9613179.0375

START

Westinghouse
Hanford Company

P.O. Box 1970 Richland, WA 99352

0045360

140

August 10, 1995

9552660

SEP 1995
RECEIVED
EDMC

J. E. Mecca, Director
Transition Programs Division
U.S. Department of Energy
Richland Operations Office
Richland, Washington 99352

Dear Mr. Mecca:

TRANSMITTAL OF PLUTONIUM-URANIUM EXTRACTION PLANT HEADEND AND F-CELL VESSELS, LOOP FLUSH ANALYTICAL RESULTS

Attachment 1 is the laboratory analytical sample results contacted on the final flush for the Plutonium-Uranium Extraction (PUREX) Headend and F-Cell Vessels. These results are transmitted in accordance with U.S. Department of Energy, Richland Operations Office/Westinghouse Hanford Company agreement with State of Washington Department of Ecology (Ecology) and the U.S. Environmental Protection Agency (EPA).

Analytical results from future flushes will be transmitted as they are obtained.

A copy of the Predetermination Reports, designating the final flush solution based on the analytical results are also included in Attachment 1. The final flushes for these cells were designated as non-dangerous waste.

Attachment 2 is a letter for your transmittal to Ecology and the EPA to transmit these results.

If you have any questions, please contact Mr. G. J. LeBaron (373-1792) of my staff.

Very truly yours,

D. G. Hamrick, Director
PUREX Transition Project
Transition Projects Division

jft

Attachments 2

RL - w/o attachments
B. L. Charboneau
L. D. Romine
L. E. Rogers
A. H. Wirkkala

DOE-HQ - B. K. Nelson (w/o attachment)

9613179.0176

9554340

Attachment 1

PUREX Headend and F-Cell Vessels Loop Flush
Laboratory ~~Analyses and~~ Sample Results

RCRA ANALYTICAL DATA SUMMARY
PUREX Headend & F-Cell Vessels
SAMPLE LOCATION: Tank F10
ORIGINAL RCRA SAMPLE ID#: R7467/BODVL7

Analyte	Dangerous Waste Designation Threshold (mg/L)	RCRA Sample Results (mg/L)	Data Relate to Following Data Ext. Nos. from R7467
Cadmium	1.0	<0.1	5750
Chromium	5.0	1.4	8750
Lead	5.0	<1.1	5750
Barium	100.0	<5.0	8750
Silver	5.0	<1.0	8750
Arsenic	5.0	<0.125	8795
Selenium	1.0	<0.25	8796
Mercury	0.2	<0.005	5897
pH	pH<2 or pH>12.5	2.57	5713
Total Organic Carbon (TOC)	100,000 (10wt% based upon designation limits for tri-butyl phosphate)	91.8	5726
Benzene	0.5	undetect (U)	VOA Sheet
Carbon Tetrachloride	0.5	undetect (U)	VOA Sheet
Chlorobenzene	100	undetect (U)	VOA Sheet
Chloroform	6.0	undetect (U)	VOA Sheet
1,2-Dichloroethane	0.5	undetect (U)	VOA Sheet
1,1 Dichloroethylene	0.7	undetect (U)	VOA Sheet
2-Butanone	200	0.008 (JB)	VOA Sheet
Tetrachloroethylene	0.7	undetect (U)	VOA Sheet
Trichloroethylene	0.5	undetect (U)	VOA Sheet
Vinyl Chloride	0.2	undetect (U)	VOA Sheet

Definitions:
U = compound was analyzed for but not detected
J = an estimated value for the target or tentatively identified compounds
B = Compound was found in the blank

SAMPLE REPORT DESCRIPTION

PUREX CANYON HEADEND AND F-CELL VESSELS LOOP

FLUSH ANALYTICAL RESULTS

SAMPLE NUMBER	SAMPLE REPORT DESCRIPTIONS
P3320	Screening sample on final flush from PUREX Laboratory. Used to determine if flush solution meets RCRA criteria.
E0608	Screening sample on final flush from 222-S laboratory tested for total activity. Sample results used to determine if the off-site laboratory criteria for acceptance is met.
R7465 STD	Standard sample results indicating the percent recovery of the analyzed constituents. A tracer was injected to test the instrumentation precision in detecting concentration levels.
R7466 BLANK	Laboratory Quality Control Method Blank used to monitor contamination resulting from the sample preparation process.
R7467 BODVL7	RCRA protocol sample results from 222-S laboratory. (includes matrix spike and matrix spike duplicate)
R7468 BODVL8	Field blank Sample results document any contamination attributable to field handling procedures and the sampling environment. (includes matrix spike and matrix spike duplicate)
R7469 STD	Standard Sample
VOA Data Sheet BODVL7/R7467	Volatile organics analysis results for RCRA sample.
VOA Data Sheet BODVL8/R7468	Volatile organics analysis results for Field blank.
VOA Data Sheet VBLK64	Volatile organics analysis results for Laboratory Quality Control Blank

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Headend & F-Cell Vessels 6th Flush

SAMPLE STATUS REPORT FOR P 3320. F10-3WF TIME: 8/10/95 9:11
DISPATCHED: 6/23/95 7:48 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 6/23/95 10:55

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHANGE CODE
****	********	**********	***	***	******
1383	Cr	1.51500E 00 uG/ML	N	Y	R43B1
1482	Cd	3.39000E-01 uG/ML	N	Y	R43B1
5203	pH	2.77000E 00 NONE	N	Y	R43B1
4411	U	6.33100E-02 G/L	N	Y	R43B1
8018	Cd-STD	COMPLETED			R43B1
8022	Cr-STD	COMPLETED			R43B1
8524	U-STD	COMPLETED			R43B1

END OF REPORT

9613479.0380

Headand & F-Cell Vessels

SAMPLE STATUS REPORT FOR E 608. E-BLANK BODVL7 TIME: 7/ 7/95 8:36
DISPATCHED: 6/23/95 10:45 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 6/29/95 14:10

EXT.	DETER.	RESULTS OR STATUS		OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********		***	***	******
1213	TB-FLTRT	8.97000E 02 uCi/L		N	Y	KP51T
1223	AT-FLTRT	5.54000E 00 uCi/L		N	Y	KP51T
2162	GEA-LIQ	1.24000E-01 uCi/L	Co-60	N	Y	KP51T
2162	GEA-LIQ	4.09000E 00 uCi/L	Sb-125	N	Y	KP51T
2162	GEA-LIQ	5.15E01 UCI/L 47% ERROR	TE-125m			KP51T
2162	GEA-LIQ	1.85000E 00 uCi/L	Cs-134	N	Y	KP51T
2162	GEA-LIQ	2.85000E 02 uCi/L	Cs-137	N	Y	KP51T
2162	GEA-LIQ	6.25000E 00 uCi/L	CePr-144	N	Y	KP51T
2162	GEA-LIQ	1.14000E 00 uCi/L	Eu-154	N	Y	KP51T
2162	GEA-LIQ	3.36000E 00 uCi/L	Eu-155	N	Y	KP51T
4271	TOT-ACT	1.27000E 06 pCi/G		N	Y	KP51T

END OF REPORT

222-S LABORATORY EXTENSION (EXT) KEY

This key refers to the EXT. NO. located on the first left column in reports R7465 through R7469. The ext. no. identifies the method used and type of sample.

FIRST NUMBER		SECOND NUMBER	
5	DIRECT LIQUID	5	STANDARD
6	FUSION	6	BLANK
7	WATER DIGESTION	7	SAMPLE
8	ACID DIGESTION	8	DUPLICATE
		9	SAMPLE + SPIKE
		0	DUPLICATE + SPIKE

9613479.0382

SAMPLE STATUS REPORT FOR R 7465. PUREX STD TIME: 7/27/95 11:16
DISPATCHED: 6/27/95 10:38 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 6/29/95 13: 0

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
5513	pH	9.96000E 01 % RECOVERY	N	Y	KP51T
		6382			
5526	TOC	9.78000E 01 % RECOVERY	N	Y	KP51T
		6383			
5550	ICP	1.02100E 02 % RECOVERY Cd	N	Y	KP51T
		6490			
5550	ICP	1.02140E 02 % RECOVERY Pb	N	Y	KP51T
		6490			
5595	As	1.13000E 02 % RECOVERY	N	Y	KP51T
		6387			
5596	Se	OUT FOR RERUN			KP51T
		6388			
5596	Se	1.20000E 02 % RECOVERY	N	Y	KP51T
		6483			
5597	Hg	9.96000E 01 % RECOVERY	N	Y	KP51T
		6384			
8505	ACD DGST	As/Se DF = 50. total volume = .100L			KP51T
		6385			
8505	ACD DGST	DF = 20, total volume = .100L			KP51T
		6385			
8550	ICP	1.08760E 02 % RECOVERY Al	N	Y	KP51T
		6386			
8550	ICP	9.60000E 01 % RECOVERY Zn	N	Y	KP51T
		6386			
8550	ICP	9.93400E 01 % RECOVERY Fe	N	Y	KP51T
		6386			
8550	ICP	1.04160E 02 % RECOVERY Ca	N	Y	KP51T
		6386			
8550	ICP	9.81800E 01 % RECOVERY Cr	N	Y	KP51T
		6386			
8550	ICP	1.02060E 02 % RECOVERY S	N	Y	KP51T
		6386			
8550	ICP	1.23520E 02 % RECOVERY Na	N	Y	KP51T
		6386			
8550	ICP	1.26020E 02 % RECOVERY B	N	Y	KP51T
		6386			
8550	ICP	9.86000E 01 % RECOVERY Ba	N	Y	KP51T
		6386			
8550	ICP	9.24000E 01 % RECOVERY Ag	N	Y	KP51T
		6386			
8550	ICP	9.52800E 01 % RECOVERY Pb	N	Y	KP51T
		6386			
8550	ICP	9.69600E 01 % RECOVERY Cd	N	Y	KP51T
		6386			
8595	As	9.83000E 01 % RECOVERY	N	Y	KP51T
		6387			
8596	Se	OUT FOR RERUN			KP51T
		6388			
8596	Se	8.04000E 01 % RECOVERY	N	Y	KP51T
		6483			

SAMPLE STATUS REPORT FOR R 7466. PUREX BLANK TIME: 7/27/95 11:16
DISPATCHED: 6/27/95 10:40 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 6/29/95 13: 0

EXT.	DETER.	RESULTS OR STATUS		OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********		***	***	******
4502	VOA	COMPLETE				KP51T
		6381				
5626	TOC	< 5.00000E 00 uG C/ML		N	Y	KP51T
		6383				
5650	ICP	< 1.00000E-02 uG/ML	Cd	N	Y	KP51T
		6490				
5650	ICP	< 1.00000E-01 uG/ML	Pb	N	Y	KP51T
		6490				
5695	As	< 3.00000E-03 uG/ML		N	Y	KP51T
		6387				
5696	Se	OUT FOR RERUN				KP51T
		6388				
5696	Se	< 3.00000E-03 uG/ML		N	Y	KP51T
		6483				
5697	Hg	< 5.00000E-03 uG/ML		N	Y	KP51T
		6384				
8605	ACD DGST	completed, total volume = .100L				KP51T
		6385				
8650	ICP	< 5.00000E-02 uG/ML	Si	N	Y	KP51T
		6386				
8650	ICP	< 5.00000E-02 uG/ML	Al	N	Y	KP51T
		6386				
8650	ICP	1.30000E-02 uG/ML	Zn	N	Y	KP51T
		6386				
8650	ICP	1.34000E-01 uG/ML	Fe	N	Y	KP51T
		6386				
8650	ICP	2.09000E-01 uG/ML	Ca	N	Y	KP51T
		6386				
8650	ICP	< 1.00000E-02 uG/ML	Cr	N	Y	KP51T
		6386				
8650	ICP	5.00000E-02 uG/ML	S	N	Y	KP51T
		6386				
8650	ICP	1.59000E-01 uG/ML	Na	N	Y	KP51T
		6386				
8650	ICP	< 5.00000E-02 uG/ML	B	N	Y	KP51T
		6386				
8650	ICP	< 5.00000E-02 uG/ML	Ba	N	Y	KP51T
		6386				
8650	ICP	< 1.00000E-02 uG/ML	Ag	N	Y	KP51T
		6386				
8650	ICP	< 1.00000E-01 uG/ML	Pb	N	Y	KP51T
		6386				
8650	ICP	< 1.00000E-02 uG/ML	Cd	N	Y	KP51T
		6386				
8695	As	< 1.25000E-01 uG/ML		N	Y	KP51T
		6387				
8696	Se	OUT FOR RERUN				KP51T
		6388				
8696	Se	< 2.50000E-01 uG/ML		N	Y	KP51T
		6483				

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SAMPLE STATUS REPORT FOR R 7467. PUREX BODVL7 TIME: 7/27/95 11:16
DISPATCHED: 6/27/95 10:44 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 6/29/95 13: 0

EXT.	DETER.	RESULTS OR STATUS		OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********		***	***	******
4502	VOA	COMPLETE				KP51T
		6381				
5713	pH	2.57000E 00 NONE		N	Y	KP51T
		6382				
5726	TOC	9.18000E 01 uG C/ML		N	Y	KP51T
		6383				
5750	ICP-LIQ	< 1.10000E-01 uG/ML	Cd	N	Y	KP51T
		6490				
5750	ICP-LIQ	< 1.10000E 00 uG/ML	Pb	N	Y	KP51T
		6490				
5797	Hg LIQ	< 5.00000E-03 uG/ML		N	Y	KP51T
		6384				
5813	pH	2.58000E 00 NONE		N	Y	KP51T
		6382				
5826	TOC	9.18000E 01 uG C/ML		N	Y	KP51T
		6383				
5897	Hg-LIQ	< 5.00000E-03 uG/ML		N	Y	KP51T
		6384				
5926	TOC	9.83000E 01 % RECOVERY		N	Y	KP51T
		6383				
5997	Hg	1.08100E 02 % RECOVERY		N	Y	KP51T
		6384				
8705	ACD DGST	DF = 100, Total volume = .100L				KP51T
		6385				
8750	ICP-LIQ	1.39000E 01 uG/ML	Si	N	Y	KP51T
		6386				
8750	ICP-LIQ	5.40000E 00 uG/ML	Al	N	Y	KP51T
		6386				
8750	ICP-LIQ	1.80000E 00 uG/ML	Zn	N	Y	KP51T
		6386				
8750	ICP-LIQ	7.00000E 00 uG/ML	Fe	N	Y	KP51T
		6386				
8750	ICP-LIQ	5.25000E 01 uG/ML	Ca	N	Y	KP51T
		6386				
8750	ICP-LIQ	1.40000E 00 uG/ML	Cr	N	Y	KP51T
		6386				
8750	ICP-LIQ	2.07000E 01 uG/ML	S	N	Y	KP51T
		6386				
8750	ICP-LIQ	3.29000E 01 uG/ML	Na	N	Y	KP51T
		6386				
8750	ICP-LIQ	1.26000E 01 uG/ML	B	N	Y	KP51T
		6386				
8750	ICP-LIQ	OUT FOR RERUN, Cd and Pb				KP51T
		6386				
8750	ICP-LIQ	< 1.00000E 00 uG/ML	Ag	N	Y	KP51T
		6386				
8750	ICP-LIQ	< 5.00000E 00 uG/ML	Ba	N	Y	KP51T
		6386				
8795	As	< 1.25000E-01 uG/ML		N	Y	KP51T
		6387				
8796	Se	OUT FOR RERUN				KP51T

9613479.0385

SAMPLE STATUS REPORT FOR R 7467. PUREX BODVL7 TIME: 7/27/95 11:16
DISPATCHED: 6/27/95 10:44 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
8796	Se	< 2.50000E-01 uG/ML	N	Y	KP51T
		6483			
8805	ACD DGST	DF = 100, Total volume = .100L			KP51T
		6385			
8850	ICP-LIQ	1.39000E 01 uG/ML Si	N	Y	KP51T
		6386			
8850	ICP-LIQ	5.20000E 00 uG/ML Al	N	Y	KP51T
		6386			
8850	ICP-LIQ	1.70000E 00 uG/ML Zn	N	Y	KP51T
		6386			
8850	ICP-LIQ	6.90000E 00 uG/ML Fe	N	Y	KP51T
		6386			
8850	ICP-LIQ	4.22000E 01 uG/ML Ca	N	Y	KP51T
		6386			
8850	ICP-LIQ	1.40000E 00 uG/ML Cr	N	Y	KP51T
		6386			
8850	ICP-LIQ	2.14000E 01 uG/ML S	N	Y	KP51T
		6386			
8850	ICP-LIQ	3.25000E 01 uG/ML Na	N	Y	KP51T
		6386			
8850	ICP-LIQ	1.28000E 01 uG/ML B	N	Y	KP51T
		6386			
8850	ICP-LIQ	< 1.00000E 00 uG/ML Cd	N	Y	KP51T
		6386			
8850	ICP-LIQ	< 1.00000E 01 uG/ML Pb	N	Y	KP51T
		6386			
8850	ICP-LIQ	< 1.00000E 00 uG/ML Ag	N	Y	KP51T
		6386			
8850	ICP-LIQ	< 5.00000E 00 uG/ML Ba	N	Y	KP51T
		6386			
8895	As	< 1.25000E-01 uG/ML	N	Y	KP51T
		6387			
8896	Se	OUT FOR RERUN			KP51T
		6388			
8896	Se	< 2.50000E-01 uG/ML	N	Y	KP51T
		6483			
8905	ACD DGST	DF=50 - As/Se, DF=20 - ICP, DF=100, .100L tot. vol			KP51T
		6385			
8950	ICP	1.05500E 02 % RECOVERY Al	N	Y	KP51T
		6386			
8950	ICP	9.50200E 01 % RECOVERY Zn	N	Y	KP51T
		6386			
8950	ICP	9.80800E 01 % RECOVERY Fe	N	Y	KP51T
		6386			
8950	ICP	9.59600E 01 % RECOVERY Ca	N	Y	KP51T
		6386			
8950	ICP	9.75800E 01 % RECOVERY Cr	N	Y	KP51T
		6386			
8950	ICP	1.20480E 02 % RECOVERY Na	N	Y	KP51T
		6386			
8950	ICP	1.26700E 02 % RECOVERY B	N	Y	KP51T
		6386			

9615479.0536

SAMPLE STATUS REPORT FOR R 7467. PUREX BODVL7 TIME: 7/27/95 11:16
DISPATCHED: 6/27/95 10:44 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
8950	ICP	9.56800E 01 % RECOVERY Ba 6386	N	Y	KP51T
8950	ICP	9.18000E 01 % RECOVERY Ag 6386	N	Y	KP51T
8950	ICP	9.48800E 01 % RECOVERY Pb 6386	N	Y	KP51T
8950	ICP	9.57000E 01 % RECOVERY Cd 6386	N	Y	KP51T
8995	As	9.54000E 01 % RECOVERY 6387	N	Y	KP51T
8996	Se	OUT FOR RERUN 6388			KP51T
8996	Se	9.93000E 01 % RECOVERY 6483	N	Y	KP51T

END OF REPORT

SAMPLE STATUS REPORT FOR R 7468. PUREX BODVL8 TIME: 7/27/95 11:17
DISPATCHED: 6/27/95 10:46 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 6/29/95 13: 0

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
4502	VOA	COMPLETE			KP51T
		6381			
5713	pH	7.06000E 00 NONE	N	Y	KP51T
		6382			
5726	TOC	6.60000E 00 uG C/ML	N	Y	KP51T
		6383			
5750	ICP-LIQ	3.52000E-01 uG/ML Cd	N	Y	KP51T
		6490			
5750	ICP-LIQ	< 1.10000E 00 uG/ML Pb	N	Y	KP51T
		6490			
5797	Hg LIQ	< 5.00000E-03 uG/ML	N	Y	KP51T
		6384			
5813	pH	7.07000E 00 NONE	N	Y	KP51T
		6382			
5826	TOC	< 6.00000E 00 uG C/ML	N	Y	KP51T
		6383			
5897	Hg-LIQ	< 5.00000E-03 uG/ML	N	Y	KP51T
		6384			
5926	TOC	9.58000E 01 % RECOVERY	N	Y	KP51T
		6383			
5997	Hg	1.04400E 02 % RECOVERY	N	Y	KP51T
		6384			
8705	ACD DGST	DF = 100, total volume = .100L			KP51T
		6385			
8750	ICP-LIQ	1.70000E 00 uG/ML Zn	N	Y	KP51T
		6386			
8750	ICP-LIQ	2.01000E 01 uG/ML Ca	N	Y	KP51T
		6386			
8750	ICP-LIQ	1.23000E 01 uG/ML Na	N	Y	KP51T
		6386			
8750	ICP-LIQ	< 5.00000E 00 uG/ML Fe	N	Y	KP51T
		6386			
8750	ICP-LIQ	OUT FOR RERUN, Cd AND Pb			KP51T
		6386			
8750	ICP-LIQ	< 1.00000E 00 uG/ML Ag	N	Y	KP51T
		6386			
8750	ICP-LIQ	< 5.00000E 00 uG/ML Ba	N	Y	KP51T
		6386			
8750	ICP-LIQ	< 1.00000E 00 uG/ML Cr	N	Y	KP51T
		6386			
8795	As	< 1.25000E-01 uG/ML	N	Y	KP51T
		6387			
8796	Se	OUT FOR RERUN			KP51T
		6388			
8796	Se	< 2.50000E-01 uG/ML	N	Y	KP51T
		6483			
8805	ACD DGST	DF = 100, Total volume = .100L			KP51T
		6385			
8850	ICP-LIQ	1.40000E 00 uG/ML Zn	N	Y	KP51T
		6386			
8850	ICP-LIQ	5.90000E 00 uG/ML Fe	N	Y	KP51T

SAMPLE STATUS REPORT FOR R 7468. PUREX BODVL8 TIME: 7/27/95 11:17
DISPATCHED: 6/27/95 10:46 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
8850	ICP-LIQ	1.91000E 01 uG/ML Ca	N	Y	KP51T
		6386			
8850	ICP-LIQ	1.17000E 01 uG/ML Na	N	Y	KP51T
		6386			
8850	ICP-LIQ	< 1.00000E 00 uG/ML Cd	N	Y	KP51T
		6386			
8850	ICP-LIQ	< 1.00000E 01 uG/ML Pb	N	Y	KP51T
		6386			
8850	ICP-LIQ	< 1.00000E 00 uG/ML Ag	N	Y	KP51T
		6386			
8850	ICP-LIQ	< 5.00000E 00 uG/ML Ba	N	Y	KP51T
		6386			
8850	ICP-LIQ	< 1.00000E 00 uG/ML Cr	N	Y	KP51T
		6386			
8895	As	< 1.25000E-01 uG/ML	N	Y	KP51T
		6387			
8896	Se	OUT FOR RERUN			KP51T
		6388			
8896	Se	< 2.50000E-01 uG/ML	N	Y	KP51T
		6483			
8905	ACD DGST	DF=50 - As/Se, DF=20 - ICP, DF=100, .100L tot.vol.			KP51T
		6385			
8950	ICP	9.50200E 01 % RECOVERY Zn	N	Y	KP51T
		6386			
8950	ICP	1.04500E 02 % RECOVERY Ca	N	Y	KP51T
		6386			
8950	ICP	1.31080E 02 % RECOVERY Na	N	Y	KP51T
		6386			
8950	ICP	9.87600E 01 % RECOVERY Fe	N	Y	KP51T
		6386			
8950	ICP	9.79200E 01 % RECOVERY Ba	N	Y	KP51T
		6386			
8950	ICP	9.11000E 01 % RECOVERY Ag	N	Y	KP51T
		6386			
8950	ICP	9.55400E 01 % RECOVERY Pb	N	Y	KP51T
		6386			
8950	ICP	9.62600E 01 % RECOVERY Cd	N	Y	KP51T
		6386			
8950	ICP	9.75800E 01 % RECOVERY Cr	N	Y	KP51T
		6386			
8995	As	1.14000E 02 % RECOVERY	N	Y	KP51T
		6387			
8996	Se	OUT FOR RERUN			KP51T
		6388			
8996	Se	1.21500E 02 % RECOVERY	N	Y	KP51T
		6483			

END OF REPORT

SAMPLE STATUS REPORT FOR R 7469. PUREX STD TIME: 7/27/95 11:17
DISPATCHED: 6/27/95 10:48 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 6/29/95 13: 0

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
5513	pH	1.00400E 02 % RECOVERY	N	Y	KP51T
		6382			
5526	TOC	9.78000E 01 % RECOVERY	N	Y	KP51T
		6383			
5550	ICP	9.69000E 01 % RECOVERY Si	N	Y	KP51T
		6386			
5550	ICP	9.84800E 01 % RECOVERY Al	N	Y	KP51T
		6386			
5550	ICP	9.96200E 01 % RECOVERY Zn	N	Y	KP51T
		6386			
5550	ICP	1.00340E 02 % RECOVERY Fe	N	Y	KP51T
		6386			
5550	ICP	1.04600E 02 % RECOVERY Ca	N	Y	KP51T
		6386			
5550	ICP	9.93800E 01 % RECOVERY Cr	N	Y	KP51T
		6386			
5550	ICP	9.95800E 01 % RECOVERY S	N	Y	KP51T
		6386			
5550	ICP	1.04540E 02 % RECOVERY Na	N	Y	KP51T
		6386			
5550	ICP	1.02160E 02 % RECOVERY B	N	Y	KP51T
		6386			
5550	ICP	1.01020E 02 % RECOVERY Ba	N	Y	KP51T
		6386			
5550	ICP	9.71200E 01 % RECOVERY Ag	N	Y	KP51T
		6386			
5550	ICP	9.90200E 01 % RECOVERY Pb	N	Y	KP51T
		6386			
5550	ICP	9.93600E 01 % RECOVERY Cd	N	Y	KP51T
		6386			
5550	ICP	1.02480E 02 % RECOVERY Cd	N	Y	KP51T
		6490			
5550	ICP	1.01880E 02 % RECOVERY Pb	N	Y	KP51T
		6490			
5595	As	1.17000E 02 % RECOVERY	N	Y	KP51T
		6387			
5596	Se	OUT FOR RERUN			KP51T
		6388			
5596	Se	8.47000E 01 % RECOVERY	N	Y	KP51T
		6483			
5597	Hg	1.04000E 02 % RECOVERY	N	Y	KP51T
		6384			

END OF REPORT

SDG NARRATIVE
Sample Point - PUREX
July 12, 1995

VOLATILE ORGANIC ANALYSIS (by GC/MS)

The samples were analyzed by method LA-523-405 A-4, using an Hewlett-Packard 5970 GC/MS (WB92426). Data acquisition and reduction were performed on an H.P.-1000 computer, running RTE-A revision F, which includes Aquarius software from Environmental Testing and Certification Corp.

All the samples and the method blank used a 5 mL sample size. Holding time was met. The specific holding time for volatile organic analysis is 14 days as found in chapter 4, table 4-1 of SW-846.

The System Monitoring Compounds (SMC), Internal Standard Compounds (IS), and Matrix Spike Compounds (MS) were the same as those used in LA-523-401 A-1. Acceptance criteria for each is also contained in LA-523-401 A-1.

LMCS control limits for the VOA compounds were administratively set to the criteria listed in procedure LA-523-401 A-1 for System Monitoring Compounds (SMC). The LMCS standard for VOA is defined as the method blank analyzed at the start of each 12 hour analysis window. The LMCS codes for the SMC's are R256 for 1,2-Dichloroethane-d4, R258 for Toluene-d8, and R260 for Bromofluorobenzene.

INFORMATION	COMMENTS
SMC Recoveries	Meets all requirements
MS/MSD Recoveries	Meets all requirements
Method blank summary	Meets all requirements
Tune/Mass Calibration	Meets all requirements
Initial Calibration	Meets all requirements
Daily Calibration	Meets all requirements
Internal Standards	Meets all requirements

The following is a list of the pertinent GC/MS files, and the sample holding times:

Lab ID	Filename	Holding Time	Comment
R-7466	>AG06C	0	Method blank
R-7467	>AG06F	7	Sample
R-7468	>AG06G	7	Sample

Standards preparation data is kept in a controlled notebook, WHC-N-337 1. Acetone and 1-Butanol and 2-Butanone were detected and Normal Paraffin Hydrocarbon (NPH) compounds and Butanal were tentatively identified in sample R-7467. A trace amount of Methylene Chloride was detected in sample R-7468.

This sample had some carryover of Normal Paraffin Hydrocarbons from the first sample. The sample was not rerun due to lack of sample but the Matrix spike and Matrix spike duplicate did not show reportable amounts of Normal Paraffin Hydrocarbons.

To enable interpretation of summary data for VOA compounds, the following table defines the qualifiers, called Q-flags, used in Form I.

Q-Flag	Definition
U	Indicates the compound was analyzed for but not detected; the U-flagged concentration number is the quantitation limit.
J	Indicates an estimated value for the target or tentatively identified compounds; spectra meet criteria but response is below the quantitation limit for the target compounds.
B	Compound was found in the blank.
D	Analysis was performed on a diluted sample.
E	Indicates that quantitation was above the calibration range.
N	Indicates the presumptive evidence of a compound. This flag is only used for tentatively identified compounds, where the identification is based on a mass spectral library search.

D.E. NELSON
J.B DELAROSA-CHANG
Organic Chemistry

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BODVL7

Lab Name: WHCWA Contract:

Lab Code: Case No.: SAS No.: SDG No.: BODVL7

Matrix: (soil/water) WATER Lab Sample ID: R-7467

Sample wt/vol: 5 (g/mL) ML Lab File ID: >AG06F

Level: (low/med) LOW Date Received: 06/29/95

% Moisture: not dec. Date Analyzed: 7/06/95

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	10.	U
67-64-1	Acetone	23.	
75-15-0	Carbon Disulfide	10.	U
75-35-4	1,1-Dichloroethene	10.	U
75-34-3	1,1-Dichloroethane	10.	U
540-59-0	1,2-Dichloroethene (total)	10.	U
67-66-3	Chloroform	10.	U
107-02-2	1,2-Dichloroethane	10.	U
78-93-3	2-Butanone	8.	JB
71-55-6	1,1,1-Trichloroethane	10.	U
56-23-5	Carbon Tetrachloride	10.	U
75-27-4	Bromodichloromethane	10.	U
78-87-5	1,2-Dichloropropane	10.	U
10061-01-5	cis-1,3-Dichloropropene	10.	U
79-01-6	Trichloroethene	10.	U
124-48-1	Dibromochloromethane	10.	U
79-00-5	1,1,2-Trichloroethane	10.	U
71-43-2	Benzene	10.	U
10061-02-6	trans-1,3-Dichloropropene	10.	U
75-25-2	Bromoform	10.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	10.	U
79-34-5	1,1,2,2-Tetrachloroethane	10.	U
108-88-3	Toluene	10.	U
108-90-7	Chlorobenzene	10.	U
100-41-4	Ethylbenzene	10.	U
100-42-5	Styrene	10.	U
133-02-7	Xylene (total)	10.	U
71-36-3	1-Butanol	610.	

9613479.0393

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.: BODVL7

Lab Name: WHCWA Contract:

Lab Code: Case No.: SAS No.: SDG No.: BODVL7

Matrix: (soil/water) WATER Lab Sample ID: R-7467

Sample wt/vol: 5 (g/mL) ML Lab File ID: >AG06F

Level: (low/med) LOW Date Received: 06/29/95

% Moisture: not dec. Date Analyzed: 7/06/95

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 3

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	123728	Butanal	5.26	10.	JN
2.	629505	Tridecane	25.36	77.	JN
3.	629594	Tetradecane	27.57	120.	JN
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BODVL8

Lab Name: WHCWA Contract:

Lab Code: Case No.: SAS No.: SDG No.: BODVL7

Matrix: (soil/water) WATER Lab Sample ID: R-7468

Sample wt/vol: 5 (g/mL) ML Lab File ID: >AG06G

Level: (low/med) LOW Date Received: 06/29/95

% Moisture: not dec. Date Analyzed: 7/06/95

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	2.	J
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	10.	U
75-35-4	1,1-Dichloroethene	10.	U
75-34-3	1,1-Dichloroethane	10.	U
540-59-0	1,2-Dichloroethene (total)	10.	U
67-66-3	Chloroform	10.	U
107-02-2	1,2-Dichloroethane	10.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	10.	U
56-23-5	Carbon Tetrachloride	10.	U
75-27-4	Bromodichloromethane	10.	U
78-87-5	1,2-Dichloropropane	10.	U
10061-01-5	cis-1,3-Dichloropropene	10.	U
79-01-6	Trichloroethene	10.	U
124-48-1	Dibromochloromethane	10.	U
79-00-5	1,1,2-Trichloroethane	10.	U
71-43-2	Benzene	10.	U
10061-02-6	trans-1,3-Dichloropropene	10.	U
75-25-2	Bromoform	10.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	10.	U
79-34-5	1,1,2,2-Tetrachloroethane	10.	U
108-88-3	Toluene	10.	U
108-90-7	Chlorobenzene	10.	U
100-41-4	Ethylbenzene	10.	U
100-42-5	Styrene	10.	U
133-02-7	Xylene (total)	10.	U
71-36-3	1-Butanol	500.	U

9613479.0395

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BODVL8

Lab Name: WHCWA Contract:

Lab Code: Case No.: SAS No.: SDG No.: BODVL7

Matrix: (soil/water) WATER Lab Sample ID: R-7468

Sample wt/vol: 5 (g/mL) ML Lab File ID: >AG06G

Level: (low/med) LOW Date Received: 06/29/95

% Moisture: not dec. Date Analyzed: 7/06/95

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
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9613479.0396

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK64

Lab Name: WHCWA Contract:

Lab Code: Case No.: SAS No.: SDG No.: BODVL7

Matrix: (soil/water) WATER Lab Sample ID: R-7466

Sample wt/vol: 5 (g/mL) ML Lab File ID: >AG06C

Level: (low/med) LOW Date Received:

% Moisture: not dec. Date Analyzed: 7/06/95

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	10.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	10.	U
75-35-4	1,1-Dichloroethene	10.	U
75-34-3	1,1-Dichloroethane	10.	U
540-59-0	1,2-Dichloroethene (total)	10.	U
67-66-3	Chloroform	10.	U
107-02-2	1,2-Dichloroethane	10.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	10.	U
56-23-5	Carbon Tetrachloride	10.	U
75-27-4	Bromodichloromethane	10.	U
78-87-5	1,2-Dichloropropane	10.	U
10061-01-5	cis-1,3-Dichloropropene	10.	U
79-01-6	Trichloroethene	10.	U
124-48-1	Dibromochloromethane	10.	U
79-00-5	1,1,2-Trichloroethane	10.	U
71-43-2	Benzene	10.	U
10061-02-6	trans-1,3-Dichloropropene	10.	U
75-25-2	Bromoform	10.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	10.	U
79-34-5	1,1,2,2-Tetrachloroethane	10.	U
108-88-3	Toluene	10.	U
108-90-7	Chlorobenzene	10.	U
100-41-4	Ethylbenzene	10.	U
100-42-5	Styrene	10.	U
133-02-7	Xylene (total)	10.	U
71-36-3	1-Butanol	500.	U

9615979.0397

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK64

Lab Name: WHCWA Contract:

Lab Code: Case No.: SAS No.: SDG No.: PUREX

Matrix: (soil/water) WATER Lab Sample ID: R-7466

Sample wt/vol: 5 (g/mL) ML Lab File ID: >AG06C

Level: (low/med) LOW Date Received:

% Moisture: not dec. Date Analyzed: 7/06/95

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
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WESTINGHOUSE HANFORD COMPANY
GENERATOR & WASTE ACCEPTANCE SERVICES
PREDETERMINATION REPORT

REQUEST #: 26569 **DATE:** August 7, 1995

SUBJECT	PRODUCT PREDETERMINATION

TO	C. N. Villalobos	COMPANY	WHC		
PHONE	373-4753	ADDRESS			
FACILITY	Purex/200E		MSIN	S6-19	

ANALYST	Judith A. Nielsen	MSIN	T3-05	PHONE	376-4393
REVIEWER	8/7/95				
cc	File				

This waste predetermination is based on the MSDS information for products/materials listed in the predetermination request and was performed according to current state and Federal law (WAC 173-303 and 40 CFR 261). For questions or comments, please contact the Generator & Waste Acceptance Services analyst above and reference the request #. Thank you for your interest in waste predetermination.

			REGULATED ?				
Item #	MSDS #	Product/Material	Unused Product	Used Product	Empty Container	Rags with 10% Product	Possible Waste Codes
1		PUREX Headend Feed Vessels & F-Cell Vessels Flush Solution	N	N	N	N	NONE

Comments: Based on lab analysis, the Flush Solution does not designate at Dangerous Waste

DISCLAIMER

This predetermination is believed accurate based on the information provided. Predeterminations are performed to assist generators in selecting less hazardous products. Since solid waste regulations are subject to constant revision, waste status may change without notice. *Waste designations must be performed on all wastes* by Generator & Waste Acceptance Services to assure proper disposal in the event products are spilled or contained within a waste matrix.

9613479.0399

CORRESPONDENCE DISTRIBUTION COVERSHEET

Author	Addressee	Correspondence No.
J. E. Mecca, RL (D. G. Hamrick, WHC)	D. R. Sherwood, EPA D. Lundstrom, Ecology	Incoming XRef 9554340

Subject: TRANSMITTAL OF PLUTONIUM-URANIUM EXTRACTION PLANT AQUEOUS MAKEUP TANK 156, LOOP FLUSH ANALYTICAL RESULTS

INTERNAL DISTRIBUTION

Approval	Date	Name	Location	W/att
		Correspondence Control	A3-01	
		R. W. Bailey	S5-66	
		R. J. Bliss (Sr.Staff/Assignee)	B3-04	
		A. A. Grasher	S6-15	
		D. G. Hamrick	S6-15	
		D. G. Harlow	S6-19	
		W. G. Jasen	S6-17	
		G. J. LeBaron	S6-19	
		W. A. Peiffer	S6-19	
		J. R. Robertson	H6-21	
		M. J. Stephenson	H6-20	
		J. F. Tea	S6-19	
		C. N. Villalobos	S6-19	

9613479.0490

Attachment 2

TRANSMITTAL OF PLUTONIUM URANIUM EXTRACTION PLANT HEADEND AND F-CELL VESSELS, LOOP FLUSH ANALYTICAL RESULTS

Ghost Letter

9615479.0401

Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

Mr. Douglas R. Sherwood
Hanford Project Manager
U.S. Environmental Protection Agency
712 Swift Boulevard, Suite 5
Richland, Washington 99352

Mr. David Lundstrom
200 Area Section Manager
State of Washington
Department of Ecology
1315 W. 4th Avenue
Kennewick, Washington 99336

Dear Messrs. Sherwood and Lundstrom:

TRANSMITTAL OF PLUTONIUM URANIUM EXTRACTION PLANT HEADEND AND F-CELL VESSELS, LOOP FLUSH ANALYTICAL RESULTS

Enclosed is the laboratory analytical sample results conducted on the final flush for the Plutonium Uranium Extraction (PUREX) Headend and F-Cell Vessels. These results are transmitted in accordance with U.S. Department of Energy, Richland Operations Office/Westinghouse Hanford Company agreement with State of Washington Department of Ecology (Ecology) and the U. S. Environmental Protection Agency (EPA).

Analytical results from future flushes will be transmitted as they are obtained.

A copy of the Predetermination Report, designating the final flush solution based on the analytical results is also included in the enclosure. The final flush for this tank was designated as non-dangerous waste.

If you have any questions, please contact L. D. Romine (376-4747) of my staff.

Sincerely,

J. E. Mecca, Director
Transition Programs Division

jft

Enclosure

cc: D. L. Duncan, EPA
M. N. Jaraysi, Ecology
D. G. Hamrick, WHC, w/o encl.
G. J. LeBaron, WHC, w/o encl.

9613479.0402

R7468 ①

CORRESPONDENCE DISTRIBUTION COVERSHEET

Author	Addressee	Correspondence No.
C. N. Villalobos, 373-4753	J. E. Mecca, RL	9554340

Subject: TRANSMITTAL OF PLUTONIUM-URANIUM EXTRACTION HEADEND AND F-CELL VESSELS, LOOP FLUSH ANALYTICAL RESULTS

INTERNAL DISTRIBUTION

Approval	Date	Name	Location	w/att
		Correspondence Control	A3-01	X
		R. W. Bailey	S6-15	X
		R. J. Bliss	B3-04	
		A. A. Grasher	S6-15	
		D. G. Hamrick	S6-15	X
DGH	8/16/95	D. G. Harlow	S6-19	
		J. P. Hayfield	S6-55	X
		W. G. Jasen	S6-17	
[illegible]	8/15/95	G. J. LeBaron	S6-19	X
		W. A. Peiffer	S6-19	
		J. R. Robertson	H6-21	X
		M. J. Stephenson	H6-20	
		J. F. Tea	S6-19	X
		C. N. Villalobos	S6-19	X
		DGH/LB	S6-15	

9613479.0403

R7468 (2)

Westinghouse Hanford Company | **Internal Memo**

From: Program Support
Phone: 373-3683 T6-20
Date: August 28, 1995
Subject: RESULTS FOR PUREX SAMPLE

75725-96-37

To: C.N. Villalobos S6-19

cc: L. A. Diaz T6-06
~~TCRC~~ ~~R2-12~~
LAD 8-28-95 ADR-File/LB

Attached analytical results have been obtained for the indicated sample which was submitted to the 222-S Laboratory.

LABORATORY ID: R7467 & R7468

CUSTOMER ID: BODUL7 & BODUL8

LABORATORY SUBMITTAL DATE: June, 29, 1995

CHAIN OF CUSTODY No.: 9208

SAMPLE AUTHORIZATION FORM: 95-013

If there are any questions regarding this data, please feel free to reach me at 373-3683.

Sincerely,

Leslie Diaz

Leslie A. Diaz
Program Support

Attachments
1) Request for Special Analysis
2) Volatile Organic Analysis
3) Analytical Data

9613479.0404

REQUEST FOR SPECIAL ANALYSIS (RSA)

RSA No. 2353

1. Sample Origin: PUREX
2. Date Submitted:
3. Submitted By: DE Richards
4. Requester Name: C. N. Villalobos
5. Requester Phone/MSIN: 373-4753
6. Charge Code/Work Package: KP51T (134)
7. Date Required: ASAP (15 DAY)

SAF 95-013

8. Customer ID	Collected Date	Collected Time	9. Laboratory ID
BODVL7	6-29-95	0915	R7467
BODVL8	6-29-95	1030	R7468

12. Number of Samples: 2
13. Volume of Samples: 180ml Total
14. Protocols: ☐ None ☒ RCRA ☐ NQA-1 ☐ Other ☐ CERCLA

15. Sample Type: ☐ Solid ☐ Soil ☐ Slurry ☐ Gas ☒ Water ☐ Waste ☐ Solution ☐ Sludge ☐ Oil ☐ Other (specify)

16. Storage Requirements: ☐ None ☒ Specify Cool to 4°C.

mR ~~* 15 day hold time.*~~
Delete - NO HOLD TIME!

17. Process Knowledge/Known Listed Wastes: ☒ Unknown ☐ Known (Please attach list) ☐ Previously submitted for this Project

18. Survey: Dwell Scott (HPT Signature) Dose Rate 3.5 mrad/hr

19. Disposition of Waste: ☐ Return to Client/Location ☒ Dispose per 222-S Procedures ☐ Other

10. Determination	11. Expected Range
✓ VOA	(LA-523-405)
✓ ICP Metals TAL	(LA-505-151)
✓ As	(LA-355-131)
RR Se	(LA-355-131)
✓ Hg	(LA-325-104) direct
✓ TOC	(LA-344-105)
✓ pH	(LA-212-102)
✓ Acid Digest	(LA-505-158)

7/31 faxed and reported to customer. mR

20. Additional Information: Fax Results to Carmen Villalobos at 373-4539.
std R7465
blank R7466
std R7469

Chain of Custody: ☐ No ☒ Yes Number: 9208

22. Assigned Custodial Group (select one): ☐ PCL ☐ PDSU ☒ ENV ☐ Process

23. Sample Received By: E Rubio
Date: 6-29-95 Time: 1300

24. Laboratory Manager (if required) Date:

BC-6700-181 (11/92)

SDG NARRATIVE
Sample Point - PUREX
July 12, 1995

VOLATILE ORGANIC ANALYSIS (by GC/MS)

The samples were analyzed by method LA-523-405 A-4, using an Hewlett-Packard 5970 GC/MS (WB92426). Data acquisition and reduction were performed on an H.P.-1000 computer, running RTE-A revision F, which includes Aquarius software from Environmental Testing and Certification Corp.

All the samples and the method blank used a 5 mL sample size. Holding time was met. The specific holding time for volatile organic analysis is 14 days as found in chapter 4, table 4-1 of SW-846.

The System Monitoring Compounds (SMC), Internal Standard Compounds (IS), and Matrix Spike Compounds (MS) were the same as those used in LA-523-401 A-1. Acceptance criteria for each is also contained in LA-523-401 A-1.

LMCS control limits for the VOA compounds were administratively set to the criteria listed in procedure LA-523-401 A-1 for System Monitoring Compounds (SMC). The LMCS standard for VOA is defined as the method blank analyzed at the start of each 12 hour analysis window. The LMCS codes for the SMC's are R256 for 1,2-Dichloroethane-d4, R258 for Toluene-d8, and R260 for Bromofluorobenzene.

INFORMATION	COMMENTS
SMC Recoveries	Meets all requirements
MS/MSD Recoveries	Meets all requirements
Method blank summary	Meets all requirements
Tune/Mass Calibration	Meets all requirements
Initial Calibration	Meets all requirements
Daily Calibration	Meets all requirements
Internal Standards	Meets all requirements

The following is a list of the pertinent GC/MS files, and the sample holding times:

Lab ID	Filename	Holding Time	Comment
R-7466	>AG06C	0	Method blank
R-7467	>AG06F	7	Sample
R-7468	>AG06G	7	Sample

Standards preparation data is kept in a controlled notebook, WHC-N-337 1. Acetone and 1-Butanol and 2-Butanone were detected and Normal Paraffin Hydrocarbon (NPH) compounds and Butanal were tentatively identified in sample R-7467. A trace amount of Methylene Chloride was detected in sample R-7468.

This sample had some carryover of Normal Paraffin Hydrocarbons from the first sample. The sample was not rerun due to lack of sample but the Matrix spike and Matrix spike duplicate did not show reportable amounts of Normal Paraffin Hydrocarbons.

To enable interpretation of summary data for VOA compounds, the following table defines the qualifiers, called Q-flags, used in Form I.

Q-Flag	Definition
U	Indicates the compound was analyzed for but not detected; the U-flagged concentration number is the quantitation limit.
J	Indicates an estimated value for the target or tentatively identified compounds; spectra meet criteria but response is below the quantitation limit for the target compounds.
B	Compound was found in the blank.
D	Analysis was performed on a diluted sample.
E	Indicates that quantitation was above the calibration range.
N	Indicates the presumptive evidence of a compound. This flag is only used for tentatively identified compounds, where the identification is based on a mass spectral library search.

D.E. NELSON
J.B DELAROSA-CHANG
Organic Chemistry

9613479.0407

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

ANALYTICAL BATCH

Lab Segment Serial No. R7447, R7448	Customer ID: BODVL7, BODVL8
Analysis: ICP	Sample Prep: Undigested

Instrument: WC38735	Procedure/ Rev: LG-505-161 /0-1
Technologist: JK Sato	Date: 7-25-95
Starting Time: 1300	Temperature N/A
Ending Time: 1530	Chemist: S. Perong, M. Lindberg

Comments:

	Description	Lab ID		Description	Lab ID
1	LMCS Check Std	R7445-5550	11		
2	Reagent Blank	R7446-5450	12		
3	Sample	R7447-5750	13		
4	Sample	R7448-5750	14		
5	Reagent Blank	----	15		
6	LMCS Check Std	R7449-5550	16		
7			17		
8			18		
9			19		
10			20		

Standard Type	Primary Book No. and Aliquot Vol.	Second Book No. and Aliquot Vol.	Third Book No. and Aliquot Vol.	Final Vol. of Standard
LMCS Check Std 5575	43B48B/direct			

A-6000-881 (03/92)

9613479.0408

Analysis Report Summary Tue 07-25-95 02:24:41 PM page 1

#	Sample Name	File	Method	Date	Time	OpID	Type	Mode
1	SST5 43B48B ICV	950725C	ICP2	07/25/95	13:47	DKS	Q	CONC
2	HNO3 REAG BLK	950725C	ICP2	07/25/95	13:53	DKS	Q	CONC
3	R7465 SAMDIL	950725C	ICP2	07/25/95	13:56	DKS	S	CONC
4	R7466 SAMDIL	950725C	ICP2	07/25/95	14:01	DKS	S	CONC
5	R7468	950725C	ICP2	07/25/95	14:05	DKS	S	CONC
6	HNO3 REAG BLK	950725C	ICP2	07/25/95	14:16	DKS	Q	CONC
7	SST5 43B48B CCV	950725C	ICP2	07/25/95	14:20	DKS	Q	CONC

DK LGD

7-25-95

Purex R7465-R7469

Pb, Cd

9613479.0409

#	Sample Name	Ag	Al	As	B	Ba	Be
1	SST5 43B48B ICV	4.977	4.934	5.103	4.921	4.946	5.151
2	HNO3 REAG BLK	.0000	-.0058	.0003	.0061	-.0000	.0000
3	R74687SAMDIL	.0015	.0035	.0075	.1346	.0084	.0001
4	R74688SAMDIL 7-25-95	.0017	.2270	.0074	.0650	.0331	.0001
5	R74687	.0004	-.0040	.0131	.1374	.0082	-.0000
6	HNO3 REAG BLK	.0006	.0041	.0192	.0042	.0000	.0002
7	SST5 43B48B CCV	5.004	5.017	5.180	5.005	5.048	5.226

#	Sample Name	Bi	Ca	Cd	Ce	Co	Cr
1	SST5 43B48B ICV	4.984	5.220	5.105	5.047	5.138	5.153
2	HNO3 REAG BLK	-.0317	.0016	.0006	-.0005	.0007	.0007
3	R74687SAMDIL	-.0157	.0188	.0010	.0015	-.0010	.0001
4	R74688SAMDIL 7-25-95	-.0058	1.407	.0323	-.0033	-.0009	.1169
5	R74687	-.0154	.0198	.0012	.0012	.0004	.0002
6	HNO3 REAG BLK	-.0209	.0012	.0013	.0087	.0008	.0014
7	SST5 43B48B CCV	5.093	5.215	5.124	5.164	5.169	5.183

#	Sample Name	Cu	Eu	Fe	K	La	Li
1	SST5 43B48B ICV	4.903	.0071	5.098	4.907	4.989	4.893
2	HNO3 REAG BLK	-.0000	.0013	.0002	-.0061	-.0005	.0012
3	R74687SAMDIL	.0008	.0009	.0068	.2198	.0003	.0021
4	R74688SAMDIL 7-25-95	.0055	.0015	.4192	.3909	.0183	.0015
5	R74687	-.0002	.0004	.0201	-.0268	.0000	.0019
6	HNO3 REAG BLK	.0010	.0006	.0004	.0851	.0004	.0009
7	SST5 43B48B CCV	5.014	.0064	5.153	5.039	5.096	5.116

#	Sample Name	Mg	Mn	Mo	Na	Nd	Ni
1	SST5 43B48B ICV	4.944	4.989	5.099	4.911	5.127	5.065
2	HNO3 REAG BLK	.0013	.0005	-.0005	.0090	.0029	.0024
3	R74687SAMDIL	.0047	.0003	-.0005	.1912	.0027	.0049
4	R74688SAMDIL 7-25-95	.3276	.0132	-.0008	.5465	.0102	.0667
5	R74687	.0012	.0003	-.0016	.1829	.0001	-.0003
6	HNO3 REAG BLK	.0025	.0002	-.0021	.0049	.0041	.0012
7	SST5 43B48B CCV	5.026	5.027	5.146	5.095	5.250	5.106

#	Sample Name	P	Pb	S	Sb	Se	Si
1	SST5 43B48B ICV	4.855	5.107	4.970	4.759	4.973	5.093
2	HNO3 REAG BLK	.0244	-.0040	-.0140	-.0014	.0214	.0131
3	R74687SAMDIL	.0089	.0075	-.0068	.0001	.0121	.1279
4	R74688SAMDIL 7-25-95	2.712	.0044	1.855	-.0056	.0135	.3374
5	R74687	.2345	-.0085	.0283	.0015	-.0017	.1191
6	HNO3 REAG BLK	.1662	.0081	.0270	-.0017	.0041	.0053
7	SST5 43B48B CCV	Q15.95	5.094	Q6.715	4.813	5.016	5.122

9613479.0410

Analysis Report Averages Tue 07-25-95 02:24:41 PM page 3

#	Sample Name	Sm	Sr	Th	Ti	Tl	U
1	SST5 43B48B ICV	5.000	4.930	.0030	4.892	4.988	10.02
2	HNO3 REAG BLK	.0156	.0001	-.0071	.0000	-.0176	.0573
3	R74687 SAMDIL	.0094	.0008	-.0050	.0004	-.0331	.0447
4	R74698 SAMDIL 7-25-95	.0046	.0068	-.0055	.0080	-.0251	3.412
5	R74687	.0068	.0001	-.0066	.0002	-.0385	.0270
6	HNO3 REAG BLK	.0080	-.0001	-.0036	.0002	-.0335	.0373
7	SST5 43B48B CCV	5.127	5.027	.0044	4.970	5.015	10.26

#	Sample Name	V	Y	Zn	Zr
1	SST5 43B48B ICV	5.037	.0136	5.080	4.979
2	HNO3 REAG BLK	.0032	.0009	-.0001	.0032
3	R74687 SAMDIL	.0022	.0007	.0001	.0012
4	R74698 SAMDIL 7-25-95	.0025	.0020	.0118	.0004
5	R74687	.0019	.0005	-.0003	.0005
6	HNO3 REAG BLK	.0022	.0007	-.0003	.0011
7	SST5 43B48B CCV	5.090	.0132	5.098	5.048

DK Lab

7-25-95

INDUCTIVELY COUPLED PLASMA ANALYSIS

Batch 6490

Serial No.	Sample Point	Date	Time Issued	Priority
R 7465.-5550	PUREX	6-27-95	10:36	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-~~151~~/41 DK 7-25-95	% RECOVERY	KP51T	1

Sample Size	Customer ID
? SSTS 43B48B direct	STD

Remarks, Calculations, Results

LMCS CHECK SAMPLE

Cd (5.105/5)(100) = 102.10 %

Pb 5.107 = 102.14 %

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
DK				
Hrs	Hrs	Hrs	Hrs	Hrs DK 7-25-95

Date	Time Completed	Lab Unit Mgr	
7-25-95	1530	07/26/95 S. Parry	DK 7-25-95

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
R 7466.-5650	PUREX	6-27-95	10:36	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-~~151~~/41 DK 7-25-95	UG/ML	KP51T	1

Sample Size	Customer ID
? Direct	BLANK

Remarks, Calculations, Results

REAGENT BLANK

Cd <.01 ug/ml

Pb <.10

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
DK				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
7-25-95	1530	07/26/95 S. Parry	DK 7-25-95

54-6800-061

INDUCTIVELY COUPLED PLASMA ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 7467.-5750	PUREX	6-27-95	10:41	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP-LIQ	LA-505-151/61 DK 7-25-95	UG/ML	RPS11	1

Sample Size	Customer ID
1.10 ml DF 11	BUDVL7

Remarks, Calculations, Results:

Cd <.01 x 11 = <1.10 E-1

Pb <.10 x 11 = <1.10

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
DK				
Hrs	Hrs	Hrs	Hrs	Hrs
				7-26-95

Date	Time Completed	Lab Unit Mgr	
7-25-95	1530	07/26/95 S. Parry	DK 7-25-95

54-6800-061 (R-10-83)

Serial No	Sample Point	Date	Time Issued	Priority
R 7468.-5750	PUREX	6-27-95	10:46	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP-LIQ	LA-505-151/61 DK 7-25-95	UG/ML	RPS11	1

Sample Size	Customer ID
1.10 ml DF 11	BUDVL8

Remarks, Calculations, Results:

Cd .032 x 11 = 3.52 E-1

Pb <.10 x 11 = <1.10

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
DK				
Hrs	Hrs	Hrs	Hrs	Hrs
				7-26-95

Date	Time Completed	Lab Unit Mgr	
7-25-95	1530	07/26/95 S. Parry	DK 7-25-95

54-6800-061 (R-10-83)

INDUCTIVELY COUPLED PLASMA ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 7469.-5550	PUREX	6-27-95	10:45	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-151	% RECOVERY	KP51T	0

Sample Size	Customer ID
? SST5 43B48B, DIRECT	STD

Remarks, Calculations, Results:

LMCS CHECK SAMPLE

SI 4.845/5(100) = 96.90%
AL 4.924 = 98.48
ZN 4.981 = 99.62
FE 5.017 = 100.34
CA 5.230 = 104.60
CR 4.969 = 99.38
S 4.979 = 99.58
NA 5.227 = 104.54
B 5.108 = 102.16
BA 5.051 = 101.02%
AG 4.856 = 97.12%

OVER

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
[signature]				[signature]
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
7-17-95	1500	[signature]	7-17-95

54-6800-061 (R-10-83)

RERUN

Serial No.	Sample Point	Date	Time Issued	Priority
R 7469.-5550	PUREX	6-27-95	10:45	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-~~151~~ 161 [illegible] 7-25-95	% RECOVERY	KP51T	1

Sample Size	Customer ID
? SST5 43B48B direct	STD

Remarks, Calculations, Results:

LMCS CHECK SAMPLE

Cd (5.124/5)(100) = 102.48 %
Pb 5.094 = 101.88 %

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
DK [illegible]				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
7-25-95	1530	07/26/95 S. Parry	DK [illegible] 7-25-95

54-6800-061 (R-10-83)

9613479.0414

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

ANALYTICAL BATCH

Lab Segment Serial No. R7465-69	Customer ID: BODVL7, BODVL8
Analysis: ICP	Sample Prep: ACID DIGEST

Instrument: WB39939	Procedure/ Rev: LA-505-157 ID-2
Technologist: B. GOELLER	Date: 7-17-95
Starting Time: 1400	Temperature NA.
Ending Time: 1530	Chemist: M. Lindberg

Comments:

	Description	Lab ID
1	LACS CHECK STD SST5	---
2	REAG. BLK.	---
3	DIG. STD.	R7465-8550
4	DIG. BLK.	R7466-8650
5	PUREX, SAMPLE, BODVL7	R7467-8750
6	PUREX, DUP, BODVL7	R7467-8850
7	PUREX, SPIKE, BODVL7	R7467-8950
8	PUREX, SAMPLE, BODVL8	R7468-8750
9	PUREX, DUP, BODVL8	R7468-8850
10	PUREX, SPIKE, BODVL8	R7468-8950

	Description	Lab ID
11	REAG. BLK.	---
12	LACS CHECK STD SST5	R7469-5550
13		
14		
15		
16		
17		
18		
19		
20		

Standard Type	Primary Book No. and Aliquot Vol.	Second Book No. and Aliquot Vol.	Third Book No. and Aliquot Vol.	Final Vol. of Standard
ICP SST5	43B48B, DIRECT			DIRECT

A-6000-881 (03/92)

Identity 1: ICV Identity 2: Quality Control 2:02 PM July 17, 1995
Task name : TWC93
Sample Weight : 1.0000 Solution Volume : 1.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	ZR (ppm)	SR (ppm)	BI (ppm)	SI (ppm)	AL (ppm)	CO (ppm)	CU (ppm)	LI (ppm)
Mean	4.906	4.949	4.924	4.789	4.877	4.952	4.870	5.110
S.D.	0.006	0.008	0.031	0.004	0.008	0.004	0.008	0.025
% R.S.D.	0.117	0.157	0.630	0.092	0.162	0.089	0.167	0.480

	ZN (ppm)	NI (ppm)	LA (ppm)	FE (ppm)	CA (ppm)	CR (ppm)	ND (ppm)	U (ppm)
Mean	4.969	4.905	5.000	5.003	5.181	4.968	5.300	9.567
S.D.	0.008	0.010	0.011	0.015	0.005	0.004	0.018	0.005
% R.S.D.	0.155	0.206	0.212	0.291	0.098	0.082	0.336	0.049

	CE (ppm)	SM (ppm)	BA (ppm)	P (ppm)	S (ppm)	MG (ppm)	AS (ppm)	NA (ppm)
Mean	4.900	4.974	4.979	4.690	4.840	4.944	4.857	5.074
S.D.	0.016	0.005	0.008	0.035	0.018	0.009	0.021	0.023
% R.S.D.	0.331	0.096	0.151	0.749	0.363	0.181	0.437	0.444

	MO (ppm)	SE (ppm)	AG (ppm)	PB (ppm)	TI (ppm)	CD (ppm)	B (ppm)	K (ppm)
Mean	4.948	4.806	4.869	4.920	4.838	4.970	5.054	5.213
S.D.	0.008	0.019	0.008	0.015	0.007	0.006	0.005	0.031
% R.S.D.	0.155	0.400	0.158	0.304	0.143	0.122	0.103	0.591

	MN (ppm)	SB (ppm)	V (ppm)	BE (ppm)	TL (ppm)
Mean	4.966	4.693	4.992	5.130	4.840
S.D.	0.009	0.055	0.009	0.011	0.023
% R.S.D.	0.186	1.174	0.185	0.209	0.483

BJ Gaeke 7-17-95
PUREX ACID DIGEST
R 7465-69
Direct

9613479.0416

Identity 1: ICB Identity 2: Quality Control 2:05 PM July 17, 1995
Task name : TWC93
Sample Weight : 1.0000 Solution Volume : 1.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	ZR (ppm)	SR (ppm)	BI (ppm)	SI (ppm)	AL (ppm)	CO (ppm)	CU (ppm)	LI (ppm)
Mean	-0.001	-0.000	-0.006	-0.050	-0.008	-0.003	-0.000	0.000
S.D.	0.001	0.000	0.008	0.000	0.001	0.001	0.000	0.000
% R.S.D.	52.326	29.029	135.866	0.755	14.583	43.451	31.102	46799.579

	ZN (ppm)	NI (ppm)	LA (ppm)	FE (ppm)	CA (ppm)	CR (ppm)	ND (ppm)	U (ppm)
Mean	0.001	-0.002	-0.005	-0.002	0.004	-0.001	-0.008	-0.077
S.D.	0.000	0.001	0.001	0.002	0.000	0.002	0.008	0.004
% R.S.D.	26.419	83.486	24.866	97.715	3.974	214.163	100.663	5.220

	CE (ppm)	SM (ppm)	BA (ppm)	P (ppm)	S (ppm)	MG (ppm)	AS (ppm)	NA (ppm)
Mean	0.001	-0.023	-0.000	0.009	0.001	0.000	-0.004	-0.002
S.D.	0.002	0.001	0.000	0.005	0.000	0.000	0.002	0.002
% R.S.D.	206.113	5.893	19.961	58.849	51.202	43.061	62.766	100.010

	MO (ppm)	SE (ppm)	AG (ppm)	PB (ppm)	TI (ppm)	CD (ppm)	B (ppm)	K (ppm)
Mean	0.000	-0.021	-0.000	-0.015	-0.001	-0.000	0.001	-0.018
S.D.	0.001	0.006	0.001	0.005	0.000	0.000	0.000	0.010
% R.S.D.	173.205	28.071	178.809	36.098	27.467	91.495	84.033	56.855

	MN (ppm)	SB (ppm)	V (ppm)	BE (ppm)	TL (ppm)
Mean	0.000	-0.011	-0.002	-0.000	-0.045
S.D.	0.000	0.003	0.000	0.000	0.010
% R.S.D.	84.686	23.493	17.054	83.942	21.564

9613479.0417

Identity 1: R7465 dig std Identity 2: 5ml in 100ml 2:10 PM July 17, 1995
Task name : TWC93
Sample Weight : 1.0000 Solution Volume : 1.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	ZR (ppm)	SR (ppm)	BI (ppm)	SI (ppm)	AL (ppm)	CO (ppm)	CU (ppm)	LI (ppm)
Mean	4.892	4.938	4.748	18.246	5.438	4.947	4.852	4.979
S.D.	0.014	0.011	0.022	0.045	0.019	0.005	0.011	0.032
% R.S.D.	0.287	0.231	0.457	0.244	0.354	0.107	0.227	0.644

	ZN (ppm)	NI (ppm)	LA (ppm)	FE (ppm)	CA (ppm)	CR (ppm)	ND (ppm)	U (ppm)
Mean	4.800	4.920	4.971	4.967	5.208	4.909	5.035	9.552
S.D.	0.010	0.011	0.015	0.014	0.016	0.017	0.023	0.040
% R.S.D.	0.211	0.224	0.303	0.280	0.311	0.352	0.449	0.417

	CE (ppm)	SM (ppm)	BA (ppm)	P (ppm)	S (ppm)	MG (ppm)	AS (ppm)	NA (ppm)
Mean	4.951	4.986	4.930	4.796	5.103	4.955	4.796	6.176
S.D.	0.005	0.018	0.013	0.037	0.016	0.014	0.021	0.036
% R.S.D.	0.107	0.363	0.272	0.781	0.312	0.275	0.444	0.590

	MO (ppm)	SE (ppm)	AG (ppm)	PB (ppm)	TI (ppm)	CD (ppm)	B (ppm)	K (ppm)
Mean	4.965	4.870	0.924	4.764	4.847	4.848	6.301	4.991
S.D.	0.014	0.006	0.002	0.012	0.011	0.009	0.014	0.022
% R.S.D.	0.281	0.122	0.169	0.251	0.222	0.194	0.222	0.441

	MN (ppm)	SB (ppm)	V (ppm)	BE (ppm)	TL (ppm)
Mean	4.939	4.604	4.914	5.345	4.723
S.D.	0.014	0.024	0.019	0.009	0.015
% R.S.D.	0.275	0.515	0.391	0.173	0.326

Identity 1: CCB Identity 2: Quality Control 2:35 PM July 17, 1995
Task name : TWC93
Sample Weight : 1.0000 Solution Volume : 1.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	ZR (ppm)	SR (ppm)	BI (ppm)	SI (ppm)	AL (ppm)	CO (ppm)	CU (ppm)	LI (ppm)
Mean	0.001	-0.000	0.018	-0.043	-0.008	0.001	0.000	0.000
S.D.	0.001	0.000	0.008	0.002	0.002	0.003	0.000	0.000
% R.S.D.	129.292	293.835	43.714	4.264	30.008	347.338	4147.258	91.583

	ZN (ppm)	NI (ppm)	LA (ppm)	FE (ppm)	CA (ppm)	CR (ppm)	ND (ppm)	U (ppm)
Mean	0.000	0.001	-0.001	0.000	0.001	0.000	-0.006	0.032
S.D.	0.000	0.001	0.001	0.002	0.000	0.000	0.008	0.053
% R.S.D.	238.119	161.064	178.726	1680.566	3.331	221.962	135.587	166.597

	CE (ppm)	SM (ppm)	BA (ppm)	P (ppm)	S (ppm)	MG (ppm)	AS (ppm)	NA (ppm)
Mean	-0.007	0.005	0.000	-0.008	-0.001	-0.000	0.004	0.012
S.D.	0.009	0.013	0.000	0.015	0.002	0.000	0.005	0.004
% R.S.D.	136.634	275.952	148.725	187.924	222.573	87.539	120.636	28.867

	MO (ppm)	SE (ppm)	AG (ppm)	PB (ppm)	TI (ppm)	CD (ppm)	B (ppm)	K (ppm)
Mean	0.001	-0.030	0.002	-0.018	0.000	0.000	0.005	0.043
S.D.	0.001	0.010	0.001	0.005	0.001	0.001	0.000	0.009
% R.S.D.	60.622	32.641	64.063	26.370	220.020	192.845	5.650	20.282

	MN (ppm)	SB (ppm)	V (ppm)	BE (ppm)	TL (ppm)
Mean	0.001	0.027	0.001	-0.000	-0.004
S.D.	0.000	0.002	0.001	0.000	0.026
% R.S.D.	17.284	7.519	100.536	181.900	611.467

Identity 1: CCV Identity 2: Quality Control 2:37 PM July 17, 1995
Task name : TWC93
Sample Weight : 1.0000 Solution Volume : 1.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	ZR (ppm)	SR (ppm)	BI (ppm)	SI (ppm)	AL (ppm)	CO (ppm)	CU (ppm)	LI (ppm)
Mean	4.943	5.015	4.952	4.845	4.924	4.967	4.943	5.254
S.D.	0.011	0.017	0.023	0.009	0.009	0.007	0.026	0.046
% R.S.D.	0.232	0.334	0.457	0.181	0.173	0.136	0.534	0.874

	ZN (ppm)	NI (ppm)	LA (ppm)	FE (ppm)	CA (ppm)	CR (ppm)	ND (ppm)	U (ppm)
Mean	4.981	4.919	5.029	5.017	5.230	4.969	5.342	9.714
S.D.	0.002	0.014	0.014	0.015	0.017	0.006	0.055	0.040
% R.S.D.	0.035	0.293	0.278	0.302	0.332	0.121	1.033	0.407

	CE (ppm)	SM (ppm)	BA (ppm)	P (ppm)	S (ppm)	MG (ppm)	AS (ppm)	NA (ppm)
Mean	5.001	5.163	5.051	5.003	4.979	4.956	4.928	5.227
S.D.	0.005	0.018	0.022	0.027	0.008	0.007	0.017	0.037
% R.S.D.	0.106	0.340	0.445	0.546	0.170	0.147	0.350	0.715

	MO (ppm)	SE (ppm)	AG (ppm)	PB (ppm)	TI (ppm)	CD (ppm)	B (ppm)	K (ppm)
Mean	4.973	4.923	4.856	4.951	4.879	4.968	5.108	5.322
S.D.	0.012	0.026	0.004	0.007	0.007	0.006	0.023	0.032
% R.S.D.	0.249	0.520	0.074	0.149	0.137	0.124	0.443	0.596

	MN (ppm)	SB (ppm)	V (ppm)	BE (ppm)	TL (ppm)
Mean	4.966	4.801	5.011	5.170	4.855
S.D.	0.005	0.024	0.004	0.011	0.013
% R.S.D.	0.102	0.492	0.084	0.204	0.268

9613479.0420

Identity 1: R7466 dig blk Identity 2: direct 2:13 PM July 17, 1995
Task name : TWC93
Sample Weight : 1.0000 Solution Volume : 1.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	ZR (ppm)	SR (ppm)	BI (ppm)	SI (ppm)	AL (ppm)	CO (ppm)	CU (ppm)	LI (ppm)
Mean	0.001	0.001	-0.003	0.018	0.012	-0.005	0.006	0.001
S.D.	0.001	0.000	0.005	0.002	0.004	0.000	0.000	0.000
% R.S.D.	84.874	24.072	187.157	13.062	33.350	0.094	5.657	35.679

	ZN (ppm)	NI (ppm)	LA (ppm)	FE (ppm)	CA (ppm)	CR (ppm)	ND (ppm)	U (ppm)
Mean	0.013	-0.000	-0.001	0.134	0.209	0.001	-0.000	0.033
S.D.	0.001	0.002	0.000	0.004	0.000	0.002	0.006	0.036
% R.S.D.	4.335	978.246	1.275	2.985	0.115	142.415	8140.002	107.771

	CE (ppm)	SM (ppm)	BA (ppm)	P (ppm)	S (ppm)	MG (ppm)	AS (ppm)	NA (ppm)
Mean	-0.000	0.009	0.001	-0.020	0.050	0.015	-0.001	0.159
S.D.	0.006	0.008	0.000	0.008	0.004	0.000	0.004	0.001
% R.S.D.	1322.671	86.289	24.861	42.774	8.217	0.631	525.124	0.734

	MO (ppm)	SE (ppm)	AG (ppm)	PB (ppm)	TI (ppm)	CD (ppm)	B (ppm)	K (ppm)
Mean	0.002	0.017	0.004	0.026	0.002	0.000	0.013	0.069
S.D.	0.002	0.004	0.001	0.013	0.000	0.001	0.001	0.012
% R.S.D.	61.001	24.316	20.502	48.405	12.877	959.183	4.040	17.445

	MN (ppm)	SB (ppm)	V (ppm)	BE (ppm)	TL (ppm)
Mean	0.002	-0.000	0.001	0.000	0.001
S.D.	0.000	0.009	0.000	0.000	0.028
% R.S.D.	0.136	8566.479	30.645	107.771	1959.303

9613479.0421

Identity 1: R7467 sample Identity 2: 1ml in 100ml 2:16 PM July 17, 1995
Task name : TWC93
Sample Weight : 1.0000 Solution Volume : 1.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	ZR (ppm)	SR (ppm)	BI (ppm)	SI (ppm)	AL (ppm)	CO (ppm)	CU (ppm)	LI (ppm)
Mean	-0.001	0.001	0.002	0.139	0.054	-0.005	0.006	0.001
S.D.	0.000	0.000	0.005	0.001	0.003	0.003	0.000	0.000
% R.S.D.	25.313	4.826	247.332	0.614	5.657	49.585	1.974	9.109

	ZN (ppm)	NI (ppm)	LA (ppm)	FE (ppm)	CA (ppm)	CR (ppm)	ND (ppm)	U (ppm)
Mean	0.018	0.012	0.001	0.070	0.525	0.014	0.004	0.299
S.D.	0.000	0.001	0.002	0.001	0.002	0.001	0.005	0.013
% R.S.D.	2.492	11.721	344.002	1.193	0.324	8.488	102.559	4.268

	CE (ppm)	SM (ppm)	BA (ppm)	P (ppm)	S (ppm)	MG (ppm)	AS (ppm)	NA (ppm)
Mean	-0.029	-0.019	0.003	0.155	0.207	0.046	-0.012	0.329
S.D.	0.004	0.002	0.000	0.004	0.005	0.000	0.005	0.002
% R.S.D.	14.816	13.009	2.089	2.873	2.260	0.199	39.872	0.614

	MO (ppm)	SE (ppm)	AG (ppm)	PB (ppm)	TI (ppm)	CD (ppm)	B (ppm)	K (ppm)
Mean	0.001	-0.024	0.003	-0.014	0.002	0.004	0.126	0.049
S.D.	0.000	0.007	0.000	0.012	0.000	0.001	0.001	0.005
% R.S.D.	32.733	29.914	12.418	91.089	15.322	31.653	1.029	9.375

	MN (ppm)	SB (ppm)	V (ppm)	BE (ppm)	TL (ppm)
Mean	0.002	-0.012	-0.001	-0.000	-0.052
S.D.	0.000	0.022	0.000	0.000	0.005
% R.S.D.	6.270	192.500	37.320	118.861	8.811

9613479.0422

Identity 1: R7467 dup Identity 2: 1ml in 100ml 2:19 PM July 17, 1995
Task name : TWC93
Sample Weight : 1.0000 Solution Volume : 1.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	ZR (ppm)	SR (ppm)	BI (ppm)	SI (ppm)	AL (ppm)	CO (ppm)	CU (ppm)	LI (ppm)
Mean	-0.002	0.001	-0.007	0.139	0.052	-0.005	0.006	0.000
S.D.	0.002	0.000	0.008	0.001	0.003	0.003	0.000	0.000
% R.S.D.	66.141	18.310	103.545	1.040	6.064	49.469	5.800	133.845

	ZN (ppm)	NI (ppm)	LA (ppm)	FE (ppm)	CA (ppm)	CR (ppm)	ND (ppm)	U (ppm)
Mean	0.017	0.011	-0.006	0.069	0.422	0.014	-0.002	0.284
S.D.	0.000	0.004	0.001	0.003	0.001	0.000	0.007	0.064
% R.S.D.	0.941	33.877	20.864	3.701	0.331	3.239	395.906	22.659

	CE (ppm)	SM (ppm)	BA (ppm)	P (ppm)	S (ppm)	MG (ppm)	AS (ppm)	NA (ppm)
Mean	-0.024	-0.023	0.003	0.156	0.214	0.046	-0.001	0.325
S.D.	0.014	0.015	0.000	0.008	0.009	0.000	0.003	0.005
% R.S.D.	60.507	66.253	9.398	4.902	4.124	0.198	343.115	1.643

	MO (ppm)	SE (ppm)	AG (ppm)	PB (ppm)	TI (ppm)	CD (ppm)	B (ppm)	K (ppm)
Mean	0.001	-0.019	0.003	-0.011	0.002	0.004	0.128	0.030
S.D.	0.001	0.008	0.001	0.010	0.000	0.000	0.001	0.022
% R.S.D.	60.245	44.195	20.622	94.903	16.577	8.200	0.772	71.545

	MN (ppm)	SB (ppm)	V (ppm)	BE (ppm)	TL (ppm)
Mean	0.002	0.028	-0.001	-0.001	-0.056
S.D.	0.000	0.017	0.001	0.000	0.038
% R.S.D.	12.589	59.959	61.229	19.099	68.281

Identity 1: R7467 dig spike Identity 2: 1ml in 100ml 2:22 PM July 17, 1995
Task name : TWC93
Sample Weight : 1.0000 Solution Volume : 1.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	ZR (ppm)	SR (ppm)	BI (ppm)	SI (ppm)	AL (ppm)	CO (ppm)	CU (ppm)	LI (ppm)
Mean	4.835	4.805	4.656	15.791	5.329	4.885	4.700	4.785
S.D.	0.007	0.008	0.022	0.031	0.014	0.010	0.006	0.012
% R.S.D.	0.154	0.164	0.481	0.194	0.268	0.209	0.137	0.245

	ZN (ppm)	NI (ppm)	LA (ppm)	FE (ppm)	CA (ppm)	CR (ppm)	ND (ppm)	U (ppm)
Mean	4.769	4.875	4.867	4.974	5.323	4.893	4.923	9.642
S.D.	0.007	0.011	0.013	0.038	0.011	0.010	0.027	0.022
% R.S.D.	0.142	0.233	0.266	0.770	0.212	0.203	0.555	0.227

	CE (ppm)	SM (ppm)	BA (ppm)	P (ppm)	S (ppm)	MG (ppm)	AS (ppm)	NA (ppm)
Mean	4.802	4.782	4.784	5.090	8.384	4.962	4.726	6.353
S.D.	0.014	0.012	0.008	0.047	0.035	0.011	0.033	0.019
% R.S.D.	0.289	0.243	0.162	0.929	0.412	0.221	0.702	0.296

	MO (ppm)	SE (ppm)	AG (ppm)	PB (ppm)	TI (ppm)	CD (ppm)	B (ppm)	K (ppm)
Mean	4.891	4.731	0.918	4.744	4.744	4.785	6.459	4.856
S.D.	0.013	0.031	0.002	0.021	0.009	0.011	0.016	0.023
% R.S.D.	0.275	0.663	0.181	0.437	0.187	0.221	0.250	0.480

	MN (ppm)	SB (ppm)	V (ppm)	BE (ppm)	TL (ppm)
Mean	4.902	4.497	4.856	5.243	4.639
S.D.	0.010	0.044	0.010	0.008	0.008
% R.S.D.	0.205	0.989	0.213	0.161	0.175

Identity 1: R7468 sample Identity 2: 1ml in 100ml 2:25 PM July 17, 1995
Task name : TWC93
Sample Weight : 1.0000 Solution Volume : 1.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	ZR (ppm)	SR (ppm)	BI (ppm)	SI (ppm)	AL (ppm)	CO (ppm)	CU (ppm)	LI (ppm)
Mean	-0.003	0.000	0.004	0.018	0.018	-0.005	0.009	0.000
S.D.	0.001	0.000	0.015	0.002	0.005	0.000	0.000	0.000
% R.S.D.	31.534	24.413	387.619	9.965	29.835	0.095	3.842	114.399

	ZN (ppm)	NI (ppm)	LA (ppm)	FE (ppm)	CA (ppm)	CR (ppm)	ND (ppm)	U (ppm)
Mean	0.017	0.001	-0.005	0.049	0.201	0.001	-0.007	-0.088
S.D.	0.000	0.002	0.002	0.002	0.000	0.002	0.006	0.036
% R.S.D.	2.628	475.307	35.352	3.450	0.018	212.848	89.797	41.165

	CE (ppm)	SM (ppm)	BA (ppm)	P (ppm)	S (ppm)	MG (ppm)	AS (ppm)	NA (ppm)
Mean	-0.010	-0.028	0.000	0.005	0.046	0.010	-0.002	0.123
S.D.	0.007	0.007	0.000	0.002	0.004	0.000	0.004	0.004
% R.S.D.	69.164	27.000	43.687	32.201	8.282	1.851	211.731	2.839

	MO (ppm)	SE (ppm)	AG (ppm)	PB (ppm)	TI (ppm)	CD (ppm)	B (ppm)	K (ppm)
Mean	-0.000	-0.013	0.002	-0.024	0.001	0.001	0.019	-0.008
S.D.	0.001	0.006	0.001	0.006	0.001	0.001	0.001	0.016
% R.S.D.	261.534	46.522	32.612	24.528	51.596	66.186	4.374	196.666

	MN (ppm)	SB (ppm)	V (ppm)	BE (ppm)	TL (ppm)
Mean	0.001	-0.030	-0.002	-0.000	-0.042
S.D.	0.000	0.011	0.001	0.000	0.014
% R.S.D.	0.182	36.358	39.247	34.629	33.901

Identity 1: R7468 dup Identity 2: 1ml in 100ml 2:28 PM July 17, 1995
Task name : TWC93
Sample Weight : 1.0000 Solution Volume : 1.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	ZR (ppm)	SR (ppm)	BI (ppm)	SI (ppm)	AL (ppm)	CO (ppm)	CU (ppm)	LI (ppm)
Mean	-0.000	-0.000	0.010	0.024	0.011	-0.009	0.010	-0.000
S.D.	0.001	0.000	0.004	0.003	0.004	0.001	0.000	0.000
% R.S.D.	296.449	85.833	43.832	13.373	42.329	15.757	2.294	172.781

	ZN (ppm)	NI (ppm)	LA (ppm)	FE (ppm)	CA (ppm)	CR (ppm)	ND (ppm)	U (ppm)
Mean	0.014	0.008	-0.001	0.059	0.191	0.006	-0.015	0.026
S.D.	0.000	0.001	0.001	0.003	0.000	0.000	0.005	0.027
% R.S.D.	0.955	15.521	90.328	5.513	0.107	6.490	33.543	104.586

	CE (ppm)	SM (ppm)	BA (ppm)	P (ppm)	S (ppm)	MG (ppm)	AS (ppm)	NA (ppm)
Mean	-0.009	0.003	0.001	-0.016	0.048	0.009	0.002	0.117
S.D.	0.005	0.003	0.000	0.006	0.003	0.000	0.005	0.001
% R.S.D.	54.878	90.175	12.738	39.094	5.686	0.964	201.285	1.001

	MO (ppm)	SE (ppm)	AG (ppm)	PB (ppm)	TI (ppm)	CD (ppm)	B (ppm)	K (ppm)
Mean	0.001	-0.030	0.004	-0.024	0.002	-0.001	0.019	0.023
S.D.	0.001	0.006	0.001	0.006	0.000	0.000	0.001	0.005
% R.S.D.	62.915	18.846	14.102	24.878	15.536	34.236	4.527	20.817

	MN (ppm)	SB (ppm)	V (ppm)	BE (ppm)	TL (ppm)
Mean	0.002	-0.070	0.001	-0.001	0.004
S.D.	0.000	0.021	0.000	0.000	0.014
% R.S.D.	9.209	29.583	1.045	33.886	342.529

9613479.0426

Identity 1: R7468 dig spike Identity 2: 1ml in 100ml 2:32 PM July 17, 1995
Task name : TWC93
Sample Weight : 1.0000 Solution Volume : 1.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	ZR (ppm)	SR (ppm)	BI (ppm)	SI (ppm)	AL (ppm)	CO (ppm)	CU (ppm)	LI (ppm)
Mean	4.848	4.897	4.734	22.253	5.461	4.894	4.855	4.970
S.D.	0.008	0.020	0.013	0.033	0.007	0.015	0.028	0.045
% R.S.D.	0.158	0.409	0.274	0.150	0.136	0.305	0.574	0.913

	ZN (ppm)	NI (ppm)	LA (ppm)	FE (ppm)	CA (ppm)	CR (ppm)	ND (ppm)	U (ppm)
Mean	4.768	4.902	4.949	4.938	5.426	4.879	5.089	9.372
S.D.	0.014	0.011	0.014	0.009	0.016	0.027	0.016	0.022
% R.S.D.	0.294	0.214	0.276	0.185	0.288	0.544	0.307	0.234

	CE (ppm)	SM (ppm)	BA (ppm)	P (ppm)	S (ppm)	MG (ppm)	AS (ppm)	NA (ppm)
Mean	4.845	4.880	4.896	4.881	4.821	4.930	4.762	6.677
S.D.	0.012	0.019	0.024	0.119	0.027	0.012	0.007	0.050
% R.S.D.	0.243	0.395	0.499	2.447	0.555	0.249	0.142	0.743

	MO (ppm)	SE (ppm)	AG (ppm)	PB (ppm)	TI (ppm)	CD (ppm)	B (ppm)	K (ppm)
Mean	4.884	4.810	0.911	4.777	4.789	4.813	6.799	4.930
S.D.	0.007	0.032	0.004	0.028	0.010	0.007	0.025	0.015
% R.S.D.	0.134	0.668	0.465	0.577	0.199	0.149	0.364	0.304

	MN (ppm)	SB (ppm)	V (ppm)	BE (ppm)	TL (ppm)
Mean	4.914	4.672	4.888	5.460	4.631
S.D.	0.011	0.062	0.006	0.014	0.024
% R.S.D.	0.216	1.323	0.126	0.250	0.511

INDUCTIVELY COUPLED PLASMA ANALYSIS

Batch 6386

Serial No.	Sample Point	Date	Time Issued	Priority
R 7465.-8550	PUREX	6-27-95	10:36	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-151	% RECOVERY	KP51T	0

Sample Size	Customer ID
? Sol ea. { with IA / after in Mol	STD

Remarks, Calculations, Results:

1st STD Digested STD

~~Si 18.2~~

AL 5.438/5(100) = 108.76 ?

ZN 4.800 = 96.00

Fe 4.967 = 99.34

CA 5.208 = 104.16

CR 4.909 = 98.18

S 5.103 = 102.06

NA 6.176 = 123.52

B 6.301 = 126.02

BA 4.930 = 98.60

OVER

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
7-17-95	1500		7-17-95

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
R 7466.-8650	PUREX	6-27-95	10:38	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-151	uG/ML	KP51T	0

Sample Size	Customer ID
? Digest	BLANK

Remarks, Calculations, Results:

REAGENT BLANK

Si <.05

AL <.05

ZN .013

Fe .134

CA .209

CR <.01

S .05

NA .159

B <.05

BA <.05

Ag <.01

pb <.10

Cd <.01

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
7-17-95	1500		7-17-95

54-6800-061 (R-10-83)

INDUCTIVELY COUPLED PLASMA ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 7467.-8750	PUREX	6-27-95	10:41	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP-LIQ	LA-505-151	uG/ML	RF51T	0

Sample Size	Customer ID
? 1ml in 100ml	BODVL7

Remarks, Calculations, Results

Si .139 (100) = 1.39E1
AL .054 : 5.40
ZN .018 : 1.80
Fe .070 : 7.00
CA .525 : 5.25E1
CR .014 : 1.40

S .207 : 2.07E1
NA .329 : 3.29E1
B .126 : 1.26E1
Cd <.01 : <1.00
Pb <.10 : <1.00E+1
Ag <.01 : <1.00

Be <.05 : <5.00

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
7-17-95	1500		7-17-95

54-6800-061 (R-10-83)

Serial No	Sample Point	Date	Time Issued	Priority
R 7467.-8850	PUREX	6-27-95	10:41	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP-LIQ	LA-505-151	uG/ML	RF51T	0

Sample Size	Customer ID
? 1ml in 100ml	BODVL7

Remarks, Calculations, Results

DUPLICATE SAMPLE

Si .139 (100) = 1.39E1
AL .052 = 5.20
ZN .017 = 1.70
Fe .069 = 6.90
CA .422 = 4.22E1
CR .014 = 1.40

S .214 = 2.14E1
NA .325 = 3.25E1
B .128 = 1.28E1
Cd <.01 : <1.00
Pb <.10 : <1.00E+1
Ag <.01 : <1.00

(over)

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
7-17-95	1500		7-17-95

54-6800-061 (R-10-8

INDUCTIVELY COUPLED PLASMA ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 7467.-8950	PUREX	6-27-95	10:41	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-151	% RECOVERY	KP51T	0

Sample Size	Customer ID
? 1mL sample + spike in 100mL	BODVL7

Remarks, Calculations, Results

SPIKE SAMPLE 0HC1A+2
SPIKE ID ~~48NH4F~~
SPIKE VOLUME 5mL

~~Si 15.29 - .04 =~~

AL 5.329 - .054 / 5 (100) = 105.50%

ZN 4.769 - .018 = 95.02

Fe 4.974 - .070 = 98.08

CA 5.323 - .525 = 95.96

CR 4.853 - .014 = 97.58

~~BR 5.384 - .201 = 163.54~~

NA 6.353 - .329 = 120.48

B 6.459 - .126 = 126.66

(OVER)

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
7-17-95	1500		7-17-95

54-6800-061 (R-10-83)

Serial No	Sample Point	Date	Time Issued	Priority
R 7468.-8750	PUREX	6-27-95	10:45	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP-LIQ	LA-505-151	uG/ML	KP51T	0

Sample Size	Customer ID
? 1mL in 100mL	BODVL8

Remarks, Calculations, Results

ZN .017 (100) = 1.70

CA .201 = 2.01E1

NA .123 = 1.23E1

Fe <(.05) = <5.0 mL 7/18/95

Cd <.01 = <1.00

Pb <.10 = <1.00E+1

Ag <.01 = <1.00

Ba <.05 = <5.00

Cr <.01 = <1.00

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
7-17-95	1500		7-17-95

54-6800-061 (R-10-83)

INDUCTIVELY COUPLED PLASMA ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 7468.-8850	PUREX	6-27-95	10:45	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP-LIQ	LA-505-151	uG/ML	KP51T	0

Sample Size	Customer ID
? 1mL in 100mL	BODVL8

Remarks, Calculations, Results:
DUPLICATE SAMPLE

ZN .014(100) = 1.40
FE .059 = 5.90
CA .191 = 1.91E1
NA .117 = 1.17E1

Cd <.01 = <1.00
Pb <.10 = <1.00E+1
Ag <.01 = <1.00
Ba <.05 = <5.00
Cr <.01 = <1.00

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
[signature]				
Hrs	Hrs	Hrs	Hrs	Hrs
			[signature]	
Date	Time Completed	Lab Unit Mgr		
7-17-95	1500	[signature]	7-17-95	

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
R 7468.-8950	PUREX	6-27-95	10:45	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-151	% RECOVERY	KP51T	0

Sample Size	Customer ID
? 1mL sample + spike in 100mL	BODVL8

Remarks, Calculations, Results
SPIKE SAMPLE
SPIKE ID WHC/A+2
SPIKE VOLUME 5mL

ZN 4.768 - .017/5(100) = 95.02 ?

CA 5.426 - .201 = 104.50

NA 6.677 - .123 = 131.08
Fe 4.933 - 0 = 98.7670mL [signature] 7/18/95 (over)

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
[signature]				
Hrs	Hrs	Hrs	Hrs	Hrs
			[signature]	
Date	Time Completed	Lab Unit Mgr		
7-17-95	1500	[signature]	7-17-95	

54-6800-061 (R-10

9613479.0431

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

ANALYTICAL BATCH

Lab Segment Serial No. R7465-7469	Customer ID: BODVL7
Analysis: As	Sample Prep: ACID DIGEST

Instrument: PE2280(Hydride AA) WB27979	Procedure/ Rev: LA 355-131 / C-0
Technologist: Valerie Massie	Date: 07/26/95
Starting Time: 07:50	Temperature 900 C
Ending Time: 13:45	Chemist: N ND SMITH

Comments: Batch #: 6387

	Description	Lab ID		Description	Lab ID
1	LMCS STANDARD	R7465-5595	11	END STANDARD	R7469-5595
2	BLANK	R7466-5695	12		
3	DIGESTED STANDARD	R7465-8595	13		
4	DIGESTED BLANK	R7466-8695	14		
5	DIGESTED SAMPLE	R7467-8795	15		
6	DIGESTED DUPLICATE	R7467-8895	16		
7	DIGESTED SPIKE	R7467-8995	17		
8	DIGESTED SAMPLE	R7468-8795	18		
9	DIGESTED DUPLICATE	R7468-8895	19		
10	DIGESTED SPIKE	R7468-8995	20		

Standard Type	Primary Book No. and Aliquot Vol.	Second Book No. and Aliquot Vol.	Third Book No. and Aliquot Vol.	Final Vol. of Standard
LMCS	52N11F 0.250mL			
DIGESTED STD	48N11E DF=50 2mL			
SPIKE	48N11E DF=50 2mL			

9613479.0432

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

CALIBRATION RECORD

Analyte:	As		
Procedure:	LA 355-131	Revision:	C-0
Instrument:	PE2280 (Hydride AA)	Property No.:	WB27979
Technologist	Valerie Massie	Payroll No.: XXXXX	Date: 07/26/95

Calibration Standard ID:	54N11C
Analyte Concentration:	.100 ppm
Type of Calibration:	LINEAR

	Dilution	Concentration	Instrument Reading Unit
1	.000 mL	0 ng	.128
2	.050 mL	5 ng	.216
3	.100 mL	10 ng	.380
4	.250 mL	25 ng	.688
5	.500 mL	50 ng	1.216
6	.750 mL	75 ng	1.643
7	1.000 mL	100 ng	2.128
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			

Comments: r=.9988; Y-INTERCEPT=0.1579; SLOPE=0.0200

A-6000-882 (03/92)

ANALYTICAL BATCH SUMMARY SHEET

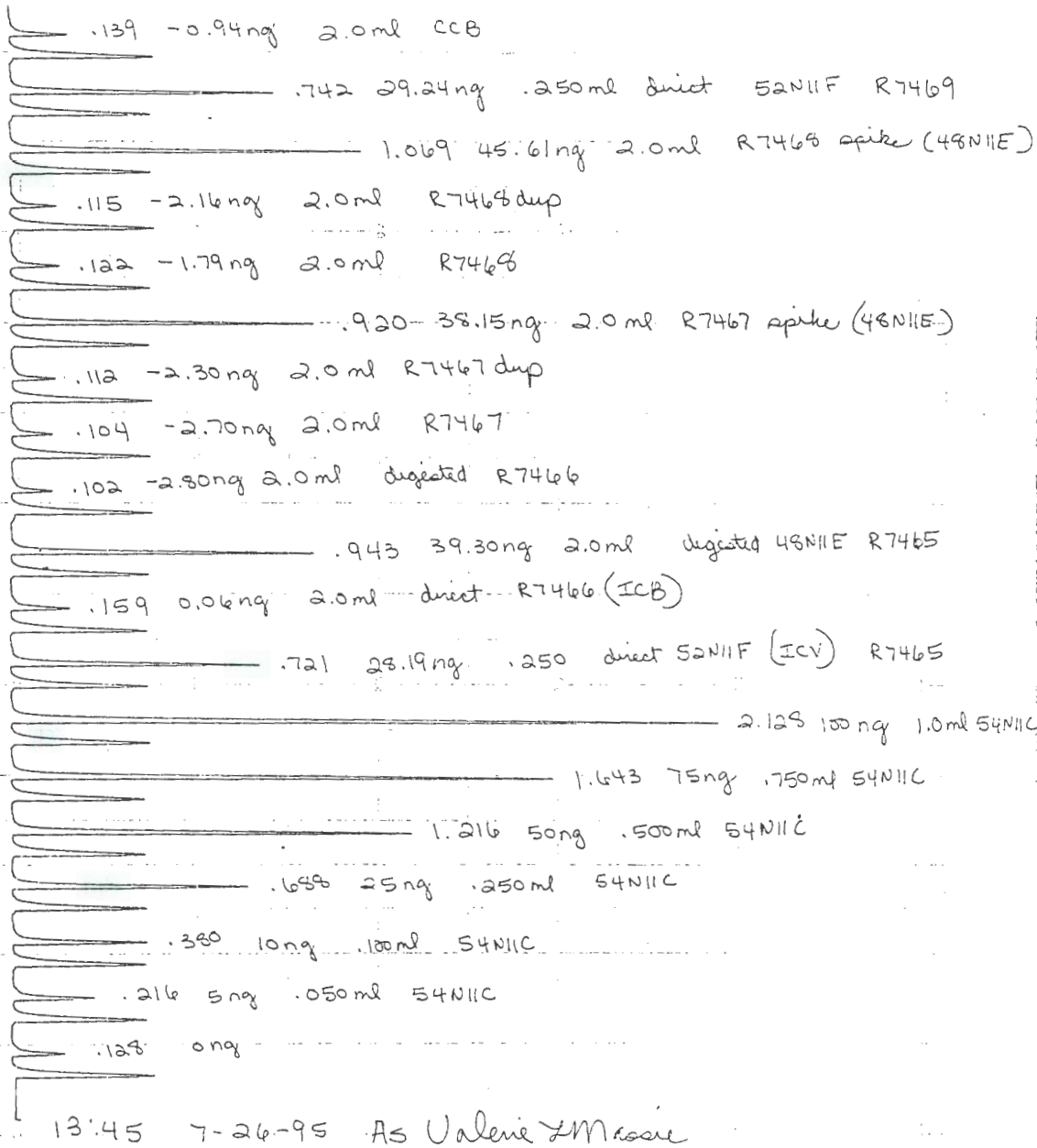
METHOD:	DATE START:	BATCH #
LA-355-131	07/26/95	6387
PREPARED BY:	DATE COMPLETE:	
N ND Smith	07/27/95	

	UNITS:		ug/mL	ug/mL	ug/mL			ug/mL	
SPL NAME	SPL ID	ANALYTE	RESULT #1	RESULT #2	AVERAGE	RPD%	%REC	DET LIM	% CT ER
STD/52N11F	R7465	As	0.113				113.0		
UNDIGESTED									
STD/48N11E	R7465	As	0.0983				98.3		
DIGESTED									
REAGENT BLK	R7466	As	<0.003					0.003	
PREP BLK	R7466	As	<0.125					0.125	
BODVL7	R7467	As	<0.125	<0.125			95.4	0.125	
BODVL7	R7468	As	<0.125	<0.125			114.0	0.125	
STD/52N11F	R7469	As	0.117				117.0		
UNDIGESTED									

NARRATIVE: [✓] NO SPECIAL PROBLEMS/METHOD VARIATIONS IN THIS BATCH

LIST SPECIFIC PROBLEMS/VARIATIONS FOR THIS BATCH:

N. Smith 7/27/95



Analyte: As
Date: 7-26-95

Analyst: Valerie L Moore
Start Time: 07:50 End Time: 13:45

MHS 20 Data:

Signal: Concentration
Mode: PKHT
Recorder: TC3
Time: 40 sec.
Expansion: 4

Purge I: 50
Reaction: 24 sec.
Purge II: 60
Temperature: 900 C
EDL milliamps: 400

Chart Recorder Data:

Chart speed: 5 mm/min Chart full scale: 20 mV

Calibration Data:

Intercept: 0.1579 absorbance units
Slope: 0.0200 abs. units / concentration
Correlation: 0.9988 (unitless)

Intercept:	0.1579
Slope:	0.0200
15:	0.9988
14:	28.1891
13:	0.0573
12:	39.3016
11:	-2.7960
10:	-2.6959
9:	-2.2954
8:	38.1503
7:	-1.7948
6:	-2.1452
5:	45.6088
4:	29.2403
3:	-0.5439
2:	
1:	

Valerie L Moore
7-26-95

PERKIN-ELMER
PERKIN-ELMER

Atomic Absorption Runlog: As Hydride Analysis

Analyst: Valerie L Massie Date: 7-26-95

Instrument: PE2280 Property # : WB27979

Batch #: 6387 Start Time: 07:50 End Time: 13:45

Calibration Data: Intercept: 0.1579 absorbance units
Slope: 0.0200 abs. units/concentration
Correlation: 0.9988 (unitless)

Calibration Std conc. 0.100 ppm

Sample - Name (Std. ID#)	Sample Point	Sam. Size, mL	D or A*	PKHT (Abs.)	ng result	% Rec.	Comments	CC **
Cal. Std. ID	N/A	0.000	D	.128	0	N/A		
#: 54N11C	"	0.050	D	.216	5	"		
"	"	0.100	D	.380	10	"		
"	"	0.250	D	.688	25	"		
"	"	0.500	D	1.216	50	"		
"	"	0.750	D	1.643	75	"		
"	"	1.000	D	2.128	100	"		
R7465 ICV	52N11F	0.250	D	.721	28.19	112.76		
R7466 ICB	direct Blk	2.0	D	.159	0.06			
R7465	digested std 43N11E	2.0	A	.943	39.30	98.25		
R7466	digested Blk	2.0	A	.102	-2.80			
R7467	BODVL7 Purex	2.0	A	.104	-2.70			
R7467D	BODVL7 Purex dup	2.0	A	.112	-2.30			
R7467S	BODVL7 + spike 43N11E	2.0	A	.920	38.15	95.38		
R7468	BODVL8 Purex	2.0	A	.122	-1.79			
R7468D	BODVL8 Purex dup	2.0	A	.115	-2.16			
R7468S	BODVL8 + spike 43N11E	2.0	A	1.069	45.61	114.02		
R7469	(CCV) 52N11F	.250	D	.742	29.24	116.96		
CCB	direct Blk	2.0	D	.139	-0.94			

* Sample prep. descriptors: D=direct, A=acid digest

**CC = control chart. Check off when control chart entries are made

ARSENIC ANALYSIS

Batch 6387

Serial No.	Sample Point	Date	Time Issued	Priority
R 7465.-5595	PUREX	6-27-95	10:36	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
As	LA-355-131	% RECOVERY	KP51T	0

Sample Size	Customer ID
? .250 ml	STD

Remarks, Calculations, Results:
EDP R741 AS/HYDRD
STD# 52N11F RESULT 1.13 E-1
STD VAL 1.00 E-1 %REC 113%.
PKHT= .721
ng= 28.19ng

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
7-26-95	13:45	Joel Smith 7/27/95

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
R 7465.-8595	PUREX	6-27-95	10:36	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
As	LA-355-131	% RECOVERY	KP51T	0

Sample Size	Customer ID
? 2.0 ml DF= 50	STD

Remarks, Calculations, Results:
EDP R747 AS/DGST
STD# 48N11E RESULT .983
STD 1.00 %REC 98.3%.
PKHT= .943
ng= 39.30ng

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
7-26-95	13:45	Joel Smith 7/27/95

54-6800-061 (R-10-83)

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Arsenic : LA-355-131 (C-1) As LIQUIDS-DIRECT

		STANDARD	DUPLICATE
Type	Sample Size in mL SS	0.250	
STANDARD	As ng (Nanograms)	28.19	
Work List	Conc As µg/mL (or mg/L or PPM)	0.113	N/A
BATCH 6387	Conc As µg/L (PPB)	112.8	N/A
Test Code		N/A	
N/A		N/A	
Matrix		N/A	
LIQUID	Conc As µg/mL=(As ng/SS)*(1µg/1000ng)		
Sample #	Average Conc.=(Sample + Duplicate)/2		
R7465-5595	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
Calibration Date			
07/26/95			
Instrument Code			
WB27979			
Analyst			
V. MASSIE			
Date		STANDARD	DUPLICATE
07/27/95	Conc As µg/mL	1.13E-01	
Time		N/A	
01:45 PM		N/A	

Data Entry by:	V. Smith	Date:	07/27/95
Approved by:	V. Smith	Date:	7/27/95

9613479.0438

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Arsenic: LA-355-131 (C-1) As LIQUID-ACID DIGEST

		STANDARD	DUPLICATE
Type	Sample Size in mL SS	2.000	
STANDARD	As ng (Nanograms)	39.30	
Work List	Acid Digest Dilution Factor DF	50.0	
BATCH 6387	Conc As µg/mL (or mg/L or PPM)	0.983	N/A
Test Code	Conc As µg/L (PPB)	982.5	N/A
N/A		N/A	
Matrix		N/A	
LIQUID		N/A	
Sample #	Conc As µg/mL=(As ng/SS)*(1µg/1000ng)*DF		
R7465-8595	Average Conc.=(Sample + Duplicate)/2		
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
07/26/95			
Instrument Code			
WB27979			
Analyst			
V. MASSIE			
Date		STANDARD	DUPLICATE
07/27/95	Conc As (µg/mL)	9.83E-01	
Time		N/A	
01:45 PM		N/A	

Data Entry by:	V. Smith	Date:	07/27/95
Approved by:	V. Smith	Date:	7/27/95

9613479.0439

ARSENIC ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 7466.-5695	PUREX	6-27-95	10:38	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
AS	LA-555-131	uG/ML	KP51T	0

Sample Size	Customer ID
? 2.0 ml	BLANK

Remarks, Calculations, Results:
REAGENT BLANK

PKHT= .159
ng= 0.06ng

<0.003

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
7-26-95	13:45	Noel Smith 7/27/95	

Serial No.	Sample Point	Date	Time Issued	Priority
R 7466.-8695	PUREX	6-27-95	10:38	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
AS	LA-555-131	uG/ML	KP51T	0

Sample Size	Customer ID
? 2.0 ml	BLANK

Remarks, Calculations, Results:
REAGENT BLANK

PKHT= .102
ng< -2.80ng

<0.125

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
7-26-95	13:45	Noel Smith 7/27/95	

54-6800-061 (R-10-83)

9613479.0440

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Arsenic : LA-355-131 (C-1) As LIQUIDS-DIRECT

		BLANK	DUPLICATE
Type	Sample Size in mL SS	2.000	
BLANK	As ng (Nanograms)	0.06	
Work List	Conc As µg/mL (or mg/L or PPM)	0.000	N/A
BATCH 6387	Conc As µg/L (PPB)	0.0	N/A
Test Code		N/A	
N/A		N/A	
Matrix		N/A	
LIQUID	Conc As µg/mL=(As ng/SS)*(1µg/1000ng)		
Sample #	Average Conc.=(Sample + Duplicate)/2		
R7466-5695	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
Calibration Date	Detection Limit = (5 ng/SS)*(1µg/1000ng)		
07/26/95	Detection Limit is Corrected for Sample Prep/Dilution		
Instrument Code			
WB27979	Detection Limit (µg/mL) =	0.003	
Analyst	Detection Limit (µg/L) =	2.5	
V. MASSIE			
Date		BLANK	DUPLICATE
07/27/95	Conc As µg/mL	<0.003	
Time		N/A	
01:45 PM		N/A	

The Result is < Detection Limit

Data Entry by:	V. Smith	Date:	07/27/95
Approved by:	V. Smith	Date:	7/27/95

9613479.0441

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Arsenic: LA-355-131 (C-1) As LIQUID-ACID DIGEST

		BLANK	DUPLICATE
Type	Sample Size in mL SS	2.000	
BLANK	As ng (Nanograms)	-2.80	
Work List	Acid Digest Dilution Factor DF	50.0	
BATCH 6387	Conc As µg/mL (or mg/L or PPM)	-0.070	N/A
Test Code	Conc As µg/L (PPB)	-70.0	N/A
N/A		N/A	
Matrix		N/A	
LIQUID		N/A	

Sample #	Conc As µg/mL=(As ng/SS)*(1µg/1000ng)*DF
R7466-8695	Average Conc.=(Sample + Duplicate)/2
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100
07/26/95	Detection Limit = (5 ng/SS)*(1µg/1000ng)*DF
Instrument Code	
WB27979	Detection Limit (µg/mL) 0.125
Analyst	Detection Limit (µg/L) 125.00
V. MASSIE	

		BLANK	DUPLICATE
Date			
07/27/95	Conc As (µg/mL)	<0.125	
Time		N/A	
01:45 PM		N/A	

The Result is < Detection Limit

Data Entry by:	N. Smith	Date:	07/27/95
Approved by:	N. Smith	Date:	7/27/95

ARSENIC ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 7467.-8795	PUREX	6-27-95	10:41	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
As	LA-355-131	uG/ML	KP51T	0

Sample Size	Customer ID
? 2.0 ml	BODVL7

Remarks, Calculations, Results

PKHT= .104
ng= -2.70ng

<0.125

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Mason				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
7-26-95	13:45	Noel Smith 7/27/95	

Serial No.	Sample Point	Date	Time Issued	Priority
R 7467.-8895	PUREX	6-27-95	10:41	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
As	LA-355-131	uG/ML	KP51T	0

Sample Size	Customer ID
? 2.0 ml	BODVL7

Remarks, Calculations, Results
DUPLICATE SAMPLE

PKHTc .112
ng= -2.30ng

<0.125

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Mason				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
7-26-95	13:~~2~~45 VM 7-26-95	Noel Smith 7/27/95	

54-6800-061 (R-10-83)

9613479.0443

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Arsenic: LA-355-131 (C-1) As LIQUID-ACID DIGEST		SAMPLE	DUPLICATE
Type	Sample Size in mL SS	2.000	
SAMPLE	As ng (Nanograms)	-2.70	
Work List	Acid Digest Dilution Factor DF	50.0	
BATCH 6387	Conc As µg/mL (or mg/L or PPM)	-0.068	N/A
Test Code	Conc As µg/L (PPB)	-67.5	N/A
N/A		N/A	
Matrix		N/A	
LIQUID		N/A	
Sample #	Conc As µg/mL=(As ng/SS)*(1µg/1000ng)*DF		
R7467-8795	Average Conc.=(Sample + Duplicate)/2		
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
07/26/95	Detection Limit = (5 ng/SS)*(1µg/1000ng)*DF		
Instrument Code			
WB27979	Detection Limit (µg/mL)	0.125	
Analyst	Detection Limit (µg/L)	125.00	
V. MASSIE			
Date		SAMPLE	DUPLICATE
07/27/95	Conc As (µg/mL)	<0.125	
Time		N/A	
01:45 PM		N/A	

The Result is < Detection Limit

Data Entry by:	V. Smith	Date:	07/27/95
Approved by:	V. Smith	Date:	7/27/95

ARSENIC ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 7467.-8995	PUREX	6-27-95	10:41	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
As	LA-355-131	% RECOVERY	KP51T	0

Sample Size	Customer ID
? 2.0 ml	BODVL7

DF=50

Remarks, Calculations, Results:

SAMPLE SPIKED ID R7467
SPIKE ID 48N11E
SPIKE VOLUME 2ml → 100ml

PKHT= .920
ng= 38.15ng

95.4%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
7-26-95	13:45	Noel Smith 7/27/95	

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
R 7468.-8795	PUREX	6-27-95	10:45	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
AS	LA-355-131	uG/ML	KP51T	0

Sample Size	Customer ID
? 2.0 ml	BODVL8

Remarks, Calculations, Results:

PKHT= .122
ng= -1.79ng

< 0.125

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
7-26-95	13:45	Noel Smith 7/27/95	

54-6800-061 (R-10-83)

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Arsenic: LA-355-131 (C-1) As LIQUIDS-ACID DIGEST

		SAMPLE	SPIKE
Type	Sample (mL)Vol. Acid Dig. Used SAVOL	2.00	N/A
SPIKE	Spike Std Volume (mL) SSVOL	N/A	2.000
Work List	ng of Spike + Sample ngSSAM	N/A	38.15
BATCH 6387	ng of Sample ngSAM	-2.70	N/A
Test Code	Final Acid Digest Vol. (mL) ADVOL	N/A	100.00
N/A		N/A	N/A
Matrix	Spike Std Dilution Factor SPDF	N/A	50.0
LIQUID	Spike Std ID	N/A	48N11E
Sample #	Spike Std Value (ppm) SS VAL	N/A	1.000
R7467-8995	% Recovery	N/A	95.4%
Calibration Date			
07/26/95	Sample result is < 5 ng, 0 ng of sample is used in the calculation for % recovery		
Instrument Code			
WB27979	Spike Std. Dilution Factor = ADVOL/SSVOL		
Analyst			
V. MASSIE	% Recovery = {([{(ngSSAM/SAVOL)*(1/1000)}-{(0/SAVOL)*(1/1000)}]*SPDF)/SS VAL}*100		
Date			
07/27/95			
Time	% Recovery = 95.4%		
01:45 PM			

Data Entry by:	N. Smith	Date:	07/27/95
Approved by:	N. Smith	Date:	7/27/95

9613479.0447

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Arsenic: LA-355-131 (C-1) As LIQUID-ACID DIGEST

		SAMPLE	DUPLICATE
Type	Sample Size in mL SS	2.000	
SAMPLE	As ng (Nanograms)	-1.79	
Work List	Acid Digest Dilution Factor DF	50.0	
BATCH 6387	Conc As µg/mL (or mg/L or PPM)	-0.045	N/A
Test Code	Conc As µg/L (PPB)	-44.8	N/A
N/A		N/A	
Matrix		N/A	
LIQUID		N/A	

Sample #	Conc As µg/mL=(As ng/SS)*(1µg/1000ng)*DF
R7468-8795	Average Conc.=(Sample + Duplicate)/2
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100
07/26/95	Detection Limit = (5 ng/SS)*(1µg/1000ng)*DF
Instrument Code	
WB27979	
Analyst	
V. MASSIE	
Date	
07/27/95	
Time	
01:45 PM	

Detection Limit (µg/mL)	0.125
Detection Limit (µg/L)	125.00

	SAMPLE	DUPLICATE
Conc As (µg/mL)	<0.125	
	N/A	
	N/A	

The Result is < Detection Limit

Data Entry by:	V. Smith	Date:	07/27/95
Approved by:	V. Smith	Date:	7/27/95

ARSENIC ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 7468.-8895	PUREX	6-27-95	10:45	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
As	LA-355-131	uG/ML	KP51T	0

Sample Size	Customer ID
? 2.0ml	BODVL8

Remarks, Calculations, Results:
DUPLICATE SAMPLE

PKHT= .115
MDS 7/27/95 ng= -2.16ng

~~<0.125~~
<0.125

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie T Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
7-26-95	13:45	Mel Smith 7/27/95	

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
R 7468.-8995	PUREX	6-27-95	10:45	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
As	LA-355-131	% RECOVERY	KP51T	0

Sample Size	Customer ID
? 2.0 ml DF=50	BODVL8

Remarks, Calculations, Results:
SAMPLE SPIKED ID R7468
SPIKE ID ~~LAN~~ ILE
SPIKE VOLUME 2ml → 100ml

PKHT= 1.069
ng= 45.6ing

114.0%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie T Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
7-26-95	13:45	Mel Smith 7/27/95	

54-6800-061 (R-10-83)

9613479.0449

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Arsenic: LA-355-131 (C-1) As LIQUID-ACID DIGEST		DUPLICATE	DUPLICATE
Type	Sample Size in mL SS	2.000	
DUPLICATE	As ng (Nanograms)	-2.16	
Work List	Acid Digest Dilution Factor DF	50.0	
BATCH 6387	Conc As µg/mL (or mg/L or PPM)	-0.054	N/A
Test Code	Conc As µg/L (PPB)	-54.0	N/A
N/A		N/A	
Matrix		N/A	
LIQUID		N/A	
Sample #	Conc As µg/mL=(As ng/SS)*(1µg/1000ng)*DF		
R7468-8895	Average Conc.=(Sample + Duplicate)/2		
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
07/26/95	Detection Limit = (5 ng/SS)*(1µg/1000ng)*DF		
Instrument Code			
WB27979	Detection Limit (µg/mL)	0.125	
Analyst	Detection Limit (µg/L)	125.00	
V. MASSIE			
Date		DUPLICATE	DUPLICATE
07/27/95	Conc As (µg/mL)	<0.125	
Time		N/A	
01:45 PM		N/A	

The Result is < Detection Limit

Data Entry by:	N Smith	Date:	07/27/95
Approved by:	N Smith	Date:	7/27/95

9613479.0450

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Arsenic: LA-355-131 (C-1) As LIQUIDS-ACID DIGEST

		SAMPLE	SPIKE
Type	Sample (mL)Vol. Acid Dig. Used SAVOL	2.00	N/A
SPIKE	Spike Std Volume (mL) SSVOL	N/A	2.000
Work List	ng of Spike + Sample ngSSAM	N/A	45.61
BATCH 6387	ng of Sample ngSAM	-1.79	N/A
Test Code	Final Acid Digest Vol. (mL) ADVOL	N/A	100.00
N/A		N/A	N/A
Matrix	Spike Std Dilution Factor SPDF	N/A	50.0
LIQUID	Spike Std ID	N/A	48N11E
Sample #	Spike Std Value (ppm) SS VAL	N/A	1.000
R7468-8995	% Recovery	N/A	114.0%
Calibration Date			
07/26/95	Sample result is < 5 ng, 0 ng of sample is used in the calculation for % recovery		
Instrument Code			
WB27979	Spike Std. Dilution Factor = ADVOL/SSVOL		
Analyst			
V. MASSIE	% Recovery = {([{(ngSSAM/SAVOL)*(1/1000)}-{(0/SAVOL)*(1/1000)}]*SPDF)/SS VAL}*100		
Date			
07/27/95			
Time	% Recovery =	114.0%	
01:45 PM			

Data Entry by:	N. Smith	Date:	07/27/95
Approved by:	N. Smith	Date:	7/27/95

Form 355131_4 Rev. 1.1

ARSENIC ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 7469.-5595	PUREX	6-27-95	10:45	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
As	LA-355-131	% RECOVERY	KP51T	0

Sample Size	Customer ID
? .250ml	STD

Remarks, Calculations, Results:

EDP R741 AS/HYDRD

STD# 52N11F RESULT

STD VAL %REC 117.0%

PKHT= .742
ng= 29.24ng

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
7-26-95	13:45	Noel Smith 7/27/95	

54-6800-061 (R-10-83)

9613479.0452

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Arsenic : LA-355-131 (C-1) As LIQUIDS-DIRECT

		STANDARD	DUPLICATE
Type	Sample Size in mL SS	0.250	
STANDARD	As ng (Nanograms)	29.24	
Work List	Conc As µg/mL (or mg/L or PPM)	0.117	N/A
BATCH 6387	Conc As µg/L (PPB)	117.0	N/A
Test Code		N/A	
N/A		N/A	
Matrix		N/A	
LIQUID	Conc As µg/mL=(As ng/SS)*(1µg/1000ng)		
Sample #	Average Conc.=(Sample + Duplicate)/2		
R7469-5595	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
Calibration Date			
07/26/95			
Instrument Code			
WB27979			
Analyst			
V. MASSIE			
Date		STANDARD	DUPLICATE
07/27/95	Conc As µg/mL	1.17E-01	
Time		N/A	
01:45 PM		N/A	

Data Entry by:	V. Smith	Date:	07/27/95
Approved by:	V. Smith	Date:	7/27/95

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

ANALYTICAL BATCH

Lab Segment Serial No. R7465-7469	Customer ID: BODVL7 (PUREX)
Analysis: Se	Sample Prep: ACID DIGEST

Instrument: PE2280(Hydride) WB27979	Procedure/ Rev: LA 365-131 / C-0
Technologist: Valerie L. Massie Valerie L Massie	Date: 07/21/95
Starting Time: 07:35	Temperature 975 C
Ending Time: 13:45	Chemist: N ND Smith

Comments: Batch #: 6483

	Description	Lab ID		Description	Lab ID
1	LMCS STANDARD	R7465-5596	11		
2	BLANK	R7466-5696	12		
3	DIGESTED STANDARD	R7465-8596	13		
4	DIGESTED BLANK	R7466-8696	14		
5	DIGESTED SAMPLE	R7467-8796	15		
6	DUPLICATE	R7467-8896	16		
7	DIGESTED SAMPLE	R7468-8796	17		
8	DUPLICATE	R7468-8896	18		
9	DIGESTED SPIKE	R7468-8996	19		
10	END STANDARD	R7469-5596	20		

Standard Type	Primary Book No. and Aliquot Vol.	Second Book No. and Aliquot Vol.	Third Book No. and Aliquot Vol.	Final Vol. of Standard
LMCS	52N11F 0.250mL			
DIGEST STANDARD	48N11E DF=50			
SPIKE	48N11E DF=100			

9613479.0454

ANALYTICAL BATCH SUMMARY SHEET

METHOD:	DATE START:	BATCH #
LA-365-131	07/21/95	6483
PREPARED BY:	DATE COMPLETE:	
N ND Smith	07/25/95	

	UNITS:		ug/mL	ug/mL	ug/mL			ug/mL	
SPL NAME	SPL ID	ANALYTE	RESULT #1	RESULT #2	AVERAGE	RPD%	%REC	DET LIM	% CT ER
STD/52N11F	R7465	Se	0.120				120.0		
UNDIGESTED									
STD/48N11E	R7465	Se	0.0804				80.4		
DIGESTED									
REAGENT BLK	R7466	Se	<.003					0.003	
PREP BLK	R7466	Se	<0.250					0.250	
BODVL7	R7467	Se	<0.250	<0.250			99.3	0.250	
BODVL7	R7468	Se	<0.250	<0.250			121.5	0.250	
STD/52N11F	R7469	Se	0.0847				84.7		
UNDIGESTED									

NARRATIVE: [ ] NO SPECIAL PROBLEMS/METHOD VARIATIONS IN THIS BATCH
LIST SPECIFIC PROBLEMS/VARIATIONS FOR THIS BATCH:

The 100ng standard was deleted from the calibration curve for all calculation purposes. The instrument reading for this standard was found to be inaccurate, and too low to obtain an acceptable calibration. The remaining number of standards used for this batch is in compliance with HASQAP, and is therefore acceptable.

Noel Smith 7/25/95

9615979.0955

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

CALIBRATION RECORD

Analyte:	Se		
Procedure:	LA 365-131	Revision:	C-1
Instrument:	PE2280 (Hydride)	Property No.:	WB27979
Technologist	Valerie Massie Valerie L Massie	Payroll No.: XXXXX	Date: 07/21/95

Calibration Standard ID:	55N11D
Analyte Concentration:	.100ppm
Type of Calibration:	LINEAR

	Dilution	Concentration	Instrument Reading Unit
1	.000mL	0 ng	.004
2	.050mL	5 ng	.057
3	.100mL	10 ng	.101
4	.250mL	25 ng	.187
5	.500mL	50 ng	.431
6	.750mL	75ng	.645
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			

Comments: Intercept = 0.0048, Slope = 0.0085, Correlation = 0.9982

A-6000-882 (03/92)

222-S LABORATORY
CALIBRATION RECORD
Se LIQUIDS-DIRECT: LA-365-131 (C-1)

LINEAR REGRESSION

Analyte:	Se	Date of Calibration:	
Procedure No:	LA-365-131 (C-1)	Instrument:	PE2380
Analyst:		Property No:	

Calib. Standard ID:	55N11D	
Analyte Conc:	1.000	µg/mL (ppm)

	Standard Volume (mL)	Instrument Reading	Concentration ng	% Recovery
1	0.000	0.004	0.00	0.0%
2	0.050	0.057	50.00	123.4%
3	0.100	0.101	100.00	113.7%
4	0.250	0.187	250.00	86.1%
5	0.500	0.431	500.00	100.7%
6	0.750	0.645	750.00	100.9%
7				
8				
9				
10				

Y-intercept (b)	Slope (m)	Corr. Coefficient
0.0048	0.0008	0.9982

Data Entry by:	RE Wright	Date:	07/21/95
Approved by:	Joel Smith	Date:	7/25/95

.023 ~~2.15ng~~ vm 7-21-95 2.15ng 2.0ml CCB

.184 21.18 ng .250ml direct R7469 52N11F

.416 48.59ng 2.0ml R7468 spike 48N11E

.036 3.69ng 2.0ml R7468 Dup

.044 4.64ng 2.0ml R7468

.341 39.73ng 2.0ml R7467 spike (48N11E)

.043 4.52ng 2.0ml R7467 Dup

.041 4.28ng 2.0ml R7467

.031 3.10ng 2.0ml R7466 digested Blank

.272 32.12ng 2.0ml digested std (48N11E) R7465

.013 0.97ng 2.0ml direct Blank R7466 (ICB)

.259 30.04ng .250ml 52N11F (ICV) direct R7465

.467 100ng (1.0ml diluted from cal curve!) 55N11D Cal std

.645 .750ml 75ng 55N11D Cal std

.431 .500ml 50ng 55N11D Cal std

.187 25ng .250ml 55N11D Cal std

.101 10ng .100ml 55N11D Cal std

.057 5ng .050ml 55N11D Cal std

.004 0ng

13:45 7-21-95 Se Valerie L Massie

Analyte: Se **Analyst:** Valerie L Massie
Date: 7-21-95 **Start Time:** 07:35 **End Time:** 13:45

MHS 20 Data:

Signal: Concentration
Mode: PKHT
Recorder: TC3
Time: 30 sec.
Expansion: 10

Purge I: 40
Reaction: 10 sec.
Purge II: 50
Temperature: 975 C
EDL milliamps: 280

Chart Recorder Data:

Chart speed: 5 mm/min Chart full scale: 20 mV

Calibration Data:

Intercept: 0.0048 absorbance units
Slope: 0.0085 abs. units / concentration
Correlation: 0.9982 (unitless)

15:	Intercept: 0.0048
14:	Slope: 0.0085
13:	0.9982
12:	30.0405
11:	0.9722
10:	32.1675
9:	3.0992
8:	4.2808
7:	4.5171
6:	39.7300
5:	4.6353
4:	3.6900
3:	48.5922
2:	0.8471
1:	2.1539

Valerie L Massie
7-21-95

Atomic Absorption Runlog: Se Hydride Analysis

Analyst: Valerie L Massie Date: 7-21-95

Instrument: PE2280 Property # : WB27979

Batch #: 6483 Start Time: 07:35 End Time: 13:45

Calibration Data: Intercept: 0.0048 absorbance units
Slope: 0.0085 abs. units/concentration
Correlation: 0.9982 (unitless)

Calibration Std conc. 0.100 ppm

Sample Name (Std. ID#)	Sample Point	Sam. Size, mL	D or A*	PKHT (Abs.)	ng result	% Rec.	Comments	CC **
Cal. Std. ID	N/A	0.000	D	.004	0	N/A		
#: 55N11D	"	0.050	D	.057	5	"		
"	"	0.100	D	.101	10	"		
"	"	0.250	D	.187	25	"		
"	"	0.500	D	.431	50	"		
"	"	0.750	D	.645	75	"		
"	"	1.000	D	~~.467~~	~~100~~	"	deleted from	
R7465 ICV	52N11F	0.250	D	.259	30.04	120.16	cal curve	
R7466 ICB	Blank	2.0	D	.013	0.97		calculation	
R7465	digested std 48N11E	2.0	A	.277	32.17	80.42		
R7466	digested Blk	2.0	A	.031	3.10			
R7467	BODVL7, Parex	2.0	A	.041	4.28			
R7467D	BODVL7 Dup Parex	2.0	A	.043	4.52			
R7467S	BODVL7 + spike 48N11E	2.0	A	.341	39.73	99.32		
R7468	BODVL8, Parex	2.0	A	.044	4.64			
R7468D	BODVL8 Dup, Parex	2.0	A	.036	3.69			
R7468S	BODVL8 + spike 48N11E	2.0	A	.416	48.59	121.48		
R7469	(CCV) 52N11F	.250	D	.184	21.18	84.71		
CCB	Blank	2.0	D	.023	2.15			

* Sample prep. descriptors: D=direct, A=acid digest

**CC = control chart. Check off when control chart entries are made

SELENIUM ANALYSIS

BATCH # 6483

RERUN

Serial No	Sample Point	Date	Time Issued	Priority
R 7465.-5596	PUREX	6-27-95	10:36	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	% RECOVERY	KP51T	1

Sample Size: ? 52N11F .250 ml VM 7-19-95

Customer ID: STD

Remarks, Calculations, Results:
EDP R743 SE/HYDRD
PKHT= .259
STD# 52N11F RESULT 1.20E-1 ng= 30.04ng
STD VAL 1.0000E-1 %REC 120.0%
WR# 8538

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
7-19-95 VM 7-21-95	13:45	Noel Smith 7/18/95	

21

54-6800-061 (R-10-83)

RERUN

Serial No	Sample Point	Date	Time Issued	Priority
R 7465.-8596	PUREX	7-95	10:36	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	% RECOVERY	KP51T	1

Sample Size: ? 2.0ml DF=50

Customer ID: STD

Remarks, Calculations, Results:
EDP R748 SE/DGST
PKHT= .277
STD# 48N11E RESULT 8.04E-1 ng= 32.17ng
STD VAL 1.0000 %REC 80.40%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
7-19-95 VM 7-21-95	13:45	Noel Smith 7/18/95	

21

54-6800-061 (R-10-83)

SELENIUM ANALYSIS

RERUN

Serial No.	Sample Point	Date	Time Issued	Priority
R 7466.-5696	PUREX	6-27-95	10:38	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
SE	LA-565-131	UG/ML	KP511	1

Sample Size	Customer ID
2.0ml	BLANK

Remarks, Calculations, Results:
REAGENT BLANK

PKHT= .013
ng= 0.97ng

< 3.0E-3

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
VM 7-21-95 7-19-95 21	13:45	V Smith 7/25/95	M E Wright

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
R 7466.-8696	PUREX	6-27-95	10:38	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
SE	LA-565-131	UG/ML	KP511	1

Sample Size	Customer ID
2.0ml	BLANK

Remarks, Calculations, Results:
REAGENT BLANK

PKHT= .031
ng= 3.10ng

< 2.50E-1

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
VM 7-21-95 7-19-95 21	13:45	V Smith 7/25/95	M E Wright

54-6800-061 (R-10-83)

SELENIUM ANALYSIS

RERUN

Serial No.	Sample Point	Date	Time Issued	Priority
R 7467.-8796	PUREX	6-27-95	10:41	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
SE	LA-565-131	UG/ML	KP511	1

Sample Size	Customer ID
2.0ml	BUDVL7

Remarks, Calculations, Results:

PKHT= .041
ng= 4.28ng

< 2.50E-1

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Mason				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
VM 7-21-95 7-19-95	13:45	V Smith 7/25/95	R E Wright

21

54-6800-061 (R-10-83)

RERUN

Serial No.	Sample Point	Date	Time Issued	Priority
R 7467.-8896	PUREX	6-27-95	10:41	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
SE	LA-565-131	UG/ML	KP511	1

Sample Size	Customer ID
2.0ml	BUDVL7

Remarks, Calculations, Results:

DUPLICATE SAMPLE

PKHT= .043
ng= 4.52ng

< 2.50E-1

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Mason				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
VM 7-21-95 7-19-95	13:45	V Smith 7/25/95	R E Wright

21

54-6800-061 (R-10-83)

SELENIUM ANALYSIS

RERUN

Serial No.	Sample Point	Date	Time Issued	Priority
R 7467.-8996	PUREX	6-27-95	10:41	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
SE	LA-565-131	% RECOVERY	KP511	1

Sample Size	Customer ID
2.0 ml DF=50	BODVL7 VM 7-21-95

Remarks, Calculations, Results:

SAMPLE SPIKED ID R7467
SPIKE ID 48N11E
SPIKE VOLUME 2 ml → 100 ml

PKHT= ~~39.73~~ .341
ng= ~~39.73~~ VM 7-21-95
39.73ng

99.3%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie Mason				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
VM 7-21-95 7-19-95	13:45	V. Smith 7/25/95	T. Enright

21

54-6800-061 (R-10-83)

RERUN

Serial No.	Sample Point	Date	Time Issued	Priority
R 7468.-8796	PUREX	6-27-95	10:45	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
SE	LA-565-131	UG/ML	KP511	1

Sample Size	Customer ID
2.0 ml	BODVL8

Remarks, Calculations, Results:

PKHT= .044
ng= 4.64ng

< 2.50E-1

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie Mason				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
VM 7-21-95 7-19-95	13:45	V. Smith 7/25/95	T. Enright

21

54-6800-061 (R-10-83)

SELENIUM ANALYSIS

RERUN

Serial No.	Sample Point	Date	Time Issued	Priority
R 7468.-8896	PUREX	6-27-95	10:45	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
SE	LA-565-131	UG/ML	KP511	1

Sample Size	Customer ID
2.0 ml	BUDVL8

Remarks, Calculations, Results:
DUPLICATE SAMPLE

PKHT = ~~3.69~~ .036 ng = 3.69 ng
VM 7-21-95

< 2.50 E-1

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Moore				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
VM 7-21-95 7-19-95	13:45	V Smith 7/25/95	R E Wright

21

54-6800-067 (R-10-83)

RERUN

Serial No.	Sample Point	Date	Time Issued	Priority
R 7468.-8996	PUREX	6-27-95	10:45	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
SE	LA-565-131	% RECOVERY	KP511	1

Sample Size	Customer ID
2.0 ml	BUDVL8

Remarks, Calculations, Results:
SAMPLE SPIKED ID R7468
SPIKE ID 48N11E
SPIKE VOLUME 2 ml → 100 ml

PKHT = .416
ng = 48.59 ng

121.5%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Moore				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
VM 7-21-95 7-19-95	13:45	V Smith 7/25/95	R E Wright

21

54-6800-067 (R-10-83)

9613479.0464

SELENIUM ANALYSIS

RERUN

Serial No.	Sample Point	Date	Time Issued	Priority
R 7469.-5596	PUREX	6-27-95	10:45	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
SE	LA-365-131	% RECOVERY	KP511	1

Sample Size	Customer ID
.250 ml	STD

Remarks, Calculations, Results:

EDP R743 SE/HYDRD

STD#52N11F RESULT 8.47E-2

STD VAL 1.000E-1 %REC 84.70%

PKHT= .184

ng= 21.18ng

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Mazell				
Hrs	Hrs	Hrs	Hrs	Hrs
Date	Time Completed	Lab Unit Mgr		
7-19-95	13:45	7/20/95		

VM 7-21-95

21

54-6800-061 (4-10-83)

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Selenium: LA-365-131 (C-1) Se LIQUIDS-DIRECT

		STANDARD	DUPLICATE
Type	Sample Size in mL SS	0.250	
STANDARD	Se ng (Nanograms)	30.04	
Work List	Conc Se µg/mL (or mg/L or PPM)	0.120	N/A
6483	Conc Se µg/L (PPB)	120.2	N/A
Test Code		N/A	
		N/A	
Matrix		N/A	
LIQUID	Conc Se µg/mL=(Se ng/SS)*(1µg/1000ng)		
Sample #	Average Conc.=(Sample + Duplicate)/2		
R7465-5596	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
Calibration Date			
07/21/95			
Instrument Code			
WB27979			
Analyst			
V. MASSIE			
Date		STANDARD	DUPLICATE
07/21/95	Conc Se µg/mL	1.20E-01	
Time		N/A	
07:35 AM		N/A	

Data Entry by:	RE Wright	Date:	07/21/95
Approved by:	Joe P Smith	Date:	7/25/95

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Selenium : LA-365-131 (C-1) Se LIQUID-ACID DIGEST

		STANDARD	DUPLICATE
Type	Sample Size in mL SS	2.000	
STANDARD	Se ng (Nanograms)	32.17	
Work List	Acid Digest Dilution Factor DF	50.0	
6483	Conc Se µg/mL (or mg/L or PPM)	0.804	N/A
Test Code	Conc Se µg/L (PPB)	804.3	N/A
		N/A	
Matrix		N/A	
ACID DIGEST		N/A	
Sample #	Conc Se µg/mL=(Se ng/SS)*(1µg/1000ng)*DF		
R7465-8596	Average Conc.=(Sample + Duplicate)/2		
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
07/21/95			
Instrument Code			
WB27979			
Analyst			
V. MASSIE			
Date		STANDARD	DUPLICATE
07/21/95	Conc Se (µg/mL)	8.04E-01	
Time		N/A	
07:35 AM		N/A	

Data Entry by:	[illegible]	Date:	07/21/95
Approved by:	[illegible]	Date:	7/25/95

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Selenium: LA-365-131 (C-1) Se LIQUIDS-DIRECT

		BLANK	DUPLICATE
Type	Sample Size in mL SS	2.000	
BLANK	Se ng (Nanograms)	0.97	
Work List	Conc Se µg/mL (or mg/L or PPM)	0.000	N/A
6483	Conc Se µg/L (PPB)	0.5	N/A
Test Code		N/A	
		N/A	
Matrix		N/A	
LIQUID	Conc Se µg/mL=(Se ng/SS)*(1µg/1000ng)		
Sample #	Average Conc.=(Sample + Duplicate)/2		
R7466-5696	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
Calibration Date	Detection Limit = (5 ng/SS)*(1µg/1000ng)		
07/21/95	Detection Limit is Corrected for Sample Prep/Dilution		
Instrument Code			
WB27979	Detection Limit (µg/mL) =	0.003	
Analyst	Detection Limit (µg/L) =	2.5	
V. MASSIE			
Date		BLANK	DUPLICATE
07/21/95	Conc Se µg/mL	<0.003	
Time		N/A	
07:35 AM		N/A	

The Result is < Detection Limit

Data Entry by:	RC Wright	Date:	07/21/95
Approved by:	V Smith	Date:	7/25/95

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Selenium : LA-365-131 (C-1) Se LIQUID-ACID DIGEST

		BLANK	DUPLICATE
Type	Sample Size in mL SS	2.000	
BLANK	Se ng (Nanograms)	3.10	
Work List	Acid Digest Dilution Factor DF	100.0	
6483	Conc Se µg/mL (or mg/L or PPM)	0.155	N/A
Test Code	Conc Se µg/L (PPB)	155.0	N/A
		N/A	
Matrix		N/A	
ACID DIGEST		N/A	
Sample #	Conc Se µg/mL=(Se ng/SS)*(1µg/1000ng)*DF		
R7466-8696	Average Conc.=(Sample + Duplicate)/2		
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
07/21/95	Detection Limit = (5 ng/SS)*(1µg/1000ng)*DF		
Instrument Code			
WB27979	Detection Limit (µg/mL)	0.250	
Analyst	Detection Limit (µg/L)	250.00	
V. MASSIE			
Date		BLANK	DUPLICATE
07/21/95	Conc Se (µg/mL)	<0.250	
Time		N/A	
07:35 AM		N/A	

The Result is < Detection Limit

Data Entry by:	N. Wright	Date:	07/21/95
Approved by:	N. Smith	Date:	7/25/95

Form 365131_3 Rev. 2.2

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Selenium : LA-365-131 (C-1) Se LIQUID-ACID DIGEST

		SAMPLE	DUPLICATE
Type	Sample Size in mL SS	2.000	2.000
SAMPLE	Se ng (Nanograms)	4.28	4.52
Work List	Acid Digest Dilution Factor DF	100.0	100.0
6483	Conc Se µg/mL (or mg/L or PPM)	0.214	0.226
Test Code	Conc Se µg/L (PPB)	214.0	226.0
	Average Conc (µg/mL)	N/A	N/A
Matrix	Average Conc (µg/L)	N/A	N/A
ACID DIGEST	Relative % Difference	N/A	N/A
Sample #	Conc Se µg/mL=(Se ng/SS)*(1µg/1000ng)*DF		
R7467-8796	Average Conc.=(Sample + Duplicate)/2		
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
07/21/95	Detection Limit = (5 ng/SS)*(1µg/1000ng)*DF		
Instrument Code			
WB27979	Detection Limit (µg/mL)	0.250	
Analyst	Detection Limit (µg/L)	250.00	
V. MASSIE			
Date		SAMPLE	DUPLICATE
07/21/95	Conc Se (µg/mL)	<0.250	<0.250
Time	Average Conc (µg/mL)	N/A	N/A
07:35 AM	Relative % Difference	N/A	N/A

Both Results are < Detection Limit

Data Entry by: N Wright Date: 07/21/95

Approved by: V. Smith Date: 7/25/95

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Selenium : LA-365-131 (C-1) Se LIQUID-ACID DIGEST

		SAMPLE	DUPLICATE
Type	Sample Size in mL SS	2.000	
DUPLICATE	Se ng (Nanograms)	4.52	
Work List	Acid Digest Dilution Factor DF	100.0	
6483	Conc Se µg/mL (or mg/L or PPM)	0.226	ERR
Test Code	Conc Se µg/L (PPB)	226.0	ERR
	Average Conc (µg/mL)	N/A	ERR
Matrix	Average Conc (µg/L)	N/A	ERR
ACID DIGEST	Relative % Difference	N/A	ERR
Sample #	Conc Se µg/mL=(Se ng/SS)*(1µg/1000ng)*DF		
R7467-8896	Average Conc.=(Sample + Duplicate)/2		
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
07/21/95	Detection Limit = (5 ng/SS)*(1µg/1000ng)*DF		
Instrument Code			
WB27979	Detection Limit (µg/mL)	0.250	
Analyst	Detection Limit (µg/L)	250.00	
V. MASSIE			
Date		SAMPLE	DUPLICATE
07/21/95	Conc Se (µg/mL)	<0.250	ERR
Time	Average Conc (µg/mL)	N/A	ERR
07:35 AM	Relative % Difference	N/A	ERR

ERR

Data Entry by: [illegible] Date: 07/21/95

Approved by: [illegible] Date: 7/25/95

Form 365131_3 Rev. 2.2

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Selenium: LA-365-131 (C-1) Se LIQUIDS-ACID DIGEST

		SAMPLE	SPIKE
Type	Sample (mL)Vol. Acid Dig. Used SAVOL	2.00	N/A
SPIKE	Spike Std Volume (mL) SSVOL	N/A	2.000
Work List	ng of Spike + Sample ngSSAM	N/A	39.73
6483	ng of Sample ngSAM	4.64	N/A
Test Code	Final Acid Digest Vol. (mL) ADVOL	N/A	100.00
		N/A	N/A
Matrix	Spike Std Dilution Factor SPDF	N/A	50.0
LIQUID	Spike Std ID	N/A	48N11E
Sample #	Spike Std Value (ppm) SS VAL	N/A	1.000
R7467-8996	% Recovery	N/A	99.3%

Calibration Date	
07/21/95	Sample result is < 5 ng, 0 ng of sample is used in the calculation for % recovery
Instrument Code	
WB27979	Spike Std. Dilution Factor = ADVOL/SSVOL
Analyst	
V. MASSIE	% Recovery = {([{(ngSSAM/SAVOL)*(1/1000)}-{(0/SAVOL)*(1/1000)}]*SPDF)/SS VAL}*100
Date	
07/21/95	
Time	% Recovery = 99.3%
07:35 AM	

Data Entry by: N C Wright Date: 07/21/95

Approved by: N. Smith Date: 7/21/95

Form 365131_4 Rev. 1.1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Selenium : LA-365-131 (C-1) Se LIQUID-ACID DIGEST

		SAMPLE	DUPLICATE
Type	Sample Size in mL SS	2.000	2.000
SAMPLE	Se ng (Nanograms)	4.64	3.69
Work List	Acid Digest Dilution Factor DF	100.0	100.0
6483	Conc Se µg/mL (or mg/L or PPM)	0.232	0.185
Test Code	Conc Se µg/L (PPB)	232.0	184.5
	Average Conc (µg/mL)	N/A	N/A
Matrix	Average Conc (µg/L)	N/A	N/A
ACID DIGEST	Relative % Difference	N/A	N/A

Sample #	Conc Se µg/mL=(Se ng/SS)*(1µg/1000ng)*DF
R7468-8796	Average Conc.=(Sample + Duplicate)/2
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100
07/21/95	Detection Limit = (5 ng/SS)*(1µg/1000ng)*DF
Instrument Code	
WB27979	
Analyst	
V. MASSIE	

Detection Limit (µg/mL)	0.250
Detection Limit (µg/L)	250.00

Date		SAMPLE	DUPLICATE
07/21/95	Conc Se (µg/mL)	<0.250	<0.250
Time	Average Conc (µg/mL)	N/A	N/A
07:35 AM	Relative % Difference	N/A	N/A

Both Results are < Detection Limit

Data Entry by:	N E Wright	Date:	07/21/95
Approved by:	N Smith	Date:	7/20/95

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Selenium : LA-365-131 (C-1) Se LIQUID-ACID DIGEST

		SAMPLE	DUPLICATE
Type	Sample Size in mL SS	2.000	
DUPLICATE	Se ng (Nanograms)	3.69	
Work List	Acid Digest Dilution Factor DF	100.0	
6483	Conc Se µg/mL (or mg/L or PPM)	0.185	ERR
Test Code	Conc Se µg/L (PPB)	184.5	ERR
	Average Conc (µg/mL)	N/A	ERR
Matrix	Average Conc (µg/L)	N/A	ERR
ACID DIGEST	Relative % Difference	N/A	ERR
Sample #	Conc Se µg/mL=(Se ng/SS)*(1µg/1000ng)*DF		
R7468-8896	Average Conc.=(Sample + Duplicate)/2		
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
07/21/95	Detection Limit = (5 ng/SS)*(1µg/1000ng)*DF		
Instrument Code			
WB27979	Detection Limit (µg/mL)	0.250	
Analyst	Detection Limit (µg/L)	250.00	
V. MASSIE			

Date		SAMPLE	DUPLICATE
07/21/95	Conc Se (µg/mL)	<0.250	ERR
Time	Average Conc (µg/mL)	N/A	ERR
07:35 AM	Relative % Difference	N/A	ERR

ERR

Data Entry by:	[illegible]	Date:	07/21/95
Approved by:	[illegible]	Date:	7/25/95

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Selenium: LA-365-131 (C-1) Se LIQUIDS-ACID DIGEST

		SAMPLE	SPIKE
Type	Sample (mL)Vol. Acid Dig. Used SAVOL	2.00	N/A
SPIKE	Spike Std Volume (mL) SSVOL	N/A	2.000
Work List	ng of Spike + Sample ngSSAM	N/A	48.59
6483	ng of Sample ngSAM	3.69	N/A
Test Code	Final Acid Digest Vol. (mL) ADVOL	N/A	100.00
		N/A	N/A
Matrix	Spike Std Dilution Factor SPDF	N/A	50.0
LIQUID	Spike Std ID	N/A	48N11E
Sample #	Spike Std Value (ppm) SS VAL	N/A	1.000
R7468-8996	% Recovery	N/A	121.5%
Calibration Date			
07/21/95	Sample result is < 5 ng, 0 ng of sample is used in the calculation for % recovery		
Instrument Code			
WB27979	Spike Std. Dilution Factor = ADVOL/SSVOL		
Analyst			
V. MASSIE	% Recovery = {([{(ngSSAM/SAVOL)*(1/1000)}-{(0/SAVOL)*(1/1000)}]*SPDF)/SS VAL}*100		
Date			
07/21/95			
Time	% Recovery = 121.5%		
07:35 AM			

Data Entry by: [illegible] Date: 07/21/95

Approved by: [illegible] Date: 7/25/95

Form 365131_4 Rev. 1.1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Selenium: LA-365-131 (C-1) Se LIQUIDS-DIRECT

		STANDARD	DUPLICATE
Type	Sample Size in mL SS	0.250	
STANDARD	Se ng (Nanograms)	21.18	
Work List	Conc Se µg/mL (or mg/L or PPM)	0.085	N/A
6483	Conc Se µg/L (PPB)	84.7	N/A
Test Code		N/A	
		N/A	
Matrix		N/A	
LIQUID	Conc Se µg/mL=(Se ng/SS)*(1µg/1000ng)		
Sample #	Average Conc.=(Sample + Duplicate)/2		
R7469-5596	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
Calibration Date			
07/21/95			
Instrument Code			
WB27979			
Analyst			
V. MASSIE			
Date		STANDARD	DUPLICATE
07/21/95	Conc Se µg/mL	8.47E-02	
Time		N/A	
07:35 AM		N/A	

Data Entry by:	R E Wright	Date:	07/21/95
Approved by:	Joe Y Smith	Date:	7/25/95

222-S LABORATORY
CALIBRATION RECORD
Hg LIQUIDS-DIRECT: LA-325-104 (B-1)

LINEAR REGRESSION

Analyte:	Hg	Date of Calibration:	07/07/95
Procedure No:	LA-325-104 (B-1)	Instrument:	PE2380
Analyst:	J Steele	Property No:	wb26847

Calib. Standard ID:	58N11A	
Analyte Conc:	0.147	µg/mL (ppm)

	Standard Volume (mL)	Instrument Reading	Concentration ng	% Recovery
1	0.000	0.000	0.00	0.0%
2	0.034	0.026	5.00	101.9%
3	0.100	0.120	14.70	92.7%
4	0.250	0.362	36.75	96.8%
5	0.500	0.777	73.50	99.7%
6	0.750	1.146	110.25	96.8%
7	1.000	1.624	147.00	102.1%
8				
9				
10				

Y-intercept (b)	Slope (m)	Corr. Coefficient
-0.0301	0.0110	0.9992

Data Entry by:	Gary Hammett	Date:	07/09/95
Approved by:	Noel Smith	Date:	7/12/95

WESTINGHOUSE HANFORD COMPANY
222-S LABORATORY
INORGANIC ANALYTICAL BATCH AND SUMMARY SHEET

Hg LIQUIDS-DIRECT: LA-325-104 (B-1)

SAMPLE #:	R7467-5797 & R7468-5797 & S2818-2385	BATCH ID:	6384
TEST CODE:		SAMPLE POINT:	PUREX / 102LW
INSTRUMENT:	wb26847	SAMPLE PREP:	DIRECT
ANALYST:	J Steele	ANALYSIS DATE:	07/07/95

SAMPLE TYPE	SAMPLE #	SAMPLE I	CONC HG µg/mL	AVERAGE µg/mL	RPD%	% REC	DET LIM µg/mL
STANDARD	R7465-5597	STD	9.96E-02			99.6%	
BLANK	R7466-5697	BLANK	< 0.005				0.005
SAMPLE 1	R7467-5797	BODVL7	< 0.005				0.005
DUPLICATE 1	R7467-5897	BODVL7	< 0.005	N/A	N/A		0.005
SPIKE 1	R7467-5997	BODVL7				108.1%	
SAMPLE 2	R7468-5797	BODVL8	< 0.005				0.005
DUPLICATE 2	R7468-5897	BODVL8	< 0.005	N/A	N/A		0.005
SPIKE 2	R7468-5997	BODVL8				104.4%	
SAMPLE 3	S2818-2385		2.36E-01				0.020
ST-END	R7469-5597	STD	1.04E-01			104.1%	

STD TYPE:	STD ID:	STD VOL:
STANDARD	59N11A	0.300 mL
SPIKE 1	59N11A	0.300 mL
SPIKE 2	59N11A	0.300 mL

NARRATIVE:

Analyst Comments:

Chemist Comments:

DETECTION LIMITS ARE ADJUSTED FOR DIFFERENT SAMPLE SIZES.

Form Completed By:	Gary J Hammitt	Signature:	Gary J Hammitt	Date:	07/09/95
Chemist Approval:	Noe'l Smith	Signature:	Noe'l Smith	Date:	7/12/95

LAB LEADER INFO:

Method:	LA-325-104 (B-1)
Matrix:	LIQUID
Test Code	-
Work List #	
Batch #	6384
Prepared By:	Gary J Hammitt
Date Complete:	07/09/95
Chemist:	Noe'l Smith
Analyst:	J Steele
Analysis Date:	07/07/95
Time Analysis Complete:	
Instrument Code:	wb26847
Rerun:	0
Sample Prep:	DIRECT
Sample Point:	PUREX / 102LW

Sample Type	Sample #
STANDARD	R7465-5597
BLANK	R7466-5697
SAMPLE 1	R7467-5797
DUPLICATE 1	R7467-5897
SPIKE 1	R7467-5997
SPIKE DUP 1	-
SAMPLE 2	R7468-5797
DUPLICATE 2	R7468-5897
SPIKE 2	R7468-5997
SAMPLE 3	S2818-2385
ST-END	R7469-5597

Sample #	Customer ID
R7465-5597	STD
R7466-5697	BLANK
R7467-5797	BODVL7
R7467-5897	BODVL7
R7467-5997	BODVL7
R7468-5797	BODVL8
R7468-5897	BODVL8
R7468-5997	BODVL8
S2818-2385	
R7469-5597	STD

Print

TECH INFO:

Standard Run:

INPUT

Sample Size in mL	0.300
Peak height (pkht)	0.299
Hg ng (Nanograms)	29.87
Std Value µg/mL	0.100
Std ID:	59N11A

RESULT

Conc Hg µg/mL	9.96E-02

Blank Run:

INPUT

Sample Size in mL	1.000
Peak height (pkht)	-0.001
Hg ng (Nanograms)	2.64

RESULT

Conc Hg µg/mL	< 0.005
Conc Hg µg/L (PPB)	<5.000

The Result is < Detection Limit

Sample Run 1:

INPUT

Sample Size in mL	1.000
Peak height (pkht)	0.018
Hg ng (Nanograms)	4.37

RESULT

Conc Hg µg/mL	< 0.005
Conc Hg µg/L (PPB)	<5.000

The Result is < Detection Limit

Duplicate Run 1:

INPUT

Sample Size in mL	1.000
Peak height (pkht)	0.021
Hg ng (Nanograms)	4.64

RESULT

Conc Hg µg/mL	< 0.005
Conc Hg µg/L (PPB)	<5.000
Average Conc (µg/mL)	N/A
Average Conc (µg/L)	N/A
Relative % Difference	N/A

The Duplicate Result is < Detection Limit

Sample Run 2:

INPUT

Sample Size in mL	1.000
Peak height (pkht)	-0.021
Hg ng (Nanograms)	0.83

RESULT

Conc Hg µg/mL	< 0.005
Conc Hg µg/L (PPB)	<5.000

The Result is < Detection Limit

Duplicate Run 2:

INPUT

Sample Size in mL	1.000
Peak height (pkht)	-0.019
Hg ng (Nanograms)	1.01

RESULT

Conc Hg µg/mL	< 0.005
Conc Hg µg/L (PPB)	<5.000
Average Conc (µg/mL)	N/A
Average Conc (µg/L)	N/A
Relative % Difference	N/A

The Duplicate Result is < Detection Limit

Sample Run 3:

INPUT

Sample Size in mL	0.250
Peak height (pkht)	0.619
Hg ng (Nanograms)	58.92

RESULT

Conc Hg µg/mL	2.36E-01
Conc Hg µg/L (PPB)	235.7

SPIKE 1

INPUT

Spike Std Volume (mL)	0.300
Peak height (pkht)	0.327
Hg ng of Spike+Sample	32.42
Hg ng of Sample	4.37
Spike Std ID	59N11A
Spike Std Value (ppm)	0.100

RESULT

% Recovery	108.1%

SPIKE 2

INPUT

Spike Std Volume (mL)	0.300
Peak height (pkht)	0.315
Hg ng of Spike + Sample	31.33
Hg ng of Sample	0.83
Spike Std ID	59N11A
Spike Std Value (ppm)	0.100

RESULT

% Recovery	104.4%

SPIKE DUP 1

INPUT

Spike Std Volume (mL)	
Sample Size in mL	
Peak height (pkht)	
Hg ng SpikeDup + Sample	
Hg ng of Sample	
Spike Std ID	
Spike Std Value (ppm)	

RESULT

Conc Hg µg/mL	
Conc Hg µg/L (PPB)	
Relative % Difference	
% Recovery	

ST-END

INPUT

Sample Size in mL	0.300
Peak height (pkht)	0.314
Hg ng (Nanograms)	31.24
Std Value µg/mL	0.100

RESULT

Conc Hg µg/mL	1.04E-01

Form Completed By:	Gary J Hammitt	Signature:	Gary Hammitt	Date:	07/09/95
Chemist Approval:	Noe'l Smith	Signature:	Noe'l Smith	Date:	7/12/95

Atomic Absorption Runlog: Hg Cold Vapor Analysis

Analyst: Jacque Steele Date: 7-7-95
Instrument: PE 2380 Property #: WB26847 Batch#: 6384
Cal. Data: Intercept: -.0301 Slope: .0110 Correlation: .9992

Sample Name (Std. ID#)	Sample Point	Sam. Size, mL	D or A*	PKHT (Abs.)	ng Result	% Rec.	Time	Comments	CC **
58NII-A	N/A	0.000	D	.000	0	N/A	:		
"	"	0.034	D	.026	5	"	:		
"	"	0.100	D	.120	14.7	"	:		
"	"	0.250	D	.362	36.75	"	:		
"	"	0.500	D	.777	73.5	"	:		
"	"	0.750	D	1.146	110.25	"	:		
"	"	1.000	D	1.624	147.00	"	:		
R7465 ICV	59NII-A	.300	D	.299	29.87	99.58	:		
R7466 ICB	Blank	1.0	D	-.001	2.65		:		
CCV	58NII-A	.500	D	.684	64.82	88.19	:		
CCB	Blank	1.0	D	-.026	.38		:	AZ	
CRA	59NII-A	.050	D	.039	6.28	125.5	:		
R7017	59NII-A	.300	D	.281	28.24	94.14	:	Batch 6405	
R7018	59NII-A	.300	D	.283	28.42	94.74	:	OSCRFIX	
R7467	Pureo - BODVII7	1.0	D	.018	4.37		:		
R7468	Dup	1.0	D	.021	4.64		:		
R7467	Spike + 300ml 59NII-A	1.0	D	.327	32.42		:		
R7468	BODVII8	1.0	D	-.021	.83		:		
R7468	dup	1.0	D	-.019	1.01		:		
R7468	Spike + 300ml 59NII-A	1.0	D	.315	31.33		:		
S2818	102-LW	.250	D	.619	58.92		:		
S2818	102-LW	.500	D	1.243	115.56		:		
CCV	58NII-A	.500	D	.796	74.98	102.02	:		
CCB	Blank	1.0	D	-.027	.28		:	AZ	
R7467 ICV	59NII-A	.300	D	.314	31.24	104.12	:		
							:		
							:		
		Jacque Steele					:		
					7-7-95		:		
							:		

* Sample prep. descriptors: D=direct, A=acid digest
** CC=control chart. Check off when control chart entries are made.

LAB LEADER

.314 31.24ng ICV R7469 .300ml 59NII-A 104.12%

-.027 .28ng CCB 1.0ml

.796 74.98ng CCV .500ml 58NII-A 102.03%

1.243 115.51ng S2818 .500ml

.619 58.92ng S2818 .250ml

.315 31.33ng R7468 spike 1.0ml + .300ml 59NII-A

-.019 1.01ng R7468 dup 1.0ml

-.021 .83ng R7468 1.0ml

.327 32.42ng R7467 spike 1.0ml + .300ml 59NII-A

.021 4.64ng ~~R7~~ R7467 dup 1.0ml

.018 4.37ng R7467 1.0ml

A2 .039 6.28ng CCA .050ml 59NII-A 126.51%

-.026 .38ng CCB 1.0ml

.684 64.82ng CCV .500ml 58NII-A 88.19%

-.001 ICB R7466 1.0ml

.060 8.18ng

.299 29.87ng ICV .300ml 59NII-A 99.58% R7465

A2

-.087 ICB

.255 25.88ng ICV

.283 28.42ng ICV R7018 osc+1% .300ml 59NII-A 94.74%

.281 28.24ng ICV R7017 osc+1% .300ml 59NII-A 94.14%

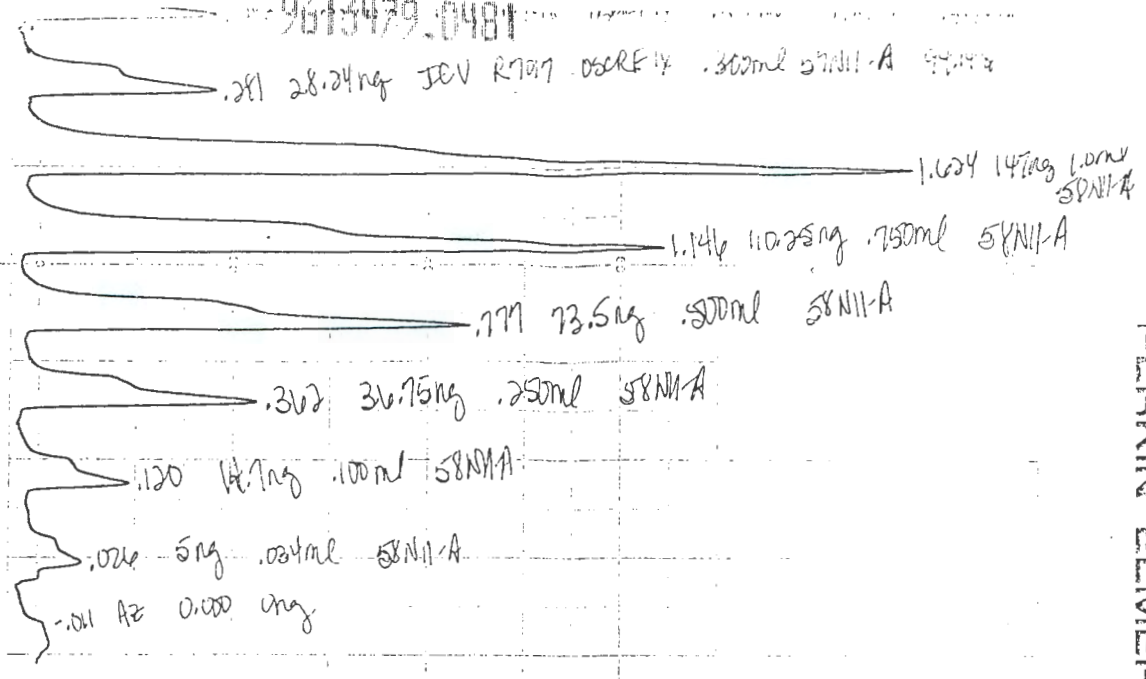
1.624 147ng 1.0ml 59NII-A

1.146 110.25ng .750ml 59NII-A

.227 22.5ng .500ml 58NII-A

PERKIN-ELMER

PERKIN-ELMER



PERKIN-ELMER

Analyte: Hg
Date: 7-7-95

Analyst: Jacie Hule
Start Time: _____ End Time: _____

Batch # 6384

MHS 20 Data:

Signal: Concentration
Mode: PKHT
Recorder: TC3
Time: 55 sec.
Expansion: 10

Purge I: 40 sec.
Purge II: 90 sec.
Reaction: 16 sec.
Temperature: 175 C
EDL Power: 5 Watts

Chart Recorder Data:

Chart speed: 5 mm/min
Chart full scale: 20 mV

Calibration Data:

Intercept: -.0301 absorbance units
Slope: .0110 abs. units / concentration
Correlation: .9992 (unitless)

24:	Intercept: -0.0301
23:	Slope: 0.0110
22:	0.2455
21:	0.5245
20:	28.2455
19:	28.4231
18:	0.8734
17:	-5.1703
16:	23.6741
15:	3.1826
14:	2.6460
13:	0.6212
12:	0.3462
11:	0.3461
10:	1.3461
9:	4.5525
8:	4.5412
7:	32.4167
6:	0.8287
5:	1.0112
4:	31.8458
3:	58.4184
2:	115.6659
1:	74.9843
	0.2851
	31.2358

PERK

MERCURY ANALYSIS

Batch 6384

Serial No	Sample Point	Date	Time Issued	Priority
R 7465.-5597	PUREX	6-27-95	10:36	23

Determination	Method Standard	Result Units	Charge Code	Reruns
Hg	LA-325-104	% RECOVERY	KP51T	0

Sample Size	Customer ID
? .300 ml	STD

Remarks, Calculations, Results

EDP R715 HG/HYDRID
STD #59 N/A RESULT 9.96E-02
STD VAL 1.00E-1 % REC 99.6

PKHT .299
29.87 ng

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
J Steele				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
7-7-95		Neil Smith 7/12/95	S Hammett

54-6800-061 (R-10-83)

Serial No	Sample Point	Date	Time Issued	Priority
R 7466.-5697	PUREX	6-27-95	10:38	19

Determination	Method Standard	Result Units	Charge Code	Reruns
Hg	LA-325-104	uG/ML	KP51T	0

Sample Size	Customer ID
? 1.0 ml	BLANK

Remarks, Calculations, Results

REAGENT BLANK

PKHT -.001
26.5 ng

<0.005 ng/ml

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
J Steele				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
7-7-95		Neil Smith 7/12/95	S Hammett

54-6800-061 (R-10-83)

MERCURY ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 7467.-5797	PUREX	6-27-95	10:41	19

Determination	Method Standard	Result Units	Charge Code	Reruns
HG LIQ	LA-325-104	uG/ML	KP51T	0

Sample Size	Customer ID
? 1.0 ml	BODVL7

Remarks, Calculations, Results

PKHT .018
4.37 ng

<0.005 mg/mL

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
J Steele				
0 Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
7-7-95		Noel Smith 7/12/95	

54-6800-061 (R-10-83)

Serial No	Sample Point	Date	Time Issued	Priority
R 7467.-5897	PUREX	6-27-95	10:41	19

Determination	Method Standard	Result Units	Charge Code	Reruns
HG-LIQ	LA-325-104	uG/ML	KP51T	0

Sample Size	Customer ID
? 1.0 ml	BODVL7

Remarks, Calculations, Results
DUPLICATE SAMPLE

PKHT .021
4.64 ng

<0.005 mg/mL

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
J Steele				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
7-7-94		Noel Smith 7/12/95	

54-6800-061 (R-10-83)

MERCURY ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 7467.-5997	PUREX	6-27-95	10:41	19

Determination	Method Standard	Result Units	Charge Code	Reruns
Hg	LA-325-104	% RECOVERY	KF51T	0

Sample Size	Customer ID
? 1.0 ml	BODVL7

Remarks, Calculations, Results:
SAMPLE SPIKED ID
SPIKE ID 59N11-A
SPIKE VOLUME .300ml

PKHT .327
32.42ng

108.1 % Rec.

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
J Steele				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
7-7-95		Neil Smith 7/12/95	

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
R 7468.-5797	PUREX	6-27-95	10:45	19

Determination	Method Standard	Result Units	Charge Code	Reruns
Hg LIQ	LA-325-104	uG/ML	KF51T	0

Sample Size	Customer ID
? 1.0 ml	BODVL8

Remarks, Calculations, Results:

PKHT -.001
.83 ng

<0.005 ug/ml

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
J Steele				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
7-7-95		Neil Smith 7/12/95	

54-6800-061 (R-10-83)

MERCURY ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 7468.-5897	PUREX	6-27-95	10:45	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
HG-LIQ	LA-325-104	uG/ML	KP51T	0

Sample Size	Customer ID
? 1.0ml	BODVL8

Remarks, Calculations, Results:
DUPLICATE SAMPLE

PKHT -.019
1.01ng

<0.005 ug/ml

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
J Steele				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
7-7-95		Yol Smith 7/12/95	S Hammond

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
R 7468.-5997	PUREX	6-27-95	10:45	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
HG	LA-325-104	% RECOVERY	KP51T	0

Sample Size	Customer ID
? 1.0ml	BODVL8

Remarks, Calculations, Results:
SAMPLE SPIKED ID
SPIKE ID 59NIF-A
SPIKE VOLUME .300ml

PKHT .315
31.33ng

104.4%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
J Steele				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
7-7-95		Yol Smith 7/12/95	S Hammond

54-6800-061 (R-10-83)

pH ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 7469.-5597	PUREX	.6-27-95	10:45	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
HG	LA-325-104	% RECOVERY	RP511	0

Sample Size	Customer ID
? .300ml	STD

Remarks, Calculations, Results

EDP R715 HG/HYDRID
STD #59N11-A RESULT 1.04E-01
STD VAL 1.00-1 % REC 104.0

PKHT .314
31.24ng

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
J Steele				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
7-7-95		Yel Smith 7/12/95	

54-6800-061 (R-10-83)

9613479.0487

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

ANALYTICAL BATCH

Lab Segment Serial No. R7467,68	Customer ID: PUREX
Analysis: TOC	Sample Prep: DIRECT

Instrument: WC39937	Procedure/ Rev: LA-344-105/B-3
Technologist: R. WENDLAND	Date: 07/14/95
Starting Time: 1100	Temperature N/A
Ending Time: 1400	Chemist: R. SCHROEDER

Comments: CAUTION: DILUTION FACTORS ON PRINT OUTS ARE NOT CORRECT!!

	Description	Lab ID		Description	Lab ID
1	LMCS	R7465-5526	11		
2	BLK	R7466-5626	12		
3	SAM	R7467-5726	13		
4	DUP	R7467-5826	14		
5	SPK	R7467-5926	15		
6	SAM	R7468-5726	16		
7	DUP	R7468-5826	17		
8	SPK	R7468-5926	18		
9	LMCS	R7469-5526	19		
10			20		

Standard Type	Primary Book No. and Aliquot Vol.	Second Book No. and Aliquot Vol.	Third Book No. and Aliquot Vol.	Final Vol. of Standard
LMCS	16N12-B			
LMCS	11N12-F	SPIKE		

A-6000-881 (03/92)

TOTAL ORGANIC CARBON ANALYSIS

Batch 6383

Serial No.	Sample Point	Date	Time Issued	Priority
R 7465.-5526	PUREX	6-27-95	10:36	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	% RECOVERY	KP51T	0

Sample Size	Customer ID
?	STD

Remarks, Calculations, Results:
S356 CO3TOC

STD# 16N12B RESULT 2.93E+3

STD VAL ~~3.00E+3~~ RS 7-17-95 2.995E03 %REC 97.8

R. WENDLAND

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
7-14-95		9/17/95	

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
R 7466.-5626	PUREX	6-27-95	10:38	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	uG C/ML	KP51T	0

Sample Size	Customer ID
?	BLANK

Remarks, Calculations, Results
REAGENT BLANK

LS.00E00 ug C/ml

R. WENDLAND

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
7-14-95		7/17/95	

54-6800-061 (R-10-83)

TOTAL ORGANIC CARBON ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 7467.-5726	PUREX	6-27-95	10:41	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	uG C/ML	KP51T	0

Sample Size		Customer ID
?	SAM H_2SO_4 INJ ML — .200 — .200	BODVL7

Remarks, Calculations, Results

9.18601 ug C/ml

R. WENDLAND

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
7-14-95		7/17/95	

54-6800-061 (R-10-83)

Serial No	Sample Point	Date	Time Issued	Priority
R 7467.-5826	PUREX	6-27-95	10:41	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	uG C/ML	KP51T	0

Sample Size	Customer ID
? 1ml — .200ml	BODVL7

Remarks, Calculations, Results

DUPLICATE SAMPLE

9.18601 ug C/ml

R. WENDLAND

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
7-14-95		7/17/95	

54-6800-061 (R-10-83)

TOTAL ORGANIC CARBON ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 7467.-5926	PUREX	6-27-95	10:41	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	% RECOVERY	KP51T	0

Sample Size: ? .400 — .200 — .200 (SAM. DIL. ~~ACID~~ RWS 7/17/95; SPIKE)

Customer ID: BODVL7

Remarks, Calculations, Results:
SAMPLE SPIKED ID
SPIKE ID 11N12-F
SPIKE VOLUME .200

98.3% REC.

R. WENDLAND

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
7-14-95		7/17/95	

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
R 7468.-5726	PUREX	6-27-95	10:45	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	uG C/ML	KP51T	0

Sample Size: ? 1ML — .200 — .200

Customer ID: BODVL8

Remarks, Calculations, Results

6.60600 ug C/ML

R. WENDLAND

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
7-14-95		7/17/95	

54-6800-061 (R-10-83)

TOTAL ORGANIC CARBON ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 7468.-5826	PUREX	6-27-95	10:45	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	uG C/ML	KP51T	0

Sample Size	Customer ID
? 1mL - .200 - .200	BODVL8

Remarks, Calculations, Results:
DUPLICATE SAMPLE

6.00600 ug C/ML

R. WENDLAND

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Hrs	Hrs	Hrs	Hrs	Hrs
Date 7-14-95	Time Completed	Lab Unit No. 7/17/95		

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
R 7468.-5926	PUREX	6-27-95	10:45	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	% RECOVERY	KP51T	0

Sample Size	Customer ID
? .400 - .200 - .200	BODVL8

Remarks, Calculations, Results:
SAMPLE SPIKED ID
SPIKE ID
SPIKE VOLUME

95.8%

R. WENDLAND

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Hrs	Hrs	Hrs	Hrs	Hrs
Date 7-14-95	Time Completed	Lab Unit No. 7/17/95		

54-6800-061 (R-10-83)

TOTAL ORGANIC CARBON ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 7469.-5526	PUREX	6-27-95	10:45	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	% RECOVERY	KP51T	0

Sample Size	Customer ID
?	STD

Remarks, Calculations, Results

S356 CO3TOC

STD# 16N12-B RESULT 2.93E+3

RJ 7-17-95

STD VAL ~~3.00E+3~~ %REC ~~100.3~~ RJ 7-17-95

2.995603 97.8

R. WENDLAND

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Hrs	Hrs	Hrs	Hrs	Hrs
Date 7-14-95	Time Completed	Lab Unit Mgr 7/17/95		

54-6800-061 (R-10-83)

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

TOC : LA-344-105 (B-3) LIQUIDS

			STD
Type	Sample Volume in mL	(SS)	0.200
STD	H2SO4 Volume in mL	(VR)	2.000
Work List	Volume Injected in mL	(VI)	0.200
Batch 6383	Dilution Factor	(DF)	11
Test Code	Digest Dilution Factor	(DDF)	1
TOC	µg of Carbon in Sample	(C1)	55.4
Matrix	µg of Carbon in Blank	(C2)	2.2
Liquid	g of Carbon/L	=	2.93E+00

Sample #	16N12-B
Instrument Code	WC39937
Analyst	R. Wendland
Date	07/14/95
Time	08:45 AM

g of Carbon/L = $\frac{(C1-C2) * DF * DDF}{VI * 1000}$

µg of Carbon/mL = g of Carbon/L * 1000000 µg/g / 1000 mL/L

Detection Level (µg/mL) $\frac{1 \text{ µg C} * DF * DDF}{VI}$

µg Carbon/mL =	2.93E+03	DETECTION LEVEL in µg/mL
		5.50E+01

Data Entry by:		Date:	07/17/95
Approved by:	RW Schroeder	Date:	7/17/95

Form 344105_C Rev. 1.1

9613479.0494

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: STD Date: 07/14/95 Time: 08:45:07

Sample Size = 200 uL
Dil Factor = 11
Blank ID # = BLK
Blank Value = .4395868 ug/minute C

Analyst : RA WENDLAND
Min Readings = 10
Max Readings = 10
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.10	0.00
2	1.01	28.30	99.65
3	1.51	48.50	41.65
4	2.01	53.30	9.01
5	2.51	54.50	2.20
6	3.01	54.80	0.55
7	3.51	55.00	0.36
8	4.01	55.20	0.36
9	4.51	55.40	0.36
10	5.01	55.40	0.00

BLANK VALUE = 2.2 micrograms carbon
BLANK FACTOR = 2.2 / 5.0047 = +4.4E-01 ug/min Carbon

SAMPLE RESULTS:
(55.4 - 2.200429)(11)/(200) = +2.93E+00 g/L Carbon
(55.4 - 2.200429)(11)/(200)(12) = +2.44E-01 Molar Carbon

Sample Run By: _____
RA WENDLAND 00000

9613479.0495

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

TOC : LA-344-105 (B-3) LIQUIDS

				BLK
Type	Sample Volume in mL		(SS)	0.200
BLK	H2SO4 Volume in mL		(VR)	0.200
Work List	Volume Injected in mL		(VI)	0.200
Batch 6383	Dilution Factor		(DF)	1
Test Code	Digest Dilution Factor		(DDF)	1
TOC	µg of Carbon in Sample		(C1)	2.9
Matrix	µg of Carbon in Blank		(C2)	2.2
Liquid	g of Carbon/L	=	<	5.00E-03

Sample #
R7466-5626
Instrument Code
WC39937
Analyst
R. Wendland
Date
07/14/95
Time
11:29 AM

g of Carbon/L = $\frac{(C1-C2) * DF * DDF}{VI * 1000}$

µg of Carbon/mL = g of Carbon/L * 1000000 µg/g / 1000 mL/L

Detection Level (µg/mL) $\frac{1 \mu g C * DF * DDF}{VI}$

NOTE: Reported Result is Below Detection Level.

µg Carbon/mL =	<	5.00E+00	DETECTION LEVEL in µg/mL
			5.00E+00

Data Entry by:		Date:	07/17/95
Approved by:	Ru Schroeder	Date:	7/17/95

Form 344105C Rev. 1.1

9613479.0496

P

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0
<<< BLANK ANALYSIS >>>

Sample: BLK Date: 07/14/95 Time: 08:39:24

Sample Size = 200 uL
Dil Factor = 1
Blank ID # = BLK
Blank Value = N/A

Analyst : RA WENDLAND
Min Readings = 10
Max Readings = 10
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.20	0.00
2	1.01	0.80	75.00
3	1.51	1.30	38.46
4	2.01	1.60	18.75
5	2.51	1.80	11.11
6	3.01	1.80	0.00
7	3.51	1.90	5.26
8	4.01	2.00	5.00
9	4.50	2.10	4.76
10	5.00	2.20	4.55

BLANK VALUE = 2.2 micrograms carbon
BLANK FACTOR = 2.2 / 5.0047 = +4.4E-01 ug/min Carbon

Sample Run By: R. Wendland 7-14-95
RA WENDLAND 00000

9613479.0497

JOHN BALL ONLY!

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: BLK Date: 07/14/95 Time: 14:29:25

Sample Size = 200 uL Analyst = RA WENDLAND
Dil Factor = 1 Min Readings = 10
Blank ID # = BLK Max Readings = 10
Blank Value = .4395868 ug/minute C % Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.20	0.00
2	1.01	0.70	71.43
3	1.51	1.10	36.36
4	2.00	1.40	21.43
5	2.50	1.60	12.50
6	3.00	1.90	15.79
7	3.50	2.20	13.64
8	4.01	2.40	8.33
9	4.50	2.70	11.11
10	5.00	2.90	6.90

ENDING BLANK

BLANK VALUE = 2.2 micrograms carbon
BLANK FACTOR = 2.2 / 5.0047 = +4.4E-01 ug/min Carbon

SAMPLE RESULTS:
(2.9 - 2.199973)(1)/(200) = < 5.00 E-3 g/L Carbon
(2.9 - 2.199973)(1)/(200)(12) = < 4.17 E-4 Molar Carbon

Sample Run By: _____
RA WENDLAND ooooo

9613479.0498

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

TOC : LA-344-105 (B-3) LIQUIDS

			SAM
Type	Sample Volume in mL	(SS)	1.000
SAM	H2SO4 Volume in mL	(VR)	~~2.000~~ 0.200 mL
Work List	Volume Injected in mL	(VI)	0.200
Batch 6383	Dilution Factor	(DF)	1.2
Test Code	Digest Dilution Factor	(DDF)	1
TOC	µg of Carbon in Sample	(C1)	17.5
Matrix	µg of Carbon in Blank	(C2)	2.2
Liquid	g of Carbon/L	=	9.18E-02

Sample #	R7467-5726
Instrument Code	WC39937
Analyst	R. Wendland
Date	07/14/95
Time	10:34 AM

g of Carbon/L = $\frac{(C1-C2) * DF * DDF}{VI * 1000}$

µg of Carbon/mL = g of Carbon/L * 1000000 µg/g / 1000 mL/L

Detection Level (µg/mL) $\frac{1 \mu g C * DF * DDF}{VI}$

µg Carbon/mL =	9.18E+01	DETECTION LEVEL in µg/mL
		6.00E+00

Data Entry by:	[signature]	Date:	07/17/95
Approved by:	Ru Schroeder	Date:	7/17/95

Form 344105_C Rev. 1.1

9613479.0499

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 7467 Date: 07/14/95 Time: 10:34:55

Sample Size = 200 uL
Dil Factor = 1.1
Blank ID # = BLK
Blank Value = .4395868 ug/minute C

Analyst : RA WENDLAND
Min Readings = 10
Max Readings = 10
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.60	0.00
2	1.01	10.60	94.34
3	1.51	14.20	25.35
4	2.01	15.60	8.97
5	2.50	16.20	3.70
6	3.00	16.50	1.82
7	3.50	16.80	1.79
8	4.00	17.10	1.75
9	4.50	17.30	1.16
10	5.00	17.50	1.14

BLANK VALUE = 2.2 micrograms carbon
BLANK FACTOR = 2.2 / 5.0047 = +4.4E-01 ug/min Carbon

SAMPLE RESULTS:
(17.5 - 2.199544)(1.1)/(200) = +8.42E-02 g/L Carbon
(17.5 - 2.199544)(1.1)/(200)(12) = +7.01E-03 Molar Carbon

Sample Run By: _____
RA WENDLAND 00000

9613479.0500

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

TOC : LA-344-105 (B-3) LIQUIDS

			DUP
Type	Sample Volume in mL	(SS)	1.000
DUP	H2SO4 Volume in mL	(VR)	0.200 ~~2.000~~ JWB 7/17/95
Work List	Volume Injected in mL	(VI)	0.200
Batch 6383	Dilution Factor	(DF)	1.2
Test Code	Digest Dilution Factor	(DDF)	1
TOC	µg of Carbon in Sample	(C1)	17.5
Matrix	µg of Carbon in Blank	(C2)	2.2
Liquid	g of Carbon/L	=	9.18E-02

Sample #
R7467-5826
Instrument Code
WC39937
Analyst
R. Wendland
Date
07/14/95
Time
10:42 AM

g of Carbon/L = $\frac{(C1-C2) * DF * DDF}{VI * 1000}$

µg of Carbon/mL = g of Carbon/L * 1000000 µg/g / 1000 mL/L

Detection Level (µg/mL) $\frac{1 \mu g C * DF * DDF}{VI}$

µg Carbon/mL =	9.18E+01	DETECTION LEVEL in µg/mL
		6.00E+00

Data Entry by:	[signature]	Date:	07/17/95
Approved by:	RW Schroeder	Date:	7/17/95

Form 344105_C Rev. 1.1

9613479.0501

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 7467D Date: 07/14/95 Time: 10:42:33

Sample Size = 200 uL
Dil Factor = 1.1
Blank ID # = BLK
Blank Value = .4395868 ug/minute C

Analyst : RA WENDLAND
Min Readings = 10
Max Readings = 10
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.30	0.00
2	1.01	10.50	97.14
3	1.51	14.30	26.57
4	2.00	15.50	7.74
5	2.51	16.00	3.13
6	3.01	16.40	2.44
7	3.51	16.70	1.80
8	4.01	17.00	1.76
9	4.50	17.20	1.16
10	5.00	17.50	1.71

BLANK VALUE = 2.2 micrograms carbon
BLANK FACTOR = 2.2 / 5.0047 = +4.4E-01 ug/min Carbon

SAMPLE RESULTS:
(17.5 - 2.2)(1.1)/(200) = +8.42E-02 g/L Carbon
(17.5 - 2.2)(1.1)/(200)(12) = +7.01E-03 Molar Carbon

Sample Run By: RA WENDLAND 00000

~~SAM~~ ~~200~~
~~400~~ ~~SPK~~

1mL - .200
H_2SO_4

9613479 0502

PLACE ANALYTICAL CARD IN BOX BELOW-DO NOT WRITE IN SPACE

TOC: LA-344-105 SPIKED SAMPLE

SPIKE

Type	>>>>>> Sample Vial Data <<<<<<		>>>>> Spiked Vial Data <<<<<	
SPIKE	Sample Volume in mL	1.000	Sample Size in mL (SS)	0.400
Work List	H2SO4 Volume in mL	0.200	Spike Volume in mL	0.200
Batch 6383	Volume Injected in mL	0.200	H2SO4 Volume in mL	0.000
Test Code	µg of Carbon in Sample	17.5	Volume Injected in mL	0.200
TOC	µg of Carbon in Blank	2.2	Sample Pre-Spike Dil. Factor (PDF)	1.2
Matrix			Spike Value (µg/ml)	748
Liquid			µg C in Sample + Spike	61.4
Sample #			µg C in Blank	2.2
R7467-5926				
Instrument Code				
WC39937				
Analyst				
R. Wendland				
Date				
07/14/95				
Time				
11:15 AM				

PERCENT SPIKE REC = $\frac{\text{µg Carbon Recovered from Spike} * 100}{\text{µg Carbon in Spike}}$

WHERE : µg Carbon Recovered from Spike =

[(µgC in sample + spike - µgC in blank) * (Spike Correction Factor)]

- [(µgC sample - µgC blank) * (Sample Correction Factor) * (Sample Size Correction Factor) * (PDF)]

Spike Correction Factor = $\frac{\text{Total volume in spiked sample vial (mL)}}{\text{Volume injected (mL)}}$

Sample Correction Factor = 2.2 $\frac{\text{Total volume in sample vial (mL)}}{\text{Volume injected (mL)}}$

Sample Size Correction Factor = $\frac{\text{Sample size in (mL) in spiked vial}}{\text{Sample size (mL) in sample}}$

Sample Pre-Spike Dilution Factor = $\frac{1}{\text{Dilution of Sample Before Added to Spike Vial}}$

WHERE : µg Carbon in Spike = Spike Value (µg/mL) * Spike Volume (mL)

Percent Spike Recovery 98.3%

Data Entry by:		Date: 17-Jul-95
Approved by:	Bill Schroeder	Date: 7/17/95

Form X Rev. 1.1

9613479.0503

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 7467S Date: 07/14/95 Time: 10:54:04

Sample Size = 200 uL
Dil Factor = 1.1
Blank ID # = BLK
Blank Value = .4395868 ug/minute C

Analyst : RA WENDLAND
Min Readings = 10
Max Readings = 10
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.10	0.00
2	1.01	32.60	99.69
3	1.51	51.70	36.94
4	2.00	57.10	9.46
5	2.51	59.10	3.38
6	3.01	59.90	1.34
7	3.51	60.40	0.83
8	4.01	60.80	0.66
9	4.50	61.10	0.49
10	5.00	61.40	0.49

BLANK VALUE = 2.2 micrograms carbon
BLANK FACTOR = 2.2 / 5.0047 = +4.4E-01 ug/min Carbon

SAMPLE RESULTS:
(61.4 - 2.199973)(1.1)/(200) = +3.26E-01 g/L Carbon
(61.4 - 2.199973)(1.1)/(200)(12) = +2.71E-02 Molar Carbon

Sample Run By: _____
RA WENDLAND 00000

Sam 200
400 - SPK

9613479.0504

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

TOC : LA-344-105 (B-3) LIQUIDS

			SAM
Type	Sample Volume in mL	(SS)	1.000
SAM	H2SO4 Volume in mL	(VR)	0.200
Work List	Volume Injected in mL	(VI)	0.200
Batch 6383	Dilution Factor	(DF)	1.2
Test Code	Digest Dilution Factor	(DDF)	1
TOC	µg of Carbon in Sample	(C1)	3.3
Matrix	µg of Carbon in Blank	(C2)	2.2
Liquid	g of Carbon/L	=	6.60E-03

Sample #	R7468-5726
Instrument Code	WC39937
Analyst	R. Wendland
Date	07/14/95
Time	11:02 AM

g of Carbon/L = $\frac{(C1-C2) * DF * DDF}{VI * 1000}$

µg of Carbon/mL = g of Carbon/L * 1000000 µg/g / 1000 mL/L

Detection Level (µg/mL) $\frac{1 \text{ µg C} * DF * DDF}{VI}$

µg Carbon/mL =	6.60E+00	DETECTION LEVEL in µg/mL
		6.00E+00

Data Entry by:	[signature]	Date:	07/17/95
Approved by:	R.W. Schroeder	Date:	7/17/95

Form 344105_C Rev. 1.1

P

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 7468 Date: 07/14/95 Time: 11:02:37

Sample Size = 200 uL
Dil Factor = 1.1
Blank ID # = BLK
Blank Value = .4395868 ug/minute C

Analyst : RA WENDLAND
Min Readings = 10
Max Readings = 10
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.10	0.00
2	1.01	1.00	90.00
3	1.51	1.60	37.50
4	2.00	1.80	11.11
5	2.50	2.10	14.29
6	3.00	2.40	12.50
7	3.50	2.60	7.69
8	4.00	2.80	7.14
9	4.50	3.10	9.68
10	5.00	3.30	6.06

BLANK VALUE = 2.2 micrograms carbon
BLANK FACTOR = 2.2 / 5.0047 = +4.4E-01 ug/min Carbon

SAMPLE RESULTS:
(3.3 - 2.199571)(1.1)/(200) = +6.1E-03 g/L Carbon
(3.3 - 2.199571)(1.1)/(200)(12) = +5.0E-04 Molar Carbon

Sample Run By: _____
RA WENDLAND 00000

9613479.0506

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

TOC : LA-344-105 (B-3) LIQUIDS

				DUP
Type	Sample Volume in mL		(SS)	1.000
DUP	H2SO4 Volume in mL		(VR)	0.200
Work List	Volume Injected in mL		(VI)	0.200
Batch 6383	Dilution Factor		(DF)	1.2
Test Code	Digest Dilution Factor		(DDF)	1
TOC	µg of Carbon in Sample		(C1)	3
Matrix	µg of Carbon in Blank		(C2)	2.2
Liquid	g of Carbon/L	=	<	6.00E-03
Sample #				
R7468-5826				
Instrument Code				
WC39937				
Analyst				
R. Wendland				
Date				
07/14/95				
Time				
11:08 AM				

g of Carbon/L = $\frac{(C1-C2) * DF * DDF}{VI * 1000}$

µg of Carbon/mL = g of Carbon/L * 1000000 µg/g / 1000 mL/L

Detection Level (µg/mL) $\frac{1 \mu g C * DF * DDF}{VI}$

NOTE: Reported Result is Below Detection Level.

µg Carbon/mL =	<	6.00E+00	DETECTION LEVEL in µg/mL
			6.00E+00

Data Entry by:		Date:	07/17/95
Approved by:	Ru Schwedler	Date:	7/17/95

Form 344105 C Rev. 1.1

9613479.0507

P^PP

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 7468D Date: 07/14/95 Time: 11:08:44

Sample Size = 200 uL
Dil Factor = 1.1
Blank ID # = BLK
Blank Value = .4395868 ug/minute C

Analyst : RA WENDLAND
Min Readings = 10
Max Readings = 10
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.10	0.00
2	1.01	0.80	87.50
3	1.50	1.30	38.46
4	2.00	1.60	18.75
5	2.50	2.00	20.00
6	3.01	2.20	9.09
7	3.51	2.40	8.33
8	4.00	2.70	11.11
9	4.50	2.80	3.57
10	5.00	3.00	6.67

BLANK VALUE = 2.2 micrograms carbon
BLANK FACTOR = 2.2 / 5.0047 = +4.4E-01 ug/min Carbon

SAMPLE RESULTS:
(3 - 2.199544)(1.1)/(200) = < 5.00 E-3 g/L Carbon
(3 - 2.199544)(1.1)/(200)(12) = < 4.17 E-4 Molar Carbon

Sample Run By: _____
RA WENDLAND 00000

9613479.0508

PLACE ANALYTICAL CARD IN BOX BELOW-DO NOT WRITE IN SPACE

TOC: LA-344-105 SPIKED SAMPLE

SPIKE

Type	>>>>>> Sample Vial Data <<<<<<		>>>>> Spiked Vial Data <<<<<	
SPIKE	Sample Volume in mL	1.000	Sample Size in mL (SS)	0.400
Work List	H2SO4 Volume in mL	0.200	Spike Volume in mL	0.200
Batch 6383	Volume Injected in mL	0.200	H2SO4 Volume in mL	0.000
Test Code	µg of Carbon in Sample	3.3	Volume Injected in mL	0.200
TOC	µg of Carbon in Blank	2.2	Sample Pre-Spike Dil. Factor (PDF)	1.2
Matrix			Spike Value (µg/ml)	748
Liquid			µg C in Sample + Spike	50.7
Sample #			µg C in Blank	2.2
R7468-5926				
Instrument Code				
WC39937				
Analyst				
R. Wendland				
Date				
07/14/95				
Time				
11:15 AM				

PERCENT SPIKE REC = $\frac{\text{µg Carbon Recovered from Spike} * 100}{\text{µg Carbon in Spike}}$

WHERE : µg Carbon Recovered from Spike =

[(µgC in sample + spike - µgC in blank) * (Spike Correction Factor)]

- [(µgC sample - µgC blank) * (Sample Correction Factor) * (Sample Size Correction Factor) * (PDF)]

Spike Correction Factor = $\frac{\text{Total volume in spiked sample vial (mL)}}{\text{Volume injected (mL)}}$

Sample Correction Factor = $\frac{\text{Total volume in sample vial (mL)}}{\text{Volume injected (mL)}}$

Sample Size Correction Factor = $\frac{\text{Sample size in (mL) in spiked vial}}{\text{Sample size (mL) in sample}}$

Sample Pre-Spike Dilution Factor = $\frac{1}{\text{Dilution of Sample Before Added to Spike Vial}}$

WHERE : µg Carbon in Spike = Spike Value (µg/mL) * Spike Volume (mL)

Percent Spike Recovery 95.8%

Data Entry by:	[signature]	Date:	17-Jul-95
Approved by:	[signature]	Date:	7/17/95

Form X Rev. 1.1

9613479.0509

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 7468S Date: 07/14/95 Time: 11:15:47

Sample Size = 200 uL
Dil Factor = 1.1
Blank ID # = BLK
Blank Value = .4395868 ug/minute C

Analyst : RA WENDLAND
Min Readings = 10
Max Readings = 10
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.70	0.00
2	1.01	31.50	94.60
3	1.51	43.10	26.91
4	2.01	46.60	7.51
5	2.51	48.30	3.52
6	3.01	49.20	1.83
7	3.51	49.60	0.81
8	4.01	50.10	1.00
9	4.51	50.40	0.60
10	5.01	50.70	0.59

BLANK VALUE = 2.2 micrograms carbon
BLANK FACTOR = 2.2 / 5.0047 = +4.4E-01 ug/min Carbon

SAMPLE RESULTS:
(50.7 - 2.200751)(1.1)/(200) = +2.67E-01 g/L Carbon
(50.7 - 2.200751)(1.1)/(200)(12) = +2.22E-02 Molar Carbon

Sample Run By: _____
RA WENDLAND 00000

9613479.0510

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

TOC : LA-344-105 (B-3) LIQUIDS

			STD
Type	Sample Volume in mL	(SS)	0.200
STD	H2SO4 Volume in mL	(VR)	2.000
Work List	Volume Injected in mL	(VI)	0.200
Batch 6383	Dilution Factor	(DF)	11
Test Code	Digest Dilution Factor	(DDF)	1
TOC	µg of Carbon in Sample	(C1)	57
Matrix	µg of Carbon in Blank	(C2)	2.2
Liquid	g of Carbon/L	=	3.01E+00

Sample #	16N12-B
Instrument Code	WC39937
Analyst	R. Wendland
Date	07/14/95
Time	11:23 AM

g of Carbon/L = $\frac{(C1-C2) * DF * DDF}{VI * 1000}$

µg of Carbon/mL = g of Carbon/L * 1000000 µg/g / 1000 mL/L

Detection Level (µg/mL) $\frac{1 \mu g C * DF * DDF}{VI}$

µg Carbon/mL =	3.01E+03	DETECTION LEVEL in µg/mL
		5.50E+01

Data Entry by:	[signature]	Date:	07/17/95
Approved by:	RW Schroeder	Date:	7/17/95

Form 344105_C Rev. 1.1

9613479.0511

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: STD Date: 07/14/95 Time: 11:23:07

Sample Size = 200 uL
Dil Factor = 11
Blank ID # = BLK
Blank Value = .4395868 ug/minute C

Analyst : RA WENDLAND
Min Readings = 10
Max Readings = 10
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.40	0.00
2	1.01	31.60	98.73
3	1.51	48.00	34.17
4	2.01	52.90	9.26
5	2.51	54.60	3.11
6	3.01	55.40	1.44
7	3.51	56.00	1.07
8	4.01	56.30	0.53
9	4.51	56.60	0.53
10	5.01	57.00	0.70

BLANK VALUE = 2.2 micrograms carbon
BLANK FACTOR = 2.2 / 5.0047 = +4.4E-01 ug/min Carbon

SAMPLE RESULTS:
(57 - 2.200349)(11)/(200) = +3.01E+00 g/L Carbon
(57 - 2.200349)(11)/(200)(12) = +2.51E-01 Molar Carbon

Sample Run By: _____
RA WENDLAND 00000

9613479.0512

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

ANALYTICAL BATCH

Lab Segment Serial No. r 7465, R 7468, R 7469	Customer ID: PUREX
Analysis: pH	Sample Prep: DIRECT

Instrument: SN 246354	Procedure/ Rev: LA-212-102 / C-5
Technologist: EA LAMBEL	Date: 07/06/95
Starting Time: 0145	Temperature 24 C
Ending Time: 0210	Chemist: ROB SCHROEDER

Comments: BATCH # 6382

	Description	Lab ID		Description	Lab ID
1	LMCS STD	R 7465-5513	11		
2	SAMPLE	R 7467-5713	12		
3	SAMPLE DUPLICATE	R 7467-5813	13		
4	SAMPLE	R 7468-5513	14		
5	SAMPLE DUPLICATE	R 7468-5813	15		
6	LMCS STD	R 7469-5513	16		
7			17		
8			18		
9			19		
10			20		

Standard Type	Primary Book No. and Aliquot Vol.	Second Book No. and Aliquot Vol.	Third Book No. and Aliquot Vol.	Final Vol. of Standard
LMCS STD	111N16F / 5ml			
LMCS STD	110NI6G / 5ML			

A-6000-881 (03/92)

pH ANALYSIS

Batch 6382

Serial No.	Sample Point	Date	Time Issued	Priority
R 7465.-5513	PUREX	6-27-95	10:36	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
pH	LA-212-102	% RECOVERY	KP51T	0

Sample Size	Customer ID
?	STD

Remarks, Calculations, Results:

S350 > 7 pH
STD# 110N16G RESULT PH = 7.35
STD VAL 7.38 %REC 99.6
S353 < 7 pH
STD# RESULT
STD VAL %REC

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Ann Lambert				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
07/06/95	0145	7/11/95	

54-6800-061 (R-10-83)

Serial No	Sample Point	Date	Time Issued	Priority
R 7469.-5513	PUREX	6-27-95	10:45	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
pH	LA-212-102	% RECOVERY	KP51T	0

Sample Size	Customer ID
?	STD

Remarks, Calculations, Results:

S350 > 7 pH
STD# RESULT
STD VAL %REC
S353 < 7 pH
STD# 111N16-F RESULT
STD VAL 5.00 %REC
100.4 PH = 5.02

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Ann Lambert				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
07/06/95	0205	7/11/95	

54-6800-061 (R-10-83)

pH ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 7468.-5813	PUREX	6-27-95	10:45	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
pH	LA-212-102	NONE	KP51T	0

Sample Size	Customer ID
?	BODVL8

Remarks, Calculations, Results:
DUPLICATE SAMPLE

~~7.068~~ gwB 7/11/95
7.07

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
07/06/95	0158	7/11/95	

54-6800-061 (R-10-83)

Serial No	Sample Point	Date	Time Issued	Priority
R 7468.-5713	PUREX	6-27-95	10:45	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
pH	LA-212-102	NONE	KP51T	0

Sample Size	Customer ID
?	BODVL8

Remarks, Calculations, Results

~~7.059~~ gwB 7/11/95
7.06

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
07/06/95	0155	7/11/95	

54-6800-061 (R-10-83)

pH ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 7467.-5813	PUREX	6-27-95	10:41	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
pH	LA-212-102	NONE	KP51T	0

Sample Size	Customer ID
?	BODVL7

Remarks, Calculations, Results:
DUPLICATE SAMPLE

~~2.578~~ gwB 7/11/95

2.58

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Ellen Lambert				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
07/06/95	0210	G W Bell 7/11/95	R L Jones

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
R 7467.-5713	PUREX	6-27-95	10:41	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
pH	LA-212-102	NONE	KP51T	0

Sample Size	Customer ID
?	BODVL7

Remarks, Calculations, Results:

~~2.571~~ gwB 7/11/95

2.57

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Ellen Lambert				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
07/06/95	0208	G W Bell 7/11/95	R L Jones

54-6800-061 (R-10-83)

ANALYTICAL BATCH SUMMARY SHEET

METHOD	RERUN#	ANALYSIS START DATE
LA-505-158	0	7-10-95

PREPARED BY ~~[illegible] Standley~~ SUMMARY DATE 7-~~10~~ 13 -95

SAMPLE POINT	TIME START	TIME COMPLETE
PUREX	0800	1100

SPL ID	SERIAL NO	RESULTS	G OR ML ->	MLS	COMMENTS
STD	R-7465-8505	50	2ml →	100	48RU11-E As, Se)
~~BLK~~ STD 7-12-95	R-7465-8505	20	5ml →	100	WHC1A/G4JWHC1AU10 WHC-2/G3MWHC2UIG
BLK	R-7466-8605	–	–	100	Total Vol: 100ml
SAM	R-7467-8705	100	1ml	100	1ml → 100ml
DUP	R-7467-8805	100	1ml	100	1ml → 100ml
SPIKE	R-7467 8905	100	1ml	100	plus 48RU11-E spike
SPIKE	R-7467-8905	100	1ml	100	plus WHC1A & WHC2 spike
SAM	R-7468-8705	100	1ml	100	1ml → 100ml
DUP	R-7468-8805	100	1ml	100	1ml → 100ml
SPIKE	R-7468 8905	100	1ml	100	plus 48RU11-E spike
SPIKE	R-7468-8905	100	1ml	100	plus WHC1A & WHC-2 spike
Bertrand Griffin II					
			7-17-95		

SNB 7-12-95 ☑ NO SPECIAL PROBLEMS / METHOD VARIATIONS IN THIS BATCH

- Hood was tagged out on 7-10-95
- Batch could not be completed until 7-13-95

ACID DIGESTION ANALYSIS

Batch 6385

Serial No.	Sample Point	Date	Time Issued	Priority
R 7465.-8505	PUREX	6-27-95	10:36	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
ACID DGST	LA-505-158	DF	KP51T	0

Sample Size	Customer ID
?	STD

2 ml → 100 ml

Remarks, Calculations, Results ~~for ICP~~ ZNS 7-10-95

LMCS CHECK SAMPLE

LMCS ID As, Se / 48211-E

$$DF = \frac{100\ ml}{2\ ml} = 50$$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
7-10-95	1100	Bertrand Griffin II	

54-6800-061 (R-10-83)

ACID DIGESTION ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 7465.-8505	PUREX	6-27-95	10:38	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
ACD DGST	LA-505-158	DF	KP51T	0

Sample Size	Customer ID
?	STD

Remarks, Calculations, Results

5ml of each → 100ml ~~for As, Se and~~ 7-10-95

LMCS CHECK SAMPLE

LMCS ID WHC-1A / G4JWHCIANIO

WHC-2 / G3MWHC2NIG

DF. $\frac{100ml}{5ml} = 20$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
7-10-95	1100	Bethard Griffin II	

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
R 7466.-8605	PUREX	6-27-95	10:38	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
ACD DGST	LA-505-158	NONE	KP51T	0

Sample Size	Customer ID
?	BLANK

Remarks, Calculations, Results

REAGENT BLANK

VOLUME ON

COMPLETION 100ml

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
7-10-95	1100	Bethard Griffin II	

54-6800-061 (R-10-83)

ACID DIGESTION ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 7467.-8705	PUREX	6-27-95	10:41	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
ACID DGST	LA-505-158	DF	KP51T	0

Sample Size	Customer ID
? 1ml → 100ml	BODVL7

Remarks, Calculations, Results:

$$DF \frac{100ml}{1ml} = 100$$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
7-10-95	1100	Bethard Griffin II	

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
R 7467.-8805	PUREX	6-27-95	10:41	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
ACID DGST	LA-505-158	DF	KP51T	0

Sample Size	Customer ID
? 1ml → 100ml	BODVL7

Remarks, Calculations, Results:
DUPLICATE SAMPLE

$$DF \frac{100ml}{1ml} = 100$$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
7-10-95	1100	Bethard Griffin II	

54-6800-061 (R-10-83)

ACID DIGESTION ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 7467.-8905	PUREX	6-27-95	10:41	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
ACD DGST	LA-505-158	DF	KP51T	0

Sample Size	Customer ID
? 1ml → 100ml	BODVL7

Remarks, Calculations, Results:

SAMPLE SPIKED ID
SPIKE ID A55e/48RU11-E
SPIKE VOLUME 2 ml

DF $\frac{100\,ml}{2\,ml}$ = 50

DF = $\frac{100\,ml}{1\,ml}$ = 100

See ICP on Back

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
7-10-95	1100	Bertrand Griffin II	

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
R 7468.-8705	PUREX	6-27-95	10:45	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
ACD DGST	LA-505-158	DF	KP51T	0

Sample Size	Customer ID
? 1ml → 100 ml	BODVL8

Remarks, Calculations, Results:

DF = $\frac{100\,ml}{1\,ml}$ = 100

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
7-10-95	1100	Bertrand Griffin II	

54-6800-061 (R-10-83)

ACID DIGESTION ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 7468.-8805	PUREX	6-27-95	10:45	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
ACID DGST	LA-505-158	DF	KP51T	0

Sample Size	Customer ID
? 1 ml → 100 ml	BODVL8

Remarks, Calculations, Results:
DUPLICATE SAMPLE

$$DF \frac{100\ ml}{1\ ml} = 100$$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
7-10-95	1100	Bernard Griffin II	

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
R 7468.-8905	PUREX	6-27-95	10:45	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
ACID DGST	LA-505-158	DF	KP51T	0

Sample Size	Customer ID
? 1 ml → 100 ml	BODVL8

Remarks, Calculations, Results:
SAMPLE SPIKED ID As, Se/
SPIKE ID 48U11-E
SPIKE VOLUME 2 ml

$$DF \frac{100\ ml}{2\ ml} = 50 \qquad DF \frac{100\ ml}{1\ ml} = 100$$

ICP on back

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
7-10-95	1100	Bernard Griffin II	

54-6800-061 (R-10-83)