Pacific Northwest National Laboratory

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TANK VAPOR CHARACTERIZATION PROJECT

Tank 241-U-112 Headspace Gas and Vapor Characterization: Results for Homogeneity Samples Collected on December 6, 1996

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Prepared for Lockheed Martin Hanford
under a Related Services Agreement
with the U.S. Department of Energy
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Summary

This report presents the results of analyses of samples taken from the headspace of waste storage tank 241-U-112 (Tank U-112) at the Hanford Site in Washington State. Samples were collected to determine the homogeneity of selected inorganic and organic headspace constituents. Two risers (Riser 3 and Riser 6) were sampled at three different elevations (Bottom, Middle, and Top) within the tank. Tank headspace samples were collected by SGN Eurisys Service Corporation (SESC) and were analyzed by Pacific Northwest National Laboratory (PNNL) to determine headspace concentrations of selected non-radioactive analytes. Analyses were performed by the Vapor Analytical Laboratory (VAL) at PNNL.

Ammonia was determined to be above the immediate notification limit specified by the sampling and analysis plan (Buckley 1996).

Acknowledgments

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Terms and Abbreviations

% D	% Difference
CCB	continuing calibration blank
CCV	continuing calibration verification
COC	chain-of-custody
DIW	deionized water
EPA	U.S. Environmental Protection Agency
EQL	estimated quantitation limit
GC/FID	gas chromatography/flame ionization detector
GC/MS	gas chromatograph/mass spectrometer
GC/TCD	gas chromatography/thermal conductivity detection
IC	ion chromatography
ICB	initial calibration blank
IDL	instrument detection limit
IS	internal standard
ISE	ion selective electrode
MW	molecular weight
NIST	National Institute for Standards and Technology
PNL	Pacific Northwest Laboratory (previous name for the laboratory)
PNNL	Pacific Northwest National Laboratory
ppbv	part per billion by volume
ppm	parts per million
ppmv	part per million by volume
QA	quality assurance
RF	response factor
RPD	relative percent difference
RSD	relative standard deviation
SAP	sample and analysis plan
SESC	SGN Eurisys Service Corporation
SCIC	suppressed-conductivity ion chromatography
SRM	standard reference material
STP	standard temperature and pressure
SUMMA™	stainless steel, passivated interior canister
TIC	tentatively identified compound
TNMOC	total non-methane organic compound
TST	triple sorbent trap
UHP	ultra high purity
UQL	upper quantitation limit
VAL	Vapor Analytical Laboratory
WHC	Westinghouse Hanford Company

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1.0 Introduction

This report presents results of chemical analyses of vapor samples collected from the headspace of waste storage tank 241-U-112 (Tank U-112) at the Hanford Site in Washington State. Samples were collected by SGN Eurisys Service Corporation (SESC) (Sample Jobs S6118 and S6119) on December 6, 1996. Pacific Northwest National Laboratory (PNNL)^(a) provided SUMMA™ canisters and sorbent traps for sample collection and analyzed the samples according to instructions in the sampling and analysis plan (SAP) (Buckley 1996). Analytical work was performed by the PNNL Vapor Analytical Laboratory (VAL) in the 300 Area of the Hanford Site under the PNNL Tank Vapor Characterization Project.

Pacific Northwest National Laboratory provided 28 sets of sorbent traps for ammonia and water (24 samples and 4 field blanks), 27 SUMMA™ canisters for permanent gases, total non-methane organic compounds (TNMOCs) and organic analytes (24 headspace samples and 3 ambient air samples), and 32 triple sorbent traps (TSTs) for organic analytes (24 samples, 4 field blanks, and 4 trip blanks). Sample devices and controls were provided to SESC on December 3, 1996 and were returned to PNNL on December 18, 1996. Sample volumes needed to determine headspace concentrations from sorbent trap samples were measured by SESC and reported to PNNL. Chain-of-custody forms used to document possession and transfer of samples and controls are provided in Appendix F.

^(a) Pacific Northwest National Laboratory is operated for the U. S. Department of Energy by Battelle under Contract DE-AC06-76RLO 1830. The previous name of the laboratory was Pacific Northwest Laboratory. The former name is used when previously published documents are referenced.

2.0 Analytical Results

This report presents the results from the analyses of samples taken from the headspace of Tank U-112 at the Hanford Site in Washington State. Samples were collected to determine the homogeneity of selected inorganic and organic headspace constituents. Two risers (Riser 3 and Riser 6) were sampled at three different elevations (Bottom, Middle, and Top) within the tank. Summarized results are describe in this section; details of the samples, analyses, and data tables are provided in the appendices. The data within this report will be statistically evaluated at a later date to determine the extent of headspace homogeneity for compounds of interest.

2.1 Inorganic Vapors

Table 2.1 lists results of the water and ammonia analyses from samples collected from the headspace of Tank U-112. A detailed discussion of the analytical method and a table of results are presented in Appendix A. In summary, mean water concentration values ranged from 13.1 mg/L in Riser 6 Middle to 15.3 mg/L in Riser 3 Top samples. The mean nitric oxide and nitrogen dioxide concentrations for all sampling locations were <0.16 ppmv. Mean ammonia concentration values ranged from 294 ppmv in Riser 3 Bottom samples to 309 ppmv in Riser 6 Top samples. There does not appear to be any significant difference in inorganic vapor values among the tank headspace samples.

2.2 Permanent Gases

Table 2.1 also lists results of the permanent gas analyses from samples collected from the headspace of Tank U-112. A detailed discussion of the analytical method and a table of results for tank samples and ambient air are presented in Appendix B. In summary, nitrous oxide and hydrogen were observed above the estimated quantitation limit (EQL) in all of the tank headspace samples. Average nitrous oxide concentrations ranged from 181 ppm in four samples to 182 ppm in 2 samples. Average hydrogen concentrations ranged from 96 ppmv in Riser 3 Bottom samples to 105 ppmv in Riser 6 Top samples. Methane, carbon dioxide, and carbon monoxide concentrations were all below the EQL concentration. There appear to be no significant differences in the concentrations of any of the permanent gases within the tank headspace.

2.3 Total Non-Methane Organic Compounds

Table 2.1 also includes the TO-12 gas analyses results from samples collected from the headspace of Tank U-112. A detailed discussion of the analytical method and a table of results for tank samples and ambient air are presented in Appendix C. In summary, the average concentrations ranged from 2.43 mg/m^3 in Riser 3 Bottom to 2.87 mg/m^3 in Riser 6 Bottom. There appear to be no significant differences in concentrations among the different sampling locations in the tank headspace.

2.4 Organic Compounds from SUMMA™ Canisters

Table 2.2 summarizes results of organic compound analyses of SUMMA™ samples collected from the headspace of Tank U-112. A detailed discussion of the analytical method and tables of results are presented in Appendix D. In summary, 27 target compounds and 21 tentatively identified compounds (TICs) were identified in at least one set of sample results from Tank U-112. Six minor peaks within the individual chromatograms were determined to be unknowns. Only one compound, methanol, was identified above 1 mg/m^3 in all the sample sets analyzed. Comparisons of the results revealed similar concentrations for the 27 target analytes and 21 TICs among the 6 different sampling locations. However, further statistical analysis will be required to confirm this observation.

2.5 Organic Compounds from Triple Sorbent Traps

Table 2.3 summarizes results of organic compound analyses of TST samples collected from the headspace of Tank U-112. A detailed discussion of the analytical method and tables of results are presented in Appendix E. In summary, 40 target compounds and 31 TICs were identified in at least one set of sample results from Tank U-112. The only compound identified above 1 mg/m^3 in all the sample sets analyzed was methanol. Comparisons of the results revealed similar concentrations of the 40 target analytes and 31 TICs among the 6 different sampling locations. However, further statistical analysis will be required to confirm this observation.

2.6 Flammability

The analytical results presented above can be used to estimate the Tank U-112 headspace flammability at the time of sampling. Flammability is calculated using the ammonia concentration from the inorganic analysis, carbon monoxide, hydrogen, and methane concentrations measured from the permanent gas analysis, and the TNMOC concentration determined from the TO-12 analysis. Table 2.4 summarizes the calculated flammability data. Hydrogen was the principal flammable constituent of the Tank U-112 headspace, determined to be present at approximately 0.248% of its LFL. Total headspace flammability was estimated to be $<0.520\%$ of the LFL.

Table 2.1. Summary of Inorganic Vapor, Permanent Gas, and TO-12 Results for Samples from Tank U-112 Sampled on 12/6/96

Analyte	Riser 3 Top Level		Riser 3 Middle Level		Riser 3 Bottom Level		Riser 6 Top Level		Riser 6 Middle Level		Riser 6 Bottom Level	
	Mean	St. Dev.	Mean	St. Dev.	Mean	St. Dev.	Mean	St. Dev.	Mean	St. Dev.	Mean	St. Dev.
Inorganics												
Water (mg/L) ^(a)	15.3	0.6	14.4	1.1	14.6	1.3	14.1	0.6	13.1	1.3	13.7	0.5
Water (mg/L) ^(b)	13.8	0.5	13	1	13.1	1.2	13	0.6	12.1	1.2	12.7	0.5
Nitric Oxide (ppmv)	<0.16		<0.16		<0.16		<0.16		<0.16		<0.16	
Nitrogen Dioxide (ppmv)	<0.16		<0.16		<0.16		<0.16		<0.16		<0.16	
Ammonia (ppmv)	303	3.3	301	8.4	294	13	309	10	306	7.3	308	13
Permanent Gas (ppmv)												
Carbon Dioxide	<17		<17		<17		<17		<17		<17	
Nitrous Oxide	181	2.2	182	1.5	181	1.7	181	1.4	181	1.5	182	0.6
Methane	<25		<25		<25		<25		<25		<25	
Carbon Monoxide	<17		<17		<17		<17		<17		<17	
Hydrogen	97	1.0	98	2.6	96	3.5	105	9.2	97	1.3	98	1.0
TO-12 (mg/m³)	2.51	0.1	2.49	0.1	2.43	0.06	2.80	0.2	2.72	0.1	2.87	0.2

(a) Dry air at 0°C and 1.013 bar.

(b) Moist air at tank temperature and pressure.

Table 2.2 Summary of Organic Compound Concentrations (mg/m³) in SUMMA™ Canisters from Tank U-112 Sampled on 12/6/96

Target Analytes ^(a)	CAS	MW	Ret Time	Riser 3 Top		Riser 3 Middle		Riser 3 Bottom		Riser 6 Top		Riser 6 Middle		Riser 6 Bottom	
				Mean	St. Dev.	Mean	St. Dev.	Mean	St. Dev.	Mean	St. Dev.	Mean	St. Dev.	Mean	St. Dev.
Dichlorodifluoromethane	75-71-8	121	4.6	0.003	0.000	0.004	0.001	0.005	0.002	0.003	0.000	0.003	0.000	0.021	0.036
Chloromethane	74-87-3	50	5.0			c	c	0.004	c					c	c
Methanol	67-56-1	32	5.2	1.083	0.084	1.113	0.097	1.117	0.057	1.285	0.111	1.199	0.153	1.097	0.177
Butane	106-97-8	58	5.9	0.083	0.006	0.082	0.001	0.084	0.005	0.083	0.006	0.084	0.005	0.138	0.106
Ethanol	64-17-5	46	6.8	0.769	0.089	0.834	0.109	0.825	0.066	1.098	0.222	0.935	0.350	0.866	0.115
Acetonitrile	75-05-8	41	7.3	c	c	0.017	0.011	0.018	0.004	0.014	0.005	0.011	0.005	0.041	c
Acetone	67-64-1	58	7.9	0.077	0.015	0.092	0.028	0.098	0.011	0.092	0.012	0.085	0.020	0.096	0.033
Trichlorofluoromethane	75-69-4	137	8.3	0.208	0.008	0.213	0.010	0.213	0.006	0.214	0.007	0.215	0.011	0.212	0.010
Pentane	109-66-0	72	9.0	0.005	0.000	0.006	0.001	0.007	0.001	0.005	0.001	0.006	0.001	0.018	0.025
Methylene Chloride	75-09-2	85	9.7	0.007	0.000	0.007	0.001	0.007	0.001	0.007	0.000	0.007	0.001	0.016	0.019
1,1,2-trichloro-2,2,2-trifluoroethane	76-13-1	187	10.2	0.008	0.003	0.013	0.005	0.018	0.003	0.008	0.002	0.011	0.005	0.031	0.036
Propanol	71-23-8	60	10.9	0.098	0.006	0.103	0.012	0.104	0.005	0.108	0.013	0.103	0.015	0.126	0.059
2-Butanone	78-93-3	72	12.5	0.020	0.002	0.024	0.010	0.021	0.003	0.023	0.002	0.020	0.005	0.023	0.009
Hexane	110-54-3	86	13.7	0.004	0.000	0.004	0.001	0.006	0.002	0.005	0.000	0.005	0.000	0.032	0.054
Tetrahydrofuran	109-99-9	72	14.6	0.022	0.002	0.024	0.002	0.022	0.003	0.023	0.003	0.022	0.002	0.034	0.025
1,1,1-Trichloroethane	71-55-6	133	15.8	0.008	0.005	0.005	0.001	0.006	0.002	0.005	0.000	0.005	0.000	0.020	0.030
1-Butanol	71-36-3	74	16.3	0.528	0.037	0.542	0.047	0.565	0.019	0.591	0.074	0.557	0.060	0.536	0.066
Benzene	71-43-2	78	16.7	0.005	0.000	0.006	0.000	0.006	0.001	0.006	0.000	0.005	0.001	0.014	0.017
Carbon Tetrachloride	56-23-5	154	17.0	0.006	0.000	0.006	0.001	0.008	0.002	0.006	0.000	0.005	0.000	0.025	0.033
Cyclohexane	110-82-7	84	17.3											0.018	c
Heptane	142-82-5	100	19.3					0.005	c	0.006	0.001	0.006	0.002	0.024	0.034
Toluene	108-88-3	92	22.6	0.147	0.007	0.147	0.012	0.144	0.004	0.153	0.009	0.151	0.006	0.148	0.013
Tetrachloroethylene	127-18-4	166	25.2	0.006	0.000	0.007	0.000	0.007	0.002	0.006	0.001	0.006	0.000	0.021	0.030
Cyclohexanone	108-94-1	98	28.5	c	c	0.014	c	0.022	c					c	c
Decane	124-18-5	142	34.4					0.006	c					c	c
Dodecane	112-40-3	170	42.8							c	c	c	c	0.035	c
Tridecane	629-50-5	184	46.5	c	c	0.007	c	c	c	0.042	0.021	0.091	0.091	0.113	0.090

Tentatively

Identified Compounds^(b)

Propane	74-98-6	44	4.5	0.050	0.004	0.059	0.010	0.060	0.009	0.055	0.007	0.047	0.007	0.048	0.013
Propanal	123-38-6	58	8.0			0.019	c	0.020	c	0.021	c	0.019	0.005	0.012	c
2-Propanol, 2-methyl-	75-65-0	74	9.4	0.039	0.005	0.040	0.001	0.043	0.002	0.038	0.003	0.038	0.002	0.032	0.006
Unknown			9.6			c	c	0.009	0.000	0.008	c	c	c		
Methane, nitro-	75-52-5	61	10.3							0.011	c	0.008	c		
Carbon disulfide	75-15-0	76	10.4	c	c	c	c	0.006	c	c	c	0.011	0.005	c	c

Table 2.2 (Cont'd) Summary of Organic Compound Concentrations (mg/m³) in SUMMATM Canisters from Tank U-112 Sampled on 12/6/96

Tentatively Identified Compounds ^(b)	CAS	MW	Ret Time	Riser 3 Top		Riser 3 Middle		Riser 3 Bottom		Riser 6 Top		Riser 6 Middle		Riser 6 Bottom	
				Mean	St. Dev.	Mean	St. Dev.	Mean	St. Dev.	Mean	St. Dev.	Mean	St. Dev.	Mean	St. Dev.
Unknown			10.5			0.007	c	c	c	c	c	c	c	c	c
Butanal	123-72-8	72	12.3	0.011	c	c	c	0.016	0.000	0.014	0.002	0.019	c	0.010	0.001
Amylene Hydrate	75-85-4	88	15.2	c	c	0.007	c	0.007	c	c	c				
1-Propanol, 2,2-dimethyl-	75-84-3	88	16.9									0.013	0.001	c	c
1-Cyclopentyl-2,2-dimethyl-1-p		156	16.9	c	c	0.011	0.002	0.013	0.000	0.012	0.001				
1,4-Dioxane	123-91-1	88	18.7					c	c	0.010	0.001	0.015	c	c	c
Unknown			18.9							0.004	c	c	c		
Pyrazine	290-37-9	80	19.8			c	c	0.007	c	0.005	0.001	0.006	0.001	0.005	c
Butane, 1-nitro-	627-05-4	103	20.3											0.006	c
Propane, 2-methyl-2-nitro-	594-70-7	103	20.3			c	c			c	c	0.007	c	c	c
Cyclohexane, methyl-	108-87-2	98	20.8							0.018	0.005	0.018	0.011	0.017	0.006
Unknown			24.7			c	c	0.005	c						
Cyclotrisiloxane, hexamethyl-	541-05-9	222	25.5			0.240	c	0.017	0.016					c	c
Unknown Alkene/Cycloalkane			33.3					0.007	c						
Unknown			38.8			c	c	0.006	0.000					c	c

Footnotes

(a) Detected target analytes.

(b) Semi-quantitative estimate calculated using concentration of closest eluting IS.

(c) Mean and/or standard deviation are not meaningful for this analyte.

Bolded results indicate suspect data.

Table 2.3 Summary of Organic Compound Concentrations (mg/m³) in Triple Sorbent Traps from Tank U-112 Sampled on 12/6/96

Target Analytes ^(a)	CAS	MW	Ret Time	Riser 3 Top		Riser 3 Middle		Riser 3 Bottom		Riser 6 Top		Riser 6 Middle		Riser 6 Bottom	
				(mg/m ³)	St. Dev.	(mg/m ³)	St. Dev.	(mg/m ³)	St. Dev.	(mg/m ³)	St. Dev.	(mg/m ³)	St. Dev.	(mg/m ³)	St. Dev.
Methanol	67-56-1	32	10.0	1.274	0.468	1.376	0.379	1.161	0.377	1.199	0.297	1.382	0.195	1.259	0.452
Butane	106-97-8	58	10.8	0.125	0.025	0.104	0.009	0.106	0.017	0.100	0.007	0.112	0.007	0.097	0.012
Ethanol	64-17-5	46	12.5	0.556	0.218	0.508	0.152	0.478	0.282	0.529	c	0.489	0.108	0.608	c
Acetonitrile	75-05-8	41	13.0	0.036	0.009	0.041	0.021	0.049	0.009	0.035	0.005	0.053	0.010	0.040	0.012
Acetone	67-64-1	58	13.7	0.087	0.012	0.069	0.010	0.092	0.018	0.061	0.004	0.084	0.006	0.073	0.012
Trichlorofluoromethane	75-69-4	137	14.1	0.231	0.048	0.188	0.018	0.177	0.038	0.196	0.021	0.224	0.040	0.187	0.023
Pentane	109-66-0	72	14.9	0.012	0.001	0.011	0.001	0.012	0.001	0.010	0.000	0.012	0.000	0.010	0.001
Methylene Chloride	75-09-2	85	15.8	0.058	0.039	0.039	0.019	0.040	0.013	0.031	0.006	0.038	0.007	0.036	0.009
1,1,2-trichloro-2,2,2-trifluoroethane	76-13-1	187	16.3	0.020	0.004	0.022	0.009	0.019	0.004	0.015	0.004	0.016	0.004	0.014	0.005
Propanol	71-23-8	60	17.1	0.077	0.021	0.078	0.009	0.068	0.024	0.076	0.009	0.072	0.005	0.072	0.010
2-Butanone	78-93-3	72	18.6	0.029	0.014	0.029	0.016	0.029	0.007	0.012	0.003	0.019	0.002	0.017	0.008
Hexane	110-54-3	86	19.8	0.053	0.005	0.058	0.022	0.072	0.023	0.017	0.002	0.021	0.002	0.018	0.001
Tetrahydrofuran	109-99-9	72	20.7	0.040	0.002	0.038	0.003	0.037	0.003	0.037	0.001	0.040	0.001	0.037	0.002
1,1,1-Trichloroethane	71-55-6	133	21.9	0.012	0.003	0.010	0.002	0.010	0.003	0.008	0.000	0.009	0.001	0.008	0.000
1-Butanol	71-36-3	74	22.3	0.333	0.056	0.312	0.030	0.351	0.120	0.313	0.035	0.307	0.032	0.277	0.027
Benzene	71-43-2	78	22.8	0.012	0.001	0.011	0.001	0.012	0.002	0.011	0.001	0.013	0.001	0.011	0.001
Carbon Tetrachloride	56-23-5	154	23.0	0.006	0.001	0.005	0.000	0.006	0.001	0.005	0.001	0.006	0.000	0.005	0.000
Cyclohexane	110-82-7	84	23.3	0.036	0.019	0.027	0.011	0.072	0.063	0.022	0.005	0.021	0.009	0.025	0.004
Heptane	142-82-5	100	25.2	0.032	0.005	0.047	0.033	0.058	0.039	0.020	0.005	0.014	0.004	0.026	0.005
4-Methyl-2-Pentanone	108-10-1	100	26.3	0.018	0.004	0.019	0.005	0.021	0.006	0.014	0.004	0.013	0.003	0.014	0.005
1,1,2-Trichloroethane	79-00-5	133	27.8	0.009	0.000	0.009	0.000	0.008	0.000	0.008	0.000	0.009	0.000	0.009	0.000
Toluene	108-88-3	92	28.4	0.576	0.543	0.309	0.084	0.468	0.258	0.266	0.075	0.486	0.460	0.290	0.076
Tetrachloroethylene	127-18-4	166	31.0	0.006	c	0.006	c	0.006	0.001	c	c	0.009	0.002	0.007	0.001
Hexanenitrile	628-73-9	97	32.8	0.130	0.250	0.129	0.247	0.008	c	c	c	0.134	0.249	0.504	c
Ethylbenzene	100-41-4	106	33.4	0.033	0.004	0.031	0.004	0.029	0.009	0.027	0.007	0.044	0.021	0.025	0.006
p/m-Xylene	106-42-3	106	33.8	0.113	0.006	0.105	0.009	0.098	0.026	0.100	0.030	0.171	0.086	0.098	0.022
Cyclohexanone	108-94-1	98	34.3	0.017	0.001	0.021	c	0.023	0.014	0.013	0.005	0.015	c	c	c
Styrene	100-42-5	104	34.7	0.022	0.002	0.020	0.002	0.019	0.006	0.022	0.008	0.042	0.023	0.020	0.008
1,1,2,2-Tetrachloroethane	79-34-5	168	35.0	0.010	0.003	0.008	c	0.011	c	c	c	nd	nd		
o-Xylene	95-47-6	106	35.0	0.060	0.004	0.055	0.006	0.051	0.016	0.047	0.014	0.080	0.035	0.047	0.012
Nonane	111-84-2	128	35.4	0.010	0.001	0.009	0.001	0.009	0.002	0.008	0.002	0.013	0.005	0.008	0.001
1-Ethyl-2-methyl benzene	611-14-3	120	38.4	0.004	0.000	0.004	0.000	0.004	0.001	0.005	0.001	0.008	0.005	0.004	0.001
1,3,5-Trimethylbenzene	108-67-8	120	38.6	0.005	0.000	0.005	0.000	0.005	0.001	0.005	0.002	0.010	0.005	0.005	0.001
1,2,4-Trimethylbenzene	95-63-6	120	39.9	0.011	0.005	0.012	0.001	0.012	0.003	0.015	0.005	0.027	0.016	0.014	0.003
Decane	124-18-5	142	40.1	0.040	0.003	0.038	0.004	0.038	0.007	0.045	0.008	0.077	0.039	0.043	0.008
1,4-Dichlorobenzene	106-46-7	147	40.6	0.010	0.001	0.010	0.001	0.010	0.003	0.010	0.003	0.017	0.010	0.010	0.002
Undecane	1120-21-4	156	44.4	0.047	0.003	0.046	0.005	0.049	0.008	0.068	0.021	0.124	0.074	0.065	0.018
Dodecane	112-40-3	170	48.4	c	c	nd	nd	c	c	0.034	c	0.060	0.022	0.033	c
Tridecane	629-50-5	184	52.2	0.054	0.004	0.060	0.017	0.068	0.015	0.062	0.004	0.091	0.043	0.063	0.018
Tetradecane	629-59-4	198	55.7	0.033	0.006	0.046	0.026	0.043	0.014	0.032	0.007	0.031	0.004	0.041	0.017

Table 2.3 Summary of Organic Compound Concentrations (mg/m³) in Triple Sorbent Traps from Tank U-112 Sampled on 12/6/96

Tentatively Identified Compounds ^(b)	CAS	MW	Ret Time	Riser 3 Top		Riser 3 Middle		Riser 3 Bottom		Riser 6 Top		Riser 6 Middle		Riser 6 Bottom	
				(mg/m ³)	St. Dev.	(mg/m ³)	St. Dev.	(mg/m ³)	St. Dev.	(mg/m ³)	St. Dev.	(mg/m ³)	St. Dev.	(mg/m ³)	St. Dev.
Propane	74-98-6	44	7.3	0.092	0.024	0.116	0.054	0.111	0.016	0.076	0.016	0.077	0.007	0.080	0.017
Ethane, 1-chloro-1,1-difluoro-	75-68-3	100	8.9	nd	nd	0.071	c	c	c	nd	nd	nd	nd	nd	nd
Acetaldehyde	75-07-0	44	9.5	0.051	c	c	c	0.054	0.011	0.047	c	nd	nd	0.036	c
1-Propene, 2-methyl-	115-11-7	56	10.4	0.893	0.236	0.557	0.227	0.843	0.455	0.562	0.096	0.973	0.326	0.737	0.340
Isopropyl Alcohol	67-63-0	60	14.3	0.091	0.022	0.095	0.020	0.072	0.033	0.091	0.015	0.084	0.013	0.093	0.024
2-Propanol, 2-methyl-	75-65-0	74	15.5	0.169	0.050	0.133	0.043	0.162	0.068	0.095	0.026	0.161	0.025	0.117	0.041
Acetic acid	64-19-7	60	18.2	0.171	0.034	0.148	0.033	0.142	0.033	0.148	0.027	0.193	0.045	0.183	0.105
Pentane, 3-methyl-	96-14-0	86	19.0	0.073	0.007	0.068	0.014	0.099	0.021	0.024	0.007	c	c	0.046	c
Pentane, 2,3-dimethyl-	565-59-3	100	23.7	0.049	0.008	0.068	0.041	0.084	0.053	0.028	0.006	0.017	0.011	0.028	0.004
Hexane, 3-methyl-	589-34-4	100	23.9	0.104	0.022	0.154	0.106	0.193	0.135	0.059	0.017	0.037	0.016	0.065	0.009
1-Octene, 3-ethyl-	74630-08-3	140	24.5	0.022	0.004	0.041	0.026	0.044	0.031	0.012	0.003	0.011	0.004	0.017	0.004
Cyclopentane, 1,2-dimethyl-	2452-99-5	98	24.8	0.039	0.010	0.043	0.021	0.052	0.023	0.027	0.004	0.023	c	0.027	0.005
Cyclohexane, methyl-	108-87-2	98	26.7	0.075	0.008	0.115	0.060	0.128	0.080	0.075	0.020	0.035	0.013	0.075	0.007
Hexane, 2,4-dimethyl-	589-43-5	114	27.1	0.035	0.009	0.043	0.005	0.040	0.013	0.014	0.005	0.011	0.004	0.013	0.005
Propanoic acid, 2,2-dimethyl-	75-98-9	102	29.0	0.106	0.018	0.092	0.024	0.047	0.007	0.071	0.009	0.114	0.032	0.078	0.042
Cyclohexane, 1,4-dimethyl-	589-90-2	112	29.7	0.059	0.015	0.056	0.013	0.046	0.024	0.018	0.007	0.025	0.008	0.020	0.007
Cyclohexane, 1,2-dimethyl-, trans-	6876-23-9	112	30.8	0.029	0.009	0.027	0.009	0.021	0.013	c	c	0.011	0.004	c	c
Hexane, 2,3,5-trimethyl-	1069-53-0	128	31.5	0.232	0.051	0.219	0.047	0.183	0.087	0.079	0.046	0.112	0.037	0.090	0.042
Heptane, 2,4-dimethyl-	2213-23-2	128	31.7	0.695	0.148	0.661	0.144	0.563	0.245	0.260	0.126	0.376	0.112	0.279	0.108
2,4-Dimethyl-1-heptene	19549-87-2	126	32.6	0.155	0.030	0.143	0.029	0.123	0.055	0.059	0.025	0.076	0.021	0.061	0.019
Octane, 2,4,6-trimethyl-	62016-37-9	156	39.2	0.151	0.065	0.084	0.028	0.132	0.017	0.080	0.042	0.198	0.091	0.109	0.028
Cyclotetrasiloxane, octamethyl-	556-67-2	296	39.4	0.959	0.069	0.933	0.083	0.776	0.068	1.042	0.279	1.834	0.843	1.077	0.203
Decane, 2,2,5-trimethyl-	62237-96-1	184	41.5	0.100	0.013	0.092	0.012	0.091	0.001	0.099	0.011	0.149	0.072	0.089	0.007
Heptadecane	629-78-7	240	42.3	0.103	0.010	0.096	0.007	0.098	0.003	0.098	0.015	0.162	0.078	0.097	0.006
Unknown C9 Alkane (mw 128)		128	42.7	0.127	0.005	0.119	0.015	0.114	0.023	0.099	0.021	0.164	0.065	0.104	0.017
Unknown C12 Alkane (mw 170)		170	42.9	0.917	0.047	0.890	0.112	0.839	0.174	0.749	0.167	1.192	0.471	0.752	0.119
Decane, 3,6-dimethyl-	17312-53-7	170	43.2	0.448	0.021	0.434	0.050	0.417	0.071	0.389	0.070	0.633	0.273	0.381	0.051
Undecane, 3,4-dimethyl-	17312-78-6	184	44.7	0.135	0.006	0.133	0.020	0.126	0.027	0.120	0.027	0.199	0.092	0.114	0.017
Undecane, 4,7-dimethyl-	17301-32-5	184	44.9	0.085	0.003	0.085	0.014	0.091	0.027	0.076	0.015	0.124	0.056	0.072	0.010
Benzoic acid, 2-[(trimethylsilyl)oxy]-,	3789-85-3	282	46.4	0.126	0.009	0.123	0.008	0.102	0.029	0.109	0.029	0.221	0.119	0.121	0.019
Pentadecane	629-62-9	212	51.8	c	c	0.126	0.014	c	c	0.123	c	0.242	0.109	0.118	c

Footnotes

- (a) Detected target analytes.
 (b) Semi-quantitative estimate calculated using concentration of closest eluting IS.
 (c) Mean and/or standard deviation are not meaningful for this analyte.
 nd Not detected.
 Bolded results should be considered suspect due to possible sampling error.

Table 2.4 Flammability Data for Tank U-112 Sampled on 12/6/96

Analyte	CAS #	Lower Flammability	Average	% of LFL ^(a)
		Limit(LFL)	Measured Concentrations	
Ammonia (ppm)	7664-41-7	150000	304	0.203
Carbon Monoxide (ppm)	630-08-0	125000	<17	<0.014
Hydrogen (ppm)	1333-74-0	40000	99	0.248
Methane (ppm)	74-82-8	50000	<25	<0.050
TNMOC (mg/m ³)		42000	2.64	0.006
Total				<0.520

(a) Less than values are calculated using the average concentration less than values.
These values are summed to determine the total LFL.

3.0 Conclusions

The concentration of inorganic vapors and organic analytes were determined from six different sampling locations within Tank U-112. The vapor concentrations were based either on whole-volume samples (SUMMA™ canisters) or on sorbent traps exposed to a sample flow. In the case of the canisters, the concentrations were based on analytical results and the tracking of dilutions/concentrations of sample volumes obtained directly from the canisters. In the case of the sorbent traps, concentrations were based on analytical results and sample volumes reported by SESC. Known sampling and analytical variances from established quality assurance requirements, if significant, were documented in this report, as required by the SAP (Buckley 1996). Immediate notification was provided because analytical results indicated ammonia exceeded the notification levels; notification levels and notification procedures are described in the SAP (Buckley 1996).

4.0 References

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Appendix A

Tank Vapor Characterization:

Inorganic Vapors

Appendix A

Tank Vapor Characterization: Inorganic Vapors

Table A.1 summarizes the analytes, sampling media, analytical methods, and laboratory procedures for inorganic vapors. Table A.2 summarizes information regarding sample media, handling, and storage procedures.

Table A.1. Sampling and Analysis Methods Summary for Inorganic Vapors

<u>Analyte</u>	<u>Sampling Media</u>	<u>Extraction Method</u>	<u>Analysis Method</u>	<u>Procedure</u>
Ammonia	Acidified carbon bead sorbent trap	Aqueous extraction	ISE analysis	PNL-ALO-226
Nitric Oxide and Nitrogen Dioxide	Triethanolamine impregnated sorbent traps	Aqueous extraction	IC	PNL-ALO-212
Water Vapor	Other inorganic sorbent traps + silica gel sorbent trap	None	Gravimetric analysis (sample weight gain)	PNL-TVP-09

Table A.2. Sample Media Preparation, Handling, and Storage for Inorganic Vapors

<u>Sampling Media</u>	<u>Supplier and Catalog Number</u>	<u>Preparation Procedure</u>	<u>Handling and Storage Procedure</u>
Inorganic vapor sorbent traps	SKC No. 226-29 SKC No. 226-40-02 SKC No. 226-10-04	PNL-TVP-09	PNL-TVP-07

Solid sorbent traps, prepared in multi-trap sampling trains, were supplied to SESC for sampling the tank headspace. Blanks and exposed samples were returned to PNNL for analyses. Analyses were performed to provide information on the tank-headspace concentration of the following analytes: ammonia, nitrogen dioxide (NO₂), nitric oxide (NO), and water. Samples were prepared, handled, and disassembled as described in Technical Procedure PNL-TVP-09^(a).

^a Pacific Northwest Laboratory. 12/95. *Sorbent Trap Preparation for Sampling and Analysis: Waste Tank Inorganic Vapor Samples*. PNL-TVP-09 (Rev. 2). PNL Technical Procedure. Richland, Washington.

A.1 Sampling Methodology

Standard glass tubes containing sorbent materials to trap ammonia, NO, NO₂, and water vapors were obtained, prepared, and submitted for vapor sampling. The sorbent traps were selected based on their use by the Occupational Safety and Health Administration (OSHA) to perform workplace monitoring and because of available procedures and verification results associated with that particular application. Each sorbent trap contained two sorbent sections separated by a glass wool plug. Sorbent media in the two sections were segregated and analyzed separately (except for analysis for water). Analyses of the second sorbent (breakthrough) sections were performed to demonstrate complete collection of the target analyte by the first sorbent section.

The ammonia sorbent traps contained carbon beads impregnated with sulfuric acid; nominally, 500 mg were contained in the primary and 250 mg in the breakthrough sections. The ammonia was chemisorbed as ammonium sulfate [(NH₄)₂SO₄]. The NO₂ traps contained a zeolite impregnated with triethanolamine (TEA), with 400 mg in the primary and 200 mg in the breakthrough sections. The NO₂ was absorbed and disproportionated to equi-molar quantities of nitrite ions (NO₂⁻) and nitrate ions (NO₃⁻). Glass tubes containing 800 mg of an oxidant were used to convert NO to NO₂. The converted NO was then collected as nitrite and nitrate in an NO₂ trap. The water traps contained a total of 450 mg of silica gel. All sorbent traps for a given analyte were from a single manufacturer's batch.

After sample preparation, sorbent trains were stored at ≤ 10°C because of handling recommendations for the oxidizer tubes attached to some samples. After receipt of exposed and radiologically cleared samples from SESC and disassembly of the sorbent trains, samples were provided to the analytical laboratory at ambient temperature.

The sorbent traps were prepared in multi-trap trains configured so sample air flow passed in order through the ammonia, nitrogen dioxide, oxidizer, nitric oxide, and desiccant traps. Traps were weighed and then connected to each other using uniform lengths of 3/8-in. perfluoroalkoxy-grade (PFA) Teflon® tubing. The perfluoroalkoxy-grade tubing was heated in hot air and forced over the open ends of the traps to form a tight seal. The inlets of the sorbent trains each consist of a short section of tubing having a 3/8-in. stainless steel Swagelok® nut, and sealed using a Swagelok® cap. The trailing ends of the sorbent trains were each sealed with red plastic caps provided by the manufacturer.

Concentration, in parts per million by volume (ppmv), was determined by dividing the amount of analyte, in μmol, by the moles of the dried tank air sampled. For example, the concentration of a 3.00-L sample containing 75.0 μg of ammonia equals

$$\frac{(75.0 \text{ } \mu\text{g})(22.4 \text{ L/mol})}{(17.0 \text{ } \mu\text{g}/\mu\text{mol})(3.00 \text{ L})} = 32.9 \text{ ppmv} \quad (2.1)$$

Measured sample volumes were specified by SESC at standard temperature and pressure (STP; 0°C, 1.013 bar). Because water vapor is removed as an analyte before the sample air stream passes through the mass flow meters, sample volumes exclude water vapor.

A.2 Analytical Procedures

A.2.1 Ammonia Analysis. The sorbent material from the ammonia traps was placed into labeled 20-mL glass scintillation vials. Vials containing front-section sorbent material were treated with 10.0 mL of deionized water (DIW), and vials containing breakthrough-section sorbent material were treated with 5.0 mL of DIW. Ammonia present was measured using the ion selective electrode (ISE) procedure PNL-ALO-226^(a). Briefly, the method includes 1) preparing a 1000- $\mu\text{g/mL}$ ammonia stock standard solution from dried reagent-grade NH_4Cl and DIW, 2) preparing 0.1-, 0.5-, 1.0-, 10-, and 100- $\mu\text{g/mL}$ ammonia working calibration standards by serial dilution of the freshly made stock standard, 3) generating an initial calibration curve from the measured electromotive force signal versus ammonia concentration data obtained for the set of working standards, 4) performing a calibration-verification check, using a mid-range dilution of a certified National Institute for Standards and Technology (NIST)-traceable 0.1 M NH_4Cl standard from an independent source, at a minimum of once per batch, 5) continuing this sequence until all samples of the batch have been measured, including duplicates and spiked samples, and 6) remeasuring the complete set of calibration standards (at the end of the session). Electromotive force signal measurements obtained for samples are compared to those for standards to determine ammonia concentration in the samples.

A.2.2 Nitrite Analysis. The sorbent material for NO_2 and NO traps were desorbed in an aqueous TEA and n-butanol solution and analyzed by suppressed-conductivity ion chromatography (SCIC) for nitrite according to PNL-ALO-212, Rev. 1^(b) modified to obviate interferences by concentrations of non-target analytes. Specifically, the modifications used were 1) eluent 1.44 mM Na_2CO_3 + 1.8 mM NaHCO_3 at 2.0 mL/min, 2) one guard column (AG4A) and two separator columns (AS4A) in series instead of just one separator column, and 3) all standards, samples, and blanks injected into the sample loop through 0.45- μm syringe filters.

Primary and breakthrough section materials were analyzed separately using identical procedures. Each analytical session was conducted as follows. Working nitrite standards were prepared by diluting a stock nitrite standard with desorbing solution. An initial calibration curve was prepared from the instrument response versus nitrite standard concentration data for the set of working standards. A calibration verification check using one of the midrange standards was performed at a minimum of once per batch. If the instrument response indicated that sample nitrite concentration was outside the calibration range, the sample was diluted with desorbing solution and reanalyzed. After all samples of a batch were analyzed, the complete set of calibration standards was remeasured to verify consistent instrument response. Instrument responses observed for samples were compared to those for standards to determine the nitrite concentration of the samples. Because the analytes were collected on the sorbent as equal quantities of nitrite and nitrate, and the analysis was specific for nitrite, the moles of NO_2 and NO were determined by doubling the analytically determined moles of nitrite.

(a) Procedure entitled "Ammonia (Nitrogen) in Aqueous Samples," PNL-ALO-226 Rev. 0, in the *Analytical Chemistry Laboratory (ACL) Procedure Compendium*, Vol. 3: Inorganic Instrumental Methods. Pacific Northwest National Laboratory, Richland, Washington.

(b) Procedure entitled "Determination of Inorganic Anions by Ion Chromatography," PNL-ALO-212, in the *Analytical Chemistry Laboratory (ACL) Procedure Compendium*, Vol. 3: Inorganic Instrumental Methods. Pacific Northwest National Laboratory, Richland, Washington.

A.2.3 Water Analysis. All Sorbent traps used to make each multi-trap train were weighed using a semi-micro mass balance, after labeling and breaking the glass tube ends, without plastic end caps. After receipt of exposed samples, the sorbent traps were again weighed to determine the change in mass. Mass gain was assumed to be entirely due to collection of water vapor. Field blanks were used to correct results.

A.3 Quality Assurance/Quality Control

Analytical work was performed according to procedures PNL-ALO-212, PNL-ALO-226, and Quality Assurance Plan ETD-002. Estimated quantitation limits (EQLs) for the inorganic vapors are given in Table A.3.

The accuracy of concentration measurements depends on errors associated with both sampling and analysis. Ammonia results were estimated to be within 5% of their true values. The uncertainty includes preparation of standards, purity of the ammonium salt used to prepare standards, potential operator bias, ambient temperature variations, etc. Working standards are traceable to NIST standard reference material (SRM) by using an independent calibration verification standard certified to be NIST-traceable. Nitrite analyses (for NO_2 and NO) are performed using certified but not NIST-traceable SRM; this is because NIST does not make a nitrite SRM. Based on experience in comparing nitrite working standards prepared from several different sources and factors mentioned for ammonia above, the estimated maximum bias for NO_2 results is $\pm 10\%$, and for NO results it is $\pm 5\%$.

Table A.3 Quantitation Limits for Selected Inorganic Analytes

Analyte	Formula	EQL ^(a) (ppmv)
Ammonia	NH_3	0.71
Nitrogen Dioxide	NO_2	0.16
Nitric oxide	NO	0.16
Mass (water) ^(b)	H_2O	0.3 mg/L

(a) The lowest calibration standard is defined as the EQL.

(b) The vapor-mass concentration, thought to be largely water vapor, is determined gravimetrically.
n/a = not applicable.

The accuracy of measurements of sample mass is typically ± 0.1 mg, or less than 1% of the mass changes of most samples. The analytical accuracy of measurements of the change in mass of sorbent trains, based on the variability in mass change of field blank multi-trap trains, is determined for each sample job and is typically about ± 1 mg per five-trap sorbent train.

A.4 Inorganic Vapor Sample Results

Table A.4 lists results of the inorganic vapor analyses of samples collected from the headspace of Tank U-112. These samples were collected through the ISVS system. A total of 28 samples were collected from two risers at three levels within the tank headspace. The samples were analyzed on January 7 through January 22, 1997. Samples were analyzed within the 60 day administrative hold time. A summary of results can be found in Section 2.1.

Table A.4 Inorganic Vapor Analysis Results for Samples Collected from Tank U-112 on 12/6/96

Riser #3	Sample ID No.	Water^(a) mg/L	Water^(b) mg/L	Nitric Oxide ppmv	Nitrogen Dioxide ppmv	NH₃ ppmv
Tank Top	S6118-t16.R75	14.5	13.0	<0.16	<0.16	306
	S6118-t17.R76	15.5	13.9	<0.16	<0.16	301
	S6118-t18.R77	15.5	13.9	<0.16	<0.16	299
	S6118-t19.R78	15.8	14.2	<0.16	<0.16	305
	Mean	15.3	13.8	<0.16	<0.16	303
	St. Dev.	0.6	0.5			3.3
Tank Middle	S6118-m10.R69	13.3	12.0	<0.16	<0.16	292
	S6118-m11.R70	13.7	12.3	<0.16	<0.16	312
	S6118-m20.R79	15.0	13.5	<0.16	<0.16	298
	S6118-m21.R80	15.6	14.0	<0.16	<0.16	302
	Mean	14.4	13.0	<0.16	<0.16	301
	St. Dev.	1.1	1.0			8.4
Tank Bottom	S6118-b12.R71	14.4	13.0	<0.16	<0.16	281
	S6118-b13.R72	15.7	14.1	<0.16	<0.16	312
	S6118-b14.R73	12.8	11.5	<0.16	<0.16	288
	S6118-b15.R74	15.4	13.9	<0.16	<0.16	296
	Mean	14.6	13.1	<0.16	<0.16	294
	St. Dev.	1.3	1.2			13
Riser # 6	Sample ID No.	Water^(a) mg/L	Water^(b) mg/L	Nitric Oxide ppmv	Nitrogen Dioxide ppmv	NH₃ ppmv
Tank Top	S6119-t16.R89	14.5	13.4	<0.16	<0.16	300
	S6119-t17.R90	14.4	13.3	<0.16	<0.16	320
	S6119-t18.R91	13.2	12.2	<0.16	<0.16	301
	S6119-t19.R92	14.4	13.2	<0.16	<0.16	316
	Mean	14.1	13.0	<0.16	<0.16	309
	St. Dev.	0.6	0.6			10
Tank Middle	S6119-m10.R83	11.5	10.7	<0.16	<0.16	309
	S6119-m11.R84	12.5	11.6	<0.16	<0.16	307
	S6119-m20.R93	13.9	12.8	<0.16	<0.16	296
	S6119-m21.R94	14.4	13.3	<0.16	<0.16	313
	Mean	13.1	12.1	<0.16	<0.16	306
	St. Dev.	1.3	1.2			7.3
Tank Bottom	S6119-b12.R85	13.8	12.7	<0.16	<0.16	311
	S6119-b13.R86	13.9	12.9	<0.16	<0.16	314
	S6119-b14.R87	13.0	12.0	<0.16	<0.16	289
	S6119-b15.R88	14.1	13.1	<0.16	<0.16	316
	Mean	13.7	12.7	<0.16	<0.16	308
	St. Dev.	0.5	0.5			13

(a) Dry air at 0°C and 1.013 bar.

(b) Moist air at tank temperature and pressure.

Appendix B

Tank Vapor Characterization:

Permanent Gases

Appendix B

Tank Vapor Characterization: Permanent Gases

Table B.1 summarizes the analytes, sampling medium, analytical method, and laboratory procedure for permanent gases. Table B.2 summarizes information regarding sample medium, handling, and storage procedures.

Table B.1. Sampling and Analysis Methods Summary for Permanent Gases

<u>Analyte</u>	<u>Sampling Medium</u>	<u>Extraction Method</u>	<u>Analysis Method</u>	<u>Procedure</u>
Carbon Monoxide, Carbon Dioxide, Hydrogen, Methane, and Nitrous Oxide	SUMMA™ canisters	Analysis of SUMMA™ canister subsample	GC/TCD	PNL-TVP-05

Table B.2. Sample Medium Preparation, Handling, and Storage for Permanent Gases

<u>Sampling Medium</u>	<u>Supplier and Catalog Number</u>	<u>Preparation Procedure</u>	<u>Handling and Storage Procedure</u>
SUMMA™ canisters	Scientific Instrumentation Specialist	PNL-TVP-02	PNL-TVP-07

SUMMA™ canister samples were analyzed for carbon dioxide, carbon monoxide, hydrogen, methane, and nitrous oxide (N₂O).

B.1 SUMMA™ Canister Preparation

All SUMMA™ canisters are cleaned and verified contaminant-free according to PNNL Technical Procedure PNL-TVP-02^(a) before use. The cleaning procedure uses an EnTech 3000 cleaning system that alternately fills the canisters with purified humid air and evacuates them for several cycles while the canister is heated. If the canister is verified as clean, the canister is evacuated to 5 mtorr and tagged. Before sending the canisters to the field for sampling, the canister vacuum is measured to determine if any leakage has occurred. If the vacuum has remained constant during storage, the canisters are prehumidified with 100 µL of distilled water and labeled. Canisters stored more than 30 but less than 60 days are re-evacuated and rehumidified before use. If stored more than 60 days, the canisters are recleaned and validated before use. All canisters are stored at room temperature.

(a) Pacific Northwest Laboratory. 8/94. *Cleaning SUMMA™ Canisters and the Validation of the Cleaning Process*. PNL-TVP-02 (Rev. 0), PNL Technical Procedure, Pacific Northwest Laboratory, Richland, Washington.

B.2 Analytical Procedure

The SUMMA™ canister samples were analyzed for five permanent gases by gas chromatography/thermal conductivity detection (GC/TCD). Aliquots of sampled air (undiluted) are drawn directly from each SUMMA™ canister into a 5-mL gas-tight syringe and injected into a Hewlett-Packard 5890 GC/TCD fitted with a loop injector valve and a column switching valve. An aliquot of 5 mL is used so that the 1.0-mL injection loop is completely purged with sample air, ensuring that no dilution of the sample takes place within the injection loop. One set of GC conditions is used to analyze for carbon monoxide, carbon dioxide, N₂O, and methane using helium as the carrier gas. A second GC/TCD analysis is performed for hydrogen using nitrogen as the carrier gas to enhance the signal sensitivity and lower the detection limit for this analyte. The permanent gases and the derived EQLs are listed in Table B.3.

Table B.3 Quantitation Limits for Permanent Gases

<u>Analyte</u>	<u>Formula</u>	<u>EQL (ppmv)</u>
Carbon Dioxide	CO ₂	17
Carbon Monoxide	CO	17
Methane	CH ₄	25
Hydrogen	H ₂	17
Nitrous Oxide	N ₂ O	17

B.3 Quality Assurance/Quality Control

Standards for the permanent gas analyses were blended from commercially prepared and certified standards. The instrument was calibrated at five different concentrations for methane over a range of 25 to 2100 ppmv, calibrated for carbon monoxide, carbon dioxide, and N₂O over a range of 17 to 2100 ppmv, and calibrated for hydrogen over a range of 17 to 2120 ppmv. An average response factor from the calibration was used for quantification.

Each analyte was quantitated by comparison of sample analyte peak area to the calibration plot generated for the compound. The EQL for the method has been established as the low level calibration standard. Before and after each sample analysis set, a gas standard was run to evaluate system performance and to measure system accuracy. The calculated concentration of the individual gases in the standards fell within $\pm 25\%$ of the expected concentrations.

B.4 Permanent Gases Sample Results

Table B.4 lists results of the permanent gas analysis from samples collected from the headspace of Tank U-112 and ambient air collected near Tank U-112. These samples were collected through the ISVS systems. A total of 27 samples were collected from two risers at three different levels within the tank headspace. The samples were analyzed on February 26, 27, and 28, 1997. Hydrogen was analyzed on March 3, 1997. Sample analysis exceeded the 60 day administrative hold time. Replicate analyses on SUMMA™ canisters were conducted on three samples for permanent gas and 1 sample for hydrogen. A summary of results can be found in Section 2.2.

B.4.1 Procedural Deviations, Observations, and Anomalies During Sample Job S6119, the valve body turned while tightening the Swagelok, as indicated on COC WHC 100422 (see Appendix F).

Table B.4 Permanent Gas Analysis Results from Tank U-112 Sampled on 12/6/96

Riser 3		Carbon Dioxide	Nitrous Oxide	Methane	Carbon Monoxide	Hydrogen
Sample Identification		(ppmv)	(ppmv)	(ppmv)	(ppmv)	(ppmv)
Ambient Air	S6118-a24.054	446	<25	<25	<17	<17
Ambient Air thru ISVS	S6118-a25.074	451	<25	<25	<17	<17
Tank Top	S6118-t38.155	<17	179	<25	<17	96
	S6118-t39.206	<17	180	<25	<17	96
	S6118-t40.210	<17	182	<25	<17	97
	S6118-t41.214	<17	184	<25	<17	98
Mean	Mean	<17	181	<25	<17	97
Std. Dev.	St. Dev.		2.2			1.0
Tank Middle	S6118-m26.094	<17	183	<25	<17	99
	S6118-m27.102	<17	180	<25	<17	100
	S6118-m46.250	<17	183	<25	<17	98
	S6118-m47.226	<17	183	<25	<17	94
Mean	Mean	<17	182	<25	<17	98
Std. Dev.	St. Dev.		1.5			2.6
Tank Bottom	S6118-b30.103	<17	179	<25	<17	96
	S6118-b31.115	<17	183	<25	<17	93
	S6118-b32.121	<17	181	<25	<17	100
	S6118-b33.124	<17	182	<25	<17	99*
Mean	Mean	<17	181	<25	<17	96
Std. Dev.	St. Dev.		1.7			3.5

Riser 6		Carbon Dioxide	Nitrous Oxide	Methane	Carbon Monoxide	Hydrogen
Sample Identification		(ppmv)	(ppmv)	(ppmv)	(ppmv)	(ppmv)
Ambient Air thru ISVS	S6119-a25.135	450	<25	<25	<17	<17
Tank Top	S6119-t38.308	<17	180	<25	<17	111*
	S6119-t39.309	<17	180	<25	<17	111*
	S6119-t40.310	<17	181	<25	<17	111*
	S6119-t41.318	<17	183	<25	<17	98
	Mean	<17	181	<25	<17	98
	St. Dev.		1.4			
Tank Middle	S6119-m26.146	<17	180	<25	<17	99
	S6119-m27.235	<17	183	<25	<17	97
	S6119-m46.319	<17	180	<25	<17	97
	S6119-m47.322	<17	180	<25	<17	96
	Mean	<17	181	<25	<17	97
	St. Dev.		1.5			1.3
Tank Bottom	S6119-b30.243	<17	181	<25	<17	98
	S6119-b31.255	<17	182	<25	<17	99
	S6119-b32.260	<17	182	<25	<17	99
	S6119-b33.270	<17	181	<25	<17	97
	Mean	<17	182	<25	<17	98
	St. Dev.		0.6			1.0

Riser 3 Replicate Analyses

S6118-m27.102	<17	180	<25	<17	100
S6118-m27.102 ^(a)	na	na	na	na	99
RPD (%)					1.0
S6118-m47.226	<17	183	<25	<17	94
S6118-m47.226 ^(a)	<17	182	<25	<17	na
RPD (%)		0.5			
S6118-b32.121	<17	181	<25	<17	100
S6118-b32.121 ^(a)	<17	180	<25	<17	na
RPD (%)		0.6			

Riser 6 Replicate Analyses

S6119-m47.322	<17	180	<25	<17	96
S6119-m47.322 ^(a)	<17	181	<25	<17	na
RPD (%)		0.6			

(a) S6118-m27.102 is a replicate for H₂ only; S6118-m47.226 is a replicate for perm gas only

na Not available

* Not included in mean or stdev for hydrogen; samples contained helium

Appendix C

Tank Vapor Characterization:

Total Non-Methane Organic Compounds

Appendix C

Tank Vapor Characterization: Total Non-Methane Organic Compounds

Table C.1 summarizes the analytes, sampling medium, analytical method, and laboratory procedure for TNMOCs. Table C.2 summarizes information regarding sample medium, handling, and storage procedures.

Table C.1. Sampling and Analysis Methods Summary for Total Non-Methane Organic Compounds

<u>Analyte</u>	<u>Sampling Medium</u>	<u>Extraction Method</u>	<u>Analysis Method</u>	<u>Procedure</u>
Total Non-Methane Organic Compounds	SUMMA™ canisters	Cryo-focusing of SUMMA™ canister subsample	GC/FID	PNL-TVP-08

Table C.2. Sample Medium Preparation, Handling, and Storage for Total Non-Methane Organic Compounds

<u>Sampling Medium</u>	<u>Supplier and Catalog Number</u>	<u>Preparation Procedure</u>	<u>Handling and Storage Procedure</u>
SUMMA™ canisters	Scientific Instrumentation Specialist	PNL-TVP-02	PNL-TVP-07

C.1 Analytical Procedure

SUMMA™ canister samples were analyzed for TNMOCs according to PNNL Technical Procedure PNL-TVP-08^(a), which is similar to the U.S. Environmental Protection Agency (EPA) Task Order (TO-12). Twenty-four hours before analysis, SUMMA™ canister samples are pressurized with purified air (Aadco Instruments, Inc., 1920 Sherwood St., Clearwater, Florida 34625). The original pressure is first measured using a calibrated diaphragm gauge (Cole Parmer), then pressurized to a level exactly twice the original pressure.

The method uses an EnTech 7000 cryoconcentration system interfaced with a Hewlett-Packard 5890 gas chromatograph/flame ionization detector (GC/FID). The EnTech concentrator is used to pull a metered volume of 50 to 100 mL of sample air from the SUMMA™ canister mounted on an EnTech 7016CA 16-canister autosampler. The sample is cryogenically concentrated, and constituents are trapped in a stainless steel tube containing glass beads and Tenax. The glass bead/Tenax trap is heated

(a) Pacific Northwest Laboratory. 12/95. *Determination of TO-12 Total Nonmethane Organic Compounds in Hanford Waste Tank Headspace Samples Using SUMMA™ Passivated Canister Sampling and Flame Ionization Detection*, PNL-TVP-08 (Rev. 1). PNL Technical Procedure, Richland, Washington.

to 180°C and purged with ultra high purity (UHP) helium into the GC/FID. The GC oven is programmed to run at a 150°C isothermal temperature. Chromatographic separation is not needed in this method since quantitation is from the entire FID response over the run time.

Concentration in mg/m³ was derived from the 10-point multilevel calibration curve from the propane standard using the following equation:

$$\text{mg/m}^3 = \frac{(\text{ng TNMOC}) \times (\text{dilution factor})}{\text{mL sampled volume}} \quad (\text{C.1})$$

C.2 Quality Assurance/Quality Control

The TNMOC is calibrated by using propane as the calibration standard. The instrument calibration mixture for the TNMOC analysis consists of NIST 99.999% propane analyzed using a 10-point, multilevel, linear regression curve.

Immediately before running the analysis sequence, a leak-check procedure, which includes evacuating the transfer lines and monitoring the pressure, must be performed on the sample manifold tower. The control limits on this test require that the change in pressure is <1.5 psi, and the absolute pressure after evacuation is <3 psi for each manifold position specified in the sequence table. If either criterion is not met, it must be corrected before the samples are analyzed.

Before the tank samples were analyzed, a diagnostic check was performed on the GC/FID instrument by running a system cleanliness procedure and an instrument continuing calibration as described in PNL-TVP-08. First, two blank volumes of Aadco purified air were analyzed to check the cleanliness of the system. This demonstrates through the analysis of a zero-air blank that the level of interference is acceptable in the analytical system. The analysis of purified air must be below 0.1 mg/m³. Second, an instrument continuing calibration is run using 100-mL UHP propane followed by one blank volume of Aadco air.

C.3 Total Non-Methane Organic Compounds Sample Results

Table C.3 lists results of the TO-12 analyses from samples collected from the headspace of Tank U-112 and ambient air collected near Tank U-112. These samples were collected through the ISVS systems. A total of 27 samples were collected from two risers at three levels within the tank headspace. The samples were analyzed on May 5 and 6, 1997. Sample analysis exceeded the 60 day administrative hold time. A summary of results can be found in Section 2.3.

C.3.1 Procedural Deviations, Observations, and Anomalies

A deviation was made to the current procedure and documented in Vapor Deviation Report JAE082996. In accordance with the current method, past TO-12 analyses used a calibration method based on an average response factor spanning the full dynamic range. Because the low level standards are impacted to some extent by the small amount of system blank present, the average response factor method generates an apparent nonlinearity introducing an unnecessary amount of error that is level dependent. To correct this situation, data included in the August 20, 1996 and all subsequent

calibrations shall use a linear regression fit that included both a slope and intercept. The correlation coefficient for the August 20, 1996 ten point calibration curve was 0.99996, which is an extremely well ordered data set. This deviation is reflected in the description of the procedure and quality assurance/quality control Sections C.1 and C.2.

During Sample Job S6119, the valve body turned while tightening the Swagelok, as indicated on COC WHC 100422 (see Appendix F).

Table C.3 Total Non-Methane Organic Compound Analysis Results from Tank U-112 Sampled on 12/6/96

Riser #3	Sample ID No.	(mg/m ³)			
Upwind Ambient Air	S6118-a24.054	<0.59			
Ambient Air Through ISVS	S6118-a25.074	<0.59			
Tank Top	S6118-t38.155		2.57		
	S6118-t39.206		2.47		
	S6118-t41.214		2.38		
	S6118-t40.210		2.60		
	S6118-t40.201	REP ^(a)	2.46	RPD ^(b)	6
	Mean		2.51		
	St. Dev.		0.1		
Tank Middle	S6118-m26.094		2.58		
	S6118-m46.250		2.57		
	S6118-m47.226		2.51		
	S6118-m27.102		2.29		
	S6118-m27.102	REP ^(a)	2.42	RPD ^(b)	6
	Mean		2.49		
	St. Dev.		0.1		
Tank Bottom	S6118-b30.103		2.37		
	S6118-b31.115		2.45		
	S6118-b32.121		2.39		
	S6118-b33.124		2.5		
	S6118-b33.124	REP ^(a)	2.53	RPD ^(b)	1
	Mean		2.43		
	St. Dev.		0.06		
Riser #6					
Ambient Air Through ISVS	S6119-a25.135	<0.59			
Tank Top	S6119-t38.308		2.79		
	S6119-t39.309		2.82		
	S6119-t41.318		2.99		
	S6119-t40.310		2.59		
	S6119-t40.310	REP ^(a)	2.67	RPD ^(b)	3
	Mean		2.80		
	St. Dev.		0.2		
Tank Middle	S6119-m26.146		2.65		
	S6119-m27.235		2.65		
	S6119-m47.322		2.65		
	S6119-m46.319		2.94		
	S6119-m46.319	REP ^(a)	2.89	RPD ^(b)	2
	Mean		2.72		
	St. Dev.		0.1		
Tank Bottom	S6119-b31.255		2.91		
	S6119-b32.260		2.96		
	S6119-b33.270		2.96		
	S6119-b30.243		2.63		
	S6119-b30.243	REP ^(a)	2.71	RPD ^(b)	3
	Mean		2.87		
	St. Dev.		0.2		

(a) Replicate analysis results are not included in the calculation of average concentrations.

(b) RPD based on replicate analysis results.

Appendix D

Tank Vapor Characterization:

Organic Compounds from SUMMA™ Canisters

Appendix D

Tank Vapor Characterization: Organic Compounds from SUMMA™ Canisters

Table D.1 summarizes the analytes, sampling medium, analytical method, and laboratory procedure for organic analytes collected in SUMMA™ canisters. Table D.2 summarizes information regarding sample media, handling, and storage procedures.

Table D.1. Sampling and Analysis Methods Summary for Organic Analytes from SUMMA™ Canisters

<u>Analyte</u>	<u>Sampling Medium</u>	<u>Extraction Method</u>	<u>Analysis Method</u>	<u>Procedure</u>
Organic Vapors	SUMMA™ canisters	Cryo-focusing of SUMMA™ canister subsample	GC/MS	PNL-TVP-03

Table D.2. Sample Media Preparation, Handling, and Storage for Organic Analytes from SUMMA™ Canisters

<u>Sampling Medium</u>	<u>Supplier and Catalog Number</u>	<u>Preparation Procedure</u>	<u>Handling and Storage Procedure</u>
SUMMA™ canisters	Scientific Instrumentation Specialist	PNL-TVP-02	PNL-TVP-07

D.1 Analytical Procedure

SUMMA™ canister samples were analyzed according to PNNL Technical Procedure PNL-TVP-03^(a), which is a modified version of EPA Task Order 14 (TO-14). The method uses an EnTech 7000 cryoconcentration system interfaced with a 5972 Hewlett-Packard benchtop gas chromatograph/mass spectrometer (GC/MS). The EnTech concentrator is used to pull a metered volume of sample air from the SUMMA™ canister, cryogenically concentrate the condensible organic vapors, then transfer the vapors to the GC/MS for analysis. A 100-mL volume of sample is measured and analyzed from the tank headspace. The organic components in the sampled air are separated on a J&W Scientific DB-1 phase, 60-m by 0.32-mm internal diameter with 3-μm film thickness column. The GC oven is programmed to run a temperature gradient beginning at 40°C, hold for 5 min, and ramp at 4°C per min to a final temperature of 260°C, with a 5-min hold.

(a) Pacific Northwest National Laboratory. 8/96. *Determination of TO-14 Volatile Organic Compounds in Hanford Tank Headspace Samples Using SUMMA™ Passivated Canister Sampling and Gas Chromatographic-Mass Spectrometric Analysis*. PNL-TVP-03 (Rev. 2), PNNL Technical Procedure, Richland, Washington.

The instrument calibration mixture for the PNL-TVP-03 analysis consists of organic analytes listed in Appendix G. These target analytes are quantitated in this analysis. The calibration mixture was prepared by blending a commercially prepared TO-14 calibration mixture with a mixture created using a Kin-Tek® permeation-tube standard generation system. The operation of the permeation-tube system follows the method detailed in PNNL Technical Procedure PNL-TVP-06^(a). The standard calibration mix was analyzed using six different concentrations, and a response factor for each compound was calculated. The GC/MS response for these compounds has been determined previously to be linearly related to concentration. Instrument detection limits (IDLs) and EQLs have been determined.

Quantitative concentrations for the target analytes were calculated using the average response factors generated using the internal standard (IS) method described in procedure PNL-TVP-03. The conversion from ppbv to mg/m³ assumes STP conditions (0°C and 1.013 bar) and was calculated using the gross molecular weight (MW) of the compound from the following equation:

$$\text{concentration in mg/m}^3 = \frac{(\text{concentration in ppbv})(\text{MW})}{(1000)(22.4 \text{ L/mol})} \quad (\text{D.1})$$

The tentatively identified compounds (TICs) are determined by mass-spectral interpretation and comparison of the spectra with the EPA/NIST and WILEY electronic mass spectra libraries. Chromatographic peaks with an area count greater than, or equal to, one-tenth of the total area count of the nearest eluting IS are tentatively identified and their concentrations are estimated. The quality of the mass spectra match was then reviewed by the principal investigators before the identification was assigned to each chromatographic peak.

The concentration of each TIC was estimated using a relative response factor calculated using the total peak area for the nearest eluting IS. The IS peak area was used to calculate a response factor using the IS concentration in mg/m³:

$$\text{Response Factor} = \frac{\text{IS conc. (mg/m}^3\text{)}}{\text{IS peak area}} \quad (\text{D.2})$$

The calculated response factor was then multiplied by the TIC peak area to give an estimated concentration for that compound. All calculated sample concentrations were multiplied by a factor of 2 to account for the dilution step described in Section C.1.

D.2 Quality Assurance/Quality Control

Before the tank sample was analyzed, a diagnostic check was performed on the GC/MS instrument by running an instrument "high-sensitivity tune", as described in PNL-TVP-03. Upon satisfactory completion of the instrument diagnostic check, a blank volume of purified nitrogen was analyzed to check the cleanliness of the system. The instrument was then calibrated using a standard gas mixture containing the organic compounds listed in Appendix G. A gas mixture containing

(a) Pacific Northwest Laboratory. 11/94. *Preparation of TO-14 Volatile Organic Compounds Gas Standards*. PNL-TVP-06 (Rev. 0). PNL Technical Procedure, Richland, Washington.

bromochloromethane, 1,4-difluorobenzene, chlorobenzene- d_5 , and bromofluorobenzene was used as an IS for all blank, calibration standard, and sample analyses. Analyte responses from sample components, ISs, and standards were obtained from the extracted ion plot from their selected mass ion. The calibration was generated by calculating the relative response ratios of the IS to calibration standard responses and plotting the ratios against the ratio of the calibration-standard concentration (in ppbv) to the IS concentration. Once it was determined that the relative response was linear with increasing concentration, an average response factor was calculated for each target analyte and used to determine the concentration of target compounds in each sample. Method blanks were analyzed before and after calibration verification standards.

D.3 SUMMA™ Canister Sample Results

Twenty-seven SUMMA™ canisters were returned to the laboratory on December 18, 1996, under chain-of-custody (COC) numbers 100419 and 100422. These samples consisted of four samples each from six different sampling locations within the tank headspace and three ambient air samples. These samples were analyzed from June 8 through June 17, 1997. Sample analysis exceeded the 60 day hold time. Five SUMMA™ canister samples were analyzed in replicate.

The quantitative results for all detected target compounds and TICs identified in the tank headspace samples from the GC/MS analysis of the tank headspace SUMMA™ samples are presented in Tables D.3 through D.8; means and standard deviations for each compound at each sampling location are calculated. The results of replicate analyses on single SUMMA™ canister samples are presented in Tables D.9 through D.13. The relative percent differences (RPDs) were calculated for analytes detected above the IDL and found in both replicates. The results of the blank sample analyses are presented in Table D.14. Appendix G contains a complete listing of all target analytes measured. A sample chromatogram is shown in Figure D.1.

A review of the SUMMA™ data associated with the sampling of Tank U-112 found contamination associated with the ambient air samples. Fifteen target compounds and six TICs were identified in one or more of the ambient samples. The ambient sample associated with the sampling of Riser 6 was more contaminated than ambient samples associated with the sampling of Riser 3. Total concentrations of compounds in the ambient samples associated with sampling of Riser 3 ranged from 0.121 mg/m³ to 0.196 mg/m³. The total concentration of compounds in the ambient samples associated with sampling of Riser 6 was 1.487 mg/m³. Because of ambient sample contamination associated with the sampling of Tank U-112, selected compounds in SUMMA™ tables have been bolded or assigned an "S" flag (suspect data). Therefore, these compound results should not be used for further data manipulation.

A summary of the mean and standard deviation (mg/m³) for each compound at each sampling location is presented in Table 2.2. This information will be used to determine whether the organic compounds are homogeneously mixed in the tank headspace.

D.3.1 Procedural Deviations, Observations, and Anomalies

During Sample Job S6119, the valve body turned while tightening the Swagelok, as indicated on COC WHC 100422 (see Appendix F).

The SUMMA™ canister samples were analyzed in five batches. The sample analytical sequence runs were as follows:

Batch #1 (file identifier 17060802.b) - S6118-A24.054, S6118-A25.074, S6118-M26.094, S6118-M26.094 REP, S6118-M27.102, S6118-B30.103, S6118-B31.115;

Batch #2 (file identifier 17061002.b) - S6118-B33.124, S6118-T38.155, S6118-T40.210, S6118-T40.120 REP, S6118-T41.214, S6119-T38.308, S6119-M47.322;

Batch #3 (file identifier 17061202.b) - S6119-T39.309, S6119-T40.310, S6119-M46.319, S6119-M46.319 REP;

Batch #4 (file identifier 17061302.b) - S6118-M46.250, S6118-M47.226, S6119-M27.235, S6119-B32.260 REP, S6119-B33.270, S6119-T41.318;

Batch #5 (file identifier 17061702.b) - S6119-A25.135, S6118-T39.206, S6119-B31.255, S6119-B31.255 REP, S6119-M26.146, S6119-B30.243, S6118-B32.121.

Batch #1:

This analytical sequence was run using 100 mL volumes to quantify target compounds in each tank sample.

No target compounds surpassed the 30% relative standard deviation (% RSD) acceptance criteria for initial calibration. No 1,3-butadiene solution was available for the initial calibration and the initial calibration verification (ICV) standard.

Tetradecane surpassed the 0.05 response factor (RF) criteria for the initial calibration. Tetradecane was not found in all tank samples at concentrations above its IDL.

Two target compounds (vinyl chloride - 38.5% and bromomethane - 31.3%) were outside the 25% difference (% D) acceptance criteria for the CCV sample. Tetradecane surpassed 0.05 RF criteria for CCV. However, the CCV passed the procedural criterion requiring $\pm 25\%$ D passage for 85% of all target compounds.

Results of tetradecane determination were mentioned above. Vinyl chloride and bromomethane were not found in all tank samples at concentrations above their IDLs. Due to the CCV performance for these compounds a higher than normal uncertainty is associated with the results.

No target compounds were found in the initial calibration blank (ICB) above their EQLs. Two target compounds (1,2,4-trichlorobenzene and hexachloro-1,3-butadiene) were found in the CCB above their EQLs.

Batch #2:

This analytical sequence was run using 100 mL volumes to quantify target compounds in each tank sample.

No target compounds surpassed the 30% RSD acceptance criteria for initial calibration. No 1,3-butadiene solution was available for the initial calibration and the initial calibration verification (ICV) standard.

Tetradecane surpassed the 0.05 RF criteria for the initial calibration. Tetradecane was not found in the tank samples at concentrations above its IDL.

No target compounds were outside the 25% D acceptance criteria for the CCV sample. Tetradecane surpassed the 0.05 RF criteria for CCV. However, the CCV passed the procedural criterion requiring $\pm 25\%$ D passage for 85% of all target compounds.

Results of tetradecane determination were mentioned above. Due to the CCV performance for this compound, a higher than normal uncertainty is associated with the results. No target compounds were found in the ICB above their EQLs. Target compound 1,2,4-trichlorobenzene was found in the CCB above its EQLs.

Batch #3:

This analytical sequence was run using 100 mL volumes to quantify target compounds in each tank sample.

No target compounds surpassed the 30% RSD acceptance criteria for initial calibration. No 1,3-butadiene solution was available for the initial calibration and the initial calibration verification (ICV) standard.

Tetradecane surpassed the 0.05 RF criteria for the initial calibration. Tetradecane was not found in the tank samples at concentrations above its IDL.

Five target compounds (chloroethane - 55.4%, ethanol - 36.1%, cyclohexane - 28.0%, tridecane - 32%, and tetradecane - 57.0%) were outside the 25% D acceptance criteria for the CCV sample. Tetradecane surpassed the 0.05 RF criteria for CCV. However, the CCV passed the procedural criterion requiring $\pm 25\%$ D passage for 85% of all target compounds.

Results of tetradecane determination were mentioned above. Chloroethane was not found in the tank samples at concentrations above its IDL. Ethanol was found in all tank samples at concentrations between EQL and upper quantitation limit (UQL). Cyclohexane and tridecane were found in all tank samples at concentrations between their IDLs and EQLs, except samples S6119-t39.309, where cyclohexane was not found at concentrations higher than its IDL. Due to the CCV performance for these compounds a higher than normal uncertainty is associated with the results.

No target compounds were found in the ICB above their EQLs. No target compounds were found in the CCB above their EQLs.

Batch #4:

This analytical sequence was run using 100 mL volumes to quantify target compounds in each tank sample.

No target compounds surpassed the 30% RSD acceptance criteria for initial calibration. No 1,3-butadiene solution was available for the initial calibration and the initial calibration verification (ICV) standard.

Tetradecane surpassed the 0.05 RF criteria for the initial calibration. Tetradecane was not found in the tank samples at concentrations above its IDL.

Two target compounds (cyclohexane - 29.7% and decane - 28%) were outside the 25% D acceptance criteria for the CCV sample. Tetradecane surpassed the 0.05 RF criteria for CCV. However, the CCV passed the procedural criterion requiring $\pm 25\%$ D passage for 85% of all target compounds.

Results of tetradecane determination were mentioned above. Cyclohexane and decane were not found in the tank samples at concentrations above their IDLs, except samples S6118-m27.235 REP and S6119-b32.260, where cyclohexane was found at concentrations between its IDL and EQL. Due to the CCV performance for this compound a higher than normal uncertainty is associated with the results.

No target compounds were found in the ICB above its EQLs. Target compounds 1,2,4-trichlorobenzene, bromoform and hexachloro-1,3-butadiene were found in the CCB above its EQLs.

Batch #5:

This analytical sequence was run using 100 mL volumes to quantify target compounds in each tank sample.

No target compounds surpassed the 30% RSD acceptance criteria for initial calibration. No 1,3-butadiene solution was available for the initial calibration and the initial calibration verification (ICV) standard.

Tetradecane surpassed the 0.05 RF criteria for the initial calibration. Tetradecane was not found in the tank samples at concentrations above its IDL, except ambient air sample S6119-a25.135, tank samples S6119-b31.255 and S6119-b31.255 REP, where it was found at concentrations between EQL and UQL.

No target compounds were outside the 25% D acceptance criteria for the CCV sample. Tetradecane surpassed the 0.05 RF criteria for CCV. However, the CCV passed the procedural criterion requiring $\pm 25\%$ D passage for 85% of all target compounds.

Results of tetradecane determination were mentioned above. Due to the CCV performance for this compound a higher than normal uncertainty is associated with the results. No target

compounds were found in the ICB above their EQLs. Target compound 1,2,4-trichlorobenzene was found in the CCB above its EQL.

Information common to all batches:

Methanol, ethanol, 1,3-butadiene, and bromoform currently are not included in the method performance section of the procedure; however, these analytes were analyzed by this method. The low-level standard is used as the EQL for these compounds. Sample results are flagged with a less-than symbol (<) when less than the EQL.

Table D.3 Organic Compound Concentrations in SUMMA™ Canisters from Tank U-112 Riser 3 Top Level Sampled on 12/6/96

Target Analytes ^(a)	CAS	MW	Ret Time	S6118-138.155 ^(c) ISVS			S6118-140.210 ^(c,d) ISVS			S6118-141.214 ^(c) ISVS			S6118-139.206 ^(c) ISVS			Mean and Standard Deviation			
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	St. Dev.	(ppbv)	St. Dev.
Dichlorodifluoromethane	75-71-8	121	4.6	0.004	0.66	J	0.003	0.60	J	0.003	0.61	J	0.003	0.58	J	0.003	0.000	0.61	0.034
Methanol	67-56-1	32	5.3	1.177	823	Y	1.092	763	Y	1.090	762	Y	0.972	679	Y	1.083	0.084	757	59
Butane	106-97-8	58	5.9	0.089	34		0.084	32		0.085	33		0.075	29		0.083	0.006	32	2.3
Ethanol	64-17-5	46	6.9	0.855	416	Y	0.790	385	Y	0.645	314	Y	0.787	383	Y	0.769	0.089	375	43
Acetonitrile	75-05-8	41	7.4	0.004	2.2	U	0.004	2.2	U	0.005	2.8	J	0.004	2.2	U	e	e	e	e
Acetone	67-64-1	58	7.9	0.063	24	B	0.075	29	B	0.098	38		0.074	29	B	0.077	0.015	30	5.7
Trichlorofluoromethane	75-69-4	137	8.3	0.216	35		0.212	35		0.208	34		0.197	32		0.208	0.008	34	1.3
Pentane	109-66-0	72	9.0	0.005	1.6	J	0.005	1.6	J	0.005	1.5	J	0.005	1.6	J	0.005	0.000	1.6	0.062
Methylene Chloride	75-09-2	85	9.7	0.007	1.8	J,B	0.007	1.8	J,B	0.006	1.7	J,B	0.007	1.7	J,B	0.007	0.000	1.7	0.066
1,1,1-Trichloro-2,2,2-trifluoroethane	76-13-1	187	10.2	0.012	1.4	J,S	0.007	0.80	J,S	0.006	0.70	J,S	0.008	0.95	J,S	0.008	0.003	0.96	0.30
Propanol	71-23-8	60	10.9	0.106	39		0.096	36		0.091	34		0.098	36		0.098	0.006	36	2.4
2-Butanone	78-93-3	72	12.5	0.019	5.8	J	0.018	5.6	J	0.019	5.8	J	0.023	7.2	J	0.020	0.002	6.1	0.71
Hexane	110-54-3	86	13.8	0.004	1.1	J	0.004	1.0	J	0.004	0.93	J	0.004	1.1	J	0.004	0.000	1.0	0.071
Tetrahydrofuran	109-99-9	72	14.7	0.024	7.5		0.023	7.0		0.020	6.3		0.021	6.5		0.022	0.002	6.8	0.53
1,1,1-Trichloroethane	71-55-6	133	15.9	0.005	0.88	J	0.005	0.88	J	0.005	0.85	J	0.015	2.5	J	0.008	0.005	1.3	0.80
1-Butanol	71-36-3	74	16.3	0.583	176		0.522	158		0.502	152		0.507	153		0.528	0.037	160	11
Benzene	71-43-2	78	16.8	0.006	1.6	J	0.006	1.6	J	0.005	1.5	J	0.005	1.4	J	0.005	0.000	1.5	0.10
Carbon Tetrachloride	56-23-5	154	17.1	0.006	0.82	J	0.006	0.84	J	0.006	0.82	J	0.005	0.73	J	0.006	0.000	0.80	0.049
Trichloroethene	79-01-6	131	18.8	0.002	0.41	U	0.002	0.41	U	0.002	0.41	U	0.017	2.9	J	e	e	e	e
Toluene	108-88-3	92	22.6	0.156	38		0.150	36		0.139	34		0.142	35		0.147	0.007	36	1.8
Tetrachloroethylene	127-18-4	166	25.2	0.007	0.88	J	0.006	0.81	J	0.006	0.74	J	0.006	0.74	J	0.006	0.000	0.79	0.067
Chlorobenzene	108-90-7	113	26.8	0.003	0.52	U	0.003	0.52	U	0.003	0.52	U	0.007	1.4	J	e	e	e	e
Cyclohexanone	108-94-1	98	28.6	0.006	1.3	U	0.019	4.4	J	0.006	1.3	U	0.006	1.3	U	e	e	e	e
Tridecane	629-50-5	184	46.6	0.006	0.73	U	0.006	0.73	U	0.006	0.73	U	0.014	1.7	J	e	e	e	e
Total Concentration of Target Analytes																3.086			
Tentatively Identified Compounds ^(b)																			
Propane	74-98-6	44	4.5	0.050	25		0.046	24		0.047	24		0.055	28		0.050	0.004	25	2.1
2-Propanol, 2-methyl-	75-65-0	74	9.4	0.042	13		nd	nd		0.034	10		0.041	12		0.039	0.005	12	1.4
Carbon disulfide	75-15-0	76	10.4	nd	nd		nd	nd		0.007	2.0		nd	nd		e	e	e	e
Unknown Alkane			10.6	nd	nd		nd	nd		nd	nd		0.008	f		e	e	e	e
Butanal	123-72-8	72	12.3	0.013	4.1		nd	nd		nd	nd		0.010	3.0		0.011	e	3.5	e
Amylene Hydrate	75-85-4	88	15.2	nd	nd		nd	nd		nd	nd		0.008	2.0		e	e	e	e
1-Cyclopentyl-2,2-dimethyl-1-propanol		156	16.9	nd	nd		nd	nd		nd	nd		0.011	1.5		e	e	e	e
Unknown			18.7	nd	nd		nd	nd		nd	nd		0.006	f		e	e	e	e
1-Butanol, 3-methyl-, nitrate	543-87-3	133	19.3	nd	nd		nd	nd		nd	nd		0.004	0.71		e	e	e	e
1,3-Diazine	289-95-2	80	19.8	nd	nd		nd	nd		nd	nd		0.005	1.3		e	e	e	e
Total Concentration of TICs																0.100			

Data Quality Flags

B Compound found in associated laboratory blank.

J Target compound detected above the IDL but below the EQL.

S Suspect data due to possible sampling error.

U Target compound not detected at or above the IDL.

Y Initial calibration and CCV were performed; however, the analyte was not part of the current operating procedure.

Footnotes

(a) Detected target analytes.

(b) Semi-quantitative estimate calculated using concentration of closest eluting IS.

(c) Sample identification number.

(d) Replicates of this sample are found in Table D.9.

(e) Mean and/or standard deviation are not meaningful for this analyte.

(f) No molecular weight available for calculation.

nd Not detected.

Table D.4 Organic Compound Concentrations in SUMMATM Canisters from Tank U-112 Riser 3 Middle Level Sampled on 12/6/96

Target Analytes ^(a)	CAS	MW	Ret Time	S6118-m26.094 ^(c,d) ISVS			S6118-m27.102 ^(c) ISVS			S6118-m46.250 ^(c) ISVS			S6118-m47.226 ^(c) ISVS			Mean and Standard Deviation			
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	St. Dev.	(ppbv)	St. Dev.
Dichlorodifluoromethane	75-71-8	121	4.6	0.003	0.60	J	0.005	0.97	J	0.004	0.72	J	0.003	0.59	J	0.004	0.001	0.72	0.18
Chloromethane	74-87-3	50	5.0	0.002	1.1	U	0.003	1.4	J	0.002	1.1	U	0.002	1.1	U	e	e	e	e
Methanol	67-56-1	32	5.2	1.017	711	Y	1.044	730	Y	1.204	842	Y	1.189	831	Y	1.113	0.097	778	68
Butane	106-97-8	58	5.9	0.081	31		0.082	32		0.082	31		0.082	32		0.082	0.001	32	0.26
Ethanol	64-17-5	46	6.8	0.741	361	Y	0.737	359	Y	0.935	455	Y	0.922	449	Y	0.834	0.109	406	53
Acetonitrile	75-05-8	41	7.3	0.019	10	J	0.014	7.7	J	0.004	2.2	J	0.030	16	J	0.017	0.011	9.1	5.8
Acetone	67-64-1	58	7.9	0.080	31	B	0.083	32	B	0.070	27	B	0.133	51		0.092	0.028	35	11
Trichlorofluoromethane	75-69-4	137	8.3	0.202	33		0.207	34		0.224	36		0.218	36		0.213	0.010	35	1.6
Pentane	109-66-0	72	9.0	0.005	1.6	J	0.006	1.9	J	0.006	2.0	J	0.006	1.8	J	0.006	0.001	1.8	0.18
Methylene Chloride	75-09-2	85	9.7	0.006	1.5	J,B	0.007	1.7	J,B	0.008	2.0	J,B	0.007	1.9	J,B	0.007	0.001	1.8	0.23
1,1,2-trichloro-2,2,2-trifluoroethane	76-13-1	187	10.2	0.018	2.2	J,S	0.016	2.0	J,S	0.008	0.92	J,S	0.009	1.1	J,S	0.013	0.005	1.5	0.63
Propanol	71-23-8	60	10.9	0.095	36		0.092	34		0.118	44		0.107	40		0.103	0.012	38	4.4
2-Butanone	78-93-3	72	12.5	0.019	5.8	J	0.019	5.8	J	0.020	6.1	J	0.038	12		0.024	0.010	7.4	3.0
Hexane	110-54-3	86	13.7	0.004	1.0	J	0.006	1.4	J	0.004	1.1	J	0.004	1.1	J	0.004	0.001	1.2	0.19
Chloroform	67-66-3	119	13.9	0.003	0.49	U	0.003	0.51	J,B	0.003	0.49	U	0.003	0.49	U	e	e	e	e
Tetrahydrofuran	109-99-9	72	14.6	0.022	6.8		0.022	6.9		0.027	8.4		0.025	7.7		0.024	0.002	7.5	0.74
1,1,1-Trichloroethane	71-55-6	133	15.8	0.005	0.88	J	0.006	1.1	J	0.005	0.87	J	0.005	0.86	J	0.005	0.001	0.92	0.10
1-Butanol	71-36-3	74	16.3	0.520	157		0.493	149		0.602	182		0.556	168		0.542	0.047	164	14
Benzene	71-43-2	78	16.7	0.005	1.6	J	0.006	1.7	J	0.006	1.7	J	0.006	1.7	J	0.006	0.000	1.7	0.083
Carbon Tetrachloride	56-23-5	154	17.0	0.005	0.79	J	0.007	1.0	J	0.006	0.80	J	0.006	0.79	J	0.006	0.001	0.86	0.12
Pyridine	110-86-1	79	20.6	0.019	5.3	U	0.019	5.3	U	0.032	8.9	J	0.019	5.3	U	e	e	e	e
Toluene	108-88-3	92	22.6	0.137	33		0.138	34		0.160	39		0.154	37		0.147	0.012	36	2.8
Tetrachloroethylene	127-18-4	166	25.2	0.004	0.57	U	0.007	0.95	J	0.007	0.95	J	0.007	0.89	J	0.007	0.000	0.93	0.035
Hexanenitrile	628-73-9	97	27.0	0.005	1.2	U	0.005	1.2	U	0.006	1.3	J,B	0.005	1.2	U	e	e	e	e
Cyclohexanone	108-94-1	98	28.5	0.022	4.9	J	0.006	1.3	U	0.006	1.3	U	0.007	1.7	J	0.014	e	3.3	e
1,2,4-Trichlorobenzene	120-82-1	181	42.3	0.003	0.35	U	0.003	0.35	U	0.013	1.6	J,B	0.003	0.35	U	e	e	e	e
Hexachloro-1,3-butadiene	87-68-3	261	44.1	0.005	0.40	U	0.005	0.40	U	0.013	1.1	J,B	0.005	0.40	U	e	e	e	e
Tridecane	629-50-5	184	46.5	0.008	0.91	J	0.006	0.73	U	0.007	0.78	J,B	0.006	0.73	U	0.007	e	0.85	e
Total Concentration of Target Analytes																3.269			

Tentatively

Identified Compounds^(b)

Propane	74-98-6	44	4.5	0.065	33		0.064	32		0.061	31		0.044	23		0.059	0.010	30	4.9
Propanal	123-38-6	58	8.0	nd	nd		0.018	6.9		nd	nd		0.019	7.5		0.019	e	7.2	e
Unknown			8.0	nd	nd		nd	nd		0.012	f		nd	nd		e	e	e	e
2-Propanol, 2-methyl-	75-65-0	74	9.4	0.041	12		0.040	12		0.040	12		0.040	12		0.040	0.001	12	0.20
Unknown			9.6	nd	nd		0.010	f		nd	nd		nd	nd		e	e	e	e
Methane, fluorotrinitro-	1840-42-2	169	9.6	nd	nd		nd	nd		0.009	1.2		nd	nd		e	e	e	e
Carbon disulfide	75-15-0	76	10.4	0.008	2.3		nd	nd		nd	nd		nd	nd		e	e	e	e
Unknown			10.5	0.006	f		0.007	f		nd	nd		nd	nd		0.007	e	e	e
Silanol, trimethyl-	1066-40-6	90	11.5	0.007	1.6		nd	nd		nd	nd		nd	nd		e	e	e	e
Unknown			12.3	0.014	f		nd	nd		nd	nd		nd	nd		e	e	e	e
Butanal	123-72-8	72	12.3	nd	nd		nd	nd		0.008	2.4		nd	nd		e	e	e	e
2-Butanol	78-92-2	74	13.0	nd	nd		nd	nd		0.043	13		nd	nd		e	e	e	e
Amylene Hydrate	75-85-4	88	15.2	nd	nd		0.007	1.7		0.007	1.9		nd	nd		0.007	e	1.8	e
1-Cyclopentyl-2,2-dimethyl-1-propanol		156	16.9	0.014	1.9		0.012	1.7		0.010	1.5		0.010	1.4		0.011	0.002	1.6	0.22
Pyrazine	290-37-9	80	19.8	nd	nd		nd	nd		0.007	1.9		nd	nd		e	e	e	e
Propane, 2-methyl-2-nitro-	594-70-7	103	20.3	nd	nd		nd	nd		0.006	1.2		nd	nd		e	e	e	e

Table D.4 (Cont'd) Organic Compound Concentrations in SUMMATM Canisters from Tank U-112 Riser 3 Middle Level Sampled on 12/6/96

Tentatively Identified Compounds ^(a)	CAS	MW	Time	S6118-m26.094 ^{(c)(Kd)} ISVS			S6118-m27.102 ^(c) ISVS			S6118-m46.250 ^(c) ISVS			S6118-m47.226 ^(c) ISVS			Mean and Standard Deviation		
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	St Dev (ppbv)	St Dev
Unknown			24.7	nd	nd		nd	nd		0.003	f		nd	nd		e	e	e
Cyclotrisiloxane, hexamethyl-	541-05-9	222	25.5	0.473	48		nd	nd		0.008	f		nd	nd		0.240	e	24
Unknown			38.8	nd	nd		nd	nd		0.005	f		nd	nd		e	e	e
Unknown Alkane			42.8	nd	nd		nd	nd		0.004	f		nd	nd		e	e	e
Total Concentration of TICs																0.382		

Data Quality Flags

B Compound found in associated laboratory blank

J Target compound detected above the IDL but below the EGL

S Suspect data due to possible sampling error

U Target compound not detected at or above the IDL

Y Initial calibration and CCV were performed, however, the analyte was not part of the current operating procedure

Footnotes

(a) Detected target analytes

(b) Semi-quantitative estimate calculated using concentration of closest eluting IS

(c) Sample identification number

(d) Replicates of this sample are found in Table D.10

(e) Mean and/or standard deviation are not meaningful for this analyte

(f) No molecular weight available for calculation

nd Not detected

Table D.5 Organic Compound Concentrations in SUMMA™ Canisters from Tank U-112 Riser 3 Bottom Level Sampled on 12/6/96

Target Analytes ^(a)	CAS	MW	Ret Time	S6118-b30.103 ^(c) ISVS			S6118-b31.115 ^(c) ISVS			S6118-b33.124 ^(c) ISVS			S6118-b32.121 ^(c) ISVS			Mean and Standard Deviation			
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	St. Dev.	(ppbv)	St. Dev.
Dichlorodifluoromethane	75-71-8	121	4.6	0.007	1.2	J	0.008	1.4	J	0.004	0.73	J	0.004	0.65	J	0.005	0.002	1.0	0.39
Chloromethane	74-87-3	50	5.0	0.004	1.6	J	0.004	1.8	J	0.002	1.1	U	0.002	1.1	U	0.004	d	1.7	d
Methanol	67-56-1	32	5.2	1.042	728	Y	1.107	774	Y	1.151	805	Y	1.169	817	Y	1.117	0.057	781	40
Butane	106-97-8	58	5.9	0.082	32		0.086	33		0.078	30		0.090	35		0.084	0.005	32	2.1
Ethanol	64-17-5	46	6.8	0.761	370	Y	0.807	393	Y	0.815	397	Y	0.918	447	Y	0.825	0.066	402	32
Acetonitrile	75-05-8	41	7.3	0.013	7.2	J	0.020	11	J	0.022	12	J	0.017	9.2	J	0.018	0.004	9.9	2.2
Acetone	67-64-1	58	7.9	0.084	32	B	0.099	38	B	0.110	43		0.097	37		0.098	0.011	38	4.1
Trichlorofluoromethane	75-69-4	137	8.3	0.210	34		0.219	36		0.206	34		0.218	35		0.213	0.006	35	1.0
Pentane	109-66-0	72	9.0	0.007	2.2	J	0.008	2.5	J	0.006	1.8	J	0.006	1.7	J	0.007	0.001	2.0	0.37
Methylene Chloride	75-09-2	85	9.7	0.007	1.9	J.B	0.007	1.9	J.B	0.008	2.0	J.B	0.006	1.5	J.B	0.007	0.001	1.8	0.20
112trichloro122trifluoroethane	76-13-1	187	10.2	0.020	2.4	J.S	0.019	2.3	J.S	0.018	2.2	J.S	0.013	1.6	J.S	0.018	0.003	2.1	0.37
Propanol	71-23-8	60	10.9	0.098	36		0.103	38		0.110	41		0.104	39		0.104	0.005	39	2.0
2-Butanone	78-93-3	72	12.5	0.022	6.8	J	0.021	6.5	J	0.024	7.5	J	0.018	5.5	J	0.021	0.003	6.6	0.82
Hexane	110-54-3	86	13.7	0.007	1.9	J	0.008	2.2	J	0.004	1.0	J	0.004	1.0	J	0.006	0.002	1.5	0.58
Chloroform	67-66-3	119	13.9	0.003	0.62	J.B	0.003	0.49	U	0.003	0.49	U	0.003	0.49	U	d	d	d	d
Tetrahydrofuran	109-99-9	72	14.6	0.022	6.9		0.022	6.9		0.026	8.0		0.018	5.5		0.022	0.003	6.8	1.00
1,1,1-Trichloroethane	71-55-6	133	15.8	0.008	1.3	J	0.008	1.4	J	0.005	0.85	J	0.005	0.81	J	0.006	0.002	1.1	0.30
Butanenitrile	109-74-0	69	15.8	0.003	1.1	U	0.004	1.3	J	0.003	1.1	U	0.003	1.1	U	d	d	d	d
1-Butanol	71-36-3	74	16.3	0.550	166		0.593	179		0.554	167		0.562	170		0.565	0.019	171	5.9
Benzene	71-43-2	78	16.7	0.007	1.9	J	0.007	2.0	J	0.006	1.6	J	0.005	1.4	J	0.006	0.001	1.7	0.27
Carbon Tetrachloride	56-23-5	154	17.0	0.009	1.2	J	0.010	1.4	J	0.005	0.79	J	0.003	0.50	U	0.008	0.002	1.1	0.31
Heptane	142-82-5	100	19.3	0.005	1.1	J	0.005	1.0	J	0.002	0.40	U	0.002	0.40	U	0.005	d	1.1	d
Pyridine	110-86-1	79	20.6	0.019	5.3	U	0.019	5.3	U	0.022	6.1	J	0.019	5.3	U	d	d	d	d
Toluene	108-88-3	92	22.6	0.144	35		0.144	35		0.149	36		0.140	34		0.144	0.004	35	0.95
Tetrachloroethylene	127-18-4	166	25.2	0.008	1.1	J	0.009	1.1	J	0.006	0.86	J	0.005	0.66	J	0.007	0.002	0.93	0.22
Hexanenitrile	628-73-9	97	27.0	0.005	1.2	J.B	0.005	1.2	U	0.005	1.2	U	0.005	1.2	U	d	d	d	d
Cyclohexanone	108-94-1	98	28.5	0.026	5.9	J	0.006	1.3	U	0.017	4.0	J	0.006	1.3	U	0.022	d	5.0	d
Decane	124-18-5	142	34.4	0.006	0.93	J.B	0.006	0.96	J.B	0.003	0.47	U	0.003	0.47	U	0.006	d	0.95	d
1,2,4-Trichlorobenzene	120-82-1	181	42.3	0.003	0.35	U	0.003	0.35	U	0.013	1.6	J.B	0.003	0.35	U	d	d	d	d
Hexachloro-1,3-butadiene	87-68-3	261	44.1	0.005	0.40	U	0.005	0.40	U	0.015	1.3	J.B	0.005	0.40	U	d	d	d	d
Tridecane	629-50-5	184	46.5	0.006	0.73	U	0.006	0.73	U	0.006	0.74	J	0.006	0.73	U	d	d	d	d
Total Concentration of Target Analytes																3.317			
Tentatively Identified Compounds ^(b)																			
Propane	74-98-6	44	4.5	0.067	34		0.068	34		0.058	29		0.048	24		0.060	0.009	30	4.7
Propanal	123-38-6	58	8.0	0.022	8.3		0.018	6.8		nd	nd		nd	nd		0.020	d	7.6	d
2-Propanol, 2-methyl-	75-65-0	74	9.4	0.043	13		0.046	14		nd	nd		0.041	12		0.043	0.002	13	0.69
Unknown			9.6	0.009	e		0.010	e		nd	nd		0.009	e		0.009	0.000	d	d
Carbon disulfide	75-15-0	76	10.4	0.006	1.9		nd	nd		0.005	1.5		nd	nd		0.006	d	1.7	d
Unknown			10.6	nd	nd		0.007	e		nd	nd		nd	nd		d	d	d	d
Unknown Alkane			10.6	0.007	e		nd	nd		nd	nd		nd	nd		d	d	d	d
Butanal	123-72-8	72	12.3	0.016	4.9		0.016	5.0		0.015	4.7		nd	nd		0.016	0.000	4.9	0.12
2-Butanol	78-92-2	74	13.0	nd	nd		nd	nd		0.041	12		nd	nd		d	d	d	d

Table D.5 (Cont'd) Organic Compound Concentrations in SUMMA™ Canisters from Tank U-112 Riser 3 Bottom Level Sampled on 12/6/96

Tentatively Identified Compounds ^(b)	CAS	MW	Ret Time	S6118-b30.103 ^(c) ISVS			S6118-b31.115 ^(c) ISVS			S6118-b33.124 ^(c) ISVS			S6118-b32.121 ^(c) ISVS			Mean and Standard Deviation			
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	St. Dev.	(ppbv)	St. Dev.
Amylene Hydrate	75-85-4	88	15.2	0.006	1.6		0.008	2.0		nd	nd		nd	nd		0.007	d	1.8	d
Acetic acid ethenyl ester	108-05-4	86	16.0	0.003	0.89		nd	nd		nd	nd		nd	nd		d	d	d	d
1-Cyclopentyl-2,2-dimethyl-1-propanol		156	16.9	0.012	1.7		0.013	1.9		0.013	1.8		nd	nd		0.013	0.000	1.8	0.066
1,4-Dioxane	123-91-1	88	18.7	0.010	2.6		nd	nd		nd	nd		nd	nd		d	d	d	d
Unknown			18.7	nd	nd		0.012	e		nd	nd		nd	nd		d	d	d	d
Pyrazine	290-37-9	80	19.8	0.007	2.1		0.006	1.8		nd	nd		nd	nd		0.007	d	1.9	d
Propane, 2-methyl-1-nitro-	625-74-1	103	20.3	0.009	1.9		nd	nd		nd	nd		nd	nd		d	d	d	d
Unknown			20.3	nd	nd		0.008	e		nd	nd		nd	nd		d	d	d	d
2,4-Pentadienenitrile	1615-70-9	79	20.7	0.003	0.96		nd	nd		nd	nd		nd	nd		d	d	d	d
Unknown			24.7	0.005	e		0.006	e		nd	nd		nd	nd		0.005	d	d	d
Pyridine, 4-methyl-	108-89-4	93	24.7	nd	nd		nd	nd		0.005	1.2		nd	nd		d	d	d	d
Cyclotrisiloxane, hexamethyl-	541-05-9	222	25.5	0.006	0.58		0.036	3.6		0.010	0.99		nd	nd		0.017	0.016	1.7	1.7
Unknown Alkene/Cycloalkane			33.3	0.008	e		0.007	e		nd	nd		nd	nd		0.007	d	d	d
Unknown			35.6	0.008	e		nd	nd		nd	nd		nd	nd		d	d	d	d
Unknown			37.2	0.006	e		nd	nd		nd	nd		nd	nd		d	d	d	d
Unknown			38.8	0.006	e		0.005	e		0.006	e		nd	nd		0.006	0.000	d	d
Unknown Alkane			42.8	nd	nd		nd	nd		0.006	e		nd	nd		d	d	d	d
Total Concentration of TICs																0.215			

Data Quality Flags

B Compound found in associated laboratory blank.

J Target compound detected above the IDL but below the EQL.

S Suspect data due to possible sampling error.

U Target compound not detected at or above the IDL.

Y Initial calibration and CCV were performed; however, the analyte was not part of the current operating procedure.

Footnotes

(a) Detected target analytes.

(b) Semi-quantitative estimate calculated using concentration of closest eluting IS.

(c) Sample identification number.

(d) Mean and/or standard deviation are not meaningful for this analyte.

(e) No molecular weight available for calculation.

nd Not detected.

Table D.6 Organic Compound Concentrations in SUMMATM Canisters from Tank U-112 Riser 6 Top Level Sampled on 12/6/96

Target Analytes ^(a)		CAS	MW	Ret	S6119-138 308 ^(c) ISVS		S6119-139 309 ^(c) ISVS		S6119-140 310 ^(c) ISVS		S6119-141 318 ^(c) ISVS		Mean and Standard Deviation	
			Time		(mg/m ³)	Flag	(mg/m ³)	Flag	(mg/m ³)	Flag	(mg/m ³)	Flag	(mg/m ³)	St Dev. (ppbv)
Dichlorodifluoromethane		75-71-8	121	4.6	0.003	0.63 J	0.003	0.52 U	0.003	0.59 J	0.003	0.56 J	0.003	0.000
Methanol		67-56-1	32	5.3	1.157	809 Y	1.322	924 Y	1.244	870 Y	1.418	991 Y	1.285	0.111
Butane		106-97-8	58	5.9	0.091	35	0.082	32	0.080	31	0.077	30	0.083	0.006
Ethanol		64-17-5	46	6.9	0.794	386 Y	1.307	636 Y	1.203	585 Y	1.091	531 Y	1.098	0.222
Acetonitrile		75-05-8	41	7.4	0.010	5.7 J	0.013	6.9 J	0.011	6.2 J	0.021	12 J	0.014	0.005
Acetone		67-64-1	58	7.9	0.083	32	0.089	34	0.088	34	0.109	42	0.092	0.012
Trichlorofluoromethane		75-69-4	137	8.3	0.211	34	0.224	36	0.212	35	0.207	34	0.214	0.007
Pentane		109-66-0	72	9.0	0.005	1.5 J	0.006	1.8 J	0.005	1.6 J	0.005	1.6 J	0.005	0.001
Methylene Chloride		75-09-2	85	9.7	0.007	1.8 J,B	0.007	1.9 J,B	0.007	1.8 J,B	0.007	1.8 J,B	0.007	0.000
1,1,1-Trichloroethane		76-13-1	187	10.2	0.010	1.2 J,S	0.008	0.98 J,S	0.007	0.82 J,S	0.006	0.72 J,S	0.008	0.002
Propanol		71-23-8	60	10.9	0.094	35	0.124	46	0.105	39	0.110	41	0.108	0.013
2-Butanone		78-93-3	72	12.5	0.020	6.3 J	0.024	7.3 J	0.024	7.4 J	0.025	7.6 J	0.023	0.002
Hexane		110-54-3	86	13.8	0.004	1.1 J	0.005	1.2 J	0.005	1.3 J	0.004	1.1 J	0.005	0.000
Tetrahydrofuran		109-99-9	72	14.7	0.021	6.5	0.026	8.2	0.024	7.5	0.019	5.9	0.023	0.003
1,1,1-Trichloroethane		71-55-6	133	15.9	0.005	0.82 J	0.005	0.91 J	0.005	0.86 J	0.005	0.84 J	0.005	0.000
1-Butanol		71-36-3	74	16.3	0.529	160	0.696	210	0.550	166	0.588	178	0.591	0.074
Benzene		71-43-2	78	16.8	0.005	1.5 J	0.006	1.8 J	0.006	1.6 J	0.005	1.4 J	0.006	0.000
Carbon Tetrachloride		56-23-5	154	17.1	0.006	0.83 J	0.005	0.79 J	0.006	0.81 J	0.006	0.80 J	0.006	0.000
Heptane		142-82-5	100	19.3	0.007	1.4 J	0.007	1.6 J	0.006	1.4 J	0.004	0.97 J	0.006	0.000
Pyridine		110-86-1	79	20.6	0.019	5.3 U	0.029	8.2 J	0.019	5.3 U	0.019	5.3 U	0.019	0.006
Toluene		108-88-3	92	22.6	0.151	37	0.164	40	0.155	38	0.141	34	0.153	0.009
Tetrachloroethylene		127-18-4	166	25.2	0.006	0.80 J	0.007	0.94 J	0.006	0.87 J	0.006	0.76 J	0.006	0.001
Dodecane		112-40-3	170	42.8	0.010	1.3 U	0.011	1.5 J	0.010	1.3 U	0.010	1.3 U	0.010	0.006
1,3-Hexadiene		87-68-3	261	44.2	0.005	0.40 U	0.012	0.99 J,B	0.005	0.40 U	0.005	0.40 U	0.005	0.000
Tridecane		629-50-5	184	46.6	0.062	7.5 S	0.054	6.6 J,S	0.039	4.7 J,S	0.015	1.8 J,S,B	0.042	0.021
Total Concentration of Target Analytes														
3.782														
Identified Compounds ^(b)														
Propane		74-98-6	44	4.5	0.053	27 S	0.063	32 S	0.050	25 S	nd	nd	0.055	0.007
Propanal		123-38-6	58	8.0	nd	nd	0.019	7.3	nd	nd	0.022	8.6	0.021	7.9
Unknown				8.0	nd	nd	nd	nd	0.018	f	nd	nd	d	d
2-Propanol, 2-methyl-		75-65-0	74	9.5	0.035	11 S	0.040	12 S	0.036	11 S	0.041	13 S	0.038	0.003
Unknown				9.6	nd	nd	0.008	e	0.009	e	nd	nd	0.008	d
Methane, nitro-		75-52-5	61	10.3	nd	nd	0.012	4.3	nd	nd	0.010	3.5	0.011	3.9
Carbon disulfide		75-15-0	76	10.4	nd	nd	0.008	nd	nd	nd	0.009	2.6	d	d
Unknown Alkane				10.6	nd	nd	nd	e	0.008	e	nd	nd	d	d
Butanal		123-72-8	72	12.3	0.012	3.9	0.016	4.9	0.014	4.2	nd	nd	0.014	0.002
2-Butanol		78-92-2	74	13.0	nd	nd	0.048	15	nd	nd	nd	nd	d	d
Unknown				14.4	nd	nd	nd	nd	0.007	e	nd	nd	d	d
Amylene Hydrate		75-85-4	88	15.2	nd	nd	nd	nd	0.006	1.6	nd	nd	d	d
1-Cyclopentyl-2,2-dimethyl-1-propanol			156	16.9	nd	nd	0.013	1.9	0.012	1.8	0.011	1.6	0.012	0.001
Unknown				18.0	0.019	f	nd	nd	nd	nd	nd	d	d	d
1,4-Dioxane		123-91-1	88	18.7	nd	nd	0.011	2.7	0.009	2.2	0.010	2.6	0.010	0.001
1,3,6-Trioxocane		1779-19-7	118	18.7	0.009	1.7	nd	nd	nd	nd	nd	nd	d	d
1-Heptene		592-76-7	98	18.8	nd	nd	nd	nd	0.004	0.84	nd	nd	d	d
Cyclopentane, 1,2-dimethyl-, trans-		822-50-4	98	18.9	nd	nd	0.003	0.72	nd	nd	nd	nd	d	d

Table D.6 (Cont'd) Organic Compound Concentrations in SUMMATM Canisters from Tank U-112 Riser 6 Top Level Sampled on 12/6/96

Tentatively Identified Compounds ^(b)	CAS	MW	Ret Time	S6119-138.308 ^(c) ISVS			S6119-139.309 ^(c) ISVS			S6119-140.310 ^(c) ISVS			S6119-141.318 ^(c) ISVS			Mean and Standard Deviation			
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	St. Dev.	(ppbv)	St. Dev.
Unknown			18.9	0.003	f		nd	nd		nd	nd		0.005	e		0.004	d	d	d
Pyrazine	290-37-9	80	19.8	0.005	1.3		0.007	1.9		0.005	1.3		nd	nd		0.005	0.001	1.5	0.32
1,3-Diazine	289-95-2	80	19.8	nd	nd		nd	nd		nd	nd		0.006	1.7		d	d	d	d
2-Propyn-1-ol, propionate	1932-92-9	112	20.3	nd	nd		0.006	1.2		nd	nd		nd	nd		d	d	d	d
Propane, 2-methyl-2-nitro-	594-70-7	103	20.3	nd	nd		nd	nd		0.007	1.4		nd	nd		d	d	d	d
Butane, 2-nitro-	600-24-8	103	20.4	nd	nd		nd	nd		nd	nd		0.005	1.2		d	d	d	d
Cyclohexane, methyl-	108-87-2	98	20.8	nd	nd		0.021	4.7		0.020	4.6		0.012	2.7		0.018	0.005	4.0	1.1
Hexane, 3-methyl-	589-34-4	100	37.5	nd	nd		0.005	1.0		nd	nd		nd	nd		d	d	d	d
Furan, 2,5-dihydro-	1708-29-8	70	38.8	nd	nd		0.005	1.7		nd	nd		nd	nd		d	d	d	d
Total Concentration of TICs																0.196			

Data Quality Flags

B Compound found in associated laboratory blank

J Target compound detected above the IDL but below the EQL

S Suspect data due to possible sampling error

U Target compound not detected at or above the iDL

Y Initial calibration and CCV were performed; however, the analyte was not part of the current operating procedure.

Footnotes

(a) Detected target analytes

(b) Semi-quantitative estimate calculated using concentration of closest eluting IS

(c) Sample identification number.

(d) Mean and/or standard deviation are not meaningful for this analyte.

(e) No molecular weight available for calculation

nd Not detected.

Table D.7 Organic Compound Concentrations in SUMMATM Canisters from Tank U-112 Riser 6 Middle Level Sampled on 12/6/96

Target Analytes ^(a)	CAS	MW	Ret Time	S6119-m47.322 ^(c) ISVS			S6119-m46.319 ^(c,d) ISVS			S6119-m27.235 ^(c,d) ISVS			S6119-m26.146 ^(c) ISVS			Mean and Standard Deviation			
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	St. Dev	(ppbv)	St. Dev.
Dichlorodifluoromethane	75-71-8	121	4.6	0.003	0.61	J	0.004	0.68	J	0.003	0.60	J	0.003	0.60	J	0.003	0.000	0.62	0.039
Methanol	67-56-1	32	5.3	1.154	807	Y	1.426	997	Y	1.117	781	Y	1.098	767	Y	1.199	0.153	838	107
Butane	106-97-8	58	5.9	0.084	33		0.092	35		0.081	31		0.080	31		0.084	0.005	32	2.0
Ethanol	64-17-5	46	6.9	0.562	274	Y	1.406	684	Y	0.918	447	Y	0.855	416	Y	0.935	0.350	455	170
Acetonitrile	75-05-8	41	7.4	0.012	6.4	J	0.018	10.0	J	0.008	4.1	J	0.008	4.6	J	0.011	0.005	6.3	2.7
Acetone	67-64-1	58	7.9	0.074	29	B	0.115	45		0.078	30	B	0.074	29	B	0.085	0.020	33	7.8
Trichlorofluoromethane	75-69-4	137	8.3	0.203	33		0.224	37		0.224	36		0.208	34		0.215	0.011	35	1.7
Pentane	109-66-0	72	9.0	0.005	1.5	J	0.006	1.8	J	0.006	1.8	J	0.006	1.8	J	0.006	0.001	1.7	0.16
Methylene Chloride	75-09-2	85	9.7	0.006	1.6	J,B	0.007	1.9	J,B	0.007	1.9	J,B	0.006	1.6	J,B	0.007	0.001	1.7	0.14
112trichloro122trifluoroethane	76-13-1	187	10.2	0.006	0.74	J,S	0.007	0.83	J,S	0.016	1.9	J,S	0.015	1.8	J,S	0.011	0.005	1.3	0.63
Propanol	71-23-8	60	10.9	0.089	33		0.123	46		0.101	38		0.100	37		0.103	0.015	39	5.4
2-Butanone	78-93-3	72	12.5	0.020	6.1	J	0.027	8.5	J	0.018	5.5	J	0.017	5.2	J	0.020	0.005	6.3	1.5
Hexane	110-54-3	86	13.8	0.004	1.0	J	0.005	1.3	J	0.005	1.2	J	0.005	1.2	J	0.005	0.000	1.2	0.10
Tetrahydrofuran	109-99-9	72	14.7	0.019	5.9		0.024	7.5		0.023	7.1		0.021	6.4		0.022	0.002	6.7	0.70
1,1,1-Trichloroethane	71-55-6	133	15.9	0.005	0.83	J	0.006	0.93	J	0.005	0.89	J	0.005	0.78	J	0.005	0.000	0.86	0.066
1-Butanol	71-36-3	74	16.3	0.525	159		0.643	194		0.552	167		0.509	154		0.557	0.060	168	18
Benzene	71-43-2	78	16.8	0.005	1.4	J	0.006	1.7	J	0.006	1.7	J	0.005	1.4	J	0.005	0.001	1.6	0.15
Carbon Tetrachloride	56-23-5	154	17.1	0.005	0.75	J	0.006	0.84	J	0.006	0.85	J	0.005	0.73	J	0.005	0.000	0.79	0.061
Heptane	142-82-5	100	19.3	0.005	1.1	J	0.008	1.9	J	0.005	1.1	J	0.006	1.3	J	0.006	0.002	1.4	0.37
Toluene	108-88-3	92	22.6	0.147	36		0.160	39		0.152	37		0.146	36		0.151	0.006	37	1.5
Tetrachloroethylene	127-18-4	166	25.2	0.006	0.74	J	0.006	0.82	J	0.007	0.88	J	0.006	0.75	J	0.006	0.000	0.80	0.066
Dodecane	112-40-3	170	42.8	0.010	1.3	U	0.010	1.3	U	0.010	1.3	U	0.013	1.7	J	e	e	e	e
Tridecane	629-50-5	184	46.6	0.025	3.0	J,S	0.036	4.3	J,S	0.081	9.8	S,B	0.221	27	S	0.091	0.091	11	11
Total Concentration of Target Analytes																3.533			

Tentatively

Identified Compounds^(b)

Propane	74-98-6	44	4.5	0.047	24	S	0.054	27	S	0.049	25	S	0.036	19	S	0.047	0.007	24	3.7
Propanal	123-38-6	58	8.0	0.018	6.8		0.025	9.7		0.015	5.8		nd	nd		0.019	0.005	7.5	2.0
2-Propanol, 2-methyl-	75-65-0	74	9.4	0.037	11	S	0.040	12	S	0.037	11	S	0.037	11	S	0.038	0.002	11	0.50
Unknown			9.6	nd	nd		nd	nd		nd	nd		0.008	f		e	e	e	e
Methane, nitro-	75-52-5	61	10.3	0.009	3.4		0.007	2.6		nd	nd		nd	nd		0.008	e	e	e
Carbon disulfide	75-15-0	76	10.4	0.006	1.7		0.014	4.1		0.014	4.1		nd	nd		0.011	0.005	3.3	1.4
Unknown			10.6	0.006	f		nd	nd		nd	nd		nd	nd		e	e	e	e
Butanal	123-72-8	72	12.3	nd	nd		nd	nd		0.024	7.3		0.014	4.5		0.019	e	e	e
1-Propanol, 2,2-dimethyl-	75-84-3	88	16.9	0.011	2.8		0.014	3.5		nd	nd		0.013	3.3		0.013	0.001	3.2	0.37
Hexane, 3-methyl-	589-34-4	100	18.0	nd	nd		0.027	6.1		nd	nd		nd	nd		e	e	e	e
Unknown			18.6	nd	nd		0.004	f		nd	nd		nd	nd		e	e	e	e
Unknown			18.7	nd	nd		nd	nd		nd	nd		0.004	f		e	e	e	e
1,4-Dioxane	123-91-1	88	18.7	nd	nd		0.013	3.4		0.017	4.4		nd	nd		0.015	e	e	e
1,3,6-Trioxocane	1779-19-7	118	18.7	0.008	1.6		nd	nd		nd	nd		nd	nd		e	e	e	e
1-Heptene	592-76-7	98	18.8	nd	nd		0.009	2.1		nd	nd		nd	nd		e	e	e	e
Unknown			18.9	0.004	f		nd	nd		nd	nd		nd	nd		e	e	e	e
Pyrazine	290-37-9	80	19.8	0.005	1.4		0.007	1.9		0.005	1.3		0.006	1.7		0.006	0.001	1.6	0.28

Table D.7 (Cont'd) Organic Compound Concentrations in SUMMA™ Canisters from Tank U-112 Riser 6 Middle Level Sampled on 12/6/96

Tentatively Identified Compounds ^(b)	CAS	MW	Ret Time	S6119-m47.322 ^(c) ISVS			S6119-m46.319 ^{(c)(d)} ISVS			S6119-m27.235 ^{(c)(d)} ISVS			S6119-m26.146 ^(c) ISVS			Mean and Standard Deviation			
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	St. Dev.	(ppbv)	St. Dev.
Unknown			20.3	nd	nd		nd	nd		nd	nd		0.004	f		e	e	e	e
Propane, 2-methyl-2-nitro-	594-70-7	103	20.3	nd	nd		0.007	1.5		0.006	1.4		nd	nd		0.007	e	1.4	e
Butane, 2-nitro-	600-24-8	103	20.3	0.006	1.4		nd	nd		nd	nd		nd	nd		e	e	e	e
Cyclohexane, methyl-	108-87-2	98	20.8	0.020	4.5		0.032	7.3		0.007	1.6		0.014	3.2		0.018	0.011	4.2	2.4
Unknown Alkane			42.8	nd	nd		0.008	f		nd	nd		nd	nd		e	e	e	e
Total Concentration of TICs																0.200			

Data Quality Flags

B Compound found in associated laboratory blank.

J Target compound detected above the IDL but below the EQL.

S Suspect data due to possible sampling error.

U Target compound not detected at or above the IDL.

Y Initial calibration and CCV were performed; however, the analyte was not part of the current operating procedure.

Footnotes

(a) Detected target analytes.

(b) Semi-quantitative estimate calculated using concentration of closest eluting IS.

(c) Sample identification number.

(d) Replicates of this sample are found in Table D.11 or D.12.

(e) Mean and/or standard deviation are not meaningful for this analyte.

(f) No molecular weight available for calculation.

nd Not detected.

Table D.8 Organic Compound Concentrations in SUMMA™ Canisters from Tank U-112 Riser 6 Bottom Level Sampled on 12/6/96

Target Analytes ^(a)	CAS	MW	Ret Time	S6119-b32.260 ^(c) ISVS			S6119-b33.270 ^(c) ISVS			S6119-b31.255 ^{(c)(d)} ISVS			S6119-b30.243 ^(c) ISVS			Mean and Standard Deviation			
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	St. Dev.	(ppbv)	St. Dev.
Dichlorodifluoromethane	75-71-8	121	4.6	0.003	0.61	J	0.003	0.59	J	0.075	14		0.003	0.64	J	0.021	0.036	3.9	6.6
Chloromethane	74-87-3	50	5.0	0.002	1.1	U	0.002	1.1	U	0.026	11		0.002	1.1	U	e	e	e	e
1,2-dichloro-1,1,2,2-tetrafluoroethane	76-14-2	171	5.2	0.013	1.7	U	0.013	1.7	U	0.092	12	J	0.013	1.7	U	e	e	e	e
Methanol	67-56-1	32	5.3	1.311	916	Y	1.141	798	Y	0.887	620	Y	1.050	734	Y	1.097	0.177	767	124
Vinyl Chloride	75-01-4	63	5.5	0.002	0.57	U	0.002	0.57	U	0.030	11		0.002	0.57	U	e	e	e	e
Butane	106-97-8	58	5.9	0.088	34		0.082	32		0.297	115		0.084	32		0.138	0.106	53	41
Bromomethane	74-83-9	95	6.4	0.005	1.2	U	0.005	1.2	U	0.060	14		0.005	1.2	U	e	e	e	e
Chloroethane	75-00-3	65	6.7	0.005	1.9	U	0.005	1.9	U	0.032	11	J	0.005	1.9	U	e	e	e	e
Ethanol	64-17-5	46	6.9	0.980	477	Y	0.927	451	Y	0.717	349	Y	0.840	409	Y	0.866	0.115	422	56
Acetonitrile	75-05-8	41	7.4	0.005	2.9	J	0.004	2.2	U	0.076	42		0.004	2.2	U	0.041	e	22	e
Acetone	67-64-1	58	7.9	0.079	30	B	0.088	34	B	0.145	56		0.072	28		0.096	0.033	37	13
Trichlorofluoromethane	75-69-4	137	8.3	0.221	36		0.217	35		0.213	35		0.199	32		0.212	0.010	35	1.6
Pentane	109-66-0	72	9.0	0.005	1.6	J	0.005	1.6	J	0.055	17		0.005	1.6	J	0.018	0.025	5.5	7.7
1,1-Dichloroethene	75-35-4	97	9.5	0.004	0.88	U	0.004	0.88	U	0.043	9.9		0.004	0.88	U	e	e	e	e
Methylene Chloride	75-09-2	85	9.7	0.007	1.8	J,B	0.007	1.9	J,B	0.045	12	J,B	0.006	1.5	J	0.016	0.019	4.3	5.1
1,1,2-trichloro-2,2,2-trifluoroethane	76-13-1	187	10.2	0.014	1.7	J,S	0.013	1.6	J,S	0.084	10	S	0.012	1.5	J,S	0.031	0.036	3.7	4.3
Propanenitrile	107-12-0	55	10.9	0.004	1.6	U	0.004	1.6	U	0.029	12	J	0.004	1.6	U	e	e	e	e
Propanol	71-23-8	60	10.9	0.099	37		0.096	36		0.215	80		0.094	35		0.126	0.059	47	22
1,1-Dichloroethane	75-34-3	99	11.8	0.002	0.45	U	0.002	0.45	U	0.049	11		0.002	0.45	U	e	e	e	e
2-Butanone	78-93-3	72	12.5	0.019	5.9	J	0.017	5.4	J	0.037	12		0.019	6.0	J	0.023	0.009	7.2	2.9
cis-1,2-Dichloroethene	156-59-2	97	13.4	0.003	0.79	U	0.003	0.79	U	0.037	8.7		0.003	0.79	U	e	e	e	e
Hexane	110-54-3	86	13.8	0.005	1.3	J	0.004	1.1	J	0.113	29		0.004	1.1	J	0.032	0.054	8.2	14
Chloroform	67-66-3	119	13.9	0.003	0.49	U	0.003	0.49	U	0.055	10		0.003	0.49	U	e	e	e	e
Tetrahydrofuran	109-99-9	72	14.7	0.022	6.7		0.026	8.1		0.071	22		0.017	5.3		0.034	0.025	11	7.8
1,2-Dichloroethane	107-06-2	99	15.3	0.002	0.50	U	0.002	0.50	U	0.052	12		0.002	0.50	U	e	e	e	e
1,1,1-Trichloroethane	71-55-6	133	15.8	0.005	0.87	J	0.005	0.87	J	0.066	11		0.005	0.81	J	0.020	0.030	3.4	5.1
Butanenitrile	109-74-0	69	15.8	0.003	1.1	U	0.003	1.1	U	0.021	6.9	J	0.003	1.1	U	e	e	e	e
1-Butanol	71-36-3	74	16.3	0.528	160		0.628	190		0.515	156		0.474	143		0.536	0.066	162	20
Benzene	71-43-2	78	16.7	0.006	1.6	J	0.005	1.5	J	0.039	11		0.005	1.3	J	0.014	0.017	3.9	4.8
Carbon Tetrachloride	56-23-5	154	17.0	0.006	0.89	J	0.006	0.88	J	0.064	9.3		0.003	0.50	U	0.025	0.033	3.7	4.9
Cyclohexane	110-82-7	84	17.3	0.004	0.98	J	0.004	0.96	U	0.033	8.8	J	0.004	0.96	U	0.018	e	4.9	e
1,2-Dichloropropane	78-87-5	113	18.3	0.003	0.59	U	0.003	0.59	U	0.057	11		0.003	0.59	U	e	e	e	e
Trichloroethene	79-01-6	131	18.8	0.002	0.41	U	0.002	0.41	U	0.056	9.6		0.002	0.41	U	e	e	e	e
Heptane	142-82-5	100	19.3	0.010	2.3	J	0.006	1.4	J	0.074	17		0.005	1.1	J	0.024	0.034	5.3	7.5
cis-1,3-Dichloropropene	10061-01-5	111	20.5	0.002	0.48	U	0.002	0.48	U	0.046	9.2		0.002	0.48	U	e	e	e	e
4-Methyl-2-Pentanone	108-10-1	100	20.5	0.003	0.76	U	0.003	0.76	U	0.119	27		0.003	0.76	U	e	e	e	e
trans-1,3-Dichloropropene	10061-02-6	111	21.5	0.002	0.36	U	0.002	0.36	U	0.046	9.3		0.002	0.36	U	e	e	e	e
Pentanenitrile	110-59-8	83	21.6	0.004	1.1	U	0.004	1.1	U	0.063	17		0.004	1.1	U	e	e	e	e
1,1,2-Trichloroethane	79-00-5	133	22.0	0.003	0.47	U	0.003	0.47	U	0.058	9.8		0.003	0.47	U	e	e	e	e
Toluene	108-88-3	92	22.6	0.162	39		0.147	36		0.155	38		0.130	32		0.148	0.013	36	3.3
1,2-Dibromoethane	106-93-4	188	24.2	0.005	0.62	U	0.005	0.62	U	0.086	10		0.005	0.62	U	e	e	e	e
Octane	111-65-9	114	24.7	0.002	0.47	U	0.002	0.47	U	0.009	1.8	J	0.002	0.47	U	e	e	e	e
Tetrachloroethylene	127-18-4	166	25.2	0.006	0.80	J	0.005	0.73	J	0.066	9.0		0.005	0.66	J	0.021	0.030	2.8	4.1
Chlorobenzene	108-90-7	113	26.8	0.003	0.52	U	0.003	0.52	U	0.055	11		0.003	0.52	U	e	e	e	e

Table D.8 (Cont'd) Organic Compound Concentrations in SUMMATM Canisters from Tank U-112 Riser 6 Bottom Level Sampled on 12/6/96

Target Analytes ^(a)	CAS	MW	Ret Time	S6119-b32.260 ^(c) ISVS			S6119-b33.270 ^(c) ISVS			S6119-b31.255 ^(c,d) ISVS			S6119-b30.243 ^(c) ISVS			Mean and Standard Deviation			
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	St. Dev.	(ppbv)	St. Dev.
Hexanenitrile	628-73-9	97	27.1	0.005	1.2	U	0.005	1.2	U	0.122	28		0.005	1.2	U	e	e	e	e
Ethylbenzene	100-41-4	106	27.7	0.003	0.59	U	0.003	0.59	U	0.053	11		0.003	0.59	U	e	e	e	e
p/m-Xylene	106-42-3	106	28.1	0.013	2.7	U	0.013	2.7	U	0.099	21	J	0.013	2.7	U	e	e	e	e
Cyclohexanone	108-94-1	98	28.5	0.006	1.3	U	0.006	1.3	U	0.058	13		0.006	1.3	U	e	e	e	e
Styrene	100-42-5	104	29.0	0.002	0.47	U	0.002	0.47	U	0.039	8.4		0.002	0.47	U	e	e	e	e
1,1,2,2-Tetrachloroethane	79-34-5	168	29.3	0.004	0.56	U	0.004	0.56	U	0.095	13		0.004	0.56	U	e	e	e	e
o-Xylene	95-47-6	106	29.3	0.003	0.59	U	0.003	0.59	U	0.045	9.6		0.003	0.59	U	e	e	e	e
Nonane	111-84-2	128	29.8	0.002	0.28	U	0.002	0.28	U	0.016	2.8	J	0.002	0.28	U	e	e	e	e
1-Ethyl-2-Methyl-Benzene	611-14-3	120	32.7	0.002	0.34	U	0.002	0.34	U	0.039	7.3		0.002	0.34	U	e	e	e	e
1,3,5-Trimethylbenzene	108-67-8	120	33.0	0.002	0.34	U	0.002	0.34	U	0.052	9.7		0.002	0.34	U	e	e	e	e
1,2,4-Trimethylbenzene	95-63-6	120	34.2	0.003	0.48	U	0.003	0.48	U	0.052	9.6		0.003	0.48	U	e	e	e	e
Decane	124-18-5	142	34.5	0.003	0.47	U	0.003	0.47	U	0.144	23		0.003	0.47	U	e	e	e	e
1,3-Dichlorobenzene	541-73-1	147	34.7	0.002	0.27	U	0.002	0.27	U	0.052	8.0	B	0.002	0.27	U	e	e	e	e
1,4-Dichlorobenzene	106-46-7	147	34.9	0.002	0.27	U	0.002	0.27	U	0.052	7.8	B	0.002	0.27	U	e	e	e	e
1,2-Dichlorobenzene	95-50-1	147	36.1	0.002	0.27	U	0.002	0.27	U	0.053	8.1		0.002	0.27	U	e	e	e	e
Undecane	1120-21-4	156	38.8	0.028	4.0	U	0.028	4.0	U	0.113	16	J	0.028	4.0	U	e	e	e	e
1,2,4-Trichlorobenzene	120-82-1	181	42.3	0.003	0.35	U	0.003	0.35	U	0.040	4.9	B	0.003	0.35	U	e	e	e	e
Dodecane	112-40-3	170	42.8	0.010	1.3	U	0.010	1.3	U	0.058	7.6	J	0.011	1.5	J	0.035	e	4.6	e
Hexachloro-1,3-butadiene	87-68-3	261	44.1	0.005	0.40	U	0.005	0.40	U	0.095	8.2	B	0.005	0.40	U	e	e	e	e
Tridecane	629-50-5	184	46.5	0.055	6.6	J,S,B	0.030	3.7	J,S,B	0.228	28	S	0.138	17	S	0.113	0.090	14	11
Tetradecane	629-59-4	198	50.1	0.004	0.47	U	0.004	0.47	U	0.093	10	S	0.004	0.47	U	e	e	e	e

Total Concentration of Target Analytes

3.704

Tentatively

Identified Compounds^(b)

Propene	115-07-1	42	4.5	nd	nd		nd	nd		0.008	4.4	S	nd	nd		e	e	e	e
Propane	74-98-6	44	4.5	0.046	24	S	0.048	25	S	0.032	16	S	0.063	32	S	0.048	0.013	24	6.5
Propanal	123-38-6	58	8.0	0.013	5.1		0.012	4.5		nd	nd		nd	nd		0.012	e	4.8	e
2-Propanol, 2-methyl-	75-65-0	74	9.4	0.036	11	S	0.034	10	S	0.023	6.9	S	0.035	10	S	0.032	0.006	9.6	1.8
1-Propene, 3-chloro-	107-05-1	76	9.9	nd	nd		nd	nd		0.022	6.5		nd	nd		e	e	e	e
Carbon disulfide	75-15-0	76	10.5	nd	nd		0.006	1.9		nd	nd		nd	nd		e	e	e	e
Unknown			10.5	nd	nd		nd	nd		nd	nd		0.007	f		e	e	e	e
Butanal	123-72-8	72	12.3	0.010	3.2		nd	nd		0.010	3.1		0.009	2.8		0.010	0.001	3.0	0.20
2-Butanol	78-92-2	74	13.0	nd	nd		nd	nd		0.029	8.9		nd	nd		e	e	e	e
1-Propanol, 2-methyl-	78-83-1	74	14.4	nd	nd		nd	nd		0.006	1.9		nd	nd		e	e	e	e
1-Propanol, 2,2-dimethyl-	75-84-3	88	16.9	nd	nd		nd	nd		0.007	1.7		nd	nd		e	e	e	e
Propane, 1,2-dichloro-	78-87-5	112	18.3	nd	nd		nd	nd		0.044	8.8		nd	nd		e	e	e	e
Unknown			18.6	0.004	f		nd	nd		nd	nd		nd	nd		e	e	e	e
Unknown Alkene/Cycloalkane			18.6	nd	nd		nd	nd		0.003	f		nd	nd		e	e	e	e
Butanal, 2-methyl-	96-17-3	86	18.6	nd	nd		nd	nd		nd	nd		0.007	1.9		e	e	e	e
1,4-Dioxane	123-91-1	88	18.7	0.011	2.7		nd	nd		nd	nd		nd	nd		e	e	e	e
1,3,6-Trioxocane	1779-19-7	118	18.7	nd	nd		0.008	1.6		nd	nd		nd	nd		e	e	e	e
1-Heptene	592-76-7	98	18.9	0.007	1.7		nd	nd		nd	nd		nd	nd		e	e	e	e
Pyrazine	290-37-9	80	19.8	nd	nd		0.006	1.5		nd	nd		0.004	1.2		0.005	e	1.4	e

Table D.8 (Cont'd) Organic Compound Concentrations in SUMMATM Canisters from Tank U-112 Riser 6 Bottom Level Sampled on 12/6/96

Tentatively Identified Compounds ^(b)	CAS	MW	Ret Time	S6119-b32.260 ^(c) ISVS		S6119-b33.270 ^(c) ISVS		S6119-b31.255 ^{(c)(d)} ISVS		S6119-b30.243 ^(c) ISVS		Mean and Standard Deviation			
				(mg/m ³)	(ppbv) Flag	(mg/m ³)	(ppbv) Flag	(mg/m ³)	(ppbv) Flag	(mg/m ³)	(ppbv) Flag	(mg/m ³)	St. Dev.	(ppbv)	St. Dev.
1,3-Diazine	289-95-2	80	19.8	0.006	1.7	nd	nd	nd	nd	nd	nd	e	e	e	e
Butane, 1-nitro-	627-05-4	103	20.3	0.008	1.6	nd	nd	nd	nd	0.004	0.81	0.006	e	1.2	e
Propane, 2-methyl-2-nitro-	594-70-7	103	20.4	nd	nd	0.007	1.5	nd	nd	nd	nd	e	e	e	e
Pyridine	110-86-1	79	20.7	nd	nd	nd	nd	0.015	4.2	nd	nd	e	e	e	e
Cyclohexane, methyl-	108-87-2	98	20.8	0.024	5.4	0.016	3.7	nd	nd	0.012	2.8	0.017	0.006	4.0	1.4
Cyclotrisiloxane, hexamethyl-	541-05-9	222	25.5	nd	nd	nd	nd	0.038	3.9	nd	nd	e	e	e	e
Unknown			35.6	nd	nd	nd	nd	0.006	f	nd	nd	e	e	e	e
Unknown			38.8	nd	nd	0.007	f	nd	nd	nd	nd	e	e	e	e
Cyclotrisiloxane, hexamethyl-	541-05-9	222	61.8	0.008	0.81	nd	nd	nd	nd	nd	nd	e	e	e	e
Total Concentration of TICs												0.129			

Data Quality Flags

B Compound found in associated laboratory blank.

J Target compound detected above the IDL but below the EQL.

S Suspect data due to possible sampling error.

U Target compound not detected at or above the IDL.

Y Initial calibration and CCV were performed; however, the analyte was not part of the current operating procedure.

Footnotes

(a) Detected target analytes.

(b) Semi-quantitative estimate calculated using concentration of closest eluting IS.

(c) Sample identification number.

(d) Replicates of this sample are found in Table D.13.

(e) Mean and/or standard deviation are not meaningful for this analyte.

(f) No molecular weight available for calculation.

nd Not detected.

Table D.9 Comparison of Organic Compound Concentrations from Replicate Analysis of SUMMA™
Canister PNL 210 from Tank U-112 Riser 3 Top Level Sampled on 12/6/96

Target Analytes ^(a)	CAS	MW	Ret Time	S6118-t40.210 ^(c) ISVS						RPD ^(d) (%)
				(mg/m ³)	(ppbv)	Fla	(mg/m ³)	(ppbv)	Flag	
Dichlorodifluoromethane	75-71-8	121	4.6	0.003	0.60	J	0.003	0.61	J	3
Methanol	67-56-1	32	5.3	1.092	763	Y	1.070	748	Y	2
Butane	106-97-8	58	5.9	0.084	32		0.085	33		1
Ethanol	64-17-5	46	6.9	0.790	385	Y	0.818	398	Y	3
Acetone	67-64-1	58	7.9	0.075	29	B	0.072	28	B	3
Trichlorofluoromethane	75-69-4	137	8.3	0.212	35		0.205	34		3
Pentane	109-66-0	72	9.0	0.005	1.6	J	0.005	1.6	J	4
Methylene Chloride	75-09-2	85	9.7	0.007	1.8	J,B	0.007	1.8	J,B	2
1,1,2-trichloro-2,2,2-trifluoroethane	76-13-1	187	10.2	0.007	0.80	J,S	0.006	0.73	J,S	9
Propanol	71-23-8	60	10.9	0.096	36		0.092	34		5
2-Butanone	78-93-3	72	12.5	0.018	5.6	J	0.018	5.4	J	3
Hexane	110-54-3	86	13.8	0.004	1.0	J	0.004	0.98	J	5
Tetrahydrofuran	109-99-9	72	14.7	0.023	7.0		0.021	6.7		5
1,1,1-Trichloroethane	71-55-6	133	15.9	0.005	0.88	J	0.005	0.85	J	4
1-Butanol	71-36-3	74	16.3	0.522	158		0.496	150		5
Benzene	71-43-2	78	16.8	0.006	1.6	J	0.005	1.5	J	9
Carbon Tetrachloride	56-23-5	154	17.1	0.006	0.84	J	0.006	0.80	J	5
Toluene	108-88-3	92	22.6	0.150	36		0.144	35		4
Tetrachloroethylene	127-18-4	166	25.2	0.006	0.81	J	0.006	0.76	J	7
Cyclohexanone	108-94-1	98	28.6	0.019	4.4	J	0.019	4.2	J	4

Tentatively

Identified Compounds^(b)

Propane	74-98-6	44	4.5	0.046	24		0.046	23		1
2-Propanol, 2-methyl-	75-65-0	74	9.4	nd	nd		0.034	10		
Unknown			9.6	nd	nd		0.007	e		
1-Cyclopentyl-2,2-dimethyl-1-propanol		156	16.9	nd	nd		0.009	1.3		

Data Quality Flags

B Compound found in associated laboratory blank.

J Target compound detected above the IDL but below the EQL.

S Suspect data due to possible sampling error.

Y Initial calibration and CCV were performed; however, the analyte was not part of the current operating procedure.

Footnotes

(a) Detected target analytes.

(b) Semi-quantitative estimate calculated using concentration of closest eluting IS.

(c) Sample identification number.

(d) Relative percent differences (RPDs) based on mg/m³ values.

(e) No molecular weight available for calculation.

nd Not detected.

Table D.10 Comparison of Organic Compound Concentrations from Replicate Analysis of SUMMATM Canister
PNL 094 from Tank U-112 Riser 3 Middle Level Sampled on 12/6/96

Target Analytes ^(a)	CAS	MW	Ret Time	S6118-m26.094 ^(c) ISVS						RPD ^(d) (%)
				(mg/m ³)	(ppbv)	Fla	(mg/m ³)	(ppbv)	Flag	
Dichlorodifluoromethane	75-71-8	121	4.6	0.003	0.60	J	0.004	0.76	J	25
Chloromethane	74-87-3	50	5.0	0.002	1.1	U	0.003	1.1	J	
Methanol	67-56-1	32	5.2	1.017	711	Y	1.019	712	Y	0
Butane	106-97-8	58	5.9	0.081	31		0.081	31		0
Ethanol	64-17-5	46	6.8	0.741	361	Y	0.732	356	Y	1
Acetonitrile	75-05-8	41	7.3	0.019	10	J	0.019	10	J	2
Acetone	67-64-1	58	7.9	0.080	31	B	0.078	30	B	3
Trichlorofluoromethane	75-69-4	137	8.3	0.202	33		0.211	34		5
Pentane	109-66-0	72	9.0	0.005	1.6	J	0.006	1.8	J	13
Methylene Chloride	75-09-2	85	9.7	0.006	1.5	J,B	0.006	1.6	J,B	5
1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	187	10.2	0.018	2.2	J,S	0.018	2.2	J,S	0
Propanol	71-23-8	60	10.9	0.095	36		0.098	36		3
2-Butanone	78-93-3	72	12.5	0.019	5.8	J	0.019	5.9	J	1
Hexane	110-54-3	86	13.7	0.004	1.0	J	0.004	1.1	J	12
Tetrahydrofuran	109-99-9	72	14.6	0.022	6.8		0.022	6.8		1
1,1,1-Trichloroethane	71-55-6	133	15.8	0.005	0.88	J	0.006	0.97	J	11
1-Butanol	71-36-3	74	16.3	0.520	157		0.563	170		8
Benzene	71-43-2	78	16.7	0.005	1.6	J	0.006	1.7	J	5
Carbon Tetrachloride	56-23-5	154	17.0	0.005	0.79	J	0.006	0.88	J	11
Toluene	108-88-3	92	22.6	0.137	33		0.146	35		6
Cyclohexanone	108-94-1	98	28.5	0.022	4.9	J	0.023	5.3	J	8
Tridecane	629-50-5	184	46.5	0.008	0.91	J	0.006	0.73	U	

Tentatively

Identified Compounds^(b)

Propane	74-98-6	44	4.5	0.065	33		0.067	34		2
Propanal	123-38-6	58	8.0	nd	nd		0.018	6.8		
2-Propanol, 2-methyl-	75-65-0	74	9.4	0.041	12		0.042	13		2
Carbon disulfide	75-15-0	76	10.4	0.008	2.3		0.008	2.3		4
Unknown			10.5	0.006	e		0.009	e		34
Silanol, trimethyl-	1066-40-6	90	11.5	0.007	1.6		nd	nd		
Unknown			12.3	0.014	e		nd	nd		
Butanal	123-72-8	72	12.3	nd	nd		0.013	4.1		
1-Cyclopentyl-2,2-dimethyl-1-propanol		156	16.9	0.014	1.9		nd	nd		
Cyclotrisiloxane, hexamethyl-	541-05-9	222	25.5	0.473	48		0.477	48		1

Data Quality Flags

B Compound found in associated laboratory blank.

J Target compound detected above the IDL but below the EQL.

S Suspect data due to possible sampling error.

U Target compound not detected at or above the IDL.

Y Initial calibration and CCV were performed; however, the analyte was not part of the current operating procedure.

Footnotes

(a) Detected target analytes.

(b) Semi-quantitative estimate calculated using concentration of closest eluting IS.

(c) Sample identification number.

(d) Relative percent differences (RPDs) based on mg/m³ values.

(e) No molecular weight available for calculation.

nd Not detected.

Table D.11 Comparison of Organic Compound Concentrations from Replicate Analysis of SUMMA™ Canister
PNL 319 from Tank U-112 Riser 6 Middle Level Sampled on 12/6/96

Target Analytes ^(a)	CAS	MW	Ret Time	S6119-m46.319 ^(c) ISVS						RPD ^(d) (%)
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	
Dichlorodifluoromethane	75-71-8	121	4.6	0.004	0.68	J	0.003	0.62	J	9
Methanol	67-56-1	32	5.3	1.426	997	Y	1.354	946	Y	5
Butane	106-97-8	58	5.9	0.092	35		0.084	32		9
Ethanol	64-17-5	46	6.9	1.406	684	Y	1.331	648	Y	5
Acetonitrile	75-05-8	41	7.4	0.018	10.0	J	0.017	9.0	J	10
Acetone	67-64-1	58	7.9	0.115	45		0.109	42		5
Trichlorofluoromethane	75-69-4	137	8.3	0.224	37		0.209	34		7
Pentane	109-66-0	72	9.0	0.006	1.8	J	0.005	1.7	J	7
Methylene Chloride	75-09-2	85	9.7	0.007	1.9	J,B	0.007	1.8	J,B	3
1,1,2-trichloro-2,2,2-trifluoroethane	76-13-1	187	10.2	0.007	0.83	J,S	0.007	0.79	J,S	6
Propanol	71-23-8	60	10.9	0.123	46		0.117	44		5
2-Butanone	78-93-3	72	12.5	0.027	8.5	J	0.025	7.9	J	8
Hexane	110-54-3	86	13.8	0.005	1.3	J	0.005	1.2	J	4
Tetrahydrofuran	109-99-9	72	14.7	0.024	7.5		0.022	6.8		10
1,1,1-Trichloroethane	71-55-6	133	15.9	0.006	0.93	J	0.005	0.84	J	10
1-Butanol	71-36-3	74	16.3	0.643	194		0.612	185		5
Benzene	71-43-2	78	16.8	0.006	1.7	J	0.006	1.6	J	7
Carbon Tetrachloride	56-23-5	154	17.1	0.006	0.84	J	0.005	0.78	J	5
Cyclohexane	110-82-7	84	17.3	0.004	0.96	U	0.005	1.2	J	
Heptane	142-82-5	100	19.3	0.008	1.9	J	0.008	1.8	J	5
Toluene	108-88-3	92	22.6	0.160	39		0.153	37		4
Tetrachloroethylene	127-18-4	166	25.2	0.006	0.82	J	0.006	0.77	J	7
Tridecane	629-50-5	184	46.6	0.036	4.3	J,S	0.033	4.0	J,S	8

Tentatively

Identified Compounds^(b)

Propane	74-98-6	44	4.5	0.054	27	S	0.051	26	S	5
Propanal	123-38-6	58	8.0	0.025	9.7		0.019	7.3		28
2-Propanol, 2-methyl-	75-65-0	74	9.4	0.040	12	S	0.040	12	S	1
Methane, nitro-	75-52-5	61	10.3	0.007	2.6		nd	nd		
Carbon disulfide	75-15-0	76	10.4	0.014	4.1		0.014	4.3		4
Butanal	123-72-8	72	12.3	nd	nd		0.020	6.2		
1-Propanol, 2,2-dimethyl-	75-84-3	88	16.9	0.014	3.5		nd	nd		
Hexane, 3-methyl-	589-34-4	100	18.0	0.027	6.1		0.027	5.9		2
Unknown			18.6	0.004	e		0.003	e		19
1,4-Dioxane	123-91-1	88	18.7	0.013	3.4		0.013	3.3		5
1-Heptene	592-76-7	98	18.8	0.009	2.1		0.008	1.9		10
Pyrazine	290-37-9	80	19.8	0.007	1.9		0.006	1.6		18
Butane, 2-nitro-	600-24-8	103	20.3	nd	nd		0.005	1.1		
Propane, 2-methyl-2-nitro-	594-70-7	103	20.3	0.007	1.5		nd	nd		
Cyclohexane, methyl-	108-87-2	98	20.8	0.032	7.3		0.034	7.8		7
Unknown Alkane			42.8	0.008	e		nd	nd		

Data Quality Flags

B Compound found in associated laboratory blank.

J Target compound detected above the IDL but below the EQL.

S Suspect data due to possible sampling error.

U Target compound not detected at or above the IDL.

Y Initial calibration and CCV were performed; however, the analyte was not part of the current operating procedure.

Footnotes

(a) Detected target analytes.

(b) Semi-quantitative estimate calculated using concentration of closest eluting IS.

(c) Sample identification number.

(d) Relative percent differences (RPDs) based on mg/m³ values.

(e) No molecular weight available for calculation.

nd Not detected.

Table D.12 Comparison of Organic Compound Concentrations from Replicate Analysis of SUMMA™ Canister PNL 235 from Tank U-112 Riser 6 Middle Level Sampled on 12/6/96

Target Analytes ^(a)	CAS	MW	Ret Time	S6119-m27.235 ^(c) ISVS						RPD ^(d) (%)
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	
Dichlorodifluoromethane	75-71-8	121	4.6	0.003	0.60	J	0.003	0.55	J	6
Methanol	67-56-1	32	5.3	1.117	781	Y	1.110	776	Y	1
Butane	106-97-8	58	5.9	0.081	31		0.075	29		7
Ethanol	64-17-5	46	6.9	0.918	447	Y	0.812	395	Y	12
Acetonitrile	75-05-8	41	7.4	0.008	4.1	J	0.007	3.7	J	11
Acetone	67-64-1	58	7.9	0.078	30	B	0.071	28	B	9
Trichlorofluoromethane	75-69-4	137	8.3	0.224	36		0.193	31		15
Pentane	109-66-0	72	9.0	0.006	1.8	J	0.005	1.4	J	23
Methylene Chloride	75-09-2	85	9.7	0.007	1.9	J,B	0.007	1.7	J,B	7
1,1,2-trichloro-2,2,2-trifluoroethane	76-13-1	187	10.2	0.016	1.9	J,S	0.014	1.6	J,S	16
Propanol	71-23-8	60	10.9	0.101	38		0.084	31		19
2-Butanone	78-93-3	72	12.5	0.018	5.5	J	0.016	5.0	J	10
Hexane	110-54-3	86	13.8	0.005	1.2	J	0.004	1.0	J	16
Tetrahydrofuran	109-99-9	72	14.7	0.023	7.1		0.019	6.0		17
1,1,1-Trichloroethane	71-55-6	133	15.9	0.005	0.89	J	0.005	0.76	J	16
1-Butanol	71-36-3	74	16.3	0.552	167		0.432	131		24
Benzene	71-43-2	78	16.8	0.006	1.7	J	0.005	1.4	J	17
Carbon Tetrachloride	56-23-5	154	17.1	0.006	0.85	J	0.005	0.73	J	15
Heptane	142-82-5	100	19.3	0.005	1.1	J	0.004	0.89	J	20
Toluene	108-88-3	92	22.6	0.152	37		0.134	32		13
Tetrachloroethylene	127-18-4	166	25.2	0.007	0.88	J	0.005	0.72	J	18
Tridecane	629-50-5	184	46.6	0.081	9.8	S,B	0.084	10	S,B	3

Tentatively

Identified Compounds^(b)

Propane	74-98-6	44	4.5	0.049	25	S	0.043	22	S	13
Propanal	123-38-6	58	8.0	0.015	5.8		0.012	4.7		22
2-Propanol, 2-methyl-	75-65-0	74	9.4	0.037	11	S	0.028	8.6	S	27
Carbon disulfide	75-15-0	76	10.4	0.014	4.1		nd	nd		
Butanal	123-72-8	72	12.3	0.024	7.3		nd	nd		
1,4-Dioxane	123-91-1	88	18.7	0.017	4.4		0.007	1.7		89
Pyrazine	290-37-9	80	19.8	0.005	1.3		nd	nd		
1,3-Diazine	289-95-2	80	19.8	nd	nd		0.003	0.90		
Propane, 2-methyl-2-nitro-	594-70-7	103	20.3	0.006	1.4		nd	nd		
Propane, 2-methyl-1-nitro-	625-74-1	103	20.3	nd	nd		0.006	1.2		
Cyclohexane, methyl-	108-87-2	98	20.8	0.007	1.6		0.006	1.5		9
Unknown Alkane			42.8	nd	nd		0.008	e		

Data Quality Flags

B Compound found in associated laboratory blank.

J Target compound detected above the IDL but below the EQL.

S Suspect data due to possible sampling error.

Y Initial calibration and CCV were performed; however, the analyte was not part of the current operating procedure.

Footnotes

(a) Detected target analytes.

(b) Semi-quantitative estimate calculated using concentration of closest eluting IS.

(c) Sample identification number.

(d) Relative percent differences (RPDs) based on mg/m³ values.

(e) No molecular weight available for calculation.

nd Not detected.

Table D.13 Comparison of Organic Compound Concentrations from Replicate Analysis of SUMMATM Canister PNL 255 from Tank U-112 Riser 6 Bottom Level Sampled on 12/6/96

Target Analytes ^(a)	CAS	MW	Ret Time	S6119-b31.255 ^(c) ISVS				RPD ^(d) (%)
				(mg/m ³)	(ppbv) Flag	(mg/m ³)	(ppbv) Flag	
Dichlorodifluoromethane	75-71-8	121	4.6	0.075	14	0.076	14	1
Chloromethane	74-87-3	50	5.0	0.026	11	0.027	12	5
1,2-dichloro-1,1,2,2-tetrafluoroeth	76-14-2	171	5.2	0.092	12 J	0.089	12 J	3
Methanol	67-56-1	32	5.3	0.887	620 Y	0.898	628 Y	1
Vinyl Chloride	75-01-4	63	5.5	0.030	11	0.031	11	2
Butane	106-97-8	58	5.9	0.297	115	0.298	115	0
Bromomethane	74-83-9	95	6.4	0.060	14	0.059	14	2
Chloroethane	75-00-3	65	6.7	0.032	11 J	0.032	11 J	0
Ethanol	64-17-5	46	6.9	0.717	349 Y	0.717	349 Y	0
Acetonitrile	75-05-8	41	7.4	0.076	42	0.076	41	0
Acetone	67-64-1	58	7.9	0.145	56	0.141	54	3
Trichlorofluoromethane	75-69-4	137	8.3	0.213	35	0.213	35	0
Pentane	109-66-0	72	9.0	0.055	17	0.055	17	0
1,1-Dichloroethene	75-35-4	97	9.5	0.043	9.9	0.043	9.9	0
Methylene Chloride	75-09-2	85	9.7	0.045	12 B	0.045	12 B	1
1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	187	10.2	0.084	10 S	0.086	10 S	2
Propanenitrile	107-12-0	55	10.9	0.029	12 J	0.028	12 J	3
Propanol	71-23-8	60	10.9	0.215	80	0.213	79	1
1,1-Dichloroethane	75-34-3	99	11.8	0.049	11	0.047	11	4
2-Butanone	78-93-3	72	12.5	0.037	12	0.036	11	2
cis-1,2-Dichloroethene	156-59-2	97	13.4	0.037	8.7	0.037	8.5	2
Hexane	110-54-3	86	13.8	0.113	29	0.109	28	3
Chloroform	67-66-3	119	13.9	0.055	10	0.054	10	2
Tetrahydrofuran	109-99-9	72	14.7	0.071	22	0.068	21	5
1,2-Dichloroethane	107-06-2	99	15.3	0.052	12	0.049	11	6
1,1,1-Trichloroethane	71-55-6	133	15.8	0.066	11	0.065	11	2
Butanenitrile	109-74-0	69	15.8	0.021	6.9 J	0.022	7.2 J	5
1-Butanol	71-36-3	74	16.3	0.515	156	0.511	154	1
Benzene	71-43-2	78	16.7	0.039	11	0.037	11	4
Carbon Tetrachloride	56-23-5	154	17.0	0.064	9.3	0.062	9.1	3
Cyclohexane	110-82-7	84	17.3	0.033	8.8 J	0.033	8.8 J	1
1,2-Dichloropropane	78-87-5	113	18.3	0.057	11	0.055	11	3
Trichloroethene	79-01-6	131	18.8	0.056	9.6	0.055	9.4	3
Heptane	142-82-5	100	19.3	0.074	17	0.072	16	3
cis-1,3-Dichloropropene	10061-01-5	111	20.5	0.046	9.2	0.043	8.7	6
4-Methyl-2-Pentanone	108-10-1	100	20.5	0.119	27	0.118	26	1
trans-1,3-Dichloropropene	10061-02-6	111	21.5	0.046	9.3	0.044	9.0	4
Pentanenitrile	110-59-8	83	21.6	0.063	17	0.061	17	3
1,1,2-Trichloroethane	79-00-5	133	22.0	0.058	9.8	0.056	9.4	3
Toluene	108-88-3	92	22.6	0.155	38	0.150	37	3
1,2-Dibromoethane	106-93-4	188	24.2	0.086	10	0.084	10.0	3
Octane	111-65-9	114	24.7	0.009	1.8 J	0.009	1.7 J	8
Tetrachloroethylene	127-18-4	166	25.2	0.066	9.0	0.065	8.8	2
Chlorobenzene	108-90-7	113	26.8	0.055	11	0.053	11	3
Hexanenitrile	628-73-9	97	27.1	0.122	28	0.121	28	1
Ethylbenzene	100-41-4	106	27.7	0.053	11	0.052	11	1
p/m-Xylene	106-42-3	106	28.1	0.099	21 J	0.098	21 J	1
Cyclohexanone	108-94-1	98	28.5	0.058	13	0.057	13 J	2
Styrene	100-42-5	104	29.0	0.039	8.4	0.037	8.0	5
1,1,2,2-Tetrachloroethane	79-34-5	168	29.3	0.095	13	0.093	12	2
o-Xylene	95-47-6	106	29.3	0.045	9.6	0.045	9.5	1
Nonane	111-84-2	128	29.8	0.016	2.8 J	0.016	2.7 J	1

Table D.13 (Cont'd) Comparison of Organic Compound Concentrations from Replicate Analysis of SUMMATM Canister PNL 255 from Tank U-112 Riser 6 Bottom Level Sampled on 12/6/96

Target Analytes ^(a)	CAS	MW	Ret Time	S6119-b31.255 ^(c) ISVS				RPD ^(d) (%)
				(mg/m ³)	(ppbv) Flag	(mg/m ³)	(ppbv) Flag	
1-Ethyl-2-Methyl-Benzene	611-14-3	120	32.7	0.039	7.3	0.040	7.4	1
1,3,5-Trimethylbenzene	108-67-8	120	33.0	0.052	9.7	0.053	9.8	2
1,2,4-Trimethylbenzene	95-63-6	120	34.2	0.052	9.6	0.052	9.7	2
Decane	124-18-5	142	34.5	0.144	23	0.143	22	1
1,3-Dichlorobenzene	541-73-1	147	34.7	0.052	8.0 B	0.054	8.2 B	3
1,4-Dichlorobenzene	106-46-7	147	34.9	0.052	7.8 B	0.052	8.0 B	2
1,2-Dichlorobenzene	95-50-1	147	36.1	0.053	8.1	0.054	8.2	2
Undecane	1120-21-4	156	38.8	0.113	16 J	0.113	16 J	0
1,2,4-Trichlorobenzene	120-82-1	181	42.3	0.040	4.9 B	0.040	4.9 B	0
Dodecane	112-40-3	170	42.8	0.058	7.6 J	0.058	7.6 J	0
Hexachloro-1,3-butadiene	87-68-3	261	44.1	0.095	8.2 B	0.099	8.5 B	4
Tridecane	629-50-5	184	46.5	0.228	28 S	0.213	26 S	7
Tetradecane	629-59-4	198	50.1	0.093	10 S	0.071	8.0 S	27

Tentatively

Identified Compounds^(b)

Propene	115-07-1	42	4.5	0.008	4.4 S	0.009	4.5 S	4
Propane	74-98-6	44	4.5	0.032	16 S	0.032	16 S	1
2-Propanol, 2-methyl-	75-65-0	74	9.4	0.023	6.9 S	0.016	4.9 S	35
1-Propene, 3-chloro-	107-05-1	76	9.9	0.022	6.5	0.020	5.9	9
Butanal	123-72-8	72	12.3	0.010	3.1	nd	nd	
2-Butanol, (R)-	14898-79-4	74	13.0	nd	nd	0.028	8.4	
2-Butanol	78-92-2	74	13.0	0.029	8.9	nd	nd	
1-Propanol, 2-methyl-	78-83-1	74	14.4	0.006	1.9	nd	nd	
1-Propanol, 2,2-dimethyl-	75-84-3	88	16.9	0.007	1.7	0.006	1.6	3
Propane, 1,2-dichloro-	78-87-5	112	18.3	0.044	8.8	nd	nd	
Unknown Alkene/Cycloalkane			18.6	0.003	e	nd	nd	
Pyridine	110-86-1	79	20.7	0.015	4.2	nd	nd	
Cyclohexane, methyl-	108-87-2	98	20.8	nd	nd	0.022	5.0	
Cyclotrisiloxane, hexamethyl-	541-05-9	222	25.5	0.038	3.9	0.038	3.8	0
Unknown			35.6	0.006	e	0.006	e	7

Data Quality Flags

B Compound found in associated laboratory blank.

J Target compound detected above the IDL but below the EQL.

S Suspect data due to possible sampling error.

Y Initial calibration and CCV were performed; however, the analyte was not part of the current operating procedure.

Footnotes

(a) Detected target analytes.

(b) Semi-quantitative estimate calculated using concentration of closest eluting IS.

(c) Sample identification number.

(d) Relative percent differences (RPDs) based on mg/m³ values.

(e) No molecular weight available for calculation.

nd Not detected.

Table D.14 Organic Compound Concentrations in Ambient Air in SUMMA™ Canisters Associated with the Sampling of Tank U-112 on 12/6/96

Target Analytes ^(a)	CAS	MW	Ret Time	S6118-a24.054 ^(c)			S6118-a25.074 ^(c)			S6119-a25.135 ^(c)		
				Ambient Air			Ambient Air thru ISVS			Ambient Air thru ISVS		
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag
Dichlorodifluoromethane	75-71-8	121	4.6	0.003	0.60	J	0.003	0.63	J	0.003	0.61	J
Methanol	67-56-1	32	5.2	<0.110	<77	Y	<0.110	<77	Y	<0.110	<77	Y
Ethanol	64-17-5	46	6.8	<0.110	<53	Y	<0.110	<53	Y	<0.110	<53	Y
Acetone	67-64-1	58	7.9	0.013	4.8	J,B	0.025	9.6	J,B	0.034	13	J,B
Methylene Chloride	75-09-2	85	9.7	0.006	1.5	J,B	0.006	1.5	J,B	0.007	1.7	J,B
1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	187	10.2	0.004	0.5	J	0.048	5.8		0.043	5.1	
Propanol	71-23-8	60	10.9	0.003	1.0	U	0.003	1.0	U	0.011	4.1	J
2-Butanone	78-93-3	72	12.5	0.007	2.1	J	0.007	2.3	J	0.012	3.7	J
1-Butanol	71-36-3	74	16.3	0.003	0.97	U	0.003	0.97	U	0.023	6.8	J
Cyclohexanone	108-94-1	98	28.5	0.006	1.30	U	0.012	2.6	J	0.006	1.3	U
1,2,4-Trichlorobenzene	120-82-1	181	42.3	0.012	1.5	J,B	0.003	0.4	U	0.003	0.4	U
Dodecane	112-40-3	170	42.8	0.010	1.3	U	0.010	1.3	U	0.037	4.9	J
Hexachloro-1,3-butadiene	87-68-3	261	44.1	0.012	1.0	J,B	0.005	0.40	U	0.012	1.0	J,B
Tridecane	629-50-5	184	46.5	0.006	0.73	U	0.006	0.73	U	0.470	57	
Tetradecane	629-59-4	198	50.1	0.004	0.47	U	0.004	0.47	U	0.755	85	
Total Target Compounds				0.088			0.135			1.414		
Tentatively Identified Compounds^(b)												
Propene	115-07-1	42	4.4	0.019	10.0		0.021	11		0.016	8.5	
Acetaldehyde	75-07-0	44	5.2	0.014	7.3		0.016	8.3		0.032	16	
Propane	74-98-6	44	6.6	nd	nd		nd	nd		0.008	4.0	
Isopropyl Alcohol	67-63-0	60	8.3	nd	nd		0.010	3.6		0.009	3.5	
2-Propanol, 2-methyl-	75-65-0	74	9.4	nd	nd		nd	nd		0.009	2.6	
2-Butenal	4170-30-3	70	11.3	nd	nd		0.015	4.7		nd	nd	
Total TIC				0.033			0.061			0.073		

Data Quality Flags

B Compound found in associated laboratory blank.

J Target compound detected above the IDL but below the EQL.

U Target compound not detected at or above the IDL.

Y Initial calibration and CCV were performed, however, the analyte was not part of the current operating procedure.

Footnotes

(a) Detected target analytes.

(b) Semi-quantitative estimate calculated using concentration of closest eluting IS.

(c) Sample identification number.

nd Not detected

Figure D.1b Typical Total Ion Chromatogram (36 - 70 min) for SUMMA™ Canister Samples from Tank U-112 Sampled on 12/6/96

Appendix E

Tank Vapor Characterization:

Organic Compounds from Triple Sorbent Traps

Appendix E

Tank Vapor Characterization: Organic Compounds from Triple Sorbent Traps

Table E.1 summarizes the analytes, sampling medium, analytical methods, and laboratory procedure for organic analytes collected in TSTs. Table E.2 summarizes information regarding sample medium, handling, and storage procedures.

Table E.1. Sampling and Analysis Methods Summary for Organic Analytes from Triple Sorbent Traps

<u>Analyte</u>	<u>Sampling Medium</u>	<u>Extraction Method</u>	<u>Analysis Method</u>	<u>Procedure</u>
Organic Vapors	Triple sorbent traps	Thermal desorption	GC/MS	PNL-TVP-10

Table E.2. Sample Media Preparation, Handling, and Storage for Organic Analytes from Triple Sorbent Traps

<u>Sampling Media</u>	<u>Supplier and Catalog Number</u>	<u>Preparation Procedure</u>	<u>Handling and Storage Procedure</u>
Triple sorbent traps	Supelco CarboTrap 300	PNL-TVP-10	PNL-TVP-07

E.1 Sampling Methodology

Samples are collected on Supelco 300 graphite-based TSTs. Before field deployment, each trap is heated to 380°C under inert gas flow for a minimum of 60 min. Traps are prepared in batches with each tank sampling job constituting one batch. One trap is selected from each batch and run immediately to verify cleanliness. All remaining traps in the batch receive equal amounts of three surrogate compounds (hexafluorobenzene, toluene- d_8 , and bromobenzene- d_5). One trap per batch is run immediately to verify successful addition of surrogate spikes to that batch. Traps are then placed in individually labeled plastic shipping tubes (Supelco TD³), which are sealed with gasketed end caps. This provides a rugged, headspace-free shipping and storage method. As a precautionary measure, sample tubes are kept in refrigerated storage before and after sampling.

E.2 Analytical Procedure

The Supelco 300 tubes were analyzed according to PNNL Technical Procedure PNL-TVP-10^(a), with the exceptions noted in Section E.4. The method employs Supelco Carbotrap™ 300 traps for sample collection and preconcentration. The traps are ground-glass tubes (11.5 cm long X 6 mm OD, 4 mm ID) containing a series of sorbents arranged in order of increasing retentivity. Each trap contains 300 mg of Carbotrap™ C, 200 mg of Carbotrap™ B, and 125 mg of Carbosieve™ S-III. The first two sorbents are deactivated graphite with limited sorption power for less volatile compounds. The final trapping stage, the Carbosieve™ S-III, is a graphitized molecular sieve used to retain the most volatile components, including some permanent gases such as Freon-12. Following sample collection and addition of IS, the traps are transferred to a Dynatherm ACEM 900 thermal desorber unit for analysis. The trap on the ACEM 900 is then desorbed by ballistic heating to 350°C with the sample then transferred to a smaller focusing trap. A 10:1 split is used during the transfer with 10% of the sample analyzed and the rest retained for reanalysis. The split sample collected on a second identical Carbotrap™ 300 trap is used for repeat analysis on at least one sample per batch. Since the IS also follows the same path, quantitation may be performed directly on the repeat run without changing the calibration. Following desorption from the Carbotrap™ 300 trap, the analyte is transferred to a long, thin focusing trap filled with the same type of trapping materials as the Carbotrap™ 300 traps and in approximately the same ratios. The purpose of the focusing trap is to provide an interface to a capillary GC column, which may be thermally desorbed using helium at a flow rate compatible with the column and MS interface (1.2 mL/min). The focusing trap is ballistically heated to thermally desorb components onto a capillary GC column. The column is subsequently temperature programmed to separate the method analytes, which are then detected by the MS.

The instrument calibration mixture for the TST analysis consists of the compounds listed in Appendix H. These compounds that are directly quantified in this analysis make up the target analyte list (these compounds will be referred to as target analytes). The calibration mixture is prepared in common with the mixture used for the SUMMA™ analysis (see Section D.1). The standard calibration mix was analyzed using six different concentrations, and a response factor for each compound was calculated. Volumes of standard added to the traps are measured by pressure difference on a SUMMA™ canister of known volume. The GC/MS response for these compounds has been determined previously to be related linearly to concentration.

Quantitative concentrations for the target analytes were calculated directly from the calibration curve generated using the IS method described in procedure PNL-TVP-10. The conversion from ppbv to mg/m³ assumes STP conditions (0°C and 1.013 bar) and was calculated directly from the following equation:

$$\text{mg/m}^3 = \frac{(\text{ppbv}/1000) \times \text{g mol wt of compound}}{22.4 \text{ L/mol}} \quad (\text{E.1})$$

(a) Pacific Northwest National Laboratory. 2/96. *Determination of Volatile Organic Compounds in Hanford Waste Tank Headspace Samples Using Triple Sorbent Trap Sampling and Gas Chromatograph-Mass Spectrometer Analysis*. PNL-TVP-10 (Rev. 2), PNNL Technical Procedure. Richland, Washington.

The TICs are determined by mass-spectral interpretation and comparison of the spectra with the EPA/NIST and WILEY Libraries, which are a part of the Hewlett-Packard 5971/5972 instrument operating system. Chromatographic peaks with an area count greater than, or equal to, one-tenth of the total area count of the nearest eluting IS are tentatively identified and quantitatively estimated. The quality of the mass-spectral searches was then reviewed by the principal investigators before the identification was assigned to each chromatographic peak.

The concentration of each TIC was estimated using a relative response factor calculated using the total peak area for the nearest eluting IS. The IS peak area was used to calculate a response factor using the IS concentration in mg/m^3 :

$$\text{Response Factor} = \frac{\text{IS conc. (mg/m}^3\text{)}}{\text{IS peak area}} \quad (\text{E.2})$$

The calculated response factor was then multiplied by the TIC peak area to give an estimated concentration for that compound.

E.3 Quality Assurance/Quality Control

Before tank samples were analyzed, a diagnostic check was performed on the GC/MS instrument by running a full auto tune, as described in PNL-TVP-10. Upon satisfactory completion of the instrument diagnostic check, a blank trap was analyzed to check the cleanliness of the system. The instrument was then calibrated using six different concentrations of standard gas mixture containing the compounds listed in Appendix H. A gas mixture containing difluorobenzene, chlorobenzene- d_5 , and 1,4 bromofluorobenzene was used as an IS for all calibration standard and sample analyses. Analyte responses from sample components, ISs, and standards were obtained from the extracted ion plot from their selected mass ion. A continuing calibration was generated by calculating the relative response ratios of the IS to calibration standard responses and plotting the ratios against the ratio of the calibration-standard concentration (in ppbv) to the IS concentration. Once it was determined that the relative response was linear with increasing concentration, an average response factor was calculated for each target analyte and used to determine the concentration of target compounds in each sample.

E.4 Triple Sorbent Trap Sample Results

Thirty-two TSTs consisting of four samples each from six different sampling locations within the tank headspace, four field blanks, and four trip blanks were returned to the laboratory on December 18, 1996, under COC numbers 100420 and 100423. The samples were analyzed from June 24 through June 27, 1997. Sample analysis exceeded the 60 day administrative hold time.

The quantitative results for all the detected target analytes and TICs from the GC/MS analysis of the tank headspace TST samples are presented in Tables E.3 through E.8; means and standard deviations for each compound at each sampling location are calculated. The results of replicate analyses on TST samples are presented in Tables E.9 through E.15. The RPDs were calculated for

analytes detected above the IDL and found in both replicates. The results of the blank samples are presented in Tables E.16 and E.17.

A summary of the mean and standard deviation values (mg/m^3) for each compound at each sampling location is presented in Table 2.3. This information will be used to determine whether the organic compounds are homogeneously mixed in the headspace.

A representative total ion chromatogram showing the major constituents identified in the triple sorbent trap analysis is provided in Figure E.1.

Appendix H contains complete listings of target analyte results from the TST analyses. These data originate directly from the evaluated instrument data and have not been rounded. The intent of the data is to list the analytes that were analyzed and to present the detection limit values associated with analytes that were not detected.

A review of the TST data associated with the sampling of Tank U-112 found contamination associated with the field blanks and to a lesser degree with the trip blanks. Seventeen target compounds and 45 TICs were identified in one or more of the blank samples. Blank samples associated with the sampling of Riser 6 were significantly more contaminated than blank samples associated with the sampling of Riser 3. Total concentrations of compounds in the blanks associated with sampling of Riser 3 ranged from $0.10 \text{ mg}/\text{m}^3$ to $5.90 \text{ mg}/\text{m}^3$. Total concentrations of compounds in the blanks associated with sampling of Riser 6 ranged from $0.26 \text{ mg}/\text{m}^3$ to $19.30 \text{ mg}/\text{m}^3$. Because of blank contamination associated with the sampling of Tank U-112, selected compounds in TST tables have been bolded or assigned an "S" flag (suspect data). Therefore, these compound results should not be used for further data manipulation.

E.4.1 Procedural Deviations, Observations, and Anomalies

Problems were noted during the collection of sample S6118-T42.1268 (see WHC COC 100420, Appendix F). Results associated with this sample should be considered suspect and are flagged with an "S" in the tables.

The TST samples were analyzed in seven batches. Samples were run under the protocols of procedure PNL-TVP-10, Rev. 2 with the initial calibration performed on June 13, 1997 and quantitated against a CCV run at beginning of the batch. The sample analytical sequence runs were as follows:

Batch #1 (file identifier 47062401.b) - S6119-a53.1311, S6118-a50.1290, S6118-m29.1241, S6118-m29.1241 REP, S6118-b35.1326, S6119-b35.1299;

Batch #2 (file identifier 47062501.b) - S6119-b34.1298, S6119-b34.1298 REP, S6118-a53.1295, S6118-b37.1267, S6118-t45.1279, S6119-t45.1305;

Batch #3 (file identifier 47062502.b) - S6118-b36.1266, S6119-m29.1297, S6119-m29.1297 REP, S6118-t42.1268, S6118-t43.1271, S6119-t42.1302;

Batch #4 (file identifier 47062601.b) - S6119-t43.1303, S6118-m48.1286, S6118-m48.1286 REP, S6119-a52.1310, S6119-t44.1304, S6118-m28.1238;

Batch #5 (file identifier 47062602.b) - S6119-a50.1308, S6118-a51.1291, S6119-a51.1309, S6119-m48.1306, S6119-m48.1306 REP, S6118-b34.1257;

Batch #6 (file identifier 47062701.b) - S6119-m49.1307, S6119-m49.1307 REP, S6119-b36.1300, S6118-t44.1272, S6119-b37.1301, S6118-m49.1289;

Batch #7 (file identifier 47062702.b) - S6119-m28.1296, S6119-m28.1296 REP, S6118-a52.1293.

Batch #1:

This analytical batch included one trip blank and one Riser 6 bottom sample and one field blank, one middle sample, a replicate of the middle sample and one bottom sample from Riser 3.

The CCV showed acceptable performance as specified in the procedure for all target compounds except tridecane (39.2%), and tetradecane (70.2%). Varying amounts of tridecane, and tetradecane were observed in the samples. Due to the CCV performance, the results for these compounds have a greater uncertainty. 1,3-butadiene was taken off the target list because the Kintech perm tube was empty; thus, calibration for this compound was not possible. Internal standard responses were acceptable for all runs in the batch with the exception of 1-bromo-4-fluorobenzene (47.02%) in the replicate sample. Surrogate recoveries ranged from 89% to 99%. The CCB showed a trace of methylene chloride and tetradecane (below EQL). The compound 1,1,2-trichloro-1,2,2-trifluoroethane was seen at quantities above the EQL but the CCB was clean of other target compounds. Those compounds found in the CCB at concentrations (ng on column) greater than 5% of the sample should be flagged with a "B" in the final report.

The peak located at approximately 10.5 minutes was labeled as 2-methyl-1-propene instead of 1,3-butadiene possibly due to a mixture of compounds located within the same peak.

Batch 2:

This analytical batch included one bottom sample, a replicate of the bottom sample, and a top sample from Riser 6, and one trip blank, a bottom sample, and a top sample from Riser 3.

The CCV showed acceptable performance as specified in the procedure for all target compounds except tetradecane (50.4%). Varying amounts of tetradecane were observed in the samples. Due to the CCV performance, the results for these compounds have a greater uncertainty. 1,3-butadiene was taken off the target list because the Kintech perm tube was empty; thus, calibration for this compound was not possible. Internal standard responses were acceptable for all runs in the batch with the exception of chlorobenzene-d5, and 1-bromo-4-fluorobenzene in the replicate sample. Surrogate recoveries ranged from 97% to 111%. The CCB showed a trace of methylene chloride, 1,1-dichloroethane, toluene, and ethylbenzene (below EQL) but was clean of other target compounds. Those compounds found in the CCB at concentrations (ng on column) greater than 5% of the sample should be flagged with a "B" in the final report.

The peak located at approximately 10.5 minutes was labeled as 2-methyl-1-propene instead of 1,3-butadiene possibly due to a mixture of compounds located within the same peak.

Batch 3:

This analytical batch included one top sample, one bottom sample from Riser 3, and one middle sample, a replicate of the middle sample and one top sample from Riser 6.

The CCV showed acceptable performance as specified in the procedure for all target compounds except tetradecane (41.8%). Tetradecane was observed in the samples. Due to the CCV performance, the results for this compound have a greater uncertainty. 1,3-butadiene was taken off the target list because the Kintech perm tube was empty; thus, calibration for this compound was not possible. Internal standard responses were acceptable for all runs in the batch with the exception of 1-bromo-4-fluorobenzene (48.8%) in the replicate sample. Surrogate recoveries ranged from 92% to 101%. The CCB showed a trace of methylene chloride, 1,1-dichloroethane, and chloroform (below EQL) but was clean of other target compounds. Those compounds found in the CCB at concentrations (ng on column) greater than 5% of the sample should be flagged with a "B" in the final report.

The peak located at approximately 10.5 minutes was labeled as 2-methyl-1-propene instead of 1,3-butadiene possibly due to a mixture of compounds located within the same peak.

Batch 4:

This analytical batch included two top samples, one trip blank from Riser 6, and two middle samples, and a replicate of the one middle sample from Riser 3.

The CCV showed acceptable performance as specified in the procedure for all target compounds except and tetradecane (39.4%). Varying amounts of tetradecane were observed in the samples. Due to the CCV performance, the results for these compounds have a greater uncertainty. 1,3-butadiene was taken off the target list because the Kintech perm tube was empty; thus, calibration for this compound was not possible. Internal standard responses were acceptable for all runs in the batch with the exception of difluorobenzene, chlorobenzene and 1-bromo-4-fluorobenzene in the replicate sample. Surrogate recoveries ranged from 90% to 103%. The CCB showed a trace of methylene chloride, 1,1,2-trichloro-1,2,2-trifluoroethane, chloroform, and tetradecane (below EQL) but was clean of other target compounds. Those compounds found in the CCB at concentrations (ng on column) greater than 5% of the sample should be flagged with a "B" in the final report.

The peak located at approximately 10.5 minutes was labeled as 2-methyl-1-propene instead of 1,3-butadiene possibly due to a mixture of compounds located within the same peak.

Batch #5:

This analytical batch included two field blanks, one middle sample and a replicate of that middle sample from Riser 6, one field blank and one bottom sample from Riser 3.

The CCV showed acceptable performance as specified in the procedure for all target compounds except tetradecane (33.9%). Varying amounts were observed in the samples. Due to the CCV performance, the results for these compounds have a greater uncertainty. 1,3-butadiene was taken off the target list because the Kintech perm tube was empty; thus, calibration for this compound was not possible. Internal standard responses were acceptable for all runs in the batch with the exception of 1-bromo-4-fluorobenzene in the replicate sample. Surrogate recoveries ranged from 94% to 105%. The CCB showed a trace of methylene chloride, 1,1-dichloroethane, chloroform, toluene and, tetradecane (below EQL) but was clean of other target compounds. Those compounds found in the CCB at concentrations (ng on column) greater than 5% of the sample should be flagged with a "B" in the final report.

The peak located at approximately 10.5 minutes was labeled as 2-methyl-1-propene instead of 1,3-butadiene possibly due to a mixture of compounds located within the same peak.

Batch #6:

This analytical batch included one bottom sample, two middle samples, one replicate of a middle sample from Riser 6, one top and one middle sample from Riser 3.

The CCV showed acceptable performance as specified in the procedure for all target compounds except tetradecane (34.0%). Varying amounts of tetradecane were observed in the samples. Due to the CCV performance, the results for these compounds have a greater uncertainty. 1,3-butadiene was taken off the target list because the Kintech perm tube was empty; thus, calibration for this compound was not possible. Internal standard responses were acceptable for all runs in the batch with the exception of difluorobenzene (46.01%), chlorobenzene-d5 (43.2%) and 1-bromo-4-fluorobenzene (41.6%) in the replicate sample. Surrogate recoveries ranged from 91% to 101%. The CCB showed a trace of methylene chloride, 1,1-dichloroethane, chloroform, toluene and tetradecane (below EQL) but was clean of other target compounds. Those compounds found in the CCB at concentrations (ng) greater than 5% of the sample should be flagged with a "B" in the final report.

Batch #7:

This analytical batch included two middle samples, one replicate of a middle sample from Riser 6, one trip blank from Riser 3.

The CCV showed acceptable performance as specified in the procedure for all target compounds except 1,3-butadiene and tetradecane (31.6%). Varying amounts of tetradecane were observed in the samples. 1,3-butadiene was taken off the target list because the Kintech perm tube was empty; thus, calibration for this compound was not possible. Due to the CCV performance, the results for these compounds have a greater uncertainty. Internal standard responses were acceptable for all runs in the batch with the exception of 1-bromo-4-fluorobenzene (49.70%) in the replicate sample. Surrogate recoveries ranged from 92% to 105%. The CCB showed a trace of methylene chloride, 1,1-dichloroethane, chloroform, and tetradecane (below EQL) but was clean of other target compounds. Those compounds found in the CCB at concentrations (ng) greater than 5% of the sample should be flagged with a "B" in the final report.

The peak located at approximately 10.5 minutes was labeled as 2-methyl-1-propene instead of 1,3-butadiene possibly due to a mixture of compounds located within the same peak.

Information common to all batches:

Methanol and ethanol are not currently included in the method performance section of the procedure; however, these analytes were analyzed by this method. The low level standard is used as the EQL for these compounds. Sample results are flagged with a less-than symbol (<) when less than the EQL.

Tributyl phosphate is included in the target list based on a calibration performed on January 5 and 9, 1996. The TBP was introduced onto a series of double sorbent traps as a methanolic solution standard rather than a vapor standard. This served to determine the retention time and verify the mass spectral characteristics of the compound but does not constitute a true target analysis since the compound is not routinely included in a vapor CCV. At present there is no known way to prepare a vapor standard from this material. The calibration information on TBP demonstrated that detectability at 20 ng on column (0.1 mg/m^3 in 200 scc) is possible and thus confirms the validity of nondetects. Tributyl phosphate was not detected in any sample.

Table E.3 Organic Compound Concentrations in Triple Sorbent Traps from Tank U-112 Riser 3 Top Level Sampled on 12/6/96

Target Analytes ^(a)	CAS	MW	Ret Time	S6118-145.1279 ^(c) ISVS			S6118-142.1268 ^(c) ISVS			S6118-143.1271 ^(c) ISVS			S6118-144.1272 ^(c) ISVS			Mean and Standard Deviation			
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	St. Dev.	(ppbv)	St. Dev.
Methanol	67-56-1	32	10.0	1.534	1072	Y	1.167	816	Y,S	1.729	1209	Y	0.665	465	Y	1.274	0.468	890	327
Butane	106-97-8	58	10.8	0.111	43		0.121	46	S	0.161	62		0.107	41		0.125	0.025	48	9.5
Ethanol	64-17-5	46	12.5	0.431	209	Y	0.430	209	Y,S	0.809	393	Y	<0.275	<133	Y	0.556	0.218	271	106
Acetonitrile	75-05-8	41	13.0	0.041	22		0.039	21	S	0.042	23		0.022	12	J	0.036	0.009	20	5.1
Acetone	67-64-1	58	13.7	0.085	33		0.103	40	S	0.086	33		0.074	28	J	0.087	0.012	34	4.7
Trichlorofluoromethane	75-69-4	137	14.2	0.203	33		0.276	45	S	0.268	44		0.178	29		0.231	0.048	38	7.9
Pentane	109-66-0	72	15.0	0.012	3.6	J	0.013	4.2	J,S	0.013	3.9	J	0.011	3.4	J	0.012	0.001	3.8	0.35
Methylene Chloride	75-09-2	85	15.8	0.032	8.4	J,B	0.067	18	J,B,S	0.108	29	J,B	0.024	6.3	J,B	0.058	0.039	15	10
1,1,2-Trichloroethane	76-13-1	187	16.3	0.023	2.7	J	0.021	2.6	J,S	0.022	2.6	J	0.014	1.7	J	0.020	0.004	2.4	0.46
Propanol	71-23-8	60	17.1	0.080	30		0.085	32	S	0.098	37		0.047	18	J	0.077	0.021	29	8.0
2-Butanone	78-93-3	72	18.6	0.024	7.4		0.027	8.4	S	0.049	15		0.018	5.6	J	0.029	0.014	9.2	4.2
Hexane	110-54-3	86	19.9	0.048	13	S	0.051	13	S	0.053	14	S	0.061	16	S	0.053	0.005	14	1.4
Tetrahydrofuran	109-99-9	72	20.8	0.041	13		0.038	12	S	0.044	14		0.039	12		0.040	0.002	13	0.77
1,1,1-Trichloroethane	71-55-6	133	21.9	0.012	2.0	J	0.016	2.6	J,S	0.014	2.3	J	0.008	1.4	J	0.012	0.003	2.1	0.54
1-Butanol	71-36-3	74	22.3	0.342	104		0.301	91	S	0.408	123		0.282	85		0.333	0.056	101	17
Benzene	71-43-2	78	22.8	0.011	3.2	J	0.012	3.4	J,S	0.012	3.5	J	0.011	3.1	J	0.012	0.001	3.3	0.17
Carbon Tetrachloride	56-23-5	154	23.1	0.006	0.81	J	0.006	0.83	J,S	0.008	1.1	J	0.005	0.74	J	0.006	0.001	0.87	0.16
Cyclohexane	110-82-7	84	23.4	0.025	6.7	J	0.027	7.2	J,S	0.028	7.3	J	0.064	17		0.036	0.019	9.5	5.0
Heptane	142-82-5	100	25.2	0.027	6.0		0.032	7.1	S	0.031	7.0		0.040	8.9		0.032	0.005	7.2	1.2
4-Methyl-2-Pentanone	108-10-1	100	26.4	0.016	3.6	J	0.018	3.9	J,S	0.024	5.3		0.013	3.0	J	0.018	0.004	3.9	0.98
1,1,2-Trichloroethane	79-00-5	133	27.9	0.009	1.5	J	0.008	1.4	J,S	0.008	1.4	J	0.009	1.5	J	0.009	0.000	1.4	0.056
Toluene	108-88-3	92	28.5	0.270	66	S	1.389	338	S	0.352	86	S	0.294	72	S	0.576	0.543	140	132
Tetrachloroethylene	127-18-4	166	31.0	0.005	0.68	J	0.003	0.36	U,S	0.003	0.36	U	0.007	1.0	J	0.006	d	0.84	d
Hexanenitrile	628-73-9	97	32.8	0.005	1.2	J	0.006	1.3	J,S	0.005	1.2	J	0.505	117		0.130	0.250	30	58
Ethylbenzene	100-41-4	106	33.4	0.036	7.5	S,B	0.035	7.3	S	0.035	7.3	S	0.028	5.9	S	0.033	0.004	7.0	0.76
p/m-Xylene	106-42-3	106	33.9	0.119	25	S	0.113	24	S	0.115	24	S	0.104	22	S	0.113	0.006	24	1.3
Cyclohexanone	108-94-1	98	34.3	0.016	3.7	J	0.016	3.6	J,S	0.018	4.2	J	0.013	3.1	U	0.017	0.001	3.8	0.32
Styrene	100-42-5	104	34.8	0.023	4.9	S	0.023	5.0	S	0.025	5.4	S	0.019	4.1	S	0.022	0.002	4.8	0.51
1,1,2,2-Tetrachloroethane	79-34-5	168	35.0	0.012	1.6	J	0.012	1.7	J,S	0.011	1.5	J	0.007	0.88	J	0.010	0.003	1.4	0.35
o-Xylene	95-47-6	106	35.1	0.063	13	S	0.060	13	S	0.061	13	S	0.055	12	S	0.060	0.004	13	0.75
Nonane	111-84-2	128	35.4	0.010	1.7	J	0.010	1.8	J,S	0.010	1.8	J	0.009	1.6	J	0.010	0.001	1.7	0.10
1-Ethyl-2-methyl benzene	611-14-3	120	38.4	0.004	0.71	J	0.004	0.82	J,S	0.004	0.81	J	0.005	0.87	J	0.004	0.000	0.80	0.067
1,3,5-Trimethylbenzene	108-67-8	120	38.7	0.005	0.89	J	0.005	0.97	J,S	0.005	1.0	J	0.005	0.98	J	0.005	0.000	0.96	0.048
1,2,4-Trimethylbenzene	95-63-6	120	39.9	0.013	2.4	J	0.014	2.6	J,S	0.014	2.7	J	0.003	0.59	J	0.011	0.005	2.0	0.98
Decane	124-18-5	142	40.1	0.037	5.9		0.039	6.1	S	0.039	6.2		0.044	6.9		0.040	0.003	6.3	0.43
1,4-Dichlorobenzene	106-46-7	147	40.7	0.010	1.5	J	0.009	1.4	J,S	0.011	1.7	J	0.011	1.6	J	0.010	0.001	1.6	0.13
Undecane	1120-21-4	156	44.4	0.045	6.4	J	0.043	6.2	J,S	0.048	6.8		0.051	7.3		0.047	0.003	6.7	0.45
Dodecane	112-40-3	170	48.5	0.019	2.5	J	0.027	3.6	U,S	0.027	3.6	U	0.027	3.6	U	d	d	d	d
Tridecane	629-50-5	184	52.2	0.049	6.0	J	0.057	6.9	J,S	0.057	7.0	J	0.053	6.4	J	0.054	0.004	6.6	0.48
Tetradecane	629-59-4	198	55.7	0.033	3.8	J	0.039	4.4	J,S	0.034	3.9	J	0.025	2.9	J,B	0.033	0.006	3.7	0.65
Total Concentration of Target Analytes																4.132			

Table E.3 (Cont'd) Organic Compound Concentrations in Triple Sorbent Traps from Tank U-112 Riser 3 Top Level Sampled on 12/6/96

Tentatively Identified Compounds ^(b)	CAS	MW	Ret Time	S6118-145.1279 ^(c) ISVS			S6118-142.1268 ^(c) ISVS			S6118-143.1271 ^(c) ISVS			S6118-144.1272 ^(c) ISVS			Mean and Standard Deviation			
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	St. Dev.	(ppbv)	St. Dev.
Unknown			5.1	nd	nd		nd	nd	S	0.240	e		nd	nd		d	d	d	d
Propane	74-98-6	44	7.4	0.091	46	S	0.093	47	S	0.121	62	S	0.062	32	S	0.092	0.024	47	12
Acetaldehyde	75-07-0	44	9.5	nd	nd		0.047	24	S	nd	nd		0.054	27		0.051	d	26	d
1-Propene, 2-methyl-	115-11-7	56	10.4	0.744	298	S	1.232	493	S	0.877	351	S	0.719	287	S	0.893	0.236	357	95
Isopropyl Alcohol	67-63-0	60	14.3	0.076	28		0.101	38	S	0.118	44		0.072	27		0.091	0.022	34	8.0
1-Fluoro-1,1-dichloro-ethane	1717-00-6	116	14.5	nd	nd	S	1.562	302	S	nd	nd	S	nd	nd	S	d	d	d	d
2-Propanol, 2-methyl-	75-65-0	74	15.5	0.153	46	S	0.212	64	S	0.207	63	S	0.107	32	S	0.169	0.050	51	15
Acetic acid	64-19-7	60	18.3	0.140	52	S	0.146	55	S	0.211	79	S	0.188	70	S	0.171	0.034	64	13
Pentane, 3-methyl-	96-14-0	86	19.1	0.068	18	S	0.070	18	S	0.081	21	S	nd	nd	S	0.073	0.007	19	1.8
Pentane, 2,3-dimethyl-	565-59-3	100	23.7	0.039	8.7	S	0.052	12	S	0.046	10	S	0.058	13	S	0.049	0.008	11	1.8
Hexane, 3-methyl-	589-34-4	100	24.0	0.081	18	S	0.103	23	S	0.097	22	S	0.133	30	S	0.104	0.022	23	4.9
1-Octene, 3-ethyl-	74630-08-3	140	24.5	0.018	2.9	S	0.021	3.4	S	0.023	3.7	S	0.028	4.4	S	0.022	0.004	3.6	0.66
Cyclopentane, 1,2-dimethyl-	2452-99-5	98	24.8	0.033	7.6	S	0.053	12	S	0.037	8.4	S	0.032	7.4	S	0.039	0.010	8.9	2.2
Cyclohexane, methyl-	108-87-2	98	26.7	0.071	16	S	nd	nd	S	0.070	16	S	0.085	19	S	0.075	0.008	17	1.8
Hexane, 2,4-dimethyl-	589-43-5	114	27.1	0.040	7.8	S	0.040	7.8	S	0.038	7.5	S	0.022	4.3	S	0.035	0.009	6.9	1.7
Propanoic acid, 2,2-dimethyl-	75-98-9	102	29.1	0.107	23	S	0.086	19	S	0.129	28	S	0.103	23	S	0.106	0.018	23	3.9
Cyclohexane, 1,4-dimethyl-	589-90-2	112	29.7	0.064	13	S	0.068	14	S	0.067	13	S	0.036	7.3	S	0.059	0.015	12	3.0
Cyclohexane, 1,2-dimethyl-, trans-	6876-23-9	112	30.8	0.033	6.6	S	0.035	6.9	S	0.032	6.4	S	0.015	3.1	S	0.029	0.009	5.8	1.8
Cyclotrisiloxane, hexamethyl-	541-05-9	222	31.2	nd	nd	S	0.767	77	S	nd	nd	S	nd	nd	S	d	d	d	d
Hexane, 2,3,5-trimethyl-	1069-53-0	128	31.5	0.254	44	S	0.268	47	S	0.249	44	S	0.157	27	S	0.232	0.051	41	8.9
Heptane, 2,4-dimethyl-	2213-23-2	128	31.8	0.756	132	S	0.801	140	S	0.747	131	S	0.477	83	S	0.695	0.148	122	26
2,4-Dimethyl-1-heptene	19549-87-2	126	32.6	0.162	29	S	0.175	31	S	0.172	31	S	0.111	20	S	0.155	0.030	28	5.3
Octane, 4-methyl-	2216-34-4	128	33.8	0.128	22		nd	nd	S	nd	nd		nd	nd		d	d	d	d
Octane, 2,4,6-trimethyl-	62016-37-9	156	39.2	0.078	11	S	0.207	30	S	0.203	29	S	0.115	17	S	0.151	0.065	22	9.3
Cyclotetrasiloxane, octamethyl-	556-67-2	296	39.5	0.950	72	S	0.939	71	S	0.891	67	S	1.055	80	S	0.959	0.069	73	5.2
Decane, 2,2,5-trimethyl-	62237-96-1	184	41.5	0.099	12	S	0.114	14	S	0.105	13	S	0.083	10	S	0.100	0.013	12	1.6
Heptadecane	629-78-7	240	42.3	0.098	9.1	S	0.114	11	S	0.108	10	S	0.093	8.7	S	0.103	0.010	9.6	0.90
Unknown C9 Alkane (mw 128)		128	42.7	0.123	22	S	0.133	23	S	0.130	23	S	0.122	21	S	0.127	0.005	22	0.93
Unknown C12 Alkane (mw 170)		170	42.9	0.886	117	S	0.954	126	S	0.960	126	S	0.868	114	S	0.917	0.047	121	6.2
Decane, 3,6-dimethyl-	17312-53-7	170	43.2	0.431	57	S	0.461	61	S	0.469	62	S	0.429	56	S	0.448	0.021	59	2.7
Undecane, 3,4-dimethyl-	17312-78-6	184	44.7	0.130	16	S	0.134	16	S	0.143	17	S	0.132	16	S	0.135	0.006	16	0.70
Undecane, 4,7-dimethyl-	17301-32-5	184	44.9	0.084	10	S	0.083	10	S	0.089	11	S	0.082	10	S	0.085	0.003	10	0.36
Benzoic acid, 2-[(trimethylsilyl)oxy]-	3789-85-3	282	46.4	0.134	11	S	0.131	10	S	0.126	10	S	0.113	9.0	S	0.126	0.009	10.0	0.73
Methanamine	100-97-0	140	49.6	nd	nd	S	0.091	15	S	nd	nd	S	nd	nd	S	d	d	d	d
Pentadecane	629-62-9	212	51.8	nd	nd	S	nd	nd	S	nd	nd	S	0.123	13	S	d	d	d	d
Total Concentration of TICs																6.289			

Data Quality Flags

B Compound found in associated laboratory blank.

J Target compound detected above the IDL but below the EQL.

S Data should be considered suspect due to possible sampling error.

U Target compound not detected at or above the IDL.

Y Initial calibration and CCV were performed, however, the analyte was not part of the current operating procedure.

Footnotes

(a) Detected target analytes.

(b) Semi-quantitative estimate calculated using concentration of closest eluting IS.

(c) Sample identification number.

(d) Mean and/or standard deviation are not meaningful for this analyte.

(e) No molecular weight available for calculation.

nd Not detected.

Table E.4 Organic Compound Concentrations in Triple Sorbent Traps from Tank U-112 Riser 3 Middle Level Sampled on 12/6/96

Target Analytes ^(a)	CAS	MW	Ret Time	S6118-m29.1241 ^(c,d) ISVS			S6118-m48.1286 ^(c,d) ISVS			S6118-m28.1238 ^(c) ISVS			S6118-m49.1289 ^(c) ISVS			Mean and Standard Deviation			
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	St. Dev.	(ppbv)	St. Dev.
Methanol	67-56-1	32	10.0	1.577	1103	Y	1.423	995	Y	1.675	1171	Y	0.829	579	Y	1.376	0.379	962	265
Butane	106-97-8	58	10.8	0.110	42		0.112	43		0.102	39		0.091	35		0.104	0.009	40	3.7
Ethanol	64-17-5	46	12.5	0.677	329	Y	0.383	186	Y	0.463	225	Y	<0.275	<133	Y	0.508	0.152	247	74
Acetonitrile	75-05-8	41	13.0	0.026	14	J	0.048	26		0.068	37		0.022	12	J	0.041	0.021	22	12
Acetone	67-64-1	58	13.7	0.080	31		0.064	25	J	0.074	29	J	0.057	22	J	0.069	0.010	27	4.0
Trichlorofluoromethane	75-69-4	137	14.1	0.212	35		0.191	31		0.171	28		0.179	29		0.188	0.018	31	2.9
Pentane	109-66-0	72	14.9	0.010	3.2	J	0.011	3.5	J	0.011	3.5	J	0.011	3.3	J	0.011	0.001	3.4	0.16
Methylene Chloride	75-09-2	85	15.8	0.066	17	J,B	0.034	9.0	J,B	0.037	9.8	J,B	0.020	5.4	J,B	0.039	0.019	10	5.1
1,1,2-Trichloroethane	76-13-1	187	16.3	0.033	4.0	B	0.022	2.7	J,B	0.022	2.6	J,B	0.012	1.5	J	0.022	0.009	2.7	1.0
Propanol	71-23-8	60	17.1	0.084	31		0.077	29		0.085	32		0.065	24		0.078	0.009	29	3.4
2-Butanone	78-93-3	72	18.6	0.052	16		0.017	5.2	J	0.021	6.5	J	0.025	7.9		0.029	0.016	9.0	5.0
Hexane	110-54-3	86	19.8	0.046	12	S	0.045	12	S	0.050	13	S	0.092	24	S	0.058	0.022	15	5.9
Tetrahydrofuran	109-99-9	72	20.7	0.036	11	J	0.040	12		0.036	11	J	0.041	13		0.038	0.003	12	0.79
1,1,1-Trichloroethane	71-55-6	133	21.9	0.011	1.9	J	0.012	1.9	J	0.011	1.8	J	0.008	1.4	J	0.010	0.002	1.8	0.25
1-Butanol	71-36-3	74	22.3	0.270	82		0.338	102		0.329	100		0.314	95		0.312	0.030	95	9.2
Benzene	71-43-2	78	22.8	0.011	3.0	J	0.011	3.0	J	0.011	3.1	J	0.012	3.4	J	0.011	0.001	3.1	0.19
Carbon Tetrachloride	56-23-5	154	23.0	0.005	0.77	J	0.005	0.78	J	0.005	0.74	J	0.006	0.84	J	0.005	0.000	0.78	0.042
Cyclohexane	110-82-7	84	23.3	0.042	11	J	0.028	7.3	J	0.025	6.5	J	0.014	3.8	J	0.027	0.011	7.2	3.0
Heptane	142-82-5	100	25.2	0.037	8.2		0.029	6.4		0.027	6.1		0.097	22		0.047	0.033	11	7.5
4-Methyl-2-Pentanone	108-10-1	100	26.3	0.026	5.9		0.014	3.2	J	0.018	4.0	J	0.016	3.5	J	0.019	0.005	4.1	1.2
1,1,2-Trichloroethane	79-00-5	133	27.8	0.009	1.5	J	0.009	1.5	J	0.008	1.3	J	0.009	1.5	J	0.009	0.000	1.4	0.062
Toluene	108-88-3	92	28.4	0.264	64	S	0.246	60	S	0.294	71	S	0.432	105	S	0.309	0.084	75	21
Tetrachloroethylene	127-18-4	166	31.0	0.004	0.55	J	0.003	0.36	U	0.003	0.36	U	0.009	1.2	J	0.006	e	0.88	e
Hexanenitrile	628-73-9	97	32.8	0.008	1.9	J	0.005	1.2	J	0.004	0.88	J	0.500	116		0.129	0.247	30	57
Ethylbenzene	100-41-4	106	33.4	0.031	6.4	S	0.036	7.6	S	0.030	6.3	S	0.027	5.7	S	0.031	0.004	6.5	0.77
p/m-Xylene	106-42-3	106	33.8	0.101	21	S	0.119	25	S	0.100	21	S	0.101	21	S	0.105	0.009	22	2.0
Cyclohexanone	108-94-1	98	34.3	0.013	3.1	U	0.024	5.4	J	0.018	4.0	J	0.013	3.1	U	0.021	e	4.7	e
Styrene	100-42-5	104	34.7	0.022	4.6	S	0.023	4.9	S	0.019	4.2	S	0.018	3.9	S	0.020	0.002	4.4	0.46
1,1,2,2-Tetrachloroethane	79-34-5	168	35.0	0.006	0.83	U	0.006	0.83	U	0.010	1.3	J	0.007	0.86	J	0.008	e	1.1	e
o-Xylene	95-47-6	106	35.0	0.054	11	S	0.063	13	S	0.052	11	S	0.052	11	S	0.055	0.006	12	1.2
Nonane	111-84-2	128	35.4	0.008	1.5	J	0.010	1.7	J	0.008	1.4	J	0.009	1.5	J	0.009	0.001	1.5	0.14
1-Ethyl-2-methyl benzene	611-14-3	120	38.4	0.004	0.71	J	0.004	0.78	J	0.004	0.65	J	0.004	0.75	J	0.004	0.000	0.72	0.056
1,3,5-Trimethylbenzene	108-67-8	120	38.6	0.005	0.86	J	0.005	0.95	J	0.004	0.80	J	0.005	0.96	J	0.005	0.000	0.89	0.076
1,2,4-Trimethylbenzene	95-63-6	120	39.9	0.012	2.2	J	0.014	2.6	J	0.011	2.1	J	0.012	2.3	J	0.012	0.001	2.3	0.21
Decane	124-18-5	142	40.1	0.035	5.5		0.043	6.7		0.034	5.4		0.041	6.5		0.038	0.004	6.0	0.67
1,4-Dichlorobenzene	106-46-7	147	40.6	0.010	1.5	J	0.011	1.7	J	0.009	1.3	J	0.010	1.5	J	0.010	0.001	1.5	0.14
Undecane	1120-21-4	156	44.4	0.042	6.0	J	0.054	7.7		0.043	6.2	J	0.045	6.5	J	0.046	0.005	6.6	0.76
Tridecane	629-50-5	184	52.2	0.085	10	J	0.054	6.6	J	0.050	6.1	J	0.050	6.1	J	0.060	0.017	7.3	2.1
Tetradecane	629-59-4	198	55.7	0.079	8.9	J,B	0.029	3.3	J,B	0.057	6.4	J,B	0.021	2.4	J,B	0.046	0.026	5.2	3.0
Total Concentration of Target Analytes																3.838			
Tentatively Identified Compounds ^(b)																			
Propene	115-07-1	42	7.4	0.119	63		nd	nd		nd	nd		nd	nd		e	e	e	e
Propane	74-98-6	44	7.4	nd	nd	S	0.132	67	S	0.159	81	S	0.056	29	S	0.116	0.054	59	27
Ethane, 1-chloro-1,1-difluoro-	75-68-3	100	8.9	0.085	19		nd	nd		0.056	13		nd	nd		0.071	e	16	e
Acetaldehyde	75-07-0	44	9.6	nd	nd		nd	nd		nd	nd		0.037	19		e	e	e	e
1-Propene, 2-methyl-	115-11-7	56	10.4	0.523	209	S	0.536	215	S	0.859	344	S	0.309	124	S	0.557	0.227	223	91

Table E.4 (Cont'd) Organic Compound Concentrations in Triple Sorbent Traps from Tank U-112 Riser 3 Middle Level Sampled on 12/6/96

Tentatively Identified Compounds ^(b)	CAS	MW	Ret Time	S6118-m29.1241 ^(c,d) ISVS			S6118-m48.1286 ^(c,d) ISVS			S6118-m28.1238 ^(c) ISVS			S6118-m49.1289 ^(c) ISVS			Mean and Standard Deviation			
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	St. Dev.	(ppbv)	St. Dev.
Isopropyl Alcohol	67-63-0	60	14.3	0.124	46		0.094	35		0.084	31		0.080	30		0.095	0.020	36	7.4
2-Propanol, 2-methyl-	75-65-0	74	15.5	0.143	43	S	0.124	37	S	0.185	56	S	0.082	25	S	0.133	0.043	40	13
Pentane, 2-methyl-	107-83-5	86	18.3	0.078	20	S	nd	nd		nd	nd		nd	nd		e	e	e	e
Acetic acid	64-19-7	60	18.3	0.098	37	S	0.164	61	S	0.165	62	S	0.164	61	S	0.148	0.033	55	12
Pentane, 3-methyl-	96-14-0	86	19.0	0.066	17	S	0.056	15	S	0.083	22	S	nd	nd	S	0.068	0.014	18	3.6
Hexane, 2-methyl-	591-76-4	100	23.5	nd	nd	S	nd	nd	S	nd	nd	S	0.194	43	S	e	e	e	e
Pentane, 2,3-dimethyl-	565-59-3	100	23.7	0.059	13	S	0.044	10	S	0.041	9.2	S	0.128	29	S	0.068	0.041	15	9.1
Hexane, 3-methyl-	589-34-4	100	23.9	0.124	28	S	0.094	21	S	0.087	20	S	0.312	70	S	0.154	0.106	34	24
1-Octene, 3-ethyl-	74630-08-3	140	24.5	0.031	5.0	S	nd	nd	S	0.021	3.4	S	0.070	11	S	0.041	0.026	6.5	4.1
Cyclopentane, 1,2-dimethyl-	2452-99-5	98	24.8	0.045	10	S	0.037	8.4	S	0.020	4.5	S	0.070	16	S	0.043	0.021	9.8	4.8
Cyclohexane, methyl-	108-87-2	98	26.7	0.114	26	S	0.088	20	S	0.060	14	S	0.199	45	S	0.115	0.060	26	14
Hexane, 2,4-dimethyl-	589-43-5	114	27.1	0.047	9.2	S	0.043	8.4	S	0.037	7.2	S	0.046	9.0	S	0.043	0.005	8.4	0.90
Propanoic acid, 2,2-dimethyl-	75-98-9	102	29.0	0.072	16	S	0.126	28	S	0.091	20	S	0.079	17	S	0.092	0.024	20	5.3
Cyclohexane, 1,4-dimethyl-	589-90-2	112	29.7	0.060	12	S	0.066	13	S	0.060	12	S	0.037	7.3	S	0.056	0.013	11	2.6
Cyclohexane, 1,2-dimethyl-, trans-	6876-23-9	112	30.8	0.031	6.1	S	0.034	6.8	S	0.030	5.9	S	0.014	2.9	S	0.027	0.009	5.4	1.7
Cyclotrisiloxane, hexamethyl-	541-05-9	222	31.1	nd	nd	S	0.669	68	S	nd	nd	S	nd	nd	S	e	e	e	e
Hexane, 2,3,5-trimethyl-	1069-53-0	128	31.5	0.231	40	S	0.262	46	S	0.231	40	S	0.152	27	S	0.219	0.047	38	8.2
Heptane, 2,4-dimethyl-	2213-23-2	128	31.7	0.691	121	S	0.801	140	S	0.693	121	S	0.458	80	S	0.661	0.144	116	25
2,4-Dimethyl-1-heptene	19549-87-2	126	32.6	0.144	26	S	0.174	31	S	0.150	27	S	0.104	18	S	0.143	0.029	25	5.2
Octane, 2,4,6-trimethyl-	62016-37-9	156	39.2	0.082	12	S	0.102	15	S	0.045	6.5	S	0.105	15	S	0.084	0.028	12	4.0
Cyclotetrasiloxane, octamethyl-	556-67-2	296	39.4	0.880	67	S	0.896	68	S	0.898	68	S	1.057	80	S	0.933	0.083	71	6.3
Decane, 2,2,5-trimethyl-	62237-96-1	184	41.4	0.089	11	S	0.108	13	S	0.092	11	S	0.079	9.6	S	0.092	0.012	11	1.5
Heptadecane	629-78-7	240	42.3	0.097	9.0	S	0.105	9.8	S	0.094	8.8	S	0.088	8.2	S	0.096	0.007	9.0	0.66
Unknown C9 Alkane (mw 128)		128	42.7	0.115	20	S	0.141	25	S	0.112	20	S	0.108	19	S	0.119	0.015	21	2.6
Unknown C12 Alkane (mw 170)		170	42.9	0.843	111	S	1.055	139	S	0.853	112	S	0.810	107	S	0.890	0.112	117	15
Decane, 3,6-dimethyl-	17312-53-7	170	43.1	0.413	54	S	0.509	67	S	0.411	54	S	0.402	53	S	0.434	0.050	57	6.6
Undecane, 3,4-dimethyl-	17312-78-6	184	44.7	0.125	15	S	0.162	20	S	0.124	15	S	0.120	15	S	0.133	0.020	16	2.4
Undecane, 4,7-dimethyl-	17301-32-5	184	44.7	0.081	9.8	S	0.105	13	S	0.079	9.6	S	0.075	9.2	S	0.085	0.014	10	1.7
Benzoic acid, 2-[(trimethylsilyl)oxy]-	3789-85-3	282	46.4	0.125	9.9	S	0.132	10	S	0.123	9.8	S	0.112	8.9	S	0.123	0.008	9.8	0.64
Pentadecane	629-62-9	212	51.8	nd	nd	S	0.142	15	S	0.121	13	S	0.115	12	S	0.126	0.014	13	1.5
Total Concentration of TICs																5.962			

Data Quality Flags

B Compound found in associated laboratory blank

J Target compound detected above the IDL but below the EQL

S Data should be considered suspect due to possible sampling error

U Target compound not detected at or above the IDL

Y Initial calibration and CCV were performed; however, the analyte was not part of the current operating procedure.

Footnotes

(a) Detected target analytes

(b) Semi-quantitative estimate calculated using concentration of closest eluting IS

(c) Sample identification number

(d) Replicates of this sample are found in Tables E9 and E10.

(e) Mean and/or standard deviation are not meaningful for this analyte

nd Not detected

Table E.5 Organic Compound Concentrations in Triple Sorbent Traps from Tank U-112 Riser 3 Bottom Level Sampled on 12/6/96

Target Analytes ^(a)	CAS	MW	Ret Time	S6118-b35.1326 ^(c) ISVS			S6118-b37.1267 ^(c) ISVS			S6118-b36.1266 ^(c) ISVS			S6118-b34.1257 ^(c) ISVS			Mean and Standard Deviation			
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	St. Dev.	(ppbv)	St. Dev.
Methanol	67-56-1	32	10.0	0.874	611	Y	1.691	1182	Y	1.171	819	Y	0.909	635	Y	1.161	0.377	812	264
Butane	106-97-8	58	10.8	0.088	34		0.126	48		0.115	44		0.096	37		0.106	0.017	41	6.7
Ethanol	64-17-5	46	12.5	<0.275	<133	Y	0.536	261	Y	0.421	205	Y	<0.275	<133	Y	0.478	0.282	233	40
Acetonitrile	75-05-8	41	13.0	0.041	22		0.063	34		0.048	26		0.045	24		0.049	0.009	27	5.1
Acetone	67-64-1	58	13.7	0.083	32		0.113	43		0.102	39		0.072	28	J	0.092	0.018	36	7.0
Trichlorofluoromethane	75-69-4	137	14.1	0.127	21		0.219	36		0.189	31		0.175	29		0.177	0.038	29	6.2
Pentane	109-66-0	72	14.9	0.011	3.5	J	0.013	4.1	J	0.012	3.7	J	0.011	3.6	J	0.012	0.001	3.7	0.26
Methylene Chloride	75-09-2	85	15.8	0.027	7.1	J,B	0.056	15	J,B	0.044	12	J,B	0.032	8.3	J,B	0.040	0.013	10	3.5
1,1,2-Trichloroethane	76-13-1	187	16.3	0.019	2.3	J,B	0.022	2.6	J	0.020	2.4	J	0.013	1.5	J	0.019	0.004	2.2	0.49
Propanol	71-23-8	60	17.1	0.036	13	J	0.089	33		0.085	32		0.062	23		0.068	0.024	25	9.1
2-Butanone	78-93-3	72	18.6	0.024	7.4	J	0.034	11		0.036	11		0.023	7.1		0.029	0.007	9.1	2.2
Hexane	110-54-3	86	19.8	0.105	27	S	0.059	15	S	0.056	15	S	0.069	18	S	0.072	0.023	19	5.9
Tetrahydrofuran	109-99-9	72	20.7	0.033	10	J	0.040	12		0.038	12		0.038	12		0.037	0.003	12	0.91
1,1,1-Trichloroethane	71-55-6	133	21.9	0.008	1.4	J	0.013	2.2	J	0.012	2.1	J	0.008	1.3	J	0.010	0.003	1.7	0.46
1-Butanol	71-36-3	74	22.3	0.333	101		0.526	159		0.268	81		0.276	84		0.351	0.120	106	36
Benzene	71-43-2	78	22.8	0.014	4.0	J	0.012	3.6	J	0.011	3.0	J	0.011	3.2	J	0.012	0.002	3.5	0.45
Carbon Tetrachloride	56-23-5	154	23.0	0.006	0.85	J	0.006	0.82	J	0.006	0.89	J	0.005	0.66	J	0.006	0.001	0.81	0.10
Cyclohexane	110-82-7	84	23.3	0.159	42		0.026	6.9	J	0.025	6.5	J	0.080	21		0.072	0.063	19	17
Heptane	142-82-5	100	25.2	0.114	26		0.034	7.6		0.031	6.9		0.051	11		0.058	0.039	13	8.7
4-Methyl-2-Pentanone	108-10-1	100	26.3	0.023	5.2		0.023	5.2		0.024	5.4		0.012	2.7	J	0.021	0.006	4.6	1.3
1,1,2-Trichloroethane	79-00-5	133	27.8	0.009	1.4	J	0.009	1.4	J	0.008	1.4	J	0.008	1.3	J	0.008	0.000	1.4	0.046
Toluene	108-88-3	92	28.4	0.471	115	S	0.830	202	S	0.260	63	S	0.309	75	S	0.468	0.258	114	63
Tetrachloroethylene	127-18-4	166	31.0	0.008	1.0	J	0.005	0.64	J	0.003	0.36	U	0.006	0.74	J	0.006	0.001	0.80	0.20
Hexanenitrile	628-73-9	97	32.8	0.003	0.71	U	0.003	0.71	U	0.006	1.4	J	0.010	2.2	J	0.008	d	1.8	d
Ethylbenzene	100-41-4	106	33.4	0.025	5.2	S	0.037	7.8	S,B	0.035	7.4	S	0.018	3.9	S	0.029	0.009	6.1	1.9
p/m-Xylene	106-42-3	106	33.8	0.088	18	S	0.123	26	S	0.116	24	S	0.067	14	S	0.098	0.026	21	5.5
Cyclohexanone	108-94-1	98	34.3	0.040	9.1	J	0.016	3.7	J	0.014	3.3	J	0.013	2.9	U	0.023	0.014	5.4	3.2
Styrene	100-42-5	104	34.7	0.017	3.7	S	0.025	5.5	S	0.020	4.2	S	0.012	2.6	J,S	0.019	0.006	4.0	1.2
1,1,2,2-Tetrachloroethane	79-34-5	168	35.0	0.006	0.84	U	0.011	1.5	J	0.011	1.5	J	0.006	0.79	U	0.011	d	1.5	d
o-Xylene	95-47-6	106	35.0	0.046	9.6	S	0.066	14	S	0.062	13	S	0.031	6.6	S	0.051	0.016	11	3.4
Nonane	111-84-2	128	35.4	0.008	1.4	J	0.011	1.9	J	0.010	1.8	J	0.006	1.1	J	0.009	0.002	1.5	0.37
1-Ethyl-2-methyl benzene	611-14-3	120	38.4	0.004	0.68	J	0.005	0.88	J	0.004	0.80	J	0.003	0.60	J	0.004	0.001	0.74	0.12
1,3,5-Trimethylbenzene	108-67-8	120	38.6	0.004	0.78	J	0.006	1.1	J	0.005	0.93	J	0.004	0.72	J	0.005	0.001	0.88	0.17
1,2,4-Trimethylbenzene	95-63-6	120	39.9	0.011	2.0	J	0.016	3.0	J	0.013	2.5	J	0.010	1.9	J	0.012	0.003	2.3	0.50
Decane	124-18-5	142	40.1	0.038	5.9		0.046	7.3		0.040	6.3		0.030	4.7	J	0.038	0.007	6.0	1.1
1,4-Dichlorobenzene	106-46-7	147	40.6	0.008	1.3	J	0.013	2.0	J	0.011	1.7	J	0.007	1.1	J	0.010	0.003	1.5	0.40
Undecane	1120-21-4	156	44.4	0.046	6.6	J	0.057	8.2		0.053	7.6		0.040	5.7	J	0.049	0.008	7.0	1.1
Dodecane	112-40-3	170	48.4	0.028	3.6	U	0.024	3.2	J	0.027	3.6	U	0.026	3.4	U	d	d	d	d
Tridecane	629-50-5	184	52.2	0.089	11	J	0.068	8.3	J	0.060	7.3	J	0.054	6.6	J	0.068	0.015	8.3	1.9
Tetradecane	629-59-4	198	55.7	0.060	6.7	J,B	0.045	5.1	J	0.025	2.9	J	0.043	4.9	J,B	0.043	0.014	4.9	1.6
Total Concentration of Target Analytes																3.669			
Tentatively Identified Compounds ^(b)																			
Unknown			5.0	nd	nd		nd	nd		0.117	e		nd	nd		d	d	d	d
Propane	74-98-6	44	7.4	0.110	56	S	nd	nd	S	0.127	65	S	0.095	48	S	0.111	0.016	56	8.2
Propene	115-07-1	42	7.4	nd	nd		0.121	65		nd	nd		nd	nd		d	d	d	d
Ethane, 1-chloro-1,1-difluoro-	75-68-3	100	8.9	0.046	10		nd	nd		nd	nd		nd	nd		d	d	d	d

Table E.5 (Cont'd) Organic Compound Concentrations in Triple Sorbent Traps from Tank U-112 Riser 3 Bottom Level Sampled on 12/6/96

Tentatively Identified Compounds ^(b)	CAS	MW	Ret Time	S6118-b35.1326 ^(c) ISVS			S6118-b37.1267 ^(c) ISVS			S6118-b36.1266 ^(c) ISVS			S6118-b34.1257 ^(c) ISVS			Mean and Standard Deviation			
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	St. Dev.	(ppbv)	St. Dev.
Acetaldehyde	75-07-0	44	9.5	0.067	34		nd	nd		0.046	23		0.050	26		0.054	0.011	28	5.8
1-Propene, 2-methyl-	115-11-7	56	10.4	0.528	211	S	1.510	604	S	0.758	303	S	0.576	231	S	0.843	0.455	337	182
Isopropyl Alcohol	67-63-0	60	14.3	0.023	8.5		0.091	34		0.093	35		0.079	30		0.072	0.033	27	12
1-Fluoro-1,1-dichloro-ethane	1717-00-6	116	14.5	nd	nd	S	0.413	80	S	nd	nd	S	nd	nd	S	d	d	d	d
2-Propanol, 2-methyl-	75-65-0	74	15.5	0.127	38	S	0.257	78	S	0.163	49	S	0.101	31	S	0.162	0.068	49	21
Pentane, 2-methyl-	107-83-5	86	18.3	0.099	26	S	nd	nd	S	nd	nd	S	nd	nd	S	d	d	d	d
Acetic acid	64-19-7	60	18.3	nd	nd	S	0.140	52	S	0.110	41	S	0.175	65	S	0.142	0.033	53	12
Pentane, 3-methyl-	96-14-0	86	19.0	0.130	34	S	0.090	23	S	0.083	22	S	0.095	25	S	0.099	0.021	26	5.4
Pentane, 2,3-dimethyl-	565-59-3	100	23.7	0.162	36	S	0.051	11	S	0.048	11	S	0.078	17	S	0.084	0.053	19	12
Hexane, 3-methyl-	589-34-4	100	23.9	0.389	87	S	0.105	24	S	0.100	22	S	0.180	40	S	0.193	0.135	43	30
1-Octene, 3-ethyl-	74630-08-3	140	24.5	0.089	14	S	0.028	4.5	S	0.020	3.3	S	0.038	6.1	S	0.044	0.031	7.0	4.9
Cyclopentane, 1,2-dimethyl-	2452-99-5	98	24.8	0.086	20	S	0.044	10	S	0.037	8.5	S	0.042	9.5	S	0.052	0.023	12	5.2
Cyclohexane, methyl-	108-87-2	98	26.7	0.245	56	S	0.081	19	S	0.075	17	S	0.111	25	S	0.128	0.080	29	18
Hexane, 2,4-dimethyl-	589-43-5	114	27.1	0.056	11	S	0.040	7.8	S	0.040	7.9	S	0.024	4.7	S	0.040	0.013	7.8	2.6
Propanoic acid, 2,2-dimethyl-	75-98-9	102	29.0	nd	nd	S	0.055	12	S	0.041	9.1	S	0.044	9.7	S	0.047	0.007	10	1.6
Cyclohexane, 1,4-dimethyl-	589-90-2	112	29.7	0.033	6.5	S	0.065	13	S	0.066	13	S	0.019	3.7	S	0.046	0.024	9.1	4.7
Cyclohexane, 1,2-dimethyl-, trans-	6876-23-9	112	30.8	0.013	2.7	S	0.032	6.5	S	0.033	6.5	S	0.008	1.5	S	0.021	0.013	4.3	2.6
Cyclotrisiloxane, hexamethyl-	541-05-9	222	31.2	nd	nd	S	nd	nd	S	0.731	74	S	nd	nd	S	d	d	d	d
Hexane, 2,3,5-trimethyl-	1069-53-0	128	31.5	0.157	27	S	0.251	44	S	0.253	44	S	0.072	13	S	0.183	0.087	32	15
Heptane, 2,4-dimethyl-	2213-23-2	128	31.7	0.474	83	S	0.756	132	S	0.767	134	S	0.257	45	S	0.563	0.245	99	43
2,4-Dimethyl-1-heptene	19549-87-2	126	32.6	0.096	17	S	0.167	30	S	0.169	30	S	0.058	10	S	0.123	0.055	22	9.7
Octane, 4-methyl-	2216-34-4	128	33.8	nd	nd	S	0.128	22		nd	nd		nd	nd		d	d	d	d
Octane, 2,4,6-trimethyl-	62016-37-9	156	39.2	0.124	18	S	0.146	21	S	0.148	21	S	0.112	16	S	0.132	0.017	19	2.5
Cyclotetrasiloxane, octamethyl-	556-67-2	296	39.4	0.703	53	S	0.868	66	S	0.765	58	S	0.769	58	S	0.776	0.068	59	5.1
Decane, 2,2,5-trimethyl-	62237-96-1	184	41.5	0.091	11	S	0.091	11	S	0.090	11	S	0.093	11	S	0.091	0.001	11	0.16
Heptadecane	629-78-7	240	42.3	0.102	9.5	S	0.101	9.4	S	0.096	9.0	S	0.095	8.9	S	0.098	0.003	9.2	0.32
Unknown C9 Alkane (mw 128)		128	42.7	0.113	20	S	0.136	24	S	0.123	22	S	0.082	14	S	0.114	0.023	20	4.0
Unknown C12 Alkane (mw 170)		170	42.9	0.837	110	S	0.998	131	S	0.923	122	S	0.598	79	S	0.839	0.174	111	23
Decane, 3,6-dimethyl-	17312-53-7	170	43.2	0.420	55	S	0.483	64	S	0.446	59	S	0.318	42	S	0.417	0.071	55	9.3
Undecane, 3,4-dimethyl-	17312-78-6	184	44.7	nd	nd	S	0.149	18	S	0.134	16	S	0.096	12	S	0.126	0.027	15	3.3
Undecane, 4-methyl-	2980-69-0	170	44.9	0.080	11		nd	nd		nd	nd		nd	nd		d	d	d	d
Undecane, 4,7-dimethyl-	17301-32-5	184	44.9	0.125	15	S	0.096	12	S	0.085	10	S	0.060	7.3	S	0.091	0.027	11.1	3.3
Benzoic acid, 2-[(trimethylsilyl)oxy]-	3789-85-3	282	46.4	0.076	6.0	S	0.139	11	S	0.109	8.7	S	0.082	6.5	S	0.102	0.029	8.1	2.3
Pentadecane	629-62-9	212	51.8	nd	nd	S	nd	nd	S	nd	nd	S	0.106	11	S	d	d	d	d
Total Concentration of TICs																5.782			

Data Quality Flags

B Compound found in associated laboratory blank.

J Target compound detected above the IDL but below the EQL.

S Data should be considered suspect due to possible sampling error.

U Target compound not detected at or above the IDL.

Y Initial calibration and CCV were performed; however, the analyte was not part of the current operating procedure.

Footnotes

(a) Detected target analytes.

(b) Semi-quantitative estimate calculated using concentration of closest eluting IS.

(c) Sample identification number.

(d) Mean and/or standard deviation are not meaningful for this analyte.

(e) No molecular weight available for calculation

nd Not detected.

Table E.6 Organic Compound Concentrations in Triple Sorbent Traps from Tank U-112 Riser 6 Top Level Sampled on 12/6/96

Target Analytes ^(a)	CAS	MW	Ret Time	S6119-145.1305 ^(c) ISVS			S6119-142.1302 ^(c) ISVS			S6119-143.1303 ^(c) ISVS			S6119-144.1304 ^(c) ISVS			Mean and Standard Deviation			
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	St. Dev.	(ppbv)	St. Dev.
Methanol	67-56-1	32	10.0	0.944	660	Y,S	1.100	769	Y,S	1.123	785	Y,S	1.627	1138	Y,S	1.199	0.297	838	207
Butane	106-97-8	58	10.8	0.096	37	S	0.108	42	S	0.094	36	S	0.103	40	S	0.100	0.007	39	2.5
Ethanol	64-17-5	46	12.5	<0.275	<133	Y	0.534	259	Y	<0.275	<133	Y	0.524	255	Y	0.529	d	257	d
Acetonitrile	75-05-8	41	13.0	0.031	17	J	0.039	21	J	0.031	17	J	0.039	21	J	0.035	0.005	19	2.5
Acetone	67-64-1	58	13.7	0.063	24	J,S	0.064	25	J,S	0.063	24	J,S	0.056	22	J,S	0.061	0.004	24	1.5
Trichlorofluoromethane	75-69-4	137	14.2	0.169	28	S	0.215	35	S	0.192	31	S	0.208	34	S	0.196	0.021	32	3.4
Pentane	109-66-0	72	15.0	0.010	3.1	J	0.010	3.2	J	0.011	3.4	J	0.010	3.1	J	0.010	0.000	3.2	0.15
Methylene Chloride	75-09-2	85	15.8	0.025	6.7	J,B	0.035	9.3	J,B	0.027	7.0	J,B	0.037	9.6	J,B	0.031	0.006	8.1	1.5
1,1,2-Trichloroethane	76-13-1	187	16.3	0.017	2.1	J	0.018	2.2	J	0.013	1.6	J,B	0.010	1.2	J,B	0.015	0.004	1.8	0.45
Propanol	71-23-8	60	17.1	0.063	24	J	0.074	28	J	0.085	32	J	0.081	30	J	0.076	0.009	28	3.5
2-Butanone	78-93-3	72	18.6	0.008	2.6	J,S	0.014	4.4	J,S	0.013	4.1	J,S	0.012	3.8	J,S	0.012	0.003	3.7	0.82
Hexane	110-54-3	86	19.9	0.016	4.2	S	0.017	4.3	S	0.020	5.2	S	0.016	4.3	S	0.017	0.002	4.5	0.49
Tetrahydrofuran	109-99-9	72	20.8	0.037	12	J	0.037	12	J	0.039	12	J	0.036	11	J	0.037	0.001	12	0.32
1,1,1-Trichloroethane	71-55-6	133	21.9	0.008	1.3	J	0.008	1.3	J	0.008	1.4	J	0.008	1.3	J	0.008	0.000	1.3	0.070
1-Butanol	71-36-3	74	22.3	0.269	81	J	0.308	93	J	0.322	97	J	0.354	107	J	0.313	0.035	95	11
Benzene	71-43-2	78	22.8	0.010	3.0	J	0.011	3.0	J	0.012	3.3	J	0.010	3.0	J	0.011	0.001	3.1	0.16
Carbon Tetrachloride	56-23-5	154	23.1	0.005	0.67	J	0.005	0.72	J	0.006	0.85	J	0.005	0.78	J	0.005	0.001	0.76	0.078
Cyclohexane	110-82-7	84	23.4	0.017	4.4	J	0.022	5.8	J	0.029	7.7	J	0.023	6.0	J	0.022	0.005	6.0	1.3
Heptane	142-82-5	100	25.2	0.015	3.4	J	0.018	4.0	J	0.026	5.9	J	0.019	4.2	J	0.020	0.005	4.4	1.0
4-Methyl-2-Pentanone	108-10-1	100	26.4	0.020	4.4	J	0.014	3.2	J	0.011	2.5	J	0.012	2.6	J	0.014	0.004	3.2	0.85
1,1,2-Trichloroethane	79-00-5	133	27.9	0.008	1.4	J	0.008	1.4	J	0.008	1.4	J	0.008	1.4	J	0.008	0.000	1.4	0.0096
Toluene	108-88-3	92	28.5	0.251	61	S	0.224	54	S	0.213	52	S	0.376	91	S	0.266	0.075	65	18
Tetrachloroethylene	127-18-4	166	31.0	0.006	0.83	J	0.003	0.36	U	0.003	0.36	U	0.003	0.36	U	d	d	d	d
Hexanenitrile	628-73-9	97	32.8	0.003	0.71	U	0.008	1.8	J	0.003	0.71	U	0.003	0.70	U	d	d	d	d
Ethylbenzene	100-41-4	106	33.4	0.033	6.9	S,B	0.032	6.7	S	0.025	5.3	S	0.017	3.5	S	0.027	0.007	5.6	1.6
p/m-Xylene	106-42-3	106	33.9	0.126	27	S	0.122	26	S	0.092	19	S	0.062	13	S	0.100	0.030	21	6.3
Cyclohexanone	108-94-1	98	34.3	0.008	1.7	J	0.014	3.2	J	0.014	3.1	U	0.017	3.9	J	0.013	0.005	2.9	1.1
Styrene	100-42-5	104	34.8	0.027	5.8	S	0.030	6.5	S	0.016	3.5	J,S	0.013	2.9	J,S	0.022	0.008	4.7	1.7
1,1,2,2-Tetrachloroethane	79-34-5	168	35.0	0.001	0.13	J	0.006	0.82	U	0.006	0.84	U	0.006	0.82	U	d	d	d	d
o-Xylene	95-47-6	106	35.1	0.056	12	S	0.056	12	S	0.050	10	S	0.026	5.6	S	0.047	0.014	9.9	3.0
Nonane	111-84-2	128	35.4	0.009	1.5	J,S	0.009	1.6	J,S	0.009	1.5	J,S	0.006	0.99	J,S	0.008	0.002	1.4	0.28
1-Ethyl-2-methyl benzene	611-14-3	120	38.4	0.005	0.97	J	0.006	1.1	J	0.004	0.77	J	0.003	0.60	J	0.005	0.001	0.85	0.21
1,3,5-Trimethylbenzene	108-67-8	120	38.7	0.007	1.2	J	0.007	1.2	J	0.004	0.82	J	0.004	0.66	J	0.005	0.002	0.98	0.29
1,2,4-Trimethylbenzene	95-63-6	120	39.9	0.019	3.4	J,S	0.019	3.5	J,S	0.011	2.1	J,S	0.010	1.9	J,S	0.015	0.005	2.7	0.85
Decane	124-18-5	142	40.1	0.051	8.0	S	0.051	8.1	S	0.046	7.2	S	0.034	5.3	S	0.045	0.008	7.1	1.3
1,4-Dichlorobenzene	106-46-7	147	40.7	0.013	1.9	J,S	0.012	1.9	J,S	0.008	1.3	J,S	0.005	0.83	J,S	0.010	0.003	1.5	0.52
Undecane	1120-21-4	156	44.4	0.081	12	S	0.089	13	S	0.055	7.9	S	0.046	6.6	J,S	0.068	0.021	9.8	3.0
Dodecane	112-40-3	170	48.5	0.034	4.5	J	0.033	4.4	J	0.028	3.6	U	0.027	3.6	U	0.034	d	4.4	d
Tridecane	629-50-5	184	52.2	0.064	7.8	J	0.063	7.6	J	0.064	7.8	J	0.057	6.9	J	0.062	0.004	7.5	0.42
Tetradecane	629-59-4	198	55.7	0.036	4.1	J	0.029	3.2	J	0.040	4.5	J,B	0.024	2.7	J,B	0.032	0.007	3.6	0.81
Total Concentration of Target Analytes																3.324			
Tentatively Identified Compounds ^(b)																			
Propane	74-98-6	44	7.4	0.053	27	S	0.081	41	S	0.083	42	S	0.089	45	S	0.076	0.016	39	8.2
Acetaldehyde	75-07-0	44	9.5	0.046	24	S	nd	nd	S	0.048	24	S	nd	nd	S	0.047	d	24	d
1-Propene, 2-methyl-	115-11-7	56	10.4	0.637	255	S	0.602	241	S	0.588	235	S	0.421	168	S	0.562	0.096	225	38
Isopropyl Alcohol	67-63-0	60	14.3	0.070	26	S	0.106	40	S	0.096	36	S	0.094	35	S	0.091	0.015	34	5.8

Table E.6 (Cont'd) Organic Compound Concentrations in Triple Sorbent Traps from Tank U-112 Riser 6 Top Level Sampled on 12/6/96

Tentatively Identified Compounds ^(a)	CAS	MW	Ret Time	S6119-145.1305 ^(c) ISVS			S6119-142.1302 ^(c) ISVS			S6119-143.1303 ^(c) ISVS			S6119-144.1304 ^(c) ISVS			Mean and Standard Deviation			
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	St. Dev.	(ppbv)	St. Dev.
2-Propanol, 2-methyl-	75-65-0	74	15.5	0.089	27	S	0.086	26	S	0.132	40	S	0.071	21	S	0.095	0.026	29	8.0
Acetic acid	64-19-7	60	18.3	0.136	51	S	0.141	53	S	0.128	48	S	0.188	70	S	0.148	0.027	55	10
Pentane, 3-methyl-	96-14-0	86	19.0	0.030	7.7		0.026	6.8		nd	nd		0.016	4.0		0.024	0.007	6.2	1.9
Pentane, 2,3-dimethyl-	565-59-3	100	23.7	0.022	4.8	S	0.028	6.3	S	0.034	7.6	S	nd	nd	S	0.028	0.006	6.2	1.4
Hexane, 3-methyl-	589-34-4	100	24.0	0.041	9.1	S	0.056	13	S	0.081	18	S	0.060	14	S	0.059	0.017	13	3.7
1-Octene, 3-ethyl-	74630-08-3	140	24.5	0.009	1.4	S	0.013	2.1	S	0.010	1.6	S	0.014	2.3	S	0.012	0.003	1.9	0.42
Cyclopentane, 1,2-dimethyl-	2452-99-5	98	24.8	0.022	5.0	S	0.025	5.8	S	0.032	7.4	S	0.028	6.5	S	0.027	0.004	6.1	1.00
Cyclohexane, methyl-	108-87-2	98	26.7	0.060	14	S	0.072	16	S	0.103	24	S	0.064	15	S	0.075	0.020	17	4.5
Hexane, 2,4-dimethyl-	589-43-5	114	27.1	0.010	2.0	S	0.011	2.2	S	0.019	3.8	S	nd	nd	S	0.014	0.005	2.7	1.0
Propanoic acid, 2,2-dimethyl-	75-98-9	102	29.0	0.080	18	S	0.069	15	S	0.075	16	S	0.059	13	S	0.071	0.009	15	2.0
Cyclohexane, 1,4-dimethyl-	589-90-2	112	29.7	0.017	3.4	S	0.017	3.5	S	0.028	5.6	S	0.012	2.3	S	0.018	0.007	3.7	1.4
Cyclohexane, 1,2-dimethyl-, trans-	6876-23-9	112	30.8	nd	nd	S	nd	nd	S	0.011	2.2	S	nd	nd	S	d	d	d	d
Hexane, 2,3,5-trimethyl-	1069-53-0	128	31.5	0.066	12	S	0.066	12	S	0.145	25	S	0.037	6.5	S	0.079	0.046	14	8.1
Heptane, 2,4-dimethyl-	2213-23-2	128	31.7	0.235	41	S	0.236	41	S	0.434	76	S	0.133	23	S	0.260	0.126	45	22
2,4-Dimethyl-1-heptene	19549-87-2	126	32.6	0.054	9.7	S	0.056	9.9	S	0.092	16	S	0.033	5.9	S	0.059	0.025	10	4.4
Octane, 4-methyl-	2216-34-4	128	33.8	0.078	14		nd	nd		nd	nd		nd	nd		d	d	d	d
Octane, 2,4,6-trimethyl-	62016-37-9	156	39.2	0.121	17	S	0.097	14	S	0.079	11	S	0.023	3.3	S	0.080	0.042	11	6.0
Cyclotetrasiloxane, octamethyl-	556-67-2	296	39.4	1.205	91	S	1.316	100	S	0.959	73	S	0.687	52	S	1.042	0.279	79	21
Decane, 2,2,5-trimethyl-	62237-96-1	184	41.5	0.093	11	S	0.096	12	S	0.092	11	S	0.116	14	S	0.099	0.011	12	1.4
Heptadecane	629-78-7	240	42.3	0.102	9.6	S	0.107	10	S	0.077	7.2	S	0.107	10	S	0.098	0.015	9.2	1.4
Unknown C9 Alkane (mw 128)		128	42.7	0.102	18	S	0.104	18	S	0.121	21	S	0.071	12	S	0.099	0.021	17	3.7
Unknown C12 Alkane (mw 170)		170	42.9	0.749	99	S	0.767	101	S	0.944	124	S	0.535	71	S	0.749	0.167	99	22
Decane, 3,6-dimethyl-	17312-53-7	170	43.2	0.398	52	S	0.407	54	S	0.460	61	S	0.292	38	S	0.389	0.070	51	9.3
Undecane, 3,4-dimethyl-	17312-78-6	184	44.7	0.127	15	S	0.132	16	S	0.141	17	S	0.081	9.8	S	0.120	0.027	15	3.3
Undecane, 4,7-dimethyl-	17301-32-5	184	44.9	0.079	9.7	S	0.083	10	S	0.087	11	S	0.055	6.7	S	0.076	0.015	9.3	1.8
Benzoic acid, 2-[(trimethylsilyl)oxy]-	3789-85-3	282	46.4	0.123	9.7	S	0.139	11	S	0.101	8.1	S	0.071	5.6	S	0.109	0.029	8.6	2.3
Pentadecane	629-62-9	212	51.8	nd	nd	S	nd	nd	S	0.137	14	S	0.110	12	S	0.123	d	13	d
Total Concentration of TICs																4.727			

Data Quality Flags

B Compound found in associated laboratory blank.

J Target compound detected above the IDL but below the EQL.

S Data should be considered suspect due to possible sampling error.

U Target compound not detected at or above the IDL.

Y Initial calibration and CCV were performed; however, the analyte was not part of the current operating procedure.

Footnotes

(a) Detected target analytes

(b) Semi-quantitative estimate calculated using concentration of closest eluting IS

(c) Sample identification number.

(d) Mean and/or standard deviation are not meaningful for this analyte.

nd Not detected

Table E.7 Organic Compound Concentrations in Triple Sorbent Traps from Tank U-112 Riser 6 Middle Level Sampled on 12/6/96

Target Analytes ^(a)	CAS	MW	Ret Time	S6119-m29.1297 ^(cxd) ISVS			S6119-m48.1306 ^(cxd) ISVS			S6119-m49.1307 ^(cxd) ISVS			S6119-m28.1296 ^(cxd) ISVS			Mean and Standard Deviation			
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	St. Dev.	(ppbv)	St. Dev.
Methanol	67-56-1	32	10.0	1.342	938	Y,S	1.142	798	Y,S	1.610	1126	Y,S	1.435	1003	Y,S	1.382	0.195	966	136
Butane	106-97-8	58	10.8	0.116	45	S	0.103	40	S	0.114	44	S	0.117	45	S	0.112	0.007	43	2.5
Ethanol	64-17-5	46	12.6	0.612	297	Y	0.363	177	Y	0.447	217	Y	0.536	261	Y	0.489	0.108	238	52
Acetonitrile	75-05-8	41	13.1	0.059	32		0.040	22		0.062	34		0.051	28		0.053	0.010	29	5.4
Acetone	67-64-1	58	13.7	0.087	34	S	0.077	30	J,S	0.081	31	S	0.090	35	S	0.084	0.006	32	2.3
Trichlorofluoromethane	75-69-4	137	14.2	0.283	46	S	0.205	33	S	0.196	32	S	0.212	35	S	0.224	0.040	37	6.5
Pentane	109-66-0	72	15.0	0.012	3.8	J	0.013	4.0	J	0.012	3.8	J	0.012	3.6	J	0.012	0.000	3.8	0.14
Methylene Chloride	75-09-2	85	15.8	0.048	13	J,B	0.032	8.5	J,B	0.039	10	J,B	0.033	8.7	J,B	0.038	0.007	10	1.9
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	187	16.4	0.013	1.6	J	0.013	1.5	J	0.021	2.6	J	0.017	2.0	J,B	0.016	0.004	1.9	0.48
Propanol	71-23-8	60	17.1	0.079	29		0.070	26		0.071	26		0.066	25		0.072	0.005	27	2.0
2-Butanone	78-93-3	72	18.7	0.020	6.3	J,S	0.019	5.9	J,S	0.020	6.2	J,S	0.016	5.1	J,S	0.019	0.002	5.9	0.55
Hexane	110-54-3	86	19.9	0.022	5.8	S	0.023	5.9	S	0.023	5.9	S	0.018	4.6	S	0.021	0.002	5.6	0.63
Tetrahydrofuran	109-99-9	72	20.8	0.042	13		0.040	12		0.040	12		0.039	12		0.040	0.001	13	0.30
1,1,1-Trichloroethane	71-55-6	133	22.0	0.011	1.8	J	0.009	1.5	J	0.009	1.5	J	0.008	1.3	J	0.009	0.001	1.5	0.24
1-Butanol	71-36-3	74	22.4	0.354	107		0.301	91		0.288	87		0.285	86		0.307	0.032	93	9.7
Benzene	71-43-2	78	22.9	0.013	3.8	J	0.014	4.1	J	0.013	3.8	J	0.011	3.2	J	0.013	0.001	3.7	0.41
Carbon Tetrachloride	56-23-5	154	23.1	0.006	0.82	J	0.005	0.78	J	0.006	0.84	J	0.005	0.77	J	0.006	0.000	0.80	0.033
Cyclohexane	110-82-7	84	23.4	0.025	6.6	J	0.027	7.3	J	0.011	3.0	J	0.004	1.2	U	0.021	0.009	5.6	2.3
Heptane	142-82-5	100	25.2	0.018	4.0		0.016	3.5	J	0.015	3.3	J	0.009	1.9	J	0.014	0.004	3.2	0.88
4-Methyl-2-Pentanone	108-10-1	100	26.4	0.017	3.7	J	0.013	2.9	J	0.012	2.8	J	0.010	2.3	J	0.013	0.003	2.9	0.61
1,1,2-Trichloroethane	79-00-5	133	27.9	0.009	1.4	J	0.009	1.5	J	0.008	1.4	J	0.009	1.5	J	0.009	0.000	1.4	0.029
Toluene	108-88-3	92	28.5	1.172	285	S	0.286	70	S	0.301	73	S	0.186	45	S	0.486	0.460	118	112
Tetrachloroethylene	127-18-4	166	31.1	0.003	0.37	U	0.008	1.1	J	0.011	1.4	J	0.007	0.93	J	0.009	0.002	1.1	0.26
Hexanenitrile	628-73-9	97	32.8	0.010	2.4	J	0.015	3.5	J	0.003	0.80	J	0.508	117		0.134	0.249	31	58
Ethylbenzene	100-41-4	106	33.5	0.028	5.9	S	0.041	8.7	S	0.075	16	S	0.033	6.9	S	0.044	0.021	9.3	4.4
p/m-Xylene	106-42-3	106	33.9	0.101	21	S	0.162	34	S	0.295	62	S	0.127	27	S	0.171	0.086	36	18
Cyclohexanone	108-94-1	98	34.4	0.014	3.1	J	0.013	3.1	U	0.017	3.9	J	0.013	3.0	U	0.015	e	3.5	e
Styrene	100-42-5	104	34.8	0.022	4.8	S	0.038	8.2	S	0.075	16	S	0.031	6.7	S	0.042	0.023	9.0	5.0
1,1,2,2-Tetrachloroethane	79-34-5	168	35.1	0.006	0.85	U	0.006	0.83	U	0.009	1.2	J	0.006	0.81	U	e	e	e	e
o-Xylene	95-47-6	106	35.1	0.055	12	S	0.074	16	S	0.131	28	S	0.059	12	S	0.080	0.035	17	7.4
Nonane	111-84-2	128	35.5	0.010	1.7	J,S	0.013	2.3	J,S	0.020	3.6	S	0.010	1.7	J,S	0.013	0.005	2.3	0.89
1-Ethyl-2-methyl benzene	611-14-3	120	38.5	0.004	0.75	J	0.009	1.6	J	0.015	2.8	J	0.006	1.1	J	0.008	0.005	1.5	0.88
1,3,5-Trimethylbenzene	108-67-8	120	38.7	0.005	0.95	J	0.010	1.8	J	0.017	3.2	J	0.007	1.3	J	0.010	0.005	1.8	0.98
1,2,4-Trimethylbenzene	95-63-6	120	40.0	0.012	2.3	J,S	0.027	5.0	S	0.048	9.0	S	0.019	3.6	J,S	0.027	0.016	4.9	2.9
Decane	124-18-5	142	40.2	0.045	7.1	S	0.077	12	S	0.132	21	S	0.053	8.4	S	0.077	0.039	12	6.1
1,4-Dichlorobenzene	106-46-7	147	40.7	0.009	1.3	J,S	0.017	2.5	J,S	0.032	4.8	S	0.013	2.0	J,S	0.017	0.010	2.7	1.5
Undecane	1120-21-4	156	44.5	0.053	7.6	S	0.135	19	S	0.224	32	S	0.086	12	S	0.124	0.074	18	11
Dodecane	112-40-3	170	48.5	0.028	3.7	U	0.066	8.7	J	0.079	10	J	0.036	4.8	J	0.060	0.022	8.0	2.9
Tridecane	629-50-5	184	52.3	0.055	6.6	J	0.117	14	J	0.137	17	J	0.055	6.7	J	0.091	0.043	11	5.2
Tetradecane	629-59-4	198	55.8	0.037	4.2	J	0.030	3.4	J,B	0.027	3.0	J,B	0.032	3.6	J,B	0.031	0.004	3.6	0.50
Total Concentration of Target Analytes																4.395			
Tentatively Identified Compounds ^(b)																			
Propane	74-98-6	44	7.3	0.078	40	S	0.067	34	S	0.083	42	S	0.079	40	S	0.077	0.007	39	3.4
1-Propene, 2-methyl-	115-11-7	56	10.4	0.762	305	S	0.667	267	S	1.079	431	S	1.384	554	S	0.973	0.326	389	130
Isopropyl Alcohol	67-63-0	60	14.3	0.103	38	S	0.072	27	S	0.080	30	S	0.080	30	S	0.084	0.013	31	4.9
1-Fluoro-1,1-dichloro-ethane	1717-00-6	116	14.5	0.813	157	S	nd	nd	S	nd	nd	S	nd	nd	S	e	e	e	e

Table E.7 (Cont'd) Organic Compound Concentrations in Triple Sorbent Traps from Tank U-112 Riser 6 Middle Level Sampled on 12/6/96

Tentatively Identified Compounds ^(b)	CAS	MW	Ret Time	S6119-m29.1297 ^(c,d) ISVS			S6119-m48.1306 ^(c,d) ISVS			S6119-m49.1307 ^(c,d) ISVS			S6119-m28.1296 ^(c,d) ISVS			Mean and Standard Deviation			
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	St. Dev.	(ppbv)	St. Dev.
2-Propanol, 2-methyl-	75-65-0	74	15.5	0.171	52	S	0.126	38	S	0.186	56	S	0.162	49	S	0.161	0.025	49	7.7
Acetic acid	64-19-7	60	18.3	0.224	84	S	0.143	53	S	0.168	63	S	0.237	89	S	0.193	0.045	72	17
Pentane, 3-methyl-	96-14-0	86	19.0	0.051	13		nd	nd		nd	nd		nd	nd		e	e	e	e
Pentane, 2,3-dimethyl-	565-59-3	100	23.7	0.028	6.2	S	0.017	3.9	S	nd	nd	S	0.007	1.5	S	0.017	0.011	3.8	2.4
Hexane, 3-methyl-	589-34-4	100	24.0	0.056	13	S	0.039	8.7	S	0.034	7.6	S	0.017	3.8	S	0.037	0.016	8.2	3.6
1-Octene, 3-ethyl-	74630-08-3	140	24.5	0.015	2.4	S	0.009	1.4	S	0.008	1.3	S	nd	nd	S	0.011	0.004	1.7	0.63
Cyclopentane, 1,2-dimethyl-	2452-99-5	98	24.8	nd	nd	S	0.020	4.7	S	0.025	5.7	S	nd	nd	S	0.023	e	5.2	e
Cyclohexane, methyl-	108-87-2	98	26.7	0.038	8.7	S	0.036	8.2	S	0.047	11	S	0.017	3.9	S	0.035	0.013	7.9	2.9
Hexane, 2,4-dimethyl-	589-43-5	114	27.1	0.014	2.8	S	0.009	1.7	S	0.013	2.6	S	0.007	1.3	S	0.011	0.004	2.1	0.72
Propanoic acid, 2,2-dimethyl-	75-98-9	102	29.0	0.155	34	S	0.119	26	S	0.106	23	S	0.078	17	S	0.114	0.032	25	7.0
Cyclohexane, 1,4-dimethyl-	589-90-2	112	29.7	0.029	5.8	S	0.020	4.0	S	0.034	6.8	S	0.016	3.2	S	0.025	0.008	4.9	1.7
Cyclohexane, 1,2-dimethyl-, trans-	6876-23-9	112	30.8	0.013	2.6	S	0.008	1.6	S	0.015	2.9	S	0.007	1.4	S	0.011	0.004	2.1	0.76
Hexane, 2,3,5-trimethyl-	1069-53-0	128	31.5	0.147	26	S	0.100	18	S	0.135	24	S	0.065	11	S	0.112	0.037	20	6.5
Heptane, 2,4-dimethyl-	2213-23-2	128	31.7	0.438	77	S	0.344	60	S	0.489	86	S	0.234	41	S	0.376	0.112	66	20
2,4-Dimethyl-1-heptene	19549-87-2	126	32.6	0.087	15	S	0.063	11	S	0.100	18	S	0.054	9.5	S	0.076	0.021	14	3.8
Octane, 2,4,6-trimethyl-	62016-37-9	156	39.2	0.127	18	S	0.242	35	S	0.304	44	S	0.118	17	S	0.198	0.091	28	13
Cyclotetrasiloxane, octamethyl-	556-67-2	296	39.5	1.096	83	S	1.962	149	S	2.970	225	S	1.308	99	S	1.834	0.843	139	64
Decane, 2,2,5-trimethyl-	62237-96-1	184	41.5	0.088	11	S	0.202	25	S	0.220	27	S	0.086	10	S	0.149	0.072	18	8.8
D-Limonene	5989-27-5	136	41.8	nd	nd		nd	nd		0.188	31		nd	nd		e	e	e	e
Heptadecane	629-78-7	240	42.3	0.099	9.2	S	0.208	19	S	0.249	23	S	0.094	8.8	S	0.162	0.078	15	7.3
Unknown C ⁹ Alkane (mw 128)		128	42.7	0.128	22	S	0.187	33	S	0.244	43	S	0.096	17	S	0.164	0.065	29	11
Unknown C ¹² Alkane (mw 170)		170	42.9	0.935	123	S	1.356	179	S	1.772	233	S	0.706	93	S	1.192	0.471	157	62
Decane, 3,6-dimethyl-	17312-53-7	170	43.2	0.455	60	S	0.727	96	S	0.974	128	S	0.374	49	S	0.633	0.273	83	36
Undecane, 3,4-dimethyl-	17312-78-6	184	44.7	0.134	16	S	0.227	28	S	0.317	39	S	0.118	14	S	0.199	0.092	24	11
Undecane, 4,7-dimethyl-	17301-32-5	184	44.9	0.087	11	S	0.143	17	S	0.194	24	S	0.072	8.7	S	0.124	0.056	15	6.8
Benzoic acid, 2-[(trimethylsilyl)oxy]-	3789-85-3	282	46.4	0.125	9.9	S	0.234	19	S	0.384	31	S	0.143	11	S	0.221	0.119	18	9.4
Pentadecane	629-62-9	212	51.8	nd	nd	S	0.280	30	S	0.327	35	S	0.119	13	S	0.242	0.109	26	12
Total Concentration of TICs																7.451			

Data Quality Flags

B Compound found in associated laboratory blank.

J Target compound detected above the IDL but below the EQL.

S Data should be considered suspect due to possible sampling error.

U Target compound not detected at or above the IDL.

Y Initial calibration and CCV were performed; however, the analyte was not part of the current operating procedure.

Footnotes

(a) Detected target analytes

(b) Semi-quantitative estimate calculated using concentration of closest eluting IS

(c) Sample identification number

(d) Replicates of this sample are found in Tables E.11, E.12, E.13, or E.14

(e) Mean and/or standard deviation are not meaningful for this analyte.

nd Not detected.

Table E.8 Organic Compound Concentrations in Triple Sorbent Traps from Tank U-112 Riser 6 Bottom Level Sampled on 12/6/96

Target Analytes ^(a)	CAS	MW	Ret Time	S6119-b35.1299 ^(c) ISVS			S6119-b34.1298 ^(c,d) ISVS			S6119-b36.1300 ^(c) ISVS			S6119-b37.1301 ^(c) ISVS			Mean and Standard Deviation			
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	Standard Deviation			
																(mg/m ³)	St. Dev.	(ppbv)	St. Dev.
Methanol	67-56-1	32	10.0	1.698	1187	Y,S	1.524	1065	Y,S	0.681	476	Y,S	1.135	794	Y,S	1.259	0.452	881	316
Butane	106-97-8	58	10.8	0.114	44	S	0.100	39	S	0.088	34	S	0.088	34	S	0.097	0.012	38	4.8
Ethanol	64-17-5	46	12.5	0.673	327	Y	0.542	263	Y	<0.275	<133	Y	<0.275	<133	Y	0.608	e	295	e
Acetonitrile	75-05-8	41	13.0	0.047	26		0.047	26		0.022	12	J	0.042	23		0.040	0.012	22	6.5
Acetone	67-64-1	58	13.7	0.081	31	S	0.079	30	S	0.078	30	S	0.055	21	J,S	0.073	0.012	28	4.7
Trichlorofluoromethane	75-69-4	137	14.1	0.184	30	S	0.219	36	S	0.166	27	S	0.179	29	S	0.187	0.023	30	3.7
Pentane	109-66-0	72	14.9	0.010	3.1	J	0.011	3.5	J	0.009	2.9	J	0.010	3.0	J	0.010	0.001	3.1	0.25
Methylene Chloride	75-09-2	85	15.8	0.047	12	J,B	0.037	9.7	J,B	0.035	9.3	J,B	0.025	6.6	J,B	0.036	0.009	9.5	2.4
1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	187	16.3	0.021	2.5	J,B	0.014	1.6	J	0.011	1.3	J	0.011	1.3	J	0.014	0.005	1.7	0.58
Propanol	71-23-8	60	17.1	0.073	27		0.084	31		0.069	26		0.060	23		0.072	0.010	27	3.7
2-Butanone	78-93-3	72	18.6	0.027	8.2	S	0.016	4.9	J,S	0.017	5.3	J,S	0.007	2.2	J,S	0.017	0.008	5.2	2.5
Hexane	110-54-3	86	19.8	0.017	4.5	S	0.019	4.9	S	0.019	5.0	S	0.017	4.3	S	0.018	0.001	4.7	0.34
Tetrahydrofuran	109-99-9	72	20.7	0.035	11	J	0.039	12		0.036	11	J	0.039	12		0.037	0.002	12	0.66
1,1,1-Trichloroethane	71-55-6	133	21.9	0.008	1.3	J	0.008	1.4	J	0.008	1.3	J	0.008	1.3	J	0.008	0.000	1.3	0.051
1-Butanol	71-36-3	74	22.3	0.273	82		0.317	96		0.256	77		0.263	80		0.277	0.027	84	8.3
Benzene	71-43-2	78	22.8	0.011	3.1	J	0.012	3.4	J	0.011	3.0	J	0.010	2.9	J	0.011	0.001	3.1	0.20
Carbon Tetrachloride	56-23-5	154	23.0	0.006	0.85	J	0.005	0.70	J	0.005	0.79	J	0.005	0.77	J	0.005	0.000	0.78	0.062
Cyclohexane	110-82-7	84	23.3	0.024	6.3	J	0.024	6.3	J	0.031	8.2	J	0.022	5.9	J	0.025	0.004	6.7	1.0
Heptane	142-82-5	100	25.2	0.023	5.1		0.023	5.2		0.033	7.4		0.024	5.3		0.026	0.005	5.8	1.1
4-Methyl-2-Pentanone	108-10-1	100	26.3	0.018	3.9	J	0.018	4.1	J	0.011	2.4	J	0.010	2.2	J	0.014	0.005	3.1	1.0
1,1,2-Trichloroethane	79-00-5	133	27.8	0.009	1.5	J	0.010	1.6	J	0.009	1.5	J	0.009	1.5	J	0.009	0.000	1.5	0.078
Toluene	108-88-3	92	28.4	0.276	67	S	0.402	98	S	0.244	59	S	0.239	58	S	0.290	0.076	71	19
Tetrachloroethylene	127-18-4	166	31.0	0.005	0.69	J	0.007	0.90	J	0.008	1.1	J	0.006	0.84	J	0.007	0.001	0.89	0.17
Hexanenitrile	628-73-9	97	32.8	0.003	0.71	U	0.003	0.70	U	0.507	117		0.500	115		0.504	e	116	e
Ethylbenzene	100-41-4	106	33.4	0.033	6.9	S	0.024	5.1	S,B	0.026	5.5	S	0.018	3.9	S	0.025	0.006	5.3	1.3
p/m-Xylene	106-42-3	106	33.8	0.126	27	S	0.090	19	S	0.103	22	S	0.073	15	S	0.098	0.022	21	4.7
Cyclohexanone	108-94-1	98	34.3	0.029	6.6	J	0.013	3.0	U	0.014	3.1	U	0.013	3.1	U	e	e	e	e
Styrene	100-42-5	104	34.7	0.031	6.6	S	0.021	4.4	S	0.017	3.6	J,S	0.013	2.8	J,S	0.020	0.008	4.4	1.6
o-Xylene	95-47-6	106	35.0	0.057	12	S	0.045	9.4	S	0.054	11	S	0.032	6.7	S	0.047	0.012	9.9	2.4
Nonane	111-84-2	128	35.4	0.009	1.6	J,S	0.008	1.3	J,S	0.009	1.5	J,S	0.006	1.0	J,S	0.008	0.001	1.4	0.24
1-Ethyl-2-methyl benzene	611-14-3	120	38.4	0.006	1.0	J	0.004	0.77	J	0.004	0.80	J	0.004	0.70	J	0.004	0.001	0.82	0.14
1,3,5-Trimethylbenzene	108-67-8	120	38.6	0.007	1.2	J	0.005	0.90	J	0.005	1.0	J	0.004	0.77	J	0.005	0.001	0.98	0.20
1,2,4-Trimethylbenzene	95-63-6	120	39.9	0.019	3.4	J,S	0.013	2.4	J,S	0.012	2.3	J,S	0.011	2.1	J,S	0.014	0.003	2.5	0.61
Decane	124-18-5	142	40.1	0.053	8.4	S	0.042	6.5	S	0.044	6.9	S	0.034	5.4	S	0.043	0.008	6.8	1.2
1,4-Dichlorobenzene	106-46-7	147	40.6	0.012	1.9	J,S	0.009	1.4	J,S	0.009	1.4	J,S	0.007	1.1	J,S	0.010	0.002	1.5	0.32
Undecane	1120-21-4	156	44.4	0.090	13	S	0.063	9.1	S	0.052	7.4	S	0.055	7.8	S	0.065	0.018	9.3	2.5
Dodecane	112-40-3	170	48.4	0.040	5.2	J	0.025	3.4	J	0.028	3.6	U	0.027	3.6	U	0.033	e	4.3	e
Tridecane	629-50-5	184	52.2	0.087	11	J	0.065	7.9	J	0.050	6.1	J	0.049	6.0	J	0.063	0.018	7.7	2.2
Tetradecane	629-59-4	198	55.7	0.055	6.2	J,B	0.046	5.2	J	0.021	2.3	U	0.021	2.4	J,B	0.041	0.017	4.6	1.9
Total Concentration of Target Analytes																3.924			
Tentatively Identified Compounds ^(b)																			
Propane	74-98-6	44	7.3	0.106	54	S	0.070	36	S	0.077	39	S	0.069	35	S	0.080	0.017	41	8.8
Acetaldehyde	75-07-0	44	9.5	nd	nd	S	nd	nd	S	0.029	15	S	0.042	22	S	0.036	e	18	e
1-Propene, 2-methyl-	115-11-7	56	10.4	1.219	488	S	0.734	294	S	0.510	204	S	0.485	194	S	0.737	0.340	295	136
Isopropyl Alcohol	67-63-0	60	14.3	0.125	47	S	0.094	35	S	0.068	25	S	0.083	31	S	0.093	0.024	35	9.0
2-Propanol, 2-methyl-	75-65-0	74	15.5	0.174	53	S	0.121	37	S	0.087	26	S	0.085	26	S	0.117	0.041	35	13

Table E.8 (Cont'd) Organic Compound Concentrations in Triple Sorbent Traps from Tank U-112 Riser 6 Bottom Level Sampled on 12/6/96

Tentatively Identified Compounds ^(b)	CAS	MW	Ret Time	S6119-b35.1299 ^(c) ISVS			S6119-b34.1298 ^{(c)(d)} ISVS			S6119-b36.1300 ^(c) ISVS			S6119-b37.1301 ^(c) ISVS			Mean and Standard Deviation			
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	St. Dev	(ppbv)	St. Dev
Acetic acid	64-19-7	60	18.2	0.332	124	S	0.095	35	S	0.176	66	S	0.130	48	S	0.183	0.105	68	39
Pentane, 3-methyl-	96-14-0	86	19.0	0.048	13		0.043	11		nd	nd		nd	nd		0.046	e	12	e
Pentane, 2,3-dimethyl-	565-59-3	100	23.7	nd	nd	S	0.028	6.2	S	0.032	7.2	S	0.025	5.5	S	0.028	0.004	6.3	0.86
Hexane, 3-methyl-	589-34-4	100	23.9	0.065	14	S	0.060	14	S	0.079	18	S	0.058	13	S	0.065	0.009	15	2.1
1-Octene, 3-ethyl-	74630-08-3	140	24.5	0.020	3.2	S	0.017	2.7	S	0.018	2.9	S	0.012	1.9	S	0.017	0.004	2.7	0.58
Cyclopentane, 1,2-dimethyl-	2452-99-5	98	24.8	0.026	6.0	S	0.033	7.5	S	0.028	6.5	S	0.022	5.0	S	0.027	0.005	6.2	1.0
Cyclohexane, methyl-	108-87-2	98	26.7	0.069	16	S	0.071	16	S	0.083	19	S	0.079	18	S	0.075	0.007	17	1.6
Hexane, 2,4-dimethyl-	589-43-5	114	27.1	0.011	2.2	S	0.014	2.8	S	0.019	3.8	S	0.009	1.8	S	0.013	0.005	2.6	0.90
Propanoic acid, 2,2-dimethyl-	75-98-9	102	29.0	0.123	27	S	0.038	8.4	S	0.104	23	S	0.047	10	S	0.078	0.042	17	9.2
Cyclohexane, 1,4-dimethyl-	589-90-2	112	29.7	0.019	3.8	S	0.021	4.2	S	0.028	5.6	S	0.012	2.4	S	0.020	0.007	4.0	1.3
Cyclohexane, 1,2-dimethyl-, trans-	6876-23-9	112	30.8	nd	nd	S	nd	nd	S	0.013	2.5	S	nd	nd	S	e	e	e	e
Hexane, 2,3,5-trimethyl-	1069-53-0	128	31.5	0.069	12	S	0.109	19	S	0.137	24	S	0.043	7.6	S	0.090	0.042	16	7.3
Heptane, 2,4-dimethyl-	2213-23-2	128	31.7	0.250	44	S	0.311	54	S	0.406	71	S	0.147	26	S	0.279	0.108	49	19
2,4-Dimethyl-1-heptene	19549-87-2	126	32.6	0.058	10	S	0.059	10	S	0.087	15	S	0.040	7.1	S	0.061	0.019	11	3.5
Octane, 4-methyl-	2216-34-4	128	33.8	nd	nd		0.046	8.1		nd	nd		nd	nd		e	e	e	e
Octane, 2,4,6-trimethyl-	62016-37-9	156	39.2	0.101	15	S	0.150	22	S	0.101	14	S	0.085	12	S	0.109	0.028	16	4.0
Cyclotetrasiloxane, octamethyl-	556-67-2	296	39.4	1.346	102	S	1.079	82	S	1.026	78	S	0.856	65	S	1.077	0.203	81	15
Decane, 2,2,5-trimethyl-	62237-96-1	184	41.5	0.092	11	S	0.086	11	S	0.081	9.9	S	0.096	12	S	0.089	0.007	11	0.81
Heptadecane	629-78-7	240	42.3	0.103	9.6	S	0.094	8.8	S	0.090	8.4	S	0.100	9.3	S	0.097	0.006	9.0	0.54
Unknown C9 Alkane (mw 128)		128	42.7	0.112	20	S	0.111	19	S	0.115	20	S	0.079	14	S	0.104	0.017	18	2.9
Unknown C12 Alkane (mw 170)		170	42.9	0.799	105	S	0.806	106	S	0.827	109	S	0.574	76	S	0.752	0.119	99	16
Decane, 3,6-dimethyl-	17312-53-7	170	43.2	0.420	55	S	0.399	53	S	0.399	53	S	0.306	40	S	0.381	0.051	50	6.7
Undecane, 3,7-dimethyl-	17301-29-0	184	44.7	0.134	16		nd	nd		nd	nd		nd	nd		e	e	e	e
Undecane, 3,4-dimethyl-	17312-78-6	184	44.7	nd	nd	S	0.124	15	S	0.124	15	S	0.095	12	S	0.114	0.017	14	2.1
Undecane, 4-methyl-	2980-69-0	170	44.9	0.086	11		nd	nd		nd	nd		nd	nd		e	e	e	e
Undecane, 4,7-dimethyl-	17301-32-5	184	44.9	nd	nd	S	0.079	9.6	S	0.077	9.4	S	0.060	7.3	S	0.072	0.010	8.8	1.3
Benzoic acid, 2-[(trimethylsilyl)oxy]-	3789-85-3	282	46.4	0.141	11	S	0.119	9.4	S	0.104	8.3	S	nd	nd	S	0.121	0.019	9.6	1.5
Benzeneethanamine, N-[(pentafluorophenyl	55429-85-1	475	46.4	nd	nd		nd	nd		nd	nd		0.082	3.8		e	e	e	e
Pentadecane	629-62-9	212	51.8	nd	nd	S	nd	nd	S	0.122	13	S	0.115	12	S	0.118	e	13	e
Total Concentration of TICs																5.079			

Data Quality Flags

B Compound found in associated laboratory blank

J Target compound detected above the IDL but below the EQL

S Data should be considered suspect due to possible sampling error

U Target compound not detected at or above the IDL

Y Initial calibration and CCV were performed; however, the analyte was not part of the current operating procedure.

Footnotes

(a) Detected target analytes

(b) Semi-quantitative estimate calculated using concentration of closest eluting IS

(c) Sample identification number

(d) Replicates of this sample are found in Table E 15

(e) Mean and/or standard deviation are not meaningful for this analyte

nd Not detected.

Table E.9 Comparison of Organic Compound Concentrations from Replicate Analysis of Triple Sorbent Trap 1241 from Tank U-112 Riser 3 Middle Level Sampled on 12/6/96

Target Analytes ^(a)	CAS	MW	Ret Time	S6118-m29.1241 ^(c) ISVS						RPD ^(d) (%)
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	
Methanol	67-56-1	32	10.0	1.577	1103	Y	1.354	947	Y	15
Butane	106-97-8	58	10.8	0.110	42		0.128	49		15
Ethanol	64-17-5	46	12.5	0.677	329	Y	0.503	244	Y	30
Acetonitrile	75-05-8	41	13.0	0.026	14	J	0.031	17	J	16
Acetone	67-64-1	58	13.7	0.080	31		0.080	31		0
Trichlorofluoromethane	75-69-4	137	14.1	0.212	35		0.209	34		2
Pentane	109-66-0	72	14.9	0.010	3.2	J	0.012	3.8	J	20
Methylene Chloride	75-09-2	85	15.8	0.066	17	J,B	0.056	15	J,B	17
1,1,2-trichloro-2,2,2-trifluoroethane	76-13-1	187	16.3	0.033	4.0	B	0.039	4.7	B	16
Propanol	71-23-8	60	17.1	0.084	31		0.072	27		15
2-Butanone	78-93-3	72	18.6	0.052	16		0.048	15		9
Hexane	110-54-3	86	19.8	0.046	12	S	0.046	12	S	1
Tetrahydrofuran	109-99-9	72	20.7	0.036	11	J	0.032	10	J	11
1,1,1-Trichloroethane	71-55-6	133	21.9	0.011	1.9	J	0.010	1.6	J	14
1-Butanol	71-36-3	74	22.3	0.270	82		0.405	123		40
Benzene	71-43-2	78	22.8	0.011	3.0	J	0.012	3.4	J	12
Carbon Tetrachloride	56-23-5	154	23.0	0.005	0.77	J	0.004	0.56	J	33
Cyclohexane	110-82-7	84	23.3	0.042	11	J	0.038	10	J	9
Heptane	142-82-5	100	25.2	0.037	8.2		0.035	7.8		4
4-Methyl-2-Pentanone	108-10-1	100	26.3	0.026	5.9		0.023	5.2		13
1,1,2-Trichloroethane	79-00-5	133	27.8	0.009	1.5	J	0.006	1.1	J	30
Toluene	108-88-3	92	28.4	0.264	64	S	0.259	63	S	2
Tetrachloroethylene	127-18-4	166	31.0	0.004	0.55	J	0.007	0.92	J	52
Hexanenitrile	628-73-9	97	32.8	0.008	1.9	J	0.004	0.96	J	63
Ethylbenzene	100-41-4	106	33.4	0.031	6.4	S	0.029	6.2	S	4
p/m-Xylene	106-42-3	106	33.8	0.101	21	S	0.100	21	S	0
Cyclohexanone	108-94-1	98	34.3	0.013	3.1	U	0.052	12	J	
Styrene	100-42-5	104	34.7	0.022	4.6	S	0.021	4.6	S	1
o-Xylene	95-47-6	106	35.0	0.054	11	S	0.053	11	S	2
Nonane	111-84-2	128	35.4	0.008	1.5	J	0.009	1.5	J	1
1-Ethyl-2-methyl benzene	611-14-3	120	38.4	0.004	0.71	J	0.007	1.4	J	63
1,3,5-Trimethylbenzene	108-67-8	120	38.6	0.005	0.86	J	0.005	0.85	J	0
1,2,4-Trimethylbenzene	95-63-6	120	39.9	0.012	2.2	J	0.012	2.2	J	3
Decane	124-18-5	142	40.1	0.035	5.5		0.037	5.9		7
1,4-Dichlorobenzene	106-46-7	147	40.6	0.010	1.5	J	0.009	1.4	J	5
Undecane	1120-21-4	156	44.4	0.042	6.0	J	0.064	9.2		41
Tridecane	629-50-5	184	52.2	0.085	10	J	0.080	9.8	J	6
Tetradecane	629-59-4	198	55.7	0.079	8.9	J,B	0.070	7.9	J,B	12

Tentatively

Identified Compounds^(b)

Propene	115-07-1	42	7.4	0.119	63		nd	nd		
Propane	74-98-6	44	7.4	nd	nd	S	0.141	72	S	
Ethane, 1-chloro-1,1-difluoro-	75-68-3	100	8.9	0.085	19		0.080	18		7
1-Propene, 2-methyl-	115-11-7	56	10.4	0.523	209	S	0.600	240	S	14
Isopropyl Alcohol	67-63-0	60	14.3	0.124	46		0.095	35		26
2-Propanol, 2-methyl-	75-65-0	74	15.5	0.143	43	S	0.143	43	S	0
Pentane, 2-methyl-	107-83-5	86	18.3	0.078	20		0.089	23		13
Acetic acid	64-19-7	60	18.3	0.098	37	S	nd	nd	S	
Pentane, 3-methyl-	96-14-0	86	19.0	0.066	17	S	0.064	17	S	4
Pentane, 2,3-dimethyl-	565-59-3	100	23.7	0.059	13	S	0.056	13	S	6

Table E.9 (Cont'd) Comparison of Organic Compound Concentrations from Replicate Analysis of Triple Sorbent Trap 1241 from Tank U-112 Riser 3 Middle Level Sampled on 12/6/96

Tentatively Identified Compounds ^(b)	CAS	MW	Ret Time	S6118-m29.1241 ^(c) ISVS						RPD ^(d) (%)
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	
Hexane, 3-methyl-	589-34-4	100	23.9	0.124	28	S	0.117	26	S	5
1-Octene, 3-ethyl-	74630-08-3	140	24.5	0.031	5.0	S	0.029	4.7	S	6
Cyclopentane, 1,2-dimethyl-	2452-99-5	98	24.8	0.045	10	S	0.039	8.9	S	14
Cyclohexane, methyl-	108-87-2	98	26.7	0.114	26	S	0.113	26	S	1
Hexane, 2,4-dimethyl-	589-43-5	114	27.1	0.047	9.2	S	0.042	8.3	S	10
Propanoic acid, 2,2-dimethyl-	75-98-9	102	29.0	0.072	16	S	nd	nd	S	
Cyclohexane, 1,4-dimethyl-	589-90-2	112	29.7	0.060	12	S	0.060	12	S	1
Cyclohexane, 1,2-dimethyl-, trans-	6876-23-9	112	30.8	0.031	6.1	S	0.026	5.1	S	18
Cyclotrisiloxane, hexamethyl-	541-05-9	222	31.1	nd	nd	S	0.706	71	S	
Hexane, 2,3,5-trimethyl-	1069-53-0	128	31.5	0.231	40	S	0.231	40	S	0
Heptane, 2,4-dimethyl-	2213-23-2	128	31.7	0.691	121	S	0.698	122	S	1
2,4-Dimethyl-1-heptene	19549-87-2	126	32.6	0.144	26	S	0.148	26	S	3
Octane, 2,4-dimethyl-	62016-37-9	156	39.2	0.082	12	S	0.089	13	S	8
Cyclotetrasiloxane, octamethyl-	556-67-2	296	39.4	0.880	67	S	0.888	67	S	1
Decane, 2,2,5-trimethyl-	62237-96-1	184	41.4	0.089	11	S	0.079	9.6	S	11
Heptadecane	629-78-7	240	42.3	0.097	9.0	S	0.089	8.3	S	8
Unknown C9 Alkane (mw 128)		128	42.7	0.115	20	S	0.110	19	S	5
Unknown C12 Alkane (mw 170)		170	42.9	0.843	111	S	0.843	111	S	0
Decane, 3,6-dimethyl-	17312-53-7	170	43.1	0.413	54	S	nd	nd	S	
Decane, 2,4,6-trimethyl-	62108-27-4	184	43.1	nd	nd		0.408	50		
Undecane, 3,4-dimethyl-	17312-78-6	184	44.7	0.125	15	S	nd	nd	S	
Undecane, 4,7-dimethyl-	17301-32-5	184	44.7	0.081	9.8	S	0.117	14	S	37
Undecane, 5-methyl-	1632-70-8	170	44.9	nd	nd		0.078	10		
Benzoic acid, 2-[(trimethylsilyl)oxy]-	3789-85-3	282	46.4	0.125	9.9	S	0.120	9.5	S	4

Data Quality Flags

B Compound found in associated laboratory blank.

J Target compound detected above the IDL but below the EQL.

S Data should be considered suspect due to possible sampling error.

U Target compound not detected at or above the IDL.

Y Initial calibration and CCV were performed; however, the analyte was not part of the current operating procedure.

Footnotes

(a) Detected target analytes.

(b) Semi-quantitative estimate calculated using concentration of closest eluting IS.

(c) Sample identification number.

(d) Relative percent differences (RPDs) based on mg/m³ values.

nd Not detected.

Table E.10 Comparison of Organic Compound Concentrations from Replicate Analysis of Triple Sorbent Trap 1286 from Tank U-112 Riser 3 Middle Level Sampled on 12/6/96

Target Analytes ^(a)	CAS	MW	Ret Time	S6118-m48.1286 ^(c) ISVS						RPD ^(d) (%)
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	
Methanol	67-56-1	32	10.0	1.423	995	Y	1.292	903	Y	10
Butane	106-97-8	58	10.8	0.112	43		0.145	56		26
Ethanol	64-17-5	46	12.5	0.383	186	Y	0.401	195	Y	5
Acetonitrile	75-05-8	41	13.0	0.048	26		0.051	28		5
Acetone	67-64-1	58	13.7	0.064	25	J	0.052	20	J	22
Trichlorofluoromethane	75-69-4	137	14.1	0.191	31		0.193	31		1
Pentane	109-66-0	72	14.9	0.011	3.5	J	0.010	3.2	J	8
Methylene Chloride	75-09-2	85	15.8	0.034	9.0	J,B	0.032	8.5	J,B	5
1,1,2-trichloro-2,2,2-trifluoroethane	76-13-1	187	16.3	0.022	2.7	J,B	0.020	2.4	J,B	9
Propanol	71-23-8	60	17.1	0.077	29		0.077	29		1
2-Butanone	78-93-3	72	18.6	0.017	5.2	J	0.009	2.7	J	62
Hexane	110-54-3	86	19.8	0.045	12	S	0.044	11	S	2
Tetrahydrofuran	109-99-9	72	20.7	0.040	12		0.037	11	J	9
1,1,1-Trichloroethane	71-55-6	133	21.9	0.012	1.9	J	0.011	1.8	J	9
1-Butanol	71-36-3	74	22.3	0.338	102		0.431	130		24
Benzene	71-43-2	78	22.8	0.011	3.0	J	0.011	3.2	J	6
Carbon Tetrachloride	56-23-5	154	23.0	0.005	0.78	J	0.002	0.33	J	81
Cyclohexane	110-82-7	84	23.3	0.028	7.3	J	0.025	6.6	J	10
Heptane	142-82-5	100	25.2	0.029	6.4		0.027	6.0		5
4-Methyl-2-Pentanone	108-10-1	100	26.3	0.014	3.2	J	0.018	3.9	J	19
1,1,2-Trichloroethane	79-00-5	133	27.8	0.009	1.5	J	0.008	1.4	J	5
Toluene	108-88-3	92	28.4	0.246	60	S	0.243	59	S	1
Hexanenitrile	628-73-9	97	32.8	0.005	1.2	J	0.005	1.2	J	2
Ethylbenzene	100-41-4	106	33.4	0.036	7.6	S	0.035	7.3	S	3
p/m-Xylene	106-42-3	106	33.8	0.119	25	S	0.117	25	S	2
Cyclohexanone	108-94-1	98	34.3	0.024	5.4	J	0.020	4.7	J	14
Styrene	100-42-5	104	34.7	0.023	4.9	S	0.022	4.7	S	4
o-Xylene	95-47-6	106	35.0	0.063	13	S	0.063	13	S	1
Nonane	111-84-2	128	35.4	0.010	1.7	J	0.010	1.7	J	1
1-Ethyl-2-methyl benzene	611-14-3	120	38.4	0.004	0.78	J	0.009	1.6	J	71
1,3,5-Trimethylbenzene	108-67-8	120	38.6	0.005	0.95	J	0.005	0.93	J	2
1,2,4-Trimethylbenzene	95-63-6	120	39.9	0.014	2.6	J	0.013	2.5	J	5
Decane	124-18-5	142	40.1	0.043	6.7		0.047	7.3		9
1,4-Dichlorobenzene	106-46-7	147	40.6	0.011	1.7	J	0.011	1.6	J	3
Undecane	1120-21-4	156	44.4	0.054	7.7		0.049	7.0		10
Tridecane	629-50-5	184	52.2	0.054	6.6	J	0.063	7.6	J	15
Tetradecane	629-59-4	198	55.7	0.029	3.3	J,B	0.023	2.6	J,B	24

Tentatively

Identified Compounds^(b)

Propane	74-98-6	44	7.4	0.132	67	S	0.070	36	S	61
1-Propene, 2-methyl-	115-11-7	56	10.4	0.536	215	S	0.475	190	S	12
Isopropyl Alcohol	67-63-0	60	14.3	0.094	35		0.086	32		9
2-Propanol, 2-methyl-	75-65-0	74	15.5	0.124	37	S	0.118	36	S	5
Acetic acid	64-19-7	60	18.3	0.164	61	S	0.147	55	S	11
Pentane, 3-methyl-	96-14-0	86	19.0	0.056	15	S	0.044	11	S	24
Pentane, 2,3-dimethyl-	565-59-3	100	23.7	0.044	10.0	S	nd	nd	S	
Hexane, 3-methyl-	589-34-4	100	23.9	0.094	21	S	0.090	20	S	4
1-Octene, 3-ethyl-	74630-08-3	140	24.5	nd	nd	S	0.021	3.4	S	
Cyclopentane, 1,2-dimethyl-	2452-99-5	98	24.8	0.037	8.4	S	0.035	8.0	S	5
Cyclohexane, methyl-	108-87-2	98	26.7	0.088	20	S	0.097	22	S	10
Hexane, 2,4-dimethyl-	589-43-5	114	27.1	0.043	8.4	S	0.041	8.0	S	4
Propanoic acid, 2,2-dimethyl-	75-98-9	102	29.0	0.126	28	S	0.068	15	S	60
Cyclohexane, 1,4-dimethyl-	589-90-2	112	29.7	0.066	13	S	0.067	13	S	1

Table E.10 (Cont'd) Comparison of Organic Compound Concentrations from Replicate Analysis of Triple Sorbent Trap 1286 from Tank U-112 Riser 3 Middle Level Sampled on 12/6/96

Tentatively Identified Compounds ^(b)	CAS	MW	Ret Time	S6118-m48.1286 ^(c) ISVS						RPD ^(d) (%)
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	
Cyclohexane, 1,2-dimethyl-, trans-	6876-23-9	112	30.8	0.034	6.8	S	0.029	5.9	S	15
Cyclotrisiloxane, hexamethyl-	541-05-9	222	31.1	0.669	68	S	0.628	63	S	6
Hexane, 2,3,5-trimethyl-	1069-53-0	128	31.5	0.262	46	S	0.263	46	S	0
Heptane, 2,4-dimethyl-	2213-23-2	128	31.7	0.801	140	S	0.805	141	S	1
2,4-Dimethyl-1-heptene	19549-87-2	126	32.6	0.174	31	S	0.161	29	S	8
Octane, 2,4,6-trimethyl-	62016-37-9	156	39.2	0.102	15	S	0.071	10	S	36
Cyclotetrasiloxane, octamethyl-	556-67-2	296	39.4	0.896	68	S	0.851	64	S	5
Decane, 2,2,5-trimethyl-	62237-96-1	184	41.4	0.108	13	S	0.097	12	S	11
Heptadecane	629-78-7	240	42.3	0.105	9.8	S	0.098	9.1	S	7
Unknown C9 Alkane (mw 128)		128	42.7	0.141	25	S	0.128	22	S	10
Unknown C12 Alkane (mw 170)		170	42.9	1.055	139	S	1.030	136	S	2
Decane, 3,6-dimethyl-	17312-53-7	170	43.1	0.509	67	S	0.490	65	S	4
Undecane, 3,4-dimethyl-	17312-78-6	184	44.7	0.162	20	S	0.150	18	S	8
Undecane, 4,7-dimethyl-	17301-32-5	184	44.7	0.105	13	S	0.089	11	S	16
Benzoic acid, 2-[(trimethylsilyl)oxy]-	3789-85-3	282	46.4	0.132	10	S	0.111	8.8	S	17
Pentadecane	629-62-9	212	51.8	0.142	15	S	0.129	14	S	10

Data Quality Flags

B Compound found in associated laboratory blank.

J Target compound detected above the IDL but below the EQL.

S Data should be considered suspect due to possible sampling error.

Y Initial calibration and CCV were performed; however, the analyte was not part of the current operating procedure.

Footnotes

(a) Detected target analytes.

(b) Semi-quantitative estimate calculated using concentration of closest eluting IS.

(c) Sample identification number.

(d) Relative percent differences (RPDs) based on mg/m³ values.

nd Not detected.

Table E.11 Comparison of Organic Compound Concentrations from Replicate Analysis of Triple Sorbent Trap 1297 from Tank U-112 Riser 6 Middle Level Sampled on 12/6/96

Target Analytes ^(a)	CAS	MW	Ret Time	S6119-m29.1297 ^(c) ISVS						RPD ^(d) (%)
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	
Methanol	67-56-1	32	10.0	1.342	938	Y,S	1.220	853	Y,S	10
Butane	106-97-8	58	10.8	0.116	45	S	0.101	39	S	14
Ethanol	64-17-5	46	12.6	0.612	297	Y	0.584	284	Y	5
Acetonitrile	75-05-8	41	13.1	0.059	32		0.062	34		5
Acetone	67-64-1	58	13.7	0.087	34	S	0.084	32	S	4
Trichlorofluoromethane	75-69-4	137	14.2	0.283	46	S	0.276	45	S	2
Pentane	109-66-0	72	15.0	0.012	3.8	J	0.014	4.4	J	15
Methylene Chloride	75-09-2	85	15.8	0.048	13	J,B	0.064	17	J,B	28
1,1,2-trichloro-2,2,2-trifluoroethane	76-13-1	187	16.4	0.013	1.6	J	0.011	1.4	J	13
Propanol	71-23-8	60	17.1	0.079	29		0.095	35		18
2-Butanone	78-93-3	72	18.7	0.020	6.3	J,S	0.017	5.3	J,S	17
Hexane	110-54-3	86	19.9	0.022	5.8	S	0.022	5.8	S	0
Tetrahydrofuran	109-99-9	72	20.8	0.042	13		0.039	12		6
1,1,1-Trichloroethane	71-55-6	133	22.0	0.011	1.8	J	0.011	1.8	J	4
1-Butanol	71-36-3	74	22.4	0.354	107		0.474	144		29
Benzene	71-43-2	78	22.9	0.013	3.8	J	0.014	4.0	J	5
Carbon Tetrachloride	56-23-5	154	23.1	0.006	0.82	J	0.004	0.61	J	29
Cyclohexane	110-82-7	84	23.4	0.025	6.6	J	0.024	6.4	J	3
Heptane	142-82-5	100	25.2	0.018	4.0		0.017	3.7	J	7
4-Methyl-2-Pentanone	108-10-1	100	26.4	0.017	3.7	J	0.017	3.8	J	2
1,1,2-Trichloroethane	79-00-5	133	27.9	0.009	1.4	J	0.008	1.4	J	1
Toluene	108-88-3	92	28.5	1.172	285	S	1.197	291	S	2
Hexanenitrile	628-73-9	97	32.8	0.010	2.4	J	0.016	3.8	J	44
Ethylbenzene	100-41-4	106	33.5	0.028	5.9	S	0.027	5.7	S	3
p/m-Xylene	106-42-3	106	33.9	0.101	21	S	0.101	21	S	0
Cyclohexanone	108-94-1	98	34.4	0.014	3.1	J	0.004	0.83	J	116
Styrene	100-42-5	104	34.8	0.022	4.8	S	0.022	4.7	S	2
o-Xylene	95-47-6	106	35.1	0.055	12	S	0.055	12	S	1
Nonane	111-84-2	128	35.5	0.010	1.7	J,S	0.012	2.2	J,S	25
1-Ethyl-2-methyl benzene	611-14-3	120	38.5	0.004	0.75	J	0.009	1.7	J	76
1,3,5-Trimethylbenzene	108-67-8	120	38.7	0.005	0.95	J	0.005	0.93	J	2
1,2,4-Trimethylbenzene	95-63-6	120	40.0	0.012	2.3	J,S	0.012	2.3	J,S	0
Decane	124-18-5	142	40.2	0.045	7.1	S	0.049	7.7	S	7
1,4-Dichlorobenzene	106-46-7	147	40.7	0.009	1.3	J,S	0.008	1.2	J,S	6
Undecane	1120-21-4	156	44.5	0.053	7.6	S	0.059	8.5	S	11
Tridecane	629-50-5	184	52.3	0.055	6.6	J	0.060	7.3	J	9
Tetradecane	629-59-4	198	55.8	0.037	4.2	J	0.043	4.8	J	13

Tentatively

Identified Compounds^(b)

Unknown			5.0	nd	nd		0.239	e		
Propane	74-98-6	44	7.3	0.078	40	S	nd	nd	S	
1-Propene, 2-methyl-	115-11-7	56	10.4	0.762	305	S	0.760	304	S	0
Isopropyl Alcohol	67-63-0	60	14.3	0.103	38	S	0.118	44	S	14
1-Fluoro-1,1-dichloro-ethane	1717-00-6	116	14.5	0.813	157	S	0.742	143	S	9
2-Propanol, 2-methyl-	75-65-0	74	15.5	0.171	52	S	0.173	52	S	1
Acetic acid	64-19-7	60	18.3	0.224	84	S	0.061	23	S	114
Pentane, 3-methyl-	96-14-0	86	19.0	0.051	13		0.051	13		0
Pentane, 2,3-dimethyl-	565-59-3	100	23.7	0.028	6.2	S	0.028	6.3	S	1
Hexane, 3-methyl-	589-34-4	100	24.0	0.056	13	S	0.055	12	S	3
1-Octene, 3-ethyl-	74630-08-3	140	24.5	0.015	2.4	S	nd	nd	S	
Cyclopentane, 1,2-dimethyl-	2452-99-5	98	24.8	nd	nd	S	0.042	9.6	S	
Cyclohexane, methyl-	108-87-2	98	26.7	0.038	8.7	S	nd	nd	S	
Hexane, 2,4-dimethyl-	589-43-5	114	27.1	0.014	2.8	S	nd	nd	S	

Table E.11 (Cont'd) Comparison of Organic Compound Concentrations from Replicate Analysis of Triple Sorbent Trap 1297 from Tank U-112 Riser 6 Middle Level Sampled on 12/6/96

Tentatively Identified Compounds ^(b)	CAS	MW	Ret Time	S6119-m29.1297 ^(c) ISVS						RPD ^(d) (%)
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	
Propanoic acid, 2,2-dimethyl-	75-98-9	102	29.0	0.155	34	S	0.018	4.0	S	157
Cyclohexane, 1,4-dimethyl-	589-90-2	112	29.7	0.029	5.8	S	0.026	5.1	S	12
Cyclohexane, 1,2-dimethyl-, trans-	6876-23-9	112	30.8	0.013	2.6	S	nd	nd	S	
Hexane, 2,3,5-trimethyl-	1069-53-0	128	31.5	0.147	26	S	0.146	26	S	1
Heptane, 2,4-dimethyl-	2213-23-2	128	31.7	0.438	77	S	0.438	77	S	0
2,4-Dimethyl-1-heptene	19549-87-2	126	32.6	0.087	15	S	0.084	15	S	3
Octane, 2,4,6-trimethyl-	62016-37-9	156	39.2	0.127	18	S	0.077	11	S	49
Cyclotetrasiloxane, octamethyl-	556-67-2	296	39.5	1.096	83	S	1.042	79	S	5
Decane, 2,2,5-trimethyl-	62237-96-1	184	41.5	0.088	11	S	0.078	9.4	S	13
Heptadecane	629-78-7	240	42.3	0.099	9.2	S	0.089	8.3	S	10
Unknown C9 Alkane (mw 128)		128	42.7	0.128	22	S	0.116	20	S	10
Unknown C12 Alkane (mw 170)		170	42.9	0.935	123	S	0.920	121	S	2
Decane, 3,6-dimethyl-	17312-53-7	170	43.2	0.455	60	S	0.443	58	S	3
Undecane, 3,4-dimethyl-	17312-78-6	184	44.7	0.134	16	S	0.128	16	S	5
Undecane, 4,7-dimethyl-	17301-32-5	184	44.9	0.087	11	S	0.086	10	S	2
Benzoic acid, 2-[(trimethylsilyl)oxy]-	3789-85-3	282	46.4	0.125	9.9	S	0.107	8.5	S	15

Data Quality Flags

B Compound found in associated laboratory blank.

J Target compound detected above the IDL but below the EQL.

S Data should be considered suspect due to possible sampling error.

Y Initial calibration and CCV were performed; however, the analyte was not part of the current operating procedure.

Footnotes

(a) Detected target analytes.

(b) Semi-quantitative estimate calculated using concentration of closest eluting IS.

(c) Sample identification number.

(d) Relative percent differences (RPDs) based on mg/m³ values.

(e) No molecular weight available for calculation.

nd Not detected.

Table E.12 Comparison of Organic Compound Concentrations from Replicate Analysis of Triple Sorbent
Trap 1306 from Tank U-112 Riser 6 Middle Level Sampled on 12/6/96

Target Analytes ^(a)	CAS	MW	Ret Time	S6119-m48.1306 ^(c) ISVS						RPD ^(d) (%)
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	
Methanol	67-56-1	32	10.0	1.142	798	Y.S	0.958	669	Y.S	18
Butane	106-97-8	58	10.8	0.103	40	S	0.119	46	S	15
Ethanol	64-17-5	46	12.6	0.363	177	Y	0.426	207	Y	16
Acetonitrile	75-05-8	41	13.1	0.040	22		0.042	23		5
Acetone	67-64-1	58	13.7	0.077	30	J.S	0.072	28	J.S	6
Trichlorofluoromethane	75-69-4	137	14.2	0.205	33	S	0.200	33	S	2
Pentane	109-66-0	72	15.0	0.013	4.0	J	0.014	4.4	J	10
Methylene Chloride	75-09-2	85	15.8	0.032	8.5	J.B	0.029	7.6	J.B	12
1,1,2-Trichloro-2,2,2-trifluoroethane	76-13-1	187	16.4	0.013	1.5	J	0.012	1.5	J	5
Propanol	71-23-8	60	17.1	0.070	26		0.079	29		11
2-Butanone	78-93-3	72	18.7	0.019	5.9	J.S	0.015	4.8	J.S	22
Hexane	110-54-3	86	19.9	0.023	5.9	S	0.023	5.9	S	0
Tetrahydrofuran	109-99-9	72	20.8	0.040	12		0.037	12		7
1,1,1-Trichloroethane	71-55-6	133	22.0	0.009	1.5	J	0.008	1.4	J	7
1-Butanol	71-36-3	74	22.4	0.301	91		0.265	80		13
Benzene	71-43-2	78	22.9	0.014	4.1	J	0.016	4.5		9
Carbon Tetrachloride	56-23-5	154	23.1	0.005	0.78	J	0.005	0.67	J	16
Cyclohexane	110-82-7	84	23.4	0.027	7.3	J	0.028	7.4	J	2
Heptane	142-82-5	100	25.2	0.016	3.5	J	0.014	3.2	J	9
4-Methyl-2-Pentanone	108-10-1	100	26.4	0.013	2.9	J	0.002	0.49	U	
1,1,2-Trichloroethane	79-00-5	133	27.9	0.009	1.5	J	0.008	1.3	J	10
Toluene	108-88-3	92	28.5	0.286	70	S	0.282	69	S	2
Tetrachloroethylene	127-18-4	166	31.1	0.008	1.1	J	0.007	0.96	J	12
Hexanenitrile	628-73-9	97	32.8	0.015	3.5	J	0.012	2.7	J	26
Ethylbenzene	100-41-4	106	33.5	0.041	8.7	S	0.040	8.4	S	3
p/m-Xylene	106-42-3	106	33.9	0.162	34	S	0.159	34	S	2
Styrene	100-42-5	104	34.8	0.038	8.2	S	0.037	8.0	S	3
o-Xylene	95-47-6	106	35.1	0.074	16	S	0.072	15	S	2
Nonane	111-84-2	128	35.5	0.013	2.3	J.S	0.013	2.2	J.S	4
1-Ethyl-2-methyl benzene	611-14-3	120	38.5	0.009	1.6	J	0.008	1.5	J	9
1,3,5-Trimethylbenzene	108-67-8	120	38.7	0.010	1.8	J	0.009	1.8	J	1
1,2,4-Trimethylbenzene	95-63-6	120	40.0	0.027	5.0	S	0.025	4.7	J.S	6
Decane	124-18-5	142	40.2	0.077	12	S	0.079	12	S	2
1,4-Dichlorobenzene	106-46-7	147	40.7	0.017	2.5	J.S	0.016	2.4	J.S	7
Undecane	1120-21-4	156	44.5	0.135	19	S	0.121	17	S	11
Dodecane	112-40-3	170	48.5	0.066	8.7	J	0.060	7.9	J	10
Tridecane	629-50-5	184	52.3	0.117	14	J	0.121	15	J	3
Tetradecane	629-59-4	198	55.8	0.030	3.4	J.B	0.027	3.0	J.B	12

Tentatively

Identified Compounds^(b)

Propane	74-98-6	44	7.3	0.067	34	S	0.053	27	S	24
1-Propene, 2-methyl-	115-11-7	56	10.4	0.667	267	S	0.685	274	S	3
Isopropyl Alcohol	67-63-0	60	14.3	0.072	27	S	0.087	33	S	19
2-Propanol, 2-methyl-	75-65-0	74	15.5	0.126	38	S	0.121	37	S	4
Acetic acid	64-19-7	60	18.3	0.143	53	S	0.099	37	S	37
Pentane, 2,3-dimethyl-	565-59-3	100	23.7	0.017	3.9	S	0.018	3.9	S	2
Hexane, 3-methyl-	589-34-4	100	24.0	0.039	8.7	S	0.038	8.6	S	1
1-Octene, 3-ethyl-	74630-08-3	140	24.5	0.009	1.4	S	nd	nd	S	
Cyclopentane, 1,2-dimethyl-	2452-99-5	98	24.8	0.020	4.7	S	0.020	4.6	S	2
Cyclohexane, methyl-	108-87-2	98	26.7	0.036	8.2	S	0.035	8.1	S	2
Hexane, 2,4-dimethyl-	589-43-5	114	27.1	0.009	1.7	S	nd	nd	S	
Propanoic acid, 2,2-dimethyl-	75-98-9	102	29.0	0.119	26	S	0.077	17	S	43
Cyclohexane, 1,4-dimethyl-	589-90-2	112	29.7	0.020	4.0	S	0.018	3.6	S	10

Table E.12 (Cont'd) Comparison of Organic Compound Concentrations from Replicate Analysis of Triple Sorbent Trap 1306 from Tank U-112 Riser 6 Middle Level Sampled on 12/6/96

Tentatively Identified Compounds ^(b)	CAS	MW	Ret Time	S6119-m48.1306 ^(c) ISVS						RPD ^(d) (%)
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	
Cyclohexane, 1,2-dimethyl-, trans-	6876-23-9	112	30.8	0.008	1.6	S	nd	nd	S	
Hexane, 2,3,5-trimethyl-	1069-53-0	128	31.5	0.100	18	S	0.099	17	S	1
Heptane, 2,4-dimethyl-	2213-23-2	128	31.7	0.344	60	S	0.340	60	S	1
2,4-Dimethyl-1-heptene	19549-87-2	126	32.6	0.063	11	S	0.065	12	S	4
Octane, 2,4,6-trimethyl-	62016-37-9	156	39.2	0.242	35	S	0.228	33	S	6
Cyclotetrasiloxane, octamethyl-	556-67-2	296	39.4	1.962	149	S	1.886	143	S	4
Decane, 2,2,5-trimethyl-	62237-96-1	184	41.5	0.202	25	S	0.191	23	S	6
Heptadecane	629-78-7	240	42.3	0.208	19	S	0.197	18	S	6
Unknown C9 Alkane (mw 128)		128	42.7	0.187	33	S	0.175	31	S	6
Unknown C12 Alkane (mw 170)		170	42.9	1.356	179	S	1.311	173	S	3
Decane, 3,6-dimethyl-	17312-53-7	170	43.2	0.727	96	S	0.686	90	S	6
Undecane, 3,4-dimethyl-	17312-78-6	184	44.7	0.227	28	S	0.209	25	S	8
Undecane, 4,7-dimethyl-	17301-32-5	184	44.9	0.143	17	S	0.138	17	S	4
Benzoic acid, 2-[(trimethylsilyl)oxy]-	3789-85-3	282	46.4	0.234	19	S	0.202	16	S	14
Pentadecane	629-62-9	212	51.8	0.280	30	S	0.258	27	S	8

Data Quality Flags

B Compound found in associated laboratory blank.

J Target compound detected above the IDL but below the EQL.

S Data should be considered suspect due to possible sampling error.

U Target compound not detected at or above the IDL.

Y Initial calibration and CCV were performed; however, the analyte was not part of the current operating procedure.

Footnotes

(a) Detected target analytes.

(b) Semi-quantitative estimate calculated using concentration of closest eluting IS.

(c) Sample identification number.

(d) Relative percent differences (RPDs) based on mg/m³ values.

nd Not detected.

Table E.13 Comparison of Organic Compound Concentrations from Replicate Analysis of Triple Sorbent
Trap 1307 from Tank U-112 Riser 6 Middle Level Sampled on 12/6/96

Target Analytes ^(a)	CAS	MW	Ret Time	S6119-m49.1307 ^(c) ISVS						RPD ^(d) (%)
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	
Methanol	67-56-1	32	10.0	1.610	1126	Y,S	1.489	1041	Y,S	8
Butane	106-97-8	58	10.8	0.114	44	S	0.095	37	S	18
Ethanol	64-17-5	46	12.6	0.447	217	Y	0.461	224	Y	3
Acetonitrile	75-05-8	41	13.1	0.062	34		0.064	35		3
Acetone	67-64-1	58	13.7	0.081	31	S	0.069	27	J,S	16
Trichlorofluoromethane	75-69-4	137	14.2	0.196	32	S	0.192	31	S	2
Pentane	109-66-0	72	15.0	0.012	3.8	J	0.012	3.6	J	6
Methylene Chloride	75-09-2	85	15.8	0.039	10	J,B	0.043	11	J,B	8
1,1,2-trichloro-2,2,2-trifluoroethane	76-13-1	187	16.4	0.021	2.6	J	0.021	2.5	J	3
Propanol	71-23-8	60	17.1	0.071	26		0.072	27		1
2-Butanone	78-93-3	72	18.7	0.020	6.2	J,S	0.014	4.5	J,S	33
Hexane	110-54-3	86	19.9	0.023	5.9	S	0.022	5.6	S	4
Tetrahydrofuran	109-99-9	72	20.8	0.040	12		0.037	12		7
1,1,1-Trichloroethane	71-55-6	133	22.0	0.009	1.5	J	0.008	1.4	J	8
1-Butanol	71-36-3	74	22.4	0.288	87		0.206	62		33
Benzene	71-43-2	78	22.9	0.013	3.8	J	0.015	4.2	J	8
Carbon Tetrachloride	56-23-5	154	23.1	0.006	0.84	J	0.005	0.65	J	25
Cyclohexane	110-82-7	84	23.4	0.011	3.0	J	0.014	3.7	J	19
Heptane	142-82-5	100	25.2	0.015	3.3	J	0.014	3.2	J	3
4-Methyl-2-Pentanone	108-10-1	100	26.4	0.012	2.8	J	0.014	3.2	J	14
1,1,2-Trichloroethane	79-00-5	133	27.9	0.008	1.4	J	0.008	1.3	J	10
Toluene	108-88-3	92	28.5	0.301	73	S	0.297	72	S	1
Tetrachloroethylene	127-18-4	166	31.1	0.011	1.4	J	0.010	1.3	J	8
Hexanenitrile	628-73-9	97	32.8	0.003	0.80	J	0.004	0.99	J	23
Ethylbenzene	100-41-4	106	33.5	0.075	16	S	0.071	15	S	5
p/m-Xylene	106-42-3	106	33.9	0.295	62	S	0.288	61	S	3
Cyclohexanone	108-94-1	98	34.4	0.017	3.9	J	0.018	4.2	J	6
Styrene	100-42-5	104	34.8	0.075	16	S	0.073	16	S	3
1,1,2,2-Tetrachloroethane	79-34-5	168	35.1	0.009	1.2	J	0.008	1.0	J	16
o-Xylene	95-47-6	106	35.1	0.131	28	S	0.132	28	S	1
Nonane	111-84-2	128	35.5	0.020	3.6	S	0.020	3.6	S	0
1-Ethyl-2-methyl benzene	611-14-3	120	38.5	0.015	2.8	J	0.014	2.7	J	4
1,3,5-Trimethylbenzene	108-67-8	120	38.7	0.017	3.2	J	0.017	3.2	J	1
1,2,4-Trimethylbenzene	95-63-6	120	40.0	0.048	9.0	S	0.047	8.7	S	3
Decane	124-18-5	142	40.2	0.132	21	S	0.127	20	S	3
1,4-Dichlorobenzene	106-46-7	147	40.7	0.032	4.8	S	0.031	4.7	S	3
Undecane	1120-21-4	156	44.5	0.224	32	S	0.205	29	S	9
Dodecane	112-40-3	170	48.5	0.079	10	J	0.078	10	J	1
Tridecane	629-50-5	184	52.3	0.137	17	J	0.131	16	J	5
Tetradecane	629-59-4	198	55.8	0.027	3.0	J,B	0.032	3.6	J,B	19

Tentatively

Identified Compounds^(b)

Propane	74-98-6	44	7.3	0.083	42	S	0.074	38	S	11
1-Propene, 2-methyl-	115-11-7	56	10.4	1.079	431	S	0.959	383	S	12
Isopropyl Alcohol	67-63-0	60	14.3	0.080	30	S	0.098	37	S	21
2-Propanol, 2-methyl-	75-65-0	74	15.5	0.186	56	S	0.178	54	S	5
Acetic acid	64-19-7	60	18.3	0.168	63	S	0.118	44	S	34
Hexane, 3-methyl-	589-34-4	100	24.0	0.034	7.6	S	0.033	7.3	S	5
1-Octene, 3-ethyl-	74630-08-3	140	24.5	0.008	1.3	S	nd	nd	S	
Cyclopentane, 1,2-dimethyl-	2452-99-5	98	24.8	0.025	5.7	S	0.025	5.7	S	1
Cyclohexane, methyl-	108-87-2	98	26.7	0.047	11	S	0.051	12	S	7
Hexane, 2,4-dimethyl-	589-43-5	114	27.1	0.013	2.6	S	0.014	2.8	S	4
Propanoic acid, 2,2-dimethyl-	75-98-9	102	29.0	0.106	23	S	0.106	23	S	0

Table E.13 (Cont'd) Comparison of Organic Compound Concentrations from Replicate Analysis of Triple Sorbent Trap 1307 from Tank U-112 Riser 6 Middle Level Sampled on 12/6/96

Tentatively Identified Compounds ^(b)	CAS	MW	Ret Time	S6119-m49.1307 ^(c) ISVS						RPD ^(d) (%)
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	
Cyclohexane, 1,4-dimethyl-	589-90-2	112	29.7	0.034	6.8	S	0.031	6.2	S	10
Cyclohexane, 1,2-dimethyl-, trans-	6876-23-9	112	30.8	0.015	2.9	S	nd	nd	S	
Hexane, 2,3,5-trimethyl-	1069-53-0	128	31.5	0.135	24	S	0.134	23	S	1
Heptane, 2,4-dimethyl-	2213-23-2	128	31.7	0.489	86	S	0.486	85	S	1
2,4-Dimethyl-1-heptene	19549-87-2	126	32.6	0.100	18	S	0.101	18	S	0
Octane, 2,4,6-trimethyl-	62016-37-9	156	39.2	0.304	44	S	0.291	42	S	5
Cyclotetrasiloxane, octamethyl-	556-67-2	296	39.4	2.970	225	S	3.096	234	S	4
Decane, 2,2,5-trimethyl-	62237-96-1	184	41.5	0.220	27	S	0.208	25	S	6
D-Limonene	5989-27-5	136	41.8	0.188	31		nd	nd		
Heptadecane	629-78-7	240	42.3	0.249	23	S	0.232	22	S	7
Unknown C9 Alkane (mw 128)		128	42.7	0.244	43	S	0.243	42	S	0
Unknown C12 Alkane (mw 170)		170	42.9	1.772	233	S	1.774	234	S	0
Decane, 3,6-dimethyl-	17312-53-7	170	43.2	0.974	128	S	0.940	124	S	4
Undecane, 3,4-dimethyl-	17312-78-6	184	44.7	0.317	39	S	0.300	36	S	6
Undecane, 4,7-dimethyl-	17301-32-5	184	44.9	0.194	24	S	0.192	23	S	1
Benzoic acid, 2-[(trimethylsilyl)oxy]-	3789-85-3	282	46.4	0.384	31	S	0.358	28	S	7
Pentadecane	629-62-9	212	51.8	0.327	35	S	0.313	33	S	4

Data Quality Flags

B Compound found in associated laboratory blank.

J Target compound detected above the IDL but below the EQL.

S Data should be considered suspect due to possible sampling error.

Y Initial calibration and CCV were performed; however, the analyte was not part of the current operating procedure.

Footnotes

(a) Detected target analytes.

(b) Semi-quantitative estimate calculated using concentration of closest eluting IS.

(c) Sample identification number.

(d) Relative percent differences (RPDs) based on mg/m³ values.

nd Not detected.

Table E.14 Comparison of Organic Compound Concentrations from Replicate Analysis of Triple Sorbent
Trap 1296 from Tank U-112 Riser 6 Middle Level Sampled on 12/6/96

Target Analytes ^(a)	CAS	MW	Ret Time	S6119-m28.1296 ^(c) ISVS						RPD ^(d) (%)
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	
Methanol	67-56-1	32	10.0	1.435	1003	Y,S	1.248	873	Y,S	14
Butane	106-97-8	58	10.8	0.117	45	S	0.102	39	S	14
Ethanol	64-17-5	46	12.6	0.536	261	Y	0.543	264	Y	1
Acetonitrile	75-05-8	41	13.1	0.051	28		0.058	32		13
Acetone	67-64-1	58	13.7	0.090	35	S	0.087	34	S	3
Trichlorofluoromethane	75-69-4	137	14.2	0.212	35	S	0.204	33	S	4
Pentane	109-66-0	72	15.0	0.012	3.6	J	0.011	3.5	J	3
Methylene Chloride	75-09-2	85	15.8	0.033	8.7	J,B	0.074	19	J,B	76
1,1,2-trichloro-2,2,2-trifluoroethane	76-13-1	187	16.4	0.017	2.0	J,B	0.016	1.9	J,B	5
Propanol	71-23-8	60	17.1	0.066	25		0.070	26		5
2-Butanone	78-93-3	72	18.7	0.016	5.1	J,S	0.012	3.7	J,S	32
Hexane	110-54-3	86	19.9	0.018	4.6	S	0.018	4.6	S	0
Tetrahydrofuran	109-99-9	72	20.8	0.039	12		0.037	11		7
1,1,1-Trichloroethane	71-55-6	133	22.0	0.008	1.3	J	0.007	1.2	J	7
1-Butanol	71-36-3	74	22.4	0.285	86		0.231	70		21
Benzene	71-43-2	78	22.9	0.011	3.2	J	0.013	3.6	J	13
Carbon Tetrachloride	56-23-5	154	23.1	0.005	0.77	J	0.004	0.61	J	23
Heptane	142-82-5	100	25.2	0.009	1.9	J	0.008	1.8	J	5
4-Methyl-2-Pentanone	108-10-1	100	26.4	0.010	2.3	J	0.015	3.3	J	36
1,1,2-Trichloroethane	79-00-5	133	27.9	0.009	1.5	J	0.008	1.3	J	13
Toluene	108-88-3	92	28.5	0.186	45	S	0.179	44	S	4
Tetrachloroethylene	127-18-4	166	31.1	0.007	0.93	J	0.005	0.66	J	34
Hexanenitrile	628-73-9	97	32.8	0.508	117		0.499	115		2
Ethylbenzene	100-41-4	106	33.5	0.033	6.9	S	0.032	6.7	S	3
p/m-Xylene	106-42-3	106	33.9	0.127	27	S	0.124	26	S	2
Styrene	100-42-5	104	34.8	0.031	6.7	S	0.029	6.3	S	7
o-Xylene	95-47-6	106	35.1	0.059	12	S	0.058	12	S	1
Nonane	111-84-2	128	35.5	0.010	1.7	J,S	0.009	1.7	J,S	1
1-Ethyl-2-methyl benzene	611-14-3	120	38.5	0.006	1.1	J	0.006	1.1	J	2
1,3,5-Trimethylbenzene	108-67-8	120	38.7	0.007	1.3	J	0.007	1.3	J	0
1,2,4-Trimethylbenzene	95-63-6	120	40.0	0.019	3.6	J,S	0.019	3.5	J,S	2
Decane	124-18-5	142	40.2	0.053	8.4	S	0.050	7.8	S	7
1,4-Dichlorobenzene	106-46-7	147	40.7	0.013	2.0	J,S	0.013	2.0	J,S	0
Undecane	1120-21-4	156	44.5	0.086	12	S	0.085	12	S	0
Dodecane	112-40-3	170	48.5	0.036	4.8	J	0.034	4.4	J	8
Tridecane	629-50-5	184	52.3	0.055	6.7	J	0.053	6.4	J	4
Tetradecane	629-59-4	198	55.8	0.032	3.6	J,B	0.036	4.1	J,B	13

Tentatively

Identified Compounds^(b)

Propane	74-98-6	44	7.3	0.079	40	S	nd	nd	S	
1-Propene, 2-methyl-	115-11-7	56	10.4	1.384	554	S	1.196	479	S	
Isopropyl Alcohol	67-63-0	60	14.3	0.080	30	S	0.109	41	S	31
2-Propanol, 2-methyl-	75-65-0	74	15.5	0.162	49	S	0.151	46	S	7
Acetic acid	64-19-7	60	18.3	0.237	89	S	0.146	54	S	48
Pentane, 2,3-dimethyl-	565-59-3	100	23.7	0.007	1.5	S	nd	nd	S	
Hexane, 3-methyl-	589-34-4	100	24.0	0.017	3.8	S	nd	nd	S	
Cyclohexane, methyl-	108-87-2	98	26.7	0.017	3.9	S	nd	nd	S	
Hexane, 2,4-dimethyl-	589-43-5	114	27.1	0.007	1.3	S	nd	nd	S	
Propanoic acid, 2,2-dimethyl-	75-98-9	102	29.0	0.078	17	S	0.042	9.1	S	61
Cyclohexane, 1,4-dimethyl-	589-90-2	112	29.7	0.016	3.2	S	0.014	2.9	S	9
Cyclohexane, 1,2-dimethyl-, trans-	6876-23-9	112	30.8	0.007	1.4	S	nd	nd	S	
Hexane, 2,3,5-trimethyl-	1069-53-0	128	31.5	0.065	11	S	0.062	11	S	4
Heptane, 2,4-dimethyl-	2213-23-2	128	31.7	0.234	41	S	0.228	40	S	3

Table E.14 (Cont'd) Comparison of Organic Compound Concentrations from Replicate Analysis of Triple Sorbent Trap 1296 from Tank U-112 Riser 6 Middle Level Sampled on 12/6/96

Tentatively Identified Compounds ^(b)	CAS	MW	Ret Time	S6119-m28.1296 ^(c) ISVS						RPD ^(d) (%)
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	
2,4-Dimethyl-1-heptene	19549-87-2	126	32.6	0.054	9.5	S	0.052	9.2	S	3
Octane, 2,4,6-trimethyl-	62016-37-9	156	39.2	0.118	17	S	0.087	12	S	30
Cyclotetrasiloxane, octamethyl-	556-67-2	296	39.4	1.308	99	S	1.293	98	S	1
Decane, 2,2,5-trimethyl-	62237-96-1	184	41.5	0.086	10	S	0.080	9.7	S	8
Heptadecane	629-78-7	240	42.3	0.094	8.8	S	0.093	8.7	S	1
Unknown C9 Alkane (mw 128)		128	42.7	0.096	17	S	0.093	16	S	4
Unknown C12 Alkane (mw 170)		170	42.9	0.706	93	S	0.692	91	S	2
Decane, 3,6-dimethyl-	17312-53-7	170	43.2	0.374	49	S	0.365	48	S	2
Undecane, 3,4-dimethyl-	17312-78-6	184	44.7	0.118	14	S	0.114	14	S	4
Undecane, 4,7-dimethyl-	17301-32-5	184	44.9	0.072	8.7	S	0.073	8.9	S	2
Benzoic acid, 2-[(trimethylsilyl)oxy]-	3789-85-3	282	46.4	0.143	11	S	0.122	9.7	S	16
Pentadecane	629-62-9	212	51.8	0.119	13	S	0.108	11	S	9

Data Quality Flags

B Compound found in associated laboratory blank.

J Target compound detected above the IDL but below the EQL.

S Data should be considered suspect due to possible sampling error.

Y Initial calibration and CCV were performed; however, the analyte was not part of the current operating procedure.

Footnotes

(a) Detected target analytes.

(b) Semi-quantitative estimate calculated using concentration of closest eluting IS.

(c) Sample identification number.

(d) Relative percent differences (RPDs) based on mg/m³ values.

nd Not detected.

Table E.15 Comparison of Organic Compound Concentrations from Replicate Analysis of Triple Sorbent
Trap 1298 from Tank U-112 Riser 6 Bottom Level Sampled on 12/6/96

Target Analytes ^(a)	CAS	MW	Ret Time	S6119-b34.1298 ^(c) ISVS						RPD ^(d) (%)
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	
Methanol	67-56-1	32	10.0	1.524	1065	Y,S	1.413	988	Y,S	8
Butane	106-97-8	58	10.8	0.100	39	S	0.126	49	S	23
Ethanol	64-17-5	46	12.5	0.542	263	Y	0.510	248	Y	6
Acetonitrile	75-05-8	41	13.0	0.047	26		0.049	27		4
Acetone	67-64-1	58	13.7	0.079	30	S	0.068	26	J,S	15
Trichlorofluoromethane	75-69-4	137	14.1	0.219	36	S	0.211	34	S	4
Pentane	109-66-0	72	14.9	0.011	3.5	J	0.012	3.8	J	8
Methylene Chloride	75-09-2	85	15.8	0.037	9.7	J,B	0.030	8.0	J,B	19
1,1,2-trichloro-2,2,2-trifluoroethane	76-13-1	187	16.3	0.014	1.6	J	0.013	1.5	J	8
Propanol	71-23-8	60	17.1	0.084	31		0.079	29		7
2-Butanone	78-93-3	72	18.6	0.016	4.9	J,S	0.013	3.9	J,S	22
Hexane	110-54-3	86	19.8	0.019	4.9	S	0.018	4.8	S	3
Tetrahydrofuran	109-99-9	72	20.7	0.039	12		0.037	11		7
1,1,1-Trichloroethane	71-55-6	133	21.9	0.008	1.4	J	0.006	1.1	J	27
1-Butanol	71-36-3	74	22.3	0.317	96		0.397	120		23
Benzene	71-43-2	78	22.8	0.012	3.4	J	0.013	3.6	J	7
Carbon Tetrachloride	56-23-5	154	23.0	0.005	0.70	J	0.003	0.44	J	46
Cyclohexane	110-82-7	84	23.3	0.024	6.3	J	0.024	6.3	J	0
Heptane	142-82-5	100	25.2	0.023	5.2		0.023	5.1		3
4-Methyl-2-Pentanone	108-10-1	100	26.3	0.018	4.1	J	0.014	3.2	J	24
1,1,2-Trichloroethane	79-00-5	133	27.8	0.010	1.6	J	0.008	1.3	J	21
Toluene	108-88-3	92	28.4	0.402	98	S	0.401	97	S	0
Tetrachloroethylene	127-18-4	166	31.0	0.007	0.90	J	0.004	0.59	J	44
Ethylbenzene	100-41-4	106	33.4	0.024	5.1	S,B	0.023	4.9	S,B	4
p/m-Xylene	106-42-3	106	33.8	0.090	19	S	0.089	19	S	1
Styrene	100-42-5	104	34.7	0.021	4.4	S	0.020	4.4	S	1
o-Xylene	95-47-6	106	35.0	0.045	9.4	S	0.043	9.1	S	3
Nonane	111-84-2	128	35.4	0.008	1.3	J,S	0.013	2.3	J,S	51
1-Ethyl-2-methyl benzene	611-14-3	120	38.4	0.004	0.77	J	0.008	1.5	J	67
1,3,5-Trimethylbenzene	108-67-8	120	38.6	0.005	0.90	J	0.005	0.87	J	4
1,2,4-Trimethylbenzene	95-63-6	120	39.9	0.013	2.4	J,S	0.012	2.3	J,S	5
Decane	124-18-5	142	40.1	0.042	6.5	S	0.044	7.0	S	6
1,4-Dichlorobenzene	106-46-7	147	40.6	0.009	1.4	J,S	0.009	1.3	J,S	8
Undecane	1120-21-4	156	44.4	0.063	9.1	S	0.079	11	S	23
Dodecane	112-40-3	170	48.4	0.025	3.4	J	0.023	3.1	J	8
Tridecane	629-50-5	184	52.2	0.065	7.9	J	0.065	7.9	J	0
Tetradecane	629-59-4	198	55.7	0.046	5.2	J	0.042	4.7	J	8

Tentatively

Identified Compounds^(b)

Propane	74-98-6	44	7.3	0.070	36	S	nd	nd	S	
1-Propene, 2-methyl-	115-11-7	56	10.4	0.734	294	S	0.797	319	S	8
Isopropyl Alcohol	67-63-0	60	14.3	0.094	35	S	0.103	38	S	9
2-Propanol, 2-methyl-	75-65-0	74	15.5	0.121	37	S	0.114	35	S	6
Acetic acid	64-19-7	60	18.2	0.095	35	S	0.039	15	S	83
Pentane, 3-methyl-	96-14-0	86	19.0	0.043	11		0.042	11		3
Pentane, 2,3-dimethyl-	565-59-3	100	23.7	0.028	6.2	S	0.029	6.5	S	5
Hexane, 3-methyl-	589-34-4	100	23.9	0.060	14	S	0.059	13	S	3
1-Octene, 3-ethyl-	74630-08-3	140	24.5	0.017	2.7	S	0.017	2.7	S	1
Cyclopentane, 1,2-dimethyl-	2452-99-5	98	24.8	0.033	7.5	S	nd	nd	S	
Cyclopentane, 1,2-dimethyl-, trans-	822-50-4	98	24.8	nd	nd		0.031	7.1		
Cyclohexane, methyl-	108-87-2	98	26.7	0.071	16	S	0.071	16	S	0
Hexane, 2,4-dimethyl-	589-43-5	114	27.1	0.014	2.8	S	nd	nd	S	
Propanoic acid, 2,2-dimethyl-	75-98-9	102	29.0	0.038	8.4	S	nd	nd	S	

Table E.15 (Cont'd) Comparison of Organic Compound Concentrations from Replicate Analysis of Triple Sorbent Trap 1298 from Tank U-112 Riser 6 Bottom Level Sampled on 12/6/96

Tentatively Identified Compounds ^(b)	CAS	MW	Ret Time	S6119-b34.1298 ^(c) ISVS						RPD ^(d) (%)
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	
Cyclohexane, 1,4-dimethyl-	589-90-2	112	29.7	0.021	4.2	S	0.018	3.7	S	12
Cyclotrisiloxane, hexamethyl-	541-05-9	222	31.2	nd	nd		0.658	66		
Hexane, 2,3,5-trimethyl-	1069-53-0	128	31.5	0.109	19	S	0.107	19	S	2
Heptane, 2,4-dimethyl-	2213-23-2	128	31.7	0.311	54	S	0.311	54	S	0
2,4-Dimethyl-1-heptene	19549-87-2	126	32.6	0.059	10	S	0.057	10	S	3
Octane, 4-methyl-	2216-34-4	128	33.8	0.046	8.1		0.056	9.8		19
Octane, 2,4,6-trimethyl-	62016-37-9	156	39.2	0.150	22	S	0.105	15	S	36
Cyclotetrasiloxane, octamethyl-	556-67-2	296	39.4	1.079	82	S	1.032	78	S	5
Decane, 2,2,5-trimethyl-	62237-96-1	184	41.5	0.086	11	S	0.078	9.6	S	10
Heptadecane	629-78-7	240	42.3	0.094	8.8	S	0.087	8.1	S	9
Unknown C9 Alkane (mw 128)		128	42.7	0.111	19	S	0.101	18	S	9
Unknown C12 Alkane (mw 170)		170	42.9	0.806	106	S	0.782	103	S	3
Decane, 3,6-dimethyl-	17312-53-7	170	43.2	0.399	53	S	0.378	50	S	5
Undecane, 3,4-dimethyl-	17312-78-6	184	44.7	0.124	15	S	0.114	14	S	8
Undecane, 4,7-dimethyl-	17301-32-5	184	44.9	0.079	9.6	S	0.075	9.1	S	5
Benzoic acid, 2-[(trimethylsilyl)oxy]-	3789-85-3	282	46.4	0.119	9.4	S	0.101	8.0	S	16
Pentadecane	629-62-9	212	51.8	nd	nd	S	0.123	13	S	

Data Quality Flags

B Compound found in associated laboratory blank.

J Target compound detected above the IDL but below the EQL.

S Data should be considered suspect due to possible sampling error.

Y Initial calibration and CCV were performed; however, the analyte was not part of the current operating procedure.

Footnotes

(a) Detected target analytes.

(b) Semi-quantitative estimate calculated using concentration of closest eluting IS.

(c) Sample identification number.

(d) Relative percent differences (RPDs) based on mg/m³ values.

nd Not detected.

Table E.16 Organic Compound Concentrations in Triple Sorbent Trap Blank Samples Associated with the Sampling of Tank U-112 Riser 3 on 12/6/96

Target Analytes ^(a)	CAS	MW	Ret Time	S6118-a50 1290 ^(c) ISVS			S6118-a51 1291 ^(c) ISVS			S6118-a52 1293 ^(c) ISVS			S6118-a53 1295 ^(c) ISVS		
				Field Blank #1			Field Blank #2			Trip Blank #1			Trip Blank #2		
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag
Methanol	67-56-1	32	10.0	<0.274	<192	Y	<0.274	<192	Y	<0.274	<192	Y	<0.274	<192	Y
Butane	106-97-8	58	10.8	0.004	1.4	U	0.024	9.1	J	0.004	1.4	U	0.002	0.92	U
Acetonitrile	75-05-8	41	13.0	0.003	1.8	U	0.006	3.1	J	0.003	1.8	U	0.002	1.2	U
Acetone	67-64-1	58	13.7	0.027	10	J	0.037	14	J	0.013	5.2	J	0.005	1.9	U
Trichlorofluoromethane	75-69-4	137	14.1	0.011	1.7	J	0.012	1.9	J	0.029	4.8	J	0.003	0.48	U
Pentane	109-66-0	72	14.9	0.004	1.1	J	0.005	1.6	J	0.003	0.89	U	0.002	0.59	U
Methylene Chloride	75-09-2	85	15.8	0.029	7.6	J,B	0.026	6.9	J,B	0.022	5.8	J,B	0.011	2.8	U
1,1,2-Trichloro-2,2,2-trifluoroethane	76-13-1	187	16.3	0.032	3.9	B	0.020	2.3	J	0.003	0.36	U	0.002	0.24	U
Propanol	71-23-8	60	17.1	0.005	2.0	U	0.007	2.5	J	0.005	2.0	U	0.004	1.3	U
2-Butanone	78-93-3	72	18.6	0.015	4.8	J	0.020	6.2	J	0.002	0.68	U	0.002	0.46	U
Hexane	110-54-3	86	19.8	0.036	9.4		0.037	9.6		0.001	0.32	U	0.001	0.22	U
Tetrahydrofuran	109-99-9	72	20.7	0.007	2.0	J	0.007	2.1	J	0.004	1.1	U	0.002	0.71	U
1,1,1-Trichloroethane	71-55-6	133	21.9	0.005	0.75	J	0.006	0.96	J	0.003	0.44	U	0.002	0.30	U
1-Butanol	71-36-3	74	22.3	0.008	2.3	U	0.012	3.6	J	0.008	2.3	U	0.005	1.5	U
Benzene	71-43-2	78	22.8	0.005	1.5	J	0.005	1.3	J	0.001	0.40	U	0.001	0.27	U
Cyclohexane	110-82-7	84	23.3	0.024	6.3	J	0.020	5.3	J	0.004	1.1	U	0.003	0.73	U
Heptane	142-82-5	100	25.2	0.010	2.3	J	0.011	2.5	J	0.002	0.35	U	0.001	0.23	U
4-Methyl-2-Pentanone	108-10-1	100	26.3	0.010	2.2	J	0.013	3.0	J	0.007	1.5	J	0.001	0.31	U
1,1,2-Trichloroethane	79-00-5	133	27.8	0.008	1.4	J	0.008	1.3	J	0.009	1.5	J	0.001	0.17	U
Toluene	108-88-3	92	28.4	0.114	28		0.092	22		0.049	12		0.001	0.15	U
Hexanenitrile	628-73-9	97	32.8	0.004	0.90	J	0.004	0.92	J	0.003	0.66	U	0.002	0.44	U
Ethylbenzene	100-41-4	106	33.4	0.026	5.4		0.026	5.5		0.001	0.30	U	0.001	0.20	U
p/m-Xylene	106-42-3	106	33.8	0.085	18		0.088	19		0.003	0.63	U	0.002	0.42	U
Styrene	100-42-5	104	34.7	0.017	3.7		0.018	3.8		0.002	0.33	U	0.001	0.22	U
o-Xylene	95-47-6	106	35.0	0.045	9.5		0.047	9.9		0.002	0.40	U	0.001	0.27	U
Nonane	111-84-2	128	35.4	0.006	1.1	J	0.007	1.2	J	0.001	0.22	U	0.001	0.15	U
1-Ethyl-2-methyl benzene	611-14-3	120	38.4	0.006	1.1	J	0.003	0.58	J	0.002	0.44	U	0.002	0.29	U
1,3,5-Trimethylbenzene	108-67-8	120	38.6	0.003	0.63	J	0.004	0.69	J	0.002	0.44	U	0.002	0.29	U
1,2,4-Trimethylbenzene	95-63-6	120	39.9	0.009	1.6	J	0.010	1.8	J	0.003	0.47	U	0.002	0.31	U
Decane	124-18-5	142	40.1	0.026	4.1	J	0.027	4.3	J	0.003	0.47	U	0.002	0.31	U
1,3-Dichlorobenzene	541-73-1	147	40.4	0.007	1.1	J	0.003	0.48	U	0.003	0.48	U	0.002	0.32	U
1,4-Dichlorobenzene	106-46-7	147	40.6	0.007	1.1	J	0.008	1.2	J	0.003	0.43	U	0.002	0.29	U
Undecane	1120-21-4	156	44.4	0.028	4.0	J	0.035	5.0	J	0.004	0.63	U	0.003	0.42	U
Tridecane	629-50-5	184	52.2	0.048	5.8	J	0.037	4.5	J	0.026	3.2	U	0.017	2.1	U
Tetradecane	629-59-4	198	55.7	0.048	5.4	J,B	0.020	2.2	J,B	0.019	2.2	U	0.013	1.4	U
Total Target Compounds				0.72			0.70			0.25			0.10		
Tentatively Identified Compounds ^(b)															
Propane	74-98-6	44	7.4	nd	nd		0.076	39		nd	nd		nd	nd	
1-Propene, 2-methyl-	115-11-7	56	10.4	0.436	174		0.616	246		nd	nd		nd	nd	
1-Fluoro-1,1-dichloro-ethane	1717-00-6	116	14.5	nd	nd		nd	nd		0.496	96		nd	nd	
2-Propanol, 2-methyl-	75-65-0	74	15.5	0.057	17		0.072	22		nd	nd		nd	nd	
Acetic acid	64-19-7	60	18.3	nd	nd		0.175	65		0.034	13		nd	nd	
Pentane, 2-methyl-	107-83-5	86	18.3	0.080	21		nd	nd		nd	nd		nd	nd	
Pentane, 3-methyl-	96-14-0	86	19.0	0.045	12		nd	nd		nd	nd		nd	nd	
Hexane, 2-methyl-	591-76-4	100	23.4	0.035	7.8		nd	nd		nd	nd		nd	nd	

Table E.16 (Cont'd) Organic Compound Concentrations in Triple Sorbent Trap Blank Samples Associated with the Sampling of Tank U-112 Riser 3 on 12/6/96

Tentatively Identified Compounds ^(b)	CAS	MW	Ret Time	S6118-a50.1290 ^(c) ISVS			S6118-a51.1291 ^(c) ISVS			S6118-a52.1293 ^(c) ISVS			S6118-a53.1295 ^(c) ISVS		
				Field Blank #1			Field Blank #2			Trip Blank #1			Trip Blank #2		
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag
Hexane, 2,2,4-trimethyl-	16747-26-5	128	23.6	0.027	4.7		nd	nd		nd	nd		nd	nd	
Pentane, 2,3-dimethyl-	565-59-3	100	23.7	nd	nd		0.029	6.6		nd	nd		nd	nd	
Hexane, 3-methyl-	589-34-4	100	23.9	0.053	12		0.056	12		0.014	3.1		nd	nd	
1-Octene, 3-ethyl-	74630-08-3	140	24.5	nd	nd		0.012	2.0		nd	nd		nd	nd	
Cyclopentane, 1,2-dimethyl-	2452-99-5	98	24.8	nd	nd		0.025	5.8		nd	nd		nd	nd	
Cyclohexane, methyl-	108-87-2	98	26.7	nd	nd		0.050	12		nd	nd		nd	nd	
Hexane, 2,4-dimethyl-	589-43-5	114	27.1	0.032	6.2		0.031	6.1		nd	nd		nd	nd	
Propanoic acid, 2,2-dimethyl-	75-98-9	102	29.1	nd	nd		0.087	19		nd	nd		nd	nd	
Cyclohexane, 1,4-dimethyl-	589-90-2	112	29.7	0.047	9.5		0.051	10		nd	nd		nd	nd	
Cyclohexane, 1,2-dimethyl-, trans-	6876-23-9	112	30.8	0.024	4.7		0.026	5.2		nd	nd		nd	nd	
Cyclotrisiloxane, hexamethyl-	541-05-9	222	31.1	0.405	41		0.466	47		nd	nd		nd	nd	
Hexane, 2,3,5-trimethyl-	1069-53-0	128	31.5	0.198	35		0.195	34		nd	nd		nd	nd	
Heptane, 2,4-dimethyl-	2213-23-2	128	31.7	0.599	105		0.574	100		nd	nd		nd	nd	
2,4-Dimethyl-1-heptene	19549-87-2	126	32.6	nd	nd		0.130	23		nd	nd		nd	nd	
Octane, 2,5,6-trimethyl-	62016-14-2	156	36.4	0.044	6.4		nd	nd		nd	nd		nd	nd	
Octane, 2,4,6-trimethyl-	62016-37-9	156	39.2	0.061	8.8		0.027	3.9		nd	nd		nd	nd	
Cyclotetrasiloxane, octamethyl-	556-67-2	296	39.4	0.743	56		0.832	63		nd	nd		nd	nd	
Decane, 2,2,5-trimethyl-	62237-96-1	184	41.4	0.057	6.9		0.061	7.5		nd	nd		nd	nd	
Heptadecane	629-78-7	240	42.3	0.061	5.7		0.064	5.9		nd	nd		nd	nd	
Dodecane, 2,7,10-trimethyl-	74645-98-0	212	42.7	0.075	8.0		nd	nd		nd	nd		nd	nd	
Unknown C9 Alkane (mw 128)		128	42.7	nd	nd		0.089	16		nd	nd		nd	nd	
Undecane, 5,7-dimethyl-	17312-83-3	184	42.9	0.567	69		nd	nd		nd	nd		nd	nd	
Unknown C12 Alkane (mw 170)		170	42.9	0.274	36		0.658	87		nd	nd		nd	nd	
Decane, 3,6-dimethyl-	17312-53-7	170	43.2	nd	nd		0.314	41		nd	nd		nd	nd	
Undecane, 4,7-dimethyl-	17301-32-5	184	44.7	0.075	9.2		0.065	7.9		nd	nd		nd	nd	
Undecane, 3,4-dimethyl-	17312-78-6	184	44.7	nd	nd		0.099	12		nd	nd		nd	nd	
Unknown C12 Alkane (mw 170)		170	46.4	0.099			nd	nd		nd	nd		nd	nd	
Benzoic acid, 2-[(trimethylsilyl)oxy]-	3789-85-3	282	46.4	nd	nd		0.109	8.7		nd	nd		nd	nd	
Methenamine	100-97-0	140	49.6	nd	nd		0.131	21		nd	nd		nd	nd	
Hexadecane	544-76-3	226	51.8	0.056	5.5		nd	nd		nd	nd		nd	nd	
Pentadecane	629-62-9	212	51.8	nd	nd		0.084	8.9		nd	nd		nd	nd	
Total TIC				4.15			5.20			0.54					

Data Quality Flags

B Compound found in associated laboratory blank

J Target compound detected above the IDL but below the EQL

S Data should be considered suspect due to possible sampling error

U Target compound not detected at or above the IDL

Y Initial calibration and CCV were performed, however, the analyte was not part of the current operating procedure.

Footnotes

(a) Detected target analytes

(b) Semi-quantitative estimate calculated using concentration of closest eluting IS.

(c) Sample identification number

nd Not detected

Table E.17 Organic Compound Concentrations in Triple Sorbent Trap Blank Samples Associated with the Sampling of Tank U-112 Riser 6 on 12/6/96

Target Analytes ^(a)	CAS	MW	Ret Time	S6119-a53.1311 ^(c) ISVS			S6119-a52.1310 ^(c) ISVS			S6119-a50.1308 ^(c) ISVS			S6119-a51.1309 ^(c) ISVS		
				Trip Blank #2			Trip Blank #1			Field Blank #1			Field Blank #2		
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag
Methanol	67-56-1	32	10.0	<0.274	<192	Y	<0.274	<192	Y	0.431	301		<0.274	<192	Y
Butane	106-97-8	58	10.8	0.004	1.4	U	0.004	1.4	U	0.045	17		0.021	8.2	J
Ethanol	64-17-5	46	12.5	<0.275	<133	Y	<0.275	<133	Y	<0.275	<133	Y	<0.275	<133	Y
Acetonitrile	75-05-8	41	13.0	0.003	1.8	U	0.003	1.8	U	0.016	8.5	J	0.009	4.7	J
Acetone	67-64-1	58	13.7	0.007	2.8	U	0.008	3.1	J	0.098	38		0.061	23	J
Trichlorofluoromethane	75-69-4	137	14.1	0.007	1.1	J	0.018	2.9	J	0.128	21		0.022	3.6	J
Pentane	109-66-0	72	14.9	0.003	0.89	U	0.003	0.89	U	0.012	3.7	J	0.007	2.1	J
1,1-Dichloroethene	75-35-4	97	15.5	0.002	0.47	U	0.002	0.47	U	0.059	14		0.002	0.47	U
Methylene Chloride	75-09-2	85	15.8	0.023	6.2	J,B	0.017	4.4	J,B	0.080	21	J,B	0.028	7.4	J,B
1,1,2-trichloro-2,2,2-trifluoroethane	76-13-1	187	16.3	0.022	2.7	J,B	0.003	0.36	U	0.024	2.9	J	0.011	1.3	J
Propanol	71-23-8	60	17.1	0.005	2.0	U	0.005	2.0	U	0.016	6.1	J	0.007	2.5	J
2-Butanone	78-93-3	72	18.6	0.002	0.68	U	0.002	0.68	U	0.024	7.5		0.012	3.7	J
Hexane	110-54-3	86	19.8	0.001	0.32	U	0.001	0.32	U	0.024	6.3		0.016	4.2	
Tetrahydrofuran	109-99-9	72	20.7	0.004	1.1	U	0.004	1.1	U	0.010	3.1	J	0.009	2.8	J
1,1,1-Trichloroethane	71-55-6	133	21.9	0.003	0.44	U	0.003	0.44	U	0.013	2.1	J	0.004	0.70	J
1-Butanol	71-36-3	74	22.3	0.008	2.3	U	0.008	2.3	U	0.022	6.8	J	0.011	3.4	J
Benzene	71-43-2	78	22.8	0.001	0.40	U	0.001	0.40	U	0.010	3.0	J	0.009	2.5	J
Carbon Tetrachloride	56-23-5	154	23.0	0.001	0.20	U	0.001	0.20	U	0.002	0.34	J	0.001	0.20	U
Cyclohexane	110-82-7	84	23.3	0.004	1.1	U	0.004	1.1	U	0.030	7.9	J	0.015	4.0	J
Heptane	142-82-5	100	25.2	0.002	0.35	U	0.002	0.35	U	0.010	2.3	J	0.009	1.9	J
4-Methyl-2-Pentanone	108-10-1	100	26.3	0.008	1.7	J	0.002	0.46	U	0.020	4.6	J	0.008	1.9	J
1,1,2-Trichloroethane	79-00-5	133	27.8	0.009	1.4	J	0.009	1.4	J	0.008	1.4	J	0.008	1.3	J
Toluene	108-88-3	92	28.4	0.006	1.5	J	0.022	5.4		1.696	412		0.246	60	
Octane	111-65-9	114	30.4	0.003	0.52	U	0.003	0.52	U	0.007	1.4	J	0.003	0.52	U
Tetrachloroethylene	127-18-4	166	31.0	0.003	0.34	U	0.003	0.34	U	0.006	0.75	J	0.003	0.34	J
Hexanenitrile	628-73-9	97	32.8	0.003	0.66	U	0.003	0.66	U	0.004	0.98	J	0.013	2.9	J
Ethylbenzene	100-41-4	106	33.4	0.001	0.30	U	0.001	0.30	U	0.076	16		0.038	7.9	
p/m-Xylene	106-42-3	106	33.8	0.003	0.63	U	0.003	0.63	U	0.296	63		0.155	33	
Styrene	100-42-5	104	34.7	0.002	0.33	U	0.002	0.33	U	0.080	17		0.034	7.2	
o-Xylene	95-47-6	106	35.0	0.002	0.40	U	0.002	0.40	U	0.136	29		0.070	15	
Nonane	111-84-2	128	35.4	0.001	0.22	U	0.001	0.22	U	0.022	3.8		0.013	2.2	
1-Ethyl-2-methyl benzene	611-14-3	120	38.4	0.002	0.44	U	0.002	0.44	U	0.015	2.8	J	0.009	1.6	J
1,3,5-Trimethylbenzene	108-67-8	120	38.6	0.002	0.44	U	0.002	0.44	U	0.017	3.2	J	0.010	1.9	J
1,2,4-Trimethylbenzene	95-63-6	120	39.9	0.003	0.47	U	0.003	0.47	U	0.050	9.4		0.029	5.4	
Decane	124-18-5	142	40.1	0.003	0.47	U	0.003	0.47	U	0.138	22		0.083	13	
1,4-Dichlorobenzene	106-46-7	147	40.6	0.003	0.43	U	0.003	0.43	U	0.035	5.3		0.019	2.8	J
Undecane	1120-21-4	156	44.4	0.004	0.63	U	0.004	0.63	U	0.256	37		0.152	22	
Dodecane	112-40-3	170	48.4	0.026	3.4	U	0.026	3.4	U	0.100	13	J	0.070	9.3	J
Tridecane	629-50-5	184	52.2	0.026	3.2	U	0.026	3.2	U	0.130	16	J	0.118	14	J
Tetradecane	629-59-4	198	55.7	0.056	6.4	J,B	0.019	2.2	U	0.034	3.9	J,B	0.031	3.5	J,B
Total Target Compounds				0.27			0.23			4.18			1.36		
Tentatively															
Identified Compounds ^(b)															
Propane	74-98-6	44	7.3	nd	nd		nd	nd		0.102	52		0.102	52	
Ethene, 1-chloro-1-fluoro-	2317-91-1	80	8.8	nd	nd		nd	nd		0.255	71		nd	nd	
Acetaldehyde	75-07-0	44	9.6	nd	nd		nd	nd		0.074	38		nd	nd	

Table E.17 (Cont'd) Organic Compound Concentrations in Triple Sorbent Trap Blank Samples Associated with the Sampling of Tank U-112 Riser 6 on 12/6/96

Tentatively Identified Compounds ^(b)	CAS	MW	Ret Time	S6119-a53.1311 ^(c) ISVS			S6119-a52.1310 ^(c) ISVS			S6119-a50.1308 ^(c) ISVS			S6119-a51.1309 ^(c) ISVS		
				Trip Blank #2			Trip Blank #1			Field Blank #1			Field Blank #2		
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag
1-Propene, 2-methyl-	115-11-7	56	10.4	nd	nd		nd	nd		1.094	438		0.883	353	
Isopropyl Alcohol	67-63-0	60	14.3	nd	nd		nd	nd		0.057	21		nd	nd	
1-Fluoro-1,1-dichloro-ethane	1717-00-6	116	14.5	nd	nd		nd	nd		4.210	813		nd	nd	
2-Propanol, 2-methyl-	75-65-0	74	15.5	nd	nd		nd	nd		0.150	45		0.136	41	
Acetic acid	64-19-7	60	18.2	nd	nd		0.026	9.8		0.163	61		0.116	43	
Pentane, 2,3-dimethyl-	565-59-3	100	23.7	nd	nd		nd	nd		0.037	8.3		0.009	2.0	
Hexane, 3-methyl-	589-34-4	100	24.0	nd	nd		nd	nd		0.062	14		0.024	5.4	
1-Octene, 3-ethyl-	74630-08-3	140	24.5	nd	nd		nd	nd		0.014	2.3		nd	nd	
Cyclopentane, 1,2-dimethyl-	2452-99-5	98	24.8	nd	nd		nd	nd		0.071	16		0.016	3.7	
Cyclohexane, methyl-	108-87-2	98	26.7	nd	nd		nd	nd		0.043	9.8		0.015	3.3	
Hexane, 2,4-dimethyl-	589-43-5	114	27.1	nd	nd		nd	nd		0.015	2.9		nd	nd	
Propanoic acid, 2,2-dimethyl-	75-98-9	102	29.1	nd	nd		nd	nd		0.091	20		0.091	20	
Cyclohexane, 1,4-dimethyl-	589-90-2	112	29.7	nd	nd		nd	nd		0.029	5.9		0.015	2.9	
Cyclohexane, 1,2-dimethyl-, trans-	6876-23-9	112	30.8	nd	nd		nd	nd		0.014	2.9		nd	nd	
Hexane, 2,3,5-trimethyl-	1069-53-0	128	31.5	nd	nd		nd	nd		0.127	22		0.078	14	
Heptane, 2,4-dimethyl-	2213-23-2	128	31.8	nd	nd		nd	nd		0.478	84		0.279	49	
2,4-Dimethyl-1-heptene	19549-87-2	126	32.6	nd	nd		nd	nd		0.098	17		0.052	9.3	
Octane, 2,4,6-trimethyl-	62016-37-9	156	39.2	nd	nd		nd	nd		0.295	42		0.045	6.4	
Cyclotetrasiloxane, octamethyl-	556-67-2	296	39.5	nd	nd		nd	nd		2.659	201		1.423	108	
Benzene, 1-methyl-4-(1-methylethyl)-	99-87-6	134	41.3	nd	nd		nd	nd		0.169	28		nd	nd	
Decane, 2,2,5-trimethyl-	62237-96-1	184	41.5	nd	nd		nd	nd		0.200	24		0.208	25	
Limonene	138-86-3	136	41.8	nd	nd		nd	nd		0.185	31		nd	nd	
Heptadecane	629-78-7	240	42.3	nd	nd		nd	nd		0.256	24		0.213	20	
Unknown C9 Alkane (mw 128)		128	42.7	nd	nd		nd	nd		0.246	43		0.194	34	
Unknown C12 Alkane (mw 170)		170	42.9	nd	nd		nd	nd		1.756	231		1.355	179	
Decane, 3,6-dimethyl-	17312-53-7	170	43.2	nd	nd		nd	nd		0.975	129		0.736	97	
Undecane, 3,4-dimethyl-	17312-78-6	184	44.7	nd	nd		nd	nd		0.317	39		0.240	29	
Undecane, 4,7-dimethyl-	17301-32-5	184	44.9	nd	nd		nd	nd		0.193	24		0.153	19	
Benzoic acid, 2-[(trimethylsilyl)oxy]-	3789-85-3	282	46.4	nd	nd		nd	nd		0.378	30		0.192	15	
Pentadecane	629-62-9	212	51.8	nd	nd		nd	nd		0.305	32		0.290	31	
Total TIC							0.03			15.12			6.86		

Data Quality Flags

B Compound found in associated laboratory blank.

J Target compound detected above the IDL but below the EQL.

S Data should be considered suspect due to possible sampling error.

U Target compound not detected at or above the IDL.

Y Initial calibration and CCV were performed, however, the analyte was not part of the current operating procedure.

Footnotes

(a) Detected target analytes

(b) Semi-quantitative estimate calculated using concentration of closest eluting IS.

(c) Sample identification number.

nd Not detected

E.39

Figure E.1b Typical Total Ion Chromatogram (36 - 70 min) for Triple Sorbent Trap Samples from Tank U-112 Sampled on 12/6/96

Appendix F

Tank Vapor Characterization: Chain of Custody Sample Control Forms

Custody Form Initiator

J. A. Edwards - PNNL

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Page 85-3009 / FAX 376-2329

Company Contact

R. D. Mahon - SESC

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Page 85-9656 / FAX 373-7076

Project Designation/Sampling Locations 200 West Tank Farm
241-U-112 Riser #3 Tank Vapor Sample SAF S6118
Homogeneity ISVS

Collection date 12-6-96

Preparation date 10-25-96

Ice Chest No.

Field Logbook No. SESC-1647-8.

Bill of Lading/Airbill No.

N/A

Offsite Property No. N/A

Method of Shipment

Government Truck

Collector MAHON

Shipped to

PNNL

Sample Identification

	Date/Time
S6118 - m10 . R69 ✓	Collect NH ₃ /NO _x /H ₂ O Sorbent Trap #1 6DEC96/1106
S6118 - m11 . R70 ✓	Collect NH ₃ /NO _x /H ₂ O Sorbent Trap #2 6DEC96/1106
S6118 - b12 . R71 ✓	Collect NH ₃ /NO _x /H ₂ O Sorbent Trap #3 6DEC96/1125
S6118 - b13 . R72 ✓	Collect NH ₃ /NO _x /H ₂ O Sorbent Trap #4 6DEC96/1125
S6118 - b14 . R73 ✓	Collect NH ₃ /NO _x /H ₂ O Sorbent Trap #5 6DEC96/1126
S6118 - b15 . R74 ✓	Collect NH ₃ /NO _x /H ₂ O Sorbent Trap #6 6DEC96/1126
S6118 - t16 . R75 ✓	Collect NH ₃ /NO _x /H ₂ O Sorbent Trap #7 6DEC96/1146
S6118 - t17 . R76 ✓	Collect NH ₃ /NO _x /H ₂ O Sorbent Trap #8 6DEC96/1147
S6118 - t18 . R77 ✓	Collect NH ₃ /NO _x /H ₂ O Sorbent Trap #9 6DEC96/1147
S6118 - t19 . R78 ✓	Collect NH ₃ /NO _x /H ₂ O Sorbent Trap #10 6DEC96/1148
S6118 - m20 . R79 ✓	Collect NH ₃ /NO _x /H ₂ O Sorbent Trap #11 6DEC96/1205
S6118 - m21 . R80 ✓	Collect NH ₃ /NO _x /H ₂ O Sorbent Trap #12 6DEC96/1206
S6118 - a22 . R81 ✓	Store NH ₃ /NO _x /H ₂ O Sorbent Field Blanks 6DEC96/
S6118 - a23 . R82 ✓	Store NH ₃ /NO _x /H ₂ O Sorbent Field Blanks 6DEC96/

[] Field Transfer of Custody		[X] Chain of Possession		(Sign and Print Names)		
Relinquished By	Date	Time	Received By	Date	Time	
GW Dennis	10-28-96	1330	JA Edwards	10-28-96	1330	
JA Edwards	10-28-96	1415	CS McClellan	10-28-96	1415	
CS McClellan	12-4-96	1136	GS CAPRIO	12-4-96	1136	
GS CAPRIO	12-5-96	1135	BC SUSTON	12-5-96	1135	
BC SUSTON	12-5-96	1145	GS CAPRIO	12-5-96	1145	
GS CAPRIO	12-9-96	1045	CS MAST	12-9-96	1045	
CS MAST	12-18-96	1330	CS McClellan	12-18-96	1330	
CS McClellan	12-18-96	1520	Final Sample Disposition			
Comments: JA Edwards	01/06/97	1530	Karl Pool	01/06/97	1530	

PNNL (only) Checklist

- Media labeled and checked? ☒ Y
- Letter of instruction? ☒ Y
- Media in good condition? ☒ Y
- COC info/signatures complete? ☒ Y
- Rad release stickers on samples? ☒ Y
- Activity report from 222S? ☒ Y
- RSR/release? (a ≤100/B ≤400 pCi/g) ☒ Y
- COC copy for LRB, RIDS filed? ☒ Y

Pick-up / Delivery

- ☒ Y
- ☒ Y
- ☒ Y
- ☒ Y
- ☒ Y
- ☒ Y
- ☒ Y
- ☒ Y

Comments:

(WHC-SD-WM-TP-335, REV. 2, Table 2b)

(Revised 05/30/96 PNNL)

Custody Form Initiator

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Company Contact

R. D. Mahon - SESC

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Project Designation/Sampling Locations 200 West Tank Farm
241-U-112 Riser #6 Tank Vapor Sample SAF S6119

Collection date 12-10-96

Preparation date 10-25-96

Homogeneity

ISVS

Ice Chest No.

Field Logbook No. SESC-N 647.8

Bill of Lading/Airbill No.

N/A

Offsite Property No. N/A

Method of Shipment

Government Truck

Collection - MAST, CAPRI

Shipped to

PNNL

Sample Identification

		Date / Time
S6119 - m10 . R83 ✓	Collect NH ₃ /NO _x /H ₂ O Sorbent Trap #1	6 DEC 96 1106
S6119 - m11 . R84 ✓	Collect NH ₃ /NO _x /H ₂ O Sorbent Trap #2	6 DEC 96 110630
S6119 - b12 . R85 ✓	Collect NH ₃ /NO _x /H ₂ O Sorbent Trap #3	6 DEC 96 1125
S6119 - b13 . R86 ✓	Collect NH ₃ /NO _x /H ₂ O Sorbent Trap #4	6 DEC 96 112530
S6119 - b14 . R87 ✓	Collect NH ₃ /NO _x /H ₂ O Sorbent Trap #5	6 DEC 96 1126
S6119 - b15 . R88 ✓	Collect NH ₃ /NO _x /H ₂ O Sorbent Trap #6	6 DEC 96 112630
S6119 - t16 . R89 ✓	Collect NH ₃ /NO _x /H ₂ O Sorbent Trap #7	6 DEC 96 114630
S6119 - t17 . R90 ✓	Collect NH ₃ /NO _x /H ₂ O Sorbent Trap #8	6 DEC 96 1147
S6119 - t18 . R91 ✓	Collect NH ₃ /NO _x /H ₂ O Sorbent Trap #9	6 DEC 96 114730
S6119 - t19 . R92 ✓	Collect NH ₃ /NO _x /H ₂ O Sorbent Trap #10	6 DEC 96 1148
S6119 - m20 . R93 ✓	Collect NH ₃ /NO _x /H ₂ O Sorbent Trap #11	6 DEC 96 120530
S6119 - m21 . R94 ✓	Collect NH ₃ /NO _x /H ₂ O Sorbent Trap #12	6 DEC 96 1206
S6119 - a22 . R95 ✓	Store NH ₃ /NO _x /H ₂ O Sorbent Field Blanks	6 DEC 96
S6119 - a23 . R96 ✓	Store NH ₃ /NO _x /H ₂ O Sorbent Field Blanks	6 DEC 96

[] Field Transfer of Custody

[X] Chain of Possession

(Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
GW Dennis	10-28-96	1330	JA Edwards	10-28-96	1330
JA Edwards	10-28-96	1415	CS McClella	10-28-96	1415
CS McClella	12-4-96	1138	GS CAPRI	12-4-96	1138
GS CAPRI	12-5-96	1135	BC Johnston	12-5-96	1135
BC Johnston	12-5-96	1145	GS CAPRI	12-5-96	1145
GS CAPRI	12-9-96	1045	CS McClella	12-9-96	1045
CS McClella	12-18-96	1400	CS McClella	12-18-96	1400
CS McClella	12-18-96	1530	JA Edwards	12-18-96	1530
JA Edwards	01/06/97	1530	Karl Pool	01/06/97	1530

Final Sample Disposition

Comments:

PNNL (only) Checklist

Pick-up / Delivery

Comments:

- Media labeled and checked? (Y) N
- Letter of instruction? (Y) N
- Media in good condition? (Y) N
- COC info/signatures complete? (Y) N
- Rad release stickers on samples? (Y) N
- Activity report from 222S? (Y) N
- RSR/release? (a ≤100/B ≤400 pCi/g) (Y) N
- COC copy for LRB, RIDS filed? (Y) N

POC

POC

(WHC-SD-WM-TP-335, REV. 2, Table 2b)

(Revised 05/30/96 PNNL)

Custody Form Initiator J. A. Edwards - PNNL

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Page 85-3656 / FAX 373-3193

Project Designation/Sampling Locations 200 West Tank Farm
241-U-112 Riser #3 Tank Vapor Sample SAF S6118
Homogeneity ISVS

Collection date 12 - 6 - 96

Preparation date 12 - 03 - 96

Ice Chest No.

Field Logbook No. SESC-647.B

Bill of Lading/Airbill No. N/A

Offsite Property No. N/A

Method of Shipment Government Truck

Collection - MAHON

Shipped to PNNL

Sample Identification

S6118 - a24 . 054 -	Collect Ambient SUMMA Upwind of tank #1	60296/1441
S6118 - a25 . 074 -	Collect Ambient SUMMA Through ISVS #2	60296/1454
S6118 - m26 . 094 -	Collect SUMMA #3	60296/1525
S6118 - m27 . 102 -	Collect SUMMA #4	60296/1530
S6118 - b30 . 103 -	Collect SUMMA #5	11544
S6118 - b31 . 115 -	Collect SUMMA #6	11550
S6118 - b32 . 121 -	Collect SUMMA #7	11555
S6118 - b33 . 124 -	Collect SUMMA #8	11559
S6118 - t38 . 155 -	Collect SUMMA #9	11617
S6118 - t39 . 206 -	Collect SUMMA #10	11624
S6118 - t40 . 210 -	Collect SUMMA #11	11630
S6118 - t41 . 214 -	Collect SUMMA #12	11635
S6118 - m46 . 250 -	Collect SUMMA #13	11652
S6118 - m47 . 226 -	Collect SUMMA #14	60296/1657

[] Field Transfer of Custody

[X] Chain of Possession

(Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
J A Edwards	12-03-96	1400	CS McClellan	12-03-96	1400
CS McClellan	12-04-96	1135	GS CAPITO	12-04-96	1135
GS CAPITO	12-09-96	1045	ES MAST	12-09-96	1045
ES MAST	12-10-96	1330	CS McClellan	12-10-96	1330
CS McClellan	12-18-96	1520	J A Edwards	12-18-96	1520

Final Sample Disposition

Comments:

PNNL (only) Checklist	Pick-up / Delivery	Comments:
Media labeled and checked?	Y/N	
Letter of instruction?	Y/N	
Media in good condition?	Y/N	
COC info/signatures complete?	Y/N	
Rad release stickers on samples?	Y/N	
Activity report from 222S?	Y/N	
RSR/release? (a ≤100/B ≤400 pCi/g)	Y/N	
COC copy for LRB, RIDS filed?	Y/N	

POC

POC

(WHC-SD-WM-TP-335, REV. 2, Table 2b)

(Revised 05/30/96 PNNL)

Custody Form Initiator

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Page 85-3656 / FAX 373-3193

Project Designation/Sampling Locations 200 West Tank Farm
241-U-112 Riser #6 Tank Vapor Sample SAF S6119

Collection date 12 - 6 - 96

Preparation date 12 - 03 - 96

Homogeneity

ISVS

Ice Chest No.

Field Logbook No. SESC-NL47-8

Bill of Lading/Airbill No.

N/A

Offsite Property No. N/A

Method of Shipment

Government Truck

CONTRACT - MAST, CAPRIO

Shipped to

PNNL

Sample Identification

		Date / Time
S6119 - a25 . 135 -	Collect Ambient SUMMA Through ISVS	#1 6 DEC 96 1445
S6119 - m26 . 146 -	Collect SUMMA #2	6 DEC 96 1445 1525
S6119 - m27 . 235 -	Collect SUMMA #3	6 DEC 96 1530
S6119 - b30 . 243 -	Collect SUMMA #4	6 DEC 96 1544
S6119 - b31 . 255 -	Collect SUMMA #5	6 DEC 96 1550
S6119 - b32 . 260 -	Collect SUMMA #6	6 DEC 96 1555
S6119 - b33 . 270 -	Collect SUMMA #7	6 DEC 96 155930
S6119 - t38 . 308 -	Collect SUMMA #8	6 DEC 96 1617
S6119 - t39 . 309 -	Collect SUMMA #9	6 DEC 96 1624
S6119 - t40 . 310 -	Collect SUMMA #10	6 DEC 96 1630
S6119 - t41 . 318 -	Collect SUMMA #11	6 DEC 96 1635
S6119 - m46 . 319 -	Collect SUMMA #12	6 DEC 96 1652
S6119 - m47 . 322 -	Collect SUMMA #13	6 DEC 96 1657

[] Field Transfer of Custody

[X] Chain of Possession

(Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
J A Edwards	12-03-96	1400	C. S. McClellan	12-03-96	1400
C. S. McClellan	12-04-96	1139	GS CAPRIO	12-04-96	1138
GS CAPRIO	12-09-96	1045	ES MAST	12-09-96	1045
ES MAST	12-10-96	1400	ES MAST	12-10-96	1400
ES MAST	12-10-96	1400	C. S. McClellan	12-10-96	1400
C. S. McClellan	12-18-96	1520	J A Edwards	12-18-96	1520

Final Sample Disposition

Comments:

PNNL (only) Checklist	Pick-up / Delivery	Comments:
Media labeled and checked?	Y/N	Canister 255, valve body turned while tightening swagelok.
Letter of instruction?	Y/N	
Media in good condition?	Y/N	
COC info/signatures complete?	Y/N	
Rad release stickers on samples?	Y/N	
Activity report from 222S?	Y/N	
RSR/release? (a ≤100/B ≤400 pCi/g)	Y/N	
COC copy for LRB, RIDS filed?	Y/N	

POC

POC

(WHC-SD-WM-TP-335, REV. 2, Table 2b)

(Revised 05/30/96 PNNL)

Custody Form Initiator

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Page 85-9656 / S3-27 / FAX 373-7076

Project Designation/Sampling Locations 200 West Tank Farm
241-U-112 Tank Vapor Sample SAF S6118 Homogeneity
(ISVS Cart) Riser #3

Collection date 12 - 6 - 96

Preparation date 12 - 01 - 96

Field Logbook No. *WHC-N-647-8*

Ice Chest No.

Ertco Hi/Lo thermometer No.

PNL-T-007

Bill of Lading/Airbill No.

N/A

Offsite Property No. N/A

Method of Shipment

Government Truck

Collection - Mahon

Shipped to

WHC

Possible Sample Hazards/Remarks Unknown at time of sampling

Sample Identification		Date/Time
S6118 - m 28 . 1238 ✓	PNL Triple Sorbent Trap (TST) Sample middle # 1	60296 / 1534
S6118 - m 29 . 1241 ✓	PNL TST Sample middle # 2	60296 / 1534
S6118 - b 34 . 1257 ✓	PNL TST Sample bottom # 1	60296 / 1606
S6118 - b 35 . 1326 ✓	PNL TST Sample bottom # 2	1606
S6118 - b 36 . 1266 ✓	PNL TST Sample bottom # 3	1606
S6118 - b 37 . 1267 ✓	PNL TST Sample bottom # 4	1607
S6118 - t 42 . 1268 ✓	PNL TST Sample top # 1	1640
S6118 - t 43 . 1271 ✓	PNL TST Sample top # 2	1640
S6118 - t 44 . 1272 ✓	PNL TST Sample top # 3	1640
S6118 - t 45 . 1279 ✓	PNL TST Sample top # 4	1640
S6118 - m 48 . 1286 ✓	PNL TST Sample middle # 3	1501
S6118 - m 49 . 1289 ✓	PNL TST Sample middle # 4	60296 / 1501
S6118 - a 50 . 1290 ✓	Open, close & store TST Field Blank # 1	60EC96
S6118 - a 51 . 1291 ✓	Open, close & store TST Field Blank # 2	60EC96
S6118 - a 52 . 1293 ✓	Store TST Trip Blank #1	
S6118 - a 53 . 1295 ✓	Store TST Trip Blank #2	

[] Field Transfer of Custody		[X] Chain of Possession		(Sign and Print Names)	
Relinquished By	Date	Time	Received By	Date	Time
JL Julia <i>JA Edwards</i>	12-02-96	1345	JA Edwards <i>JA Edwards</i>	12- -96	1345
JA Edwards <i>JA Edwards</i>	12-03-96	1410	CS McClellan <i>CS McClellan</i>	12-3-96	1410
CS McClellan <i>CS McClellan</i>	12-4-96	1134	AS Caprio <i>AS Caprio</i>	12-4-96	1134
AS Caprio <i>AS Caprio</i>	12-9-96	1045	ES Mast <i>ES Mast</i>	12-9-96	1045
ES Mast <i>ES Mast</i>	12/18/96	1330	CS McClellan <i>CS McClellan</i>	12/18/96	1330
CS McClellan <i>CS McClellan</i>	12-18-96	1520	JA Edwards <i>JA Edwards</i>	12/18/96	1520
JA Edwards <i>JA Edwards</i>	1-24-97	1315	JA Edwards <i>JA Edwards</i>	1-24-97	1315

Final Sample Disposition

Comments:

- PNL (only) Checklist
- Media labeled and checked? ☒ Y/N
 - Letter of instruction? ☒ Y/N
 - Media in good condition? ☒ Y/N
 - COC info/signatures complete? ☒ Y/N
 - Sorbents shipped on ice? (<5°C) ☒ Y/N
 - Hi/Lo thermometer - Keep upright! ☒ Y/N
 - Hi/Lo thermometer ☒ Y/N
 - Rad release stickers on samples? ☒ Y/N
 - Activity report from 222S? ☒ Y/N
 - COC copy for LRB, RIDS filed? ☒ Y/N

Pick-up / Delivery

POC *JA* POC *JA*

Comments:

S6118-t42.1268 The flow was dropping off during the run. The flow changed from 1.3 to 8.75 cm during the run. The c/flex clamp was opened further, but it is unknown why the flow was dropping off. The TST may be tightly packed.

Cooler Temperature Status

Hi -10°C / Lo -10°C (pick up at PNL to WHC) Results are
Hi -10°C / Lo -10°C (delivery at WHC from PNL) TST 1268
Hi -10°C / Lo -10°C (at return to PNL from WHC) are suspect
Hi +15°C / Lo +15°C (at delivery from WHC to PNL) RDM

(Revised 06/21/95 PNL)

Custody Form Initiator

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Page 85-9656 / S3-27 / FAX 373-7076Project Designation/Sampling Locations 200 West Tank Farm
241-U-112 Tank Vapor Sample SAF S6119 Homogeneity
(ISVS Cart) Riser #6Collection date 12 - 6 - 96
Preparation date 12 - 01 - 96

Ice Chest No.

Field Logbook No. SESC-W4C-N-647-8

Ertco Hi/Lo thermometer No.

PNL-T-004

Bill of Lading/Airbill No.

N/A

Offsite Property No. N/A

Method of Shipment

Government Truck

Collection Method, CAP 110

Shipped to

WHC-

Possible Sample Hazards/Remarks Unknown at time of sampling

Sample Identification		Date / Time
S6119 - m 28 . 1296 ✓	PNL Triple Sorbent Trap (TST) Sample middle # 1	6 DEC 96 1534
S6119 - m 29 . 1297 ✓	PNL TST Sample middle # 2	6 DEC 96 1534
S6119 - b 34 . 1298 ✓	PNL TST Sample bottom # 1	6 DEC 96 1606
S6119 - b 35 . 1299 ✓	PNL TST Sample bottom # 2	6 DEC 96 1606
S6119 - b 36 . 1300 ✓	PNL TST Sample bottom # 3	6 DEC 96 1606
S6119 - b 37 . 1301 ✓	PNL TST Sample bottom # 4	6 DEC 96 1606
S6119 - t 42 . 1302 ✓	PNL TST Sample top # 1	6 DEC 96 1640
S6119 - t 43 . 1303 ✓	PNL TST Sample top # 2	6 DEC 96 1640
S6119 - t 44 . 1304 ✓	PNL TST Sample top # 3	6 DEC 96 1640
S6119 - t 45 . 1305 ✓	PNL TST Sample top # 4	6 DEC 96 1640
S6119 - m 48 . 1306 ✓	PNL TST Sample middle # 3	6 DEC 96 1701
S6119 - m 49 . 1307 ✓	PNL TST Sample middle # 4	6 DEC 96 1701
S6119 - a 50 . 1308 ✓	Open, close & store TST Field Blank # 1	6 DEC 96
S6119 - a 51 . 1309 ✓	Open, close & store TST Field Blank # 2	6 DEC 96
S6119 - a 52 . 1310 ✓	Store TST Trip Blank #1	
S6119 - a 53 . 1311 ✓	Store TST Trip Blank #2	

Field Transfer of Custody		Chain of Possession		(Sign and Print Names)	
Relinquished By	Date	Time	Received By	Date	Time
JL Julia	12-02-96	1345	JA Edwards	12-02-96	1345
JA Edwards	12-03-96	1404	CS McClellan	12-03-96	1404
CS McClellan	12-04-96	1138	CS Caprio	12-04-96	1138
CS Caprio	12-09-96	1045	ES Mast	12-09-96	1045
ES Mast	12-18-96	1400	CS McClellan	12-18-96	1400
CS McClellan	12-18-96	1520	JA Edwards	12-18-96	1520
JA Edwards	1-24-97	1315	JL Julia	1-24-97	1315

Final Sample Disposition

Comments:

PNL (only) Checklist

- Media labeled and checked? ☒ Y
- Letter of instruction? ☒ Y
- Media in good condition? ☒ Y
- COC info/signatures complete? ☒ Y
- Sorbents shipped on ice? (5°C) ☒ Y
- Hi/Lo thermometer - Keep upright! ☒ Y
- Hi/Lo thermometer ☒ Y
- Rad release stickers on samples? ☒ Y
- Activity report from 222S? ☒ Y
- COC copy for LRB, RIDS filed? ☒ Y

Pick-up / Delivery

- ☒ Y
- ☒ Y
- ☒ Y
- ☒ Y
- ☒ Y
- ☒ Y
- ☒ Y
- ☒ Y
- ☒ Y
- ☒ Y

Comments:

Cooler Temperature Status
Hi -10°C / Lo -10°C (pick up at PNL to WHC)
Hi _____°C / Lo _____°C (delivery at WHC from PNL)
Hi _____°C / Lo _____°C (at return to PNL from WHC)
Hi +15°C / Lo +15°C (at delivery from WHC to PNL)

POC

POC

(Revised 06/21/95 PNL)

Appendix G

Tank Vapor Characterization:

Target Analytes Measured

for SUMMATM Canisters

Table G.1 SUMMA™ Canister Analysis Results for All Target Analytes from Tank U-112 Riser 3 Top Level Sampled on 12/6/96

Target Analytes	CAS	MW	Ret Time	S6118-t38.155 ISVS			S6118-t40.210 ISVS			S6118-t40.210 ISVS REP			S6118-t41.214 ISVS			S6118-t39.206 ISVS		
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag
Dichlorodifluoromethane	75-71-8	120.91	4.624	0.0035	0.66	J	0.0032	0.6	J	0.0033	0.61	J	0.0033	0.61	J	0.0032	0.58	J
Chloromethane	74-87-3	50.49	5.001	0.0024	1.06	U	0.0024	1.06	U	0.0024	1.06	U	0.0024	1.06	U	0.0024	1.06	U
1,2-dichloro-1,1,2,2-tetrafluoroethane	76-14-2	170.92	5.216	0.013	1.7	U	0.013	1.7	U	0.013	1.7	U	0.013	1.7	U	0.013	1.7	U
Methanol	67-56-1	32.04	5.27	1.1772	823.04	Y	1.092	763.45	Y	1.0703	748.29	Y	1.0897	761.86	Y	0.9718	679.42	Y
Vinyl Chloride	75-01-4	62.5	5.496	0.0016	0.57	U	0.0016	0.57	U	0.0016	0.57	U	0.0016	0.57	U	0.0016	0.57	U
Butane	106-97-8	58.12	5.927	0.0889	34.27		0.0835	32.17		0.0845	32.55		0.0845	32.57		0.0746	28.77	
Bromomethane	74-83-9	94.94	6.401	0.0052	1.23	U	0.0052	1.23	U	0.0052	1.23	U	0.0052	1.23	U	0.0052	1.23	U
Chloroethane	75-00-3	64.51	6.746	0.0054	1.88	U	0.0054	1.88	U	0.0054	1.88	U	0.0054	1.88	U	0.0054	1.88	U
Ethanol	64-17-5	46.01	6.864	0.8553	416.42	Y	0.7898	384.52	Y	0.8178	398.17	Y	0.6451	314.06	Y	0.7872	383.24	Y
Acetonitrile	75-05-8	41.05	7.37	0.004	2.18	U	0.004	2.18	U	0.004	2.18	U	0.005	2.75	J	0.004	2.18	U
Acetone	67-64-1	58.08	7.876	0.0632	24.39	B	0.0745	28.71	B	0.0723	27.9	B	0.098	37.8		0.0739	28.5	B
Trichlorofluoromethane	75-69-4	137.37	8.307	0.2155	35.14		0.2122	34.6		0.2054	33.5		0.2084	33.98		0.1972	32.16	
Pentane	109-66-0	72.15	8.986	0.0053	1.64	J	0.0053	1.64	J	0.0051	1.58	J	0.0049	1.51	J	0.0052	1.61	J
1,1-Dichloroethene	75-35-4	96.94	9.535	0.0038	0.88	U	0.0038	0.88	U	0.0038	0.88	U	0.0038	0.88	U	0.0038	0.88	U
Methylene Chloride	75-09-2	84.93	9.718	0.0069	1.81	J,B	0.0067	1.76	J,B	0.0066	1.75	J,B	0.0063	1.66	J,B	0.0065	1.7	J,B
1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	187.38	10.214	0.0116	1.39	J,S	0.0067	0.8	J,S	0.0061	0.73	J,S	0.0058	0.7	J,S	0.008	0.95	J,S
Propanenitrile	107-12-0	55.08	10.935	0.0038	1.55	U	0.0038	1.55	U	0.0038	1.55	U	0.0038	1.55	U	0.0038	1.55	U
Propanol	71-23-8	60.1	10.903	0.106	39.49		0.0962	35.87		0.0918	34.2		0.0906	33.77		0.0977	36.43	
1,1-Dichloroethane	75-34-3	98.96	11.861	0.002	0.45	U	0.002	0.45	U	0.002	0.45	U	0.002	0.45	U	0.002	0.45	U
2-Butanone	78-93-3	72.11	12.486	0.0187	5.8	J	0.018	5.61	J	0.0175	5.43	J	0.0188	5.84	J	0.023	7.15	J
cis-1,2-Dichloroethene	156-59-2	96.94	13.391	0.0034	0.79	U	0.0034	0.79	U	0.0034	0.79	U	0.0034	0.79	U	0.0034	0.79	U
Hexane	110-54-3	86.18	13.768	0.0042	1.09	J	0.004	1.04	J	0.0038	0.98	J	0.0036	0.93	J	0.0041	1.07	J
Chloroform	67-66-3	119.38	13.929	0.0026	0.49	U	0.0026	0.49	U	0.0026	0.49	U	0.0026	0.49	U	0.0026	0.49	U
Tetrahydrofuran	109-99-9	72.11	14.672	0.0241	7.48		0.0225	7		0.0214	6.65		0.0203	6.3		0.021	6.52	
1,2-Dichloroethane	107-06-2	98.96	15.34	0.0022	0.5	U	0.0022	0.5	U	0.0022	0.5	U	0.0022	0.5	U	0.0022	0.5	U
1,1,1-Trichloroethane	71-55-6	133.4	15.868	0.0052	0.88	J	0.0053	0.88	J	0.0051	0.85	J	0.0051	0.85	J	0.0147	2.47	J
Butanenitrile	109-74-0	69.11	15.835	0.0034	1.1	U	0.0034	1.1	U	0.0034	1.1	U	0.0034	1.1	U	0.0034	1.1	U
1-Butanol	71-36-3	74.12	16.309	0.5826	176.08		0.5217	157.67		0.4964	150.01		0.5023	151.81		0.507	153.22	
Benzene	71-43-2	78.11	16.762	0.0057	1.64	J	0.0056	1.6	J	0.0051	1.45	J	0.0052	1.48	J	0.0049	1.42	J
Carbon Tetrachloride	56-23-5	153.82	17.052	0.0056	0.82	J	0.0058	0.84	J	0.0055	0.8	J	0.0056	0.82	J	0.005	0.73	J
Cyclohexane	110-82-7	84.16	17.333	0.0036	0.96	U	0.0036	0.96	U	0.0036	0.96	U	0.0036	0.96	U	0.0036	0.96	U
1,2-Dichloropropane	78-87-5	112.99	18.334	0.003	0.59	U	0.003	0.59	U	0.003	0.59	U	0.003	0.59	U	0.003	0.59	U
Trichloroethene	79-01-6	131.39	18.786	0.0024	0.41	U	0.0024	0.41	U	0.0024	0.41	U	0.0024	0.41	U	0.0168	2.86	J
Heptane	142-82-5	100.2	19.293	0.0018	0.4	U	0.0018	0.4	U	0.0018	0.4	U	0.0018	0.4	U	0.0018	0.4	U
cis-1,3-Dichloropropene	10061-01-5	110.97	20.477	0.0024	0.48	U	0.0024	0.48	U	0.0024	0.48	U	0.0024	0.48	U	0.0024	0.48	U
4-Methyl-2-Pentanone	108-10-1	100.16	20.488	0.0034	0.76	U	0.0034	0.76	U	0.0034	0.76	U	0.0034	0.76	U	0.0034	0.76	U
Pyridine	110-86-1	79.1	20.628	0.0186	5.27	U	0.0186	5.27	U	0.0186	5.27	U	0.0186	5.27	U	0.0186	5.27	U
trans-1,3-Dichloropropene	10061-02-6	110.97	21.544	0.0018	0.36	U	0.0018	0.36	U	0.0018	0.36	U	0.0018	0.36	U	0.0018	0.36	U
Pentanenitrile	110-59-8	83.13	21.576	0.0042	1.13	U	0.0042	1.13	U	0.0042	1.13	U	0.0042	1.13	U	0.0042	1.13	U
1,1,2-Trichloroethane	79-00-5	133.4	21.985	0.0028	0.47	U	0.0028	0.47	U	0.0028	0.47	U	0.0028	0.47	U	0.0028	0.47	U
Toluene	108-88-3	92.14	22.642	0.1556	37.82		0.15	36.46		0.1436	34.9		0.1392	33.84		0.142	34.52	
1,2-Dibromoethane	106-93-4	187.86	24.172	0.0052	0.62	U	0.0052	0.62	U	0.0052	0.62	U	0.0052	0.62	U	0.0052	0.62	U
Octane	111-65-9	114.23	24.721	0.0024	0.47	U	0.0024	0.47	U	0.0024	0.47	U	0.0024	0.47	U	0.0024	0.47	U
Bromoform	75-25-2	175.0	28.3	<0.059	<5.21	Y	<0.059	<5.21	Y	<0.059	<5.21	Y	<0.059	<5.21	Y	<0.059	<5.21	Y
Tetrachloroethylene	127-18-4	165.83	25.216	0.0065	0.88	J	0.006	0.81	J	0.0056	0.76	J	0.0055	0.74	J	0.0055	0.74	J
Chlorobenzene	108-90-7	112.56	26.821	0.0026	0.52	U	0.0026	0.52	U	0.0026	0.52	U	0.0026	0.52	U	0.0069	1.38	J

Table G.1 (Cont'd) SUMMA™ Canister Analysis Results for All Target Analytes from Tank U-112 Riser 3 Top Level Sampled on 12/6/96

Target Analytes	CAS	MW	Ret Time	S6118-t38.155 ISVS			S6118-t40.210 ISVS			S6118-t40.210 ISVS REP			S6118-t41.214 ISVS			S6118-t39.206 ISVS		
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag
Hexanenitrile	628-73-9	97.13	27.079	0.0052	1.2	U	0.0052	1.2	U	0.0052	1.2	U	0.0052	1.2	U	0.0052	1.2	U
Ethylbenzene	100-41-4	106.17	27.704	0.0028	0.59	U	0.0028	0.59	U	0.0028	0.59	U	0.0028	0.59	U	0.0028	0.59	U
p/m-Xylene	106-42-3	106.17	28.146	0.013	2.74	U	0.013	2.74	U	0.013	2.74	U	0.013	2.74	U	0.013	2.74	U
Cyclohexanone	108-94-1	98.14	28.555	0.0058	1.32	U	0.0193	4.41	J	0.0186	4.24	J	0.0058	1.32	U	0.0058	1.32	U
Styrene	100-42-5	104.15	29.05	0.0022	0.47	U	0.0022	0.47	U	0.0022	0.47	U	0.0022	0.47	U	0.0022	0.47	U
1,1,2,2-Tetrachloroethane	79-34-5	167.85	29.276	0.0042	0.56	U	0.0042	0.56	U	0.0042	0.56	U	0.0042	0.56	U	0.0042	0.56	U
o-Xylene	95-47-6	106.17	29.352	0.0028	0.59	U	0.0028	0.59	U	0.0028	0.59	U	0.0028	0.59	U	0.0028	0.59	U
Nonane	111-84-2	128.26	29.793	0.0016	0.28	U	0.0016	0.28	U	0.0016	0.28	U	0.0016	0.28	U	0.0016	0.28	U
1-Ethyl-2-Methyl-Benzene	611-14-3	120.19	32.755	0.0018	0.34	U	0.0018	0.34	U	0.0018	0.34	U	0.0018	0.34	U	0.0018	0.34	U
1,3,5-Trimethylbenzene	108-67-8	120.19	32.981	0.0018	0.34	U	0.0018	0.34	U	0.0018	0.34	U	0.0018	0.34	U	0.0018	0.34	U
1,2,4-Trimethylbenzene	95-63-6	120.19	34.241	0.0026	0.48	U	0.0026	0.48	U	0.0026	0.48	U	0.0026	0.48	U	0.0026	0.48	U
Decane	124-18-5	142.28	34.489	0.003	0.47	U	0.003	0.47	U	0.003	0.47	U	0.003	0.47	U	0.003	0.47	U
1,3-Dichlorobenzene	541-73-1	147	34.758	0.0018	0.27	U	0.0018	0.27	U	0.0018	0.27	U	0.0018	0.27	U	0.0018	0.27	U
1,4-Dichlorobenzene	106-46-7	147	34.963	0.0018	0.27	U	0.0018	0.27	U	0.0018	0.27	U	0.0018	0.27	U	0.0018	0.27	U
1,2-Dichlorobenzene	95-50-1	147	36.094	0.0018	0.27	U	0.0018	0.27	U	0.0018	0.27	U	0.0018	0.27	U	0.0018	0.27	U
Undecane	1120-21-4	156.31	38.808	0.0282	4.04	U	0.0282	4.04	U	0.0282	4.04	U	0.0282	4.04	U	0.0282	4.04	U
1,2,4-Trichlorobenzene	120-82-1	181.45	42.319	0.0028	0.35	U	0.0028	0.35	U	0.0028	0.35	U	0.0028	0.35	U	0.0028	0.35	U
Dodecane	112-40-3	170.34	42.825	0.0098	1.29	U	0.0098	1.29	U	0.0098	1.29	U	0.0098	1.29	U	0.0098	1.29	U
Hexachloro-1,3-butadiene	87-68-3	260.76	44.15	0.0046	0.4	U	0.0046	0.4	U	0.0046	0.4	U	0.0046	0.4	U	0.0046	0.4	U
Tridecane	629-50-5	184.36	46.562	0.006	0.73	U	0.006	0.73	U	0.006	0.73	U	0.006	0.73	U	0.0135	1.65	J
Tetradecane	629-59-4	198.34	50.073	0.0042	0.47	U	0.0042	0.47	U	0.0042	0.47	U	0.0042	0.47	U	0.0042	0.47	U

B Compound found in associated laboratory blank.

J Target compound detected above the IDL but below the EQL.

S Suspect data due to possible sampling error.

U Target compound not detected at or above the IDL.

Y Initial calibration and CCV were performed; however, the analyte was not part of the current operating procedure.

Table G.2 SUMMA™ Canister Analysis Results for All Target Analytes from Tank U-112 Riser 3 Middle Level Sampled on 12/6/96

Target Analytes	CAS	MW	Ret Time	S6118-m26.094 ISVS			S6118-m26.094 ISVS REP			S6118-m27.102 ISVS			S6118-m46.250 ISVS			S6118-m47.226 ISVS		
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag
Dichlorodifluoromethane	75-71-8	120.91	4.604	0.0032	0.6	J	0.0041	0.76	J	0.0052	0.97	J	0.0039	0.72	J	0.0032	0.59	J
Chloromethane	74-87-3	50.49	4.97	0.0024	1.06	U	0.0026	1.13	J	0.0032	1.42	J	0.0024	1.06	U	0.0024	1.06	U
1,2-dichloro-1,1,2,2-tetrafluoroethane	76-14-2	170.92	5.185	0.013	1.7	U	0.013	1.7	U	0.013	1.7	U	0.013	1.7	U	0.013	1.7	U
Methanol	67-56-1	32.04	5.239	1.0167	710.78	Y	1.0186	712.12	Y	1.0444	730.17	Y	1.204	841.76	Y	1.1887	831.03	Y
Vinyl Chloride	75-01-4	62.5	5.476	0.0016	0.57	U	0.0016	0.57	U	0.0016	0.57	U	0.0016	0.57	U	0.0016	0.57	U
Butane	106-97-8	58.12	5.896	0.0809	31.19		0.0805	31.03		0.0822	31.7		0.0816	31.45		0.0824	31.77	
Bromomethane	74-83-9	94.94	6.37	0.0052	1.23	U	0.0052	1.23	U	0.0052	1.23	U	0.0052	1.23	U	0.0052	1.23	U
Chloroethane	75-00-3	64.51	6.725	0.0054	1.88	U	0.0054	1.88	U	0.0054	1.88	U	0.0054	1.88	U	0.0054	1.88	U
Ethanol	64-17-5	46.01	6.833	0.7412	360.88	Y	0.7318	356.28	Y	0.7372	358.91	Y	0.9348	455.1	Y	0.9215	448.63	Y
Acetonitrile	75-05-8	41.05	7.339	0.0187	10.2	J	0.0191	10.4	J	0.0142	7.73	J	0.0041	2.24	J	0.0297	16.23	J
Acetone	67-64-1	58.08	7.855	0.08	30.86	B	0.0775	29.87	B	0.0831	32.04	B	0.0703	27.13	B	0.1326	51.13	
Trichlorofluoromethane	75-69-4	137.37	8.275	0.2019	32.92		0.2112	34.44		0.2068	33.72		0.2236	36.46		0.2182	35.59	
Pentane	109-66-0	72.15	8.934	0.005	1.55	J	0.0057	1.78	J	0.0061	1.91	J	0.0063	1.96	J	0.0058	1.81	J
1,1-Dichloroethene	75-35-4	96.94	9.503	0.0038	0.88	U	0.0038	0.88	U	0.0038	0.88	U	0.0038	0.88	U	0.0038	0.88	U
Methylene Chloride	75-09-2	84.93	9.686	0.0057	1.51	J,B	0.006	1.59	J,B	0.0066	1.74	J,B	0.0077	2.04	J,B	0.0072	1.89	J,B
1,1,2-trichloro-1,1,2,2-tetrafluoroethane	76-13-1	187.38	10.181	0.0181	2.16	J,S	0.0181	2.16	J,S	0.0164	1.96	J,S	0.0077	0.92	J,S	0.0089	1.06	J,S
Propanenitrile	107-12-0	55.08	10.902	0.0038	1.55	U	0.0038	1.55	U	0.0038	1.55	U	0.0038	1.55	U	0.0038	1.55	U
Propanol	71-23-8	60.1	10.859	0.0953	35.53		0.0979	36.48		0.0919	34.24		0.1176	43.81		0.107	39.89	
1,1-Dichloroethane	75-34-3	98.96	11.828	0.002	0.45	U	0.002	0.45	U	0.002	0.45	U	0.002	0.45	U	0.002	0.45	U
2-Butanone	78-93-3	72.11	12.453	0.0186	5.79	J	0.0188	5.85	J	0.0186	5.78	J	0.0198	6.14	J	0.0381	11.83	
cis-1,2-Dichloroethene	156-59-2	96.94	13.346	0.0034	0.79	U	0.0034	0.79	U	0.0034	0.79	U	0.0034	0.79	U	0.0034	0.79	U
Hexane	110-54-3	86.18	13.734	0.0039	1	J	0.0044	1.14	J	0.0055	1.44	J	0.0043	1.13	J	0.0042	1.08	J
Chloroform	67-66-3	119.38	13.885	0.0026	0.49	U	0.0026	0.49	U	0.0027	0.51	J,B	0.0026	0.49	U	0.0026	0.49	U
Tetrahydrofuran	109-99-9	72.11	14.638	0.022	6.82		0.0218	6.77		0.0222	6.91		0.027	8.39		0.0249	7.74	
1,2-Dichloroethane	107-06-2	98.96	15.306	0.0022	0.5	U	0.0022	0.5	U	0.0022	0.5	U	0.0022	0.5	U	0.0022	0.5	U
1,1,1-Trichloroethane	71-55-6	133.4	15.833	0.0052	0.88	J	0.0058	0.97	J	0.0064	1.07	J	0.0052	0.87	J	0.0051	0.86	J
Butanenitrile	109-74-0	69.11	15.79	0.0034	1.1	U	0.0034	1.1	U	0.0034	1.1	U	0.0034	1.1	U	0.0034	1.1	U
1-Butanol	71-36-3	74.12	16.264	0.5203	157.25		0.5634	170.27		0.4925	148.84		0.6016	181.8		0.5555	167.87	
Benzene	71-43-2	78.11	16.727	0.0054	1.55	J	0.0057	1.65	J	0.0061	1.74	J	0.006	1.71	J	0.0058	1.66	J
Carbon Tetrachloride	56-23-5	153.82	17.018	0.0054	0.79	J	0.006	0.88	J	0.0071	1.04	J	0.0055	0.8	J	0.0055	0.79	J
Cyclohexane	110-82-7	84.16	17.287	0.0036	0.96	U	0.0036	0.96	U	0.0036	0.96	U	0.0036	0.96	U	0.0036	0.96	U
1,2-Dichloropropane	78-87-5	112.99	18.299	0.003	0.59	U	0.003	0.59	U	0.003	0.59	U	0.003	0.59	U	0.003	0.59	U
Trichloroethene	79-01-6	131.39	18.751	0.0024	0.41	U	0.0024	0.41	U	0.0024	0.41	U	0.0024	0.41	U	0.0024	0.41	U
Heptane	142-82-5	100.2	19.257	0.0018	0.4	U	0.0018	0.4	U	0.0018	0.4	U	0.0018	0.4	U	0.0018	0.4	U
cis-1,3-Dichloropropene	10061-01-5	110.97	20.441	0.0024	0.48	U	0.0024	0.48	U	0.0024	0.48	U	0.0024	0.48	U	0.0024	0.48	U
4-Methyl-2-Pentanone	108-10-1	100.16	20.441	0.0034	0.76	U	0.0034	0.76	U	0.0034	0.76	U	0.0034	0.76	U	0.0034	0.76	U
Pyridine	110-86-1	79.1	20.592	0.0186	5.27	U	0.0186	5.27	U	0.0186	5.27	U	0.0315	8.93	J	0.0186	5.27	U
trans-1,3-Dichloropropene	10061-02-6	110.97	21.507	0.0018	0.36	U	0.0018	0.36	U	0.0018	0.36	U	0.0018	0.36	U	0.0018	0.36	U
Pentanenitrile	110-59-8	83.13	21.529	0.0042	1.13	U	0.0042	1.13	U	0.0042	1.13	U	0.0042	1.13	U	0.0042	1.13	U
1,1,2-Trichloroethane	79-00-5	133.4	21.949	0.0028	0.47	U	0.0028	0.47	U	0.0028	0.47	U	0.0028	0.47	U	0.0028	0.47	U
Toluene	108-88-3	92.14	22.605	0.1369	33.28		0.1459	35.46		0.1384	33.64		0.1603	38.97		0.1538	37.38	
1,2-Dibromoethane	106-93-4	187.86	24.145	0.0052	0.62	U	0.0052	0.62	U	0.0052	0.62	U	0.0052	0.62	U	0.0052	0.62	U
Octane	111-65-9	114.23	24.683	0.0024	0.47	U	0.0024	0.47	U	0.0024	0.47	U	0.0024	0.47	U	0.0024	0.47	U
Bromoform	75-25-2	175.0	28.3	<0.059	<5.21	Y	<0.059	<5.21	Y	<0.059	<5.21	Y	<0.059	<5.21	Y	<0.059	<5.21	Y
Tetrachloroethylene	127-18-4	165.83	25.179	0.0042	0.57	U	0.0042	0.57	U	0.0071	0.95	J	0.007	0.95	J	0.0066	0.89	J
Chlorobenzene	108-90-7	112.56	26.783	0.0026	0.52	U	0.0026	0.52	U	0.0026	0.52	U	0.0026	0.52	U	0.0026	0.52	U

Table G.2 (Cont'd) SUMMA™ Canister Analysis Results for All Target Analytes from Tank U-112 Riser 3 Middle Level Sampled on 12/6/96

Target Analytes	CAS	MW	Ret Time	S6118-m26.094 ISVS			S6118-m26.094 ISVS REP			S6118-m27.102 ISVS			S6118-m46.250 ISVS			S6118-m47.226 ISVS		
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag
Hexanenitrile	628-73-9	97.13	27.041	0.0052	1.2	U	0.0052	1.2	U	0.0052	1.2	U	0.0055	1.27	J,B	0.0052	1.2	U
Ethylbenzene	100-41-4	106.17	27.666	0.0028	0.59	U	0.0028	0.59	U	0.0028	0.59	U	0.0028	0.59	U	0.0028	0.59	U
p/m-Xylene	106-42-3	106.17	28.107	0.013	2.74	U	0.013	2.74	U	0.013	2.74	U	0.013	2.74	U	0.013	2.74	U
Cyclohexanone	108-94-1	98.14	28.516	0.0215	4.9	J	0.0234	5.33	J	0.0058	1.32	U	0.0058	1.32	U	0.0072	1.65	J
Styrene	100-42-5	104.15	29.022	0.0022	0.47	U	0.0022	0.47	U	0.0022	0.47	U	0.0022	0.47	U	0.0022	0.47	U
1,1,2,2-Tetrachloroethane	79-34-5	167.85	29.248	0.0042	0.56	U	0.0042	0.56	U	0.0042	0.56	U	0.0042	0.56	U	0.0042	0.56	U
o-Xylene	95-47-6	106.17	29.313	0.0028	0.59	U	0.0028	0.59	U	0.0028	0.59	U	0.0028	0.59	U	0.0028	0.59	U
Nonane	111-84-2	128.26	29.765	0.0016	0.28	U	0.0016	0.28	U	0.0016	0.28	U	0.0016	0.28	U	0.0016	0.28	U
1-Ethyl-2-Methyl-Benzene	611-14-3	120.19	32.726	0.0018	0.34	U	0.0018	0.34	U	0.0018	0.34	U	0.0018	0.34	U	0.0018	0.34	U
1,3,5-Trimethylbenzene	108-67-8	120.19	32.941	0.0018	0.34	U	0.0018	0.34	U	0.0018	0.34	U	0.0018	0.34	U	0.0018	0.34	U
1,2,4-Trimethylbenzene	95-63-6	120.19	34.212	0.0026	0.48	U	0.0026	0.48	U	0.0026	0.48	U	0.0026	0.48	U	0.0026	0.48	U
Decane	124-18-5	142.28	34.449	0.003	0.47	U	0.003	0.47	U	0.003	0.47	U	0.003	0.47	U	0.003	0.47	U
1,3-Dichlorobenzene	541-73-1	147	34.718	0.0018	0.27	U	0.0018	0.27	U	0.0018	0.27	U	0.0018	0.27	U	0.0018	0.27	U
1,4-Dichlorobenzene	106-46-7	147	34.933	0.0018	0.27	U	0.0018	0.27	U	0.0018	0.27	U	0.0018	0.27	U	0.0018	0.27	U
1,2-Dichlorobenzene	95-50-1	147	36.053	0.0018	0.27	U	0.0018	0.27	U	0.0018	0.27	U	0.0018	0.27	U	0.0018	0.27	U
Undecane	1120-21-4	156.31	38.777	0.0282	4.04	U	0.0282	4.04	U	0.0282	4.04	U	0.0282	4.04	U	0.0282	4.04	U
1,2,4-Trichlorobenzene	120-82-1	181.45	42.287	0.0028	0.35	U	0.0028	0.35	U	0.0028	0.35	U	0.0128	1.58	J,B	0.0028	0.35	U
Dodecane	112-40-3	170.34	42.793	0.0098	1.29	U	0.0098	1.29	U	0.0098	1.29	U	0.0098	1.29	U	0.0098	1.29	U
Hexachloro-1,3-butadiene	87-68-3	260.76	44.117	0.0046	0.4	U	0.0046	0.4	U	0.0046	0.4	U	0.0131	1.13	J,B	0.0046	0.4	U
Tridecane	629-50-5	184.36	46.539	0.0075	0.91	J	0.006	0.73	U	0.006	0.73	U	0.0065	0.78	J,B	0.006	0.73	U
Tetradecane	629-59-4	198.34	50.06	0.0042	0.47	U	0.0042	0.47	U	0.0042	0.47	U	0.0042	0.47	U	0.0042	0.47	U

B Compound found in associated laboratory blank.

J Target compound detected above the IDL but below the EQL.

S Suspect data due to possible sampling error.

U Target compound not detected at or above the IDL.

Y Initial calibration and CCV were performed, however, the analyte was not part of the current operating procedure.

Table G.3 SUMMA™ Canister Analysis Results for All Target Analytes from Tank U-112 Riser 3 Bottom Level Sampled on 12/6/96

Target Analytes	CAS	MW	Ret Time	S6118-b30.103 ISVS			S6118-b31.115 ISVS			S6118-b33.124 ISVS			S6118-b32.121 ISVS		
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag
Dichlorodifluoromethane	75-71-8	120.91	4.604	0.0067	1.24	J	0.0078	1.44	J	0.0039	0.73	J	0.0035	0.65	J
Chloromethane	74-87-3	50.49	4.97	0.0035	1.55	J	0.004	1.76	J	0.0024	1.06	U	0.0024	1.06	U
1,2-dichloro-1,1,2,2-tetrafluoroeth	76-14-2	170.92	5.185	0.013	1.7	U	0.013	1.7	U	0.013	1.7	U	0.013	1.7	U
Methanol	67-56-1	32.04	5.239	1.0418	728.32	Y	1.1071	773.99	Y	1.1514	805	Y	1.1691	817.35	Y
Vinyl Chloride	75-01-4	62.5	5.476	0.0016	0.57	U	0.0016	0.57	U	0.0016	0.57	U	0.0016	0.57	U
Butane	106-97-8	58.12	5.896	0.0818	31.53		0.0856	33		0.0775	29.85		0.09	34.7	
Bromomethane	74-83-9	94.94	6.37	0.0052	1.23	U	0.0052	1.23	U	0.0052	1.23	U	0.0052	1.23	U
Chloroethane	75-00-3	64.51	6.725	0.0054	1.88	U	0.0054	1.88	U	0.0054	1.88	U	0.0054	1.88	U
Ethanol	64-17-5	46.01	6.833	0.7609	370.43	Y	0.8071	392.94	Y	0.8149	396.75	Y	0.9182	447.03	Y
Acetonitrile	75-05-8	41.05	7.339	0.0132	7.2	J	0.02	10.9	J	0.0224	12.21	J	0.0169	9.23	J
Acetone	67-64-1	58.08	7.855	0.0842	32.49	B	0.099	38.19	B	0.1104	42.59		0.0965	37.22	
Trichlorofluoromethane	75-69-4	137.37	8.275	0.2102	34.27		0.2193	35.75		0.2061	33.61		0.2176	35.49	
Pentane	109-66-0	72.15	8.954	0.0072	2.24	J	0.0079	2.46	J	0.0057	1.78	J	0.0055	1.69	J
1,1-Dichloroethene	75-35-4	96.94	9.503	0.0038	0.88	U	0.0038	0.88	U	0.0038	0.88	U	0.0038	0.88	U
Methylene Chloride	75-09-2	84.93	9.686	0.0071	1.88	J,B	0.0074	1.94	J,B	0.0075	1.97	J,B	0.0058	1.53	J,B
1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	187.38	10.181	0.0199	2.38	J,S	0.0192	2.3	J,S	0.0181	2.16	J,S	0.0132	1.57	J,S
Propanenitrile	107-12-0	55.08	10.902	0.0038	1.55	U	0.0038	1.55	U	0.0038	1.55	U	0.0038	1.55	U
Propanol	71-23-8	60.1	10.859	0.0975	36.34		0.1025	38.2		0.1104	41.15		0.1041	38.81	
1,1-Dichloroethane	75-34-3	98.96	11.828	0.002	0.45	U	0.002	0.45	U	0.002	0.45	U	0.002	0.45	U
2-Butanone	78-93-3	72.11	12.453	0.0217	6.75	J	0.021	6.52	J	0.0241	7.49	J	0.0177	5.5	J
cis-1,2-Dichloroethene	156-59-2	96.94	13.346	0.0034	0.79	U	0.0034	0.79	U	0.0034	0.79	U	0.0034	0.79	U
Hexane	110-54-3	86.18	13.734	0.0072	1.87	J	0.0083	2.17	J	0.004	1.04	J	0.0039	1.02	J
Chloroform	67-66-3	119.38	13.885	0.0033	0.62	J,B	0.0026	0.49	U	0.0026	0.49	U	0.0026	0.49	U
Tetrahydrofuran	109-99-9	72.11	14.638	0.0221	6.87		0.0222	6.89		0.0256	7.97		0.0178	5.53	
1,2-Dichloroethane	107-06-2	98.96	15.306	0.0022	0.5	U	0.0022	0.5	U	0.0022	0.5	U	0.0022	0.5	U
1,1,1-Trichloroethane	71-55-6	133.4	15.833	0.0076	1.28	J	0.0084	1.41	J	0.0051	0.85	J	0.0048	0.81	J
Butanenitrile	109-74-0	69.11	15.79	0.0034	1.1	U	0.0038	1.25	J	0.0034	1.1	U	0.0034	1.1	U
1-Butanol	71-36-3	74.12	16.264	0.55	166.21		0.5927	179.14		0.5537	167.34		0.5619	169.8	
Benzene	71-43-2	78.11	16.727	0.0066	1.91	J	0.0069	1.98	J	0.0057	1.63	J	0.0049	1.4	J
Carbon Tetrachloride	56-23-5	153.82	17.018	0.0085	1.23	J	0.0096	1.4	J	0.0054	0.79	J	0.0034	0.5	U
Cyclohexane	110-82-7	84.16	17.287	0.0036	0.96	U	0.0036	0.96	U	0.0036	0.96	U	0.0036	0.96	U
1,2-Dichloropropane	78-87-5	112.99	18.299	0.003	0.59	U	0.003	0.59	U	0.003	0.59	U	0.003	0.59	U
Trichloroethene	79-01-6	131.39	18.751	0.0024	0.41	U	0.0024	0.41	U	0.0024	0.41	U	0.0024	0.41	U
Heptane	142-82-5	100.2	19.257	0.0049	1.11	J	0.0046	1.02	J	0.0018	0.4	U	0.0018	0.4	U
cis-1,3-Dichloropropene	10061-01-5	110.97	20.441	0.0024	0.48	U	0.0024	0.48	U	0.0024	0.48	U	0.0024	0.48	U
4-Methyl-2-Pentanone	108-10-1	100.16	20.441	0.0034	0.76	U	0.0034	0.76	U	0.0034	0.76	U	0.0034	0.76	U
Pyridine	110-86-1	79.1	20.592	0.0186	5.27	U	0.0186	5.27	U	0.0216	6.13	J	0.0186	5.27	U
trans-1,3-Dichloropropene	10061-02-6	110.97	21.507	0.0018	0.36	U	0.0018	0.36	U	0.0018	0.36	U	0.0018	0.36	U
Pentanenitrile	110-59-8	83.13	21.529	0.0042	1.13	U	0.0042	1.13	U	0.0042	1.13	U	0.0042	1.13	U
1,1,2-Trichloroethane	79-00-5	133.4	21.949	0.0028	0.47	U	0.0028	0.47	U	0.0028	0.47	U	0.0028	0.47	U
Toluene	108-88-3	92.14	22.605	0.1442	35.05		0.1438	34.96		0.1492	36.27		0.1397	33.95	
1,2-Dibromoethane	106-93-4	187.86	24.145	0.0052	0.62	U	0.0052	0.62	U	0.0052	0.62	U	0.0052	0.62	U

Table G.3 (Cont'd) SUMMA™ Canister Analysis Results for All Target Analytes from Tank U-112 Riser 3 Bottom Level Sampled on 12/6/96

Target Analytes	CAS	MW	Ret Time	S6118-b30.103 ISVS			S6118-b31.115 ISVS			S6118-b33.124 ISVS			S6118-b32.121 ISVS		
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag
Octane	111-65-9	114.23	24.683	0.0024	0.47	U	0.0024	0.47	U	0.0024	0.47	U	0.0024	0.47	U
Bromoform	75-25-2	175.0	28.3	<0.059	<5.21	Y	<0.059	<5.21	Y	<0.059	<5.21	Y	<0.059	<5.21	Y
Tetrachloroethylene	127-18-4	165.83	25.179	0.0079	1.07	J	0.0085	1.14	J	0.0064	0.86	J	0.0049	0.66	J
Chlorobenzene	108-90-7	112.56	26.783	0.0026	0.52	U	0.0026	0.52	U	0.0026	0.52	U	0.0026	0.52	U
Hexanenitrile	628-73-9	97.13	27.041	0.0052	1.2	J,B	0.0052	1.2	U	0.0052	1.2	U	0.0052	1.2	U
Ethylbenzene	100-41-4	106.17	27.666	0.0028	0.59	U	0.0028	0.59	U	0.0028	0.59	U	0.0028	0.59	U
p/m-Xylene	106-42-3	106.17	28.107	0.013	2.74	U	0.013	2.74	U	0.013	2.74	U	0.013	2.74	U
Cyclohexanone	108-94-1	98.14	28.516	0.026	5.94	J	0.0058	1.32	U	0.0174	3.98	J	0.0058	1.32	U
Styrene	100-42-5	104.15	29.022	0.0022	0.47	U	0.0022	0.47	U	0.0022	0.47	U	0.0022	0.47	U
1,1,2,2-Tetrachloroethane	79-34-5	167.85	29.248	0.0042	0.56	U	0.0042	0.56	U	0.0042	0.56	U	0.0042	0.56	U
o-Xylene	95-47-6	106.17	29.313	0.0028	0.59	U	0.0028	0.59	U	0.0028	0.59	U	0.0028	0.59	U
Nonane	111-84-2	128.26	29.765	0.0016	0.28	U	0.0016	0.28	U	0.0016	0.28	U	0.0016	0.28	U
1-Ethyl-2-Methyl-Benzene	611-14-3	120.19	32.726	0.0018	0.34	U	0.0018	0.34	U	0.0018	0.34	U	0.0018	0.34	U
1,3,5-Trimethylbenzene	108-67-8	120.19	32.941	0.0018	0.34	U	0.0018	0.34	U	0.0018	0.34	U	0.0018	0.34	U
1,2,4-Trimethylbenzene	95-63-6	120.19	34.212	0.0026	0.48	U	0.0026	0.48	U	0.0026	0.48	U	0.0026	0.48	U
Decane	124-18-5	142.28	34.449	0.0059	0.93	J,B	0.0061	0.96	J,B	0.003	0.47	U	0.003	0.47	U
1,3-Dichlorobenzene	541-73-1	147	34.718	0.0018	0.27	U	0.0018	0.27	U	0.0018	0.27	U	0.0018	0.27	U
1,4-Dichlorobenzene	106-46-7	147	34.933	0.0018	0.27	U	0.0018	0.27	U	0.0018	0.27	U	0.0018	0.27	U
1,2-Dichlorobenzene	95-50-1	147	36.053	0.0018	0.27	U	0.0018	0.27	U	0.0018	0.27	U	0.0018	0.27	U
Undecane	1120-21-4	156.31	38.777	0.0282	4.04	U	0.0282	4.04	U	0.0282	4.04	U	0.0282	4.04	U
1,2,4-Trichlorobenzene	120-82-1	181.45	42.287	0.0028	0.35	U	0.0028	0.35	U	0.0126	1.56	J,B	0.0028	0.35	U
Dodecane	112-40-3	170.34	42.793	0.0098	1.29	U	0.0098	1.29	U	0.0098	1.29	U	0.0098	1.29	U
Hexachloro-1,3-butadiene	87-68-3	260.76	44.117	0.0046	0.4	U	0.0046	0.4	U	0.0145	1.25	J,B	0.0046	0.4	U
Tridecane	629-50-5	184.36	46.539	0.006	0.73	U	0.006	0.73	U	0.0061	0.74	J	0.006	0.73	U
Tetradecane	629-59-4	198.34	50.06	0.0042	0.47	U	0.0042	0.47	U	0.0042	0.47	U	0.0042	0.47	U

B Compound found in associated laboratory blank.

J Target compound detected above the IDL but below the EQL.

S Suspect data due to possible sampling error.

U Target compound not detected at or above the IDL.

Y Initial calibration and CCV were performed; however, the analyte was not part of the current operating procedure.

Table G.4 SUMMA™ Canister Analysis Results for All Target Analytes from Tank U-112 Riser 6 Top Level Sampled on 12/6/96

Target Analytes	CAS	MW	Ret Time	S6119-138.308 ISVS			S6119-139.309 ISVS			S6119-140.310 ISVS			S6119-141.318 ISVS		
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag
Dichlorodifluoromethane	75-71-8	120.91	4.624	0.0034	0.63	J	0.0028	0.52	U	0.0032	0.59	J	0.003	0.56	J
Chloromethane	74-87-3	50.49	5.001	0.0024	1.06	U	0.0024	1.06	U	0.0024	1.06	U	0.0024	1.06	U
1,2-dichloro-1,2,2-tetrafluoroeth	76-14-2	170.92	5.216	0.013	1.7	U	0.013	1.7	U	0.013	1.7	U	0.013	1.7	U
Methanol	67-56-1	32.04	5.27	1.1573	809.11	Y	1.3223	924.45	Y	1.2444	869.99	Y	1.4175	990.99	Y
Vinyl Chloride	75-01-4	62.5	5.496	0.0016	0.57	U	0.0016	0.57	U	0.0016	0.57	U	0.0016	0.57	U
Butane	106-97-8	58.12	5.927	0.0906	34.92		0.0823	31.7		0.0804	30.98		0.0768	29.62	
Bromomethane	74-83-9	94.94	6.401	0.0052	1.23	U	0.0052	1.23	U	0.0052	1.23	U	0.0052	1.23	U
Chloroethane	75-00-3	64.51	6.746	0.0054	1.88	U	0.0054	1.88	U	0.0054	1.88	U	0.0054	1.88	U
Ethanol	64-17-5	46.01	6.864	0.7935	386.32	Y	1.3066	636.1	Y	1.2026	585.49	Y	1.0912	531.24	Y
Acetonitrile	75-05-8	41.05	7.37	0.0104	5.67	J	0.0126	6.85	J	0.0113	6.16	J	0.0212	11.58	J
Acetone	67-64-1	58.08	7.876	0.0829	31.96		0.0894	34.49		0.0879	33.92		0.1091	42.08	
Trichlorofluoromethane	75-69-4	137.37	8.307	0.211	34.4		0.2238	36.49		0.2123	34.61		0.2072	33.78	
Pentane	109-66-0	72.15	8.986	0.0048	1.5	J	0.0058	1.81	J	0.0058	1.79	J	0.005	1.55	J
1,1-Dichloroethene	75-35-4	96.94	9.535	0.0038	0.88	U	0.0038	0.88	U	0.0038	0.88	U	0.0038	0.88	U
Methylene Chloride	75-09-2	84.93	9.718	0.0068	1.8	J,B	0.0073	1.92	J,B	0.0069	1.81	J,B	0.0068	1.79	J,B
1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	187.38	10.214	0.0096	1.15	J,S	0.0082	0.98	J,S	0.0069	0.82	J,S	0.006	0.72	J,S
Propanenitrile	107-12-0	55.08	10.935	0.0038	1.55	U	0.0038	1.55	U	0.0038	1.55	U	0.0038	1.55	U
Propanol	71-23-8	60.1	10.903	0.0937	34.91		0.124	46.22		0.1052	39.23		0.1103	41.12	
1,1-Dichloroethane	75-34-3	98.96	11.861	0.002	0.45	U	0.002	0.45	U	0.002	0.45	U	0.002	0.45	U
2-Butanone	78-93-3	72.11	12.486	0.0203	6.3	J	0.0236	7.32	J	0.0238	7.4	J	0.0246	7.63	J
cis-1,2-Dichloroethene	156-59-2	96.94	13.391	0.0034	0.79	U	0.0034	0.79	U	0.0034	0.79	U	0.0034	0.79	U
Hexane	110-54-3	86.18	13.768	0.0044	1.14	J	0.0047	1.23	J	0.0048	1.25	J	0.0041	1.06	J
Chloroform	67-66-3	119.38	13.929	0.0026	0.49	U	0.0026	0.49	U	0.0026	0.49	U	0.0026	0.49	U
Tetrahydrofuran	109-99-9	72.11	14.672	0.021	6.52		0.0263	8.16		0.024	7.47		0.019	5.91	
1,2-Dichloroethane	107-06-2	98.96	15.34	0.0022	0.5	U	0.0022	0.5	U	0.0022	0.5	U	0.0022	0.5	U
1,1,1-Trichloroethane	71-55-6	133.4	15.868	0.0049	0.82	J	0.0054	0.91	J	0.0051	0.86	J	0.005	0.84	J
Butanenitrile	109-74-0	69.11	15.835	0.0034	1.1	U	0.0034	1.1	U	0.0034	1.1	U	0.0034	1.1	U
1-Butanol	71-36-3	74.12	16.309	0.5289	159.85		0.696	210.33		0.5497	166.12		0.5878	177.63	
Benzene	71-43-2	78.11	16.762	0.0053	1.52	J	0.0061	1.76	J	0.0056	1.6	J	0.005	1.42	J
Carbon Tetrachloride	56-23-5	153.82	17.052	0.0057	0.83	J	0.0054	0.79	J	0.0056	0.81	J	0.0055	0.8	J
Cyclohexane	110-82-7	84.16	17.333	0.0036	0.96	U	0.0036	0.96	U	0.0036	0.96	U	0.0036	0.96	U
1,2-Dichloropropane	78-87-5	112.99	18.334	0.003	0.59	U	0.003	0.59	U	0.003	0.59	U	0.003	0.59	U
Trichloroethene	79-01-6	131.39	18.786	0.0024	0.41	U	0.0024	0.41	U	0.0024	0.41	U	0.0024	0.41	U
Heptane	142-82-5	100.2	19.293	0.0062	1.39	J	0.0073	1.63	J	0.0063	1.41	J	0.0043	0.97	J
cis-1,3-Dichloropropene	10061-01-5	110.97	20.477	0.0024	0.48	U	0.0024	0.48	U	0.0024	0.48	U	0.0024	0.48	U
4-Methyl-2-Pentanone	108-10-1	100.16	20.488	0.0034	0.76	U	0.0034	0.76	U	0.0034	0.76	U	0.0034	0.76	U
Pyridine	110-86-1	79.1	20.628	0.0186	5.27	U	0.0288	8.15	J	0.0186	5.27	U	0.0186	5.27	U
trans-1,3-Dichloropropene	10061-02-6	110.97	21.544	0.0018	0.36	U	0.0018	0.36	U	0.0018	0.36	U	0.0018	0.36	U
Pentanenitrile	110-59-8	83.13	21.576	0.0042	1.13	U	0.0042	1.13	U	0.0042	1.13	U	0.0042	1.13	U

Table G.4 (Cont'd) SUMMA™ Canister Analysis Results for All Target Analytes from Tank U-112 Riser 6 Top Level Sampled on 12/6/96

Target Analytes	CAS	MW	Ret Time	S6119-t38.308 ISVS			S6119-t39.309 ISVS			S6119-t40.310 ISVS			S6119-t41.318 ISVS		
				(mg/m³)	(ppbv)	Flag	(mg/m³)	(ppbv)	Flag	(mg/m³)	(ppbv)	Flag	(mg/m³)	(ppbv)	Flag
1,1,2-Trichloroethane	79-00-5	133.4	21.985	0.0028	0.47	U	0.0028	0.47	U	0.0028	0.47	U	0.0028	0.47	U
Toluene	108-88-3	92.14	22.642	0.1507	36.63		0.1639	39.86		0.1546	37.58		0.1412	34.34	
1,2-Dibromoethane	106-93-4	187.86	24.172	0.0052	0.62	U	0.0052	0.62	U	0.0052	0.62	U	0.0052	0.62	U
Octane	111-65-9	114.23	24.721	0.0024	0.47	U	0.0024	0.47	U	0.0024	0.47	U	0.0024	0.47	U
Bromoform	75-25-2	175.0	28.3	<0.059	<5.21	Y	<0.059	<5.21	Y	<0.059	<5.21	Y	<0.059	<5.21	Y
Tetrachloroethylene	127-18-4	165.83	25.216	0.0059	0.8	J	0.0069	0.94	J	0.0064	0.87	J	0.0056	0.76	J
Chlorobenzene	108-90-7	112.56	26.821	0.0026	0.52	U	0.0026	0.52	U	0.0026	0.52	U	0.0026	0.52	U
Hexanenitrile	628-73-9	97.13	27.079	0.0052	1.2	U	0.0052	1.2	U	0.0052	1.2	U	0.0052	1.2	U
Ethylbenzene	100-41-4	106.17	27.704	0.0028	0.59	U	0.0028	0.59	U	0.0028	0.59	U	0.0028	0.59	U
p/m-Xylene	106-42-3	106.17	28.146	0.013	2.74	U	0.013	2.74	U	0.013	2.74	U	0.013	2.74	U
Cyclohexanone	108-94-1	98.14	28.555	0.0058	1.32	U	0.0058	1.32	U	0.0058	1.32	U	0.0058	1.32	U
Styrene	100-42-5	104.15	29.05	0.0022	0.47	U	0.0022	0.47	U	0.0022	0.47	U	0.0022	0.47	U
1,1,2,2-Tetrachloroethane	79-34-5	167.85	29.276	0.0042	0.56	U	0.0042	0.56	U	0.0042	0.56	U	0.0042	0.56	U
o-Xylene	95-47-6	106.17	29.352	0.0028	0.59	U	0.0028	0.59	U	0.0028	0.59	U	0.0028	0.59	U
Nonane	111-84-2	128.26	29.793	0.0016	0.28	U	0.0016	0.28	U	0.0016	0.28	U	0.0016	0.28	U
1-Ethyl-2-Methyl-Benzene	611-14-3	120.19	32.755	0.0018	0.34	U	0.0018	0.34	U	0.0018	0.34	U	0.0018	0.34	U
1,3,5-Trimethylbenzene	108-67-8	120.19	32.981	0.0018	0.34	U	0.0018	0.34	U	0.0018	0.34	U	0.0018	0.34	U
1,2,4-Trimethylbenzene	95-63-6	120.19	34.241	0.0026	0.48	U	0.0026	0.48	U	0.0026	0.48	U	0.0026	0.48	U
Decane	124-18-5	142.28	34.489	0.003	0.47	U	0.003	0.47	U	0.003	0.47	U	0.003	0.47	U
1,3-Dichlorobenzene	541-73-1	147	34.758	0.0018	0.27	U	0.0018	0.27	U	0.0018	0.27	U	0.0018	0.27	U
1,4-Dichlorobenzene	106-46-7	147	34.963	0.0018	0.27	U	0.0018	0.27	U	0.0018	0.27	U	0.0018	0.27	U
1,2-Dichlorobenzene	95-50-1	147	36.094	0.0018	0.27	U	0.0018	0.27	U	0.0018	0.27	U	0.0018	0.27	U
Undecane	1120-21-4	156.31	38.808	0.0282	4.04	U	0.0282	4.04	U	0.0282	4.04	U	0.0282	4.04	U
1,2,4-Trichlorobenzene	120-82-1	181.45	42.319	0.0028	0.35	U	0.0028	0.35	U	0.0028	0.35	U	0.0028	0.35	U
Dodecane	112-40-3	170.34	42.825	0.0098	1.29	U	0.0113	1.49	J	0.0098	1.29	U	0.0098	1.29	U
Hexachloro-1,3-butadiene	87-68-3	260.76	44.15	0.0046	0.4	U	0.0115	0.99	J.B	0.0046	0.4	U	0.0046	0.4	U
Tridecane	629-50-5	184.36	46.562	0.0617	7.5	S	0.054	6.56	J.S	0.039	4.74	J.S	0.0147	1.79	J.S.B
Tetradecane	629-59-4	198.34	50.073	0.0042	0.47	U	0.0042	0.47	U	0.0042	0.47	U	0.0042	0.47	U

B Compound found in associated laboratory blank.

J Target compound detected above the IDL but below the EQL.

S Suspect data due to possible sampling error.

U Target compound not detected at or above the IDL.

Y Initial calibration and CCV were performed; however, the analyte was not part of the current operating procedure.

Table G.5 SUMMATM Canister Analysis Results for All Target Analytes from Tank U-112 Riser 6 Middle Level Sampled on 12/6/96

Target Analytes	CAS	MW	Ret Time	S6119-m47.322 ISVS			S6119-m46.319 ISVS			S6119-m46.319 ISVS REP			S6119-m27.235 ISVS			S6119-m27.235 ISVS REP			S6119-m26.146 ISVS		
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag
Dichlorodifluoromethane	75-71-8	120.91	4.624	0.0033	0.61	J	0.0036	0.68	J	0.0033	0.62	J	0.0032	0.6	J	0.003	0.55	J	0.0033	0.6	J
Chloromethane	74-87-3	50.49	5.001	0.0024	1.06	U	0.0024	1.06	U	0.0024	1.06	U	0.0024	1.06	U	0.0024	1.06	U	0.0024	1.06	U
1,2-dichloro 1,1,2,2-tetrafluoroeth	76-14-2	170.92	5.216	0.013	1.7	U	0.013	1.7	U	0.013	1.7	U	0.013	1.7	U	0.013	1.7	U	0.013	1.7	U
Methanol	67-56-1	32.04	5.27	1.1538	806.69	Y	1.4263	997.18	Y	1.3536	946.34	Y	1.1174	781.17	Y	1.1098	775.88	Y	1.0976	767.34	Y
Vinyl Chloride	75-01-4	62.5	5.496	0.0016	0.57	U	0.0016	0.57	U	0.0016	0.57	U	0.0016	0.57	U	0.0016	0.57	U	0.0016	0.57	U
Butane	106-97-8	58.12	5.927	0.0843	32.5		0.0915	35.26		0.0835	32.17		0.081	31.21		0.0753	29.03		0.0804	30.99	
Bromomethane	74-83-9	94.94	6.401	0.0052	1.23	U	0.0052	1.23	U	0.0052	1.23	U	0.0052	1.23	U	0.0052	1.23	U	0.0052	1.23	U
Chloroethane	75-00-3	64.51	6.746	0.0054	1.88	U	0.0054	1.88	U	0.0054	1.88	U	0.0054	1.88	U	0.0054	1.88	U	0.0054	1.88	U
Ethanol	64-17-5	46.01	6.864	0.5622	273.69	Y	1.406	684.49	Y	1.3311	648.06	Y	0.9176	446.75	Y	0.8117	395.17	Y	0.8551	416.31	Y
Acetonitrile	75-05-8	41.05	7.37	0.0118	6.42	J	0.0183	9.97	J	0.0165	9	J	0.0075	4.07	J	0.0067	3.66	J	0.0083	4.55	J
Acetone	67-64-1	58.08	7.876	0.0741	28.56	B	0.1154	44.51		0.1093	42.15		0.0783	30.18	B	0.0714	27.52	B	0.0739	28.5	B
Trichlorofluoromethane	75-69-4	137.37	8.307	0.2031	33.12		0.2238	36.5		0.2091	34.09		0.2236	36.47		0.1925	31.39		0.2081	33.93	
Pentane	109-66-0	72.15	8.986	0.0047	1.47	J	0.0057	1.78	J	0.0053	1.65	J	0.0059	1.82	J	0.0047	1.44	J	0.0057	1.77	J
1,1-Dichloroethene	75-35-4	96.94	9.535	0.0038	0.88	U	0.0038	0.88	U	0.0038	0.88	U	0.0038	0.88	U	0.0038	0.88	U	0.0038	0.88	U
Methylene Chloride	75-09-2	84.93	9.718	0.0062	1.64	J,B	0.007	1.85	J,B	0.0068	1.81	J,B	0.0071	1.87	J,B	0.0066	1.74	J,B	0.0061	1.6	J,B
1,1,2-trichloro 1,2,2-trifluoroethane	76-13-1	187.38	10.214	0.0062	0.74	J,S	0.007	0.83	J,S	0.0066	0.79	J,S	0.0161	1.93	J,S	0.0137	1.64	J,S	0.0152	1.82	J,S
Propanenitrile	107-12-0	55.08	10.935	0.0038	1.55	U	0.0038	1.55	U	0.0038	1.55	U	0.0038	1.55	U	0.0038	1.55	U	0.0038	1.55	U
Propanol	71-23-8	60.1	10.903	0.0885	32.98		0.1233	45.95		0.1171	43.65		0.1012	37.72		0.0839	31.29		0.1002	37.35	
1,1-Dichloroethane	75-34-3	98.96	11.861	0.002	0.45	U	0.002	0.45	U	0.002	0.45	U	0.002	0.45	U	0.002	0.45	U	0.002	0.45	U
2-Butanone	78-93-3	72.11	12.486	0.0197	6.13	J	0.0274	8.53	J	0.0254	7.89	J	0.0178	5.54	J	0.0161	5	J	0.0166	5.16	J
cis-1,2-Dichloroethene	156-59-2	96.94	13.391	0.0034	0.79	U	0.0034	0.79	U	0.0034	0.79	U	0.0034	0.79	U	0.0034	0.79	U	0.0034	0.79	U
Hexane	110-54-3	86.18	13.768	0.0039	1.03	J	0.0048	1.26	J	0.0046	1.18	J	0.0046	1.2	J	0.0039	1.01	J	0.0047	1.21	J
Chloroform	67-66-3	119.38	13.929	0.0026	0.49	U	0.0026	0.49	U	0.0026	0.49	U	0.0026	0.49	U	0.0026	0.49	U	0.0026	0.49	U
Tetrahydrofuran	109-99-9	72.11	14.672	0.0191	5.92		0.0243	7.53		0.0219	6.81		0.0227	7.05		0.0192	5.98		0.0207	6.44	
1,2-Dichloroethane	107-06-2	98.96	15.34	0.0022	0.5	U	0.0022	0.5	U	0.0022	0.5	U	0.0022	0.5	U	0.0022	0.5	U	0.0022	0.5	U
1,1,1-Trichloroethane	71-55-6	133.4	15.868	0.0049	0.83	J	0.0055	0.93	J	0.005	0.84	J	0.0053	0.89	J	0.0045	0.76	J	0.0047	0.78	J
Butanenitrile	109-74-0	69.11	15.835	0.0034	1.1	U	0.0034	1.1	U	0.0034	1.1	U	0.0034	1.1	U	0.0034	1.1	U	0.0034	1.1	U
1-Butanol	71-36-3	74.12	16.309	0.5245	158.5		0.6428	194.26		0.6116	184.82		0.5523	166.91		0.4323	130.64		0.5087	153.73	
Benzene	71-43-2	78.11	16.762	0.0049	1.41	J	0.0059	1.69	J	0.0055	1.57	J	0.0058	1.67	J	0.0049	1.4	J	0.005	1.44	J
Carbon Tetrachloride	56-23-5	153.82	17.052	0.0052	0.75	J	0.0057	0.84	J	0.0054	0.78	J	0.0058	0.85	J	0.005	0.73	J	0.005	0.73	J
Cyclohexane	110-82-7	84.16	17.333	0.0036	0.96	U	0.0036	0.96	U	0.0045	1.19	J	0.0036	0.96	U	0.0036	0.96	U	0.0036	0.96	U
1,2-Dichloropropane	78-87-5	112.99	18.334	0.003	0.59	U	0.003	0.59	U	0.003	0.59	U	0.003	0.59	U	0.003	0.59	U	0.003	0.59	U
Trichloroethene	79-01-6	131.39	18.786	0.0024	0.41	U	0.0024	0.41	U	0.0024	0.41	U	0.0024	0.41	U	0.0024	0.41	U	0.0024	0.41	U
Heptane	142-82-5	100.2	19.293	0.005	1.11	J	0.0084	1.89	J	0.008	1.8	J	0.0049	1.1	J	0.004	0.89	J	0.006	1.33	J
cis-1,3-Dichloropropene	10061-01-5	110.97	20.477	0.0024	0.48	U	0.0024	0.48	U	0.0024	0.48	U	0.0024	0.48	U	0.0024	0.48	U	0.0024	0.48	U
4-Methyl-2-Pentanone	108-10-1	100.16	20.488	0.0034	0.76	U	0.0034	0.76	U	0.0034	0.76	U	0.0034	0.76	U	0.0034	0.76	U	0.0034	0.76	U
Pyridine	110-86-1	79.1	20.628	0.0186	5.27	U	0.0186	5.27	U	0.0186	5.27	U	0.0186	5.27	U	0.0186	5.27	U	0.0186	5.27	U
trans-1,3-Dichloropropene	10061-02-6	110.97	21.544	0.0018	0.36	U	0.0018	0.36	U	0.0018	0.36	U	0.0018	0.36	U	0.0018	0.36	U	0.0018	0.36	U
Pentanenitrile	110-59-8	83.13	21.576	0.0042	1.13	U	0.0042	1.13	U	0.0042	1.13	U	0.0042	1.13	U	0.0042	1.13	U	0.0042	1.13	U
1,1,2-Trichloroethane	79-00-5	133.4	21.985	0.0028	0.47	U	0.0028	0.47	U	0.0028	0.47	U	0.0028	0.47	U	0.0028	0.47	U	0.0028	0.47	U
Toluene	108-88-3	92.14	22.642	0.1469	35.7		0.1598	38.86		0.1533	37.27		0.1518	36.91		0.1336	32.47		0.1461	35.51	
1,2-Dibromoethane	106-93-4	187.86	24.172	0.0052	0.62	U	0.0052	0.62	U	0.0052	0.62	U	0.0052	0.62	U	0.0052	0.62	U	0.0052	0.62	U
Octane	111-65-9	114.23	24.721	0.0024	0.47	U	0.0024	0.47	U	0.0024	0.47	U	0.0024	0.47	U	0.0024	0.47	U	0.0024	0.47	U
Bromoform	75-25-2	175.0	28.3	<0.059	<5.21	Y	<0.059	<5.21	Y	<0.059	<5.21	Y	<0.059	<5.21	Y	<0.059	<5.21	Y	<0.059	<5.21	Y
Tetrachloroethylene	127-18-4	165.83	25.216	0.0055	0.74	J	0.0061	0.82	J	0.0057	0.77	J	0.0065	0.88	J	0.0054	0.72	J	0.0056	0.75	J
Chlorobenzene	108-90-7	112.56	26.821	0.0026	0.52	U	0.0026	0.52	U	0.0026	0.52	U	0.0026	0.52	U	0.0026	0.52	U	0.0026	0.52	U
Hexanenitrile	628-73-9	97.13	27.079	0.0052	1.2	U	0.0052	1.2	U	0.0052	1.2	U	0.0052	1.2	U	0.0052	1.2	U	0.0052	1.2	U
Ethylbenzene	100-41-4	106.17	27.704	0.0028	0.59	U	0.0028	0.59	U	0.0028	0.59	U	0.0028	0.59	U	0.0028	0.59	U	0.0028	0.59	U
p-m-Xylene	106-42-3	106.17	28.146	0.013	2.74	U	0.013	2.74	U	0.013	2.74	U	0.013	2.74	U	0.013	2.74	U	0.013	2.74	U
Cyclohexanone	108-94-1	98.14	28.555	0.0058	1.32	U	0.0058	1.32	U	0.0058	1.32	U	0.0058	1.32	U	0.0058	1.32	U	0.0058	1.32	U
Styrene	100-42-5	104.15	29.05	0.0022	0.47	U	0.0022	0.47	U	0.0022	0.47	U	0.0022	0.47	U	0.0022	0.47	U	0.0022	0.47	U
1,1,2,2-Tetrachloroethane	79-34-5	167.85	29.276	0.0042	0.56	U	0.0042	0.56	U	0.0042	0.56	U	0.0042	0.56	U	0.0042	0.56	U	0.0042	0.56	U
o-Xylene	95-47-6	106.17	29.352	0.0028	0.59	U	0.0028	0.59	U	0.0028	0.59	U	0.0028	0.59	U	0.0028	0.59	U	0.0028	0.59	U
Nonane	111-84-2	128.26	29.793	0.0016	0.28	U	0.0016	0.28	U	0.0016	0.28	U	0.0016	0.28	U	0.0016	0.28	U	0.0016	0.28	U
1-Ethyl-2-Methyl-Benzene	611-14-3	120.19	32.755	0.0018	0.34	U	0.0018	0.34	U	0.0018	0.34	U	0.0018	0.34	U	0.0018	0.34	U	0.0018	0.34	U

Table G.5 (Cont'd) SUMMA™ Canister Analysis Results for All Target Analytes from Tank U-112 Riser 6 Middle Level Sampled on 12/6/96

Target Analytes	CAS	MW	Ret Time	S6119-m47.322 ISVS			S6119-m46.319 ISVS			S6119-m46.319 ISVS REP			S6119-m27.235 ISVS			S6119-m27.235 ISVS REP			S6119-m26.146 ISVS		
				(mg/m³)	(ppbv)	Flag	(mg/m³)	(ppbv)	Flag	(mg/m³)	(ppbv)	Flag	(mg/m³)	(ppbv)	Flag	(mg/m³)	(ppbv)	Flag	(mg/m³)	(ppbv)	Flag
1,3,5-Trimethylbenzene	108-67-8	120.19	32.981	0.0018	0.34	U	0.0018	0.34	U	0.0018	0.34	U	0.0018	0.34	U	0.0018	0.34	U	0.0018	0.34	U
1,2,4-Trimethylbenzene	95-63-6	120.19	34.241	0.0026	0.48	U	0.0026	0.48	U	0.0026	0.48	U	0.0026	0.48	U	0.0026	0.48	U	0.0026	0.48	U
Decane	124-18-5	142.28	34.489	0.003	0.47	U	0.003	0.47	U	0.003	0.47	U	0.003	0.47	U	0.003	0.47	U	0.003	0.47	U
1,3-Dichlorobenzene	541-73-1	147	34.758	0.0018	0.27	U	0.0018	0.27	U	0.0018	0.27	U	0.0018	0.27	U	0.0018	0.27	U	0.0018	0.27	U
1,4-Dichlorobenzene	106-46-7	147	34.963	0.0018	0.27	U	0.0018	0.27	U	0.0018	0.27	U	0.0018	0.27	U	0.0018	0.27	U	0.0018	0.27	U
1,2-Dichlorobenzene	95-50-1	147	36.094	0.0018	0.27	U	0.0018	0.27	U	0.0018	0.27	U	0.0018	0.27	U	0.0018	0.27	U	0.0018	0.27	U
Undecane	1120-21-4	156.31	38.808	0.0282	4.04	U	0.0282	4.04	U	0.0282	4.04	U	0.0282	4.04	U	0.0282	4.04	U	0.0282	4.04	U
1,2,4-Trichlorobenzene	120-82-1	181.45	42.319	0.0028	0.35	U	0.0028	0.35	U	0.0028	0.35	U	0.0028	0.35	U	0.0028	0.35	U	0.0028	0.35	U
Dodecane	112-40-3	170.34	42.825	0.0098	1.29	U	0.0098	1.29	U	0.0098	1.29	U	0.0098	1.29	U	0.0098	1.29	U	0.013	1.7	J
Hexachloro-1,3-butadiene	87-68-3	260.76	44.15	0.0046	0.4	U	0.0046	0.4	U	0.0046	0.4	U	0.0046	0.4	U	0.0046	0.4	U	0.0046	0.4	U
Tridecane	629-50-5	184.36	46.562	0.0245	2.97	J,S	0.0355	4.31	J,S	0.0327	3.98	J,S	0.081	9.84	S,B	0.0836	10.16	S,B	0.2213	26.89	S
Tetradecane	629-59-4	198.34	50.073	0.0042	0.47	U	0.0042	0.47	U	0.0042	0.47	U	0.0042	0.47	U	0.0042	0.47	U	0.0042	0.47	U

B Compound found in associated laboratory blank.

J Target compound detected above the IDL but below the EQL.

S Suspect data due to possible sampling error.

U Target compound not detected at or above the IDL.

Y Initial calibration and CCV were performed; however, the analyte was not part of the current operating procedure.

Table G.6 SUMMA™ Canister Analysis Results for All Target Analytes from Tank U-112 Riser 6 Bottom Level Sampled on 12/6/96

Target Analytes	CAS	MW	Ret Time	S6119-b32.260 ISVS			S6119-b33.270 ISVS			S6119-b31.255 ISVS			S6119-b31.255 ISVS REP			S6119-b30.243 ISVS		
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag
Dichlorodifluoromethane	75-71-8	120.91	4.616	0.0033	0.61	J	0.0032	0.59	J	0.0748	13.86		0.0756	14.01		0.0034	0.64	J
Chloromethane	74-87-3	50.49	4.992	0.0024	1.06	U	0.0024	1.06	U	0.0258	11.44		0.027	11.97		0.0024	1.06	U
1,2-dichloro1,1,2,2-tetrafluoroeth	76-14-2	170.92	5.197	0.013	1.7	U	0.013	1.7	U	0.0917	12.01	J	0.0887	11.62	J	0.013	1.7	U
Methanol	67-56-1	32.04	5.262	1.3106	916.29	Y	1.1407	797.51	Y	0.8872	620.23	Y	0.8978	627.71	Y	1.0496	733.77	Y
Vinyl Chloride	75-01-4	62.5	5.488	0.0016	0.57	U	0.0016	0.57	U	0.0301	10.78		0.0306	10.98		0.0016	0.57	U
Butane	106-97-8	58.12	5.908	0.0878	33.84		0.0823	31.7		0.2972	114.53		0.2983	114.98		0.0835	32.18	
Bromomethane	74-83-9	94.94	6.381	0.0052	1.23	U	0.0052	1.23	U	0.0603	14.22		0.059	13.92		0.0052	1.23	U
Chloroethane	75-00-3	64.51	6.737	0.0054	1.88	U	0.0054	1.88	U	0.032	11.1	J	0.0319	11.07	J	0.0054	1.88	U
Ethanol	64-17-5	46.01	6.855	0.98	477.11	Y	0.9272	451.41	Y	0.7166	348.86	Y	0.7174	349.28	Y	0.8401	409.01	Y
Acetonitrile	75-05-8	41.05	7.35	0.0053	2.89	J	0.004	2.18	U	0.0761	41.52		0.0759	41.4		0.004	2.18	U
Acetone	67-64-1	58.08	7.867	0.0789	30.42	B	0.0878	33.85	B	0.1447	55.79		0.1405	54.17		0.0717	27.66	
Trichlorofluoromethane	75-69-4	137.37	8.298	0.2211	36.05		0.2169	35.37		0.2125	34.66		0.2128	34.71		0.1991	32.46	
Pentane	109-66-0	72.15	8.965	0.0052	1.6	J	0.0052	1.61	J	0.0547	16.98		0.0545	16.92		0.0052	1.61	J
1,1-Dichloroethene	75-35-4	96.94	9.514	0.0038	0.88	U	0.0038	0.88	U	0.0427	9.86		0.0429	9.9		0.0038	0.88	U
Methylene Chloride	75-09-2	84.93	9.697	0.0068	1.79	J.B	0.007	1.85	J.B	0.045	11.86	B	0.0447	11.78	B	0.0058	1.54	J
1,1,2-trichloro1,1,2,2-trifluoroethane	76-13-1	187.38	10.203	0.0138	1.65	J.S	0.013	1.56	J.S	0.0844	10.09	S	0.0857	10.24	S	0.0123	1.47	J.S
Propanenitrile	107-12-0	55.08	10.925	0.0038	1.55	U	0.0038	1.55	U	0.0294	11.96	J	0.0284	11.55	J	0.0038	1.55	U
Propanol	71-23-8	60.1	10.882	0.0987	36.8		0.096	35.76		0.2149	80.11		0.2127	79.28		0.094	35.05	
1,1-Dichloroethane	75-34-3	98.96	11.84	0.002	0.45	U	0.002	0.45	U	0.0486	11		0.0468	10.59		0.002	0.45	U
2-Butanone	78-93-3	72.11	12.464	0.019	5.91	J	0.0173	5.39	J	0.0372	11.55		0.0363	11.27		0.0192	5.97	J
cis-1,2-Dichloroethene	156-59-2	96.94	13.369	0.0034	0.79	U	0.0034	0.79	U	0.0374	8.65		0.0368	8.5		0.0034	0.79	U
Hexane	110-54-3	86.18	13.756	0.0052	1.34	J	0.0043	1.13	J	0.1127	29.29		0.1091	28.37		0.0041	1.07	J
Chloroform	67-66-3	119.38	13.907	0.0026	0.49	U	0.0026	0.49	U	0.0552	10.36		0.0539	10.12		0.0026	0.49	U
Tetrahydrofuran	109-99-9	72.11	14.65	0.0215	6.66		0.0261	8.11		0.0711	22.09		0.0675	20.97		0.0169	5.26	
1,2-Dichloroethane	107-06-2	98.96	15.328	0.0022	0.5	U	0.0022	0.5	U	0.0521	11.79		0.0493	11.15		0.0022	0.5	U
1,1,1-Trichloroethane	71-55-6	133.4	15.845	0.0052	0.87	J	0.0052	0.87	J	0.066	11.08		0.0648	10.88		0.0048	0.81	J
Butanenitrile	109-74-0	69.11	15.813	0.0034	1.1	U	0.0034	1.1	U	0.0212	6.87	J	0.0223	7.24	J	0.0034	1.1	U
1-Butanol	71-36-3	74.12	16.287	0.5281	159.59		0.6284	189.92		0.5148	155.57		0.5107	154.35		0.4735	143.11	
Benzene	71-43-2	78.11	16.739	0.0056	1.59	J	0.0051	1.45	J	0.0387	11.1		0.0373	10.71		0.0046	1.31	J
Carbon Tetrachloride	56-23-5	153.82	17.029	0.0061	0.89	J	0.006	0.88	J	0.064	9.32		0.0622	9.05		0.0034	0.5	U
Cyclohexane	110-82-7	84.16	17.309	0.0037	0.98	J	0.0036	0.96	U	0.0329	8.76	J	0.0331	8.82	J	0.0036	0.96	U
1,2-Dichloropropane	78-87-5	112.99	18.311	0.003	0.59	U	0.003	0.59	U	0.0566	11.22		0.0547	10.85		0.003	0.59	U
Trichloroethene	79-01-6	131.39	18.763	0.0024	0.41	U	0.0024	0.41	U	0.0564	9.62		0.055	9.37		0.0024	0.41	U
Heptane	142-82-5	100.2	19.269	0.0102	2.27	J	0.0063	1.42	J	0.0741	16.57		0.0719	16.08		0.005	1.13	J
cis-1,3-Dichloropropene	10061-01-5	110.97	20.453	0.0024	0.48	U	0.0024	0.48	U	0.0456	9.2		0.043	8.68		0.0024	0.48	U
4-Methyl-2-Pentanone	108-10-1	100.16	20.464	0.0034	0.76	U	0.0034	0.76	U	0.1185	26.5		0.1175	26.28		0.0034	0.76	U
Pyridine	110-86-1	79.1	20.615	0.0186	5.27	U	0.0186	5.27	U	0.0186	5.27	U	0.0186	5.27	U	0.0186	5.27	U
trans-1,3-Dichloropropene	10061-02-6	110.97	21.53	0.0018	0.36	U	0.0018	0.36	U	0.0461	9.31		0.0444	8.97		0.0018	0.36	U
Pentanenitrile	110-59-8	83.13	21.551	0.0042	1.13	U	0.0042	1.13	U	0.0633	17.07		0.0613	16.53		0.0042	1.13	U
1,1,2-Trichloroethane	79-00-5	133.4	21.971	0.0028	0.47	U	0.0028	0.47	U	0.0581	9.76		0.0562	9.44		0.0028	0.47	U
Toluene	108-88-3	92.14	22.617	0.1618	39.34		0.1465	35.61		0.1545	37.57		0.1503	36.55		0.1304	31.71	
1,2-Dibromoethane	106-93-4	187.86	24.157	0.0052	0.62	U	0.0052	0.62	U	0.0863	10.29		0.0835	9.95		0.0052	0.62	U
Octane	111-65-9	114.23	24.695	0.0024	0.47	U	0.0024	0.47	U	0.0092	1.8	J	0.0085	1.67	J	0.0024	0.47	U
Bromoform	75-25-2	175.0	28.3	<0.059	<5.21	Y	<0.059	<5.21	Y	<0.059	<5.21	Y	<0.059	<5.21	Y	<0.059	<5.21	Y
Tetrachloroethylene	127-18-4	165.83	25.201	0.0059	0.8	J	0.0054	0.73	J	0.0662	8.95		0.0648	8.75		0.0049	0.66	J
Chlorobenzene	108-90-7	112.56	26.805	0.0026	0.52	U	0.0026	0.52	U	0.0545	10.84		0.0529	10.52		0.0026	0.52	U

Table G.6 (Cont'd) SUMMA™ Canister Analysis Results for All Target Analytes from Tank U-112 Riser 6 Bottom Level Sampled on 12/6/96

Target Analytes	CAS	MW	Ret Time	S6119-b32.260 ISVS			S6119-b33.270 ISVS			S6119-b31.255 ISVS			S6119-b31.255 ISVS REP			S6119-b30.243 ISVS		
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag
Hexanenitrile	628-73-9	97.13	27.064	0.0052	1.2	U	0.0052	1.2	U	0.1224	28.22		0.121	27.89		0.0052	1.2	U
Ethylbenzene	100-41-4	106.17	27.677	0.0028	0.59	U	0.0028	0.59	U	0.0525	11.07		0.052	10.98		0.0028	0.59	U
p/m-Xylene	106-42-3	106.17	28.13	0.013	2.74	U	0.013	2.74	U	0.0989	20.87	J	0.0978	20.64	J	0.013	2.74	U
Cyclohexanone	108-94-1	98.14	28.528	0.0058	1.32	U	0.0058	1.32	U	0.0581	13.27		0.0567	12.95	J	0.0058	1.32	U
Styrene	100-42-5	104.15	29.034	0.0022	0.47	U	0.0022	0.47	U	0.0392	8.43		0.0373	8.03		0.0022	0.47	U
1,1,2,2-Tetrachloroethane	79-34-5	167.85	29.26	0.0042	0.56	U	0.0042	0.56	U	0.0952	12.7		0.0931	12.43		0.0042	0.56	U
o-Xylene	95-47-6	106.17	29.336	0.0028	0.59	U	0.0028	0.59	U	0.0453	9.56		0.0448	9.46		0.0028	0.59	U
Nonane	111-84-2	128.26	29.777	0.0016	0.28	U	0.0016	0.28	U	0.0159	2.77	J	0.0157	2.74	J	0.0016	0.28	U
1-Ethyl-2-Methyl-Benzene	611-14-3	120.19	32.738	0.0018	0.34	U	0.0018	0.34	U	0.0392	7.31		0.0397	7.4		0.0018	0.34	U
1,3,5-Trimethylbenzene	108-67-8	120.19	32.953	0.0018	0.34	U	0.0018	0.34	U	0.0519	9.68		0.0528	9.84		0.0018	0.34	U
1,2,4-Trimethylbenzene	95-63-6	120.19	34.224	0.0026	0.48	U	0.0026	0.48	U	0.0515	9.61		0.0523	9.74		0.0026	0.48	U
Decane	124-18-5	142.28	34.46	0.003	0.47	U	0.003	0.47	U	0.1444	22.74		0.1425	22.44		0.003	0.47	U
1,3-Dichlorobenzene	541-73-1	147	34.73	0.0018	0.27	U	0.0018	0.27	U	0.0524	7.98	B	0.054	8.23	B	0.0018	0.27	U
1,4-Dichlorobenzene	106-46-7	147	34.945	0.0018	0.27	U	0.0018	0.27	U	0.0515	7.84	B	0.0524	7.99	B	0.0018	0.27	U
1,2-Dichlorobenzene	95-50-1	147	36.065	0.0018	0.27	U	0.0018	0.27	U	0.0529	8.06		0.0539	8.22		0.0018	0.27	U
Undecane	1120-21-4	156.31	38.789	0.0282	4.04	U	0.0282	4.04	U	0.1128	16.16	J	0.1125	16.12	J	0.0282	4.04	U
1,2,4-Trichlorobenzene	120-82-1	181.45	42.298	0.0028	0.35	U	0.0028	0.35	U	0.0399	4.93	B	0.0399	4.92	B	0.0028	0.35	U
Dodecane	112-40-3	170.34	42.804	0.0098	1.29	U	0.0098	1.29	U	0.0579	7.61	J	0.0579	7.61	J	0.0114	1.5	J
Hexachloro-1,3-butadiene	87-68-3	260.76	44.129	0.0046	0.4	U	0.0046	0.4	U	0.0953	8.19	B	0.0987	8.48	B	0.0046	0.4	U
Tridecane	629-50-5	184.36	46.54	0.0547	6.64	J,S,B	0.0302	3.66	J,S,B	0.2281	27.72	S	0.2133	25.92	S	0.1383	16.8	S
Tetradecane	629-59-4	198.34	50.061	0.0042	0.47	U,S	0.0042	0.47	U,S	0.0925	10.45	S	0.0706	7.98	S	0.0042	0.47	U,S

B Compound found in associated laboratory blank.

J Target compound detected above the IDL but below the EQL.

S Suspect data due to possible sampling error.

U Target compound not detected at or above the IDL.

Y Initial calibration and CCV were performed; however, the analyte was not part of the current operating procedure.

Table G.7 SUMMA™ Canister Analysis Results for All Target Analytes from Blank Samples Associated with the Sampling of Tank U-112 on 12/6/96

Target Analytes	CAS	MW	Ret Time	S6118-a24.054 ISVS Amb. Air			S6118-a25.074 ISVS thru Air			S6119-a25.135 ISVS thru Air		
				(mg/m³)	(ppbv)	Flag	(mg/m³)	(ppbv)	Flag	(mg/m³)	(ppbv)	Flag
Dichlorodifluoromethane	75-71-8	120.91	4.604	0.0033	0.6	J	0.0034	0.63	J	0.0033	0.61	J
Chloromethane	74-87-3	50.49	4.97	0.0024	1.06	U	0.0024	1.06	U	0.0024	1.06	U
1,2-dichloro-1,1,2,2-tetrafluoroeth	76-14-2	170.92	5.185	0.013	1.7	U	0.013	1.7	U	0.013	1.7	U
Methanol	67-56-1	32.04	5.239	<0.110	<77	Y	<0.110	<77	Y	<0.110	<77	Y
Vinyl Chloride	75-01-4	62.5	5.476	0.0016	0.57	U	0.0016	0.57	U	0.0016	0.57	U
Butane	106-97-8	58.12	5.896	0.0024	0.92	U	0.0024	0.92	U	0.0024	0.92	U
Bromomethane	74-83-9	94.94	6.37	0.0052	1.23	U	0.0052	1.23	U	0.0052	1.23	U
Chloroethane	75-00-3	64.51	6.725	0.0054	1.88	U	0.0054	1.88	U	0.0054	1.88	U
Ethanol	64-17-5	46.01	6.833	<0.110	<53	Y	<0.110	<53	Y	<0.110	<53	Y
Acetonitrile	75-05-8	41.05	7.339	0.004	2.18	U	0.004	2.18	U	0.004	2.18	U
Acetone	67-64-1	58.08	7.855	0.0125	4.83	J,B	0.0249	9.59	J,B	0.034	13.11	J,B
Trichlorofluoromethane	75-69-4	137.37	8.275	0.0048	0.78	U	0.0048	0.78	U	0.0048	0.78	U
Pentane	109-66-0	72.15	8.954	0.0038	1.18	U	0.0038	1.18	U	0.0038	1.18	U
1,1-Dichloroethene	75-35-4	96.94	9.503	0.0038	0.88	U	0.0038	0.88	U	0.0038	0.88	U
Methylene Chloride	75-09-2	84.93	9.686	0.0055	1.46	J,B	0.0055	1.45	J,B	0.0065	1.7	J,B
1,1,2-trichloro-1,1,2,2-trifluoroethane	76-13-1	187.38	10.181	0.004	0.48	U	0.0481	5.75		0.0427	5.1	
Propanenitrile	107-12-0	55.08	10.902	0.0038	1.55	U	0.0038	1.55	U	0.0038	1.55	U
Propanol	71-23-8	60.1	10.859	0.0028	1.04	U	0.0028	1.04	U	0.011	4.08	J
1,1-Dichloroethane	75-34-3	98.96	11.828	0.002	0.45	U	0.002	0.45	U	0.002	0.45	U
2-Butanone	78-93-3	72.11	12.453	0.0069	2.13	J	0.0074	2.29	J	0.0117	3.65	J
cis-1,2-Dichloroethene	156-59-2	96.94	13.346	0.0034	0.79	U	0.0034	0.79	U	0.0034	0.79	U
Hexane	110-54-3	86.18	13.734	0.0032	0.83	U	0.0032	0.83	U	0.0032	0.83	U
Chloroform	67-66-3	119.38	13.885	0.0026	0.49	U	0.0026	0.49	U	0.0026	0.49	U
Tetrahydrofuran	109-99-9	72.11	14.638	0.0016	0.5	U	0.0016	0.5	U	0.0016	0.5	U
1,2-Dichloroethane	107-06-2	98.96	15.306	0.0022	0.5	U	0.0022	0.5	U	0.0022	0.5	U
1,1,1-Trichloroethane	71-55-6	133.4	15.833	0.0032	0.54	U	0.0032	0.54	U	0.0032	0.54	U
Butanenitrile	109-74-0	69.11	15.79	0.0034	1.1	U	0.0034	1.1	U	0.0034	1.1	U
1-Butanol	71-36-3	74.12	16.264	0.0032	0.97	U	0.0032	0.97	U	0.0225	6.81	J
Benzene	71-43-2	78.11	16.727	0.0016	0.46	U	0.0016	0.46	U	0.0016	0.46	U
Carbon Tetrachloride	56-23-5	153.82	17.018	0.0034	0.5	U	0.0034	0.5	U	0.0034	0.5	U
Cyclohexane	110-82-7	84.16	17.287	0.0036	0.96	U	0.0036	0.96	U	0.0036	0.96	U
1,2-Dichloropropane	78-87-5	112.99	18.299	0.003	0.59	U	0.003	0.59	U	0.003	0.59	U
Trichloroethene	79-01-6	131.39	18.751	0.0024	0.41	U	0.0024	0.41	U	0.0024	0.41	U
Heptane	142-82-5	100.2	19.257	0.0018	0.4	U	0.0018	0.4	U	0.0018	0.4	U
cis-1,3-Dichloropropene	10061-01-5	110.97	20.441	0.0024	0.48	U	0.0024	0.48	U	0.0024	0.48	U
4-Methyl-2-Pentanone	108-10-1	100.16	20.441	0.0034	0.76	U	0.0034	0.76	U	0.0034	0.76	U

Table G.7 (Cont'd) SUMMA™ Canister Analysis Results for All Target Analytes from Blank Samples Associated with the Sampling of Tank U-112 on 12/6/96

Target Analytes	CAS	MW	Ret Time	S6118-a24.054 ISVS Amb. Air			S6118-a25.074 ISVS thru Air			S6119-a25.135 ISVS thru Air		
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag
Pyridine	110-86-1	79.1	20.592	0.0186	5.27	U	0.0186	5.27	U	0.0186	5.27	U
trans-1,3-Dichloropropene	10061-02-6	110.97	21.507	0.0018	0.36	U	0.0018	0.36	U	0.0018	0.36	U
Pentanenitrile	110-59-8	83.13	21.529	0.0042	1.13	U	0.0042	1.13	U	0.0042	1.13	U
1,1,2-Trichloroethane	79-00-5	133.4	21.949	0.0028	0.47	U	0.0028	0.47	U	0.0028	0.47	U
Toluene	108-88-3	92.14	22.605	0.002	0.49	U	0.002	0.49	U	0.002	0.49	U
1,2-Dibromoethane	106-93-4	187.86	24.145	0.0052	0.62	U	0.0052	0.62	U	0.0052	0.62	U
Octane	111-65-9	114.23	24.683	0.0024	0.47	U	0.0024	0.47	U	0.0024	0.47	U
Bromoform	75-25-2	175.0	28.3	<0.059	<5.21	Y	<0.059	<5.21	Y	<0.059	<5.21	Y
Tetrachloroethylene	127-18-4	165.83	25.179	0.0042	0.57	U	0.0042	0.57	U	0.0042	0.57	U
Chlorobenzene	108-90-7	112.56	26.783	0.0026	0.52	U	0.0026	0.52	U	0.0026	0.52	U
Hexanenitrile	628-73-9	97.13	27.041	0.0052	1.2	U	0.0052	1.2	U	0.0052	1.2	U
Ethylbenzene	100-41-4	106.17	27.666	0.0028	0.59	U	0.0028	0.59	U	0.0028	0.59	U
p/m-Xylene	106-42-3	106.17	28.107	0.013	2.74	U	0.013	2.74	U	0.013	2.74	U
Cyclohexanone	108-94-1	98.14	28.516	0.0058	1.32	U	0.0116	2.64	J	0.0058	1.32	U
Styrene	100-42-5	104.15	29.022	0.0022	0.47	U	0.0022	0.47	U	0.0022	0.47	U
1,1,2,2-Tetrachloroethane	79-34-5	167.85	29.248	0.0042	0.56	U	0.0042	0.56	U	0.0042	0.56	U
o-Xylene	95-47-6	106.17	29.313	0.0028	0.59	U	0.0028	0.59	U	0.0028	0.59	U
Nonane	111-84-2	128.26	29.765	0.0016	0.28	U	0.0016	0.28	U	0.0016	0.28	U
1-Ethyl-2-Methyl-Benzene	611-14-3	120.19	32.726	0.0018	0.34	U	0.0018	0.34	U	0.0018	0.34	U
1,3,5-Trimethylbenzene	108-67-8	120.19	32.941	0.0018	0.34	U	0.0018	0.34	U	0.0018	0.34	U
1,2,4-Trimethylbenzene	95-63-6	120.19	34.212	0.0026	0.48	U	0.0026	0.48	U	0.0026	0.48	U
Decane	124-18-5	142.28	34.449	0.003	0.47	U	0.003	0.47	U	0.003	0.47	U
1,3-Dichlorobenzene	541-73-1	147	34.718	0.0018	0.27	U	0.0018	0.27	U	0.0018	0.27	U
1,4-Dichlorobenzene	106-46-7	147	34.933	0.0018	0.27	U	0.0018	0.27	U	0.0018	0.27	U
1,2-Dichlorobenzene	95-50-1	147	36.053	0.0018	0.27	U	0.0018	0.27	U	0.0018	0.27	U
Undecane	1120-21-4	156.31	38.777	0.0282	4.04	U	0.0282	4.04	U	0.0282	4.04	U
1,2,4-Trichlorobenzene	120-82-1	181.45	42.287	0.0122	1.5	J,B	0.0028	0.35	U	0.0028	0.35	U
Dodecane	112-40-3	170.34	42.793	0.0098	1.29	U	0.0098	1.29	U	0.0371	4.88	J
Hexachloro-1,3-butadiene	87-68-3	260.76	44.117	0.0118	1.02	J,B	0.0046	0.4	U	0.0116	1	J,B
Tridecane	629-50-5	184.36	46.539	0.006	0.73	U	0.006	0.73	U	0.4698	57.08	
Tetradecane	629-59-4	198.34	50.06	0.0042	0.47	U	0.0042	0.47	U	0.7551	85.27	

B Compound found in associated laboratory blank.

J Target compound detected above the IDL but below the EQL.

U Target compound not detected at or above the IDL.

Y Initial calibration and CCV were performed; however, the analyte was not part of the current operating procedure.

Appendix H

Tank Vapor Characterization:

Target Analytes Measured

for Triple Sorbent Traps

Table H.1 Triple Sorbent Trap Analysis Results for All Target Analytes from Tank U-112 Riser 3 Top Level Sampled on 12/6/96

Target Analytes	CAS	MW	Ret Time	S6118-t45.1279 ISVS			S6118-t42.1268 ISVS			S6118-t43.1271 ISVS			S6118-t44.1272 ISVS		
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag
Dichlorodifluoromethane	75-71-8	120.91	7.898	0.0046	0.85	U	0.0046	0.85	U	0.0046	0.85	U	0.0046	0.85	U
Chloromethane	74-87-3	50.49	8.908	0.0034	1.5	U	0.0034	1.5	U	0.0034	1.5	U	0.0034	1.5	U
1,2-dichloro-1,1,2,2-tetrafluoroethane	76-14-2	170.92	9.578	0.0034	0.44	U	0.0034	0.44	U	0.0034	0.44	U	0.0034	0.44	U
Methanol	67-56-1	32.04	10.003	1.5339	1072.4	Y	1.1668	815.75	Y	1.7286	1208.5	Y	0.6649	464.86	Y
Vinyl Chloride	75-01-4	62.5	9.982	0.0032	1.15	U	0.0032	1.15	U	0.0032	1.15	U	0.0032	1.15	U
Butane	106-97-8	58.14	10.8	0.1109	42.75		0.1206	46.46		0.1609	61.97		0.1069	41.18	
Chloroethane	75-00-3	64.51	12.107	0.0044	1.53	U	0.0044	1.53	U	0.0044	1.53	U	0.0044	1.53	U
Ethanol	64-17-5	46.07	12.543	0.4308	209.47	Y	0.4299	209.04	Y	0.8087	393.22	Y	<0.275	<133	Y
Acetonitrile	75-05-8	41.05	13.043	0.0407	22.19		0.0385	21		0.0422	23.05		0.0219	11.95	J
Acetone	67-64-1	58.08	13.691	0.0853	32.91		0.1033	39.83		0.0864	33.34		0.0738	28.45	J
Trichlorofluoromethane	75-69-4	137.37	14.169	0.2029	33.08		0.276	45		0.2684	43.76		0.1781	29.04	
Pentane	109-66-0	72	14.956	0.0115	3.58	J	0.0134	4.18	J	0.0126	3.92	J	0.0109	3.39	J
1,1-Dichloroethene	75-35-4	96.94	15.551	0.0022	0.51	U	0.0022	0.51	U	0.0022	0.51	U	0.0022	0.51	U
Methylene Chloride	75-09-2	84.93	15.796	0.0318	8.4	J,B	0.0671	17.71	J,B	0.1082	28.53	J,B	0.0237	6.26	J,B
1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	187.38	16.327	0.0225	2.69	J	0.0213	2.55	J	0.022	2.63	J	0.0144	1.72	J
Propanenitrile	107-12-0	55.08	17.061	0.002	0.83	U	0.002	0.83	U	0.002	0.83	U	0.002	0.83	U
Propanol	71-23-8	60.1	17.092	0.0797	29.72		0.0847	31.56		0.0979	36.5		0.0474	17.66	J
1,1-Dichloroethane	75-34-3	98.96	18.006	0.0015	0.34	U	0.0015	0.34	U	0.0015	0.34	U	0.0015	0.34	U
2-Butanone	78-93-3	72.11	18.623	0.0239	7.42		0.0269	8.35		0.049	15.23		0.0181	5.63	J
cis-1,2-Dichloroethene	156-59-2	96.94	19.526	0.0027	0.62	U	0.0027	0.62	U	0.0027	0.62	U	0.0027	0.62	U
Hexane	110-54-3	86.18	19.888	0.0484	12.57	S	0.0511	13.27	S	0.0531	13.79	S	0.0611	15.89	S
Chloroform	67-66-3	119.38	20.058	0.0031	0.57	U	0.0031	0.57	U	0.0031	0.57	U	0.0031	0.57	U
Tetrahydrofuran	109-99-9	72.11	20.77	0.0406	12.6		0.0377	11.71		0.0435	13.52		0.0392	12.18	
1,2-Dichloroethane	107-06-2	98.96	21.429	0.0012	0.27	U	0.0012	0.27	U	0.0012	0.27	U	0.0012	0.27	U
Butanenitrile	109-74-0	69.11	21.886	0.0015	0.49	U	0.0015	0.49	U	0.0015	0.49	U	0.0015	0.49	U
1,1,1-Trichloroethane	71-55-6	133.4	21.939	0.0119	2	J	0.0156	2.62	J	0.0137	2.29	J	0.0081	1.35	J
1-Butanol	71-36-3	74	22.322	0.3422	103.58		0.3013	91.19		0.4079	123.48		0.2815	85.2	
Benzene	71-43-2	78.11	22.8	0.0113	3.24	J	0.012	3.44	J	0.0121	3.48	J	0.0109	3.11	J
Carbon Tetrachloride	56-23-5	153.82	23.087	0.0056	0.81	J	0.0057	0.83	J	0.0076	1.1	J	0.0051	0.74	J
Cyclohexane	110-82-7	84.16	23.353	0.0251	6.68	J	0.027	7.18	J	0.0275	7.32	J	0.0638	16.99	
1,2-Dichloropropane	78-87-5	112.99	24.32	0.002	0.4	U	0.002	0.4	U	0.002	0.4	U	0.002	0.4	U
Trichloroethene	79-01-6	131.39	24.745	0.0039	0.66	U	0.0039	0.66	U	0.0039	0.66	U	0.0039	0.66	U
Heptane	142-82-5	100.2	25.192	0.0269	6.01		0.0316	7.05		0.0311	6.95		0.0397	8.87	
4-Methyl-2-Pentanone	108-10-1	100.16	26.35	0.016	3.58	J	0.0175	3.91	J	0.0236	5.28		0.0133	2.97	J
cis-1,3-Dichloropropene	10061-01-5	110.97	26.382	0.0013	0.27	U	0.0013	0.27	U	0.0013	0.27	U	0.0013	0.27	U
Pyridine	110-86-1	79.1	26.541	0.023	6.51	U	0.023	6.51	U	0.023	6.51	U	0.023	6.51	U
trans-1,3-Dichloropropene	10061-02-6	110.97	27.402	0.0029	0.58	U	0.0029	0.58	U	0.0029	0.58	U	0.0029	0.58	U
Pentanenitrile	110-59-8	83.15	27.413	0.0009	0.23	U	0.0009	0.23	U	0.0009	0.23	U	0.0009	0.23	U
1,1,2-Trichloroethane	79-00-5	133.4	27.859	0.0087	1.47	J	0.0083	1.39	J	0.0082	1.38	J	0.0089	1.49	J

Table II.1 (Cont'd) Triple Sorbent Trap Analysis Results for All Target Analytes from Tank U-112 Riser 3 Top Level Sampled on 12/6/96

Target Analytes	CAS	MW	Ret Time	S6118-t45.1279 ISVS			S6118-t42.1268 ISVS			S6118-t43.1271 ISVS			S6118-t44.1272 ISVS		
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag
Toluene	108-88-3	92.14	28.497	0.2698	65.59	S	1.3888	337.62	S	0.3517	85.51	S	0.2942	71.53	S
1,2-Dibromoethane	106-93-4	187.86	30.017	0.0025	0.3	U	0.0025	0.3	U	0.0025	0.3	U	0.0025	0.3	U
Octane	111-65-9	114	30.453	0.0029	0.56	U	0.0029	0.56	U	0.0029	0.56	U	0.0029	0.56	U
Tetrachloroethylene	127-18-4	165.83	31.016	0.0051	0.68	J	0.0027	0.36	U	0.0027	0.36	U	0.0074	1	J
Chlorobenzene	108-90-7	112.56	32.6	0.0012	0.23	U	0.0012	0.23	U	0.0012	0.23	U	0.0012	0.23	U
Hexanenitrile	628-73-9	97	32.802	0.0053	1.23	J	0.0056	1.3	J	0.0053	1.23	J	0.5051	116.64	
Ethylbenzene	100-41-4	106.17	33.44	0.0356	7.51	S,B	0.0348	7.34	S,B	0.0347	7.33	S	0.0279	5.89	S
p/m-Xylene	106-42-3	106.17	33.875	0.1194	25.19	S	0.1129	23.82	S	0.1146	24.17	S	0.1042	21.99	S
Cyclohexanone	108-94-1	98.14	34.311	0.0161	3.68	J	0.0159	3.62	J	0.0184	4.21	J	0.0134	3.06	U
Styrene	100-42-5	104.15	34.779	0.0227	4.88	S	0.0231	4.96	S	0.0249	5.35	S	0.0192	4.14	S
1,1,2,2-Tetrachloroethane	79-34-5	167.85	35.013	0.0118	1.57	J	0.0123	1.65	J	0.0111	1.48	J	0.0066	0.88	J
o-Xylene	95-47-6	106.17	35.087	0.0629	13.26	S	0.0603	12.71	S	0.061	12.87	S	0.0546	11.53	S
Nonane	111-84-2	128	35.448	0.0098	1.72	J	0.0101	1.77	J	0.0102	1.79	J	0.0089	1.56	J
1-Ethyl-2-methyl benzene	611-14-3	120.19	38.446	0.0038	0.71	J	0.0044	0.82	J	0.0043	0.81	J	0.0047	0.87	J
1,3,5-Trimethylbenzene	108-67-8	120.19	38.658	0.0048	0.89	J	0.0052	0.97	J	0.0054	1	J	0.0052	0.98	J
1,2,4-Trimethylbenzene	95-63-6	120.19	39.934	0.0127	2.37	J	0.0138	2.56	J	0.0143	2.67	J	0.0031	0.59	J
Decane	124-18-5	142.28	40.114	0.0373	5.88		0.0385	6.07		0.0393	6.19		0.0435	6.86	
1,3-Dichlorobenzene	541-73-1	147	40.486	0.0034	0.52	U	0.0034	0.52	U	0.0034	0.52	U	0.0034	0.52	U
1,4-Dichlorobenzene	106-46-7	147	40.688	0.0099	1.51	J	0.0094	1.43	J	0.0113	1.73	J	0.0106	1.61	J
1,2-Dichlorobenzene	95-50-1	147	41.826	0.0051	0.77	U	0.0051	0.77	U	0.0051	0.77	U	0.0051	0.77	U
Undecane	1120-21-4	156	44.44	0.0446	6.4	J	0.0434	6.24	J	0.0476	6.83		0.0505	7.25	
1,2,4-Trichlorobenzene	120-82-1	181.45	48.065	0.0167	2.06	U	0.0167	2.06	U	0.0167	2.06	U	0.0167	2.06	U
Dodecane	112-40-3	170	48.469	0.019	2.5	J	0.0274	3.61	U	0.0274	3.61	U	0.0274	3.61	U
Hexachloro-1,3-butadiene	87-68-3	260.76	49.882	0.022	1.89	U	0.022	1.89	U	0.022	1.89	U	0.022	1.89	U
Tridecane	629-50-5	184	52.221	0.0489	5.95	J	0.0569	6.93	J	0.0571	6.95	J	0.0528	6.43	J
Tetradecane	629-59-4	198	55.739	0.0334	3.78	J	0.039	4.42	J	0.0344	3.89	J	0.0253	2.86	J,B
Tributyl Phosphate	126-73-8	266	63.1	<0.0106	<0.89	Z	<0.0106	<0.89	Z	<0.0106	<0.89	Z	<0.0106	<0.89	Z

B Compound found in associated laboratory blank.

J Target compound detected above the IDL but below the EQL.

S Data should be considered suspect due to possible sampling error.

U Target compound not detected at or above the IDL.

Y Initial calibration and CCV were performed; however, the analyte was not part of the current operating procedure.

Z Retention time and mass spectral characteristics were determined and detectability possible at 0.8 ppbv; however, this compound is not currently part of the analytical method. See Section E.4 for more information.

Table H.2 Triple Sorbent Trap Analysis Results for All Target Analytes from Tank U-112 Riser 3 Middle Level Sampled on 12/6/96

Target Analytes	CAS	MW	Ret Time	S6118-m29.1241 ISVS			S6118-m29.1241 ISVS REP			S6118-m48.1286 ISVS			S6118-m48.1286 ISVS REP			S6118-m28.1238 ISVS			S6118-m49.1289 ISVS		
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag
Dichlorodifluoromethane	75-71-8	120.9	7.858	0.0045	0.84	U	0.0045	0.84	U	0.0046	0.85	U	0.0046	0.85	U	0.0045	0.83	U	0.0045	0.84	U
Chloromethane	74-87-3	50.49	8.835	0.0034	1.5	U	0.0034	1.5	U	0.0034	1.5	U	0.0034	1.5	U	0.0033	1.48	U	0.0034	1.5	U
1,2-dichloro-1,1,2,2-tetrafluoroethane	76-14-2	170.9	9.526	0.0034	0.44	U	0.0034	0.44	U	0.0034	0.44	U	0.0034	0.44	U	0.0033	0.44	U	0.0034	0.44	U
Methanol	67-56-1	32.04	9.973	1.577	1102.5	Y	1.3543	946.83	Y	1.4229	994.77	Y	1.2923	903.45	Y	1.6749	1170.95	Y	0.8286	579.29	Y
Vinyl Chloride	75-01-4	62.5	9.941	0.0032	1.15	U	0.0032	1.15	U	0.0032	1.15	U	0.0032	1.15	U	0.0032	1.14	U	0.0032	1.15	U
Butane	106-97-8	58.14	10.77	0.1102	42.46		0.128	49.33		0.1116	43		0.1448	55.77		0.102	39.29		0.091	35.04	
Chloroethane	75-00-3	64.51	12.067	0.0044	1.52	U	0.0044	1.52	U	0.0044	1.53	U	0.0044	1.53	U	0.0043	1.51	U	0.0044	1.52	U
Ethanol	64-17-5	46.07	12.513	0.6771	329.22	Y	0.5028	244.46	Y	0.3826	186.04	Y	0.4008	194.9	Y	0.4632	225.2	Y	<0.275	<133	Y
Acetonitrile	75-05-8	41.05	13.013	0.0261	14.26	J	0.0307	16.76	J	0.0483	26.35		0.0506	27.62		0.0678	37.02		0.0224	12.22	J
Acetone	67-64-1	58.08	13.65	0.0803	30.96		0.0804	31		0.0642	24.76	J	0.0516	19.91	J	0.074	28.54	J	0.057	21.99	J
Trichlorofluoromethane	75-69-4	137.4	14.129	0.2122	34.6		0.2086	34.02		0.1911	31.16		0.1926	31.4		0.1705	27.8		0.1793	29.24	
Pentane	109-66-0	72	14.915	0.0101	3.15	J	0.0123	3.84	J	0.0113	3.52	J	0.0104	3.23	J	0.0111	3.45	J	0.0106	3.3	J
1,1-Dichloroethene	75-35-4	96.94	15.521	0.0022	0.51	U	0.0022	0.51	U	0.0022	0.51	U	0.0022	0.51	U	0.0022	0.5	U	0.0022	0.51	U
Methylene Chloride	75-09-2	84.93	15.755	0.0662	17.46	J,B	0.056	14.78	J,B	0.0341	8.99	J,B	0.0324	8.54	J,B	0.0372	9.81	J,B	0.0204	5.39	J,B
1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	187.4	16.286	0.0333	3.98	B	0.0391	4.67	B	0.0223	2.67	J,B	0.0204	2.44	J,B	0.0215	2.57	J,B	0.0123	1.47	J
Propanenitrile	107-12-0	55.08	17.02	0.002	0.83	U	0.002	0.83	U	0.002	0.83	U	0.002	0.83	U	0.002	0.82	U	0.002	0.83	U
Propanol	71-23-8	60.1	17.052	0.0842	31.39		0.0724	26.99		0.0767	28.61		0.0774	28.86		0.0853	31.78		0.0652	24.31	
1,1-Dichloroethane	75-34-3	98.96	17.966	0.0015	0.34	U	0.0015	0.34	U	0.0015	0.34	U	0.0015	0.34	U	0.0015	0.34	U	0.0015	0.34	U
2-Butanone	78-93-3	72.11	18.582	0.0523	16.25		0.0476	14.78		0.0166	5.15	J	0.0087	2.7	J	0.021	6.53	J	0.0254	7.9	
cis-1,2-Dichloroethene	156-59-2	96.94	19.486	0.0027	0.62	U	0.0027	0.62	U	0.0027	0.62	U	0.0027	0.62	U	0.0026	0.61	U	0.0027	0.62	U
Hexane	110-54-3	86.18	19.847	0.0464	12.05	S	0.0458	11.91	S	0.0447	11.61	S	0.0436	11.32	S	0.0496	12.89	S	0.0917	23.84	S
Chloroform	67-66-3	119.4	20.017	0.003	0.57	U	0.003	0.57	U	0.0031	0.57	U	0.0031	0.57	U	0.003	0.57	U	0.003	0.57	U
Tetrahydrofuran	109-99-9	72.11	20.729	0.0361	11.2	J	0.0324	10.08	J	0.0399	12.39		0.0366	11.36	J	0.0357	11.1	J	0.0406	12.61	
1,2-Dichloroethane	107-06-2	98.96	21.388	0.0012	0.27	U	0.0012	0.27	U	0.0012	0.27	U	0.0012	0.27	U	0.0012	0.26	U	0.0012	0.27	U
Butanenitrile	109-74-0	69.11	21.834	0.0015	0.49	U	0.0015	0.49	U	0.0015	0.49	U	0.0015	0.49	U	0.0015	0.48	U	0.0015	0.49	U
1,1,1-Trichloroethane	71-55-6	133.4	21.888	0.0112	1.88	J	0.0097	1.63	J	0.0115	1.94	J	0.0105	1.76	J	0.0109	1.83	J	0.0082	1.39	J
1-Butanol	71-36-3	74	22.281	0.2696	81.62		0.4052	122.65		0.3376	102.2		0.4308	130.4		0.329	99.59		0.3136	94.94	
Benzene	71-43-2	78.11	22.759	0.0106	3.04	J	0.012	3.44	J	0.0105	3	J	0.0111	3.19	J	0.0108	3.09	J	0.0119	3.42	J
Carbon Tetrachloride	56-23-5	153.8	23.046	0.0053	0.77	J	0.0038	0.56	J	0.0054	0.78	J	0.0023	0.33	J	0.0051	0.74	J	0.0057	0.84	J
Cyclohexane	110-82-7	84.16	23.312	0.0415	11.04	J	0.0379	10.1	J	0.0275	7.33	J	0.0248	6.6	J	0.0245	6.52	J	0.0141	3.75	J
1,2-Dichloropropane	78-87-5	113	24.279	0.002	0.4	U	0.002	0.4	U	0.002	0.4	U	0.002	0.4	U	0.002	0.4	U	0.002	0.4	U
Trichloroethene	79-01-6	131.4	24.704	0.0039	0.66	U	0.0039	0.66	U	0.0039	0.66	U	0.0039	0.66	U	0.0038	0.65	U	0.0039	0.66	U
Heptane	142-82-5	100.2	25.151	0.0367	8.21		0.0351	7.84		0.0285	6.38		0.027	6.04		0.0273	6.11		0.0971	21.7	
4-Methyl-2-Pentanone	108-10-1	100.2	26.309	0.0264	5.91		0.0231	5.17		0.0144	3.23	J	0.0175	3.92	J	0.0177	3.97	J	0.0155	3.46	J
cis-1,3-Dichloropropene	10061-01-5	111	26.331	0.0013	0.27	U	0.0013	0.27	U	0.0013	0.27	U	0.0013	0.27	U	0.0013	0.27	U	0.0013	0.27	U
Pyridine	110-86-1	79.1	26.501	0.0228	6.46	U	0.0228	6.46	U	0.023	6.51	U	0.023	6.51	U	0.0226	6.4	U	0.0228	6.46	U
trans-1,3-Dichloropropene	10061-02-6	111	27.361	0.0028	0.57	U	0.0028	0.57	U	0.0029	0.58	U	0.0029	0.58	U	0.0028	0.57	U	0.0028	0.57	U
Pentanenitrile	110-59-8	83.15	27.372	0.0009	0.23	U	0.0009	0.23	U	0.0009	0.23	U	0.0009	0.23	U	0.0008	0.23	U	0.0009	0.23	U
1,1,2-Trichloroethane	79-00-5	133.4	27.808	0.0087	1.47	J	0.0064	1.07	J	0.0087	1.46	J	0.0083	1.39	J	0.008	1.34	J	0.0087	1.46	J
Toluene	108-88-3	92.14	28.446	0.2635	64.05	S	0.2594	63.07	S	0.2463	59.87	S	0.2429	59.06	S	0.2935	71.36	S	0.432	105.02	S
1,2-Dibromoethane	106-93-4	187.9	29.976	0.0025	0.3	U	0.0025	0.3	U	0.0025	0.3	U	0.0025	0.3	U	0.0025	0.3	U	0.0025	0.3	U
Octane	111-65-9	114	30.412	0.0028	0.56	U	0.0028	0.56	U	0.0029	0.56	U	0.0029	0.56	U	0.0028	0.55	U	0.0028	0.56	U
Tetrachloroethylene	127-18-4	165.8	30.975	0.004	0.55	J	0.0068	0.92	J	0.0027	0.36	U	0.0027	0.36	U	0.0026	0.36	U	0.0089	1.21	J
Chlorobenzene	108-90-7	112.6	32.559	0.0012	0.23	U	0.0012	0.23	U	0.0012	0.23	U	0.0012	0.23	U	0.0012	0.23	U	0.0012	0.23	U
Hexanenitrile	628-73-9	97	32.75	0.0081	1.87	J	0.0042	0.96	J	0.0053	1.23	J	0.0052	1.2	J	0.0038	0.88	J	0.5004	115.56	
Ethylbenzene	100-41-4	106.2	33.399	0.0305	6.43	S	0.0294	6.2	S	0.0358	7.55	S	0.0347	7.32	S	0.0297	6.28	S	0.0271	5.72	S
p/m-Xylene	106-42-3	106.2	33.824	0.1007	21.24	S	0.1003	21.17	S	0.1192	25.15	S	0.1165	24.57	S	0.1002	21.13	S	0.1009	21.29	S
Cyclohexanone	108-94-1	98.14	34.27	0.0134	3.06	U	0.0522	11.92	J	0.0235	5.37	J	0.0204	4.66	J	0.0176	4.02	J	0.0134	3.06	U
Styrene	100-42-5	104.2	34.738	0.0215	4.63	S	0.0212	4.56	S	0.0229	4.92	S	0.0219	4.72	S	0.0194	4.17	S	0.0181	3.9	S
1,1,2,2-Tetrachloroethane	79-34-5	167.9	34.972	0.0062	0.83	U	0.0062	0.83	U	0.0062	0.83	U	0.0062	0.83	U	0.0097	1.29	J	0.0065	0.86	J

Table H.2 (Cont'd) Triple Sorbent Trap Analysis Results for All Target Analytes from Tank U-112 Riser 3 Middle Level Sampled on 12/6/96

Target Analytes	CAS	MW	Ret Time	S6118-m29.1241 ISVS			S6118-m29.1241 ISVS REP			S6118-m48.1286 ISVS			S6118-m48.1286 ISVS REP			S6118-m28.1238 ISVS			S6118-m49.1289 ISVS		
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag
o-Xylene	95-47-6	106.2	35.046	0.0539	11.37	S	0.0529	11.17	S	0.0634	13.38	S	0.0625	13.2	S	0.0518	10.93	S	0.0518	10.93	S
Nonane	111-84-2	128	35.408	0.0084	1.47	J	0.0085	1.48	J	0.0099	1.73	J	0.0098	1.72	J	0.0081	1.41	J	0.0086	1.5	J
1-Ethyl-2-methyl benzene	611-14-3	120.2	38.405	0.0038	0.71	J	0.0073	1.35	J	0.0042	0.78	J	0.0088	1.64	J	0.0035	0.65	J	0.004	0.75	J
1,3,5-Trimethylbenzene	108-67-8	120.2	38.617	0.0046	0.86	J	0.0046	0.85	J	0.0051	0.95	J	0.005	0.93	J	0.0043	0.8	J	0.0051	0.96	J
1,2,4-Trimethylbenzene	95-63-6	120.2	39.893	0.012	2.23	J	0.0117	2.19	J	0.014	2.61	J	0.0133	2.48	J	0.0114	2.13	J	0.0123	2.3	J
Decane	124-18-5	142.3	40.074	0.0348	5.48		0.0373	5.87		0.0425	6.69		0.0465	7.33		0.0343	5.4		0.0414	6.51	
1,3-Dichlorobenzene	541-73-1	147	40.435	0.0034	0.51	U	0.0034	0.51	U	0.0034	0.52	U	0.0034	0.52	U	0.0033	0.51	U	0.0034	0.51	U
1,4-Dichlorobenzene	106-46-7	147	40.637	0.0097	1.48	J	0.0092	1.4	J	0.0109	1.66	J	0.0106	1.61	J	0.0086	1.31	J	0.01	1.52	J
1,2-Dichlorobenzene	95-50-1	147	41.774	0.005	0.77	U	0.005	0.77	U	0.0051	0.77	U	0.0051	0.77	U	0.005	0.76	U	0.005	0.77	U
Undecane	1120-21-4	156	44.4	0.042	6.04	J	0.0638	9.16		0.0537	7.72		0.0488	7.01		0.0432	6.2	J	0.0453	6.51	J
1,2,4-Trichlorobenzene	120-82-1	181.5	48.024	0.0166	2.05	U	0.0166	2.05	U	0.0167	2.06	U	0.0167	2.06	U	0.0164	2.02	U	0.0166	2.05	U
Dodecane	112-40-3	170	48.428	0.0273	3.6	U	0.0273	3.6	U	0.0274	3.61	U	0.0274	3.61	U	0.027	3.56	U	0.0273	3.6	U
Hexachloro-1,3-butadiene	87-68-3	260.8	49.841	0.0219	1.88	U	0.0219	1.88	U	0.022	1.89	U	0.022	1.89	U	0.0217	1.86	U	0.0219	1.88	U
Tridecane	629-50-5	184	52.19	0.0848	10.33	J	0.0802	9.76	J	0.054	6.58	J	0.0628	7.64	J	0.05	6.09	J	0.0498	6.06	J
Tetradecane	629-59-4	198	55.709	0.0785	8.88	J,B	0.0698	7.9	J,B	0.0291	3.29	J,B	0.0229	2.59	J,B	0.0565	6.39	J,B	0.0212	2.4	J,B
Tributyl Phosphate	126-73-8	266	63.1	<0.0106	<0.89	Z	<0.0106	<0.89	Z	<0.0106	<0.89	Z	<0.0106	<0.89	Z	<0.0105	<0.88	Z	<0.0106	<0.89	Z

B Compound found in associated laboratory blank.

J Target compound detected above the IDL but below the EQL.

S Data should be considered suspect due to possible sampling error.

U Target compound not detected at or above the IDL.

Y Initial calibration and CCV were performed, however, the analyte was not part of the current operating procedure.

Z Retention time and mass spectral characteristics were determined and detectability possible at 0.8 ppbv;
however, this compound is not currently part of the analytical method. See Section E.4 for more information.

Table H.3 Triple Sorbent Trap Analysis Results for All Target Analytes from Tank U-112 Riser 3 Bottom Level Sampled on 12/6/96

Target Analytes	CAS	MW	Ret Time	S6118-b35.1326 ISVS			S6118-b37.1267 ISVS			S6118-b36.1266 ISVS			S6118-b34.1257 ISVS		
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag
Dichlorodifluoromethane	75-71-8	120.91	7.858	0.0046	0.85	U	0.0046	0.85	U	0.0045	0.84	U	0.0043	0.8	U
Chloromethane	74-87-3	50.49	8.835	0.0034	1.51	U	0.0034	1.5	U	0.0034	1.5	U	0.0032	1.42	U
1,2-dichloro-1,1,2,2-tetrafluoroethane	76-14-2	170.92	9.526	0.0034	0.45	U	0.0034	0.44	U	0.0034	0.44	U	0.0032	0.42	U
Methanol	67-56-1	32.04	9.973	0.8739	610.98	Y	1.6908	1182.1	Y	1.1714	818.95	Y	0.9085	635.12	Y
Vinyl Chloride	75-01-4	62.5	9.941	0.0032	1.16	U	0.0032	1.15	U	0.0032	1.15	U	0.003	1.09	U
Butane	106-97-8	58.14	10.77	0.0881	33.93		0.1256	48.4		0.1154	44.44		0.0956	36.83	
Chloroethane	75-00-3	64.51	12.067	0.0044	1.54	U	0.0044	1.53	U	0.0044	1.52	U	0.0042	1.44	U
Ethanol	64-17-5	46.07	12.513	<0.275	<133	Y	0.536	260.63	Y	0.4208	204.61	Y	<0.275	<133	Y
Acetonitrile	75-05-8	41.05	13.013	0.0411	22.42		0.0625	34.11		0.0479	26.13		0.0448	24.45	
Acetone	67-64-1	58.08	13.65	0.0825	31.82		0.1125	43.37		0.1021	39.37		0.0724	27.92	J
Trichlorofluoromethane	75-69-4	137.37	14.129	0.1267	20.66		0.2185	35.63		0.1886	30.76		0.1751	28.55	
Pentane	109-66-0	72	14.915	0.0112	3.48	J	0.0131	4.07	J	0.012	3.74	J	0.0114	3.55	J
1,1-Dichloroethene	75-35-4	96.94	15.521	0.0022	0.51	U	0.0022	0.51	U	0.0022	0.51	U	0.0021	0.48	U
Methylene Chloride	75-09-2	84.93	15.755	0.0267	7.05	J,B	0.0562	14.82	J,B	0.0441	11.63	J,B	0.0315	8.31	J,B
1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	187.38	16.286	0.0193	2.3	J,B	0.0218	2.6	J	0.0203	2.43	J	0.0126	1.5	J
Propanenitrile	107-12-0	55.08	17.02	0.0021	0.83	U	0.002	0.83	U	0.002	0.83	U	0.0019	0.78	U
Propanol	71-23-8	60.1	17.052	0.0361	13.44	J	0.089	33.19		0.0847	31.58		0.0624	23.24	
1,1-Dichloroethane	75-34-3	98.96	17.966	0.0015	0.34	U	0.0015	0.34	U	0.0015	0.34	U	0.0014	0.32	U
2-Butanone	78-93-3	72.11	18.582	0.0237	7.36	J	0.0338	10.5		0.0363	11.28		0.0227	7.06	
cis-1,2-Dichloroethene	156-59-2	96.94	19.486	0.0027	0.62	U	0.0027	0.62	U	0.0027	0.62	U	0.0025	0.59	U
Hexane	110-54-3	86.18	19.847	0.1054	27.39	S	0.0589	15.3	S	0.0559	14.54	S	0.0686	17.84	S
Chloroform	67-66-3	119.38	20.017	0.0031	0.58	U	0.0031	0.57	U	0.003	0.57	U	0.0029	0.54	U
Tetrahydrofuran	109-99-9	72.11	20.729	0.033	10.25	J	0.0397	12.33		0.038	11.8		0.0383	11.91	
1,2-Dichloroethane	107-06-2	98.96	21.388	0.0012	0.27	U	0.0012	0.27	U	0.0012	0.27	U	0.0011	0.25	U
Butanenitrile	109-74-0	69.11	21.834	0.0015	0.49	U	0.0015	0.49	U	0.0015	0.49	U	0.0014	0.46	U
1,1,1-Trichloroethane	71-55-6	133.4	21.888	0.0082	1.37	J	0.0131	2.21	J	0.0122	2.05	J	0.0079	1.33	J
1-Butanol	71-36-3	74	22.281	0.3331	100.83		0.526	159.22		0.2675	80.97		0.2762	83.61	
Benzene	71-43-2	78.11	22.759	0.0141	4.04	J	0.0124	3.56	J	0.0106	3.04	J	0.011	3.17	J
Carbon Tetrachloride	56-23-5	153.82	23.046	0.0058	0.85	J	0.0056	0.82	J	0.0061	0.89	J	0.0046	0.66	J
Cyclohexane	110-82-7	84.16	23.312	0.1586	42.22		0.026	6.91	J	0.0245	6.51	J	0.0799	21.27	
1,2-Dichloropropane	78-87-5	112.99	24.279	0.0021	0.41	U	0.002	0.4	U	0.002	0.4	U	0.0019	0.38	U
Trichloroethene	79-01-6	131.39	24.704	0.0039	0.66	U	0.0039	0.66	U	0.0039	0.66	U	0.0036	0.62	U
Heptane	142-82-5	100.2	25.151	0.1143	25.56		0.0339	7.57		0.0311	6.94		0.0514	11.48	
4-Methyl-2-Pentanone	108-10-1	100.16	26.309	0.0233	5.22		0.0231	5.16		0.0239	5.35		0.0119	2.65	J
cis-1,3-Dichloropropene	10061-01-5	110.97	26.331	0.0014	0.27	U	0.0013	0.27	U	0.0013	0.27	U	0.0013	0.26	U
Pyridine	110-86-1	79.1	26.501	0.0231	6.54	U	0.023	6.51	U	0.0228	6.46	U	0.0217	6.15	U

Table H.3 (Cont'd) Triple Sorbent Trap Analysis Results for All Target Analytes from Tank U-112 Riser 3 Bottom Level Sampled on 12/6/96

Target Analytes	CAS	MW	Ret	S6118-b35.1326 ISVS			S6118-b37.1267 ISVS			S6118-b36.1266 ISVS			S6118-b34.1257 ISVS		
			Time	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag
trans-1,3-Dichloropropene	10061-02-6	110.97	27.361	0.0029	0.58	U	0.0029	0.58	U	0.0028	0.57	U	0.0027	0.54	U
Pentanenitrile	110-59-8	83.15	27.372	0.0009	0.23	U	0.0009	0.23	U	0.0009	0.23	U	0.0008	0.22	U
1,1,2-Trichloroethane	79-00-5	133.4	27.808	0.0085	1.43	J	0.0086	1.44	J	0.0082	1.38	J	0.008	1.34	J
Toluene	108-88-3	92.14	28.446	0.4712	114.55	S	0.8303	201.84	S	0.2601	63.24	S	0.3089	75.1	S
1,2-Dibromoethane	106-93-4	187.86	29.976	0.0025	0.3	U	0.0025	0.3	U	0.0025	0.3	U	0.0024	0.28	U
Octane	111-65-9	114	30.412	0.0029	0.56	U	0.0029	0.56	U	0.0028	0.56	U	0.0027	0.53	U
Tetrachloroethylene	127-18-4	165.83	30.975	0.0076	1.02	J	0.0047	0.64	J	0.0027	0.36	U	0.0055	0.74	J
Chlorobenzene	108-90-7	112.56	32.559	0.0012	0.24	U	0.0012	0.23	U	0.0012	0.23	U	0.0011	0.22	U
Hexanenitrile	628-73-9	97	32.75	0.0031	0.71	U	0.0031	0.71	U	0.0059	1.37	J	0.0096	2.21	J
Ethylbenzene	100-41-4	106.17	33.399	0.0247	5.21	S	0.0371	7.82	S,B	0.0352	7.42	S	0.0182	3.85	S
p/m-Xylene	106-42-3	106.17	33.824	0.0875	18.47	S	0.1228	25.91	S	0.116	24.48	S	0.0671	14.15	S
Cyclohexanone	108-94-1	98.14	34.27	0.0397	9.07	J	0.0163	3.73	J	0.0144	3.28	J	0.0127	2.9	U
Styrene	100-42-5	104.15	34.738	0.0172	3.69	S	0.0254	5.46	S	0.0196	4.22	S	0.0121	2.61	J,S
1,1,2,2-Tetrachloroethane	79-34-5	167.85	34.972	0.0063	0.84	U	0.0114	1.51	J	0.0114	1.52	J	0.0059	0.79	U
o-Xylene	95-47-6	106.17	35.046	0.0455	9.59	S	0.0657	13.87	S	0.0624	13.16	S	0.031	6.55	S
Nonane	111-84-2	128	35.408	0.0077	1.36	J	0.011	1.93	J	0.01	1.76	J	0.0063	1.11	J
1-Ethyl-2-methyl benzene	611-14-3	120.19	38.405	0.0036	0.68	J	0.0047	0.88	J	0.0043	0.8	J	0.0032	0.6	J
1,3,5-Trimethylbenzene	108-67-8	120.19	38.617	0.0042	0.78	J	0.0059	1.1	J	0.005	0.93	J	0.0039	0.72	J
1,2,4-Trimethylbenzene	95-63-6	120.19	39.893	0.0105	1.96	J	0.0159	2.96	J	0.0134	2.49	J	0.0101	1.88	J
Decane	124-18-5	142.28	40.074	0.0375	5.9		0.0463	7.29		0.0397	6.26		0.0295	4.65	J
1,3-Dichlorobenzene	541-73-1	147	40.435	0.0034	0.52	U	0.0034	0.52	U	0.0034	0.51	U	0.0032	0.49	U
1,4-Dichlorobenzene	106-46-7	147	40.637	0.0082	1.25	J	0.0128	1.95	J	0.0108	1.65	J	0.007	1.07	J
1,2-Dichlorobenzene	95-50-1	147	41.774	0.0051	0.77	U	0.0051	0.77	U	0.005	0.77	U	0.0048	0.73	U
Undecane	1120-21-4	156	44.4	0.046	6.61	J	0.057	8.18		0.0531	7.62		0.0396	5.69	J
1,2,4-Trichlorobenzene	120-82-1	181.45	48.024	0.0168	2.07	U	0.0167	2.06	U	0.0166	2.05	U	0.0157	1.94	U
Dodecane	112-40-3	170	48.428	0.0276	3.64	U	0.0244	3.22	J	0.0273	3.6	U	0.0259	3.41	U
Hexachloro-1,3-butadiene	87-68-3	260.76	49.841	0.0222	1.91	U	0.022	1.89	U	0.0219	1.88	U	0.0208	1.79	U
Tridecane	629-50-5	184	52.19	0.0892	10.85	J	0.0683	8.32	J	0.0598	7.28	J	0.0539	6.56	J
Tetradecane	629-59-4	198	55.709	0.0595	6.73	J,B	0.0451	5.1	J	0.0254	2.88	J	0.0433	4.9	J,B
Tributyl Phosphate	126-73-8	266	63.1	<0.0107	<0.90	Z	<0.0106	<0.89	Z	<0.010	<0.89	Z	<0.0100	<0.84	Z

B Compound found in associated laboratory blank.

J Target compound detected above the IDL but below the EQL.

S Data should be considered suspect due to possible sampling error.

U Target compound not detected at or above the IDL.

Y Initial calibration and CCV were performed; however, the analyte was not part of the current operating procedure.

Z Retention time and mass spectral characteristics were determined and detectability possible at 0.8 ppbv; however, this compound is not currently part of the analytical method. See Section E.4 for more information.

Table H.4 Triple Sorbent Trap Analysis Results for All Target Analytes from Tank U-112 Riser 6 Top Level Sampled on 12/6/96

Target Analytes	CAS	MW	Ret Time	S6119-t45.1305 ISVS			S6119-t42.1302 ISVS			S6119-t43.1303 ISVS			S6119-t44.1304 ISVS		
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag
Dichlorodifluoromethane	75-71-8	121	7.898	0.0046	0.85	U	0.0045	0.84	U	0.0046	0.85	U	0.0045	0.83	U
Chloromethane	74-87-3	50.5	8.908	0.0034	1.5	U	0.0034	1.49	U	0.0034	1.51	U	0.0033	1.48	U
1,2-dichloro-1,1,2,2-tetrafluoroethane	76-14-2	171	9.578	0.0034	0.44	U	0.0034	0.44	U	0.0034	0.45	U	0.0033	0.44	U
Methanol	67-56-1	32	10.003	0.9438	659.87	Y,S	1.1002	769.18	Y,S	1.1227	784.94	Y,S	1.6273	1137.72	Y,S
Vinyl Chloride	75-01-4	62.5	9.982	0.0032	1.15	U	0.0032	1.14	U	0.0032	1.16	U	0.0032	1.14	U
Butane	106-97-8	58.1	10.8	0.0961	37.01	S	0.1081	41.67	S	0.0936	36.05	S	0.1026	39.54	S
Chloroethane	75-00-3	64.5	12.107	0.0044	1.53	U	0.0044	1.51	U	0.0044	1.54	U	0.0043	1.51	U
Ethanol	64-17-5	46.1	12.543	<0.275	<133	Y	0.5336	259.43	Y	<0.275	<133	Y	0.5238	254.67	Y
Acetonitrile	75-05-8	41.1	13.043	0.0308	16.79	J	0.0385	21		0.0305	16.66	J	0.0389	21.2	
Acetone	67-64-1	58.1	13.691	0.0634	24.47	J,S	0.0642	24.77	J,S	0.0625	24.1	J,S	0.0558	21.52	J,S
Trichlorofluoromethane	75-69-4	137	14.169	0.1687	27.52	S	0.2153	35.11	S	0.1921	31.33	S	0.2084	33.98	S
Pentane	109-66-0	72	14.956	0.0101	3.14	J	0.0101	3.15	J	0.011	3.43	J	0.01	3.12	J
1,1-Dichloroethene	75-35-4	96.9	15.551	0.0022	0.51	U	0.0022	0.5	U	0.0022	0.51	U	0.0022	0.5	U
Methylene Chloride	75-09-2	84.9	15.796	0.0253	6.67	J,B	0.0351	9.25	J,B	0.0265	7	J,B	0.0365	9.62	J,B
1,1,2-trichloro-2,2,2-trifluoroethane	76-13-1	187	16.327	0.0174	2.08	J	0.0181	2.16	J	0.013	1.56	J,B	0.0101	1.21	J,B
Propanenitrile	107-12-0	55.1	17.061	0.002	0.83	U	0.002	0.82	U	0.0021	0.83	U	0.002	0.82	U
Propanol	71-23-8	60.1	17.092	0.0632	23.55		0.0739	27.55		0.0846	31.54		0.081	30.19	
1,1-Dichloroethane	75-34-3	99	18.006	0.0015	0.34	U	0.0015	0.34	U	0.0015	0.34	U	0.0015	0.34	U
2-Butanone	78-93-3	72.1	18.623	0.0083	2.56	J,S	0.0142	4.41	J,S	0.0133	4.13	J,S	0.0122	3.78	J,S
cis-1,2-Dichloroethene	156-59-2	96.9	19.526	0.0027	0.62	U	0.0027	0.61	U	0.0027	0.62	U	0.0026	0.61	U
Hexane	110-54-3	86.2	19.888	0.0161	4.19	S	0.0165	4.28	S	0.0201	5.23	S	0.0164	4.26	S
Chloroform	67-66-3	119	20.058	0.0031	0.57	U	0.003	0.57	U	0.0031	0.58	U	0.003	0.57	U
Tetrahydrofuran	109-99-9	72.1	20.77	0.0374	11.62		0.037	11.5		0.0388	12.04		0.0363	11.27	J
1,2-Dichloroethane	107-06-2	99	21.429	0.0012	0.27	U	0.0012	0.26	U	0.0012	0.27	U	0.0012	0.26	U
Butanenitrile	109-74-0	69.1	21.886	0.0015	0.49	U	0.0015	0.48	U	0.0015	0.49	U	0.0015	0.48	U
1,1,1-Trichloroethane	71-55-6	133	21.939	0.0075	1.25	J	0.0079	1.33	J	0.0083	1.4	J	0.0075	1.26	J
1-Butanol	71-36-3	74	22.322	0.2691	81.45		0.3078	93.16		0.3219	97.44		0.354	107.16	
Benzene	71-43-2	78.1	22.8	0.0104	2.97	J	0.0105	3.02	J	0.0115	3.31	J	0.0104	2.99	J
Carbon Tetrachloride	56-23-5	154	23.087	0.0046	0.67	J	0.0049	0.72	J	0.0058	0.85	J	0.0053	0.78	J
Cyclohexane	110-82-7	84.2	23.353	0.0166	4.41	J	0.0216	5.75	J	0.0288	7.67	J	0.0227	6.04	J
1,2-Dichloropropane	78-87-5	113	24.32	0.002	0.4	U	0.002	0.4	U	0.0021	0.41	U	0.002	0.4	U
Trichloroethene	79-01-6	131	24.745	0.0039	0.66	U	0.0038	0.65	U	0.0039	0.66	U	0.0038	0.65	U
Heptane	142-82-5	100	25.192	0.0153	3.42	J	0.018	4.03		0.0262	5.86		0.0187	4.17	
4-Methyl-2-Pentanone	108-10-1	100	26.35	0.0195	4.37	J	0.0141	3.16	J	0.0114	2.54	J	0.0115	2.58	J
cis-1,3-Dichloropropene	10061-01-5	111	26.382	0.0013	0.27	U	0.0013	0.27	U	0.0014	0.27	U	0.0013	0.27	U
Pyridine	110-86-1	79.1	26.541	0.023	6.51	U	0.0227	6.43	U	0.0231	6.54	U	0.0226	6.4	U

Table H.4 (Cont'd) Triple Sorbent Trap Analysis Results for All Target Analytes from Tank U-112 Riser 6 Top Level Sampled on 12/6/96

Target Analytes	CAS	MW	Ret Time	S6119-t45.1305 ISVS			S6119-t42.1302 ISVS			S6119-t43.1303 ISVS			S6119-t44.1304 ISVS		
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag
trans-1,3-Dichloropropene	10061-02-6	111	27.402	0.0029	0.58	U	0.0028	0.57	U	0.0029	0.58	U	0.0028	0.57	U
Pentanenitrile	110-59-8	83.2	27.413	0.0009	0.23	U	0.0009	0.23	U	0.0009	0.23	U	0.0008	0.23	U
1,1,2-Trichloroethane	79-00-5	133	27.859	0.0082	1.37	J	0.0082	1.38	J	0.0081	1.37	J	0.0083	1.39	J
Toluene	108-88-3	92.1	28.497	0.2505	60.89	S	0.2239	54.43	S	0.2132	51.82	S	0.3758	91.36	S
1,2-Dibromoethane	106-93-4	188	30.017	0.0025	0.3	U	0.0025	0.3	U	0.0025	0.3	U	0.0025	0.3	U
Octane	111-65-9	114	30.453	0.0029	0.56	U	0.0028	0.55	U	0.0029	0.56	U	0.0028	0.55	U
Tetrachloroethylene	127-18-4	166	31.016	0.0061	0.83	J	0.0027	0.36	U	0.0027	0.36	U	0.0026	0.36	U
Chlorobenzene	108-90-7	113	32.6	0.0012	0.23	U	0.0012	0.23	U	0.0012	0.24	U	0.0012	0.23	U
Hexanenitrile	628-73-9	97	32.802	0.0031	0.71	U	0.008	1.84	J	0.0031	0.71	U	0.003	0.7	U
Ethylbenzene	100-41-4	106	33.44	0.0327	6.91	S,B	0.0318	6.72	S	0.025	5.28	S	0.0166	3.49	S
p/m-Xylene	106-42-3	106	33.875	0.1257	26.51	S	0.1221	25.76	S	0.0922	19.45	S	0.0615	12.98	S
Cyclohexanone	108-94-1	98.1	34.311	0.0075	1.71	J	0.0138	3.16	J	0.0135	3.08	U	0.0171	3.9	J
Styrene	100-42-5	104	34.779	0.027	5.8	S	0.03	6.45	S	0.0163	3.5	J,S	0.0134	2.88	J,S
1,1,2,2-Tetrachloroethane	79-34-5	168	35.013	0.001	0.13	J	0.0062	0.82	U	0.0063	0.84	U	0.0061	0.82	U
o-Xylene	95-47-6	106	35.087	0.0562	11.85	S	0.0556	11.73	S	0.0495	10.45	S	0.0264	5.56	S
Nonane	111-84-2	128	35.448	0.0088	1.54	J,S	0.0089	1.56	J,S	0.0088	1.54	J,S	0.0057	0.99	J,S
1-Ethyl-2-methyl benzene	611-14-3	120	38.446	0.0052	0.97	J	0.0057	1.06	J	0.0041	0.77	J	0.0032	0.6	J
1,3,5-Trimethylbenzene	108-67-8	120	38.658	0.0067	1.24	J	0.0065	1.21	J	0.0044	0.82	J	0.0036	0.66	J
1,2,4-Trimethylbenzene	95-63-6	120	39.934	0.0185	3.44	J,S	0.0185	3.45	J,S	0.0113	2.1	J,S	0.01	1.86	J,S
Decane	124-18-5	142	40.114	0.0506	7.96	S	0.0512	8.06	S	0.0455	7.17	S	0.0336	5.29	S
1,3-Dichlorobenzene	541-73-1	147	40.486	0.0034	0.52	U	0.0034	0.51	U	0.0034	0.52	U	0.0033	0.51	U
1,4-Dichlorobenzene	106-46-7	147	40.688	0.0125	1.91	J,S	0.0122	1.86	J,S	0.0082	1.25	J,S	0.0054	0.83	J,S
1,2-Dichlorobenzene	95-50-1	147	41.826	0.0051	0.77	U	0.005	0.76	U	0.0051	0.77	U	0.005	0.76	U
Undecane	1120-21-4	156	44.44	0.081	11.63	S	0.0894	12.84	S	0.0552	7.92	S	0.0461	6.62	J,S
1,2,4-Trichlorobenzene	120-82-1	181	48.065	0.0167	2.06	U	0.0165	2.04	U	0.0168	2.07	U	0.0164	2.02	U
Dodecane	112-40-3	170	48.469	0.034	4.48	J	0.0332	4.38	J	0.0276	3.64	U	0.027	3.56	U
Hexachloro-1,3-butadiene	87-68-3	261	49.882	0.022	1.89	U	0.0218	1.87	U	0.0222	1.91	U	0.0217	1.86	U
Tridecane	629-50-5	184	52.221	0.064	7.79	J	0.0627	7.63	J	0.0641	7.81	J	0.0567	6.91	J
Tetradecane	629-59-4	198	55.739	0.0361	4.08	J	0.0286	3.23	J	0.0396	4.48	J,B	0.0239	2.7	J,B
Tributyl Phosphate	126-73-8	266	63.1	<0.0106	<0.89	Z	<0.0105	<0.88	Z	<0.0107	<0.90	Z	<0.0105	<0.88	Z

B Compound found in associated laboratory blank.

J Target compound detected above the IDL but below the EQL.

S Data should be considered suspect due to possible sampling error.

U Target compound not detected at or above the IDL.

Y Initial calibration and CCV were performed; however, the analyte was not part of the current operating procedure.

Z Retention time and mass spectral characteristics were determined and detectability possible at 0.8 ppbv; however, this compound is not currently part of the analytical method. See Section E.4 for more information.

[illegible]

Table H.5 (Cont'd) Triple Sorbent Trap Analysis Results for All Target Analytes from Tank U-112 Riser 6 Middle Level Sampled on 12/6/96

Target Analytes	CAS	MW	Ret Time	S6119-m29.1297 ISVS			S6119-m48.1306 ISVS			S6119-m48.1306 ISVS REP			S6119-m49.1307 ISVS			S6119-m28.1296 ISVS			S6119-m49.1307 Rep ISVS Rep			S6119-m28.1296 ISVS REP			S6119-m29.1297 ISVS REP		
				(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag
Dodecane	112-40-3	170	48.51	0.028	3.69 U		0.0663	8.74 J		0.0599	7.89 J		0.0785	10.35 J		0.0364	4.79 J		0.0777	10.24 J		0.0337	4.44 J		0.028	3.69 U	
Hexachloro-1,3-butadiene	87-68-3	260.76	49.924	0.0225	1.93 U		0.0219	1.88 U		0.0219	1.88 U		0.0219	1.88 U		0.0216	1.86 U		0.0219	1.88 U		0.0216	1.86 U		0.0225	1.93 U	
Tridecane	629-50-5	184	52.262	0.0545	6.63 J		0.1167	14.2 J		0.1205	14.68 J		0.1374	16.73 J		0.0549	6.69 J		0.1307	15.91 J		0.0525	6.39 J		0.0599	7.3 J	
Tetradecane	629-59-4	198	55.78	0.0373	4.22 J		0.0303	3.43 J		0.0268	3.03 J		0.0266	3.01 J,B		0.0317	3.59 J,B		0.0321	3.63 J,B		0.0362	4.09 J,B		0.0425	4.8 J	
Tributyl Phosphate	126-73-8	266	63.1	<0.0109	<0.92 Z		<0.0106	<0.89 Z		<0.0106	<0.89 Z		<0.0106	<0.89 Z		<0.0104	<0.88 Z		<0.0106	<0.89 Z		<0.0104	<0.88 Z		<0.0109	<0.92 Z	

B Compound found in associated laboratory blank.

J Target compound detected above the IDL but below the EQL.

S Data should be considered suspect due to possible sampling error.

U Target compound not detected at or above the IDL.

Y Initial calibration and CCV were performed, however, the analyte was not part of the current operating procedure.

Z Retention time and mass spectral characteristics were determined and detectability possible at 0.8 ppbv; however, this compound is not currently part of the analytical method. See Section E.4 for more information.

Table H.6 Triple Sorbent Trap Analysis Results for All Target Analytes from Tank U-112 Riser 6 Bottom Level Sampled on 12/6/96

Target Analytes	CAS	MW	Ret Time	S6119-b35.1299 ISVS			S6119-b34.1298 ISVS			S6119-b34.1298 ISVS REP			S6119-b36.1300 ISVS			S6119-b37.1301 ISVS		
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag
Dichlorodifluoromethane	75-71-8	121	7.858	0.0046	0.85	U	0.0045	0.84	U	0.0045	0.84	U	0.0046	0.85	U	0.0046	0.85	U
Chloromethane	74-87-3	50.5	8.835	0.0034	1.51	U	0.0034	1.49	U	0.0034	1.49	U	0.0034	1.51	U	0.0034	1.5	U
1,2-dichloro-1,1,2,2-tetrafluoroethane	76-14-2	171	9.526	0.0034	0.45	U	0.0034	0.44	U	0.0034	0.44	U	0.0034	0.45	U	0.0034	0.44	U
Methanol	67-56-1	32	9.973	1.698	1187.08	Y,S	1.5239	1065.43	Y,S	1.4131	987.95	Y,S	0.6808	475.98	Y,S	1.1352	793.64	Y,S
Vinyl Chloride	75-01-4	62.5	9.941	0.0032	1.16	U	0.0032	1.14	U	0.0032	1.14	U	0.0032	1.16	U	0.0032	1.15	U
Butane	106-97-8	58.1	10.77	0.1138	43.85	S	0.1004	38.67	S	0.1262	48.63	S	0.0875	33.72	S	0.0882	33.98	S
Chloroethane	75-00-3	64.5	12.067	0.0044	1.54	U	0.0044	1.51	U	0.0044	1.51	U	0.0044	1.54	U	0.0044	1.53	U
Ethanol	64-17-5	46.1	12.513	0.6734	327.4	Y	0.5419	263.46	Y	0.5101	248.02	Y	<0.275	<133	Y	<0.275	<133	Y
Acetonitrile	75-05-8	41.1	13.013	0.0471	25.69		0.0472	25.77		0.0493	26.89		0.0223	12.16	J	0.042	22.89	
Acetone	67-64-1	58.1	13.65	0.0808	31.18	S	0.0789	30.41	S	0.0676	26.06	J,S	0.0779	30.06	S	0.0552	21.27	J,S
Trichlorofluoromethane	75-69-4	137	14.129	0.184	30	S	0.2188	35.68	S	0.2108	34.37	S	0.1656	27.01	S	0.1789	29.18	S
Pentane	109-66-0	72	14.915	0.01	3.13	J	0.0113	3.5	J	0.0123	3.82	J	0.0094	2.92	J	0.0098	3.04	J
1,1-Dichloroethene	75-35-4	96.9	15.521	0.0022	0.51	U	0.0022	0.5	U	0.0022	0.5	U	0.0022	0.51	U	0.0022	0.51	U
Methylene Chloride	75-09-2	84.9	15.755	0.047	12.4	J,B	0.0368	9.71	J,B	0.0304	8.02	J,B	0.0351	9.27	J,B	0.025	6.59	J,B
1,1,2-trichloro-1,1,2,2-trifluoroethane	76-13-1	187	16.286	0.0212	2.54	J,B	0.0136	1.63	J	0.0126	1.51	J	0.0112	1.34	J	0.0108	1.29	J
Propanenitrile	107-12-0	55.1	17.02	0.0021	0.83	U	0.002	0.82	U	0.002	0.82	U	0.0021	0.83	U	0.002	0.83	U
Propanol	71-23-8	60.1	17.052	0.073	27.19		0.0842	31.37		0.0785	29.26		0.0689	25.67		0.0604	22.52	
1,1-Dichloroethane	75-34-3	99	17.966	0.0015	0.34	U	0.0015	0.34	U	0.0015	0.34	U	0.0015	0.34	U	0.0015	0.34	U
2-Butanone	78-93-3	72.1	18.582	0.0265	8.23	S	0.0158	4.91	J,S	0.0127	3.94	J,S	0.017	5.28	J,S	0.0071	2.21	J,S
cis-1,2-Dichloroethene	156-59-2	96.9	19.486	0.0027	0.62	U	0.0027	0.61	U	0.0027	0.61	U	0.0027	0.62	U	0.0027	0.62	U
Hexane	110-54-3	86.2	19.847	0.0172	4.48	S	0.0189	4.91	S	0.0183	4.75	S	0.0193	5.01	S	0.0165	4.29	S
Chloroform	67-66-3	119	20.017	0.0031	0.58	U	0.003	0.57	U	0.003	0.57	U	0.0031	0.58	U	0.0031	0.57	U
Tetrahydrofuran	109-99-9	72.1	20.729	0.0347	10.79	J	0.0393	12.22		0.0368	11.42		0.0362	11.24	J	0.0386	11.99	
1,2-Dichloroethane	107-06-2	99	21.388	0.0012	0.27	U	0.0012	0.26	U	0.0012	0.26	U	0.0012	0.27	U	0.0012	0.27	U
Butanenitrile	109-74-0	69.1	21.834	0.0015	0.49	U	0.0015	0.48	U	0.0015	0.48	U	0.0015	0.49	U	0.0015	0.49	U
1,1,1-Trichloroethane	71-55-6	133	21.888	0.0079	1.33	J	0.0083	1.39	J	0.0063	1.06	J	0.0078	1.3	J	0.0076	1.27	J
1-Butanol	71-36-3	74	22.281	0.2725	82.49		0.3168	95.91		0.3974	120.3		0.2559	77.46		0.2629	79.59	
Benzene	71-43-2	78.1	22.759	0.0107	3.06	J	0.0118	3.38	J	0.0126	3.62	J	0.0105	3.02	J	0.0102	2.93	J
Carbon Tetrachloride	56-23-5	154	23.046	0.0058	0.85	J	0.0048	0.7	J	0.003	0.44	J	0.0054	0.79	J	0.0053	0.77	J
Cyclohexane	110-82-7	84.2	23.312	0.0235	6.27	J	0.0236	6.28	J	0.0237	6.32	J	0.0309	8.22	J	0.0223	5.93	J
1,2-Dichloropropane	78-87-5	113	24.279	0.0021	0.41	U	0.002	0.4	U	0.002	0.4	U	0.0021	0.41	U	0.002	0.4	U
Trichloroethene	79-01-6	131	24.704	0.0039	0.66	U	0.0038	0.65	U	0.0038	0.65	U	0.0039	0.66	U	0.0039	0.66	U
Heptane	142-82-5	100	25.151	0.0227	5.07		0.0233	5.21		0.0226	5.05		0.0332	7.43		0.0237	5.29	
4-Methyl-2-Pentanone	108-10-1	100	26.309	0.0175	3.9	J	0.0184	4.11	J	0.0144	3.22	J	0.0105	2.35	J	0.0098	2.2	J
cis-1,3-Dichloropropene	10061-01-5	111	26.331	0.0014	0.27	U	0.0013	0.27	U	0.0013	0.27	U	0.0014	0.27	U	0.0013	0.27	U
Pyridine	110-86-1	79.1	26.501	0.0231	6.54	U	0.0227	6.43	U	0.0227	6.43	U	0.0231	6.54	U	0.023	6.51	U
trans-1,3-Dichloropropene	10061-02-6	111	27.361	0.0029	0.58	U	0.0028	0.57	U	0.0028	0.57	U	0.0029	0.58	U	0.0029	0.58	U
Pentanenitrile	110-59-8	83.2	27.372	0.0009	0.23	U	0.0009	0.23	U	0.0009	0.23	U	0.0009	0.23	U	0.0009	0.23	U
1,1,2-Trichloroethane	79-00-5	133	27.808	0.0088	1.48	J	0.0096	1.62	J	0.0078	1.3	J	0.0086	1.45	J	0.0088	1.47	J
Toluene	108-88-3	92.1	28.446	0.276	67.09	S	0.402	97.74	S	0.4007	97.42	S	0.2435	59.2	S	0.2385	57.98	S
1,2-Dibromoethane	106-93-4	188	29.976	0.0025	0.3	U	0.0025	0.3	U	0.0025	0.3	U	0.0025	0.3	U	0.0025	0.3	U
Octane	111-65-9	114	30.412	0.0029	0.56	U	0.0028	0.55	U	0.0028	0.55	U	0.0029	0.56	U	0.0029	0.56	U
Tetrachloroethylene	127-18-4	166	30.975	0.0051	0.69	J	0.0067	0.9	J	0.0043	0.59	J	0.0082	1.11	J	0.0062	0.84	J
Chlorobenzene	108-90-7	113	32.559	0.0012	0.24	U	0.0012	0.23	U	0.0012	0.23	U	0.0012	0.24	U	0.0012	0.23	U
Hexanenitrile	628-73-9	97	32.75	0.0031	0.71	U	0.003	0.7	U	0.003	0.7	U	0.507	117.07		0.5	115.47	

Table H.6 (Cont'd) Triple Sorbent Trap Analysis Results for All Target Analytes from Tank U-112 Riser 6 Bottom Level Sampled on 12/6/96

Target Analytes	CAS	MW	Ret Time	S6119-b35.1299 ISVS			S6119-b34.1298 ISVS			S6119-b34.1298 ISVS REP			S6119-b36.1300 ISVS			S6119-b37.1301 ISVS		
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag
Ethylbenzene	100-41-4	106	33.399	0.0327	6.9 S		0.0241	5.08 S,B		0.0232	4.89 S,B		0.0259	5.47 S		0.0183	3.86 S	
p/m-Xylene	106-42-3	106	33.824	0.1261	26.6 S		0.0897	18.93 S		0.0886	18.69 S		0.1034	21.82 S		0.0732	15.44 S	
Cyclohexanone	108-94-1	98.1	34.27	0.029	6.61 J		0.0133	3.04 U		0.0133	3.04 U		0.0135	3.08 U		0.0134	3.06 U	
Styrene	100-42-5	104	34.738	0.0307	6.6 S		0.0206	4.43 S		0.0203	4.36 S		0.0166	3.57 J,S		0.0131	2.81 J,S	
1,1,2,2-Tetrachloroethane	79-34-5	168	34.972	0.0063	0.84 U		0.0062	0.82 U		0.0062	0.82 U		0.0063	0.84 U		0.0062	0.83 U	
o-Xylene	95-47-6	106	35.046	0.0574	12.1 S		0.0446	9.42 S		0.0433	9.14 S		0.0544	11.47 S		0.0318	6.71 S	
Nonane	111-84-2	128	35.408	0.009	1.57 J,S		0.0076	1.33 J,S		0.0128	2.25 J,S		0.0087	1.52 J,S		0.0059	1.03 J,S	
1-Ethyl-2-methyl benzene	611-14-3	120	38.405	0.0055	1.02 J		0.0041	0.77 J		0.0082	1.53 J		0.0043	0.8 J		0.0037	0.7 J	
1,3,5-Trimethylbenzene	108-67-8	120	38.617	0.0067	1.24 J		0.0048	0.9 J		0.0046	0.87 J		0.0053	1 J		0.0042	0.77 J	
1,2,4-Trimethylbenzene	95-63-6	120	39.893	0.0185	3.44 J,S		0.0128	2.38 J,S		0.0122	2.27 J,S		0.0121	2.25 J,S		0.0112	2.08 J,S	
Decane	124-18-5	142	40.074	0.0531	8.36 S		0.0415	6.54 S		0.0441	6.95 S		0.0435	6.85 S		0.0341	5.36 S	
1,3-Dichlorobenzene	541-73-1	147	40.435	0.0034	0.52 U		0.0034	0.51 U		0.0034	0.51 U		0.0034	0.52 U		0.0034	0.52 U	
1,4-Dichlorobenzene	106-46-7	147	40.637	0.0124	1.89 J,S		0.0094	1.44 J,S		0.0087	1.32 J,S		0.0092	1.4 J,S		0.0074	1.13 J,S	
1,2-Dichlorobenzene	95-50-1	147	41.774	0.0051	0.77 U		0.005	0.76 U		0.005	0.76 U		0.0051	0.77 U		0.0051	0.77 U	
Undecane	1120-21-4	156	44.4	0.0904	12.98 S		0.063	9.05 S		0.0791	11.36 S		0.0518	7.43 S		0.0545	7.82 S	
1,2,4-Trichlorobenzene	120-82-1	181	48.024	0.0168	2.07 U		0.0165	2.04 U		0.0165	2.04 U		0.0168	2.07 U		0.0167	2.06 U	
Dodecane	112-40-3	170	48.428	0.0396	5.22 J		0.0254	3.35 J		0.0234	3.08 J		0.0276	3.64 U		0.0274	3.61 U	
Hexachloro-1,3-butadiene	87-68-3	261	49.841	0.0222	1.91 U		0.0218	1.87 U		0.0218	1.87 U		0.0222	1.91 U		0.022	1.89 U	
Tridecane	629-50-5	184	52.19	0.0874	10.64 J		0.0652	7.94 J		0.0651	7.92 J		0.0502	6.12 J		0.0491	5.97 J	
Tetradecane	629-59-4	198	55.709	0.0546	6.18 J,B		0.0455	5.15 J		0.0419	4.74 J		0.0205	2.32 U		0.0214	2.42 J,B	
Tributyl Phosphate	126-73-8	266	63.1	<0.0107	<0.90 Z		<0.0105	<0.88 Z		<0.0105	<0.88 Z		<0.0107	<0.90 Z		<0.0106	<0.89 Z	

B Compound found in associated laboratory blank.

J Target compound detected above the IDL but below the EQL.

S Data should be considered suspect due to possible sampling error.

U Target compound not detected at or above the IDL.

Y Initial calibration and CCV were performed; however, the analyte was not part of the current operating procedure.

Z Retention time and mass spectral characteristics were determined and detectability possible at 0.8 ppbv; however, this compound is not currently part of the analytical method. See Section E.4 for more information.

Table H.7 Triple Sorbent Trap Analysis Results for All Target Analytes from Blank Samples Associated with the Sampling of Tank U-112 Riser 3 on 12/6/96

Target Analytes	CAS	MW	Ret Time	S6118-a50.1290 ISVS FB#1 (mg/m3) (ppbv) Flag	S6118-a51.1295 ISVS TB#2 (mg/m3) (ppbv) Flag	S6118-a51.1291 ISVS FB#2 (mg/m3) (ppbv) Flag	S6118-a52.1293 ISVS TB#1 (mg/m3) (ppbv) Flag
Dichlorodifluoromethane	75-71-8	120.91	7.838	0.0043	0.79 U	0.0043	0.79 U
Chloromethane	74-87-3	50.49	8.835	0.0032	1.4 U	0.0032	1.4 U
1,2-Dichloroethane	76-14-2	170.92	9.526	0.0032	0.41 U	0.0032	0.41 U
Methanol	67-56-1	32.04	9.973	<0.274	<192 Y	<0.274	<192 Y
Vinyl Chloride	75-01-4	62.5	9.941	0.003	1.08 U	0.003	1.08 U
Butane	106-97-8	58.14	10.77	0.0036	1.39 U	0.0024	0.92 U
Chloroethane	75-00-3	64.51	12.067	0.0041	1.42 U	0.0027	0.95 U
Ethanol	64-17-5	46.07	12.513	<0.275	<133 Y	<0.275	<133 Y
Acetonitrile	75-05-8	41.05	13.013	0.0033	1.8 U	0.0022	1.2 U
Acetone	67-64-1	58.08	13.65	0.0268	10.32 J	0.0048	1.85 U
Trichlorofluoromethane	75-69-4	137.37	14.129	0.0107	1.74 J	0.0029	0.48 U
Pentane	109-66-0	72	14.915	0.0035	1.09 J	0.0019	0.59 U
1,1-Dichloroethene	75-35-4	96.94	15.521	0.0021	0.47 U	0.0014	0.32 U
Methylene Chloride	75-09-2	84.93	15.755	0.0288	7.6 JB	0.0107	2.82 U
112trichloro122trifluoroethane	76-13-1	187.38	16.286	0.0323	3.86 B	0.002	0.24 U
Propanenitrile	107-12-0	55.08	17.02	0.0019	0.77 U	0.0013	0.52 U
Propanol	71-23-8	60.1	17.052	0.0053	1.99 U	0.0036	1.33 U
1,1-Dichloroethane	75-34-3	98.96	17.966	0.0014	0.32 U	0.0009	0.21 U
2-Butanone	78-93-3	72.11	18.582	0.0154	4.79 J	0.0015	0.46 U
cis-1,2-Dichloroethene	156-59-2	96.94	19.486	0.0025	0.58 U	0.0017	0.39 U
Hexane	110-54-3	86.18	19.847	0.0361	9.38	0.0008	0.22 U
Chloroform	67-66-3	119.38	20.017	0.0029	0.53 U	0.0019	0.36 U
Tetrahydrofuran	109-99-9	72.11	20.729	0.0065	2.01 J	0.0023	0.71 U
1,2-Dichloroethane	107-06-2	98.96	21.388	0.0011	0.25 U	0.0007	0.17 U
Butanenitrile	109-74-0	69.11	21.834	0.0044	0.45 U	0.0009	0.3 U
1,1,1-Trichloroethane	71-55-6	133.4	21.888	0.0045	0.75 J	0.0018	0.3 U
1-Butanol	71-36-3	74	22.281	0.0075	2.29 U	0.005	1.52 U
Benzene	71-43-2	78.11	22.759	0.0054	1.53 J	0.0009	0.27 U
Carbon Tetrachloride	56-23-5	153.82	23.046	0.0014	0.2 U	0.0009	0.14 U
Cyclohexane	110-82-7	84.16	23.312	0.0236	6.27 J	0.0027	0.73 U
1,2-Dichloropropane	78-87-5	112.99	24.279	0.0019	0.38 U	0.0013	0.25 U
Trichloroethene	79-01-6	131.39	24.704	0.0036	0.61 U	0.0024	0.41 U
Heptane	142-82-5	100.2	25.151	0.0102	2.29 J	0.001	0.23 U
4-Methyl-2-Pentanone	108-10-1	100.16	26.309	0.0098	2.19 J	0.0014	0.31 U
cis-1,3-Dichloropropene	10061-01-5	110.97	26.331	0.0013	0.25 U	0.0008	0.17 U
Pyridine	110-86-1	79.1	26.501	0.0214	6.06 U	0.0142	4.02 U
trans-1,3-Dichloropropene	10061-02-6	110.97	27.361	0.0027	0.53 U	0.0018	0.36 U
Pentanenitrile	110-59-8	83.15	27.372	0.0008	0.22 U	0.0005	0.14 U
1,1,2-Trichloroethane	79-00-5	133.4	27.808	0.0082	1.38 J	0.001	0.17 U
Toluene	108-88-3	92.14	28.446	0.114	27.72	0.0006	0.15 U
1,2-Dichloroethane	106-93-4	187.86	29.976	0.0024	0.28 U	0.0016	0.19 U
Octane	111-65-9	114	30.412	0.0027	0.52 U	0.0018	0.35 U
Tetraethoxyethylene	127-18-4	165.83	30.975	0.0025	0.34 U	0.0017	0.23 U
Chlorobenzene	108-90-7	112.56	32.559	0.0011	0.22 U	0.0007	0.15 U

Table H.7 (Cont'd) Triple Sorbent Trap Analysis Results for All Target Analytes from Blank Samples Associated with the Sampling of Tank U-112 Riser 3 on 12/6/96

Target Analytes	CAS	MW	Ret Time	S6118-a50.1290 ISVS FB#1			S6118-a53.1295 ISVS TB#2			S6118-a51.1291 ISVS FB#2			S6118-a52.1293 ISVS TB#1		
				(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag
Hexanenitrile	628-73-9	97	32.75	0.0039	0.9 J		0.0019	0.44 U		0.004	0.92 J		0.0029	0.66 U	
Ethylbenzene	100-41-4	106.17	33.399	0.0255	5.39		0.0009	0.2 U		0.026	5.48		0.0014	0.3 U	
p/m-Xylene	106-42-3	106.17	33.824	0.0848	17.89		0.002	0.42 U		0.0879	18.55		0.003	0.63 U	
Cyclohexanone	108-94-1	98.14	34.27	0.0125	2.85 U		0.0083	1.9 U		0.0125	2.85 U		0.0125	2.85 U	
Styrene	100-42-5	104.15	34.738	0.0173	3.72		0.001	0.22 U		0.0178	3.83		0.0015	0.33 U	
1,1,2,2-Tetrachloroethane	79-34-5	167.85	34.972	0.0058	0.77 U		0.0039	0.52 U		0.0058	0.77 U		0.0058	0.77 U	
o-Xylene	95-47-6	106.17	35.046	0.0448	9.45		0.0013	0.27 U		0.0471	9.93		0.0019	0.4 U	
Nonane	111-84-2	128	35.408	0.0064	1.12 J		0.0008	0.15 U		0.0068	1.19 J		0.0013	0.22 U	
1-Ethyl-2-methyl benzene	611-14-3	120.19	38.405	0.0058	1.09 J		0.0016	0.29 U		0.0031	0.58 J		0.0024	0.44 U	
1,3,5-Trimethylbenzene	108-67-8	120.19	38.617	0.0034	0.63 J		0.0016	0.29 U		0.0037	0.69 J		0.0024	0.44 U	
1,2,4-Trimethylbenzene	95-63-6	120.19	39.893	0.0088	1.64 J		0.0017	0.31 U		0.0098	1.83 J		0.0025	0.47 U	
Decane	124-18-5	142.28	40.074	0.0261	4.1 J		0.002	0.31 U		0.0271	4.26 J		0.003	0.47 U	
1,3-Dichlorobenzene	541-73-1	147	40.435	0.0072	1.1 J		0.0021	0.32 U		0.0032	0.48 U		0.0032	0.48 U	
1,4-Dichlorobenzene	106-46-7	147	40.637	0.0072	1.09 J		0.0019	0.29 U		0.0081	1.24 J		0.0029	0.43 U	
1,2-Dichlorobenzene	95-50-1	147	41.774	0.0047	0.72 U		0.0031	0.48 U		0.0047	0.72 U		0.0047	0.72 U	
Undecane	1120-21-4	156	44.4	0.0279	4.01 J		0.0029	0.42 U		0.035	5.03 J		0.0044	0.63 U	
1,2,4-Trichlorobenzene	120-82-1	181.45	48.024	0.0155	1.91 U		0.0103	1.27 U		0.0155	1.91 U		0.0155	1.91 U	
Dodecane	112-40-3	170	48.428	0.0255	3.36 U		0.017	2.24 U		0.0255	3.36 U		0.0255	3.36 U	
Hexachloro-1,3-butadiene	87-68-3	260.76	49.841	0.0205	1.76 U		0.0137	1.18 U		0.0205	1.76 U		0.0205	1.76 U	
Tridecane	629-50-5	184	52.19	0.0477	5.81 J		0.0173	2.11 U		0.0369	4.5 J		0.026	3.17 U	
Tetradecane	629-59-4	198	55.709	0.0476	5.39 J,B		0.0127	1.44 U		0.0196	2.22 J,B		0.019	2.15 U	
Tributyl Phosphate	126-73-8	266	63.1	<0.0099	<0.83 Z		<0.0099	<0.83 Z		<0.0099	<0.83 Z		<0.0099	<0.83 Z	

B Compound found in associated laboratory blank.

J Target compound detected above the IDL but below the EQL.

U Target compound not detected at or above the IDL.

Y Initial calibration and CCV were performed; however, the analyte was not part of the current operating procedure.

Z Retention time and mass spectral characteristics were determined and detectability possible at 0.8 ppbv; however, this compound is not currently part of the analytical method. See Section E.4 for more information.

Table H.8 Triple Sorbent Trap Analysis Results for All Target Analytes from Blank Samples Associated with the Sampling of Tank U-112 Riser 6 on 12/6/96

Target Analytes	CAS	MW	Ret Time	S6119-a53.1311 ISVS TB#2			S6119-a52.1310 ISVS TB#1			S6119-a50.1308 ISVS FB#1			S6119-a51.1309 ISVS FB#2		
				(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag
Dichlorodifluoromethane	75-71-8	120.91	7.858	0.0043	0.79 U		0.0043	0.79 U		0.0043	0.79 U		0.0043	0.79 U	
Chloromethane	74-87-3	50.49	8.835	0.0032	1.4 U		0.0032	1.4 U		0.0032	1.4 U		0.0032	1.4 U	
1,2-dichloro 1,1,2,2-tetrafluoroeth	76-14-2	170.92	9.526	0.0032	0.41 U		0.0032	0.41 U		0.0032	0.41 U		0.0032	0.41 U	
Methanol	67-56-1	32.04	9.973	<0.274	<192 Y		<0.274	<192 Y		0.4309	301.28 Y		<0.274	<192 Y	
Vinyl Chloride	75-01-4	62.5	9.941	0.003	1.08 U		0.003	1.08 U		0.003	1.08 U		0.003	1.08 U	
Butane	106-97-8	58.14	10.77	0.0036	1.39 U		0.0036	1.39 U		0.0446	17.17		0.0212	8.15 J	
Chloroethane	75-00-3	64.51	12.067	0.0041	1.42 U		0.0041	1.42 U		0.0041	1.42 U		0.0041	1.42 U	
Ethanol	64-17-5	46.07	12.513	<0.275	<133 Y		<0.275	<133 Y		<0.275	<133 Y		<0.275	<133 Y	
Acetonitrile	75-05-8	41.05	13.013	0.0033	1.8 U		0.0033	1.8 U		0.0155	8.48 J		0.0086	4.7 J	
Acetone	67-64-1	58.08	13.65	0.0072	2.78 U		0.0081	3.13 J		0.098	37.78		0.0605	23.35 J	
Trichlorofluoromethane	75-69-4	137.37	14.129	0.0069	1.13 J		0.0177	2.89 J		0.1281	20.89		0.0222	3.63 J	
Pentane	109-66-0	72	14.915	0.0029	0.89 U		0.0029	0.89 U		0.0118	3.67 J		0.0066	2.05 J	
1,1-Dichloroethene	75-35-4	96.94	15.521	0.0021	0.47 U		0.0021	0.47 U		0.0589	13.61		0.0021	0.47 U	
Methylene Chloride	75-09-2	84.93	15.755	0.0234	6.17 J,B		0.0167	4.4 J,B		0.0801	21.13 J,B		0.0281	7.41 J,B	
1,1,2-trichloro 1,2,2-trifluoroethane	76-13-1	187.38	16.286	0.0221	2.65 J,B		0.003	0.36 U		0.0244	2.92 J		0.0112	1.33 J	
Propanenitrile	107-12-0	55.08	17.02	0.0019	0.77 U		0.0019	0.77 U		0.0019	0.77 U		0.0019	0.77 U	
Propanol	71-23-8	60.1	17.052	0.0053	1.99 U		0.0053	1.99 U		0.0163	6.08 J		0.0067	2.48 J	
1,1-Dichloroethane	75-34-3	98.96	17.966	0.0014	0.32 U		0.0014	0.32 U		0.0014	0.32 U		0.0014	0.32 U	
2-Butanone	78-93-3	72.11	18.582	0.0022	0.68 U		0.0022	0.68 U		0.024	7.45		0.0119	3.69 J	
cis-1,2-Dichloroethene	156-59-2	96.94	19.486	0.0025	0.58 U		0.0025	0.58 U		0.0025	0.58 U		0.0025	0.58 U	
Hexane	110-54-3	86.18	19.847	0.0013	0.32 U		0.0013	0.32 U		0.0242	6.29		0.0161	4.2	
Chloroform	67-66-3	119.38	20.017	0.0029	0.53 U		0.0029	0.53 U		0.0029	0.53 U		0.0029	0.53 U	
Tetrahydrofuran	109-99-9	72.11	20.729	0.0035	1.07 U		0.0035	1.07 U		0.0101	3.13 J		0.0091	2.83 J	
1,2-Dichloroethane	107-06-2	98.96	21.388	0.0011	0.25 U		0.0011	0.25 U		0.0011	0.25 U		0.0011	0.25 U	
Butanenitrile	109-74-0	69.11	21.834	0.0014	0.45 U		0.0014	0.45 U		0.0014	0.45 U		0.0014	0.45 U	
1,1,1-Trichloroethane	71-55-6	133.4	21.888	0.0027	0.44 U		0.0027	0.44 U		0.0126	2.11 J		0.0042	0.7 J	
1-Butanol	71-36-3	74	22.281	0.0075	2.29 U		0.0075	2.29 U		0.0224	6.77 J		0.0112	3.38 J	
Benzene	71-43-2	78.11	22.759	0.0014	0.4 U		0.0014	0.4 U		0.0103	2.96 J		0.0085	2.45 J	
Carbon Tetrachloride	56-23-5	153.82	23.046	0.0014	0.2 U		0.0014	0.2 U		0.0023	0.34 J		0.0014	0.2 U	
Cyclohexane	110-82-7	84.16	23.312	0.0041	1.09 U		0.0041	1.09 U		0.0295	7.85 J		0.0149	3.97 J	
1,2-Dichloropropane	78-87-5	112.99	24.279	0.0019	0.38 U		0.0019	0.38 U		0.0019	0.38 U		0.0019	0.38 U	
Trichloroethene	79-01-6	131.39	24.704	0.0036	0.61 U		0.0036	0.61 U		0.0036	0.61 U		0.0036	0.61 U	
Heptane	142-82-5	100.2	25.151	0.0015	0.35 U		0.0015	0.35 U		0.0101	2.26 J		0.0086	1.93 J	
4-Methyl-2-Pentanone	108-10-1	100.16	26.309	0.0077	1.72 J		0.0021	0.46 U		0.0203	4.55 J		0.0083	1.86 J	
cis-1,3-Dichloropropene	10061-01-5	110.97	26.331	0.0013	0.25 U		0.0013	0.25 U		0.0013	0.25 U		0.0013	0.25 U	
Pyridine	110-86-1	79.1	26.501	0.0214	6.06 U		0.0214	6.06 U		0.0214	6.06 U		0.0214	6.06 U	
trans-1,3-Dichloropropene	10061-02-6	110.97	27.361	0.0027	0.53 U		0.0027	0.53 U		0.0027	0.53 U		0.0027	0.53 U	
Pentanenitrile	110-59-8	83.15	27.372	0.0008	0.22 U		0.0008	0.22 U		0.0008	0.22 U		0.0008	0.22 U	
1,1,2-Trichloroethane	79-00-5	133.4	27.808	0.0085	1.42 J		0.0085	1.42 J		0.0083	1.4 J		0.0078	1.32 J	
Toluene	108-88-3	92.14	28.446	0.0061	1.49 J		0.0221	5.37		1.6956	412.22		0.2463	59.89	
1,2-Dibromoethane	106-93-4	187.86	29.976	0.0024	0.28 U		0.0024	0.28 U		0.0024	0.28 U		0.0024	0.28 U	

Table H.8 (Cont'd) Triple Sorbent Trap Analysis Results for All Target Analytes from Blank Samples Associated with the Sampling of Tank U-112 Riser 6 on 12/6/96

Target Analytes	CAS	MW	Ret Time	S6119-a53.1311 ISVS TB#2			S6119-a52.1310 ISVS TB#1			S6119-a50.1308 ISVS FB#1			S6119-a51.1309 ISVS FB#2		
				(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag
Octane	111-65-9	114	30.412	0.0027	0.52 U		0.0027	0.52 U		0.007	1.38 J		0.0027	0.52 U	
Tetrachloroethylene	127-18-4	165.83	30.975	0.0025	0.34 U		0.0025	0.34 U		0.0056	0.75 J		0.0025	0.34 J	
Chlorobenzene	108-90-7	112.56	32.559	0.0011	0.22 U		0.0011	0.22 U		0.0011	0.22 U		0.0011	0.22 U	
Hexanenitrile	628-73-9	97	32.75	0.0029	0.66 U		0.0029	0.66 U		0.0042	0.98 J		0.0126	2.92 J	
Ethylbenzene	100-41-4	106.17	33.399	0.0014	0.3 U		0.0014	0.3 U		0.0759	16		0.0375	7.91	
p/m-Xylene	106-42-3	106.17	33.824	0.003	0.63 U		0.003	0.63 U		0.2963	62.52		0.155	32.7	
Cyclohexanone	108-94-1	98.14	34.27	0.0125	2.85 U		0.0125	2.85 U		0.0125	2.85 U		0.0125	2.85 U	
Styrene	100-42-5	104.15	34.738	0.0015	0.33 U		0.0015	0.33 U		0.0799	17.19		0.0335	7.2	
1,1,2,2-Tetrachloroethane	79-34-5	167.85	34.972	0.0058	0.77 U		0.0058	0.77 U		0.0058	0.77 U		0.0058	0.77 U	
o-Xylene	95-47-6	106.17	35.046	0.0019	0.4 U		0.0019	0.4 U		0.1359	28.67		0.07	14.77	
Nonane	111-84-2	128	35.408	0.0013	0.22 U		0.0013	0.22 U		0.0217	3.8		0.0126	2.2	
1-Ethyl-2-methyl benzene	611-14-3	120.19	38.405	0.0024	0.44 U		0.0024	0.44 U		0.0151	2.81 J		0.0085	1.58 J	
1,3,5-Trimethylbenzene	108-67-8	120.19	38.617	0.0024	0.44 U		0.0024	0.44 U		0.017	3.17 J		0.0102	1.9 J	
1,2,4-Trimethylbenzene	95-63-6	120.19	39.893	0.0025	0.47 U		0.0025	0.47 U		0.0504	9.39		0.0289	5.38	
Decane	124-18-5	142.28	40.074	0.003	0.47 U		0.003	0.47 U		0.138	21.73		0.0834	13.13	
1,3-Dichlorobenzene	541-73-1	147	40.435	0.0032	0.48 U		0.0032	0.48 U		0.0032	0.48 U		0.0032	0.48 U	
1,4-Dichlorobenzene	106-46-7	147	40.637	0.0029	0.43 U		0.0029	0.43 U		0.0347	5.28		0.0186	2.84 J	
1,2-Dichlorobenzene	95-50-1	147	41.774	0.0047	0.72 U		0.0047	0.72 U		0.0047	0.72 U		0.0047	0.72 U	
Undecane	1120-21-4	156	44.4	0.0044	0.63 U		0.0044	0.63 U		0.2561	36.77		0.152	21.83	
1,2,4-Trichlorobenzene	120-82-1	181.45	48.024	0.0155	1.91 U		0.0155	1.91 U		0.0155	1.91 U		0.0155	1.91 U	
Dodecane	112-40-3	170	48.428	0.0255	3.36 U		0.0255	3.36 U		0.0995	13.1 J		0.0704	9.28 J	
Hexachloro-1,3-butadiene	87-68-3	260.76	49.841	0.0205	1.76 U		0.0205	1.76 U		0.0205	1.76 U		0.0205	1.76 U	
Tridecane	629-50-5	184	52.19	0.026	3.17 U		0.026	3.17 U		0.1296	15.77 J		0.1183	14.4 J	
Tetradecane	629-59-4	198	55.709	0.0563	6.37 J,B		0.019	2.15 U		0.034	3.85 J,B		0.0307	3.48 J,B	
Tributyl Phosphate	126-73-8	266	63.1	<0.0099	<0.83 Z		<0.0099	<0.83 Z		<0.0099	<0.83 Z		<0.0099	<0.83 Z	

B Compound found in associated laboratory blank.

J Target compound detected above the IDL but below the EQL.

U Target compound not detected at or above the IDL.

Y Initial calibration and CCV were performed; however, the analyte was not part of the current operating procedure.

Z Retention time and mass spectral characteristics were determined and detectability possible at 0.8 ppbv; however, this compound is not currently part of the analytical method. See Section E.4 for more information.

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