Westinghouse
Hanford Company

P.O. Box 1970 Richland, WA 99352

START 9515949.0964

0045363

May 16, 1995 9552660

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 CLADDING WASTE VESSELS AND TANK G7, LOOP FLUSH ANALYTICAL RESULTS

Attachments 1 and 2 are the laboratory analytical and sample results conducted on the final flush for the Plutonium-Uranium Extraction (PUREX) Cladding Waste Vessels and Tank G7. 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 Attachments 1 and 2. The final flushes for these cells were designated as non-dangerous waste.

Attachment 3 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 3

RL - w/o attachments
B. L. Charboneau
R. X. Gonzalez
J. E. Mecca
L. D. Romine
A. H. Wirkkala

DOE-HQ - R. Martinez (w/o attachment)
B. K. Nelson (w/o attachment)
D. A. Schmidt

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Attachment 1

TRANSMITTAL OF PLUTONIUM-URANIUM EXTRACTION PLANT CLADDING WASTE VESSELS, LOOP FLUSH ANALYTICAL RESULTS

RCRA ANALYTICAL DATA SUMMARY
PUREX CLADDING WASTE VESSELS
SAMPLE LOCATION: TANK E5
SAMPLE ID# BODVK8 (R6995)

Analyte	Dangerous Waste Designation Threshold (mg/L)	RCRA Sample Results (mg/L)
Cadmium	1.0	<0.6
Chromium	5.0	0.396
Lead	5.0	<0.6
Barium	100.0	<0.3
Silver	5.0	<0.06
* Arsenic	5.0	<0.25
* Selenium	1.0	<0.25
Mercury	0.2	<0.005
pH	pH<2 or pH>12.5	9.44
Total Organic Carbon (TOC)	100,000 (10wt% based upon designation limits for tri-butyl phosphate)	29.7
Benzene	0.5	undetect (U)
Carbon Tetrachloride	0.5	undetect (U)
Chlorobenzene	100	undetect (U)
Chloroform	6.0	undetect (U)
1,2-Dichloroethane	0.5	undetect (U)
1,1 Dichloroethylene	0.7	undetect (U)
2-Butanone	200	0.5 (J)
Tetrachloroethylene	0.7	undetect (U)
Trichloroethylene	0.5	undetect (U)
Vinyl Chloride	0.2	undetect (U)

* Note: Arsenic and Selenium data relate to data extension numbers 8795 and 8796 on the attached printout R6995.

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

SAMPLE REPORT DESCRIPTION
PUREX CANYON VESSELS-CLADDING WASTE LOOP
FLUSH ANALYTICAL RESULTS

SAMPLE NUMBER	SAMPLE REPORT DESCRIPTIONS
P2999	Screening sample on final flush from PUREX Laboratory. Used to determine if flush solution meets RCRA criteria.
E9833	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.
R6993 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.
R6994 BLANK	Laboratory Quality Control Method Blank.
R6995 BODVK8	RCRA protocol sample results from 222-S laboratory.
R6996 BODVK9	Field blank Sample results document any contamination attributable to field handling procedures and the sampling environment.
R6997 STD	Standard Sample
VOA Data Sheet BODVK8/R6995	Volatile organics analysis results for RCRA sample-BODVK8/R6995
VOA Data Sheet BODVK9/R6996	Volatile organics analysis results for Field Blank.

SAMPLE STATUS REPORT FOR P 2999. P-BLANK Tank E5 TIME: 2/ 6/95 8:48
DISPATCHED: 2/ 3/95 7:46 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 2/ 3/95 10:51

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
1383	Cr	1.62000E 00 uG/ML	N	Y	KP32B
1482	Cd	< 6.56000E-01 uG/ML	N	Y	KP32B
3203	pH	9.37000E 00 NONE	N	Y	KP32B
4411	U	4.14000E-01 G/L	N	Y	KP32B
6016	Cd-STD	COMPLETED			KP32B
6022	Cr-STD	COMPLETED			KP32B
6170	PH-STD	COMPLETED			KP32B
6524	U-STD	COMPLETED			KP32B

END OF REPORT

AMPLE STATUS REPORT FOR E 9833. E-BLANK BODVK8 ES TIME: 2/15/95 13:24
DISPATCHED: 2/14/95 13:36 SAMPLE HAS NOT BEEN SLURPED PAGE 1
RECEIVED: 2/15/95 7:47

EXT.	DETER.	RESULTS OR STATUS		OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********		***	***	******
1213	TB-FLTRT	6.44000E 02 uCi/L		N	Y	KP51T
1223	AT-FLTRT	5.17000E 00 uCi/L		N	Y	KP51T
2162	GEA-LIQ	1.57000E-01 uCi/L	Co-60	N	Y	KP51T
2162	GEA-LIQ	1.24E01 UCI/L RURH 106 31% ERROR				KP51T
2162	GEA-LIQ	2.99000E 01 uCi/L	Sb-125	N	Y	KP51T
2162	GEA-LIQ	5.29000E 00 uCi/L	Cs-134	N	Y	KP51T
2162	GEA-LIQ	6.41000E 02 uCi/L	Cs-137	N	Y	KP51T

END OF REPORT

PRESS ANY KEY TO CONTINUE

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SAMPLE STATUS REPORT FOR R 6993. PUREX ~~J3~~/E5' STD TIME: 3/13/95 10:45
DISPATCHED: 2/14/95 11:49 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 2/14/95 14:50

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
5513	pH	OUT FOR RERUN			KP51T
		5557			
5513	pH	1.00200E 02 % RECOVERY	N	Y	KP51T
		5587			
5526	TOC	9.10000E 01 % RECOVERY	N	Y	KP51T
		5558			
5550	ICP	1.00600E 02 % RECOVERY Ag	N	Y	KP51T
		5559			
5550	ICP	1.00400E 02 % RECOVERY Al	N	Y	KP51T
		5559			
5550	ICP	1.02940E 02 % RECOVERY Sb	N	Y	KP51T
		5559			
5550	ICP	9.98600E 01 % RECOVERY Ba	N	Y	KP51T
		5559			
5550	ICP	1.03120E 02 % RECOVERY Be	N	Y	KP51T
		5559			
5550	ICP	1.03620E 02 % RECOVERY Ca	N	Y	KP51T
		5559			
5550	ICP	1.01580E 02 % RECOVERY Cd	N	Y	KP51T
		5559			
5550	ICP	1.03200E 02 % RECOVERY Co	N	Y	KP51T
		5559			
5550	ICP	1.02240E 02 % RECOVERY Cr	N	Y	KP51T
		5559			
5550	ICP	1.02200E 02 % RECOVERY Cu	N	Y	KP51T
		5559			
5550	ICP	1.01580E 02 % RECOVERY Fe	N	Y	KP51T
		5559			
5550	ICP	1.02900E 02 % RECOVERY K	N	Y	KP51T
		5559			
5550	ICP	1.00520E 02 % RECOVERY Li	N	Y	KP51T
		5559			
5550	ICP	1.00100E 02 % RECOVERY Mg	N	Y	KP51T
		5559			
5550	ICP	1.00160E 02 % RECOVERY Mn	N	Y	KP51T
		5559			
5550	ICP	1.01740E 02 % RECOVERY Mo	N	Y	KP51T
		5559			
5550	ICP	1.01580E 02 % RECOVERY Na	N	Y	KP51T
		5559			
5550	ICP	1.00220E 02 % RECOVERY Ni	N	Y	KP51T
		5559			
5550	ICP	1.02040E 02 % RECOVERY P	N	Y	KP51T
		5559			
5550	ICP	1.02140E 02 % RECOVERY Pb	N	Y	KP51T
		5559			
5550	ICP	9.60000E 01 % RECOVERY Sb	N	Y	KP51T
		5559			
5550	ICP	1.00400E 02 % RECOVERY Se	N	Y	KP51T
		5559			
5550	ICP	9.93400E 01 % RECOVERY Sr	N	Y	KP51T
		5559			

REPORT CONTINUED ON NEXT PAGE

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SAMPLE STATUS REPORT FOR R 6993. PUREX ~~J5~~/E5' STD' TIME: 3/13/95 10:45
DISPATCHED: 2/14/95 11:49 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
5550	ICP	9.98200E 01 % RECOVERY Tl	N	Y	KP51T
		5559			
5550	ICP	1.01720E 02 % RECOVERY V	N	Y	KP51T
		5559			
5550	ICP	1.04060E 02 % RECOVERY Zn	N	Y	KP51T
		5559			
5595	As	1.10000E 02 % RECOVERY	N	Y	KP51T
		5568			
5596	Se	INCOMPLETE			KP51T
5597	Hg	1.03000E 02 % RECOVERY	N	Y	KP51T
		5560			
8505	ACD DGST	AS/SE DF=50; ICP DF=20; FINAL VOL.100 ML			KP51T
		5567			
8595	As	9.91000E 01 % RECOVERY	N	Y	KP51T
		5568			
8596	Se	INCOMPLETE			KP51T

END OF REPORT

SAMPLE STATUS REPORT FOR R 6994. PUREX J3/E5 BLANK TIME: 3/13/95 10:46
DISPATCHED: 2/14/95 11:49 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 2/14/95 14:50

EXT. ****	DETER. ********	RESULTS OR STATUS **********		OUT OF RANGE? ***	GOOD ANS? ***	CHARGE CODE ******
5626	TOC	< 5.00000E 00 uG C/ML 5558		N	Y	KP51T
5650	ICP	< 1.00000E-02 uG/ML 5559	Ag	N	Y	KP51T
5650	ICP	< 5.00000E-02 uG/ML 5559	Al	N	Y	KP51T
5650	ICP	< 5.00000E-02 uG/ML 5559	As	N	Y	KP51T
5650	ICP	< 5.00000E-02 uG/ML 5559	Ba	N	Y	KP51T
5650	ICP	< 5.00000E-03 uG/ML 5559	Be	N	Y	KP51T
5650	ICP	< 1.00000E-01 uG/ML 5559	Ca	N	Y	KP51T
5650	ICP	< 1.00000E-02 uG/ML 5559	Cd	N	Y	KP51T
5650	ICP	< 2.00000E-02 uG/ML 5559	Co	N	Y	KP51T
5650	ICP	< 1.00000E-02 uG/ML 5559	Cr	N	Y	KP51T
5650	ICP	< 1.00000E-02 uG/ML 5559	Cu	N	Y	KP51T
5650	ICP	< 5.00000E-02 uG/ML 5559	Fe	N	Y	KP51T
5650	ICP	< 3.00000E-01 uG/ML 5559	K	N	Y	KP51T
5650	ICP	< 1.00000E-02 uG/ML 5559	Li	N	Y	KP51T
5650	ICP	< 1.00000E-01 uG/ML 5559	Mg	N	Y	KP51T
5650	ICP	< 1.00000E-02 uG/ML 5559	Mn	N	Y	KP51T
5650	ICP	< 5.00000E-02 uG/ML 5559	Mo	N	Y	KP51T
5650	ICP	< 1.00000E-01 uG/ML 5559	Na	N	Y	KP51T
5650	ICP	< 2.00000E-02 uG/ML 5559	Ni	N	Y	KP51T
5650	ICP	< 2.00000E-01 uG/ML 5559	P	N	Y	KP51T
5650	ICP	< 1.00000E-01 uG/ML 5559	Pb	N	Y	KP51T
5650	ICP	< 2.00000E-01 uG/ML 5559	Sb	N	Y	KP51T
5650	ICP	< 1.00000E-01 uG/ML 5559	Se	N	Y	KP51T
5650	ICP	< 1.00000E-02 uG/ML 5559	Sr	N	Y	KP51T
5650	ICP	< 2.00000E-01 uG/ML 5559	Ti	N	Y	KP51T
5650	ICP	< 5.00000E-02 uG/ML 5559	V	N	Y	KP51T

REPORT CONTINUED ON NEXT PAGE

SAMPLE STATUS REPORT FOR R 6994. PUREX ~~39~~/E5 BLANK TIME: 3/13/95 10:46
DISPATCHED: 2/14/95 11:49 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
5650	ICP	< 1.00000E-02 uG/ML Zn 5559	N	Y	KP51T
5695	As	< 3.00000E-03 uG/ML 5568	N	Y	KP51T
5696	Se	INCOMPLETE			KP51T
5697	Hg	< 5.00000E-03 uG/ML 5560	N	Y	KP51T
8605	ACD DGST	COMPLETED, 100 ML FINAL VOL. 5567			KP51T
8695	As	< 2.50000E-01 uG/ML 5568	N	Y	KP51T
8696	Se	INCOMPLETE			KP51T

END OF REPORT

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SAMPLE STATUS REPORT FOR R 6995. PUREX ~~J5~~/E5 BODVK8 TIME: 3/23/95 12:58
DISPATCHED: 2/14/95 11:50 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 2/14/95 14:50

EXT.	DETER.	RESULTS OR STATUS		OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********		***	***	******
4502	VOA	COMPLETE				KP51T
5713	pH	OUT FOR RERUN				KP51T
		5557				
5713	pH	9.44000E 00 NONE		N	Y	KP51T
		5587				
5726	TOC	2.97000E 01 uG C/ML		N	Y	KP51T
		5558				
5750	ICP-LIQ	< 6.00000E-02 uG/ML	Ag	N	Y	KP51T
		5559				
5750	ICP-LIQ	5.16000E 00 uG/ML	Al	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 3.00000E-01 uG/ML	As	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 3.00000E-01 uG/ML	Ba	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 3.00000E-02 uG/ML	Be	N	Y	KP51T
		5559				
5750	ICP-LIQ	2.33000E 00 uG/ML	Ca	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 6.00000E-01 uG/ML	Cd	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 1.20000E-01 uG/ML	Co	N	Y	KP51T
		5559				
5750	ICP-LIQ	3.96000E-01 uG/ML	Cr	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 6.00000E-01 uG/ML	Cu	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 3.00000E-01 uG/ML	Fe	N	Y	KP51T
		5559				
5750	ICP-LIQ	3.03000E 03 uG/ML	K	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 6.00000E-01 uG/ML	Li	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 6.00000E-01 uG/ML	Mg	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 6.00000E-02 uG/ML	Mn	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 3.00000E-01 uG/ML	Mo	N	Y	KP51T
		5559				
5750	ICP-LIQ	3.01000E 01 uG/ML	Na	N	Y	KP51T
		5559				
5750	ICP-LIQ	1.20000E-01 uG/ML	Ni	N	Y	KP51T
		5559				
5750	ICP-LIQ	8.70000E 00 uG/ML	P	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 6.00000E-01 uG/ML	Pb	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 1.20000E 00 uG/ML	Sb	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 6.00000E-01 uG/ML	Se	N	Y	KP51T
		5559				

REPORT CONTINUED ON NEXT PAGE

SAMPLE STATUS REPORT FOR R 6995. PUREX 22/E5 BODVK8 TIME: 3/23/95 12:58
DISPATCHED: 2/14/95 11:50 SAMPLE HAS NOT BEEN SLURPED

EXT. ****	DETER. ********	RESULTS OR STATUS **********		OUT OF RANGE? ***	GOOD ANS? ***	CHARGE CODE ******
5750	ICP-LIQ	< 6.00000E-02 uG/ML 5559	Sr	N	Y	KP51T
5750	ICP-LIQ	< 1.20000E 00 uG/ML 5559	Tl	N	Y	KP51T
5750	ICP-LIQ	< 3.00000E-01 uG/ML 5559	V	N	Y	KP51T
5750	ICP-LIQ	7.20000E-02 uG/ML 5559	Zn	N	Y	KP51T
5797	Hg LIQ	< 5.00000E-03 uG/ML 5560		N	Y	KP51T
5813	pH	OUT FOR RERUN R6996-5713				KP51T
5813	pH	9.45000E 00 NONE 5587		N	Y	KP51T
5826	TOC	3.41000E 01 uG C/ML 5558		N	Y	KP51T
5850	ICP-LIQ	< 6.00000E-02 uG/ML 5559	Ag	N	Y	KP51T
5850	ICP-LIQ	5.33000E 00 uG/ML 5559	Al	N	Y	KP51T
5850	ICP-LIQ	< 3.00000E-01 uG/ML 5559	As	N	Y	KP51T
5850	ICP-LIQ	< 3.00000E-01 uG/ML 5559	Ba	N	Y	KP51T
5850	ICP-LIQ	< 3.00000E-02 uG/ML 5559	Be	N	Y	KP51T
5850	ICP-LIQ	2.47000E 00 uG/ML 5559	Ca	N	Y	KP51T
5850	ICP-LIQ	< 6.00000E-02 uG/ML 5559	Cd	N	Y	KP51T
5850	ICP-LIQ	< 1.20000E-01 uG/ML 5559	Co	N	Y	KP51T
5850	ICP-LIQ	4.08000E-01 uG/ML 5559	Cr	N	Y	KP51T
5850	ICP-LIQ	< 6.00000E-02 uG/ML 5559	Cu	N	Y	KP51T
5850	ICP-LIQ	< 3.00000E-01 uG/ML 5559	Fe	N	Y	KP51T
5850	ICP-LIQ	3.06000E 03 uG/ML 5559	K	N	Y	KP51T
5850	ICP-LIQ	< 6.00000E-02 uG/ML 5559	Li	N	Y	KP51T
5850	ICP-LIQ	< 6.00000E-01 uG/ML 5559	Mg	N	Y	KP51T
5850	ICP-LIQ	< 6.00000E-02 uG/ML 5559	Mn	N	Y	KP51T
5850	ICP-LIQ	< 3.00000E-01 uG/ML 5559	Mo	N	Y	KP51T
5850	ICP-LIQ	3.04000E 01 uG/ML 5559	Na	N	Y	KP51T
5850	ICP-LIQ	< 1.20000E-01 uG/ML 5559	Ni	N	Y	KP51T

REPORT CONTINUED ON NEXT PAGE

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SAMPLE STATUS REPORT FOR R 6995. PUREX 3/2/E5 BODVK8 TIME: 3/23/95 12:58
DISPATCHED: 2/14/95 11:50 SAMPLE HAS NOT BEEN SLURPED

EXT. ****	DETER. ********	RESULTS OR STATUS **********		OUT OF RANGE? ***	GOOD ANS? ***	CHARGE CODE ******
5850	ICP-LIQ	8.64000E 00 uG/ML 5559	P	N	Y	KP51T
5850	ICP-LIQ	< 6.00000E-01 uG/ML 5559	Pb	N	Y	KP51T
5850	ICP-LIQ	< 1.20000E 00 uG/ML 5559	Sb	N	Y	KP51T
5850	ICP-LIQ	< 6.00000E-01 uG/ML 5559	Se	N	Y	KP51T
5850	ICP-LIQ	< 6.00000E-02 uG/ML 5559	Sr	N	Y	KP51T
5850	ICP-LIQ	< 1.20000E 00 uG/ML 5559	Tl	N	Y	KP51T
5850	ICP-LIQ	< 3.00000E-01 uG/ML 5559	V	N	Y	KP51T
5850	ICP-LIQ	< 6.00000E-02 uG/ML 5559	Zn	N	Y	KP51T
5897	Hg-LIQ	< 5.00000E-03 uG/ML 5560		N	Y	KP51T
5926	TOC	1.03200E 02 % RECOVERY 5558		N	Y	KP51T
5950	ICP	9.58000E 01 % RECOVERY 5559	Ag	N	Y	KP51T
5950	ICP	9.84400E 01 % RECOVERY 5559	Al	N	Y	KP51T
5950	ICP	1.08520E 02 % RECOVERY 5559	As	N	Y	KP51T
5950	ICP	9.89200E 01 % RECOVERY 5559	Ba	N	Y	KP51T
5950	ICP	1.03000E 02 % RECOVERY 5559	Be	N	Y	KP51T
5950	ICP	1.05880E 02 % RECOVERY 5559	Ca	N	Y	KP51T
5950	ICP	1.00720E 02 % RECOVERY 5559	Cd	N	Y	KP51T
5950	ICP	9.98800E 01 % RECOVERY 5559	Co	N	Y	KP51T
5950	ICP	1.01080E 02 % RECOVERY 5559	Cr	N	Y	KP51T
5950	ICP	1.00240E 02 % RECOVERY 5559	Cu	N	Y	KP51T
5950	ICP	1.01800E 02 % RECOVERY 5559	Fe	N	Y	KP51T
5950	ICP	K - SAMPLE > 4X CONCENTRATION OF SPIKE. 5559				KP51T
5950	ICP	9.77200E 01 % RECOVERY 5559	Li	N	Y	KP51T
5950	ICP	9.64000E 01 % RECOVERY 5559	Mg	N	Y	KP51T
5950	ICP	9.64000E 01 % RECOVERY 5559	Mn	N	Y	KP51T
5950	ICP	9.84400E 01 % RECOVERY 5559	Mo	N	Y	KP51T

REPORT CONTINUED ON NEXT PAGE

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SAMPLE STATUS REPORT FOR R 6995. PUREX J3/E5 BODVK8 TIME: 3/23/95 12:58
DISPATCHED: 2/14/95 11:50 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
5950	ICP	8.40300E 01 % RECOVERY Na	N	Y	KP51T
		5559			
5950	ICP	9.78400E 01 % RECOVERY Ni	N	Y	KP51T
		5559			
5950	ICP	1.08040E 02 % RECOVERY P	N	Y	KP51T
		5559			
5950	ICP	1.03960E 02 % RECOVERY Pb	N	Y	KP51T
		5559			
5950	ICP	9.34000E 01 % RECOVERY Sb	N	Y	KP51T
		5559			
5950	ICP	1.16450E 02 % RECOVERY Se	N	Y	KP51T
		5559			
5950	ICP	9.89200E 01 % RECOVERY Sr	N	Y	KP51T
		5559			
5950	ICP	9.65200E 01 % RECOVERY Tl	N	Y	KP51T
		5559			
5950	ICP	1.01800E 02 % RECOVERY V	N	Y	KP51T
		5559			
5950	ICP	1.00240E 02 % RECOVERY Zn	N	Y	KP51T
		5559			
5997	Hg	9.47000E 01 % RECOVERY	N	Y	KP51T
		5560			
8705	ACD DGST	DF = 100; 100 ML FINAL VOL.			KP51T
		5567			
8795	As	< 2.50000E-01 uG/ML	N	Y	KP51T
		5568			
8796	Se	OUT FOR RERUN			KP51T
		5569			
8796	Se	< 2.50000E-01 uG/ML	N	Y	KP51T
		5691			
8805	ACD DGST	DF=100, FINAL VOL. 100 ML			KP51T
		5567			
8895	As	< 2.50000E-01 uG/ML	N	Y	KP51T
		5568			
8896	Se	OUT FOR RERUN			KP51T
		5569			
8896	Se	< 2.50000E-01 uG/ML	N	Y	KP51T
		5691			
8905	ACD DGST	SAMPLE DF=100;ICP SPK DF=20;AS/SE DF=50			KP51T
		5567			
8995	As	8.87000E 01 % RECOVERY	N	Y	KP51T
		5568			
8996	Se	OUT FOR RERUN			KP51T
8996	Se	9.58000E 01 % RECOVERY	N	Y	KP51T
		5691			

END OF REPORT

9613479.0978

SAMPLE STATUS REPORT FOR R 6996. PUREX JB/E5 BODVK9 TIME: 3/23/95 12:59
DISPATCHED: 2/14/95 11:51 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 2/14/95 14:50

EXT. ****	DETER. ********	RESULTS OR STATUS **********		OUT OF RANGE? ***	GOOD ANS? ***	CHARGE CODE ******
4502	VOA	COMPLETE				KP51T
5713	pH	OUT FOR RERUN				KP51T
		5557				
5713	pH	8.13000E 00 NONE		N	Y	KP51T
		5587				
5726	TOC	2.15000E 01 uG C/ML		N	Y	KP51T
		5558				
5750	ICP-LIQ	< 1.00000E-02 uG/ML	Ag	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 5.00000E-02 uG/ML	Al	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 5.00000E-02 uG/ML	As	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 5.00000E-02 uG/ML	Ba	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 5.00000E-03 uG/ML	Be	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 1.00000E-01 uG/ML	Ca	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 1.00000E-02 uG/ML	Cd	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 2.00000E-02 uG/ML	Co	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 1.00000E-02 uG/ML	Cr	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 1.00000E-02 uG/ML	Cu	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 5.00000E-02 uG/ML	Fe	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 3.00000E-01 uG/ML	K	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 1.00000E-02 uG/ML	Li	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 1.00000E-01 uG/ML	Mg	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 1.00000E-02 uG/ML	Mn	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 5.00000E-02 uG/ML	Mo	N	Y	KP51T
		5559				
5750	ICP-LIQ	2.63000E-01 uG/ML	Na	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 2.00000E-02 uG/ML	Ni	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 2.00000E-01 uG/ML	P	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 1.00000E-01 uG/ML	Pb	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 2.00000E-01 uG/ML	Sb	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 1.00000E-01 uG/ML	Se	N	Y	KP51T
		5559				

REPORT CONTINUED ON NEXT PAGE

9613479.0979

SAMPLE STATUS REPORT FOR R 6996. PUREX J3/E5 BODVK9 TIME: 3/23/95 12:59
DISPATCHED: 2/14/95 11:51 SAMPLE HAS NOT BEEN SLURPED

EXT. ****	DETER. ********	RESULTS OR STATUS **********		OUT OF RANGE? ***	GOOD ANS? ***	CHARGE CODE ******
5750	ICP-LIQ	< 1.00000E-02 uG/ML 5559	Sr	N	Y	KP51T
5750	ICP-LIQ	< 2.00000E-01 uG/ML 5559	Tl	N	Y	KP51T
5750	ICP-LIQ	< 5.00000E-02 uG/ML 5559	V	N	Y	KP51T
5750	ICP-LIQ	< 1.00000E-02 uG/ML 5559	Zn	N	Y	KP51T
5797	Hg LIQ	< 5.00000E-03 uG/ML 5560		N	Y	KP51T
5813	pH	OUT FOR RERUN 5557				KP51T
5813	pH	8.12000E 00 NONE 5587		N	Y	KP51T
5826	TOC	8.80000E 00 uG C/ML 5558		N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-02 uG/ML 5559	Ag	N	Y	KP51T
5850	ICP-LIQ	< 5.00000E-02 uG/ML 5559	Al	N	Y	KP51T
5850	ICP-LIQ	< 2.00000E-02 uG/ML 5559	As	N	Y	KP51T
5850	ICP-LIQ	< 5.00000E-02 uG/ML 5559	Ba	N	Y	KP51T
5850	ICP-LIQ	< 5.00000E-03 uG/ML 5559	Be	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-01 uG/ML 5559	Ca	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-02 uG/ML 5559	Cd	N	Y	KP51T
5850	ICP-LIQ	< 2.00000E-01 uG/ML 5559	Co	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-02 uG/ML 5559	Cr	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-02 uG/ML 5559	Cu	N	Y	KP51T
5850	ICP-LIQ	< 5.00000E-02 uG/ML 5559	Fe	N	Y	KP51T
5850	ICP-LIQ	< 3.00000E-01 uG/ML 5559	K	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-02 uG/ML 5559	Li	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-01 uG/ML 5559	Mg	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-02 uG/ML 5559	Mn	N	Y	KP51T
5850	ICP-LIQ	< 5.00000E-02 uG/ML 5559	Mo	N	Y	KP51T
5850	ICP-LIQ	2.68000E-01 uG/ML 5559	Na	N	Y	KP51T
5850	ICP-LIQ	< 2.00000E-02 uG/ML 5559	Ni	N	Y	KP51T

REPORT CONTINUED ON NEXT PAGE

9613479.0980

SAMPLE STATUS REPORT FOR R 6996. PUREX J3/E5 BODVK9 TIME: 3/23/95 12:59
DISPATCHED: 2/14/95 11:51 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS		OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********		***	***	******
5850	ICP-LIQ	< 2.00000E-01 uG/ML 5559	P	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-01 uG/ML 5559	Pb	N	Y	KP51T
5850	ICP-LIQ	< 2.00000E-01 uG/ML 5559	Sb	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-01 uG/ML 5559	Se	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-02 uG/ML 5559	Sr	N	Y	KP51T
5850	ICP-LIQ	< 2.00000E-01 uG/ML 5559	Tl	N	Y	KP51T
5850	ICP-LIQ	< 5.00000E-02 uG/ML 5559	V	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-02 uG/ML 5559	Zn	N	Y	KP51T
5897	Hg-LIQ	< 5.00000E-03 uG/ML 5560		N	Y	KP51T
5926	TOC	9.02000E 01 % RECOVERY 5558		N	Y	KP51T
5950	ICP	1.08200E 02 % RECOVERY 5559	Ag	N	Y	KP51T
5950	ICP	1.06560E 02 % RECOVERY 5559	Al	N	Y	KP51T
5950	ICP	1.04920E 02 % RECOVERY 5559	As	N	Y	KP51T
5950	ICP	1.04100E 02 % RECOVERY 5559	Ba	N	Y	KP51T
5950	ICP	1.05740E 02 % RECOVERY 5559	Be	N	Y	KP51T
5950	ICP	1.07380E 02 % RECOVERY 5559	Ca	N	Y	KP51T
5950	ICP	1.07380E 02 % RECOVERY 5559	Cd	N	Y	KP51T
5950	ICP	1.06560E 02 % RECOVERY 5559	Co	N	Y	KP51T
5950	ICP	1.06560E 02 % RECOVERY 5559	Cr	N	Y	KP51T
5950	ICP	1.06560E 02 % RECOVERY 5559	Cu	N	Y	KP51T
5950	ICP	1.06560E 02 % RECOVERY 5559	Fe	N	Y	KP51T
5950	ICP	1.20490E 02 % RECOVERY 5559	K	N	Y	KP51T
5950	ICP	1.06560E 02 % RECOVERY 5559	Li	N	Y	KP51T
5950	ICP	1.08200E 02 % RECOVERY 5559	Mg	N	Y	KP51T
5950	ICP	1.04920E 02 % RECOVERY 5559	Mo	N	Y	KP51T
5950	ICP	1.11230E 02 % RECOVERY 5559	Na	N	Y	KP51T

REPORT CONTINUED ON NEXT PAGE

96159/9.1941

SAMPLE STATUS REPORT FOR R 6996. PUREX 23/E5 BODVK9 TIME: 3/23/95 12:59
DISPATCHED: 2/14/95 11:51 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
5950	ICP	1.07380E 02 % RECOVERY Ni	N	Y	KP51T
		5559			
5950	ICP	1.10660E 02 % RECOVERY P	N	Y	KP51T
		5559			
5950	ICP	1.08200E 02 % RECOVERY Pb	N	Y	KP51T
		5559			
5950	ICP	1.04920E 02 % RECOVERY Sb	N	Y	KP51T
		5559			
5950	ICP	1.04920E 02 % RECOVERY Se	N	Y	KP51T
		5559			
5950	ICP	1.05740E 02 % RECOVERY Sr	N	Y	KP51T
		5559			
5950	ICP	1.05740E 02 % RECOVERY Tl	N	Y	KP51T
		5559			
5950	ICP	1.05740E 02 % RECOVERY V	N	Y	KP51T
		5559			
5950	ICP	1.09020E 02 % RECOVERY Zn	N	Y	KP51T
		5559			
5997	Hg	9.78000E 01 % RECOVERY	N	Y	KP51T
		5560			
8705	ACD DGST	DF=100; FINAL VOL. 100 ML			KP51T
		5567			
8795	As	< 2.50000E-01 uG/ML	N	Y	KP51T
		5568			
8796	Se	OUT FOR RERUN			KP51T
		5569			
8796	Se	< 2.50000E-01 uG/ML	N	Y	KP51T
		5691			
8805	ACD DGST	DF=100; FINAL VOL. 100 ML			KP51T
		5567			
8895	As	< 2.50000E-01 uG/ML	N	Y	KP51T
		5568			
8896	Se	OUT FOR RERUN			KP51T
		5569			
8896	Se	< 2.50000E-01 uG/ML	N	Y	KP51T
		5691			
8905	ACD DGST	SAMPLE DF=100; ICP SPK DF=20; AS/SE DF=50			KP51T
		5567			
8995	As	9.25000E 01 % RECOVERY	N	Y	KP51T
		5568			
8996	Se	OUT FOR RERUN			KP51T
		5569			
8996	Se	1.03200E 02 % RECOVERY	N	Y	KP51T
		5691			

END OF REPORT

9613479.0982

SAMPLE STATUS REPORT FOR R 6997. PUREX J3/E5 STD TIME: 3/23/95 13: 0
DISPATCHED: 2/14/95 11:51 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 2/14/95 14:50

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
5513	pH	OUT FOR RERUN			KP51T
		5557			
5513	pH	1.00400E 02 % RECOVERY	N	Y	KP51T
		5587			
5526	TOC	9.43000E 01 % RECOVERY	N	Y	KP51T
		5558			
5550	ICP	1.01940E 02 % RECOVERY Ag	N	Y	KP51T
		5559			
5550	ICP	1.01940E 02 % RECOVERY Al	N	Y	KP51T
		5559			
5550	ICP	1.06760E 02 % RECOVERY As	N	Y	KP51T
		5559			
5550	ICP	1.02240E 02 % RECOVERY Ba	N	Y	KP51T
		5559			
5550	ICP	1.07160E 02 % RECOVERY Be	N	Y	KP51T
		5559			
5550	ICP	1.05980E 02 % RECOVERY Ca	N	Y	KP51T
		5559			
5550	ICP	1.04780E 02 % RECOVERY Cd	N	Y	KP51T
		5559			
5550	ICP	1.05960E 02 % RECOVERY Co	N	Y	KP51T
		5559			
5550	ICP	1.04960E 02 % RECOVERY Cr	N	Y	KP51T
		5559			
5550	ICP	1.04760E 02 % RECOVERY Cu	N	Y	KP51T
		5559			
5550	ICP	1.04280E 02 % RECOVERY Fe	N	Y	KP51T
		5559			
5550	ICP	9.98600E 01 % RECOVERY K	N	Y	KP51T
		5559			
5550	ICP	1.01880E 02 % RECOVERY Li	N	Y	KP51T
		5559			
5550	ICP	1.02060E 02 % RECOVERY Mg	N	Y	KP51T
		5559			
5550	ICP	1.02240E 02 % RECOVERY Mn	N	Y	KP51T
		5559			
5550	ICP	1.04520E 02 % RECOVERY Mo	N	Y	KP51T
		5559			
5550	ICP	1.01800E 02 % RECOVERY Na	N	Y	KP51T
		5559			
5550	ICP	1.03360E 02 % RECOVERY Ni	N	Y	KP51T
		5559			
5550	ICP	1.06780E 02 % RECOVERY P	N	Y	KP51T
		5559			
5550	ICP	1.04700E 02 % RECOVERY Pb	N	Y	KP51T
		5559			
5550	ICP	9.91400E 01 % RECOVERY Sb	N	Y	KP51T
		5559			
5550	ICP	1.03020E 02 % RECOVERY Se	N	Y	KP51T
		5559			
5550	ICP	1.02120E 02 % RECOVERY Sr	N	Y	KP51T
		5559			

REPORT CONTINUED ON NEXT PAGE

96154/9.1995

SAMPLE STATUS REPORT FOR R 6997. PUREX J3/E5 STD TIME: 3/23/95 13: 0
DISPATCHED: 2/14/95 11:51 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
5550	ICP	1.01980E 02 % RECOVERY Tl	N	Y	KP51T
		5559			
5550	ICP	1.04500E 02 % RECOVERY V	N	Y	KP51T
		5559			
5550	ICP	1.05580E 02 % RECOVERY Zn	N	Y	KP51T
		5559			
5595	As	1.01000E 02 % RECOVERY	N	Y	KP51T
		5568			
5596	Se	OUT FOR RERUN			KP51T
5596	Se	1.02600E 02 % RECOVERY	N	Y	KP51T
		5691			
5597	Hg	9.66000E 01 % RECOVERY	N	Y	KP51T
		5560			

END OF REPORT

SDG NARRATIVE - PUREX
Sample Point - PUREX ~~13~~/E5
March 1, 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 organics 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-6889~~	~~>AB24C~~	~~0~~	~~Method blank~~
~~R-6990~~	~~>AB24D~~	~~10~~	~~Sample~~
~~R-6991~~	~~>AB24E~~	~~10~~	~~Sample~~
R-6995	>AB24F	10	Sample
R-6996	>AB24G	10	Sample

Reported in transmittal of analytical data for Backcycle Waste & Neptunium Package Vessels on March 31, 1995 Ltr #9551768

4/12/95

9615H29.1P05

Standards preparation data is kept in a controlled notebook, WHC-N-337 1. Acetone and 1-Butanol was detected in R-6995 sample. ~~1-Butanol was detected and Normal Paraffin Hydrocarbon (NPH) compounds were tentatively identified in R-6990 sample~~.

To enable interpetation 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 D E Nelson 3/1/95
J.B DELAROSA-CHANG J de la Rosa-Chang 3/1/95
Organic Chemistry

9613479.0986

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BODVK8

Lab Name: WHCWA Contract:

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

Matrix: (soil/water) WATER Lab Sample ID: R6995

Sample wt/vol: 5 (g/mL) ML Lab File ID: >AB24F

Level: (low/med) LOW Date Received: 02/14/95

% Moisture: not dec. Date Analyzed: 2/24/95

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	19.	
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	.5	J
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	250.	J

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BODVK8

Lab Name: WHCWA Contract:

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

Matrix: (soil/water) WATER Lab Sample ID: R6995

Sample wt/vol: 5 (g/mL) ML Lab File ID: >AB24F

Level: (low/med) LOW Date Received: 02/14/95

% Moisture: not dec. Date Analyzed: 2/24/95

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.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BODVK9

Lab Name: WHCWA Contract:

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

Matrix: (soil/water) WATER Lab Sample ID: R6996

Sample wt/vol: 5 (g/mL) ML Lab File ID: >AB24G

Level: (low/med) LOW Date Received: 02/14/95

% Moisture: not dec. Date Analyzed: 2/24/95

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

9613479.0989

1E

EPA SAMPLE NO.

BODVK9

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: WHCWA Contract:

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

Matrix: (soil/water) WATER Lab Sample ID: R6996

Sample wt/vol: 5 (g/mL) ML Lab File ID: >AB24G

Level: (low/med) LOW Date Received: 02/14/95

% Moisture: not dec. Date Analyzed: 2/24/95

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.				
2.				
3.				
4.				
5.				
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28.				
29.				
30.				

9613479.0090

WESTINGHOUSE HANFORD COMPANY
GENERATOR & WASTE ACCEPTANCE SERVICES
PREDETERMINATION REPORT

REQUEST #: 25947 DATE: April 4, 1995

SUBJECT	PRODUCT PREDETERMINATION

TO	C.N. Villalobos	COMPANY	WHC
PHONE	373-4753	ADDRESS	PUREX-MO273/C103/200E
FACILITY	200E	MSIN	S6-19

ANALYST	Clay V. Hawkes	MSIN	T3-05	PHONE	373-0508
REVIEWER	K.W. Chris				
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 Material	Used Material	Empty Container	Rags with 10% Material	Possible Waste Codes
1	Lab Analysis	PUREX Cladding Waste Vessels Flush Solution	N/A	N	N	N	none

Comments: As stated above, this solution is not regulated based on a designation of the generator provided lab analysis.

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.

9613479.1551

9552660

Attachment 2

TRANSMITTAL OF PLUTONIUM-URANIUM EXTRACTION PLANT TANK G7
LOOP FLUSH ANALYTICAL RESULTS

SAMPLE REPORT DESCRIPTION
PUREX CANYON VESSELS - THE G7 VESSEL LOOP
FLUSH ANALYTICAL RESULTS

SAMPLE NUMBER	SAMPLE REPORT DESCRIPTION
P2975	Screening sample on final flush from PUREX Laboratory. Used to determine if flush solution meets RCRA criteria.
E9689	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.
BODPS5 (7547-001)	RCRA protocol sample results for ICP metals Arsenic Selenium, Mercury, TOC, and pH from Quanterra Laboratory (an offsite laboratory)
BODPS5 (7547-001MS)	Matrix Spike sample results for ICP metals, Arsenic, Selenium, Mercury, pH, and TOC. A matrix spike is an aliquot of sample spiked with a known concentration of target analytes. It documents the bias of a method in a given sample matrix.
BODPS5 (7547-001MSD)	Matrix Spike Duplicate for ICP metals, Arsenic, Selenium, Mercury, pH, and TOC.
BODPS7 (7547-002)	Field Sample Blank results for ICP metals, Arsenic, Selenium, Mercury, pH, and TOC. It documents any contamination attributable to field handling procedures and the sampling environment.
QCBLK60614-1	Laboratory Quality control Method Blank for ICP Metals, Arsenic, Selenium, Mercury, pH, and TOC.
QCLC60614-1	Quality Control Sample Blank Spike for ICP metals, Arsenic, Selenium, Mercury, pH, and TOC.
VOA Data Sheet BODPS5/R6991	Volatile organics analysis results for RCRA sample - BODPS5
VOA Data Sheet BODPS7/R6991	Volatile organics analysis results for Field blank. BODPS7

RCRA ANALYTICAL DATA SUMMARY
PUREX G7 WASTE VESSEL
SAMPLE LOCATION: TANK G8
SAMPLE ID# BODPS5

Analyte	Dangerous Waste Designation Threshold (mg/L)	RCRA Sample Results (mg/L)
Cadmium	1.0	0.289
Chromium	5.0	0.737
Lead	5.0	0.370
Barium	100.0	0.329
Silver	5.0	0.038
Arsenic	5.0	0.012
Selenium	1.0	0.010
Mercury	0.2	0.001
pH	pH<2 or pH>12.5	11.39
Total Organic Carbon (TOC)	100,000 (10wt% based upon designation limits for tri-butyl phosphate)	1.070
Benzene	0.5	undetect (U)
Carbon Tetrachloride	0.5	undetect (U)
Chlorobenzene	100	undetect (U)
Chloroform	6.0	undetect (U)
1,2-Dichloroethane	0.5	undetect (U)
1,1 Dichloroethylene	0.7	undetect (U)
2-Butanone	200	undetect (U)
Tetrachloroethylene	0.7	undetect (U)
Trichloroethylene	0.5	0.012 (J)
Vinyl Chloride	0.2	undetect (U)

Definitions:
U = compound was analyzed for but not detected
J = estimated value for the target or tentatively identified compound

AMPLE STATUS REPORT FOR P 2975. P-BLANK Tank G7 TIME: 2/ 6/95 8:59
ISPATCHED: 1/24/95 13:33 SAMPLE HAS NOT BEEN SLURPED
ECEIVED: 1/24/95 14:48

XT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
***	********	**********	***	***	******
383	Cr	1.72000E 00 uG/ML	N	Y	KP32B
482	Cd	< 8.79000E-01 uG/ML	N	Y	KP32B
203	pH	1.09800E 01 NONE	N	Y	KP32B
411	U	8.86999E-02 G/L	N	Y	KP32B
016	Cd-STD	COMPLETED			KP32B
022	Cr-STD	COMPLETED			KP32B
170	PH-STD	COMPLETED			KP32B
524	U-STD	COMPLETED			KP32B

END OF REPORT

9613479.0995

SAMPLE STATUS REPORT FOR E 9689. E-BLANK G7 BODPS5 TIME: 2/ 7/95 12:21
DISPATCHED: 1/31/95 13: 0 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 2/ 3/95 7:57

EXT.	DETER.	RESULTS OR STATUS		OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********		***	***	******
1213	TB-FLTRT	4.06000E 02 uCi/L		N	Y	KP50F
1223	AT-FLTRT	3.59000E 00 uCi/L		N	Y	KP50F
2162	GEA-LIQ	3.23E-1 UCI/L CR-51 48%ERROR				KP50F
2162	GEA-LIQ	2.74000E-01 uCi/L	Co-60	N	Y	KP50F
2162	GEA-LIQ	5.44E-2 UCI/L ZR-95 36%ERROR				KP50F
2162	GEA-LIQ	1.75000E 01 uCi/L	RuRh-106	N	Y	KP50F
2162	GEA-LIQ	8.08000E 00 uCi/L	Sb-125	N	Y	KP50F
2162	GEA-LIQ	4.93000E-01 uCi/L	Cs-134	N	Y	KP50F
2162	GEA-LIQ	7.29000E 01 uCi/L	Cs-137	N	Y	KP50F
2162	GEA-LIQ	1.15000E 01 uCi/L	CePr-144	N	Y	KP50F
2162	GEA-LIQ	8.90000E-01 uCi/L	Eu-154	N	Y	KP50F
2162	GEA-LIQ	2.82000E 00 uCi/L	Eu-155	N	Y	KP50F
2162	GEA-LIQ	7.85000E-01 uCi/L	Am-241	N	Y	KP50F

END OF REPORT

9613479.0996

Analytical Data Package Prepared For

Westinghouse Hanford

APR 1995
RECEIVED
SDLA

Chemical Analysis By

Quanterra Environmental Services
St. Louis Laboratory

Sample Delivery Group Number: W0417

95013

WHC IDENTIFICATION NUMBER	QUANTERRA ID NUMBER
B0DPS5	7547-001
B0DPS7	7547-002

RECORD COPY

Quanterra Environmental Services

Quanterra Incorporated
13715 Rider Trail North
Earth City, Missouri 63045

314 298-8566 Telephone
314 298-8757 Fax

CERTIFICATE OF ANALYSIS

Westinghouse Hanford Company
P.O. Box 1970
Richland, Washington 99352

March 28, 1995

Attention: Karl Pool

Project number	:	519.136
Date Received by Lab	:	February 28, 1995
Number of Samples	:	Two (2)
Sample Type	:	Water
SDG Number	:	W0417
Data Deliverable	:	Summary

I. Introduction

On February 28, 1995, two (2) water samples were received by Quanterra, Richland and transferred to Quanterra, St. Louis for chemical analyses. Upon receipt, the samples were given the following laboratory ID numbers to correspond with the specific client ID's:

St Louis ID	WHC ID	Richland ID	Matrix	Date of Receipt
7547-001	B0DPS5	50220001	Water	02/28/95
7547-002	B0DPS7	50220002	Water	02/28/95

II. Analytical Results/ Methodology

The analytical results for this report are presented by analytical test. Each set of data includes sample identification information, analytical results and the appropriate detection limits.

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Quanterra
Environmental Services

Westinghouse Hanford Company
March 28, 1995
Project Number: 519.136
SDG: W0417
Page 2

RECORD COPY

Analyses requested: Total Organic Carbon by EPA method 9060. ICP Metals by EPA method 6010. Arsenic by EPA method 7060. Selenium by EPA method 7740. pH by EPA method 9040. Mercury by EPA method 7470. Volatiles by EPA method 8240.

III. Quality Control

A Laboratory Control Sample and Method Blank were analyzed with each preparation batch. Matrix Spike and Matrix Spike Duplicate or Sample Duplicate analyses were performed per the protocol for all analytes in this SDG. For pH analysis, only a sample duplicate was performed.

IV. Definitions

The following codes are used to denote laboratory quality control samples and can be found in the data summary section of this report:

QCBLK- Quality Control Blank, Method Blank
QCLCS- Quality Control Laboratory Control Sample, Blank Spike

V. Comments

Sample 7547-001 and its MS/MSD could not be analyzed undiluted due to the high concentrations of non-target analytes (tentatively identified as dodecane and tridecane). These samples were analyzed as 1:10 dilutions. See ROD-95-0027.

Sample 7547-002, which was analyzed after 7547-001, may be contaminated by the dodecane and tridecane found in sample 7547-001. This possibility wasn't considered until the library searches were performed, which occurred after the holding times had elapsed. Carryover from 7547-001 because it is known that the low vapor pressure compounds, such as dodecane and tridecane, are difficult to remove from the purge-and-trap lines and trap.

Westinghouse Hanford Company
March 28, 1995
Project Number: 519.136
SDG: W0417
Page 3

Due to limitations in the amount of sample received, samples 7547-001 and 7547-002 were diluted 10 fold during the digestions resulting in an elevation of the reporting limits.

The manganese MS/MSD gave a poor recovery however since the sample concentration was greater than four times the spike level it required no further action.

The selenium MS/MSD gave recoveries of 75.7 and 71.4 % respectively.

There are no comments or nonconformances for the TOC analysis.

I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Reviewed and approved:

Wade H. Price
Project Manager
e:\\sqtimo01\price5\abbydave\hanford\hanw0417.nar

96134/9.1000

Quanterra
Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: ICAP Metals
Method: EPA 6010
Matrix: LIQUID

Sample Date : 02/02/95
Receipt Date : 02/10/95
Report Date : 04/19/95

Client ID: B0DPS5

Quanterra ID : 7547-001

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analysis Date	Result	Unit	Qual.	Detection Limit	Dilution
Aluminum	7429-90-5	QCBLK60614-1	02/28/95	03/01/95	936	UG/L	B	2000	10
Antimony	7440-36-0	QCBLK60614-1	02/28/95	03/01/95	328	UG/L	U	1000	10
Barium	7440-39-3	QCBLK60614-1	02/28/95	03/01/95	329	UG/L	B	2000	10
Beryllium	7440-41-7	QCBLK60614-1	02/28/95	03/01/95	2.0	UG/L	U	70.0	10
Cadmium	7440-43-9	QCBLK60614-1	02/28/95	03/01/95	289	UG/L		200	10
Calcium	7440-70-2	QCBLK60614-1	02/28/95	03/01/95	29600	UG/L	B	50000	10
Chromium	7440-47-3	QCBLK60614-1	02/28/95	03/01/95	737	UG/L		200	10
Cobalt	7440-48-4	QCBLK60614-1	02/28/95	03/01/95	41.0	UG/L	U	500	10
Copper	7440-50-8	QCBLK60614-1	02/28/95	03/01/95	82.7	UG/L	B	250	10
Iron	7439-89-6	QCBLK60614-1	02/28/95	03/01/95	11800	UG/L		1000	10
Lead	7439-92-1	QCBLK60614-1	02/28/95	03/01/95	370	UG/L	U	1000	10
Magnesium	7439-95-4	QCBLK60614-1	02/28/95	03/01/95	6610	UG/L	B	50000	10
Manganese	7439-96-5	QCBLK60614-1	02/28/95	03/01/95	67500	UG/L		150	10
Nickel	7440-02-0	QCBLK60614-1	02/28/95	03/01/95	766	UG/L		400	10
Potassium	7440-09-7	QCBLK60614-1	02/28/95	03/01/95	186000	UG/L		50000	10
Silver	7440-22-4	QCBLK60614-1	02/28/95	03/01/95	38.0	UG/L	U	2000	10
Sodium	7440-23-5	QCBLK60614-1	02/28/95	03/01/95	2240000	UG/L		100000	100
Vanadium	7440-62-2	QCBLK60614-1	02/28/95	03/01/95	25.0	UG/L	U	500	10
Zinc	7440-66-6	QCBLK60614-1	02/28/95	03/01/95	724	UG/L		200	10

PRIORITY

8

Quanterra
Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: ICAP Metals
Method: EPA 6010
Matrix: LIQUID

Sample Date : 02/02/95
Receipt Date : 02/10/95
Report Date : 04/19/95

Client ID: B0DPS5

Quanterra ID : 7547-001MS

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Aluminum	7429-90-5	QCBLK60614-1	02/28/95	03/01/95	101	%REC			10
Antimony	7440-36-0	QCBLK60614-1	02/28/95	03/01/95	110	%REC			10
Barium	7440-39-3	QCBLK60614-1	02/28/95	03/01/95	96	%REC			10
Beryllium	7440-41-7	QCBLK60614-1	02/28/95	03/01/95	102	%REC			10
Cadmium	7440-43-9	QCBLK60614-1	02/28/95	03/01/95	93	%REC			10
Chromium	7440-47-3	QCBLK60614-1	02/28/95	03/01/95	95	%REC			10
Cobalt	7440-48-4	QCBLK60614-1	02/28/95	03/01/95	99	%REC			10
Copper	7440-50-8	QCBLK60614-1	02/28/95	03/01/95	101	%REC			10
Iron	7439-89-6	QCBLK60614-1	02/28/95	03/01/95	95	%REC			10
Lead	7439-92-1	QCBLK60614-1	02/28/95	03/01/95	101	%REC			10
Manganese	7439-96-5	QCBLK60614-1	02/28/95	03/01/95	-7	%REC			10
Nickel	7440-02-0	QCBLK60614-1	02/28/95	03/01/95	98	%REC			10
Silver	7440-22-4	QCBLK60614-1	02/28/95	03/01/95	97	%REC			10
Vanadium	7440-62-2	QCBLK60614-1	02/28/95	03/01/95	100	%REC			10
Zinc	7440-66-6	QCBLK60614-1	02/28/95	03/01/95	102	%REC			10

PRIORITY

96154/9.1002

Quanterra Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: ICAP Metals
Method: EPA 6010
Matrix: LIQUID

Sample Date : 02/02/95
Receipt Date : 02/10/95
Report Date : 04/19/95

Client ID: B00PS5

Quanterra ID : 7547-001MSD

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Aluminum	7429-90-5	QCBLK60614-1	02/28/95	03/01/95	101	%REC			10
Antimony	7440-36-0	QCBLK60614-1	02/28/95	03/01/95	107	%REC			10
Barium	7440-39-3	QCBLK60614-1	02/28/95	03/01/95	96	%REC			10
Beryllium	7440-41-7	QCBLK60614-1	02/28/95	03/01/95	101	%REC			10
Cadmium	7440-43-9	QCBLK60614-1	02/28/95	03/01/95	90	%REC			10
Chromium	7440-47-3	QCBLK60614-1	02/28/95	03/01/95	94	%REC			10
Cobalt	7440-48-4	QCBLK60614-1	02/28/95	03/01/95	98	%REC			10
Copper	7440-50-8	QCBLK60614-1	02/28/95	03/01/95	102	%REC			10
Iron	7439-89-6	QCBLK60614-1	02/28/95	03/01/95	89	%REC			10
Lead	7439-92-1	QCBLK60614-1	02/28/95	03/01/95	100	%REC			10
Manganese	7439-96-5	QCBLK60614-1	02/28/95	03/01/95	-56	%REC			10
Nickel	7440-02-0	QCBLK60614-1	02/28/95	03/01/95	95	%REC			10
Silver	7440-22-4	QCBLK60614-1	02/28/95	03/01/95	93	%REC			10
Vanadium	7440-62-2	QCBLK60614-1	02/28/95	03/01/95	97	%REC			10
Zinc	7440-66-6	QCBLK60614-1	02/28/95	03/01/95	102	%REC			10

PRIORITY

Quanterra
Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: ICAP Metals
Method: EPA 6010
Matrix: LIQUID

Sample Date : 02/02/95
Receipt Date : 02/10/95
Report Date : 04/19/95

Client ID: B0DPS7

Quanterra ID : 7547-002

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Aluminum	7429-90-5	QCBLK60614-1	02/28/95	03/01/95	235	UG/L	U	2000	10
Antimony	7440-36-0	QCBLK60614-1	02/28/95	03/01/95	328	UG/L	U	1000	10
Barium	7440-39-3	QCBLK60614-1	02/28/95	03/01/95	89.2	UG/L	B	2000	10
Beryllium	7440-41-7	QCBLK60614-1	02/28/95	03/01/95	2.0	UG/L	U	70.0	10
Cadmium	7440-43-9	QCBLK60614-1	02/28/95	03/01/95	38.0	UG/L	U	200	10
Calcium	7440-70-2	QCBLK60614-1	02/28/95	03/01/95	13100	UG/L	B	50000	10
Chromium	7440-47-3	QCBLK60614-1	02/28/95	03/01/95	29.0	UG/L	U	200	10
Cobalt	7440-48-4	QCBLK60614-1	02/28/95	03/01/95	41.0	UG/L	U	500	10
Copper	7440-50-8	QCBLK60614-1	02/28/95	03/01/95	58.8	UG/L	B	250	10
Iron	7439-89-6	QCBLK60614-1	02/28/95	03/01/95	394	UG/L	B	1000	10
Lead	7439-92-1	QCBLK60614-1	02/28/95	03/01/95	370	UG/L	U	1000	10
Magnesium	7439-95-4	QCBLK60614-1	02/28/95	03/01/95	2640	UG/L	B	50000	10
Manganese	7439-96-5	QCBLK60614-1	02/28/95	03/01/95	19.6	UG/L	B	150	10
Nickel	7440-02-0	QCBLK60614-1	02/28/95	03/01/95	152	UG/L	U	400	10
Potassium	7440-09-7	QCBLK60614-1	02/28/95	03/01/95	26700	UG/L	U	50000	10
Silver	7440-22-4	QCBLK60614-1	02/28/95	03/01/95	38.0	UG/L	U	2000	10
Sodium	7440-23-5	QCBLK60614-1	02/28/95	03/01/95	3010	UG/L	B	10000	10
Vanadium	7440-62-2	QCBLK60614-1	02/28/95	03/01/95	25.0	UG/L	U	500	10
Zinc	7440-66-6	QCBLK60614-1	02/28/95	03/01/95	177	UG/L	B	200	10

PRIORITY

Quanterra
Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: ICAP Metals
Method: EPA 6010
Matrix: LIQUID

Sample Date : NA
Receipt Date : NA
Report Date : 04/19/95

Client ID: NA

Quanterra ID : QCBLK60614-1

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Aluminum	7429-90-5	QCBLK60614-1	02/28/95	03/01/95	30.2	UG/L	B	200	1
Antimony	7440-36-0	QCBLK60614-1	02/28/95	03/01/95	32.8	UG/L	U	100	1
Barium	7440-39-3	QCBLK60614-1	02/28/95	03/01/95	0.71	UG/L	B	200	1
Beryllium	7440-41-7	QCBLK60614-1	02/28/95	03/01/95	0.44	UG/L	B	7.0	1
Cadmium	7440-43-9	QCBLK60614-1	02/28/95	03/01/95	3.8	UG/L	U	20.0	1
Calcium	7440-70-2	QCBLK60614-1	02/28/95	03/01/95	41.5	UG/L	U	5000	1
Chromium	7440-47-3	QCBLK60614-1	02/28/95	03/01/95	2.9	UG/L	U	20.0	1
Cobalt	7440-48-4	QCBLK60614-1	02/28/95	03/01/95	4.1	UG/L	U	50.0	1
Copper	7440-50-8	QCBLK60614-1	02/28/95	03/01/95	7.7	UG/L	B	25.0	1
Iron	7439-89-6	QCBLK60614-1	02/28/95	03/01/95	18.6	UG/L	B	100	1
Lead	7439-92-1	QCBLK60614-1	02/28/95	03/01/95	37.0	UG/L	U	100	1
Magnesium	7439-95-4	QCBLK60614-1	02/28/95	03/01/95	120	UG/L	B	5000	1
Manganese	7439-96-5	QCBLK60614-1	02/28/95	03/01/95	0.86	UG/L	B	15.0	1
Nickel	7440-02-0	QCBLK60614-1	02/28/95	03/01/95	15.2	UG/L	U	40.0	1
Potassium	7440-09-7	QCBLK60614-1	02/28/95	03/01/95	2670	UG/L	U	5000	1
Silver	7440-22-4	QCBLK60614-1	02/28/95	03/01/95	3.8	UG/L	U	200	1
Sodium	7440-23-5	QCBLK60614-1	02/28/95	03/01/95	88.3	UG/L	B	1000	1
Vanadium	7440-62-2	QCBLK60614-1	02/28/95	03/01/95	4.5	UG/L	B	50.0	1
Zinc	7440-66-6	QCBLK60614-1	02/28/95	03/01/95	5.2	UG/L	U	20.0	1

PRIORITY

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Quanterra
Environmental Services

Project: 519.136

Category: ICAP Metals
Method: EPA 6010
Matrix: LIQUID

Sample Date : NA
Receipt Date : NA
Report Date : 04/19/95

Client ID: NA

Quanterra ID : QCLCS60614-1

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Aluminum	7429-90-5	QCBLK60614-1	02/28/95	03/01/95	106	%REC			1
Antimony	7440-36-0	QCBLK60614-1	02/28/95	03/01/95	103	%REC			1
Barium	7440-39-3	QCBLK60614-1	02/28/95	03/01/95	97	%REC			1
Beryllium	7440-41-7	QCBLK60614-1	02/28/95	03/01/95	100	%REC			1
Cadmium	7440-43-9	QCBLK60614-1	02/28/95	03/01/95	101	%REC			1
Calcium	7440-70-2	QCBLK60614-1	02/28/95	03/01/95	103	%REC			1
Chromium	7440-47-3	QCBLK60614-1	02/28/95	03/01/95	100	%REC			1
Cobalt	7440-48-4	QCBLK60614-1	02/28/95	03/01/95	99	%REC			1
Copper	7440-50-8	QCBLK60614-1	02/28/95	03/01/95	101	%REC			1
Iron	7439-89-6	QCBLK60614-1	02/28/95	03/01/95	111	%REC			1
Lead	7439-92-1	QCBLK60614-1	02/28/95	03/01/95	98	%REC			1
Magnesium	7439-95-4	QCBLK60614-1	02/28/95	03/01/95	103	%REC			1
Manganese	7439-96-5	QCBLK60614-1	02/28/95	03/01/95	100	%REC			1
Nickel	7440-02-0	QCBLK60614-1	02/28/95	03/01/95	100	%REC			1
Potassium	7440-09-7	QCBLK60614-1	02/28/95	03/01/95	100	%REC			1
Silver	7440-22-4	QCBLK60614-1	02/28/95	03/01/95	84	%REC			1
Sodium	7440-23-5	QCBLK60614-1	02/28/95	03/01/95	100	%REC			1
Vanadium	7440-62-2	QCBLK60614-1	02/28/95	03/01/95	99	%REC			1
Zinc	7440-66-6	QCBLK60614-1	02/28/95	03/01/95	103	%REC			1

PRIORITY

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: Arsenic
Method: EPA 7060
Matrix: LIQUID

Sample Date : 02/02/95
Receipt Date : 02/10/95
Report Date : 03/24/95

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analysis Date	Result	Unit	Qual.	Detection Limit	Dil
BDDPS5	7547-001	Arsenic	7440-38-2	QCBLK60623-1	02/28/95	03/01/95	12.0	UG/L	U	100	10
BDDPS5	7547-001MS	Arsenic	7440-38-2	QCBLK60623-1	02/28/95	03/01/95	87	%REC			10
BDDPS5	7547-001MSD	Arsenic	7440-38-2	QCBLK60623-1	02/28/95	03/01/95	88	%REC			10
BDDPS7	7547-002	Arsenic	7440-38-2	QCBLK60623-1	02/28/95	03/01/95	12.0	UG/L	U	100	10
NA	QCBLK60623-1	Arsenic	7440-38-2	QCBLK60623-1	02/28/95	03/01/95	1.2	UG/L	U	10.0	1
NA	QCLCS60623-1	Arsenic	7440-38-2	QCBLK60623-1	02/28/95	03/01/95	100	%REC			1

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Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: Selenium
Method: EPA 7740
Matrix: LIQUID

Sample Date : 02/02/95
Receipt Date : 02/10/95
Report Date : 03/22/95

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil
B00PB5	7547-001	Selenium	7782-49-2	QCBLK60623-1	02/28/95	03/01/95	10.0	UG/L	U	50.0	10
B00PS5	7547-001MS	Selenium	7782-49-2	QCBLK60623-1	02/28/95	03/01/95	76	%REC			10
B00PS5	7547-001MSD	Selenium	7782-49-2	QCBLK60623-1	02/28/95	03/01/95	71	%REC			10
B00PS7	7547-002	Selenium	7782-49-2	QCBLK60623-1	02/28/95	03/01/95	10.0	UG/L	U	50.0	10
NA	QCBLK60623-1	Selenium	7782-49-2	QCBLK60623-1	02/28/95	03/01/95	1.0	UG/L	U	5.0	1
NA	QCLCS60623-1	Selenium	7782-49-2	QCBLK60623-1	02/28/95	03/01/95	94	%REC			1

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: Mercury
Method: EPA 7470
Matrix: LIQUID

Sample Date : 02/02/95
Receipt Date : 02/10/95
Report Date : 03/24/95

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
BOOPS5	7547-001	Mercury	7439-97-6	QCBLK60003-1	02/21/95	02/21/95	1.0	UG/L	U	2.0	10
BOOPS5	7547-001MS	Mercury	7439-97-6	QCBLK60003-1	02/21/95	02/21/95	101	%REC			10
BOOPS5	7547-001MSD	Mercury	7439-97-6	QCBLK60003-1	02/21/95	02/21/95	97	%REC			10
BOOPS7	7547-002	Mercury	7439-97-6	QCBLK60003-1	02/21/95	02/21/95	0.10	UG/L	U	0.20	1
NA	QCBLK60003-1	Mercury	7439-97-6	QCBLK60003-1	02/21/95	02/21/95	0.10	UG/L	U	0.20	1
NA	QCLCS60003-1	Mercury	7439-97-6	QCBLK60003-1	02/21/95	02/21/95	95	%REC			1

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Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: pH
Method: EPA 9040
Matrix: LIQUID

Sample Date : 02/02/95
Receipt Date : 02/10/95
Report Date : 03/22/95

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
BOOPS5	7547-001	pH	10-29-7	QCBLK60643-1	02/28/95	02/28/95	11.39	PH			1
BOOPS5	7547-001DUP	pH	10-29-7	QCBLK60643-1	02/28/95	02/28/95	11.39	PH			1
BOOPS7	7547-002	pH	10-29-7	QCBLK60643-1	02/28/95	02/28/95	7.85	PH			1
NA	QCBLK60643-1	pH	10-29-7	QCBLK60643-1	02/28/95	02/28/95	5.76	PH			1

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Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: Total Organic Carbon
Method: EPA 9060
Matrix: LIQUID

Sample Date : 02/02/95
Receipt Date : 02/10/95
Report Date : 03/22/95

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil
B00PS5	7547-001	Total Organic C	10-35-5	QCBLK60836-1	03/01/95	03/01/95	1070	MG/L		20.0	20
B00PS5	7547-001DUP	Total Organic C	10-35-5	QCBLK60836-1	03/01/95	03/01/95	1050	MG/L		20.0	20
B00PS5	7547-001MS	Total Organic C	10-35-5	QCBLK60836-1	03/01/95	03/01/95	120	%REC			20
B00PS7	7547-002	Total Organic C	10-35-5	QCBLK61080-1	03/02/95	03/02/95	1.60	MG/L		1.00	1
NA	QCBLK60836-1	Total Organic C	10-35-5	QCBLK60836-1	03/01/95	03/01/95	1.00	MG/L	U	1.00	1
NA	QCBLK61080-1	Total Organic C	10-35-5	QCBLK61080-1	03/02/95	03/02/95	1.00	MG/L	U	1.00	1
NA	QCLCS60836-1	Total Organic C	10-35-5	QCBLK60836-1	03/01/95	03/01/95	99	%REC			1
NA	QCLCS61080-1	Total Organic C	10-35-5	QCBLK61080-1	03/02/95	03/02/95	99	%REC			1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0DPS5

Lab Name: QUANTERRA MO Contract: 519-136

Lab Code: ITMO Case No.: V54701 SDG No.: W0417

Matrix: (soil/water) WATER Lab Sample ID: 7547-001

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: B2017

Level: (low/med) LOW Date Received: 02/10/95

% Moisture: not dec. Date Analyzed: 02/15/95

Column: (pack/cap) CAP Dilution Factor: 10

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	100	U
74-83-9	Bromomethane	100	U
75-01-4	Vinyl Chloride	100	U
75-00-3	Chloroethane	100	U
75-09-2	Methylene Chloride	47	J
67-64-1	Acetone	370	J
75-15-0	Carbon Disulfide	50	U
75-35-4	1,1-Dichloroethene	50	U
75-34-3	1,1-Dichloroethane	50	U
540-59-0	1,2-Dichloroethene (total)	50	U
67-66-3	Chloroform	50	U
107-06-2	1,2-Dichloroethane	50	U
78-93-3	2-Butanone	1000	U
71-55-6	1,1,1-Trichloroethane	50	U
56-23-5	Carbon Tetrachloride	50	U
75-27-4	Bromodichloromethane	50	U
78-87-5	1,2-Dichloropropane	50	U
10061-01-5	cis-1,3-Dichloropropene	50	U
79-01-6	Trichloroethene	12	J
124-48-1	Dibromochloromethane	50	U
79-00-5	1,1,2-Trichloroethane	50	U
71-43-2	Benzene	50	U
10061-02-6	trans-1,3-Dichloropropene	50	U
75-25-2	Bromoform	50	U
108-10-1	4-Methyl-2-Pentanone	500	U
591-78-6	2-Hexanone	500	U
127-18-4	Tetrachloroethene	50	U
79-34-5	1,1,2,2-Tetrachloroethane	50	U
108-88-3	Toluene	50	U
108-90-7	Chlorobenzene	50	U
100-41-4	Ethylbenzene	50	U
100-42-5	Styrene	50	U
1330-20-7	Xylene (total)	50	U

EPA SAMPLE NO

B0DPS5

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: QUANTERRA MO Contract: 519-136

Lab Code: ITMO Case No.: V54701 SDG No.: W0417

Matrix: (soil/water) WATER Lab Sample ID: 7547-001

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: B2017

Level: (low/med) LOW Date Received: 02/10/95

% Moisture: not dec. Date Analyzed: 02/15/95

Column (pack/cap) CAP Dilution Factor: 10

Number TICs found: 6

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 124185	Decane	20.10	63	J
2. 1120214	Undecane	21.89	1600	J
3. 112403	Dodecane	23.54	16000	J
4.	UNKNOWN	24.33	96	J
5.	UNKNOWN	24.44	77	J
6. 629505	Tridecane	25.08	7100	J

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0DPS7

Lab Name: QUANTERRA MO Contract: 519-136

Lab Code: ITMO Case No.: V54701 SDG No.: W0417

Matrix: (soil/water) WATER Lab Sample ID: 7547-002

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: B2020

Level: (low/med) LOW Date Received: 02/10/95

% Moisture: not dec. Date Analyzed: 02/15/95

Column: (pack/cap) CAP Dilution Factor: 1.0

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	6	
67-64-1	Acetone	100	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	100	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	50	U
591-78-6	2-Hexanone	50	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

EPA SAMPLE NO.

B0DPS7

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: QUANTERRA MO Contract: 519-136

Lab Code: ITMO Case No.: V54701 SDG No.: W0417

Matrix: (soil/water) WATER Lab Sample ID: 7547-002

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: B2020

Level: (low/med) LOW Date Received: 02/10/95

% Moisture: not dec. Date Analyzed: 02/15/95

Column (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 112403	Dodecane	23.52	16	J
2. 629505	Tridecane	25.07	75	J

WESTINGHOUSE HANFORD COMPANY
GENERATOR & WASTE ACCEPTANCE SERVICES
PREDETERMINATION REPORT

REQUEST #: 26169 DATE: May 10, 1995

SUBJECT	PRODUCT PREDETERMINATION				
TO	C.N. Villalobos	COMPANY	WHC		
PHONE	373-4753	ADDRESS	200 East/PUREX		
FACILITY	PUREX	MSIN	S6-19		
ANALYST	C.L. Edwards	MSIN	T3-05	PHONE	372-0715
REVIEWER	5/12/95				
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	N/A	PUREX Tank G7 Flush Solution	N.	N	N	N	NONE

Comments: "Based on the lab analysis, the Flush Solution Does not designate as 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.

9613479.1016

9552660

Attachment 3

PUREX Cladding Waste Vessels and Tank G7 Loop Flush

Laboratory Analyses and Sample Results

Ghost Letter

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

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:

References:

1) Letter from G. A. Farabee, RL, to D. R. Sherwood, EPA, and M. N. Jaraysi, Ecology, "Transmittal of Plutonium-Uranium Extraction Plant K Cell and G and R Cell, Part I, Loop Flush Analytical Results, "TPD:EJS, dated February 15, 1995.

2) Letter from O. A. Farabee, RL, to D. R. Sherwood, EPA, and D. Lundstrom Ecology, "Transmittal of Plutonium-Uranium Extraction Plant and G and R Cells, Part II, Loop Flush Analytical Results, "TPD:RXG", dated March 5, 1995.

3) Letter from O. A. Farabee, RL, to D. R. Sherwood, EPA, and D. Lundstrom, Ecology, "Transmittal of Plutonium-Uranium Extraction Plant Backcycle Waste & Neptunium Package Vessels Loop Flush Analytical results, "TPD:, dated March 31, 1995.

TRANSMITTAL OF PLUTONIUM-URANIUM EXTRACTION PLANT CLADDING WASTE VESSELS AND TANK G7 LOOP FLUSH ANALYTICAL RESULTS

Attachments 1 and 2 contain laboratory analytical and sample results conducted on the final flush for the Plutonium-Uranium Extraction Facility Cladding Waste Vessels and Tank G7. 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 and the U.S. Environmental Protection Agency.

Results from the following flushes have been provided:

K-Cell and G & R Cell, Part 1 in reference 1.

G & R Cell, Part II in reference 2.

Backcycle Waste & Neptumiun Package Vessels in reference 3.

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 Attachments 1 and 2. The final flushes were designated as non-dangerous waste.

Sincerely,

J. E. Mecca, Director
Transition Programs Division

jft

Attachments 3

1) Cladding Waste Vessels Analytical Results
2) Tank G7 Analytical Results
3) Ghost Letter to DOE

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

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R6995

①

CORRESPONDENCE DISTRIBUTION COVERSHEET

Author	Addressee	Correspondence No.
J. E. Mecca, RL (D. G. Hamrick, WHC)	D. G. Hamrick, WHC	Incoming XRef 9552660

Subject: TRANSMITTAL OF PLUTONIUM-URANIUM EXTRACTION PLANT CLADDING WASTE VESSELS AND TANK G7, 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	
		J. R. Robertson	H6-21	
		M. J. Stephenson	H6-20	
		J. F. Tea	S6-19	
		C. N. Villalobos	S6-19	

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CORRESPONDENCE DISTRIBUTION COVERSHEET

Author	Addressee	Correspondence No.
C. N. Villalobos 373-4753	J. E. Mecca, RL	9552660

Subject: TRANSMITTAL OF PLUTONIUM-URANIUM EXTRACTION PLANT CLADDING WASTE VESSELS AND TANK G7, LOOP FLUSH ANALYTICAL RESULTS

INTERNAL DISTRIBUTION

Approval w/att	Date	Name	Location	
		Correspondence Control	A3-01	X
		R. W. Bailey	S5-66	X
		R. J. Bliss, (Sr. Staff/Assignee)	B3-04	
		A. A. Grasher	S6-15	
		D. G. Hamrick,	S6-15	X
DGH	May 17, 95	D. G. Harlow	S6-19	
		W. G. Jasen	S6-17	
GJL	17 MAY '95	G. J. LeBaron	S6-19	X
		J. R. Robertson	H6-21	X
		M. J. Stephenson	H6-20	
		J. F. Tea	S6-19	

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R6995

(2)

Westinghouse Hanford Company

Internal Memo

From: Program Support
Phone: 373-3683 T6-20
Date: February 6, 1995
Subject: RESULTS FOR PUREX / J-3 / E-5 TANKS

75725-96-006

To: C.N. Villalobos S6-19

cc: M. D. Rollison T6-20
ADR-File/LB

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

LABORATORY ID: R6990, R6991, R6995, R6996

CUSTOMER ID: BODPS9, BODPT0, BODVK8, BODVK9

LABORATORY SUBMITTAL DATE: February 14, 1995

CHAIN OF CUSTODY No.: 008453 & 008455

SAMPLE AUTHORIZATION FORM: 95-013

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

Sincerely,

Leslie A. Diaz

Leslie A. Diaz for Michelle D. Rollison
Program Support

Attachments
1) Request for Special Analysis
2) Chain of Custody Forms
3) Volatile Organic Analysis
4) Sample Status Report
5) Analytical Data

9613479.1022

ATTACHMENT 1

REQUEST FOR SPECIAL ANALYSIS

961349.1023

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This document consists of pages 1 through 259.

9613479.1024

REQUEST FOR SPECIAL ANALYSIS (RSA)

RSA No. 2251

1. Sample Origin	2. Date Submitted	4. Requester Name	6. Charge Code/Work Package
IREX 5-3/E-5	2-14-95	C.N. Villalobos	KP51T
SAF 95-013	3. Submitted By: KB Hulse	5. Requester Phone/MSIN: 373-4753/S6-19	7. Date Required: ASAP

8. Customer ID	Collected Date	Collected Time	9. Laboratory ID
BODPS9	2-14-95	0954	R6990
BODPT0	2-14-95	0999	R6991
BODVK8	2-14-95	1015	R6995
BODVK9	2-14-95	1040	R6996

12. Number of Samples: 4 samples 4 bottles per 16 bottles Total

13. Volume of Samples: 20 ml per bottle (4) bottles per sample

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. 14 Day Holding Time.

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

10. Determination	11. Expected Range
VOA (LA-523-405)	14 day hold time.
ICP Metals TAL (LA-505-151)	6 Mon. hold time.
As, Se (LA-505-402)	6 Mon. hold time.
Hg (LA-325-104)	28 day hold time.
TOC (LA-344-105)	28 day hold time
pH (LA-212-102)	ASAP.
Acid digest for	As, Se 2-15-95 SKM
reported to C.N. Villalobos 3-13-95 MR	
Se to be sent at a later date MR	
3/23 Se sent out MR	

18. Survey: Stan Archer (HPT Signature) Dose Rate 3 mrem/hr

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

20. Additional Information: Fax Results to Carmen Villalobos at 373-4539.

Std R6988 Blank R6989 Std R6992

Std R6993 Blank R6994 Std R6997

21. Chain of Custody: ☐ No ☒ Yes Number: 008455 + 008453

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

23. Sample Received By: [signature] Date: 2-14-95 Time: 1450

24. Laboratory Manager (if required): 2 Date:

BC-6700-181 (11/92)

9613479.1025

ATTACHMENT 2

CHAIN OF CUSTODY FORMS

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

008453

Collector K.B. Hulse
SAF No. 95-013
Ice Chest No. SML-801
Method of Shipment Government Vehicle
Shipped to 222-S Laboratory/200 West Area.
Possible Sample Hazards/Remarks RADIOACTIVE
Special Handling and/or Storage COOL TO 4 DEG. C.

Company Contact L.D. Zuck/C.N. Villalobos
Project Designation Flush PUREX Vessels - 2
Bill of Lading/Airbill No. N/A

Telephone 372-3075/373-4753
Sampling Locations PUREX/J-3 Tank
ORRSR No. SITE-04-SAMP
Field Logbook No. WHC-N-205 #52

SPECIAL INSTRUCTIONS
SUMMARY DELIVERABLE.
WORK DONE TO RCRA PROTOCOL.
COOL TO 4 DEGREES CELCIUS.
MINIMUM 14 DAY HOLDING TIME (VOA ANALYSIS).

Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required	Preservative
BODPS9	W	2-14-94	0934	(1) 20ml aGs	VOA (LA-523-405) R 6990	4 deg C.
↓	W	2-14-94	0938	(3) 20ml aGs	ICP Metals TAL (LA-505-151), As (LA-505-402), Se (LA-505-402), Hg (LA-325-104). TOC (LA-344-105). pH (LA-212-102).	↓
BODPT0	W	2-14-94	0949	(1) 20ml aGs	VOA (LA-523-405) R 6991	
↓	W	2-14-94	0949	(3) 20ml aGs	ICP Metals TAL (LA-505-151), As (LA-505-402), Se (LA-505-402), Hg (LA-325-104). TOC (LA-344-105). pH (LA-212-102).	↓

KB Hulse 2-14-95

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
KB Hulse KB Hulse	2-14-95	1450	N. Tapia

*Matrix
A = Air
DL = Drum Liquids
DS = Drum Solids
L = Liquid
O = Oil
S = Soil
SE = Sediment
SL = Sludge
SO = Solid
T = Tissue
W = Water
WI = Wipe
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

02/06/96 15:39 222 ANALYTICAL LAB 7013747-1026

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

008455

Collector K.B. Hulse
SAF No. 95-013
Ice Chest No. SML-801
Method of Shipment Government Vehicle
Shipped to 222-S Laboratory/200 West Area.
Possible Sample Hazards/Remarks RADIOACTIVE
Special Handling and/or Storage COOL TO 4 DEG. C.

Company Contact L.D. Zuck/C.N. Villalobos
Project Designation Flush PUREX Vessels - 2
Bill of Lading/Airbill No. N/A

Telephone 372-3075/373-4753
Sampling Locations PUREX/E-5 Tank
ORRSR No. SITE-04-SAMP
Field Logbook No. WHC-N-205 #52

SPECIAL INSTRUCTIONS
SUMMARY DELIVERABLE.
WORK DONE TO RCRA PROTOCOL.
COOL TO 4 DEGREES CELCIUS.
MINIMUM 14 DAY HOLDING TIME (VOA ANALYSIS).

Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required	Preservative
BODVK8	W	2-14-95	1015	(1) 20ml aGs	VOA (LA-523-405) R6995	4 deg C.
↓	W	2-14-95	1020	(3) 20ml aGs	ICP Metals TAL (LA-505-151), As (LA-505-402), Se (LA-505-402), Hg (LA-325-104). TOC (LA-344-105). pH (LA-212-102).	↓
BODVK9	W	2-14-95	1040	(1) 20ml aGs	VOA (LA-523-405) R6996	
↓	W	2-14-95	1040	(3) 20ml aGs	ICP Metals TAL (LA-505-151), As (LA-505-402), Se (LA-505-402), Hg (LA-325-104). TOC (LA-344-105). pH (LA-212-102).	↓

KB Hulse 2-14-95

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
KB Hulse KB Hulse	2-14-95	1450	N Tapiers

*Matrix
A = Air
DL = Drum Liquids
DS = Drum Solids
L = Liquid
O = Oil
S = Soil
SE = Sediment
SL = Sludge
SO = Solid
T = Tissue
W = Water
WI = Wipe
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

02/06/96 15:39 222 ANALYTICAL LAB 004

9613479.1028

ATTACHMENT 3

VOLATILE ORGANIC ANALYSIS

SDG NARRATIVE - PUREX
Sample Point - PUREX J3/E5
March 1, 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 organics 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-6889	>AB24C	0	Method blank
R-6990	>AB24D	10	Sample
R-6991	>AB24E	10	Sample
R-6995	>AB24F	10	Sample
R-6996	>AB24G	10	Sample

Standards preparation data is kept in a controlled notebook, WHC-N-337 1. Acetone and 1-Butanol was detected in R-6995 sample. 1-Butanol was detected and Normal Paraffin Hydrocarbon (NPH) compounds were tentatively identified in R-6990 sample.

To enable interpetation 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 D E Nelson 3/1/95
J.B DELAROSA-CHANG J de la Rosa-Chang 3/1/95
Organic Chemistry

9613479.1031

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BODPS9

Lab Name: WHCWA Contract:

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

Matrix: (soil/water) WATER Lab Sample ID: R6990

Sample wt/vol: 5 (g/mL) ML Lab File ID: >AB24D

Level: (low/med) LOW Date Received: 02/14/95

% Moisture: not dec. Date Analyzed: 2/24/95

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	320.	J

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BODPS9

Lab Name: WHCWA Contract:

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

Matrix: (soil/water) WATER Lab Sample ID: R6990

Sample wt/vol: 5 (g/mL) ML Lab File ID: >AB24D

Level: (low/med) LOW Date Received: 02/14/95

% Moisture: not dec. Date Analyzed: 2/24/95

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

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

Number TICs found: 2

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	629505	Tridecane	25.46	19.	JN
2.	629594	Tetradecane	27.68	37.	JN
3.					
4.					
5.					
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30.					

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BODPTO

Lab Name: WHCWA Contract:

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

Matrix: (soil/water) WATER Lab Sample ID: R6991

Sample wt/vol: 5 (g/mL) ML Lab File ID: >AB24E

Level: (low/med) LOW Date Received: 02/14/95

% Moisture: not dec. Date Analyzed: 2/24/95

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

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BODPTO

Lab Name: WHCWA Contract:

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

Matrix: (soil/water) WATER Lab Sample ID: R6991

Sample wt/vol: 5 (g/mL) ML Lab File ID: >AB24E

Level: (low/med) LOW Date Received: 02/14/95

% Moisture: not dec. Date Analyzed: 2/24/95

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.				
2.				
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29.				
30.				

9613479.1035

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BODVK8

Lab Name: WHCWA Contract:

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

Matrix: (soil/water) WATER Lab Sample ID: R6995

Sample wt/vol: 5 (g/mL) ML Lab File ID: >AB24F

Level: (low/med) LOW Date Received: 02/14/95

% Moisture: not dec. Date Analyzed: 2/24/95

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	19.	
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	.5	J
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	250.	J

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BODVK8

Lab Name: WHCWA Contract:

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

Matrix: (soil/water) WATER Lab Sample ID: R6995

Sample wt/vol: 5 (g/mL) ML Lab File ID: >AB24F

Level: (low/med) LOW Date Received: 02/14/95

% Moisture: not dec. Date Analyzed: 2/24/95

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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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BODVK9

Lab Name: WHCWA Contract:

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

Matrix: (soil/water) WATER Lab Sample ID: R6996

Sample wt/vol: 5 (g/mL) ML Lab File ID: >AB24G

Level: (low/med) LOW Date Received: 02/14/95

% Moisture: not dec. Date Analyzed: 2/24/95

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

9613429.1038

1E

EPA SAMPLE NO.

BODVK9

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: WHCWA Contract:

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

Matrix: (soil/water) WATER Lab Sample ID: R6996

Sample wt/vol: 5 (g/mL) ML Lab File ID: >AB24G

Level: (low/med) LOW Date Received: 02/14/95

% Moisture: not dec. Date Analyzed: 2/24/95

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.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

9613479.1039

ATTACHMENT 4

SAMPLE STATUS REPORT

SAMPLE STATUS REPORT FOR R 6988. PUREX J3/E5 STD TIME: 3/13/95 10:43
DISPATCHED: 2/14/95 11:23 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 2/14/95 14:50

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
5513	pH	1.00500E 02 % RECOVERY	N	Y	KP51T
		5553			
5526	TOC	1.02300E 02 % RECOVERY	N	Y	KP51T
		5554			
5595	As	1.00360E 02 % RECOVERY Ag	N	Y	KP51T
		5555			
5595	As	1.07000E 02 % RECOVERY	N	Y	KP51T
		5566			
5595	As	9.88600E 01 % RECOVERY Al	N	Y	KP51T
		5555			
5595	As	1.00520E 02 % RECOVERY As	N	Y	KP51T
		5555			
5595	As	1.00240E 02 % RECOVERY Ba	N	Y	KP51T
		5555			
5595	As	1.05380E 02 % RECOVERY Be	N	Y	KP51T
		5555			
5595	As	1.03140E 02 % RECOVERY Ca	N	Y	KP51T
		5555			
5595	As	1.03760E 02 % RECOVERY Cd	N	Y	KP51T
		5555			
5595	As	1.04380E 02 % RECOVERY Co	N	Y	KP51T
		5555			
5595	As	1.04080E 02 % RECOVERY Cr	N	Y	KP51T
		5555			
5595	As	1.02420E 02 % RECOVERY Cu	N	Y	KP51T
		5555			
5595	As	1.01880E 02 % RECOVERY Fe	N	Y	KP51T
		5555			
5595	As	9.91600E 01 % RECOVERY K	N	Y	KP51T
		5555			
5595	As	9.97200E 01 % RECOVERY Li	N	Y	KP51T
		5555			
5595	As	9.74600E 01 % RECOVERY Mg	N	Y	KP51T
		5555			
5595	As	1.01220E 02 % RECOVERY Mn	N-	Y	KP51T
		5555			
5595	As	1.02620E 02 % RECOVERY Mo	N	Y	KP51T
		5555			
5595	As	9.97000E 01 % RECOVERY Na	N	Y	KP51T
		5555			
5595	As	1.02320E 02 % RECOVERY Ni	N	Y	KP51T
		5555			
5595	As	1.04240E 02 % RECOVERY P	N	Y	KP51T
		5555			
5595	As	1.01480E 02 % RECOVERY Pb	N	Y	KP51T
		5555			
5595	As	9.77800E 01 % RECOVERY Sb	N	Y	KP51T
		5555			
5595	As	1.00120E 02 % RECOVERY Se	N	Y	KP51T
		5555			
5595	As	1.00220E 02 % RECOVERY Sr	N	Y	KP51T
		5555			

REPORT CONTINUED ON NEXT PAGE

96139/9.1041

SAMPLE STATUS REPORT FOR R 6988. PUREX J3/E5 STD TIME: 3/13/95 10:43
DISPATCHED: 2/14/95 11:23 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
5595	As	9.94400E 01 % RECOVERY Tl	N	Y	KP51T
		5555			
5595	As	1.02260E 02 % RECOVERY V	N	Y	KP51T
		5555			
5595	As	1.02760E 02 % RECOVERY Zn	N	Y	KP51T
		5555			
5596	Se	1.07000E 02 % RECOVERY	N	Y	KP51T
		5565			
5597	Hg	1.09000E 02 % RECOVERY	N	Y	KP51T
		5556			
8505	ACD DGST	AS/SE DF=50; ICP DF=20; TOTAL VOL. 100 ML EACH			KP51T
		5564			
8595	As	9.37000E 01 % RECOVERY	N	Y	KP51T
		5566			
8596	Se	1.02000E 02 % RECOVERY	N	Y	KP51T
		5565			

END OF REPORT

SAMPLE STATUS REPORT FOR R 6989. PUREX J3/E5 BLANK TIME: 3/13/95 10:43
DISPATCHED: 2/14/95 11:25 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 2/14/95 14:50

EXT.	DETER.	RESULTS OR STATUS		OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********		***	***	******
4502	VOA	COMPLETE				KP51T
5626	TOC	< 5.00000E 00 uG C/ML 5554		N	Y	KP51T
5650	ICP	< 1.00000E-02 uG/ML 5555	Ag	N	Y	KP51T
5650	ICP	< 5.00000E-02 uG/ML 5555	Al	N	Y	KP51T
5650	ICP	< 5.00000E-02 uG/ML 5555	As	N	Y	KP51T
5650	ICP	< 5.00000E-02 uG/ML 5555	Ba	N	Y	KP51T
5650	ICP	< 5.00000E-03 uG/ML 5555	Be	N	Y	KP51T
5650	ICP	< 1.00000E-01 uG/ML 5555	Ca	N	Y	KP51T
5650	ICP	< 1.00000E-02 uG/ML 5555	Cd	N	Y	KP51T
5650	ICP	< 2.00000E-02 uG/ML 5555	Co	N	Y	KP51T
5650	ICP	< 1.00000E-02 uG/ML 5555	Cr	N	Y	KP51T
5650	ICP	< 1.00000E-02 uG/ML 5555	Cu	N	Y	KP51T
5650	ICP	< 5.00000E-02 uG/ML 5555	Fe	N	Y	KP51T
5650	ICP	< 3.00000E-01 uG/ML 5555	K	N	Y	KP51T
5650	ICP	< 1.00000E-02 uG/ML 5555	Li	N	Y	KP51T
5650	ICP	< 1.00000E-01 uG/ML 5555	Mg	N	Y	KP51T
5650	ICP	< 1.00000E-02 uG/ML 5555	Mn	N	Y	KP51T
5650	ICP	< 5.00000E-02 uG/ML 5555	Mo	N	Y	KP51T
5650	ICP	< 1.00000E-01 uG/ML 5555	Na	N	Y	KP51T
5650	ICP	< 2.00000E-02 uG/ML 5555	Ni	N	Y	KP51T
5650	ICP	< 2.00000E-01 uG/ML 5555	P	N	Y	KP51T
5650	ICP	< 1.00000E-01 uG/ML 5555	Pb	N	Y	KP51T
5650	ICP	< 2.00000E-01 uG/ML 5555	Sb	N	Y	KP51T
5650	ICP	< 1.00000E-01 uG/ML 5555	Se	N	Y	KP51T
5650	ICP	< 1.00000E-02 uG/ML 5555	Sr	N	Y	KP51T
5650	ICP	< 2.00000E-01 uG/ML 5555	Tl	N	Y	KP51T

REPORT CONTINUED ON NEXT PAGE

9613479.1043

SAMPLE STATUS REPORT FOR R 6989. PUREX J3/E5 BLANK TIME: 3/13/95 10:43
DISPATCHED: 2/14/95 11:25 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
5650	ICP	< 5.00000E-02 uG/ML V 5555	N	Y	KP51T
5650	ICP	< 1.00000E-02 uG/ML Zn 5555	N	Y	KP51T
5695	As	< 3.00000E-03 uG/ML 5566	N	Y	KP51T
5696	Se	< 3.00000E-03 uG/ML 5565	N	Y	KP51T
5697	Hg	< 5.00000E-03 uG/ML 5556	N	Y	KP51T
8605	ACD DGST	COMPLETED, 100 ML FINAL VOL. 5564			KP51T
8695	As	< 2.50000E-01 uG/ML 5566	N	Y	KP51T
8696	Se	< 2.50000E-01 uG/ML 5565	N	Y	KP51T

END OF REPORT

SAMPLE STATUS REPORT FOR R 6990. PUREX J3/E5 BODPS9 TIME: 3/13/95 10:44
DISPATCHED: 2/14/95 11:29 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 2/14/95 14:50

EXT.	DETER.	RESULTS OR STATUS		OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********		***	***	******
4502	VOA	COMPLETE				KP51T
		5552				
5713	pH	2.89000E 00 NONE		N	Y	KP51T
		5553				
5726	TOC	1.71000E 02 uG C/ML		N	Y	KP51T
		5554				
5750	ICP-LIQ	< 1.00000E-02 uG/ML	Ag	N	Y	KP51T
		5555				
5750	ICP-LIQ	4.36000E-01 uG/ML	Al	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 5.00000E-02 uG/ML	As	N	Y	KP51T
		5555				
5750	ICP-LIQ	2.91000E-01 uG/ML	Ba	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 5.00000E-03 uG/ML	Be	N	Y	KP51T
		5555				
5750	ICP-LIQ	2.03000E 01 uG/ML	Ca	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 1.00000E-02 uG/ML	Cd	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 2.00000E-02 uG/ML	Co	N	Y	KP51T
		5555				
5750	ICP-LIQ	8.67000E-01 uG/ML	Cr	N	Y	KP51T
		5555				
5750	ICP-LIQ	3.30000E-02 uG/ML	Cu	N	Y	KP51T
		5555				
5750	ICP-LIQ	7.16000E 00 uG/ML	Fe	N	Y	KP51T
		5555				
5750	ICP-LIQ	9.16000E-01 uG/ML	K	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 1.00000E-02 uG/ML	Li	N	Y	KP51T
		5555				
5750	ICP-LIQ	4.78000E 00 uG/ML	Mg	N	Y	KP51T
		5555				
5750	ICP-LIQ	8.39999E-02 uG/ML	Mn	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 5.00000E-02 uG/ML	Mo	N	Y	KP51T
		5555				
5750	ICP-LIQ	4.07000E 00 uG/ML	Na	N	Y	KP51T
		5555				
5750	ICP-LIQ	3.41000E-01 uG/ML	Ni	N	Y	KP51T
		5555				
5750	ICP-LIQ	4.20000E 01 uG/ML	P	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 1.00000E-01 uG/ML	Pb	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 2.00000E-01 uG/ML	Sb	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 1.00000E-01 uG/ML	Se	N	Y	KP51T
		5555				
5750	ICP-LIQ	1.08000E-01 uG/ML	Sr	N	Y	KP51T
		5555				

REPORT CONTINUED ON NEXT PAGE

96134/9.1045

SAMPLE STATUS REPORT FOR R 6990. PUREX J3/E5 BODPS9 TIME: 3/13/95 10:44
DISPATCHED: 2/14/95 11:29 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS			OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********			***	***	******
5750	ICP-LIQ	< 2.00000E-01	uG/ML	Tl	N	Y	KP51T
		5555					
5750	ICP-LIQ	< 5.00000E-02	uG/ML	V	N	Y	KP51T
		5555					
5750	ICP-LIQ	6.50000E-02	uG/ML	Zn	N	Y	KP51T
		5555					
5797	Hg LIQ	< 5.00000E-03	uG/ML		N	Y	KP51T
		5556					
5813	pH	2.85000E 00	NONE		N	Y	KP51T
		5553					
5826	TOC	1.64000E 02	uG C/ML		N	Y	KP51T
		5554					
5850	ICP-LIQ	< 1.00000E-02	uG/ML	Ag	N	Y	KP51T
		5555					
5850	ICP-LIQ	4.52000E-01	uG/ML	Al	N	Y	KP51T
		5555					
5850	ICP-LIQ	< 5.00000E-02	uG/ML	As	N	Y	KP51T
		5555					
5850	ICP-LIQ	2.96000E-01	uG/ML	Ba	N	Y	KP51T
		5555					
5850	ICP-LIQ	< 5.00000E-03	uG/ML	Be	N	Y	KP51T
		5555					
5850	ICP-LIQ	2.10000E 01	uG/ML	Ca	N	Y	KP51T
		5555					
5850	ICP-LIQ	< 1.00000E-02	uG/ML	Cd	N	Y	KP51T
		5555					
5850	ICP-LIQ	< 2.00000E-02	uG/ML	Co	N	Y	KP51T
		5555					
5850	ICP-LIQ	8.93000E-01	uG/ML	Cr	N	Y	KP51T
		5555					
5850	ICP-LIQ	3.30000E-02	uG/ML	Cu	N	Y	KP51T
		5555					
5850	ICP-LIQ	7.34000E 00	uG/ML	Fe	N	Y	KP51T
		5555					
5850	ICP-LIQ	1.08000E 00	uG/ML	K	N	Y	KP51T
		5555					
5850	ICP-LIQ	< 1.00000E-02	uG/ML	Li	N	Y	KP51T
		5555					
5850	ICP-LIQ	4.83000E 00	uG/ML	Mg	N	Y	KP51T
		5555					
5850	ICP-LIQ	8.60000E-02	uG/ML	Mn	N	Y	KP51T
		5555					
5850	ICP-LIQ	< 5.00000E-02	uG/ML	Mo	N	Y	KP51T
		5555					
5850	ICP-LIQ	4.10000E 00	uG/ML	Na	N	Y	KP51T
		5555					
5850	ICP-LIQ	3.53000E-01	uG/ML	Ni	N	Y	KP51T
		5555					
5850	ICP-LIQ	4.59000E 01	uG/ML	P	N	Y	KP51T
		5555					
5850	ICP-LIQ	< 1.00000E-01	uG/ML	Pb	N	Y	KP51T
		5555					

REPORT CONTINUED ON NEXT PAGE

SAMPLE STATUS REPORT FOR R 6990. PUREX J3/E5 BODPS9 TIME: 3/13/95 10:44
DISPATCHED: 2/14/95 11:29 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
5850	ICP-LIQ	< 2.00000E-01 uG/ML Sb 5555	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-01 uG/ML Se 5555	N	Y	KP51T
5850	ICP-LIQ	1.10000E-01 uG/ML Sr 5555	N	Y	KP51T
5850	ICP-LIQ	< 2.00000E-01 uG/ML Tl 5555	N	Y	KP51T
5850	ICP-LIQ	< 5.00000E-02 uG/ML V 5555	N	Y	KP51T
5850	ICP-LIQ	6.50000E-02 uG/ML Zn 5555	N	Y	KP51T
5897	Hg-LIQ	< 5.00000E-03 uG/ML 5556	N	Y	KP51T
5926	TOC	9.83000E 01 % RECOVERY 5554	N	Y	KP51T
5950	ICP	1.01970E 02 % RECOVERY Al 5555	N	Y	KP51T
5950	ICP	1.00000E 02 % RECOVERY As 5555	N	Y	KP51T
5950	ICP	1.01560E 02 % RECOVERY Ba 5555	N	Y	KP51T
5950	ICP	1.05740E 02 % RECOVERY Be 5555	N	Y	KP51T
5950	ICP	Ca - SAMPLE > 4X CONCENTRATION OF SPIKE. 5555			KP51T
5950	ICP	1.06560E 02 % RECOVERY Cd 5555	N	Y	KP51T
5950	ICP	1.04920E 02 % RECOVERY Co 5555	N	Y	KP51T
5950	ICP	1.04340E 02 % RECOVERY Cr 5555	N	Y	KP51T
5950	ICP	1.01390E 02 % RECOVERY Cu 5555	N	Y	KP51T
5950	ICP	9.83600E 01 % RECOVERY Fe 5555	N	Y	KP51T
5950	ICP	1.01970E 02 % RECOVERY K 5555	N	Y	KP51T
5950	ICP	1.00000E 02 % RECOVERY Li 5555	N	Y	KP51T
5950	ICP	8.60600E 01 % RECOVERY Mg 5555	N	Y	KP51T
5950	ICP	1.02130E 02 % RECOVERY Mn 5555	N	Y	KP51T
5950	ICP	1.01640E 02 % RECOVERY Mo 5555	N	Y	KP51T
5950	ICP	9.09800E 01 % RECOVERY Na 5555	N	Y	KP51T
5950	ICP	1.05660E 02 % RECOVERY Ni 5555	N	Y	KP51T
5950	ICP	P - SAMPLE > 4X CONCENTRATION OF SPIKE. 5555			KP51T

REPORT CONTINUED ON NEXT PAGE

SAMPLE STATUS REPORT FOR R 6990. PUREX J3/E5 BODPS9 TIME: 3/13/95 10:44
DISPATCHED: 2/14/95 11:29 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
5950	ICP	1.05740E 02 % RECOVERY Pb	N	Y	KP51T
		5555			
5950	ICP	1.02460E 02 % RECOVERY Sb	N	Y	KP51T
		5555			
5950	ICP	1.01640E 02 % RECOVERY Se	N	Y	KP51T
		5555			
5950	ICP	1.01800E 02 % RECOVERY Sr	N	Y	KP51T
		5555			
5950	ICP	1.04920E 02 % RECOVERY Tl	N	Y	KP51T
		5555			
5950	ICP	1.03280E 02 % RECOVERY V	N	Y	KP51T
		5555			
5950	ICP	1.03690E 02 % RECOVERY Zn	N	Y	KP51T
		5555			
5997	Hg	1.02700E 02 % RECOVERY	N	Y	KP51T
		5556			
8705	ACD DGST	DF=100, FINAL VOL. 100 ML			KP51T
		5564			
8795	As	< 2.50000E-01 uG/ML	N	Y	KP51T
		5566			
8796	Se	< 2.50000E-01 uG/ML	N	Y	KP51T
		5565			
8805	ACD DGST	DF=100; FINAL VOL.100 ML			KP51T
		5564			
8895	As	< 2.50000E-01 uG/ML	N	Y	KP51T
		5566			
8896	Se	< 2.50000E-01 uG/ML	N	Y	KP51T
		5565			
8905	ACD DGST	AS/SE DF=50; ICP DF= 20; FINAL VOL. 100 ML EACH			KP51T
		5564			
8995	As	9.45000E 01 % RECOVERY	N	Y	KP51T
		5566			
8996	Se	9.68000E 01 % RECOVERY	N	Y	KP51T
		5565			

END OF REPORT

SAMPLE STATUS REPORT FOR R 6991. PUREX J3/E5 BODPT0 TIME: 3/13/95 10:44
DISPATCHED: 2/14/95 11:30 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 2/14/95 14:50

EXT.	DETER.	RESULTS OR STATUS		OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********		***	***	******
4502	VOA	COMPLETE				KP51T
		5552				
5713	pH	6.28000E 00 NONE		N	Y	KP51T
		5553				
5726	TOC	1.27000E 01 uG C/ML		N	Y	KP51T
		5554				
5750	ICP-LIQ	< 1.00000E-02 uG/ML	Ag	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 5.00000E-02 uG/ML	Al	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 5.00000E-02 uG/ML	As	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 5.00000E-02 uG/ML	Ba	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 5.00000E-03 uG/ML	Be	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 1.00000E-01 uG/ML	Ca	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 1.00000E-02 uG/ML	Cd	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 2.00000E-02 uG/ML	Co	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 1.00000E-02 uG/ML	Cr	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 1.00000E-02 uG/ML	Cu	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 5.00000E-02 uG/ML	Fe	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 3.00000E-01 uG/ML	K	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 1.00000E-02 uG/ML	Li	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 1.00000E-01 uG/ML	Mg	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 1.00000E-02 uG/ML	Mn	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 5.00000E-02 uG/ML	Mo	N	Y	KP51T
		5555				
5750	ICP-LIQ	4.50000E-01 uG/ML	Na	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 2.00000E-02 uG/ML	Ni	N	Y	KP51T
		5555				
5750	ICP-LIQ	2.70000E-01 uG/ML	P	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 1.00000E-01 uG/ML	Pb	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 2.00000E-01 uG/ML	Sb	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 1.00000E-01 uG/ML	Se	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 1.00000E-02 uG/ML	Sr	N	Y	KP51T
		5555				

REPORT CONTINUED ON NEXT PAGE

SAMPLE STATUS REPORT FOR R 6991. PUREX J3/E5 BODPT0 TIME: 3/13/95 10:44
DISPATCHED: 2/14/95 11:30 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS		OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********		***	***	******
5750	ICP-LIQ	< 2.00000E-01 uG/ML 5555	Tl	N	Y	KP51T
5750	ICP-LIQ	< 5.00000E-02 uG/ML 5555	V	N	Y	KP51T
5750	ICP-LIQ	< 1.00000E-02 uG/ML 5555	Zn	N	Y	KP51T
5797	Hg LIQ	< 5.00000E-03 uG/ML 5556		N	Y	KP51T
5813	pH	6.43000E 00 NONE 5553		N	Y	KP51T
5826	TOC	1.43000E 01 uG C/ML 5554		N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-02 uG/ML 5555	Ag	N	Y	KP51T
5850	ICP-LIQ	< 5.00000E-02 uG/ML 5555	Al	N	Y	KP51T
5850	ICP-LIQ	< 5.00000E-02 uG/ML 5555	As	N	Y	KP51T
5850	ICP-LIQ	< 5.00000E-02 uG/ML 5555	Ba	N	Y	KP51T
5850	ICP-LIQ	< 5.00000E-03 uG/ML 5555	Be	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-01 uG/ML 5555	Ca	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-02 uG/ML 5555	Cd	N	Y	KP51T
5850	ICP-LIQ	< 2.00000E-02 uG/ML 5555	Co	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-02 uG/ML 5555	Cr	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-02 uG/ML 5555	Cu	N	Y	KP51T
5850	ICP-LIQ	< 5.00000E-02 uG/ML 5555	Fe	N	Y	KP51T
5850	ICP-LIQ	< 3.00000E-01 uG/ML 5555	K	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-02 uG/ML 5555	Li	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-01 uG/ML 5555	Mg	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-02 uG/ML 5555	Mn	N	Y	KP51T
5850	ICP-LIQ	< 5.00000E-02 uG/ML 5555	Mo	N	Y	KP51T
5850	ICP-LIQ	4.51000E-01 uG/ML 5555	Na	N	Y	KP51T
5850	ICP-LIQ	< 2.00000E-02 uG/ML 5555	Ni	N	Y	KP51T
5850	ICP-LIQ	2.45000E-01 uG/ML 5555	P	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-01 uG/ML 5555	Pb	N	Y	KP51T

REPORT CONTINUED ON NEXT PAGE

SAMPLE STATUS REPORT FOR R 6991. PUREX J3/E5 BODPT0 TIME: 3/13/95 10:44
DISPATCHED: 2/14/95 11:30 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS			OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********			***	***	******
5850	ICP-LIQ	< 2.00000E-01	uG/ML	Sb	N	Y	KP51T
		5555					
5850	ICP-LIQ	< 1.00000E-01	uG/ML	Se	N	Y	KP51T
		5555					
5850	ICP-LIQ	< 1.00000E-02	uG/ML	Sr	N	Y	KP51T
		5555					
5850	ICP-LIQ	< 2.00000E-01	uG/ML	Tl	N	Y	KP51T
		5555					
5850	ICP-LIQ	< 5.00000E-02	uG/ML	V	N	Y	KP51T
		5555					
5850	ICP-LIQ	< 1.00000E-02	uG/ML	Zn	N	Y	KP51T
		5555					
5897	Hg-LIQ	< 5.00000E-03	uG/ML		N	Y	KP51T
		5556					
5926	TOC	9.89000E 01	% RECOVERY		N	Y	KP51T
		5554					
5950	ICP	1.08200E 02	% RECOVERY	Ag	N	Y	KP51T
		5555					
5950	ICP	1.04920E 02	% RECOVERY	Al	N	Y	KP51T
		5555					
5950	ICP	1.01640E 02	% RECOVERY	As	N	Y	KP51T
		5555					
5950	ICP	1.02460E 02	% RECOVERY	Ba	N	Y	KP51T
		5555					
5950	ICP	1.06560E 02	% RECOVERY	Be	N	Y	KP51T
		5555					
5950	ICP	1.07380E 02	% RECOVERY	Ca	N	Y	KP51T
		5555					
5950	ICP	1.09840E 02	% RECOVERY	Cd	N	Y	KP51T
		5555					
5950	ICP	1.08200E 02	% RECOVERY	Co	N	Y	KP51T
		5555					
5950	ICP	1.09020E 02	% RECOVERY	Cr	N	Y	KP51T
		5555					
5950	ICP	1.05740E 02	% RECOVERY	Cu	N	Y	KP51T
		5555					
5950	ICP	1.07380E 02	% RECOVERY	Fe	N	Y	KP51T
		5555					
5950	ICP	1.03280E 02	% RECOVERY	K	N	Y	KP51T
		5555					
5950	ICP	1.02460E 02	% RECOVERY	Li	N	Y	KP51T
		5555					
5950	ICP	1.03280E 02	% RECOVERY	Mg	N	Y	KP51T
		5555					
5950	ICP	1.05740E 02	% RECOVERY	Mn	N	Y	KP51T
		5555					
5950	ICP	1.06560E 02	% RECOVERY	Mo	N	Y	KP51T
		5555					
5950	ICP	1.03280E 02	% RECOVERY	Na	N	Y	KP51T
		5555					
5950	ICP	1.08200E 02	% RECOVERY	Ni	N	Y	KP51T
		5555					

REPORT CONTINUED ON NEXT PAGE

SAMPLE STATUS REPORT FOR R 6991. PUREX J3/E5 BODPTO TIME: 3/13/95 10:44
DISPATCHED: 2/14/95 11:30 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
5950	ICP	1.10660E 02 % RECOVERY P 5555	N	Y	KP51T
5950	ICP	1.09020E 02 % RECOVERY Pb 5555	N	Y	KP51T
5950	ICP	1.07380E 02 % RECOVERY Sb 5555	N	Y	KP51T
5950	ICP	1.05740E 02 % RECOVERY Se 5555	N	Y	KP51T
5950	ICP	1.04920E 02 % RECOVERY Sr 5555	N	Y	KP51T
5950	ICP	1.07380E 02 % RECOVERY Tl 5555	N	Y	KP51T
5950	ICP	1.06560E 02 % RECOVERY V 5555	N	Y	KP51T
5950	ICP	1.08200E 02 % RECOVERY Zn 5555	N	Y	KP51T
5997	Hg	1.04100E 02 % RECOVERY 5556	N	Y	KP51T
8705	ACD DGST	DF= 100; FINAL VOL. 100 ML 5564			KP51T
8795	As	< 2.50000E-01 uG/ML 5566	N	Y	KP51T
8796	Se	< 2.50000E-01 uG/ML 5565	N	Y	KP51T
8805	ACD DGST	DF=100; FINAL VOL. 100 ML 5564			KP51T
8895	As	< 2.50000E-01 uG/ML 5566	N	Y	KP51T
8896	Se	< 2.50000E-01 uG/ML 5565	N	Y	KP51T
8905	ACD DGST	AS/SE DF= 50; ICP DF=20; FINAL VOL. 100 ML EACH 5564			KP51T
8995	As	9.42000E 01 % RECOVERY 5566	N	Y	KP51T
8996	Se	1.19100E 02 % RECOVERY 5565	N	Y	KP51T

END OF REPORT

SAMPLE STATUS REPORT FOR R 6992. PUREX J3/E5 STD TIME: 3/13/95 10:45
DISPATCHED: 2/14/95 11:49 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 2/14/95 14:50

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
5513	pH	1.00800E 02 % RECOVERY	N	Y	KP51T
		5553			
5526	TOC	1.03700E 02 % RECOVERY	N	Y	KP51T
		5554			
5550	ICP	1.03980E 02 % RECOVERY Ag	N	Y	KP51T
		5555			
5550	ICP	1.02280E 02 % RECOVERY Al	N	Y	KP51T
		5555			
5550	ICP	1.05980E 02 % RECOVERY As	N	Y	KP51T
		5555			
5550	ICP	1.04480E 02 % RECOVERY Ba	N	Y	KP51T
		5555			
5550	ICP	1.09740E 02 % RECOVERY Be	N	Y	KP51T
		5555			
5550	ICP	1.08740E 02 % RECOVERY Ca	N	Y	KP51T
		5555			
5550	ICP	1.08880E 02 % RECOVERY Cd	N	Y	KP51T
		5555			
5550	ICP	1.09200E 02 % RECOVERY Co	N	Y	KP51T
		5555			
5550	ICP	1.09220E 02 % RECOVERY Cr	N	Y	KP51T
		5555			
5550	ICP	1.05520E 02 % RECOVERY Cu	N	Y	KP51T
		5555			
5550	ICP	1.06540E 02 % RECOVERY Fe	N	Y	KP51T
		5555			
5550	ICP	1.03240E 02 % RECOVERY K	N	Y	KP51T
		5555			
5550	ICP	1.01440E 02 % RECOVERY Li	N	Y	KP51T
		5555			
5550	ICP	1.00700E 02 % RECOVERY Mg	N	Y	KP51T
		5555			
5550	ICP	1.06440E 02 % RECOVERY Mn	N	Y	KP51T
		5555			
5550	ICP	1.07420E 02 % RECOVERY Mo	N	Y	KP51T
		5555			
5550	ICP	1.02320E 02 % RECOVERY Na	N	Y	KP51T
		5555			
5550	ICP	1.06760E 02 % RECOVERY Ni	N	Y	KP51T
		5555			
5550	ICP	1.13060E 02 % RECOVERY P	N	Y	KP51T
		5555			
5550	ICP	1.06100E 02 % RECOVERY Pb	N	Y	KP51T
		5555			
5550	ICP	1.02140E 02 % RECOVERY Sb	N	Y	KP51T
		5555			
5550	ICP	1.04940E 02 % RECOVERY Se	N	Y	KP51T
		5555			
5550	ICP	1.03640E 02 % RECOVERY Sr	N	Y	KP51T
		5555			
5550	ICP	1.04280E 02 % RECOVERY Tl	N	Y	KP51T
		5555			

REPORT CONTINUED ON NEXT PAGE

SAMPLE STATUS REPORT FOR R 6992. PUREX J3/E5 STD TIME: 3/13/95 10:45
DISPATCHED: 2/14/95 11:49 SAMPLE HAS NOT BEEN SLURPED

EXT. ****	DETER. ********	RESULTS OR STATUS **********	OUT OF RANGE? ***	GOOD ANS? ***	CHARGE CODE ******
5550	ICP	1.06940E 02 % RECOVERY V 5555	N	Y	KP51T
5550	ICP	1.07100E 02 % RECOVERY Zn 5555	N	Y	KP51T
5595	As	8.72000E 01 % RECOVERY 5566	N	Y	KP51T
5596	Se	1.13000E 02 % RECOVERY 5565	N	Y	KP51T
5597	Hg	1.08000E 02 % RECOVERY 5556	N	Y	KP51T

END OF REPORT

SAMPLE STATUS REPORT FOR R 6993. PUREX J3/E5 STD TIME: 3/13/95 10:45
DISPATCHED: 2/14/95 11:49 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 2/14/95 14:50

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
5513	pH	OUT FOR RERUN			KP51T
		5557			
5513	pH	1.00200E 02 % RECOVERY	N	Y	KP51T
		5587			
5526	TOC	9.10000E 01 % RECOVERY	N	Y	KP51T
		5558			
5550	ICP	1.00600E 02 % RECOVERY Ag	N	Y	KP51T
		5559			
5550	ICP	1.00400E 02 % RECOVERY Al	N	Y	KP51T
		5559			
5550	ICP	1.02940E 02 % RECOVERY Sb	N	Y	KP51T
		5559			
5550	ICP	9.98600E 01 % RECOVERY Ba	N	Y	KP51T
		5559			
5550	ICP	1.03120E 02 % RECOVERY Be	N	Y	KP51T
		5559			
5550	ICP	1.03620E 02 % RECOVERY Ca	N	Y	KP51T
		5559			
5550	ICP	1.01580E 02 % RECOVERY Cd	N	Y	KP51T
		5559			
5550	ICP	1.03200E 02 % RECOVERY Co	N	Y	KP51T
		5559			
5550	ICP	1.02240E 02 % RECOVERY Cr	N	Y	KP51T
		5559			
5550	ICP	1.02200E 02 % RECOVERY Cu	N	Y	KP51T
		5559			
5550	ICP	1.01580E 02 % RECOVERY Fe	N	Y	KP51T
		5559			
5550	ICP	1.02900E 02 % RECOVERY K	N	Y	KP51T
		5559			
5550	ICP	1.00520E 02 % RECOVERY Li	N	Y	KP51T
		5559			
5550	ICP	1.00100E 02 % RECOVERY Mg	N	Y	KP51T
		5559			
5550	ICP	1.00160E 02 % RECOVERY Mn	N	Y	KP51T
		5559			
5550	ICP	1.01740E 02 % RECOVERY Mo	N	Y	KP51T
		5559			
5550	ICP	1.01580E 02 % RECOVERY Na	N	Y	KP51T
		5559			
5550	ICP	1.00220E 02 % RECOVERY Ni	N	Y	KP51T
		5559			
5550	ICP	1.02040E 02 % RECOVERY P	N	Y	KP51T
		5559			
5550	ICP	1.02140E 02 % RECOVERY Pb	N	Y	KP51T
		5559			
5550	ICP	9.60000E 01 % RECOVERY Sb	N	Y	KP51T
		5559			
5550	ICP	1.00400E 02 % RECOVERY Se	N	Y	KP51T
		5559			
5550	ICP	9.93400E 01 % RECOVERY Sr	N	Y	KP51T
		5559			

REPORT CONTINUED ON NEXT PAGE

SAMPLE STATUS REPORT FOR R 6993. PUREX J3/E5 STD TIME: 3/13/95 10:45
DISPATCHED: 2/14/95 11:49 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
5550	ICP	9.98200E 01 % RECOVERY Tl	N	Y	KP51T
		5559			
5550	ICP	1.01720E 02 % RECOVERY V	N	Y	KP51T
		5559			
5550	ICP	1.04060E 02 % RECOVERY Zn	N	Y	KP51T
		5559			
5595	As	1.10000E 02 % RECOVERY	N	Y	KP51T
		5568			
5596	Se	INCOMPLETE			KP51T
5597	Hg	1.03000E 02 % RECOVERY	N	Y	KP51T
		5560			
8505	ACD DGST	AS/SE DF=50; ICP DF=20; FINAL VOL.100 ML			KP51T
		5567			
8595	As	9.91000E 01 % RECOVERY	N	Y	KP51T
		5568			
8596	Se	INCOMPLETE			KP51T

END OF REPORT

SAMPLE STATUS REPORT FOR R 6994. PUREX J3/E5 BLANK TIME: 3/13/95 10:46
DISPATCHED: 2/14/95 11:49 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 2/14/95 14:50

EXT.	DETER.	RESULTS OR STATUS		OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********		***	***	******
5626	TOC	< 5.00000E 00 uG C/ML 5558		N	Y	KP51T
5650	ICP	< 1.00000E-02 uG/ML 5559	Ag	N	Y	KP51T
5650	ICP	< 5.00000E-02 uG/ML 5559	Al	N	Y	KP51T
5650	ICP	< 5.00000E-02 uG/ML 5559	As	N	Y	KP51T
5650	ICP	< 5.00000E-02 uG/ML 5559	Ba	N	Y	KP51T
5650	ICP	< 5.00000E-03 uG/ML 5559	Be	N	Y	KP51T
5650	ICP	< 1.00000E-01 uG/ML 5559	Ca	N	Y	KP51T
5650	ICP	< 1.00000E-02 uG/ML 5559	Cd	N	Y	KP51T
5650	ICP	< 2.00000E-02 uG/ML 5559	Co	N	Y	KP51T
5650	ICP	< 1.00000E-02 uG/ML 5559	Cr	N	Y	KP51T
5650	ICP	< 1.00000E-02 uG/ML 5559	Cu	N	Y	KP51T
5650	ICP	< 5.00000E-02 uG/ML 5559	Fe	N	Y	KP51T
5650	ICP	< 3.00000E-01 uG/ML 5559	K	N	Y	KP51T
5650	ICP	< 1.00000E-02 uG/ML 5559	Li	N	Y	KP51T
5650	ICP	< 1.00000E-01 uG/ML 5559	Mg	N	Y	KP51T
5650	ICP	< 1.00000E-02 uG/ML 5559	Mn	N	Y	KP51T
5650	ICP	< 5.00000E-02 uG/ML 5559	Mo	N	Y	KP51T
5650	ICP	< 1.00000E-01 uG/ML 5559	Na	N	Y	KP51T
5650	ICP	< 2.00000E-02 uG/ML 5559	Ni	N	Y	KP51T
5650	ICP	< 2.00000E-01 uG/ML 5559	P	N	Y	KP51T
5650	ICP	< 1.00000E-01 uG/ML 5559	Pb	N	Y	KP51T
5650	ICP	< 2.00000E-01 uG/ML 5559	Sb	N	Y	KP51T
5650	ICP	< 1.00000E-01 uG/ML 5559	Se	N	Y	KP51T
5650	ICP	< 1.00000E-02 uG/ML 5559	Sr	N	Y	KP51T
5650	ICP	< 2.00000E-01 uG/ML 5559	Tl	N	Y	KP51T
5650	ICP	< 5.00000E-02 uG/ML 5559	V	N	Y	KP51T

REPORT CONTINUED ON NEXT PAGE

SAMPLE STATUS REPORT FOR R 6994. PUREX J3/E5 BLANK TIME: 3/13/95 10:46
DISPATCHED: 2/14/95 11:49 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
5650	ICP	< 1.00000E-02 uG/ML Zn 5559	N	Y	KP51T
5695	As	< 3.00000E-03 uG/ML 5568	N	Y	KP51T
5696	Se	INCOMPLETE			KP51T
5697	Hg	< 5.00000E-03 uG/ML 5560	N	Y	KP51T
8605	ACD DGST	COMPLETED, 100 ML FINAL VOL. 5567			KP51T
8695	As	< 2.50000E-01 uG/ML 5568	N	Y	KP51T
8696	Se	INCOMPLETE			KP51T

END OF REPORT

SAMPLE STATUS REPORT FOR R 6995. PUREX J3/E5 BODVK8 TIME: 3/23/95 12:58
DISPATCHED: 2/14/95 11:50 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 2/14/95 14:50

EXT.	DETER.	RESULTS OR STATUS		OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********		***	***	******
4502	VOA	COMPLETE				KP51T
5713	pH	OUT FOR RERUN				KP51T
		5557				
5713	pH	9.44000E 00 NONE		N	Y	KP51T
		5587				
5726	TOC	2.97000E 01 uG C/ML		N	Y	KP51T
		5558				
5750	ICP-LIQ	< 6.00000E-02 uG/ML	Ag	N	Y	KP51T
		5559				
5750	ICP-LIQ	5.16000E 00 uG/ML	Al	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 3.00000E-01 uG/ML	As	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 3.00000E-01 uG/ML	Ba	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 3.00000E-02 uG/ML	Be	N	Y	KP51T
		5559				
5750	ICP-LIQ	2.33000E 00 uG/ML	Ca	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 6.00000E-01 uG/ML	Cd	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 1.20000E-01 uG/ML	Co	N	Y	KP51T
		5559				
5750	ICP-LIQ	3.96000E-01 uG/ML	Cr	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 6.00000E-01 uG/ML	Cu	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 3.00000E-01 uG/ML	Fe	N	Y	KP51T
		5559				
5750	ICP-LIQ	3.03000E 03 uG/ML	K	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 6.00000E-01 uG/ML	Li	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 6.00000E-01 uG/ML	Mg	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 6.00000E-02 uG/ML	Mn	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 3.00000E-01 uG/ML	Mo	N	Y	KP51T
		5559				
5750	ICP-LIQ	3.01000E 01 uG/ML	Na	N	Y	KP51T
		5559				
5750	ICP-LIQ	1.20000E-01 uG/ML	Ni	N	Y	KP51T
		5559				
5750	ICP-LIQ	8.70000E 00 uG/ML	P	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 6.00000E-01 uG/ML	Pb	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 1.20000E 00 uG/ML	Sb	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 6.00000E-01 uG/ML	Se	N	Y	KP51T
		5559				

REPORT CONTINUED ON NEXT PAGE

SAMPLE STATUS REPORT FOR R 6995. PUREX J3/E5 BODVK8 TIME: 3/23/95 12:58
DISPATCHED: 2/14/95 11:50 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS		OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********		***	***	******
5750	ICP-LIQ	< 6.00000E-02 uG/ML 5559	Sr	N	Y	KP51T
5750	ICP-LIQ	< 1.20000E 00 uG/ML 5559	Tl	N	Y	KP51T
5750	ICP-LIQ	< 3.00000E-01 uG/ML 5559	V	N	Y	KP51T
5750	ICP-LIQ	7.20000E-02 uG/ML 5559	Zn	N	Y	KP51T
5797	Hg LIQ	< 5.00000E-03 uG/ML 5560		N	Y	KP51T
5813	pH	OUT FOR RERUN R6996-5713				KP51T
5813	pH	9.45000E 00 NONE 5587		N	Y	KP51T
5826	TOC	3.41000E 01 uG C/ML 5558		N	Y	KP51T
5850	ICP-LIQ	< 6.00000E-02 uG/ML 5559	Ag	N	Y	KP51T
5850	ICP-LIQ	5.33000E 00 uG/ML 5559	Al	N	Y	KP51T
5850	ICP-LIQ	< 3.00000E-01 uG/ML 5559	As	N	Y	KP51T
5850	ICP-LIQ	< 3.00000E-01 uG/ML 5559	Ba	N	Y	KP51T
5850	ICP-LIQ	< 3.00000E-02 uG/ML 5559	Be	N	Y	KP51T
5850	ICP-LIQ	2.47000E 00 uG/ML 5559	Ca	N	Y	KP51T
5850	ICP-LIQ	< 6.00000E-02 uG/ML 5559	Cd	N	Y	KP51T
5850	ICP-LIQ	< 1.20000E-01 uG/ML 5559	Co	N	Y	KP51T
5850	ICP-LIQ	4.08000E-01 uG/ML 5559	Cr	N	Y	KP51T
5850	ICP-LIQ	< 6.00000E-02 uG/ML 5559	Cu	N	Y	KP51T
5850	ICP-LIQ	< 3.00000E-01 uG/ML 5559	Fe	N	Y	KP51T
5850	ICP-LIQ	3.06000E 03 uG/ML 5559	K	N	Y	KP51T
5850	ICP-LIQ	< 6.00000E-02 uG/ML 5559	Li	N	Y	KP51T
5850	ICP-LIQ	< 6.00000E-01 uG/ML 5559	Mg	N	Y	KP51T
5850	ICP-LIQ	< 6.00000E-02 uG/ML 5559	Mn	N	Y	KP51T
5850	ICP-LIQ	< 3.00000E-01 uG/ML 5559	Mo	N	Y	KP51T
5850	ICP-LIQ	3.04000E 01 uG/ML 5559	Na	N	Y	KP51T
5850	ICP-LIQ	< 1.20000E-01 uG/ML 5559	Ni	N	Y	KP51T

REPORT CONTINUED ON NEXT PAGE

SAMPLE STATUS REPORT FOR R 6995. PUREX J3/E5 BODVK8 TIME: 3/23/95 12:58
DISPATCHED: 2/14/95 11:50 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
5850	ICP-LIQ	8.64000E 00 uG/ML P	N	Y	KP51T
		5559			
5850	ICP-LIQ	< 6.00000E-01 uG/ML Pb	N	Y	KP51T
		5559			
5850	ICP-LIQ	< 1.20000E 00 uG/ML Sb	N	Y	KP51T
		5559			
5850	ICP-LIQ	< 6.00000E-01 uG/ML Se	N	Y	KP51T
		5559			
5850	ICP-LIQ	< 6.00000E-02 uG/ML Sr	N	Y	KP51T
		5559			
5850	ICP-LIQ	< 1.20000E 00 uG/ML Tl	N	Y	KP51T
		5559			
5850	ICP-LIQ	< 3.00000E-01 uG/ML V	N	Y	KP51T
		5559			
5850	ICP-LIQ	< 6.00000E-02 uG/ML Zn	N	Y	KP51T
		5559			
5897	Hg-LIQ	< 5.00000E-03 uG/ML	N	Y	KP51T
		5560			
5926	TOC	1.03200E 02 % RECOVERY	N	Y	KP51T
		5558			
5950	ICP	9.58000E 01 % RECOVERY Ag	N	Y	KP51T
		5559			
5950	ICP	9.84400E 01 % RECOVERY Al	N	Y	KP51T
		5559			
5950	ICP	1.08520E 02 % RECOVERY As	N	Y	KP51T
		5559			
5950	ICP	9.89200E 01 % RECOVERY Ba	N	Y	KP51T
		5559			
5950	ICP	1.03000E 02 % RECOVERY Be	N	Y	KP51T
		5559			
5950	ICP	1.05880E 02 % RECOVERY Ca	N	Y	KP51T
		5559			
5950	ICP	1.00720E 02 % RECOVERY Cd	N	Y	KP51T
		5559			
5950	ICP	9.98800E 01 % RECOVERY Co	N	Y	KP51T
		5559			
5950	ICP	1.01080E 02 % RECOVERY Cr	N	Y	KP51T
		5559			
5950	ICP	1.00240E 02 % RECOVERY Cu	N	Y	KP51T
		5559			
5950	ICP	1.01800E 02 % RECOVERY Fe	N	Y	KP51T
		5559			
5950	ICP	K - SAMPLE > 4X CONCENTRATION OF SPIKE.			KP51T
		5559			
5950	ICP	9.77200E 01 % RECOVERY Li	N	Y	KP51T
		5559			
5950	ICP	9.64000E 01 % RECOVERY Mg	N	Y	KP51T
		5559			
5950	ICP	9.64000E 01 % RECOVERY Mn	N	Y	KP51T
		5559			
5950	ICP	9.84400E 01 % RECOVERY Mo	N	Y	KP51T
		5559			

REPORT CONTINUED ON NEXT PAGE

SAMPLE STATUS REPORT FOR R 6995. PUREX J3/E5 BODVK8 TIME: 3/23/95 12:58
DISPATCHED: 2/14/95 11:50 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
5950	ICP	8.40300E 01 % RECOVERY Na	N	Y	KP51T
		5559			
5950	ICP	9.78400E 01 % RECOVERY Ni	N	Y	KP51T
		5559			
5950	ICP	1.08040E 02 % RECOVERY P	N	Y	KP51T
		5559			
5950	ICP	1.03960E 02 % RECOVERY Pb	N	Y	KP51T
		5559			
5950	ICP	9.34000E 01 % RECOVERY Sb	N	Y	KP51T
		5559			
5950	ICP	1.16450E 02 % RECOVERY Se	N	Y	KP51T
		5559			
5950	ICP	9.89200E 01 % RECOVERY Sr	N	Y	KP51T
		5559			
5950	ICP	9.65200E 01 % RECOVERY Tl	N	Y	KP51T
		5559			
5950	ICP	1.01800E 02 % RECOVERY V	N	Y	KP51T
		5559			
5950	ICP	1.00240E 02 % RECOVERY Zn	N	Y	KP51T
		5559			
5997	Hg	9.47000E 01 % RECOVERY	N	Y	KP51T
		5560			
8705	ACD DGST	DF = 100; 100 ML FINAL VOL.			KP51T
		5567			
8795	As	< 2.50000E-01 uG/ML	N	Y	KP51T
		5568			
8796	Se	OUT FOR RERUN			KP51T
		5569			
8796	Se	< 2.50000E-01 uG/ML	N	Y	KP51T
		5691			
8805	ACD DGST	DF=100, FINAL VOL. 100 ML			KP51T
		5567			
8895	As	< 2.50000E-01 uG/ML	N	Y	KP51T
		5568			
8896	Se	OUT FOR RERUN	-		KP51T
		5569			
8896	Se	< 2.50000E-01 uG/ML	N	Y	KP51T
		5691			
8905	ACD DGST	SAMPLE DF=100;ICP SPK DF=20;AS/SE DF=50			KP51T
		5567			
8995	As	8.87000E 01 % RECOVERY	N	Y	KP51T
		5568			
8996	Se	OUT FOR RERUN			KP51T
8996	Se	9.58000E 01 % RECOVERY	N	Y	KP51T
		5691			

END OF REPORT

SAMPLE STATUS REPORT FOR R 6996. PUREX J3/E5 BODVK9 TIME: 3/23/95 12:59
DISPATCHED: 2/14/95 11:51 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 2/14/95 14:50

EXT.	DETER.	RESULTS OR STATUS		OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********		***	***	******
4502	VOA	COMPLETE				KP51T
5713	pH	OUT FOR RERUN				KP51T
		5557				
5713	pH	8.13000E 00 NONE		N	Y	KP51T
		5587				
5726	TOC	2.15000E 01 uG C/ML		N	Y	KP51T
		5558				
5750	ICP-LIQ	< 1.00000E-02 uG/ML	Ag	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 5.00000E-02 uG/ML	Al	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 5.00000E-02 uG/ML	As	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 5.00000E-02 uG/ML	Ba	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 5.00000E-03 uG/ML	Be	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 1.00000E-01 uG/ML	Ca	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 1.00000E-02 uG/ML	Cd	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 2.00000E-02 uG/ML	Co	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 1.00000E-02 uG/ML	Cr	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 1.00000E-02 uG/ML	Cu	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 5.00000E-02 uG/ML	Fe	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 3.00000E-01 uG/ML	K	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 1.00000E-02 uG/ML	Li	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 1.00000E-01 uG/ML	Mg	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 1.00000E-02 uG/ML	Mn	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 5.00000E-02 uG/ML	Mo	N	Y	KP51T
		5559				
5750	ICP-LIQ	2.63000E-01 uG/ML	Na	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 2.00000E-02 uG/ML	Ni	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 2.00000E-01 uG/ML	P	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 1.00000E-01 uG/ML	Pb	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 2.00000E-01 uG/ML	Sb	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 1.00000E-01 uG/ML	Se	N	Y	KP51T
		5559				

REPORT CONTINUED ON NEXT PAGE

SAMPLE STATUS REPORT FOR R 6996. PUREX J3/E5 BODVK9 TIME: 3/23/95 12:59
DISPATCHED: 2/14/95 11:51 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS		OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********		***	***	******
5750	ICP-LIQ	< 1.00000E-02 uG/ML 5559	Sr	N	Y	KP51T
5750	ICP-LIQ	< 2.00000E-01 uG/ML 5559	Tl	N	Y	KP51T
5750	ICP-LIQ	< 5.00000E-02 uG/ML 5559	V	N	Y	KP51T
5750	ICP-LIQ	< 1.00000E-02 uG/ML 5559	Zn	N	Y	KP51T
5797	Hg LIQ	< 5.00000E-03 uG/ML 5560		N	Y	KP51T
5813	pH	OUT FOR RERUN 5557				KP51T
5813	pH	8.12000E 00 NONE 5587		N	Y	KP51T
5826	TOC	8.80000E 00 uG C/ML 5558		N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-02 uG/ML 5559	Ag	N	Y	KP51T
5850	ICP-LIQ	< 5.00000E-02 uG/ML 5559	Al	N	Y	KP51T
5850	ICP-LIQ	< 2.00000E-02 uG/ML 5559	As	N	Y	KP51T
5850	ICP-LIQ	< 5.00000E-02 uG/ML 5559	Ba	N	Y	KP51T
5850	ICP-LIQ	< 5.00000E-03 uG/ML 5559	Be	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-01 uG/ML 5559	Ca	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-02 uG/ML 5559	Cd	N	Y	KP51T
5850	ICP-LIQ	< 2.00000E-01 uG/ML 5559	Co	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-02 uG/ML 5559	Cr	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-02 uG/ML 5559	Cu	N	Y	KP51T
5850	ICP-LIQ	< 5.00000E-02 uG/ML 5559	Fe	N	Y	KP51T
5850	ICP-LIQ	< 3.00000E-01 uG/ML 5559	K	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-02 uG/ML 5559	Li	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-01 uG/ML 5559	Mg	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-02 uG/ML 5559	Mn	N	Y	KP51T
5850	ICP-LIQ	< 5.00000E-02 uG/ML 5559	Mo	N	Y	KP51T
5850	ICP-LIQ	2.68000E-01 uG/ML 5559	Na	N	Y	KP51T
5850	ICP-LIQ	< 2.00000E-02 uG/ML 5559	Ni	N	Y	KP51T

REPORT CONTINUED ON NEXT PAGE

SAMPLE STATUS REPORT FOR R 6996. PUREX J3/E5 BODVK9 TIME: 3/23/95 12:59
DISPATCHED: 2/14/95 11:51 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS		OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********		***	***	******
5850	ICP-LIQ	< 2.00000E-01 uG/ML 5559	P	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-01 uG/ML 5559	Pb	N	Y	KP51T
5850	ICP-LIQ	< 2.00000E-01 uG/ML 5559	Sb	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-01 uG/ML 5559	Se	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-02 uG/ML 5559	Sr	N	Y	KP51T
5850	ICP-LIQ	< 2.00000E-01 uG/ML 5559	Tl	N	Y	KP51T
5850	ICP-LIQ	< 5.00000E-02 uG/ML 5559	V	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-02 uG/ML 5559	Zn	N	Y	KP51T
5897	Hg-LIQ	< 5.00000E-03 uG/ML 5560		N	Y	KP51T
5926	TOC	9.02000E 01 % RECOVERY 5558		N	Y	KP51T
5950	ICP	1.08200E 02 % RECOVERY 5559	Ag	N	Y	KP51T
5950	ICP	1.06560E 02 % RECOVERY 5559	Al	N	Y	KP51T
5950	ICP	1.04920E 02 % RECOVERY 5559	As	N	Y	KP51T
5950	ICP	1.04100E 02 % RECOVERY 5559	Ba	N	Y	KP51T
5950	ICP	1.05740E 02 % RECOVERY 5559	Be	N	Y	KP51T
5950	ICP	1.07380E 02 % RECOVERY 5559	Ca	N	Y	KP51T
5950	ICP	1.07380E 02 % RECOVERY 5559	Cd	N	Y	KP51T
5950	ICP	1.06560E 02 % RECOVERY 5559	Co	N	Y	KP51T
5950	ICP	1.06560E 02 % RECOVERY 5559	Cr	N	Y	KP51T
5950	ICP	1.06560E 02 % RECOVERY 5559	Cu	N	Y	KP51T
5950	ICP	1.06560E 02 % RECOVERY 5559	Fe	N	Y	KP51T
5950	ICP	1.20490E 02 % RECOVERY 5559	K	N	Y	KP51T
5950	ICP	1.06560E 02 % RECOVERY 5559	Li	N	Y	KP51T
5950	ICP	1.08200E 02 % RECOVERY 5559	Mg	N	Y	KP51T
5950	ICP	1.04920E 02 % RECOVERY 5559	Mo	N	Y	KP51T
5950	ICP	1.11230E 02 % RECOVERY 5559	Na	N	Y	KP51T

REPORT CONTINUED ON NEXT PAGE

SAMPLE STATUS REPORT FOR R 6996. PUREX J3/E5 BODVK9 TIME: 3/23/95 12:59
DISPATCHED: 2/14/95 11:51 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
5950	ICP	1.07380E 02 % RECOVERY Ni	N	Y	KP51T
		5559			
5950	ICP	1.10660E 02 % RECOVERY P	N	Y	KP51T
		5559			
5950	ICP	1.08200E 02 % RECOVERY Pb	N	Y	KP51T
		5559			
5950	ICP	1.04920E 02 % RECOVERY Sb	N	Y	KP51T
		5559			
5950	ICP	1.04920E 02 % RECOVERY Se	N	Y	KP51T
		5559			
5950	ICP	1.05740E 02 % RECOVERY Sr	N	Y	KP51T
		5559			
5950	ICP	1.05740E 02 % RECOVERY Tl	N	Y	KP51T
		5559			
5950	ICP	1.05740E 02 % RECOVERY V	N	Y	KP51T
		5559			
5950	ICP	1.09020E 02 % RECOVERY Zn	N	Y	KP51T
		5559			
5997	Hg	9.78000E 01 % RECOVERY	N	Y	KP51T
		5560			
8705	ACD DGST	DF=100; FINAL VOL. 100 ML			KP51T
		5567			
8795	As	< 2.50000E-01 uG/ML	N	Y	KP51T
		5568			
8796	Se	OUT FOR RERUN			KP51T
		5569			
8796	Se	< 2.50000E-01 uG/ML	N	Y	KP51T
		5691			
8805	ACD DGST	DF=100; FINAL VOL. 100 ML			KP51T
		5567			
8895	As	< 2.50000E-01 uG/ML	N	Y	KP51T
		5568			
8896	Se	OUT FOR RERUN			KP51T
		5569			
8896	Se	< 2.50000E-01 uG/ML	N	Y	KP51T
		5691			
8905	ACD DGST	SAMPLE DF=100; ICP SPK DF=20; AS/SE DF=50			KP51T
		5567			
8995	As	9.25000E 01 % RECOVERY	N	Y	KP51T
		5568			
8996	Se	OUT FOR RERUN			KP51T
		5569			
8996	Se	1.03200E 02 % RECOVERY	N	Y	KP51T
		5691			

END OF REPORT

SAMPLE STATUS REPORT FOR R 6997. PUREX J3/E5 STD TIME: 3/23/95 13: 0
DISPATCHED: 2/14/95 11:51 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 2/14/95 14:50

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
5513	pH	OUT FOR RERUN			KP51T
		5557			
5513	pH	1.00400E 02 % RECOVERY	N	Y	KP51T
		5587			
5526	TOC	9.43000E 01 % RECOVERY	N	Y	KP51T
		5558			
5550	ICP	1.01940E 02 % RECOVERY Ag	N	Y	KP51T
		5559			
5550	ICP	1.01940E 02 % RECOVERY Al	N	Y	KP51T
		5559			
5550	ICP	1.06760E 02 % RECOVERY As	N	Y	KP51T
		5559			
5550	ICP	1.02240E 02 % RECOVERY Ba	N	Y	KP51T
		5559			
5550	ICP	1.07160E 02 % RECOVERY Be	N	Y	KP51T
		5559			
5550	ICP	1.05980E 02 % RECOVERY Ca	N	Y	KP51T
		5559			
5550	ICP	1.04780E 02 % RECOVERY Cd	N	Y	KP51T
		5559			
5550	ICP	1.05960E 02 % RECOVERY Co	N	Y	KP51T
		5559			
5550	ICP	1.04960E 02 % RECOVERY Cr	N	Y	KP51T
		5559			
5550	ICP	1.04760E 02 % RECOVERY Cu	N	Y	KP51T
		5559			
5550	ICP	1.04280E 02 % RECOVERY Fe	N	Y	KP51T
		5559			
5550	ICP	9.98600E 01 % RECOVERY K	N	Y	KP51T
		5559			
5550	ICP	1.01880E 02 % RECOVERY Li	N	Y	KP51T
		5559			
5550	ICP	1.02060E 02 % RECOVERY Mg	N	Y	KP51T
		5559			
5550	ICP	1.02240E 02 % RECOVERY Mn	N	Y	KP51T
		5559			
5550	ICP	1.04520E 02 % RECOVERY Mo	N	Y	KP51T
		5559			
5550	ICP	1.01800E 02 % RECOVERY Na	N	Y	KP51T
		5559			
5550	ICP	1.03360E 02 % RECOVERY Ni	N	Y	KP51T
		5559			
5550	ICP	1.06780E 02 % RECOVERY P	N	Y	KP51T
		5559			
5550	ICP	1.04700E 02 % RECOVERY Pb	N	Y	KP51T
		5559			
5550	ICP	9.91400E 01 % RECOVERY Sb	N	Y	KP51T
		5559			
5550	ICP	1.03020E 02 % RECOVERY Se	N	Y	KP51T
		5559			
5550	ICP	1.02120E 02 % RECOVERY Sr	N	Y	KP51T
		5559			

REPORT CONTINUED ON NEXT PAGE

SAMPLE STATUS REPORT FOR R 6997. PUREX J3/E5 STD TIME: 3/23/95 13: 0
DISPATCHED: 2/14/95 11:51 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
5550	ICP	1.01980E 02 % RECOVERY Tl	N	Y	KP51T
		5559			
5550	ICP	1.04500E 02 % RECOVERY V	N	Y	KP51T
		5559			
5550	ICP	1.05580E 02 % RECOVERY Zn	N	Y	KP51T
		5559			
5595	As	1.01000E 02 % RECOVERY	N	Y	KP51T
		5568			
5596	Se	OUT FOR RERUN			KP51T
5596	Se	1.02600E 02 % RECOVERY	N	Y	KP51T
		5691			
5597	Hg	9.66000E 01 % RECOVERY	N	Y	KP51T
		5560			

END OF REPORT

9613479.1068

ATTACHMENT 5

ANALYTICAL DATA

9613479.1069

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

ANALYTICAL BATCH

Lab Segment Serial No. R 6990,R 6991	Customer ID: BODPS9,BODPTO
Analysis: pH	Sample Prep: DIRECT

Instrument: SN 246354	Procedure/ Rev: LA-212-102 / C-5
Technologist: RD MEYERS	Date: 02/19/95
Starting Time: 1140	Temperature 24 C
Ending Time: 1200	Chemist: ROB SCHROEDER

Comments: BATCH #5553

	Description	Lab ID		Description	Lab ID
1	LMCS STD	R6988-5513	11		
2	SAMPLE	R6990-5713	12		
3	SAMPLE DUP	R6990-5813	13		
4	SAMPLE	R6991-5713	14		
5	SAMPLE DUP	R6991-5813	15		
6	LMCS	R6992-5513	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	52N16-B / 5ml			

A-6000-881 (03/92)

9613479.1070

pH ANALYSIS

Batch 5553

Serial No.	Sample Point	Date	Time Issued	Priority
R 6988.-5513	PUREX J3/E5	2-14-95	11:13	21

Determination	Method/Standard	Result Units	Charge Code	Reruns
pH	LA-212-102	% RECOVERY	KP51T	0

Sample Size	Customer ID
? 5ml	STD

Remarks, Calculations, Results:

S350 PH MAT.
STD# RESULT
STD VAL %REC
S353 NBSPH1
STD# 52N16-B RESULT 4.02
STD VAL 4.00 %REC 100.5

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

Date	Time Completed	Lab Unit Mgr.
2/19/95	1200	2/21/95

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

pH ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6800-5713	PUREX J3/E5	2-14-95	11:25	21

Determination	Method/Standard	Result Units	Charge Code	Reruns
pH	LA-212-102	NONE	KP51T	0

Sample Size	Customer ID
5 ml	[illegible]

Remarks, Calculations, Results: 2.89

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

Date	Time Completed	Lab Unit Mgr	
2/14/95	1200	[signature] 2/21/95	[signature]

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

9613479.1072

pH ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6990.-5813	PUREX J3/E5	2-14-95	11:25	21

Determination	Method/Standard	Result Units	Charge Code	Reruns
pH	LA-212-102	NONE	KP51T	0

Sample Size	Customer ID
75ml	BODPS9

Remarks, Calculations, Results

DUPLICATE SAMPLE 2.85

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

Date	Time Completed	Lab Unit Mgr.	
2/14/95	1200	2/21/95	

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

9615979.1073

pH ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6991.-5713	PUREX J3/E5	2-14-95	11:29	21

Determination	Method/Standard	Result Units	Charge Code	Reruns
pH	LA-212-102	NONE	KP51T	0

Sample Size	Customer ID
? 5ml	BODPTO

Remarks, Calculations, Results: 6.28

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

Date	Time Completed	Lab Unit Mgr.	
2/14/95	1200	2/21/95	

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

9613479.1074

pH ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6991.-5813	PUREX J3/E5	2-14-95	11:29	21

Determination	Method/Standard	Result Units	Charge Code	Reruns
pH	LA-212-102	NONE	KP51T	0

Sample Size	Customer ID
? 5ml	BODPTO

Remarks, Calculations, Results:
DUPLICATE SAMPLE 6.43

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

Date	Time Completed	Lab Unit Mgr	
2/19/95	1200	2/21/95	

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

pH ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 6992.-5513	PUREX J3/E5	2-14-95	11:49	21

Determination	Method Standard	Result Units	Charge Code	Reruns
pH	LA-212-102	% RECOVERY	KP51T	[illegible]

Sample Size	Customer ID
2 ~~[illegible]~~ 5ml	STD

Remarks, Calculations, Results

[illegible]
STD# [illegible]
STD [illegible]
[illegible]
STD# 52N16B RESULT 4.03
STD [illegible] 4.06 %REC 100.8 ACM 5957

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

Date	Time Completed	Lab Unit Mgr	
2/14/95	1200	2/21/95	

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

9613479.1076

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

ANALYTICAL BATCH

Lab Segment Serial No. R 6995,R 6996	Customer ID: BODVK8,BODVK9
Analysis: pH	Sample Prep: DIRECT

Instrument: SN 246354	Procedure/ Rev: LA-212-102 / C-5
Technologist: RD MEYERS	Date: 02/19/95
Starting Time: 1120	Temperature 24 C
Ending Time: 1140	Chemist: ROB SCHROEDER

Comments: BATCH #5557

	Description	Lab ID		Description	Lab ID
1	LMCS STD	R6993-5513	11		
2	SAMPLE	R6995-5713	12		
3	SAMPLE DUP	R6995-5813	13		
4	SAMPLE	R6996-5713	14		
5	SAMPLE DUP	R6996-5813	15		
6	LMCS	R6997-5513	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	52N16-B / 5ml			

A-6000-881 (03/92)

9613479.1077

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

ANALYTICAL BATCH

Lab Segment Serial No. R 6995.6996	Customer ID: J3/E5
Analysis: PH	Sample Prep: DIRECT

Instrument:	Procedure/ Rev: LA 212-102/
Technologist: R. WENDLAND	Date: 02/21/95
Starting Time: 0800	Temperature 25.0
Ending Time: 1200	Chemist: R. SCHROEDER

Comments: _____

	Description	Lab ID		Description	Lab ID
1	LMCS	R 6993-5513	11		
2	SAM	R 6995-5713	12		
3	DUP	R 6995-5813	13		
4	SAM	R 6996-5713	14		
5	DUP	R 6996-5813	15		
6	LMCS	R 6997-5513	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				

A-6000-881 (03/92)

9613479.1078

pH ANALYSIS

Batch 5557

Serial No	Sample Point	Date	Time Issued	Priority
R 6993.-5513	PUREX J3/E5	2-14-95	11:49	21

Determination	Method Standard	Result Units	Charge Code	Reruns
pH	LA-212-102	% RECOVERY	KP51T	0

Sample Size	Customer ID
? 5ml	STD

Remarks, Calculations, Results

S350 PH MAT.
STD# RESULT
STD VAL %REC
S353 NPSPH1
STD# 52N4B RESULT 4.04
STD VAL 4.00 %REC 101.0 WR# 5960

OUT FOR RERUN

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

Date	Time Completed	Lab Unit Mgr	
2/14/95	1140	2/21/95	

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

RERUN Batch 5587

Serial No	Sample Point	Date	Time Issued	Priority
R 6993.-5513	PUREX J3/E5	2-14-95	11:49	21

Determination	Method Standard	Result Units	Charge Code	Reruns
pH	LA-212-102	% RECOVERY	KP51T	1

Sample Size	Customer ID
5 ML	STD

Remarks, Calculations, Results

S350 PH MAT.
STD# RESULT 8.02
STD VAL 8.00 %REC 100.2
~~S353 NPSPH1~~
STD# 86N16-C RESULT
STD VAL %REC

Robert Wendland

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

Date	Time Completed	Lab Unit Mgr	
2-22-95		2-23-95	

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

pH ANALYSIS

RERUN

Serial No.	Sample Point	Date	Time Issued	Priority
R 6995.-5713	PUREX J3/E5	2-14-95	11:50	21

Determination	Method/Standard	Result Units	Charge Code	Reruns
pH	LA-212-102	NONE	KP51T	1

Sample Size	Customer ID
5 ML	BOIVKS

Remarks, Calculations, Results

9.44

Robby Wendland

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Hrs	Hrs	Hrs	Hrs	Hrs
Date: 2-22-95	Time Completed	Lab Unit Mgr. 2-23-95		

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

pH 8.00 STD

pH 9.44 95
pH 9.45

R6995-5713

pH 8.13 96
8.12

pH 8.00 STD

pH ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 6995.-5713	FUREX J3/E5	2-14-95	11:50	21

Determination	Method Standard	Result Units	Charge Code	Reruns
pH	LA-212-102	NONE	KP51T	0

Sample Size	Customer ID
5ml	BODY

Remarks, Calculations, Results

9.42

OUT FOR RERUN

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

Date	Time Completed	Lab Unit Mgr	
2/15/95	1145	2/21/95	

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

9613479.1081

pH ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6995.-5813	PUREX J3/E5	2-14-95	11:50	21

Determination	Method/Standard	Result Units	Charge Code	Reruns
pH	LA-212-102	NONE	KP51T	0

Sample Size	Customer ID
? 5ml	BODVK8

Remarks, Calculations, Results:
DUPLICATE SAMPLE 9.44

OUT FOR RERUN

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

Date	Time Completed	Lab Unit Mgr	
2/14/95	1140	2/21/95	

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

RERUN

Serial No.	Sample Point	Date	Time Issued	Priority
R 6995. 5813	PUREX J3/E5	2-14-95		

Determination	Method Standard	Result Units	Charge Code	Reruns
pH	LA-212-102	NONE	KP51T	1

Sample Size	Customer ID
5 ML	BODVK8

Remarks, Calculations, Results:
DUPLICATE SAMPLE

9.45

ROBERT NENDLAND

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

Date	Time Completed	Lab Unit Mgr	
2-22-95		2-23-95	

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

9613479.1082

pH ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6996.-5813	PUREX J3/E5	2-14-95	11:51	21

Determination	Method/Standard	Result Units	Charge Code	Reruns
pH	LA-212-102	NONE	KP51T	0

Sample Size	Customer ID
? 5ml	BODVK9

Remarks, Calculations, Results:
DUPLICATE SAMPLE 6.62

OUT FOR RERUN

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

Date	Time Completed	Lab Unit Mgr	
2/14/95	1140	2/21/95	

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

RERUN

Serial No.	Sample Point	Date	Time Issued	Priority
[illegible]	PUREX J3/E5	2-14-95	11:51	21

Determination	Method/Standard	Result Units	Charge Code	Reruns
pH	LA-212-102	NONE	[illegible]	1

Sample Size	Customer ID
5 ML	BODVK9

Remarks, Calculations, Results
DUPLICATE SAMPLE

8.12

BOBBY WENDLAND

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

Date	Time Completed	Lab Unit Mgr	
2-22-95		2-23-95	

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

pH ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 6996.-5713	PUREX J3/E5	2-14-95	11:51	21

Determination	Method Standard	Result Units	Charge Code	Reruns
pH	LA-212-102	NONE	KP51T	0

Sample Size	Customer ID
?5ml	BODVK9

Remarks, Calculations, Results

7.01

OUT FOR RERUN

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

Date	Time Completed	Lab Unit Mgr	
2/14/95	1140	2/21/95	

54-6600-061 (R-10-83)

RERUN

Serial No	Sample Point	Date	Time Issued	Priority
R [illegible]	PUREX J3/E5	[illegible]-95	[illegible]	-

Determination	Method Standard	Result Units	Charge Code	Reruns
pH	LA-212-102	NONE	KP51T	-

Sample Size	Customer ID
5 ML	BODVK9

Remarks, Calculations, Results

8.13

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

Date	Time Completed	Lab Unit Mgr	
2-22-95			

54-6600-061 (R-10-83)

9613479.1084

pH ANALYSIS

RERUN

Serial No	Sample Point	Date	Time Issued	Priority
R 6997.-5513	PUREX J3/E5	2-14-95	11:51	21

Determination	Method Standard	Result Units	Charge Code	Reruns
pH	LA-212-102	% RECOVERY	KP51T	1

Sample Size	Customer ID
5 ML	STD

Remarks, Calculations, Results

S350 PH MAT.
STD# 86N16C RESULT 8.03
STD VAL %REC 100.4
S353 NBSPH1
STD# RESULT
STD VAL %REC

BOBBY WENDLAND

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

Date	Time Completed	Lab Unit Mgr	
2-22-95		2-23-95 Rev Schroeder	

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

Serial No	Sample Point	Date	Time Issued	Priority
R 6997.-5513	PUREX J3/E5	2-14-95	11:51	21

Determination	Method Standard	Result Units	Charge Code	Reruns
pH	LA-212-102	% RECOVERY	KP51T	0

Sample Size	Customer ID
? 5ml	STD

Remarks, Calculations, Results

S350 PH MAT.
STD# RESULT
STD VAL %REC
S353 NBSPH1
STD# 52N1013 RESULT 4.04
STD VAL 4.00 %REC 101.0 WR# 5963

OUT FOR RERUN

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

Date	Time Completed	Lab Unit Mgr	
2/15/95	1140	2/21/95	

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

9613479.1085

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

ANALYTICAL BATCH

Lab Segment Serial No. R6990, R6991	Customer ID: BODPS9
Analysis: TOTAL ORGANIC CARBON	Sample Prep: DIRECT

Instrument: WC16130	Procedure/ Rev: LA-344-105 / B-5
Technologist: DC DUNHAM	Date: 02/21/95
Starting Time: 0500	Temperature N\A
Ending Time: 0645	Chemist: RW SCHROEDER

Comments: BATCH # 5554

	Description	Lab ID		Description	Lab ID
1	LMCS STD	R6988-5526	11		
2	REAGENT BLANK	R6989-5626	12		
3	SAMPLE	R6990-5726	13		
4	DUPLICATE	R6990-5826	14		
5	SPIKE	R6990-5926	15		
6	SAMPLE	R6991-5726	16		
7	DUPLICATE	R6991-5826	17		
8	SPIKE	R6991-5926	18		
9	LMCS STD	R6992-5526	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	10N12F / .200 ML			
SPIKE	11N12E / .400 ML			

A-6000-881 (03/92)

9613479.1086

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Batch 5554

Serial No.	Sample Point	Date	Time Issued	Priority
R 6988.-5526	PUREX 3S/2S	2-14-95	11:13	21

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

Sample Size	Customer ID
? .200 ml - 2 ml .5 M H_2SO_4	STD

Remarks, Calculations, Results:

S356 CO3TOC

STD# 10N12F RESULT 3.02803

STD VAL 3.00803 %REC 102.3

David C Dunham

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

Date	Time Completed	Lab Unit Mgr	
2-21-95	0645	2/22/95 Ru Schroeder	R C Jones

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

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

Type			STANDARD
STANDARD	Sample Volume in mL	(SS)	0.200
Work List	H2SO4 Volume in mL	(VR)	2.000
5554	Volume Injected in mL	(VI)	0.200
Test Code	Dilution Factor	(DF)	11
	Digest Dilution Factor	(DDF)	1
	µg of Carbon in Sample	(C1)	58.2
Matrix	µg of Carbon in Blank	(C2)	2.3
LIQUID	g of Carbon/L	=	3.07E+00

Sample #
R6988-5526
Instrument Code
Analyst
D. DUNHAM
Date
02/21/95
Time
06:45 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) = $\frac{1 \mu g C * DF * DDF}{VI}$

µg Carbon/mL =	3.07E+03	DETECTION LEVEL in µg/mL
		5.50E+01

Data Entry by:	R C Jones	Date:	02/21/95
Approved by:	[illegible]	Date:	2/22/95

Form 344105_C Rev. 1.1

9613479.1087

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: R6988 Date: 02/21/95 Time: 05:24:53

Sample Size = 200 uL
Dil Factor = 11
Blank ID # = BLANK
Blank Value = .3283918 ug/minute C

Analyst : DC DUNHAM
Min Readings = 14
Max Readings = 14
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.20	0.00
2	1.01	33.30	99.40
3	1.51	47.00	29.15
4	2.01	51.50	8.74
5	2.51	53.80	4.28
6	3.01	54.80	1.82
7	3.51	55.80	1.79
8	4.01	56.10	0.53
9	4.51	56.50	0.71
10	5.01	56.80	0.53
11	5.51	57.20	0.70
12	6.01	57.50	0.52
13	6.50	57.80	0.52
14	7.00	58.20	0.69

BLANK VALUE = 2.3 micrograms carbon
BLANK FACTOR = 2.3 / 7.00383 = +3.3E-01 ug/min Carbon

SAMPLE RESULTS:
(58.2 - 2.30006)(11)/(200) = +3.07E+00 g/L Carbon
(58.2 - 2.30006)(11)/(200)(12) = +2.56E-01 Molar Carbon

Sample Run By: David C Dunham
DC DUNHAM 00000

9613479.1088

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No.	Sample Point	Date	Time Issued	Priority
R 6989 -5626	PUREX J3/E5	2-14-95	11:23	21

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

Sample Size	Customer ID
? • 200 ml .5M H_2SO_4	BLANK

Remarks, Calculations, Results:

REAGENT BLANK

15.00E00 ug/ml JMB 2/22/95

~~15.00E00~~ ug C/ML

~~15.00E-03~~ RJ 2-21-95

David C. Dunham

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

Date	Time Completed	Lab Unit Mgr	
2-21-95	0645	RW Schneider 2/22/95	

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

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

				BLK
Type	Sample Volume in mL	(SS)		0.200
BLK	H2SO4 Volume in mL	(VR)		0.000
Work List	Volume Injected in mL	(VI)		0.200
5554	Dilution Factor	(DF)		1
Test Code	Digest Dilution Factor	(DDF)		1
	µg of Carbon in Sample	(C1)		3.1
Matrix	µg of Carbon in Blank	(C2)		2.3
Liquid	g of Carbon/L	=	<	5.00E-03

Sample #
R6989-5626
Instrument Code
Analyst
D. Dunham
Date
02/21/95
Time
06:45 AM

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

$$\mu\text{g of Carbon/mL} = \text{g of Carbon/L} * 1000000\ \mu g/g\ /\ 1000\ mL/L$$

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

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:	02/22/95
Approved by:		Date:	2/22/95

Form 344105_C Rev. 1.1

9613479.1009

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: R6989 Date: 02/21/95 Time: 06:06:23

Sample Size = 200 uL
Dil Factor = 1
Blank ID # = BLANK
Blank Value = .3283918 ug/minute C

Analyst : DC DUNHAM
Min Readings = 14
Max Readings = 14
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.10	0.00	0.00
2	0.60	0.00	0.00
3	1.10	0.30	100.00
4	1.60	0.60	50.00
5	2.10	0.90	33.33
6	2.60	1.10	18.18
7	3.10	1.40	21.43
8	3.60	1.70	17.65
9	4.10	1.90	10.53
10	4.60	2.10	9.52
11	5.10	2.40	12.50
12	5.60	2.60	7.69
13	6.10	2.90	10.34
14	6.60	3.10	6.45

BLANK VALUE = 2.3 micrograms carbon
BLANK FACTOR = 2.3 / 7.00383 = +3.3E-01 ug/min Carbon

SAMPLE RESULTS:
(3.1 - 2.166566)(1)/(200) = < 5.00 E-3 g/L Carbon
(3.1 - 2.166566)(1)/(200)(12) = < 4.17 E-4 Molar Carbon

Sample Run By: DC DUNHAM 00000

9613479.1090

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

Sample: BLANK Date: 02/21/95 Time: 04:09:30

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

Analyst : DC DUNHAM
Min Readings = 14
Max Readings = 14
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.00	0.00
2	1.01	0.30	100.00
3	1.51	0.50	40.00
4	2.00	0.60	16.67
5	2.50	0.80	25.00
6	3.00	1.00	20.00
7	3.51	1.10	9.09
8	4.01	1.30	15.38
9	4.50	1.50	13.33
10	5.00	1.60	6.25
11	5.50	1.80	11.11
12	6.00	2.00	10.00
13	6.50	2.10	4.76
14	7.00	2.30	8.70

BLANK VALUE = 2.3 micrograms carbon
BLANK FACTOR = 2.3 / 7.00383 = +3.3E-01 ug/min Carbon

Sample Run By: David C. Dunham
DC DUNHAM 00000

9613479.1091

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No.	Sample Point	Date	Time Issued	Priority
R 6990.-5726	FUREX'J3/E3	2-14-95	11:25	21

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

Sample Size	Customer ID
? 2 ml – .200 ml .5 M H_2SO_4	BUDPS9

Remarks, Calculations, Results:

1.7150 mg C/mL

David G. Dunham

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

Date	Time Completed	Lab Unit Mgr 2/22/95	
2-21-95	0645		

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

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

Type			Sample
Sample	Sample Volume in mL	(SS)	2.000
	H2SO4 Volume in mL	(VR)	0.200
Work List	Volume Injected in mL	(VI)	0.200
5554	Dilution Factor	(DF)	1.1
Test Code	Digest Dilution Factor	(DDF)	1
	µg of Carbon in Sample	(C1)	33.3
Matrix	µg of Carbon in Blank	(C2)	2.3
liquid	g of Carbon/L	=	1.71E-01

Sample #
R6990-5726
Instrument Code
Analyst
D. Dunham
Date
02/21/95
Time
06:45 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) = $\frac{1 \mu g C * DF * DDF}{VI}$

µg Carbon/mL =	1.71E+02	DETECTION LEVEL in µg/mL
		5.50E+00

Data Entry by:		Date:	02/22/95
Approved by:		Date:	2/22/95

Form 344105_C Rev 1.1

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: R6990-5726 Date: 02/21/95 Time: 05:51:08

Sample Size = 200 uL
Dil Factor = 1.1
Blank ID # = BLANK
Blank Value = .3283918 ug/minute C

Analyst : DC DUNHAM
Min Readings = 14
Max Readings = 14
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.30	0.00
2	1.01	19.80	98.48
3	1.51	26.10	24.14
4	2.00	28.60	8.74
5	2.50	29.90	4.35
6	3.00	30.70	2.61
7	3.50	31.20	1.60
8	4.00	31.50	0.95
9	4.50	31.90	1.25
10	5.00	32.20	0.93
11	5.51	32.40	0.62
12	6.01	32.70	0.92
13	6.51	33.00	0.91
14	7.00	33.30	0.90

BLANK VALUE = 2.3 micrograms carbon
BLANK FACTOR = 2.3 / 7.00383 = +3.3E-01 ug/min Carbon

SAMPLE RESULTS:
(33.3 - 2.300336)(1.1)/(200) = +1.70E-01 g/L Carbon
(33.3 - 2.300336)(1.1)/(200)(12) = +1.42E-02 Molar Carbon

Sample Run By: David C Dunham
DC DUNHAM 00000

9613479.1093

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No.	Sample Point	Date	Time Issued	Priority
R 6990.-5826	PUREX J3/E5	2-14-95	11:25	21

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

Sample Size	Customer ID
? 2 ml – .200 ml .5M H_2SO_4	BODPS9

Remarks, Calculations, Results:
DUPLICATE SAMPLE

David C Dunham 1.64E02 ug C/ML

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

Date	Time Completed	Lab Unit Mgr 2/22/95	
2-21-95	0645	Ruf Schroeder	

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

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

			Duplicate
Type	Sample Volume in mL	(SS)	2.000
Duplicate	H2SO4 Volume in mL	(VR)	0.200
Work List	Volume Injected in mL	(VI)	0.200
5554	Dilution Factor	(DF)	1.1
Test Code	Digest Dilution Factor	(DDF)	1
	µg of Carbon in Sample	(C1)	32.1
Matrix	µg of Carbon in Blank	(C2)	2.3
liquid	g of Carbon/L	=	1.64E-01

Sample #
R6990-5826
Instrument Code
Analyst
D. Dunham
Date
02/21/95
Time
06:45 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) = $\frac{1 \mu g C * DF * DDF}{VI}$

µg Carbon/mL =	1.64E+02	DETECTION LEVEL in µg/mL
		5.50E+00

Data Entry by:		Date:	02/22/95
Approved by:		Date:	2/22/95

Form 344105LC Rev. 1.1

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: R6990-5826 Date: 02/21/95 Time: 05:58:55

Sample Size = 200 uL
Dil Factor = 1.1
Blank ID # = BLANK
Blank Value = .3283918 ug/minute C

Analyst : DC DUNHAM
Min Readings = 14
Max Readings = 14
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.40	0.00
2	1.01	20.20	98.02
3	1.51	25.90	22.01
4	2.01	27.80	6.83
5	2.51	29.00	4.14
6	3.01	29.60	2.03
7	3.51	29.90	1.00
8	4.01	30.30	1.32
9	4.51	30.70	1.30
10	5.01	30.90	0.65
11	5.51	31.20	0.96
12	6.01	31.60	1.27
13	6.51	31.80	0.63
14	7.00	32.10	0.93

BLANK VALUE = 2.3 micrograms carbon
BLANK FACTOR = 2.3 / 7.00383 = +3.3E-01 ug/min Carbon

SAMPLE RESULTS:
(32.1 - 2.300326)(1.1)/(200) = +1.64E-01 g/L Carbon
(32.1 - 2.300326)(1.1)/(200)(12) = +1.37E-02 Molar Carbon

Sample Run By: David C Dunham
DC DUNHAM 00000

PLACE ANALYTICAL CARD IN BOX BELOW-DO NOT WRITE IN SPACE

Serial No.	Sample Point	Date	Time Issued	Priority
R 699[illegible] 5926	PUREX J3/[illegible]	2-14-95	11:25	21

Determination	Method/Standard	Result Units	Charge Code	Reruns
TOC	LA-344-1[illegible]	% RECOVERY	KP[illegible]	0

Sample Size	Customer ID
? .400 ml - .400 ml spike ~~1.200 ml 1.M H_2SO_4~~	[illegible]

Remarks, Calculations, Results:

SAMPLE SPIKED TO R6990-5726
SPIKE ID 11N12E
SPIKE VOLUME .400 ml

~~74.8%~~
92.3% gwb 2/22/95

David C Dunham

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

Date	Time Completed	Lab Unit Mgr 2/22/95	
2-21-95	0645	RW Schroeder	[illegible]

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

TOC: LA-344-105 SPIKED SAMPLE

SPIKE

Type	>>>>>> Sample Vial Data <<<<<<		>>>>> Spiked Vial Data <<<<<	
SPIKE	Sample Volume in mL	2.000	Sample Size in mL (SS)	0.400
Work List	H_2SO_4 Volume in mL	0.200	Spike Volume in mL	0.400
5554	Volume Injected in mL	0.200	H_2SO_4 Volume in mL	0.000
Test Code	µg of Carbon in Sample	33.3	Volume Injected in mL	0.200
	µg of Carbon in Blank	2.3	Sample Pre-Spike Dil. Factor (PDF)	1.1
Matrix			Spike Value (µg/ml)	747
Liquid			µg C in Sample + Spike	91.2
Sample #			µg C in Blank	2.3
R6990-5926				
Instrument Code				
Analyst				
D. Dunham				
Date				
02/21/95				
Time				
06:45 AM				

$$\text{PERCENT SPIKE RECOVERY} = \frac{\mu g \text{ Carbon Recovered from Spike} * 100}{\mu g \text{ Carbon in Spike}}$$

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)

$$\text{Spike Correction Factor} = \frac{\text{Total volume in spiked sample vial (mL)}}{\text{Volume injected (mL)}}$$

$$\text{Sample Correction Factor} = \frac{\text{Total volume in sample vial (mL)}}{\text{Volume injected (mL)}}$$

$$\text{Sample Size Correction Factor} = \frac{\text{Sample size in (mL) in spiked vial}}{\text{Sample size (mL) in sample}}$$

$$\text{Sample Pre-Spike Dilution Factor} = \frac{1}{\text{Dilution of Sample Before Added to Spike Vial}}$$

WHERE : µg Carbon in Spike = Spike Value (µg/mL) * Spike Volume (mL)

Percent Spike Recovery 98.3%

Data Entry by:	[illegible]	Date: 22-Feb-95
Approved by:	[illegible]	Date: 2/22/95

Form X Rev. 1.1

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: R6990-5926 Date: 02/21/95 Time: 06:59:54

Sample Size = 200 uL
Dil Factor = 2.2
Blank ID # = BLANK
Blank Value = .3283918 ug/minute C

Analyst : DC DUNHAM
Min Readings = 14
Max Readings = 14
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.90	0.00
2	1.01	58.00	98.45
3	1.51	76.30	23.98
4	2.01	83.30	8.40
5	2.51	86.40	3.59
6	3.01	87.60	1.37
7	3.51	88.20	0.68
8	4.01	88.90	0.79
9	4.50	89.50	0.67
10	5.00	89.80	0.33
11	5.50	90.20	0.44
12	6.00	90.50	0.33
13	6.50	91.00	0.55
14	7.00	91.20	0.22

BLANK VALUE = 2.3 micrograms carbon
BLANK FACTOR = 2.3 / 7.00383 = +3.3E-01 ug/min Carbon

SAMPLE RESULTS:
(91.2 - 2.300005)(2.2)/(200) = +9.78E-01 g/L Carbon
(91.2 - 2.300005)(2.2)/(200)(12) = +8.15E-02 Molar Carbon

Sample Run By: Daimell Dunham
DC DUNHAM 00000

9613479.1097

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6991.-5726	PUREX J3/E5'	2-14-95	11:29	21

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

Sample Size	Customer ID
? 2ml - .200 ml .5 M H_2SO_4	BODPTO

Remarks, Calculations, Results

1.27E+1 ug/ml gwb 2/22/95

~~1.38 oz/gal/rc~~

David C Dunham

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

Date	Time Completed	Lab Unit Mgr	
2-21-95	0645	RW Schroeder 2/22/95	L Jones

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

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

			Sample
Type	Sample Volume in mL	(SS)	2.000
Sample	H2SO4 Volume in mL	(VR)	0.200
Work List	Volume Injected in mL	(VI)	0.200
5554	Dilution Factor	(DF)	1.1
Test Code	Digest Dilution Factor	(DDF)	1
	µg of Carbon in Sample	(C1)	4.6
Matrix	µg of Carbon in Blank	(C2)	2.3
liquid	g of Carbon/L	=	1.27E-02

Sample #	
R6991-5726	
Instrument Code	
Analyst	
D. Dunham	
Date	
02/21/95	
Time	
06:45 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) = $\frac{1 \mu g C * DF * DDF}{VI}$

µg Carbon/mL =	1.27E+01	DETECTION LEVEL in µg/mL
		5.50E+00

Data Entry by:		Date:	02/22/95
Approved by:		Date:	2/22/95

Form 344105_C Rev. 1.1

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: R6991-5726 Date: 02/21/95 Time: 06:32:55

Sample Size = 200 uL
Dil Factor = 1.1
Blank ID # = BLANK
Blank Value = .3283918 ug/minute C

Analyst : DC DUNHAM
Min Readings = 14
Max Readings = 14
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.10	0.00
2	1.01	1.10	90.91
3	1.51	1.50	26.67
4	2.00	1.90	21.05
5	2.50	2.20	13.64
6	3.00	2.60	15.38
7	3.50	2.70	3.70
8	4.01	3.00	10.00
9	4.50	3.30	9.09
10	5.00	3.50	5.71
11	5.50	4.00	12.50
12	6.00	4.10	2.44
13	6.50	4.30	4.65
14	7.00	4.60	6.52

BLANK VALUE = 2.3 micrograms carbon
BLANK FACTOR = 2.3 / 7.00383 = +3.3E-01 ug/min Carbon

SAMPLE RESULTS:
(4.6 - 2.300065)(1.1)/(200) = +1.3E-02 g/L Carbon
(4.6 - 2.300065)(1.1)/(200)(12) = +1.1E-03 Molar Carbon

Sample Run By: Dennis C Dunham
DC DUNHAM 00000

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6991.-5826	PUREX J3/E5	2-14-95	11:29	21

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

Sample Size	Customer ID
? 2 ml - .200 ml .5 M H_2SO_4	BODPTO

Remarks, Calculations, Results:
DUPLICATE SAMPLE

1.43501 ug/c/ml

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

Date	Time Completed	Lab Unit Mgr 2/22/95	
2-21-95	0645		

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

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

Type			Duplicate
Duplicate	Sample Volume in mL	(SS)	2.000
	H2SO4 Volume in mL	(VR)	0.200
Work List	Volume Injected in mL	(VI)	0.200
5554	Dilution Factor	(DF)	1.1
Test Code	Digest Dilution Factor	(DDF)	1
	µg of Carbon in Sample	(C1)	4.9
Matrix	µg of Carbon in Blank	(C2)	2.3
liquid	g of Carbon/L	=	1.43E-02

Sample #
R6991-5826
Instrument Code
Analyst
D. Dunham
Date
02/21/95
Time
06:45 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) = $\frac{1 \mu g C * DF * DDF}{VI}$

µg Carbon/mL =	1.43E+01	DETECTION LEVEL in µg/mL
		5.50E+00

Data Entry by:		Date:	02/22/95
Approved by:		Date:	2/22/95

Form 344105_C Rev. 1.1

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: R6991-5826 Date: 02/21/95 Time: 06:40:50

Sample Size = 200 uL
Dil Factor = 1.1
Blank ID # = BLANK
Blank Value = .3283918 ug/minute C

Analyst : DC DUNHAM
Min Readings = 14
Max Readings = 14
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.20	0.00
2	1.01	1.70	88.24
3	1.51	2.00	15.00
4	2.01	2.30	13.04
5	2.51	2.60	11.54
6	3.01	2.90	10.34
7	3.51	3.10	6.45
8	4.01	3.30	6.06
9	4.51	3.70	10.81
10	5.01	3.80	2.63
11	5.51	4.20	9.52
12	6.01	4.40	4.55
13	6.51	4.70	6.38
14	7.00	4.90	4.08

BLANK VALUE = 2.3 micrograms carbon
BLANK FACTOR = 2.3 / 7.00383 = +3.3E-01 ug/min Carbon

SAMPLE RESULTS:
(4.9 - 2.300326)(1.1)/(200) = +1.4E-02 g/L Carbon
(4.9 - 2.300326)(1.1)/(200)(12) = +1.2E-03 Molar Carbon

Sample Run By: Daniel C Dunham
DC DUNHAM 00000

PLACE ANALYTICAL CARD IN BOX BELOW-DO NOT WRITE IN SPACE

Serial No.	Sample Point	Date	Time Issued	Priority
R 6991.-5926	PUREX J3/E5	2-14-95	11:29	21

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

Sample Size	Customer ID
? .400 ml - .400 ml spike - .200 ml injection	BODPTO

Remarks, Calculations, Results:
SAMPLE SPIKED ID R6991-5726
SPIKE ID 11N12E
SPIKE VOLUME .400 ml

~~147.9%~~
98.9% JWB 2/22/95

Daniel Dunham

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

Date	Time Completed	Lab Unit Mgr	
2-21-95	0645	RW Schroeder 2/22/95	

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

TOC: LA-344-105 SPIKED SAMPLE

SPIKE

Type	>>>>>> Sample Vial Data <<<<<<		>>>>> Spiked Vial Data <<<<<	
SPIKE	Sample Volume in mL	2.000	Sample Size in mL (SS)	0.400
Work List	H2S04 Volume in mL	0.200	Spike Volume in mL	0.400
5554	Volume Injected in mL	0.200	H2S04 Volume in mL	0.000
Test Code	µg of Carbon in Sample	4.6	Volume Injected in mL	0.200
	µg of Carbon in Blank	2.3	Sample Pre-Spike Dil. Factor (PDF)	1.1
Matrix			Spike Value (µg/ml)	747
Liquid			µg C in Sample + Spike	77.3
Sample #			µg C in Blank	2.3
R6991-5926				
Instrument Code				
Analyst				
D. Dunham				
Date				
02/21/95				
Time				
06:45 AM				

PERCENT SPIKE RECOVERY = $\frac{\text{µg Carbon Recovered from Spike} * 100}{\text{µg Carbon in Spike}}$

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 98.9%

Data Entry by:		Date: 22-Feb-95
Approved by:		Date: 2/22/95

Form X Rev. 1.1

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: R6991-5926 Date: 02/21/95 Time: 06:48:39

Sample Size = 200 uL
Dil Factor = 2.2
Blank ID # = BLANK
Blank Value = .3283918 ug/minute C

Analyst : DC DUNHAM
Min Readings = 14
Max Readings = 14
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.10	0.00
2	1.01	45.40	99.78
3	1.51	63.10	28.05
4	2.01	70.10	9.99
5	2.51	72.30	3.04
6	3.01	73.90	2.17
7	3.51	74.60	0.94
8	4.01	75.20	0.80
9	4.50	75.50	0.40
10	5.00	76.00	0.66
11	5.50	76.40	0.52
12	6.00	76.70	0.39
13	6.50	77.00	0.39
14	7.00	77.30	0.39

BLANK VALUE = 2.3 micrograms carbon
BLANK FACTOR = 2.3 / 7.00383 = +3.3E-01 ug/min Carbon

SAMPLE RESULTS:
(77.3 - 2.300055)(2.2)/(200) = +8.25E-01 g/L Carbon
(77.3 - 2.300055)(2.2)/(200)(12) = +6.87E-02 Molar Carbon

Sample Run By: Daniel C. Dunham
DC DUNHAM 00000

9613479.1103

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6992.-5526	PUREX J3/E5	2-14-95	11:49	21

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

Sample Size	Customer ID
? . 200 ml - 2ml .5M H_2SO_4	STD

Remarks, Calculations, Results

S356 CO3TOC

STD# 10 N12-F RESULT 3.11E03

STD VAL 3.00E03 %REC 103.7

David C. Dunham

WR# 6324

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

Date	Time Completed	Lab Unit Mgr 2/22/95	
2-21-95	0645	R.W. Schroeder	R. Jones

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

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

			STANDARD
Type	Sample Volume in mL	(SS)	0.200
STANDARD	H2SO4 Volume in mL	(VR)	2.000
Work List	Volume Injected in mL	(VI)	0.200
5554	Dilution Factor	(DF)	11
Test Code	Digest Dilution Factor	(DDF)	1
	µg of Carbon in Sample	(C1)	58.9
Matrix	µg of Carbon in Blank	(C2)	2.3
LIQUID	g of Carbon/L	=	3.11E+00

Sample #
R6992-5526
Instrument Code
Analyst
D. DUNHAM
Date
02/21/95
Time
06:45 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) = $\frac{1 \mu g C * DF * DDF}{VI}$

µg Carbon/mL =	3.11E+03	DETECTION LEVEL in µg/mL
		5.50E+01

Data Entry by:	R. Jones	Date:	02/21/95
Approved by:	[illegible]	Date:	2/22/95

Form 344105_C Rev. 1.1

Page 1 of 1

9613479.1104

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: R6992-5526 Date: 02/21/95 Time: 07:07:56

Sample Size = 200 uL
Dil Factor = 11
Blank ID # = BLANK
Blank Value = .3283918 ug/minute C

Analyst : DC DUNHAM
Min Readings = 14
Max Readings = 14
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.00	0.00
2	1.01	31.90	100.00
3	1.51	48.40	34.09
4	2.01	53.40	9.36
5	2.50	55.70	4.13
6	3.01	56.70	1.76
7	3.51	57.20	0.87
8	4.00	57.60	0.69
9	4.50	58.00	0.69
10	5.01	58.40	0.68
11	5.51	58.60	0.34
12	6.01	58.60	0.00
13	6.50	58.90	0.51
14	7.00	58.90	0.00

BLANK VALUE = 2.3 micrograms carbon
BLANK FACTOR = 2.3 / 7.00383 = +3.3E-01 ug/min Carbon

SAMPLE RESULTS:
(58.9 - 2.300326)(11)/(200) = +3.11E+00 g/L Carbon
(58.9 - 2.300326)(11)/(200)(12) = +2.59E-01 Molar Carbon

Sample Run By: David C Dunham
DC DUNHAM 00000

9613479.1105

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

ANALYTICAL BATCH

Lab Segment Serial No. R6995, R6996	Customer ID: BODVK8, BODVK9
Analysis: TOTAL ORGANIC CARBON	Sample Prep: DIRECT

Instrument: WC16130	Procedure/ Rev: LA-344-105 / B-5
Technologist: DC DUNHAM David C Dunham	Date: 02/23/95
Starting Time: 0500	Temperature N\A
Ending Time: 0730	Chemist: RW SCHROEDER

Comments: BATCH # 5558

	Description	Lab ID		Description	Lab ID
1	LMCS STD	R6993-5526	11		
2	REAGENT BLANK	R6994-5626	12		
3	SAMPLE	R6995-5726	13		
4	DUPLICATE	R6995-5826	14		
5	SPIKE	R6995-5926	15		
6	SAMPLE	R6996-5726	16		
7	DUPLICATE	R6996-5826	17		
8	SPIKE	R6996-5926	18		
9	LMCS STD	R6997-5526	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	10N12F / .200 ML			
SPIKE	11N12E / .400 ML			

A-6000-881 (03/92)

9613979.1106

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Batch 5558

Serial No.	Sample Point	Date	Time Issued	Priority
R 6993.-5526	PUREX J3/E5	2-14-95	11:49	21

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

Sample Size	Customer ID
? .200 ml - 2ml .5 M H_2SO_4	STD

Remarks, Calculations, Results:
C356 COSTOC
STD# 10N12-F RESULT 2.73E03 ug/mL
STD VAL 3.00E03 ug/mL %REC 91.0

David C. Dunham

WF 6956

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

Date	Time Completed	Lab Unit Mgr	
2-23-95	0730	2/27/95	

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

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

			STANDARD
Type	Sample Volume in mL	(SS)	0.200
STANDARD	H2SO4 Volume in mL	(VR)	2.000
Work List	Volume Injected in mL	(VI)	0.200
5558	Dilution Factor	(DF)	11
Test Code	Digest Dilution Factor	(DDF)	1
	µg of Carbon in Sample	(C1)	53.6
Matrix	µg of Carbon in Blank	(C2)	3.9
LIQUID	g of Carbon/L	=	2.73E+00

Sample #
R6993-5526
Instrument Code
Analyst
D. DUNHAM
Date
02/23/95
Time
07:30 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 =	2.73E+03	DETECTION LEVEL in µg/mL
		5.50E+01

Data Entry by:		Date:	02/23/95
Approved by:		Date:	2/24/95

Form 344105_C Rev. 1.1

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: R6993-5526 Date: 02/23/95 Time: 05:54:43

Sample Size = 200 uL
Dil Factor = 11
Blank ID # = BLANK
Blank Value = .5568249 ug/minute C

Analyst : DC DUNHAM
Min Readings = 14
Max Readings = 14
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.20	0.00
2	1.01	31.20	99.36
3	1.51	40.80	23.53
4	2.01	44.40	8.11
5	2.51	46.80	5.13
6	3.01	48.40	3.31
7	3.51	49.60	2.42
8	4.01	50.60	1.98
9	4.51	51.30	1.36
10	5.01	52.00	1.35
11	5.51	52.50	0.95
12	6.01	52.80	0.57
13	6.51	53.20	0.75
14	7.00	53.60	0.75

BLANK VALUE = 3.9 micrograms carbon
BLANK FACTOR = 3.9 / 7.003998 = +5.6E-01 ug/min Carbon

SAMPLE RESULTS:
(53.6 - 3.900476)(11)/(200) = +2.73E+00 g/L Carbon
(53.6 - 3.900476)(11)/(200)(12) = +2.28E-01 Molar Carbon

Sample Run By: David C Dunham
DC DUNHAM 00000

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

Sample: BLANK Date: 02/23/95 Time: 05:47:01

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

Analyst : DC DUNHAM
Min Readings = 14
Max Readings = 14
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.10	0.00
2	1.01	0.50	80.00
3	1.51	1.00	50.00
4	2.01	1.30	23.08
5	2.51	1.50	13.33
6	3.01	1.80	16.67
7	3.51	2.10	14.29
8	4.01	2.40	12.50
9	4.50	2.70	11.11
10	5.00	2.90	6.90
11	5.50	3.20	9.37
12	6.00	3.40	5.88
13	6.51	3.60	5.56
14	7.00	3.90	7.69

BLANK VALUE = 3.9 micrograms carbon
BLANK FACTOR = 3.9 / 7.003998 = +5.6E-01 ug/min Carbon

Sample Run By: David C Dunham
DC DUNHAM 00000

9613479.1109

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No.	Sample Point	Date	Time Issued	Priority
R 6994.-5626	PUREX J3/E5	2-14-95	11:49	21

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

Sample Size	Customer ID
? . 200 ml direct .5 M H_2SO_4	BLANK

Remarks, Calculations, Results:
REAGENT BLANK

<5.00E00 µgC/ml

gwb 2/24/95 ~~<5.50 E00 µg C/ML~~

David C. Dunham

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

Date	Time Completed	Lab Unit Mgr	
2-23-95	0730	2/27/95	

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

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

				BLANK
Type	Sample Volume in mL	(SS)		0.200
BLANK	H2SO4 Volume in mL	(VR)		2.000
Work List	Volume Injected in mL	(VI)		0.200
5558	Dilution Factor	(DF)		1
Test Code	Digest Dilution Factor	(DDF)		1
	µg of Carbon in Sample	(C1)		4.1
Matrix	µg of Carbon in Blank	(C2)		3.9
LIQUID	g of Carbon/L	=	<	5.00E-03

Sample #: R6994-5626

Instrument Code:

Analyst: D. DUNHAM

Date: 02/23/95

Time: 07:30 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:	02/23/95
Approved by:		Date:	2/24/95

Form 344105_C Rev. 1.1

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: R6994-5626 Date: 02/23/95 Time: 06:02:57

Sample Size = 200 uL
Dil Factor = 1
Blank ID # = BLANK
Blank Value = .5568249 ug/minute C

Analyst : DC DUNHAM
Min Readings = 14
Max Readings = 14
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.00	0.00
2	1.01	0.60	100.00
3	1.51	0.90	33.33
4	2.01	1.30	30.77
5	2.51	1.60	18.75
6	3.01	2.00	20.00
7	3.51	2.30	13.04
8	4.01	2.60	11.54
9	4.51	2.80	7.14
10	5.01	3.00	6.67
11	5.51	3.40	11.76
12	6.01	3.60	5.56
13	6.51	3.90	7.69
14	7.01	4.10	4.88

BLANK VALUE = 3.9 micrograms carbon
BLANK FACTOR = 3.9 / 7.003998 = +5.6E-01 ug/min Carbon

SAMPLE RESULTS:
(4.1 - 3.900935)(1)/(200) = < 5.00 E-3 g/L Carbon
(4.1 - 3.900935)(1)/(200)(12) = < 4.17 E-4 Molar Carbon

Sample Run By: David C Dunham
DC DUNHAM 00000

9613479.1111

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6995.-5726	PUREX J3/E5	2-14-95	11:50	1

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

Sample Size	Customer ID
? 2 ml - .200 ml .5 M H_2SO_4	BODVK8

Remarks. Calculations. Results:

David C. Dunham 2.97E01 ug C/ML

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

Date	Time Completed	Lab Unit Mgr	
2-23-95	0730	2/27/95	

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

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

			SAMPLE
Type	Sample Volume in mL	(SS)	2.000 ~~0.200~~ MJB 2/24/95
SAMPLE	H2SO4 Volume in mL	(VR)	0.200 ~~2.000~~ MJB 2/24/95
Work List	Volume Injected in mL	(VI)	0.200
5558	Dilution Factor	(DF)	1.1
Test Code	Digest Dilution Factor	(DDF)	1
	µg of Carbon in Sample	(C1)	9.3
Matrix	µg of Carbon in Blank	(C2)	3.9
LIQUID	g of Carbon/L	=	2.97E-02

Sample #
R6995-5726
Instrument Code
Analyst
D. DUNHAM
Date
02/23/95
Time
07:30 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 =	2.97E+01	DETECTION LEVEL in µg/mL
		5.50E+00

Data Entry by:		Date:	02/23/95
Approved by:		Date:	2/24/95

Form 344105_C Rev. 1.1

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: R6995-5726 Date: 02/23/95 Time: 07:04:15

Sample Size = 200 uL
Dil Factor = 1.1
Blank ID # = BLANK
Blank Value = .5568249 ug/minute C

Analyst : DC DUNHAM
Min Readings = 14
Max Readings = 14
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.60	0.00
2	1.01	3.40	82.35
3	1.51	4.30	20.93
4	2.01	4.90	12.24
5	2.51	5.40	9.26
6	3.01	6.20	12.90
7	3.51	6.50	4.62
8	4.01	6.90	5.80
9	4.51	7.30	5.48
10	5.01	7.80	6.41
11	5.51	8.20	4.88
12	6.01	8.50	3.53
13	6.51	9.00	5.56
14	7.00	9.30	3.23

BLANK VALUE = 3.9 micrograms carbon
BLANK FACTOR = 3.9 / 7.003998 = +5.6E-01 ug/min Carbon

SAMPLE RESULTS:
(9.3 - 3.900476)(1.1)/(200) = +3.0E-02 g/L Carbon
(9.3 - 3.900476)(1.1)/(200)(12) = +2.5E-03 Molar Carbon

Sample Run By: David C Dunham
DC DUNHAM 00000

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No.	Sample Point	Date	Time Issued	Priority
R 6995.-5826	PUREX J3/E5	2-14-95	11:50	21

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

Sample Size	Customer ID
? 2 ml - .200 ml .5M H_2SO_4	BODVK8

Remarks, Calculations, Results:
DUPLICATE SAMPLE

David C. Dunham 3.41E01 ug C/ML

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

Date	Time Completed	Lab Unit Mgr	
2-23-95	0730	JWB 2/27/95	

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

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

			DUPLICATE
Type	Sample Volume in mL	(SS)	2.000 ~~0.200~~ JWB 2/24/95
DUPLICATE	H2SO4 Volume in mL	(VR)	0.200 ~~2.000~~ JWB 2/24/95
Work List	Volume Injected in mL	(VI)	0.200
5558	Dilution Factor	(DF)	1.1
Test Code	Digest Dilution Factor	(DDF)	1
	µg of Carbon in Sample	(C1)	10.1
Matrix	µg of Carbon in Blank	(C2)	3.9
LIQUID	g of Carbon/L	=	3.41E-02

Sample #
R6995-5826
Instrument Code
Analyst
D. DUNHAM
Date
02/23/95
Time
07:30 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 =	3.41E+01	DETECTION LEVEL in µg/mL
		5.50E+00

Data Entry by:		Date:	02/23/95
Approved by:		Date:	2/24/95

Form 344105_C Rev. 1.1

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: R6995-5826 Date: 02/23/95 Time: 07:11:45

Sample Size = 200 uL
Dil Factor = 1.1
Blank ID # = BLANK
Blank Value = .5568249 ug/minute C

Analyst : DC DUNHAM
Min Readings = 14
Max Readings = 14
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.50	0.00
2	1.01	3.60	86.11
3	1.51	4.60	21.74
4	2.01	5.40	14.81
5	2.51	6.00	10.00
6	3.01	6.50	7.69
7	3.51	7.10	8.45
8	4.01	7.60	6.58
9	4.51	8.10	6.17
10	5.01	8.50	4.71
11	5.51	8.90	4.49
12	6.01	9.30	4.30
13	6.50	9.90	6.06
14	7.00	10.10	1.98

BLANK VALUE = 3.9 micrograms carbon
BLANK FACTOR = 3.9 / 7.003998 = +5.6E-01 ug/min Carbon

SAMPLE RESULTS:
(10.1 - 3.900442)(1.1)/(200) = +3.41E-02 g/L Carbon
(10.1 - 3.900442)(1.1)/(200)(12) = +2.84E-03 Molar Carbon

Sample Run By: David C Dunham
DC DUNHAM 00000

PLACE ANALYTICAL CARD IN BOX BELOW-DO NOT WRITE IN SPACE

Serial No.	Sample Point	Date	Time Issued	Priority
R 6995.-5926	PUREX J3/PF	2-14-95	11:50	21

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

Sample Size	Customer ID
? .400 ml - .400 ml spike	BODVK8

Remarks, Calculations, Results:

SAMPLE SPIKED ID R6995-5726
SPIKE ID 11N12-E
SPIKE VOLUME .400 ml

103.2%
~~43.8%~~ JWB 2/24/95
~~168.9%~~ JWB 2/24/95

David C. Dunham

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

Date	Time Completed	Lab Unit Mgr	
2-23-95	0730	2/27/95	

54-6800-061

TOC: LA-344-105 SPIKED SAMPLE

SPIKE

Type	>>>>>> Sample Vial Data <<<<<<		>>>>> Spiked Vial Data <<<<<	
SPIKE	Sample Volume in mL	2.000	Sample Size in mL (SS)	0.400
Work List	H2SO4 Volume in mL	0.200	Spike Volume in mL	0.400
5558	Volume Injected in mL	0.200	H2SO4 Volume in mL	0.000
Test Code	µg of Carbon in Sample	9.3	Volume Injected in mL	0.200
	µg of Carbon in Blank	3.9	Sample Pre-Spike Dil. Factor (PDF)	1.1
Matrix			Spike Value (µg/ml)	747
Liquid			µg C in Sample + Spike	83.7
Sample #			µg C in Blank	3.9
R6995-5926				
Instrument Code				
Analyst				
D. Dunham				
Date				
02/23/95				
Time				
07:30 AM				

$$\text{PERCENT SPIKE RECOVERY} = \frac{\mu g \text{ Carbon Recovered from Spike} * 100}{\mu g \text{ Carbon in Spike}}$$

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)

$$\text{Spike Correction Factor} = \frac{\text{Total volume in spiked sample vial (mL)}}{\text{Volume injected (mL)}}$$

$$\text{Sample Correction Factor} = \frac{\text{Total volume in sample vial (mL)}}{\text{Volume injected (mL)}}$$

$$\text{Sample Size Correction Factor} = \frac{\text{Sample size in (mL) in spiked vial}}{\text{Sample size (mL) in sample}}$$

$$\text{Sample Pre-Spike Dilution Factor} = \frac{1}{\text{Dilution of Sample Before Added to Spike Vial}}$$

WHERE : µg Carbon in Spike = Spike Value (µg/mL) * Spike Volume (mL)

Percent Spike Recovery 103.2%

Data Entry by:		Date: 27-Feb-95
Approved by:		Date: 2/27/95

Form X Rev. 1.1

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: R6995-5926 Date: 02/23/95 Time: 06:27:25

Sample Size = 200 uL
Dil Factor = 2.2
Blank ID # = BLANK
Blank Value = .5568249 ug/minute C

Analyst : DC DUNHAM
Min Readings = 14
Max Readings = 14
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.60	0.00
2	1.01	44.70	98.66
3	1.51	62.80	28.82
4	2.01	68.80	8.72
5	2.51	72.80	5.49
6	3.01	75.40	3.45
7	3.51	77.60	2.84
8	4.01	79.00	1.77
9	4.50	80.20	1.50
10	5.00	81.30	1.35
11	5.51	81.90	0.73
12	6.01	82.60	0.85
13	6.51	83.20	0.72
14	7.00	83.70	0.60

BLANK VALUE = 3.9 micrograms carbon
BLANK FACTOR = 3.9 / 7.003998 = +5.6E-01 ug/min Carbon

SAMPLE RESULTS:
(83.7 - 3.900476)(2.2)/(200) = +8.78E-01 g/L Carbon
(83.7 - 3.900476)(2.2)/(200)(12) = +7.31E-02 Molar Carbon

Sample Run By: David C Dunham
DC DUNHAM 00000

9613479.1117

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6996.-5726	PUREX J3/E5	2-14-95	11:51	21

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

Sample Size	Customer ID
? 2ml - .200 ml .5M H_2SO_4	BODVK9

Remarks, Calculations, Results:

2.15E01 ug C/ML

David C Dunham

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

Date	Time Completed	Lab Unit Mgr	
2-23-95	0730	2/27/95	

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

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

			SAMPLE
Type	Sample Volume in mL	(SS)	2.000 ~~0.200~~
SAMPLE	H2SO4 Volume in mL	(VR)	0.200 ~~2.000~~
Work List	Volume Injected in mL	(VI)	0.200
5558	Dilution Factor	(DF)	1.1
Test Code	Digest Dilution Factor	(DDF)	1
	µg of Carbon in Sample	(C1)	7.8
Matrix	µg of Carbon in Blank	(C2)	3.9
LIQUID	g of Carbon/L	=	2.15E-02

GKOB 2/24/95
GKB 2/24/95

Sample #
R6996-5726
Instrument Code
Analyst
D. DUNHAM
Date
02/23/95
Time
07:30 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 =	2.15E+01	DETECTION LEVEL in µg/mL
		5.50E+00

Data Entry by:		Date:	02/23/95
Approved by:		Date:	2/24/95

Form 344105_C Rev. 1.1

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: R6996-5726 Date: 02/23/95 Time: 06:48:21

Sample Size = 200 uL
Dil Factor = 1.1
Blank ID # = BLANK
Blank Value = .5568249 ug/minute C

Analyst : DC DUNHAM
Min Readings = 14
Max Readings = 14
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.20	0.00
2	1.01	2.40	50.00
3	1.51	3.10	22.58
4	2.01	3.80	18.42
5	2.51	4.30	11.63
6	3.01	4.70	8.51
7	3.51	5.20	9.62
8	4.01	5.60	7.14
9	4.50	6.00	6.67
10	5.00	6.40	6.25
11	5.50	6.80	5.88
12	6.00	7.10	4.23
13	6.50	7.50	5.33
14	7.00	7.80	3.85

BLANK VALUE = 3.9 micrograms carbon
BLANK FACTOR = 3.9 / 7.003998 = +5.6E-01 ug/min Carbon

SAMPLE RESULTS:
(7.8 - 3.900476)(1.1)/(200) = +2.1E-02 g/L Carbon
(7.8 - 3.900476)(1.1)/(200)(12) = +1.8E-03 Molar Carbon

Sample Run By: David C Dunham
DC DUNHAM 00000

9613479.1119

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6996.-5826	PUREX J3/E5	2-14-95	11:51	21

Determination	Method Standard	Result Units	Charge Code	Reruns
TOC	LA-344-10E	uG C/ML	KP51T	0

Sample Size	Customer ID
? 2 ml - .200 ml . 5 M H_2SO_4	BODVK9

Remarks, Calculations, Results
DUPLICATE SAMPLE

David C Dunham 8.80800 ug C/ML

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

Date	Time Completed	Lab Unit Mgr	
2-23-95	0730	2/27/95	

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

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

Type			DUPLICATE
DUPLICATE	Sample Volume in mL	(SS)	2.000 ~~0.200~~ JWB 2/24/95
	H2SO4 Volume in mL	(VR)	0.200 ~~2.000~~ JWB 2/24/95
Work List	Volume Injected in mL	(VI)	0.200
5558	Dilution Factor	(DF)	1.1
Test Code	Digest Dilution Factor	(DDF)	1
	µg of Carbon in Sample	(C1)	5.5
Matrix	µg of Carbon in Blank	(C2)	3.9
LIQUID	g of Carbon/L	=	8.80E-03
Sample #			
R6996-5826			
Instrument Code			
Analyst			
D. DUNHAM			
Date			
02/23/95			
Time			
07:30 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 =	8.80E+00	DETECTION LEVEL in µg/mL
		5.50E+00

Data Entry by:		Date:	02/23/95
Approved by:		Date:	2/24/95

Form 344105_C Rev. 1.1

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: R6996-5826 Date: 02/23/95 Time: 06:56:30

Sample Size = 200 uL
Dil Factor = 1.1
Blank ID # = BLANK
Blank Value = .5568249 ug/minute C

Analyst : DC DUNHAM
Min Readings = 14
Max Readings = 14
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.00	0.00
2	1.01	0.70	100.00
3	1.51	1.10	36.36
4	2.01	1.30	15.38
5	2.51	1.80	27.78
6	3.01	2.00	10.00
7	3.50	2.40	16.67
8	4.01	2.80	14.29
9	4.50	3.20	12.50
10	5.01	3.70	13.51
11	5.50	3.90	5.13
12	6.00	4.80	18.75
13	6.50	5.20	7.69
14	7.00	5.50	5.45

BLANK VALUE = 3.9 micrograms carbon
BLANK FACTOR = 3.9 / 7.003998 = +5.6E-01 ug/min Carbon

SAMPLE RESULTS:
(5.5 - 3.899915)(1.1)/(200) = +8.8E-03 g/L Carbon
(5.5 - 3.899915)(1.1)/(200)(12) = +7.3E-04 Molar Carbon

Sample Run By: David A Dunham
DC DUNHAM 00000

PLACE ANALYTICAL CARD IN BOX BELOW-DO NOT WRITE IN SPACE

Serial No	Sample Point	Date	Time Issued	Priority
R 6996.-5926	PUREX J3/E5	2-14-95	11:51	21

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

Sample Size	Customer ID
.400 ml - .400 ml spike	EOPWK9

Remarks, Calculations, Results:
SAMPLE SPIKED ID R6996-5726
SPIKE ID 11N12-E
SPIKE VOLUME .400 ml

90.2%
~~49.0~~ % JWS 2/27/95
~~[illegible]~~ % JWS 2/27/95

David C. Dunham

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

Date	Time Completed	Yes Unit Mgr	
2-23-95	0730	Jennifer Ball 2/27/95	L. Jones

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

TOC: LA-344-105 SPIKED SAMPLE

SPIKE

Type	>>>>>> Sample Vial Data <<<<<<		>>>>> Spiked Vial Data <<<<<	
SPIKE	Sample Volume in mL	2.000	Sample Size in mL (SS)	0.400
Work List	H2S04 Volume in mL	0.200	Spike Volume in mL	0.400
5558	Volume Injected in mL	0.200	H2S04 Volume in mL	0.000
Test Code	µg of Carbon in Sample	7.8	Volume Injected in mL	0.200
	µg of Carbon in Blank	3.9	Sample Pre-Spike Dil. Factor (PDF)	1.1
Matrix			Spike Value (µg/ml)	747
Liquid			µg C in Sample + Spike	73.2
Sample #			µg C in Blank	3.9
R6996-5926				
Instrument Code				
Analyst				
D. Dunham				
Date				
02/23/95				
Time				
07:30 AM				

$$\text{PERCENT SPIKE RECOVERY} = \frac{\mu g \text{ Carbon Recovered from Spike} * 100}{\mu g \text{ Carbon in Spike}}$$

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)

$$\text{Spike Correction Factor} = \frac{\text{Total volume in spiked sample vial (mL)}}{\text{Volume injected (mL)}}$$

$$\text{Sample Correction Factor} = \frac{\text{Total volume in sample vial (mL)}}{\text{Volume injected (mL)}}$$

$$\text{Sample Size Correction Factor} = \frac{\text{Sample size in (mL) in spiked vial}}{\text{Sample size (mL) in sample}}$$

$$\text{Sample Pre-Spike Dilution Factor} = \frac{1}{\text{Dilution of Sample Before Added to Spike Vial}}$$

WHERE : µg Carbon in Spike = Spike Value (µg/mL) * Spike Volume (mL)

Percent Spike Recovery 90.2%

Data Entry by:	Jennifer Ball	Date: 27-Feb-95
Approved by:	Jennifer Ball	Date: 2/27/95

Form X Rev. 1.1

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: R6996-5926 Date: 02/23/95 Time: 07:21:21

Sample Size = 200 uL
Dil Factor = 2.2
Blank ID # = BLANK
Blank Value = .5568249 ug/minute C

Analyst : DC DUNHAM
Min Readings = 14
Max Readings = 14
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.60	0.00
2	1.01	47.20	98.73
3	1.51	57.40	17.77
4	2.01	61.80	7.12
5	2.51	64.70	4.48
6	3.01	66.90	3.29
7	3.51	68.40	2.19
8	4.01	69.40	1.44
9	4.50	70.40	1.42
10	5.00	71.10	0.98
11	5.50	71.70	0.84
12	6.00	72.40	0.97
13	6.50	72.80	0.55
14	7.00	73.20	0.55

BLANK VALUE = 3.9 micrograms carbon
BLANK FACTOR = 3.9 / 7.003998 = +5.6E-01 ug/min Carbon

SAMPLE RESULTS:
(73.2 - 3.899898)(2.2)/(200) = +7.62E-01 g/L Carbon
(73.2 - 3.899898)(2.2)/(200)(12) = +6.35E-02 Molar Carbon

Sample Run By: DC DUNHAM 00000

9613479.1123

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No.	Sample Point	Date	Time Issued	Priority
R 6997.-5526	PUREX J3/E5	2-14-95	11:51	21

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

Sample Size	Customer ID
? 200 ml - 2ml .5M H_2SO_4	STD

Remarks, Calculations, Results:

S356 COSTOC

STD# 10N12-F RESULT 283E03 ug/mL

STD VAL 300E03 %REC 94.3

Daniel C. Dunham WR# 6959

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

Date	Time Completed	Lab Unit Mgr	
2-23-95	0730		

SE 5800-061 (R-10-83)

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

			STANDARD
Type	Sample Volume in mL	(SS)	0.200
STANDARD	H2SO4 Volume in mL	(VR)	2.000
Work List	Volume Injected in mL	(VI)	0.200
5558	Dilution Factor	(DF)	11
Test Code	Digest Dilution Factor	(DDF)	1
	µg of Carbon in Sample	(C1)	55.3
Matrix	µg of Carbon in Blank	(C2)	3.9
LIQUID	g of Carbon/L	=	2.83E+00

Sample #
R6997-5526
Instrument Code
Analyst
D. DUNHAM
Date
02/23/95
Time
07:30 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 =	2.83E+03	DETECTION LEVEL in µg/mL
		5.50E+01

Data Entry by:		Date:	02/23/95
Approved by:		Date:	2/24/95

Form 344105_C Rev. 1.1

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: R6997-5526 Date: 02/23/95 Time: 07:29:57

Sample Size = 200 uL
Dil Factor = 11
Blank ID # = BLANK
Blank Value = .5568249 ug/minute C

Analyst : DC DUNHAM
Min Readings = 14
Max Readings = 14
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.60	0.00
2	1.01	36.90	95.66
3	1.51	43.10	14.39
4	2.01	46.20	6.71
5	2.51	48.20	4.15
6	3.01	49.80	3.21
7	3.51	51.00	2.35
8	4.01	51.90	1.73
9	4.50	52.70	1.52
10	5.00	53.40	1.31
11	5.50	54.00	1.11
12	6.01	54.40	0.74
13	6.51	54.80	0.73
14	7.00	55.30	0.90

BLANK VALUE = 3.9 micrograms carbon
BLANK FACTOR = 3.9 / 7.003998 = +5.6E-01 ug/min Carbon

SAMPLE RESULTS:
(55.3 - 3.900476)(11)/(200) = +2.83E+00 g/L Carbon
(55.3 - 3.900476)(11)/(200)(12) = +2.36E-01 Molar Carbon

Sample Run By: Daniel C Dunham
DC DUNHAM 00000

9613479.1125

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

ANALYTICAL BATCH

Lab Segment Serial No. R6990, R6991	Customer ID: BODPS9, BODPT0
Analysis: ICP	Sample Prep: undigested

Instrument: WC38935	Procedure/ Rev: LG-505-161 /G-1
Technologist: D.K. Soto	Date: 2-16-95
Starting Time: 1230	Temperature N/A
Ending Time: 1530	Chemist: B. Wells, S. Parcay

Comments:

	Description	Lab ID		Description	Lab ID
1	Lmcs Check Std	R6988-5550	11		
2	Reagent Blank	R6989-5650	12		
3	Sample	R6990-5750	13		
4	Duplicate	R6990-5850	14		
5	Spike	R6990-5950	15		
6	Sample	R6991-5750	16		
7	Duplicate	R6991-5850	17		
8	Spike	R6991-5950	18		
9	Reagent Blank	- - - -	19		
10	Lmcs Check Std	R6992-5550	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 SSTS	38B48 /direct			
Spike	XWHC35/.1ml			
Spike	XWHC35/.1ml			

A-6000-881 (03/92)

INDUCTIVELY COUPLED PLASMA ANALYSIS

Batch 5555

Serial No.	Sample Point	Date	Time Issued	Priority
R 6988.-5550	PUREX J3/E5	2-14-95	11:13	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-605-161 DK 2-14-95	% RECOVERY	KP51T	0

Sample Size	Customer ID
? SST5 38848 Direct	STD

Remarks, Calculations, Results

LMCS CHECK SAMPLE

Ag (5.018/5)(100) = 100.36 %
Al 4.943 = 98.86 %
As 5.016 = 100.52 %
Ba 5.012 = 100.24 %
Be 5.269 = 105.38 %
Ca 5.157 = 103.14 %
Cd 5.188 = 103.76 %
Co 5.219 = 104.38 %
Cr 5.204 = 104.08 %
Cu 5.121 = 102.42 %
Fe 5.094 = 101.88 %

Over

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
JK				
Hrs	Hrs	Hrs	Hrs	Hrs JK 2-21-95

Date	Time Completed	Lab Unit Mgr	
2-16-95	1530	02/21/95 S. Pavey	JK 2-21-95

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

K (4.958/5)(100) = 99.16 %
Li 4.986 = 99.72 %
Mg 4.873 = 97.46 %
Mn 5.061 = 101.22 %
Mo 5.131 = 102.62 %
Na 4.985 = 99.70 %
Ni 5.116 = 102.32 %
P 5.212 = 104.24 %
Pb 5.074 = 101.48 %
Sb 4.889 = 97.78 %
Se 5.006 = 100.12 %
Sr 5.011 = 100.22 %
Tl 4.972 = 99.44 %
V 5.113 = 102.26 %
Zn 5.138 = 102.76 %

R6988-5550

INDUCTIVELY COUPLED PLASMA ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6989.-5650	PUREX J3/E5	2-14-95	11:23	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-~~231~~/41	uG/ML	KP51T	0

Sample Size	Customer ID
? Direct	BLANK

Remarks, Calculations, Results

Target Analyte List

REAGENT BLANK

Ag	<.01 ug/ml	Ca	<.10	Li	<.01
Al	<.05	Cd	<.01	Mg	<.10
As	<.05	Co	<.02	Mn	<.01
Ba	<.05	Cr	<.01	Mo	<.05
Be	<.005	Cu	<.01	Na	<.10
		Fe	<.05	Ni	<.02
		K	<.30	P	<.20
		Pb	<.10	Sb	<.20
		Se	<.10	Sr	<.01
		Tl	<.20	V	<.05
		Zn	<.01		

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

Date	Time Completed	Lab Unit Mgr	
2-16-95	1530	02/21/95 S. Parry	JK 2-21-95

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

9613479.1128

INDUCTIVELY COUPLED PLASMA ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6990.-5750	PUREX J3/E5	2-14-95	11:25	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP-LIQ	LA-505-~~251~~161 DK 2-16-95	uG/ML	KP51T	0

Sample Size	Customer ID
? Direct	BODPS9

Remarks, Calculations, Results

Ag <.01 43/41	Cd <.01	Mg 4.78	Sb <.20
Al .436	Co <.02	Mn .084	Se <.10
As <.05	Cr .867	Mo <.05	Sr .108
Ba .291	Cu .033	Na 4.07	TL <.20
Be <.005	Fe 7.16	Ni ~~3.41~~ .341	V <.05
Ca 20.3	K .916	P 42.0	Zn .065
	Li <.01	Pb <.10 / DK 2-17-95	

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

Date	Time Completed	Lab Unit Mgr	
2-16-95	1530	02/21/95 S. Pang	DK LGO 2-21-95

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

Analysis Report Summary Thu 02-16-95 03:11:15 PM page 1

#	Sample Name	File	Method	Date	Time	OpID	Type	Mode
1	R6988 SST5 38B48	950216A	ICP2	02/16/95	13:18	DKS	Q	CONC
2	R6989 REAG BLK	950216A	ICP2	02/16/95	13:22	DKS	Q	CONC
3	R6990 SAMPLE	950216A	ICP2	02/16/95	13:26	DKS	S	CONC
4	R6990 DUPLICATE	950216A	ICP2	02/16/95	13:30	DKS	S	CONC
5	R6990 SPIKE	950216A	ICP2	02/16/95	13:37	DKS	S	CONC
6	R6991 SAMPLE	950216A	ICP2	02/16/95	14:27	DKS	S	CONC
7	R6991 DUPLICATE	950216A	ICP2	02/16/95	14:30	DKS	S	CONC
8	R6991 SPIKE	950216A	ICP2	02/16/95	14:35	DKS	S	CONC
9	HNO3 REAG BLK	950216A	ICP2	02/16/95	14:58	DKS	Q	CONC
10	R6992 SST5 38B48	950216A	ICP2	02/16/95	15:06	DKS	Q	CONC

DK [illegible]
2-16-95
Purex J3/E5 R6988-R6992

#	Sample Name	Ag	Al	As	B	Ba	Be
1	R6988 SST5 38B48	5.018	4.943	5.026	4.959	5.012	5.269
2	R6989 REAG BLK	-.0002	.0043	-.0034	-.0026	-.0001	.0002
3	R6990 SAMPLE	.0007	.4364	.0171	.6908	.2909	.0006
4	R6990 DUPLICATE	.0004	.4520	.0046	.6987	.2956	.0006
5	R6990 SPIKE	.8099	1.685	1.218	1.983	1.531	1.291
6	R6991 SAMPLE	-.0013	.0106	-.0097	.4093	.0002	.0004
7	R6991 DUPLICATE	-.0011	.0048	-.0061	.4114	.0002	.0003
8	R6991 SPIKE	1.315	1.277	1.242	1.683	1.254	1.298
9	HNO3 REAG BLK	.0005	.0114	-.0004	-.0031	.0000	.0003
10	R6992 SST5 38B48	5.199	5.114	5.299	5.136	5.224	5.487

#	Sample Name	Bi	Ca	Cd	Ce	Co	Cr
1	R6988 SST5 38B48	5.013	5.157	5.188	5.129	5.219	5.204
2	R6989 REAG BLK	.0404	.0038	.0003	.0072	.0006	.0021
3	R6990 SAMPLE	-.0216	20.33	.0048	.0035	.0054	.8666
4	R6990 DUPLICATE	-.0110	21.03	.0061	.0129	.0038	.8934
5	R6990 SPIKE	1.090	21.24	1.299	1.264	1.281	2.140
6	R6991 SAMPLE	.0562	.0094	.0009	.0011	.0016	.0013
7	R6991 DUPLICATE	.0327	.0101	.0001	.0018	.0006	.0011
8	R6991 SPIKE	1.175	1.306	1.335	1.290	1.325	1.329
9	HNO3 REAG BLK	.0124	.0010	.0006	.0000	-.0015	.0017
10	R6992 SST5 38B48	5.215	5.437	5.444	5.339	5.460	5.461

#	Sample Name	Cu	Eu	Fe	K	La	Li
1	R6988 SST5 38B48	5.121	.0257	5.094	4.958	5.092	4.986
2	R6989 REAG BLK	.0005	.0009	.0022	-.0935	-.0004	.0005
3	R6990 SAMPLE	.0326	.0362	7.157	.9160	.0026	.0076
4	R6990 DUPLICATE	.0330	.0373	7.344	1.081	.0043	.0084
5	R6990 SPIKE	1.272	.0416	8.363	2.156	1.263	1.217
6	R6991 SAMPLE	-.0008	.0019	.0025	.0812	-.0006	.0045
7	R6991 DUPLICATE	-.0005	.0019	.0034	.1413	-.0012	.0041
8	R6991 SPIKE	1.286	.0070	1.307	1.257	1.290	1.246
9	HNO3 REAG BLK	-.0007	.0002	.0013	-.0812	-.0015	.0001
10	R6992 SST5 38B48	5.276	.0274	5.327	5.162	5.287	5.072

#	Sample Name	Mg	Mn	Mo	Na	Nd	Ni
1	R6988 SST5 38B48	4.873	5.061	5.131	4.985	4.887	5.116
2	R6989 REAG BLK	-.0040	.0006	.0051	.0037	.0030	-.0049
3	R6990 SAMPLE	4.775	.0837	-.0035	4.073	.0011	.3414
4	R6990 DUPLICATE	4.827	.0863	-.0030	4.095	.0009	.3534
5	R6990 SPIKE	5.830	1.328	1.242	5.182	1.166	1.627
6	R6991 SAMPLE	.0007	.0008	.0040	.4498	.0009	-.0067
7	R6991 DUPLICATE	-.0063	.0009	.0038	.4506	.0011	-.0096
8	R6991 SPIKE	1.260	1.286	1.298	1.714	1.191	1.323
9	HNO3 REAG BLK	-.0068	.0002	.0030	.0034	.0015	-.0100
10	R6992 SST5 38B48	5.035	5.322	5.371	5.116	5.046	5.338

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#	Sample Name	P	Pb	S	Sb	Se	Si
1	R6988 SST5 38B48	5.212	5.074	5.120	4.889	5.006	4.745
2	R6989 REAG BLK	.0315	.0312	.0131	.0184	.0322	.0054
3	R6990 SAMPLE	41.99	.0073	11.06	.0080	-.0218	2.198
4	R6990 DUPLICATE	45.90	.0241	11.26	.0279	-.0197	2.245
5	R6990 SPIKE	48.24	1.289	12.05	1.253	1.238	3.347
6	R6991 SAMPLE	.2696	.0549	.0050	.0100	.0452	.3239
7	R6991 DUPLICATE	.2451	.0565	-.0075	.0052	.0593	.3246
8	R6991 SPIKE	1.617	1.329	1.332	1.312	1.293	1.550
9	HNO3 REAG BLK	.1826	.0258	.0114	.0232	.0418	.0011
10	R6992 SST5 38B48	Q5.653	5.305	5.367	5.107	5.247	4.940

#	Sample Name	Sm	Sr	Ti	Tl	U	V
1	R6988 SST5 38B48	5.038	5.011	4.951	4.972	9.860	5.113
2	R6989 REAG BLK	.0093	-.0006	.0005	.0076	.0237	.0023
3	R6990 SAMPLE	.0058	.1079	.0400	.0198	9.321	.0045
4	R6990 DUPLICATE	.0123	.1096	.0407	.0135	9.436	.0074
5	R6990 SPIKE	1.242	1.347	1.286	1.279	11.34	1.255
6	R6991 SAMPLE	.0214	.0004	.0000	-.0104	.0833	.0049
7	R6991 DUPLICATE	.0229	.0004	.0000	.0075	.0856	.0049
8	R6991 SPIKE	1.266	1.277	1.287	1.307	2.500	1.298
9	HNO3 REAG BLK	.0067	-.0006	-.0002	.0087	.0128	.0010
10	R6992 SST5 38B48	5.236	5.182	5.157	5.214	10.22	5.347

#	Sample Name	Y	Zn	Zr
1	R6988 SST5 38B48	.0102	5.138	5.042
2	R6989 REAG BLK	.0003	.0002	.0021
3	R6990 SAMPLE	.0042	.0653	.0092
4	R6990 DUPLICATE	.0046	.0653	.0105
5	R6990 SPIKE	.0068	1.333	1.253
6	R6991 SAMPLE	.0009	.0012	.0042
7	R6991 DUPLICATE	.0010	.0017	.0042
8	R6991 SPIKE	.0027	1.324	1.285
9	HNO3 REAG BLK	.0002	.0014	.0010
10	R6992 SST5 38B48	.0110	5.355	5.258

JK Lab

2-16-95

Purex J3/E5 R6988-R6992

INDUCTIVELY COUPLED PLASMA ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6990.-5850	PUREX J3/E5	2-14-95	11:25	21

Determination	Method/Standard	Result Units	Charge Code	Refune
ICP-LIQ	LA-505-~~[illegible]~~/161	uG/ML	KP51T	0

Sample Size	Customer ID
1 Direct	BODPS

Remarks, Calculations, Results

DUPLICATE SAMPLE

Ag <.01 ug/ml	Ca 41.0	K 1.08	P 45.7	Zn .065
Al .454	Cd <.01	Li <.01	Pb <.10	
As <.05	Co <.01	Mg 4.83	Sb <.20	
Ba .496	Cr .573	Mn .084	Se <.10	
Be <.005	Cu .033	Mo <.05	Sr .110	
	Fe 7.34	Na 4.10	Tl <.20	
		Ni .353	V <.05	

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

Date	Time Completed	Lab Unit Mgr	
2-14-95	1530	2/21/95 S. Parry	DK Lo 2-21-95

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

INDUCTIVELY COUPLED PLASMA ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6990.-5950	PUREX J3/E5	2-14-95	11:25	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-~~151~~/161	% RECOVERY	KP51T	0

Sample Size	Customer ID
? 8 ml	BODPS9

Remarks, Calculations, Results:

SAMPLE SPIKED
SPIKE ID XUHC 28+35
SPIKE VOLUME .1 ml each

.1 ml x 100 ppm = 8.2 ml x X ppm X = 1.22 ppm.

~~Cs (.810-0)/1.22 x 100 = 66.39%~~ 2-14-95

Al (1.68-.436)/1.22 x 100 = 101.97%

As (1.22-0)/1.22 x 100 = 100.00%

Ba (1.53-.291)/1.22 x 100 = 101.56%

Be (1.24-0)/1.22 x 100 = 105.74%

Ca Sample > 4X concentration of spike.

Cd (1.30-0)/1.22 x 100 = 106.56%

Co (1.28-0)/1.22 x 100 = 104.92%

Cr (2.14-.867)/1.22 x 100 = 104.34%

Cu (1.27-.033)/1.22 x 100 = 101.39% over

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

Date	Time Completed	Lab Unit Mgr	
2-16-95	1530	2-21-95 S. Parry	JK Lito 2-21-95

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

Fe (8.36-7.16)/1.22 x 100 = 98.36%

K (2.16-.916)/1.22 x 100 = 101.97%

Li (1.22-0)/1.22 x 100 = 100.00%

Mg (5.83-4.78)/1.22 x 100 = 86.06%

Mn (1.33-.084)/1.22 x 100 = 102.13%

Mo (1.24-0)/1.22 x 100 = 101.64%

Na (5.18-4.07)/1.22 x 100 = 90.98%

Ni (1.63-.371)/1.22 x 100 = 105.66%

P Sample > 4X concentration of sample

Pb (1.24-0)/1.22 x 100 = 105.74%

Sb (1.25-0)/1.22 x 100 = 102.46%

Se (1.24-0)/1.22 x 100 = 101.64%

Sr (1.35-.108)/1.22 x 100 = 101.80%

Tl (1.28-0)/1.22 x 100 = 104.92%

V (1.26-0)/1.22 x 100 = 103.28%

Zn (1.33-.065)/1.22 x 100 = 103.67%

R6990 -5950

9613479.1134

INDUCTIVELY COUPLED PLASMA ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6991.-5750	PUREX J3/E5	2-14-95	11:29	25

Determination	Method Standard	Result Units	Charge Code	Reruns
ICP-LIQ	LA-505-~~151~~ 161 (2-16-95)	uG/ML	KP51T	0

Sample Size	Customer ID
? Direct	BODPTO

Remarks, Calculations, Results:

Ag <.01 ug/ml	Cd <.01	Mg <.10	Sb <.20
Al <.05	Co <.02	Mn <.01	Se <.10
As <.05	Cr <.01	Mo <.05	Sr <.01
Ba <.05	Cu <.01	Na .450	Tl ~~<.10~~ <.20 DR 2-17-95
Be <.005	Fe <.05	Ni <.02	V <.05
Ca <.10	K <.30	P .270	Zn <.01
	Li <.01	Pb <.10	

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

Date	Time Completed	Lab Unit Mgr	
2-16-95	1530	S. Parry 02/21/95	JK 2-21-95

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

INDUCTIVELY COUPLED PLASMA ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6991.-5850	PUREX J3/E5	2-14-95	11:29	21

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP-LIQ	LA-505-~~151~~/161	uG/ML	KP51T	0

Sample Size	Customer ID
? Direct	BODPTO

Remarks, Calculations, Results:

DUPLICATE SAMPLE

Ag <.01 ug/ml	Cd <.01	Mg <.10	Se <.10
Al <.05	Co <.02	Mn <.01	Sr <.01
As <.05	Cr <.01	Mo <.05	Tl <.20
Ba <.05	Cu <.01	Na .451	V <.05
Be <.005	Fe <.05	Ni <.02	Zn <.01
Ca <.10	K <.30	P .245	
	Li <.01	Pb <.10	
		Sb <.20	

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

Date	Time Completed	Lab Unit Mgr	
2-16-95	1530	02/21/95 S. Parry	JK Lato 2-21-95

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

INDUCTIVELY COUPLED PLASMA ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6991.-5950	PUREX J3/E5	2-14-95	11:29	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-~~151~~ 141 DK 2-16-95	% RECOVERY	KP51T	0

Sample Size	Customer ID
? 8 ml	BODPTO

Remarks, Calculations, Results: .1 ml x 100 ppm = 8.2 ml x X ppm X = 1.22 ppm

SAMPLE SPIKED ID
SPIKE ID XWHC 28+35
SPIKE VOLUME .1 ml each

Ag (1.32-0)/1.22 x 100 = 108.20%
Al (1.28-0)/1.22 x 100 = 104.92%
As (1.24-0)/1.22 x 100 = 101.64%
Ba (1.25-0)/1.22 x 100 = 102.46%
Be (1.30-0)/1.22 x 100 = 106.56%
Ca (1.31-0)/1.22 x 100 = 107.38%
Cd (1.34-0)/1.22 x 100 = 109.84%
Co (1.32-0)/1.22 x 100 = 108.20%
Cr (1.33-0)/1.22 x 100 = 109.02%
Cu (1.29-0)/1.22 x 100 = 105.74%
Fe (1.31-0)/1.22 x 100 = 107.38%

over

Analyst	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
JK				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-16-95	1530	S. Pauz 02/21/95	JK 2-21-95

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

K (1.26-0)/1.22 x 100 = 103.28%
Li (1.25-0)/1.22 x 100 = 102.46%
Mg (1.26-0)/1.22 x 100 = 103.28%
Mn (1.29-0)/1.22 x 100 = 105.74%
Mo (1.30-0)/1.22 x 100 = 106.56%
Na (1.71-.450)/1.22 x 100 = 103.28%
Ni (1.32-0)/1.22 x 100 = 108.20%
P (1.42-.470)/1.22 x 100 = 110.66%
Pb (1.33-0)/1.22 x 100 = 109.02%
Sb (1.31-0)/1.22 x 100 = 107.38%
Se (1.29-0)/1.22 x 100 = 105.74%
Sr (1.28-0)/1.22 x 100 = 104.92%
Tl (1.31-0)/1.22 x 100 = 107.38%
V (1.30-0)/1.22 x 100 = 106.56%
Zn (1.32-0)/1.22 x 100 = 108.20%

R 6991-5950

INDUCTIVELY COUPLED PLASMA ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 6992.-5550	PUREX J3/E5	2-14-95	11:49	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-~~351~~ 161 JK 2-16-95	% RECOVERY	KP51T	0

Sample Size	Customer ID
? SST5 38B48 Direct	STD

Remarks, Calculations, Results

LINE CHECK SAMPLE

Ag (5.199/5)(100) = 103.98 % ✓
Al 5.114 = 102.28 % ✓
As 5.197 = 105.98 % ✓
Ba 5.224 = 104.48 % ✓
Be 5.487 = 109.74 % ✓
Ca 5.431 = 108.74 % ✓
Cd 5.444 = 108.88 % ✓
Co 5.460 = 109.20 % ✓
Cr 5.461 = 109.22 % ✓
Cu 5.274 = 105.52 % ✓
Fe 5.247 = 104.94 % ✓

over

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

Date	Time Completed	Lab Unit Mgr	
2-16-95	1530	S. Parry 02/21/95	JK 2-21-95

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

K (5.162/5)(100) = 103.24 % ✓
Li 5.072 = 101.44 % ✓
Mg 5.035 = 100.70 % ✓
Mn 5.322 = 106.44 % ✓
Mo 5.371 = 107.42 % ✓
Na 5.116 = 102.32 % ✓
Ni 5.338 = 106.76 % ✓
P 5.653 = 113.06 % ✓
Pb 5.305 = 106.10 % ✓
Sb 5.107 = 102.14 % ✓
Se 5.247 = 104.94 % ✓
Sr 5.182 = 103.64 % ✓
Tl 5.214 = 104.28 % ✓
V 5.347 = 106.94 % ✓
Zn 5.355 = 107.10 % ✓

R6992-5550

9613479.1138

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

ANALYTICAL BATCH

Lab Segment Serial No. R6995, R6996	Customer ID: BODVK8, BODVK9
Analysis: ICP	Sample Prep: Undigested

Instrument: WC38935	Procedure/ Rev: LQ-505-161/G-1
Technologist: JK Sato	Date: 2-17-95
Starting Time: 0830	Temperature N/a
Ending Time: 1530	Chemist: B. Wels, S. Parony

Comments:

	Description	Lab ID		Description	Lab ID
1	LMCS Check Std	R6993-5550	11		
2	Reagent Blank	R6994-5650	12		
3	Sample	R6995-5750	13		
4	Duplicate	R6995-5850	14		
5	Spike	R6995-5950	15		
6	Sample	R6996-5750	16		
7	Duplicate	R6996-5850	17		
8	Spike	R6996-5950	18		
9	Reagent Blank	~ ~ - - - - -	19		
10	LMCS Check Std	R6997-5550	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	38848 / direct			
Spike	38848 / 2ml	XWHC 28+35 / .1ml each		
St 2-21-95				

A-6000-881 (03/92)

INDUCTIVELY COUPLED PLASMA ANALYSIS

Batch 5559

Serial No	Sample Point	Date	Time Issued	Priority
R 6993.-5550	PUREX J3/E5	2-14-95	11:49	25

Determination	Method Standard	Result Units	Charge Code	Reruns
ICP	LA-505-~~151~~141 (2-17-95)	% RECOVERY	KP51T	0

Sample Size	Customer ID
? SST5 38848 Direct	STD

Remarks, Calculations, Results

[illegible] SAMPLE

Ag (5.030/5)(100) = 100.60 %
Al 5.021 = 100.40 %
As 5.147 = 102.94 %
Ba 4.993 = 99.86 %
Be 5.156 = 103.12 %
Ca 5.181 = 103.62 %
Cd 5.079 = 101.58 %
Co 5.160 = 103.20 %
Cr 5.112 = 102.24 %
Cu 5.110 = 102.20 %
Fe 5.079 = 101.58 %
K 5.145 = 102.90 %
Li 5.026 = 100.52 %

OVER

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
[illegible]				
Hrs	Hrs	Hrs	Hrs	Hrs [illegible] 2-21-95

Date	Time Completed	Lab Unit Mgr	
2-17-95	1530	02/21/95	[illegible] 2-21-95

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

Hg (5.005/5)(100) = 100.10 %
In 5.008 = 100.16 %
Mo 5.087 = 101.74 %
Na 5.079 = 101.58 %
Ni 5.011 = 100.22 %
P 5.102 = 102.04 %
Pb 5.107 = 102.14 %
Sb 4.800 = 96.00 %
Se 5.020 = 100.40 %
Sr 4.967 = 99.34 %
Tl 4.991 = 99.82 %
V 5.086 = 101.72 %
Zn 5.203 = 104.06 %

R6993 5550

9613479.1140

INDUCTIVELY COUPLED PLASMA ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6994.-5650	PUREX J3/E5	2-14-95	11:49	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-~~151~~/61 JK 2-17-95	uG/ML	KP51T	0

Sample Size	Customer ID
? Direct	BLANK

Remarks, Calculations, Results: Trace Concentrated REAGENT BLANK

Ag <.01 ug/ml	Cd <.01	Mn <.01	Se <.10
Al <.05	Co <.02	Mo <.05	Sr <.01
As <.05	Cr <.01	Na <.10	Tl <.20
Ba <.05	Cu <.01	Ni <.02	V <.05
Be <.005	Fe <.05	P <.20	Zn <.01
Ca <.10	K <.30	Pb <.10	
	Li <.01	Sb <.20	
	Mg <.10		

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
JK Lold				
Hrs	Hrs	Hrs	Hrs	Hrs JK Lold 2-17-95

Date	Time Completed	Lab Unit Mgr	
2-17-95	1530	2/21/95 S. Parry	JK Lold 2-21-95

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

INDUCTIVELY COUPLED PLASMA ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 6995.-5750	PUREX J3/E5	2-14-95	11:50	25

Determination	Method Standard	Result Units	Charge Code	Reruns
ICP-LIQ	LA-505-~~101~~ 141 DK 2-17-95	uG/ML	KP51T	0

Sample Size	Customer ID
? 2-10 ml JF 6	BODVK8

Remarks, Calculations, Results

Ag <.01 x 6 = <4.00E-2 ug/ml
Al .860 = 5.14
As <.05 = <3.00E-1
Ba <.05 = <3.00E-1
Be <.005 = <3.00E-2
Ca .388 = 2.33
Cd <.01 = <6.00E-1
Co <.02 = <1.20E-1
Cr .066 = 3.96E-1
Cu <.01 = <6.00E-1
Fe <.05 = <3.00E-1
K 5.05 = 3.03E+3
Li <.01 = <6.00E-1

Over

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

Date	Time Completed	Mgr	
2-17-95	1530	02/21/95 S. Parry	DK Lato 2-21-95

54-6600-061 (R-10-83)

Mg <.10 x 6 = <6.00E-1 ug/ml
Mn <.01 = <1.00E-2
Mo <.05 = <3.00E-1
Na 5.02 = 3.01E+1
Ni .020 = 1.20E-1
P 1.45 = 8.70
Pb <.10 = <6.00E-1
Sb <.20 = <1.20
Se <.10 = <6.00E-1
Sr <.01 = <6.00E-2
Tl <.20 = <1.20
V <.05 = <3.00E-1
Zn .012 = 7.20E-2

R6995-5750

Analysis Report Summary Fri 02-17-95 09:46:47 AM page 1

#	Sample Name	File	Method	Date	Time	OpID	Type	Mode
1	R6993 SST5 38B48	950217A	ICP2	02/17/95	08:58	DKS	Q	CONC
2	R6994 REAG BLK	950217A	ICP2	02/17/95	09:02	DKS	Q	CONC
3	R6995 SAMDIL	950217A	ICP2	02/17/95	09:06	DKS	S	CONC
4	R6995 DUPDIL	950217A	ICP2	02/17/95	09:11	DKS	S	CONC
5	R6995 SPIKE	950217A	ICP2	02/17/95	09:16	DKS	S	CONC
6	R6996 SAMPLE	950217A	ICP2	02/17/95	09:24	DKS	S	CONC
7	R6996 DUPLICATE	950217A	ICP2	02/17/95	09:27	DKS	S	CONC
8	R6996 SPIKE	950217A	ICP2	02/17/95	09:31	DKS	S	CONC
9	HNO3 REAG BLK	950217A	ICP2	02/17/95	09:37	DKS	Q	CONC
10	R6997 SST5 38B48	950217A	ICP2	02/17/95	09:41	DKS	Q	CONC

JK
2-17-95
Parex J3/E5 R6993-R6997

Analysis Report Averages Fri 02-17-95 09:46:47 AM page 2

#	Sample Name	Ag	Al	As	B	Ba	Be
1	R6993 SST5 38B48	5.030	5.020	5.147	4.939	4.993	5.156
2	R6994 REAG BLK	.0016	.0073	-.0033	.0098	.0003	.0003
3	R6995 SAMDIL	.0015	.8600	.0170	.0169	.0123	.0037
4	R6995 DUPDIL	.0027	.8878	.0212	.0160	.0125	.0037
5	R6995 SPIKE	.7981	1.680	.9043	.8194	.8243	.8584
6	R6996 SAMPLE	.0003	.0078	-.0029	.1014	.0008	.0001
7	R6996 DUPLICATE	.0003	.0001	-.0118	.0994	.0007	.0002
8	R6996 SPIKE	1.321	1.304	1.283	1.478	1.274	1.289
9	HNO3 REAG BLK	-.0002	.0100	-.0099	.0031	.0001	.0002
10	R6997 SST5 38B48	5.097	5.097	5.338	5.080	5.112	5.358

#	Sample Name	Bi	Ca	Cd	Ce	Co	Cr
1	R6993 SST5 38B48	5.025	5.181	5.079	5.078	5.160	5.112
2	R6994 REAG BLK	.0014	.0053	.0001	.0089	-.0028	-.0006
3	R6995 SAMDIL	-.3784	.3876	.0077	.0034	-.0091	.0662
4	R6995 DUPDIL	-.3617	.4107	.0069	.0020	-.0092	.0677
5	R6995 SPIKE	.4858	1.272	.8389	.8473	.8322	.9080
6	R6996 SAMPLE	.0049	.0158	.0010	.0031	.0006	.0001
7	R6996 DUPLICATE	.0088	.0134	-.0003	.0034	-.0034	.0003
8	R6996 SPIKE	1.145	1.313	1.311	1.299	1.304	1.302
9	HNO3 REAG BLK	.0044	.0082	.0016	.0061	.0009	-.0002
10	R6997 SST5 38B48	5.094	5.299	5.239	5.220	5.298	5.248

#	Sample Name	Cu	Eu	Fe	K	La	Li
1	R6993 SST5 38B48	5.110	.0251	5.079	5.145	5.024	5.026
2	R6994 REAG BLK	-.0000	.0009	.0016	.0716	.0014	.0007
3	R6995 SAMDIL	.0020	-.0144	.0089	504.7	.0206	.0031
4	R6995 DUPDIL	.0035	-.0137	.0100	510.4	.0221	.0032
5	R6995 SPIKE	.8346	-.0090	.8483	494.3	.8492	.8143
6	R6996 SAMPLE	-.0008	.0016	.0032	.2565	.0006	.0014
7	R6996 DUPLICATE	.0002	.0013	.0016	.0694	.0001	.0010
8	R6996 SPIKE	1.303	.0069	1.304	1.471	1.296	1.299
9	HNO3 REAG BLK	-.0005	.0014	.0022	.0143	.0008	.0014
10	R6997 SST5 38B48	5.238	.0252	5.214	4.993	5.167	5.094

#	Sample Name	Mg	Mn	Mo	Na	Nd	Ni
1	R6993 SST5 38B48	5.005	5.008	5.087	5.022	5.196	5.011
2	R6994 REAG BLK	.0061	.0005	.0002	.0033	.0012	-.0046
3	R6995 SAMDIL	-.0142	-.0039	-.0198	5.019	-.0145	.0203
4	R6995 DUPDIL	.0098	-.0037	-.0245	5.062	-.0120	.0065
5	R6995 SPIKE	.8030	.8026	.8198	5.720	.8417	.8347
6	R6996 SAMPLE	.0029	.0008	.0013	.2627	.0004	-.0114
7	R6996 DUPLICATE	.0042	.0008	-.0013	.2679	.0001	-.0025
8	R6996 SPIKE	1.321	1.265	1.280	1.625	1.299	1.309
9	HNO3 REAG BLK	.0031	.0004	.0013	.0138	-.0006	-.0004
10	R6997 SST5 38B48	5.103	5.112	5.226	5.090	5.322	5.168

Analysis Report Averages Fri 02-17-95 09:46:47 AM page 3

#	Sample Name	P	Pb	S	Sb	Se	Si
1	R6993 SST5 38B48	5.102	5.106	5.122	4.800	5.020	4.781
2	R6994 REAG BLK	.0287	.0070	-.0158	.0015	-.0020	.0137
3	R6995 SAMDIL	1.451	.0153	.2444	.0174	-.0188	.0840
4	R6995 DUPDIL	1.435	.0396	.2532	.0013	-.0248	.0899
5	R6995 SPIKE	2.350	.8663	1.078	.7782	.9705	.9023
6	R6996 SAMPLE	.0192	.0233	-.0205	-.0162	.0012	.0404
7	R6996 DUPLICATE	.0041	.0339	-.0146	.0044	.0041	.0392
8	R6996 SPIKE	1.354	1.323	1.284	1.279	1.276	1.374
9	HNO3 REAG BLK	.0324	.0185	-.0096	.0004	.0236	.0101
10	R6997 SST5 38B48	5.339	5.235	5.192	4.957	5.151	4.870

#	Sample Name	Sm	Sr	Ti	Tl	U	V
1	R6993 SST5 38B48	5.042	4.967	4.909	4.991	10.07	5.086
2	R6994 REAG BLK	.0093	.0002	.0005	.0154	.0277	.0018
3	R6995 SAMDIL	-.0288	.0058	.0313	-.0144	63.81	.0026
4	R6995 DUPDIL	-.0215	.0058	.0316	-.0273	64.72	.0046
5	R6995 SPIKE	.8160	.8245	.8464	.8042	64.07	.8482
6	R6996 SAMPLE	.0177	.0004	.0000	-.0202	.0706	.0037
7	R6996 DUPLICATE	.0111	.0004	.0000	.0210	.0505	.0027
8	R6996 SPIKE	1.294	1.293	1.286	1.286	2.599	1.288
9	HNO3 REAG BLK	.0115	.0000	.0000	-.0114	.0420	.0035
10	R6997 SST5 38B48	5.183	5.106	5.053	5.099	10.34	5.225

#	Sample Name	Y	Zn	Zr
1	R6993 SST5 38B48	.0109	5.203	5.008
2	R6994 REAG BLK	.0004	-.0010	.0021
3	R6995 SAMDIL	.0201	.0119	1.831
4	R6995 DUPDIL	.0211	.0069	1.869
5	R6995 SPIKE	.0221	.8472	2.649
6	R6996 SAMPLE	.0009	.0016	.0021
7	R6996 DUPLICATE	.0006	.0022	.0021
8	R6996 SPIKE	.0031	1.333	1.282
9	HNO3 REAG BLK	.0007	-.0005	.0021
10	R6997 SST5 38B48	.0110	5.279	5.150

JK Lold
2-17-95
Purex J3/E5 R6993-R6997

INDUCTIVELY COUPLED PLASMA ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6995.-5850	PUREX J3/E5	2-14-95	11:50	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP-LIQ	LA-505-~~151~~/61	uG/ML	KP51T	0

Sample Size	Customer ID
? 2-10 ml DF 6	BODVAS

Remarks, Calculations, Results

DUPLICATE SAMPLE

Ag <.01 x 6 = <6.00 E-2 ug/ml
Al .888 = 5.33
As <.05 = <3.00 E-1
Ba <.05 = <3.00 E-1
Be <.005 = <3.00 E-2
Ca .411 = 2.47
Cd <.01 = <6.00 E-2
Co <.02 = <1.20 E-1
Cr .068 = 4.08 E-1
Cu <.01 = <6.00 E-2
Fe <.05 ~~= 3.00 E-1~~ <3.00 E-1
K .510 = 3.06 E+3

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

Date	Time Completed	Lab Unit Mgr	
2-17-95	1500	02/21/95 J. Parry	DK 2-21-95

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

Li <.01 x 6 = <6.00 E-2 ug/ml
Mg <.10 = <6.00 E-1
Mn <.01 = <6.00 E-2
Mo <.05 = <3.00 E-1 DK 2-21-95
Na 5.06 = ~~2.53 E+1~~ 3.04 E+1
Ni <.02 = <1.20 E-1
P 1.44 = 8.64
Pb <.10 = <6.00 E-1
Sb <.20 = <1.20
Se <.10 = <6.00 E-1
Sr <.01 = <6.00 E-2
Tl <.20 = <1.20
V <.05 = <3.00 E-1
Zn <.01 = <6.00 E-2

R 6995 - 5850

INDUCTIVELY COUPLED PLASMA ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6995.-5950	PUREX J3/E5	2-14-95	11:50	25

Determination	Method Standard	Result Units	Charge Code	Reruns
ICP	LA-508-141 JR 2-17-95	% RECOVERY	KP51T	0

Sample Size	Customer ID
? 2-10 ml	BOIVK8

Remarks, Calculations, Results

2ml x 5ppm = 12ml x Xppm X = .833ppm

[illegible] 38848

[illegible] 2ml

As (.773-0)/.833 x100 = 95.80 %
Ce (1.48-.860)/.833 x100 = 98.44 %
Cs (.904-0)/.833 x100 = 108.52 %
Ba (.824-0)/.833 x100 = 98.92 %
Be (.858-0)/.833 x100 = 103.00 %

Cu (1.27-.388)/.833 x100 = 105.88 %
Cd (.839-0)/.833 x100 = 100.72 %
Co (.832-0)/.833 x100 = 99.88 %
Cr (.908-.066)/.833 x100 = 101.08 %
Cu (.835-0)/.833 x100 = 100.24 %
Fe (.848-0)/.833 x100 = 101.80 %

over

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

Date	Time Completed	Lab Unit Mgr	
2-17-95	1530	02/21/95 S. Fang	DK 2-21-95

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

K Sample > 4x concentration of spike.
Li (.814-0)/.833 x100 = 97.72 %
Mg (.803-0)/.833 x100 = 96.40 %
Mn (.803-0)/.833 x100 = 96.40 %
Mo (.820-0)/.833 x100 = 98.44 %
Na (5.72-3.02)/.833 x100 = 84.03 %
Ni (.835-.021)/.833 x100 = 97.84 %
P (2.35-1.45)/.833 x100 = 108.04 %
Pb (.866-0)/.833 x100 = 103.96 %

Sb (.773-0)/.833 x100 = 93.40 %
Se (.970-0)/.833 x100 = 116.45 %
Sr (.824-0)/.833 x100 = 98.92 %
Tl (.804-0)/.833 x100 = 96.52 %
V (.848-0)/.833 x100 = 101.80 %
Zn (.847-.012)/.833 x100 = 100.24 %

R6995 - 5950

96139/9.1147

INDUCTIVELY COUPLED PLASMA ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 6996.-5750	PUREX J3/E5	2-14-95	11:51	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP-LIQ	LA-505-151/41	uG/ML	KP51T	0

Sample Size	Customer ID
? Direct	BODVK9

Remarks, Calculations, Results

Ag <.01 ug/ml	Co <.02	Mo <.05	Tl <.20
Al <.05	Cr <.01	Na .263	V <.05
As <.05	Cu <.01	Ni <.02	Zn <.01
Ba <.05	Fe <.05	P <.20	
Be <.005	K <.30	Pb <.10	
Ca <.10	Li <.01	Sb <.20	
Cd <.01	Mg <.10	Se <.10	
	Mn <.01	Si <.01	

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

Date	Time Completed	Lab Unit Mgr	
2-17-95	1530	02/21/95 S. Young	2-21-95

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

INDUCTIVELY COUPLED PLASMA ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6996.-5850	PUREX J3/E5	2-14-95	11:51	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP-LIQ	LA-505-~~151~~/41 DK 2-17-95	uG/ML	KP51T	0

Sample Size	Customer ID
? Direct	BODVK9

Remarks. Calculations. Results:

DUPLICATE SAMPLE

Ag <.01 ug/ml	Cd <.01	Mg <.10	Se <.10
Al <.05	Co <.20	Mn <.01	Sr <.01
As <.05	Cr <.01	Mo <.05	Tl <.20
Ba <.05	Cu <.01	Na .248	V <.05
Be <.005	Fe <.05	Ni <.02	Zn <.01
Ca <.10	K <.50	P <.20	
	Li <.01	Pb <.10	
		Sb <.20	

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

Date	Time Completed	Lab Unit Mgr	
2-17-95	1530	02/21/95 S. Parry	DK Lab 2-21-95

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

9613479.1149

INDUCTIVELY COUPLED PLASMA ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6996.-5950	PUREX J3/E5	2-14-95	11:51	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-~~151~~/141 BR 2-17-95	% RECOVERY	KP51T	0

Sample Size	Customer ID
? 8 ml	BODVK9

Remarks, Calculations, Results

SAMPLE SPIKED ID
SPIKE ID XUHC 28+35
SPIKE VOLUME .1ml each

.1ml x 100ppm = 8.2ml x Xppm X = 1.22ppm

Ag (1.32-0)/1.22 x100 = 108.20%
Ge (1.30-0)/1.22 x100 = 106.56%
Cs (1.28-0)/1.22 x100 = 104.92%
Ba (1.27-0)/1.22 x100 = 104.10%
Be (1.29-0)/1.22 x100 = 105.74%
Ca (1.31-0)/1.22 x100 = 107.38%
Cd (1.31-0)/1.22 x100 = 107.38%
Co (1.30-0)/1.22 x100 = 106.56%
Cr (1.30-0)/1.22 x100 = 106.56%
Cu (1.30-0)/1.22 x100 = 106.56%

over

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

Date	Time Completed	Lab Unit Mgr	
2-17-95	1530	2/21/95 S. Parry	JK Lab 2-21-95

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

Fe (1.30-0)/1.22 x100 = 106.56%
K (1.47-0)/1.22 x100 = 120.49%
Li (1.30-0)/1.22 x100 = 106.56%
Mg (1.32-0)/1.22 x100 = 108.20%
Mo (1.28-0)/1.22 x100 = 104.92%
Na (1.42-.243)/1.22 x100 = 111.23%
Ni (1.31-0)/1.22 x100 = 107.38%
P (1.35-0)/1.22 x100 = 110.66%
Pb (1.32-0)/1.22 x100 = 108.20%
Sb (1.28-0)/1.22 x100 = 104.92%
Se (1.28-0)/1.22 x100 = 104.92%
Sr (1.29-0)/1.22 x100 = 105.74%
Tl (1.29-0)/1.22 x100 = 105.74%
V (1.29-0)/1.22 x100 = 105.74%
Zn (1.33-0)/1.22 x100 = 109.02%

R6996-5950

INDUCTIVELY COUPLED PLASMA ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6997.-5550	PUREX J3/E5	2-14-95	11:51	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-506-~~161~~ 161 JK 2-17-95	% RECOVERY	KP51T	0

Sample Size	Customer ID
? SST5 38B48 Direct	STD

Remarks, Calculations, Results

LMCS CHECK SAMPLE

Ag (5.097/5)(100) = 101.94 %
Al 5.097 = 101.94 %
As 5.338 = 106.76 %
Ba 5.112 = 102.24 %
Be 5.358 = 107.16 %
Ca 5.299 = 105.98 %
Cd 5.239 = 104.78 %
Co 5.298 = 105.96 %
Cr 5.248 = 104.96 %
Cu 5.238 = 104.76 %
Fe 5.214 = 104.28 %
K 4.993 = 99.86 %

over

Analyst	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
JK				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-17-95	1530	02/21/95 S. Range	JK 2-21-95

54-6600-061 (R-10-83)

Li (5.094/5)(100) = 101.88 %
Mg 5.103 = 102.06 %
Mn 5.112 = 102.24 %
Mo 5.226 = 104.52 %
Na 5.090 = 101.80 %
Ni 5.168 = 103.36 %
P 5.339 = 106.78 %
Pb 5.235 = 104.70 %
Sb 4.957 = 99.14 %
Se 5.151 = 103.02 %
Sr 5.106 = 102.12 %
Tl 5.099 = 101.98 %
V 5.225 = 104.50 %
Zn 5.279 = 105.58 %

R 6997-5550

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

ANALYTICAL BATCH

Lab Segment Serial No. R6995, R6996	Customer ID: B0DVK8, B0DVK9
Analysis: HG	Sample Prep: DIRECT

Instrument: WB26847	Procedure/ Rev: LA-325-104 B-1
Technologist: SUSIE FULTON	Date: 03/07/95
Starting Time:	Temperature N/A
Ending Time: 15:15	Chemist: NOEL SMITH

Comments:

BATCH 5560

	Description	Lab ID		Description	Lab ID
1	LMCS STD	R6993-5597	11		
2	BLANK	R6984-5697	12		
3	SAMPLE	R6995-5797	13		
4	DUPLICATE	R6995-5897	14		
5	SPIKE	R6995-5997	15		
6	SAMPLE	R6996-5797	16		
7	DUPLICATE	R6996-5897	17		
8	SPIKE	R6996-5997	18		
9	LMCS STD	R6997-5597	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	43N11F			

A-6000-881 (03/92)

MERCURY ANALYSIS

Batch 5560

Serial No	Sample Point	Date	Time Issued	Priority
R 6993.-5597	PUREX J3/E5	2-14-95	11:49	21

Determination	Method Standard	Result Units	Charge Code	Reruns
HG	[illegible]	[illegible]	X851T	0

Sample Size	Customer ID
? .300 ml	STD

Remarks Calculations Results

RDP R715 HG/HYDRID

STD 51MM-A RESULT 1.03E-01 pk ht .319

STD WT .100 ~~103.0~~ nas 3/9/95 30.99 ng

103.0%

Analyst 1	Analyst 2	Analyst 3	Analyst 4	Analyst 5
Susie M Fulton				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-7-95	1515	Joel Smith 3/9/95	

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

MERCURY ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6994.-5697	PUREX J3/E5	2-14-95	11:49	21

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

pk ht .014
.16 ng

< 0.005 ug/ml

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Susie M. Sutton				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-7-95	1515	Neil Smith 3/9/95	

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

MERCURY ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6995.-5797	PUREX J3/E5	2-14-95	11:50	21

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

Sample Size	Customer ID
? 1.0 ml	DVK6

Remarks, Calculations, Results

pk ht .025

1.18 ng

<0.005 ug/ml

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Susie M. Dalton				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-7-95	1515	Phil Smith 3/9/95	

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

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

LINEAR REGRESSION

Analyte:	Hg	Date of Calibration:	03/07/95
Procedure No:	LA-325-104 (B-1)	Instrument:	PE2380
Analyst:	S. FULTON	Property No:	WB26847

Calib. Standard ID:	50N11A	
Analyte Conc:	0.147	µg/mL (ppm)

	Standard Volume (mL)	Instrument Reading	Concentration ng	% Recovery
1	0.000	0.008	0.00	0.0%
2	0.034	0.061	5.00	89.8%
3	0.100	0.165	14.70	95.6%
4	0.250	0.439	36.75	106.9%
5	0.500	0.842	73.50	103.9%
6	0.750	1.129	110.25	93.2%
7	1.000	1.649	147.00	102.5%
8				
9				
10				

Y-intercept (b)	Slope (m)	Corr. Coefficient
0.0122	0.0109	0.9978

Data Entry by:	[illegible]	Date:	03/08/95
Approved by:	Noel Smith	Date:	3/9/95

LAB LEADER INFO:

Method:	LA-325-104 (B-1)
Matrix:	LIQUID
Test Code	
Work List #	
Batch #	5560
Prepared By:	RC JONES
Date Complete:	03/08/95
Chemist:	R. ESCH
Analyst:	S. FULTON
Analysis Date:	03/07/95
Time Analysis Complete:	03:15 PM
Instrument Code:	WB26847
Rerun:	0
Sample Prep:	DIRECT
Sample Point:	PUREX J3/E5

Sample Type	Sample #
STANDARD	R6993-5597
BLANK	R6994-5697
SAMPLE 1	R6995-5797
DUPLICATE 1	R6995-5897
SPIKE 1	R6995-5997
SPIKE DUP 1	
SAMPLE 2	R6996-5797
DUPLICATE 2	R6996-5897
SPIKE 2	R6996-5997
SAMPLE 3	
ST-END	R6997-5597

Sample #	Customer ID
R6993-5597	STD
R6994-5697	BLANK
R6995-5797	BODVK8
R6995-5897	BODVK8
R6995-5997	BODVK8
R6996-5797	BODVK9
R6996-5897	BODVK9
R6996-5997	BODVK9
R6997-5597	STD

Print

TECH INFO:

Standard Run:

INPUT

Sample Size in mL	0.300
Peak height (pkht)	0.349
Hg ng (Nanograms)	30.99
Std Value µg/mL	0.100
Std ID:	51N11A

RESULT

Conc Hg µg/mL	1.03E-01

Blank Run:

INPUT

Sample Size in mL	1.000
Peak height (pkht)	0.014
Hg ng (Nanograms)	0.16

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)	0.025
Hg ng (Nanograms)	1.18

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)	0.011
Hg ng (Nanograms)	-0.11

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

Both Results are < Detection Limit

Sample Run 2:

INPUT

Sample Size in mL	1.000
Peak height (pkht)	0.012
Hg ng (Nanograms)	-0.02

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)	0.014
Hg ng (Nanograms)	0.16

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	
Peak height (pkht)	
Hg ng (Nanograms)	

RESULT

Conc Hg µg/mL	
Conc Hg µg/L (PPB)	

SPIKE 1

INPUT

Spike Std Volume (mL)	0.300
Peak height (pkht)	0.321
Hg ng of Spike+Sample	28.42
Hg ng of Sample	1.18
Spike Std ID	51N11A
Spike Std Value (ppm)	0.100

RESULT

% Recovery	94.7%

SPIKE 2

INPUT

Spike Std Volume (mL)	0.300
Peak height (pkht)	0.331
Hg ng of Spike + Sample	29.34
Hg ng of Sample	-0.02
Spike Std ID	51N11A
Spike Std Value (ppm)	0.100

RESULT

% Recovery	97.8%

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

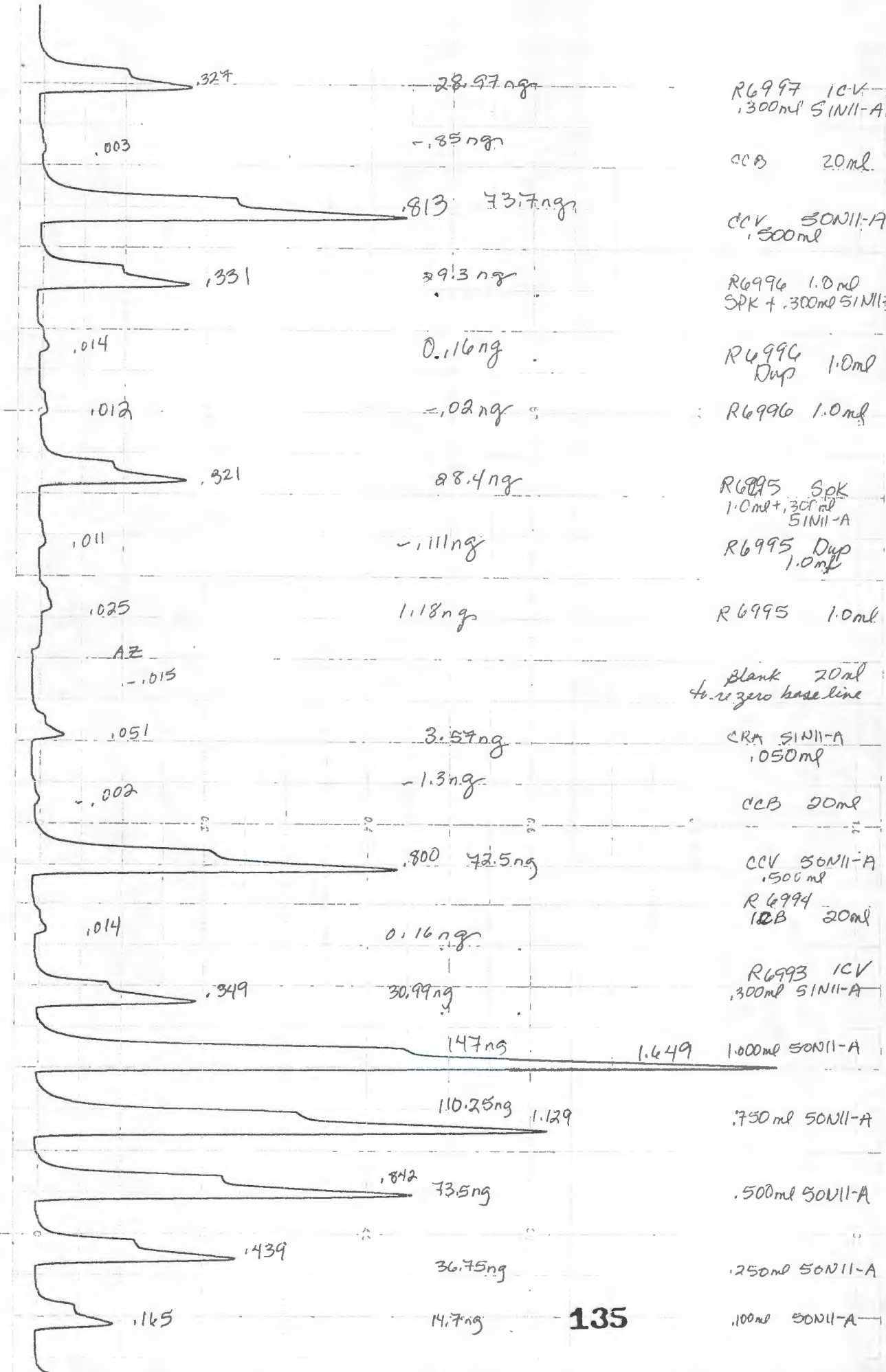
INPUT

Sample Size in mL	0.300
Peak height (pkht)	0.327
Hg ng (Nanograms)	28.97
Std Value µg/mL	0.100

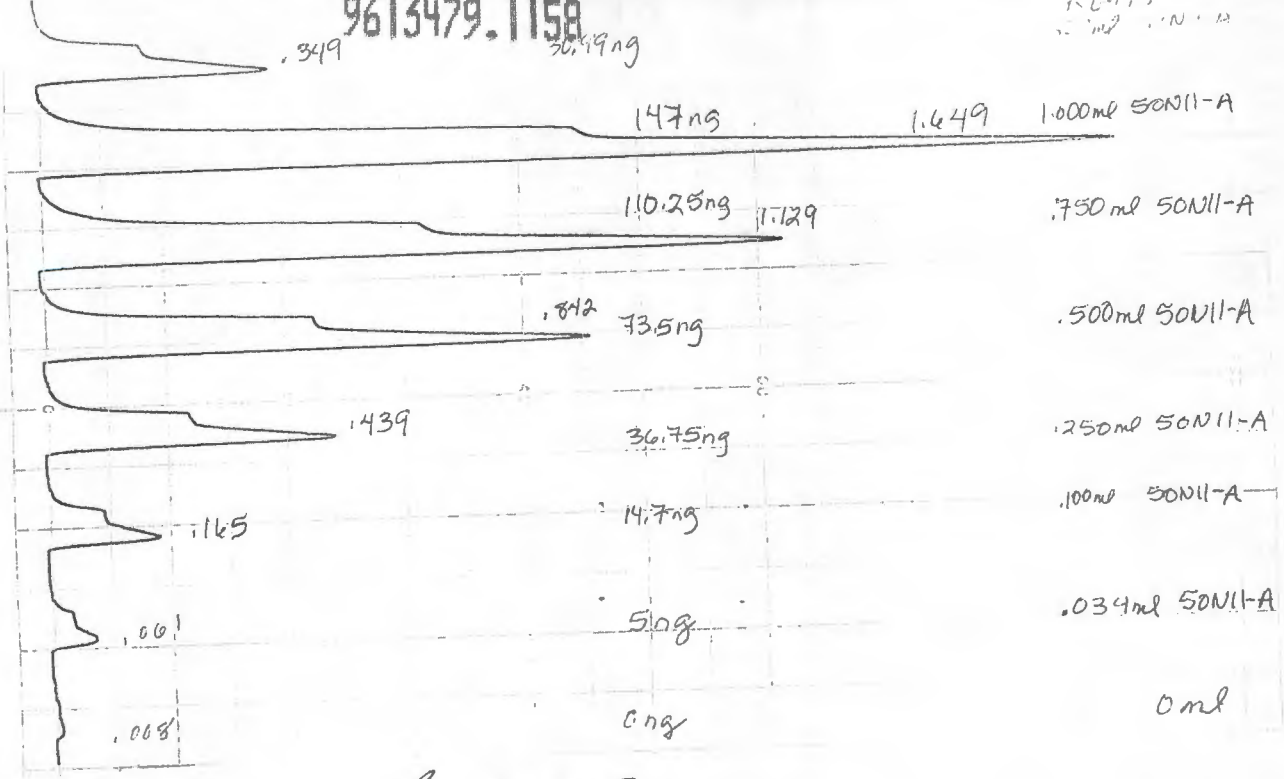
RESULT

Conc Hg µg/mL	9.66E-02

Form Completed By:	RC JONES	Signature:	RC Jones	Date:	03/08/95
Chemist Approval:	R. ESCH	Signature:	Noel Smith	Date:	3/9/95



PERKIN-ELMER
Chart No. CP3402-0
BEST AVAILABLE COPY



Analyte: Hg
Date: 3-7-95

Analyst: Susie M. Dutton
Start Time: 0800 **End Time:** 1515

Batch #5560

MHS 20 Data:

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

Purge I: 40
Purge II: 90
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: .0122 absorbance units
Slope: .0109 abs. units / concentration
Correlation: .9978 (unitless)

17:	Intercept: 0.0122
16:	Slope: 0.0109
15:	0.9978
14:	30.9932
13:	0.1646
12:	72.4968
11:	-1.3078
10:	3.5696
9:	1.1769
8:	-0.1114
7:	28.4165
6:	-0.0194
5:	0.1646
4:	29.3368
3:	73.6931
2:	-0.8477
1:	28.9687

PERKIN-ELMER

BEST AVAILABLE COPY

Atomic Absorption Runlog: Hg Cold Vapor Analysis

Analyst: Susie M. Sutton Date: 3-7-95
Instrument: PE 2380 Property #: WB26847 Batch#: 5560
Cal. Data: Intercept: .0122 Slope: .0109 Correlation: .9978

Sample Name (Std. ID#)	Sample Point	Sam. Size, mL	D or A*	PKHT (Abs.)	ng Result	% Rec.	Time	Comments	CC **
50N11-A	N/A	0.000	D	.008	0	N/A	:		
"	"	0.034	D	.061	5	"	:		
"	"	0.100	D	.165	14.7	"	:		
"	"	0.250	D	.439	36.75	"	:		
"	"	0.500	D	.842	73.5	"	:		
"	"	0.750	D	1.129	110.25	"	:		
"	"	1.000	D	1.649	147.75	"	:		
R6993 ICV	51N11-A	.300	D	.349	30.99	103%	:		
R6994 ICB		1.0	D	.014	.16		:		
CCV	50N11-A	.500	D	.800	72.5	99%	:		
CCB		1.0	D	-.002	-1.3		:		
CRA	51N11-A	.050	D	.051	3.57	71%	:	* Ran Blank & rezeroed baseline SMS	
R6995	Purex J3/E5	1.0	D	.025	1.18		:		
R6995D	" Dup	1.0	D	.011	-.111		:		
R6995S	" Spk +.300mL 51N11-A	1.0	D	.321	28.4		:		
R6996	Purex J3/E5	1.0	D	.012	-.02		:		
R6996D	" Dup	1.0	D	.014	.16		:		
R6996S	" Spk +300mL 51N11-A	1.0	D	.331	29.3		:		
CCV	50N11-A	.500	D	.813	73.7	100%	:		
CCB		1.0	D	.003	-.85		:		
R6997 CCV	51N11-A	.300	D	.327	28.97	97%	:		
							:		
							:		
							:		
							:		
							:		
							:		
							:		
							:		
							:		

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

Analyte Concentration: 0.147ppm

9613479.1160

MERCURY ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6995.-5897	PUREX J3/E5	2-14-95	11:50	21

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

Sample Size	Customer ID
1.0 ml	BODWF8

Remarks, Calculations, Results

DUPLICATE SAMPLE

pk ht .011

-.11 ng

<0.005 ug/ml

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Susie M. Felton				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-7-95	1515	[illegible] 3/9/95	[illegible]

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

MERCURY ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 6995.-5997	PUREX J3/E5	2-14-95	11:50	21

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

Sample Size	Customer ID
1.0 ml	[illegible]

Remarks, Calculations, Results

SAMPLE [illegible] ID 51N11-A

[illegible] .300 ml

pk ht .321

2.8.4 ng

94.7%

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

Date	Time Completed	Lab Unit Mgr	
3-7-95	1515	[signature] 3/9/95	[signature]

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

MERCURY ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 6996.-5797	PUREX J3/E5	2-14-95	11:51	21

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

Sample Size	Customer ID
? 1.0 ml	BODVK9

Remarks Calculations Results

pk ht .012

-.02 ng

<0.005 ug/ml

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Susie M. Dalton				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-7-95	1515	Phil Smith	

54-6600-061 (R-10-83)

9613479.1163

MERCURY ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6996.-5897	PUREX J3/E5	2-14-95	11:51	21

Determination	Method/Standard	Result Units	Charge Code	Reruns
HG-LIQ	LA-525-104	uG/ML	KP51T	0

Sample Size	Customer ID
1.0ml	BODVK9

Remarks, Calculations, Results

DUPLICATE SAMPLE

pkht .014

-.016ng

<0.005ug/ml

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Susie M. Fulton				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-7-95	1515	Neil Smith 3/9/95	

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

MERCURY ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 6996.-5997	PUREX J3/E5	2-14-95	11:51	21

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

Sample Size	Customer ID
? 1.0 ml	BODVK9

Remarks, Calculations, Results

SAMPLE SPIKED ID
SPIKE ID 51N11-A
SPIKE VOLUME .300 ml

pk ht .331
29.3 ng
97.8%

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

Date	Time Completed	Lab Unit Mgr	
3-7-95	1515	Neil Smith 3/9/95	

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

MERCURY ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6997.-5597	PUREX J3/E5	2-14-95	11:51	21

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

SLP R715 HG-HYDRID
MID SINH-A RESULT 9.66E-02 pk ht .327
VAL .100 % REC 96.6 28.97 ng

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Susie M. Gilkey				
Hrs	Hrs	Hrs	Hrs	Hrs
				R.E. Jones

Date	Time Completed	Lab Unit Mgr	
3-7-95	1515	Noel Swatts 3/9/95	R.E. Jones

54-6800-061 (R.10.83)

9613479.1166

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

ANALYTICAL BATCH

Lab Segment Serial No. R6990, R6991	Customer ID: BODPS9, BODPTO
Analysis: HG	Sample Prep: DIRECT

Instrument: WB26847	Procedure/ Rev: LA-325-104 B-1
Technologist: VALERIE MASSIE	Date: 03/03/95
Starting Time:	Temperature N/A
Ending Time: 11:20	Chemist: NOEL SMITH

Comments: _____

BATCH 5556

	Description	Lab ID		Description	Lab ID
1	LMCS STD	R6988-5597	11		
2	BLANK	R6989-5697	12		
3	SAMPLE	R6990-5797	13		
4	DUPLICATE	R6990-5897	14		
5	SPIKE	R6990-5997	15		
6	SAMPLE	R6991-5797	16		
7	DUPLICATE	R6991-5897	17		
8	SPIKE	R6991-5997	18		
9	LMCS STD	R6992-5597	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	43N11F			

A-6000-881 (03/92)

9613479.1167

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

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

SAMPLE #:	R6990-5797 & R6991-5797	BATCH ID:	5556
TEST CODE:		SAMPLE POINT:	PUREX J3/E5
INSTRUMENT:	WB26847	SAMPLE PREP:	DIRECT
ANALYST:	Valerie Massie	ANALYSIS DATE:	03/03/95

SAMPLE TYPE	SAMPLE #	SAMPLE ID	CONC HG µg/mL	AVERAGE µg/mL	RPD%	% REC	DET LIM µg/mL
STANDARD	R6988-5597	STD	1.09E-01			109.1%	
BLANK	R6989-5697	BLANK	< 0.005				0.005
SAMPLE 1	R6990-5797	BODPS9	< 0.005				0.005
DUPLICATE 1	R6990-5897	BODPS9	< 0.005	N/A	N/A		0.005
SPIKE 1	R6990-5997	BODPS9				102.7%	
SAMPLE 2	R6991-5797	BODPT0	< 0.005				0.005
DUPLICATE 2	R6991-5897	BODPT0	< 0.005	N/A	N/A		0.005
SPIKE 2	R6991-5997	BODPT0				104.1%	
ST-END	R6992-5597	STD	1.08E-01			107.8%	

STD TYPE:	STD ID:	STD VOL:
STANDARD	43N11F	0.300 mL
SPIKE 1	43N11F	0.300 mL
SPIKE 2	43N11F	0.300 mL

NARRATIVE: **Analyst Comments:**

Chemist Comments:

DETECTION LIMITS ARE ADJUSTED FOR DIFFERENT SAMPLE SIZES.

Form Completed By:	Gary Hammitt	Signature:	Gary Hammitt	Date:	03/03/95
Chemist Approval:	Noel Smith	Signature:	Noel Smith	Date:	3/6/95

145

MERCURY ANALYSIS

Batch 5556

Serial No.	Sample Point	Date	Time Issued	Priority
R 6988.-5597	PUREX J3/E5	2-14-95	11:13	25

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

Sample Size	Customer ID
.300ml	STD

Remarks, Calculations, Results

EDF [illegible] HgCHYLRID
STD #43N11F RESULT /.09E-01
STD VAL/.09E-1 % R[illegible] /109.0

PKHT = .324
ng = ~~31.84ng~~ 32.73ng
3-3-95

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

Date	Time Completed	Lab Unit Mgr
3-3-95	11:20	Joel Smith 3/6/95

84-6800-061 (R-10-83)

MERCURY ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6989.-5697	PUREX J3/E5	2-14-95	11:23	21

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= .009

ng= ~~0.92ng~~ ~~0.009ng~~ 1.05

2/H 3-3-95

< 0.005 µg/mL

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

Date	Time Completed	Lab Unit Mgr
3-3-95	11:20	Noel Smith 3/6/95

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

MERCURY ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6990.-5797	PUREX J3/E5	2-14-95	11:25	21

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

Sample Size	Customer ID
? 1.0 ml	BODPS9

Remarks, Calculations, Results:

PKHT= -.005
ng= ~~-0.005 ng~~
-0.36 ng

< 0.005 µg/mL

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

Date	Time Completed	Lab Unit Mgr	
3-3-95	11:20	Noel Smith 3/6/95	[illegible]

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

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

LINEAR REGRESSION

Analyte:	Hg	Date of Calibration:	03/03/95
Procedure No:	LA-325-104 (B-1)	Instrument:	PE2380
Analyst:	Valerie Massie	Property No:	WB26847

Calib. Standard ID:	42N11F	
Analyte Conc:	0.147	µg/mL (ppm)

	Standard Volume (mL)	Instrument Reading	Concentration ng	% Recovery
1	0.000	-0.003	0.00	0.0%
2	0.034	0.050	5.00	103.5%
3	0.100	0.135	14.70	93.3%
4	0.250	0.356	36.75	97.8%
5	0.500	0.752	73.50	103.1%
6	0.750	1.108	110.25	101.2%
7	1.000	1.442	147.00	98.8%
8				
9				
10				

Y-Intercept (b)	Slope (m)	Corr. Coefficient
-0.0015	0.0099	0.9997

Data Entry by:	Terry Hamm	Date:	03/03/95
Approved by:	Noel Smith	Date:	3/6/95

9613479.1172

LAB LEADER INFO:

Method:	LA-325-104 (B-1)
Matrix:	LIQUID
Test Code	
Work List #	
Batch #	5556
Prepared By:	Gary Hammitt
Date Complete:	03/03/95
Chemist:	Noel Smith
Analyst:	Valerie Massie
Analysis Date:	03/03/95
Time Analysis Complete:	11:20 AM
Instrument Code:	WB26847
Rerun:	0
Sample Prep:	DIRECT
Sample Point:	PUREX J3/E5

Sample Type	Sample #
STANDARD	R6988-5597
BLANK	R6989-5697
SAMPLE 1	R6990-5797
DUPLICATE 1	R6990-5897
SPIKE 1	R6990-5997
SPIKE DUP 1	
SAMPLE 2	R6991-5797
DUPLICATE 2	R6991-5897
SPIKE 2	R6991-5997
SAMPLE 3	
ST-END	R6992-5597

Sample #	Customer ID
R6988-5597	STD
R6989-5697	BLANK
R6990-5797	BODPS9
R6990-5897	BODPS9
R6990-5997	BODPS9
R6991-5797	BODPT0
R6991-5897	BODPT0
R6991-5997	BODPT0
R6992-5597	STD

Print

TECH INFO:

Standard Run:

INPUT

Sample Size in mL	0.300
Peak height (pkht)	0.324
Hg ng (Nanograms)	32.73
Std Value µg/mL	0.100
Std ID:	43N11F

RESULT

Conc Hg µg/mL	1.09E-01

Blank Run:

INPUT

Sample Size in mL	1.000
Peak height (pkht)	0.009
Hg ng (Nanograms)	1.05

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)	-0.005
Hg ng (Nanograms)	-0.36

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)	-0.006
Hg ng (Nanograms)	-0.46

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

Both Results are < Detection Limit

Sample Run 2:

INPUT

Sample Size in mL	1.000
Peak height (pkht)	-0.009
Hg ng (Nanograms)	-0.76

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)	-0.012
Hg ng (Nanograms)	-1.06

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

Both Results are < Detection Limit

Sample Run 3:

INPUT

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

RESULT

Conc Hg µg/mL	
Conc Hg µg/L (PPB)	

SPIKE 1

INPUT

Spike Std Volume (mL)	0.300
Peak height (pkht)	0.305
Hg ng of Spike+Sample	30.82
Hg ng of Sample	-0.36
Spike Std ID	43N11F
Spike Std Value (ppm)	0.100

RESULT

% Recovery	102.7%

SPIKE 2

INPUT

Spike Std Volume (mL)	0.300
Peak height (pkht)	0.309
Hg ng of Spike + Sample	31.22
Hg ng of Sample	-0.76
Spike Std ID	43N11F
Spike Std Value (ppm)	0.100

RESULT

% Recovery	104.1%

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)	0.320
Hg ng (Nanograms)	32.33
Std Value µg/mL	0.100

RESULT

Conc Hg µg/mL	1.08E-01

Form Completed By:	Gary Hammitt	Signature:	Gary Hammitt	Date:	03/03/95
Chemist Approval:	Noel Smith	Signature:	Noel Smith	Date:	3/6/95

150

Atomic Absorption Runlog: Hg Cold Vapor Analysis

Analyst: Valerie L Massie Date: 3-3-95
Instrument: PE 2380 Property #: WB26847 Batch#: 5556
Cal. Data: Intercept: -0.0015 Slope: 0.0099 Correlation: 0.9997

Sample Name (Std. ID#)	Sample Point	Sam. Size, mL	D or A*	PKHT (Abs.)	ng Result	% Rec.	Time	Comments	CC **
42N11F	N/A	0.000	D	-.003	0	N/A	:		
"	"	0.034	D	.050	5	"	:		
"	"	0.100	D	.135	14.7	"	:		
"	"	0.250	D	.356	36.75	"	:		
"	"	0.500	D	.752	73.5	"	:		
"	"	0.750	D	1.108	110.25	"	:		
"	"	1.000	D	1.442	147.00	"	:		
R6988 ICV	43N11F	.300	D	.324	32.73	109.10	:		
R6989 ICB	Blank	1.0	D	.009	1.05		:		
CCV	42N11F	.500	D	.728	73.36	99.81	:		
CCB	Blank	1.0	D	-.004	-0.26		:		
VMB-3-45 CRA	43N11F	.050	D	.045	4.67	93.40	:		
R6990	Purex sample J3/E5	1.0	D	-.005	-0.36		:		
R6990D	Purex J3/E5 Dup	1.0	D	-.006	-0.46	~~30.82~~ VMB-3-95	:		
R6990S	Purex sample + 43N11F	1.0 + .300 mL	D	.305	30.82	102.73	:		
R6991	Purex sample	1.0	D	-.009	-0.76		:		
R6991D	Purex sample Dup	1.0	D	-.012	-1.06		:		
R6991S	Purex sample + 43N11F	1.0 + .300 mL	D	.309	31.22	104.07	:		
S1393	102LW	.050	D	.268	27.10		:		
S1393	102LW	.100	D	.527	53.14		:		
CCV	42N11F	.500	D	.769	77.48	105.42	:		
CCB	Blank	1.0	D	-.010	1.15		:		
R6992 ICV	43N11F	.300	D	.320	32.33	107.76	:		
							:		
							:		
							:		
							:		
							:		
							:		
							:		

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

.320 32.33ng .300ml 43NHF ICV R6992

-.010 ~~-0.94ng~~ 1.15ng 1.0ml CCB
VM3-3-95

.769 ~~75.52ng~~ 77.46ng .500ml 42NHF CCV
VM3-3-95

.527 ~~51.77ng~~ 53.14ng 0.100ml 51393 102LW
VM3-3-95

.268 ~~26.35ng~~ 27.10ng .050ml 51393 102LW
VM3-3-95

.309 ~~30.37ng~~ 31.22ng R6991 spike 1.0ml R6991 sample + .300ml 43NHF
VM-3-3-95

-0.012 ~~-1.14ng~~ -1.06ng 1.0ml R6991 Dup
VM3-3-95

-.009 ~~-0.84ng~~ -0.76ng 1.0ml R6991
VM3-3-95

.305 ~~29.98ng~~ 30.82ng R6990 spike 1.0ml R6990 + .300ml 43NHF
VM3-3-95

-.006 ~~-0.55ng~~ -0.44ng 1.0ml R6990 Dup
VM3-3-95

-.005 ~~-0.45ng~~ -0.36ng 1.0ml R6990
VM3-3-95

.045 ~~4.40ng~~ 4.67ng .050ml 43NHF CRA
VM3-3-95

-.004 ~~-0.35ng~~ -0.26ng 1.0ml CCB
VM3-3-95

.728 ~~71.50ng~~ 73.36ng .500ml 42NHF CCV
VM3-3-95

.009 ~~0.92ng~~ 1.05ng 1.0ml ICB R6989
VM3-3-95

.324 ~~31.84ng~~ 32.73ng .300ml 43NHF ICCV R6988
VM3-3-95

1.442 141ng 1.0ml 42NHF Cal std

1.108 110.25ng .750ml 42NHF Cal std

.752 73.5ng .500ml 42NHF Cal std

.356 36.75ng .250ml 42NHF Cal std

.135 14.7ng .100ml 42NHF Cal std

.050 5ng .034ml 42NHF Cal std

-.003 0ng

11:20 3-3-95 Hg Valerie L Massie

BEREKIN-ELMER

BEREKIN-ELMER

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9613479.1175

.050 5 ng .034 ml 42N4F Cal std

-.003 0 ng

11:20 3-3-95 Hg Valerie L Massie

Analyte: Hg
Date: 3-3-95

Analyst: Valerie L Massie
Start Time: 10:00 3-2-95
End Time: 11:20 3-3-95

MHS 20 Data:

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

Purge I: ~~35 sec.~~ 40 VM 3-3-95
Purge II: ~~87.5 sec.~~ 90 VM 3-3-95
Reaction: 16 sec.
Temperature: 175 C
EDL Power: 5 Watts

Valerie L Massie 3-3-95

19:	Intercept: -0.0015
18:	Slope: 0.0099
17:	0.9997
16:	32.7300
15:	1.0516
14:	73.3588
13:	-0.2558
12:	4.6720
11:	-0.3564
10:	-0.4569
9:	30.8192
8:	-0.7586
7:	-1.0603
6:	31.2215
5:	27.0983
4:	53.1449
3:	77.4820
2:	1.1521
1:	32.3277

Chart Recorder Data:

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

Calibration Data:

Intercept: -0.0015 absorbance units
Slope: 0.0099 abs. units / concentration
Correlation: 0.9997 (unitless)

PERKIN-ELMER

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9613479.1176

MERCURY ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6990.-5897	PUREX J3/E5	2-14-95	11:25	21

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

Sample Size	Customer ID
1.0 ml	BODPS9

Remarks, Calculations, Results

DUPLICATE SAMPLE

PRHT= -.006
ng= ~~.055ng~~ DH 3-3-95
-0.46

<0.005 µg/mL

Analyst - 1	Apalyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massal				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-3-95	11:20	Joel Smith 3/6/95	

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

MERCURY ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6990.-5997	PUREX J3/E5	2-14-95	11:25	21

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

Sample Size	Customer ID
? 1.0ml + .300ml spike	BODPSS

Remarks, Calculations, Results

SAMPLE SPIKED ID R6990
SPIKE ID 43N11F
SPIKE VOLUME

PKHT= .305
ng= ~~29.98ng~~
30.82

102.7
~~104.1 %~~ Rec.
DH
3-4-95

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

Date	Time Completed	Lab Unit Mgr	
3-3-95	11:20	Neil Smith 3/6/95	

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

9613479.1178

MERCURY ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6991.-5797	PUREX J3/E5	2-14-95	11:29	21

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

Sample Size	Customer ID
? 1.0 ml	BODPTO

Remarks, Calculations, Results:

PKHT= -.009
mg= ~~-0.84mg~~ 3-3-95
-0.76

< 0.005 ug/ml

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

Date	Time Completed	Lab Unit Mgr
3-3-95	11:20	Neil Smith 3/6/95

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

MERCURY ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6991.-5897	PUREX J3/E5	2-14-95	11:29	21

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

Sample Size	Customer ID
? 1.0ml	BODPTO

Remarks, Calculations, Results

DUPLICATE SAMPLE

PKHT = -.012
ng = ~~-1.14ng~~ 3-3-95
-1.06

< 0.005 ug/mL

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

Date	Time Completed	Lab Unit Mgr.	
3-3-95	11:20	Noel Smith 3/6/95	[signature]

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

MERCURY ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6991.-5997	PUREX J3/E5	2-14-95	11:29	21

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

Sample Size	Customer ID
? 1.0 ml + .300 ml spike	BODPTO

Remarks, Calculations, Results:

SAMPLE SPIKED ID R6991
SPIKE ID 43N11F
SPIKE VOLUME

PKHT= .309
3-3-95 JH
ng= ~~30.37 ng~~
31.22

104.1 % Recovery

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

Date	Time Completed	Lab Unit Mgr.	
3-3-95	11:20	Noel Smith 3/6/95	Gary [illegible]

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

9613479.1181

MERCURY ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 6992.-5597	PUREX J3/E5	2-14-95	11:49	21

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

Sample Size	Customer ID
? .300ml	STD

Remarks, Calculations, Results

EDP R71C HG/HYDRID
STD #43N11F RESULT 108E-01
STD VAL 100E-1 % REC 108.0

PKHT= .320
ng= ~~31.45ng~~ 32.33

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

Date	Time Completed	Lab Unit Mgr
3-3-95	11:20	Neil Smith 3/6/95

9613479.1182

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

ANALYTICAL BATCH

Lab Segment Serial No. R6990, R6991	Customer ID: B0DPS9, B0DPT0
Analysis: ACID DIGEST	Sample Prep: N/A

Instrument:	Procedure/ Rev: LA-505-158 A-4
Technologist: LISA HUGHS-STANDLEY	Date: 02/22/95
Starting Time: 0730	Temperature N/A
Ending Time: 1600	Chemist: BERTRAND GRIFFIN II

Comments: _____

BATCH 5564

	Description	Lab ID		Description	Lab ID
1	LMCS STD	R6988-8505	11		
2	BLANK	R6989-8605	12		
3	SAMPLE	R6990-8705	13		
4	DUPLICATE	R6990-8805	14		
5	SPIKE	R6990-8905	15		
6	SAMPLE	R6991-8705	16		
7	DUPLICATE	R6991-8805	17		
8	SPIKE	R6991-8905	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	48N11C			

A-6000-881 (03/92)

ANALYTICAL BATCH SUMMARY SHEET

METHOD	LA-505-158 A-4	RERUN# 0	ANALYSIS START DATE 02/22/95
PREPARED BY	LM HUGHES-STANDLEY	SUMMARY DATE	02/22/95
SAMPLE POINT	PUREX J3/E5	TIME START 0730	TIME COMPLETE 1600

SPL ID	SERIAL NO	RESULT #1	G OR ML ->	MLS	COMMENTS
STD	R 6988 8505	20 50	5 ML 2 ML	100	WHC1A / G4JWHC1AN10 WHC2 / G3MWHC2N1G 5 ML -> 100 ML 48N11-C 2 ML -> 100 ML
BLK	R 6989 8605	-	-	100	100 ML TOTAL VOLUME
SAM	R 6990 8705	D.F. = 100	1 ML	100	1 ML -> 100 ML
DUP	R 6990 8805	D.F. = 100	1 ML	100	1 ML -> 100 ML
SPIKE	R 6990 8905	D.F. = 100	1 ML	100	1 ML -> 100 ML SPIKES ARE ADDED JUST LIKE THE STANDARD.
SAM	R 6991 8705	D.F. = 100	1 ML	100	1 ML -> 100 ML
DUP	R 6991 8805	D.F. = 100	1 ML	100	1 ML -> 100 ML
SPIKE	R 6991 8905	D.F. = 100	1 ML	100	1 ML -> 100 ML SPIKES ARE ADDED JUST LIKE THE STANDARD.

Bertram L Griffin II
2-28-95

ACID DIGESTION ANALYSIS

Batch 5564

Serial No	Sample Point	Date	Time Issued	Priority
R 6888.-8505	PUREX J3/E5	2-14-95	11:23	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
ACD DGST	LA-505-158	DF	KP51T	0

Sample Size	Customer ID
? LOOK BELOW	SUB

Remarks Calculations Results

for ASE
IMCS [illegible] SAMPLE
IMCS [illegible] 48JUN-C
2 ml → 100 ml

$DF = \frac{100\ ml}{2\ ml} = 50$

WHC1A / Y4JWHC1AN10
WHC2 / G3MWHC2NJG
5 ml → 100 ml

$DF = \frac{100\ ml}{5\ ml} = 20$

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

Date	Time Completed	Lab Unit Mgr	
2-22-95	1600	Bernard Griffith	[illegible]

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

ACID DIGESTION ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 6989.-8605	PUREX J3/E5	2-14-95	11:25	25

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 [illegible]
VOLUME [illegible]
COMPLETION 100mL

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

Date	Time Completed	Lab Unit Mgr
2-22-95	1600	[illegible]

54-6800-061 (R 10-83)

9613979.1186

ACID DIGESTION ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6990.-8705	PUREX J3/E5	2-14-95	11:29	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
ACID DIGST	LA-505-158	DF	KP51T	0

Sample Size	Customer ID
? 1mL → 100mL	BODPS9

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.	
2-22-95	1600	Bertrand Griffin II	

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

ACID DIGESTION ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6990.-8805	PUREX J3/E5	2-14-95	11:29	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
ACD DGST	LA-505-158	DF	KP51T	0

Sample Size	Customer ID
? 1 mL = 100 mL	BOLESR

Remarks, Calculations, Results:

DUPLICATE SAMPLE

DF = 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	
2-22-95	1600	Bertram Buffin III	

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

ACID DIGESTION ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 6990.-8905	PUREX J3/E5	2-14-95	11:29	25

Determination	Method Standard	Result Units	Charge Code	Reruns
ACD DGST	LA-505-158	DF	KP51T	0

Sample Size	Customer ID
1 ml → 100 ml	BODPS9

Remarks, Calculations, Results

SAMPLE SPIKED ID AS/SE
SPIKE ID 48U11-C
SPIKE VOLUME 2 ml

$DF = \frac{100 ml}{2 ml} = 50$

WHC1A / Y4JWHC1AU0
WHC2 / G3MWHC2U6
5 ml → 100 ml

$DF = \frac{100 ml}{5 ml} = 20$

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

Date	Time Completed	Lab Unit Mgr	
2-22-95	1600	Bethany Huffman II	

54-6800 061 (R-10-83)

ACID DIGESTION ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6991.-8705	PUREX J3/E5	2-14-95	11:30	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
ACD DGST	LA-505-158	DF	KP51T	0

Sample Size	Customer ID
? 1ml → 100ml	BODPTO

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
2-22-95	1600	Bertrand Griffin II

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

9613479.1190

ACID DIGESTION ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6991.-8805	PUREX J3/E5	2-14-95	11:30	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
ACD DGST	LA-505-158	DF	KP51T	0

Sample Size	Customer ID
? 1ml → 100ml	BODPTO

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	
2-22-95	1600	Bertrand Griffin II	

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

9613479.1191

ACID DIGESTION ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6991.-8905	PUREX J3/E5	2-14-95	11:30	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
ACD DGST	LA-505-158	DF	KP51T	0

Sample Size	Customer ID
? 1 ml → 100 ml	BODPTO

Remarks, Calculations, Results

SAMPLE SPIKED ID
SPIKE ID AS/SE / 48RJ11-C
SPIKE VOLUME 2 ml

DF: 100 ml / 2 ml = 50

Bottle 1

WHC1A/ Y4JWHC1ARJ10
WHC-2/ G3MWHC2RJG
5 ml of eq. → 100 ml

DF = 100 ml / 5 ml = 20

Bottle 2

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

Date	Time Completed	Lab Unit Mgr
2-22-95	1600	Bertrand Giffin III

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

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

ANALYTICAL BATCH

Lab Segment Serial No. R6995, R6996	Customer ID: B0DVK8, B0DVK9
Analysis: ACID DIGEST	Sample Prep: N/A

Instrument:	Procedure/ Rev: LA-505-158 A-4
Technologist: LISA HUGHS-STANDLEY	Date: 02/23/95
Starting Time: 0730	Temperature N/A
Ending Time: 0925	Chemist: BERTRAND GRIFFIN II

Comments:

BATCH 5567

	Description	Lab ID		Description	Lab ID
1	LMCS STD	R6993-8505	11		
2	BLANK	R6994-8605	12		
3	SAMPLE	R6995-8705	13		
4	DUPLICATE	R6995-8805	14		
5	SPIKE	R6995-8905	15		
6	SAMPLE	R6996-8705	16		
7	DUPLICATE	R6996-8805	17		
8	SPIKE	R6996-8905	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	48N11C			

A-6000-881 (03/92)

ANALYTICAL BATCH SUMMARY SHEET					
METHOD	LA-505-158 A-4	RERUN#	0	ANALYSIS START DATE 02/23/95	
PREPARED BY LM HUGHES-STANDLEY			SUMMARY DATE	02/23/95	
SAMPLE POINT	PUREX J3/E5	TIME START	0730	TIME COMPLETE 0925	

SPL ID	SERIAL NO	RESULT #1	G OR ML ->	MLS	COMMENTS
STD	R 6993 8505	20 50	5 ML 2 ML	100	WHC1A / G4JWHC1AN10 WHC2 / G3MWHC2N1G 5 ML -> 100 ML 48N11-C 2 ML -> 100 ML
BLK	R 6994 8605	-	-	100	100 ML TOTAL VOLUME
SAM	R 6995 8705	D.F. = 100	1 ML	100	1 ML -> 100 ML
DUP	R 6995 8805	D.F. = 100	1 ML	100	1 ML -> 100 ML
SPIKE	R 6995 8905	D.F. = 100	1 ML	100	1 ML -> 100 ML SPIKES ARE ADDED JUST LIKE THE STANDARD.
SAM	R 6996 8705	D.F. = 100	1 ML	100	1 ML -> 100 ML
DUP	R 6996 8805	D.F. = 100	1 ML	100	1 ML -> 100 ML
SPIKE	R 6996 8905	D.F. = 100	1 ML	100	1 ML -> 100 ML SPIKES ARE ADDED JUST LIKE THE STANDARD.

ACID DIGESTION ANALYSIS

Batch 5567

Serial No	Sample Point	Date	Time Issued	Priority
R 6993.-6505	PUREX J3/E5	2-14-95	11:49	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
ACID DIGEST	LA-508-153	DF	KP51T	0

Sample Size	Customer ID
? SEE VARIOUS SIZES	STD

Remarks, Calculations, Results

for 45 Se
[illegible] SAMPLE
[illegible] ID 45011C

2 mL → 100 mL

$DF = \frac{100 mL}{2 mL} = 50$

WHCIA/Y4JWHCIAN10
WHC-2/C2MWHC2N1G
5 mL of eq. in 100 mL

$\frac{100 mL}{5 mL} = 20$

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

Date	Time Comp.	Lab Unit Mgr	
2-23-95	0922 S	Bertrand [illegible]	

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

9613479.1195

ACID DIGESTION ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6994.-8605	PUREX J3/E5	2-14-95	11:49	25

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
2-23-95	0225	Bertrand Griffin III

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

ACID DIGESTION ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 6995.-6705	FUBX J3/E5	2-14-95	11:50	25

Determination	Method Standard	Result Units	Charge Code	Reruns
ACID DIGST	LA-505-158	DF	XF51T	0

Sample Size	Customer ID
1mL → 100mL	[illegible]

Remarks Calculations Results

$$DF = \frac{100\,mL}{1\,mL} = 100$$

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

Date	Time Completed	Lab Unit Mgr	
2-23-95	0925	Bertrand Griffin III	[signature]

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

ACID DIGESTION ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 6995[illegible]-8805	PUREX Js/B5	2-14-95	11:50	25

Determination	Method Standard	Result Units	Charge Code	Reruns
ACD DGST	LA-505-158	UF	RP51T	0

Sample Size	Customer ID
? 1ml → 100ml	[illegible]

Remarks, Calculations, Results

DUP[illegible] [illegible]AMPLE

$$DF = \frac{100\,ml}{1\,ml} = 100$$

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

Date	Time Completed	Lab Unit Mgr
2-23-95	0925	[illegible]

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

ACID DIGESTION ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 6995.-[illegible]	PUREX J3/E5	2-14-95	11:50	35

Determination	Method/Standard	Result Units	Charge Code	Reruns
ACID DIGST	LA-505-158	DB	MPS1T	0

Sample Size	Customer ID
1 mL > 100mL	[illegible]

Remarks, Calculations, Results

SAMPLE [illegible] WHC1A/Y4J WHC1A/U10 & WHC2/G3M WHC2/U1G
SPIKE [illegible] 5 mL of each in 100mL

DF = $\frac{100\ mL}{1\ mL}$ (100) DF = $\frac{100\ mL}{5\ mL}$ = (20)

ALSO SPIKE LISTED ON BACK

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

Date	Time Completed	Lab Supervisor
2-23-95	09[illegible]	Bertrand Huff III [signature]

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

ACID DIGESTION ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 8998.-8705	PUREX J3/E5	2-14-95	11:51	25

Determination	Method Standard	Result Units	Charge Code	Reruns
ACD DGST	LA-505-158	DF	KP51T	0

Sample Size	Customer ID
? 1ml → 100ml	BODVK9

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	
2-23-95	0925	Bertrand Duffin II	

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

9613479.1200

ACID DIGESTION ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6996.-8805	PUREX J3/E5	2-14-95	11:51	25

Determination	Method Standard	Result Units	Charge Code	Reruns
ACID DGST	LA-505-158	DF	KP51T	0

Sample Size	Customer ID
? 1ml → 100ml	BODVK9

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	
2-23-95	0925	Bertrand Griffin II	

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

ACID DIGESTION ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 6996.-8905	PUREX J3/E5	2-14-95	11:51	25

Determination	Method Standard	Result Units	Charge Code	Reruns
ACD DGST	LA-505-158	DF	KP51T	0

Sample Size	Customer ID
? 1 ml → 100 ml DF: 100 ml / 1 ml = 100	BODVK9

Remarks, Calculations, Results

SAMPLE SPIKED ID
SPIKE ID 18ZU1
SPIKE VOLUME 2 ml
DF = 100 ml / 2 ml = 50

WHC1A / W4JWHCANIO
WHC-2 / G3MWHC2NIG
5 ml of ea. in 100 ml
DF = 100 ml / 5 ml = ~~50~~ 20
2-23-95

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

Date	Time Completed	Lab Unit Mgr
2-23-95	0925	Bertrand Griffin II

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

9613479.1202

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

ANALYTICAL BATCH

Lab Segment Serial No. R6988-R6992	Customer ID: BODPS9
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: 03/08/95
Starting Time: 07:40	Temperature 975 C
Ending Time: 13:50	Chemist: N. D. Smith

Comments: Batch #: 5565

	Description	Lab ID		Description	Lab ID
1	LMCS STANDARD	R6988-5596	11	END STANDARD	R6992-5596
2	BLANK	R6989-5696	12		
3	DIGESTED STANDARD	R6988-8596	13		
4	DIGESTED BLANK	R6989-8696	14		
5	DIGESTED SAMPLE	R6990-8796	15		
6	DUPLICATE	R6990-8896	16		
7	SPIKE	R6990-8996	17		
8	DIGESTED SAMPLE	R6991-8796	18		
9	DUPLICATE	R6991-8896	19		
10	SPIKE	R6991-8996	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	44N11G 0.500mL			
DIGEST STANDARD	48N11C DF=50			
SPIKE	48N11C DF=100			

A-6000-881 (03/92)

ANALYTICAL BATCH SUMMARY SHEET

METHOD:	DATE START:	BATCH #5565
LA-365-131	3/8/95	
PREPARED BY:	DATE COMPLETE:	
N.D. Smith	3/9/95	

	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/44N11G	R6988	Se	0.107				107.0		
UNDIGESTED									
STD/48N11C	R6988	Se	0.102				102.0		
DIGESTED									
REAGENT BLK	R6989	Se	<0.003					0.003	
PREP BLK	R6989	Se	<0.250					0.250	
PUREX J3/E5	R6990	Se	<0.250	<0.250	N/A	N/A	96.8	0.250	
SAM BLNK	R6991	Se	<0.250	<0.250	N/A	N/A	119.1	0.250	
STD/44N11G	R6992	Se	0.113				113.0		
UNDIGESTED									

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

ND Smith 3/9/95

96134/9.1204

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Batch 5565

Serial No.	Sample Point	Date	Time Issued	Priority
R 6988.-5596	PUREX J3/E5	2-14-95	11:13	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	% RECOVERY	KP51T	0

Sample Size	Customer ID
? .500 ml	STD

Remarks, Calculations, Results:

EDP R743 SE/HYDRD

STD# ~~45NHE~~ 44NHG vm 3-8-95 RESULT 1.075-01 ug/ml

STD VAL 1.00-1 %REC 107 %

PKHT= .524
ng= 53.63ng

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs
Date	Time Completed	Lab Unit Mgr		
3-8-95	13:50	Noel Smith 3/9/95		

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

Selenium: LA-365-131 (C-0) Se LIQUIDS-DIRECT		STANDARD	DUPLICATE
Type	Sample Size in mL SS	0.500	
STANDARD	Se ng (Nanograms)	53.63	
Work List	Conc Se µg/mL (or mg/L or PPM)	0.107	N/A
5565	Conc Se µg/L (PPB)	107.3	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		
R6988-5596	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
Calibration Date			
03/08/95			
Instrument Code			
WB27979			
Analyst			
V. MASSIE			
Date		STANDARD	DUPLICATE
03/08/95	Conc Se µg/mL	1.07E-01	
Time		N/A	
01:50 PM		N/A	

Data Entry by:		Date:	03/09/95
Approved by:	Noel Smith	Date:	3/9/95

Form 365131_1 Rev. 1.1

9613479.1205

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No.	Sample Point	Date	Time Issued	Priority
R 6988.-8596	PUREX J3/E5	2-14-95	11:23	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	% RECOVERY	KP51T	0

Sample Size	Customer ID
? 2.0ml AF=50	STD

Remarks, Calculations, Results:

EDP R748 SE/DGST PKHT=.405

STD# 48N11C RESULT 1.02500 ng=40.85ng

STD VAL 1.00500 %REC 102%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs
Date	Time Completed	Lab Unit/Mgr		
3-8-95	13:50	3/9/95		

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

Selenium : LA-365-131 (C-0) Se LIQUID-ACID DIGEST		STANDARD	DUPLICATE
Type	Sample Size in mL SS	2.000	
STANDARD	Se ng (Nanograms)	40.85	
Work List	Acid Digest Dilution Factor DF	50.0	
5565	Conc Se µg/mL (or mg/L or PPM)	1.021	N/A
Test Code	Conc Se µg/L (PPB)	1021.3	N/A
		N/A	
Matrix		N/A	
ACID DIGEST		N/A	
Sample #	Conc Se µg/mL=(Se ng/SS)*(1µg/1000ng)*DF		
R6988-8596	Average Conc.=(Sample + Duplicate)/2		
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
03/08/95			
Instrument Code			
WB27979			
Analyst			
V. MASSIE			
Date		STANDARD	DUPLICATE
03/08/95	Conc Se (µg/mL)	1.02E+00	
Time		N/A	
01:50 PM		N/A	

Data Entry by:		Date:	03/09/95
Approved by:		Date:	3/9/95

Form 365131_3 Rev. 2.2

96134/9.1206

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No.	Sample Point	Date	Time Issued	Priority
R 6989.-5696	PUREX J3/E5	2-14-95	11:23	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	uG/ML	KP51T	0

Sample Size	Customer ID
? 2.0 ml	BLANK

Remarks, Calculations, Results:

REAGENT BLANK

PKHT = -.007
ng = -3.38 ng

<0.003 ug/ML

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

Date	Time Completed	Lab Unit Mgr	
3-8-95	13:50	Noel Smith 3/9/95	Rick Jones

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

Selenium: LA-365-131 (C-0) Se LIQUIDS-DIRECT

		BLANK	DUPLICATE
Type	Sample Size in mL SS	2.000	
BLANK	Se ng (Nanograms)	-3.38	
Work List	Conc Se µg/mL (or mg/L or PPM)	-0.002	N/A
5565	Conc Se µg/L (PPB)	-1.7	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		
R6989-5696	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
Calibration Date	Detection Limit = (5 ng/SS)*(1µg/1000ng)		
03/08/95	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
03/08/95	Conc Se µg/mL	<0.003	
Time		N/A	
01:50 PM		N/A	

The Result is < Detection Limit

Data Entry by:	Rick Jones	Date:	03/09/95
Approved by:	Noel Smith	Date:	3/9/95

Form 365131_1 Rev. 1.1

9613479.1207

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No.	Sample Point	Date	Time Issued	Priority
R 6989.-8696	PUREX J3/E5	2-14-95	11:25	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	uG/ML	KP51T	0

Sample Size	Customer ID
? 2.0 ml DF=100	BLANK

Remarks, Calculations, Results:
REAGENT BLANK

PKHT= .001
ng= -2.52ng

20.250 ug/ML

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

Date	Time Completed	Lab Unit Mgr
3-8-95	13:50	Joel Smith 3/9/95

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

Selenium : LA-365-131 (C-0) Se LIQUID-ACID DIGEST

		BLANK	DUPLICATE
Type	Sample Size in mL SS	2.000	
BLANK	Se ng (Nanograms)	-2.52	
Work List	Acid Digest Dilution Factor DF	100.0	
5565	Conc Se µg/mL (or mg/L or PPM)	-0.126	N/A
Test Code	Conc Se µg/L (PPB)	-126.0	N/A
		N/A	
Matrix		N/A	
ACID DIGEST		N/A	
Sample #	Conc Se µg/mL=(Se ng/SS)*(1µg/1000ng)*DF		
R6989-8696	Average Conc.=(Sample + Duplicate)/2		
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
03/08/95	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
03/08/95	Conc Se (µg/mL)	<0.250	
Time		N/A	
01:50 PM		N/A	

The Result is < Detection Limit

Data Entry by:	RS Jones	Date:	03/09/95
Approved by:	Joel Smith	Date:	3/9/95

Form 365131_3 Rev. 2.2

96134/9.1208

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No.	Sample Point	Date	Time Issued	Priority
R 6990.-8796	PUREX J3/E5	2-14-95	11:29	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	uG/ML	KP51T	0

Sample Size	Customer ID
? 2.0 ml	BODPS9

Remarks, Calculations, Results

PKHT= -.007
ng = -3.38 ng

<0.250 ug/mL

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

Date	Time Completed	Lab Unit Mgr	
3-8-95	13:50	Noel Smith 3/9/95	

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

Selenium : LA-365-131 (C-0) Se LIQUID-ACID DIGEST		SAMPLE	DUPLICATE
Type	Sample Size in mL SS	2.000	
SAMPLE	Se ng (Nanograms)	-3.38	
Work List	Acid Digest Dilution Factor DF	100.0	
5565	Conc Se µg/mL (or mg/L or PPM)	-0.169	N/A
Test Code	Conc Se µg/L (PPB)	-169.0	N/A
		N/A	
Matrix		N/A	
ACID DIGEST		N/A	
Sample #	Conc Se µg/mL=(Se ng/SS)*(1µg/1000ng)*DF		
R6990-8796	Average Conc.=(Sample + Duplicate)/2		
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
03/08/95	Detection Limit = (5 ng/SS)*(1µg/1000ng)*DF		
Instrument Code			
WB27970	Detection Limit (µg/mL)	0.250	
Analyst	Detection Limit (µg/L)	250.00	
V. MASSIE			
Date		SAMPLE	DUPLICATE
03/08/95	Conc Se (µg/mL)	<0.250	
Time		N/A	
01:50 PM		N/A	

The Result is < Detection Limit

Data Entry by:		Date:	03/09/95
Approved by:	Noel Smith	Date:	3/9/95

Form 365131_3 Rev. 2.2

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

CALIBRATION RECORD

Analyte:	Se		
Procedure:	LA 365-131	Revision:	C-0
Instrument:	PE2280 (Hydride)	Property No.:	WB27979
Technologist	Valerie Massie Valerie L Massie	Payroll No.: XXXXX	Date: 03/08/95

Calibration Standard ID:	45N11E
Analyte Concentration:	.100ppm
Type of Calibration:	LINEAR

	Dilution	Concentration	Instrument Reading Unit
1	.000mL	0 ng	.000
2	.050mL	5 ng	.052
3	.250mL	25 ng	.277
4	.500mL	50 ng	.546
5	1.00mL	100ng	.924
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			

Comments: Intercept = 0.0245, Slope = 0.0093, Correlation = 0.9953

A-6000-882 (03/92)

96134/9.1210

.552 56.64ng .500ml direct LMCS 44N11G R6992

.468 47.62ng 2.0ml R6991 spike (48N11C)

.012 -1.34ng 2.0ml R6991 Dup

.009 -1.67ng 2.0ml R6991

.385 38.71ng 2.0ml R6990 spike (48N11C)

.007 -1.88ng 2.0ml R6990 Dup

-.007 -3.38ng 2.0ml R6990

.001 -2.52ng 2.0ml digested Blank R6989

.405 40.85ng 2.0ml digested std 48N11C R6988

-.007 -3.38ng 2.0ml direct Blank R6989

.524 53.63ng .500ml direct LMCS 44N11G R6988

.924 100ng 1.0ml 45N11E Cal std

.546 50ng .500ml 45N11E Cal std

.277 25ng .250ml 45N11E Cal std

.052 5ng .050ml 45N11E Cal std

.000 0ng

13:50 3-8-95 Se Valerie L Massie

Analyte: Se **Analyst:** Valerie L Massie
Date: 3-8-95 **Start Time:** 07:40 **End Time:** 13:50

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 Power: 6 Watts

Chart Recorder Data:

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

Calibration Data:

Intercept: 0.0245 absorbance units
Slope: 0.0093 abs. units / concentration
Correlation: 0.9953 (unitless)

```
14:   Intercept: 0.0245
13:       Slope: 0.0093
12:              0.9953
11:              53.6303
10:              -3.3837
9:               40.8532
8:               -2.5248
7:               -3.3837
6:               -1.8805
5:               38.7058
4:               -1.6658
3:               -1.3437
2:               47.6176
1:               56.6367
```

Valerie L Massie
3-8-95

BEST AVAILABLE COPY

Atomic Absorption Runlog: Se Hydride Analysis

Analyst: Valerie L Massie Date: 3-8-95
Instrument: PE 2280 Property #: WB27979
Analyte: Se Batch #: 5565 Start Time: 07:40 End Time: 13:50

Calibration Data: Intercept: 0.0245 absorbance units
Slope: 0.0093 abs. units / concentration
Correlation: 0.9953 (unitless)

Room temp 86°F during run!

Sample Name (Std. ID#)	Sample Point	Sam. Size, (mL)	D or A*	PKHT (Abs.)	ng result	% Rec.	Comments	CC **
45N11E	N/A	0.000	D	.000	0	N/A		
	"	0.050	D	.052	5	"		
	"	0.250	D	.277	25	"		
	"	0.500	D	.546	50	"		
	"	1.000	D	.924	100	"		
R6988	direct LMCS 44N11G	.500	D	.524	53.63	107.26		
R6989	direct Blank	2.0	D	-.007	-3.38			
R6988	digested LMCS 48N11C	2.0	A	.405	40.85	102.13		
R6989	digested Blank	2.0	A	.001	-2.52			
R6990	Purex J3/E5 sample	2.0	A	-.007	-3.38			
R6990D	Purex J3/E5 dup	2.0	A	.007	-1.88			
R6990S	Purex J3/E5 spike (48N11C)	2.0	A	.385	38.71	96.76		
R6991	Purex J3/E5 sample	2.0	A	.009	-1.67			
R6991D	Purex J3/E5 dup.	2.0	A	.012	-1.34			
R6991S	Purex J3/E5 spike (48N11C)	2.0	A	.468	47.62	119.04		
R6992	direct LMCS 44N11G	.500	D	.552	56.64	113.28		

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

9613479.1212

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No.	Sample Point	Date	Time Issued	Priority
R 6990.-8896	PUREX J3/E5	2-14-95	11:29	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
SE	LA-365-131	uG/ML	KP51T	0

Sample Size	Customer ID
? 2.0 ml	BODPS9

Remarks, Calculations, Results:
DUPLICATE SAMPLE

PKHT= .007
ng= -1.88 ng

<0.250 ug/mL

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

Date	Time Completed	Lab Unit Mgr	
3-8-95	13:50	Noel Smith	Kis Jones

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

Selenium : LA-365-131 (C-0) Se LIQUID-ACID DIGEST

Type		SAMPLE	DUPLICATE
DUPLICATE	Sample Size in mL SS	2.000	2.000
	Se ng (Nanograms)	-3.38	-1.88
Work List	Acid Digest Dilution Factor DF	100.0	100.0
5565	Conc Se µg/mL (or mg/L or PPM)	-0.169	-0.094
Test Code	Conc Se µg/L (PPB)	-169.0	-94.0
	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		
R6990-8796	Average Conc.=(Sample + Duplicate)/2		
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
03/08/95	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
03/08/95	Conc Se (µg/mL)	<0.250	<0.250
Time	Average Conc (µg/mL)	N/A	N/A
01:50 PM	Relative % Difference	N/A	N/A

Both Results are < Detection Limit

Data Entry by:	Kis Jones	Date:	03/09/95
Approved by:	Noel Smith	Date:	3/9/95

Form 365131_3 Rev. 2.2

96134/9.1213

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No.	Sample Point	Date	Time Issued	Priority
R 6990.-8996	PUREX J3/E5	2-14-95	11:29	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	% RECOVERY	KP51T	0

Sample Size	Customer ID
? 2.0ml	BODPS9

Remarks, Calculations, Results

SAMPLE SPIKED ID R6990
SPIKE ID 48N11C
SPIKE VOLUME
2 ML → FINAL 100ML

PKHT= .385
ng= 38.71ng

96.8%

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

Date	Time Completed	Lab Unit Mgr
3-8-95	13:50 3-8-95	Joel Smith 3/9/95

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

Selenium: LA-365-131 (C-0) Se LIQUIDS-ACID DIGEST

Type		SAMPLE	SPIKE
	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	38.71
5565	ng of Sample ngSAM	-3.38	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	48N11C
Sample #	Spike Std Value (ppm) SS VAL	N/A	1.000
R6990-8996	% Recovery	N/A	96.8%
Calibration Date			
03/08/95	Sample result is < 5 ng, 0 ng of sample is used in the calculation for % recovery		
Instrument Code			
WB27575	Spike Std. Dilution Factor = ADVOL/SSVOL		
Analyst			
V. MASSIE	% Recovery = {([{(ngSSAM/SAVOL)*(1/1000)}-{(0/SAVOL)*(1/1000)}]*SPDF)/SS VAL}*100		
Date			
03/08/95			
Time	% Recovery =	96.8%	
01:50 PM			

Data Entry by:		Date:	03/09/95
Approved by:	Joel Smith	Date:	3/9/95

Form 365131_4 Rev. 1.1

9613479.1214

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6991.-8796	PUREX J3/E5	2-14-95	11:30	25

Determination	Method Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	uG/ML	KP51T	0

Sample Size	Customer ID
? 2.0 ml	BODPTO

Remarks, Calculations, Results

PKHT= .009
ng= -1.67ng

LO.250 ug/ML

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

Date	Time Completed	Lab Unit Mgr	
3-8-95	13:50	Noel Smith 3/9/95	

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

Selenium : LA-365-131 (C-0) Se LIQUID-ACID DIGEST

		SAMPLE	DUPLICATE
Type	Sample Size in mL SS	2.000	
SAMPLE	Se ng (Nanograms)	-1.67	
Work List	Acid Digest Dilution Factor DF	100.0	
5565	Conc Se µg/mL (or mg/L or PPM)	-0.084	N/A
Test Code	Conc Se µg/L (PPB)	-83.5	N/A
		N/A	
Matrix		N/A	
ACID DIGEST		N/A	
Sample #	Conc Se µg/mL=(Se ng/SS)*(1µg/1000ng)*DF		
R6991-8796	Average Conc.=(Sample + Duplicate)/2		
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
03/08/95	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
03/08/95	Conc Se (µg/mL)	<0.250	
Time		N/A	
01:50 PM		N/A	

The Result is < Detection Limit

Data Entry by:		Date:	03/09/95
Approved by:	Noel Smith	Date:	3/9/95

Form 365131_3 Rev. 2.2

96134/9.1215

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No.	Sample Point	Date	Time Issued	Priority
R 6991.-8896	PUREX J3/E5	2-14-95	11:30	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	uG/ML	KP51T	0

Sample Size	Customer ID
? 2.0 ml	BODPTO

Remarks, Calculations, Results
DUPLICATE SAMPLE

PKHT= .012
ng= -1.34ng

LO.250ug/ml

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

Date	Time Completed	Lab Unit Mgr	
3-8-95	13:50	Noel Smith 3/9/95	

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

Selenium : LA-365-131 (C-0) Se LIQUID-ACID DIGEST

		SAMPLE	DUPLICATE
Type	Sample Size in mL SS	2.000	
DUPLICATE	Se ng (Nanograms)	-1.34	
Work List	Acid Digest Dilution Factor DF	100.0	
5565	Conc Se µg/mL (or mg/L or PPM)	-0.067	N/A
Test Code	Conc Se µg/L (PPB)	-67.0	N/A
		N/A	
Matrix		N/A	
ACID DIGEST		N/A	

Sample #	Conc Se µg/mL=(Se ng/SS)*(1µg/1000ng)*DF
R6991-8896	Average Conc.=(Sample + Duplicate)/2
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100
03/08/95	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
03/08/95	Conc Se (µg/mL)	<0.250	
Time		N/A	
01:50 PM		N/A	

The Result is < Detection Limit

Data Entry by:		Date:	03/09/95
Approved by:	Noel Smith	Date:	3/9/95

Form 365131_3 Rev. 2.2

96134/9.1216

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6991.-8996	PUREX J3/E5	2-14-95	11:30	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
SE	LA-365-131	% RECOVERY	KP51T	0

Sample Size	Customer ID
? 2.0 ml	BODPTO

Remarks, Calculations, Results:

SAMPLE SPIKED ID R6991
SPIKE ID 48N11C
SPIKE VOLUME

2 ML → 100 ML FINAL VOL.

PKHT = .468
ng = 47.62 ng

119.1%

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

Date	Time Completed	Lab Unit Mgr
3-8-95	13:50	Noel Smith 3/9/95

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

Selenium: LA-365-131 (C-0) 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	47.62
5565	ng of Sample ngSAM	-1.67	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	48N11C
Sample #	Spike Std Value (ppm) SS VAL	N/A	1.000
R6991-8996	% Recovery	N/A	119.1%
Calibration Date			
03/08/95	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			
03/08/95			
Time	% Recovery =	119.1%	
01:50 PM			

Data Entry by:		Date:	03/09/95
Approved by:	Noel Smith	Date:	3/9/95

Form 365131_4 Rev. 1.1

9613979.1217

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No.	Sample Point	Date	Time Issued	Priority
R 6992.-5596	PUREX J3/E5	2-14-95	11:49	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	% RECOVERY	KP51T	0

Sample Size	Customer ID
? .500 ml	STD

Remarks, Calculations, Results

EDP R743 SE/HYDRD PKHT= .552

STD# 44N11G RESULT 1.13E-01ug/mL ng= 56.64ng

STD VAL 1.00-1 %REC 113.0 %

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

Date	Time Completed	Lab Unit Mgr
3-8-95	13:50	Noel Smith 3/9/95

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

Selenium: LA-365-131 (C-0) Se LIQUIDS-DIRECT		STANDARD	DUPLICATE
Type	Sample Size in mL SS	0.500	
STANDARD	Se ng (Nanograms)	56.64	
Work List	Conc Se µg/mL (or mg/L or PPM)	0.113	N/A
5565	Conc Se µg/L (PPB)	113.3	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		
R6992-5596	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
Calibration Date			
03/08/95			
Instrument Code			
WB27979			
Analyst			
V. MASSIE			
Date		STANDARD	DUPLICATE
03/08/95	Conc Se µg/mL	1.13E-01	
Time		N/A	
01:50 PM		N/A	

Data Entry by:		Date:	03/09/95
Approved by:	Noel Smith	Date:	3/9/95

Form 365131_1 Rev. 1.1

96134/9.1218

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

ANALYTICAL BATCH

Lab Segment Serial No. R6993-R6997	Customer ID: BODVK8
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: 03/22/95
Starting Time: 07:35	Temperature 975 C
Ending Time: 13:50	Chemist: N. D. Smith

Comments: Batch #: 5691

	Description	Lab ID		Description	Lab ID
1	LMCS STANDARD	R6993-5596	11	END STANDARD	R6997-5596
2	BLANK	R6994-5696	12		
3	DIGESTED STANDARD	R6993-8596	13		
4	DIGESTED BLANK	R6994-8696	14		
5	DIGESTED SAMPLE	R6995-8796	15		
6	DUPLICATE	R6995-8896	16		
7	SPIKE	R6995-8996	17		
8	DIGESTED SAMPLE	R6996-8796	18		
9	DUPLICATE	R6996-8896	19		
10	SPIKE	R6996-8996	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	44N11H 0.500mL			
DIGEST STANDARD	48N11C DF=50			
SPIKE	48N11C DF=100			

A-6000-881 (03/92)

ANALYTICAL BATCH SUMMARY SHEET

METHOD: LA-365-131	DATE START: 3/22/95	BATCH #5691
PREPARED BY: N.D. Smith	DATE COMPLETE: 3/23/95	

	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/44N11H	R6993	Se	0.103				103.0		
UNDIGESTED									
STD/48N11C	R6993	Se	0.0955				95.5		
DIGESTED									
REAGENT BLK	R6994	Se	0.003					0.003	
PREP BLK	R6994	Se	<0.250					0.250	
PUREX J3/E5	R6995	Se	<0.250	<0.250	N/A	N/A	95.8	0.250	
SAM BLNK	R6996	Se	<0.250	<0.250	N/A	N/A	103.2	0.250	
STD/44N11H	R6997	Se	0.0126				102.6		
UNDIGESTED									

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

LIST SPECIFIC PROBLEMS/VARIATIONS FOR THIS BATCH:

Noel Smith 3/23/95

96134/9.1220

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

RERUN

Serial No.	Sample Point		Time Issued	Priority
R 6993.-8596	PUREX J3/E5	2-14-95	11:49	25

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

Sample Size	Customer ID
2 ML	STD

Remarks, Calculations, Results:

EDP R748 SE/DGST

STD# 48N11C RESULT .955

STD VAL 1.000 REC 95.5%

PKHT= .328

ng= 38.21 ng

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

Date	Time Completed	Lab Unit Mgr	
3-22-95	13:50	Joel Smith 3/23/95	

3-22-95

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

Selenium : LA-365-131 (C-0) Se LIQUID-ACID DIGEST		STANDARD	DUPLICATE
Type	Sample Size in mL SS	2.000	
STANDARD	Se ng (Nanograms)	38.21	
Work List	Acid Digest Dilution Factor DF	50.0	
5691	Conc Se µg/mL (or mg/L or PPM)	0.955	N/A
Test Code	Conc Se µg/L (PPB)	955.3	N/A
		N/A	
Matrix		N/A	
LIQUID		N/A	
Sample #	Conc Se µg/mL=(Se ng/SS)*(1µg/1000ng)*DF		
R6993-8596	Average Conc.=(Sample + Duplicate)/2		
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
03/22/95			
Instrument Code			
WB27979			
Analyst			
MASSIE			
Date		STANDARD	DUPLICATE
03/22/95	Conc Se (µg/mL)	9.55E-01	
Time		N/A	
01:50 PM		N/A	

Data Entry by:		Date:	03/23/95
Approved by:	Joel Smith	Date:	3/23/95

Form 365131_3 Rev. 2.2

96139/9.1221

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

RERUN Batch 5691

Serial No.	Sample Point	Date	Time Issued	Priority
R 6993.-5596	PUREX J3/E5	2-14-95	11:49	25

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

Sample Size	Customer ID
.500 ML	STD

Remarks, Calculations, Results:

EDP R743 SE/HYDRD

STD# 44N11H RESULT .103

STD VAL .100 %REC 103.0%

PKHT= .467

ng= 55.22ng

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

Date	Time Completed	Lab Unit Mgr
3-22-95	13:50	Joel Smith 3/23/95

vm 3-22-95

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

Selenium: LA-365-131 (C-0) Se LIQUIDS-DIRECT		STANDARD	DUPLICATE
Type	Sample Size in mL SS	0.500	
STANDARD	Se ng (Nanograms)	51.31	
Work List	Conc Se µg/mL (or mg/L or PPM)	0.103	N/A
5691	Conc Se µg/L (PPB)	102.6	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		
R6997-5596	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
Calibration Date			
03/22/95			
Instrument Code			
WB27979			
Analyst			
MASSIE			
Date		STANDARD	DUPLICATE
03/22/95	Conc Se µg/mL	1.03E 01	
Time		N/A	
01:50 PM		N/A	

LAD 7/12/96

Data Entry by:		Date:	03/22/95
Approved by:	Joel Smith	Date:	3/23/95

Form 365131_1 Rev. 1.1

9613479.1222

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

RERUN

Serial No.	Sample Point	Date	Time Issued	Priority
R 6994.-8696	PUREX J3/E5	2-14-95	11:49	25

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

Sample Size	Customer ID
2 ML	BLANK

Remarks, Calculations, Results:

REAGENT BLANK

PKHT= .014
ng= -0.22ng

<2.50 E-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	
3-22-95	13:50	Noel Smith 3/23/95	

VM 3-22-95

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

Selenium : LA-365-131 (C-0) Se LIQUID-ACID DIGEST		BLANK	DUPLICATE
Type	Sample Size in mL SS	2.000	
BLANK	Se ng (Nanograms)	-0.02	
Work List	Acid Digest Dilution Factor DF	100.0	
5691	Conc Se µg/mL (or mg/L or PPM)	-0.001	N/A
Test Code	Conc Se µg/L (PPB)	-1.1	N/A
		N/A	
Matrix		N/A	
LIQUID		N/A	
Sample #	Conc Se µg/mL=(Se ng/SS)*(1µg/1000ng)*DF		
R6994-8696	Average Conc.=(Sample + Duplicate)/2		
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
03/22/95	Detection Limit = (5 ng/SS)*(1µg/1000ng)*DF		
Instrument Code			
WB27979	Detection Limit (µg/mL)	0.250	
Analyst	Detection Limit (µg/L)	250.00	
MASSIE			
Date		BLANK	DUPLICATE
03/22/95	Conc Se (µg/mL)	<0.250	
Time		N/A	
01:50 PM		N/A	

The Result is < Detection Limit

Data Entry by:		Date:	03/23/95
Approved by:	Noel Smith	Date:	3/23/95

Form 365131_3 Rev. 2.2

9613479.1223

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

RERUN

Serial No.	Sample Point	Date	Time Issued	Priority
R 6994.-5696	PUREX J3/E5	2-14-95	11:49	25

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

Sample Size	Customer ID
2 ML	BLANK

Remarks, Calculations, Results:
REAGENT BLANK

PKHT = .067
ng = 6.27ng

3.14 E-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	
3-17-95	13:50	Noel Smith 3/23/95	

VM 3-22-95

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

Selenium: LA-365-131 (C-0) Se LIQUIDS-DIRECT		BLANK	DUPLICATE
Type	Sample Size in mL SS	2.000	
BLANK	Se ng (Nanograms)	6.27	
Work List	Conc Se µg/mL (or mg/L or PPM)	0.003	N/A
5691	Conc Se µg/L (PPB)	3.1	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		
R6994-5696	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
Calibration Date	Detection Limit = (5 ng/SS)*(1µg/1000ng)		
03/22/95	Detection Limit is Corrected for Sample Prep/Dilution		
Instrument Code			
WB27979	Detection Limit (µg/mL) =	0.003	
Analyst	Detection Limit (µg/L) =	2.5	
MASSIE			
Date		BLANK	DUPLICATE
03/22/95	Conc Se µg/mL	3.14E-03	
Time		N/A	
01:50 PM		N/A	

Data Entry by:		Date:	03/23/95
Approved by:	Noel Smith	Date:	3/23/95

Form 365131_1 Rev. 1.1

9613479.1224

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

RERUN

Serial No.	Sample Point	Date	Time Issued	Priority
R 6995.-8796	PUREX J3/E5	2-14-95	11:50	25

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

Sample Size	Customer ID
2 ML	BODVK8

Remarks, Calculations, Results:

PKHT= .010
ng= -0.71 ng

<.250

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs
Date 3-22-95	Time Completed 13:50	Lab Unit Mgr. Noel Smith 3/23/95		

RM3-22-95

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

Selenium : LA-365-131 (C-0) Se LIQUID-ACID DIGEST		SAMPLE	DUPLICATE
Type	Sample Size in mL SS	2.000	
SAMPLE	Se ng (Nanograms)	-0.71	
Work List	Acid Digest Dilution Factor DF	100.0	
5691	Conc Se µg/mL (or mg/L or PPM)	-0.036	N/A
Test Code	Conc Se µg/L (PPB)	-35.5	N/A
		N/A	
Matrix		N/A	
LIQUID		N/A	
Sample #	Conc Se µg/mL=(Se ng/SS)*(1µg/1000ng)*DF		
R6995-8796	Average Conc.=(Sample + Duplicate)/2		
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
03/22/95	Detection Limit = (5 ng/SS)*(1µg/1000ng)*DF		
Instrument Code			
WB27979	Detection Limit (µg/mL)	0.250	
Analyst	Detection Limit (µg/L)	250.00	
MASSIE			
Date		SAMPLE	DUPLICATE
03/22/95	Conc Se (µg/mL)	<0.250	
Time		N/A	
01:50 PM		N/A	

The Result is < Detection Limit

Data Entry by:		Date:	03/23/95
Approved by:	Noel Smith	Date:	3/23/95

Form 365131_3 Rev. 2.2

9613979.1225

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

CALIBRATION RECORD

Analyte:	Se		
Procedure:	LA 365-131	Revision:	C-0
Instrument:	PE2280 (Hydride)	Property No.:	WB27979
Technologist	Valerie Massie Valerie L Massie	Payroll No.: XXXXX	Date: 03/22/95

Calibration Standard ID:	45N11F
Analyte Concentration:	.100ppm
Type of Calibration:	LINEAR

	Dilution	Concentration	Instrument Reading Unit
1	.000mL	0 ng	.012
2	.050mL	5 ng	.022
3	.250mL	25 ng	.246
4	.500mL	50 ng	.393
5	1.00mL	100 ng	.842
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			

Comments: Intercept = 0.0158, Slope = 0.0082, Correlation = 0.9976

A-6000-882 (03/92)

9613979.1226

.435 51.31ng .500ml direct LMCS 44N11H R6997

.353 41.27ng 2.0ml R6996 spike (48N11C)

.005 -1.32ng 2.0ml R6996 dup

.004 -1.44ng 2.0ml R6996

.329 38.33ng 2.0ml R6995 spike (48N11C)

.015 -0.10ng 2.0ml R6995 dup

.010 -0.71ng 2.0ml R6995

.014 -0.22ng 2.0ml digested Blank R6994

.328 38.21ng 2.0ml digested std 48N11C R6993

~~6.27~~ VM 3-22-95 .067 6.27ng 2.0ml direct Blank R6994

.467 55.22ng .500ml 44N11H LMCS std direct LMCS R6993

.403 47.39ng .500ml 44N11H LMCS std

.403 47.39ng .500ml 44N11H LMCS std

.842 100ng 1.0ml 45N11F Cal std

.393 50ng .500ml 45N11F Cal std

.246 25ng .250ml 45N11F Cal std

.022 5ng (deleted from Cal Curve! Reaction flame tip came off!)

.012 0ng

13:50 3-22-95 Se Valerie L Masai

clem Oacr #6937

Analyte: Se Analyst: Valerie L Masai
Date: 3-22-95 Start Time: 07:35 End Time: 13:50

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: 0.0158 absorbance units
Slope: 0.0082 abs. units / concentration
Correlation: 0.9976 (unitless)

16:	Intercept: 0.0158
15:	Slope: 0.0082
14:	0.9976
13:	47.3912
12:	47.3912
11:	55.2245
10:	6.2666
9:	38.2116
8:	-0.2203
7:	-0.7099
6:	-0.0979
5:	38.3340
4:	-1.4443
3:	-1.3219
2:	41.2715
1:	51.3079

Valerie L Masai 3-22-95

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PERKIN-ELMER

96154/9.1227

Atomic Absorption Runlog: Se Hydride Analysis

Analyst: Valerie L Massie Date: 3-22-95
Instrument: PE 2280 Property #: WB27979
Analyte: Se Batch #: 5691 Start Time: 07:35 End Time: 13:50

Calibration Data: Intercept: 0.0158 absorbance units
Slope: 0.0082 abs. units / concentration
Correlation: 0.9976 (unitless)

Sample Name (Std. ID#)	Sample Point	Sam. Size, (mL)	D or A*	PKHT (Abs.)	ng result	% Rec.	Comments	CC **
45N11F	N/A	0.000	D	.012	0	N/A		
	"	0.050		.022	5	"	found Reaction	
	"	0.250		.246	25	"	flask tip off.	
	"	0.500		.393	50	"	deleted from	
	"	1.000		.842	100	"	Cal Curve	
LMCS	LMCS std 44N11H	.500	D	.403	47.39	94.78	to clear OSCR	
LMCS	LMCS std 44N11H	.500	D	.403	47.39	94.78	#6937.	
R6993	direct LMCS 44N11H	.500	D	.467	55.22	110.45		
R6994	direct Blk	2.0	D	.067	6.27		found reaction tip off!	
R6993	digested std 48N11C	2.0	~~D~~ A	.328	38.21	95.53	inserted new reaction flask	
R6994	digested Blk	2.0	A	.014	-0.22		tip. fell off	
R6995	Purex J3/E5 samp.	2.0	A	.010	-0.71		at this spot	
R6995D	Purex J3/E5 dup	2.0	A	.015	-0.10		again!	
R6995S	Purex J3/E5 (spike 48N11C)	2.0	A	.329	38.33	95.84		
R6996	Purex J3/E5 samp.	2.0	A	.004	-1.44			
R6996D	Purex J3/E5 dup.	2.0	A	.005	-1.32			
R6996S	Purex J3/E5 spike 48N11C	2.0	A	.353	41.27	103.18		
R6997	direct LMCS 44N11H	.500	D	.435	51.31	102.62		

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

96134/9.1228

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

RERUN

Serial No.	Sample Point	Date	Time Issued	Priority
R 6995.-8896	PUREX J3/E5	2-14-95	11:50	25

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

Sample Size	Customer ID
2 ML	BODVK8

Remarks, Calculations, Results:

DUPLICATE SAMPLE

PK HT = .015
ng = ~~-1.~~ = 0.10ng
JM 3-22-95

<0.250 U

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

Date	Time Completed	Lab Unit Mgr
3-22-95	13:50	Noel Smith 3/23/95

JM 3-22-95

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

Selenium : LA-365-131 (C-0) Se LIQUID-ACID DIGEST

Type		SAMPLE	DUPLICATE
DUPLICATE	Sample Size in mL SS	2.000	
	Se ng (Nanograms)	-0.10	
Work List	Acid Digest Dilution Factor DF	100.0	
5691	Conc Se µg/mL (or mg/L or PPM)	-0.005	N/A
Test Code	Conc Se µg/L (PPB)	-5.0	N/A
		N/A	
Matrix		N/A	
LIQUID		N/A	

Sample #	
R6995-8896	Conc Se µg/mL=(Se ng/SS)*(1µg/1000ng)*DF
Calibration Date	Average Conc.=(Sample + Duplicate)/2
03/22/95	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100
Instrument Code	Detection Limit = (5 ng/SS)*(1µg/1000ng)*DF
WB27979	

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

Analyst		SAMPLE	DUPLICATE
MASSIE			
Date			
03/22/95	Conc Se (µg/mL)	<0.250	
Time		N/A	
01:50 PM		N/A	

The Result is < Detection Limit

Data Entry by:		Date:	03/23/95
Approved by:	Noel Smith	Date:	3/23/95

Form 365131_3 Rev. 2.2

9613979.1229

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

RERUN

Serial No.	Sample Point	Date	Time Issued	Priority
R 6995.-8996	PUREX J3/E5	2-14-95	11:50	25

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

Sample Size	Customer ID
2 ML	BODVK8

Remarks, Calculations, Results:

SAMPLE SPIKED ID R6995
SPIKE ID 48N11C
SPIKE VOLUME
2mL of std → 100mL final vol.
spk std. value = 1 ppm

PKHT = .329
ng = 38.33ng

95.8%

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

Date	Time Completed	Lab Unit Mgr
3-22-95	13:50	Joel Smith 3/23/95

VM 3-22-95

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

Selenium: LA-365-131 (C-0) 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	38.33
5691	ng of Sample ngSAM	-0.71	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	48N11C
Sample #	Spike Std Value (ppm) SS VAL	N/A	1.000
R6995-8996	% Recovery	N/A	95.8%
Calibration Date			
03/22/95	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			
MASSIE	% Recovery = {([{(ngSSAM/SAVOL)*(1/1000)}-{(0/SAVOL)*(1/1000)}]*SPDF)/SS VAL}*100		
Date			
03/22/95			
Time	% Recovery =		95.8%
01:50 PM			

Data Entry by:		Date:	03/23/95
Approved by:	Joel Smith	Date:	3/23/95

Form 365131_4 Rev. 1.1

9613479.1230

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

RERUN

Serial No.	Sample Point	Date	Time Issued	Priority
R 6996.-8796	PUREX J3/E5	2-14-95	11:51	25

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

Sample Size	Customer ID
2 ML	BODVK9

Remarks, Calculations, Results

PKHT= .004
ng= -1.44ng

<0.250

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

Date	Time Completed	Lab Unit Mgr
3-22-95	13:50	Noel Smith 3/23/95

rm 3-22-95

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

Selenium : LA-365-131 (C-0) Se LIQUID-ACID DIGEST

		SAMPLE	DUPLICATE
Type	Sample Size in mL SS	2.000	
SAMPLE	Se ng (Nanograms)	-1.44	
Work List	Acid Digest Dilution Factor DF	100.0	
5691	Conc Se µg/mL (or mg/L or PPM)	-0.072	N/A
Test Code	Conc Se µg/L (PPB)	-72.0	N/A
		N/A	
Matrix		N/A	
LIQUID		N/A	
Sample #	Conc Se µg/mL=(Se ng/SS)*(1µg/1000ng)*DF		
R6996-8796	Average Conc.=(Sample + Duplicate)/2		
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
03/22/95	Detection Limit = (5 ng/SS)*(1µg/1000ng)*DF		
Instrument Code			
WB27979	Detection Limit (µg/mL)	0.250	
Analyst	Detection Limit (µg/L)	250.00	
MASSIE			
Date		SAMPLE	DUPLICATE
03/22/95	Conc Se (µg/mL)	<0.250	
Time		N/A	
01:50 PM		N/A	

The Result is < Detection Limit

Data Entry by:		Date:	03/23/95
Approved by:	Noel Smith	Date:	3/23/95

Form 365131_3 Rev. 2.2

9613479.1231

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

RERUN

Serial No.	Sample Point	Date	Time Issued	Priority
R 6996.-8896	PUREX J3/E5'	2-14-95	11:51	25

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

Sample Size	Customer ID
2 ML	BODVK9

Remarks, Calculations, Results:
DUPLICATE SAMPLE

PKHT= .005
ng= -1.32ng

<0.250

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

Date	Time Completed	Lab Unit Mgr
3-22-95	13:50	Noel Smith 3/28/95

VM 3-22-95

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

Selenium : LA-365-131 (C-0) Se LIQUID-ACID DIGEST

		SAMPLE	DUPLICATE
Type	Sample Size in mL SS	2.000	
DUPLICATE	Se ng (Nanograms)	-1.32	
Work List	Acid Digest Dilution Factor DF	100.0	
5691	Conc Se µg/mL (or mg/L or PPM)	-0.066	N/A
Test Code	Conc Se µg/L (PPB)	-66.0	N/A
		N/A	
Matrix		N/A	
LIQUID		N/A	
Sample #	Conc Se µg/mL=(Se ng/SS)*(1µg/1000ng)*DF		
R6996-8896	Average Conc.=(Sample + Duplicate)/2		
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
03/22/95	Detection Limit = (5 ng/SS)*(1µg/1000ng)*DF		
Instrument Code			
WB27979	Detection Limit (µg/mL)	0.250	
Analyst	Detection Limit (µg/L)	250.00	
MASSIE			
Date		SAMPLE	DUPLICATE
03/22/95	Conc Se (µg/mL)	<0.250	
Time		N/A	
01:50 PM		N/A	

The Result is < Detection Limit

Data Entry by:		Date:	03/23/95
Approved by:	Noel Smith	Date:	3/23/95

Form 365131_3 Rev. 2.2

9613479.1232

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

RERUN

Serial No.	Sample Point	Date	Time Issued	Priority
R 6996.-8996	PUREX J3/E5	2-14-95	11:51	25

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

Sample Size	Customer ID
2 ML	BODVK9

Remarks, Calculations, Results:

SAMPLE SPIKED ID R6996
SPIKE ID 48N11C
SPIKE VOLUME

PK HT= .353
ng= 41.27ng

103.2%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs
Date 2-17-95	Time Completed 13:50	Lab Unit Mgr Noel Smith 3/23/95		

VM 3-22-95

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

Selenium: LA-365-131 (C-0) 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	41.27
5691	ng of Sample ngSAM	-1.44	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	48N11C
Sample #	Spike Std Value (ppm) SS VAL	N/A	1.000
R6996-8996	% Recovery	N/A	103.2%
Calibration Date			
03/22/95	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			
MASSIE	% Recovery = {([{(ngSSAM/SAVOL)*(1/1000)}-{(0/SAVOL)*(1/1000)}]*SPDF)/SS VAL}*100		
Date			
03/22/95			
Time	% Recovery =	103.2%	
01:50 PM			

Data Entry by:		Date:	03/23/95
Approved by:	Noel Smith	Date:	3/23/95

Form 365131_4 Rev. 1.1

9615979.1235

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

KEKUN Batch 5691

Serial No.	Sample Point	Date	Time Issued	Priority
R 6997 -5596	PUREX J3/E5	2-14-95	11:51	25

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

Sample Size	Customer ID
.500 ML	STD

Remarks, Calculations, Results:

EDP R743 SE/HYDRD

STD# 44N11H RESULT .1026

STD VAL .100 %REC 102.6%

PKHT= .435
ng= 51.31 ng

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

Date	Time Completed	Lab Unit Mgr.
3-22-95	13:50	Joel Smith 3/23/95

VM3-22-95

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

Selenium: LA-365-131 (C-0) Se LIQUIDS-DIRECT

Type	Sample Size in mL SS	STANDARD	DUPLICATE
STANDARD	Se ng (Nanograms)	51.31	
Work List	Conc Se µg/mL (or mg/L or PPM)	0.103	N/A
5691	Conc Se µg/L (PPB)	102.6	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		
R6997-5596	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
Calibration Date			
03/22/95			
Instrument Code			
WB27979			
Analyst			
MASSIE			

Date		STANDARD	DUPLICATE
03/22/95	Conc Se µg/mL	1.03E-01	
Time		N/A	
01:50 PM		N/A	

Data Entry by:		Date:	03/23/95
Approved by:	Joel Smith	Date:	3/23/95

Form 365131_1 Rev. 1.1

9613479.1234

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

KEKUN Batch 5691

Serial No.	Sample Point	Date	Time Issued	Priority
R 6997 -5596	PUREX J3/E5	2-14-95	11:51	25

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

Sample Size	Customer ID
.500 ML	STD

Remarks, Calculations, Results

EDP R743 SE/HYDRD

STD# 44N11H RESULT .1026

STD VAL .100 %REC 102.6%

PKHT= .435
ng= 51.31 ng

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs
Date 3-22-95	Time Completed 13:50	Lab Unit Mgr. Joel Smith 3/23/95		

VM 3-22-95

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

Selenium: LA-365-131 (C-0) Se LIQUIDS-DIRECT

Type	Sample Size in mL SS	STANDARD	DUPLICATE
STANDARD	Se ng (Nanograms)	51.31	
Work List	Conc Se µg/mL (or mg/L or PPM)	0.103	N/A
5691	Conc Se µg/L (PPB)	102.6	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		
R6997-5596	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
Calibration Date			
03/22/95			
Instrument Code			
WB27979			
Analyst			
MASSIE			

Date		STANDARD	DUPLICATE
03/22/95	Conc Se µg/mL	1.03E-01	
Time		N/A	
01:50 PM		N/A	

Data Entry by:		Date:	03/23/95
Approved by:	Joel Smith	Date:	3/23/95

Form 365131_1 Rev. 1.1

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

ANALYTICAL BATCH

Lab Segment Serial No. R6995, R6996	Customer ID: B0DVK8, B0DVK9
Analysis: SE	Sample Prep: DIRECT

Instrument: WB26847	Procedure/ Rev: LA-325-104 B-1
Technologist: VALERIE MASSIE	Date: 03/15/95
Starting Time:	Temperature N/A
Ending Time: 14:00	Chemist: NOEL SMITH

Comments: OUT FOR RERUN

BATCH 5569

	Description	Lab ID		Description	Lab ID
1	LMCS STD	R6993-5596	11		
2	BLANK	R6984-5696	12		
3	SAMPLE	R6995-5796	13		
4	DUPLICATE	R6995-5896	14		
5	SPIKE	R6995-5996	15		
6	SAMPLE	R6996-5796	16		
7	DUPLICATE	R6996-5896	17		
8	SPIKE	R6996-5996	18		
9	LMCS STD	R6997-5596	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	44N11H			

A-6000-881 (03/92)

9613479 1236

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Batch 5569

Serial No.	Sample Point	Date	Time Issued	Priority
R 6993.-5596	PUREX J3/E5	2-14-95	11:49	25

Determination	Method Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	% RECOVERY	KP51T	0

Sample Size	Customer ID
? .500ml	STD

Remarks, Calculations, Results:

EDP R743 SE/HYDRD

STD# 44N11 H RESULT .102

STD VAL .100 %REC 102.0%

PKHT= .366

ng= 51.04ng

OUT FOR RERUN

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

Date	Time Completed	Lab Unit Mgr
3-15-95	14:00	Noel Smith 3/16/95

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

Selenium: LA-365-131 (C-0) Se LIQUIDS-DIRECT

Type	Sample Size in mL SS	STANDARD	DUPLICATE
STANDARD	Se ng (Nanograms)	51.04	
Work List	Conc Se µg/mL (or mg/L or PPM)	0.102	N/A
5569	Conc Se µg/L (PPB)	102.1	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		
R6993-5596	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
Calibration Date			
03/15/95			
Instrument Code			
WB27979			
Analyst			
MASSIE			
Date		STANDARD	DUPLICATE
03/15/95	Conc Se µg/mL	1.02E-01	
Time		N/A	
02:00 PM		N/A	

Data Entry by:		Date:	03/16/95
Approved by:	Noel Smith	Date:	3/16/95

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No.	Sample Point	Date	Time Issued	Priority
R 6993.-8596	PUREX J3/E5	2-14-95	11:49	25

Determination	Method Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	% RECOVERY	KP51T	0

Sample Size	Customer ID
? 2.0 ml	STD

Remarks, Calculations, Results:

EDP R748 SE/DGST

STD# 48N11C RESULT 1.04

STD VAL 1.00 %REC 104 %

PRHT= .300

ng= 41.75ng

OUT FOR RERUN

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

Date	Time Completed	Lab Unit Mgr
3-15-95	14:00	Noel Smith 3/16/95

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

Selenium : LA-365-131 (C-0) Se LIQUID-ACID DIGEST

		STANDARD	DUPLICATE
Type	Sample Size in mL SS	2.000	
STANDARD	Se ng (Nanograms)	41.75	
Work List	Acid Digest Dilution Factor DF	50.0	
5500	Conc Se µg/mL (or mg/L or PPM)	1.044	N/A
Test Code	Conc Se µg/L (PPB)	1043.8	N/A
		N/A	
Matrix		N/A	
LIQUID		N/A	
Sample #	Conc Se µg/mL=(Se ng/SS)*(1µg/1000ng)*DF		
R6993-8596	Average Conc.=(Sample + Duplicate)/2		
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
03/15/95			
Instrument Code			
WB27979			
Analyst			
MASSIE			
Date		STANDARD	DUPLICATE
03/15/95	Conc Se (µg/mL)	1.04E+00	
Time		N/A	
02:00 PM		N/A	

Data Entry by:		Date:	03/16/95
Approved by:	Noel Smith	Date:	3/16/95

Form 365131_3 Rev. 2.2

SELENIUM ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6994.-8696	PUREX J3/E5	2-14-95	11:49	25

Determination	Method Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	uG/ML	KP51T	0

Sample Size	Customer ID
?2.0 ml	BLANK

Remarks, Calculations, Results

REAGENT BLANK

PKHT: ~~.020~~ .020 vm 3-15-95

ng: 2.31 ng

OUT FOR RERUN

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

Date	Time Completed	Lab Unit Mgr	
3-15-95	14:00	Neil Smith 3/16/95	

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

ARSENIC ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6994.-5696	PUREX J3/E5	2-14-95	11:49	25

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

Sample Size	Customer ID
? 2.0 ml	BLANK

Remarks, Calculations, Results
REAGENT BLANK

PKHT = -.002
ng = -0.78 ng

OUT FOR RERUN

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

Date	Time Completed	Lab Unit Mgr
3-15-95	14:00	Joel Smith 3/16/95

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

9613479.1240

SELENIUM ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6995.-8796	PUREX J3/E5	2-14-95	11:50	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	uG/ML	KP51T	0

Sample Size	Customer ID
? 2.0 ml	BODVK8

Remarks, Calculations, Results:

PK HT = .018
ng = 2.03 ng

OUT FOR RERUN

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

Date	Time Completed	Lab Unit Mgr
3-15-95	14:00	R J Smith 3/16/95

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

96134/9.1241

.480 67.09ng ~~Se~~ VM3-15-95 .500ml direct LMCS 44N11H

.377 52.59ng 2.0ml R6996 spike (48N11C)

.016 1.75ng 2.0ml R6996 Dup

.008 0.62ng 2.0ml R6996

.311 43.29ng 2.0ml R6995 spike (48N11C)

.024 2.88ng 2.0 ml R6995 Dup

.018 2.03ng 2.0ml R6995

.020 2.31ng 2.0ml digested Blank R6994

.300 41.75ng 2.0ml digested std R6993

-.002 -0.78ng 2.0ml direct Blank R6994

.366 51.04ng .500ml direct LMCS 44N11H R6993

.714 100ng 1.0ml 44N11H Cal std

.346 50ng .500ml 44N11H Cal std

.206 25ng .250ml 44N11H Cal std

.034 5ng .050ml 44N11H Cal std

-.004 0ng

14:00 03-15-95 Se Valerie L Massie

Analyte: Se **Analyst:** Valerie L Massie
Date: 3-15-95 **Start Time:** 07:40 **End Time:** 14:00

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 Power: 6 Watts

Valerie L Massie
3-15-95

14:	Intercept:	0.0036
13:	Slope:	0.0071
12:		0.9987
11:		1.0208
10:		-0.7833
9:		41.7456
8:		2.3148
7:		2.0332
6:		2.8781
5:		43.2947
4:		0.6249
3:		1.7515
2:		52.5891
1:		67.0940

Chart Recorder Data:

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

Calibration Data:

Intercept: 0.0036 absorbance units
Slope: 0.0071 abs. units / concentration
Correlation: 0.9987 (unitless)

PERKIN-ELMER
BEST AVAILABLE COPY

Atomic Absorption Runlog: Se Hydride Analysis

Analyst: Valerie Masson Date: 3-15-95
Instrument: PE 2280 Property #: WB27979
Analyte: Se Batch #: 5569 Start Time: 07:40 End Time: 14:00

Calibration Data: Intercept: 0.0036 absorbance units
Slope: 0.0071 abs. units / concentration
Correlation: 0.9987 (unitless)

Sample Name (Std. ID#)	Sample Point	Sam. Size, (mL)	D or A*	PKHT (Abs.)	ng result	% Rec.	Comments	CC **
44N11 H	N/A	0.000	D	-.004	0	N/A		
	"	0.050	D	.034	5	"		
	"	0.250	D	.206	25	"		
	"	0.500	D	.346	50	"		
	"	1.000	D	.714	100	"		
R6993	direct LMCS 44N11 H	.500	D	.366	51.04	102.08		
R6994	direct Blank	2.0	D	-.002	-0.78			
R6993	digest std 48N11C	2.0	D	.300	41.75	104.36		
R6994	digest Blank	2.0	D	.020	2.31			
R6995	Purex J3/E5	2.0	D	.018	2.03			
R6995D	Purex J3/E5 Dup	2.0	D	.024	2.88			
R6995S	Purex J3/E5 spike 48N11C	2.0	D	.311	43.29	108.24		
R6996	Purex J3/E5 sample	2.0	D	.008	0.62			
R6996D	Purex J3/E5 Dup	2.0	D	.016	1.75			
R6996S	Purex J3/E5 spike 48N11C	2.0	D	.377	52.59	131.47		
R6997	direct LMCS 44N11 H	.500	D	.480	67.09	134.19		

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

SELENIUM ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6995.-8896	PUREX J3/E5	2-14-95	11:50	25

Determination	Method Standard	Result Units	Charge Code	Reruns
SE	LA-365-181	uG/ML	KP51T	0

Sample Size	Customer ID
? 2.0 ml	BODVK8

Remarks. Calculations Results

DUPLICATE SAMPLE

PKHT= .024
ng= 2.88ng

OUT FOR RERUN

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

Date	Time Completed	Lab Unit Mgr	
2-15-95	11:50	Joe Smith 3/16/95	

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

SELENIUM ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6995.-8996	PUREX J3/E5	2-14-95	11:50	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	% RECOVERY	KP51T	0

Sample Size	Customer ID
2.0 ml	BODVK8

Remarks, Calculations, Results

SAMPLE SPIKED ID R6995
SPIKE ID 48N11C
SPIKE VOLUME

PKHT = .311
ng = 43.29 ng

OUT FOR RERUN

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valery L Moss				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-15-95	14:00	Joel Smith 3/16/95	

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

9613479.1245

SELENIUM ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 6996.-8796	PUREX J3/E5	2-14-95	11:51	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	uG/ML	KP51T	0

Sample Size	Customer ID
? 2.0ml	BODVK9

Remarks, Calculations, Results

PK HT = .008
ng = 0.62ng

OUT FOR RERUN

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

Date	Time Completed	Lab Unit Mgr	
3-15-95	14:00	Noel Smith 3/16/95	

54-6800-061 (R-10 83)

SELENIUM ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 6996.-8896	PUREX J3/E5	2-14-95	11:51	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	uG/ML	KP51T	0

Sample Size	Customer ID
? 2.0 ml	BCTWK9

Remarks, Calculations, Results

DUPLICATE SAMPLE

PKHT= .016
ng= 1.75ng

OUT FOR RERUN

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

Date	Time Completed	Lab Unit Mgr	
3-15-95	14:00	per Unit 3/16/95	

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

SELENIUM ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6996.-8996	PUREX J3/E5	2-14-95	11:51	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
Se	LA-365-181	% RECOVERY	KP51T	0

Sample Size	Customer ID
? 2.0ml	BODVK9

Remarks, Calculations, Results

SAMPLE SPIKED ID R6996
SPIKE ID 48N11C
SPIKE VOLUME

PKHT= .377
ng= 52.59ng

OUT FOR RERUN

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

Date	Time Completed	Lab Unit Mgr	
3-15-95	14:00	Noel Smith 3/16/95	

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

9613479.1248

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6997.-5596	PUREX J3/E5	2-14-95	11:51	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	% RECOVERY	KP51T	0

Sample Size	Customer ID
? .500 ml	STD

Remarks, Calculations, Results:

EDP R743 SE/HYDRD

PKHT- .480
ng= 67.09ng

STD# 44NIIH RESULT .134

STD VAL .100 %REC 134%

OUT FOR RERUN

OSCR #6937

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

Date	Time Completed	Lab Unit Mgr
3-15-95	14:00	Mark Smith 3/16/95

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

Selenium: LA-365-131 (C-0) Se LIQUIDS-DIRECT

		STANDARD	DUPLICATE
Type	Sample Size in mL SS	0.500	
STANDARD	Se ng (Nanograms)	67.09	
Work List	Conc Se µg/mL (or mg/L or PPM)	0.134	N/A
5569	Conc Se µg/L (PPB)	134.2	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		
R6997-5596	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
Calibration Date			
03/15/95			
Instrument Code			
WB27979			
Analyst			
MASSIE			
Date		STANDARD	DUPLICATE
03/15/95	Conc Se µg/mL	1.34E-01	
Time		N/A	
02:00 PM		N/A	

Data Entry by:		Date:	03/16/95
Approved by:	Mark Smith	Date:	3/16/95

9613479.1249

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

ANALYTICAL BATCH

Lab Segment Serial No. R 6988- R 6992	Customer ID: BODPS9 PUREX J3/E5
Analysis: As	Sample Prep: ACID DIGEST

Instrument: PE2280(Hydride AA) WB27979	Procedure/ Rev: LA 355-131 / C-0
Technologist: Valerie Massie	Date: 03/02/95
Starting Time: 07:40	Temperature 900 C
Ending Time: 14:15	Chemist: R.A. Esch

Comments: Batch # 5566

	Description	Lab ID		Description	Lab ID
1	LMCS STD	R 6988-5595	11	END STANDARD	R 6992-5595
2	REAGENT BLANK	R 6989-5695	12		
3	DIGESTED LMCS	R 6988-8595	13		
4	DIGESTED BLANK	R 6989-8695	14		
5	DIGESTED SAMPLE	R 6990-8795	15		
6	DUPLICAATE SAMPLE	R 6990-8895	16		
7	SPIKED SAMPLE	R 6990-8995	17		
8	DIGESTED SAMPLE	R 6991-8795	18		
9	DUPLICATE SAMPLE	R 6991-8895	19		
10	SPIKED SAMPLE	R 6991-8995	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	44N11G .250ml			
DIGESTED LMCS	48N11C DF=50			
DIGESTED SPIKE	48N11C DF=50			

A-6000-881 (03/92)

9613429.1250

ANALYTICAL BATCH SUMMARY SHEET

METHOD:	DATE START:	BATCH #5566
LA-355-131	3/2/95	
PREPARED BY:	DATE COMPLETE:	
R. A. Esch	3/3/95	

	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/44N11G UNDIGESTED	R6988	As	0.107				107.0		
STD/48N11C DIGESTED	R6988	As	0.937				93.7		
REAGENT BLK	R6989	As	<0.003					0.003	
DIGESTED BLK	R6989	As	<0.250					0.250	
PUREX J3/E5 BODPS9	R6990	As	<0.250	<0.250	N/A	N/A	94.5	0.250	
PUREX J3/E5 BODPT0	R6991	As	<0.250	<0.250	N/A	N/A	94.2	0.250	
TRIP BLK	R6933	As	<0.250					0.250	
STD/44N11G UNDIGESTED	R6934	As	0.0872				87.2		

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

RAEsch
3/6/95

9613479.1251

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Batch 5566

Serial No.	Sample Point	Date	Time Issued	Priority
R 6988.-5595	PUREX J3/E5	2-14-95	11:13	25

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# 44N11G RESULT .107

STD VAL .100 %REC 107 %

PHT = .639
ng = 26.74ng

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

Date	Time Completed	Lab Unit Mgr.	
3-2-95	14:15	ND Smith 3/3/95	

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

Arsenic : LA-355-131 (C-0) As LIQUIDS-DIRECT		STANDARD	DUPLICATE
Type	Sample Size in mL SS	0.250	
STANDARD	As ng (Nanograms)	26.74	
Work List	Conc As µg/mL (or mg/L or PPM)	0.107	N/A
5566	Conc As µg/L (PPB)	107.0	N/A
Test Code		N/A	
		N/A	
Matrix		N/A	
LIQUID	Conc As µg/mL=(As ng/SS)*(1µg/1000ng)		
Sample #	Average Conc.=(Sample + Duplicate)/2		
R6988-5595	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
Calibration Date			
03/02/95			
Instrument Code			
WB27979			
Analyst			
MASSIE			
Date		STANDARD	DUPLICATE
03/02/95	Conc As µg/mL	1.07E-01	
Time		N/A	
02:15 PM		N/A	

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Data Entry by:		Date:	03/03/95
Approved by:	ND Smith	Date:	3/3/95

Form 355131_1 Rev. 1.2

9613479.1252

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6988.-8595	PUREX J3/E5	2-14-95	11:23	25

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

Sample Size	Customer ID
? 2.0 ml Acid dig DF=50	STD

Remarks, Calculations, Results:
EDP R747 AS/DGST
STD# 48N11C RESULT .937
STD 1.000 %REC 93.7 %
PK HT= .852
ng= 37.49 ng

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

Date	Time Completed	Lab Unit Mgr	
3-2-95	14:15	ND Smith 3/3/95	

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

Arsenic: LA-355-131 (C-0) As LIQUID-ACID DIGEST

		STANDARD	DUPLICATE
Type	Sample Size in mL SS	2.000	
STANDARD	As ng (Nanograms)	37.49	
Work List	Acid Digest Dilution Factor DF	50.0	
5566	Conc As µg/mL (or mg/L or PPM)	0.937	N/A
Test Code	Conc As µg/L (PPB)	937.3	N/A
		N/A	
Matrix		N/A	
LIQUID		N/A	
Sample #	Conc As µg/mL=(As ng/SS)*(1µg/1000ng)*DF		
R6988-8595	Average Conc.=(Sample + Duplicate)/2		
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
03/02/95			
Instrument Code			
WB27979			
Analyst			
MASSIE			
Date		STANDARD	DUPLICATE
03/02/95	Conc As (µg/mL)	9.37E-01	
Time		N/A	
02:15 PM		N/A	

Data Entry by:		Date:	03/03/95
Approved by:	ND Smith	Date:	3/3/95

96 13479 1253

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6989.-8695	PUREX J3/E5	2-14-95	11:25	25

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

Sample Size	Customer ID
? 2.0ml Acid dig DF = 100	BLANK

Remarks, Calculations, Results:
REAGENT BLANK for comparison to sample PKHT = .025 ng = -4.25ng

<2.50 E-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	
3-2-95	14:15	MD Smith 3/3/95	

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

Arsenic: LA 355-131 (C-0) As LIQUID-ACID DIGEST

		BLANK	DUPLICATE
Type	Sample Size in mL SS	2.000	
BLANK	As ng (Nanograms)	-4.25	
Work List	Acid Digest Dilution Factor DF	100.0	
5566	Conc As µg/mL (or mg/L or PPM)	-0.213	N/A
Test Code	Conc As µg/L (PPB)	-212.5	N/A
		N/A	
Matrix		N/A	
LIQUID		N/A	

Sample #	Conc As µg/mL=(As ng/SS)*(1µg/1000ng)*DF
R6989-8695	Average Conc.=(Sample + Duplicate)/2
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100
03/02/95	Detection Limit = (5 ng/SS)*(1µg/1000ng)*DF
Instrument Code	
WB27979	Detection Limit (µg/mL) 0.250
Analyst	Detection Limit (µg/L) 250.00
MASSIE	

		BLANK	DUPLICATE
Date			
03/02/95	Conc As (µg/mL)	<0.250	
Time		N/A	
02:15 PM		N/A	

The Result is < Detection Limit

Data Entry by:		Date:	03/03/95
Approved by:	MD Smith	Date:	3/3/95

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96134/9 1254

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No.	Sample Point	Date	Time Issued	Priority
R 6989.-5695	PUREX J3/E5	2-14-95	11:23	25

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

Sample Size	Customer ID
? 2.0 ml	BLANK

Remarks, Calculations, Results:

REAGENT BLANK

PKHT= .054
ng= -2.79ng

< 3.00 E-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	
3-2-95	14:15	ND Smith 3/3/95	

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

Arsenic : LA-355-131 (C-0) As LIQUIDS-DIRECT

		BLANK	DUPLICATE
Type	Sample Size in mL SS	2.000	
BLANK	As ng (Nanograms)	-2.79	
Work List	Conc As µg/mL (or mg/L or PPM)	-0.001	N/A
5566	Conc As µg/L (PPB)	-1.4	N/A
Test Code		N/A	
		N/A	
Matrix		N/A	
LIQUID	Conc As µg/mL=(As ng/SS)*(1µg/1000ng)		
Sample #	Average Conc.=(Sample + Duplicate)/2		
R6989-5695	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
Calibration Date	Detection Limit = (5 ng/SS)*(1µg/1000ng)		
03/02/95	Detection Limit is Corrected for Sample Prep/Dilution		
Instrument Code			
WB27979	Detection Limit (µg/mL) =	0.003	
Analyst	Detection Limit (µg/L) =	2.5	
MASSIE			
Date		BLANK	DUPLICATE
03/02/95	Conc As µg/mL	<0.003	
Time		N/A	
02:15 PM		N/A	

The Result is < Detection Limit

Data Entry by:		Date:	03/03/95
Approved by:	ND Smith	Date:	3/3/95

9613479.1255

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6990.-8795	PUREX J3/E5	2-14-95	11:29	25

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

Sample Size	Customer ID
? 2.0 ml Acid dig DF=100	BODPS9

Remarks, Calculations, Results:

PKHT= .038
ng= -3.59ng

<2.50 E-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	
3-2-95	14:15	ND Smith 3/3/95	

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

Arsenic: LA-355-131 (C-0) As LIQUID-ACID DIGEST		SAMPLE	DUPLICATE
Type	Sample Size in mL SS	2.000	
SAMPLE	As ng (Nanograms)	-3.59	
Work List	Acid Digest Dilution Factor DF	100.0	
5566	Conc As µg/mL (or mg/L or PPM)	-0.180	N/A
Test Code	Conc As µg/L (PPB)	-179.5	N/A
		N/A	
Matrix		N/A	
LIQUID		N/A	
Sample #	Conc As µg/mL=(As ng/SS)*(1µg/1000ng)*DF		
R6990-8795	Average Conc.=(Sample + Duplicate)/2		
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
03/02/95	Detection Limit = (5 ng/SS)*(1µg/1000ng)*DF		
Instrument Code			
WB27979	Detection Limit (µg/mL)	0.250	
Analyst	Detection Limit (µg/L)	250.00	
MASSIE			
Date		SAMPLE	DUPLICATE
03/02/95	Conc As (µg/mL)	<0.250	
Time		N/A	
02:15 PM		N/A	

The Result is < Detection Limit

Data Entry by:		Date:	03/03/95
Approved by:	ND Smith	Date:	3/3/95

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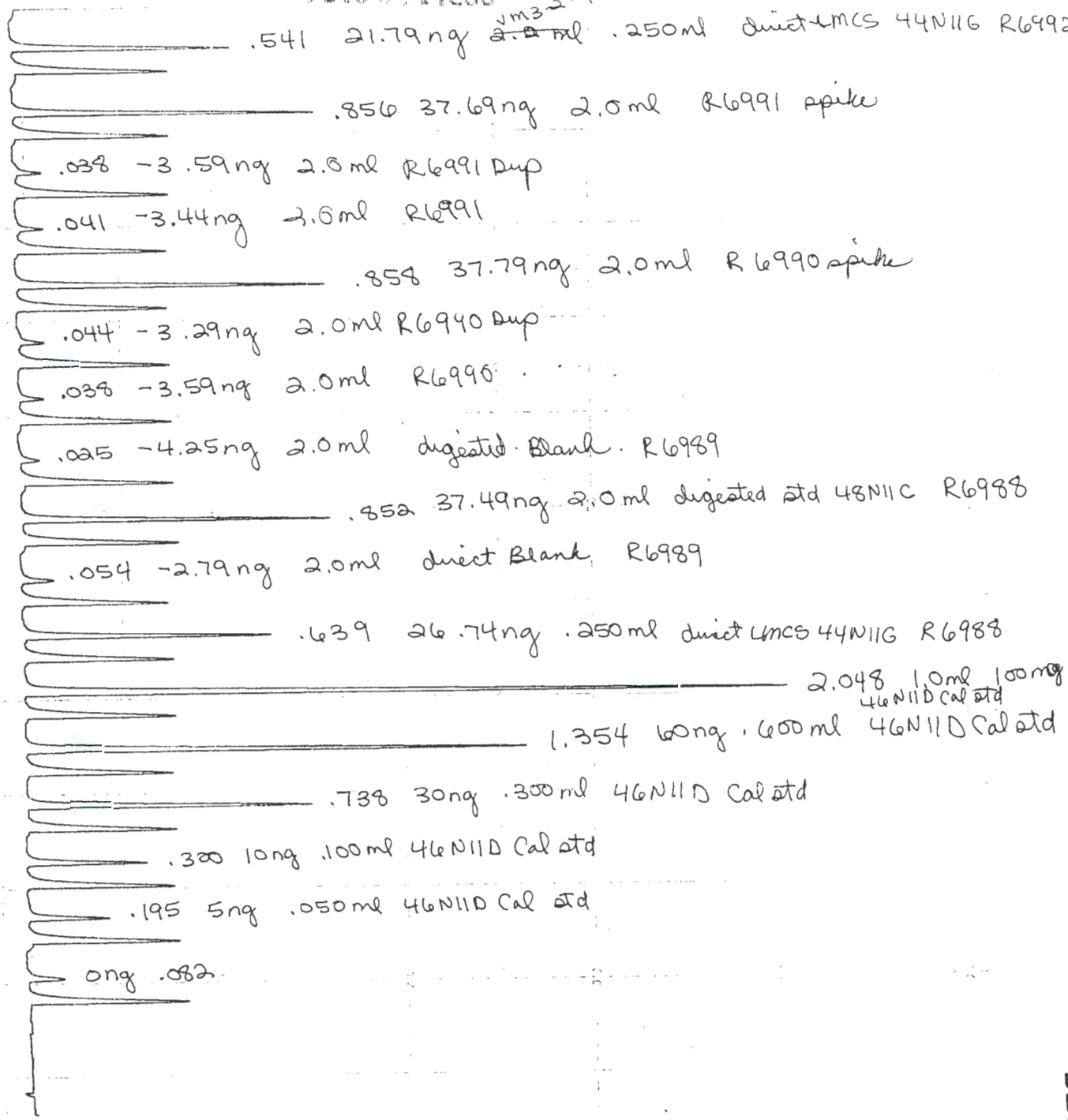
96134/9.1256



14:15 3-2-95 As Valerie Massie

Analyte: As Analyst: Valerie L Massie
Date: 3-2-95 Start Time: 07:40 End Time: 14:15

MHS 20 Data:

Signal: Concentration Purge I: 50 sec.
Mode: PKHT vm3295 Reaction: 24 sec.
Recorder: TC3 Purge II: ~~60~~ 55 sec.
Time: 40 sec. Temperature: 900 C
Expansion: 4 EDL Power: 8 Watts

Valerie L Massie 3-2-95

14:	Intercept: 0.1092
13:	Slope: 0.0198
12:	0.9988
11:	26.7388
10:	-2.7874
9:	37.4894
8:	-4.2511
7:	-3.5949
6:	-3.2921
5:	37.7923
4:	-3.4435
3:	-3.5949
2:	37.6913
1:	21.7926

Chart Recorder Data:

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

Calibration Data:

Intercept: 0.1092 absorbance units
Slope: 0.0198 abs. units / concentration
Correlation: 0.9988 (unitless)

BEST AVAILABLE COPY

Atomic Absorption Runlog: As Hydride Analysis

Analyst: Valerie L Massie Date: 3-2-95
Instrument: PE 2280 Property #: WB27979
Analyte: As Batch #: 5566 Start Time: 07:40 End Time: 14:15

Calibration Data: Intercept: 0.1092 absorbance units
Slope: 0.0198 abs. units / concentration
Correlation: 0.9988 (unitless)

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	.082	0	N/A		
#: 46N11D	"	0.050	D	.195	5	"		
	"	0.100	D	.300	10	"		
	"	0.300	D	.738	30	"		
	"	0.600	D	1.354	60	"		
	"	1.000	D	2.048	100	"		
R6988	direct LMCS 44N11G	.250	D	.639	26.74	106.96		
R6989	direct Blank	2.0	D	.054	-2.79			
R6988	digested std 48N11C	2.0	A	.852	37.49	93.72		
R6989	digested Blk	2.0	A	.025	-4.25			
R6990	Purex J3/E5 samp.	2.0	A	.038	-3.59			
R6990D	Purex J3/E5 dup	2.0	A	.044	-3.29			
R6990S	Purex J3/E5 spike 48N11C	2.0	A	.858	37.79	94.48		
R6991	Purex J3/E5 sample	2.0	A	.041	-3.44			
R6991D	Purex J3/E5 dup	2.0	A	.038	-3.59			
R6991S	Purex J3/E5 sam + spike 48N11C	2.0	A	.856	37.69	94.23		
R6992	direct LMCS 44N11G	.250	D	.541	21.79	87.17		

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

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.: N/A	Date: 03/02/95

Calibration Standard ID:	46N11D
Analyte Concentration:	.100ppm
Type of Calibration:	LINEAR

	Dilution	Concentration	Instrument Reading Unit
1	.000mL	0 ng	.082
2	.050mL	5 ng	.195
3	.100mL	10 ng	.300
4	.300mL	30 ng	.738
5	.600mL	60 ng	1.354
6	1.000ml	100 ng	2.048
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			

Comments: r=.9988

Y intercept= .1092

slope=.0198

9613429 1259

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6990.-8895	PUREX J3/E5	2-14-95	11:29	25

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

Sample Size	Customer ID
? 2.0 ml Acid dig DF=100	BODPS9

Remarks, Calculations, Results:
DUPLICATE SAMPLE

PKHT= .044
ng= -3.29ng

<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
3-2-95	14:15	MD Smith 3/3/95

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

Arsenic: LA-355-131 (C-0) As LIQUID-ACID DIGEST		DUPLICATE	DUPLICATE
Type	Sample Size in mL SS	2.000	2.000
DUPLICATE	As ng (Nanograms)	-3.59	-3.29
Work List	Acid Digest Dilution Factor DF	100.0	100.0
5566	Conc As µg/mL (or mg/L or PPM)	-0.180	-0.165
Test Code	Conc As µg/L (PPB)	-179.5	-164.5
	Average Conc (µg/mL)	N/A	N/A
Matrix	Average Conc (µg/L)	N/A	N/A
LIQUID	Relative % Difference	N/A	N/A
Sample #	Conc As µg/mL=(As ng/SS)*(1µg/1000ng)*DF		
R6990-8895	Average Conc.=(Sample + Duplicate)/2		
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
03/02/95	Detection Limit = (5 ng/SS)*(1µg/1000ng)*DF		
Instrument Code			
WB27979	Detection Limit (µg/mL)	0.250	
Analyst	Detection Limit (µg/L)	250.00	
MASSIE			
Date		DUPLICATE	DUPLICATE
03/02/95	Conc As (µg/mL)	<0.250	<0.250
Time	Average Conc (µg/mL)	N/A	N/A
02:15 PM	Relative % Difference	N/A	N/A

Both Results are < Detection Limit

Data Entry by:		Date:	03/03/95
Approved by:	MD Smith	Date:	3/3/95

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6990.-8995	PUREX J3/E5	2-14-95	11:29	25

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

Sample Size	Customer ID
? 2.0 ml Samp-Acid dig DF=100	BODPS9

Remarks, Calculations, Results:
SAMPLE SPIKED ID R6990
SPIKE ID 48N11C
SPIKE VOLUME
2.0 ml → 100 ml final vol.
DF=50

PKHT= .858
ng= 37.79 ng

94.5%

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

Date	Time Completed	Lab Unit Mgr
3-2-95	14:15	MD Smith 3/3/95

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

Arsenic: LA-355-131 (C-0) 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	37.79
5566	ng of Sample ngSAM	-3.59	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	48N11C
Sample #	Spike Std Value (ppm) SS VAL	N/A	1.000
R6990-8995	% Recovery	N/A	94.5%
Calibration Date			
03/02/95	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			
MASSIE	% Recovery = {([{(ngSSAM/SAVOL)*(1/1000)}-{(0/SAVOL)*(1/1000)}]*SPDF)/SS VAL}*100		
Date			
03/02/95			
Time	% Recovery =	94.5%	
02:15 PM			

Data Entry by:		Date:	03/03/95
Approved by:	MD Smith 3/3/95	Date:	3/3/95

Form 355131_4 Rev. 1.1

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PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No.	Sample Point	Date	Time Issued	Priority
R 6991.-8895	PUREX J3/E5	2-14-95	11:30	25

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

Sample Size	Customer ID
? 2.0 ml	BODPTO

Remarks, Calculations, Results:
DUPLICATE SAMPLE

PKHT= ~~1041~~ 1,038 VM3-2-95
ng = ~~-3.44 ng~~ VM3-2-95
-3.59 ng

< 2.50 E-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	
3-2-95	14:15	MD Smith 3/3/95	

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

Arsenic: LA-355-131 (C-0) As LIQUID-ACID DIGEST

		DUPLICATE	DUPLICATE
Type	Sample Size in mL SS	2.000	2.000
DUPLICATE	As ng (Nanograms)	-3.44	-3.59
Work List	Acid Digest Dilution Factor DF	100.0	100.0
5566	Conc As µg/mL (or mg/L or PPM)	-0.172	-0.180
Test Code	Conc As µg/L (PPB)	-172.0	-179.5
	Average Conc (µg/mL)	N/A	N/A
Matrix	Average Conc (µg/L)	N/A	N/A
LIQUID	Relative % Difference	N/A	N/A
Sample #	Conc As µg/mL=(As ng/SS)*(1µg/1000ng)*DF		
R6991-8895	Average Conc.=(Sample + Duplicate)/2		
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
03/02/95	Detection Limit = (5 ng/SS)*(1µg/1000ng)*DF		
Instrument Code			
WB27979	Detection Limit (µg/mL)	0.250	
Analyst	Detection Limit (µg/L)	250.00	
MASSIE			
Date		DUPLICATE	DUPLICATE
03/02/95	Conc As (µg/mL)	<0.250	<0.250
Time	Average Conc (µg/mL)	N/A	N/A
02:15 PM	Relative % Difference	N/A	N/A

Both Results are < Detection Limit

Data Entry by:		Date:	03/03/95
Approved by:	MD Smith	Date:	3/3/95

9613479.1262

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6991..-8795	PUREX J3/E5	2-14-95	11:30	25

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

Sample Size	Customer ID
? 2.0 ml Acid dig DF=100	BODPTO

Remarks. Calculations. Results

PKHT= .041
ng= -3.44ng

<2.50 E-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	
3-2-95		MO Smith 3/3/95	

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

Arsenic: LA-355-131 (C-0) As LIQUID-ACID DIGEST

		SAMPLE	DUPLICATE
Type	Sample Size in mL SS	2.000	
SAMPLE	As ng (Nanograms)	-3.44	
Work List	Acid Digest Dilution Factor DF	100.0	
5566	Conc As µg/mL (or mg/L or PPM)	-0.172	ERR
Test Code	Conc As µg/L (PPB)	-172.0	ERR
	Average Conc (µg/mL)	N/A	ERR
Matrix	Average Conc (µg/L)	N/A	ERR
LIQUID	Relative % Difference	N/A	ERR
Sample #	Conc As µg/mL=(As ng/SS)*(1µg/1000ng)*DF		
R6991-8795	Average Conc.=(Sample + Duplicate)/2		
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
03/02/95	Detection Limit = (5 ng/SS)*(1µg/1000ng)*DF		
Instrument Code			
WB27979	Detection Limit (µg/mL)	0.250	
Analyst	Detection Limit (µg/L)	250.00	
MASSIE			
Date		SAMPLE	DUPLICATE
03/02/95	Conc As (µg/mL)	<0.250	ERR
Time	Average Conc (µg/mL)	N/A	ERR
02:15 PM	Relative % Difference	N/A	ERR

ERR

Data Entry by:		Date:	03/03/95
Approved by:	MO Smith	Date:	3/3/95

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96L49/9 1263

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No.	Sample Point	Date	Time Issued	Priority
R 6991.-8995	PUREX J3/E5	2-14-95	11:30	25

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

Sample Size	Customer ID
? 2.0 ml	BODPTO

Remarks, Calculations, Results

SAMPLE SPIKED ID R6991
SPIKE ID 48N11C
SPIKE VOLUME

PKHT= .856
ng= 37.69ng

94.2%

~~92.4%~~ 2-3-95

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

Date	Time Completed	Lab Unit Mgr.	
3-2-95	14:15	MD Smith	

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

Arsenic: LA-355-131 (C-0) As LIQUIDS-ACID DIGEST

Type		SAMPLE	SPIKE
SPIKE	Sample (mL)Vol. Acid Dig. Used SAVOL	2.00	N/A
	Spike Std Volume (mL) SSVOL	N/A	2.000
Work List	ng of Spike + Sample ngSSAM	N/A	37.69
5566	ng of Sample ngSAM	-3.44	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	48N11C
Sample #	Spike Std Value (ppm) SS VAL	N/A	1.000
R6991-8995	% Recovery	N/A	94.2%
Calibration Date			
03/02/95	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			
MASSIE	% Recovery = {([{(ngSSAM/SAVOL)*(1/1000)}-{(0/SAVOL)*(1/1000)}]*SPDF)/SS VAL}*100		
Date			
03/02/95			
Time	% Recovery =	94.2%	
02:15 PM			

Data Entry by:		Date:	03/03/95
Approved by:	MD Smith	Date:	3/3/95

Form 355131_4 Rev. 1.1

9613479.1269

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6992.-5595	PUREX J3/E5	2-14-95	11:49	25

Determination	Method Standard	Result Units	Charge Code	Reruns
AS	LA-355-131	% RECOVERY	KF51T	0

Sample Size	Customer ID
? .250 ml	STD

Remarks, Calculations, Results:

EDP R741 AS/HYDRD

STD# 44N116 RESULT 8.72E-2

STD VAL .100 %REC 87.2 %

PKHT= .541

ng= 21.79ng

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

Date	Time Completed	Lab Unit Mgr
3-2-95	14:15	ND Smith 3/3/95

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

Arsenic : LA-355-131 (C-0) As LIQUIDS-DIRECT

		STANDARD	DUPLICATE
Type	Sample Size in mL SS	0.250	
STANDARD	As ng (Nanograms)	21.79	
Work List	Conc As µg/mL (or mg/L or PPM)	0.087	N/A
5566	Conc As µg/L (PPB)	87.2	N/A
Test Code		N/A	
		N/A	
Matrix		N/A	
LIQUID	Conc As µg/mL=(As ng/SS)*(1µg/1000ng)		
Sample #	Average Conc.=(Sample + Duplicate)/2		
R6992-5595	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
Calibration Date			
03/02/95			
Instrument Code			
WB27979			
Analyst			
MASSIE			
Date		STANDARD	DUPLICATE
03/02/95	Conc As µg/mL	8.72E-02	
Time		N/A	
02:15 PM		N/A	

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Data Entry by:		Date:	03/03/95
Approved by:	ND Smith	Date:	3/3/95

9613479.1265

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

ANALYTICAL BATCH

Lab Segment Serial No. R 6995, R 6996	Customer ID: PUREX J3/E5
Analysis: As	Sample Prep: ACID DIGEST

Instrument: PE2280(Hydride AA) WB27979	Procedure/ Rev: LA 355-131 / C-0
Technologist: Valerie L Massie	Date: 03/06/95
Starting Time: 07:40	Temperature 900 C
Ending Time: 14:15	Chemist: R.A. Esch

Comments: Batch # 5568

	Description	Lab ID
1	LMCS STD	R 6993-5595
2	REAGENT BLANK	R 6994-5695
3	DIGESTED LMCS	R 6993-8595
4	DIGESTED BLANK	R 6994-8695
5	SAMPLE	R 6995-8795
6	DUPLICAATE SAMPLE	R 6995-8895
7	SPIKED SAMPLE	R 6995-8995
8	SAMPLE	R 6996-8795
9	DUPLICATE SAMPLE	R 6996-8895
10	SPIKED SAMPLE	R 6996-8995

	Description	Lab ID
11	ENDING LMCS STD	R 6997-5595
12		
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
LMCS	44N11G .250ml			
DIGESTED LMCS	48N11C DF=50			
DIGESTED SPIKE	48N11C DF=50			

A-6000-881 (03/92)

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

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

SAMPLE #:	R6995-5797 & R6996-5797	BATCH ID:	5560
TEST CODE:		SAMPLE POINT:	PUREX J3/E5
INSTRUMENT:	WB26847	SAMPLE PREP:	DIRECT
ANALYST:	S. FULTON	ANALYSIS DATE:	03/07/95

SAMPLE TYPE	SAMPLE #	SAMPLE ID	CONC HG µg/mL	AVERAGE µg/mL	RPD%	% REC	DET LIM µg/mL
STANDARD	R6993-5597	STD	1.03E-01			103.3%	
BLANK	R6994-5697	BLANK	< 0.005				0.005
SAMPLE 1	R6995-5797	BODVK8	< 0.005				0.005
DUPLICATE 1	R6995-5897	BODVK8	< 0.005	N/A	N/A		0.005
SPIKE 1	R6995-5997	BODVK8				94.7%	
SAMPLE 2	R6996-5797	BODVK9	< 0.005				0.005
DUPLICATE 2	R6996-5897	BODVK9	< 0.005	N/A	N/A		0.005
SPIKE 2	R6996-5997	BODVK9				97.8%	
ST-END	R6997-5597	STD	9.66E-02			96.6%	

STD TYPE:	STD ID:	STD VOL:
STANDARD	51N11A	0.300 mL
SPIKE 1	51N11A	0.300 mL
SPIKE 2	51N11A	0.300 mL

NARRATIVE: **Analyst Comments:**

Chemist Comments:

DETECTION LIMITS ARE ADJUSTED FOR DIFFERENT SAMPLE SIZES.

Form Completed By:	RC JONES	Signature:	RC Jones	Date:	03/08/95
Chemist Approval:	R. ESCH	Signature:	Rael Smith	Date:	3/9/95

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9613479.1267

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Batch 5568

Serial No	Sample Point	Date	Time Issued	Priority
R 6993.-5595	PUREX J3/E5	2-14-95	11:49	25

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# 44N116 RESULT 1.10E-01 ppm

STD VAL 1.00-1 ppm %REC 110.0 %

PKHT= .736

ng = 27.58 ng

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs
				R L Jones
Date	Time Completed	Lab Unit Mgr		
3-6-95	14:15	Ralph 3/5/95	R L Jones	

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

Arsenic : LA-355-131 (C-0) As LIQUIDS-DIRECT		STANDARD	DUPLICATE
Type	Sample Size in mL SS	0.250	
STANDARD	As ng (Nanograms)	27.58	
Work List	Conc As µg/mL (or mg/L or PPM)	0.110	N/A
5568	Conc As µg/L (PPB)	110.3	N/A
Test Code		N/A	
		N/A	
Matrix		N/A	
LIQUID	Conc As µg/mL=(As ng/SS)*(1µg/1000ng)		
Sample #	Average Conc.=(Sample + Duplicate)/2		
R6993-5595	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
Calibration Date			
03/06/95			
Instrument Code			
WB27979			
Analyst			
V. MASSIE			
Date		STANDARD	DUPLICATE
03/06/95	Conc As µg/mL	1.10E-01	
Time		N/A	
02:15 PM		N/A	

Data Entry by:	R L Jones	Date:	03/07/95
Approved by:	Ralph	Date:	3/8/95

Form 355131_1 Rev. 1.2

Page 1 of 1

9613479.1268

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No.	Sample Point	Date	Time Issued	Priority
R 6993.-8595	PUREX J5/L5	2-14-95	11:49	25

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

Sample Size	Customer ID
? 2.0 ml Acid dig DF = ~~100~~ 50 RJ 3-7-95	STD

Remarks, Calculations, Results:
EDP R747 AS/DGST .991 ug/mL PKHT= 1.007
STD# 48N11C RESULT ~~1.98E00~~ RJ 3-7-95 ng= 39.62ng
STD 1.00 ppm %REC 99.1

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

Date	Time Completed	Lab Unit Mgr.
3-6-95	14:15	3/8/95

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

Arsenic: LA-355-131 (C-0) As LIQUID-ACID DIGEST

		STANDARD	DUPLICATE
Type	Sample Size in mL SS	2.000	
STANDARD	As ng (Nanograms)	39.62	
Work List	Acid Digest Dilution Factor DF	50.0	
5568	Conc As µg/mL (or mg/L or PPM)	0.991	N/A
Test Code	Conc As µg/L (PPB)	990.5	N/A
		N/A	
Matrix		N/A	
LIQUID		N/A	
Sample #	Conc As µg/mL=(As ng/SS)*(1µg/1000ng)*DF		
R6993-8595	Average Conc.=(Sample + Duplicate)/2		
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
03/06/95			
Instrument Code			
WB27979			
Analyst			
V. MASSIE			
Date		STANDARD	DUPLICATE
03/06/95	Conc As (µg/mL)	9.91E-01	
Time		N/A	
02:15 PM		N/A	

Data Entry by:	RJ Jones	Date:	03/07/95
Approved by:	[illegible]	Date:	3/8/95

Form 355131_3 Rev. 2.1

9613479.1269

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No.	Sample Point	Date	Time Issued	Priority
R 6994.-8695	PUREX J3/E5	2-14-95	11:49	25

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

Sample Size	Customer ID
? 2.0 ml Acid dig DF=100	BLANK

Remarks, Calculations, Results:
REAGENT BLANK used for calculation for comparison w/sample PKHT= .061 ng=-2.40ng

20.250ug/ML

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

Date	Time Completed	Lab Unit Mgr.
3-6-95	14:15	3/8/95

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

Arsenic: LA-355-131 (C-0) As LIQUID-ACID DIGEST

		BLANK	DUPLICATE
Type	Sample Size in mL SS	2.000	
BLANK	As ng (Nanograms)	-2.40	
Work List	Acid Digest Dilution Factor DF	100.0	
5568	Conc As µg/mL (or mg/L or PPM)	-0.120	N/A
Test Code	Conc As µg/L (PPB)	-120.0	N/A
		N/A	
Matrix		N/A	
LIQUID		N/A	

Sample #	Conc As µg/mL=(As ng/SS)*(1µg/1000ng)*DF
R6994-8695	Average Conc.=(Sample + Duplicate)/2
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100
03/06/95	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		BLANK	DUPLICATE
03/06/95	Conc As (µg/mL)	<0.250	
Time		N/A	
02:15 PM		N/A	

The Result is < Detection Limit

Data Entry by:		Date:	03/07/95
Approved by:		Date:	3/8/95

96134/9.1270.

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6994.-5695	PUREX J3/E5	2-14-95	11:49	25

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

Sample Size	Customer ID
?2.0 ml	BLANK

Remarks, Calculations, Results:
REAGENT BLANK

PKHT= .086
ng= -1.29 ng

<0.003 ug/ML

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

Date	Time Completed	Lab Unit Mgr	
3-6-95	14:15	3/8/95	

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

Arsenic : LA-355-131 (C-0) As LIQUIDS-DIRECT

		BLANK	DUPLICATE
Type	Sample Size in mL SS	2.000	
BLANK	As ng (Nanograms)	-1.29	
Work List	Conc As µg/mL (or mg/L or PPM)	-0.001	N/A
5568	Conc As µg/L (PPB)	-0.6	N/A
Test Code		N/A	
		N/A	
Matrix		N/A	
LIQUID	Conc As µg/mL=(As ng/SS)*(1µg/1000ng)		
Sample #	Average Conc.=(Sample + Duplicate)/2		
R6994-5695	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
Calibration Date	Detection Limit = (5 ng/SS)*(1µg/1000ng)		
03/06/95	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
03/06/95	Conc As µg/mL	<0.003	
Time		N/A	
02:15 PM		N/A	

The Result is < Detection Limit

Data Entry by:		Date:	03/07/95
Approved by:		Date:	3/8/95

Form 355131_1 Rev. 1.2

9613479.1271

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6995.-8795	PUREX J3/E5	2-14-95	11:50	25

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

Sample Size	Customer ID
? 2.0 ml Acid dig DF=100	BODVK8

Remarks, Calculations, Results

PKHT= .072
ng= -1.91 ng

<0.250 ug/mL

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

Date	Time Completed	Lab Unit Mgr	
3-6-95	14:15	3/8/95	

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

Arsenic: LA-355-131 (C-0) As LIQUID-ACID DIGEST

		SAMPLE	DUPLICATE
Type	Sample Size in mL SS	2.000	
SAMPLE	As ng (Nanograms)	-1.91	
Work List	Acid Digest Dilution Factor DF	100.0	
5568	Conc As µg/mL (or mg/L or PPM)	-0.096	N/A
Test Code	Conc As µg/L (PPB)	-95.5	N/A
		N/A	
Matrix		N/A	
LIQUID		N/A	

Sample #	Conc As µg/mL=(As ng/SS)*(1µg/1000ng)*DF
R6995-8795	Average Conc.=(Sample + Duplicate)/2
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100
03/06/95	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
03/06/95	Conc As (µg/mL)	<0.250	
Time		N/A	
02:15 PM		N/A	

The Result is < Detection Limit

Data Entry by:		Date:	03/07/95
Approved by:		Date:	3/8/95

ANALYTICAL BATCH SUMMARY SHEET

METHOD: LA-355-131	DATE START: 3/6/95	BATCH #5568
PREPARED BY: R. A. Esch	DATE COMPLETE: 3/8/95	

	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/44N11G UNDIGESTED	R6993	As	0.110				110.0		
STD/48N11C DIGESTED	R6993	As	0.991				99.1		
REAGENT BLK	R6994	As	<0.003					0.003	
DIGESTED BLK	R6994	As	<0.250					0.250	
PUREX J3/E5 BODVK8	R6995	As	<0.250	<0.250	N/A	N/A	88.7	0.250	
PUREX J3/E5 BODVK9	R6996	As	<0.250	<0.250	N/A	N/A	92.5	0.250	
STD/44N11G UNDIGESTED	R6997	As	0.101				101.0		

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

RAEsch
3/8/95

BEST AVAILABLE COPY

9613479.1273

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 L Massie	Payroll No.: N/A	Date: 03/06/95

Calibration Standard ID:	46N11D
Analyte Concentration:	.100ppm
Type of Calibration:	LINEAR

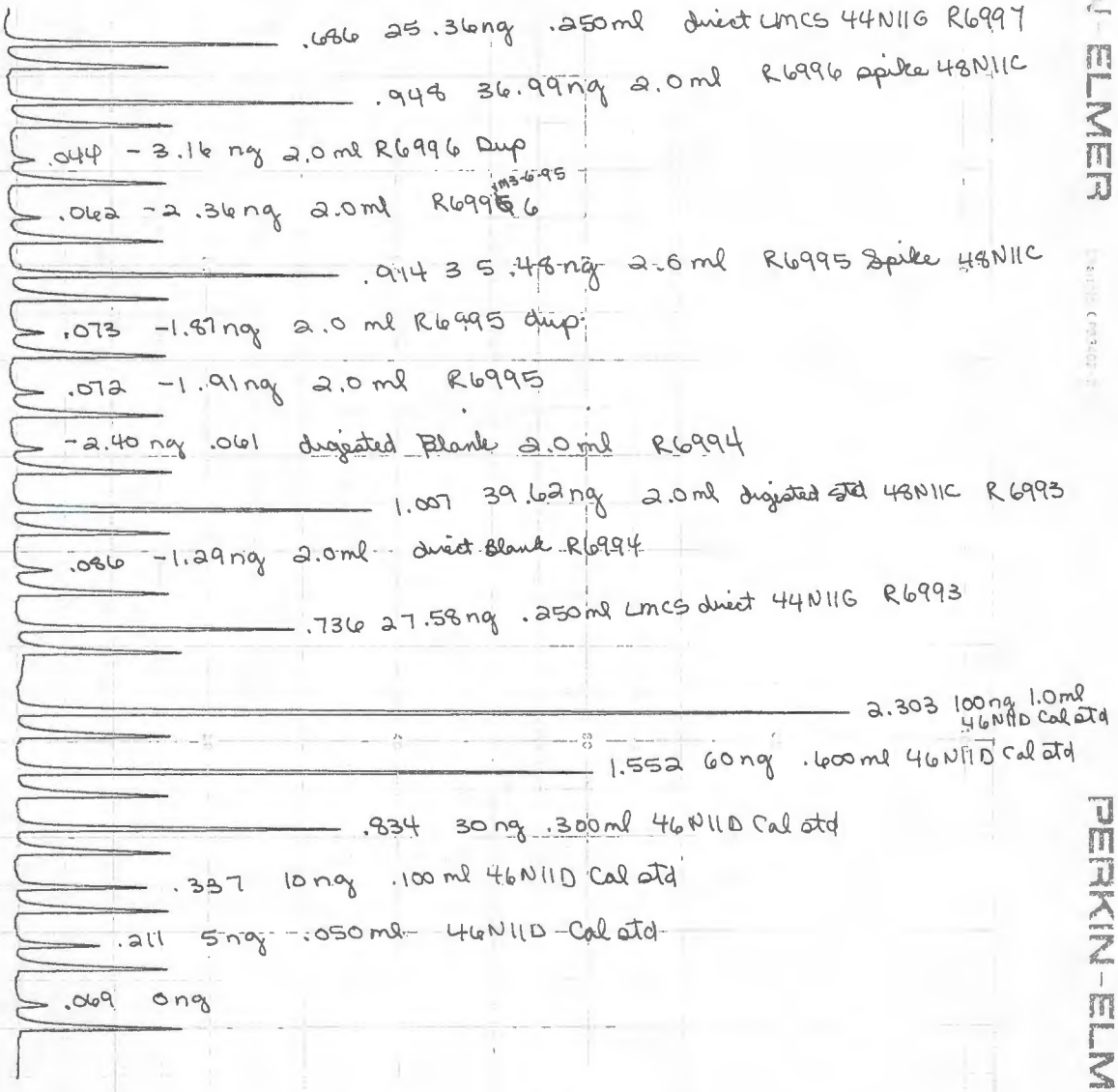
	Dilution	Concentration	Instrument Reading Unit
1	.000mL	0 ng	.069
2	.050mL	5 ng	.211
3	.100mL	10 ng	.337
4	.300mL	30 ng	.834
5	.600mL	60 ng	1.552
6	1.000ml	100 ng	2.303
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			

Comments: r=.9980

Y intercept= .1151

slope=.0225

A-6000-882 (03/92)



Analyte: As **Analyst:** Valerie L Massie
Date: 3-6-95 **Start Time:** 07:40 **End Time:** 14:15

MHS 20 Data:

Signal: Concentration Purge I: 50 sec.
Mode: PKHT Reaction: 24 sec.
Recorder: TC3 Purge II: 60 sec.
Time: 40 sec. Temperature: 900 C
Expansion: 4 EDL Power: 8 Watts

Valerie L Massie
3-6-95

Chart Recorder Data:

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

Calibration Data:

Intercept: 0.1151 absorbance units
Slope: 0.0225 abs. units / concentration
Correlation: 0.9980 (unitless)

14:	Intercept: 0.1151
13:	Slope: 0.0225
12:	0.9980
11:	27.5782
10:	-1.2925
9:	39.6151
8:	-2.4029
7:	-1.9143
6:	-1.8699
5:	35.4844
4:	-2.3585
3:	-3.1580
2:	36.9945
1:	25.3574

BEST AVAILABLE COPY

Atomic Absorption Runlog: As Hydride Analysis

Analyst: Valerie L Massie Date: 3-6-95
Instrument: PE 2280 Property #: WB27979
Analyte: As Batch #: 5568 Start Time: 07:40 End Time: 14:15

Calibration Data: Intercept: 0.1151 absorbance units
Slope: 0.0225 abs. units / concentration
Correlation: 0.9980 (unitless)

Room Temp. during Run 88°F.

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	.069	0	N/A		
#:46N11D	"	0.050	D	.211	5	"		
	"	0.100	D	.337	10	"		
	"	0.300	D	.834 VM 3-6-95	30	"		
	"	0.600	D	1.552	60	"		
	"	1.000	D	2.303	100	"		
R6993	direct LMCS 44N11G	.250	D	.736	27.58	110.31		
R6994	direct Blank	2.0	D	.086	-1.29			
R6993	digested std 48N11C	2.0	~~D~~ A VM 3-6-95	1.007	39.62	99.04		
R6994	digested Blank	2.0	~~D~~ A VM 3-6-95	.061	-2.40			
R6995	Purex J3/E5 samp	2.0	A	.072	-1.91			
R6995 D	Purex J3/E5 Dup	2.0	A	.073	-1.87			
R6995 S	Purex J3/E5 spike 48N11C	2.0	A	.914	35.48	88.71		
R6996	Purex J3/E5 samp	2.0	A	.062	-2.36			
R6996D	Purex J3/E5 Dup	2.0	A	.044	-3.16			
R6996S	Purex J3/E5 spike 48N11C	2.0	A	.948	36.99	92.49		
R6997	direct LMCS 44N11G	.250	D	.686	25.36	101.43		

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

9613479.1276

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6995.-8895	PUREX J3/E5	2-14-95	11:50	25

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

Sample Size	Customer ID
? 2.0 ml Acid dig DF= 100	BODVK8

Remarks, Calculations, Results
DUPLICATE SAMPLE

PKHT= .073
ng= -1.87ng

RPD N/A-samp and Dup both < Det. Lim.

LO.250ug/mL

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

Date	Time Completed	Lab Unit Mgr
3-6-95	14:15	3/8/95

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

Arsenic: LA-355-131 (C-0) As LIQUID-ACID DIGEST

		SAMPLE	DUPLICATE
Type	Sample Size in mL SS	2.000	2.000
SAMPLE	As ng (Nanograms)	-1.91	-1.87
Work List	Acid Digest Dilution Factor DF	100.0	100.0
5568	Conc As µg/mL (or mg/L or PPM)	-0.096	-0.094
Test Code	Conc As µg/L (PPB)	-95.5	-93.5
	Average Conc (µg/mL)	N/A	N/A
Matrix	Average Conc (µg/L)	N/A	N/A
LIQUID	Relative % Difference	N/A	N/A

Sample #	Conc As µg/mL=(As ng/SS)*(1µg/1000ng)*DF
R6995-8895	Average Conc.=(Sample + Duplicate)/2
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100
03/06/95	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
03/06/95	Conc As (µg/mL)	<0.250	<0.250
Time	Average Conc (µg/mL)	N/A	N/A
02:15 PM	Relative % Difference	N/A	N/A

Both Results are < Detection Limit

Data Entry by:		Date:	03/07/95
Approved by:		Date:	3/8/95

9613479.1272

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No.	Sample Point	Date	Time Issued	Priority
R 6995.-8995	PUREX J3/E5	2-14-95	11:50	25

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

Sample Size	Customer ID
? 2.0 ml Samp. Acid dig DF = 100	BODVK8

Remarks, Calculations, Results:

SAMPLE SPIKED ID R6995 PKHT= .914
SPIKE ID 48N11C ng= 35.48 ng
SPIKE VOLUME 2 ML
FINAL VOL 100 ML
spk DF = 50
Spk Val. = 1.0 ppm
88.7%

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

Date	Time Completed	Lab Unit Mgr.	
3-6-95	14:15	3/8/95	

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

Arsenic: LA-355-131 (C-0) 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	35.48
5568	ng of Sample ngSAM	-1.91	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	48N11C
Sample #	Spike Std Value (ppm) SS VAL	N/A	1.000
R6995-8995	% Recovery	N/A	88.7%
Calibration Date			
03/06/95	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			
03/06/95			
Time	% Recovery =	88.7%	
02:15 PM			

Data Entry by:		Date:	03/07/95
Approved by:		Date:	3/8/95

Form 355131_4 Rev. 1.1

9613479.1278

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No.	Sample Point	Date	Time Issued	Priority
R 6996.-8795	PUREX J3/E5	2-14-95	11:51	25

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

Sample Size	Customer ID
? 2.0 ml Acid dig DF = 100	BODVK9

Remarks, Calculations, Results:

PKHT= .062
ng= -2.36ng

LO. 250ug/ml

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

Date	Time Completed	Lab Unit Mgr.	
3-6-95	14:15	3/8/95	

54 (800-061 R-10-83)

Arsenic: LA-355-131 (C-0) As LIQUID-ACID DIGEST

		SAMPLE	DUPLICATE
Type	Sample Size in mL SS	2.000	
SAMPLE	As ng (Nanograms)	-2.36	
Work List	Acid Digest Dilution Factor DF	100.0	
5568	Conc As µg/mL (or mg/L or PPM)	-0.118	ERR
Test Code	Conc As µg/L (PPB)	-118.0	ERR
	Average Conc (µg/mL)	N/A	ERR
Matrix	Average Conc (µg/L)	N/A	ERR
LIQUID	Relative % Difference	N/A	ERR
Sample #	Conc As µg/mL=(As ng/SS)*(1µg/1000ng)*DF		
R6996-8795	Average Conc.=(Sample + Duplicate)/2		
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
03/06/95	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
03/06/95	Conc As (µg/mL)	<0.250	
Time	Average Conc (µg/mL)	N/A	ERR
02:15 PM	Relative % Difference	N/A	ERR

ERR

Data Entry by:		Date:	03/07/95
Approved by:		Date:	3/8/95

Form 355131_3 Rev. 2.1

9613479.1279

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6996.-8895	PUREX J3/E5	2-14-95	11:51	25

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

Sample Size	Customer ID
? 2.0 ml Acid dig DF = 100	BODVK9

Remarks, Calculations, Results
DUPLICATE SAMPLE

PKHT= .044
ng: -3.16 ng

RPD N/A Samp. & Dup both < Det Lim

<0.250 ug/ml

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

Date	Time Completed	Lab Unit Mgr	
3-6-95	14:15	3/8/95	

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

Arsenic: LA-355-131 (C-0) As LIQUID-ACID DIGEST

		SAMPLE	DUPLICATE
Type	Sample Size in mL SS	2.000	2.000
SAMPLE	As ng (Nanograms)	-2.36	-3.16
Work List	Acid Digest Dilution Factor DF	100.0	100.0
5568	Conc As µg/mL (or mg/L or PPM)	-0.118	-0.158
Test Code	Conc As µg/L (PPB)	-118.0	-158.0
	Average Conc (µg/mL)	N/A	N/A
Matrix	Average Conc (µg/L)	N/A	N/A
LIQUID	Relative % Difference	N/A	N/A

Sample #	Conc As µg/mL=(As ng/SS)*(1µg/1000ng)*DF
R6996-8895	Average Conc.=(Sample + Duplicate)/2
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100
03/06/95	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
03/06/95	Conc As (µg/mL)	<0.250	<0.250
Time	Average Conc (µg/mL)	N/A	N/A
02:15 PM	Relative % Difference	N/A	N/A

Both Results are < Detection Limit

Data Entry by:		Date:	03/07/95
Approved by:		Date:	3/8/95

Form 355131_3 Rev. 2.1

9613479.1280

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6996.-8995	PUREX J3/E5	2-14-95	11:51	25

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

Sample Size	Customer ID
? 2.0 ml	BODVK9

Remarks, Calculations, Results

SAMPLE SPIKED ID R6996
SPIKE ID 48N11C
SPIKE VOLUME 2 mL
FINAL 100 mL

PKHT = .948
ng = 36.99 ng

92.5 %

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

Date	Time Completed	Lab Unit Mgr	
3-6-95	14:15	3/8/95	

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

Arsenic: LA-355-131 (C-0) 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	36.99
5568	ng of Sample ngSAM	-2.36	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	48N11C
Sample #	Spike Std Value (ppm) SS VAL	N/A	1.000
R6996-8995	% Recovery	N/A	92.5%
Calibration Date			
03/06/95	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			
03/06/95			
Time	% Recovery =		92.5%
02:15 PM			

Data Entry by:		Date:	03/07/95
Approved by:		Date:	3/8/95

Form 355131_4 Rev. 1.1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No.	Sample Point	Date	Time Issued	Priority
R 6997.-5595	PUREX J3/E5	2-14-95	11:51	25

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
PKHT= .686
ng= 25.36ng
STD# 44N116 RESULT 1.01E-01 ug/ML
STD VAL 1.00-1 ug/ml %REC 101 %

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

Date	Time Completed	Lab Unit Mgr	
3-6-95	14:15	3/8/95	

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

Arsenic : LA-355-131 (C-0) As LIQUIDS-DIRECT		STANDARD	DUPLICATE
Type	Sample Size in mL SS	0.250	
STANDARD	As ng (Nanograms)	25.36	
Work List	Conc As µg/mL (or mg/L or PPM)	0.101	N/A
5568	Conc As µg/L (PPB)	101.4	N/A
Test Code		N/A	
		N/A	
Matrix		N/A	
LIQUID	Conc As µg/mL=(As ng/SS)*(1µg/1000ng)		
Sample #	Average Conc.=(Sample + Duplicate)/2		
R6997-5595	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
Calibration Date			
03/06/95			
Instrument Code			
WB27979			
Analyst			
V. MASSIE			
Date		STANDARD	DUPLICATE
03/06/95	Conc As µg/mL	1.01E-01	
Time		N/A	
02:15 PM		N/A	

Data Entry by:		Date:	03/07/95
Approved by:		Date:	3/8/95

Form 355131_1 Rev. 1.2