Pacific Northwest National Laboratory

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TANK VAPOR CHARACTERIZATION PROJECT

**Tank 241-TY-103 Headspace Gas and Vapor
Characterization: Results for Homogeneity
Samples Collected on November 22, 1996**

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Prepared for Lockheed Martin Hanford
under a Related Services Agreement
with the U.S. Department of Energy
Contract DE-AC06-76RLO 1830

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Summary

This report presents the results of analyses of samples taken from the headspace of waste storage tank 241-TY-103 (Tank TY-103) at the Hanford Site in Washington State. Samples were collected to determine the homogeneity of selected inorganic and organic headspace constituents. Two risers (Riser 8 and Riser 18) were sampled at three different elevations (Top, Middle, and Bottom) 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.

No analytes were determined to be above the immediate notification limits specified by the sampling and analysis plan (SAP) (Buckley 1996).

Acknowledgments

The authors gratefully acknowledge the support of other project staff at Pacific Northwest National Laboratory (PNNL) who contributed to the successful completion of this sampling and analysis activity. S. O. Slate, L. M. P. Thomas, and G. W. Dennis supported inorganic laboratory work.

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-TY-103 (Tank TY-103) at the Hanford Site in Washington State. Samples were collected by SGN Eurisys Service Corporation (SESC) (Sample Jobs S6116 and S6117) on November 22, 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 October 21, 1996 and were returned to PNNL on December 10, 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 TY-103 at the Hanford Site in Washington State. Samples were collected to determine the homogeneity of selected inorganic and organic headspace constituents. Two risers (Riser 8 and Riser 18) were sampled at three different elevations (Top, Middle, and Bottom) 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 TY-103. A detailed discussion of the analytical method and a table of results are presented in Appendix A. In summary, mean water concentration values for dry air at 0°C and 1.013 bar pressure ranged from 14.1 mg/L in Riser 18 Middle and Bottom to 15.9 mg/L in Riser 18 Top samples. The mean nitric oxide and nitrogen dioxide concentrations for all sampling locations were <0.16 ppmv. Mean ammonia concentration values ranged from 43.0 ppmv in Riser 18 Bottom samples to 48.9 ppmv in Riser 8 Top samples.

2.2 Permanent Gases

Table 2.1 also lists results of the permanent gas analyses from samples collected from the headspace of Tank TY-103. 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, carbon dioxide, nitrous oxide, and hydrogen were observed above the estimated quantitation limit (EQL) in all of the tank headspace samples. Average carbon dioxide concentrations ranged from 209 ppm in Riser 8 Bottom samples to 211 ppmv in all Riser 18 samples. Average nitrous oxide concentrations ranged from 203 ppmv in Riser 8 Top samples to 206 ppmv in all Riser 18 samples and Riser 8 Bottom samples. Methane and carbon monoxide concentrations were all below the EQL concentration. Hydrogen values ranged from 62 ppmv in Riser 8 Top and Middle samples to 63 ppmv in Riser 8 Bottom and all Riser 18 samples. There appears 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 TY-103. 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 38.72 mg/m³ in Riser 18 Middle samples to 52.07 mg/m³ in Riser 8 Top samples. There appear to be 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 TY-103. A detailed discussion of the analytical method and tables of results are presented in Appendix D. In summary, 41 target compounds and 6 tentatively identified compounds (TICs) were identified in at least one set of sample results from Tank TY-103. Several compounds including trichlorofluoromethane, 1-butanol, dodecane, tridecane, and tetradecane were identified above 1 mg/m^3 in at least some the sample sets analyzed.

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 TY-103. A detailed discussion of the analytical method and tables of results are presented in Appendix E. In summary, 44 target compounds and 30 TICs were identified in at least one set of sample results from Tank TY-103. Two peaks within the chromatogram were determined to be unknowns. Several compounds including methanol, trichlorofluoromethane, toluene, dodecane, tridecane and tetradecane were identified above 1 mg/m^3 in at least some of the sample sets analyzed. Significant contamination was observed in the field and trip blank samples. Thirty-three target compounds and 22 TICs were identified in one or more of the blank samples. Results from the blank samples suggest problems associated with sampling the tank headspace using triple sorbent traps. 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.

2.6 Flammability

The analytical results presented above can be used to estimate the Tank TY-103 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 TY-103 headspace, determined to be present at approximately 0.158% of its LFL. Total headspace flammability was estimated to be $<0.360\%$ of the LFL.

Table 2.1. Summary of Inorganic Vapor, Permanent Gas, and TO-12 Results for Samples from Tank TY-103 Sampled on 11/22/96

Analyte	Riser 8 Top Level		Riser 8 Middle Level		Riser 8 Bottom Level		Riser 18 Top Level		Riser 18 Middle Level		Riser 18 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	0.5	14.5	1.3	15.3	0.6	15.9	1.4	14.1	1.9	14.1	1.2
Water (mg/L) ^(b)	13.6	0.4	13.0	1.2	13.7	0.5	14.2	1.2	12.6	1.7	12.6	1.0
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)	48.9	3.5	47.8	2.6	46.1	5.2	45.8	1.4	45.3	3.7	43.0	7.2
Permanent Gas (ppmv)												
Carbon Dioxide	210	4.4	210	2.1	209	5.1	211	0.8	211	4.0	211	3.4
Nitrous Oxide	203	4.8	205	1.3	206	2.4	206	1.2	206	2.4	206	1.3
Methane	< 25		< 25		< 25		< 25		< 25		< 25	
Carbon Monoxide	< 17		< 17		< 17		< 17		< 17		< 17	
Hydrogen	62	0.6	62	1.7	63	0.5	63	2.2	63	1.8	63	0.6
TO-12 (mg/m³)	52.07	2.1	51.26	3.9	48.81	2.9	41.59	1.0	38.72	3.7	40.45	2.1

(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 SUMMATM Canisters from Tank TY-103 Sampled on 11/22/96

Target Analytes ^(a)	CAS	MW	Ret Time	Riser 8 Top Level		Riser 8 Middle Level		Riser 8 Bottom Level		Riser 18 Top Level		Riser 18 Middle Level		Riser 18 Bottom Level	
				(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.
Dichlorodifluoromethane	75-71-8	121	4.6	0.004	0.000	0.004	0.000	0.004	0.000	0.003	0.000	0.004	0.000	0.004	0.000
Chloromethane	74-87-3	50	4.9	0.002	0.000	0.002	c	0.002	0.000	0.003	0.002	0.002	0.001	0.002	0.000
Methanol	67-56-1	32	5.2	0.464	0.017	0.500	0.031	0.507	0.020	0.585	0.154	0.575	0.201	0.821	0.057
Butane	106-97-8	58	5.8	0.120	0.004	0.130	0.011	0.128	0.006	0.110	0.009	0.118	0.015	0.117	0.002
Ethanol	64-17-5	46	6.8	0.117	0.005	0.181	0.016	0.186	0.044	0.121	0.005	0.120	0.003	0.125	0.005
Acetonitrile	75-05-8	41	7.3	0.138	0.006	0.144	0.002	0.145	0.007	0.133	0.002	0.135	0.005	0.137	0.003
Acetone	67-64-1	58	7.8	0.355	0.015	0.391	0.023	0.413	0.032	0.371	0.014	0.354	0.008	0.371	0.007
Trichlorofluoromethane	75-69-4	137	8.2	0.855	0.027	0.933	0.113	1.022	0.090	0.855	0.025	0.805	0.023	0.792	0.014
Pentane	109-66-0	72	8.9	0.045	0.001	0.048	0.003	0.050	0.004	0.046	0.000	0.044	0.003	0.043	0.001
Methylene Chloride	75-09-2	85	9.6	0.021	0.000	0.019	0.000	0.020	0.001	0.022	0.001	0.021	0.002	0.020	0.000
1,1,1-Trichloro-2,2,2-trifluoroethane	76-13-1	187	10.1	0.049	0.001	0.059	0.020	0.062	0.005	0.059	0.002	0.096	0.068	0.061	0.005
Propanol	71-23-8	60	10.8	0.090	0.003	0.099	0.003	0.100	0.004	0.094	0.001	0.088	0.010	0.083	0.002
Propanenitrile	107-12-0	55	10.8	0.044	0.001	0.044	0.003	0.046	0.002	0.044	0.001	0.042	0.003	0.040	0.001
2-Butanone	78-93-3	72	12.4	0.074	0.009	0.068	0.014	0.062	0.005	0.080	0.008	0.066	0.010	0.058	0.003
Hexane	110-54-3	86	13.6	0.037	0.004	0.041	0.014	0.045	0.008	0.044	0.003	0.034	0.004	0.029	0.001
Chloroform	67-66-3	119	13.8	0.006	0.000	0.007	c	0.007	0.001	0.006	0.000	0.006	0.000	0.005	0.000
Tetrahydrofuran	109-99-9	72	14.5	0.050	0.001	0.049	0.005	0.055	0.003	0.053	0.003	0.048	0.006	0.043	0.001
Butanenitrile	109-74-0	69	15.7	0.041	0.003	0.050	0.004	0.049	0.005	0.043	0.002	0.040	0.003	0.043	0.001
1,1,1-Trichloroethane	71-55-6	133	15.7	c	c	c	c	c	c	c	c	c	c	0.003	c
1-Butanol	71-36-3	74	16.2	0.978	0.053	1.130	0.049	1.109	0.062	0.999	0.056	0.952	0.053	0.911	0.040
Benzene	71-43-2	78	16.6	0.003	0.000	0.003	c	0.003	0.000	0.003	0.000	0.003	0.000	0.002	0.000
Carbon Tetrachloride	56-23-5	154	16.9	0.075	0.003	0.087	0.007	0.092	0.009	0.071	0.003	0.069	0.002	0.068	0.001
Cyclohexane	110-82-7	84	17.2	0.004	0.001	0.006	0.003	0.007	0.002	0.007	0.001	0.004	0.000	0.004	0.001
Heptane	142-82-5	100	19.2	0.031	0.005	0.039	0.017	0.038	0.009	0.049	0.005	0.031	0.003	0.024	0.001
4-Methyl-2-Pentanone	108-10-1	100	20.4	0.002	c	0.003	c	0.003	0.000	c	c	0.003	0.000	0.003	0.000
Pentanenitrile	110-59-8	83	21.5	0.015	0.001	0.018	0.001	0.018	0.002	0.015	0.001	0.015	0.001	0.015	0.000
Toluene	108-88-3	92	22.5	0.072	0.013	0.100	0.060	0.091	0.030	0.158	0.026	0.106	0.020	0.052	0.001
Octane	111-65-9	114	24.6	0.014	0.000	0.016	0.002	0.018	0.002	0.017	0.000	0.015	0.001	0.014	0.001
Tetrachloroethylene	127-18-4	166	25.1	0.068	0.001	0.073	0.010	0.082	0.009	0.068	0.003	0.066	0.003	0.062	0.002
Hexanenitrile	628-73-9	97	27.0	0.030	0.002	0.037	0.002	0.037	0.004	0.034	0.003	0.031	0.002	0.030	0.001
Ethylbenzene	100-41-4	106	27.6	0.004	0.000	0.004	0.001	0.005	0.001	0.004	0.000	0.004	0.000	0.005	0.002
p/m-Xylene	106-42-3	106	28.0	0.012	0.000	0.013	0.002	0.014	0.002	0.013	0.000	0.012	0.000	0.011	0.000
Cyclohexanone	108-94-1	98	28.4	0.041	0.018	0.082	c	0.050	0.023	0.016	0.004	0.018	0.004	0.019	c
o-Xylene	95-47-6	106	29.2	0.009	0.000	0.009	0.001	0.010	0.001	0.009	0.000	0.009	0.000	0.008	0.000
Nonane	111-84-2	128	29.7	0.008	0.000	0.009	0.001	0.009	0.001	0.009	0.000	0.008	0.000	0.008	c
1,2,4-Trimethylbenzene	95-63-6	120	34.2	0.003	c			0.004	0.000			0.003	0.000	c	c
Decane	124-18-5	142	34.4	0.042	0.001	0.048	0.004	0.049	0.004	0.043	0.001	0.041	0.002	0.039	0.001
Undecane	1120-21-4	156	38.7	0.202	0.007	0.218	0.014	0.221	0.009	0.174	0.007	0.167	0.014	0.167	0.008
Dodecane	112-40-3	170	42.7	12.282	0.491	10.799	3.999	11.866	1.228	7.746	0.759	7.253	0.809	7.784	0.216
Tridecane	629-50-5	184	46.5	36.178	8.328	44.604	10.277	48.016	6.049	60.572	8.459	51.670	26.103	52.886	8.810
Tetradecane	629-59-4	198	50.0	5.097	2.701	10.770	7.315	21.364	7.253	27.048	6.882	23.435	14.539	28.212	14.067

Table 2.2 (Cont'd) Summary of Organic Compound Concentrations (mg/m³) in SUMMATM Canisters from Tank TY-103 Sampled on 11/22/96

Tentatively Identified Compounds ^(b)	CAS	MW	Ret Time	Riser 8 Top Level		Riser 8 Middle Level		Riser 8 Bottom Level		Riser 18 Top Level		Riser 18 Middle Level		Riser 18 Bottom Level	
				(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	4.4	0.122	0.006	0.139	0.018	0.131	0.009	0.128	0.015	0.126	0.011	0.127	0.007
Propanal	123-38-6	58	7.9	0.110	0.005			c	c	0.127	0.004	0.123	0.009	0.131	0.006
Butanal	123-72-8	72	12.2	0.214	0.014	0.196	0.007	0.189	0.012	0.228	0.008	0.215	0.019	0.219	0.017
Pentanal	110-62-3	86	17.8	0.132	0.018	0.119	0.013	0.134	0.022	0.204	0.015	0.130	0.010	0.119	0.010
Hexanal	66-25-1	100	23.4	0.111	0.003	0.109	c	0.102	0.006	0.136	0.013	0.116	0.007	0.122	0.009
Heptanal	111-71-7	114	28.8	c	c					0.193	0.025	0.167	c	c	c

(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.

Table 2.3 Summary of Organic Compound Concentrations (mg/m³) in Triple Sorbent Traps from Tank TY-103 Sampled on 11/22/96

Target Analytes ^(a)	CAS	MW	Ret Time	Riser 8 Top Level		Riser 8 Middle Level		Riser 8 Bottom Level		Riser 18 Top Level		Riser 18 Middle Level		Riser 18 Bottom Level	
				(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	1.454	1.040	1.408	0.927	1.896	1.612	1.064	0.331	0.949	0.312	1.082	0.385
Butane	106-97-8	58	10.8	0.098	0.032	0.097	0.037	0.112	0.056	0.081	0.009	0.094	0.014	0.090	0.013
Acetonitrile	75-05-8	41	13.0	0.102	0.028	0.091	0.025	0.113	0.050	0.097	0.020	0.089	0.017	0.095	0.019
Acetone	67-64-1	58	13.7	0.087	0.023	0.088	0.016	0.106	0.035	0.098	0.026	0.074	0.005	0.087	0.012
Trichlorofluoromethane	75-69-4	137	14.1	1.092	0.740	1.112	0.965	1.380	1.057	0.639	0.065	0.855	0.322	0.768	0.251
Pentane	109-66-0	72	14.9	0.044	0.003	0.042	0.004	0.046	0.002	0.043	0.003	0.043	0.003	0.045	0.003
1,1-Dichloroethene	75-35-4	97	15.5					0.013	0.011						
Methylene Chloride	75-09-2	85	15.8	0.206	0.212	0.195	0.213	0.480	0.408	0.068	0.022	0.080	0.044	0.065	0.027
1,1,2-trichloro-2,2,2-trifluoroethane	76-13-1	187	16.3	0.080	0.008	0.080	0.009	0.079	0.014	0.072	0.011	0.078	0.012	0.073	0.011
Propanenitrile	107-12-0	55	17.0	0.036	0.007	0.036	0.002	0.041	0.008	0.034	0.004	0.034	0.005	0.035	0.004
Propanol	71-23-8	60	17.1	0.070	0.012	0.059	0.010	0.075	0.013	0.070	0.011	0.067	0.006	0.076	0.009
2-Butanone	78-93-3	72	18.6	0.059	0.032	0.052	0.014	0.087	0.060	0.216	0.183	0.146	0.039	0.152	0.066
Hexane	110-54-3	86	19.8	0.122	0.051	0.121	0.055	0.157	0.077	0.258	0.097	0.285	0.098	0.290	0.099
Chloroform	67-66-3	119	20.0			0.004	c	0.006	c	c	c				
Tetrahydrofuran	109-99-9	72	20.7	0.049	0.003	0.047	0.005	0.049	0.002	0.047	0.003	0.051	0.004	0.052	0.004
Butanenitrile	109-74-0	69	21.8	0.055	0.006	0.051	0.005	0.059	0.004	0.058	0.007	0.056	0.006	0.058	0.005
1,1,1-Trichloroethane	71-55-6	133	21.9	0.010	0.004	0.008	0.003	0.011	0.004	0.009	0.003	0.008	0.003	0.009	0.003
1-Butanol	71-36-3	74	22.3	0.670	0.108	0.621	0.084	0.677	0.057	0.657	0.053	0.622	0.048	0.625	0.066
Benzene	71-43-2	78	22.8	0.009	0.001	0.009	0.001	0.010	0.001	0.009	0.001	0.010	0.003	0.011	0.002
Carbon Tetrachloride	56-23-5	154	23.0	0.056	0.007	0.054	0.004	0.058	0.004	0.055	0.005	0.052	0.004	0.055	0.004
Cyclohexane	110-82-7	84	23.3	0.072	0.010	0.057	0.031	0.086	0.007	0.221	0.186	0.225	0.159	0.086	0.036
Trichloroethene	79-01-6	131	24.7			c	c	0.014	0.012						
Heptane	142-82-5	100	25.2	0.066	0.024	0.067	0.020	0.090	0.030	0.156	0.057	0.164	0.080	0.125	0.070
4-Methyl-2-Pentanone	108-10-1	100	26.3	0.016	0.005	0.016	0.004	0.022	0.005	0.018	0.007	0.014	0.003	0.017	0.003
Pentanenitrile	110-59-8	83	27.4	0.018	0.003	0.017	0.002	0.019	0.002	0.018	0.001	0.019	0.002	0.020	0.003
1,1,2-Trichloroethane	79-00-5	133	27.8	0.009	0.004			0.009	0.002			0.008	0.003	0.010	0.000
Toluene	108-88-3	92	28.5	1.162	0.942	0.953	0.684	1.612	0.916	1.126	0.285	1.391	0.217	0.889	0.229
Octane	111-65-9	114	30.4	0.027	0.007	0.024	0.007	0.031	0.006	0.026	0.004	0.026	0.005	0.029	0.007
Tetrachloroethylene	127-18-4	166	31.0	0.042	0.014	0.042	0.013	0.047	0.009	0.039	0.007	0.045	0.014	0.053	0.015
Hexanenitrile	628-73-9	97	32.8	0.014	0.005	0.014	0.004	0.016	0.002	0.014	0.001	0.015	0.003	0.017	0.003
Ethylbenzene	100-41-4	106	33.4	0.036	0.010	0.026	0.008	0.035	0.010	0.033	0.008	0.029	0.008	0.031	0.009
p/m-Xylene	106-42-3	106	33.8	0.120	0.030	0.085	0.024	0.112	0.028	0.110	0.024	0.096	0.024	0.101	0.024
Styrene	100-42-5	104	34.8	0.026	0.006	0.018	0.005	0.024	0.006	0.024	0.005	0.021	0.005	0.021	0.005
o-Xylene	95-47-6	106	35.0	0.057	0.016	0.041	0.013	0.055	0.015	0.053	0.014	0.045	0.012	0.050	0.013
Nonane	111-84-2	128	35.4	0.022	0.005	0.018	0.004	0.025	0.006	0.020	0.004	0.018	0.002	0.022	0.004
1-Ethyl-2-methyl benzene	611-14-3	120	38.4	0.004	0.001	0.003	0.000	0.005	0.001	0.004	0.000	0.004	0.001	0.004	0.001
1,3,5-Trimethylbenzene	108-67-8	120	38.6	0.005	0.000	0.004	0.001	0.005	0.001	0.004	0.000	0.004	0.001	0.004	0.001
1,2,4-Trimethylbenzene	95-63-6	120	39.9	0.012	0.002	0.010	0.001	0.013	0.003	0.012	0.001	0.011	0.001	0.011	0.001
Decane	124-18-5	142	40.1	0.042	0.010	0.034	0.005	0.045	0.010	0.042	0.009	0.038	0.003	0.042	0.003
1,4-Dichlorobenzene	106-46-7	147	40.6	0.010	0.003	0.007	0.002	0.010	0.004	0.010	0.002	0.008	0.002	0.008	0.002
Undecane	1120-21-4	156	44.4	0.051	0.029	0.053	0.028	0.057	0.019	0.056	0.025	0.054	0.023	0.082	0.030
Dodecane	112-40-3	170	48.4	1.043	0.845	1.223	0.924	1.301	0.630	1.165	0.634	1.124	0.794	2.006	0.845
Tridecane	629-50-5	184	52.2	2.182	1.244	2.837	2.068	3.203	1.597	2.600	0.934	3.016	1.585	4.056	1.236
Tetradecane	629-59-4	198	55.7	1.875	1.181	2.842	2.407	3.121	2.041	2.481	0.838	3.347	1.988	3.487	1.098

Table 2.3 (Cont'd) Summary of Organic Compound Concentrations (mg/m³) in Triple Sorbent Traps from Tank TY-103 Sampled on 11/22/96

Tentatively Identified Compounds ^(b)	CAS	MW	Ret Time	Riser 8 Top Level		Riser 8 Middle Level		Riser 8 Bottom Level		Riser 18 Top Level		Riser 18 Middle Level		Riser 18 Bottom Level	
				(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	7.4	0.168	0.123	0.172	0.144	0.155	0.089	0.142	0.027	0.193	0.068	0.127	0.032
Ethane, 1-chloro-1,1-difluoro-	75-68-3	100	8.8	1.041	1.493	1.154	1.675	3.315	3.307	0.647	0.802	0.459	0.542	0.373	0.506
1-Propene, 2-methyl-	115-11-7	56	10.4			0.200	0.043								
1-Fluoro-1,1-dichloro-ethane	1717-00-6	116	14.4	c	c	c	c	1.218	c						
2-Propanol, 2-methyl-	75-65-0	74	15.5	0.130	0.042	0.108	0.046	0.129	0.042	0.168	0.057	0.139	0.033	0.160	0.030
Pentane, 2-methyl-	107-83-5	86	18.3	0.064	0.017	0.061	0.018	0.067	0.018	0.122	0.028	0.121	0.041	0.121	0.046
Pentane, 3-methyl-	96-14-0	86	19.0	0.057	0.019	0.056	0.013	0.072	0.026	0.169	0.054	0.158	0.050	0.162	0.051
Cyclopentane, methyl-	96-37-7	84	21.4	0.044	0.020	0.042	0.016	0.059	0.022	0.119	0.051	0.118	0.050	0.114	0.054
Hexane, 2-methyl-	591-76-4	100	23.4	0.088	0.029	0.089	0.025	0.120	0.040	0.223	0.094	0.204	0.111	0.171	0.106
Pentane, 2,3-dimethyl-	565-59-3	100	23.6	0.062	0.032	0.065	0.017	0.104	0.039	0.133	0.031	0.098	0.042	0.080	0.046
Hexane, 3-methyl-	589-34-4	100	23.9	0.140	0.062	0.135	0.061	0.224	0.072	0.366	0.144	0.322	0.161	0.260	0.161
1-Butanol, 2-ethyl-	97-95-0	102	24.5	0.044	c	0.038	c	0.051	0.016	0.072	0.021	0.054	0.026	0.066	c
Cyclopentane, 1,2-dimethyl-	2452-99-5	98	24.8	0.107	0.103	0.050	0.013	0.169	0.147	0.087	0.020	0.094	0.033	0.066	0.028
Cyclohexane, methyl-	108-87-2	98	26.7	0.115	0.048	0.098	0.051	0.159	0.052	0.201	0.022	0.118	0.052	0.090	0.041
Hexane, 2,4-dimethyl-	589-43-5	114	27.0	0.049	0.023	0.035	0.021	0.053	0.024	0.074	0.016	0.054	0.030	0.047	0.023
Cyclohexane, 1,4-dimethyl-	589-90-2	112	29.7	0.068	0.038	0.052	0.031	0.076	0.030	0.088	0.021	0.060	0.035	0.058	0.028
Cyclotrisiloxane, hexamethyl-	541-05-9	222	31.1	0.813	0.175	0.753	0.244	0.693	0.088			0.822	0.222	0.729	0.197
Hexane, 2,3,5-trimethyl-	1069-53-0	128	31.4	0.204	0.095	0.136	0.094	0.189	0.085	0.194	0.091	0.142	0.097	0.182	0.086
Heptane, 2,4-dimethyl-	2213-23-2	128	31.7	0.640	0.284	0.425	0.277	0.587	0.251	0.600	0.277	0.442	0.287	0.564	0.257
2,4-Dimethyl-1-heptene	19549-87-2	126	32.6	0.127	0.061	0.094	0.056	0.113	0.053	0.116	0.059	0.085	0.060	0.107	0.054
Cyclotetrasiloxane, octamethyl-	556-67-2	296	39.4	0.447	0.086	0.407	0.042	0.425	0.084	0.393	0.064	0.443	0.059	0.395	0.038
Undecane, 3,7-dimethyl-	17301-29-0	184	42.9	0.678	c	0.643	c			0.651	c	0.643	c		
Undecane, 4,7-dimethyl-	17301-32-5	184	42.9	c	c	c	c	0.726	c	c	c			0.527	c
Unknown C12 Alkane		170	43.1	0.386	0.052	0.301	0.039	0.378	0.057	0.366	0.061	0.326	0.036	0.311	0.051
5-Dodecanone	19780-10-0	184	54.4	0.163	c	0.255	c	0.131	0.066	0.145	0.076	c	c	0.278	0.121
6-Dodecanone	6064-27-3	184	54.4	c	c							0.094	0.028		
Unknown C14 Alkane		198	57.8	0.367	0.244	0.515	0.464	0.429	0.240	0.490	0.244	0.436	0.273	0.971	0.403
3-Tridecanone	1534-26-5	198	58.3	0.094	0.064	0.137	0.127	0.106	0.060	0.129	0.067	0.111	0.069	0.258	0.116
2-Tridecanone	593-08-8	198	58.5	0.113	0.061	0.145	0.172	c	c	0.142	0.067	0.150	0.075	0.279	0.133
Pentadecane	629-62-9	212	59.0			c	c			c	c	c	c	0.295	0.088

(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 should be considered suspect due to possible sampling error.

Table 2.4 Flammability Data for Tank TY-103 Sampled on 11/22/96

Analyte	CAS #	Lower Flammability	Average	% of LFL
		Limit(LFL)	Measured Concentrations	
Ammonia (ppm)	7664-41-7	150000	46.14	0.031
Carbon Monoxide (ppm)	630-08-0	125000	<17	<0.014
Hydrogen (ppm)	1333-74-0	40000	63	0.158
Methane (ppm)	74-82-8	50000	<25	<0.050
TNMOC (mg/m ³)		42000	45.48	0.108
Total				<0.360

Note: Less than values are calculated using the average concentration less than values.

These values are summed to determine the total LFL.

Average values from all sampling locations were used for calculations.

3.0 Conclusions

The concentrations of inorganic vapors and organic analytes were determined from six different sampling locations within Tank TY-103. 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). No immediate notifications were provided because analytical results indicated no specific analytes exceeded the notification levels; notification levels and notification procedures are described in the SAP (Buckley 1996). The TST sample results suggest problems associated with the sampling event; therefore, selected target and TIC results should be considered suspect.

5.0 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).

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 NO₂ 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 NO₂ results is $\pm 10\%$, and for NO results it is $\pm 5\%$.

Table A.3 Quantitation Limits for Selected Inorganic Analytes

<u>Analyte</u>	<u>Formula</u>	<u>EQL^(a)</u> <u>(ppmv)</u>
Ammonia	NH ₃	0.71
Nitrogen Dioxide	NO ₂	0.16
Nitric oxide	NO	0.16
Mass (water) ^(b)	H ₂ O	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 TY-103 through the ISVS system. A total of 24 samples were collected from two risers at three levels within the tank headspace. Four field blanks were also analyzed. The samples were analyzed for water on December 12, 1996, for ammonia on December 20, 1996, and for NO₂ and NO on December 17 through December 20, 1996. A summary of results can be found in Table 2.1 of Section 2.

Table A.4 Inorganic Vapor Analysis Results for Samples Collected from Tank TY-103 on 11/22/96

Riser # 8	Sample ID No.	Water^(a)	Water^(b)	Nitric	Nitrogen	NH₃
		mg/L	mg/L	Oxide	Dioxide	
Tank Top	S6116-t16.R47	14.6	13.0	<0.16	<0.16	47.4
	S6116-t17.R48	15.4	13.8	<0.16	<0.16	47.0
	S6116-t18.R49	15.7	14.0	<0.16	<0.16	54.2
	S6116-t19.R50	15.3	13.7	<0.16	<0.16	47.1
Mean		15.3	13.6	<0.16	<0.16	48.9
St. Dev.		0.5	0.4			3.5
Tank Middle	S6116-m10.R41	13.4	12.0	<0.16	<0.16	44.8
	S6116-m11.R42	13.4	12.0	<0.16	<0.16	49.7
	S6116-m20.R51	16.0	14.3	<0.16	<0.16	46.4
	S6116-m21.R52	15.2	13.6	<0.16	<0.16	50.3
Mean		14.5	13.0	<0.16	<0.16	47.8
St. Dev.		1.3	1.2			2.6
Tank Bottom	S6116-b12.R43	9.0*	8.1*	<0.16	<0.16	48.5
	S6116-b13.R44	15.1	13.5	<0.16	<0.16	46.5
	S6116-b14.R45	16.0	14.3	<0.16	<0.16	50.5
	S6116-b15.R46	14.9	13.4	<0.16	<0.16	38.7
Mean		15.3	13.7	<0.16	<0.16	46.1
St. Dev.		0.6	0.5			5.2

Riser # 18	Sample ID No.	Water^(a)	Water^(b)	Nitric	Nitrogen	NH₃
		mg/L	mg/L	Oxide	Dioxide	
Tank Top	S6117-t16.R61	16.6	14.8	<0.16	<0.16	45.6
	S6117-t17.R62	17.4	15.5	<0.16	<0.16	46.4
	S6117-t18.R63	14.2	12.7	<0.16	<0.16	44.0
	S6117-t19.R64	15.3	13.6	<0.16	<0.16	47.2
Mean		15.9	14.2	<0.16	<0.16	45.8
St. Dev.		1.4	1.2			1.4
Tank Middle	S6117-m10.R55	8.1*	7.3*	<0.16	<0.16	40.1
	S6117-m11.R56	11.9	10.7	<0.16	<0.16	46.6
	S6117-m20.R65	14.9	13.3	<0.16	<0.16	45.6
	S6117-m21.R66	15.5	13.8	<0.16	<0.16	48.8
Mean		14.1	12.6	<0.16	<0.16	45.3
St. Dev.		1.9	1.7			3.7
Tank Bottom	S6117-b12.R57	12.7	11.4	<0.16	<0.16	38.9
	S6117-b13.R58	14.8	13.3	<0.16	<0.16	53.1
	S6117-b14.R59	8.3*	7.5*	<0.16	<0.16	36.9
	S6117-b15.R60	14.6	13.1	<0.16	<0.16	43.0
Mean		14.1	12.6	<0.16	<0.16	43.0
St. Dev.		0.7	0.6			7.2

(a) Dry air at 0°C and 1.013 bar.

(b) Moist air at tank temperature and pressure.

* Suspect data, not used in average calculation

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 TY-103 through the ISVS system and ambient air collected near Tank TY-103. A total of 24 samples were collected from two risers at three different levels within the tank headspace. A single ambient air sample was collected during sampling of TY-103 (see COC anomaly in Appendix F). Samples were analyzed on January 21 through 23, 1997. Hydrogen was analyzed on January 29, 1997. Replicate analyses for all permanent gases were conducted on SUMMA™ canister 303. Replicate analysis was conducted for hydrogen only on SUMMA™ canister 113. A summary of all permanent gas results can be found in Table 2.1 of Section 2.0.

Table B.4 Permanent Gas Analysis Results from Tank TY-103 Sampled on 11/22/96

Riser 8		Carbon Dioxide	Nitrous Oxide	Methane	Carbon Monoxide	Hydrogen
	Sample Identification	(ppmv)	(ppmv)	(ppmv)	(ppmv)	(ppmv)
Ambient Air	S6116-a24.006	478	<17	<25	<17	<17
Tank Top	S6116-t38.266	204	204	<25	<17	62
	S6116-t39.267	212	207	<25	<17	62
	S6116-t40.277	214	196	<25	<17	61
	S6116-t41.279	208	205	<25	<17	61
	Mean	210	203	<25	<17	62
	St. Dev.	4.4	4.8			0.6
Tank Middle	S6116-m26.307	207	205	<25	<17	64
	S6116-m27.078	210	203	<25	<17	62
	S6116-m46.302	212	205	<25	<17	60
	S6116-m47.303	210	206	<25	<17	61
	Mean	210	205	<25	<17	62
	St. Dev.	2.1	1.3			1.7
Tank Bottom	S6116-b30.113	216	209	<25	<17	63
	S6116-b31.240	206	205	<25	<17	63
	S6116-b32.251	207	204	<25	<17	63
	S6116-b33.265	205	204	<25	<17	62
	Mean	209	206	<25	<17	63
	St. Dev.	5.1	2.4			0.5
Riser 18		Carbon Dioxide	Nitrous Oxide	Methane	Carbon Monoxide	Hydrogen
	Sample Identification	(ppmv)	(ppmv)	(ppmv)	(ppmv)	(ppmv)
Tank Top	S6117-t38.348	210	207	<25	<17	62
	S6117-t39.349	212	207	<25	<17	66
	S6117-t40.350	211	205	<25	<17	61
	S6117-t41.351	211	205	<25	<17	64
	Mean	211	206	<25	<17	63
	St. Dev.	0.8	1.2			2.2
Tank Middle	S6117-m26.342	208	204	<25	<17	65
	S6117-m27.343	211	205	<25	<17	62
	S6117-m46.352	209	204	<25	<17	64
	S6117-m47.353	217	209	<25	<17	61
	Mean	211	206	<25	<17	63
	St. Dev.	4.0	2.4			1.8
Tank Bottom	S6117-b30.344	209	206	<25	<17	62
	S6117-b31.345	211	206	<25	<17	63
	S6117-b32.346	215	208	<25	<17	63
	S6117-b33.347	207	205	<25	<17	62
	Mean	211	206	<25	<17	63
	St. Dev.	3.4	1.3			0.6
Riser 8 Replicate Analyses						
Tank Bottom	S6116-b30.113 ^(a)	216	209	<25	<17	63
		NA	NA	NA	NA	60
	RPD					4.9
Tank Middle	S6116-m47.303 ^(b)	210	206	<25	<17	61
		207	206	<25	<17	NA
	RPD	1.4	0.0			

Footnotes

NA Not Analyzed

(a) Replicate for hydrogen only.

(b) Replicate for permanent gases only.

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 analysis from samples collected from the headspace of Tank TY-103 through the ISVS system and ambient air collected near Tank TY-103. A total of 24 tank samples were collected from two risers at three levels within the tank headspace. A single ambient air sample was collected during the sampling of TY-103 (see COC anomaly in Appendix F). The samples were analyzed on February 11 and 12, April 16, and June 3, 1997. A summary of results can be found in Table 2.1 of Section 2.0.

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 non linearity 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.

Table C.3 Total Non-Methane Organic Compound Analysis Results from Tank TY-103 Sampled on 11/22/96

Riser # 8		Sample ID No.	(mg/m ³)		
Upwind Ambient Air	S6114-a24.006		<0.59		
Tank Top	S6116-t38.266		53.14		
	S6116-t39.267		54.28		
	S6116-t40.277		49.63		
	S6116-t41.279		51.22		
	Mean		52.07		
	St. Dev.		2.1		
Tank Middle	S6116-m26.307		47.12		
	S6116-m47.303		54.54		
	S6116-m27.078		48.74		
	S6116-m27.078	REP ^(a)	49.56	RPD ^(b)	1.7
	S6116-m46.302		54.63		
	S6116-m46.302	REP ^(a)	53.35	RPD ^(b)	2.4
	Mean		51.26		
	St. Dev.		3.9		
Tank Bottom	S6116-b30.113		49.24		
	S6116-b31.240		50.70		
	S6116-b32.251		44.59		
	S6116-b33.265		50.71		
	S6116-b33.265	REP ^(a)	50.52	RPD ^(b)	0.4
	Mean		48.81		
	St. Dev.		2.9		
	Riser # 18				
Tank Top	S6117-t38.348		40.63		
	S6117-t40.350		41.77		
	S6117-t41.351		42.89		
	S6117-t39.349		41.06		
	S6117-t39.349	REP ^(a)	41.01	RPD ^(b)	0.1
	Mean		41.59		
	St. Dev.		1.0		
Tank Middle	S6117-m27.343		37.54		
	S6117-m47.353		40.07		
	S6117-m46.352		43.04		
	S6117-m46.352	REP ^(a)	41.90	RPD ^(b)	2.7
	S6117-m26.342		34.22		
	S6117-m26.342	REP ^(a)	33.50	RPD ^(b)	2.1
	Mean		38.72		
	St. Dev.		3.7		
Tank Bottom	S6117-b30.344		37.42		
	S6117-b31.345		41.94		
	S6117-b32.346		41.07		
	S6117-b33.347		41.36		
	Mean		40.45		
	St. Dev.		2.1		

(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 10, 1996, under chain-of-custody (COC) numbers 100413 and 100416. Two SUMMA™ canisters were returned unused (see COC anomaly in Appendix F). Twenty-four tank headspace samples and one ambient sample were collected during the sampling of Tank TY-103. These samples consisted of four samples each from six different sampling locations within the tank headspace and one ambient air sample. These samples were analyzed on January 31, February 19, 20, 21, 23, and 28, March 5 and 12, May 22, and June 14, 1997. Four 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.12. 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.13.

A representative total ion chromatogram showing the major constituents identified in the SUMMA™ analysis is provided in Figure D.1.

Appendix G contains complete listings of target analyte results from the SUMMA™ 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 summary of the mean concentration values (mg/m^3) and associated standard deviations 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.

The SUMMA™ canister samples were analyzed in ten batches. Case narratives for each of the batches are presented below.

Batch #1 (file identifier 17013102.b) - S6116-a24.006, S6116-m26.307, S6116-m27.078, S6116-m27.078 REP, S6116-b30.113, S6116-b31.240, S6116-b32.251;

Batch #2 (file identifier 17021902.b) - S6116-t38.348, S6116-t39.349, S6116-t40.350, S6116-t40.350 REP, S6116-t41.351, S6116-m46.352, S6116-m47.353;

Batch #3 (file identifier 17022002.b) - S6116-b32.251, S6116-b33.265, S6116-t38.266, S6116-t38.266 REP, S6116-t39.267, S6116-t40.277, S6116-t41.279;

Batch #4 (file identifier 17022102.b) - S6116-m46.302, S6116-m47.303;

Batch #5 (file identifier 17022302.b) - S6117-m26.342, S6117-m27.343, S6117-b30.344, S6117-b30.344 REP, S6117-b31.345, S6117-b32.346, S6117-b33.347;

Batch #6 (file identifier 17022802.b) - S6116-m26.307, S6116-m27.078, S6116-b30.113, S6116-b30.113 REP, S6116-b31.240, S6116-b32.251, S6116-b33.265;

Batch #7 (file identifier 17030502.b) - S6116-t39.267, S6116-t40.277, S6116-t38.266, S6116-t38.266 REP, S6116-t41.279, S6116-m46.302, S6116-m47.303;

Batch #8 (file identifier 17031202.b) - S6117-m26.342, S6117-m27.343, S6117-b30.344, S6117-b30.344 REP, S6117-b31.345, S6117-b32.346, S6117-b33.347;

Batch #9 (file identifier 17052202.b) - S6117-t38.348, S6117-t39.349, S6117-t40.350, S6117-t40.350 REP, S6117-t41.351, S6117-m46.352, S6117-m47.353;

Batch #10 (file identifier 17061402.b) - S6116-m27.078, S6116-m27.078 REP.

Batch #1:

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

Two target compounds (chloroethane at 47.60% and pyridine at 53.79%) surpassed the 30% relative standard deviation (%RSD) acceptance criteria for initial calibration.

Tetradecane surpassed 0.05 response factor (RF) criteria for the initial calibration. Tetradecane was found in all tank samples at concentrations above the upper quantitation limit (UQL), except ambient air sample S6116-a24.006 where it was found at concentration between EQL and UQL. Chloroethane was not found in the tank samples at concentrations higher than its IDL. Pyridine was not found in all tank samples at concentrations higher than its IDL, except ambient air sample S6116-a24.006 where it was found at concentration between its IDL and EQL. Due to the initial calibration performance the uncertainty associated with the results is higher than normal.

Five target compounds (1,2-dichloro-1,1,2,2-tetrafluoroethane-31.8%, chloroethane - 47.3%, ethanol - 37.9%, tridecane - 49.2%, and tetradecane - 133.7%) were outside the 25% difference (% D) acceptance criteria for the continuing calibration verification (CCV) sample. However, the CCV passed the procedural criterion requiring $\pm 25\%$ D passage for 85% of all target compounds.

Results of chloroethane and tetradecane determination were mentioned above. Tridecane was found in all tank samples at concentrations above its UQL, except ambient air sample S6116-a24.006 where it was found at concentration between IDL and EQL. The compound 1,2-dichloro-1,1,2,2-tetrafluoroethane was not found in the tank samples at concentrations higher than its IDL. Ethanol was found in the all tank samples at concentrations between its EQL and UQL, except ambient air sample S6116-a24.006 where it was found at concentration between its IDL and EQL. Due to the CCV performance for this compounds a higher than normal uncertainty is associated with the results.

Two target compounds (acetone and 1,2,4-trichlorobenzene) were found in the initial calibration blank (ICB) above their EQLs. Target compounds tridecane and 1,2,4-trichlorobenzene were detected in the continuing calibration blank (CCB) above their EQLs. Compounds found in the CCB at concentrations (in ng) greater than 5% of the sample concentration are flagged with a "B" in the tables.

Batch #2:

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

Two target compounds (chloroethane - 47.60% and pyridine - 53.79%) surpassed the 30% percent relative standard deviation (%RSD) acceptance criteria for initial calibration.

Tetradecane surpassed 0.05 RF criteria for the initial calibration. Tetradecane was found in all tank samples at concentrations above the UQL. Chloroethane and pyridine were not found in the tank samples at concentrations higher than their IDL. Due to the initial calibration performance the uncertainty associated with the results is higher than normal.

Three target compounds (1,1,2-trichloro-1,2,2-trifluoroethane-33.7%, pyridine-43.2% and tetradecane - 64.5%) were outside the 25% D acceptance criteria for the CCV sample. However, the CCV passed the procedural criterion requiring $\pm 25\%$ D passage for 85% of all target compounds. Results of pyridine and tetradecane determination were mentioned above. The compound 1,1,2-trichloro-1,2,2-trifluoroethane was found in all tank samples at concentrations between EQL and UQL. Due to the CCV performance for this compounds a higher than normal uncertainty is associated with the results.

Two target compounds (acetone and 1,2,4-trichlorobenzene) were found in the ICB above their EQLs. Target compound methylene chloride was detected in the CCB above the EQL. Compounds found in the CCB at concentrations (in ng) greater than 5% of the sample concentration are flagged with a "B" in the tables.

Batch #3:

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

Two target compounds (chloroethane - 47.60% and pyridine - 53.79%) surpassed the 30% percent relative standard deviation (%RSD) acceptance criteria for initial calibration.

Tetradecane surpassed 0.05 RF criteria for the initial calibration. Tetradecane was found in all tank samples at concentrations above the UQL. Chloroethane and pyridine were not found in the tank samples at concentrations higher than their IDL. Due to the initial calibration performance the uncertainty associated with the results is higher than normal. Four target compounds (1,1,2-trichloro-1,2,2-trifluoroethane-30.2%, pyridine - 30.9%, tridecane - 34.2% and tetradecane - 88.6%) were outside the 25% D acceptance criteria for the CCV sample. However, the CCV passed the procedural criterion requiring $\pm 25\%$ D passage for 85% of all target compounds. Results of pyridine and tetradecane determination were mentioned above. The compound 1,1,2-trichloro-1,2,2-trifluoroethane was found in all tank samples at concentrations between the EQL and UQL. Tridecane was found in all tank samples at concentrations above its UQL. Due to the CCV performance for this compound, a higher than normal uncertainty is associated with the results.

Two target compounds (acetone and 1,2,4-trichlorobenzene) were found in the ICB above their EQLs. Target compound methylene chloride was detected in the CCB above their EQLs. Compounds found in the CCB at concentrations (in ng) greater than 5% of the sample concentration are flagged with a "B" in the tables.

Batch #4:

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

Two target compounds (chloroethane - 47.60% and pyridine - 53.79%) surpassed the 30% percent relative standard deviation (%RSD) acceptance criteria for initial calibration. Tetradecane surpassed 0.05 RF criteria for the initial calibration.

Tetradecane was found in all tank samples at concentrations above the UQL. Chloroethane and pyridine were not found in the tank samples at concentrations higher than their IDL. Due to the initial calibration performance the uncertainty associated with the results is higher than normal.

Four target compounds (chloroethane - 29.2%, pyridine - 27.1%, tridecane - 33.9% and tetradecane - 70.5%) were outside the 25% D acceptance criteria for the CCV sample. However, the CCV passed the procedural criterion requiring $\pm 25\%$ D passage for 85% of all target compounds.

Results of pyridine, chloroethane and tetradecane determination were mentioned above. Tridecane was found in all tank samples at concentrations above its UQL. Due to the CCV performance for this compounds a higher than normal uncertainty is associated with the results.

Two target compounds (acetone and 1,2,4-trichlorobenzene) were found in the ICB above their EQLs. Target compound methylene chloride was detected in the CCB above their EQLs. Compounds found in the CCB at concentrations (in ng) greater than 5% of the sample concentration are flagged with a "B" in the tables.

Batch #5:

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

Two target compounds (chloroethane - 47.60% and pyridine - 53.79%) surpassed the 30% percent relative standard deviation (%RSD) acceptance criteria for initial calibration. Tetradecane surpassed 0.05 RF criteria for the initial calibration.

Tetradecane was found in all tank samples at concentrations above the UQL. Chloroethane and pyridine were not found in the tank samples at concentrations higher than their IDL, except tank sample S6117-m26.342, where pyridine was found at concentration between IDL and EQL. Due to the initial calibration performance the uncertainty associated with the results is higher than normal.

Six target compounds (chloroethane - 29.8%, 1,1,2-trichloro-1,2,2-trifluoroethane-30.2%, 4-methyl-2-pentanone - 28.9%, pyridine - 33.3%, tridecane - 41.6% and tetradecane - 84.4%) were outside the 25% D acceptance criteria for the CCV sample. However, the CCV passed the procedural criterion requiring $\pm 25\%$ D passage for 85% of all target compounds.

Results of chloroethane, pyridine and tetradecane determination were mentioned above. The compound 1,1,2-trichloro-1,2,2-trifluoroethane was found in all tank samples at concentrations between the EQL and UQL. Tridecane was found in all tank samples at concentrations above its UQL. The compound 4-methyl-2-pentanone was found in all tank samples at concentration between the IDL and EQL, except tank samples S6117-b30.344 REP and S6117-b31.345, where it was not found at concentration higher than its IDL. Due to the CCV performance for this compound, a higher than normal uncertainty is associated with the results.

Two target compounds (acetone and 1,2,4-trichlorobenzene) were found in the ICB above their EQLs. No target compounds were detected in the CCB above their EQLs. Compounds found in the CCB at concentrations (in ng) greater than 5% of the sample concentration are flagged with a "B" in the tables.

Batch #6:

This analytical sequence was run using 40 mL volumes of diluted 1:10 samples to quantify target compounds in each tank sample.

Two target compounds (chloroethane - 47.60% and pyridine - 53.79%) surpassed the 30% percent relative standard deviation (%RSD) acceptance criteria for initial calibration.

Tetradecane surpassed 0.05 RF criteria for the initial calibration. Tetradecane was found in all tank samples at concentrations between the EQL and the UQL. Chloroethane and pyridine were not found in the tank samples at concentrations higher than their IDL. Due to the initial calibration performance the uncertainty associated with the results is higher than normal. Six target compounds (chloroethane - 56.1%; 1,1,2-trichloro-1,2,2-trifluoroethane-32.9%, cis-1,2-dichloroethene - 32.8%; pyridine - 28.8%; tridecane - 37.2% and tetradecane - 67.2%) were outside the 25% D acceptance criteria for the CCV sample. However, the CCV passed the

procedural criterion requiring $\pm 25\%$ D passage for 85% of all target compounds. Results of chloroethane, pyridine and tetradecane determination were mentioned above. The compound 1,1,2-trichloro-1,2,2-trifluoroethane was found in all tank samples at concentrations between its IDL and EQL. Cis-1,2-dichloroethene was not found in the tank samples at concentrations higher than its IDL. Tridecane was found in all tank samples at concentrations between its EQL and UQL. Due to the CCV performance for this compound, a higher than normal uncertainty is associated with the results.

Two target compounds (acetone and 1,2,4-trichlorobenzene) were found in the ICB above their EQLs. Target compound 1,2,4-trichlorobenzene was detected in the CCB above its EQL. Compounds found in the CCB at concentrations (in ng) greater than 5% of the sample concentration are flagged with a "B" in the tables.

Batch #7:

This analytical sequence was run using 40 mL volumes of diluted 1:10 samples to quantify target compounds in each tank sample.

Two target compounds (chloroethane - 47.60% and pyridine - 53.79%) surpassed the 30% percent relative standard deviation (%RSD) acceptance criteria for initial calibration.

Tetradecane surpassed 0.05 RF criteria for the initial calibration. Tetradecane was found in all tank samples at concentrations between the EQL and the UQL. Chloroethane and pyridine were not found in the tank samples at concentrations higher than their IDL. Due to the initial calibration performance the uncertainty associated with the results is higher than normal. Four target compounds (chloroethane - 31.8%; pyridine - 41.4%; tridecane - 45.9% and tetradecane - 94.8%) were outside the 25% D acceptance criteria for the CCV sample. However, the CCV passed the procedural criterion requiring $\pm 25\%$ D passage for 85% of all target compounds.

Results of chloroethane, pyridine and tetradecane determination were mentioned above. Tridecane was found in all tank samples at concentrations between its EQL and UQL. Due to the CCV performance for this compound, a higher than normal uncertainty is associated with the results.

Two target compounds (acetone and 1,2,4-trichlorobenzene) were found in the ICB above its EQLs. No target compounds were detected in the CCB above their EQLs. Compounds found in the CCB at concentrations (in ng) greater than 5% of the sample concentration are flagged with a "B" in the tables.

Batch #8:

This analytical sequence was run using 40 mL volumes of diluted 1:10 samples to quantify target compounds in each tank sample.

Two target compounds (chloroethane - 47.60% and pyridine - 53.79%) surpassed the 30% percent relative standard deviation (%RSD) acceptance criteria for initial calibration.

Tetradecane surpassed 0.05 RF criteria for the initial calibration. Tetradecane was found in all tank samples at concentrations between the EQL and the UQL. Chloroethane and pyridine were not found in the tank samples at concentrations higher than their IDL. Due to the initial calibration performance the uncertainty associated with the results is higher than normal. One target compound (chloroethane - 46.9%) was outside the 25% D acceptance criteria for the CCV. 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 chloroethane and tetradecane determination were mentioned above. Due to the CCV performance for these compounds, a higher than normal uncertainty is associated with the results.

Two target compounds (acetone and 1,2,4-trichlorobenzene) were found in the ICB above their EQLs. Target compound 1,2,4-trichlorobenzene was also detected in the CCB above its EQL.

Batch #9:

This analytical sequence was run using 40 mL volumes of diluted 1:20 samples to quantify target compounds in each tank sample.

Two target compounds (chloroethane - 47.60% and pyridine - 53.79%) surpassed the 30% percent relative standard deviation (%RSD) acceptance criteria for initial calibration.

Tetradecane surpassed 0.05 RF criteria for the initial calibration. Tetradecane was found in all tank samples at concentrations between the EQL and the UQL. Chloroethane and pyridine were not found in the tank samples at concentrations higher than their IDL. Due to the initial calibration performance the uncertainty associated with the results is higher than normal. One target compound (chloroethane - 35.0%) was outside the 25% 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 chloroethane and tetradecane determination were mentioned above. Due to the CCV performance for these compounds a higher than normal uncertainty is associated with the results.

Two target compounds (acetone and 1,2,4-trichlorobenzene) were found in the ICB above their EQLs. No target compounds were detected in the CCB above the EQL. Compounds found in the CCB at concentrations (in ng) greater than 5% of the sample concentration are flagged with a "B" in the tables.

Batch #10:

This analytical sequence was run using 40 mL volumes of diluted 1:20 samples to quantify target compounds in tank sample S6116-m27.078 and S6116-m27.078 REP.

No target compounds surpassed the 30% percent relative standard deviation (%RSD) acceptance criteria for initial calibration.

Tetradecane surpassed 0.05 RF criteria for the initial calibration. Tetradecane was found in all tank samples at concentrations between the EQL and the UQL. Two target compounds (

propanol - 29.4%, decane - 30.4%) were outside the 25% D acceptance criteria for the CCV. Tetradecane surpassed 0.05 RF criteria for the CCV. However, the CCV passed the procedural criterion requiring $\pm 25\%$ D passage for 85% of all target compounds.

Results of tetradecane were mentioned above. Propanol was found in both samples at concentration between the IDL and EQL. Decane was not found in the samples at concentration higher than its IDL. 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.

Two target compounds (1,2,4-trichlorobenzene and hexachloro-1,3-butadiene) were found in the CCB above their EQLs. Compounds found in the CCB at concentrations (in ng) greater than 5% of the sample concentration are flagged with a "B" in the tables.

Information common to all batches:

Methanol, ethanol, and 1,3-butadiene 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 TY-103 Riser 8 Top Level Sampled on 11/22/96

Target Analytes ^(a)	CAS	MW	Ret Time	S6116-439.267 ^(c) ISVS			S6116-440.277 ^(c) ISVS			S6116-441.279 ^(c) ISVS			S6116-438.266 ^{(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.
Dichlorodifluoromethane	75-71-8	121	4.6	0.004	0.70	J	0.004	0.66	J	0.004	0.65	J	0.003	0.63	J	0.004	0.000	0.66	0.029
Chloromethane	74-87-3	50	4.9	0.002	1.1	U	0.002	0.74	J	0.002	0.81	J	0.002	0.72	J	0.002	0.000	0.76	0.047
Methanol	67-56-1	32	5.2	0.465	325	Y	0.464	324	Y	0.486	340	Y	0.444	310	Y	0.464	0.017	325	12
Butane	106-97-8	58	5.9	0.125	48		0.116	45		0.121	46		0.118	45		0.120	0.004	46	1.5
Ethanol	64-17-5	46	6.8	0.118	58	Y	0.111	54	Y	0.124	60	Y	0.116	57	Y	0.117	0.005	57	2.6
Acetonitrile	75-05-8	41	7.3	0.141	77		0.131	72		0.146	79		0.136	74		0.138	0.006	75	3.4
Acetone	67-64-1	58	7.8	0.359	138		0.338	130		0.374	144		0.352	136		0.355	0.015	137	5.9
Trichlorofluoromethane	75-69-4	137	8.2	0.886	144		0.821	134		0.850	139		0.865	141		0.855	0.027	139	4.4
Pentane	109-66-0	72	8.9	0.047	14		0.043	13		0.045	14		0.044	14		0.045	0.001	14	0.41
Methylene Chloride	75-09-2	85	9.6	0.021	5.5	B	0.021	5.6	B	0.022	5.7	B	0.021	5.6	B	0.021	0.000	5.6	0.083
1,1,1-Trichloroethane	76-13-1	187	10.1	0.049	5.9		0.048	5.8		0.047	5.6		0.050	6.0		0.049	0.001	5.8	0.16
Propanenitrile	107-12-0	55	10.8	0.044	18		0.043	17		0.045	18		0.044	18		0.044	0.001	18	0.30
Propanol	71-23-8	60	10.8	0.090	34		0.086	32		0.094	35		0.090	34		0.090	0.003	34	1.2
2-Butanone	78-93-3	72	12.4	0.086	27		0.065	20		0.077	24		0.068	21		0.074	0.009	23	2.9
Hexane	110-54-3	86	13.7	0.036	9.2		0.033	8.7		0.035	9.2		0.043	11		0.037	0.004	9.5	1.1
Chloroform	67-66-3	119	13.8	0.006	1.1	J	0.006	1.1	J	0.006	1.1	J	0.006	1.1	J	0.006	0.000	1.1	0.022
Tetrahydrofuran	109-99-9	72	14.6	0.051	16		0.048	15		0.050	15		0.050	16		0.050	0.001	15	0.32
1,1,1-Trichloroethane	71-55-6	133	15.8	0.003	0.50	J	0.003	0.54	U	0.003	0.54	U	0.003	0.54	U	e	e	e	e
Butanenitrile	109-74-0	69	15.7	0.040	13		0.038	12		0.044	14		0.044	14		0.041	0.003	13	0.97
1-Butanol	71-36-3	74	16.2	0.931	281		0.933	282		1.028	311		1.020	308		0.978	0.053	296	16
Benzene	71-43-2	78	16.7	0.003	0.83	J	0.003	0.72	J	0.003	0.75	J	0.003	0.77	J	0.003	0.000	0.77	0.046
Carbon Tetrachloride	56-23-5	154	17.0	0.076	11		0.070	10		0.076	11		0.077	11		0.075	0.003	11	0.45
Cyclohexane	110-82-7	84	17.2	0.003	0.89	J	0.004	1.1	J	0.003	0.69	J	0.006	1.5	J	0.004	0.001	1.0	0.33
Heptane	142-82-5	100	19.2	0.030	6.7		0.026	5.9		0.029	6.5		0.038	8.5		0.031	0.005	6.9	1.1
4-Methyl-2-Pentanone	108-10-1	100	20.4	0.003	0.76	U	0.002	0.46	J	0.002	0.54	J	0.003	0.76	U	0.002	e	0.50	e
Pentanenitrile	110-59-8	83	21.5	0.015	4.0	J	0.014	3.7	J	0.015	4.2	J	0.015	4.1	J	0.015	0.001	4.0	0.21
Toluene	108-88-3	92	22.6	0.073	18		0.058	14		0.069	17		0.089	22		0.072	0.013	18	3.1
Octane	111-65-9	114	24.6	0.014	2.8	J	0.014	2.7	J	0.014	2.8	J	0.015	3.0	J	0.014	0.000	2.8	0.096
Tetrachloroethylene	127-18-4	166	25.1	0.067	9.1		0.066	8.9		0.068	9.1		0.069	9.3		0.068	0.001	9.1	0.18
Hexanenitrile	628-73-9	97	27.0	0.030	6.9	J	0.028	6.4	J	0.031	7.1	J	0.032	7.4	J	0.030	0.002	7.0	0.41
Ethylbenzene	100-41-4	106	27.6	0.004	0.74	J	0.003	0.71	J	0.004	0.81	J	0.004	0.79	J	0.004	0.000	0.76	0.046
p/m-Xylene	106-42-3	106	28.1	0.013	2.7	U	0.011	2.3	J	0.012	2.4	J	0.012	2.5	J	0.012	0.000	2.4	0.085
Cyclohexanone	108-94-1	98	28.5	0.064	15		0.020	4.6	J	0.037	8.5	J	0.041	9.4	J	0.041	0.018	9.3	4.2
o-Xylene	95-47-6	106	29.3	0.008	1.8	J	0.008	1.7	J	0.009	1.9	J	0.009	1.9	J	0.009	0.000	1.8	0.097
Nonane	111-84-2	128	29.7	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	0.022
1,2,4-Trimethylbenzene	95-63-6	120	34.2	0.003	0.50	J	0.003	0.47	J	0.003	0.48	U	0.003	0.48	U	0.003	e	0.49	e
Decane	124-18-5	142	34.4	0.042	6.6		0.041	6.4		0.042	6.6		0.042	6.6		0.042	0.001	6.6	0.087
Undecane	1120-21-4	156	38.7	0.206	30	J	0.192	28	J	0.207	30	J	0.202	29	J	0.202	0.007	29	0.98
Dodecane	112-40-3	170	42.8	12.483	1641	*	12.607	1658	*	12.485	1642	*	11.551	1519	*	12.282	0.491	1615	65
Tridecane	629-50-5	184	46.5	25.261	3069	*	43.490	5284	*	34.180	4153	*	41.783	5077	*	36.178	8.328	4396	1012
Tetradecane	629-59-4	198	50.0	2.426	274	*	6.637	750	*	3.239	366	*	8.085	913	*	5.097	2.701	576	305
Total Concentration of Target Analytes																57.68			

Table D.3 (Cont'd) Organic Compound Concentrations in SUMMA™ Canisters from Tank TY-103 Riser 8 Top Level Sampled on 11/22/96

Tentatively Identified Compounds ^(b)	CAS	MW	Ret Time	S6116-439.267 ^(c) ISVS			S6116-440.277 ^(c) ISVS			S6116-441.279 ^(c) ISVS			S6116-438.266 ^{(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.
Propane	74-98-6	44	4.5	0.130	66		0.116	59		0.121	62		0.121	62		0.122	0.006	62	3.0
Propanal	123-38-6	58	7.9	0.114	44		nd	nd		0.113	44		0.104	40		0.110	0.005	43	2.0
Butanal	123-72-8	72	12.2	0.231	72		0.200	62		0.221	69		0.205	64		0.214	0.014	67	4.4
Pentanal	110-62-3	86	17.8	0.127	33		0.116	30		0.128	33		0.159	41		0.132	0.018	34	4.8
Hexanal	66-25-1	100	23.5	0.115	26		0.109	24		0.113	25		0.108	24		0.111	0.003	25	0.74
Heptanal	111-71-7	114	28.8	0.172	34		nd	nd		nd	nd		nd	nd		e	e	e	e
Total Concentration of TICs																0.69			

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.

* Denotes diluted value was reported for target compound in table.

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.

nd Not detected.

Table D.4 Organic Compound Concentrations in SUMMATM Canisters from Tank TY-103 Riser 8 Middle Level Sampled on 11/22/96

Target Analytes ^(a)	CAS	MW	Ret Time	S6116-m27.078 ^{(c)(d)} ISVS			S6116-m46.302 ^(c) ISVS			S6116-m47.303 ^(c) ISVS			S6116-m26.307 ^(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	0.79	J	0.004	0.75	J	0.003	0.52	U	0.004	0.80	J	0.004	0.000	0.78	0.026
Chloromethane	74-87-3	50	5.0	0.002	0.89	J	0.002	0.90	J	0.002	1.1	U	0.002	1.1	U	0.002	e	0.90	e
Methanol	67-56-1	32	5.3	0.487	340	Y	0.546	382	Y	0.479	335	Y	0.488	341	Y	0.500	0.031	350	22
Butane	106-97-8	58	5.9	0.127	49		0.146	56		0.121	46		0.128	49		0.130	0.011	50	4.1
Ethanol	64-17-5	46	6.8	0.202	98	Y	0.165	80	Y	0.173	84	Y	0.186	90	Y	0.181	0.016	88	8.0
Acetonitrile	75-05-8	41	7.3	0.144	79		0.147	80		0.144	79		0.142	78		0.144	0.002	79	1.0
Acetone	67-64-1	58	7.9	0.415	160		0.374	144		0.368	142		0.405	156		0.391	0.023	151	8.9
Trichlorofluoromethane	75-69-4	137	8.3	1.032	168		0.848	138		0.823	134		1.029	168		0.933	0.113	152	18
Pentane	109-66-0	72	9.0	0.050	16		0.047	15		0.045	14		0.051	16		0.048	0.003	15	0.82
Methylene Chloride	75-09-2	85	9.7	0.020	5.2	J	0.019	5.0	J,B	0.019	5.0	J,B	0.019	5.1	J	0.019	0.000	5.1	0.10
1,1,1,2,2,2-hexafluoroethane	76-13-1	187	10.2	0.072	8.6		0.042	5.0		0.042	5.0		0.081	9.7		0.059	0.020	7.1	2.4
Propanenitrile	107-12-0	55	10.9	0.047	19		0.041	17		0.044	18		0.045	18		0.044	0.003	18	1.1
Propanol	71-23-8	60	10.9	0.102	38		0.096	36		0.100	37		0.097	36		0.099	0.003	37	1.0
2-Butanone	78-93-3	72	12.5	0.087	27		0.055	17		0.064	20		0.066	21		0.068	0.014	21	4.2
Hexane	110-54-3	86	13.7	0.062	16		0.031	8.1	J	0.031	8.0	J	0.042	11		0.041	0.014	11	3.8
Chloroform	67-66-3	119	13.9	0.007	1.3	J	0.003	0.49	U	0.003	0.49	U	0.007	1.3	J	0.007	e	1.3	e
Tetrahydrofuran	109-99-9	72	14.6	0.056	17		0.044	14		0.045	14		0.051	16		0.049	0.005	15	1.7
1,1,1-Trichloroethane	71-55-6	133	15.8	0.004	0.68	J	0.003	0.54	U	0.003	0.54	U	0.003	0.54	U	e	e	e	e
Butanenitrile	109-74-0	69	15.8	0.056	18		0.048	15		0.046	15		0.051	17		0.050	0.004	16	1.4
1-Butanol	71-36-3	74	16.3	1.110	336		1.180	357		1.157	350		1.071	324		1.130	0.049	341	15
Benzene	71-43-2	78	16.7	0.003	0.93	J	0.002	0.46	U	0.002	0.46	U	0.003	0.89	J	0.003	e	0.91	e
Carbon Tetrachloride	56-23-5	154	17.0	0.094	14		0.082	12		0.080	12		0.093	13		0.087	0.007	13	1.0
Cyclohexane	110-82-7	84	17.3	0.011	2.9	J	0.005	1.2	J	0.004	1.1	J	0.005	1.3	J	0.006	0.003	1.6	0.85
Heptane	142-82-5	100	19.3	0.063	14		0.027	6.1		0.027	5.9		0.039	8.7		0.039	0.017	8.7	3.8
4-Methyl-2-Pentanone	108-10-1	100	20.5	0.004	0.83	J	0.003	0.76	U	0.003	0.76	U	0.003	0.64	J	0.003	e	0.74	e
Pentanenitrile	110-59-8	83	21.6	0.019	5.1	J	0.017	4.6	J	0.017	4.5	J	0.019	5.1	J	0.018	0.001	4.8	0.35
Toluene	108-88-3	92	22.6	0.179	44		0.053	13		0.054	13		0.115	28		0.100	0.060	24	15
Octane	111-65-9	114	24.7	0.018	3.6	J	0.014	2.8	J	0.014	2.7	J	0.017	3.4	J	0.016	0.002	3.1	0.42
Tetrachloroethylene	127-18-4	166	25.2	0.082	11		0.064	8.6		0.065	8.7		0.082	11		0.073	0.010	9.9	1.4
Hexanenitrile	628-73-9	97	27.0	0.038	8.7	J	0.039	8.9	J	0.034	7.9	J	0.038	8.8	J	0.037	0.002	8.6	0.45
Ethylbenzene	100-41-4	106	27.7	0.005	1.0	J	0.004	0.73	J	0.004	0.76	J	0.005	1.0	J	0.004	0.001	0.88	0.16
p/m-Xylene	106-42-3	106	28.1	0.015	3.1	J	0.011	2.4	J	0.011	2.4	J	0.015	3.1	J	0.013	0.002	2.7	0.44
Cyclohexanone	108-94-1	98	28.5	0.147	34		0.006	1.3	U	0.006	1.3	U	0.016	3.7	J	0.082	e	19	e
o-Xylene	95-47-6	106	29.3	0.011	2.2	J	0.008	1.6	J	0.008	1.7	J	0.011	2.2	J	0.009	0.001	1.9	0.32
Nonane	111-84-2	128	29.8	0.009	1.6	J	0.008	1.4	J	0.008	1.4	J	0.009	1.6	J	0.009	0.001	1.5	0.15
Decane	124-18-5	142	34.4	0.051	8.0		0.046	7.2		0.044	6.9		0.052	8.2		0.048	0.004	7.6	0.61
Undecane	1120-21-4	156	38.8	0.209	30	J	0.237	34	J	0.208	30	J	0.216	31	J	0.218	0.014	31	2.0
1,2,4-Trichlorobenzene	120-82-1	181	42.3	0.003	0.35	U	0.003	0.35	U	0.003	0.35	U	0.011	1.4	J	e	e	e	e
Dodecane	112-40-3	170	42.8	5.374	707	*	13.914	1830	*	13.710	1803	*	10.198	1341	*	10.799	3.999	1420	526
Tridecane	629-50-5	184	46.5	34.566	4200	*	49.786	6049	*	56.452	6859	*	37.614	4550	*	44.604	10.277	5414	1253
Tetradecane	629-59-4	198	50.0	2.103	238	*	7.581	856	*	18.271	2063	*	15.125	1708	*	10.770	7.315	1216	826
Total Concentration of Target Analytes																70.84			

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Table D.4 (Cont'd) Organic Compound Concentrations in SUMMA™ Canisters from Tank TY-103-Riser 8 Middle Level Sampled on 11/22/96

Tentatively Identified Compounds ^(b)	CAS	MW	Ret Time	S6116-m27.078 ^{(c)(d)} ISVS			S6116-m46.302 ^(c) ISVS			S6116-m47.303 ^(c) ISVS			S6116-m26.307 ^(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.
Propane	74-98-6	44	4.5	0.132	67		0.165	84		0.132	67		0.126	64		0.139	0.018	71	9.1
Butanal	123-72-8	72	12.2	0.195	61		0.206	64		0.191	59		0.191	59		0.196	0.007	61	2.1
Pentanal	110-62-3	86	17.8	nd	nd		0.117	30		0.107	28		0.133	35		0.119	0.013	31	3.4
Hexane, 3-methyl-	589-34-4	100	17.9	0.206	46		nd	nd		nd	nd		nd	nd		e	e	e	e
Hexanal	66-25-1	100	23.5	nd	nd		0.113	25		0.106	24		nd	nd		0.109	e	24	e
Total Concentration of TICs																0.56			

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.

* Denotes diluted value was reported for target compound in table.

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.

nd Not detected.

Table D.5 Organic Compound Concentrations in SUMMATM Canisters from Tank TY-103 Riser 8 Bottom Level Sampled on 11/22/96

Target Analytes ^(a)	CAS	MW	Ret	S6116-b33.265 ^(c) ISVS			S6116-b32.251 ^(c) ISVS			S6116-b31.240 ^(c) ISVS			S6116-b30.113 ^(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	0.67	J	0.004	0.82	J	0.004	0.82	J	0.004	0.78	J	0.004	0.000	0.77	0.071
Chloromethane	74-87-3	50	4.9	0.002	0.73	J	0.002	0.92	J	0.002	1.1	U	0.002	0.82	J	0.002	0.000	0.82	0.095
Methanol	67-56-1	32	5.2	0.487	340	Y	0.498	348	Y	0.534	373	Y	0.508	355	Y	0.507	0.020	354	14
Butane	106-97-8	58	5.9	0.119	46		0.132	51		0.130	50		0.129	50		0.128	0.006	49	2.2
Ethanol	64-17-5	46	6.8	0.122	59	Y	0.197	96	Y	0.204	99	Y	0.220	107	Y	0.186	0.044	91	21
Acetonitrile	75-05-8	41	7.3	0.135	73		0.148	80		0.148	81		0.151	82		0.145	0.007	79	4.0
Acetone	67-64-1	58	7.8	0.367	142		0.424	163		0.443	171		0.420	162		0.413	0.032	159	13
Trichlorofluoromethane	75-69-4	137	8.2	0.887	145		1.067	174		1.074	175		1.062	173		1.022	0.090	167	15
Pentane	109-66-0	72	8.9	0.045	14		0.052	16		0.052	16		0.052	16		0.050	0.004	16	1.1
Methylene Chloride	75-09-2	85	9.6	0.021	5.6	B	0.020	5.2	J	0.020	5.3		0.020	5.3		0.020	0.001	5.3	0.18
1,1,2-trichloro-2,2,2-trifluoroethane	76-13-1	187	10.1	0.054	6.5		0.063	7.5		0.064	7.7		0.066	7.8		0.062	0.005	7.4	0.60
Propanenitrile	107-12-0	55	10.8	0.044	18		0.047	19		0.047	19		0.047	19		0.046	0.002	19	0.69
Propanol	71-23-8	60	10.8	0.095	35		0.102	38		0.102	38		0.104	39		0.100	0.004	37	1.5
2-Butanone	78-93-3	72	12.4	0.056	17		0.066	20		0.060	19		0.067	21		0.062	0.005	19	1.6
Hexane	110-54-3	86	13.7	0.034	8.7		0.049	13		0.044	11		0.053	14		0.045	0.008	12	2.2
Chloroform	67-66-3	119	13.8	0.006	1.1	J	0.007	1.3	J	0.007	1.3	J	0.007	1.4	J	0.007	0.001	1.3	0.11
Tetrahydrofuran	109-99-9	72	14.6	0.052	16		0.056	17		0.058	18		0.057	18		0.055	0.003	17	0.82
Butanenitrile	109-74-0	69	15.7	0.043	14		0.048	15		0.052	17		0.055	18		0.049	0.005	16	1.7
1-Butanol	71-36-3	74	16.2	1.022	309		1.109	335		1.155	349		1.151	348		1.109	0.062	335	19
Benzene	71-43-2	78	16.7	0.003	0.73	J	0.003	0.86	J	0.003	0.87	J	0.003	0.94	J	0.003	0.000	0.85	0.088
Carbon Tetrachloride	56-23-5	154	17.0	0.079	11		0.094	14		0.097	14		0.097	14		0.092	0.009	13	1.3
Cyclohexane	110-82-7	84	17.2	0.003	0.88	J	0.008	2.1	J	0.007	1.9	J	0.009	2.3	J	0.007	0.002	1.8	0.64
Heptane	142-82-5	100	19.2	0.026	5.7		0.041	9.2		0.037	8.2		0.048	11		0.038	0.009	8.5	2.1
4-Methyl-2-Pentanone	108-10-1	100	20.4	0.002	0.49	J	0.003	0.60	J	0.003	0.67	J	0.003	0.68	J	0.003	0.000	0.61	0.088
Pentanenitrile	110-59-8	83	21.5	0.015	4.2	J	0.019	5.0	J	0.019	5.2	J	0.019	5.2	J	0.018	0.002	4.9	0.50
Toluene	108-88-3	92	22.6	0.054	13		0.096	23		0.086	21		0.128	31		0.091	0.030	22	7.4
Octane	111-65-9	114	24.6	0.015	2.9	J	0.019	3.6	J	0.018	3.6	J	0.020	3.8	J	0.018	0.002	3.5	0.40
Tetrachloroethylene	127-18-4	166	25.1	0.068	9.2		0.086	12		0.086	12		0.087	12		0.082	0.009	11	1.2
Hexanenitrile	628-73-9	97	27.0	0.031	7.2	J	0.039	8.9	J	0.038	8.7	J	0.040	9.3	J	0.037	0.004	8.5	0.89
Ethylbenzene	100-41-4	106	27.6	0.004	0.80	J	0.005	1.0	J	0.005	0.99	J	0.005	1.1	J	0.005	0.001	0.96	0.11
p/m-Xylene	106-42-3	106	28.1	0.012	2.5	J	0.014	3.0	J	0.015	3.1	J	0.015	3.2	J	0.014	0.002	3.0	0.34
Cyclohexanone	108-94-1	98	28.5	0.082	19		0.047	11	J	0.046	11	J	0.027	6.1	J	0.050	0.023	12	5.2
o-Xylene	95-47-6	106	29.3	0.009	1.9	J	0.010	2.2	J	0.011	2.3	J	0.011	2.3	J	0.010	0.001	2.2	0.22
Nonane	111-84-2	128	29.7	0.008	1.4	J	0.009	1.6	J	0.010	1.7	J	0.010	1.7	J	0.009	0.001	1.6	0.13
1,2,4-Trimethylbenzene	95-63-6	120	34.2	0.003	0.48	U	0.004	0.66	J	0.004	0.73	J	0.004	0.68	J	0.004	0.000	0.69	0.036
Decane	124-18-5	142	34.4	0.044	6.9		0.050	7.8		0.052	8.2		0.051	8.0		0.049	0.004	7.7	0.60
Undecane	1120-21-4	156	38.7	0.210	30	J	0.227	33	J	0.229	33	J	0.218	31	J	0.221	0.009	32	1.3
Dodecane	112-40-3	170	42.8	11.845	1558	*	12.817	1685	*	12.664	1665	*	10.139	1333	*	11.866	1.228	1560	162
Tridecane	629-50-5	184	46.5	53.294	6475	*	49.153	5972	*	50.290	6110	*	39.329	4778	*	48.016	6.049	5834	735
Tetradecane	629-59-4	198	50.0	32.056	3620	*	19.688	2225	*	16.783	1895	*	16.928	1912	*	21.364	7.253	2413	819
Total Concentration of Target Analytes																86.01			

Table D.5 (Cont'd) Organic Compound Concentrations in SUMMA™ Canisters from Tank TY-103 Riser 8 Bottom Level Sampled on 11/22/96

Tentatively Identified Compounds ^(b)	CAS	MW	Ret Time	S6116-b33.265 ^(c) ISVS			S6116-b32.251 ^(c) ISVS			S6116-b31.240 ^(c) ISVS			S6116-b30.113 ^(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.
Propane	74-98-6	44	4.5	0.123	63		0.132	67		0.144	73		0.125	64		0.131	0.009	67	4.8
Propanal	123-38-6	58	7.9	0.111	43		nd	nd		nd	nd		nd	nd		d	d	d	d
Butanal	123-72-8	72	12.2	0.207	64		0.179	56		0.189	59		0.182	57		0.189	0.012	59	3.9
Pentanal	110-62-3	86	17.8	0.110	29		0.138	36		0.125	32		0.161	42		0.134	0.022	35	5.6
Hexanal	66-25-1	100	23.5	0.109	24		0.097	22		0.102	23		nd	nd		0.102	0.006	23	1.4
Unknown C13 Alkane		184	48.6	nd	nd		0.094	nd		nd	nd		nd	nd		d	d	d	d
Total Concentration of TICs																0.56			

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 was performed; however, the analyte was not part of the current operating procedure.

* Denotes diluted value was reported for target compound in table.

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 D.6 Organic Compound Concentrations in SUMMA™ Canisters from Tank TY-103 Riser 18 Top Level Sampled on 11/22/96

Target Analytes ^(a)	CAS	MW	Ret S6117-140.350 ^{(c)(d)} ISVS					S6117-141.351 ^(c) ISVS					S6117-138.348 ^(c) ISVS					S6117-139.349 ^(c) ISVS					Mean and Standard Deviation			
			Time	(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	0.58	J		0.003	0.62	J		0.003	0.52	U		0.003	0.59	J		0.003	0.000	0.60	0.021			
Chloromethane	74-87-3	50	5.0	0.003	1.1	J		0.002	0.78	J		0.002	1.1	U		0.005	2.1	J		0.003	0.002	1.3	0.71			
Methanol	67-56-1	32	5.3	0.737	515	Y		0.435	304	Y		0.696	487	Y		0.471	329	Y		0.585	0.154	409	108			
Butane	106-97-8	58	5.9	0.101	39			0.110	42			0.123	47			0.107	41			0.110	0.009	42	3.5			
Ethanol	64-17-5	46	6.9	0.117	57	Y		0.118	57	Y		0.127	62	Y		0.120	59	Y		0.121	0.005	59	2.3			
Acetonitrile	75-05-8	41	7.3	0.132	72			0.132	72			0.136	74			0.133	73			0.133	0.002	73	0.88			
Acetone	67-64-1	58	7.9	0.381	147			0.375	144			0.379	146			0.351	135			0.371	0.014	143	5.2			
Trichlorofluoromethane	75-69-4	137	8.3	0.838	137			0.839	137			0.891	145			0.853	139			0.855	0.025	139	4.1			
Pentane	109-66-0	72	9.0	0.046	14			0.047	15			0.046	14			0.046	14			0.046	0.000	14	0.14			
Methylene Chloride	75-09-2	85	9.7	0.023	6.2	B		0.022	5.9	B		0.021	5.6	B		0.023	6.0	B		0.022	0.001	5.9	0.22			
1,1,2,2-tetrachloroethane	76-13-1	187	10.2	0.059	7.1			0.059	7.0			0.057	6.8			0.062	7.4			0.059	0.002	7.1	0.21			
Propanenitrile	107-12-0	55	10.9	0.045	18			0.045	18			0.043	18			0.044	18			0.044	0.001	18	0.30			
Propanol	71-23-8	60	10.9	0.094	35			0.093	35			0.095	35			0.092	34			0.094	0.001	35	0.54			
2-Butanone	78-93-3	72	12.5	0.087	27			0.086	27			0.074	23			0.073	23			0.080	0.008	25	2.4			
Hexane	110-54-3	86	13.7	0.045	12			0.048	12			0.041	11			0.043	11			0.044	0.003	11	0.78			
Chloroform	67-66-3	119	13.9	0.006	1.1	J		0.006	1.1	J		0.006	1.1	J		0.006	1.1	J		0.006	0.000	1.1	0.021			
Tetrahydrofuran	109-99-9	72	14.6	0.056	17			0.053	16			0.049	15			0.054	17			0.053	0.003	16	0.86			
1,1,1-Trichloroethane	71-55-6	133	15.8	0.003	0.50	J		0.003	0.54	U		0.003	0.54	U		0.003	0.54	U		e	e	e	e			
Butanenitrile	109-74-0	69	15.8	0.044	14			0.043	14			0.046	15			0.041	13			0.043	0.002	14	0.64			
1-Butanol	71-36-3	74	16.3	0.974	294			0.965	292			1.082	327			0.973	294			0.999	0.056	302	17			
Benzene	71-43-2	78	16.7	0.003	0.77	J		0.003	0.77	J		0.002	0.46	U		0.003	0.80	J		0.003	0.000	0.78	0.017			
Carbon Tetrachloride	56-23-5	154	17.0	0.070	10			0.070	10			0.076	11			0.069	10			0.071	0.003	10	0.45			
Cyclohexane	110-82-7	84	17.3	0.008	2.2	J		0.008	2.1	J		0.006	1.7	J		0.008	2.0	J		0.007	0.001	2.0	0.22			
Heptane	142-82-5	100	19.3	0.049	11			0.057	13			0.046	10			0.045	10			0.049	0.005	11	1.2			
4-Methyl-2-Pentanone	108-10-1	100	20.5	0.003	0.76	U		0.003	0.76	U		0.003	0.76	J		0.003	0.76	U		e	e	e	e			
Pentanenitrile	110-59-8	83	21.6	0.015	4.1	J		0.015	3.9	J		0.017	4.6	J		0.015	4.1	J		0.015	0.001	4.2	0.28			
Toluene	108-88-3	92	22.6	0.167	41			0.190	46			0.139	34			0.135	33			0.158	0.026	38	6.3			
Octane	111-65-9	114	24.7	0.017	3.3	J		0.017	3.3	J		0.002	0.47	U		0.017	3.3	J		0.017	0.000	3.3	0.045			
Tetrachloroethylene	127-18-4	166	25.2	0.071	9.6			0.069	9.3			0.063	8.5			0.068	9.1			0.068	0.003	9.1	0.46			
Hexanenitrile	628-73-9	97	27.1	0.033	7.6	J		0.032	7.3	J		0.038	8.8	J		0.032	7.5	J		0.034	0.003	7.8	0.67			
Ethylbenzene	100-41-4	106	27.7	0.004	0.91	J		0.004	0.87	J		0.004	0.92	J		0.004	0.88	J		0.004	0.000	0.90	0.024			
p/m-Xylene	106-42-3	106	28.1	0.013	2.7	J		0.013	2.7	J		0.012	2.6	J		0.012	2.6	J		0.013	0.000	2.7	0.064			
Cyclohexanone	108-94-1	98	28.5	0.012	2.8	J		0.015	3.3	J		0.022	5.0	J		0.015	3.3	J		0.016	0.004	3.6	0.94			
o-Xylene	95-47-6	106	29.3	0.010	2.1	J		0.009	2.0	J		0.009	1.9	J		0.009	2.0	J		0.009	0.000	2.0	0.095			
Nonane	111-84-2	128	29.8	0.009	1.6	J		0.008	1.5	J		0.009	1.6	J		0.008	1.5	J		0.009	0.000	1.5	0.080			
Decane	124-18-5	142	34.5	0.044	6.9			0.043	6.8			0.043	6.8			0.042	6.6			0.043	0.001	6.8	0.12			
Undecane	1120-21-4	156	38.8	0.172	25	J		0.184	26	J		0.173	25	J		0.168	24	J		0.174	0.007	25	1.0			
Dodecane	112-40-3	170	42.8	8.461	1113	*		7.337	965	*		6.886	906	*		8.302	1092	*		7.746	0.759	1019	100			
Tridecane	629-50-5	184	46.6	72.606	8822	*		57.424	6977	*		52.929	6431	*		59.328	7208	*		60.572	8.459	7360	1028			
Tetradecane	629-59-4	198	50.1	36.981	4177	*		21.247	2400	*		24.190	2732	*		25.774	2911	*		27.048	6.882	3055	777			
Total Concentration of Target Analytes															99.73											

Table D.6 (Cont'd) Organic Compound Concentrations in SUMMA™ Canisters from Tank TY-103 Riser 18 Top Level Sampled on 11/22/96

Tentatively Identified Compounds ^(b)	CAS	MW	Ret S6117-140.350 ^{(c)(d)} ISVS				S6117-141.351 ^(c) ISVS				S6117-138.348 ^(c) ISVS				S6117-139.349 ^(c) ISVS				Mean and Standard Deviation			
			Time	(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.
Methane, chlorodifluoro-	75-45-6	86	4.3	nd	nd		nd	nd			0.048	13			nd	nd			e	e	e	e
Propene	115-07-1	42	4.4	nd	nd		nd	nd			0.017	9.1			nd	nd			e	e	e	e
Propane	74-98-6	44	4.5	nd	nd		0.120	61			0.146	74			0.119	61			0.128	0.015	65	7.7
Propanal	123-38-6	58	7.9	0.127	49		0.132	51			0.129	50			0.121	47			0.127	0.004	49	1.7
Butanal	123-72-8	72	12.2	0.230	72		0.222	69			0.222	69			0.239	74			0.228	0.008	71	2.6
Pentanal	110-62-3	86	17.9	0.203	53		0.223	58			0.188	49			0.201	52			0.204	0.015	53	3.8
Hexanal	66-25-1	100	23.5	0.138	31		0.122	27			0.133	30			0.153	34			0.136	0.013	31	2.8
Heptanal	111-71-7	114	28.8	0.196	39		0.174	34			0.176	35			0.227	45			0.193	0.025	38	4.8
Octanal	124-13-0	128	33.7	nd	nd		nd	nd			nd	nd			0.171	30			e	e	e	e
Total Concentration of TICs																			1.02			

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.

* Denotes diluted value was reported for target compound in table.

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.

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

nd Not detected.

Table D.7 Organic Compound Concentrations in SUMMA™ Canisters from Tank TY-103 Riser 18 Middle Level Sampled on 11/22/96

Target Analytes ^(a)	CAS	MW	Ret Time	S6117-m47.353 ^(c) ISVS			S6117-m46.352 ^(c) ISVS			S6117-m26.342 ^(c) ISVS			S6117-m27.343 ^(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	0.62	J	0.003	0.62	J	0.004	0.75	J	0.004	0.69	J	0.004	0.000	0.67	0.063
Chloromethane	74-87-3	50	5.0	0.002	0.68	J	0.002	0.85	J	0.003	1.2	J	0.002	0.89	J	0.002	0.001	0.91	0.23
Methanol	67-56-1	32	5.3	0.406	284	Y	0.431	301	Y	0.840	587	Y	0.625	437	Y	0.575	0.201	402	141
Butane	106-97-8	58	5.9	0.108	42		0.106	41		0.138	53		0.119	46		0.118	0.015	45	5.7
Ethanol	64-17-5	46	6.9	0.123	60	Y	0.122	59	Y	0.116	56	Y	0.120	58	Y	0.120	0.003	58	1.6
Acetonitrile	75-05-8	41	7.3	0.135	74		0.136	74		0.129	70		0.141	77		0.135	0.005	74	2.8
Acetone	67-64-1	58	7.9	0.362	140		0.353	136		0.344	133		0.359	138		0.354	0.008	137	3.0
Trichlorofluoromethane	75-69-4	137	8.3	0.826	135		0.822	134		0.779	127		0.793	129		0.805	0.023	131	3.7
Pentane	109-66-0	72	9.0	0.046	14		0.046	14		0.041	13		0.043	13		0.044	0.003	14	0.79
Methylene Chloride	75-09-2	85	9.7	0.023	6.1	B	0.023	6.0	B	0.019	4.9	J	0.019	5.0	J	0.021	0.002	5.5	0.63
1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	187	10.2	0.057	6.8		0.058	6.9		0.199	24		0.072	8.6		0.096	0.068	12	8.2
Propanenitrile	107-12-0	55	10.9	0.046	18		0.045	18		0.040	16		0.039	16		0.042	0.003	17	1.4
Propanol	71-23-8	60	10.9	0.098	36		0.094	35		0.078	29		0.082	30		0.088	0.010	33	3.6
2-Butanone	78-93-3	72	12.5	0.068	21		0.079	24		0.058	18		0.058	18		0.066	0.010	20	3.1
Hexane	110-54-3	86	13.7	0.037	9.5		0.038	9.9		0.032	8.2	J	0.030	7.8	J	0.034	0.004	8.8	1.0
Chloroform	67-66-3	119	13.9	0.006	1.1	J	0.006	1.1	J	0.006	1.0	J	0.005	0.94	J	0.006	0.000	1.1	0.081
Tetrahydrofuran	109-99-9	72	14.6	0.054	17		0.054	17		0.043	13		0.043	13		0.048	0.006	15	2.0
1,1,1-Trichloroethane	71-55-6	133	15.8	0.003	0.50	J	0.003	0.54	U	0.003	0.54	U	0.003	0.54	U	d	d	d	d
Butanenitrile	109-74-0	69	15.8	0.040	13		0.037	12		0.043	14		0.041	13		0.040	0.003	13	0.83
1-Butanol	71-36-3	74	16.3	1.012	306		0.973	294		0.888	268		0.933	282		0.952	0.053	288	16
Benzene	71-43-2	78	16.7	0.003	0.77	J	0.003	0.77	J	0.003	0.78	J	0.002	0.70	J	0.003	0.000	0.76	0.037
Carbon Tetrachloride	56-23-5	154	17.0	0.068	9.9		0.068	9.9		0.073	11		0.068	9.9		0.069	0.002	10	0.36
Cyclohexane	110-82-7	84	17.3	0.003	0.87	J	0.003	0.84	J	0.004	1.0	J	0.004	1.1	J	0.004	0.000	0.96	0.12
Heptane	142-82-5	100	19.3	0.030	6.6		0.034	7.7		0.033	7.3		0.027	6.1		0.031	0.003	6.9	0.73
4-Methyl-2-Pentanone	108-10-1	100	20.5	0.003	0.71	J	0.003	0.76	U	0.003	0.61	J	0.003	0.71	J	0.003	0.000	0.68	0.058
Pyridine	110-86-1	79	20.6	0.019	5.3	U	0.019	5.3	U	0.019	5.3	J	0.019	5.3	U	d	d	d	d
Pentanenitrile	110-59-8	83	21.6	0.014	3.9	J	0.014	3.9	J	0.017	4.5	J	0.015	4.0	J	0.015	0.001	4.1	0.30
Toluene	108-88-3	92	22.6	0.091	22		0.131	32		0.115	28		0.088	21		0.106	0.020	26	5.0
Octane	111-65-9	114	24.7	0.015	2.9	J	0.016	3.1	J	0.015	2.9	J	0.014	2.7	J	0.015	0.001	2.9	0.18
Tetrachloroethylene	127-18-4	166	25.2	0.068	9.2		0.069	9.4		0.063	8.5		0.063	8.5		0.066	0.003	8.9	0.45
Hexanenitrile	628-73-9	97	27.1	0.030	7.0	J	0.030	6.9	J	0.033	7.7	J	0.031	7.2	J	0.031	0.002	7.2	0.38
Ethylbenzene	100-41-4	106	27.7	0.004	0.81	J	0.004	0.81	J	0.004	0.89	J	0.004	0.78	J	0.004	0.000	0.82	0.047
p/m-Xylene	106-42-3	106	28.1	0.012	2.5	J	0.012	2.6	J	0.012	2.6	J	0.011	2.4	J	0.012	0.000	2.5	0.079
Cyclohexanone	108-94-1	98	28.5	0.013	3.0	J	0.018	4.2	J	0.019	4.2	J	0.023	5.3	J	0.018	0.004	4.2	0.92
o-Xylene	95-47-6	106	29.3	0.009	1.9	J	0.009	2.0	J	0.009	1.8	J	0.009	1.8	J	0.009	0.000	1.9	0.085
Nonane	111-84-2	128	29.8	0.009	1.5	J	0.009	1.5	J	0.008	1.4	J	0.008	1.3	J	0.008	0.000	1.4	0.078
1,2,4-Trimethylbenzene	95-63-6	120	34.2	0.003	0.49	J	0.003	0.52	J	0.003	0.61	J	0.003	0.52	J	0.003	0.000	0.54	0.052
Decane	124-18-5	142	34.5	0.041	6.4		0.043	6.7		0.039	6.1		0.041	6.5		0.041	0.002	6.4	0.26
Undecane	1120-21-4	156	38.8	0.179	26	J	0.175	25	J	0.147	21	J	0.167	24	J	0.167	0.014	24	2.0
Dodecane	112-40-3	170	42.8	7.413	975	*	7.481	984	*	6.106	803	*	8.010	1053	*	7.253	0.809	954	106
Tridecane	629-50-5	184	46.6	64.628	7852	*	70.595	8577	*	13.259	1611	*	58.198	7071	*	51.670	26.103	6278	3172
Tetradecane	629-59-4	198	50.1	25.556	2886	*	32.295	3647	*	2.278	257	*	33.610	3796	*	23.435	14.539	2647	1642
Total Concentration of Target Analytes																86.51			

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Table D.7 (Cont'd) Organic Compound Concentrations in SUMMA™ Canisters from Tank TY-103 Riser 18 Middle Level Sampled on 11/22/96

Tentatively Identified Compounds ^(b)	CAS	MW	Ret Time	S6117-m47.353 ^(c) ISVS			S6117-m46.352 ^(c) ISVS			S6117-m26.342 ^(c) ISVS			S6117-m27.343 ^(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.
Propane	74-98-6	44	4.4	0.120	61		0.113	57		0.138	70		0.131	67		0.126	0.011	64	5.7
Propanal	123-38-6	58	7.9	0.120	46		0.133	51		0.125	48		0.112	43		0.123	0.009	47	3.5
2-Propanol, 2-methyl-	75-65-0	74	9.3	nd	nd		nd	nd		nd	nd		0.128	39		d	d	d	d
Butanal	123-72-8	72	12.2	0.231	72		0.232	72		0.200	62		0.198	61		0.215	0.019	67	5.9
Pentanal	110-62-3	86	17.8	0.129	34		0.140	37		0.134	35		0.116	30		0.130	0.010	34	2.7
Hexanal	66-25-1	100	23.4	0.122	27		0.123	27		0.111	25		0.110	25		0.116	0.007	26	1.5
Unknown Alcohol			27.1	nd	nd		nd	nd		nd	nd		0.117	e		d	d	d	d
Heptanal	111-71-7	114	28.8	0.163	32		0.171	34		nd	nd		nd	nd		0.167	d	33	d
Octanal	124-13-0	128	33.7	0.093	16		nd	nd		nd	nd		nd	nd		d	d	d	d
Total Concentration of TICs																0.876			

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.

* Denotes diluted value was reported for target compound in table.

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.8 Organic Compound Concentrations in SUMMA™ Canisters from Tank TY-103 Riser 18 Bottom Level Sampled on 11/22/96

Target Analytes ^(a)	CAS	MW	Ret Time	S6117-b31.345 ^(c) ISVS			S6117-b32.346 ^(c) ISVS			S6117-b33.347 ^(c) ISVS			S6117-b30.344 ^{(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.
Dichlorodifluoromethane	75-71-8	121	4.6	0.003	0.52	U	0.004	0.64	J	0.004	0.67	J	0.004	0.73	J	0.004	0.000	0.68	0.046
Chloromethane	74-87-3	50	4.9	0.002	1.1	U	0.002	0.76	J	0.002	0.94	J	0.002	1.1	J	0.002	0.000	0.92	0.15
Methanol	67-56-1	32	5.2	0.862	602	Y	0.825	577	Y	0.858	600	Y	0.738	516	Y	0.821	0.057	574	40
Butane	106-97-8	58	5.8	0.119	46		0.116	45		0.116	45		0.120	46		0.117	0.002	45	0.81
Ethanol	64-17-5	46	6.8	0.128	62	Y	0.121	59	Y	0.131	64	Y	0.122	59	Y	0.125	0.005	61	2.5
Acetonitrile	75-05-8	41	7.3	0.136	74		0.137	75		0.142	77		0.134	73		0.137	0.003	75	1.7
Acetone	67-64-1	58	7.8	0.365	141		0.370	143		0.380	147		0.367	142		0.371	0.007	143	2.6
Trichlorofluoromethane	75-69-4	137	8.2	0.794	129		0.773	126		0.793	129		0.807	132		0.792	0.014	129	2.2
Pentane	109-66-0	72	8.9	0.042	13		0.042	13		0.043	13		0.043	13		0.043	0.001	13	0.18
Methylene Chloride	75-09-2	85	9.6	0.020	5.2	J	0.019	5.0	J	0.020	5.2	J	0.019	5.1	J	0.020	0.000	5.1	0.095
112trichloro122trifluoroethane	76-13-1	187	10.1	0.067	8.0		0.056	6.7		0.056	6.7		0.063	7.5		0.061	0.005	7.2	0.64
Propanenitrile	107-12-0	55	10.8	0.040	16		0.040	16		0.042	17		0.039	16		0.040	0.001	16	0.44
Propanol	71-23-8	60	10.8	0.083	31		0.080	30		0.086	32		0.083	31		0.083	0.002	31	0.93
2-Butanone	78-93-3	72	12.4	0.062	19		0.055	17		0.058	18		0.058	18		0.058	0.003	18	0.90
Hexane	110-54-3	86	13.6	0.029	7.5	J	0.029	7.5	J	0.030	7.9	J	0.030	7.7	J	0.029	0.001	7.6	0.19
Chloroform	67-66-3	119	13.8	0.003	0.49	U	0.005	0.97	J	0.005	1.0	J	0.005	0.98	J	0.005	0.000	0.98	0.015
Tetrahydrofuran	109-99-9	72	14.5	0.043	13		0.043	13		0.045	14		0.043	13		0.043	0.001	13	0.26
1,1,1-Trichloroethane	71-55-6	133	15.7	0.003	0.54	U	0.003	0.45	J	0.003	0.54	U	0.003	0.48	J	0.003	e	0.47	e
Butanenitrile	109-74-0	69	15.7	0.003	1.1	U	0.041	13		0.043	14		0.043	14		0.043	0.001	14	0.48
1-Butanol	71-36-3	74	16.2	0.884	267		0.873	264		0.960	290		0.927	280		0.911	0.040	275	12
Benzene	71-43-2	78	16.6	0.002	0.46	U	0.002	0.69	J	0.003	0.73	J	0.002	0.68	J	0.002	0.000	0.70	0.026
Carbon Tetrachloride	56-23-5	154	16.9	0.068	9.9		0.066	9.6		0.069	10		0.069	10		0.068	0.001	9.9	0.21
Cyclohexane	110-82-7	84	17.2	0.004	0.96	U	0.005	1.3	J	0.004	0.93	J	0.004	1.1	J	0.004	0.001	1.1	0.16
Heptane	142-82-5	100	19.2	0.023	5.2		0.024	5.3		0.025	5.6		0.024	5.4		0.024	0.001	5.4	0.17
4-Methyl-2-Pentanone	108-10-1	100	20.4	0.003	0.76	U	0.003	0.58	J	0.003	0.62	J	0.003	0.61	J	0.003	0.000	0.60	0.021
Pentanenitrile	110-59-8	83	21.5	0.014	3.9	J	0.014	3.9	J	0.015	4.0	J	0.015	3.9	J	0.015	0.000	3.9	0.053
Toluene	108-88-3	92	22.5	0.052	13		0.051	12		0.053	13		0.052	13		0.052	0.001	13	0.23
Octane	111-65-9	114	24.6	0.002	0.47	U	0.013	2.6	J	0.014	2.8	J	0.014	2.7	J	0.014	0.001	2.7	0.11
Tetrachloroethylene	127-18-4	166	25.1	0.061	8.2		0.062	8.4		0.065	8.8		0.062	8.3		0.062	0.002	8.4	0.26
Hexanenitrile	628-73-9	97	27.0	0.031	7.1	J	0.030	6.8	J	0.032	7.3	J	0.030	6.9	J	0.030	0.001	7.0	0.21
Ethylbenzene	100-41-4	106	27.6	0.008	1.7	J	0.003	0.69	J	0.004	0.76	J	0.004	0.74	J	0.005	0.002	0.97	0.47
p/m-Xylene	106-42-3	106	28.0	0.013	2.7	U	0.011	2.3	J	0.011	2.4	J	0.010	2.2	J	0.011	0.000	2.3	0.085
Cyclohexanone	108-94-1	98	28.4	0.006	1.3	U	0.020	4.6	J	0.019	4.3	J	0.006	1.3	U	0.019	e	4.4	e
o-Xylene	95-47-6	106	29.2	0.008	1.7	J	0.008	1.7	J	0.009	1.8	J	0.008	1.8	J	0.008	0.000	1.7	0.057
Nonane	111-84-2	128	29.7	0.002	0.28	U	0.008	1.3	J	0.008	1.4	J	0.002	0.28	U	0.008	e	1.4	e
1,2,4-Trimethylbenzene	95-63-6	120	34.1	0.003	0.48	U	0.003	0.48	U	0.003	0.46	J	0.003	0.48	U	e	e	e	e
Decane	124-18-5	142	34.4	0.039	6.1		0.040	6.3		0.041	6.4		0.038	6.0		0.039	0.001	6.2	0.19
Undecane	1120-21-4	156	38.7	0.156	22	J	0.166	24	J	0.170	24	J	0.175	25	J	0.167	0.008	24	1.2
Dodecane	112-40-3	170	42.7	7.530	990	*	7.872	1035	*	7.701	1013	*	8.031	1056	*	7.784	0.216	1024	28
Tridecane	629-50-5	184	46.5	39.710	4825	*	56.647	6883	*	58.227	7075	*	56.959	6921	*	52.886	8.810	6426	1070
Tetradecane	629-59-4	198	50.0	7.640	863	*	31.076	3510	*	35.417	4000	*	38.714	4372	*	28.212	14.067	3186	1589
Total Concentration of Target Analytes																93.12			

Table D.8 (Cont'd) Organic Compound Concentrations in SUMMA™ Canisters from Tank TY-103 Riser 18 Bottom Level Sampled on 11/22/96

Tentatively Identified Compounds ^(a)	CAS	MW	Ret Time	S6117-b31.345 ^(c) ISVS			S6117-b32.346 ^(c) ISVS			S6117-b33.347 ^(c) ISVS			S6117-b30.344 ^{(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.
Propane	74-98-6	44	4.4	0.130	66		0.122	62		0.120	61		0.136	69		0.127	0.007	65	3.8
Propanal	123-38-6	58	7.9	0.127	49		0.133	51		0.139	54		0.127	49		0.131	0.006	51	2.2
Butanal	123-72-8	72	12.2	0.213	66		0.217	67		0.243	76		0.205	64		0.219	0.017	68	5.2
Pentanal	110-62-3	86	17.8	0.112	29		0.116	30		0.134	35		0.115	30		0.119	0.010	31	2.6
Hexanal	66-25-1	100	23.4	0.113	25		0.125	28		0.133	30		0.115	26		0.122	0.009	27	2.0
Hexane, 1-ethoxy-	5756-43-4	130	27.1	nd	nd		0.113	19		nd	nd		nd	nd		e	e	e	e
Heptanal	111-71-7	114	28.8	nd	nd		nd	nd		0.188	37		nd	nd		e	e	e	e
Total Concentration of TICs																0.72			

Data Quality Flags

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

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

U Target compound not detected at or above the IDL.

* Denotes diluted value was reported for target compound in table.

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.12.

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

nd Not detected.

Table D.9 Comparison of Organic Compound Concentrations from Replicate Analysis SUMMA™ Canister PNL 266 from Tank TY-103 Riser 8 Top Level Sampled on 11/22/96

Target Analytes ^(a)	CAS	MW	Ret Time	S6116-138.266 ^(c) ISVS						RPD ^(d) (%)
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	
Dichlorodifluoromethane	75-71-8	121	4.6	0.003	0.63	J	0.004	0.70	J	11
Chloromethane	74-87-3	50	4.9	0.002	0.72	J	0.002	1.1	U	
Methanol	67-56-1	32	5.2	0.444	310	Y	0.461	322	Y	4
Butane	106-97-8	58	5.9	0.118	45		0.124	48		5
Ethanol	64-17-5	46	6.8	0.116	57	Y	0.119	58	Y	2
Acetonitrile	75-05-8	41	7.3	0.136	74		0.138	75		2
Acetone	67-64-1	58	7.8	0.352	136		0.355	137		1
Trichlorofluoromethane	75-69-4	137	8.2	0.865	141		0.886	144		2
Pentane	109-66-0	72	8.9	0.044	14		0.045	14		2
Methylene Chloride	75-09-2	85	9.6	0.021	5.6	B	0.022	5.7	B	2
1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	187	10.1	0.050	6.0		0.051	6.1		2
Propanenitrile	107-12-0	55	10.8	0.044	18		0.044	18		0
Propanol	71-23-8	60	10.8	0.090	34		0.092	34		2
2-Butanone	78-93-3	72	12.4	0.068	21		0.067	21		2
Hexane	110-54-3	86	13.7	0.043	11		0.044	11		3
Chloroform	67-66-3	119	13.8	0.006	1.1	J	0.006	1.1	J	0
Tetrahydrofuran	109-99-9	72	14.6	0.050	16		0.051	16		2
Butanenitrile	109-74-0	69	15.7	0.044	14		0.042	14		6
1-Butanol	71-36-3	74	16.2	1.020	308		1.019	308		0
Benzene	71-43-2	78	16.7	0.003	0.77	J	0.003	0.74	J	4
Carbon Tetrachloride	56-23-5	154	17.0	0.077	11		0.079	11		2
Cyclohexane	110-82-7	84	17.2	0.006	1.5	J	0.006	1.5	J	2
Heptane	142-82-5	100	19.2	0.038	8.5		0.040	9.0		5
Pentanenitrile	110-59-8	83	21.5	0.015	4.1	J	0.015	4.1	J	1
Toluene	108-88-3	92	22.6	0.089	22		0.090	22		1
Octane	111-65-9	114	24.6	0.015	3.0	J	0.015	3.0	J	0
Tetrachloroethylene	127-18-4	166	25.1	0.069	9.3		0.071	9.6		2
Hexanenitrile	628-73-9	97	27.0	0.032	7.4	J	0.028	6.5	J	14
Ethylbenzene	100-41-4	106	27.6	0.004	0.79	J	0.004	0.81	J	3
p/m-Xylene	106-42-3	106	28.1	0.012	2.5	J	0.012	2.6	J	2
Cyclohexanone	108-94-1	98	28.5	0.041	9.4	J	0.037	8.5	J	10
o-Xylene	95-47-6	106	29.3	0.009	1.9	J	0.009	1.9	J	0
Nonane	111-84-2	128	29.7	0.008	1.4	J	0.008	1.4	J	1
Decane	124-18-5	142	34.4	0.042	6.6		0.042	6.6		1
Undecane	1120-21-4	156	38.7	0.202	29	J	0.202	29	J	0
Dodecane	112-40-3	170	42.8	11.551	1519	*	13.522	1778	*	16
Tridecane	629-50-5	184	46.5	41.783	5077	*	55.711	6769	*	29
Tetradecane	629-59-4	198	50.0	8.085	913	*	13.681	1545	*	51
Tentatively Identified Compounds ^(b)										
Methane, chlorodifluoro-	75-45-6	86	4.3	nd	nd		0.043	11		
Propene	115-07-1	42	4.4	nd	nd		0.055	29		
Propane	74-98-6	44	4.5	0.121	62		0.131	67		8
Cyclopropane	75-19-4	42	5.0	nd	nd		0.035	19		
1-Propene, 2-methyl-	115-11-7	56	6.4	nd	nd		0.044	17		
Propanal	123-38-6	58	7.9	0.104	40		0.112	43		7
2-Propanol, 2-methyl-	75-65-0	74	9.4	nd	nd		0.097	29		
Butanal	123-72-8	72	12.2	0.205	64		0.200	62		3
Pentanal	110-62-3	86	17.8	0.159	41		0.159	41		0
Hexanal	66-25-1	100	23.5	0.108	24		0.108	24		0

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.

* Denotes diluted value was reported for target compound in table.

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.

Table D.10 Comparison of Organic Compound Concentrations from Replicate Analysis of SUMMA™ Canister PNL 078 from Tank TY-103 Riser 8 Middle Level Sampled on 11/22/96

Target Analytes ^(a)	CAS	MW	Ret Time	S6116-m27.078 ^(c) ISVS						RPD ^(d) (%)
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	
Dichlorodifluoromethane	75-71-8	121	4.6	0.004	0.79	J	0.004	0.81	J	2
Chloromethane	74-87-3	50	5.0	0.002	0.89	J	0.002	1.1	U	
Methanol	67-56-1	32	5.3	0.487	340	Y	0.488	341	Y	0
Butane	106-97-8	58	5.9	0.127	49		0.129	50		1
Ethanol	64-17-5	46	6.8	0.202	98	Y	0.205	100	Y	1
Acetonitrile	75-05-8	41	7.3	0.144	79		0.145	79		1
Acetone	67-64-1	58	7.9	0.415	160		0.422	163		2
Trichlorofluoromethane	75-69-4	137	8.3	1.032	168		1.055	172		2
Pentane	109-66-0	72	9.0	0.050	16		0.052	16		2
Methylene Chloride	75-09-2	85	9.7	0.020	5.2	J	0.020	5.3	J	2
1,1,1-Trichloro-2,2,2-trifluoroethane	76-13-1	187	10.2	0.072	8.6		0.073	8.7		1
Propanenitrile	107-12-0	55	10.9	0.047	19		0.048	19		1
Propanol	71-23-8	60	10.9	0.102	38		0.099	37		3
2-Butanone	78-93-3	72	12.5	0.087	27		0.091	28		5
Hexane	110-54-3	86	13.7	0.062	16		0.064	17		4
Chloroform	67-66-3	119	13.9	0.007	1.3	J	0.007	1.3	J	0
Tetrahydrofuran	109-99-9	72	14.6	0.056	17		0.056	17		1
1,1,1-Trichloroethane	71-55-6	133	15.8	0.004	0.68	J	0.003	0.54	U	
Butanenitrile	109-74-0	69	15.8	0.056	18		0.055	18		2
1-Butanol	71-36-3	74	16.3	1.110	336		1.091	330		2
Benzene	71-43-2	78	16.7	0.003	0.93	J	0.003	0.96	J	6
Carbon Tetrachloride	56-23-5	154	17.0	0.094	14		0.095	14		2
Cyclohexane	110-82-7	84	17.3	0.011	2.9	J	0.011	3.1	J	4
Heptane	142-82-5	100	19.3	0.063	14		0.064	14		2
4-Methyl-2-Pentanone	108-10-1	100	20.5	0.004	0.83	J	0.003	0.72	J	14
Pentanenitrile	110-59-8	83	21.6	0.019	5.1	J	0.019	5.1	J	0
Toluene	108-88-3	92	22.6	0.179	44		0.185	45		3
Octane	111-65-9	114	24.7	0.018	3.6	J	0.019	3.7	J	3
Tetrachloroethylene	127-18-4	166	25.2	0.082	11		0.085	11		4
Hexanenitrile	628-73-9	97	27.0	0.038	8.7	J	0.037	8.6	J	2
Ethylbenzene	100-41-4	106	27.7	0.005	1.0	J	0.005	1.0	J	2
p/m-Xylene	106-42-3	106	28.1	0.015	3.1	J	0.015	3.1	J	0
Cyclohexanone	108-94-1	98	28.5	0.147	34		0.137	31		7
o-Xylene	95-47-6	106	29.3	0.011	2.2	J	0.011	2.2	J	1
Nonane	111-84-2	128	29.8	0.009	1.6	J	0.009	1.6	J	2
1,2,4-Trimethylbenzene	95-63-6	120	34.2	0.003	0.48	U	0.004	0.78	J	
Decane	124-18-5	142	34.4	0.051	8.0		0.052	8.2		3
Undecane	1120-21-4	156	38.8	0.209	30	J	0.218	31	J	4
Dodecane	112-40-3	170	42.8	5.374	707	*	6.331	833	*	16
Tridecane	629-50-5	184	46.5	34.566	4200	*	49.864	6059	*	36
Tetradecane	629-59-4	198	50.0	2.103	238	*	9.627	1087	*	128
Tentatively Identified Compounds^(a)										
Propane	74-98-6	44	4.5	0.132	67		0.137	70		4
Butanal	123-72-8	72	12.2	0.195	61		0.205	64		5
Hexane, 3-methyl-	589-34-4	100	17.9	0.206	46		0.214	48		4
Hexanal	66-25-1	100	23.5	nd	nd		0.104	23		

Data Quality Flags

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 was performed; however, the analyte was not part of the current operating procedure.

* Denotes diluted value was reported for target compound in table.

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 D.11 Comparison of Organic Compound Concentrations from Replicate Analysis of SUMMATM Canister PNL 350 from Tank TY-103 Riser 18 Top Level Sampled on 11/22/96

Ret	ISVS	RPD ^(c)	Target Analytes ^(a)	CAS	MW	Time	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	RPD ^(c)
3			Dichlorodifluoromethane	75-71-8	121	4.6	0.003	0.58	J	0.003	0.62	J	
6			Chloromethane	74-87-3	50	5.0	0.003	1.1	J	0.002	1.1	U	
9			Methanol	67-56-1	32	5.3	0.737	515	Y	0.693	485	Y	
6			Butane	106-97-8	58	5.9	0.101	39	Y	0.111	43	Y	
3			Ethanol	64-17-5	46	6.9	0.117	57	Y	0.120	59	Y	
2			Acetonitrile	75-05-8	41	7.3	0.132	72		0.135	74		
1			Acetone	67-64-1	58	7.9	0.381	147		0.383	148		
3			Trichlorofluoromethane	75-69-4	137	8.3	0.838	137		0.859	140		
2			Pentane	109-66-0	72	9.0	0.046	14		0.047	14		
0			Methylene Chloride	75-09-2	85	9.7	0.023	6.2	B	0.023	6.1	B	
2			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	187	10.2	0.059	7.1		0.058	7.0		
2			Propanenitrile	107-12-0	55	10.9	0.045	18		0.044	18		
0			Propanol	71-23-8	60	10.9	0.094	35		0.092	34		
2			2-Butanone	78-93-3	72	12.5	0.087	27		0.085	26		
3			Hexane	110-54-3	86	13.7	0.045	12		0.044	12		
2			Chloroform	67-66-3	119	13.9	0.006	1.1	J	0.006	1.1	J	
3			Tetrahydrofuran	109-99-9	72	14.6	0.056	17		0.054	17		
2			1,1,1-Trichloroethane	71-55-6	133	15.8	0.003	0.50	J	0.003	0.49	J	
3			Butanenitrile	109-74-0	69	15.8	0.044	14		0.046	15		
2			1-Butanol	71-36-3	74	16.3	0.974	294		0.989	299		
4			Benzene	71-43-2	78	16.7	0.003	0.77	J	0.003	0.76	J	
0			Carbon Tetrachloride	56-23-5	154	17.0	0.070	10		0.070	10		
19			Cyclohexane	110-82-7	84	17.3	0.008	2.2	J	0.007	1.8	J	
1			Heptane	142-82-5	100	19.3	0.049	11		0.049	11		
1			Pentanenitrile	110-59-8	83	21.6	0.015	4.1	J	0.015	4.1	J	
1			Toluene	108-88-3	92	22.6	0.167	41		0.166	40		
5			Octane	111-65-9	114	24.7	0.017	3.3	J	0.016	3.2	J	
3			Tetrachloroethylene	127-18-4	166	25.2	0.071	9.6		0.069	9.3		
6			Hexanenitrile	628-73-9	97	27.1	0.033	7.6	J	0.031	7.1	J	
10			Ethylbenzene	100-41-4	106	27.7	0.004	0.91	J	0.004	0.83	J	
0			p/m-Xylene	106-42-3	106	28.1	0.013	2.7	J	0.013	2.8	J	
52			Cyclohexanone	108-94-1	98	28.5	0.012	2.8	J	0.021	4.8	J	
5			o-Xylene	95-47-6	106	29.3	0.010	2.1	J	0.010	2.0	J	
8			Nonane	111-84-2	128	29.8	0.009	1.6	J	0.009	1.5	J	
3			Decane	124-18-5	142	34.5	0.044	6.9		0.043	6.7		
10			Undecane	1120-21-4	156	38.8	0.172	25	J	0.190	27	J	
3			Dodecane	112-40-3	170	42.8	8.461	1113	*	8.190	1077	*	
10			Tridecane	629-50-5	184	46.6	72.606	8822	*	80.125	9735	*	
15			Tetradecane	629-59-4	198	50.1	36.981	4177	*	42.894	4844	*	
Identified Compounds ^(b)													
Data Quality Flags													
Propane	74-98-6	44	4.5	nd	nd	nd	0.123	63		0.116	45		9
Propanal	123-38-6	58	7.9	0.127	49		0.116	45		0.223	69		3
Butanal	123-72-8	72	12.2	0.230	72		0.223	69		0.198	51		3
Pentanal	110-62-3	86	17.9	0.203	53		0.198	51		0.134	30		3
Hexanal	66-25-1	100	23.5	0.138	31		0.134	30		0.185	36		6
Heptanal	111-71-7	114	28.8	0.196	39		0.185	36					
Compound found in associated laboratory blank													
J	Target compound detected above the IDL but below the EGL												
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.												
*	Denotes diluted value was reported for target compound in table.												
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/m ³ values.												
nd	Not detected.												

D.25

Table D.12 Comparison of Organic Compound Concentrations from Replicate Analysis of SUMMA™ Canister PNL 344 from Tank TY-103 Riser 18 Bottom Level Sampled on 11/22/96

Target Analytes ^(a)	CAS	MW	Ret Time	S6117-b30.344 ^(c) ISVS						RPD ^(d) (%)
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	
Dichlorodifluoromethane	75-71-8	121	4.6	0.004	0.73	J	0.003	0.52	U	
Chloromethane	74-87-3	50	4.9	0.002	1.1	J	0.002	1.1	U	
Methanol	67-56-1	32	5.2	0.738	516	Y	0.877	613	Y	17
Butane	106-97-8	58	5.8	0.120	46		0.119	46		1
Ethanol	64-17-5	46	6.8	0.122	59	Y	0.120	58	Y	1
Acetonitrile	75-05-8	41	7.3	0.134	73		0.131	72		2
Acetone	67-64-1	58	7.8	0.367	142		0.354	136		4
Trichlorofluoromethane	75-69-4	137	8.2	0.807	132		0.767	125		5
Pentane	109-66-0	72	8.9	0.043	13		0.041	13		4
Methylene Chloride	75-09-2	85	9.6	0.019	5.1	J	0.019	5.1	J	1
1,1,1-Trichloroethane	76-13-1	187	10.1	0.063	7.5		0.061	7.3		4
Propanenitrile	107-12-0	55	10.8	0.039	16		0.038	16		2
Propanol	71-23-8	60	10.8	0.083	31		0.078	29		6
2-Butanone	78-93-3	72	12.4	0.058	18		0.056	17		4
Hexane	110-54-3	86	13.6	0.030	7.7	J	0.029	7.6	J	2
Chloroform	67-66-3	119	13.8	0.005	0.98	J	0.003	0.49	U	
Tetrahydrofuran	109-99-9	72	14.5	0.043	13		0.041	13		3
1,1,1-Trichloroethane	71-55-6	133	15.7	0.003	0.48	J	0.003	0.54	U	
Butanenitrile	109-74-0	69	15.7	0.043	14		0.003	1.1	U	
1-Butanol	71-36-3	74	16.2	0.927	280		0.888	268		4
Benzene	71-43-2	78	16.6	0.002	0.68	J	0.002	0.46	U	
Carbon Tetrachloride	56-23-5	154	16.9	0.069	10		0.069	10		1
Cyclohexane	110-82-7	84	17.2	0.004	1.1	J	0.004	0.96	U	
Heptane	142-82-5	100	19.2	0.024	5.4		0.024	5.3		1
4-Methyl-2-Pentanone	108-10-1	100	20.4	0.003	0.61	J	0.003	0.76	U	
Pentanenitrile	110-59-8	83	21.5	0.015	3.9	J	0.014	3.8	J	3
Toluene	108-88-3	92	22.5	0.052	13		0.052	13		0
Octane	111-65-9	114	24.6	0.014	2.7	J	0.002	0.47	U	
Tetrachloroethylene	127-18-4	166	25.1	0.062	8.3		0.062	8.4		1
Hexanenitrile	628-73-9	97	27.0	0.030	6.9	J	0.031	7.2	J	5
Ethylbenzene	100-41-4	106	27.6	0.004	0.74	J	0.008	1.7	J	77
p/m-Xylene	106-42-3	106	28.0	0.010	2.2	J	0.013	2.7	U	
o-Xylene	95-47-6	106	29.2	0.008	1.8	J	0.008	1.8	J	1
Decane	124-18-5	142	34.4	0.038	6.0		0.039	6.1		2
Undecane	1120-21-4	156	38.7	0.175	25	J	0.153	22	J	13
Dodecane	112-40-3	170	42.7	8.031	1056	*	7.801	1026	*	3
Tridecane	629-50-5	184	46.5	56.959	6921	*	57.299	6962	*	1
Tetradecane	629-59-4	198	50.0	38.714	4372	*	40.373	4560	*	4

Tentatively

Identified Compounds^(b)

Propane	74-98-6	44	4.4	0.136	69		0.130	66		4
Propanal	123-38-6	58	7.9	0.127	49		0.121	47		5
Butanal	123-72-8	72	12.2	0.205	64		0.199	62		3
Pentanal	110-62-3	86	17.8	0.115	30		0.112	29		3
Hexanal	66-25-1	100	23.4	0.115	26		0.106	24		8

Data Quality Flags

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.

* Denotes diluted value was reported for target compound in table.

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.

Table D.13 Organic Compound Concentrations in Ambient Air in SUMMA™ Canisters
Associated with the Sampling of Tank TY-103 on 11/22/96

Target Analytes ^(a)	CAS	MW	Ret Time	S6116-a24.006 ^(b) Upwind Ambient Air		
				(mg/m ³)	(ppbv)	Flag
Dichlorodifluoromethane	75-71-8	121	4.6	0.004	0.75	J
Methanol	67-56-1	32	5.2	<0.11	<77	Y
Ethanol	64-17-5	46	6.8	<0.11	<53	Y
Acetone	67-64-1	58	7.8	0.032	12	J,B
Pentane	109-66-0	72	8.9	0.001	0.24	J
Methylene Chloride	75-09-2	85	9.6	0.019	4.9	J,B
2-Butanone	78-93-3	72	12.4	0.017	5.2	J
Pyridine	110-86-1	79	20.5	0.009	2.4	J
Hexanenitrile	628-73-9	97	27.0	0.005	1.2	J,B
1,2,4-Trichlorobenzene	120-82-1	181	42.2	0.025	3.1	J,B
Hexachloro-1,3-butadiene	87-68-3	261	44.1	0.015	1.3	J,B
Tridecane	629-50-5	184	46.5	0.035	4.2	J,B
Tetradecane	629-59-4	198	50.0	0.074	8.4	

Data Quality Flags

B Compound found in associated laboratory blank.

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

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

Footnotes

(a) Detected target analytes.

(b) Sample identification number.

Figure D.1a Typical Total Ion Chromatogram (2 - 36 min) for SUMMA™ Canister Samples from Tank TY-103 Sampled on 11/22/96

Figure D.1b Typical Total Ion Chromatogram (36 - 70 min) for SUMMA™ Canister Samples from Tank TY-103 Sampled on 11/22/96

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 10, 1996, under COC numbers 100414 and 100417. The samples were analyzed May 15 through May 27, 1997.

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/m³) for each compound at each sampling location is presented in Table 2.3 of Section 2.0.

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 TY-103 found serious contamination problems associated with the field blanks and to a lesser degree with the trip blanks. Thirty-four target compounds and 23 TICs were identified in one or more of the blank samples. Compounds identified in the blank samples included: methanol, trichlorofluoromethane, methylene chloride, hexane, toluene, 1-chloro-1,1-difluoroethane, 1-fluoro-1,1-dichloroethane, and 2,4-dimethylheptane. Blank samples associated with the sampling of Riser 18 were significantly more contaminated than blank samples associated with the sampling of Riser 8. Total concentrations of compounds in the blanks associated with sampling of Riser 8 ranged from 2.00 mg/m³ to 4.58 mg/m³. Total concentrations of compounds in the blanks associated with sampling of Riser 18 ranged from 1.23 mg/m³ to 16.32 mg/m³. The upper end value for the Riser 18 blanks is in the concentration range measured for several TST tank headspace samples. Because of blank contamination associated with the sampling of Tank TY-103, 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.

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 May 14, 1997 and quantitated against a CCV run at beginning of the batch. The sample analytical sequence runs were as follows:

Batch #1 (file identifier 47051501.b) - S6117-t42.1168, S6117-t42.1168 REP, S6116-t44.1132, S6116-m29.1120, S6116-b35.1164;

Batch #2 (file identifier 47051601.b) - S6117-b35.1166, S6117-a50.1177, S6116-t42.1160, S6116-t42.1160 REP, S6117-b37.1169;

Batch #3 (file identifier 47052001.b) - S6116-a50.1026, S6116-b34.1191, S6116-b34.1191 REP, S6116-a53.1179, S6116-m48.1199, S6116-a51.1159;

Batch #4 (file identifier 47052101.b) - S6117-t44.1121, S6116-m28.1197, S6116-m49.1126, S6116-m49.1126 REP, S6117-b34.1165, S6117-t43.1137;

Batch #5 (file identifier 47052201.b) - S6117-b36.1151, S6117-b36.1151 REP, S6116-b37.1139, S6117-m29.1170, S6116-t45.1157;

Batch #6 (file identifier 47052302.b) - S6117-m48.1139, S6117-m28.1188, S6117-m28.1188 REP, S6116-b36.1135, S6117-m49.1186, S6116-a52.1162;

Batch #7 (file identifier 47052701.b) - S6117-a52.1136, S6117-a53.1134, S6117-t45.1211, S6116-t43.1152, S6116-t43.1152 REP, S6117-a51.1154.

Batch #1:

This analytical batch included one Top sample and a replicate of that Top sample from Riser 18, one Top, one Middle and one Bottom sample from Riser 8.

The first CCV was not used due to poor performance. The second CCV showed acceptable performance as specified in the procedure for all target compounds except methanol (36.9%), ethanol (26.9%), and tetradecane (36.2%). Varying amounts of methanol, ethanol, and tetradecane were observed in the samples. Due to the CCV performance, the results for these compounds have a greater uncertainty. The CCB showed a trace of methylene chloride, 1,1,2-trichloro-1,2,2-trifluoroethane, 1,1-dichloroethane, chloroform, and tetradecane (below EQL) and was clean of other target compounds. Compounds found in the CCB at concentrations (in ng) greater than 5% of the sample concentration are flagged with a "B" in the tables.

Batch #2:

This analytical batch included two Bottom sample and one field blank from Riser 18, one Top sample and a replicate of the Top sample from Riser 8.

The CCV showed acceptable performance as specified in the procedure for all target compounds except methanol (40.4%), and tetradecane (27.2%). Varying amounts of methanol, and tetradecane were observed in the samples. Due to the CCV performance, the results for these compounds have a greater uncertainty. The CCB showed a trace of methylene chloride, 1,1-dichloroethane, chloroform, tridecane, and tetradecane (below EQL) and was clean of other target compounds. Compounds found in the CCB at concentrations (in ng) greater than 5% of the sample are flagged with a "B" in the tables.

Batch #3:

This analytical batch included two field blanks, one trip blank, one Bottom sample, one replicate of that Bottom sample and one Middle sample from Riser 8.

The CCV showed acceptable performance as specified in the procedure for all target compounds except methanol (32.1%), pyridine (25.9%), tridecane (37.6%) and tetradecane (62.0%). Varying amounts of methanol, tridecane, and tetradecane were observed in the samples. Due to the CCV performance, the results for these compounds have a greater uncertainty. The CCB showed a trace of methylene chloride, 1,1-dichloroethane, chloroform, and tetradecane (below EQL) and was clean of other target compounds. Compounds found in the CCB at concentrations (in ng) greater than 5% of the sample are flagged with a "B" in the tables.

Batch #4:

This analytical batch included two Middle samples with one duplicate from Riser 8; two Top samples and one Bottom sample from Riser 18.

The CCV showed acceptable performance as specified in the procedure for all target compounds except methanol (46.5%), 1,1,2-trichloro-1,2,2-trifluoroethane (26.5%), propanol (29.1%), and tetradecane (41.5%). Varying amounts of methanol, 1,1,2-trichloro-1,2,2-trifluoroethane, propanol, and tetradecane were observed in the samples. Due to the CCV performance, the results for these compounds have a greater uncertainty. The CCB showed a trace of methylene chloride, 1,1-dichloroethane, chloroform, and tetradecane (below EQL) and was clean of other target compounds. Compounds found in the CCB at concentrations (in ng) greater than 5% of the sample are flagged with a "B" in the tables.

Batch #5:

This analytical batch included one Bottom sample and one Top sample from Riser 8, one Bottom sample and a replicate of that sample, and one Middle sample from Riser 18.

The CCV showed acceptable performance as specified in the procedure for all target compounds except methanol (39.2%), ethanol (25.4%), propanol (27.6%), and tetradecane (30.2%). Varying amounts of methanol, propanol, and tetradecane were observed in the samples. Due to the CCV performance, the results for these compounds have a greater uncertainty. The CCB showed a trace of methylene chloride, 1,1-dichloroethane, chloroform, and tetradecane (below EQL) and the TIC hexamethyl-cyclotrisiloxane but was otherwise clean of other target compounds. Compounds found in the CCB at concentrations (in ng) greater than 5% of the sample are flagged with a "B" in the tables.

Batch #6:

This analytical batch included one trip blank and one Bottom sample from Riser 8, two Middle samples and a replicate of one Middle sample from Riser 18.

The first CCV showed poor performance and due to the length of this analytical batch a new auto tune was performed and the run restarted with a new name. This first CCV was not included in the package because it belonged to another run. The second CCV showed acceptable performance as specified in the procedure for all target compounds except methanol (29.9%), propanol (27.4%), pyridine (25.1%), cyclohexanone (28.9%), tridecane (40.9%), and tetradecane (66.3%). Varying amounts of methanol, propanol, tridecane, and tetradecane were observed in the samples. Due to the CCV performance, the results for these compounds have a greater uncertainty. The CCB showed a trace of methylene chloride, 1,1-dichloroethane, chloroform, tetrahydrofuran, and tetradecane (below EQL) and the TIC hexamethyl-cyclotrisiloxane but was otherwise clean of other target compounds. Compounds found in the CCB at concentrations (in ng) greater than 5% of the sample are flagged with a "B" in the tables.

Batch #7:

This analytical batch included one Top sample and a replicate of this Top sample from Riser 8, two trip blanks, one field blank and two Top samples from Riser 18.

The CCV showed acceptable performance as specified in the procedure for all target compounds except chloromethane (30.5%), methanol (33.4%), propanol (25.5%),

cyclohexanone (32.4%), and tetradecane (43.0%). Varying amounts of methanol, propanol, tridecane, and tetradecane were observed in the samples. Due to the CCV performance, the results for these compounds have a greater uncertainty. The CCB showed a trace of methylene chloride, 1,1-dichloroethane, chloroform, and tetradecane (below EQL) and the TIC hexamethyl-cyclotrisiloxane but was otherwise clean of other target compounds. Compounds found in the CCB at concentrations (in ng) greater than 5% of the sample are flagged with a "B" in the tables.

Information common to all batches:

Methanol, ethanol, and 1,3-butadiene 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 TY-103 Riser 8 Top Level Sampled on 11/22/96

Target Analytes ^(a)	CAS	MW	Ret Time	S6116-144.1132 ^(c) ISVS			S6116-142.1160 ^{(c)(d)} ISVS			S6116-145.1157 ^(c) ISVS			S6116-143.1152 ^{(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.
Methanol	67-56-1	32	10.0	0.943	659	Y,S	0.808	565	Y,S	3.006	2102	Y,S	1.060	741	Y,S	1.454	1.040	1017	727
Butane	106-97-8	58	10.8	0.086	33		0.082	32		0.145	56		0.078	30		0.098	0.032	38	12
Acetonitrile	75-05-8	41	13.0	0.089	49		0.076	42		0.141	77		0.103	56		0.102	0.028	56	15
Acetone	67-64-1	58	13.7	0.078	30	J	0.066	26	J	0.085	33		0.119	46		0.087	0.023	34	8.7
Trichlorofluoromethane	75-69-4	137	14.2	0.810	132	S	0.695	113	S	2.198	358	S	0.665	109	S	1.092	0.740	178	121
Pentane	109-66-0	72	14.9	0.048	15		0.042	13		0.044	14		0.042	13		0.044	0.003	14	0.88
Methylene Chloride	75-09-2	85	15.8	0.114	30	J,S,B	0.096	25	J,S,B	0.524	138	S	0.089	24	J,S,B	0.206	0.212	54	56
1,1,2-Trichloroethane	76-13-1	187	16.3	0.078	9.3	S,B	0.073	8.7	S	0.079	9.5	S	0.091	11	S	0.080	0.008	9.6	0.95
Propanenitrile	107-12-0	55	17.0	0.034	14		0.029	12		0.036	15		0.046	19		0.036	0.007	15	3.0
Propanol	71-23-8	60	17.1	0.086	32		0.062	23		0.059	22		0.074	27		0.070	0.012	26	4.6
2-Butanone	78-93-3	72	18.6	0.064	20	S	0.025	7.9	S	0.045	14	S	0.099	31	S	0.059	0.032	18	9.8
Hexane	110-54-3	86	19.9	0.134	35	S	0.078	20	S	0.189	49	S	0.089	23	S	0.122	0.051	32	13
Tetrahydrofuran	109-99-9	72	20.8	0.054	17		0.047	15		0.048	15		0.048	15		0.049	0.003	15	0.96
Butanenitrile	109-74-0	69	21.9	0.063	20		0.051	17		0.051	17		0.055	18		0.055	0.006	18	1.8
1,1,1-Trichloroethane	71-55-6	133	21.9	0.011	1.8	J	0.011	1.9	J	0.014	2.4	J	0.006	0.97	J	0.010	0.004	1.8	0.59
1-Butanol	71-36-3	74	22.3	0.811	245		0.655	198		0.548	166		0.665	201		0.670	0.108	203	33
Benzene	71-43-2	78	22.8	0.010	2.8	J	0.010	2.8	J	0.010	2.8	J	0.008	2.4	J	0.009	0.001	2.7	0.19
Carbon Tetrachloride	56-23-5	154	23.1	0.062	9.0		0.048	7.0		0.053	7.7		0.061	8.9		0.056	0.007	8.1	0.97
Cyclohexane	110-82-7	84	23.3	0.070	19	S	0.059	16	S	0.079	21	S	0.081	22	S	0.072	0.010	19	2.7
Heptane	142-82-5	100	25.2	0.095	21		0.039	8.8		0.073	16		0.056	12		0.066	0.024	15	5.4
4-Methyl-2-Pentanone	108-10-1	100	26.3	0.017	3.8	J	0.018	4.1	J	0.020	4.5	J	0.009	1.9	J	0.016	0.005	3.6	1.1
Pentanenitrile	110-59-8	83	27.4	0.022	5.8		0.017	4.4		0.015	3.9		0.018	4.7		0.018	0.003	4.7	0.81
1,1,2-Trichloroethane	79-00-5	133	27.8	0.012	2.0	J	0.010	1.6	J	0.003	0.57	J	0.010	1.7	J	0.009	0.004	1.5	0.61
Toluene	108-88-3	92	28.5	0.835	203	S	0.626	152	S	2.567	624	S	0.620	151	S	1.162	0.942	283	229
Octane	111-65-9	114	30.4	0.036	7.1		0.020	4.0	J	0.029	5.7		0.023	4.5	J	0.027	0.007	5.3	1.4
Tetrachloroethylene	127-18-4	166	31.0	0.061	8.2		0.031	4.1		0.033	4.5		0.043	5.8		0.042	0.014	5.7	1.8
Hexanenitrile	628-73-9	97	32.8	0.021	4.9	J	0.010	2.4	J	0.011	2.5	J	0.013	3.0	J	0.014	0.005	3.2	1.2
Ethylbenzene	100-41-4	106	33.4	0.040	8.4	S	0.040	8.3	S	0.045	9.4	S	0.021	4.5	S	0.036	0.010	7.6	2.2
p/m-Xylene	106-42-3	106	33.9	0.129	27	S	0.135	28	S	0.142	30	S	0.076	16	S	0.120	0.030	25	6.3
Styrene	100-42-5	104	34.8	0.028	5.9	S	0.030	6.4	S	0.029	6.3	S	0.016	3.5	J,S	0.026	0.006	5.5	1.4
o-Xylene	95-47-6	106	35.1	0.066	14	S	0.062	13	S	0.067	14	S	0.034	7.2	S	0.057	0.016	12	3.3
Nonane	111-84-2	128	35.4	0.026	4.6		0.020	3.6		0.024	4.3		0.016	2.8		0.022	0.005	3.8	0.80
1-Ethyl-2-methyl benzene	611-14-3	120	38.4	0.005	0.86	J	0.004	0.75	J	0.004	0.81	J	0.003	0.59	J	0.004	0.001	0.75	0.12
1,3,5-Trimethylbenzene	108-67-8	120	38.7	0.005	0.92	J	0.005	0.87	J	0.005	0.89	J	0.004	0.72	J	0.005	0.000	0.85	0.089
1,2,4-Trimethylbenzene	95-63-6	120	39.9	0.014	2.6	J	0.012	2.2	J	0.013	2.3	J	0.010	1.9	J	0.012	0.002	2.3	0.29
Decane	124-18-5	142	40.1	0.056	8.8		0.039	6.1		0.038	6.0		0.034	5.3		0.042	0.010	6.5	1.5
1,4-Dichlorobenzene	106-46-7	147	40.7	0.012	1.8	J	0.011	1.7	J	0.010	1.5	J	0.006	0.96	J	0.010	0.003	1.5	0.38
Undecane	1120-21-4	156	44.4	0.094	14		0.032	4.5	J	0.034	4.9	J	0.044	6.3	J	0.051	0.029	7.3	4.2
Dodecane	112-40-3	170	48.5	2.284	301		0.474	62		0.540	71		0.876	115		1.043	0.845	137	111
Tridecane	629-50-5	184	52.2	3.973	484	E	1.271	155		1.413	172		2.071	252		2.182	1.244	266	151
Tetradecane	629-59-4	198	55.7	3.492	395	E	0.939	106	B	1.054	119		2.013	228		1.875	1.181	212	134
Total Concentration of Target Analytes																11.30			

Table E.3 (Cont'd) Organic Compound Concentrations in Triple Sorbent Traps from Tank TY-103 Riser 8 Top Level Sampled on 11/22/96

Tentatively Identified Compounds ^(a)	CAS	MW	Ret Time	S6116-444.1132 ^(c) ISVS			S6116-442.1160 ^{(c)(d)} ISVS			S6116-445.1157 ^(c) ISVS			S6116-443.1152 ^{(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.
Propane	74-98-6	44	7.4	0.102	52	S	0.089	45	S	0.351	179	S	0.130	66	S	0.168	0.123	85	63
Ethane, 1-chloro-1,1-difluoro-	75-68-3	100	8.8	0.456	102	S	0.328	74	S	3.269	732	S	0.109	24	S	1.041	1.493	233	334
1-Fluoro-1,1-dichloro-ethane	1717-00-6	116	14.5	nd	nd	S	nd	nd	S	0.654	126	S	nd	nd	S	e	e	e	e
2-Propanol, 2-methyl-	75-65-0	74	15.5	0.151	46	S	0.152	46	S	0.152	46	S	0.067	20	S	0.130	0.042	39	13
Pentane, 2-methyl-	107-83-5	86	18.3	0.075	20	S	0.039	10	S	0.070	18	S	0.071	19	S	0.064	0.017	17	4.3
Pentane, 3-methyl-	96-14-0	86	19.0	0.063	16	S	0.040	10	S	0.081	21	S	0.043	11	S	0.057	0.019	15	5.0
Cyclopentane, methyl-	96-37-7	84	21.4	0.051	14	S	0.028	7.5	S	0.069	18	S	0.029	7.6	S	0.044	0.020	12	5.3
Hexane, 2-methyl-	591-76-4	100	23.4	0.106	24	S	nd	nd	S	0.103	23	S	0.055	12	S	0.088	0.029	20	6.4
Pentane, 2,3-dimethyl-	565-59-3	100	23.6	0.071	16	S	0.039	8.8	S	0.105	23	S	0.035	7.8	S	0.062	0.032	14	7.3
Hexane, 3-methyl-	589-34-4	100	23.9	0.182	41	S	0.078	17	S	0.204	46	S	0.097	22	S	0.140	0.062	31	14
1-Butanol, 2-ethyl-	97-95-0	102	24.5	0.038	8.4		nd	nd		0.050	11		nd	nd		0.044	e	9.7	e
Cyclopentane, 1,2-dimethyl-	2452-99-5	98	24.8	0.079	18	S	0.053	12	S	0.260	59	S	0.038	8.6	S	0.107	0.103	24	24
Cyclohexane, methyl-	108-87-2	98	26.7	0.130	30	S	0.099	23	S	0.172	39	S	0.058	13	S	0.115	0.048	26	11
Hexane, 2,4-dimethyl-	589-43-5	114	27.1	0.059	12	S	0.053	10	S	0.068	13	S	0.016	3.1	S	0.049	0.023	9.6	4.5
Cyclohexane, 1,4-dimethyl-	589-90-2	112	29.7	nd	nd	S	0.079	16	S	0.099	20	S	0.026	5.1	S	0.068	0.038	14	7.6
Cyclotrisiloxane, hexamethyl-	541-05-9	222	31.1	0.748	75	S	0.816	82	S	1.051	106	S	0.638	64	S	0.813	0.175	82	18
Hexane, 2,3,5-trimethyl-	1069-53-0	128	31.4	0.235	41	S	0.255	45	S	0.264	46	S	0.064	11	S	0.204	0.095	36	17
Heptane, 2,4-dimethyl-	2213-23-2	128	31.7	0.727	127	S	0.800	140	S	0.816	143	S	0.218	38	S	0.640	0.284	112	50
2,4-Dimethyl-1-heptene	19549-87-2	126	32.6	0.154	27	S	0.158	28	S	0.162	29	S	0.036	6.4	S	0.127	0.061	23	11
Cyclotetrasiloxane, octamethyl-	556-67-2	296	39.4	0.390	30	S	0.390	30	S	0.439	33	S	0.571	43	S	0.447	0.086	34	6.5
Undecane, 3,7-dimethyl-	17301-29-0	184	42.9	nd	nd		nd	nd		0.791	96		0.564	69		0.678	e	82	e
Undecane, 4-methyl-	2980-69-0	170	42.9	nd	nd		0.811	107		nd	nd		nd	nd		e	e	e	e
Undecane, 4,7-dimethyl-	17301-32-5	184	42.9	0.840	102	S	nd	nd	S	nd	nd	S	nd	nd	S	e	e	e	e
Unknown C12 Alkane		170	43.1	0.445	59		0.394	52		0.386	51		0.318	42		0.386	0.052	51	6.9
5-Dodecanone	19780-10-0	184	54.4	0.226	28		nd	nd		nd	nd		0.099	12		0.163	e	20	e
6-Dodecanone	6064-27-3	184	54.4	nd	nd		0.051	6.2		nd	nd		nd	nd		e	e	e	e
Unknown C14 Alkane		198	57.9	0.715	81		0.186	21		0.209	24		0.360	41		0.367	0.244	42	28
3-Tridecanone	1534-26-5	198	58.3	0.185	21		0.046	5.2		0.052	5.9		0.091	10		0.094	0.064	11	7.2
2-Tridecanone	593-08-8	198	58.5	0.194	22		0.060	6.7		0.072	8.2		0.127	14		0.113	0.061	13	6.9
Total Concentration of TICs																6.210			

Data Quality Flags

B Compound identified in associated laboratory blank.

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

E Target compound exceeds the upper quantification limit (UQL).

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 these samples are found in Tables E.9 and E.10.

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

nd Not detected.

Table E.4 Organic Compound Concentrations in Triple Sorbent Traps from Tank TY-103 Riser 8 Middle Level Sampled on 11/22/96

Target Analytes ^(a)	CAS	MW	Ret Time	S6116-m29.1120 ^(c) ISVS			S6116-m48.1199 ^(c) ISVS			S6116-m28.1197 ^(c) ISVS			S6116-m49.1126 ^{(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.
Methanol	67-56-1	32	10.0	0.771	539	Y,S	0.959	671	Y,S	1.121	784	Y,S	2.781	1944	Y,S	1.408	0.927	984	648
Butane	106-97-8	58	10.8	0.077	30		0.087	34		0.072	28		0.152	59		0.097	0.037	37	14
Acetonitrile	75-05-8	41	13.0	0.056	30		0.102	56		0.094	51		0.112	61		0.091	0.025	50	13
Acetone	67-64-1	58	13.7	0.103	40		0.067	26	J	0.099	38		0.081	31		0.088	0.016	34	6.3
Trichlorofluoromethane	75-69-4	137	14.2	0.625	102	S	0.696	113	S	0.569	93	S	2.557	417	S	1.112	0.965	181	157
Pentane	109-66-0	72	14.9	0.040	12		0.046	14		0.038	12		0.043	13		0.042	0.004	13	1.2
Methylene Chloride	75-09-2	85	15.8	0.077	20	J,S,B	0.105	28	J,S,B	0.084	22	J,S,B	0.515	136	S	0.195	0.213	51	56
1,1,2-trichloro-2,2,2-trifluoroethane	76-13-1	187	16.3	0.088	11	S,B	0.087	10	S	0.076	9.1	S	0.070	8.3	S	0.080	0.009	9.6	1.0
Propanenitrile	107-12-0	55	17.0	0.035	14		0.037	15		0.038	15		0.035	14		0.036	0.002	15	0.68
Propanol	71-23-8	60	17.1	0.047	18	J	0.066	25		0.056	21	J	0.068	25		0.059	0.010	22	3.6
2-Butanone	78-93-3	72	18.6	0.066	21	S	0.037	12	S	0.044	14	S	0.061	19	S	0.052	0.014	16	4.2
Hexane	110-54-3	86	19.9	0.109	28	S	0.092	24	S	0.081	21	S	0.202	52	S	0.121	0.055	31	14
Chloroform	67-66-3	119	20.0	0.005	1.0	J,B	0.003	0.56	U	0.003	0.58	J,B	0.003	0.55	U	0.004	e	0.80	e
Tetrahydrofuran	109-99-9	72	20.8	0.042	13		0.050	16		0.044	14		0.051	16		0.047	0.005	15	1.5
Butanenitrile	109-74-0	69	21.9	0.052	17		0.057	18		0.044	14		0.054	17		0.051	0.005	17	1.7
1,1,1-Trichloroethane	71-55-6	133	21.9	0.006	0.94	J	0.006	0.92	J	0.011	1.8	J	0.011	1.9	J	0.008	0.003	1.4	0.53
1-Butanol	71-36-3	74	22.3	0.617	187		0.718	217		0.514	156		0.634	192		0.621	0.084	188	25
Benzene	71-43-2	78	22.8	0.011	3.0	J	0.008	2.2	J	0.008	2.2	J	0.010	2.9	J	0.009	0.001	2.6	0.42
Carbon Tetrachloride	56-23-5	154	23.1	0.057	8.3		0.058	8.5		0.049	7.2		0.053	7.7		0.054	0.004	7.9	0.60
Cyclohexane	110-82-7	84	23.3	0.089	24	S	0.016	4.3	J,S	0.068	18	S	0.054	14	S	0.057	0.031	15	8.2
Trichloroethene	79-01-6	131	24.7	0.004	0.63	U	0.004	0.64	U	0.004	0.65	U	0.015	2.5	J	e	e	e	e
Heptane	142-82-5	100	25.2	0.087	20	S	0.044	9.8	S	0.056	12	S	0.080	18	S	0.067	0.020	15	4.6
4-Methyl-2-Pentanone	108-10-1	100	26.3	0.014	3.1	J	0.014	3.2	J	0.021	4.8	J	0.015	3.2	J	0.016	0.004	3.6	0.80
Pentanenitrile	110-59-8	83	27.4	0.017	4.5		0.019	5.1		0.014	3.8		0.019	5.1		0.017	0.002	4.6	0.62
Toluene	108-88-3	92	28.5	0.684	166	S	0.588	143	S	0.562	137	S	1.976	480	S	0.953	0.684	232	166
Octane	111-65-9	114	30.4	0.021	4.1	J	0.023	4.5	J	0.020	3.9	J	0.034	6.7		0.024	0.007	4.8	1.3
Tetrachloroethylene	127-18-4	166	31.0	0.037	5.0		0.046	6.2		0.028	3.8		0.059	7.9		0.042	0.013	5.7	1.8
Hexanenitrile	628-73-9	97	32.8	0.012	2.8	J	0.016	3.7	J	0.010	2.2	J	0.018	4.2	J	0.014	0.004	3.2	0.89
Ethylbenzene	100-41-4	106	33.4	0.018	3.9	S	0.020	4.2	S	0.036	7.5	S	0.031	6.6	S	0.026	0.008	5.5	1.8
p/m-Xylene	106-42-3	106	33.9	0.062	13	S	0.067	14	S	0.113	24	S	0.097	20	S	0.085	0.024	18	5.1
Styrene	100-42-5	104	34.8	0.013	2.9	J,S	0.015	3.2	J,S	0.024	5.2	S	0.018	3.9	S	0.018	0.005	3.8	1.0
o-Xylene	95-47-6	106	35.1	0.028	5.9	S	0.032	6.7	S	0.055	12	S	0.048	10	S	0.041	0.013	8.6	2.7
Nonane	111-84-2	128	35.4	0.014	2.4		0.016	2.8		0.017	3.0		0.023	4.0		0.018	0.004	3.1	0.69
1-Ethyl-2-methyl benzene	611-14-3	120	38.4	0.003	0.50	J	0.003	0.63	J	0.004	0.69	J	0.003	0.55	J	0.003	0.000	0.59	0.084
1,3,5-Trimethylbenzene	108-67-8	120	38.7	0.003	0.57	J	0.004	0.74	J	0.005	0.87	J	0.004	0.66	J	0.004	0.001	0.71	0.13
1,2,4-Trimethylbenzene	95-63-6	120	39.9	0.008	1.5	J	0.010	1.9	J	0.011	2.1	J	0.010	1.8	J	0.010	0.001	1.8	0.23
Decane	124-18-5	142	40.1	0.027	4.3	J	0.038	5.9		0.033	5.2		0.038	5.9		0.034	0.005	5.3	0.79
1,4-Dichlorobenzene	106-46-7	147	40.7	0.005	0.73	J	0.006	0.96	J	0.009	1.4	J	0.006	0.87	J	0.007	0.002	1.00	0.30
Undecane	1120-21-4	156	44.4	0.033	4.7	J	0.065	9.3		0.027	3.8	J	0.086	12		0.053	0.028	7.6	4.0
Dodecane	112-40-3	170	48.5	0.595	78		1.727	228		0.308	41		2.260	298		1.223	0.924	161	122
Tridecane	629-50-5	184	52.2	1.376	167		4.831	588	E	0.756	92		4.384	534	E	2.837	2.068	345	252
Tetradecane	629-59-4	198	55.7	1.024	116	B	5.509	623	E	0.600	68		4.233	479	E	2.842	2.407	321	272
Total Concentration of Target Analytes																12.65			

E.10

Table E.4 (Cont'd) Organic Compound Concentrations in Triple Sorbent Traps from Tank TY-103 Riser 8 Middle Level Sampled on 11/22/96

Tentatively Identified Compounds ^(b)	CAS	MW	Ret Time	S6116-m29.1120 ^(c) ISVS			S6116-m48.1199 ^(c) ISVS			S6116-m28.1197 ^(c) ISVS			S6116-m49.1126 ^{(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.
Propane	74-98-6	44	7.4	0.106	54	S	0.109	55	S	0.087	44	S	0.388	197	S	0.172	0.144	88	73
Ethane, 1-chloro-1,1-difluoro-	75-68-3	100	8.9	0.077	17	S	0.300	67	S	nd	nd	S	3.084	691	S	1.154	1.675	258	375
1-Propene, 2-methyl-	115-11-7	56	10.4	0.154	62		0.189	75		0.257	103		0.201	80		0.200	0.043	80	17
1-Fluoro-1,1-dichloro-ethane	1717-00-6	116	14.4	nd	nd	S	nd	nd	S	nd	nd	S	0.415	80	S	e	e	e	e
2-Propanol, 2-methyl-	75-65-0	74	15.5	0.063	19	S	0.074	22	S	0.153	46	S	0.141	43	S	0.108	0.046	33	14
Pentane, 2-methyl-	107-83-5	86	18.3	0.089	23	S	0.050	13	S	0.054	14	S	0.051	13	S	0.061	0.018	16	4.8
Pentane, 3-methyl-	96-14-0	86	19.0	0.065	17	S	0.038	9.8	S	0.058	15	S	0.064	17	S	0.056	0.013	15	3.3
Cyclopentane, methyl-	96-37-7	84	21.5	0.051	14	S	0.022	5.8	S	0.036	9.7	S	0.058	15	S	0.042	0.016	11	4.3
Hexane, 2-methyl-	591-76-4	100	23.5	0.117	26	S	nd	nd	S	0.068	15	S	0.081	18	S	0.089	0.025	20	5.6
Pentane, 2,3-dimethyl-	565-59-3	100	23.7	0.084	19	S	nd	nd	S	0.055	12	S	0.056	12	S	0.065	0.017	15	3.7
Hexane, 3-methyl-	589-34-4	100	24.0	0.208	47	S	0.062	14	S	0.122	27	S	0.148	33	S	0.135	0.061	30	14
1-Butanol, 2-ethyl-	97-95-0	102	24.5	0.046	10		nd	nd		0.031	6.7		nd	nd		0.038	e	8.4	e
Cyclopentane, 1,2-dimethyl-	2452-99-5	98	24.8	0.061	14	S	0.035	8.1	S	0.053	12	S	nd	nd		0.050	0.013	11	3.1
Cyclohexane, methyl-	108-87-2	98	26.7	0.141	32	S	0.029	6.7	S	0.132	30	S	0.090	20	S	0.098	0.051	22	12
Hexane, 2,4-dimethyl-	589-43-5	114	27.1	0.031	6.1	S	0.010	1.9	S	0.060	12	S	0.041	8.1	S	0.035	0.021	6.9	4.1
Cyclohexane, 1,4-dimethyl-	589-90-2	112	29.7	0.038	7.5	S	0.016	3.1	S	0.082	16	S	0.073	15	S	0.052	0.031	10	6.2
Cyclotrisiloxane, hexamethyl-	541-05-9	222	31.2	0.534	54	S	0.612	62	S	1.084	109	S	0.783	79	S	0.753	0.244	76	25
Hexane, 2,3,5-trimethyl-	1069-53-0	128	31.5	0.058	10	S	0.054	9.5	S	0.234	41	S	0.199	35	S	0.136	0.094	24	16
Heptane, 2,4-dimethyl-	2213-23-2	128	31.7	0.188	33	S	0.189	33	S	0.715	125	S	0.608	106	S	0.425	0.277	74	48
2,4-Dimethyl-1-heptene	19549-87-2	126	32.6	nd	nd	S	0.031	5.5	S	0.137	24	S	0.115	20	S	0.094	0.056	17	9.9
Cyclotetrasiloxane, octamethyl-	556-67-2	296	39.4	0.395	30	S	0.469	36	S	0.378	29	S	0.385	29	S	0.407	0.042	31	3.2
Undecane, 3,4-dimethyl-	17312-78-6	184	42.9	0.428	52		nd	nd		nd	nd		nd	nd		e	e	e	e
Undecane, 3,7-dimethyl-	17301-29-0	184	42.9	nd	nd		nd	nd		0.716	87		0.570	69		0.643	e	78	e
Undecane, 4,7-dimethyl-	17301-32-5	184	42.9	nd	nd	S	0.530	65	S	nd	nd	S	nd	nd	S	e	e	e	e
Unknown C12 Alkane		170	43.2	0.261	34		0.285	38		0.354	47		0.303	40		0.301	0.039	40	5.2
5-Dodecanone	19780-10-0	184	54.4	nd	nd		0.198	24		nd	nd		0.313	38		0.255	e	31	e
Unknown C14 Alkane		198	57.9	0.165	19		0.707	f		0.108	12		1.082	122		0.515	0.464	51	62
3-Tridecanone	1534-26-5	198	58.4	0.044	5.0		0.182	21		0.026	2.9		0.295	33		0.137	0.127	15	14
2-Tridecanone	593-08-8	198	58.5	0.055	6.2		nd	nd		0.038	4.3		0.344	42		0.145	0.172	17	21
2-Undecanone	112-12-9	170	58.5	nd	nd		0.210	28		nd	nd		nd	nd		e	e	e	e
Pentadecane	629-62-9	212	59.1	nd	nd		nd	nd		nd	nd		0.270	29		e	e	e	e
Total Concentration of TICs																6.17			

Data Quality Flags

B Compound identified in associated laboratory blank.

E Target compound exceeds the upper quantification limit (UQL).

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.11.

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

(f) Result was not calculated on instrument report.

nd, Not detected.

Table E.5 Organic Compound Concentrations in Triple Sorbent Traps from Tank TY-103 Riser 8 Bottom Level Sampled on 11/22/96

Target Analytes ^(a)	CAS	MW	Mean and Standard Deviation																		
			Ret			S6116-b35.1164 ^(c) ISVS			S6116-b34.1191 ^{(c)(d)} ISVS			S6116-b37.1139 ^(c) ISVS			S6116-b36.1135 ^(c) ISVS						
			Time	(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	1.554	1086	Y,S	4.229	2957	E,Y,S	1.255	877	Y,S	0.547	382	Y,S	1.896	1.612	1326	1127		
Butane	106-97-8	58	10.8	0.088	34		0.196	76		0.086	33		0.079	30		0.112	0.056	43	22		
Acetonitrile	75-05-8	41	13.0	0.095	52		0.184	100		0.107	59		0.066	36		0.113	0.050	62	27		
Acetone	67-64-1	58	13.7	0.127	49		0.095	36		0.140	54		0.063	24	J	0.106	0.035	41	13		
Trichlorofluoromethane	75-69-4	137	14.2	1.083	177	S	2.941	480	S	0.869	142	S	0.628	102	S	1.380	1.057	225	172		
Pentane	109-66-0	72	14.9	0.044	14		0.048	15		0.046	14		0.046	14		0.046	0.002	14	0.54		
1,1-Dichloroethene	75-35-4	97	15.5	0.024	5.6		0.011	2.6	J	0.002	0.44	J	0.002	0.50	U	0.013	0.011	2.9	2.6		
Methylene Chloride	75-09-2	85	15.8	0.824	217	S	0.837	221	S	0.187	49	S,B	0.071	19	J,S,B	0.480	0.408	126	108		
112trichloro 122trifluoroethane	76-13-1	187	16.3	0.078	9.3	S,B	0.067	8.0	S	0.074	8.8	S	0.099	12	S	0.079	0.014	9.5	1.6		
Propanenitrile	107-12-0	55	17.0	0.048	20		0.040	16		0.046	19		0.031	13		0.041	0.008	17	3.2		
Propanol	71-23-8	60	17.1	0.090	33		0.060	22		0.080	30		0.070	26		0.075	0.013	28	4.8		
2-Butanone	78-93-3	72	18.6	0.079	25	S	0.060	18	S	0.173	54	S	0.035	11	S	0.087	0.060	27	19		
Hexane	110-54-3	86	19.9	0.095	25	S	0.259	67	S	0.173	45	S	0.100	26	S	0.157	0.077	41	20		
Chloroform	67-66-3	119	20.0	0.004	0.82	J,B	0.003	0.57	U	0.007	1.3	J,B	0.003	0.57	U	0.006	e	1.0	e		
Tetrahydrofuran	109-99-9	72	20.8	0.048	15		0.048	15		0.050	15		0.052	16	B	0.049	0.002	15	0.50		
Butanenitrile	109-74-0	69	21.9	0.059	19		0.059	19		0.065	21		0.054	18		0.059	0.004	19	1.4		
1,1,1-Trichloroethane	71-55-6	133	21.9	0.015	2.5	J	0.013	2.2	J	0.011	1.8	J	0.006	1.0	J	0.011	0.004	1.9	0.63		
1-Butanol	71-36-3	74	22.3	0.730	221		0.684	207		0.699	212		0.596	181		0.677	0.057	205	17		
Benzene	71-43-2	78	22.8	0.011	3.1	J	0.011	3.1	J	0.009	2.7	J	0.009	2.6	J	0.010	0.001	2.9	0.29		
Carbon Tetrachloride	56-23-5	154	23.1	0.057	8.3		0.054	7.9		0.065	9.4		0.057	8.3		0.058	0.004	8.5	0.65		
Cyclohexane	110-82-7	84	23.3	0.083	22	S	0.088	23	S	0.079	21	S	0.096	25	S	0.086	0.007	23	2.0		
Trichloroethene	79-01-6	131	24.7	0.025	4.2	J	0.024	4.1	J	0.006	0.95	J	0.003	0.48	J	0.014	0.012	2.4	2.0		
Heptane	142-82-5	100	25.2	0.068	15	S	0.088	20	S	0.132	30	S	0.071	16	S	0.090	0.030	20	6.6		
4-Methyl-2-Pentanone	108-10-1	100	26.3	0.025	5.7		0.022	4.9		0.024	5.5		0.015	3.4	J	0.022	0.005	4.8	1.0		
Pentanenitrile	110-59-8	83	27.4	0.018	4.8		0.019	5.2		0.021	5.8		0.018	4.9		0.019	0.002	5.2	0.44		
1,1,2-Trichloroethane	79-00-5	133	27.8	0.011	1.8	J	0.010	1.6	J	0.007	1.1	J	0.009	1.5	J	0.009	0.002	1.5	0.28		
Toluene	108-88-3	92	28.5	2.001	487	S	2.706	658	E,S	1.059	258	S	0.683	166	S	1.612	0.916	392	223		
Octane	111-65-9	114	30.4	0.028	5.5	J	0.035	7.0		0.037	7.2		0.024	4.7	J	0.031	0.006	6.1	1.2		
Tetrachloroethylene	127-18-4	166	31.0	0.035	4.8		0.051	6.9		0.057	7.7		0.043	5.9		0.047	0.009	6.3	1.3		
Hexanenitrile	628-73-9	97	32.8	0.014	3.2	J	0.018	4.3	J	0.019	4.3	J	0.015	3.4	J	0.016	0.002	3.8	0.57		
Ethylbenzene	100-41-4	106	33.4	0.037	7.9	S	0.040	8.3	S	0.042	8.9	S	0.021	4.3	S	0.035	0.010	7.4	2.1		
p/m-Xylene	106-42-3	106	33.9	0.113	24	S	0.123	26	S	0.140	29	S	0.073	15	S	0.112	0.028	24	5.9		
Styrene	100-42-5	104	34.8	0.025	5.3	S	0.025	5.4	S	0.029	6.2	S	0.015	3.3	J,S	0.024	0.006	5.1	1.2		
o-Xylene	95-47-6	106	35.1	0.055	12	S	0.061	13	S	0.068	14	S	0.034	7.2	S	0.055	0.015	12	3.1		
Nonane	111-84-2	128	35.4	0.026	4.5		0.029	5.0		0.030	5.3		0.016	2.9		0.025	0.006	4.4	1.1		
1-Ethyl-2-methyl benzene	611-14-3	120	38.4	0.005	0.90	J	0.005	0.84	J	0.006	1.2	J	0.003	0.60	J	0.005	0.001	0.88	0.23		
1,3,5-Trimethylbenzene	108-67-8	120	38.7	0.005	0.92	J	0.005	0.99	J	0.007	1.3	J	0.004	0.66	J	0.005	0.001	0.97	0.27		
1,2,4-Trimethylbenzene	95-63-6	120	39.9	0.012	2.3	J	0.014	2.5	J	0.017	3.1	J	0.010	1.8	J	0.013	0.003	2.4	0.57		
Decane	124-18-5	142	40.1	0.041	6.5		0.051	8.0		0.056	8.8		0.034	5.4		0.045	0.010	7.2	1.5		
1,4-Dichlorobenzene	106-46-7	147	40.7	0.010	1.5	J	0.011	1.7	J	0.015	2.3	J	0.006	0.85	J	0.010	0.004	1.6	0.59		
Undecane	1120-21-4	156	44.4	0.038	5.5	J	0.080	12		0.065	9.4		0.046	6.6	J	0.057	0.019	8.3	2.7		
Dodecane	112-40-3	170	48.5	0.666	88		2.153	284		1.327	175		1.058	139		1.301	0.630	171	83		
Tridecane	629-50-5	184	52.2	1.653	201		5.437	662	E	2.756	336		2.966	361		3.203	1.597	390	194		
Tetradecane	629-59-4	198	55.7	1.277	144	B	5.974	676	E	2.147	243		3.087	349	E	3.121	2.041	353	231		
Total Concentration of Target Analytes																	15.56				

Table E.5 (Cont'd) Organic Compound Concentrations in Triple Sorbent Traps from Tank TY-103 Riser 8 Bottom Level Sampled on 11/22/96

Tentatively Identified Compounds ^(b)	CAS	MW	Ret Time	S6116-b35.1164 ^(c) ISVS			S6116-b34.1191 ^{(c)(d)} ISVS			S6116-b37.1139 ^(c) ISVS			S6116-b36.1135 ^(c) ISVS			Mean and Standard Deviation			
				(ng/m ³)	(ppbv)	Flag	(ng/m ³)	(ppbv)	Flag	(ng/m ³)	(ppbv)	Flag	(ng/m ³)	(ppbv)	Flag	(ng/m ³)	St. Dev.	(ppbv)	St. Dev.
Propane	74-98-6	44	7.4	0.126	64	S	0.287	146	S	0.111	57	S	0.097	49	S	0.155	0.089	79	45
Ethane, 1-chloro-1,1-difluoro-	75-68-3	100	8.8	7.260	1626	S	4.791	1073	S	1.040	233	S	0.170	38	S	3.315	3.307	743	741
1-Fluoro-1,1-dichloro-ethane	1717-00-6	116	14.4	1.646	318	S	0.790	153	S	nd	nd	S	nd	nd	S	1.218	e	235	e
2-Propanol, 2-methyl-	75-65-0	74	15.5	0.164	50	S	0.149	45	S	0.135	41	S	0.070	21	S	0.129	0.042	39	13
Pentane, 2-methyl-	107-83-5	86	18.3	0.056	15	S	0.053	14	S	0.092	24	S	0.068	18	S	0.067	0.018	18	4.6
Pentane, 3-methyl-	96-14-0	86	19.0	0.055	14	S	0.071	18	S	0.109	28	S	0.053	14	S	0.072	0.026	19	6.7
Cyclopentane, methyl-	96-37-7	84	21.5	0.046	12	S	0.069	19	S	0.083	22	S	0.036	9.5	S	0.059	0.022	16	5.8
Hexane, 2-methyl-	591-76-4	100	23.5	0.131	29	S	0.098	22	S	0.171	38	S	0.082	18	S	0.120	0.040	27	8.9
Pentane, 2,3-dimethyl-	565-59-3	100	23.7	0.146	33	S	0.084	19	S	0.125	28	S	0.060	14	S	0.104	0.039	23	8.7
Hexane, 3-methyl-	589-34-4	100	24.0	0.243	54	S	0.185	41	S	0.316	71	S	0.151	34	S	0.224	0.072	50	16
1-Butanol, 2-ethyl-	97-95-0	102	24.5	0.064	14	S	0.043	9.4	S	0.066	15	S	0.033	7.2	S	0.051	0.016	11	3.6
Cyclopentane, 1,2-dimethyl-	2452-99-5	98	24.8	nd	nd	S	0.335	77	S	0.119	27	S	0.053	12	S	0.169	0.147	39	34
Cyclohexane, methyl-	108-87-2	98	26.7	0.190	43	S	0.119	27	S	0.216	49	S	0.110	25	S	0.159	0.052	36	12
Hexane, 2,4-dimethyl-	589-43-5	114	27.1	0.067	13	S	0.047	9.2	S	0.076	15	S	0.022	4.3	S	0.053	0.024	10	4.7
Cyclohexane, 1,4-dimethyl-	589-90-2	112	29.7	0.085	17	S	0.086	17	S	0.101	20	S	0.032	6.4	S	0.076	0.030	15	6.0
Cyclotrisiloxane, hexamethyl-	541-05-9	222	31.2	0.820	83	S	0.614	62	S	0.664	67	S	0.674	68	S	0.693	0.088	70	8.9
Hexane, 2,3,5-trimethyl-	1069-53-0	128	31.5	0.240	42	S	0.223	39	S	0.231	40	S	0.063	11	S	0.189	0.085	33	15
Heptane, 2,4-dimethyl-	2213-23-2	128	31.8	0.733	128	S	0.689	121	S	0.713	125	S	0.211	37	S	0.587	0.251	103	44
2,4-Dimethyl-1-heptene	19549-87-2	126	32.6	0.140	25	S	0.138	25	S	0.140	25	S	0.034	6.0	S	0.113	0.053	20	9.4
Cyclotetrasiloxane, octamethyl-	556-67-2	296	39.4	0.384	29	S	0.373	28	S	0.394	30	S	0.550	42	S	0.425	0.084	32	6.3
Undecane, 4,7-dimethyl-	17301-32-5	184	42.9	0.676	82	S	0.776	95	S	nd	nd	S	nd	nd	S	0.726	e	88	e
Undecane, 5,7-dimethyl-	17312-83-3	184	42.9	nd	nd		nd	nd		0.812	99		nd	nd		e	e	e	e
Undecane, 4,4-dimethyl-	17312-68-4	184	42.9	nd	nd		nd	nd		nd	nd		0.567	69		e	e	e	e
Unknown C12 Alkane		170	43.2	0.337	44		0.401	53		0.447	59		0.326	43		0.378	0.057	50	7.5
5-Dodecanone	19780-10-0	184	54.4	0.072	8.8		0.220	27		0.139	17		0.093	11		0.131	0.066	16	8.0
Unknown C14 Alkane		198	57.8	0.207	f		0.755	f		0.457	f		0.298	f		0.429	0.240	e	e
3-Tridecanone	1534-26-5	198	58.4	0.051	5.7		0.185	21		0.117	13		0.072	8.2		0.106	0.060	12	6.7
2-Tetradecanone	2345-27-9	212	58.5	0.068	7.1		nd	nd		nd	nd		nd	nd		e	e	e	e
2-Dodecanone	6175-49-1	184	58.5	nd	nd		nd	nd		0.144	18		nd	nd		e	e	e	e
2-Tridecanone	593-08-8	198	58.5	nd	nd		nd	nd		nd	nd		0.095	11		e	e	e	e
2-Decanone	693-54-9	156	58.5	nd	nd		0.198	28		nd	nd		nd	nd		e	e	e	e
Total Concentration of TICs																9.75			

Data Quality Flags

B Compound identified in associated laboratory blank.

E Target compound exceeds the upper quantification limit (UQL).

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

S Data should be considered suspect due to a 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.12

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

(f) Result was not calculated on instrument report.

nd Not detected.

Table E.6 Organic Compound Concentrations in Triple Sorbent Traps from Tank TY-103 Riser 18 Top Level Sampled on 11/22/96

Target Analytes ^(a)	CAS	MW	Time	Ret S6117-442.1168 ^{(c)(d)} ISVS			S6117-444.1121 ^(c) ISVS			S6117-443.1137 ^(c) ISVS			S6117-445.1211 ^(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	1.236	864	Y,S	1.416	990	Y,S	0.663	464	Y,S	0.942	659	Y,S	1.064	0.331	744	232
Butane	106-97-8	58	10.8	0.092	35	S	0.079	30	S	0.070	27	S	0.083	32	S	0.081	0.009	31	3.4
Acetonitrile	75-05-8	41	13.0	0.106	58		0.102	56		0.067	37		0.111	60		0.097	0.020	53	11
Acetone	67-64-1	58	13.7	0.109	42		0.128	49		0.066	25	J	0.091	35		0.098	0.026	38	10
Trichlorofluoromethane	75-69-4	137	14.2	0.629	103	S	0.731	119	S	0.582	95	S	0.614	100	S	0.639	0.065	104	11
Pentane	109-66-0	72	14.9	0.045	14		0.044	14		0.038	12		0.044	14		0.043	0.003	13	0.97
Methylene Chloride	75-09-2	85	15.8	0.098	26	J,S,B	0.069	18	J,S,B	0.045	12	J,S,B	0.060	16	J,S,B	0.068	0.022	18	5.9
1,1,1-Trichloroethane	76-13-1	187	16.3	0.081	9.7	S,B	0.060	7.1	S	0.080	9.6	S	0.066	7.9	S	0.072	0.011	8.6	1.3
Propanenitrile	107-12-0	55	17.0	0.036	15		0.038	15		0.029	12		0.034	14		0.034	0.004	14	1.5
Propanol	71-23-8	60	17.1	0.082	31		0.065	24		0.058	22		0.075	28		0.070	0.011	26	4.0
2-Butanone	78-93-3	72	18.6	0.128	40	S	0.489	152	S	0.150	47	S	0.097	30	S	0.216	0.183	67	57
Hexane	110-54-3	86	19.9	0.202	52	S	0.397	103	S	0.251	65	S	0.182	47	S	0.258	0.097	67	25
Chloroform	67-66-3	119	20.0	0.003	0.57	U	0.008	1.5	J,B	0.003	0.54	U	0.003	0.57	U	e	e	e	e
Tetrahydrofuran	109-99-9	72	20.8	0.050	16		0.043	13		0.047	15		0.048	15		0.047	0.003	15	0.90
Butanenitrile	109-74-0	69	21.9	0.059	19		0.068	22		0.052	17		0.055	18		0.058	0.007	19	2.3
1,1,1-Trichloroethane	71-55-6	133	21.9	0.011	1.9	J	0.010	1.7	J	0.005	0.86	J	0.011	1.8	J	0.009	0.003	1.6	0.47
1-Butanol	71-36-3	74	22.3	0.734	222		0.633	192		0.648	196		0.615	186		0.657	0.053	199	16
Benzene	71-43-2	78	22.8	0.008	2.3	J	0.009	2.5	J	0.010	3.0	J	0.007	2.0	J	0.009	0.001	2.4	0.42
Carbon Tetrachloride	56-23-5	154	23.1	0.055	8.0		0.063	9.1		0.050	7.3		0.053	7.7		0.055	0.005	8.0	0.79
Cyclohexane	110-82-7	84	23.3	0.086	23	S	0.472	126	S	0.253	67	S	0.074	20	S	0.221	0.186	59	49
Heptane	142-82-5	100	25.2	0.129	29	S	0.231	52	S	0.167	37	S	0.098	22	S	0.156	0.057	35	13
4-Methyl-2-Pentanone	108-10-1	100	26.3	0.018	4.0	J	0.027	6.0		0.009	2.1	J	0.020	4.5	J	0.018	0.007	4.1	1.6
Pentanenitrile	110-59-8	83	27.4	0.018	4.8		0.019	5.2		0.018	4.7		0.017	4.4		0.018	0.001	4.8	0.31
Toluene	108-88-3	92	28.5	1.315	320	S	1.297	315	S	1.185	288	S	0.707	172	S	1.126	0.285	274	69
Octane	111-65-9	114	30.4	0.026	5.1	J	0.031	6.1		0.023	4.5	J	0.024	4.7	J	0.026	0.004	5.1	0.72
Tetrachloroethylene	127-18-4	166	31.0	0.032	4.3		0.047	6.4		0.040	5.4		0.036	4.9		0.039	0.007	5.3	0.89
Hexanenitrile	628-73-9	97	32.8	0.015	3.4	J	0.014	3.2	J	0.013	2.9	J	0.013	3.0	J	0.014	0.001	3.1	0.24
Ethylbenzene	100-41-4	106	33.4	0.037	7.8		0.036	7.7		0.020	4.3		0.038	8.1		0.033	0.008	6.9	1.8
p/m-Xylene	106-42-3	106	33.9	0.115	24	S	0.127	27	S	0.075	16	S	0.125	26	S	0.110	0.024	23	5.1
Styrene	100-42-5	104	34.8	0.025	5.4		0.028	6.0		0.017	3.7		0.027	5.9		0.024	0.005	5.2	1.1
o-Xylene	95-47-6	106	35.1	0.056	12	S	0.064	13	S	0.033	6.9	S	0.061	13	S	0.053	0.014	11	3.0
Nonane	111-84-2	128	35.4	0.023	4.0		0.022	3.8		0.014	2.5		0.020	3.4		0.020	0.004	3.4	0.67
1-Ethyl-2-methyl benzene	611-14-3	120	38.4	0.004	0.76	J	0.004	0.79	J	0.003	0.61	J	0.004	0.68	J	0.004	0.000	0.71	0.081
1,3,5-Trimethylbenzene	108-67-8	120	38.7	0.005	0.83	J	0.005	0.86	J	0.004	0.74	J	0.004	0.77	J	0.004	0.000	0.80	0.055
1,2,4-Trimethylbenzene	95-63-6	120	39.9	0.012	2.2	J	0.013	2.5	J	0.010	1.9	J	0.011	2.1	J	0.012	0.001	2.1	0.24
Decane	124-18-5	142	40.1	0.041	6.4		0.055	8.6		0.032	5.1		0.041	6.4		0.042	0.009	6.6	1.5
1,4-Dichlorobenzene	106-46-7	147	40.7	0.009	1.4	J	0.012	1.8	J	0.007	1.1	J	0.010	1.5	J	0.010	0.002	1.5	0.30
Undecane	1120-21-4	156	44.4	0.039	5.6	J	0.094	13		0.047	6.7		0.044	6.3	J	0.056	0.025	8.0	3.6
Dodecane	112-40-3	170	48.5	0.748	99		2.111	278		0.903	119		0.898	118		1.165	0.634	154	84
Tridecane	629-50-5	184	52.2	2.059	251		3.999	487	E	2.160	263		2.183	266		2.600	0.934	317	114
Tetradecane	629-59-4	198	55.7	1.997	226	S	3.733	422	E,S	2.029	230	S	2.163	245	S	2.481	0.838	281	95
Total Concentration of Target Analytes																11.92			

Table E.6 (Cont'd) Organic Compound Concentrations in Triple Sorbent Traps from Tank TY-103 Riser 18 Top Level Sampled on 11/22/96

Tentatively Identified Compounds ^(b)	CAS	MW	Ret Time	S6117-142.1168 ^{(c)(d)} ISVS			S6117-144.1121 ^(e) ISVS			S6117-143.1137 ^(e) ISVS			S6117-145.1211 ^(e) 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.
Propane	74-98-6	44	7.4	0.149	76	S	0.174	89	S	0.110	56	S	0.135	69	S	0.142	0.027	72	14
Ethane, 1-chloro-1,1-difluoro-	75-68-3	100	8.8	1.847	414	S	0.261	58	S	0.176	40	S	0.303	68	S	0.647	0.802	145	180
Unknown			14.4	0.102	f		nd	nd		nd	nd		nd	nd		e	e	e	e
2-Propanol, 2-methyl-	75-65-0	74	15.5	0.209	63	S	0.174	53	S	0.085	26	S	0.204	62	S	0.168	0.057	51	17
Pentane, 2-methyl-	107-83-5	86	18.3	0.112	29	S	0.159	41	S	0.122	32	S	0.093	24	S	0.122	0.028	32	7.2
Pentane, 3-methyl-	96-14-0	86	19.0	0.131	34	S	0.246	64	S	0.165	43	S	0.134	35	S	0.169	0.054	44	14
Cyclopentane, methyl-	96-37-7	84	21.4	0.088	23	S	0.190	51	S	0.123	33	S	0.076	20	S	0.119	0.051	32	14
Hexane, 2-methyl-	591-76-4	100	23.4	0.178	40	S	0.354	79	S	0.225	50	S	0.137	31	S	0.223	0.094	50	21
Pentane, 2,3-dimethyl-	565-59-3	100	23.6	0.129	29	S	0.172	39	S	0.137	31	S	0.096	22	S	0.133	0.031	30	7.0
Hexane, 3-methyl-	589-34-4	100	23.9	0.299	67	S	0.562	126	S	0.375	84	S	0.227	51	S	0.366	0.144	82	32
1-Butanol, 2-ethyl-	97-95-0	102	24.5	0.067	15		0.097	21		0.076	17		0.047	10		0.072	0.021	16	4.5
Cyclopentane, 1,2-dimethyl-	2452-99-5	98	24.8	0.088	20		0.115	26		0.071	16		0.075	17		0.087	0.020	20	4.5
Cyclohexane, methyl-	108-87-2	98	26.7	0.213	49	S	0.225	51	S	0.190	43	S	0.177	40	S	0.201	0.022	46	5.0
Hexane, 2,4-dimethyl-	589-43-5	114	27.0	0.080	16	S	0.090	18	S	0.052	10	S	0.072	14	S	0.074	0.016	14	3.2
Cyclohexane, 1,4-dimethyl-	589-90-2	112	29.7	0.101	20	S	0.096	19	S	0.056	11	S	0.100	20	S	0.088	0.021	18	4.3
Hexane, 2,3,5-trimethyl-	1069-53-0	128	31.4	0.243	43	S	0.223	39	S	0.060	10	S	0.251	44	S	0.194	0.091	34	16
Heptane, 2,4-dimethyl-	2213-23-2	128	31.7	0.750	131	S	0.687	120	S	0.188	33	S	0.774	135	S	0.600	0.277	105	48
2,4-Dimethyl-1-heptene	19549-87-2	126	32.6	0.141	25	S	0.137	24	S	0.029	5.1	S	0.156	28	S	0.116	0.059	21	10
Cyclotetrasiloxane, octamethyl-	556-67-2	296	39.4	0.381	29	S	0.326	25	S	0.479	36	S	0.384	29	S	0.393	0.064	30	4.8
Undecane, 5,7-dimethyl-	17312-83-3	184	42.9	nd	nd	S	nd	nd	S	nd	nd	S	0.799	97	S	e	e	e	e
Undecane, 4,7-dimethyl-	17301-32-5	184	42.9	0.765	93	S	nd	nd	S	nd	nd	S	nd	nd	S	e	e	e	e
Undecane, 3,7-dimethyl-	17301-29-0	184	42.9	nd	nd		0.803	98		0.499	61		nd	nd		0.651	e	79	e
Unknown C12 Alkane		170	43.1	0.375	49	S	0.416	55	S	0.278	37	S	0.393	52	S	0.366	0.061	48	8.0
5-Dodecanone	19780-10-0	184	54.4	0.091	11		0.257	31		0.112	14		0.118	14		0.145	0.076	18	9.2
Unknown C14 Alkane		198	57.9	0.309	35		0.851	96		0.390	44		0.411	47		0.490	0.244	55	28
3-Tridecanone	1534-26-5	198	58.3	0.078	8.9		0.227	26		0.102	12		0.108	12		0.129	0.067	15	7.5
2-Tridecanone	593-08-8	198	58.5	0.082	9.2		0.238	27		0.117	13		0.131	15		0.142	0.067	16	7.6
Pentadecane	629-62-9	212	59.1	nd	nd		0.204	22		nd	nd		nd	nd		e	e	e	e
Total Concentration of TICs																5.83			

Data Quality Flags

B Compound identified in associated laboratory blank.

E Target compound exceeds the upper quantification limit (UQL).

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.13.

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

(f) No molecular weight available for calculation.

nd Not detected.

Table E.7 Organic Compound Concentrations in Triple Sorbent Traps from Tank TY-103 Riser 18 Middle Level Sampled on 11/22/96

Target Analytes ^(a)	CAS	MW	Ret Time	S6117 m29.1170 ^(c) ISVS			S6117-m48.1139 ^(c) ISVS			S6117-m28.1188 ^{(c)(d)} ISVS			S6117-m49.1186 ^(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	0.978	684	Y,S	1.366	955	Y,S	0.824	576	Y,S	0.630	440	Y,S	0.949	0.312	664	218
Butane	106-97-8	58	10.8	0.081	31	S	0.114	44	S	0.095	37	S	0.085	33	S	0.094	0.014	36	5.5
Acetonitrile	75-05-8	41	13.0	0.096	52		0.109	60		0.069	38		0.082	45		0.089	0.017	49	9.5
Acetone	67-64-1	58	13.7	0.076	29	J	0.073	28	J	0.068	26	J	0.081	31		0.074	0.005	29	2.0
Trichlorofluoromethane	75-69-4	137	14.2	0.614	100	S	1.286	210	S	0.916	149	S	0.604	99	S	0.855	0.322	139	52
Pentane	109-66-0	72	14.9	0.044	14		0.044	14		0.039	12		0.046	14		0.043	0.003	13	0.88
Methylene Chloride	75-09-2	85	15.8	0.050	13	J,S,B	0.144	38	J,S,B	0.073	19	J,S,B	0.052	14	J,S,B	0.080	0.044	21	12
1,1,2-Trichloro-2,2,2-trifluoroethane	76-13-1	187	16.3	0.091	11	S	0.086	10	S	0.070	8.4	S	0.067	8.0	S	0.078	0.012	9.4	1.4
Propanenitrile	107-12-0	55	17.0	0.034	14		0.041	17		0.028	11		0.035	14		0.034	0.005	14	2.2
Propanol	71-23-8	60	17.1	0.075	28		0.068	25		0.061	23		0.063	24		0.067	0.006	25	2.2
2-Butanone	78-93-3	72	18.6	0.156	48	S	0.144	45	S	0.094	29	S	0.189	59	S	0.146	0.039	45	12
Hexane	110-54-3	86	19.9	0.252	66	S	0.269	70	S	0.195	51	S	0.425	110	S	0.285	0.098	74	26
Tetrahydrofuran	109-99-9	72	20.8	0.054	17		0.051	16	B	0.046	14	B	0.055	17	B	0.051	0.004	16	1.2
Butanenitrile	109-74-0	69	21.9	0.055	18		0.060	19		0.048	16		0.062	20		0.056	0.006	18	1.9
1,1,1-Trichloroethane	71-55-6	133	21.9	0.006	0.93	J	0.006	0.97	J	0.011	1.9	J	0.010	1.6	J	0.008	0.003	1.4	0.48
1-Butanol	71-36-3	74	22.3	0.641	194		0.664	201		0.554	168		0.631	191		0.622	0.048	188	14
Benzene	71-43-2	78	22.8	0.010	2.9	J	0.014	4.1	J	0.007	2.1	J	0.009	2.7	J	0.010	0.003	2.9	0.83
Carbon Tetrachloride	56-23-5	154	23.1	0.056	8.2		0.051	7.5		0.048	7.0		0.054	7.8		0.052	0.004	7.6	0.52
Cyclohexane	110-82-7	84	23.3	0.218	58	S	0.171	45	S	0.067	18	S	0.443	118	S	0.225	0.159	60	42
Heptane	142-82-5	100	25.2	0.147	33	S	0.102	23	S	0.125	28	S	0.281	63	S	0.164	0.080	37	18
4-Methyl-2-Pentanone	108-10-1	100	26.3	0.011	2.6	J	0.013	2.8	J	0.018	4.1	J	0.015	3.4	J	0.014	0.003	3.2	0.69
Pentanenitrile	110-59-8	83	27.4	0.018	4.9		0.021	5.7		0.016	4.3		0.021	5.6		0.019	0.002	5.1	0.64
1,1,2-Trichloroethane	79-00-5	133	27.9	0.009	1.5	J	0.009	1.5	J	0.010	1.6	J	0.002	0.40	J	0.008	0.003	1.3	0.58
Toluene	108-88-3	92	28.5	1.157	281	S	1.417	344	S	1.316	320	S	1.673	407	S	1.391	0.217	338	53
Octane	111-65-9	114	30.5	0.024	4.8	J	0.024	4.7	J	0.023	4.5	J	0.034	6.8		0.026	0.005	5.2	1.1
Tetrachloroethylene	127-18-4	166	31.0	0.046	6.2		0.038	5.2		0.031	4.2		0.064	8.7		0.045	0.014	6.1	1.9
Hexanenitrile	628-73-9	97	32.8	0.014	3.3	J	0.016	3.6	J	0.011	2.5	J	0.019	4.5	J	0.015	0.003	3.5	0.81
Ethylbenzene	100-41-4	106	33.4	0.023	4.8		0.021	4.4		0.039	8.2		0.032	6.7		0.029	0.008	6.0	1.8
p/m-Xylene	106-42-3	106	33.9	0.082	17	S	0.075	16	S	0.128	27	S	0.102	21	S	0.096	0.024	20	5.0
Styrene	100-42-5	104	34.8	0.019	4.1		0.018	3.8		0.028	5.9		0.018	3.9		0.021	0.005	4.4	1.0
o-Xylene	95-47-6	106	35.1	0.037	7.9	S	0.033	7.0	S	0.060	13	S	0.050	11	S	0.045	0.012	9.5	2.6
Nonane	111-84-2	128	35.5	0.017	3.0		0.018	3.1		0.018	3.2		0.021	3.6		0.018	0.002	3.2	0.27
1-Ethyl-2-methyl benzene	611-14-3	120	38.5	0.004	0.72	J	0.004	0.81	J	0.004	0.69	J	0.003	0.56	J	0.004	0.001	0.70	0.10
1,3,5-Trimethylbenzene	108-67-8	120	38.7	0.005	0.88	J	0.005	0.93	J	0.004	0.78	J	0.003	0.59	J	0.004	0.001	0.80	0.15
1,2,4-Trimethylbenzene	95-63-6	120	39.9	0.012	2.2	J	0.012	2.2	J	0.011	2.1	J	0.009	1.7	J	0.011	0.001	2.0	0.25
Decane	124-18-5	142	40.1	0.037	5.9		0.040	6.3		0.034	5.4		0.041	6.5		0.038	0.003	6.0	0.50
1,4-Dichlorobenzene	106-46-7	147	40.7	0.008	1.2	J	0.009	1.4	J	0.010	1.5	J	0.006	0.86	J	0.008	0.002	1.2	0.27
Undecane	1120-21-4	156	44.4	0.052	7.5		0.050	7.2		0.029	4.1	J	0.084	12		0.054	0.023	7.7	3.3
Dodecane	112-40-3	170	48.5	0.870	115		0.918	121		0.439	58		2.271	299		1.124	0.794	148	105
Tridecane	629-50-5	184	52.2	2.137	260		2.941	358		1.719	209		5.269	641	E	3.016	1.585	367	193
Tetradecane	629-59-4	198	55.8	1.694	192	S	3.349	379	E,S	2.203	249	S	6.142	695	E,S	3.347	1.988	379	225
Total Concentration of Target Analytes																13.41			

Table E.7 (Cont'd) Organic Compound Concentrations in Triple Sorbent Traps from Tank TY-103 Riser 18 Middle Level Sampled on 11/22/96

Tentatively Identified Compounds ^(b)	CAS	MW	Ret Time	S6117-m29.1170 ^(c) ISVS			S6117-m48.1139 ^(c) ISVS			S6117-m28.1188 ^{(c)(d)} ISVS			S6117-m49.1186 ^(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.
Propane	74-98-6	44	7.4	0.139	71	S	0.292	149	S	0.182	93	S	0.161	82	S	0.193	0.068	98	35
Ethane, 1-chloro-1,1-difluoro-	75-68-3	100	8.9	0.070	16	S	1.256	281	S	0.336	75	S	0.176	39	S	0.459	0.542	103	121
2-Propanol, 2-methyl-	75-65-0	74	15.5	0.105	32	S	0.116	35	S	0.165	50	S	0.168	51	S	0.139	0.033	42	9.9
Pentane, 2-methyl-	107-83-5	86	18.3	0.118	31	S	0.099	26	S	0.088	23	S	0.179	47	S	0.121	0.041	32	11
Pentane, 3-methyl-	96-14-0	86	19.0	0.161	42	S	0.140	37	S	0.106	28	S	0.226	59	S	0.158	0.050	41	13
Cyclopentane, methyl-	96-37-7	84	21.5	0.110	29	S	0.092	25	S	0.079	21	S	0.191	51	S	0.118	0.050	32	13
Hexane, 2-methyl-	591-76-4	100	23.5	0.188	42	S	0.127	28	S	0.134	30	S	0.365	82	S	0.204	0.111	46	25
Pentane, 2,3-dimethyl-	565-59-3	100	23.7	0.096	22	S	0.063	14	S	0.074	17	S	0.156	35	S	0.098	0.042	22	9.3
Hexane, 3-methyl-	589-34-4	100	24.0	0.308	69	S	0.202	45	S	0.223	50	S	0.553	124	S	0.322	0.161	72	36
1-Butanol, 2-ethyl-	97-95-0	102	24.5	0.052	11		0.031	6.7		0.043	9.5		0.091	20		0.054	0.026	12	5.7
Cyclopentane, 1,2-dimethyl-	2452-99-5	98	24.8	0.048	11		0.125	29		0.111	25		0.092	21		0.094	0.033	21	7.6
Cyclohexane, methyl-	108-87-2	98	26.7	0.103	24	S	0.060	14	S	0.126	29	S	0.184	42	S	0.118	0.052	27	12
Hexane, 2,4-dimethyl-	589-43-5	114	27.1	0.036	7.1	S	0.022	4.3	S	0.073	14	S	0.086	17	S	0.054	0.030	11	5.9
Cyclohexane, 1,4-dimethyl-	589-90-2	112	29.7	0.033	6.7	S	0.025	5.1	S	0.091	18	S	0.090	18	S	0.060	0.035	12	7.1
Cyclotrisiloxane, hexamethyl-	541-05-9	222	31.2	0.733	74	S	0.574	58	S	1.093	110	S	0.890	90	S	0.822	0.222	83	22
Hexane, 2,3,5-trimethyl-	1069-53-0	128	31.5	0.062	11	S	0.057	9.9	S	0.244	43	S	0.207	36	S	0.142	0.097	25	17
Heptane, 2,4-dimethyl-	2213-23-2	128	31.7	0.201	35	S	0.194	34	S	0.752	132	S	0.620	109	S	0.442	0.287	77	50
2,4-Dimethyl-1-heptene	19549-87-2	126	32.6	0.032	5.7	S	0.035	6.2	S	0.146	26	S	0.126	22	S	0.085	0.060	15	11
Cyclotetrasiloxane, octamethyl-	556-67-2	296	39.5	0.507	38	S	0.477	36	S	0.402	30	S	0.385	29	S	0.443	0.059	34	4.4
Undecane, 3,7-dimethyl-	17301-29-0	184	42.9	nd	nd		0.548	67		0.739	90		nd	nd		0.643	e	78	e
Undecane, 4-methyl-	2980-69-0	170	42.9	nd	nd		nd	nd		nd	nd		0.559	74		e	e	e	e
Undecane, 5,7-dimethyl-	17312-83-3	184	42.9	0.551	67	S	nd	nd	S	nd	nd	S	nd	nd	S	e	e	e	e
Unknown C12 Alkane		170	43.2	0.317	42	S	0.293	39	S	0.378	50	S	0.316	42	S	0.326	0.036	43	4.8
6-Dodecanone	6064-27-3	184	54.4	0.120	15		0.099	12		0.063	7.7		nd	nd		0.094	0.028	11	3.5
5-Dodecanone	19780-10-0	184	54.5	nd	nd		nd	nd		nd	nd		0.253	31		e	e	e	e
Unknown C14 Alkane		198	57.9	0.370	42		0.353	40		0.194	22		0.828	94		0.436	0.273	49	31
3-Tridecanone	1534-26-5	198	58.4	0.095	11		0.090	10		0.049	5.5		0.209	24		0.111	0.069	13	7.8
2-Tridecanone	593-08-8	198	58.5	0.107	12		0.106	12		nd	nd		0.236	27		0.150	0.075	17	8.4
2-Tetradecanone	2345-27-9	212	58.5	nd	nd		nd	nd		0.058	6.1		nd	nd		e	e	e	e
Pentadecane	629-62-9	212	59.1	nd	nd		nd	nd		nd	nd		0.246	26		e	e	e	e
Total Concentration of TICs																5.89			

Data Quality Flags

B Compound identified in associated laboratory blank.

E Target compound exceeds the upper quantification limit (UQL).

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) Replicates of this sample are found in Table 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 TY-103 Riser 18 Bottom Level Sampled on 11/22/96

Target Analytes ^(a)	CAS	MW	Ret Time	S6117-b35.1166 ⁽³⁾ ISVS			S6117-b37.1169 ⁽³⁾ ISVS			S6117-b34.1165 ⁽³⁾ ISVS			S6117-b36.1151 ⁽³⁾⁽⁶⁾ 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	7.8	0.005	0.86	U	0.005	0.84	U	0.018	3.3	J	0.005	0.85	U	e	e	e	e
Methanol	67-56-1	32	10.0	1.647	1152	Y,S	0.978	684	Y,S	0.791	553	Y,S	0.912	638	Y,S	1.082	0.385	756	269
Butane	106-97-8	58	10.8	0.107	41	S	0.090	35	S	0.077	30	S	0.087	33	S	0.090	0.013	35	4.8
Acetonitrile	75-05-8	41	13.0	0.113	62		0.110	60		0.078	43		0.078	43		0.095	0.019	52	11
Acetone	67-64-1	58	13.7	0.072	28	J	0.101	39		0.091	35		0.085	33		0.087	0.012	34	4.7
Trichlorofluoromethane	75-69-4	137	14.1	1.135	185	S	0.722	118	S	0.624	102	S	0.591	96	S	0.768	0.251	125	41
Pentane	109-66-0	72	14.9	0.046	14		0.047	15		0.041	13		0.044	14		0.045	0.003	14	0.79
Methylene Chloride	75-09-2	85	15.8	0.105	28	J,S,B	0.062	16	J,S,B	0.048	13	J,S,B	0.045	12	J,S,B	0.065	0.027	17	7.2
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	187	16.3	0.069	8.2	S	0.072	8.6	S	0.063	7.5	S	0.088	11	S	0.073	0.011	8.7	1.3
Propanenitrile	107-12-0	55	17.0	0.036	14		0.041	17		0.035	14		0.030	12		0.035	0.004	14	1.8
Propanol	71-23-8	60	17.1	0.084	31		0.082	31		0.064	24		0.076	28		0.076	0.009	28	3.3
2-Butanone	78-93-3	72	18.6	0.069	21	S	0.218	68	S	0.189	59	S	0.131	41	S	0.152	0.066	47	20
Hexane	110-54-3	86	19.8	0.194	50	S	0.415	108	S	0.322	84	S	0.231	60	S	0.290	0.099	75	26
Tetrahydrofuran	109-99-9	72	20.7	0.050	15		0.057	18		0.052	16		0.048	15		0.052	0.004	16	1.2
Butanenitrile	109-74-0	69	21.8	0.055	18		0.064	21		0.059	19		0.054	17		0.058	0.005	19	1.5
1,1,1-Trichloroethane	71-55-6	133	21.9	0.011	1.9	J	0.010	1.6	J	0.010	1.6	J	0.005	0.90	J	0.009	0.003	1.5	0.43
1-Butanol	71-36-3	74	22.3	0.629	190		0.548	166		0.709	215		0.615	186		0.625	0.056	189	29
Benzene	71-43-2	78	22.8	0.011	3.0	J	0.013	3.8	J	0.012	3.3	J	0.007	2.1	J	0.011	0.002	3.1	0.70
Carbon Tetrachloride	56-23-5	154	23.0	0.053	7.8		0.061	8.9		0.054	7.9		0.054	7.8		0.055	0.004	8.1	0.54
Cyclohexane	110-82-7	84	23.3	0.075	20	S	0.069	18	S	0.060	16	S	0.138	37	S	0.086	0.036	23	9.4
Heptane	142-82-5	100	25.2	0.061	14	S	0.206	46	S	0.161	36	S	0.073	16	S	0.125	0.070	28	16
4-Methyl-2-Pentanone	108-10-1	100	26.3	0.020	4.5	J	0.018	4.1	J	0.014	3.1	J	0.015	3.4	J	0.017	0.003	3.8	0.60
Pentanenitrile	110-59-8	83	27.4	0.017	4.7		0.021	5.7		0.023	6.3		0.018	4.9		0.020	0.003	5.4	0.73
1,1,2-Trichloroethane	79-00-5	133	27.8	0.010	1.7	J	0.010	1.7	J	0.010	1.7	J	0.010	1.7	J	0.010	0.000	1.7	0.044
Toluene	108-88-3	92	28.5	0.887	216	S	1.134	276	S	0.951	231	S	0.584	142	S	0.889	0.229	216	56
Octane	111-65-9	114	30.4	0.026	5.1	J	0.037	7.3		0.031	6.2		0.022	4.3	J	0.029	0.007	5.7	1.3
Tetrachloroethylene	127-18-4	166	31.0	0.036	4.9		0.066	9.0		0.063	8.5		0.044	6.0		0.053	0.015	7.1	2.0
Hexanenitrile	628-73-9	97	32.8	0.015	3.4	J	0.020	4.5	J	0.020	4.6	J	0.015	3.5	J	0.017	0.003	4.0	0.63
Ethylbenzene	100-41-4	106	33.4	0.041	8.7		0.029	6.2		0.033	6.9		0.020	4.3		0.031	0.009	6.5	1.8
p/m-Xylene	106-42-3	106	33.8	0.130	27	S	0.095	20	S	0.108	23	S	0.072	15	S	0.101	0.024	21	5.1
Styrene	100-42-5	104	34.8	0.028	6.0		0.017	3.6		0.022	4.8		0.016	3.5	J	0.021	0.005	4.5	1.2
o-Xylene	95-47-6	106	35.0	0.064	13	S	0.049	10	S	0.054	11	S	0.033	6.9	S	0.050	0.013	10	2.7
Nonane	111-84-2	128	35.4	0.022	3.8		0.027	4.8		0.022	3.9		0.016	2.8		0.022	0.004	3.8	0.78
1-Ethyl-2-methyl benzene	611-14-3	120	38.4	0.004	0.81	J	0.003	0.57	J	0.004	0.66	J	0.003	0.61	J	0.004	0.001	0.66	0.11
1,3,5-Trimethylbenzene	108-67-8	120	38.6	0.005	0.88	J	0.004	0.66	J	0.005	0.83	J	0.004	0.65	J	0.004	0.001	0.76	0.12
1,2,4-Trimethylbenzene	95-63-6	120	39.9	0.012	2.2	J	0.009	1.7	J	0.012	2.2	J	0.010	1.8	J	0.011	0.001	2.0	0.25
Decane	124-18-5	142	40.1	0.040	6.4		0.043	6.8		0.045	7.1		0.038	5.9		0.042	0.003	6.5	0.52
1,4-Dichlorobenzene	106-46-7	147	40.6	0.010	1.6	J	0.006	0.87	J	0.009	1.4	J	0.006	0.95	J	0.008	0.002	1.2	0.33
Undecane	1120-21-4	156	44.4	0.046	6.6	J	0.113	16		0.100	14		0.068	9.8		0.082	0.030	12	4.3
Dodecane	112-40-3	170	48.4	1.012	133		2.942	388		2.406	317		1.663	219		2.006	0.845	264	111
Tridecane	629-50-5	184	52.2	2.552	311		5.439	662	E	4.566	556	E	3.667	446	E	4.056	1.236	494	151
Tetradecane	629-59-4	198	55.7	2.053	232	S	4.310	488	S	4.383	496	S	3.201	362	S	3.487	1.098	394	124
Total Concentration of Target Analytes																14.94			

E.18

Table E.8 (Cont'd) Organic Compound Concentrations in Triple Sorbent Traps from Tank TY-103 Riser 18 Bottom Level Sampled on 11/22/96

Tentatively Identified Compounds ^(b)	CAS	MW	Ret Time	S6117-b35.1166 ^(c) ISVS			S6117-b37.1169 ^(c) ISVS			S6117-b34.1165 ^(c) ISVS			S6117-b36.1151 ^{(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.
Propane	74-98-6	44	7.4	0.167	85	S	0.091	47	S	0.133	68	S	0.117	59	S	0.127	0.032	65	16
Ethane, 1-chloro-1,1-difluoro-	75-68-3	100	8.8	1.130	253	S	0.158	35	S	0.054	12	S	0.153	34	S	0.373	0.506	84	113
2-Propanol, 2-methyl-	75-65-0	74	15.5	0.180	55	S	0.182	55	S	0.160	48	S	0.118	36	S	0.160	0.030	48	9.0
Pentane, 2-methyl-	107-83-5	86	18.3	0.075	20	S	0.181	47	S	0.130	34	S	0.096	25	S	0.121	0.046	31	12
Pentane, 3-methyl-	96-14-0	86	19.0	0.096	25	S	0.210	55	S	0.192	50	S	0.149	39	S	0.162	0.051	42	13
Cyclopentane, methyl-	96-37-7	84	21.5	0.060	16	S	0.173	46	S	0.145	39	S	0.078	21	S	0.114	0.054	30	14
Hexane, 2-methyl-	591-76-4	100	23.4	0.063	14	S	0.278	62	S	0.246	55	S	0.099	22	S	0.171	0.106	38	24
Pentane, 2,3-dimethyl-	565-59-3	100	23.6	0.036	8.0	S	0.124	28	S	0.115	26	S	0.044	9.9	S	0.080	0.046	18	10
Hexane, 3-methyl-	589-34-4	100	23.9	0.097	22	S	0.429	96	S	0.364	82	S	0.151	34	S	0.260	0.161	58	36
1-Butanol, 2-ethyl-	97-95-0	102	24.5	nd	nd		0.068	15		0.063	14		nd	nd		0.066	e	14	e
Cyclopentane, 1,2-dimethyl-	2452-99-5	98	24.8	0.096	22		0.073	17		0.066	15		0.028	6.4		0.066	0.028	15	6.5
Cyclohexane, methyl-	108-87-2	98	26.7	0.077	18	S	0.123	28	S	0.123	28	S	0.038	8.7	S	0.090	0.041	21	9.3
Hexane, 2,4-dimethyl-	589-43-5	114	27.1	0.052	10	S	0.063	12	S	0.060	12	S	0.012	2.4	S	0.047	0.023	9.2	4.6
Cyclohexane, 1,4-dimethyl-	589-90-2	112	29.7	0.078	16	S	0.066	13	S	0.072	14	S	0.016	3.2	S	0.058	0.028	12	5.7
Cyclotrisiloxane, hexamethyl-	541-05-9	222	31.1	1.002	101	S	0.606	61	S	0.743	75	S	0.566	57	S	0.729	0.197	74	20
Hexane, 2,3,5-trimethyl-	1069-53-0	128	31.5	0.256	45	S	0.214	37	S	0.200	35	S	0.057	10.0	S	0.182	0.086	32	15
Heptane, 2,4-dimethyl-	2213-23-2	128	31.7	0.804	141	S	0.644	113	S	0.609	107	S	0.201	35	S	0.564	0.257	99	45
2,4-Dimethyl-1-heptene	19549-87-2	126	32.6	0.158	28	S	0.121	21	S	0.121	21	S	0.030	5.4	S	0.107	0.054	19	9.7
Cyclotetrasiloxane, octamethyl-	556-67-2	296	39.4	0.394	30	S	0.378	29	S	0.359	27	S	0.448	34	S	0.395	0.038	30	2.9
Undecane, 3,4-dimethyl-	17312-78-6	184	42.9	0.709	86		nd	nd		nd	nd		nd	nd		e	e	e	e
Undecane, 4,7-dimethyl-	17301-32-5	184	42.9	nd	nd	S	0.504	61	S	nd	nd	S	0.551	67	S	0.527	e	64	e
Undecane, 5,7-dimethyl-	17312-83-3	184	42.9	nd	nd	S	nd	nd	S	0.704	86	S	nd	nd	S	e	e	e	e
Unknown C12 Alkane		170	43.1	0.347	46	S	0.242	32	S	0.351	46	S	0.304	40	S	0.311	0.051	41	6.7
Tetradecane	629-59-4	198	51.8	nd	nd		0.189	21		nd	nd		nd	nd		e	e	e	e
5-Dodecanone	19780-10-0	184	54.4	0.137	17		0.404	49		0.347	42		0.224	27		0.278	0.121	34	15
Unknown C14 Alkane		198	57.9	0.515	f		1.395	f		1.211	f		0.765	f		0.971	0.403	e	e
3-Tridecanone	1534-26-5	198	58.3	0.119	13		0.370	42		0.335	38		0.206	23		0.258	0.116	29	13
2-Tridecanone	593-08-8	198	58.5	0.121	14		0.399	49		0.378	43		0.218	25		0.279	0.133	32	16
Pentadecane	629-62-9	212	59.0	nd	nd		0.371	39		0.315	33		0.198	21		0.295	0.088	31	9.3
Total Concentration of TICs																6.79			

Data Quality Flags

B Compound identified in associated laboratory blank.

E Target compound exceeds the upper quantification limit (UQL).

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.

(f) Result was not calculated on instrument report.

nd Not detected.

Table E.9 Comparison of Organic Compound Concentrations from Replicate Analysis of Triple Sorbent Trap 1160 from Tank TY-103 Riser 8 Top Level Sampled on 11/22/96

Target Analytes ^(a)	CAS	MW	Ret Time	S6116-t42.1160 ^(c) ISVS						RPD ^(d) (%)
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	
Methanol	67-56-1	32	10.0	0.808	565	Y,S	0.760	531	Y,S	6
Butane	106-97-8	58	10.8	0.082	32		0.078	30		5
Acetonitrile	75-05-8	41	13.0	0.076	42		0.073	40		4
Acetone	67-64-1	58	13.7	0.066	26	J	0.060	23	J	10
Trichlorofluoromethane	75-69-4	137	14.2	0.695	113	S	0.685	112	S	1
Pentane	109-66-0	72	14.9	0.042	13		0.040	13		5
Methylene Chloride	75-09-2	85	15.8	0.096	25	J,S,B	0.095	25	J,S,B	1
1,1,2-trichloro-2,2,2-trifluoroethane	76-13-1	187	16.3	0.073	8.7	S	0.072	8.6	S	1
Propanenitrile	107-12-0	55	17.0	0.029	12		0.026	11		10
Propanol	71-23-8	60	17.1	0.062	23		0.056	21	J	10
2-Butanone	78-93-3	72	18.6	0.025	7.9	S	0.022	7.0	J,S	12
Hexane	110-54-3	86	19.9	0.078	20	S	0.074	19	S	4
Tetrahydrofuran	109-99-9	72	20.8	0.047	15		0.045	14		5
Butanenitrile	109-74-0	69	21.9	0.051	17		0.047	15		7
1,1,1-Trichloroethane	71-55-6	133	21.9	0.011	1.9	J	0.010	1.7	J	11
1-Butanol	71-36-3	74	22.3	0.655	198		0.480	145		31
Benzene	71-43-2	78	22.8	0.010	2.8	J	0.012	3.4	J	21
Carbon Tetrachloride	56-23-5	154	23.1	0.048	7.0		0.044	6.3		9
Cyclohexane	110-82-7	84	23.3	0.059	16	S	0.070	19	S	17
Heptane	142-82-5	100	25.2	0.039	8.8	S	0.039	8.7	S	2
4-Methyl-2-Pentanone	108-10-1	100	26.3	0.018	4.1	J	0.015	3.4	J	17
Pentanenitrile	110-59-8	83	27.4	0.017	4.4		0.016	4.3		2
1,1,2-Trichloroethane	79-00-5	133	27.8	0.010	1.6	J	0.009	1.6	J	3
Toluene	108-88-3	92	28.5	0.626	152	S	0.632	154	S	1
Octane	111-65-9	114	30.4	0.020	4.0	J	0.020	3.9	J	3
Tetrachloroethylene	127-18-4	166	31.0	0.031	4.1		0.029	3.9		5
Hexanenitrile	628-73-9	97	32.8	0.010	2.4	J	0.009	2.0	J	19
Ethylbenzene	100-41-4	106	33.4	0.040	8.3	S	0.039	8.2	S	2
p/m-Xylene	106-42-3	106	33.9	0.135	28	S	0.134	28	S	0
Styrene	100-42-5	104	34.8	0.030	6.4	S	0.030	6.4	S	1
o-Xylene	95-47-6	106	35.1	0.062	13	S	0.064	13	S	3
Nonane	111-84-2	128	35.4	0.020	3.6		0.020	3.5		0
1-Ethyl-2-methyl benzene	611-14-3	120	38.4	0.004	0.75	J	0.008	1.5	J	64
1,3,5-Trimethylbenzene	108-67-8	120	38.7	0.005	0.87	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	1
Decane	124-18-5	142	40.1	0.039	6.1		0.038	6.0		2
1,4-Dichlorobenzene	106-46-7	147	40.7	0.011	1.7	J	0.011	1.7	J	2
Undecane	1120-21-4	156	44.4	0.032	4.5	J	0.031	4.5	J	2
Dodecane	112-40-3	170	48.5	0.474	62		0.452	60		5
Tridecane	629-50-5	184	52.2	1.271	155		1.300	158		2
Tetradecane	629-59-4	198	55.7	0.939	106	B	0.936	106	B	0
Tentatively Identified Compounds^(b)										
Propane	74-98-6	44	7.4	0.089	45	S	0.085	43	S	5
Ethane, 1-chloro-1,1-difluoro-	75-68-3	100	8.8	0.328	74	S	0.222	50	S	39
2-Propanol, 2-methyl-	75-65-0	74	15.5	0.152	46	S	0.138	42	S	10
Pentane, 2-methyl-	107-83-5	86	18.3	0.039	10	S	0.034	8.9	S	14
Pentane, 3-methyl-	96-14-0	86	19.0	0.040	10	S	0.037	9.8	S	7
Cyclopentane, methyl-	96-37-7	84	21.4	0.028	7.5	S	0.027	7.1	S	6
Pentane, 2,3-dimethyl-	565-59-3	100	23.6	0.039	8.8	S	nd	nd	S	
Hexane, 3-methyl-	589-34-4	100	23.9	0.078	17	S	0.070	16	S	10
Cyclopentane, 1,2-dimethyl-	2452-99-5	98	24.8	0.053	12	S	0.050	11	S	5

Table E.9 (Cont'd) Comparison of Organic Compound Concentrations from Replicate Analysis of Triple Sorbent Trap 1160 from Tank TY-103 Riser 8 Top Level Sampled on 11/22/96

Tentatively Identified Compounds ^(b)	CAS	MW	Ret Time	S6116-t42.1160 ^(c) ISVS						RPD ^(d) (%)
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	
Cyclohexane, methyl-	108-87-2	98	26.7	0.099	23	S	0.097	22	S	2
Hexane, 2,4-dimethyl-	589-43-5	114	27.1	0.053	10	S	0.050	9.7	S	6
Cyclohexane, 1,4-dimethyl-	589-90-2	112	29.7	0.079	16	S	0.078	16	S	2
Cyclotrisiloxane, hexamethyl-	541-05-9	222	31.1	0.816	82	S	0.819	83	S	0
Hexane, 2,3,5-trimethyl-	1069-53-0	128	31.4	0.255	45	S	0.254	44	S	0
Heptane, 2,4-dimethyl-	2213-23-2	128	31.7	0.800	140	S	0.802	140	S	0
2,4-Dimethyl-1-heptene	19549-87-2	126	32.6	0.158	28	S	0.149	27	S	6
Cyclotetrasiloxane, octamethyl-	556-67-2	296	39.4	0.390	30	S	0.380	29	S	2
Undecane, 4-methyl-	2980-69-0	170	42.9	0.811	107		nd	nd		
Undecane, 3,4-dimethyl-	17312-78-6	184	42.9	nd	nd		0.801	98		
Unknown C12 Alkane		170	43.1	0.394	52		0.387	51		2
6-Dodecanone	6064-27-3	184	54.4	0.051	6.2		nd	nd		
Unknown C14 Alkane		198	57.9	0.186	21		0.162	e		14
3-Tridecanone	1534-26-5	198	58.3	0.046	5.2		nd	nd		
3-Tetradecanone	629-23-2	212	58.4	nd	nd		0.039	4.1		
2-Tridecanone	593-08-8	198	58.5	0.060	6.7		0.046	5.3		25

Data Quality Flags

B Compound identified 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) Result was not calculated on instrument report.

nd Not detected.

Table E.10 Comparison of Organic Compound Concentrations from Replicate Analysis of Triple Sorbent Trap 1152 from Tank TY-103 Riser 8 Top Level Sampled on 11/22/96

Target Analytes ^(a)	CAS	MW	Ret Time	S6116-t43.1152 ^(c) ISVS						RPD ^(d) (%)
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	
Methanol	67-56-1	32	10.0	1.060	741	Y,S	1.009	706	Y,S	5
Butane	106-97-8	58	10.8	0.078	30		0.077	30		1
Acetonitrile	75-05-8	41	13.0	0.103	56		0.100	55		3
Acetone	67-64-1	58	13.7	0.119	46		0.111	43		7
Trichlorofluoromethane	75-69-4	137	14.2	0.665	109	S	0.659	108	S	1
Pentane	109-66-0	72	14.9	0.042	13		0.042	13		1
Methylene Chloride	75-09-2	85	15.8	0.089	24	J,S,B	0.091	24	J,S,B	2
1,1,2-trichloro-2,2,2-trifluoroethane	76-13-1	187	16.3	0.091	11	S	0.090	11	S	2
Propanenitrile	107-12-0	55	17.0	0.046	19		0.045	18		3
Propanol	71-23-8	60	17.1	0.074	27		0.074	27		0
2-Butanone	78-93-3	72	18.6	0.099	31	S	0.087	27	S	13
Hexane	110-54-3	86	19.9	0.089	23	S	0.089	23	S	0
Tetrahydrofuran	109-99-9	72	20.8	0.048	15		0.046	14		6
Butanenitrile	109-74-0	69	21.9	0.055	18		0.052	17		6
1,1,1-Trichloroethane	71-55-6	133	21.9	0.006	0.97	J	0.005	0.90	J	9
1-Butanol	71-36-3	74	22.3	0.665	201		0.466	141		35
Benzene	71-43-2	78	22.8	0.008	2.4	J	0.011	3.2	J	29
Carbon Tetrachloride	56-23-5	154	23.1	0.061	8.9		0.057	8.3		7
Cyclohexane	110-82-7	84	23.3	0.081	22	S	0.068	18	S	18
Heptane	142-82-5	100	25.2	0.056	12	S	0.054	12	S	3
4-Methyl-2-Pentanone	108-10-1	100	26.3	0.009	1.9	J	0.012	2.7	J	32
Pentanenitrile	110-59-8	83	27.4	0.018	4.7		0.017	4.5		5
1,1,2-Trichloroethane	79-00-5	133	27.8	0.010	1.7	J	0.010	1.6	J	4
Toluene	108-88-3	92	28.5	0.620	151	S	0.611	148	S	2
Octane	111-65-9	114	30.4	0.023	4.5	J	0.023	4.5	J	0
Tetrachloroethylene	127-18-4	166	31.0	0.043	5.8		0.041	5.5		5
Hexanenitrile	628-73-9	97	32.8	0.013	3.0	J	0.012	2.9	J	3
Ethylbenzene	100-41-4	106	33.4	0.021	4.5	S	0.021	4.3	S	3
p/m-Xylene	106-42-3	106	33.9	0.076	16	S	0.076	16	S	0
Styrene	100-42-5	104	34.8	0.016	3.5	J,S	0.015	3.2	J,S	8
o-Xylene	95-47-6	106	35.1	0.034	7.2	S	0.033	7.1	S	1
Nonane	111-84-2	128	35.4	0.016	2.8		0.016	2.8		0
1-Ethyl-2-methyl benzene	611-14-3	120	38.4	0.003	0.59	J	0.006	1.1	J	61
1,3,5-Trimethylbenzene	108-67-8	120	38.7	0.004	0.72	J	0.004	0.67	J	5
1,2,4-Trimethylbenzene	95-63-6	120	39.9	0.010	1.9	J	0.010	1.8	J	5
Decane	124-18-5	142	40.1	0.034	5.3		0.036	5.7		7
1,4-Dichlorobenzene	106-46-7	147	40.7	0.006	0.96	J	0.006	0.94	J	2
Undecane	1120-21-4	156	44.4	0.044	6.3	J	0.043	6.2	J	1
Dodecane	112-40-3	170	48.5	0.876	115		0.878	116		0
Tridecane	629-50-5	184	52.2	2.071	252		2.376	289		14
Tetradecane	629-59-4	198	55.7	2.013	228		2.184	247		8

Tentatively

Identified Compounds^(b)

Propane	74-98-6	44	7.4	0.130	66	S	0.058	30	S	76
Ethane, 1-chloro-1,1-difluoro-	75-68-3	100	8.8	0.109	24	S	0.064	14	S	52
2-Propanol, 2-methyl-	75-65-0	74	15.5	0.067	20	S	0.061	18	S	10
Pentane, 2-methyl-	107-83-5	86	18.3	0.071	19	S	0.052	14	S	31
Pentane, 3-methyl-	96-14-0	86	19.0	0.043	11	S	0.040	10	S	8

Table E.10 (Cont'd) Comparison of Organic Compound Concentrations from Replicate Analysis of Triple Sorbent Trap 1152 from Tank TY-103 Riser 8 Top Level Sampled on 11/22/96

Tentatively Identified Compounds ^(b)	CAS	MW	Ret Time	S6116-143.1152 ^(c) ISVS						RPD ^(d) (%)
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	
Cyclopentane, methyl-	96-37-7	84	21.4	0.029	7.6	S	0.027	7.1	S	6
Hexane, 2-methyl-	591-76-4	100	23.4	0.055	12	S	0.049	11	S	11
Pentane, 2,3-dimethyl-	565-59-3	100	23.6	0.035	7.8	S	0.033	7.4	S	4
Hexane, 3-methyl-	589-34-4	100	23.9	0.097	22	S	0.092	21	S	6
Cyclopentane, 1,2-dimethyl-	2452-99-5	98	24.8	0.038	8.6	S	0.035	8.0	S	7
Cyclohexane, methyl-	108-87-2	98	26.7	0.058	13	S	0.061	14	S	5
Hexane, 2,4-dimethyl-	589-43-5	114	27.1	0.016	3.1	S	0.016	3.1	S	2
Cyclohexane, 1,4-dimethyl-	589-90-2	112	29.7	0.026	5.1	S	0.025	4.9	S	4
Cyclotrisiloxane, hexamethyl-	541-05-9	222	31.1	0.638	64	S	0.640	65	S	0
Hexane, 2,3,5-trimethyl-	1069-53-0	128	31.4	0.064	11	S	0.062	11	S	2
Heptane, 2,4-dimethyl-	2213-23-2	128	31.7	0.218	38	S	0.212	37	S	3
2,4-Dimethyl-1-heptene	19549-87-2	126	32.6	0.036	6.4	S	0.035	6.2	S	2
Cyclotetrasiloxane, octamethyl-	556-67-2	296	39.4	0.571	43	S	0.548	41	S	4
Undecane, 3,7-dimethyl-	17301-29-0	184	42.9	0.564	69		nd	nd		
Undecane, 5,7-dimethyl-	17312-83-3	184	42.9	nd	nd		0.549	67		
Unknown C12 Alkane		170	43.1	0.318	42		0.305	40		4
5-Dodecanone	19780-10-0	184	54.4	0.099	12		0.094	11		5
Unknown C14 Alkane		198	57.9	0.360	41		0.329	37		9
3-Tridecanone	1534-26-5	198	58.3	0.091	10		0.082	9.2		11
2-Tridecanone	593-08-8	198	58.5	0.127	14		0.092	10		32

Data Quality Flags

B Compound identified 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 1126 from Tank TY-103 Riser 8 Middle Level Sampled on 11/22/96

Target Analytes ^(a)	CAS	MW	Ret Time	S6116-m49.1126 ^(c) ISVS						RPD ^(d) (%)
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	
Methanol	67-56-1	32	10.0	2.781	1944	Y,S	2.628	1837	Y,S	6
Butane	106-97-8	58	10.8	0.152	59		0.149	57		2
Acetonitrile	75-05-8	41	13.0	0.112	61		0.108	59		4
Acetone	67-64-1	58	13.7	0.081	31		0.073	28	J	11
Trichlorofluoromethane	75-69-4	137	14.2	2.557	417	S	2.541	414	S	1
Pentane	109-66-0	72	14.9	0.043	13		0.043	13		2
Methylene Chloride	75-09-2	85	15.8	0.515	136	S	0.501	132	S	3
1,1,1-Trichloro-2,2,2-trifluoroethane	76-13-1	187	16.3	0.070	8.3	S	0.070	8.4	S	0
Propanenitrile	107-12-0	55	17.0	0.035	14		0.034	14		0
Propanol	71-23-8	60	17.1	0.068	25		0.066	25		2
2-Butanone	78-93-3	72	18.6	0.061	19	S	0.053	17	S	13
Hexane	110-54-3	86	19.9	0.202	52	S	0.199	52	S	1
Tetrahydrofuran	109-99-9	72	20.8	0.051	16		0.051	16		1
Butanenitrile	109-74-0	69	21.9	0.054	17		0.052	17		2
1,1,1-Trichloroethane	71-55-6	133	21.9	0.011	1.9	J	0.011	1.8	J	3
1-Butanol	71-36-3	74	22.3	0.634	192		0.559	169		13
Benzene	71-43-2	78	22.8	0.010	2.9	J	0.014	4.0	J	30
Carbon Tetrachloride	56-23-5	154	23.1	0.053	7.7		0.050	7.3		6
Cyclohexane	110-82-7	84	23.3	0.054	14	S	0.055	15	S	2
Trichloroethene	79-01-6	131	24.7	0.015	2.5	J	0.015	2.6	J	4
Heptane	142-82-5	100	25.2	0.080	18	S	0.080	18	S	0
4-Methyl-2-Pentanone	108-10-1	100	26.3	0.015	3.2	J	0.016	3.6	J	9
Pentanenitrile	110-59-8	83	27.4	0.019	5.1		0.020	5.2		3
Toluene	108-88-3	92	28.5	1.976	480	S	2.027	493	S	3
Octane	111-65-9	114	30.4	0.034	6.7		0.035	7.0		3
Tetrachloroethylene	127-18-4	166	31.0	0.059	7.9		0.058	7.8		1
Hexanenitrile	628-73-9	97	32.8	0.018	4.2	J	0.018	4.2	J	1
Ethylbenzene	100-41-4	106	33.4	0.031	6.6	S	0.031	6.6	S	0
p/m-Xylene	106-42-3	106	33.9	0.097	20	S	0.098	21	S	1
Styrene	100-42-5	104	34.8	0.018	3.9	S	0.018	3.8	S	2
o-Xylene	95-47-6	106	35.1	0.048	10	S	0.048	10	S	0
Nonane	111-84-2	128	35.4	0.023	4.0		0.024	4.2		3
1-Ethyl-2-methyl benzene	611-14-3	120	38.4	0.003	0.55	J	0.004	0.65	J	15
1,3,5-Trimethylbenzene	108-67-8	120	38.7	0.004	0.66	J	0.004	0.82	J	20
1,2,4-Trimethylbenzene	95-63-6	120	39.9	0.010	1.8	J	0.011	2.0	J	12
Decane	124-18-5	142	40.1	0.038	5.9		0.039	6.2		4
1,4-Dichlorobenzene	106-46-7	147	40.7	0.006	0.87	J	0.007	1.1	J	19
Undecane	1120-21-4	156	44.4	0.086	12		0.086	12		0
Dodecane	112-40-3	170	48.5	2.260	298		2.314	305		2
Tridecane	629-50-5	184	52.2	4.384	534	E	4.721	575	E	7
Tetradecane	629-59-4	198	55.7	4.233	479	E	4.529	512	E	7

Table E.11 (Cont'd) Comparison of Organic Compound Concentrations from Replicate Analysis of Triple Sorbent Trap 1126 from Tank TY-103 Riser 8 Middle Level Sampled on 11/22/96

Tentatively Identified Compounds ^(b)	CAS	MW	Ret Time	S6116-m49.1126 ^(c) ISVS						RPD ^(d) (%)
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	
Propane	74-98-6	44	7.4	0.388	197	S	0.362	184	S	7
Ethane, 1-chloro-1,1-difluoro-	75-68-3	100	8.9	3.084	691	S	2.734	612	S	12
1-Propene, 2-methyl-	115-11-7	56	10.4	0.201	80		0.185	74		8
1-Fluoro-1,1-dichloro-ethane	1717-00-6	116	14.4	0.415	80	S	0.399	77	S	4
2-Propanol, 2-methyl-	75-65-0	74	15.5	0.141	43	S	0.131	40	S	8
Pentane, 2-methyl-	107-83-5	86	18.3	0.051	13	S	0.048	12	S	7
Pentane, 3-methyl-	96-14-0	86	19.0	0.064	17	S	0.060	16	S	6
Cyclopentane, methyl-	96-37-7	84	21.5	0.058	15	S	0.057	15	S	2
Hexane, 2-methyl-	591-76-4	100	23.5	0.081	18	S	0.076	17	S	6
Pentane, 2,3-dimethyl-	565-59-3	100	23.7	0.056	12	S	0.055	12	S	1
Hexane, 3-methyl-	589-34-4	100	24.0	0.148	33	S	0.139	31	S	7
Cyclohexane, methyl-	108-87-2	98	26.7	0.090	20	S	0.084	19	S	7
Hexane, 2,4-dimethyl-	589-43-5	114	27.1	0.041	8.1	S	0.042	8.2	S	2
Cyclohexane, 1,4-dimethyl-	589-90-2	112	29.7	0.073	15	S	0.075	15	S	2
Cyclotrisiloxane, hexamethyl-	541-05-9	222	31.2	0.783	79	S	0.779	79	S	1
Hexane, 2,3,5-trimethyl-	1069-53-0	128	31.5	0.199	35	S	0.202	35	S	1
Heptane, 2,4-dimethyl-	2213-23-2	128	31.7	0.608	106	S	0.612	107	S	1
2,4-Dimethyl-1-heptene	19549-87-2	126	32.6	0.115	20	S	0.117	21	S	2
Cyclotetrasiloxane, octamethyl-	556-67-2	296	39.4	0.385	29	S	0.373	28	S	3
Undecane, 3,7-dimethyl-	17301-29-0	184	42.9	0.570	69		0.566	69		1
Unknown C12 Alkane		170	43.2	0.303	40		0.295	39		3
Decanedioic acid, didecyl ester	2432-89-5	482	51.9	nd	nd		0.194	9.0		
5-Dodecanone	19780-10-0	184	54.4	0.313	38		0.278	34		12
Unknown C14 Alkane		198	57.9	1.082	122		0.985	111		9
3-Tridecanone	1534-26-5	198	58.4	0.295	33		0.255	29		15
2-Tridecanone	593-08-8	198	58.5	0.344	42		0.252	29		31
Pentadecane	629-62-9	212	59.1	0.270	29		0.237	25		13

Data Quality Flags

E Target compound exceeds the upper quantification limit (UQL).

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.12 Comparison of Organic Compound Concentrations from Replicate Analysis of Triple Sorbent Trap 1191 from Tank TY-103 Riser 8 Bottom Level Sampled on 11/22/96

Target Analytes ^(a)	CAS	MW	Ret Time	S6116-b34.1191 ^(c) ISVS						RPD ^(d) (%)
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	
Methanol	67-56-1	32	10.0	4.229	2957	E,S,Y	3.659	2558	E,S,Y	14
Butane	106-97-8	58	10.8	0.196	76		0.182	70		7
Ethanol	64-17-5	46	12.6	0.103	50	J	0.101	49	J	2
Acetonitrile	75-05-8	41	13.0	0.184	100		0.170	93		8
Acetone	67-64-1	58	13.7	0.095	36		0.082	31		15
Trichlorofluoromethane	75-69-4	137	14.2	2.941	480	S	2.872	468	S	2
Pentane	109-66-0	72	14.9	0.048	15		0.045	14		8
1,1-Dichloroethene	75-35-4	97	15.5	0.011	2.6	J	0.012	2.7	J	2
Methylene Chloride	75-09-2	85	15.8	0.837	221	S	0.769	203	S	8
112trichloro122trifluoroethane	76-13-1	187	16.3	0.067	8.0	S	0.069	8.2	S	2
Propanenitrile	107-12-0	55	17.0	0.040	16		0.037	15		9
Propanol	71-23-8	60	17.1	0.060	22		0.063	24		6
2-Butanone	78-93-3	72	18.6	0.060	18	S	0.053	17	S	11
Hexane	110-54-3	86	19.9	0.259	67	S	0.249	65	S	4
Tetrahydrofuran	109-99-9	72	20.8	0.048	15		0.047	14		4
Butanenitrile	109-74-0	69	21.9	0.059	19		0.054	17		10
1,1,1-Trichloroethane	71-55-6	133	21.9	0.013	2.2	J	0.012	2.1	J	4
1-Butanol	71-36-3	74	22.3	0.684	207		0.582	176		16
Benzene	71-43-2	78	22.8	0.011	3.1	J	0.013	3.7	J	19
Carbon Tetrachloride	56-23-5	154	23.1	0.054	7.9		0.050	7.3		7
Cyclohexane	110-82-7	84	23.3	0.088	23	S	0.104	28	S	17
Trichloroethene	79-01-6	131	24.7	0.024	4.1	J	0.024	4.1	J	1
Heptane	142-82-5	100	25.2	0.088	20	S	0.087	19	S	2
4-Methyl-2-Pentanone	108-10-1	100	26.3	0.022	4.9		0.017	3.8	J	24
Pentanenitrile	110-59-8	83	27.4	0.019	5.2		0.018	4.8		9
1,1,2-Trichloroethane	79-00-5	133	27.8	0.010	1.6	J	0.010	1.6	J	1
Toluene	108-88-3	92	28.5	2.706	658	E,S	2.834	689	E,S	5
Octane	111-65-9	114	30.4	0.035	7.0		0.037	7.2		4
Tetrachloroethylene	127-18-4	166	31.0	0.051	6.9		0.052	7.0		2
Hexanenitrile	628-73-9	97	32.8	0.018	4.3	J	0.017	3.9	J	8
Ethylbenzene	100-41-4	106	33.4	0.040	8.3	S	0.039	8.3	S	1
p/m-Xylene	106-42-3	106	33.9	0.123	26	S	0.125	26	S	2
Styrene	100-42-5	104	34.8	0.025	5.4	S	0.025	5.5	S	0
o-Xylene	95-47-6	106	35.1	0.061	13	S	0.061	13	S	1
Nonane	111-84-2	128	35.4	0.029	5.0		0.029	5.1		0
1-Ethyl-2-methyl benzene	611-14-3	120	38.4	0.005	0.84	J	0.008	1.5	J	56
1,3,5-Trimethylbenzene	108-67-8	120	38.7	0.005	0.99	J	0.005	0.99	J	0
1,2,4-Trimethylbenzene	95-63-6	120	39.9	0.014	2.5	J	0.014	2.5	J	1
Decane	124-18-5	142	40.1	0.051	8.0		0.050	7.8		3
1,4-Dichlorobenzene	106-46-7	147	40.7	0.011	1.7	J	0.011	1.7	J	5
Undecane	1120-21-4	156	44.4	0.080	12		0.078	11		3
Dodecane	112-40-3	170	48.5	2.153	284		2.142	282		1
Tridecane	629-50-5	184	52.2	5.437	662	E	6.232	759	E	14
Tetradecane	629-59-4	198	55.7	5.974	676	E	6.673	755	E	11

Table E.12 (Cont'd) Comparison of Organic Compound Concentrations from Replicate Analysis of Triple Sorbent Trap 1191 from Tank TY-103 Riser 8 Bottom Level Sampled on 11/22/96

Tentatively Identified Compounds ^(b)	CAS	MW	Ret Time	S6116-b34.1191 ^(c) ISVS						RPD ^(d) (%)
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	
Propane	74-98-6	44	7.4	0.287	146	S	0.293	149	S	2
Ethane, 1-chloro-1,1-difluoro-	75-68-3	100	8.8	4.791	1073	S	3.983	892	S	18
1-Fluoro-1,1-dichloro-ethane	1717-00-6	116	14.4	0.790	153	S	0.751	145	S	5
2-Propanol, 2-methyl-	75-65-0	74	15.5	0.149	45	S	0.141	43	S	6
Pentane, 2-methyl-	107-83-5	86	18.3	0.053	14	S	0.050	13	S	6
Pentane, 3-methyl-	96-14-0	86	19.0	0.071	18	S	0.067	17	S	6
Cyclopentane, methyl-	96-37-7	84	21.5	0.069	19	S	0.068	18	S	3
Hexane, 2-methyl-	591-76-4	100	23.5	0.098	22	S	0.097	22	S	1
Pentane, 2,3-dimethyl-	565-59-3	100	23.7	0.084	19	S	0.081	18	S	4
Hexane, 3-methyl-	589-34-4	100	24.0	0.185	41	S	0.180	40	S	3
1-Butanol, 2-ethyl-	97-95-0	102	24.5	0.043	9.4		0.043	9.5		1
Cyclopentane, 1,2-dimethyl-	2452-99-5	98	24.8	0.335	77	S	0.330	75	S	2
Cyclohexane, methyl-	108-87-2	98	26.7	0.119	27	S	0.120	27	S	1
Hexane, 2,4-dimethyl-	589-43-5	114	27.1	0.047	9.2	S	0.046	9.0	S	2
Cyclohexane, 1,4-dimethyl-	589-90-2	112	29.7	0.086	17	S	0.082	16	S	4
Cyclotrisiloxane, hexamethyl-	541-05-9	222	31.2	0.614	62	S	0.634	64	S	3
Hexane, 2,3,5-trimethyl-	1069-53-0	128	31.5	0.223	39	S	0.223	39	S	0
Heptane, 2,4-dimethyl-	2213-23-2	128	31.8	0.689	121	S	0.683	120	S	1
2,4-Dimethyl-1-heptene	19549-87-2	126	32.6	0.138	25	S	0.137	24	S	1
Cyclotetrasiloxane, octamethyl-	556-67-2	296	39.4	0.373	28	S	0.368	28	S	1
Undecane, 4,7-dimethyl-	17301-32-5	184	42.9	0.776	95	S	0.760	92	S	2
Unknown C12 Alkane		170	43.2	0.401	53		0.392	52		2
5-Dodecanone	19780-10-0	184	54.4	0.220	27		0.205	25		7
Unknown C14 Alkane		198	57.8	0.755	85		0.701	e		7
3-Tridecanone	1534-26-5	198	58.4	0.185	21		0.175	20		6
2-Tridecanone	593-08-8	198	58.5	nd	nd		0.168	19		
2-Decanone	693-54-9	156	58.5	0.198	28		nd	nd		

Data Quality Flags

E Target compound exceeds the upper quantification limit (UQL).

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

S Data should be considered suspect due to a 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) Result was not calculated on instrument report.

nd Not detected.

Table E.13 Comparison of Organic Compound Concentrations from Replicate Analysis of Triple Sorbent Trap 1168 from Tank TY-103 Riser 18 Top Level Sampled on 11/22/96

Target Analytes ^(a)	CAS	MW	Ret Time	S6117-42.1168 ^(c) ISVS						RPD ^(d) (%)
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	
Methanol	67-56-1	32	10.0	1.236	864	Y,S	0.970	678	Y,S	24
Butane	106-97-8	58	10.8	0.092	35	S	0.083	32	S	10
Acetonitrile	75-05-8	41	13.0	0.106	58		0.095	52		11
Acetone	67-64-1	58	13.7	0.109	42		0.108	42		1
Trichlorofluoromethane	75-69-4	137	14.2	0.629	103	S	0.622	101	S	1
Pentane	109-66-0	72	14.9	0.045	14		0.041	13		10
Methylene Chloride	75-09-2	85	15.8	0.098	26	J,S,B	0.104	27	J,S,B	6
1,1,2-trichloro-2,2,2-trifluoroethane	76-13-1	187	16.3	0.081	9.7	S,B	0.087	10	S,B	7
Propanenitrile	107-12-0	55	17.0	0.036	15		0.033	13		9
Propanol	71-23-8	60	17.1	0.082	31		0.073	27		12
2-Butanone	78-93-3	72	18.6	0.128	40	S	0.125	39	S	2
Hexane	110-54-3	86	19.9	0.202	52	S	0.192	50	S	5
Tetrahydrofuran	109-99-9	72	20.8	0.050	16		0.048	15		4
Butanenitrile	109-74-0	69	21.9	0.059	19		0.055	18		8
1,1,1-Trichloroethane	71-55-6	133	21.9	0.011	1.9	J	0.011	1.9	J	1
1-Butanol	71-36-3	74	22.3	0.734	222		0.647	196		13
Benzene	71-43-2	78	22.8	0.008	2.3	J	0.010	2.9	J	24
Carbon Tetrachloride	56-23-5	154	23.1	0.055	8.0		0.052	7.6		5
Cyclohexane	110-82-7	84	23.3	0.086	23	S	0.077	21	S	11
Heptane	142-82-5	100	25.2	0.129	29	S	0.127	28	S	1
4-Methyl-2-Pentanone	108-10-1	100	26.3	0.018	4.0	J	0.017	3.7	J	8
Pentanenitrile	110-59-8	83	27.4	0.018	4.8		0.017	4.6		3
Toluene	108-88-3	92	28.5	1.315	320	S	1.367	332	S	4
Octane	111-65-9	114	30.4	0.026	5.1	J	0.027	5.4	J	4
Tetrachloroethylene	127-18-4	166	31.0	0.032	4.3		0.035	4.7		9
Hexanenitrile	628-73-9	97	32.8	0.015	3.4	J	0.013	3.1	J	11
Ethylbenzene	100-41-4	106	33.4	0.037	7.8		0.037	7.9		1
p/m-Xylene	106-42-3	106	33.9	0.115	24	S	0.115	24	S	1
Styrene	100-42-5	104	34.8	0.025	5.4		0.026	5.5		2
o-Xylene	95-47-6	106	35.1	0.056	12	S	0.058	12	S	4
Nonane	111-84-2	128	35.4	0.023	4.0		0.025	4.4		8
1-Ethyl-2-methyl benzene	611-14-3	120	38.4	0.004	0.76	J	0.005	0.88	J	14
1,3,5-Trimethylbenzene	108-67-8	120	38.7	0.005	0.83	J	0.005	1.0	J	18
1,2,4-Trimethylbenzene	95-63-6	120	39.9	0.012	2.2	J	0.013	2.5	J	14
Decane	124-18-5	142	40.1	0.041	6.4		0.041	6.5		2
1,4-Dichlorobenzene	106-46-7	147	40.7	0.009	1.4	J	0.011	1.7	J	18
Undecane	1120-21-4	156	44.4	0.039	5.6	J	0.041	5.9	J	6
Dodecane	112-40-3	170	48.5	0.748	99		0.735	97		2
Tridecane	629-50-5	184	52.2	2.059	251		2.207	269		7
Tetradecane	629-59-4	198	55.7	1.997	226	S	2.073	234	S	4

Tentatively

Identified Compounds^(b)

Propane	74-98-6	44	7.4	0.149	76	S	nd	nd	S	
Ethane, 1-chloro-1,1-difluoro-	75-68-3	100	8.8	1.847	414	S	1.690	379	S	9
Unknown			14.4	0.102	f		nd	nd		
2-Propanol, 2-methyl-	75-65-0	74	15.5	0.209	63	S	0.201	61	S	4
Pentane, 2-methyl-	107-83-5	86	18.3	0.112	29	S	0.097	25	S	15
Pentane, 3-methyl-	96-14-0	86	19.0	0.131	34	S	0.125	33	S	4

Table E.13 (Cont'd) Comparison of Organic Compound Concentrations from Replicate Analysis of Triple Sorbent Trap 1168 from Tank TY-103 Riser 18 Top Level Sampled on 11/22/96

Tentatively Identified Compounds ^(b)	CAS	MW	Ret Time	S6117-42.1168 ^(c) ISVS						RPD ^(d) (%)
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	
Cyclopentane, methyl-	96-37-7	84	21.4	0.088	23	S	0.087	23	S	1
Hexane, 2-methyl-	591-76-4	100	23.4	0.178	40	S	0.167	37	S	6
Pentane, 2,3-dimethyl-	565-59-3	100	23.6	0.129	29	S	0.125	28	S	3
Hexane, 3-methyl-	589-34-4	100	23.9	0.299	67	S	0.289	65	S	3
1-Butanol, 2-ethyl-	97-95-0	102	24.5	0.067	15		0.063	14		6
Cyclopentane, 1,2-dimethyl-	2452-99-5	98	24.8	0.088	20		0.085	19		3
Cyclohexane, methyl-	108-87-2	98	26.7	0.213	49	S	0.208	48	S	2
Hexane, 2,4-dimethyl-	589-43-5	114	27.0	0.080	16	S	0.077	15	S	4
Cyclohexane, 1,4-dimethyl-	589-90-2	112	29.7	0.101	20	S	0.102	20	S	1
Hexane, 2,3,5-trimethyl-	1069-53-0	128	31.4	0.243	43	S	0.244	43	S	0
Heptane, 2,4-dimethyl-	2213-23-2	128	31.7	0.750	131	S	0.743	130	S	1
2,4-Dimethyl-1-heptene	19549-87-2	126	32.6	0.141	25	S	0.141	25	S	0
Cyclotetrasiloxane, octamethyl-	556-67-2	296	39.4	0.381	29	S	0.356	27	S	7
Undecane, 4,7-dimethyl-	17301-32-5	184	42.9	0.765	93	S	0.747	91	S	2
Unknown C12 Alkane		170	43.1	0.375	49	S	0.368	48	S	2
5-Dodecanone	19780-10-0	184	54.4	0.091	11		nd	nd		
Unknown C14 Alkane		198	57.9	0.309	35		0.292	33		6
3-Tridecanone	1534-26-5	198	58.3	0.078	8.9		0.075	8.5		4
2-Tridecanone	593-08-8	198	58.5	0.082	9.2		0.075	8.5		8

Data Quality Flags

B Compound identified 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 1188 from Tank TY-103 Riser 18 Middle Level Sampled on 11/22/96

Target Analytes ^(a)	CAS	MW	Ret Time	S6117-m28.1188 ^(c) ISVS						RPD ^(d) (%)
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	
Methanol	67-56-1	32	10.0	0.824	576	Y,S	0.804	562	Y,S	2
Butane	106-97-8	58	10.8	0.095	37	S	0.093	36	S	2
Acetonitrile	75-05-8	41	13.0	0.069	38		0.065	36		6
Acetone	67-64-1	58	13.7	0.068	26	J	0.059	23	J	14
Trichlorofluoromethane	75-69-4	137	14.2	0.916	149	S	0.905	148	S	1
Pentane	109-66-0	72	14.9	0.039	12		0.039	12		1
Methylene Chloride	75-09-2	85	15.8	0.073	19	J,S,B	0.069	18	J,S,B	5
1,1,2-trichloro-2,2,2-trifluoroethane	76-13-1	187	16.3	0.070	8.4	S	0.069	8.3	S	1
Propanenitrile	107-12-0	55	17.0	0.028	11		0.026	11		5
Propanol	71-23-8	60	17.1	0.061	23		0.055	20	J	10
2-Butanone	78-93-3	72	18.6	0.094	29	S	0.080	25	S	16
Hexane	110-54-3	86	19.9	0.195	51	S	0.193	50	S	1
Tetrahydrofuran	109-99-9	72	20.8	0.046	14	B	0.044	14	B	6
Butanenitrile	109-74-0	69	21.9	0.048	16		0.047	15		4
1,1,1-Trichloroethane	71-55-6	133	21.9	0.011	1.9	J	0.011	1.8	J	4
1-Butanol	71-36-3	74	22.3	0.554	168		0.422	128		27
Benzene	71-43-2	78	22.8	0.007	2.1	J	0.010	2.8	J	30
Carbon Tetrachloride	56-23-5	154	23.1	0.048	7.0		0.045	6.6		6
Cyclohexane	110-82-7	84	23.3	0.067	18	S	0.065	17	S	3
Heptane	142-82-5	100	25.2	0.125	28	S	0.119	27	S	5
4-Methyl-2-Pentanone	108-10-1	100	26.3	0.018	4.1	J	0.022	4.8	J	16
Pentanenitrile	110-59-8	83	27.4	0.016	4.3		0.016	4.2		4
1,1,2-Trichloroethane	79-00-5	133	27.9	0.010	1.6	J	0.009	1.5	J	9
Toluene	108-88-3	92	28.5	1.316	320	S	1.327	323	S	1
Octane	111-65-9	114	30.5	0.023	4.5	J	0.022	4.3	J	4
Tetrachloroethylene	127-18-4	166	31.0	0.031	4.2		0.029	3.9		8
Hexanenitrile	628-73-9	97	32.8	0.011	2.5	J	0.012	2.7	J	6
Ethylbenzene	100-41-4	106	33.4	0.039	8.2		0.036	7.5		10
p/m-Xylene	106-42-3	106	33.9	0.128	27	S	0.121	26	S	5
Styrene	100-42-5	104	34.8	0.028	5.9		0.027	5.9		1
o-Xylene	95-47-6	106	35.1	0.060	13	S	0.059	13	S	1
Nonane	111-84-2	128	35.5	0.018	3.2		0.020	3.6		11
1-Ethyl-2-methyl benzene	611-14-3	120	38.5	0.004	0.69	J	0.004	0.75	J	8
1,3,5-Trimethylbenzene	108-67-8	120	38.7	0.004	0.78	J	0.006	1.1	J	35
1,2,4-Trimethylbenzene	95-63-6	120	39.9	0.011	2.1	J	0.012	2.2	J	7
Decane	124-18-5	142	40.1	0.034	5.4		0.036	5.6		5
1,4-Dichlorobenzene	106-46-7	147	40.7	0.010	1.5	J	0.010	1.5	J	2
Undecane	1120-21-4	156	44.4	0.029	4.1	J	0.028	4.0	J	3
Dodecane	112-40-3	170	48.5	0.439	58		0.410	54		7
Tridecane	629-50-5	184	52.2	1.719	209		1.629	198		5
Tetradecane	629-59-4	198	55.8	2.203	249	S	2.102	238	S	5
Tentatively Identified Compounds^(b)										
Propane	74-98-6	44	7.4	0.182	93	S	0.130	66	S	33
Ethane, 1-chloro-1,1-difluoro-	75-68-3	100	8.9	0.336	75	S	0.261	58	S	25
2-Propanol, 2-methyl-	75-65-0	74	15.5	0.165	50	S	0.154	47	S	7
Pentane, 2-methyl-	107-83-5	86	18.3	0.088	23	S	0.073	19	S	18
Pentane, 3-methyl-	96-14-0	86	19.0	0.106	28	S	0.097	25	S	9
Cyclopentane, methyl-	96-37-7	84	21.5	0.079	21	S	0.076	20	S	4
Hexane, 2-methyl-	591-76-4	100	23.5	0.134	30	S	0.113	25	S	17
Pentane, 2,3-dimethyl-	565-59-3	100	23.7	0.074	17	S	0.068	15	S	9

Table E.14 (Cont'd) Comparison of Organic Compound Concentrations from Replicate Analysis of Triple Sorbent Trap 1188 from Tank TY-103 Riser 18 Middle Level Sampled on 11/22/96

Tentatively Identified Compounds ^(b)	CAS	MW	Ret Time	S6117-m28.1188 ^(c) ISVS						RPD ^(d) (%)
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	
Hexane, 3-methyl-	589-34-4	100	24.0	0.223	50	S	0.204	46	S	9
1-Butanol, 2-ethyl-	97-95-0	102	24.5	0.043	9.5		0.040	8.9		6
Cyclopentane, 1,2-dimethyl-	2452-99-5	98	24.8	0.111	25		0.108	25		2
Cyclohexane, methyl-	108-87-2	98	26.7	0.126	29	S	0.118	27	S	6
Hexane, 2,4-dimethyl-	589-43-5	114	27.1	0.073	14	S	0.070	14	S	5
Cyclohexane, 1,4-dimethyl-	589-90-2	112	29.7	0.091	18	S	0.087	17	S	5
Cyclotrisiloxane, hexamethyl-	541-05-9	222	31.2	1.093	110	S	1.088	110	S	0
Hexane, 2,3,5-trimethyl-	1069-53-0	128	31.5	0.244	43	S	0.245	43	S	0
Heptane, 2,4-dimethyl-	2213-23-2	128	31.7	0.752	132	S	0.751	131	S	0
2,4-Dimethyl-1-heptene	19549-87-2	126	32.6	0.146	26	S	0.146	26	S	0
Cyclotetrasiloxane, octamethyl-	556-67-2	296	39.5	0.402	30	S	0.389	29	S	3
Undecane, 3,7-dimethyl-	17301-29-0	184	42.9	0.739	90		nd	nd		
Undecane, 3,4-dimethyl-	17312-78-6	184	42.9	nd	nd		0.747	91		
Unknown C12 Alkane		170	43.2	0.378	50		0.372	49		2
6-Dodecanone	6064-27-3	184	54.4	0.063	7.7		nd	nd		
Unknown C14 Alkane		198	57.9	0.194	22		0.161	18		19
3-Tridecanone	1534-26-5	198	58.4	0.049	5.5		0.037	4.2		28
2-Tridecanone	593-08-8	198	58.5	nd	nd		0.043	4.8		
2-Tetradecanone	2345-27-9	212	58.5	0.058	6.1		nd	nd		

Data Quality Flags

B Compound identified 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 1151 from Tank TY-103 Riser 18 Bottom Level Sampled on 11/22/96

Target Analytes ^(a)	CAS	MW	Ret Time	S6117-b36.1151 ^(c) ISVS						RPD ^(d) (%)
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	
Methanol	67-56-1	32	10.0	0.912	638	Y,S	0.881	616	Y,S	4
Butane	106-97-8	58	10.8	0.087	33	S	0.080	31	S	8
Acetonitrile	75-05-8	41	13.0	0.078	43		0.071	39		10
Acetone	67-64-1	58	13.7	0.085	33		0.104	40		20
Trichlorofluoromethane	75-69-4	137	14.1	0.591	96	S	0.582	95	S	1
Pentane	109-66-0	72	14.9	0.044	14		0.041	13		7
Methylene Chloride	75-09-2	85	15.8	0.045	12	J,S,B	0.044	12	J,S,B	3
1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	187	16.3	0.088	11	S	0.091	11	S	3
Propanenitrile	107-12-0	55	17.0	0.030	12		0.027	11		9
Propanol	71-23-8	60	17.1	0.076	28		0.069	26		10
2-Butanone	78-93-3	72	18.6	0.131	41	S	0.128	40	S	2
Hexane	110-54-3	86	19.8	0.231	60	S	0.222	58	S	4
Tetrahydrofuran	109-99-9	72	20.7	0.048	15		0.048	15		2
Butanenitrile	109-74-0	69	21.8	0.054	17		0.049	16		10
1,1,1-Trichloroethane	71-55-6	133	21.9	0.005	0.90	J	0.005	0.91	J	2
1-Butanol	71-36-3	74	22.3	0.615	186		0.519	157		17
Benzene	71-43-2	78	22.8	0.007	2.1	J	0.009	2.7	J	24
Carbon Tetrachloride	56-23-5	154	23.0	0.054	7.8		0.050	7.3		6
Cyclohexane	110-82-7	84	23.3	0.138	37	S	0.124	33	S	11
Heptane	142-82-5	100	25.2	0.073	16	S	0.072	16	S	2
4-Methyl-2-Pentanone	108-10-1	100	26.3	0.015	3.4	J	0.014	3.1	J	12
Pentanenitrile	110-59-8	83	27.4	0.018	4.9		0.017	4.6		7
1,1,2-Trichloroethane	79-00-5	133	27.8	0.010	1.7	J	0.009	1.6	J	9
Toluene	108-88-3	92	28.5	0.584	142	S	0.593	144	S	2
Octane	111-65-9	114	30.4	0.022	4.3	J	0.023	4.5	J	6
Tetrachloroethylene	127-18-4	166	31.0	0.044	6.0		0.046	6.1		3
Hexanenitrile	628-73-9	97	32.8	0.015	3.5	J	0.014	3.2	J	9
Ethylbenzene	100-41-4	106	33.4	0.020	4.3		0.020	4.3		0
p/m-Xylene	106-42-3	106	33.8	0.072	15	S	0.073	15	S	2
Styrene	100-42-5	104	34.8	0.016	3.5	J	0.016	3.5	J	1
o-Xylene	95-47-6	106	35.0	0.033	6.9	S	0.033	7.0	S	1
Nonane	111-84-2	128	35.4	0.016	2.8		0.016	2.8		1
1-Ethyl-2-methyl benzene	611-14-3	120	38.4	0.003	0.61	J	0.006	1.1	J	60
1,3,5-Trimethylbenzene	108-67-8	120	38.6	0.004	0.65	J	0.003	0.64	J	3
1,2,4-Trimethylbenzene	95-63-6	120	39.9	0.010	1.8	J	0.010	1.8	J	2
Decane	124-18-5	142	40.1	0.038	5.9		0.039	6.1		4
1,4-Dichlorobenzene	106-46-7	147	40.6	0.006	0.95	J	0.006	0.88	J	8
Undecane	1120-21-4	156	44.4	0.068	9.8		0.061	8.8		11
Dodecane	112-40-3	170	48.4	1.663	219		1.603	211		4
Tridecane	629-50-5	184	52.2	3.667	446	E	4.227	515	E	14
Tetradecane	629-59-4	198	55.7	3.201	362	E,S	3.607	408	E,S	12
Tentatively Identified Compounds^(b)										
Propane	74-98-6	44	7.4	0.117	59	S	0.143	73	S	20
Ethane, 1-chloro-1,1-difluoro-	75-68-3	100	8.8	0.153	34	S	0.117	26	S	27
2-Propanol, 2-methyl-	75-65-0	74	15.5	0.118	36	S	0.109	33	S	8
Pentane, 2-methyl-	107-83-5	86	18.3	0.096	25	S	0.094	25	S	2
Pentane, 3-methyl-	96-14-0	86	19.0	0.149	39	S	0.138	36	S	8
Cyclopentane, methyl-	96-37-7	84	21.5	0.078	21	S	0.074	20	S	6
Hexane, 2-methyl-	591-76-4	100	23.4	0.099	22	S	0.096	22	S	2
Pentane, 2,3-dimethyl-	565-59-3	100	23.6	0.044	9.9	S	0.042	9.4	S	5

Table E.15 (Cont'd) Comparison of Organic Compound Concentrations from Replicate Analysis of Triple Sorbent Trap 1151 from Tank TY-103 Riser 18 Bottom Level Sampled on 11/22/96

Tentatively Identified Compounds ^(b)	CAS	MW	Ret Time	S6117-b36.1151 ^(c) ISVS						RPD ^(d) (%)
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	
Hexane, 3-methyl-	589-34-4	100	23.9	0.151	34	S	0.149	33	S	2
1-Butanol, 2-ethyl-	97-95-0	102	24.5	nd	nd		0.025	5.5		
Cyclopentane, 1,2-dimethyl-	2452-99-5	98	24.8	0.028	6.4		0.027	6.2		3
Cyclohexane, methyl-	108-87-2	98	26.7	0.038	8.7	S	0.034	7.9	S	10
Hexane, 2,4-dimethyl-	589-43-5	114	27.1	0.012	2.4	S	0.012	2.3	S	3
Cyclohexane, 1,4-dimethyl-	589-90-2	112	29.7	0.016	3.2	S	nd	nd	S	
Cyclotrisiloxane, hexamethyl-	541-05-9	222	31.1	0.566	57	S	0.582	59	S	3
Hexane, 2,3,5-trimethyl-	1069-53-0	128	31.5	0.057	10.0	S	0.055	9.6	S	4
Heptane, 2,4-dimethyl-	2213-23-2	128	31.7	0.201	35	S	0.196	34	S	2
2,4-Dimethyl-1-heptene	19549-87-2	126	32.6	0.030	5.4	S	0.031	5.6	S	3
Cyclotetrasiloxane, octamethyl-	556-67-2	296	39.4	0.448	34	S	0.442	33	S	1
Undecane, 4,7-dimethyl-	17301-32-5	184	42.9	0.551	67	S	0.528	64	S	4
Unknown C12 Alkane		170	43.1	0.304	40	S	0.291	38	S	4
5-Dodecanone	19780-10-0	184	54.4	0.224	27		nd	nd		
4-Undecanone	14476-37-0	170	54.4	nd	nd		0.210	28		
Unknown C14 Alkane		198	57.9	0.765	e		0.688	e		11
3-Tridecanone	1534-26-5	198	58.3	0.206	23		0.184	21		11
2-Tridecanone	593-08-8	198	58.5	0.218	25		0.174	20		22
Pentadecane	629-62-9	212	59.0	0.198	21		nd	nd		

Data Quality Flags

B Compound identified in associated laboratory blank.

E Target compound exceeds the upper quantification limit (UQL).

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) Result was not calculated on instrument report.

nd Not detected.

Table E.16 Organic Compound Concentrations in Triple Sorbent Trap Blank Samples Associated with the Sampling of Tank TY-103 Riser 8 on 11/22/96

Target Analytes ^(a)	CAS	MW	S6116-a50.1026 ^(c) ISVS						S6116-a53.1179 ^(c) ISVS						S6116-a51.1159 ^(c) ISVS						S6116-a52.1162 ^(c) ISVS					
			Ret Time	Field Blank #1					Trip Blank #2						Field Blank #2						Trip Blank #1					
				(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	10.1	0.836	584	Y			0.367	256	Y				0.409	286	Y				<0.274	<192	Y			
Butane	106-97-8	58	10.8	0.018	6.8	J			0.023	9.0	J				0.010	3.9	J				0.012	4.6	J			
Acetonitrile	75-05-8	41	13.1	0.023	13	J			0.003	1.8	U				0.010	5.5	J				0.003	1.8	U			
Acetone	67-64-1	58	13.7	0.032	12	J			0.011	4.2	J				0.018	7.0	J				0.012	4.5	J			
Trichlorofluoromethane	75-69-4	137	14.2	0.287	47				0.627	102					0.124	20					0.327	53				
Pentane	109-66-0	72	15.0	0.006	2.0	J			0.003	0.89	U				0.006	1.9	J				0.003	0.89	U			
Methylene Chloride	75-09-2	85	15.8	0.077	20	J,B			0.198	52	B				0.060	16	J,B				0.153	40	J,B			
1,1,2-trichloro-2,2,2-trifluoroethane	76-13-1	187	16.4	0.038	4.5				0.003	0.36	U				0.021	2.5	J				0.003	0.36	U			
2-Butanone	78-93-3	72	18.6	0.063	19				0.002	0.68	U				0.019	6.0	J				0.002	0.68	U			
Hexane	110-54-3	86	19.9	0.061	16				0.030	7.7					0.073	19					0.014	3.7				
Tetrahydrofuran	109-99-9	72	20.8	0.005	1.4	J			0.004	1.1	U				0.005	1.5	J				0.004	1.1	U			
Benzene	71-43-2	78	22.8	0.003	0.97	J			0.001	0.40	U				0.004	1.1	J				0.001	0.40	U			
Cyclohexane	110-82-7	84	23.4	0.040	11	J			0.017	4.4	J				0.048	13					0.014	3.7	J			
Trichloroethene	79-01-6	131	24.8	0.004	0.61	U			0.009	1.5	J				0.004	0.61	U				0.009	1.5	J			
Heptane	142-82-5	100	25.2	0.012	2.6	J			0.001	0.25	J				0.035	7.8					0.002	0.38	J			
4-Methyl-2-Pentanone	108-10-1	100	26.4	0.008	1.9	J			0.007	1.5	J				0.012	2.7	J				0.002	0.46	U			
1,1,2-Trichloroethane	79-00-5	133	27.9	0.010	1.6	J			0.009	1.5	J				0.009	1.4	J				0.009	1.4	J			
Toluene	108-88-3	92	28.5	0.411	100				0.484	118					0.405	98					0.320	78				
Ethylbenzene	100-41-4	106	33.5	0.013	2.8	J			0.002	0.35	J				0.026	5.4					0.001	0.27	J			
p/m-Xylene	106-42-3	106	33.9	0.047	9.8				0.003	0.63	U				0.083	17					0.003	0.63	U			
Styrene	100-42-5	104	34.8	0.011	2.4	J			0.002	0.33	U				0.019	4.0					0.002	0.33	U			
o-Xylene	95-47-6	106	35.1	0.020	4.3				0.002	0.40	U				0.040	8.4					0.002	0.40	U			
Nonane	111-84-2	128	35.5	0.007	1.2	J			0.001	0.22	U				0.011	1.9	J				0.001	0.22	U			
1-Ethyl-2-methyl benzene	611-14-3	120	38.5	0.004	0.75	J			0.002	0.44	U				0.005	0.92	J				0.002	0.44	U			
1,3,5-Trimethylbenzene	108-67-8	120	38.7	0.002	0.44	J			0.002	0.44	U				0.003	0.48	J				0.002	0.44	U			
1,2,4-Trimethylbenzene	95-63-6	120	40.0	0.007	1.2	J			0.003	0.47	U				0.007	1.4	J				0.003	0.47	U			
Decane	124-18-5	142	40.1	0.021	3.3	J			0.001	0.16	J				0.021	3.3	J				0.003	0.50	J			
1,4-Dichlorobenzene	106-46-7	147	40.7	0.004	0.63	J			0.003	0.43	U				0.007	1.0	J				0.003	0.43	U			
Undecane	1120-21-4	156	44.5	0.013	1.8	J			0.004	0.63	U				0.012	1.7	J				0.004	0.63	U			
Tridecane	629-50-5	184	52.3	0.050	6.1	J			0.010	1.3	J				0.043	5.3	J				0.014	1.8	J			
Tetradecane	629-59-4	198	55.8	0.047	5.4	J,B			0.056	6.3	J,B				0.054	6.1	J,B				0.082	9.2	J,B			
Total Target Compounds				2.18					1.89						1.60						1.01					

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Table E.16 (Cont'd) Organic Compound Concentrations in Triple Sorbent Trap Blank Samples Associated with the Sampling of Tank TY-103 Riser 8 on 11/22/96

Tentatively Identified Compounds ^(b)	CAS	MW	Ret Time	S6116-a50.1026 ^(c) ISVS Field Blank #1			S6116-a53.1179 ^(c) ISVS Trip Blank #2			S6116-a51.1159 ^(c) ISVS Field Blank #2			S6116 a52.1162 ^(c) ISVS Trip Blank #1		
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag
Propane	74-98-6	44	7.4	nd	nd		0.031	16		nd	nd		0.060	31	
Propene	115-07-1	42	7.4	0.610	32		nd	nd		nd	nd		nd	nd	
Ethane, 1-chloro-1,1-difluoro-	75-68-3	100	8.9	0.171	38		1.305	292		0.140	31		0.915	205	
1-Fluoro-1,1-dichloro-ethane	0-00-0	116	14.4	nd	nd		0.339	65		nd	nd		nd	nd	
2-Propanol, 2-methyl-	75-65-0	74	15.5	0.029	8.7		nd	nd		0.091	27		nd	nd	
Pentane, 2-methyl-	107-83-5	86	18.3	0.020	5.3		nd	nd		0.028	7.2		nd	nd	
Pentane, 3-methyl-	96-14-0	86	19.1	0.033	8.5		nd	nd		0.040	10		nd	nd	
Cyclopentane, methyl-	96-37-7	84	21.5	0.018	4.8		nd	nd		0.032	8.6		nd	nd	
Hexane, 2-methyl-	591-76-4	100	23.5	0.023	5.1		nd	nd		0.055	12		nd	nd	
Pentane, 2,3-dimethyl-	565-59-3	100	23.7	0.011	2.4		nd	nd		0.029	6.5		nd	nd	
Hexane, 3-methyl-	589-34-4	100	24.0	0.032	7.1		0.016	3.7		0.082	18		0.015	3.3	
Cyclopentane, 1,2-dimethyl-	2452-99-5	98	24.8	0.033	7.5		0.073	17		0.036	8.3		nd	nd	
Cyclohexane, methyl-	108-87-2	98	26.8	0.014	3.3		nd	nd		0.059	14		nd	nd	
Hexane, 2,4-dimethyl-	589-43-5	114	27.1	0.006	1.3		nd	nd		0.038	7.5		nd	nd	
Cyclohexane, 1,4-dimethyl-	589-90-2	112	29.7	0.009	1.8		nd	nd		0.052	10		nd	nd	
Cyclotrisiloxane, hexamethyl-	541-05-9	222	31.2	0.350	35		nd	nd		0.781	79		nd	nd	
Hexane, 2,3,5-trimethyl-	1069-53-0	128	31.5	0.045	8.0		nd	nd		0.178	31		nd	nd	
Heptane, 2,4-dimethyl-	2213-23-2	128	31.8	0.157	28		nd	nd		0.545	95		nd	nd	
2,4-Dimethyl-1-heptene	19549-87-2	126	32.7	0.038	6.8		nd	nd		0.112	20		nd	nd	
Cyclotetrasiloxane, octamethyl-	556-67-2	296	39.5	0.402	30		nd	nd		0.207	16		nd	nd	
Undecane, 4,7-dimethyl-	17301-32-5	184	42.9	0.340	41		nd	nd		0.480	58		nd	nd	
Total TIC				2.340			1.764			2.984			0.989		

Data Quality Flags

B Compound identified 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.

Table E.17 Organic Compound Concentrations in Triple Sorbent Trap Blank Samples Associated with the Sampling of Tank TY-103 Riser 18 on 11/22/96

Target Analytes ^(a)	CAS	MW	Ret	S6117-a50.1177 ^(c) ISVS			S6117-a52.1136 ^(c) ISVS			S6117-a53.1134 ^(c) ISVS			S6117 a51.1154 ^(c) ISVS		
				Field Blank #1			Trip Blank #1			Trip Blank #2			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	0.626	438	Y	0.996	697	Y	<0.274	<192	Y	1.943	1358	Y
Butane	106-97-8	58	10.8	0.017	6.5	J	0.074	29		0.004	1.4	U	0.069	27	
Acetonitrile	75-05-8	41	13.0	0.016	8.5	J	0.017	9.1	J	0.003	1.8	U	0.042	23	
Acetone	67-64-1	58	13.7	0.024	9.4	J	0.022	8.5	J	0.005	2.1	J	0.037	14	J
Trichlorofluoromethane	75-69-4	137	14.1	0.248	40		1.897	309		0.021	3.4	J	1.437	234	
Pentane	109-66-0	72	14.9	0.005	1.7	J	0.003	0.89	U	0.003	0.89	U	0.007	2.2	J
1,1-Dichloroethene	75-35-4	97	15.5	0.002	0.47	U	0.015	3.5	J	0.002	0.47	U	0.009	2.0	J
Methylene Chloride	75-09-2	85	15.8	0.047	12	J,B	0.432	114		0.032	8.3	J,B	0.267	70	B
1,1,2-trichloro-2,2,2-trifluoroethane	76-13-1	187	16.3	0.036	4.3		0.003	0.36	U	0.003	0.36	U	0.020	2.4	J
Propanol	71-23-8	60	17.1	0.005	2.0	U	0.006	2.3	J	0.005	2.0	U	0.005	2.0	U
2-Butanone	78-93-3	72	18.6	0.106	33		0.013	4.1	J	0.002	0.68	U	0.217	67	
Hexane	110-54-3	86	19.8	0.180	47		0.092	24		0.001	0.32	U	0.397	103	
Tetrahydrofuran	109-99-9	72	20.7	0.006	1.7	J	0.004	1.1	U	0.004	1.1	U	0.008	2.3	J
Benzene	71-43-2	78	22.8	0.003	0.98	J	0.002	0.67	J	0.000	0.11	J	0.005	1.5	J
Cyclohexane	110-82-7	84	23.3	0.084	22		0.025	6.8	J	0.004	1.1	U	0.051	14	
Trichloroethene	79-01-6	131	24.7	0.004	0.61	U	0.026	4.4	J	0.004	0.61	U	0.010	1.7	J
Heptane	142-82-5	100	25.2	0.033	7.5		0.004	0.89	J	0.002	0.35	U	0.159	36	
4-Methyl-2-Pentanone	108-10-1	100	26.3	0.013	2.8	J	0.007	1.6	J	0.003	0.72	J	0.015	3.3	J
Toluene	108-88-3	92	28.5	0.438	106		1.475	359		0.032	7.7		2.222	540	
Ethylbenzene	100-41-4	106	33.4	0.013	2.7	J	0.004	0.83	J	0.001	0.30	U	0.026	5.4	
p/m-Xylene	106-42-3	106	33.8	0.044	9.3		0.006	1.3	J	0.003	0.63	U	0.080	17	
Styrene	100-42-5	104	34.8	0.011	2.4	J	0.003	0.69	J	0.002	0.33	U	0.018	3.9	
o-Xylene	95-47-6	106	35.0	0.019	4.0		0.002	0.48	J	0.002	0.40	U	0.038	7.9	
Nonane	111-84-2	128	35.4	0.010	1.7	J	0.004	0.73	J	0.001	0.22	U	0.013	2.4	
1-Ethyl-2-methyl benzene	611-14-3	120	38.4	0.003	0.63	J	0.002	0.44	U	0.002	0.44	U	0.005	0.93	J
1,3,5-Trimethylbenzene	108-67-8	120	38.6	0.004	0.72	J	0.002	0.44	U	0.002	0.44	U	0.003	0.50	J
1,2,4-Trimethylbenzene	95-63-6	120	39.9	0.006	1.0	J	0.003	0.47	U	0.003	0.47	U	0.007	1.3	J
Decane	124-18-5	142	40.1	0.017	2.7	J	0.003	0.50	J	0.003	0.47	U	0.019	3.0	J
1,4-Dichlorobenzene	106-46-7	147	40.6	0.004	0.58	J	0.003	0.43	U	0.003	0.43	U	0.006	0.85	J
Undecane	1120-21-4	156	44.4	0.011	1.5	J	0.004	0.63	U	0.004	0.63	U	0.011	1.6	J
Tridecane	629-50-5	184	52.2	0.128	16	J,B	0.026	3.2	U	0.026	3.2	U	0.037	4.5	J
Tetradecane	629-59-4	198	55.7	0.304	34	B	0.017	1.9	J,B	0.016	1.8	J,B	0.022	2.5	J,B
Total Target Compounds				2.47			5.19			0.20			7.20		

Table E.17 (Cont'd) Organic Compound Concentrations in Triple Sorbent Trap Blank Samples Associated with the Sampling of Tank TY-103 Riser 18 on 11/22/96

Tentatively Identified Compounds ^(b)	CAS	MW	Ret Time	S6117-a50.1177 ^(c) ISVS			S6117-a52.1136 ^(c) ISVS			S6117-a53.1134 ^(c) ISVS			S6117-a51.1154 ^(c) ISVS		
				Field Blank #1			Trip Blank #1			Trip Blank #2			Field Blank #2		
				(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag	(mg/m ³)	(ppbv)	Flag
Propane	74-98-6	44	7.4	0.082	42		0.228	116		0.025	13		0.396	201	
Ethane, 1-chloro-1,1-difluoro-	75-68-3	100	8.8	0.135	30		7.493	1678		0.854	191		4.434	993	
1-Fluoro-1,1-dichloro-ethane	0-00-0	116	14.4	nd	nd		0.789	152		nd	nd		0.409	79	
2-Propanol, 2-methyl-	75-65-0	74	15.5	0.075	23		nd	nd		nd	nd		0.136	41	
Pentane, 2-methyl-	107-83-5	86	18.3	0.077	20		nd	nd		nd	nd		0.117	31	
Pentane, 3-methyl-	96-14-0	86	19.0	0.112	29		nd	nd		nd	nd		0.183	48	
Cyclopentane, methyl-	96-37-7	84	21.4	0.073	19		0.022	5.9		nd	nd		0.159	43	
Hexane, 2-methyl-	591-76-4	100	23.4	0.075	17		0.021	4.6		nd	nd		0.235	53	
Pentane, 2,3-dimethyl-	565-59-3	100	23.6	0.035	7.8		0.035	7.9		nd	nd		0.125	28	
Hexane, 3-methyl-	589-34-4	100	23.9	0.109	24		0.048	11		nd	nd		0.351	79	
Cyclohexane, methyl-	108-87-2	98	26.7	0.021	4.8		0.019	4.3		nd	nd		0.115	26	
Hexane, 2,4-dimethyl-	589-43-5	114	27.0	0.009	1.7		nd	nd		nd	nd		0.059	12	
Cyclohexane, 1,4-dimethyl-	589-90-2	112	29.7	nd	nd		nd	nd		nd	nd		0.062	12	
Cyclotrisiloxane, hexamethyl-	541-05-9	222	31.1	0.602	61		0.059	5.9		0.122	12		0.805	81	
Hexane, 2,3,5-trimethyl-	1069-53-0	128	31.4	0.040	7.0		nd	nd		nd	nd		0.176	31	
Heptane, 2,4-dimethyl-	2213-23-2	128	31.7	0.137	24		nd	nd		nd	nd		0.535	94	
2,4-Dimethyl-1-heptene	19549-87-2	126	32.6	0.025	4.4		nd	nd		nd	nd		0.111	20	
Cyclotetrasiloxane, octamethyl-	556-67-2	296	39.4	0.281	21		nd	nd		nd	nd		0.234	18	
Undecane, 5,7-dimethyl-	17312-83-3	184	42.9	nd	nd		nd	nd		nd	nd		0.447	54	
Undecane, 4,7-dimethyl-	17301-32-5	184	42.9	0.274	33		nd	nd		nd	nd		nd	nd	
Unknown C12 Alkane		170	43.1	0.144	19		nd	nd		nd	nd		nd	nd	
Total TICs				2.31			8.71			1.00			9.09		

Data Quality Flags

B Compound identified 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.

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Appendix F

Tank Vapor Characterization: Chain of Custody Sample Control Forms

Custody Form Initiator J. A. Edwards - PNNL

Telephone (509) 373-0141

Page 85-3009 / FAX 376-2329

Company Contact R. D. Mahon - SESC

Telephone (509) 373-2891

Page 85-3656 / FAX 373-3793

Project Designation/Sampling Locations 200 West Tank Farm
241-TY-103 Riser #8 Tank Vapor Sample SAF S6116Collection date ^{18 Nov 96} 18 - 22 - 96

Preparation date 10 - 11 - 96

Homogeneity

ISVS

Ice Chest No.

Field Logbook No. ^{RDM} ^{WHC} ~~SESC~~ N-647.3

Bill of Lading/Airbill No. N/A

Offsite Property No. N/A

Method of Shipment Government Truck

Collectors: Mahon, Pingel

Shipped to PNNL

Sample Identification

		Sample Date/Time
S6116 - m10 . R41 ..	Collect NH ₃ /NO _x /H ₂ O Sorbent Trap #1	22 Nov 96 1058
S6116 - m11 . R42 ..	Collect NH ₃ /NO _x /H ₂ O Sorbent Trap #2	22 Nov 96 1058
S6116 - b12 . R43 ..	Collect NH ₃ /NO _x /H ₂ O Sorbent Trap #3	22 Nov 96 1021
S6116 - b13 . R44 ..	Collect NH ₃ /NO _x /H ₂ O Sorbent Trap #4	102130
S6116 - b14 . R45 ..	Collect NH ₃ /NO _x /H ₂ O Sorbent Trap #5	1022
S6116 - b15 . R46 ..	Collect NH ₃ /NO _x /H ₂ O Sorbent Trap #6	22 Nov 96 102230
S6116 - t16 . R47 ..	Collect NH ₃ /NO _x /H ₂ O Sorbent Trap #7	22 Nov 96 1144
S6116 - t17 . R48 ..	Collect NH ₃ /NO _x /H ₂ O Sorbent Trap #8	114430
S6116 - t18 . R49 ..	Collect NH ₃ /NO _x /H ₂ O Sorbent Trap #9	1145
S6116 - t19 . R50 ..	Collect NH ₃ /NO _x /H ₂ O Sorbent Trap #10	22 Nov 96 114530
S6116 - m20 . R51 ..	Collect NH ₃ /NO _x /H ₂ O Sorbent Trap #11	22 Nov 96 1205
S6116 - m21 . R52 ..	Collect NH ₃ /NO _x /H ₂ O Sorbent Trap #12	22 Nov 96 120530
S6116 - a22 . R53 ..	Store NH ₃ /NO _x /H ₂ O Sorbent Field Blanks	25 Nov 96 1900
S6116 - a23 . R54 ..	Store NH ₃ /NO _x /H ₂ O Sorbent Field Blanks	25 Nov 96 1900

[] Field Transfer of Custody		[X] Chain of Possession		(Sign and Print Names)		
Relinquished By	Date	Time	Received By	Date	Time	
K H Pool <i>Karl Pool</i>	10-15-96	1345	JA Edwards <i>JA Edwards</i>	10-15-96	1345	
JA Edwards <i>JA Edwards</i>	10-21-96	1328	ES Mast <i>ES Mast</i>	10-21-96	1328	
ES Mast <i>ES Mast</i>	12-10-96	1145	JA Edwards <i>JA Edwards</i>	12-10-96	1145	
JA Edwards <i>JA Edwards</i>	12-11-96	1210	IMP Thomas <i>IMP Thomas</i>	12-11-96	1210	

Final Sample Disposition

Comments:

PNNL (only) Checklist

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

Pick-up / Delivery

- Y/N
- Y/N
- Y/N
- Y/N
- Y/N
- Y/N
- Y/N
- Y/N

Comments:

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

POC

POC

(Revised 05/30/96 PNNL)

Custody Form Initiator

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Company Contact

R. D. Mahon - SESC

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Page 85-3656 / FAX 373-3793Project Designation/Sampling Locations 200 West Tank Farm
241-TY-103 Riser #18 Tank Vapor Sample SAF S6117Collection date 10 - 22 - 96
Preparation date 10 - 11 - 96

Homogeneity

ISVS

Ice Chest No.

Field Logbook No. SESC-11-647.8

Bill of Lading/Airbill No.

N/A

Offsite Property No. N/A

Method of Shipment

Government Truck

Collectors: Mast, McClellan

Shipped to

PNNL

Sample Identification

		Sample Date/Time
S6117 - m10 . R55 . -	Collect NH ₃ /NO _x /H ₂ O Sorbent Trap #1	22 Nov 96 1058
S6117 - m11 . R56 . -	Collect NH ₃ /NO _x /H ₂ O Sorbent Trap #2	1120
S6117 - b12 . R57 . -	Collect NH ₃ /NO _x /H ₂ O Sorbent Trap #3	112030
S6117 - b13 . R58 . -	Collect NH ₃ /NO _x /H ₂ O Sorbent Trap #4	1121
S6117 - b14 . R59 . -	Collect NH ₃ /NO _x /H ₂ O Sorbent Trap #5	112130
S6117 - b15 . R60 . -	Collect NH ₃ /NO _x /H ₂ O Sorbent Trap #6	
S6117 - t16 . R61 . -	Collect NH ₃ /NO _x /H ₂ O Sorbent Trap #7	1144
S6117 - t17 . R62 . -	Collect NH ₃ /NO _x /H ₂ O Sorbent Trap #8	114430
S6117 - t18 . R63 . -	Collect NH ₃ /NO _x /H ₂ O Sorbent Trap #9	1145
S6117 - t19 . R64 . -	Collect NH ₃ /NO _x /H ₂ O Sorbent Trap #10	114530
S6117 - m20 . R65 . -	Collect NH ₃ /NO _x /H ₂ O Sorbent Trap #11	1205
S6117 - m21 . R66 . -	Collect NH ₃ /NO _x /H ₂ O Sorbent Trap #12	121430 / 120530
S6117 - a22 . R67 . -	Store NH ₃ /NO _x /H ₂ O Sorbent Field Blanks	25 Nov 96 1900
S6117 - a23 . R68 . -	Store NH ₃ /NO _x /H ₂ O Sorbent Field Blanks	25 Nov 96 1900

[] Field Transfer of Custody		[X] Chain of Possession		(Sign and Print Names)	
Relinquished By	Date	Time	Received By	Date	Time
K H Pool	10-15-96	1345	J A Edwards	10-15-96	1345
J A Edwards	10-21-96	1330	ES Mast	10-21-96	1330
ES Mast	12-10-96	1145	J A Edwards	12-10-96	1145
J A Edwards	12-11-96	1210	LMP Thomas	12-11-96	1210

Final Sample Disposition

Comments:

PNNL (only) Checklist

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

Pick-up / Delivery

- X/N
- X/N
- X/N
- X/N
- X/N
- X/N
- X/N
- X/N

Comments:

POC

POC

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

(Revised 05/30/96 PNNL)

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Project Designation/Sampling Locations 200 West Tank Farm
241-TY-103 Riser #8 Tank Vapor Sample SAF S6116
Homogeneity ISVS

Collection date 22 Nov 96 10 - 22 - 96

Preparation date 10 - 21 - 96

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

Collectors: Mahon, Pingel

Shipped to PNNL

Sample Identification

S6116 - a24 . 006	Collect Ambient SUMMA Upwind of tank #1	Sample Date/Time 22 Nov 96 1248
S6116 - a25 . 007	Collect Ambient SUMMA Through ISVS #2	NOT COLLECTED
S6116 - m26 . 307	Collect SUMMA #3	22 Nov 96 1300
S6116 - m27 . 078	Collect SUMMA #4	22 Nov 96 1306
S6116 - b30 . 113	Collect SUMMA #5	22 Nov 96 1330
S6116 - b31 . 240	Collect SUMMA #6	1336
S6116 - b32 . 251	Collect SUMMA #7	1341
S6116 - b33 . 265	Collect SUMMA #8	1345
S6116 - t38 . 266	Collect SUMMA #9	1401
S6116 - t39 . 267	Collect SUMMA #10	1406
S6116 - t40 . 277	Collect SUMMA #11	1410
S6116 - t41 . 279	Collect SUMMA #12	1414
S6116 - m46 . 302	Collect SUMMA #13	1434
S6116 - m47 . 303	Collect SUMMA #14	22 Nov 96 1438

[] Field Transfer of Custody

[X] Chain of Possession

(Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
J A Edwards	10- 21 -96	1315	J A Edwards	10- 21 -96	1315
ESMPT	12-10-96	1200	J A Edwards	12-10-96	1200

Final Sample Disposition

Comments:

PNNL (only) Checklist

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

Pick-up / Delivery

- Y/N
- Y/N
- Y/N
- Y/N
- Y/N
- Y/N
- Y/N
- Y/N

Comments:

* Anomaly: SUMMA 007 was not collected.

POC

POC

POC

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

(Revised 05/30/96 PNNL)

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Project Designation/Sampling Locations 200 West Tank Farm

241-TY-103 Riser #18 Tank Vapor Sample SAF S6117

Homogeneity

ISVS

Ice Chest No.

Collection date 10-22-96

Preparation date 10-21-96

Field Logbook No. SESC-N-6478

Bill of Lading/Airbill No.

N/A

Offsite Property No. N/A

Method of Shipment

Government Truck

Collectors: Mast, McClellan

Shipped to

PNNL

Sample Identification

S6117 - a25 . 304	Collect Ambient SUMMA Through ISVS #1	NOT COLLECTED
S6117 - m26 . 342	Collect SUMMA #2	Sample Date/Time 22 Nov 96 1300
S6117 - m27 . 343	Collect SUMMA #3	22 Nov 96 1306
S6117 - b30 . 344	Collect SUMMA #4	22 Nov 96 1330
S6117 - b31 . 345	Collect SUMMA #5	1336
S6117 - b32 . 346	Collect SUMMA #6	1341
S6117 - b33 . 347	Collect SUMMA #7	1345
S6117 - t38 . 348	Collect SUMMA #8	22 Nov 96 1401
S6117 - t39 . 349	Collect SUMMA #9	1406
S6117 - t40 . 350	Collect SUMMA #10	1410
S6117 - t41 . 351	Collect SUMMA #11	1414
S6117 - m46 . 352	Collect SUMMA #12	22 Nov 96 1434
S6117 - m47 . 353	Collect SUMMA #13	22 Nov 96 143530

[] Field Transfer of Custody		[X] Chain of Possession		(Sign and Print Names)		
Relinquished By	Date	Time	Received By	Date	Time	
J A Edwards	10-21-96	1310	Eric Smith	10-21-96	1310	
CS Mast	12-01-96					
CS Mast	12-05-96	1200	J A Edwards	12-0-96	1200	

Final Sample Disposition

Comments:

PNNL (only) Checklist	Pick-up / Delivery
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

Comments: Anomaly: Canister 304 was not collected.
#5

PNNL -12	-3	WS
WS +4	+6	(12)

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

(Revised 05/30/96 PNNL)

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Project Designation/Sampling Locations 200 West Tank Farm
241-TY-103 Riser #8 Tank Vapor Sample SAF S6116Collection date ^{Room} 22 Nov 96 11 18 - 22 - 96

Preparation date 10 - 18 - 96

Homogeneity

ISVS

Ice Chest No.

Field Logbook No. ^{Room} 8556-N-647.8

Bill of Lading/Airbill No.

N/A

Offsite Property No. N/A

Method of Shipment

Government Truck

Collectors: Mahon, Pingel

Shipped to

PNNL

Sample Identification

Riser #8		Sample Date/Time	
S6116 - m28 . 1197 .	Collect TST middle #1	22 Nov 96	1315
S6116 - m29 . 1120 .	Collect TST middle #2	22 Nov 96	1315
S6116 - b34 . 1191 .	Collect TST bottom #1	22 Nov 96	1350
S6116 - b35 . 1164 .	Collect TST bottom #2	↓	↓
S6116 - b36 . 1135 .	Collect TST bottom #3	↓	↓
S6116 - b37 . 1139 .	Collect TST bottom #4	22 Nov 96	1350
S6116 - 142 . 1160 .	Collect TST top #1	22 Nov 96	1420
S6116 - 143 . 1152 .	Collect TST top #2	↓	↓
S6116 - 144 . 1132 .	Collect TST top #3	↓	↓
S6116 - 145 . 1157 .	Collect TST top #4	22 Nov 96	1420
S6116 - m48 . 1199 .	Collect TST middle #3	22 Nov 96	1443
S6116 - m49 . 1126 .	Collect TST middle #4	22 Nov 96	1443
S6116 - a50 . 1026 .	Store TST bundle field blanks #1	25 Nov 96	1900
S6116 - a51 . 1159 .	Store TST bundle field blanks #2	25 Nov 96	1900
S6116 - a52 . 1162 .	Store TST trip blanks #1	25 Nov 96	1900
S6116 - a53 . 1179 .	Store TST trip blanks #2	25 Nov 96	1900

[] Field Transfer of Custody

[X] Chain of Possession

(Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
J C Evans	10-18-96	1700	J A Edwards	10-18-96	1425
J A Edwards	10-21-96	1320	J A Edwards	10-21-96	1320
ES mits - J A Edwards	12-10-96	1145	J A Edwards	12-10-96	1145
J A Edwards	12-16-96	0700	Scott C. J. J. J.	12-16-96	0700

Final Sample Disposition

Comments:

PNNL (only) Checklist

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

Pick-up / Delivery

- ☒ N
- ☒ N
- ☒ N
- ☒ N
- ☒ N
- ☒ N
- ☒ N
- ☒ N

Comments:

#5

PNNL

-12	-3	WS
WS +4	+8	(P)

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

POC

POC

(Revised 05/30/96 PNNL)

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241-TY-103 Riser #18 Tank Vapor Sample SAF S6117Collection date ^{Room 11} 22 Nov 96 - 22 - 96
Preparation date 10 - 18 - 96

Homogeneity

ISVS

Ice Chest No.

Field Logbook No. ^{WHC} SESC-N-697-8

Bill of Lading/Airbill No.

N/A

Offsite Property No. N/A

Method of Shipment

Government Truck

Collectors: Murt, McClellan

Shipped to

PNNL

Sample Identification

Riser #18		Sample Date/Time
S6117 - m28 . 1188	Collect TST middle #1	22 Nov 96 1315
S6117 - m29 . 1170	Collect TST middle #2	22 Nov 96 1316
S6117 - b34 . 1165	Collect TST bottom #1	22 Nov 96 1350
S6117 - b35 . 1166	Collect TST bottom #2	↓
S6117 - b36 . 1151	Collect TST bottom #3	22 Nov 96 1350
S6117 - b37 . 1169	Collect TST bottom #4	↓
S6117 - 142 . 1168	Collect TST top #1	22 Nov 96 1419
S6117 - 143 . 1137	Collect TST top #2	↓
S6117 - 144 . 1121	Collect TST top #3	22 Nov 96 1419
S6117 - 145 . 1211	Collect TST top #4	22 Nov 96 1420
S6117 - m48 . 1139	Collect TST middle #3	22 Nov 96 1443
S6117 - m49 . 1186	Collect TST middle #4	22 Nov 96 1443
S6117 - a50 . 1177	Store TST bundle field blanks #1	25 Nov 96 1400
S6117 - a51 . 1154	Store TST bundle field blanks #2	25 Nov 96 1400
S6117 - a52 . 1136	Store TST trip blanks #1	25 Nov 96 1400
S6117 - a53 . 1134	Store TST trip blanks #2	25 Nov 96 1400

☐ Field Transfer of Custody☒ Chain of Possession

(Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
J C Evans	10-18-96	1420	J A Edwards	10-18-96	1420
J A Edwards	10-21-96	1320	J A Edwards	10-21-96	1320
EMAST Elms	12-10-96	1145	J A Edwards	12-10-96	1145
J A Edwards	12-16-96	0700	J A Edwards	12-16-96	0700

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)

A-6000-407 (12/92) WEF061

1 of 1

Appendix G

Tank Vapor Characterization:

Target Analytes Measured

for SUMMATM Canisters

Table G.1 SUMMA™ Canister Analysis Results for All Target Analytes from Tank TY-103 Riser 8 Top Level Sampled on 11/22/96

Target Analytes	CAS	MW	Ret Time	S6116-138 266 ISVS Rep			S6116-139 267 ISVS			S6116-140 277 ISVS			S6116-141 279 ISVS			S6116-138 266 ISVS			S6116-a24 006 Upwind Ambient Air		
				(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	4.6	0.0038	0.7 J		0.0038	0.7 J		0.0036	0.66 J		0.0035	0.65 J		0.0034	0.63 J		0.0041	0.75 J	
Chloromethane	74-87-3	50.5	4.9	0.0024	1.06 U		0.0024	1.06 U		0.0017	0.74 J		0.0018	0.81 J		0.0016	0.72 J		0.0024	1.06 U	
1,2-dichloro 1,2,2-tetrafluoroethane	76-14-2	170.9	5.2	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	32.0	5.2	0.4607	322.12 Y		0.4646	324.81 Y		0.4636	324.1 Y		0.4857	339.54 Y		0.4435	310.05 Y		<0.11	<77 Y	
Vinyl Chloride	75-01-4	62.5	5.4	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	
1,3-Butadiene	106-99-0	54.0	5.7	<0.083	<34 Y		<0.083	<34 Y		<0.083	<34 Y		<0.083	<34 Y		<0.083	<34 Y		<0.083	<34 Y	
Butane	106-97-8	58.1	5.9	0.1239	47.75		0.1249	48.15		0.1162	44.79		0.1205	46.44		0.118	45.47		0.0024	0.92 U	
Bromomethane	74-83-9	94.9	6.3	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	64.5	6.7	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	46.0	6.8	0.1185	57.67 Y		0.1181	57.51 Y		0.1108	53.96 Y		0.1236	60.19 Y		0.1164	56.69 Y		<0.11	<53 Y	
Acetonitrile	75-05-8	41.1	7.3	0.1378	75.21		0.141	76.93		0.1311	71.56		0.1456	79.43		0.1356	74.02		0.004	2.18 U	
Acetone	67-64-1	58.1	7.8	0.3546	136.77		0.3585	138.25		0.3375	130.15		0.3742	144.31		0.3515	135.56		0.032	12.35 J,B	
Trichlorofluoromethane	75-69-4	137.4	8.2	0.8858	144.45		0.8859	144.45		0.8212	133.91		0.8502	138.63		0.8645	140.97		0.0048	0.78 U	
Pentane	109-66-0	72.2	8.9	0.0453	14.05		0.0465	14.43		0.0434	13.48		0.0454	14.1		0.0444	13.77		0.0008	0.24 J	
1,1-Dichloroethene	75-35-4	96.9	9.4	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	84.9	9.6	0.0215	5.68 B		0.0209	5.51 B		0.0214	5.64 B		0.0216	5.7 B		0.0211	5.57 B		0.0186	4.9 J,B	
1,1,2-trichloro 1,2,2-trifluoroethane	76-13-1	187.4	10.1	0.0513	6.14		0.0493	5.9		0.0481	5.75		0.047	5.62		0.0501	5.99		0.004	0.48 U	
Propanenitrile	107-12-0	55.1	10.8	0.0438	17.79		0.0437	17.78		0.0428	17.42		0.0446	18.16		0.0439	17.84		0.0038	1.55 U	
Propanol	71-23-8	60.1	10.8	0.0919	34.27		0.0902	33.6		0.0858	31.97		0.0936	34.9		0.0904	33.69		0.0028	1.04 U	
1,1-Dichloroethane	75-34-3	99.0	11.8	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	72.1	12.4	0.0669	20.78		0.086	26.73		0.065	20.19		0.0767	23.84		0.0683	21.23		0.0167	5.2 J	
cis-1,2-Dichloroethene	156-59-2	96.9	13.3	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	86.2	13.7	0.0439	11.4		0.0355	9.21		0.0334	8.69		0.0352	9.15		0.0427	11.11		0.0032	0.83 U	
Chloroform	67-66-3	119.4	13.8	0.0059	1.1 J		0.0058	1.09 J		0.0056	1.06 J		0.0059	1.11 J		0.0059	1.1 J		0.0026	0.49 U	
Tetrahydrofuran	109-99-9	72.1	14.6	0.0513	15.94		0.0505	15.67		0.0482	14.99		0.0495	15.37		0.0504	15.66		0.0016	0.5 U	
1,2-Dichloroethane	107-06-2	99.0	15.3	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	15.8	0.0032	0.54 U		0.003	0.5 J		0.0032	0.54 U		0.0032	0.54 U		0.0032	0.54 U		0.0032	0.54 U	
Butanenitrile	109-74-0	69.1	15.7	0.0417	13.51		0.0398	12.91		0.0379	12.28		0.0436	14.14		0.0441	14.29		0.0034	1.1 U	
1-Butanol	71-36-3	74.1	16.2	1.0185	307.81		0.9308	281.3		0.933	281.96		1.0281	310.71		1.0195	308.1		0.0032	0.97 U	
Benzene	71-43-2	78.1	16.7	0.0026	0.74 J		0.0029	0.83 J		0.0025	0.72 J		0.0026	0.75 J		0.0027	0.77 J		0.0016	0.46 U	
Carbon Tetrachloride	56-23-5	153.8	17.0	0.0785	11.43		0.0762	11.09		0.0704	10.25		0.0762	11.1		0.0773	11.25		0.0034	0.5 U	
Cyclohexane	110-82-7	84.2	17.2	0.0056	1.48 J		0.0033	0.88 J		0.0041	1.1 J		0.0026	0.69 J		0.0055	1.46 J		0.0036	0.96 U	
1,2-Dichloropropane	78-87-5	113.0	18.2	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	131.4	18.7	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	19.2	0.0403	9.01		0.0302	6.74		0.0263	5.88		0.0289	6.47		0.0382	8.54		0.0018	0.4 U	
cis-1,3-Dichloropropene	10061-01-5	111.0	20.4	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	100.2	20.4	0.0034	0.76 U		0.0034	0.76 U		0.0021	0.46 J		0.0024	0.54 J		0.0034	0.76 U		0.0034	0.76 U	
Pyridine	110-86-1	79.1	20.5	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		0.0086	2.44 J	
trans-1,3-Dichloropropene	10061-02-6	111.0	21.5	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	83.1	21.5	0.0153	4.13 J		0.015	4.04 J		0.0137	3.68 J		0.0154	4.15 J		0.0151	4.07 J		0.0042	1.13 U	
1,1,2-Trichloroethane	79-00-5	133.4	21.9	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	92.1	22.6	0.0903	21.94		0.0734	17.85		0.0582	14.14		0.0687	16.71		0.0892	21.67		0.002	0.49 U	
1,2-Dibromoethane	106-93-4	187.9	24.1	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	114.2	24.6	0.015	2.95 J		0.0141	2.76 J		0.014	2.74 J		0.0142	2.79 J		0.015	2.95 J		0.0024	0.47 U	

Table G.1 (Cont'd) SUMMA™ Canister Analysis Results for All Target Analytes from Tank TY-103 Riser 8 Top Level Sampled on 11/22/96

Target Analytes	CAS	MW	Ret Time	S6116-138.266 ISVS Rep			S6116-139.267 ISVS			S6116-140.277 ISVS			S6116-141.279 ISVS			S6116-138.266 ISVS			S6116-a24.006 Upwind Ambient Air		
				(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag
Tetrachloroethylene	127-18-4	165.8	25.1	0.0707	9.55		0.0674	9.1		0.0659	8.9		0.0676	9.13		0.0691	9.34		0.0042	0.57	U
Chlorobenzene	108-90-7	112.6	26.7	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	97.1	27.0	0.0281	6.48	J	0.0299	6.89	J	0.0279	6.43	J	0.0306	7.06	J	0.0322	7.43	J	0.0052	1.19	J,B
Ethylbenzene	100-41-4	106.2	27.6	0.0038	0.81	J	0.0035	0.74	J	0.0034	0.71	J	0.0039	0.81	J	0.0037	0.79	J	0.0028	0.59	U
p/m-Xylene	106-42-3	106.2	28.1	0.0121	2.56	J	0.013	2.74	U	0.0111	2.33	J	0.0115	2.42	J	0.0119	2.5	J	0.013	2.74	U
Cyclohexanone	108-94-1	98.1	28.5	0.0374	8.54	J	0.0643	14.68		0.0201	4.59	J	0.0372	8.49	J	0.0412	9.41	J	0.0058	1.32	U
Styrene	100-42-5	104.2	29.0	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	167.9	29.2	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	106.2	29.3	0.0089	1.87	J	0.0084	1.77	J	0.0081	1.71	J	0.0091	1.92	J	0.0089	1.88	J	0.0028	0.59	U
Nonane	111-84-2	128.3	29.7	0.0081	1.41	J	0.0078	1.36	J	0.0078	1.36	J	0.0077	1.35	J	0.008	1.4	J	0.0016	0.28	U
1-Ethyl-2-Methyl-Benzene	611-14-3	120.2	32.7	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
1,3,5-Trimethylbenzene	108-67-8	120.2	32.9	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	120.2	34.2	0.0026	0.48	U	0.0027	0.5	J	0.0025	0.47	J	0.0026	0.48	U	0.0026	0.48	U	0.0026	0.48	U
Decane	124-18-5	142.3	34.4	0.0418	6.58		0.0418	6.59		0.0409	6.44		0.0419	6.59		0.0422	6.64		0.003	0.47	U
1,3-Dichlorobenzene	541-73-1	147.0	34.7	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	147.0	34.9	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	147.0	36.0	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	156.3	38.7	0.202	28.95	J	0.2063	29.57	J	0.1923	27.56	J	0.2073	29.7	J	0.2018	28.92	J	0.0282	4.04	U
1,2,4-Trichlorobenzene	120-82-1	181.5	42.2	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	0.0249	3.08	J,B
Dodecane	112-40-3	170.3	42.8	13.5224	1778.22	*	12.4827	1641.49	*	12.6074	1657.89	*	12.4853	1641.84	*	11.5507	1518.93	*	0.0098	1.29	U
Hexachloro-1,3-butadiene	87-68-3	260.8	44.1	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	0.0151	1.3	J,B
Tridecane	629-50-5	184.4	46.5	55.7114	6769.01	*	25.261	3069.25	*	43.4898	5284.08	*	34.1803	4152.95	*	41.7827	5076.66	*	0.0346	4.21	J,B
Tetradecane	629-59-4	198.3	50.0	13.6808	1545.07	*	2.4259	273.97	*	6.6371	749.57	*	3.2393	365.83	*	8.0852	913.12	*	0.0743	8.39	

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.

* Denotes diluted value was reported for target compound in table

Table G.2 SUMMA™ Canister Analysis Results for All Target Analytes from Tank TY-103 Riser 8 Middle Level Sampled on 11/22/96

Target Analytes	CAS	MW	Ret Time	S6116-m27.078 ISVS		S6116-m27.078 ISVS Rep		S6116-m46.302 ISVS		S6116-m47.303 ISVS		S6116-m26.307 ISVS	
				(mg/m3)	(ppbv)	(mg/m3)	(ppbv)	(mg/m3)	(ppbv)	(mg/m3)	(ppbv)	(mg/m3)	(ppbv)
Dichlorodifluoromethane	75-71-8	120.9	4.6	0.0043	0.79 J	0.0044	0.81 J	0.004	0.75 J	0.0028	0.52 U	0.0043	0.8 J
Chloromethane	74-87-3	50.5	5.0	0.002	0.89 J	0.0024	1.06 U	0.002	0.9 J	0.0024	1.06 U	0.0024	1.06 U
1,2-dichloro-1,1,2,2-tetrafluoroethane	76-14-2	170.9	5.2	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	32.0	5.3	0.4866	340.21 Y	0.488	341.14 Y	0.5464	382.01 Y	0.479	334.9 Y	0.4883	341.39 Y
Vinyl Chloride	75-01-4	62.5	5.5	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
1,3-Butadiene	106-99-0	54.0	5.8	<0.083	<34 Y	<0.083	<34 Y	<0.083	<34 Y	<0.083	<34 Y	<0.083	<34 Y
Butane	106-97-8	58.1	5.9	0.1272	49.03	0.129	49.71	0.1457	56.16	0.1206	46.49	0.1279	49.29
Bromomethane	74-83-9	94.9	6.4	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	64.5	6.7	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	46.0	6.8	0.202	98.33 Y	0.2045	99.56 Y	0.1645	80.1 Y	0.1726	84.03 Y	0.1856	90.38 Y
Acetonitrile	75-05-8	41.1	7.3	0.1439	78.52	0.1454	79.34	0.147	80.2	0.1444	78.8	0.1424	77.71
Acetone	67-64-1	58.1	7.9	0.4153	160.16	0.4219	162.72	0.3736	144.1	0.3683	142.06	0.4054	156.36
Trichlorofluoromethane	75-69-4	137.4	8.3	1.0319	168.27	1.055	172.03	0.8479	138.26	0.8232	134.24	1.0285	167.72
Pentane	109-66-0	72.2	9.0	0.0503	15.6	0.0515	16	0.0472	14.66	0.0451	13.99	0.0507	15.73
1,1-Dichloroethene	75-35-4	96.9	9.5	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	84.9	9.7	0.0196	5.17 J	0.0199	5.25 J	0.0188	4.95 J,B	0.0189	4.98 J,B	0.0193	5.1 J
1,1,2-trichloro-1,1,2,2-trifluoroethane	76-13-1	187.4	10.2	0.0721	8.62	0.0725	8.67	0.0418	5	0.0416	4.97	0.0808	9.66
Propanenitrile	107-12-0	55.1	10.9	0.0474	19.27	0.0478	19.45	0.041	16.67	0.0438	17.8	0.045	18.3
Propanol	71-23-8	60.1	10.9	0.1023	38.15	0.0993	37.03	0.0964	35.94	0.0995	37.07	0.0967	36.02
1,1-Dichloroethane	75-34-3	99.0	11.8	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	72.1	12.5	0.0868	26.96	0.0911	28.31	0.0547	16.99	0.0643	19.96	0.066	20.5
cis-1,2-Dichloroethene	156-59-2	96.9	13.4	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	86.2	13.7	0.0616	16.02	0.064	16.64	0.0311	8.08 J	0.0308	8.01 J	0.042	10.91
Chloroform	67-66-3	119.4	13.9	0.007	1.31 J	0.007	1.31 J	0.0026	0.49 U	0.0026	0.49 U	0.0068	1.28 J
Tetrahydrofuran	109-99-9	72.1	14.6	0.0556	17.29	0.0559	17.37	0.0444	13.8	0.045	13.97	0.0513	15.94
1,2-Dichloroethane	107-06-2	99.0	15.3	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	15.8	0.004	0.68 J	0.0032	0.54 U	0.0032	0.54 U	0.0032	0.54 U	0.0032	0.54 U
Butanenitrile	109-74-0	69.1	15.8	0.0558	18.08	0.0547	17.72	0.0477	15.45	0.046	14.9	0.0514	16.65
1-Butanol	71-36-3	74.1	16.3	1.1102	335.5	1.0911	329.74	1.1804	356.74	1.1569	349.63	1.071	323.67
Benzene	71-43-2	78.1	16.7	0.0032	0.93 J	0.0034	0.96 J	0.0016	0.46 U	0.0016	0.46 U	0.0031	0.89 J
Carbon Tetrachloride	56-23-5	153.8	17.0	0.0936	13.63	0.0951	13.85	0.0818	11.91	0.0797	11.61	0.0926	13.48
Cyclohexane	110-82-7	84.2	17.3	0.011	2.92 J	0.0114	3.05 J	0.0046	1.21 J	0.0043	1.13 J	0.0049	1.31 J
1,2-Dichloropropane	78-87-5	113.0	18.3	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	131.4	18.8	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	19.3	0.0629	14.07	0.0644	14.4	0.0271	6.06	0.0265	5.92	0.039	8.73
cis-1,3-Dichloropropene	10061-01-5	111.0	20.4	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	100.2	20.5	0.0037	0.83 J	0.0032	0.72 J	0.0034	0.76 U	0.0034	0.76 U	0.0028	0.64 J
Pyridine	110-86-1	79.1	20.6	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	111.0	21.5	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	83.1	21.6	0.019	5.12 J	0.019	5.12 J	0.017	4.59 J	0.0166	4.47 J	0.019	5.13 J
1,1,2-Trichloroethane	79-00-5	133.4	22.0	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	92.1	22.6	0.1793	43.6	0.1854	45.08	0.053	12.9	0.054	13.13	0.1151	27.99

Table G.2 (Cont'd) SUMMA™ Canister Analysis Results for All Target Analytes from Tank TY-103 Riser 8 Middle Level Sampled on 11/22/96

Target Analytes	CAS	MW	Ret Time	S6116-m27.078 ISVS			S6116-m27.078 ISVS Rep			S6116-m46.302 ISVS			S6116-m47.303 ISVS			S6116-m26.307 ISVS		
				(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag
1,2-Dibromoethane	106-93-4	187.9	24.1	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	114.2	24.7	0.0184	3.6	J	0.0189	3.71	J	0.0144	2.82	J	0.0139	2.72	J	0.0171	3.36	J
Tetrachloroethylene	127-18-4	165.8	25.2	0.0819	11.06		0.0851	11.49		0.0639	8.64		0.0646	8.72		0.0819	11.07	
Chlorobenzene	108-90-7	112.6	26.8	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	97.1	27.0	0.0379	8.74	J	0.0371	8.55	J	0.0386	8.89	J	0.0342	7.9	J	0.038	8.77	J
Ethylbenzene	100-41-4	106.2	27.7	0.0048	1	J	0.0049	1.03	J	0.0035	0.73	J	0.0036	0.76	J	0.0049	1.04	J
p/m-Xylene	106-42-3	106.2	28.1	0.0147	3.11	J	0.0147	3.1	J	0.0112	2.35	J	0.0111	2.35	J	0.0147	3.11	J
Cyclohexanone	108-94-1	98.1	28.5	0.1472	33.6		0.137	31.27		0.0058	1.32	U	0.0058	1.32	U	0.0163	3.72	J
Styrene	100-42-5	104.2	29.0	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	167.9	29.2	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	106.2	29.3	0.0105	2.21	J	0.0106	2.23	J	0.0077	1.61	J	0.0082	1.73	J	0.0105	2.21	J
Nonane	111-84-2	128.3	29.8	0.0094	1.64	J	0.0092	1.61	J	0.0077	1.35	J	0.008	1.4	J	0.0094	1.64	J
1-Ethyl-2-Methyl-Benzene	611-14-3	120.2	32.7	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	120.2	32.9	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	120.2	34.2	0.0026	0.48	U	0.0042	0.78	J	0.0026	0.48	U	0.0026	0.48	U	0.0026	0.48	U
Decane	124-18-5	142.3	34.4	0.0505	7.95		0.0522	8.23		0.0457	7.2		0.0441	6.94		0.0523	8.24	
1,3-Dichlorobenzene	541-73-1	147.0	34.7	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	147.0	34.7	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	147.0	36.0	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	156.3	38.8	0.2089	29.94	J	0.2184	31.29	J	0.2373	34.01	J	0.2077	29.76	J	0.2163	31	J
1,2,4-Trichlorobenzene	120-82-1	181.5	42.3	0.0028	0.35	U	0.0028	0.35	U	0.0028	0.35	U	0.0028	0.35	U	0.0114	1.4	J,B
Dodecane	112-40-3	170.3	42.8	5.3741	706.71	*	6.3314	832.59	*	13.9138	1829.69	*	13.7098	1802.86	*	10.1984	1341.11	*
Hexachloro-1,3-butadiene	87-68-3	260.8	44.1	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	184.4	46.5	34.5657	4199.79	*	49.864	6058.54	*	49.7856	6049.02	*	56.4523	6859.03	*	37.6137	4550.12	*
Tetradecane	629-59-4	198.3	50.0	2.1033	237.54	*	9.6273	1087.28	*	7.5809	856.16	*	18.2707	2063.44	*	15.1254	1708.23	*

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.

* Denotes diluted value was reported for target compound in table.

Table G.3 SUMMA™ Canister Analysis Results for All Target Analytes from Tank TY-103 Riser 8 Bottom Level Sampled on 11/22/96

Target Analytes	CAS	MW	Ret Time	S6116-b33.265 ISVS			S6116-b32.251 ISVS			S6116-b31.240 ISVS			S6116-b30.113 ISVS		
				(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag
Dichlorodifluoromethane	75-71-8	120.9	4.6	0.0036	0.67 J		0.0044	0.82 J		0.0044	0.82 J		0.0042	0.78 J	
Chloromethane	74-87-3	50.5	4.9	0.0016	0.73 J		0.0021	0.92 J		0.0024	1.06 U		0.0018	0.82 J	
1,2-dichloro1,1,2,2-tetrafluoroethane	76-14-2	170.9	5.2	0.013	1.7 U		0.013	1.7 U		0.013	1.7 U		0.013	1.7 U	
Methanol	67-56-1	32.0	5.2	0.4866	340.21 Y		0.498	348.16 Y		0.5339	373.27 Y		0.5081	355.23 Y	
Vinyl Chloride	75-01-4	62.5	5.4	0.0016	0.57 U		0.0016	0.57 U		0.0016	0.57 U		0.0016	0.57 U	
1,3-Butadiene	106-99-0	54.0	5.7	<0.083	<34 Y		<0.083	<34 Y		<0.083	<34 Y		<0.083	<34 Y	
Butane	106-97-8	58.1	5.9	0.1193	45.97		0.1323	51		0.1303	50.22		0.129	49.72	
Bromomethane	74-83-9	94.9	6.3	0.0052	1.23 U		0.0052	1.23 U		0.0052	1.23 U		0.0052	1.23 U	
Chloroethane	75-00-3	64.5	6.7	0.0054	1.88 U		0.0054	1.88 U		0.0054	1.88 U		0.0054	1.88 U	
Ethanol	64-17-5	46.0	6.8	0.1222	59.49 Y		0.1972	96.02 Y		0.2044	99.49 Y		0.22	107.09 Y	
Acetonitrile	75-05-8	41.1	7.3	0.1346	73.42		0.1475	80.48		0.148	80.74		0.151	82.37	
Acetone	67-64-1	58.1	7.8	0.3671	141.6		0.4235	163.32		0.4431	170.88		0.4197	161.89	
Trichlorofluoromethane	75-69-4	137.4	8.2	0.8868	144.61		1.0671	174.01		1.0736	175.06		1.0617	173.13	
Pentane	109-66-0	72.2	8.9	0.0445	13.82		0.0524	16.26		0.0516	16.01		0.0516	16.03	
1,1-Dichloroethene	75-35-4	96.9	9.4	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	84.9	9.6	0.0212	5.58 B		0.0195	5.15 J		0.0203	5.34		0.02	5.28	
1,1,2-trichloro1,2,2-trifluoroethane	76-13-1	187.4	10.1	0.0543	6.49		0.0625	7.47		0.0642	7.67		0.0656	7.84	
Propanenitrile	107-12-0	55.1	10.8	0.0435	17.7		0.047	19.1		0.0468	19.02		0.0469	19.09	
Propanol	71-23-8	60.1	10.8	0.0945	35.22		0.1019	37.97		0.1019	37.98		0.1035	38.58	
1,1-Dichloroethane	75-34-3	99.0	11.8	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	72.1	12.4	0.0561	17.42		0.0659	20.46		0.0604	18.77		0.067	20.81	
cis-1,2-Dichloroethene	156-59-2	96.9	13.3	0.0034	0.79 U		0.0034	0.79 U		0.0034	0.79 U		0.0034	0.79 U	
Hexane	110-54-3	86.2	13.7	0.0335	8.71		0.0486	12.63		0.0437	11.36		0.0527	13.71	
Chloroform	67-66-3	119.4	13.8	0.006	1.13 J		0.007	1.31 J		0.0069	1.3 J		0.0074	1.39 J	
Tetrahydrofuran	109-99-9	72.1	14.6	0.0516	16.03		0.0555	17.23		0.0577	17.93		0.0565	17.55	
1,2-Dichloroethane	107-06-2	99.0	15.3	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	15.8	0.0032	0.54 U		0.0032	0.54 U		0.0032	0.54 U		0.0032	0.54 U	
Butanenitrile	109-74-0	69.1	15.7	0.0428	13.87		0.0476	15.43		0.0521	16.9		0.0545	17.67	
1-Butanol	71-36-3	74.1	16.2	1.0219	308.82		1.1086	335.03		1.1548	349.01		1.1509	347.82	
Benzene	71-43-2	78.1	16.7	0.0026	0.73 J		0.003	0.86 J		0.003	0.87 J		0.0033	0.94 J	
Carbon Tetrachloride	56-23-5	153.8	17.0	0.0785	11.43		0.0938	13.67		0.0974	14.19		0.0966	14.07	
Cyclohexane	110-82-7	84.2	17.2	0.0033	0.88 J		0.0079	2.1 J		0.0072	1.92 J		0.0088	2.33 J	
1,2-Dichloropropane	78-87-5	113.0	18.2	0.003	0.59 U		0.003	0.59 U		0.003	0.59 U		0.003	0.59 U	
Trichloroethene	79-01-6	131.4	18.7	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	19.2	0.0256	5.73		0.0411	9.18		0.0368	8.22		0.0481	10.75	
cis-1,3-Dichloropropene	10061-01-5	111.0	20.4	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	100.2	20.4	0.0022	0.49 J		0.0027	0.6 J		0.003	0.67 J		0.003	0.68 J	
Pyridine	110-86-1	79.1	20.5	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	111.0	21.5	0.0018	0.36 U		0.0018	0.36 U		0.0018	0.36 U		0.0018	0.36 U	

Table G.3 (Cont'd) SUMMA™ Canister Analysis Results for All Target Analytes from Tank TY-103 Riser 8 Bottom Level Sampled on 11/22/96

Target Analytes	CAS	MW	Ret Time	S6116-b33.265 ISVS			S6116-b32.251 ISVS			S6116-b31.240 ISVS			S6116-b30.113 ISVS		
				(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag
Pentanenitrile	110-59-8	83.1	21.5	0.0154	4.16 J		0.0187	5.04 J		0.0193	5.19 J		0.0194	5.23 J	
1,1,2-Trichloroethane	79-00-5	133.4	21.9	0.0028	0.47 U		0.0028	0.47 U		0.0028	0.47 U		0.0028	0.47 U	
Toluene	108-88-3	92.1	22.6	0.0541	13.16		0.0961	23.37		0.0864	21		0.1279	31.1	
1,2-Dibromoethane	106-93-4	187.9	24.1	0.0052	0.62 U		0.0052	0.62 U		0.0052	0.62 U		0.0052	0.62 U	
Octane	111-65-9	114.2	24.6	0.0148	2.9 J		0.0185	3.62 J		0.0181	3.55 J		0.0195	3.83 J	
Tetrachloroethylene	127-18-4	165.8	25.1	0.0682	9.22		0.0855	11.55		0.0858	11.59		0.0869	11.74	
Chlorobenzene	108-90-7	112.6	26.7	0.0026	0.52 U		0.0026	0.52 U		0.0026	0.52 U		0.0026	0.52 U	
Hexanenitrile	628-73-9	97.1	27.0	0.0314	7.24 J		0.0386	8.89 J		0.0379	8.74 J		0.0401	9.25 J	
Ethylbenzene	100-41-4	106.2	27.6	0.0038	0.8 J		0.0047	1 J		0.0047	0.99 J		0.005	1.05 J	
p/m-Xylene	106-42-3	106.2	28.1	0.0117	2.46 J		0.0144	3.04 J		0.0149	3.14 J		0.0151	3.18 J	
Cyclohexanone	108-94-1	98.1	28.5	0.0819	18.69		0.047	10.73 J		0.0461	10.53 J		0.0267	6.1 J	
Styrene	100-42-5	104.2	29.0	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	167.9	29.2	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	106.2	29.3	0.0088	1.86 J		0.0104	2.19 J		0.0111	2.33 J		0.0109	2.3 J	
Nonane	111-84-2	128.3	29.7	0.0082	1.44 J		0.0094	1.64 J		0.0099	1.72 J		0.0099	1.72 J	
1-Ethyl-2-Methyl-Benzene	611-14-3	120.2	32.7	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	120.2	32.9	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	120.2	34.2	0.0026	0.48 U		0.0036	0.66 J		0.0039	0.73 J		0.0036	0.68 J	
Decane	124-18-5	142.3	34.4	0.0436	6.87		0.0495	7.79		0.0521	8.21		0.051	8.03	
1,3-Dichlorobenzene	541-73-1	147.0	34.7	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	147.0	34.9	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	147.0	36.0	0.0018	0.27 U		0.0018	0.27 U		0.0018	0.27 U		0.0018	0.27 U	
Undecane	1120-21-4	156.3	38.7	0.2096	30.03 J		0.227	32.53 J		0.2289	32.8 J		0.2181	31.25 J	
1,2,4-Trichlorobenzene	120-82-1	181.5	42.2	0.0028	0.35 U		0.0028	0.35 U		0.0028	0.35 U		0.0028	0.35 U	
Dodecane	112-40-3	170.3	42.8	11.8451	1557.65 *		12.8168	1685.43 *		12.6643	1665.38 *		10.1387	1333.25 *	
Hexachloro-1,3-butadiene	87-68-3	260.8	44.1	0.0046	0.4 U		0.0046	0.4 U		0.0046	0.4 U		0.0046	0.4 U	
Tridecane	629-50-5	184.4	46.5	53.2935	6475.23 *		49.1531	5972.17 *		50.2901	6110.32 *		39.3286	4778.48 *	
Tetradecane	629-59-4	198.3	50.0	32.056	3620.32 *		19.6875	2224.58 *		16.783	1895.42 *		16.9275	1911.75 *	

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.

* Denotes diluted value was reported for target compound in table.

Table G.4 SUMMA™ Canister Analysis Results for All Target Analytes from Tank TY-103 Riser 18 Top Level Sampled on 11/22/96

Target Analytes	CAS	MW	Ret Time	S6117-140.350 ISVS			S6117-140.350 ISVS Rep			S6117-141.351 ISVS			S6117-138.348 ISVS			S6117-139.349 ISVS		
				(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag
Dichlorodifluoromethane	75-71-8	120.9	4.6	0.0032	0.58 J		0.0033	0.62 J		0.0033	0.62 J		0.0028	0.52 U		0.0032	0.59 J	
Chloromethane	74-87-3	50.5	5.0	0.0025	1.09 J		0.0024	1.06 U		0.0017	0.78 J		0.0024	1.06 U		0.0048	2.13 J	
1,2-dichloro 1,1,2,2-tetrafluoroethane	76-14-2	170.9	5.2	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	32.0	5.3	0.737	515.25 Y		0.6932	484.62 Y		0.4347	303.93 Y		0.6962	486.77 Y		0.4709	329.24 Y	
Vinyl Chloride	75-01-4	62.5	5.5	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	
1,3-Butadiene	106-99-0	54.0	5.8	<0.083	<34 Y		<0.083	<34 Y		<0.083	<34 Y		<0.083	<34 Y		<0.083	<34 Y	
Butane	106-97-8	58.1	5.9	0.1012	39.01		0.1111	42.84		0.1098	42.32		0.1227	47.27		0.1068	41.18	
Bromomethane	74-83-9	94.9	6.4	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	64.5	6.7	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	46.0	6.9	0.1169	56.9 Y		0.1203	58.56 Y		0.1176	57.24 Y		0.1272	61.91 Y		0.1203	58.56 Y	
Acetonitrile	75-05-8	41.1	7.3	0.1323	72.2		0.1348	73.56		0.132	72.05		0.1355	73.97		0.133	72.59	
Acetone	67-64-1	58.1	7.9	0.3809	146.91		0.3829	147.69		0.3745	144.44		0.3785	145.96		0.3513	135.49	
Trichlorofluoromethane	75-69-4	137.4	8.3	0.8376	136.58		0.8589	140.05		0.8388	136.78		0.8912	145.32		0.8528	139.05	
Pentane	109-66-0	72.2	9.0	0.0459	14.24		0.0466	14.45		0.0467	14.51		0.0457	14.18		0.0461	14.31	
1,1-Dichloroethene	75-35-4	96.9	9.5	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	84.9	9.7	0.0234	6.16 B		0.0233	6.14 B		0.0223	5.88 B		0.0214	5.64 B		0.0226	5.97 B	
1,1,2-trichloro 1,2,2-trifluoroethane	76-13-1	187.4	10.2	0.0593	7.09		0.0582	6.96		0.0588	7.03		0.0572	6.84		0.0616	7.36	
Propanenitrile	107-12-0	55.1	10.9	0.0445	18.08		0.0443	18.02		0.0452	18.37		0.0434	17.66		0.0441	17.93	
Propanol	71-23-8	60.1	10.9	0.0943	35.14		0.0924	34.44		0.0933	34.76		0.095	35.42		0.0917	34.17	
1,1-Dichloroethane	75-34-3	99.0	11.8	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	72.1	12.5	0.0872	27.09		0.0847	26.31		0.0862	26.77		0.0738	22.93		0.0732	22.73	
cis-1,2-Dichloroethene	156-59-2	96.9	13.4	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	86.2	13.7	0.045	11.71		0.0442	11.5		0.0475	12.34		0.0405	10.54		0.0426	11.08	
Chloroform	67-66-3	119.4	13.9	0.0061	1.14 J		0.0059	1.1 J		0.0058	1.09 J		0.006	1.12 J		0.0059	1.11 J	
Tetrahydrofuran	109-99-9	72.1	14.6	0.0555	17.25		0.0543	16.86		0.0527	16.38		0.0491	15.25		0.0541	16.82	
1,2-Dichloroethane	107-06-2	99.0	15.3	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	15.8	0.003	0.5 J		0.0029	0.49 J		0.0032	0.54 U		0.0032	0.54 U		0.0032	0.54 U	
Butanenitrile	109-74-0	69.1	15.8	0.0444	14.4		0.0455	14.76		0.0429	13.89		0.0455	14.74		0.041	13.28	
1-Butanol	71-36-3	74.1	16.3	0.974	294.35		0.9886	298.78		0.9653	291.72		1.0821	327.01		0.9729	294.01	
Benzene	71-43-2	78.1	16.7	0.0027	0.77 J		0.0026	0.76 J		0.0027	0.77 J		0.0016	0.46 U		0.0028	0.8 J	
Carbon Tetrachloride	56-23-5	153.8	17.0	0.0697	10.15		0.0695	10.12		0.0697	10.14		0.0755	11		0.069	10.05	
Cyclohexane	110-82-7	84.2	17.3	0.0082	2.18 J		0.0068	1.8 J		0.0078	2.08 J		0.0063	1.68 J		0.0076	2.02 J	
1,2-Dichloropropane	78-87-5	113.0	18.3	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	131.4	18.8	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	19.3	0.0492	10.99		0.0486	10.86		0.0569	12.72		0.0459	10.27		0.0454	10.15	
cis-1,3-Dichloropropene	10061-01-5	111.0	20.5	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	100.2	20.5	0.0034	0.76 U		0.0034	0.76 U		0.0034	0.76 U		0.0034	0.76 J		0.0034	0.76 U	
Pyridine	110-86-1	79.1	20.6	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	111.0	21.5	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	83.1	21.6	0.015	4.05 J		0.0151	4.07 J		0.0146	3.94 J		0.017	4.57 J		0.0153	4.13 J	
1,1,2-Trichloroethane	79-00-5	133.4	22.0	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	92.1	22.6	0.1669	40.58		0.1656	40.25		0.1902	46.24		0.1394	33.89		0.135	32.82	

Table G.4 (Cont'd) SUMMA™ Canister Analysis Results for All Target Analytes from Tank TY-103 Riser 18 Top Level Sampled on 11/22/96

Target Analytes	CAS	MW	Ret Time	S6117-40.350 ISVS (mg/m3)	S6117-40.350 ISVS (ppbv)	Flag	S6117-40.350 ISVS Rep (mg/m3)	S6117-40.350 ISVS Rep (ppbv)	Flag	S6117-41.351 ISVS (mg/m3)	S6117-41.351 ISVS (ppbv)	Flag	S6117-38.348 ISVS (mg/m3)	S6117-38.348 ISVS (ppbv)	Flag	S6117-439 ISVS (mg/m3)	S6117-439 ISVS (ppbv)	Flag
1,2-Dibromochloroethane	106-93-4	187.9	24.2	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	114.2	24.7	0.0171	3.34 J		0.0162	3.18 J		0.0168	3.29 J		0.0024	0.47 U		0.0166	3.25 J	
Tetrahydrofuran	127-18-4	165.8	25.2	0.071	9.59		0.0691	9.33		0.0692	9.34		0.0631	8.52		0.0675	9.12	
Chlorobenzene	108-90-7	112.6	26.8	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	97.1	27.1	0.033	7.6 J		0.031	7.14 J		0.0316	7.29 J		0.0381	8.78 J		0.0324	7.48 J	
Ethylbenzene	100-41-4	106.2	27.7	0.0043	0.91 J		0.0039	0.83 J		0.0041	0.87 J		0.0044	0.92 J		0.0042	0.88 J	
p/m-Xylene	106-42-3	106.2	28.1	0.013	2.74 J		0.013	2.75 J		0.0128	2.69 J		0.0124	2.62 J		0.0123	2.6 J	
Cyclohexanone	108-94-1	98.1	28.5	0.0124	2.84 J		0.0212	4.84 J		0.0146	3.34 J		0.0219	5 J		0.0146	3.34 J	
Styrene	100-42-5	104.2	29.0	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	167.9	29.3	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	106.2	29.3	0.01	2.11 J		0.0095	1.99 J		0.0093	1.96 J		0.0089	1.88 J		0.0094	1.98 J	
Nonane	111-84-2	128.3	29.8	0.0093	1.62 J		0.0086	1.5 J		0.0084	1.47 J		0.009	1.58 J		0.0084	1.46 J	
1-Ethyl-2-Methyl-Benzene	611-14-3	120.2	32.7	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	120.2	33.0	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	120.2	34.2	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	142.3	34.5	0.0439	6.91		0.0425	6.7		0.0432	6.81		0.0434	6.83		0.0421	6.63	
1,3-Dichlorobenzene	541-73-1	147.0	34.8	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	147.0	35.0	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	147.0	36.1	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	156.3	38.8	0.0176	24.59 J		0.0192	27.25 J		0.0183	26.41 J		0.0178	24.77 J		0.0168	24.07 J	
1,2,4-Trichlorobenzene	120-82-1	181.5	42.3	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	170.3	42.8	8.4609	1112.62 *		8.1898	1076.97 *		7.3366	964.77 *		6.8863	905.56 *		8.3017	1091.68 *	
Hexachloro-1,3-butadiene	87-68-3	260.8	44.1	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	184.4	46.6	72.6058	8821.71 *		80.1249	9735.29 *		57.4242	6977.12 *		52.929	6430.95 *		59.3281	7208.45 *	
Tetradecane	629-59-4	198.3	50.1	36.9809	4176.53 *		42.8938	4844.31 *		21.2473	2399.61 *		24.1895	2731.9 *		25.7736	2910.81 *	

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.

* Denotes diluted value was reported for target compound in table.

Table G.5 SUMMATM Canister Analysis Results for All Target Analytes from Tank TY-103 Riser 18 Middle Level Sampled on 11/22/96

Target Analytes	CAS	MW	Ret Time	S6117-m47.353 ISVS			S6117-m46.352 ISVS			S6117-m26.342 ISVS			S6117-m27.343 ISVS		
				(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag
Dichlorodifluoromethane	75-71-8	120.9	4.6	0.0033	0.62 J		0.0033	0.62 J		0.0041	0.75 J		0.0037	0.69 J	
Chloromethane	74-87-3	50.5	5.0	0.0015	0.68 J		0.0019	0.85 J		0.0028	1.23 J		0.002	0.89 J	
1,1,2,2-tetrafluoroethane	76-14-2	170.9	5.2	0.013	1.7 U		0.013	1.7 U		0.013	1.7 U		0.013	1.7 U	
Methanol	67-56-1	32.0	5.3	0.4064	284.1 Y		0.4305	300.97 Y		0.8395	586.91 Y		0.6252	437.13 Y	
Vinyl Chloride	75-01-4	62.5	5.5	0.0016	0.57 U		0.0016	0.57 U		0.0016	0.57 U		0.0016	0.57 U	
1,3-Butadiene	106-99-0	54.0	5.8	<0.083	<34 Y		<0.083	<34 Y		<0.083	<34 Y		<0.083	<34 Y	
Butane	106-97-8	58.1	5.9	0.1078	41.55		0.1062	40.93		0.1382	53.27		0.1194	46.01	
Bromomethane	74-83-9	94.9	6.4	0.0052	1.23 U		0.0052	1.23 U		0.0052	1.23 U		0.0052	1.23 U	
Chloroethane	75-00-3	64.5	6.7	0.0054	1.88 U		0.0054	1.88 U		0.0054	1.88 U		0.0054	1.88 U	
Ethanol	64-17-5	46.0	6.9	0.123	59.86 Y		0.1216	59.18 Y		0.1155	56.25 Y		0.1196	58.2 Y	
Acetonitrile	75-05-8	41.1	7.3	0.135	73.64		0.1361	74.27		0.1288	70.29		0.1412	77.08	
Acetone	67-64-1	58.1	7.9	0.3618	139.52		0.3526	136.01		0.3439	132.62		0.3586	138.31	
Trichlorofluoromethane	75-69-4	137.4	8.3	0.8255	134.62		0.8224	134.1		0.779	127.03		0.7925	129.23	
Pentane	109-66-0	72.2	9.0	0.0463	14.38		0.0458	14.23		0.041	12.74		0.0426	13.22	
1,1-Dichloroethene	75-35-4	96.9	9.5	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	84.9	9.7	0.0231	6.09 B		0.0227	5.98 B		0.0186	4.91 J		0.019	5 J	
1,1,2-trichloro-2,2,2-trifluoroethane	76-13-1	187.4	10.2	0.0571	6.82		0.0577	6.9		0.1986	23.75		0.0722	8.63	
Propanenitrile	107-12-0	55.1	10.9	0.0455	18.49		0.0452	18.4		0.04	16.28		0.0392	15.95	
Propanol	71-23-8	60.1	10.9	0.0976	36.37		0.0943	35.14		0.0776	28.93		0.0818	30.49	
1,1-Dichloroethane	75-34-3	99.0	11.8	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	72.1	12.5	0.0682	21.18		0.0786	24.43		0.0577	17.92		0.0576	17.89	
cis-1,2-Dichloroethene	156-59-2	96.9	13.4	0.0034	0.79 U		0.0034	0.79 U		0.0034	0.79 U		0.0034	0.79 U	
Hexane	110-54-3	86.2	13.7	0.0365	9.48		0.0381	9.9		0.0316	8.2 J		0.0298	7.75 J	
Chloroform	67-66-3	119.4	13.9	0.006	1.12 J		0.0059	1.1 J		0.0056	1.04 J		0.005	0.94 J	
Tetrahydrofuran	109-99-9	72.1	14.6	0.0541	16.81		0.0539	16.74		0.0428	13.3		0.0431	13.4	
1,2-Dichloroethane	107-06-2	99.0	15.3	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	15.8	0.0029	0.5 J		0.0032	0.54 U		0.0032	0.54 U		0.0032	0.54 U	
Butanenitrile	109-74-0	69.1	15.8	0.0396	12.82		0.0369	11.96		0.0429	13.9		0.0412	13.36	
1-Butanol	71-36-3	74.1	16.3	1.0118	305.78		0.9727	293.95		0.8883	268.46		0.9334	282.09	
Benzene	71-43-2	78.1	16.7	0.0027	0.77 J		0.0027	0.77 J		0.0027	0.78 J		0.0024	0.7 J	
Carbon Tetrachloride	56-23-5	153.8	17.0	0.0681	9.92		0.0678	9.88		0.0728	10.61		0.068	9.9	
Cyclohexane	110-82-7	84.2	17.3	0.0033	0.87 J		0.0032	0.84 J		0.0038	1.01 J		0.0041	1.1 J	
1,2-Dichloropropane	78-87-5	113.0	18.3	0.003	0.59 U		0.003	0.59 U		0.003	0.59 U		0.003	0.59 U	
Trichloroethene	79-01-6	131.4	18.8	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	19.3	0.0296	6.62		0.0343	7.68		0.0328	7.34		0.0271	6.05	
cis-1,3-Dichloropropene	10061-01-5	111.0	20.5	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	100.2	20.5	0.0032	0.71 J		0.0034	0.76 U		0.0027	0.61 J		0.0032	0.71 J	
Pyridine	110-86-1	79.1	20.6	0.0186	5.27 U		0.0186	5.27 U		0.0186	5.26 J		0.0186	5.27 U	
trans-1,3-Dichloropropene	10061-02-6	111.0	21.5	0.0018	0.36 U		0.0018	0.36 U		0.0018	0.36 U		0.0018	0.36 U	
Pentanenitrile	110-59-8	83.1	21.6	0.0144	3.88 J		0.0144	3.89 J		0.0168	4.52 J		0.0149	4 J	
1,1,2-Trichloroethane	79-00-5	133.4	22.0	0.0028	0.47 U		0.0028	0.47 U		0.0028	0.47 U		0.0028	0.47 U	

Table G.5 (Cont'd) SUMMA™ Canister Analysis Results for All Target Analytes from Tank TY-103 Riser 18 Middle Level Sampled on 11/22/96

Target Analytes	CAS	MW	Ret Time	S6117-m47.353 ISVS			S6117-m46.352 ISVS			S6117-m26.342 ISVS			S6117-m27.343 ISVS		
				(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag
Toluene	108-88-3	92.1	22.6	0.0914	22.21		0.1308	31.8		0.1148	27.91		0.0876	21.3	
1,2-Dibromoethane	106-93-4	187.9	24.2	0.0052	0.62 U		0.0052	0.62 U		0.0052	0.62 U		0.0052	0.62 U	
Octane	111-65-9	114.2	24.7	0.015	2.93 J		0.0157	3.07 J		0.0149	2.92 J		0.0135	2.65 J	
Tetrachloroethylene	127-18-4	165.8	25.2	0.068	9.19		0.0692	9.35		0.0628	8.49		0.0631	8.52	
Chlorobenzene	108-90-7	112.6	26.8	0.0026	0.52 U		0.0026	0.52 U		0.0026	0.52 U		0.0026	0.52 U	
Hexanenitrile	628-73-9	97.1	27.1	0.0302	6.96 J		0.0297	6.85 J		0.0334	7.71 J		0.0313	7.22 J	
Ethylbenzene	100-41-4	106.2	27.7	0.0038	0.81 J		0.0038	0.81 J		0.0042	0.89 J		0.0037	0.78 J	
p/m-Xylene	106-42-3	106.2	28.1	0.0119	2.5 J		0.0123	2.59 J		0.0121	2.56 J		0.0114	2.41 J	
Cyclohexanone	108-94-1	98.1	28.5	0.0132	3.01 J		0.0183	4.18 J		0.0186	4.24 J		0.0231	5.27 J	
Styrene	100-42-5	104.2	29.0	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	167.9	29.3	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	106.2	29.3	0.0091	1.92 J		0.0094	1.98 J		0.0086	1.82 J		0.0085	1.8 J	
Nonane	111-84-2	128.3	29.8	0.0086	1.5 J		0.0086	1.49 J		0.008	1.39 J		0.0077	1.34 J	
1-Ethyl-2-Methyl-Benzene	611-14-3	120.2	32.7	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	120.2	33.0	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	120.2	34.2	0.0026	0.49 J		0.0028	0.52 J		0.0033	0.61 J		0.0028	0.52 J	
Decane	124-18-5	142.3	34.5	0.0409	6.43		0.0427	6.73		0.0387	6.09		0.0413	6.49	
1,3-Dichlorobenzene	541-73-1	147.0	34.8	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	147.0	35.0	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	147.0	36.1	0.0018	0.27 U		0.0018	0.27 U		0.0018	0.27 U		0.0018	0.27 U	
Undecane	1120-21-4	156.3	38.8	0.1788	25.63 J		0.1751	25.09 J		0.1469	21.05 J		0.1674	23.99 J	
1,2,4-Trichlorobenzene	120-82-1	181.5	42.3	0.0028	0.35 U		0.0028	0.35 U		0.0028	0.35 U		0.0028	0.35 U	
Dodecane	112-40-3	170.3	42.8	7.4128	974.79 *		7.4811	983.77 *		6.1062	802.98 *		8.01	1053.33 *	
Hexachloro-1,3-butadiene	87-68-3	260.8	44.1	0.0046	0.4 U		0.0046	0.4 U		0.0046	0.4 U		0.0046	0.4 U	
Tridecane	629-50-5	184.4	46.6	64.6283	7852.43 *		70.5953	8577.43 *		13.2589	1610.98 *		58.1983	7071.17 *	
Tetradecane	629-59-4	198.3	50.1	25.5558	2886.2 *		32.2946	3647.27 *		2.2779	257.26 *		33.6103	3795.86 *	

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.

* Denotes diluted value was reported for target compound in table.

Table G.6 SUMMA™ Canister Analysis Results for All Target Analytes from Tank TY-103 Riser 18 Bottom Level Sampled on 11/22/96

Target Analytes	CAS	MW	Ret Time	S6117-b31.345 ISVS			S6117-b32.346 ISVS			S6117-b33.347 ISVS			S6117-b30.344 ISVS			S6117-b30.344 ISVS Rep		
				(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag
Dichlorodifluoromethane	75-71-8	120.9	4.6	0.0028	0.52 U		0.0035	0.64 J		0.0036	0.67 J		0.0039	0.73 J		0.0028	0.52 U	
Chloromethane	74-87-3	50.5	4.9	0.0024	1.06 U		0.0017	0.76 J		0.0021	0.94 J		0.0024	1.06 J		0.0024	1.06 U	
1,2-dichloro-1,1,2,2-tetrafluoroethane	76-14-2	170.9	5.1	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	32.0	5.2	0.8615	602.3 Y		0.8248	576.66 Y		0.8579	599.77 Y		0.7381	516.01 Y		0.8769	613.08 Y	
Vinyl Chloride	75-01-4	62.5	5.4	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	
1,3-Butadiene	106-99-0	54.0	5.7	<0.083	<34 Y		<0.083	<34 Y		<0.083	<34 Y		<0.083	<34 Y		<0.083	<34 Y	
Butane	106-97-8	58.1	5.8	0.1185	45.68		0.1156	44.56		0.1157	44.58		0.1198	46.18		0.1191	45.89	
Bromomethane	74-83-9	94.9	6.3	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	64.5	6.7	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	46.0	6.8	0.128	62.34 Y		0.1206	58.7 Y		0.1313	63.94 Y		0.1216	59.22 Y		0.1198	58.3 Y	
Acetonitrile	75-05-8	41.1	7.3	0.1364	74.44		0.1374	75		0.1417	77.3		0.1343	73.27		0.1313	71.62	
Acetone	67-64-1	58.1	7.8	0.3649	140.72		0.37	142.69		0.3802	146.65		0.367	141.54		0.3535	136.35	
Trichlorofluoromethane	75-69-4	137.4	8.2	0.7939	129.45		0.7732	126.07		0.7929	129.29		0.8065	131.51		0.7666	125	
Pentane	109-66-0	72.2	8.9	0.0423	13.15		0.042	13.03		0.0431	13.39		0.0431	13.38		0.0413	12.83	
1,1-Dichloroethene	75-35-4	96.9	9.4	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	84.9	9.6	0.0197	5.19 J		0.0191	5.03 J		0.0199	5.24 J		0.0193	5.09 J		0.0194	5.11 J	
1,1,2-trichloro-1,1,2,2-tetrafluoroethane	76-13-1	187.4	10.1	0.0671	8.02		0.0562	6.71		0.0563	6.73		0.063	7.53		0.0607	7.26	
Propanenitrile	107-12-0	55.1	10.8	0.04	16.28		0.0398	16.21		0.0416	16.92		0.039	15.86		0.0384	15.63	
Propanol	71-23-8	60.1	10.8	0.0831	30.98		0.0802	29.89		0.0863	32.16		0.0832	30.99		0.0784	29.23	
1,1-Dichloroethane	75-34-3	99.0	11.7	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	72.1	12.4	0.062	19.27		0.055	17.09		0.058	18.03		0.0577	17.92		0.0555	17.24	
cis-1,2-Dichloroethene	156-59-2	96.9	13.3	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	86.2	13.6	0.029	7.53 J		0.0287	7.45 J		0.0303	7.87 J		0.0296	7.71 J		0.0291	7.56 J	
Chloroform	67-66-3	119.4	13.8	0.0026	0.49 U		0.0052	0.97 J		0.0053	1 J		0.0052	0.98 J		0.0026	0.49 U	
Tetrahydrofuran	109-99-9	72.1	14.5	0.0428	13.3		0.043	13.35		0.0445	13.83		0.0428	13.31		0.0414	12.86	
1,2-Dichloroethane	107-06-2	99.0	15.2	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	15.7	0.0032	0.54 U		0.0027	0.45 J		0.0032	0.54 U		0.0029	0.48 J		0.0032	0.54 U	
Butanenitrile	109-74-0	69.1	15.7	0.0034	1.1 U		0.0408	13.23		0.0433	14.05		0.0434	14.06		0.0034	1.1 U	
1-Butanol	71-36-3	74.1	16.2	0.8842	267.22		0.8729	263.81		0.9596	290		0.9271	280.19		0.8882	268.42	
Benzene	71-43-2	78.1	16.6	0.0016	0.46 U		0.0024	0.69 J		0.0025	0.73 J		0.0024	0.68 J		0.0016	0.46 U	
Carbon Tetrachloride	56-23-5	153.8	16.9	0.0679	9.89		0.0662	9.64		0.069	10.05		0.0693	10.1		0.0688	10.02	
Cyclohexane	110-82-7	84.2	17.2	0.0036	0.96 U		0.0047	1.25 J		0.0035	0.93 J		0.004	1.06 J		0.0036	0.96 U	
1,2-Dichloropropane	78-87-5	113.0	18.2	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	131.4	18.7	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	19.2	0.0233	5.21		0.0235	5.26		0.025	5.6		0.0241	5.39		0.0238	5.31	
cis-1,3-Dichloropropene	10061-01-5	111.0	20.4	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	100.2	20.4	0.0034	0.76 U		0.0026	0.58 J		0.0028	0.62 J		0.0027	0.61 J		0.0034	0.76 U	
Pyridine	110-86-1	79.1	20.5	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	111.0	21.4	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	83.1	21.5	0.0144	3.89 J		0.0144	3.89 J		0.0148	4 J		0.0145	3.91 J		0.0141	3.79 J	
1,1,2-Trichloroethane	79-00-5	133.4	21.9	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	92.1	22.5	0.0516	12.55		0.0505	12.28		0.0527	12.82		0.052	12.64		0.0518	12.59	
1,2-Dibromoethane	106-93-4	187.9	24.0	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	114.2	24.6	0.0024	0.47 U		0.0133	2.61 J		0.0144	2.82 J		0.014	2.74 J		0.0024	0.47 U	
Tetrachloroethylene	127-18-4	165.8	25.1	0.0605	8.18		0.0622	8.4		0.0651	8.79		0.0617	8.34		0.0623	8.42	

Table G.6 (Cont'd) SUMMA™ Canister Analysis Results for All Target Analytes from Tank TY-103 Riser 18 Bottom Level Sampled on 11/22/96

Target Analytes	CAS	MW	Ret Time	S6117-b31.345 ISVS			S6117-b32.346 ISVS			S6117-b33.347 ISVS			S6117-b30.344 ISVS			S6117-b30.344 ISVS Rep		
				(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag
Chlorobenzene	108-90-7	112.6	26.7	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	97.1	27.0	0.0306	7.06 J		0.0295	6.81 J		0.0316	7.29 J		0.0298	6.88 J		0.0313	7.21 J	
Ethylbenzene	100-41-4	106.2	27.6	0.0079	1.67 J		0.0033	0.69 J		0.0036	0.76 J		0.0035	0.74 J		0.0079	1.67 J	
p/m-Xylene	106-42-3	106.2	28.0	0.013	2.74 U		0.0109	2.3 J		0.0113	2.37 J		0.0104	2.2 J		0.013	2.74 U	
Cyclohexanone	108-94-1	98.1	28.4	0.0058	1.32 U		0.02	4.56 J		0.0189	4.3 J		0.0058	1.32 U		0.0058	1.32 U	
Styrene	100-42-5	104.2	28.9	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	167.9	29.2	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	106.2	29.2	0.008	1.7 J		0.0078	1.66 J		0.0085	1.79 J		0.0083	1.75 J		0.0084	1.77 J	
Nonane	111-84-2	128.3	29.7	0.0016	0.28 U		0.0076	1.32 J		0.0081	1.41 J		0.0016	0.28 U		0.0016	0.28 U	
1-Ethyl-2-Methyl-Benzene	611-14-3	120.2	32.6	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	120.2	32.9	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	120.2	34.1	0.0026	0.48 U		0.0026	0.48 U		0.0025	0.46 J		0.0026	0.48 U		0.0026	0.48 U	
Decane	124-18-5	142.3	34.4	0.0386	6.08		0.0399	6.29		0.0409	6.43		0.0382	6.01		0.0388	6.11	
1,3-Dichlorobenzene	541-73-1	147.0	34.6	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	147.0	34.8	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	147.0	36.0	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	156.3	38.7	0.1556	22.3 J		0.1658	23.76 J		0.1699	24.34 J		0.1752	25.11 J		0.1533	21.96 J	
1,2,4-Trichlorobenzene	120-82-1	181.5	42.2	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	170.3	42.7	7.5296	990.15 *		7.8719	1035.17 *		7.7014	1012.74 *		8.0311	1056.11 *		7.8006	1025.79 *	
Hexachloro-1,3-butadiene	87-68-3	260.8	44.0	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	184.4	46.5	39.7101	4824.83 *		56.6472	6882.72 *		58.227	7074.67 *		56.9591	6920.61 *		57.2992	6961.93 *	
Tetradecane	629-59-4	198.3	50.0	7.6396	862.8 *		31.0757	3509.61 *		35.417	3999.9 *		38.7143	4372.29 *		40.3726	4559.58 *	

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.

* Denotes diluted value was reported for target compound in table.

Appendix H

Tank Vapor Characterization:

Target Analytes Measured

for Triple Sorbent Traps

Table II.1 Triple Sorbent Trap Analysis Results for All Target Analytes from Tank TY-103 Riser 8 Top Level Sampled on 11/22/96

Target Analytes	CAS	MW	Ret Time	S6116-144 1132 ISVS			S6116-142 1160 ISVS			S6116-142 1160 ISVS REP			S6116-145 1157 ISVS			S6116-143 1152 ISVS			S6116-143 1152 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
Dichlorodifluoromethane	75-71-8	120.9	7.9	0.0046	0.86 U		0.0045	0.84 U		0.0045	0.84 U		0.0046	0.85 U		0.0046	0.85 U		0.0046	0.85 U	
Chloromethane	74-87-3	50.5	8.9	0.0034	1.52 U		0.0034	1.49 U		0.0034	1.49 U		0.0034	1.51 U		0.0034	1.5 U		0.0034	1.5 U	
1,2-dichloro-1,1,2,2-tetrafluoroethane	76-14-2	170.9	9.6	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		0.0034	0.44 U	
Methanol	67-56-1	32.0	10.0	0.9427	659.06 Y,S		0.8078	564.76 Y,S		0.7601	531.44 Y,S		3.0061	2101.67 Y,S		1.0601	741.12 Y,S		1.0092	705.57 Y,S	
Vinyl Chloride	75-01-4	62.5	10.0	0.0033	1.17 U		0.0032	1.14 U		0.0032	1.14 U		0.0032	1.16 U		0.0032	1.15 U		0.0032	1.15 U	
1,3-Butadiene	106-99-0	54.0	10.6	<0.208	<86 Y		<0.208	<86 Y		<0.208	<86 Y		<0.208	<86 Y		<0.208	<86 Y		<0.208	<86 Y	
Butane	106-97-8	58.1	10.8	0.0856	32.96		0.0822	31.68		0.0784	30.21		0.1453	55.97		0.0777	29.95		0.0773	29.79	
Chloroethane	75-00-3	64.5	12.1	0.0045	1.55 U		0.0044	1.51 U		0.0044	1.51 U		0.0044	1.54 U		0.0044	1.53 U		0.0044	1.53 U	
Ethanol	64-17-5	46.1	12.6	<0.275	<133 Y		<0.275	<133 Y		<0.275	<133 Y		<0.275	<133 Y		<0.275	<133 Y		<0.275	<133 Y	
Acetonitrile	75-05-8	41.1	13.0	0.0891	48.62		0.0761	41.55		0.0729	39.77		0.141	76.95		0.1032	56.29		0.1004	54.78	
Acetone	67-64-1	58.1	13.7	0.0782	30.16 J		0.0664	25.62 J		0.0598	23.06 J		0.0853	32.89		0.1192	45.96		0.1111	42.83	
Trichlorofluoromethane	75-69-4	137.4	14.2	0.8097	132.03 S		0.6946	113.26 S		0.6847	111.65 S		2.1982	358.45 S		0.6654	108.5 S		0.6594	107.53 S	
Pentane	109-66-0	72.0	14.9	0.0478	14.88		0.0422	13.12		0.0402	12.5		0.0435	13.53		0.0415	12.91		0.0421	13.11	
1,1-Dichloroethene	75-35-4	96.9	15.5	0.0022	0.52 U		0.0022	0.5 U		0.0022	0.5 U		0.0022	0.51 U		0.0022	0.51 U		0.0022	0.51 U	
Methylene Chloride	75-09-2	84.9	15.8	0.114	30.08 J,S,B		0.0963	25.4 J,S,B		0.0949	25.04 J,S,B		0.5237	138.13 S		0.0891	23.5 J,S,B		0.0907	23.92 J,S,B	
1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	187.4	16.3	0.0777	9.28 S,B		0.0726	8.68 S		0.0722	8.63 S		0.0794	9.49 S		0.0914	10.93 S		0.09	10.76 S	
Propanenitrile	107-12-0	55.1	17.0	0.0336	13.67		0.029	11.79		0.0263	10.7		0.0362	14.72		0.0463	18.83		0.0449	18.25	
Propanol	71-23-8	60.1	17.1	0.0858	32		0.0619	23.05		0.056	20.86 J		0.059	22		0.0735	27.41		0.0736	27.44	
1,1-Dichloroethane	75-34-3	99.0	18.0	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	72.1	18.6	0.0642	19.95 S		0.0253	7.85 S		0.0224	6.96 J,S		0.0453	14.08 S		0.0994	30.88 S		0.0871	27.04 S	
cis-1,2-Dichloroethene	156-59-2	96.9	19.5	0.0027	0.63 U		0.0027	0.61 U		0.0027	0.61 U		0.0027	0.62 U		0.0027	0.62 U		0.0027	0.62 U	
Hexane	110-54-3	86.2	19.9	0.1339	34.79 S		0.0776	20.16 S		0.0743	19.32 S		0.1892	49.18 S		0.0892	23.17 S		0.0891	23.17 S	
Chloroform	67-66-3	119.4	20.0	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		0.0031	0.57 U	
Tetrahydrofuran	109-99-9	72.1	20.8	0.0539	16.75		0.0473	14.69		0.045	13.99		0.0478	14.86		0.0482	14.98		0.0455	14.13	
1,2-Dichloroethane	107-06-2	99.0	21.4	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		0.0012	0.27 U	
Butanenitrile	109-74-0	69.1	21.9	0.0628	20.37		0.0509	16.5		0.0473	15.34		0.0512	16.59		0.0546	17.69		0.0515	16.69	
1,1,1-Trichloroethane	71-55-6	133.4	21.9	0.0107	1.79 J		0.0111	1.86 J		0.0099	1.66 J		0.0143	2.4 J		0.0058	0.97 J		0.0053	0.9 J	
1-Butanol	71-36-3	74.0	22.3	0.8105	245.35		0.6553	198.37		0.4798	145.25		0.5482	165.94		0.6648	201.23		0.4657	140.96	
Benzene	71-43-2	78.1	22.8	0.0097	2.77 J		0.0096	2.76 J		0.0119	3.41 J		0.0098	2.8 J		0.0083	2.39 J		0.0111	3.18 J	
Carbon Tetrachloride	56-23-5	153.8	23.1	0.0615	8.96		0.0478	6.97		0.0435	6.33		0.0526	7.66		0.061	8.88		0.0569	8.29	
Cyclohexane	110-82-7	84.2	23.3	0.0697	18.56 S		0.059	15.71 S		0.0702	18.68 S		0.0793	21.1 S		0.0813	21.65 S		0.0681	18.13 S	
1,2-Dichloropropane	78-87-5	113.0	24.3	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		0.002	0.4 U	
Trichloroethene	79-01-6	131.4	24.7	0.0039	0.67 U		0.0038	0.65 U		0.0038	0.65 U		0.0039	0.66 U		0.0039	0.66 U		0.0039	0.66 U	
Heptane	142-82-5	100.2	25.2	0.0951	21.26 S		0.0393	8.79 S		0.0387	8.65 S		0.0734	16.42 S		0.0558	12.47 S		0.0542	12.11 S	
4-Methyl-2-Pentanone	108-10-1	100.2	26.3	0.017	3.81 J		0.0182	4.07 J		0.0153	3.42 J		0.0201	4.49 J		0.0086	1.93 J		0.0119	2.65 J	
cis-1,3-Dichloropropene	10061-01-5	111.0	26.4	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		0.0013	0.27 U	
Pyridine	110-86-1	79.1	26.5	0.0232	6.57 U		0.0227	6.43 U		0.0227	6.43 U		0.0231	6.54 U		0.023	6.51 U		0.023	6.51 U	
trans-1,3-Dichloropropene	10061-02-6	111.0	27.4	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		0.0029	0.58 U	
Pentanenitrile	110-59-8	83.2	27.4	0.0217	5.84		0.0165	4.44		0.0161	4.33		0.0145	3.91		0.0175	4.72		0.0167	4.51	
1,1,2-Trichloroethane	79-00-5	133.4	27.8	0.0116	1.95 J		0.0097	1.63 J		0.0094	1.58 J		0.0034	0.57 J		0.0101	1.69 J		0.0097	1.63 J	
Toluene	108-88-3	92.1	28.5	0.8354	203.09 S		0.6261	152.21 S		0.6318	153.6 S		2.567	624.05 S		0.6198	150.68 S		0.6105	148.42 S	
1,2-Dibromoethane	106-93-4	187.9	30.0	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	114.0	30.4	0.036	7.08		0.0202	3.97 J		0.0197	3.87 J		0.0289	5.68		0.023	4.51 J		0.0229	4.49 J	
Tetrachloroethylene	127-18-4	165.8	31.0	0.0609	8.22		0.0306	4.13		0.029	3.91		0.0334	4.52		0.043	5.81		0.0408	5.52	
Chlorobenzene	108-90-7	112.6	32.6	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		0.0012	0.23 U	
Hexanenitrile	628-73-9	97.0	32.8	0.0214	4.93 J		0.0103	2.38 J		0.0085	1.96 J		0.0107	2.47 J		0.0128	2.95 J		0.0124	2.87 J	
Ethylbenzene	100-41-4	106.2	33.4	0.0398	8.39 S		0.0395	8.32 S		0.0389	8.21 S		0.0445	9.4 S		0.0211	4.45 S		0.0205	4.33 S	
p/m-Xylene	106-42-3	106.2	33.9	0.1293	27.29 S		0.1346	28.41 S		0.134	28.27 S		0.1418	29.91 S		0.0759	16.02 S		0.0756	15.94 S	
Cyclohexanone	108-94-1	98.1	34.3	0.0136	3.1 U		0.0133	3.04 U		0.0133	3.04 U		0.0135	3.08 U		0.0134	3.06 U		0.0134	3.06 U	

Table H.1 (Cont'd) Triple Sorbent Trap Analysis Results for All Target Analytes from Tank TY-103 Riser 8 Top Level Sampled on 11/22/96

Target Analytes	CAS	MW	Ret Time	S6116-t44 1132 ISVS			S6116-t42 1160 ISVS			S6116-t42 1160 ISVS REP			S6116-t45 1157 ISVS			S6116-t43 1152 ISVS			S6116-t43 1152 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
Styrene	100-42-5	104.2	34.8	0.0275	5.92 S		0.0298	6.41 S		0.0295	6.35 S		0.0294	6.32 S		0.0162	3.48 J,S		0.0149	3.21 J,S	
1,1,2,2-Tetrachloroethane	79-34-5	167.9	35.0	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		0.0062	0.83 U	
o-Xylene	95-47-6	106.2	35.1	0.0659	13.9 S		0.062	13.08 S		0.0637	13.44 S		0.067	14.13 S		0.0339	7.15 S		0.0334	7.06 S	
Nonane	111-84-2	128.0	35.4	0.0264	4.61		0.0203	3.55		0.0202	3.54		0.0244	4.27		0.0161	2.81		0.0161	2.81	
1-Ethyl-2-methyl benzene	611-14-3	120.2	38.4	0.0046	0.86 J		0.004	0.75 J		0.0078	1.46 J		0.0044	0.81 J		0.0032	0.59 J		0.006	1.12 J	
1,3,5-Trimethylbenzene	108-67-8	120.2	38.7	0.0049	0.92 J		0.0046	0.87 J		0.0046	0.85 J		0.0048	0.89 J		0.0038	0.72 J		0.0036	0.67 J	
1,2,4-Trimethylbenzene	95-63-6	120.2	39.9	0.0138	2.58 J		0.012	2.24 J		0.0119	2.21 J		0.0125	2.33 J		0.0101	1.88 J		0.0096	1.78 J	
Decane	124-18-5	142.3	40.1	0.0558	8.78		0.039	6.14		0.0381	6		0.0379	5.97		0.0336	5.29		0.0361	5.68	
1,3-Dichlorobenzene	541-73-1	147.0	40.5	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		0.0034	0.52 U	
1,4-Dichlorobenzene	106-46-7	147.0	40.7	0.0118	1.8 J		0.0114	1.73 J		0.0112	1.71 J		0.0101	1.54 J		0.0063	0.96 J		0.0062	0.94 J	
1,2-Dichlorobenzene	95-50-1	147.0	41.8	0.0051	0.78 U		0.005	0.76 U		0.005	0.76 U		0.0051	0.77 U		0.0051	0.77 U		0.0051	0.77 U	
Undecane	1120-21-4	156.0	44.4	0.0944	13.56		0.0315	4.53 J		0.031	4.45 J		0.0342	4.91 J		0.0435	6.25 J		0.0429	6.16 J	
1,2,4-Trichlorobenzene	120-82-1	181.5	48.1	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		0.0167	2.06 U	
Dodecane	112-40-3	170.0	48.5	2.2835	300.88		0.4735	62.39		0.4522	59.58		0.5401	71.17		0.8755	115.35		0.8777	115.65	
Hexachloro-1,3-butadiene	87-68-3	260.8	49.9	0.0223	1.92 U		0.0218	1.87 U		0.0218	1.87 U		0.0222	1.91 U		0.022	1.89 U		0.022	1.89 U	
Tridecane	629-50-5	184.0	52.2	3.9728	483.65 E		1.2713	154.76		1.3002	158.29		1.4127	171.98		2.0706	252.07		2.376	289.25	
Tetradecane	629-59-4	198.0	55.7	3.492	395.05 E		0.9394	106.28 B		0.9359	105.87 B		1.0537	119.21		2.0133	227.77		2.1838	247.86	
Tributyl Phosphate	126-73-8	266.0	63.1	<0.0108	<0.91 Z		<0.0105	<0.88 Z		<0.0105	<0.88 Z		<0.0107	<0.9 Z		<0.0106	<0.89 Z		<0.0106	<0.89 Z	

B Compound identified in associated laboratory blank

E Target compound exceeds upper quantification limit (UQL).

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 TY-103 Riser 8 Middle Level Sampled on 11/22/96

Target Analytes	CAS	MW	Ret Time	S6116-m29.1120 ISVS			S6116-m48.1199 ISVS			S6116-m28.1197 ISVS			S6116-m49.1126 ISVS			S6116-m49.1126 ISVS REP		
				(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag
Dichlorodifluoromethane	75-71-8	120.9	7.9	0.0044	0.81 U		0.0044	0.82 U		0.0045	0.83 U		0.0044	0.81 U		0.0044	0.81 U	
Chloromethane	74-87-3	50.5	8.9	0.0033	1.44 U		0.0033	1.46 U		0.0033	1.47 U		0.0033	1.44 U		0.0033	1.44 U	
1,2-dichloro1,1,2,2-tetrafluoroethane	76-14-2	170.9	9.6	0.0033	0.43 U		0.0033	0.43 U		0.0033	0.44 U		0.0033	0.43 U		0.0033	0.43 U	
Methanol	67-56-1	32.0	10.0	0.7709	538.94 Y,S		0.9593	670.66 Y,S		1.1209	783.68 Y,S		2.7812	1944.39 Y,S		2.6283	1837.49 Y,S	
Vinyl Chloride	75-01-4	62.5	10.0	0.0031	1.11 U		0.0031	1.12 U		0.0032	1.13 U		0.0031	1.11 U		0.0031	1.11 U	
1,3-Butadiene	106-99-0	54.0	10.6	<0.208	<86 Y		<0.208	<86 Y		<0.208	<86 Y		<0.208	<86 Y		<0.208	<86 Y	
Butane	106-97-8	58.1	10.8	0.0769	29.64		0.0873	33.65		0.0715	27.53		0.1523	58.7		0.149	57.39	
Chloroethane	75-00-3	64.5	12.1	0.0042	1.47 U		0.0043	1.48 U		0.0043	1.5 U		0.0042	1.47 U		0.0042	1.47 U	
Ethanol	64-17-5	46.1	12.6	<0.275	<133 Y		<0.275	<133 Y		<0.275	<133 Y		<0.275	<133 Y		<0.275	<133 Y	
Acetonitrile	75-05-8	41.1	13.0	0.0555	30.28		0.1019	55.61		0.0938	51.18		0.1121	61.18		0.1081	59.01	
Acetone	67-64-1	58.1	13.7	0.1025	39.51		0.0674	25.99 J		0.0993	38.31		0.0814	31.39		0.0729	28.1 J	
Trichlorofluoromethane	75-69-4	137.4	14.2	0.6254	101.98 S		0.6957	113.45 S		0.5692	92.81 S		2.5567	416.9 S		2.5414	414.41 S	
Pentane	109-66-0	72.0	14.9	0.0397	12.34		0.0463	14.42		0.0378	11.76		0.0433	13.48		0.0425	13.21	
1,1-Dichloroethene	75-35-4	96.9	15.5	0.0021	0.49 U		0.0021	0.49 U		0.0022	0.5 U		0.0021	0.49 U		0.0021	0.49 U	
Methylene Chloride	75-09-2	84.9	15.8	0.0772	20.35 J,S,B		0.1048	27.64 J,S,B		0.0844	22.25 J,S,B		0.5147	135.74 S		0.5005	132 S	
1,1,2-trichloro1,2,2-trifluoroethane	76-13-1	187.4	16.3	0.0884	10.57 S,B		0.0865	10.33 S		0.0762	9.11 S		0.0697	8.34 S		0.07	8.36 S	
Propanenitrile	107-12-0	55.1	17.0	0.0352	14.33		0.0373	15.17		0.038	15.45		0.0345	14.02		0.0344	14	
Propanol	71-23-8	60.1	17.1	0.0473	17.64 J		0.0664	24.74		0.0559	20.82 J		0.0675	25.16		0.0661	24.62	
1,1-Dichloroethane	75-34-3	99.0	18.0	0.0014	0.33 U		0.0015	0.33 U		0.0015	0.33 U		0.0014	0.33 U		0.0014	0.33 U	
2-Butanone	78-93-3	72.1	18.6	0.0663	20.6 S		0.0373	11.59 S		0.0444	13.8 S		0.0608	18.9 S		0.0532	16.54 S	
cis-1,2-Dichloroethene	156-59-2	96.9	19.5	0.0026	0.6 U		0.0026	0.6 U		0.0026	0.61 U		0.0026	0.6 U		0.0026	0.6 U	
Hexane	110-54-3	86.2	19.9	0.109	28.33 S		0.0918	23.85 S		0.0806	20.95 S		0.2016	52.4 S		0.1986	51.61 S	
Chloroform	67-66-3	119.4	20.0	0.0054	1.02 J		0.003	0.56 U		0.0031	0.58 J,B		0.0029	0.55 U		0.0029	0.55 U	
Tetrahydrofuran	109-99-9	72.1	20.8	0.0419	13.02		0.0503	15.62		0.0435	13.51		0.0511	15.88		0.0505	15.68	
1,2-Dichloroethane	107-06-2	99.0	21.4	0.0011	0.26 U		0.0011	0.26 U		0.0012	0.26 U		0.0011	0.26 U		0.0011	0.26 U	
Butanenitrile	109-74-0	69.1	21.9	0.0516	16.73		0.0565	18.31		0.0442	14.32		0.0535	17.34		0.0523	16.95	
1,1,1-Trichloroethane	71-55-6	133.4	21.9	0.0056	0.94 J		0.0055	0.92 J		0.0107	1.8 J		0.0112	1.88 J		0.0109	1.83 J	
1-Butanol	71-36-3	74.0	22.3	0.6166	186.65		0.7183	217.42		0.5143	155.69		0.6339	191.87		0.5589	169.17	
Benzene	71-43-2	78.1	22.8	0.0105	3.02 J		0.0078	2.24 J		0.0078	2.24 J		0.0102	2.91 J		0.0138	3.97 J	
Carbon Tetrachloride	56-23-5	153.8	23.1	0.0569	8.29		0.0584	8.51		0.0493	7.18		0.053	7.72		0.0498	7.26	
Cyclohexane	110-82-7	84.2	23.3	0.0891	23.71 S		0.016	4.26 J,S		0.0682	18.16 S		0.0536	14.27 S		0.0545	14.52 S	
1,2-Dichloropropane	78-87-5	113.0	24.3	0.002	0.39 U		0.002	0.39 U		0.002	0.4 U		0.002	0.39 U		0.002	0.39 U	
Trichloroethene	79-01-6	131.4	24.7	0.0037	0.63 U		0.0037	0.64 U		0.0038	0.65 U		0.0148	2.52 J		0.0154	2.62 J	
Heptane	142-82-5	100.2	25.2	0.0872	19.5 S		0.0436	9.76 S		0.0558	12.47 S		0.0804	17.97 S		0.0803	17.95 S	
4-Methyl-2-Pentanone	108-10-1	100.2	26.3	0.0138	3.08 J		0.0143	3.21 J		0.0214	4.78 J		0.0145	3.24 J		0.0159	3.56 J	
cis-1,3-Dichloropropene	10061-01-5	111.0	26.4	0.0013	0.26 U		0.0013	0.26 U		0.0013	0.27 U		0.0013	0.26 U		0.0013	0.26 U	
Pyridine	110-86-1	79.1	26.5	0.022	6.23 U		0.0222	6.29 U		0.0225	6.37 U		0.022	6.23 U		0.022	6.23 U	
trans-1,3-Dichloropropene	10061-02-6	111.0	27.4	0.0027	0.55 U		0.0028	0.56 U		0.0028	0.56 U		0.0027	0.55 U		0.0027	0.55 U	
Pentanenitrile	110-59-8	83.2	27.4	0.0167	4.5		0.019	5.11		0.0141	3.8		0.0189	5.08		0.0195	5.24	
1,1,2-Trichloroethane	79-00-5	133.4	27.8	0.0016	0.27 U		0.0016	0.27 U		0.0016	0.27 U		0.0016	0.27 U		0.0016	0.27 U	
Toluene	108-88-3	92.1	28.5	0.6838	166.23 S		0.588	142.94 S		0.5623	136.7 S		1.9761	480.4 S		2.0266	492.69 S	
1,2-Dibromoethane	106-93-4	187.9	30.0	0.0024	0.29 U		0.0024	0.29 U		0.0025	0.29 U		0.0024	0.29 U		0.0024	0.29 U	

Table H.2 (Cont'd) Triple Sorbent Trap Analysis Results for All Target Analytes from Tank TY-103 Riser 8 Middle Level Sampled on 11/22/96

Target Analytes	CAS	MW	Ret Time	S6116-m29.1120 ISVS			S6116-m48.1199 ISVS			S6116-m28.1197 ISVS			S6116-m49.1126 ISVS			S6116-m49.1126 ISVS REP		
				(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag
Octane	111-65-9	114.0	30.4	0.0206	4.05 J		0.0228	4.48 J		0.0199	3.92 J		0.0343	6.74		0.0354	6.95	
Tetrachloroethylene	127-18-4	165.8	31.0	0.0369	4.98		0.0458	6.19		0.0278	3.76		0.0586	7.92		0.0578	7.8	
Chlorobenzene	108-90-7	112.6	32.6	0.0011	0.22 U		0.0011	0.23 U		0.0012	0.23 U		0.0011	0.22 U		0.0011	0.22 U	
Hexanenitrile	628-73-9	97.0	32.8	0.0122	2.82 J		0.0159	3.66 J		0.0095	2.2 J		0.0182	4.2 J		0.0183	4.22 J	
Ethylbenzene	100-41-4	106.2	33.4	0.0183	3.86 S		0.0197	4.16 S		0.0355	7.48 S		0.0312	6.58 S		0.0313	6.59 S	
p/m-Xylene	106-42-3	106.2	33.9	0.0623	13.15 S		0.0671	14.16 S		0.1131	23.85 S		0.0968	20.41 S		0.0978	20.63 S	
Cyclohexanone	108-94-1	98.1	34.3	0.0129	2.94 U		0.013	2.97 U		0.0132	3.01 U		0.0129	2.94 U		0.0129	2.94 U	
Styrene	100-42-5	104.2	34.8	0.0133	2.86 J,S		0.0148	3.18 J,S		0.0239	5.15 S		0.0181	3.9 S		0.0178	3.84 S	
1,1,2,2-Tetrachloroethane	79-34-5	167.9	35.0	0.006	0.8 U		0.006	0.81 U		0.0061	0.81 U		0.006	0.8 U		0.006	0.8 U	
o-Xylene	95-47-6	106.2	35.1	0.0281	5.93 S		0.0319	6.73 S		0.0548	11.56 S		0.0481	10.15 S		0.0482	10.17 S	
Nonane	111-84-2	128.0	35.4	0.0137	2.41		0.0162	2.84		0.0173	3.02		0.0231	4.04		0.0238	4.16	
1-Ethyl-2-methyl benzene	611-14-3	120.2	38.4	0.0027	0.5 J		0.0034	0.63 J		0.0037	0.69 J		0.003	0.55 J		0.0035	0.65 J	
1,3,5-Trimethylbenzene	108-67-8	120.2	38.7	0.0031	0.57 J		0.0039	0.74 J		0.0047	0.87 J		0.0036	0.66 J		0.0044	0.82 J	
1,2,4-Trimethylbenzene	95-63-6	120.2	39.9	0.0082	1.53 J		0.0101	1.88 J		0.0111	2.07 J		0.0093	1.76 J		0.0107	2 J	
Decane	124-18-5	142.3	40.1	0.027	4.25 J		0.0377	5.94		0.0333	5.24		0.0375	5.9		0.0392	6.18	
1,3-Dichlorobenzene	541-73-1	147.0	40.5	0.0033	0.5 U		0.0033	0.5 U		0.0033	0.51 U		0.0033	0.5 U		0.0033	0.5 U	
1,4-Dichlorobenzene	106-46-7	147.0	40.7	0.0048	0.73 J		0.0063	0.96 J		0.0093	1.42 J		0.0057	0.87 J		0.0069	1.06 J	
1,2-Dichlorobenzene	95-50-1	147.0	41.8	0.0048	0.74 U		0.0049	0.75 U		0.005	0.75 U		0.0048	0.74 U		0.0048	0.74 U	
Undecane	1120-21-4	156.0	44.4	0.0329	4.72 J		0.065	9.34		0.0267	3.84 J		0.0858	12.33		0.0862	12.38	
1,2,4-Trichlorobenzene	120-82-1	181.5	48.1	0.016	1.98 U		0.0161	1.99 U		0.0163	2.01 U		0.016	1.98 U		0.016	1.98 U	
Dodecane	112-40-3	170.0	48.5	0.5951	78.42		1.7271	227.57		0.3083	40.63		2.2599	297.78		2.3136	304.85	
Hexachloro-1,3-butadiene	87-68-3	260.8	49.9	0.0211	1.81 U		0.0214	1.84 U		0.0216	1.86 U		0.0211	1.81 U		0.0211	1.81 U	
Tridecane	629-50-5	184.0	52.2	1.3758	167.49		4.8312	588.14 E		0.7561	92.05		4.3842	533.72 E		4.7212	574.76 E	
Tetradecane	629-59-4	198.0	55.7	1.0239	115.83 B		5.5093	623.28 E		0.6004	67.93		4.2326	478.84 E		4.5292	512.39 E	
Tributyl Phosphate	126-73-8	266.0	63.1	<0.0102	<0.86 Z		<0.0103	<0.87 Z		<0.0104	<0.88 Z		<0.0102	<0.86 Z		<0.0102	<0.86 Z	

B Compound identified in associated laboratory blank.

E Target compound exceeds upper quantification limit (UQL).

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 II.3 Triple Sorbent Trap Analysis Results for All Target Analytes from Tank TY-103 Riser 8 Bottom Level Sampled on 11/22/96

Target Analytes	CAS	MW	Ret Time	S6116-b35.1164 ISVS			S6116-b34.1191 ISVS			S6116-b34.1191 ISVS REP			S6116-b37.1139 ISVS			S6116-b36.1135 ISVS		
				(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag
Dichlorodifluoromethane	75-71-8	120.9	7.9	0.0045	0.84 U		0.0045	0.83 U		0.0045	0.83 U		0.0045	0.83 U		0.0045	0.84 U	
Chloromethane	74-87-3	50.5	8.9	0.0034	1.49 U		0.0033	1.48 U		0.0033	1.48 U		0.0033	1.48 U		0.0034	1.49 U	
1,2-dichloro-1,1,2,2-tetrafluoroethane	76-14-2	170.9	9.6	0.0034	0.44 U		0.0033	0.44 U		0.0033	0.44 U		0.0033	0.44 U		0.0034	0.44 U	
Methanol	67-56-1	32.0	10.0	1.5535	1086.12 Y,S		4.2292	2956.71 E,Y,S		3.6585	2557.73 E,Y,S		1.2549	877.36 Y,S		0.5469	382.36 Y,S	
Vinyl Chloride	75-01-4	62.5	10.0	0.0032	1.14 U		0.0032	1.14 U		0.0032	1.14 U		0.0032	1.14 U		0.0032	1.14 U	
1,3-Butadiene	106-99-0	54.0	10.6	<0.275	<86 Y		<0.275	<86 Y		<0.275	<86 Y		<0.275	<86 Y		<0.275	<86 Y	
Butane	106-97-8	58.1	10.8	0.088	33.9		0.1961	75.55		0.182	70.12		0.0864	33.28		0.079	30.44	
Chloroethane	75-00-3	64.5	12.1	0.0044	1.51 U		0.0043	1.51 U		0.0043	1.51 U		0.0043	1.51 U		0.0044	1.51 U	
Ethanol	64-17-5	46.1	12.6	<0.275	<133 Y		<0.275	<133 Y		<0.275	<133 Y		<0.275	<133 Y		<0.275	<133 Y	
Acetonitrile	75-05-8	41.1	13.0	0.0948	51.72		0.1839	100.38		0.1702	92.86		0.1074	58.59		0.0659	35.97	
Acetone	67-64-1	58.1	13.7	0.1274	49.12		0.0945	36.44		0.0815	31.44		0.1396	53.83		0.0627	24.16 J	
Trichlorofluoromethane	75-69-4	137.4	14.2	1.0832	176.64 S		2.9413	479.62 S		2.8724	468.38 S		0.8691	141.73 S		0.6276	102.33 S	
Pentane	109-66-0	72.0	14.9	0.044	13.69		0.0482	15		0.0446	13.87		0.0464	14.43		0.0456	14.18	
1,1-Dichloroethene	75-35-4	96.9	15.5	0.0244	5.63		0.0113	2.62 J		0.0115	2.67 J		0.0019	0.44 J		0.0022	0.5 U	
Methylene Chloride	75-09-2	84.9	15.8	0.8235	217.18 S		0.837	220.76 S		0.7692	202.87 S		0.187	49.32 S,B		0.0708	18.68 J,S,B	
1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	187.4	16.3	0.0775	9.26 S,B		0.0669	8 S		0.0685	8.19 S		0.0738	8.82 S		0.0986	11.78 S	
Propanenitrile	107-12-0	55.1	17.0	0.0484	19.69		0.0401	16.3		0.0366	14.9		0.0464	18.86		0.0308	12.51	
Propanol	71-23-8	60.1	17.1	0.0896	33.4		0.0596	22.21		0.0632	23.54		0.0798	29.75		0.0704	26.23	
1,1-Dichloroethane	75-34-3	99.0	18.0	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	18.6	0.0793	24.65 S		0.0595	18.48 S		0.0532	16.52 S		0.1731	53.77 S		0.0351	10.91 S	
cis-1,2-Dichloroethene	156-59-2	96.9	19.5	0.0027	0.61 U		0.0026	0.61 U		0.0026	0.61 U		0.0026	0.61 U		0.0027	0.61 U	
Hexane	110-54-3	86.2	19.9	0.0951	24.71 S		0.2591	67.36 S		0.2487	64.65 S		0.1734	45.06 S		0.1	25.98 S	
Chloroform	67-66-3	119.4	20.0	0.0044	0.82 J,B		0.003	0.57 U		0.003	0.57 U		0.0067	1.26 J,B		0.003	0.57 U	
Tetrahydrofuran	109-99-9	72.1	20.8	0.0478	14.86		0.0484	15.04		0.0466	14.48		0.0497	15.45		0.0515	15.99 B	
1,2-Dichloroethane	107-06-2	99.0	21.4	0.0012	0.26 U		0.0012	0.26 U		0.0012	0.26 U		0.0012	0.26 U		0.0012	0.26 U	
Butanenitrile	109-74-0	69.1	21.9	0.0591	19.15		0.0594	19.24		0.0539	17.48		0.0645	20.92		0.0543	17.61	
1,1,1-Trichloroethane	71-55-6	133.4	21.9	0.0149	2.5 J		0.0128	2.15 J		0.0123	2.06 J		0.0106	1.79 J		0.0061	1.02 J	
1-Butanol	71-36-3	74.0	22.3	0.7299	220.95		0.6836	206.94		0.5818	176.1		0.699	211.6		0.5964	180.54	
Benzene	71-43-2	78.1	22.8	0.0109	3.13 J		0.0107	3.06 J		0.0129	3.69 J		0.0092	2.65 J		0.0089	2.56 J	
Carbon Tetrachloride	56-23-5	153.8	23.1	0.057	8.31		0.0541	7.88		0.0503	7.32		0.0645	9.4		0.0572	8.32	
Cyclohexane	110-82-7	84.2	23.3	0.0828	22.04 S		0.0876	23.31 S		0.104	27.69 S		0.0785	20.88 S		0.0956	25.44 S	
1,2-Dichloropropane	78-87-5	113.0	24.3	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	24.7	0.0245	4.18 J		0.024	4.1 J		0.0238	4.05 J		0.0056	0.95 J		0.0028	0.48 J	
Heptane	142-82-5	100.2	25.2	0.0682	15.24 S		0.0883	19.74 S		0.0868	19.4 S		0.132	29.51 S		0.0707	15.81 S	
4-Methyl-2-Pentanone	108-10-1	100.2	26.3	0.0253	5.65		0.0217	4.86		0.0171	3.83 J		0.0244	5.46		0.0151	3.38 J	
cis-1,3-Dichloropropene	10061-01-5	111.0	26.4	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	26.5	0.0227	6.43 U		0.0226	6.4 U		0.0226	6.4 U		0.0226	6.4 U		0.0227	6.43 U	
trans-1,3-Dichloropropene	10061-02-6	111.0	27.4	0.0028	0.57 U		0.0028	0.57 U		0.0028	0.57 U		0.0028	0.57 U		0.0028	0.57 U	
Pentanenitrile	110-59-8	83.2	27.4	0.0179	4.82		0.0193	5.21		0.0177	4.76		0.0214	5.77		0.018	4.86	
1,1,2-Trichloroethane	79-00-5	133.4	27.8	0.0107	1.8 J		0.0097	1.63 J		0.0096	1.61 J		0.0068	1.14 J		0.0091	1.33 J	
Toluene	108-88-3	92.1	28.5	2.0012	486.51 S		2.7063	657.92 E,S		2.8336	688.88 E,S		1.0592	257.5 S		0.6831	166.07 S	
1,2-Dibromoethane	106-93-4	187.9	30.0	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	114.0	30.4	0.028	5.51 J		0.0354	6.96		0.0368	7.22		0.0365	7.18		0.0237	4.65 J	
Tetrachloroethylene	127-18-4	165.8	31.0	0.0353	4.76		0.0511	6.9		0.052	7.03		0.0567	7.66		0.0433	5.85	
Chlorobenzene	108-90-7	112.6	32.6	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	97.0	32.8	0.0138	3.2 J		0.0184	4.26 J		0.0169	3.9 J		0.0185	4.26 J		0.0145	3.36 J	

H.5

Table II.3 (Cont'd) Triple Sorbent Trap Analysis Results for All Target Analytes from Tank TY-103 Riser 8 Bottom Level Sampled on 11/22/96

Target Analytes	CAS	MW	Ret Time	S6116-b35.1164 ISVS			S6116-b34.1191 ISVS			S6116-b34.1191 ISVS REP			S6116-b37.1139 ISVS			S6116-b36.1135 ISVS		
				(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag
Ethylbenzene	100-41-4	106.2	33.4	0.0374	7.89 S		0.0395	8.34 S		0.0392	8.26 S		0.0422	8.9 S		0.0206	4.34 S	
p/m-Xylene	106-42-3	106.2	33.9	0.1132	23.88 S		0.1226	25.86 S		0.1246	26.28 S		0.1397	29.47 S		0.0733	15.47 S	
Cyclohexanone	108-94-1	98.1	34.3	0.0133	3.04 U		0.0132	3.01 U		0.0132	3.01 U		0.0132	3.01 U		0.0133	3.04 U	
Styrene	100-42-5	104.2	34.8	0.0246	5.28 S		0.0253	5.44 S		0.0254	5.47 S		0.0288	6.2 S		0.0153	3.29 J,S	
1,1,2,2-Tetrachloroethane	79-34-5	167.9	35.0	0.0062	0.82 U		0.0061	0.82 U		0.0061	0.82 U		0.0061	0.82 U		0.0062	0.82 U	
o-Xylene	95-47-6	106.2	35.1	0.0553	11.67 S		0.0605	12.77 S		0.0614	12.96 S		0.0683	14.42 S		0.0341	7.2 S	
Nonane	111-84-2	128.0	35.4	0.0258	4.51		0.0288	5.04		0.0289	5.06		0.03	5.25		0.0164	2.87	
1-Ethyl-2-methyl benzene	611-14-3	120.2	38.4	0.0048	0.9 J		0.0045	0.84 J		0.008	1.49 J		0.0062	1.16 J		0.0032	0.6 J	
1,3,5-Trimethylbenzene	108-67-8	120.2	38.7	0.0049	0.92 J		0.0053	0.99 J		0.0053	0.99 J		0.007	1.31 J		0.0036	0.66 J	
1,2,4-Trimethylbenzene	95-63-6	120.2	39.9	0.0123	2.3 J		0.0135	2.52 J		0.0136	2.53 J		0.0169	3.14 J		0.0095	1.77 J	
Decane	124-18-5	142.3	40.1	0.041	6.45		0.0508	8		0.0495	7.79		0.0557	8.76		0.0344	5.42	
1,3-Dichlorobenzene	541-73-1	147.0	40.5	0.0034	0.51 U		0.0033	0.51 U		0.0033	0.51 U		0.0033	0.51 U		0.0034	0.51 U	
1,4-Dichlorobenzene	106-46-7	147.0	40.7	0.0096	1.47 J		0.0113	1.73 J		0.0108	1.65 J		0.0149	2.27 J		0.0056	0.85 J	
1,2-Dichlorobenzene	95-50-1	147.0	41.8	0.005	0.76 U		0.005	0.76 U		0.005	0.76 U		0.005	0.76 U		0.005	0.76 U	
Undecane	1120-21-4	156.0	44.4	0.0384	5.51 J		0.0802	11.51		0.0778	11.18		0.0653	9.38		0.046	6.6 J	
1,2,4-Trichlorobenzene	120-82-1	181.5	48.1	0.0165	2.04 U		0.0164	2.02 U		0.0164	2.02 U		0.0164	2.02 U		0.0165	2.04 U	
Dodecane	112-40-3	170.0	48.5	0.6658	87.73		2.1533	283.73		2.1419	282.23		1.3267	174.81		1.0579	139.39	
Hexachloro-1,3-butadiene	87-68-3	260.8	49.9	0.0218	1.87 U		0.0217	1.86 U		0.0217	1.86 U		0.0217	1.86 U		0.0218	1.87 U	
Tridecane	629-50-5	184.0	52.2	1.6528	201.21		5.4367	661.86 E		6.2315	758.62 E		2.7562	335.54		2.9661	361.09	
Tetradecane	629-59-4	198.0	55.7	1.2772	144.49 B		5.9743	675.88 E		6.6727	754.89 E		2.1468	242.87		3.0868	349.21 E	
Tributyl Phosphate	126-73-8	266.0	63.1	<0.0105	<0.88 Z		<0.0105	<0.88 Z		<0.0105	<0.88 Z		<0.0105	<0.88 Z		<0.0105	<0.88 Z	

B Compound identified in associated laboratory blank

E Target compound exceeds upper quantification limit (UQL).

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 BY-103 Riser 18 Top Level Sampled on 11/22/96

Target Analytes	CAS	MW	Ret Time	S6117-142.1168 ISVS			S6117-142.1168 ISVS REP			S6117-144.1121 ISVS			S6117-143.1137 ISVS			S6117-145.1211 ISVS		
				(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag
Dichlorodifluoromethane	75-71-8	120.9	7.9	0.0045	0.84 U		0.0045	0.84 U		0.0045	0.83 U		0.0043	0.79 U		0.0045	0.83 U	
Chloromethane	74-87-3	50.5	8.9	0.0034	1.5 U		0.0034	1.5 U		0.0033	1.47 U		0.0032	1.41 U		0.0033	1.48 U	
1,2-dichloro-1,1,2,2-tetrafluoroethane	76-14-2	170.9	9.6	0.0034	0.44 U		0.0034	0.44 U		0.0033	0.44 U		0.0032	0.42 U		0.0033	0.44 U	
Methanol	67-56-1	32.0	10.0	1.2364	864.42 Y,S		0.97	678.13 Y,S		1.4162	990.13 Y,S		0.663	463.51 Y,S		0.9423	658.8 Y,S	
Vinyl Chloride	75-01-4	62.5	10.0	0.0032	1.15 U		0.0032	1.15 U		0.0032	1.13 U		0.003	1.09 U		0.0032	1.14 U	
1,3-Butadiene	106-99-0	54.0	10.6	<0.208	<86 Y		<0.208	<86 Y		<0.208	<86 Y		<0.208	<86 Y		<0.208	<86 Y	
Butane	106-97-8	58.1	10.8	0.0915	35.24 S		0.0832	32.07 S		0.0788	30.38 S		0.0704	27.11 S		0.0833	32.11 S	
Chloroethane	75-00-3	64.5	12.1	0.0044	1.52 U		0.0044	1.52 U		0.0043	1.5 U		0.0041	1.44 U		0.0043	1.51 U	
Ethanol	64-17-5	46.1	12.6	<0.275	<133 Y		<0.275	<133 Y		<0.275	<133 Y		<0.275	<133 Y		<0.275	<133 Y	
Acetonitrile	75-05-8	41.1	13.0	0.1058	57.71		0.095	51.83		0.1022	55.76		0.0673	36.74		0.1107	60.4	
Acetone	67-64-1	58.1	13.7	0.1093	42.17		0.1082	41.72		0.1275	49.18		0.0656	25.29 J		0.0906	34.96	
Trichlorofluoromethane	75-69-4	137.4	14.2	0.6288	102.53 S		0.6215	101.34 S		0.7314	119.27 S		0.5818	94.88 S		0.6137	100.08 S	
Pentane	109-66-0	72.0	14.9	0.0448	13.94		0.0405	12.62		0.0439	13.67		0.0379	11.8		0.0436	13.56	
1,1-Dichloroethene	75-35-4	96.9	15.5	0.0022	0.51 U		0.0022	0.51 U		0.0022	0.5 U		0.0021	0.48 U		0.0022	0.5 U	
Methylene Chloride	75-09-2	84.9	15.8	0.0978	25.78 J,S,B		0.1036	27.33 J,S,B		0.0687	18.11 J,S,B		0.0446	11.77 J,S,B		0.0604	15.94 J,S,B	
1,1,2-trichloro-2,2,2-trifluoroethane	76-13-1	187.4	16.3	0.0813	9.71 S,B		0.0873	10.44 S,B		0.0595	7.11 S		0.0803	9.6 S		0.0661	7.91 S	
Propanenitrile	107-12-0	55.1	17.0	0.0361	14.67		0.033	13.42		0.0377	15.35		0.0293	11.93		0.0342	13.91	
Propanol	71-23-8	60.1	17.1	0.0824	30.7		0.0729	27.16		0.0648	24.15		0.058	21.61		0.0753	28.08	
1,1-Dichloroethane	75-34-3	99.0	18.0	0.0015	0.34 U		0.0015	0.34 U		0.0015	0.33 U		0.0014	0.32 U		0.0015	0.34 U	
2-Butanone	78-93-3	72.1	18.6	0.1282	39.82 S		0.1254	38.96 S		0.4888	151.85 S		0.1504	46.71 S		0.097	30.14 S	
cis-1,2-Dichloroethene	156-59-2	96.9	19.5	0.0027	0.62 U		0.0027	0.62 U		0.0026	0.61 U		0.0025	0.58 U		0.0026	0.61 U	
Hexane	110-54-3	86.2	19.9	0.2018	52.44 S		0.1919	49.88 S		0.3971	103.22 S		0.2513	65.31 S		0.1816	47.2 S	
Chloroform	67-66-3	119.4	20.0	0.003	0.57 U		0.003	0.57 U		0.0078	1.46 J,B		0.0029	0.54 U		0.003	0.57 U	
Tetrahydrofuran	109-99-9	72.1	20.8	0.0499	15.51		0.048	14.91		0.0431	13.39		0.0468	14.53		0.0481	14.96	
1,2-Dichloroethane	107-06-2	99.0	21.4	0.0012	0.27 U		0.0012	0.27 U		0.0012	0.26 U		0.0011	0.25 U		0.0012	0.26 U	
Butanenitrile	109-74-0	69.1	21.9	0.0591	19.15		0.0547	17.71		0.0676	21.92		0.0515	16.69		0.0545	17.66	
1,1,1-Trichloroethane	71-55-6	133.4	21.9	0.0111	1.87 J		0.011	1.85 J		0.01	1.68 J		0.0051	0.86 J		0.0106	1.79 J	
1-Butanol	71-36-3	74.0	22.3	0.7335	222.04		0.6466	195.73		0.6329	191.59		0.6475	196.01		0.6148	186.11	
Benzene	71-43-2	78.1	22.8	0.008	2.3 J		0.0102	2.91 J		0.0087	2.49 J		0.0104	2.99 J		0.007	2 J	
Carbon Tetrachloride	56-23-5	153.8	23.1	0.0551	8.03		0.0522	7.6		0.0627	9.13		0.0498	7.26		0.0531	7.73	
Cyclohexane	110-82-7	84.2	23.3	0.0863	22.98 S		0.0771	20.51 S		0.4716	125.52 S		0.2526	67.22 S		0.0735	19.56 S	
1,2-Dichloropropane	78-87-5	113.0	24.3	0.002	0.4 U		0.002	0.4 U		0.002	0.4 U		0.0019	0.38 U		0.002	0.4 U	
Trichloroethene	79-01-6	131.4	24.7	0.0039	0.66 U		0.0039	0.66 U		0.0038	0.65 U		0.0036	0.62 U		0.0038	0.65 U	
Heptane	142-82-5	100.2	25.2	0.1292	28.88 S		0.1273	28.46 S		0.2306	51.55 S		0.1672	37.38 S		0.0978	21.85 S	
4-Methyl-2-Pentanone	108-10-1	100.2	26.3	0.0178	3.97 J		0.0165	3.69 J		0.0267	5.98		0.0093	2.09 J		0.0199	4.46 J	
cis-1,3-Dichloropropene	10061-01-5	111.0	26.4	0.0013	0.27 U		0.0013	0.27 U		0.0013	0.27 U		0.0013	0.25 U		0.0013	0.27 U	
Pyridine	110-86-1	79.1	26.5	0.0228	6.46 U		0.0228	6.46 U		0.0225	6.37 U		0.0216	6.12 U		0.0226	6.4 U	
trans-1,3-Dichloropropene	10061-02-6	111.0	27.4	0.0028	0.57 U		0.0028	0.57 U		0.0028	0.56 U		0.0027	0.54 U		0.0028	0.57 U	
Pentanenitrile	110-59-8	83.2	27.4	0.0177	4.76		0.0171	4.61		0.0192	5.18		0.0175	4.72		0.0165	4.44	
1,1,2-Trichloroethane	79-00-5	133.4	27.8	0.0017	0.28 U		0.0017	0.28 U		0.0016	0.27 U		0.0016	0.26 U		0.0016	0.28 U	
Toluene	108-88-3	92.1	28.5	1.3152	319.75 S		1.3674	332.42 S		1.2971	315.33 S		1.1854	288.19 S		0.7067	171.81 S	
1,2-Dibromoethane	106-93-4	187.9	30.0	0.0025	0.3 U		0.0025	0.3 U		0.0025	0.29 U		0.0024	0.28 U		0.0025	0.3 U	
Octane	111-65-9	114.0	30.4	0.0262	5.14 J		0.0274	5.37 J		0.0311	6.11		0.0227	4.46 J		0.024	4.72 J	
Tetrachloroethylene	127-18-4	165.8	31.0	0.0318	4.3		0.0349	4.72		0.0474	6.4		0.0402	5.43		0.0364	4.92	

Table II.4 (Cont'd) Triple Sorbent Trap Analysis Results for All Target Analytes from Tank BY-103 Riser 18 Top Level Sampled on 11/22/96

Target Analytes	CAS	MW	Ret Time	S6117-442.1168 ISVS			S6117-442.1168 ISVS REP			S6117-444.1121 ISVS			S6117-443.1137 ISVS			S6117-445.1211 ISVS		
				(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag
Chlorobenzene	108-90-7	112.6	32.6	0.0012	0.23	U	0.0012	0.23	U	0.0012	0.23	U	0.0011	0.22	U	0.0012	0.23	U
Hexanenitrile	628-73-9	97.0	32.8	0.0148	3.42	J	0.0133	3.07	J	0.0139	3.21	J	0.0125	2.9	J	0.0128	2.95	J
Ethylbenzene	100-41-4	106.2	33.4	0.0367	7.75		0.0372	7.86		0.0363	7.65		0.0203	4.29		0.0383	8.07	
p/m-Xylene	106-42-3	106.2	33.9	0.1145	24.15	S	0.1154	24.34	S	0.1267	26.73	S	0.0745	15.72	S	0.1251	26.4	S
Cyclohexanone	108-94-1	98.1	34.3	0.0134	3.06	U	0.0134	3.06	U	0.0132	3.01	U	0.0126	2.88	U	0.0132	3.01	U
Styrene	100-42-5	104.2	34.8	0.025	5.37		0.0256	5.5		0.0281	6.03		0.017	3.65		0.0273	5.86	
1,1,2,2-Tetrachloroethane	79-34-5	167.9	35.0	0.0062	0.83	U	0.0062	0.83	U	0.0061	0.81	U	0.0059	0.78	U	0.0061	0.82	U
o-Xylene	95-47-6	106.2	35.1	0.0556	11.72	S	0.0578	12.2	S	0.0635	13.4	S	0.0326	6.88	S	0.0613	12.93	S
Nonane	111-84-2	128.0	35.4	0.023	4.02		0.025	4.38		0.0218	3.82		0.0143	2.5		0.0197	3.44	
1-Ethyl-2-methyl benzene	611-14-3	120.2	38.4	0.0041	0.76	J	0.0047	0.88	J	0.0042	0.79	J	0.0033	0.61	J	0.0036	0.68	J
1,3,5-Trimethylbenzene	108-67-8	120.2	38.7	0.0045	0.83	J	0.0054	1.01	J	0.0046	0.86	J	0.004	0.74	J	0.0041	0.77	J
1,2,4-Trimethylbenzene	95-63-6	120.2	39.9	0.0116	2.16	J	0.0134	2.5	J	0.0131	2.45	J	0.01	1.86	J	0.0114	2.12	J
Decane	124-18-5	142.3	40.1	0.0407	6.41		0.0414	6.52		0.0548	8.64		0.0321	5.06		0.0406	6.39	
1,3-Dichlorobenzene	541-73-1	147.0	40.5	0.0034	0.51	U	0.0034	0.51	U	0.0033	0.51	U	0.0032	0.48	U	0.0033	0.51	U
1,4-Dichlorobenzene	106-46-7	147.0	40.7	0.0093	1.42	J	0.0111	1.69	J	0.0121	1.84	J	0.0072	1.1	J	0.0097	1.47	J
1,2-Dichlorobenzene	95-50-1	147.0	41.8	0.005	0.77	U	0.005	0.77	U	0.005	0.75	U	0.0047	0.72	U	0.005	0.76	U
Undecane	1120-21-4	156.0	44.4	0.0391	5.61	J	0.0414	5.94	J	0.0937	13.45		0.0469	6.74		0.044	6.32	J
1,2,4-Trichlorobenzene	120-82-1	181.5	48.1	0.0166	2.05	U	0.0166	2.05	U	0.0163	2.01	U	0.0156	1.93	U	0.0164	2.02	U
Dodecane	112-40-3	170.0	48.5	0.7484	98.61		0.7346	96.79		2.1106	278.1		0.9029	118.97		0.8979	118.32	
Hexachloro-1,3-butadiene	87-68-3	260.8	49.9	0.0219	1.88	U	0.0219	1.88	U	0.0216	1.86	U	0.0207	1.78	U	0.0217	1.86	U
Tridecane	629-50-5	184.0	52.2	2.0591	250.67		2.2074	268.73		3.9988	486.81	E	2.1599	262.95		2.1828	265.73	
Tetradecane	629-59-4	198.0	55.7	1.997	225.92	S	2.0725	234.47	S	3.7332	422.34	E,S	2.0292	229.57	S	2.1633	244.74	S
Tributyl Phosphate	126-73-8	266.0	63.1	<0.0106	<0.89	Z	<0.0106	<0.89	Z	<0.0104	<0.88	Z	<0.01	<0.84	Z	<0.0105	<0.88	Z

B Compound identified in associated laboratory blank.

E Target compound exceeds upper quantification limit (UQL).

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.5 Triple Sorbent Trap Analysis Results for All Target Analytes from Tank TY-103 Riser 18 Middle Level Sampled on 11/22/96

Target Analytes	CAS	MW	Ret Time	S6117-m29.1170 ISVS			S6117-m48.1139 ISVS			S6117-m28.1188 ISVS			S6117-m28.1188 ISVS REP			S6117-m49.1186 ISVS		
				(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag
Dichlorodifluoromethane	75-71-8	120.9	7.9	0.0046	0.86 U		0.0045	0.84 U		0.0046	0.85 U		0.0046	0.85 U		0.0046	0.85 U	
Chloromethane	74-87-3	50.5	8.9	0.0034	1.53 U		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	170.9	9.6	0.0034	0.45 U		0.0034	0.44 U		0.0034	0.44 U		0.0034	0.44 U		0.0034	0.44 U	
Methanol	67-56-1	32.0	10.0	0.9781	683.82 Y,S		1.3661	955.1 Y,S		0.8236	575.81 Y,S		0.8042	562.24 Y,S		0.6299	440.4 Y,S	
Vinyl Chloride	75-01-4	62.5	10.0	0.0033	1.18 U		0.0032	1.15 U		0.0032	1.15 U		0.0032	1.15 U		0.0032	1.15 U	
1,3-Butadiene	106-99-0	54.0	10.6	<0.208	<86 Y		<0.208	<86 Y		<0.208	<86 Y		<0.208	<86 Y		<0.208	<86 Y	
Butane	106-97-8	58.1	10.8	0.0814	31.34 S		0.1135	43.71 S		0.0952	36.69 S		0.093	35.81 S		0.0853	32.88 S	
Chloroethane	75-00-3	64.5	12.1	0.0045	1.56 U		0.0044	1.52 U		0.0044	1.53 U		0.0044	1.53 U		0.0044	1.53 U	
Ethanol	64-17-5	46.1	12.5	<0.275	<133 Y		<0.275	<133 Y		<0.275	<133 Y		<0.275	<133 Y		<0.275	<133 Y	
Acetonitrile	75-05-8	41.1	13.0	0.0958	52.29		0.1092	59.6		0.0691	37.73		0.0653	35.65		0.0818	44.65	
Acetone	67-64-1	58.1	13.7	0.0761	29.34 J		0.0732	28.23 J		0.0681	26.25 J		0.0592	22.82 J		0.0805	31.04	
Trichlorofluoromethane	75-69-4	137.4	14.2	0.6143	100.16 S		1.2861	209.72 S		0.9159	149.35 S		0.9054	147.63 S		0.6044	98.55 S	
Pentane	109-66-0	72.0	14.9	0.0435	13.52		0.0444	13.81		0.0394	12.26		0.039	12.12		0.0461	14.34	
1,1-Dichloroethene	75-35-4	96.9	15.5	0.0022	0.52 U		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	84.9	15.8	0.0503	13.28 J,S,B		0.1441	38 J,S,B		0.073	19.26 J,S,B		0.0694	18.3 J,S,B		0.052	13.7 J,S,B	
1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	187.4	16.3	0.0914	10.92 S		0.0857	10.24 S		0.0701	8.38 S		0.0694	8.3 S		0.0667	7.98 S	
Propanenitrile	107-12-0	55.1	17.0	0.0343	13.96		0.0406	16.5		0.0275	11.17		0.0262	10.65		0.0347	14.11	
Propanol	71-23-8	60.1	17.1	0.0747	27.83		0.0675	25.17		0.061	22.75		0.055	20.49 J		0.0634	23.63	
1,1-Dichloroethane	75-34-3	99.0	18.0	0.0015	0.35 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	18.6	0.1557	48.35 S		0.1436	44.62 S		0.0943	29.31 S		0.08	24.85 S		0.1893	58.81 S	
cis-1,2-Dichloroethene	156-59-2	96.9	19.5	0.0027	0.63 U		0.0027	0.62 U		0.0027	0.62 U		0.0027	0.62 U		0.0027	0.62 U	
Hexane	110-54-3	86.2	19.9	0.2522	65.55 S		0.2692	69.98 S		0.1948	50.64 S		0.1928	50.12 S		0.4247	110.4 S	
Chloroform	67-66-3	119.4	20.1	0.0031	0.58 U		0.003	0.57 U		0.0031	0.57 U		0.0031	0.57 U		0.0031	0.57 U	
Tetrahydrofuran	109-99-9	72.1	20.8	0.0537	16.69		0.0508	15.77 B		0.0462	14.34 B		0.0435	13.52 B		0.0547	16.98 B	
1,2-Dichloroethane	107-06-2	99.0	21.4	0.0012	0.27 U		0.0012	0.27 U		0.0012	0.27 U		0.0012	0.27 U		0.0012	0.27 U	
Butanenitrile	109-74-0	69.1	21.9	0.0549	17.8		0.0597	19.33		0.0483	15.67		0.0465	15.06		0.0618	20.04	
1,1,1-Trichloroethane	71-55-6	133.4	21.9	0.0055	0.93 J		0.0058	0.97 J		0.0112	1.89 J		0.0108	1.82 J		0.0098	1.64 J	
1-Butanol	71-36-3	74.0	22.3	0.6407	193.94		0.6639	200.97		0.5537	167.59		0.4215	127.6		0.6314	191.11	
Benzene	71-43-2	78.1	22.8	0.0102	2.92 J		0.0142	4.08 J		0.0073	2.11 J		0.0099	2.83 J		0.0093	2.68 J	
Carbon Tetrachloride	56-23-5	153.8	23.1	0.0564	8.21		0.0513	7.47		0.048	6.99		0.0452	6.58		0.0536	7.81	
Cyclohexane	110-82-7	84.2	23.3	0.2177	57.94 S		0.1705	45.38 S		0.0671	17.86 S		0.0654	17.42 S		0.4434	118.01 S	
1,2-Dichloropropane	78-87-5	113.0	24.3	0.0021	0.41 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	24.7	0.0039	0.67 U		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	25.2	0.1467	32.81 S		0.1015	22.7 S		0.1253	28.01 S		0.1189	26.58 S		0.2807	62.75 S	
4-Methyl-2-Pentanone	108-10-1	100.2	26.3	0.0114	2.55 J		0.0126	2.83 J		0.0184	4.11 J		0.0216	4.84 J		0.015	3.36 J	
cis-1,3-Dichloropropene	10061-01-5	111.0	26.4	0.0014	0.28 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	26.5	0.0233	6.6 U		0.0228	6.46 U		0.023	6.51 U		0.023	6.51 U		0.023	6.51 U	
trans-1,3-Dichloropropene	10061-02-6	111.0	27.4	0.0029	0.59 U		0.0028	0.57 U		0.0029	0.58 U		0.0029	0.58 U		0.0029	0.58 U	
Pentanenitrile	110-59-8	83.2	27.4	0.0183	4.92		0.0211	5.68		0.0161	4.33		0.0155	4.16		0.0209	5.62	
1,1,2-Trichloroethane	79-00-5	133.4	27.9	0.0091	1.53 J		0.0091	1.54 J		0.0096	1.61 J		0.0088	1.47 J		0.0024	0.4 J	
Toluene	108-88-3	92.1	28.5	1.1568	281.22 S		1.417	344.48 S		1.3161	319.97 S		1.3266	322.51 S		1.673	406.72 S	
1,2-Dibromoethane	106-93-4	187.9	30.0	0.0026	0.31 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	114.0	30.5	0.0243	4.77 J		0.0241	4.73 J		0.0227	4.46 J		0.0218	4.29 J		0.0343	6.75	
Tetrachloroethylene	127-18-4	165.8	31.0	0.0457	6.17		0.0384	5.19		0.0311	4.2		0.0288	3.89		0.064	8.65	
Chlorobenzene	108-90-7	112.6	32.6	0.0012	0.24 U		0.0012	0.23 U		0.0012	0.23 U		0.0012	0.23 U		0.0012	0.23 U	

Table II.5 (Cont'd) Triple Sorbent Trap Analysis Results for All Target Analytes from Tank TY-103 Riser 18 Middle Level Sampled on 11/22/96

Target Analytes	CAS	MW	Ret Time	S6117-m29.1170 ISVS			S6117-m48.1139 ISVS			S6117-m28.1188 ISVS			S6117-m28.1188 ISVS REP			S6117-m49.1186 ISVS		
				(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag
Hexanenitrile	628-73-9	97.0	32.8	0.0144	3.33 J		0.0155	3.59 J		0.0108	2.49 J		0.0115	2.66 J		0.0193	4.46 J	
Ethylbenzene	100-41-4	106.2	33.4	0.0229	4.83		0.0207	4.36		0.0391	8.24		0.0355	7.49		0.0319	6.72	
p/m-Xylene	106-42-3	106.2	33.9	0.0815	17.2 S		0.0749	15.81 S		0.1275	26.9 S		0.121	25.53 S		0.1015	21.41 S	
Cyclohexanone	108-94-1	98.1	34.3	0.0137	3.13 U		0.0134	3.06 U		0.0134	3.06 U		0.0134	3.06 U		0.0134	3.06 U	
Styrene	100-42-5	104.2	34.8	0.0189	4.06		0.0176	3.79		0.0276	5.93		0.0273	5.86		0.0181	3.89	
1,1,2,2-Tetrachloroethane	79-34-5	167.9	35.0	0.0063	0.85 U		0.0062	0.83 U		0.0062	0.83 U		0.0062	0.83 U		0.0062	0.83 U	
o-Xylene	95-47-6	106.2	35.1	0.0372	7.85 S		0.0331	6.98 S		0.06	12.65 S		0.0593	12.52 S		0.0498	10.5 S	
Nonane	111-84-2	128.0	35.5	0.0171	2.99		0.0179	3.13		0.0182	3.18		0.0204	3.57		0.0206	3.61	
1-Ethyl-2-methyl benzene	611-14-3	120.2	38.5	0.0039	0.72 J		0.0044	0.81 J		0.0037	0.69 J		0.004	0.75 J		0.003	0.56 J	
1,3,5-Trimethylbenzene	108-67-8	120.2	38.7	0.0047	0.88 J		0.005	0.93 J		0.0042	0.78 J		0.006	1.12 J		0.0032	0.59 J	
1,2,4-Trimethylbenzene	95-63-6	120.2	39.9	0.0116	2.16 J		0.012	2.24 J		0.0111	2.07 J		0.0119	2.21 J		0.009	1.68 J	
Decane	124-18-5	142.3	40.1	0.0372	5.85		0.0399	6.29		0.034	5.35		0.0358	5.64		0.0411	6.47	
1,3-Dichlorobenzene	541-73-1	147.0	40.5	0.0034	0.52 U		0.0034	0.51 U		0.0034	0.52 U		0.0034	0.52 U		0.0034	0.52 U	
1,4-Dichlorobenzene	106-46-7	147.0	40.7	0.0077	1.17 J		0.0089	1.36 J		0.0096	1.47 J		0.0098	1.49 J		0.0057	0.86 J	
1,2-Dichlorobenzene	95-50-1	147.0	41.8	0.0051	0.78 U		0.005	0.77 U		0.0051	0.77 U		0.0051	0.77 U		0.0051	0.77 U	
Undecane	1120-21-4	156.0	44.4	0.0519	7.46		0.0501	7.2		0.0286	4.11 J		0.0277	3.97 J		0.0842	12.08	
1,2,4-Trichlorobenzene	120-82-1	181.5	48.1	0.0169	2.09 U		0.0166	2.05 U		0.0167	2.06 U		0.0167	2.06 U		0.0167	2.06 U	
Dodecane	112-40-3	170.0	48.5	0.8701	114.65		0.9175	120.89		0.439	57.85		0.4099	54.01		2.2705	299.17	
Hexachloro-1,3-butadiene	87-68-3	260.8	49.9	0.0224	1.92 U		0.0219	1.88 U		0.022	1.89 U		0.022	1.89 U		0.022	1.89 U	
Tridecane	629-50-5	184.0	52.2	2.1366	260.11		2.9406	357.98		1.7186	209.22		1.6288	198.29		5.2687	641.4 E	
Tetradecane	629-59-4	198.0	55.8	1.6941	191.66 S		3.3488	378.85 E.S		2.2025	249.17 S		2.1022	237.82 S		6.1422	694.88 E.S	
Tributyl Phosphate	126-73-8	266.0	63.1	<0.0108	<0.91 Z		<0.0106	<0.89 Z		<0.0106	<0.89 Z		<0.0106	<0.89 Z		<0.0106	<0.89 Z	

B Compound identified in associated laboratory blank.

E Target compound exceeds upper quantification limit (UQL).

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 TY-103 Riser 18 Bottom Level Sampled on 11/22/96

Target Analytes	CAS	MW	Ret Time	S6117-b35.1166 ISVS			S6117-b37.1169 ISVS			S6117-b34.1165 ISVS			S6117-b36.1151 ISVS			S6117-b36.1151 ISVS REP		
				(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag
Dichlorodifluoromethane	75-71-8	120.9	7.8	0.0046	0.86 U		0.0045	0.84 U		0.0176	3.25 J		0.0046	0.85 U		0.0046	0.85 U	
Chloromethane	74-87-3	50.5	8.9	0.0034	1.52 U		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	170.9	9.5	0.0034	0.45 U		0.0034	0.44 U		0.0034	0.44 U		0.0034	0.44 U		0.0034	0.44 U	
Methanol	67-56-1	32.0	10.0	1.6472	1151.57 Y,S		0.9777	683.52 Y,S		0.791	552.99 Y,S		0.9123	637.79 Y,S		0.8807	615.75 Y,S	
Vinyl Chloride	75-01-4	62.5	9.9	0.0033	1.17 U		0.0032	1.15 U		0.0032	1.15 U		0.0032	1.15 U		0.0032	1.15 U	
1,3-Butadiene	106-99-0	54.0	10.5	<0.208	<86 Y		<0.208	<86 Y		<0.208	<86 Y		<0.208	<86 Y		<0.208	<86 Y	
Butane	106-97-8	58.1	10.8	0.1073	41.34 S		0.0898	34.6 S		0.0772	29.75 S		0.0865	33.32 S		0.0797	30.71 S	
Chloroethane	75-00-3	64.5	12.1	0.0045	1.55 U		0.0044	1.52 U		0.0044	1.53 U		0.0044	1.53 U		0.0044	1.53 U	
Ethanol	64-17-5	46.1	12.5	<0.275	<133 Y		<0.275	<133 Y		<0.275	<133 Y		<0.275	<133 Y		<0.275	<133 Y	
Acetonitrile	75-05-8	41.1	13.0	0.113	61.69		0.1097	59.87		0.0781	42.6		0.0781	42.64		0.0709	38.67	
Acetone	67-64-1	58.1	13.7	0.0719	27.73 J		0.1009	38.92		0.091	35.09		0.0847	32.67		0.1038	40.04	
Trichlorofluoromethane	75-69-4	137.4	14.1	1.1351	185.1 S		0.722	117.74 S		0.6235	101.66 S		0.5905	96.29 S		0.5819	94.89 S	
Pentane	109-66-0	72.0	14.9	0.0463	14.42		0.0469	14.6		0.0414	12.89		0.0437	13.59		0.0408	12.71	
1,1-Dichloroethene	75-35-4	96.9	15.5	0.0022	0.52 U		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	84.9	15.8	0.1045	27.55 J,S,B		0.0617	16.27 J,S,B		0.0481	12.68 J,S,B		0.0454	11.97 J,S,B		0.044	11.62 J,S,B	
1,1,2-trichloro 1,2,2-trifluoroethane	76-13-1	187.4	16.3	0.0687	8.21 S		0.0717	8.57 S		0.0631	7.54 S		0.0883	10.55 S		0.091	10.88 S	
Propanenitrile	107-12-0	55.1	17.0	0.0355	14.45		0.0406	16.51		0.0351	14.28		0.0299	12.16		0.0273	11.11	
Propanol	71-23-8	60.1	17.1	0.0835	31.11		0.0819	30.54		0.064	23.85		0.0762	28.39		0.0691	25.74	
1,1-Dichloroethane	75-34-3	99.0	18.0	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	18.6	0.0689	21.4 S		0.2175	67.55 S		0.1889	58.68 S		0.1308	40.64 S		0.1276	39.65 S	
cis-1,2-Dichloroethene	156-59-2	96.9	19.5	0.0027	0.63 U		0.0027	0.62 U		0.0027	0.62 U		0.0027	0.62 U		0.0027	0.62 U	
Hexane	110-54-3	86.2	19.8	0.1935	50.3 S		0.4151	107.89 S		0.3221	83.73 S		0.2307	59.97 S		0.2218	57.64 S	
Chloroform	67-66-3	119.4	20.0	0.0031	0.58 U		0.003	0.57 U		0.0031	0.57 U		0.0031	0.57 U		0.0031	0.57 U	
Tetrahydrofuran	109-99-9	72.1	20.7	0.0496	15.41		0.0568	17.64		0.0521	16.18		0.0484	15.02		0.0476	14.78	
1,2-Dichloroethane	107-06-2	99.0	21.4	0.0012	0.27 U		0.0012	0.27 U		0.0012	0.27 U		0.0012	0.27 U		0.0012	0.27 U	
Butanenitrile	109-74-0	69.1	21.8	0.0547	17.74		0.0635	20.57		0.0591	19.16		0.0536	17.37		0.0485	15.71	
1,1,1-Trichloroethane	71-55-6	133.4	21.9	0.0114	1.91 J		0.0097	1.62 J		0.0095	1.6 J		0.0053	0.9 J		0.0054	0.91 J	
1-Butanol	71-36-3	74.0	22.3	0.6292	190.45		0.5479	165.86		0.709	214.62		0.6149	186.14		0.5193	157.19	
Benzene	71-43-2	78.1	22.8	0.0105	3.02 J		0.0131	3.76 J		0.0116	3.33 J		0.0073	2.1 J		0.0093	2.67 J	
Carbon Tetrachloride	56-23-5	153.8	23.0	0.0534	7.78		0.061	8.89		0.0539	7.85		0.0535	7.79		0.0504	7.34	
Cyclohexane	110-82-7	84.2	23.3	0.0754	20.06 S		0.0693	18.44 S		0.0595	15.84 S		0.1379	36.69 S		0.1241	33.02 S	
1,2-Dichloropropane	78-87-5	113.0	24.3	0.0021	0.41 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	24.7	0.0039	0.67 U		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	25.2	0.0607	13.56 S		0.2055	45.93 S		0.1609	35.96 S		0.0732	16.36 S		0.0716	16 S	
4-Methyl-2-Pentanone	108-10-1	100.2	26.3	0.02	4.46 J		0.0181	4.06 J		0.014	3.14 J		0.0154	3.44 J		0.0136	3.05 J	
cis-1,3-Dichloropropene	10061-01-5	111.0	26.3	0.0014	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	26.5	0.0232	6.57 U		0.0228	6.46 U		0.023	6.51 U		0.023	6.51 U		0.023	6.51 U	
trans-1,3-Dichloropropene	10061-02-6	111.0	27.4	0.0029	0.58 U		0.0028	0.57 U		0.0029	0.58 U		0.0029	0.58 U		0.0029	0.58 U	
Pentanenitrile	110-59-8	83.2	27.4	0.0174	4.68		0.0212	5.72		0.0232	6.25		0.0181	4.88		0.0169	4.56	
1,1,2-Trichloroethane	79-00-5	133.4	27.8	0.0104	1.74 J		0.0098	1.65 J		0.01	1.69 J		0.0103	1.74 J		0.0094	1.58 J	
Toluene	108-88-3	92.1	28.5	0.8874	215.72 S		1.1341	275.72 S		0.9513	231.26 S		0.5837	141.89 S		0.5928	144.11 S	
1,2-Dibromoethane	106-93-4	187.9	30.0	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	114.0	30.4	0.0261	5.14 J		0.0371	7.28		0.0314	6.17		0.0218	4.29 J		0.0231	4.54 J	
Tetrachloroethylene	127-18-4	165.8	31.0	0.0363	4.91		0.0664	8.96		0.0632	8.54		0.0441	5.96		0.0455	6.14	
Chlorobenzene	108-90-7	112.6	32.6	0.0012	0.24 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	97.0	32.8	0.0148	3.42 J		0.0197	4.54 J		0.0198	4.58 J		0.0152	3.52 J		0.0139	3.2 J	

Table II.6 (Cont'd) Triple Sorbent Trap Analysis Results for All Target Analytes from Tank TY-103 Riser 18 Bottom Level Sampled on 11/22/96

Target Analytes	CAS	MW	Ret Time	S6117-b35.1166 ISVS			S6117-b37.1169 ISVS			S6117-b34.1165 ISVS			S6117-b36.1151 ISVS			S6117-b36.1151 ISVS REP		
				(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag
Ethylbenzene	100-41-4	106.2	33.4	0.0414	8.73		0.0292	6.17		0.0326	6.88		0.0202	4.27		0.0203	4.29	
p/m-Xylene	106-42-3	106.2	33.8	0.1297	27.37	S	0.0945	19.94	S	0.1083	22.86	S	0.0716	15.11	S	0.0728	15.36	S
Cyclohexanone	108-94-1	98.1	34.3	0.0136	3.1	U	0.0134	3.06	U	0.0134	3.06	U	0.0134	3.06	U	0.0134	3.06	U
Styrene	100-42-5	104.2	34.8	0.0277	5.96		0.0168	3.62		0.0224	4.83		0.0162	3.48	J	0.0163	3.51	J
1,1,2,2-Tetrachloroethane	79-34-5	167.9	35.0	0.0063	0.84	U	0.0062	0.83	U	0.0062	0.83	U	0.0062	0.83	U	0.0062	0.83	U
o-Xylene	95-47-6	106.2	35.0	0.0636	13.43	S	0.0487	10.27	S	0.0535	11.28	S	0.0328	6.93	S	0.0331	6.98	S
Nonane	111-84-2	128.0	35.4	0.0219	3.83		0.0272	4.76		0.022	3.86		0.0162	2.84		0.016	2.8	
1-Ethyl-2-methyl benzene	611-14-3	120.2	38.4	0.0044	0.81	J	0.0031	0.57	J	0.0035	0.66	J	0.0033	0.61	J	0.0061	1.13	J
1,3,5-Trimethylbenzene	108-67-8	120.2	38.6	0.0047	0.88	J	0.0035	0.66	J	0.0045	0.83	J	0.0035	0.65	J	0.0034	0.64	J
1,2,4-Trimethylbenzene	95-63-6	120.2	39.9	0.012	2.23	J	0.0092	1.71	J	0.0116	2.15	J	0.0097	1.81	J	0.0099	1.84	J
Decane	124-18-5	142.3	40.1	0.0403	6.35		0.0433	6.82		0.0451	7.1		0.0375	5.91		0.0389	6.13	
1,3-Dichlorobenzene	541-73-1	147.0	40.4	0.0034	0.52	U	0.0034	0.51	U	0.0034	0.52	U	0.0034	0.52	U	0.0034	0.52	U
1,4-Dichlorobenzene	106-46-7	147.0	40.6	0.0102	1.56	J	0.0057	0.87	J	0.0091	1.38	J	0.0062	0.95	J	0.0057	0.88	J
1,2-Dichlorobenzene	95-50-1	147.0	41.8	0.0051	0.78	U	0.005	0.77	U	0.0051	0.77	U	0.0051	0.77	U	0.0051	0.77	U
Undecane	1120-21-4	156.0	44.4	0.0459	6.6	J	0.1127	16.18		0.1001	14.37		0.0684	9.82		0.0612	8.79	
1,2,4-Trichlorobenzene	120-82-1	181.5	48.0	0.0168	2.07	U	0.0166	2.05	U	0.0167	2.06	U	0.0167	2.06	U	0.0167	2.06	U
Dodecane	112-40-3	170.0	48.4	1.0116	133.29		2.9416	387.6		2.4055	316.96		1.6634	219.18		1.6026	211.16	
Hexachloro-1,3-butadiene	87-68-3	260.8	49.9	0.0223	1.92	U	0.0219	1.88	U	0.022	1.89	U	0.022	1.89	U	0.022	1.89	U
Tridecane	629-50-5	184.0	52.2	2.5516	310.63		5.4388	662.11	E	4.566	555.86	E	3.6672	446.44	E	4.2268	514.57	E
Tetradecane	629-59-4	198.0	55.7	2.0525	232.21	S	4.31	487.59	E,S	4.3831	495.86	E,S	3.201	362.14	E,S	3.6074	408.11	E,S
Tributyl Phosphate	126-73-8	266.0	63.1	<0.0108	<0.91	Z	<0.0106	<0.89	Z	<0.0106	<0.89	Z	<0.0106	<0.89	Z	<0.0106	<0.89	Z

B Compound identified in associated laboratory blank.

E Target compound exceeds the upper quantification limit (UQL).

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 II.7 Triple Sorbent Trap Analysis Results for All Target Analytes from Blank Samples Associated with the Sampling of Tank TY-103 Riser 8 on 11/22/96

TY-103 TST			Ret	S6116-a50.1026 ISVS FB#1			S6116-a53.1179 ISVS TB#2			S6116-a51.1159 ISVS FB#2			S6116-a52.1162 ISVS TB#1		
Target Analytes	CAS	MW	Time	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag
Dichlorodifluoromethane	75-71-8	120.9	7.9	0.0043	0.79 U		0.0043	0.79 U		0.0043	0.79 U		0.0043	0.79 U	
Chloromethane	74-87-3	50.5	8.9	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-tetrafluoroethane	76-14-2	170.9	9.6	0.0032	0.41 U		0.0032	0.41 U		0.0032	0.41 U		0.0032	0.41 U	
Methanol	67-56-1	32.0	10.1	0.836	584.49 Y		0.3666	256.29 Y		0.4094	286.25 Y		<0.275	<192 Y	
Vinyl Chloride	75-01-4	62.5	10.0	0.003	1.08 U		0.003	1.08 U		0.003	1.08 U		0.003	1.08 U	
1,3-Butadiene	106-99-0	54.0	10.6	<0.208	<86 Y		<0.208	<86 Y		<0.208	<86 Y		<0.208	<86 Y	
Butane	106-97-8	58.1	10.8	0.0177	6.81 J		0.0234	9.01 J		0.01	3.85 J		0.0119	4.59 J	
Chloroethane	75-00-3	64.5	12.1	0.0041	1.42 U		0.0041	1.42 U		0.0041	1.42 U		0.0041	1.42 U	
Ethanol	64-17-5	46.1	12.6	<0.275	<133 Y		<0.275	<133 Y		<0.275	<133 Y		<0.275	<133 Y	
Acetonitrile	75-05-8	41.1	13.1	0.0232	12.66 J		0.0033	1.8 U		0.0101	5.51 J		0.0033	1.8 U	
Acetone	67-64-1	58.1	13.7	0.0318	12.26 J		0.0108	4.15 J		0.0182	7.04 J		0.0118	4.54 J	
Trichlorofluoromethane	75-69-4	137.4	14.2	0.2869	46.78		0.6272	102.28		0.1238	20.18		0.3272	53.36	
Pentane	109-66-0	72.0	15.0	0.0063	1.97 J		0.0029	0.89 U		0.0061	1.89 J		0.0029	0.89 U	
1,1-Dichloroethene	75-35-4	96.9	15.6	0.0021	0.47 U		0.0021	0.47 U		0.0021	0.47 U		0.0021	0.47 U	
Methylene Chloride	75-09-2	84.9	15.8	0.0771	20.33 J,B		0.1976	52.12 B		0.0597	15.73 J,B		0.1534	40.46 J,B	
1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	187.4	16.4	0.0379	4.53		0.003	0.36 U		0.0206	2.46 J		0.003	0.36 U	
Propanenitrile	107-12-0	55.1	17.1	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	17.1	0.0053	1.99 U		0.0053	1.99 U		0.0053	1.99 U		0.0053	1.99 U	
1,1-Dichloroethane	75-34-3	99.0	18.0	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	72.1	18.6	0.0625	19.4		0.0022	0.68 U		0.0192	5.97 J		0.0022	0.68 U	
cis-1,2-Dichloroethene	156-59-2	96.9	19.6	0.0025	0.58 U		0.0025	0.58 U		0.0025	0.58 U		0.0025	0.58 U	
Hexane	110-54-3	86.2	19.9	0.0605	15.72		0.0297	7.73		0.0732	19.01		0.014	3.65	
Chloroform	67-66-3	119.4	20.1	0.0029	0.53 U		0.0029	0.53 U		0.0029	0.53 U		0.0029	0.53 U	
Tetrahydrofuran	109-99-9	72.1	20.8	0.0046	1.44 J		0.0035	1.07 U		0.0047	1.45 J		0.0035	1.07 U	
1,2-Dichloroethane	107-06-2	99.0	21.5	0.0011	0.25 U		0.0011	0.25 U		0.0011	0.25 U		0.0011	0.25 U	
Butanenitrile	109-74-0	69.1	21.9	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	22.0	0.0027	0.44 U		0.0027	0.44 U		0.0027	0.44 U		0.0027	0.44 U	
1-Butanol	71-36-3	74.0	22.3	0.0075	2.29 U		0.0075	2.29 U		0.0075	2.29 U		0.0075	2.29 U	
Benzene	71-43-2	78.1	22.8	0.0034	0.97 J		0.0014	0.4 U		0.004	1.14 J		0.0014	0.4 U	
Carbon Tetrachloride	56-23-5	153.8	23.1	0.0014	0.2 U		0.0014	0.2 U		0.0014	0.2 U		0.0014	0.2 U	
Cyclohexane	110-82-7	84.2	23.4	0.0404	10.75 J		0.0165	4.39 J		0.0483	12.87		0.014	3.72 J	
1,2-Dichloropropane	78-87-5	113.0	24.4	0.0019	0.38 U		0.0019	0.38 U		0.0019	0.38 U		0.0019	0.38 U	
Trichloroethene	79-01-6	131.4	24.8	0.0036	0.61 U		0.0088	1.49 J		0.0036	0.61 U		0.0089	1.52 J	
Heptane	142-82-5	100.2	25.2	0.0116	2.6 J		0.0011	0.25 J		0.035	7.83		0.0017	0.38 J	
4-Methyl-2-Pentanone	108-10-1	100.2	26.4	0.0083	1.86 J		0.0069	1.54 J		0.0119	2.67 J		0.0021	0.46 U	
cis-1,3-Dichloropropene	10061-01-5	111.0	26.4	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	26.6	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	111.0	27.4	0.0027	0.53 U		0.0027	0.53 U		0.0027	0.53 U		0.0027	0.53 U	
Pentanenitrile	110-59-8	83.2	27.4	0.0008	0.22 U		0.0008	0.22 U		0.0008	0.22 U		0.0008	0.22 U	

Table H.7 (Cont'd) Triple Sorbent Trap Analysis Results for All Target Analytes from Blank Samples Associated with the Sampling of Tank TY-103 Riser 8 on 11/22/96

TY-103 TST				Ret	S6116-a50.1026 ISVS FB#1			S6116-a53.1179 ISVS TB#2			S6116-a51.1159 ISVS FB#2			S6116 a52.1162 ISVS TB#1		
Target Analytes	CAS	MW	Time		(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	27.9		0.0097	1.63 J		0.0091	1.53 J		0.0085	1.43 J		0.0085	1.43 J	
Toluene	108-88-3	92.1	28.5		0.4108	99.88		0.4844	117.76		0.4049	98.44		0.3203	77.86	
1,2-Dibromoethane	106-93-4	187.9	30.1		0.0024	0.28 U		0.0024	0.28 U		0.0024	0.28 U		0.0024	0.28 U	
Octane	111-65-9	114.0	30.5		0.0027	0.52 U		0.0027	0.52 U		0.0027	0.52 U		0.0027	0.52 U	
Tetrachloroethylene	127-18-4	165.8	31.1		0.0025	0.34 U		0.0025	0.34 U		0.0025	0.34 U		0.0025	0.34 U	
Chlorobenzene	108-90-7	112.6	32.6		0.0011	0.22 U		0.0011	0.22 U		0.0011	0.22 U		0.0011	0.22 U	
Hexanenitrile	628-73-9	97.0	32.8		0.0029	0.66 U		0.0029	0.66 U		0.0029	0.66 U		0.0029	0.66 U	
Ethylbenzene	100-41-4	106.2	33.5		0.0133	2.81 J		0.0016	0.35 J		0.0256	5.4		0.0013	0.27 J	
p/m-Xylene	106-42-3	106.2	33.9		0.0465	9.81		0.003	0.63 U		0.0826	17.42		0.003	0.63 U	
Cyclohexanone	108-94-1	98.1	34.3		0.0125	2.85 U		0.0125	2.85 U		0.0125	2.85 U		0.0125	2.85 U	
Styrene	100-42-5	104.2	34.8		0.0109	2.35 J		0.0015	0.33 U		0.0187	4.02		0.0015	0.33 U	
1,1,2,2-Tetrachloroethane	79-34-5	167.9	35.1		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	106.2	35.1		0.0203	4.28		0.0019	0.4 U		0.0397	8.38		0.0019	0.4 U	
Nonane	111-84-2	128.0	35.5		0.0071	1.24 J		0.0013	0.22 U		0.0107	1.87 J		0.0013	0.22 U	
1-Ethyl-2-methyl benzene	611-14-3	120.2	38.5		0.004	0.75 J		0.0024	0.44 U		0.005	0.92 J		0.0024	0.44 U	
1,3,5-Trimethylbenzene	108-67-8	120.2	38.7		0.0023	0.44 J		0.0024	0.44 U		0.0026	0.48 J		0.0024	0.44 U	
1,2,4-Trimethylbenzene	95-63-6	120.2	40.0		0.0066	1.23 J		0.0025	0.47 U		0.0072	1.35 J		0.0025	0.47 U	
Decane	124-18-5	142.3	40.1		0.0211	3.33 J		0.001	0.16 J		0.021	3.3 J		0.0032	0.5 J	
1,3-Dichlorobenzene	541-73-1	147.0	40.5		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	147.0	40.7		0.0042	0.63 J		0.0029	0.43 U		0.0067	1.02 J		0.0029	0.43 U	
1,2-Dichlorobenzene	95-50-1	147.0	41.9		0.0047	0.72 U		0.0047	0.72 U		0.0047	0.72 U		0.0047	0.72 U	
Undecane	1120-21-4	156.0	44.5		0.0128	1.84 J		0.0044	0.63 U		0.0116	1.66 J		0.0044	0.63 U	
1,2,4-Trichlorobenzene	120-82-1	181.5	48.1		0.0155	1.91 U		0.0155	1.91 U		0.0155	1.91 U		0.0155	1.91 U	
Dodecane	112-40-3	170.0	48.5		0.0255	3.36 U		0.0255	3.36 U		0.0255	3.36 U		0.0255	3.36 U	
Hexachloro-1,3-butadiene	87-68-3	260.8	49.9		0.0205	1.76 U		0.0205	1.76 U		0.0205	1.76 U		0.0205	1.76 U	
Tridecane	629-50-5	184.0	52.3		0.0501	6.1 J		0.0103	1.26 J		0.0434	5.29 J		0.0144	1.76 J	
Tetradecane	629-59-4	198.0	55.8		0.0473	5.36 J,B		0.0559	6.33 J,B		0.054	6.11 J,B		0.0816	9.23 J,B	
Tributyl Phosphate	126-73-8	266.0	63.1		<0.0099	<0.83 Z		<0.0099	<0.83 Z		<0.0099	<0.83 Z		<0.0099	<0.83 Z	

B Compound identified 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 TY-103 Riser 18 on 11/22/96

TY-103 TST			Ret	S6117-a50.1177 ISVS FB#1			S6117-a52.1136 ISVS TB#1			S6117-a53.1134 ISVS TB#2			S6117 a51.1154 ISVS FB#2		
Target Analytes	CAS	MW	Time	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag
Dichlorodifluoromethane	75-71-8	120.9	7.8	0.0043	0.79 U		0.0043	0.79 U		0.0043	0.79 U		0.0043	0.79 U	
Chloromethane	74-87-3	50.5	8.9	0.0032	1.4 U		0.0032	1.4 U		0.0032	1.4 U		0.0032	1.4 U	
1,2-dichloro1,1,2,2-tetrafluoroethane	76-14-2	170.9	9.5	0.0032	0.41 U		0.0032	0.41 U		0.0032	0.41 U		0.0032	0.41 U	
Methanol	67-56-1	32.0	10.0	0.6264	437.95 Y		0.9964	696.6 Y		<0.274	<192 Y		1.943	1358.38 Y	
Vinyl Chloride	75-01-4	62.5	9.9	0.003	1.08 U		0.003	1.08 U		0.003	1.08 U		0.003	1.08 U	
1,3-Butadiene	106-99-0	54.0	10.5	<0.208	<86 Y		<0.208	<86 Y		<0.208	<86 Y		<0.208	<86 Y	
Butane	106-97-8	58.1	10.8	0.0169	6.5 J		0.0742	28.57		0.0036	1.39 U		0.0689	26.53	
Chloroethane	75-00-3	64.5	12.1	0.0041	1.42 U		0.0041	1.42 U		0.0041	1.42 U		0.0041	1.42 U	
Ethanol	64-17-5	46.1	12.5	<0.275	<133 Y		<0.275	<133 Y		<0.275	<133 Y		<0.275	<133 Y	
Acetonitrile	75-05-8	41.1	13.0	0.0156	8.51 J		0.0167	9.09 J		0.0033	1.8 U		0.0417	22.77	
Acetone	67-64-1	58.1	13.7	0.0244	9.41 J		0.0221	8.52 J		0.0053	2.05 J		0.0366	14.1 J	
Trichlorofluoromethane	75-69-4	137.4	14.1	0.2483	40.48		1.8968	309.3		0.0209	3.4 J		1.4371	234.34	
Pentane	109-66-0	72.0	14.9	0.0053	1.66 J		0.0029	0.89 U		0.0029	0.89 U		0.0072	2.23 J	
1,1-Dichloroethene	75-35-4	96.9	15.5	0.0021	0.47 U		0.0151	3.48 J		0.0021	0.47 U		0.0085	1.96 J	
Methylene Chloride	75-09-2	84.9	15.8	0.0473	12.47 J,B		0.4323	114.02		0.0316	8.34 J,B		0.2672	70.47 B	
1,1,2-trichloro1,2,2-trifluoroethane	76-13-1	187.4	16.3	0.0359	4.3		0.003	0.36 U		0.003	0.36 U		0.0203	2.42 J	
Propanenitrile	107-12-0	55.1	17.0	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	17.1	0.0053	1.99 U		0.0061	2.27 J		0.0053	1.99 U		0.0053	1.99 U	
1,1-Dichloroethane	75-34-3	99.0	18.0	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	72.1	18.6	0.1063	33.01		0.0133	4.12 J		0.0022	0.68 U		0.2168	67.35	
cis-1,2-Dichloroethene	156-59-2	96.9	19.5	0.0025	0.58 U		0.0025	0.58 U		0.0025	0.58 U		0.0025	0.58 U	
Hexane	110-54-3	86.2	19.8	0.1801	46.8		0.0917	23.83		0.0013	0.32 U		0.3966	103.09	
Chloroform	67-66-3	119.4	20.0	0.0029	0.53 U		0.0029	0.53 U		0.0029	0.53 U		0.0029	0.53 U	
Tetrahydrofuran	109-99-9	72.1	20.7	0.0056	1.73 J		0.0035	1.07 U		0.0035	1.07 U		0.0075	2.34 J	
1,2-Dichloroethane	107-06-2	99.0	21.4	0.0011	0.25 U		0.0011	0.25 U		0.0011	0.25 U		0.0011	0.25 U	
Butanenitrile	109-74-0	69.1	21.8	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	21.9	0.0027	0.44 U		0.0027	0.44 U		0.0027	0.44 U		0.0027	0.44 U	
1-Butanol	71-36-3	74.0	22.3	0.0075	2.29 U		0.0075	2.29 U		0.0075	2.29 U		0.0075	2.29 U	
Benzene	71-43-2	78.1	22.8	0.0034	0.98 J		0.0023	0.67 J		0.0004	0.11 J		0.0051	1.47 J	
Carbon Tetrachloride	56-23-5	153.8	23.0	0.0014	0.2 U		0.0014	0.2 U		0.0014	0.2 U		0.0014	0.2 U	
Cyclohexane	110-82-7	84.2	23.3	0.0839	22.34		0.0254	6.76 J		0.0041	1.09 U		0.0508	13.53	
1,2-Dichloropropane	78-87-5	113.0	24.3	0.0019	0.38 U		0.0019	0.38 U		0.0019	0.38 U		0.0019	0.38 U	
Trichloroethene	79-01-6	131.4	24.7	0.0036	0.61 U		0.0259	4.41 J		0.0036	0.61 U		0.01	1.71 J	
Heptane	142-82-5	100.2	25.2	0.0334	7.47		0.004	0.89 J		0.0015	0.35 U		0.159	35.54	
4-Methyl-2-Pentanone	108-10-1	100.2	26.3	0.0126	2.82 J		0.007	1.56 J		0.0032	0.72 J		0.0146	3.27 J	
cis-1,3-Dichloropropene	10061-01-5	111.0	26.3	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	26.5	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	111.0	27.4	0.0027	0.53 U		0.0027	0.53 U		0.0027	0.53 U		0.0027	0.53 U	
Pentanenitrile	110-59-8	83.2	27.4	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	27.8	0.0015	0.26 U		0.0015	0.26 U		0.0015	0.26 U		0.0015	0.26 U	
Toluene	108-88-3	92.1	28.5	0.4378	106.43		1.4751	358.62		0.0318	7.73		2.2215	540.07	
1,2-Dibromoethane	106-93-4	187.9	30.0	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 TY-103 Riser-18 on 11/22/96

TY-103 TST			Ret	S6117-a50.1177 ISVS FB#1			S6117-a52.1136 ISVS TB#1			S6117-a53.1134 ISVS TB#2			S6117-a51.1154 ISVS FB#2		
Target Analytes	CAS	MW	Time	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag	(mg/m3)	(ppbv)	Flag
Octane	111-65-9	114.0	30.4	0.0027	0.52 U		0.0027	0.52 U		0.0027	0.52 U		0.0027	0.52 U	
Tetrachloroethylene	127-18-4	165.8	31.0	0.0025	0.34 U		0.0025	0.34 U		0.0025	0.34 U		0.0025	0.34 U	
Chlorobenzene	108-90-7	112.6	32.6	0.0011	0.22 U		0.0011	0.22 U		0.0011	0.22 U		0.0011	0.22 U	
Hexanenitrile	628-73-9	97.0	32.8	0.0029	0.66 U		0.0029	0.66 U		0.0029	0.66 U		0.0029	0.66 U	
Ethylbenzene	100-41-4	106.2	33.4	0.0126	2.66 J		0.0039	0.83 J		0.0014	0.3 U		0.0257	5.41	
p/m-Xylene	106-42-3	106.2	33.8	0.0441	9.3		0.0062	1.31 J		0.003	0.63 U		0.0798	16.84	
Cyclohexanone	108-94-1	98.1	34.3	0.0125	2.85 U		0.0125	2.85 U		0.0125	2.85 U		0.0125	2.85 U	
Styrene	100-42-5	104.2	34.8	0.0111	2.4 J		0.0032	0.69 J		0.0015	0.33 U		0.0182	3.92	
1,1,2,2-Tetrachloroethane	79-34-5	167.9	35.0	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	106.2	35.0	0.019	4		0.0023	0.48 J		0.0019	0.4 U		0.0376	7.93	
Nonane	111-84-2	128.0	35.4	0.0096	1.68 J		0.0042	0.73 J		0.0013	0.22 U		0.0134	2.35	
1-Ethyl-2-methyl benzene	611-14-3	120.2	38.4	0.0034	0.63 J		0.0024	0.44 U		0.0024	0.44 U		0.005	0.93 J	
1,3,5-Trimethylbenzene	108-67-8	120.2	38.6	0.0038	0.72 J		0.0024	0.44 U		0.0024	0.44 U		0.0027	0.5 J	
1,2,4-Trimethylbenzene	95-63-6	120.2	39.9	0.0055	1.02 J		0.0025	0.47 U		0.0025	0.47 U		0.0072	1.34 J	
Decane	124-18-5	142.3	40.1	0.0169	2.65 J		0.0032	0.5 J		0.003	0.47 U		0.0191	3.01 J	
1,3-Dichlorobenzene	541-73-1	147.0	40.4	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	147.0	40.6	0.0038	0.58 J		0.0029	0.43 U		0.0029	0.43 U		0.0056	0.85 J	
1,2-Dichlorobenzene	95-50-1	147.0	41.8	0.0047	0.72 U		0.0047	0.72 U		0.0047	0.72 U		0.0047	0.72 U	
Undecane	1120-21-4	156.0	44.4	0.0107	1.54 J		0.0044	0.63 U		0.0044	0.63 U		0.0108	1.55 J	
1,2,4-Trichlorobenzene	120-82-1	181.5	48.0	0.0155	1.91 U		0.0155	1.91 U		0.0155	1.91 U		0.0155	1.91 U	
Dodecane	112-40-3	170.0	48.4	0.0255	3.36 U		0.0255	3.36 U		0.0255	3.36 U		0.0255	3.36 U	
Hexachloro-1,3-butadiene	87-68-3	260.8	49.9	0.0205	1.76 U		0.0205	1.76 U		0.0205	1.76 U		0.0205	1.76 U	
Tridecane	629-50-5	184.0	52.2	0.1276	15.54 J,B		0.026	3.17 U		0.026	3.17 U		0.0367	4.46 J	
Tetradecane	629-59-4	198.0	55.7	0.3039	34.38 B		0.0167	1.88 J,B		0.016	1.81 J,B		0.0221	2.5 J,B	
Tributyl Phosphate	126-73-8	266.0	63.1	<0.0099	<0.83 Z		<0.0099	<0.83 Z		<0.0099	<0.83 Z		<0.0099	<0.83 Z	

B Compound identified 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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