STS-121 Return Samples: Assessment of Air Quality aboard the Orbiter and International Space Station

The toxicological assessments derived from 9 dual sorbent tubes (DSTs), 13 grab sample canisters (GSCs), and 7 pairs of formaldehyde badges returned aboard STS-121 in July 2006 are reported. Analytical methods have not changed from earlier reports. The recoveries of the 2 less volatile surrogates from the DSTs averaged 83 and 91 %; however, ^{13}C-acetone was only recovered at an average of 54 %. Correction factors were applied to volatile polar compounds due to limited recoveries by the DSTs. The average GSC surrogate recoveries were 106, 95, and 95%. Formaldehyde recoveries from 4 positive controls ranged from 99 to 122%. The two general criteria used to assess air quality are the total-non-methane-volatile organic hydrocarbons (NMVOCs) and the total T-value (minus the CO_2 and formaldehyde contributions). Control of atmospheric alcohols is important to the water recovery system engineers, hence total alcohols (including acetone) are also shown for each sample. Because formaldehyde is quantified from badges, its concentration is also listed separately. These four indices are summarized below:

Module/Sample	Approx. Date	NMVOCs (mg/m^3)	T Value[a] (units)	T Value[a] Minus siloxanes	Alcohols (mg/m^3)	Formaldehyde (ug/m^3)
SM/GSC	9/8/05	15	1.54	0.80	5.3	
Lab/GSC	9/30/05	13	1.24	0.76	6.1	
SM/GSC	10/26/05	26[b]	1.06	0.57	19[b]	
Lab/DST	10/26/05	19	1.61	0.25	3.7	
FGB/DST	10/26/05	7	0.32	0.31	4.8	
Lab/GSC	11/25/05	11	0.59	0.35	6.1	
FGB/DST	11/25/05	8	0.65	0.55	5.2	
SM/GSC	12/21/05	11	1.06	0.54	4.7	
Lab/GSC	1/18/06	14	1.31	0.57	4.6	
FGB/GSC	2/21/06	11	0.83	0.55	6.1	
Lab/GSC	3/29/06	21	3.10[e]	2.13[e]	6.3	
Lab/GSC/Form.	4/20/06	12	1.61[e]	1.49[e]	8.7	37
+DST	4/20/06	14	0.72	0.53	10	
SM/DST/Form.	4/20/06	13	0.47	0.38	9.9	34
SM/GSC/Form.	6/09/06	18	1.40	0.74	9.0	26
Lab/DST/Form.	6/09/06	56[c]	2.43	1.57[c]	35[c]	41
FGB/DST	6/09/06	17	0.89	0.66	12	
Lab/GSC/Form.	6/27/06	13	0.98	0.70	8.5	40
FGB/DST	6/27/06	24[d]	0.66	0.65	22[d]	
SM/DST/Form.	6/27/06	27[d]	0.93	0.73	22[d]	34
MPLM/GSC	7/07/06	15	1.31	0.63	3.5	
Flt-Dk/GSC/For	7/16/06	4	0.62	0.61	1.0	34
Guideline		*<25*		*<1.0*	*<5*	*<120*

[a] Both sets of T values exclude the contribution from CO2.
[b] Ethanol alone was elevated to 18 mg/m3.
[c] Ethanol was elevated to 30 mg/m3, and many other compounds were up as well. In view of values in FGB and SM samples from the same time, these high values are probably an artifact.
[d] Ethanol alone was elevated to 20 mg/m3.
[e] Large contribution from the irritant propenal (acrolein): 1.12 in 3/29 sample, and 0.76 in 4/20 sample.

Although there is a wide diversity in the T values from these samples, the air quality has not reached a point where crew health could be affected. Once the siloxanes, which are respiratory and reproductive toxicants are removed from the T calculation, and propenal, which is a respiratory and eye irritant is removed from the T calculation, the T-values are at or below 1.0 except for the spurious DST result in the Lab on 6/29/06. The alcohols consistently exceed the guideline level of 5 mg/m^3. Formaldehyde continues to be well below the guideline, with levels consistently lower in the SM when compared to the Lab.

Enclosures

Table 1A: Analytical Concentrations of ULF1.1 DST Air Samples
Table 1B: Analytical Concentrations of ULF1.1 GSC Air Samples
Table 1C: Analytical Concentrations of STS-121 GSC Air Samples
Table 2A: T-Value Calculations of ULF1.1 DST Air Samples
Table 2B: T-Value Calculations of ULF1.1 GSC Air Samples
Table 2C: T-Value Calculations of STS-121 GSC Air Samples

TABLE 1A
ANALYTICAL RESULTS OF
ULF-1.1 DUAL SORBENT TUBE AIR SAMPLES

CHEMICAL CONTAMINANT	CONCENTRATION (mg/m3)								
	AA04026 LAB S/N 1009 10/26/05 @ 08:45 GMT	AA04025 FGB S/N 1008 10/26/05 @ 08:58 GMT	AA04024 FGB S/N 1002 11/25/05 @ 17:03 GMT	AA04028 LAB S/N 1042 04/20/06 @ 09:05 GMT	AA04027 SM S/N 1038 04/20/06 @ 09:15 GMT	AA04029 LAB S/N 1046 06/09/06 @ 10:15 GMT	AA04030 FGB S/N 1051 06/09/06 @ 10:25 GMT	AA04031 FGB S/N 1012 06/27/06 @ 16:05 GMT	AA04032 SM S/N 1034 06/27/06 @ 16:10 GMT
TARGET COMPOUNDS (TO-14/POLAR)* **									
FREON 12	TRACE	TRACE	TRACE	TRACE	TRACE	0.088	TRACE	TRACE	TRACE
CHLOROMETHANE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE
FREON 114	< 0.06	< 0.06	< 0.06	< 0.06	< 0.05	< 0.06	< 0.06	< 0.05	< 0.06
METHANOL	0.2	0.3	0.4	0.3	0.2	**2**	0.6	0.7	0.6
ACETALDEHYDE	0.5	0.6	0.8	1	1	***3***	1	1	1
VINYL CHLORIDE	< 0.06	< 0.06	< 0.06	< 0.06	< 0.05	< 0.06	< 0.06	< 0.05	< 0.06
BROMOMETHANE	< 0.06	< 0.06	< 0.06	< 0.06	< 0.05	< 0.06	< 0.06	< 0.05	< 0.06
ETHANOL	3	4	**4**	9	9	**30**	**10**	**20**	**20**
CHLOROETHANE	< 0.06	< 0.06	< 0.06	< 0.06	< 0.05	TRACE	< 0.06	< 0.05	< 0.06
ACETONITRILE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE
PROPENAL	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
ACETONE	0.4	0.3	0.5	0.4	0.4	1	0.6	0.6	0.7
PROPANAL	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE
2-PROPANOL	0.09	0.1	0.2	0.2	0.2	1	0.3	0.4	0.4
FREON 11	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE
FURAN	< 0.06	< 0.06	< 0.06	< 0.06	< 0.05	< 0.06	< 0.06	< 0.05	< 0.06
ACRYLONITRILE	< 0.06	< 0.06	TRACE	< 0.06	TRACE	TRACE	TRACE	TRACE	TRACE
PENTANE	< 0.06	< 0.06	< 0.06	< 0.06	< 0.05	TRACE	< 0.06	< 0.05	< 0.06
2-METHYL-2-PROPANOL	< 0.06	< 0.06	< 0.06	< 0.06	TRACE	TRACE	TRACE	TRACE	TRACE
METHYL ACETATE	< 0.06	< 0.06	TRACE	TRACE	TRACE	0.088	TRACE	TRACE	TRACE
1,1-DICHLOROETHENE	< 0.06	< 0.06	< 0.06	< 0.06	< 0.05	< 0.06	< 0.06	< 0.05	< 0.06
DICHLOROMETHANE	TRACE	TRACE	TRACE	TRACE	TRACE	0.11	TRACE	TRACE	TRACE
3-CHLOROPROPENE	< 0.06	< 0.06	< 0.06	< 0.06	< 0.05	< 0.06	< 0.06	< 0.05	< 0.06
FREON 113	< 0.06	< 0.06	< 0.06	< 0.06	< 0.05	TRACE	< 0.06	< 0.05	< 0.06
N-PROPANOL	TRACE	TRACE	TRACE	TRACE	TRACE	0.096	TRACE	TRACE	TRACE
1,1-DICHLOROETHANE	< 0.06	< 0.06	< 0.06	< 0.06	< 0.05	< 0.06	< 0.06	< 0.05	< 0.06
BUTANAL	TRACE	TRACE	TRACE	TRACE	< 0.05	TRACE	TRACE	TRACE	TRACE
2-BUTANONE	TRACE	TRACE	TRACE	TRACE	TRACE	0.091	TRACE	TRACE	TRACE
1,2-DICHLOROETHENE	< 0.06	< 0.06	< 0.06	< 0.06	< 0.05	< 0.06	< 0.06	< 0.05	< 0.06
2-METHYLFURAN	< 0.06	< 0.06	< 0.06	< 0.06	< 0.05	< 0.06	< 0.06	< 0.05	< 0.06
ETHYL ACETATE	TRACE	TRACE	TRACE	TRACE	TRACE	0.23	TRACE	0.077	0.086
HEXANE	< 0.06	< 0.06	< 0.06	< 0.06	< 0.05	TRACE	< 0.06	< 0.05	< 0.06
CHLOROFORM	< 0.06	< 0.06	< 0.06	< 0.06	< 0.05	TRACE	< 0.06	< 0.05	< 0.06
2-BUTENAL	< 0.06	< 0.06	< 0.06	< 0.06	< 0.05	< 0.06	< 0.06	< 0.05	< 0.06
1,2-DICHLOROETHANE	TRACE	TRACE	TRACE	TRACE	TRACE	0.089	TRACE	TRACE	TRACE

CHEMICAL CONTAMINANT	CONCENTRATION (mg/m3)								
	AA04026 LAB S/N 1009 10/26/05 @ 08:45 GMT	AA04025 FGB S/N 1008 10/26/05 @ 08:58 GMT	AA04024 FGB S/N 1002 11/25/05 @ 17:03 GMT	AA04028 LAB S/N 1042 04/20/06 @ 09:05 GMT	AA04027 SM S/N 1038 04/20/06 @ 09:15 GMT	AA04029 LAB S/N 1046 06/09/06 @ 10:15 GMT	AA04030 FGB S/N 1051 06/09/06 @ 10:25 GMT	AA04031 FGB S/N 1012 06/27/06 @ 16:05 GMT	AA04032 SM S/N 1034 06/27/06 @ 16:10 GMT
1,1,1-TRICHLOROETHANE	< 0.06	< 0.06	< 0.06	< 0.06	< 0.05	< 0.06	< 0.06	< 0.05	< 0.06
N-BUTANOL	TRACE	TRACE	TRACE	0.089	0.071	0.44	0.11	0.11	0.15
BENZENE	< 0.06	< 0.06	TRACE	TRACE	< 0.05	TRACE	TRACE	TRACE	TRACE
TETRACHLOROMETHANE	< 0.06	< 0.06	< 0.06	< 0.06	< 0.05	< 0.06	< 0.06	< 0.05	< 0.06
2-PENTANONE	TRACE	TRACE	TRACE	< 0.06	TRACE	TRACE	TRACE	< 0.05	TRACE
2-METHYLHEXANE	< 0.06	< 0.06	TRACE	TRACE	TRACE	TRACE	< 0.06	TRACE	TRACE
2,3-DIMETHYLPENTANE	< 0.06	< 0.06	TRACE	TRACE	< 0.05	TRACE	< 0.06	TRACE	TRACE
PENTANAL	< 0.06	TRACE	TRACE	< 0.06	< 0.05	TRACE	TRACE	< 0.05	< 0.06
3-METHYLHEXANE	< 0.06	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE
1,2-DICHLOROPROPANE	< 0.06	< 0.06	< 0.06	< 0.06	< 0.05	< 0.06	< 0.06	< 0.05	< 0.06
1,4-DIOXANE	< 0.06	< 0.06	< 0.06	< 0.06	< 0.05	< 0.06	< 0.06	< 0.05	< 0.06
TRICHLOROETHENE	< 0.06	< 0.06	< 0.06	< 0.06	< 0.05	< 0.06	< 0.06	< 0.05	< 0.06
2,5-DIMETHYLFURAN	< 0.06	< 0.06	< 0.06	< 0.06	< 0.05	< 0.06	< 0.06	< 0.05	< 0.06
HEPTANE	< 0.06	< 0.06	< 0.06	< 0.06	< 0.05	TRACE	< 0.06	TRACE	TRACE
4-METHYL-2-PENTANONE	< 0.06	< 0.06	< 0.06	< 0.06	< 0.05	TRACE	< 0.06	< 0.05	< 0.06
CIS-1,3-DICHLOROPROPENE	< 0.06	< 0.06	< 0.06	< 0.06	< 0.05	< 0.06	< 0.06	< 0.05	< 0.06
2-PENTENAL	< 0.06	< 0.06	< 0.06	< 0.06	< 0.05	TRACE	< 0.06	< 0.05	< 0.06
TRANS-1,3-DICHLOROPROPENE	< 0.06	< 0.06	< 0.06	< 0.06	< 0.05	< 0.06	< 0.06	< 0.05	< 0.06
1,1,2-TRICHLOROETHANE	< 0.06	< 0.06	< 0.06	< 0.06	< 0.05	< 0.06	< 0.06	< 0.05	< 0.06
TOLUENE	TRACE	TRACE	TRACE	TRACE	TRACE	0.15	TRACE	0.062	0.089
HEXANAL	< 0.06	< 0.06	TRACE	< 0.06	< 0.05	TRACE	TRACE	< 0.05	TRACE
MESITYL OXIDE	< 0.06	< 0.06	< 0.06	< 0.06	< 0.05	TRACE	< 0.06	< 0.05	< 0.06
1,2-DIBROMOETHANE	< 0.06	< 0.06	< 0.06	< 0.06	< 0.05	< 0.06	< 0.06	< 0.05	< 0.06
BUTYL ACETATE	TRACE	TRACE	TRACE	TRACE	TRACE	0.061	TRACE	TRACE	TRACE
TETRACHLOROETHENE	< 0.06	< 0.06	< 0.06	< 0.06	< 0.05	< 0.06	< 0.06	< 0.05	< 0.06
CHLOROBENZENE	< 0.06	< 0.06	< 0.06	< 0.06	< 0.05	< 0.06	< 0.06	< 0.05	< 0.06
ETHYLBENZENE	< 0.06	< 0.06	< 0.06	< 0.06	< 0.05	TRACE	< 0.06	< 0.05	< 0.06
META+PARA-XYLENES	TRACE	TRACE	TRACE	TRACE	TRACE	0.086	TRACE	TRACE	TRACE
2-HEPTANONE	< 0.06	< 0.06	< 0.06	< 0.06	< 0.05	TRACE	< 0.06	< 0.05	< 0.06
CYCLOHEXANONE	TRACE	TRACE	TRACE	TRACE	TRACE	0.088	TRACE	TRACE	TRACE
HEPTANAL	TRACE	< 0.06	TRACE	< 0.06	< 0.05	TRACE	< 0.06	< 0.05	< 0.06
STYRENE	< 0.06	< 0.06	< 0.06	< 0.06	< 0.05	< 0.06	< 0.06	< 0.05	< 0.06
1,1,2,2-TETRACHLOROETHANE	< 0.06	< 0.06	< 0.06	< 0.06	< 0.05	< 0.06	< 0.06	< 0.05	< 0.06
ORTHO-XYLENE	TRACE	TRACE	0.069	0.071	0.06	0.26	0.07	0.13	0.15
1,3,5-TRIMETHYLBENZENE	< 0.06	< 0.06	< 0.06	< 0.06	< 0.05	< 0.06	< 0.06	< 0.05	< 0.06
1,2,4-TRIMETHYLBENZENE	< 0.06	< 0.06	< 0.06	< 0.06	< 0.05	< 0.06	< 0.06	< 0.05	< 0.06
1,3-DICHLOROBENZENE	< 0.06	< 0.06	< 0.06	< 0.06	< 0.05	< 0.06	< 0.06	< 0.05	< 0.06
1,4-DICHLOROBENZENE	< 0.06	< 0.06	< 0.06	< 0.06	< 0.05	< 0.06	< 0.06	< 0.05	< 0.06
1,2-DICHLOROBENZENE	< 0.06	< 0.06	< 0.06	< 0.06	< 0.05	< 0.06	< 0.06	< 0.05	< 0.06
1,2,4-TRICHLOROBENZENE	< 0.06	< 0.06	< 0.06	< 0.06	< 0.05	< 0.06	< 0.06	< 0.05	< 0.06
HEXACHLOROBUTADIENE	< 0.06	< 0.06	< 0.06	< 0.06	< 0.05	< 0.06	< 0.06	< 0.05	< 0.06

CHEMICAL CONTAMINANT	CONCENTRATION (mg/m3)								
	AA04026 LAB S/N 1009 10/26/05 @ 08:45 GMT	AA04025 FGB S/N 1008 10/26/05 @ 08:58 GMT	AA04024 FGB S/N 1002 11/25/05 @ 17:03 GMT	AA04028 LAB S/N 1042 04/20/06 @ 09:05 GMT	AA04027 SM S/N 1038 04/20/06 @ 09:15 GMT	AA04029 LAB S/N 1046 06/09/06 @ 10:15 GMT	AA04030 FGB S/N 1051 06/09/06 @ 10:25 GMT	AA04031 FGB S/N 1012 06/27/06 @ 16:05 GMT	AA04032 SM S/N 1034 06/27/06 @ 16:10 GMT
TARGET COMPOUNDS (TOXIC)									
1,3-BUTADIENE	< 0.06	< 0.06	< 0.06	< 0.06	< 0.05	< 0.06	< 0.06	< 0.05	< 0.06
ETHYLENE OXIDE	< 0.06	< 0.06	< 0.06	< 0.06	< 0.05	< 0.06	< 0.06	< 0.05	< 0.06
CARBON DISULFIDE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE
2-METHYL-2-PROPENAL	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE
3-BUTEN-2-ONE	< 0.06	< 0.06	< 0.06	< 0.06	< 0.05	< 0.06	< 0.06	< 0.05	< 0.06
2-ETHOXYETHANOL	< 0.06	< 0.06	< 0.06	< 0.06	< 0.05	< 0.06	< 0.06	< 0.05	< 0.06
DIMETHYLDISULFIDE	< 0.06	< 0.06	< 0.06	< 0.06	< 0.05	< 0.06	< 0.06	< 0.05	< 0.06
OCTAMETHYLCYCLOTETRASILOXANE	6.4	0.17	0.94	0.71	0.78	3.8	2.2	0.061	1.6
NON-TARGET COMPOUNDS									
OCTAFLUOROPROPANE	*	*	*	*	*	*	*	*	*
1,1,1,2-TETRAFLUOROETHANE	< 0.06	< 0.06	< 0.06	< 0.06	< 0.05	0.85	< 0.06	TRACE	0.13
PROPENE	TRACE	TRACE	TRACE	TRACE	TRACE	0.17	TRACE	TRACE	TRACE
CARBONYLSULFIDE	0.15	0.24	0.24	0.15	0.15	0.24	0.15	0.10	0.15
1-BUTENE	TRACE	TRACE	TRACE	TRACE	TRACE	0.060	TRACE	TRACE	TRACE
TRIMETHYLSILANOL	TRACE	TRACE	0.12	0.070	0.070	0.47	0.13	0.12	0.14
1,3-DIOXOLANE	TRACE	TRACE	0.070	0.080	0.060	3.8	0.090	0.12	0.58
CYCLOHEXANE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE
HEXAMETHYLCYCLOTRISILOXANE	7.1	TRACE	0.20	0.99	0.19	3.8	0.47	TRACE	0.51
LIMONENE	TRACE	TRACE	0.090	TRACE	TRACE	0.98	0.33	0.31	0.30
DECAMETHYLCYCLOPENTASILOXANE	0.48	TRACE	0.13	0.12	TRACE	1.8	TRACE	< 0.05	TRACE
TOTAL ALCOHOLS PLUS ACETONE	3.9	4.7	4.8	10	9.9	35	12	22	22
TOTAL CONCENTRATION (NON-METHANE HYDROCARBONS)	19	6.4	8.2	14	13	56	17	25	28

*** Present, but not quantitated**

CONCENTRATION FROM GC ANALYSIS (BOLD)

CONCENTRATION FROM DILUTION ANALYSIS (ITALICS)

< : Value is less than the laboratory report detection limit.

TRACE: Amount detected is sufficient for compound identification only. Calculations are based on one-half of the laboratory report detection limit (1.1 mg/m3 for CO; 0.2 mg/m3 for CH4; 1.6 mg/m3 for H2; 0.05 mg/m3 for VOCs; and 0.02 mg/m3 for propenal.)

***Measurements are calibrated by multi-point initial calibration and verified by mid-point continuing calibration.

TABLE 1B
ANALYTICAL RESULTS OF
ULF-1.1 RETURN GRAB SAMPLE CONTAINER AIR SAMPLES

CHEMICAL CONTAMINANT	CONCENTRATION (mg/m3)												
	AA04090 SM S/N 1018 09/08/05 @ 14:54 GMT	AA04010 LAB S/N 1037 09/30/05 @ 09:50 GMT	AA04013 SM S/N 1054 10/26/05 @ 21:17 GMT	AA04011+ LAB S/N 1046 11/25/05 @ 17:32 GMT	AA04014 SM S/N 1056 12/21/05 @ 08:40 GMT	AA04012 LAB S/N 1052 01/18/06 @ 18:55 GMT	AA04016 FGB S/N 1077 02/21/06 @ 06:17 GMT	AA04017 LAB S/N 1091 3/29/06 @ 12:14 GMT	AA04021 LAB S/N 1095 04/20/06 @ 9:25 GMT	AA04008 SM S/N 1020 6/9/2006 @ 9:55 GMT	AA04009 LAB S/N 1022 06/27/06 @ 15:55 GMT	AA04009-DUP LAB S/N 1022 06/27/06 @ 15:55 GMT	AA04015 MPLM S/N 1068 07/07/06 @ 10:22 GMT
TARGET COMPOUNDS (TO-14/POLAR)* **													
FREON12	0.11	0.079	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	<0.05
CHLOROMETHANE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE
FREON114	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
METHANOL *	**0.48**	**0.52**	**0.46**	**0.43**	0.38	**0.47**	**0.40**	0.30	**0.51**	**0.95**	**0.61**	**0.68**	0.33
ACETALDEHYDE **	0.24	0.19	0.19	0.14	0.16	0.21	0.17	***1.0***	0.57	0.21	0.22	0.17	0.11
VINYLCHLORIDE	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
BROMOMETHANE	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
ETHANOL *	**3.8**	**4.8**	**18**	**5.1**	**3.7**	**3.6**	**4.9**	**5.0**	**7.5**	**7.3**	**7.4**	**7.4**	0.45
CHLOROETHANE	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
ACETONITRILE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE
PROPENAL	TRACE_	TRACE_	TRACE_	<0.02	TRACE_	TRACE_	TRACE_	0.034	0.023	TRACE_	TRACE_	TRACE_	<0.02
ACETONE	0.59	0.36	0.45	0.24	0.30	0.31	0.36	0.67	0.50	0.35	0.29	0.38	0.61
PROPANAL	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	0.38	0.16	TRACE	TRACE	TRACE	TRACE
ISOPROPANOL	0.23	0.19	0.18	0.27	0.16	0.11	0.26	0.15	0.14	0.16	0.12	0.13	1.7
FREON11	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	<0.05
FURAN	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
ACRYLONITRILE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	<0.05
PENTANE	TRACE	<0.05	<0.05	TRACE	<0.05	<0.05	<0.05	TRACE	<0.05	TRACE	TRACE	TRACE	TRACE
2-METHYL-2-PROPANOL	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE
METHYLACETATE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE
1,1-DICHLOROETHENE	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
DICHLOROMETHANE	0.091	0.054	0.057	TRACE	0.056	0.083	0.078	TRACE	TRACE	TRACE	TRACE	TRACE	0.064
3-CHLOROPROPENE	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
FREON113	TRACE	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
N-PROPANOL	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	0.057	0.064	TRACE	0.056	TRACE	TRACE	TRACE
1,1-DICHLOROETHANE	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
BUTANAL	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	0.24	0.11	TRACE	TRACE	TRACE	TRACE
2-BUTANONE	0.059	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	0.17	0.076	TRACE	TRACE	TRACE	0.87
CIS-1,2-DICHLOROETHENE	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2-METHYLFURAN	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	TRACE	TRACE	<0.05	<0.05	<0.05	TRACE
ETHYLACETATE	TRACE	TRACE	TRACE	0.052	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	0.053	0.063	0.12
HEXANE	<0.05	<0.05	<0.05	TRACE	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
CHLOROFORM	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	TRACE	<0.05	<0.05	<0.05	TRACE
2-BUTENAL	<0.05	TRACE	<0.05	<0.05	<0.05	<0.05	<0.05	TRACE	TRACE	<0.05	<0.05	<0.05	<0.05
1,2-DICHLOROETHANE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE
1,1,1-TRICHLOROETHANE	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
N-BUTANOL	0.16	0.13	0.11	0.10	0.097	0.10	0.16	0.10	0.084	0.14	0.11	0.12	0.38
BENZENE	TRACE	TRACE	<0.05	TRACE	<0.05	<0.05	<0.05	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE
CARBONTETRACHLORIDE	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2-PENTANONE	TRACE	TRACE	TRACE	<0.05	TRACE	TRACE	TRACE	0.094	TRACE	TRACE	<0.05	TRACE	<0.05
2-METHYLHEXANE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	<0.05	TRACE	TRACE	TRACE	TRACE	0.070
2,3-DIMETHYLPENTANE	TRACE	TRACE	TRACE	<0.05	<0.05	TRACE	TRACE	<0.05	TRACE	TRACE	TRACE	TRACE	TRACE
PENTANAL	TRACE	TRACE	TRACE	<0.05	TRACE	TRACE	<0.05	0.20	0.055	TRACE	TRACE	TRACE	TRACE
3-METHYLHEXANE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	0.098
1,2-DICHLOROPROPANE	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	TRACE
1,4-DIOXANE	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	TRACE	<0.05

CHEMICAL CONTAMINANT	CONCENTRATION (mg/m3)												
	AA04090 SM S/N 1018 09/08/05 @ 14:54 GMT	AA04010 LAB S/N 1037 09/30/05 @ 09:50 GMT	AA04013 SM S/N 1054 10/26/05 @ 21:17 GMT	AA04011+ LAB S/N 1046 11/25/05 @ 17:32 GMT	AA04014 SM S/N 1056 12/21/05 @ 08:40 GMT	AA04012 LAB S/N 1052 01/18/06 @ 18:55 GMT	AA04016 FGB S/N 1077 02/21/06 @ 06:17 GMT	AA04017 LAB S/N 1091 3/29/06 @ 12:14 GMT	AA04021 LAB S/N 1095 04/20/06 @ 9:25 GMT	AA04008 SM S/N 1020 6/9/2006 @ 9:55 GMT	AA04009 LAB S/N 1022 06/27/06 @ 15:55 GMT	AA04009-DUP LAB S/N 1022 06/27/06 @ 15:55 GMT	AA04015 MPLM S/N 1068 07/07/06 @ 10:22 GMT
TRICHLOROETHENE	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	TRACE
2,5-DIMETHYLFURAN	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
N-HEPTANE	<0.05	<0.05	<0.05	TRACE	<0.05	TRACE	<0.05	TRACE	<0.05	<0.05	TRACE	TRACE	TRACE
4-METHYL2-PENTANONE	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	TRACE	<0.05	<0.05	<0.05	<0.05	TRACE
CIS-1,3-DICHLOROPROPENE	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2-PENTENAL	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	TRACE	<0.05	<0.05	<0.05	<0.05	<0.05
TRANS-1,3-DICHLOROPROPENE	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,2-TRICHLOROETHANE	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
TOLUENE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	0.20
HEXANAL	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	0.19	TRACE	TRACE	TRACE	TRACE	TRACE
MESITYLOXIDE	TRACE	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	TRACE	TRACE	<0.05	<0.05	TRACE	<0.05
1,2-DIBROMOETHANE	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
BUTYLACETATE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	0.061
TETRACHLOROETHENE	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	TRACE
CHLOROBENZENE	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
ETHYLBENZENE	<0.05	TRACE	TRACE	<0.05	<0.05	TRACE	TRACE	TRACE	<0.05	TRACE	TRACE	TRACE	TRACE
M/P-XYLENES	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	0.068
2-HEPTANONE	TRACE	TRACE	<0.05	<0.05	<0.05	TRACE	<0.05	0.065	TRACE	TRACE	TRACE	TRACE	<0.05
CYCLOHEXANONE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	0.066	0.11
HEPTANAL	TRACE	TRACE	TRACE	<0.05	TRACE	TRACE	<0.05	0.13	TRACE	TRACE	TRACE	TRACE	<0.05
STYRENE	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,2,2-TETRACHLOROETHANE	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
O-XYLENE	0.071	0.084	0.085	TRACE	0.053	0.084	0.094	0.055	0.060	0.089	0.096	0.14	TRACE
1,3,5-TRIMETHYLBENZENE	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,2,4-TRIMETHYLBENZENE	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-DICHLOROBENZENE	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,4-DICHLOROBENZENE	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,2-DICHLOROBENZENE	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,2,4-TRICHLOROBENZENE	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
HEXACHLORO-1,3-BUTADIENE	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
TARGET COMPOUNDS (TOXIC)													
1,3-BUTADIENE	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
ETHYLENE OXIDE	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
CARBON DISULFIDE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE
2-METHYL-2-PROPENAL	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE
3-BUTEN-2-ONE	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2-ETHOXYETHANOL	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
DIMETHYLDISULFIDE	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
OCTAMETHYLCYCLOTETRASILOXANE	3.7	2.5	1.8	1.0	2.1	3.7	1.1	5.0	1.1	2.6	0.86	1.6	1.3
NON-TARGET COMPOUNDS													
OCTAFLUOROPROPANE	#	#	#	#	#	#	#	#	#	#	#	#	#
CARBONYLSULFIDE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	0.14
1-BUTENE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE
2-METHYL-1,3-BUTADIENE	0.094	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE
TRIMETHYLSILANOL	0.32	0.19	0.14	0.42	0.15	0.13	0.19	0.13	0.12	0.18	0.10	0.13	2.4
1,3-DIOXOLANE	0.088	0.089	0.077	0.42	0.075	0.080	0.12	0.074	0.070	0.10	0.077	0.099	TRACE
CARBONICACID,DIMETHYLESTER	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	0.076
2-METHYLBUTANAL	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	<0.05	<0.05	TRACE

CHEMICAL CONTAMINANT	CONCENTRATION (mg/m3)												
	AA04090 SM S/N 1018 09/08/05 @ 14:54 GMT	AA04010 LAB S/N 1037 09/30/05 @ 09:50 GMT	AA04013 SM S/N 1054 10/26/05 @ 21:17 GMT	AA04011+ LAB S/N 1046 11/25/05 @ 17:32 GMT	AA04014 SM S/N 1056 12/21/05 @ 08:40 GMT	AA04012 LAB S/N 1052 01/18/06 @ 18:55 GMT	AA04016 FGB S/N 1077 02/21/06 @ 06:17 GMT	AA04017 LAB S/N 1091 3/29/06 @ 12:14 GMT	AA04021 LAB S/N 1095 04/20/06 @ 9:25 GMT	AA04008 SM S/N 1020 6/9/2006 @ 9:55 GMT	AA04009 LAB S/N 1022 06/27/06 @ 15:55 GMT	AA04009-DUP LAB S/N 1022 06/27/06 @ 15:55 GMT	AA04015 MPLM S/N 1068 07/07/06 @ 10:22 GMT
CYCLOHEXANE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	0.055
HEXAMETHYLCYCLOTRISILOXANE	3.5	2.2	2.9	1.3	2.9	3.7	1.6	4.8	0.25	3.4	1.6	2.2	5.1
C8-KETONE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	0.33	TRACE	TRACE	TRACE	TRACE	TRACE
BENZALDEHYDE	0.077	0.064	0.068	TRACE	TRACE	0.054	TRACE	0.10	TRACE	TRACE	TRACE	TRACE	TRACE
C12-ALKANE	TRACE	TRACE	TRACE	0.18	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE
LIMONENE	0.080	0.12	0.081	0.15	0.067	0.22	0.26	TRACE	TRACE	0.44	0.20	0.36	TRACE
DECAMETHYLCYCLOPENTASILOXANE	0.63	0.38	0.25	0.35	0.30	0.28	0.18	0.40	0.050	1.0	0.46	0.25	0.057
TOTAL ALCOHOLS PLUS ACETONE	**5.3**	**6.1**	**19**	**6.1**	**4.7**	**4.6**	**6.1**	**6.3**	**8.7**	**9.0**	**8.5**	**8.7**	**3.5**
TARGET COMPOUNDS (GC)* **													
CARBON MONOXIDE	<0.57	<0.57	<0.57	<0.57	<0.57	<0.57	<0.57	<0.57	<0.57	<0.57	<0.57	<0.57	<0.57
METHANE	57	52	7.6	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE
HYDROGEN	15	11	TRACE	<0.74	TRACE	TRACE	TRACE	<0.74	TRACE	<0.74	<0.74	<0.74	<0.74
CARBON DIOXIDE	9800	2200	9400	4900	9600	12000	9600	10000	7700	7600	7300	7300	5700
TOTAL CONCENTRATION (NON-METHANE HYDROCARBONS)	**15**	**13**	**26**	**11**	**11**	**14**	**11**	**21**	**12**	**18**	**13**	**15**	**15**

*** FROM GC RESULTS**

***** FROM 2x DILUTION***

+ Received with valve open

 # Present, but not quantitated

< : Value is less than the laboratory report detection limit.

TRACE: Amount detected is sufficient for compound identification only. Calculations are based on one-half of the laboratory report detection limit (1.1 mg/m3 for CO; 0.2 mg/m3 for CH4; 1.6 mg/m3 for H2; 0.05 mg/m3 for VOCs; and 0.02 mg/m3 for propenal.)

***Measurements are calibrated by multi-point initial calibration and verified by mid-point continuing calibration.

TABLE 1C
ANALYTICAL RESULTS OF
STS-121 CONTAINER AIR SAMPLES

CHEMICAL CONTAMINANT	CONCENTRATION (mg/m3)		
	AA04006 SN 1089 FLIGHT DECK 7/16/06 @13:30 GMT	AA04003 SN1048 PREFLIGHT 07/01/06 @ 10:10 EDT	AA04004 SN1088 PREFLIGHT 7/2/06 @ 09:20 EDT
TARGET COMPOUNDS (TO-14/POLAR)* **			
FREON12	TRACE	<0.05	<0.05
CHLOROMETHANE	TRACE	<0.05	<0.05
FREON114	<0.05	<0.05	<0.05
METHANOL	0.20	0.19	**0.33**
ACETALDEHYDE	0.44	TRACE	0.31
VINYLCHLORIDE	<0.05	<0.05	<0.05
BROMOMETHANE	<0.05	<0.05	<0.05
ETHANOL	0.53	TRACE	TRACE
CHLOROETHANE	TRACE	<0.05	<0.05
ACETONITRILE	TRACE	<0.05	<0.05
PROPENAL	TRACE_	<0.02	TRACE_
ACETONE	0.25	TRACE	0.12
PROPANAL	0.11	<0.05	0.11
ISOPROPANOL	TRACE	1.5	TRACE
FREON11	<0.05	<0.05	<0.05
FURAN	<0.05	<0.05	<0.05
ACRYLONITRILE	<0.05	<0.05	<0.05
PENTANE	<0.05	<0.05	<0.05
2-METHYL-2-PROPANOL	TRACE	<0.05	<0.05
METHYLACETATE	<0.05	<0.05	<0.05
1,1-DICHLOROETHENE	<0.05	<0.05	<0.05
DICHLOROMETHANE	TRACE	<0.05	<0.05
3-CHLOROPROPENE	<0.05	<0.05	<0.05
FREON113	<0.05	<0.05	<0.05
N-PROPANOL	TRACE	<0.05	TRACE
1,1-DICHLOROETHANE	<0.05	<0.05	<0.05
BUTANAL	0.052	<0.05	0.077
2-BUTANONE	TRACE	TRACE	TRACE
CIS-1,2-DICHLOROETHENE	<0.05	<0.05	<0.05
2-METHYLFURAN	<0.05	<0.05	<0.05
ETHYLACETATE	TRACE	<0.05	<0.05
HEXANE	<0.05	<0.05	<0.05
CHLOROFORM	<0.05	<0.05	<0.05
2-BUTENAL	TRACE	<0.05	TRACE
1,2-DICHLOROETHANE	<0.05	<0.05	<0.05
1,1,1-TRICHLOROETHANE	<0.05	<0.05	<0.05
N-BUTANOL	TRACE	<0.05	TRACE
BENZENE	<0.05	<0.05	<0.05
CARBONTETRACHLORIDE	<0.05	<0.05	<0.05
2-PENTANONE	TRACE	<0.05	TRACE
2-METHYLHEXANE	<0.05	<0.05	<0.05
2,3-DIMETHYLPENTANE	<0.05	<0.05	<0.05
PENTANAL	TRACE	<0.05	0.05
3-METHYLHEXANE	<0.05	<0.05	<0.05
1,2-DICHLOROPROPANE	<0.05	<0.05	<0.05
1,4-DIOXANE	<0.05	<0.05	<0.05
TRICHLOROETHENE	<0.05	<0.05	<0.05
2,5-DIMETHYLFURAN	<0.05	<0.05	<0.05
N-HEPTANE	<0.05	<0.05	<0.05
4-METHYL2-PENTANONE	<0.05	<0.05	<0.05

CHEMICAL CONTAMINANT	CONCENTRATION (mg/m3)		
	AA04006 SN 1089 FLIGHT DECK 7/16/06 @13:30 GMT	AA04003 SN1048 PREFLIGHT 07/01/06 @ 10:10 EDT	AA04004 SN1088 PREFLIGHT 7/2/06 @ 09:20 EDT
CIS-1,3-DICHLOROPROPENE	<0.05	<0.05	<0.05
2-PENTENAL	<0.05	<0.05	<0.05
TRANS-1,3-DICHLOROPROPENE	<0.05	<0.05	<0.05
1,1,2-TRICHLOROETHANE	<0.05	<0.05	<0.05
TOLUENE	<0.05	<0.05	<0.05
HEXANAL	TRACE	<0.05	0.05
MESITYLOXIDE	<0.05	<0.05	<0.05
1,2-DIBROMOETHANE	<0.05	<0.05	<0.05
BUTYLACETATE	<0.05	<0.05	<0.05
TETRACHLOROETHENE	<0.05	<0.05	<0.05
CHLOROBENZENE	<0.05	<0.05	<0.05
ETHYLBENZENE	<0.05	<0.05	<0.05
M/P-XYLENES	<0.05	<0.05	<0.05
2-HEPTANONE	<0.05	<0.05	TRACE
CYCLOHEXANONE	<0.05	<0.05	TRACE
HEPTANAL	TRACE	<0.05	TRACE
STYRENE	<0.05	<0.05	<0.05
1,1,2,2-TETRACHLOROETHANE	<0.05	<0.05	<0.05
O-XYLENE	<0.05	<0.05	<0.05
1,3,5-TRIMETHYLBENZENE	<0.05	<0.05	<0.05
1,2,4-TRIMETHYLBENZENE	<0.05	<0.05	<0.05
1,3-DICHLOROBENZENE	<0.05	<0.05	<0.05
1,4-DICHLOROBENZENE	<0.05	<0.05	<0.05
1,2-DICHLOROBENZENE	<0.05	<0.05	<0.05
1,2,4-TRICHLOROBENZENE	<0.05	<0.05	<0.05
HEXACHLORO-1,3-BUTADIENE	<0.05	<0.05	<0.05
TARGET COMPOUNDS (TOXIC)			
1,3-BUTADIENE	<0.05	<0.05	<0.05
ETHYLENE OXIDE	<0.05	<0.05	<0.05
CARBON DISULFIDE	<0.05	<0.05	<0.05
2-METHYL-2-PROPENAL	TRACE	<0.05	TRACE
3-BUTEN-2-ONE	TRACE	<0.05	TRACE
2-ETHOXYETHANOL	<0.05	<0.05	<0.05
DIMETHYLDISULFIDE	<0.05	<0.05	<0.05
OCTAMETHYLCYCLOTETRASILOXANE	0.47	TRACE	0.071
NON-TARGET COMPOUNDS			
OCTAFLUOROPROPANE	TRACE	<0.05	<0.05
BROMOTRIFLUOROMETHANE	0.49	<0.05	<0.05
HEXAMETHYLCYCLOTRISILOXANE	0.93	0.17	0.25
DECAMETHYLCYCLOPENTASILOXANE	0.22	0.30	0.32
TOTAL ALCOHOLS PLUS ACETONE	**1.0**	**1.7**	**0.55**
TARGET COMPOUNDS (GC)* **			
CARBON MONOXIDE	<0.57	<0.57	<0.57
METHANE	47	<1.4	<1.4
HYDROGEN	6.9	<0.74	<0.74
CARBON DIOXIDE	5000	TRACE	TRACE

CHEMICAL CONTAMINANT	CONCENTRATION (mg/m3)		
	AA04006 SN 1089 FLIGHT DECK 7/16/06 @13:30 GMT	AA04003 SN1048 PREFLIGHT 07/01/06 @ 10:10 EDT	AA04004 SN1088 PREFLIGHT 7/2/06 @ 09:20 EDT
TOTAL CONCENTRATION (NON-METHANE HYDROCARBONS)	**4.2**	**2.3**	**2.0**

< : Value is less than the laboratory report detection limit.
TRACE: Amount detected is sufficient for compound identification only.
***Measurements are calibrated by multi-point initial calibration and verified by mid-point continuing calibration.
METHANOL CONCENTRATION FOR SAMPLE AA04004 FROM GC RUN

TABLE 2A
ANALYTICAL RESULTS OF
ULF-1.1 DUAL SORBENT TUBE AIR SAMPLES

CHEMICAL CONTAMINANT	T-VALUE (180-day SMAC)								
	AA04026 LAB S/N 1009 10/26/05 @ 08:45 GMT	AA04025 FGB S/N 1008 10/26/05 @ 08:58 GMT	AA04024 FGB S/N 1002 11/25/05 @ 17:03 GMT	AA04028 LAB S/N 1042 04/20/06 @ 09:05 GMT	AA04027 SM S/N 1038 04/20/06 @ 09:15 GMT	AA04029 LAB S/N 1046 06/09/06 @ 10:15 GMT	AA04030 FGB S/N 1051 06/09/06 @ 10:25 GMT	AA04031 FGB S/N 1012 06/27/06 @ 16:05 GMT	AA04032 SM S/N 1034 06/27/06 @ 16:10 GMT
TARGET COMPOUNDS (TO-14/POLAR)* **									
FREON 12	0.00006	0.00006	0.00006	0.00006	0.00005	0.00019	0.00006	0.00005	0.00006
CHLOROMETHANE	0.00073	0.00073	0.00073	0.00073	0.00061	0.00073	0.00073	0.00061	0.00073
FREON 114	ND	ND	ND	ND	ND	ND	ND	ND	ND
METHANOL	0.02427	0.03523	0.04560	0.03180	0.02753	**0.25253**	0.06730	0.07493	0.07033
ACETALDEHYDE	0.12158	0.14888	0.20265	0.25500	0.25193	***0.76178***	0.29400	0.33668	0.36120
VINYL CHLORIDE	ND	ND	ND	ND	ND	ND	ND	ND	ND
BROMOMETHANE	ND	ND	ND	ND	ND	ND	ND	ND	ND
ETHANOL	0.00159	0.00201	0.00183	0.00452	0.00444	**0.01702**	**0.00528**	**0.00866**	**0.00882**
CHLOROETHANE	ND	ND	ND	ND	ND	0.00012	ND	ND	ND
ACETONITRILE	0.00448	0.00448	0.00448	0.00448	0.00373	0.00448	0.00448	0.00373	0.00448
PROPENAL	ND	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE	0.00753	0.00508	0.00900	0.00744	0.00848	0.02215	0.01075	0.01120	0.01323
PROPANAL	0.00833	0.00833	0.00833	0.00833	0.00694	0.00833	0.00833	0.00694	0.00833
2-PROPANOL	0.00062	0.00065	0.00144	0.00123	0.00123	0.00748	0.00172	0.00283	0.00246
FREON 11	0.00004	0.00004	0.00004	0.00004	0.00003	0.00004	0.00004	0.00003	0.00004
FURAN	ND	ND	ND	ND	ND	ND	ND	ND	ND
ACRYLONITRILE	ND	ND	0.01071	ND	0.00893	0.01071	0.01071	0.00893	0.01071
PENTANE	ND	ND	ND	ND	ND	0.00005	ND	ND	ND
2-METHYL-2-PROPANOL	ND	ND	ND	ND	0.00021	0.00025	0.00025	0.00021	0.00025
METHYL ACETATE	ND	ND	0.00025	0.00025	0.00021	0.00073	0.00025	0.00021	0.00025
1,1-DICHLOROETHENE	ND	ND	ND	ND	ND	ND	ND	ND	ND
DICHLOROMETHANE	0.00300	0.00300	0.00300	0.00300	0.00250	0.01067	0.00300	0.00250	0.00300
3-CHLOROPROPENE	ND	ND	ND	ND	ND	ND	ND	ND	ND
FREON 113	ND	ND	ND	ND	ND	0.00008	ND	ND	ND
N-PROPANOL	0.00031	0.00031	0.00031	0.00031	0.00026	0.00098	0.00031	0.00026	0.00031
1,1-DICHLOROETHANE	ND	ND	ND	ND	ND	ND	ND	ND	ND
BUTANAL	0.00682	0.00682	0.00682	0.00682	ND	0.00682	0.00682	0.00568	0.00682
2-BUTANONE	0.00100	0.00100	0.00100	0.00100	0.00083	0.00304	0.00100	0.00083	0.00100
1,2-DICHLOROETHENE	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-METHYLFURAN	ND	ND	ND	ND	ND	ND	ND	ND	ND
ETHYL ACETATE	0.00017	0.00017	0.00017	0.00017	0.00014	0.00125	0.00017	0.00043	0.00048
HEXANE	ND	ND	ND	ND	ND	0.00017	ND	ND	ND
CHLOROFORM	ND	ND	ND	ND	ND	0.00600	ND	ND	ND
2-BUTENAL	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	0.03000	0.03000	0.03000	0.03000	0.02500	0.08910	0.03000	0.02500	0.03000

CHEMICAL CONTAMINANT	T-VALUE (180-day SMAC)								
	AA04026 LAB S/N 1009 10/26/05 @ 08:45 GMT	AA04025 FGB S/N 1008 10/26/05 @ 08:58 GMT	AA04024 FGB S/N 1002 11/25/05 @ 17:03 GMT	AA04028 LAB S/N 1042 04/20/06 @ 09:05 GMT	AA04027 SM S/N 1038 04/20/06 @ 09:15 GMT	AA04029 LAB S/N 1046 06/09/06 @ 10:15 GMT	AA04030 FGB S/N 1051 06/09/06 @ 10:25 GMT	AA04031 FGB S/N 1012 06/27/06 @ 16:05 GMT	AA04032 SM S/N 1034 06/27/06 @ 16:10 GMT
TARGET COMPOUNDS (TO-14/POLAR)* **									
1,1,1-TRICHLOROETHANE	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-BUTANOL	0.00075	0.00075	0.00075	0.00222	0.00177	0.01111	0.00279	0.00268	0.00380
BENZENE	ND	ND	0.15000	0.15000	ND	0.15000	0.15000	0.12500	0.15000
TETRACHLOROMETHANE	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-PENTANONE	0.00043	0.00043	0.00043	ND	0.00036	0.00043	0.00043	ND	0.00043
2-METHYLHEXANE	ND	ND	0.00103	0.00103	0.00086	0.00103	ND	0.00086	0.00103
2,3-DIMETHYLPENTANE	ND	ND	0.00015	0.00015	ND	0.00015	ND	0.00012	0.00015
PENTANAL	ND	0.00566	0.00566	ND	ND	0.00566	0.00566	ND	ND
3-METHYLHEXANE	ND	0.00103	0.00103	0.00103	0.00086	0.00103	0.00103	0.00086	0.00103
1,2-DICHLOROPROPANE	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-DIOXANE	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,5-DIMETHYLFURAN	ND	ND	ND	ND	ND	ND	ND	ND	ND
HEPTANE	ND	ND	ND	ND	ND	0.00015	ND	0.00013	0.00015
4-METHYL-2-PENTANONE	ND	ND	ND	ND	ND	0.00021	ND	ND	ND
CIS-1,3-DICHLOROPROPENE	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-PENTENAL	ND	ND	ND	ND	ND	0.01429	ND	ND	ND
TRANS-1,3-DICHLOROPROPENE	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND	ND	ND	ND	ND	ND
TOLUENE	0.00050	0.00050	0.00050	0.00050	0.00042	0.00249	0.00050	0.00103	0.00148
HEXANAL	ND	ND	0.00492	ND	ND	0.00492	0.00492	ND	0.00492
MESITYL OXIDE	ND	ND	ND	ND	ND	0.00075	ND	ND	ND
1,2-DIBROMOETHANE	ND	ND	ND	ND	ND	ND	ND	ND	ND
BUTYL ACETATE	0.00016	0.00016	0.00016	0.00016	0.00013	0.00032	0.00016	0.00013	0.00016
TETRACHLOROETHENE	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROBENZENE	ND	ND	ND	ND	ND	ND	ND	ND	ND
ETHYLBENZENE	ND	ND	ND	ND	ND	0.00060	ND	ND	ND
META+PARA-XYLENES	0.00014	0.00014	0.00014	0.00014	0.00011	0.00039	0.00014	0.00011	0.00014
2-HEPTANONE	ND	ND	ND	ND	ND	0.00130	ND	ND	ND
CYCLOHEXANONE	0.00050	0.00050	0.00050	0.00050	0.00042	0.00146	0.00050	0.00042	0.00050
HEPTANAL	0.00429	ND	0.00429	ND	ND	0.00429	ND	ND	ND
STYRENE	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND	ND	ND	ND	ND	ND
ORTHO-XYLENE	0.00014	0.00014	0.00032	0.00032	0.00028	0.00116	0.00033	0.00059	0.00068
1,3,5-TRIMETHYLBENZENE	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-TRIMETHYLBENZENE	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND	ND	ND	ND	ND	ND

CHEMICAL CONTAMINANT	T-VALUE (180-day SMAC)								
	AA04026 LAB S/N 1009 10/26/05 @ 08:45 GMT	AA04025 FGB S/N 1008 10/26/05 @ 08:58 GMT	AA04024 FGB S/N 1002 11/25/05 @ 17:03 GMT	AA04028 LAB S/N 1042 04/20/06 @ 09:05 GMT	AA04027 SM S/N 1038 04/20/06 @ 09:15 GMT	AA04029 LAB S/N 1046 06/09/06 @ 10:15 GMT	AA04030 FGB S/N 1051 06/09/06 @ 10:25 GMT	AA04031 FGB S/N 1012 06/27/06 @ 16:05 GMT	AA04032 SM S/N 1034 06/27/06 @ 16:10 GMT
TARGET COMPOUNDS (TO-14/POLAR)* **									
1,2,4-TRICHLOROBENZENE	ND	ND	ND	ND	ND	ND	ND	ND	ND
HEXACHLOROBUTADIENE	ND	ND	ND	ND	ND	ND	ND	ND	ND
TARGET COMPOUNDS (TOXIC)									
1,3-BUTADIENE	ND	ND	ND	ND	ND	ND	ND	ND	ND
ETHYLENE OXIDE	ND	ND	ND	ND	ND	ND	ND	ND	ND
CARBON DISULFIDE	0.00188	0.00188	0.00188	0.00188	0.00156	0.00188	0.00188	0.00156	0.00188
2-METHYL-2-PROPENAL	0.01765	0.01765	0.01765	0.01765	0.01471	0.01765	0.01765	0.01471	0.01765
3-BUTEN-2-ONE	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-ETHOXYETHANOL	ND	ND	ND	ND	ND	ND	ND	ND	ND
DIMETHYLDISULFIDE	ND	ND	ND	ND	ND	ND	ND	ND	ND
OCTAMETHYLCYCLOTETRASILOXANE	0.53692	0.01441	0.0782	0.05917	0.06505	0.31603	0.181	0.00504	0.13141
NON-TARGET COMPOUNDS									
OCTAFLUOROPROPANE	*	*	*	*	*	*	*	*	*
1,1,1,2-TETRAFLUOROETHANE	ND	ND	ND	ND	ND	0.00817	ND	0.00024	0.00123
PROPENE	0.00003	0.00003	0.00003	0.00003	0.00003	0.00019	0.00003	0.00003	0.00003
CARBONYLSULFIDE	0.01234	0.02015	0.01960	0.01238	0.01282	0.02006	0.01213	0.00821	0.01219
1-BUTENE	0.00007	0.00007	0.00007	0.00007	0.00005	0.00014	0.00007	0.00005	0.00007
TRIMETHYLSILANOL	0.00081	0.00081	0.00313	0.00194	0.00194	0.01271	0.00356	0.00325	0.00389
1,3-DIOXOLANE	0.00083	0.00083	0.00194	0.00211	0.00156	0.10658	0.00255	0.00339	0.01619
CYCLOHEXANE	0.00014	0.00014	0.00014	0.00014	0.00012	0.00014	0.00014	0.00012	0.00014
HEXAMETHYLCYCLOTRISILOXANE	0.78796	0.00333	0.02227	0.11018	0.02073	0.42590	0.05266	0.00278	0.05632
LIMONENE	0.00005	0.00005	0.00016	0.00005	0.00004	0.00175	0.00059	0.00055	0.00053
DECAMETHYLCYCLOPENTASILOXANE	0.03225	0.00200	0.00859	0.00810	0.00167	0.11693	0.00200	ND	0.00200
TOTAL T-VALUE	1.60837	0.31745	0.64996	0.72493	0.46854	2.43457	0.88592	0.66157	0.93050

*** Present, but not calculated**

CONCENTRATION FROM GC ANALYSIS (BOLD)

CONCENTRATION FROM DILUTION ANALYSIS (ITALICS)

ND : Value is less than the laboratory report detection limit.

Note: Number of decimal places in T-Values do not represent significant figures of measurements.

***Measurements are calibrated by multi-point initial calibration and verified by mid-point continuing calibration.

TABLE 2B
ANALYTICAL RESULTS OF
ULF-1.1 RETURN GRAB SAMPLE CONTAINER AIR SAMPLES

CHEMICAL CONTAMINANT	T-VALUE (180-d SMAC)												
	AA04090 SM S/N 1018 09/08/05 @ 14:54 GMT	AA04010 LAB S/N 1037 09/30/05 @ 09:50 GMT	AA04013 SM S/N 1054 10/26/05 @ 21:17 GMT	AA04011+ LAB S/N 1046 11/25/05 @ 17:32 GMT	AA04014 SM S/N 1056 12/21/05 @ 08:40 GMT	AA04012 LAB S/N 1052 01/18/06 @ 18:55 GMT	AA04016 FGB S/N 1077 02/21/06 @ 06:17 GMT	AA04017 LAB S/N 1091 3/29/06 @ 12:14 GMT	AA04021 LAB S/N 1095 04/20/06 @ 9:25 GMT	AA04008 SM S/N 1020 6/9/2006 @ 9:55 GMT	AA04009 LAB S/N 1022 06/27/06 @ 15:55 GMT	AA04009-DUP LAB S/N 1022 06/27/06 @ 15:55 GMT	AA04015 MPLM S/N 1068 07/07/06 @ 10:22 GMT
TARGET COMPOUNDS (TO-14/POLAR)* **													
FREON12	0.00023	0.00017	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	ND
CHLOROMETHANE	0.00061	0.00061	0.00061	0.00061	0.00061	0.00061	0.00061	0.00061	0.00061	0.00061	0.00061	0.00061	0.00061
FREON114	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
METHANOL *	**0.05357**	**0.05823**	**0.05124**	**0.04804**	0.04212	**0.05240**	**0.04440**	0.03370	**0.05648**	**0.10583**	**0.06812**	**0.07599**	0.03652
ACETALDEHYDE*	0.05979	0.04773	0.04863	0.03580	0.03909	0.05267	0.04147	***0.25131***	0.14174	0.05317	0.05514	0.04258	0.02705
VINYLCHLORIDE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BROMOMETHANE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ETHANOL *	**0.00191**	**0.00242**	**0.00897**	**0.00253**	**0.00186**	**0.00181**	**0.00244**	**0.00251**	**0.00373**	**0.00367**	**0.00369**	**0.00369**	0.00023
CHLOROETHANE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ACETONITRILE	0.00373	0.00373	0.00373	0.00373	0.00373	0.00373	0.00373	0.00373	0.00373	0.00373	0.00373	0.00373	0.00373
PROPENAL	0.33333	0.33333	0.33333	ND	0.33333	0.33333	0.33333	1.12473	0.76026	0.33333	0.33333	0.33333	ND
ACETONE	0.01127	0.00695	0.00863	0.00464	0.00575	0.00592	0.00686	0.01297	0.00953	0.00669	0.00567	0.00721	0.01165
PROPANAL	0.00694	0.00694	0.00694	0.00694	0.00694	0.00694	0.00694	0.10508	0.04500	0.00694	0.00694	0.00694	0.00694
ISOPROPANOL	0.00152	0.00129	0.00117	0.00178	0.00106	0.00076	0.00171	0.00097	0.00094	0.00109	0.00078	0.00085	0.01132
FREON11	0.00003	0.00003	0.00003	0.00003	0.00003	0.00003	0.00003	0.00003	0.00003	0.00003	0.00003	0.00003	ND
FURAN	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ACRYLONITRILE	0.00893	0.00893	0.00893	0.00893	0.00893	0.00893	0.00893	0.00893	0.00893	0.00893	0.00893	0.00893	ND
PENTANE	0.00004	ND	ND	0.00004	ND	ND	ND	0.00004	ND	0.00004	0.00004	0.00004	0.00004
2-METHYL-2-PROPANOL	0.00021	0.00021	0.00021	0.00021	0.00021	0.00021	0.00021	0.00021	0.00021	0.00021	0.00021	0.00021	0.00021
METHYLACETATE	0.00021	0.00021	0.00021	0.00021	0.00021	0.00021	0.00021	0.00021	0.00021	0.00021	0.00021	0.00021	0.00021
1,1-DICHLOROETHENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DICHLOROMETHANE	0.00911	0.00538	0.00570	0.00250	0.00559	0.00828	0.00776	0.00250	0.00250	0.00250	0.00250	0.00250	0.00645
3-CHLOROPROPENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FREON113	0.00006	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-PROPANOL	0.00026	0.00026	0.00026	0.00026	0.00026	0.00026	0.00059	0.00066	0.00026	0.00057	0.00026	0.00026	0.00026
1,1-DICHLOROETHANE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BUTANAL	0.00568	0.00568	0.00568	0.00568	0.00568	0.00568	0.00568	0.05461	0.02396	0.00568	0.00568	0.00568	0.00568
2-BUTANONE	0.00197	0.00083	0.00083	0.00083	0.00083	0.00083	0.00083	0.00581	0.00252	0.00083	0.00083	0.00083	0.02908
CIS-1,2-DICHLOROETHENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-METHYLFURAN	ND	ND	ND	ND	ND	ND	ND	0.19231	0.19231	ND	ND	ND	0.19231
ETHYLACETATE	0.00014	0.00014	0.00014	0.00029	0.00014	0.00014	0.00014	0.00014	0.00014	0.00014	0.00029	0.00035	0.00065
HEXANE	ND	ND	ND	0.00014	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROFORM	ND	ND	ND	ND	ND	ND	ND	ND	0.00500	ND	ND	ND	0.00500
2-BUTENAL	ND	0.01471	ND	ND	ND	ND	ND	0.01471	0.01471	ND	ND	ND	ND
1,2-DICHLOROETHANE	0.02500	0.02500	0.02500	0.02500	0.02500	0.02500	0.02500	0.02500	0.02500	0.02500	0.02500	0.02500	0.02500
1,1,1-TRICHLOROETHANE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-BUTANOL	0.00395	0.00334	0.00273	0.00253	0.00244	0.00252	0.00405	0.00250	0.00211	0.00354	0.00271	0.00289	0.00943
BENZENE	0.12500	0.12500	ND	0.12500	ND	ND	ND	0.12500	0.12500	0.12500	0.12500	0.12500	0.12500
CARBONTETRACHLORIDE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-PENTANONE	0.00036	0.00036	0.00036	ND	0.00036	0.00036	0.00036	0.00134	0.00036	0.00036	ND	0.00036	ND
2-METHYLHEXANE	0.00086	0.00086	0.00086	0.00086	0.00086	0.00086	0.00086	ND	0.00086	0.00086	0.00086	0.00086	0.00241
2,3-DIMETHYLPENTANE	0.00012	0.00012	0.00012	ND	ND	0.00012	0.00012	ND	0.00012	0.00012	0.00012	0.00012	0.00012
PENTANAL	0.00472	0.00472	0.00472	ND	0.00472	0.00472	ND	0.03820	0.01037	0.00472	0.00472	0.00472	0.00472
3-METHYLHEXANE	0.00086	0.00086	0.00086	0.00086	0.00086	0.00086	0.00086	0.00086	0.00086	0.00086	0.00086	0.00086	0.00337
1,2-DICHLOROPROPANE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00060
1,4-DIOXANE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00035	ND
TRICHLOROETHENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00250
2,5-DIMETHYLFURAN	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-HEPTANE	ND	ND	ND	0.00013	ND	0.00013	ND	0.00013	ND	ND	0.00013	0.00013	0.00013

CHEMICAL CONTAMINANT	T-VALUE (180-d SMAC)												
	AA04090 SM S/N 1018 09/08/05 @ 14:54 GMT	AA04010 LAB S/N 1037 09/30/05 @ 09:50 GMT	AA04013 SM S/N 1054 10/26/05 @ 21:17 GMT	AA04011+ LAB S/N 1046 11/25/05 @ 17:32 GMT	AA04014 SM S/N 1056 12/21/05 @ 08:40 GMT	AA04012 LAB S/N 1052 01/18/06 @ 18:55 GMT	AA04016 FGB S/N 1077 02/21/06 @ 06:17 GMT	AA04017 LAB S/N 1091 3/29/06 @ 12:14 GMT	AA04021 LAB S/N 1095 04/20/06 @ 9:25 GMT	AA04008 SM S/N 1020 6/9/2006 @ 9:55 GMT	AA04009 LAB S/N 1022 06/27/06 @ 15:55 GMT	AA04009-DUP LAB S/N 1022 06/27/06 @ 15:55 GMT	AA04015 MPLM S/N 1068 07/07/06 @ 10:22 GMT
4-METHYL2-PENTANONE	ND	ND	ND	ND	ND	ND	ND	0.00018	ND	ND	ND	ND	0.00018
CIS-1,3-DICHLOROPROPENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-PENTENAL	ND	ND	ND	ND	ND	ND	ND	0.01190	ND	ND	ND	ND	ND
TRANS-1,3-DICHLOROPROPENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TOLUENE	0.00042	0.00042	0.00042	0.00042	0.00042	0.00042	0.00042	0.00042	0.00042	0.00042	0.00042	0.00042	0.00332
HEXANAL	0.00410	0.00410	0.00410	0.00410	0.00410	0.00410	0.00410	0.03076	0.00410	0.00410	0.00410	0.00410	0.00410
MESITYLOXIDE	0.00063	ND	ND	ND	ND	ND	ND	0.00063	0.00063	ND	ND	0.00063	ND
1,2-DIBROMOETHANE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BUTYLACETATE	0.00013	0.00013	0.00013	0.00013	0.00013	0.00013	0.00013	0.00013	0.00013	0.00013	0.00013	0.00013	0.00032
TETRACHLOROETHENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00074
CHLOROBENZENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ETHYLBENZENE	ND	0.00050	0.00050	ND	ND	0.00050	0.00050	0.00050	ND	0.00050	0.00050	0.00050	0.00050
M/P-XYLENES	0.00011	0.00011	0.00011	0.00011	0.00011	0.00011	0.00011	0.00011	0.00011	0.00011	0.00011	0.00011	0.00031
2-HEPTANONE	0.00109	0.00109	ND	ND	ND	0.00109	ND	0.00284	0.00109	0.00109	0.00109	0.00109	ND
CYCLOHEXANONE	0.00042	0.00042	0.00042	0.00042	0.00042	0.00042	0.00042	0.00042	0.00042	0.00042	0.00042	0.00110	0.00187
HEPTANAL	0.00357	0.00357	0.00357	ND	0.00357	0.00357	ND	0.01920	0.00357	0.00357	0.00357	0.00357	ND
STYRENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
O-XYLENE	0.00032	0.00038	0.00039	0.00011	0.00024	0.00038	0.00043	0.00025	0.00027	0.00040	0.00044	0.00063	0.00011
1,3,5-TRIMETHYLBENZENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-TRIMETHYLBENZENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-TRICHLOROBENZENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
HEXACHLORO-1,3-BUTADIENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TARGET COMPOUNDS (TOXIC)													
1,3-BUTADIENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ETHYLENE OXIDE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CARBON DISULFIDE	0.00156	0.00156	0.00156	0.00156	0.00156	0.00156	0.00156	0.00156	0.00156	0.00156	0.00156	0.00156	0.00156
2-METHYL-2-PROPENAL	0.01471	0.01471	0.01471	0.01471	0.01471	0.01471	0.01471	0.01471	0.01471	0.01471	0.01471	0.01471	0.01471
3-BUTEN-2-ONE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-ETHOXYETHANOL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DIMETHYLDISULFIDE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
OCTAMETHYLCYCLOTETRASILOXANE	0.30659	0.20769	0.15366	0.08483	0.17660	0.30735	0.09523	0.41449	0.09393	0.21841	0.07184	0.13206	0.10630
NON-TARGET COMPOUNDS													
OCTAFLUOROPROPANE	#	#	#	#	#	#	#	#	#	#	#	#	#
CARBONYLSULFIDE	0.00208	0.00208	0.00208	0.00208	0.00208	0.00208	0.00208	0.00208	0.00208	0.00208	0.00208	0.00208	0.01173
1-BUTENE	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
2-METHYL-1,3-BUTADIENE	0.03142	0.00833	0.00833	0.00833	0.00833	0.00833	0.00833	0.00833	0.00833	0.00833	0.00833	0.00833	0.00833
TRIMETHYLSILANOL	0.00874	0.00513	0.00386	0.01132	0.00395	0.00344	0.00510	0.00361	0.00316	0.00494	0.00258	0.00355	0.06490
1,3-DIOXOLANE	0.00243	0.00248	0.00214	0.01162	0.00208	0.00223	0.00343	0.00207	0.00194	0.00286	0.00213	0.00275	0.00069
CARBONICACID,DIMETHYLESTER	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00003
2-METHYLBUTANAL	0.00472	0.00472	0.00472	0.00472	0.00472	0.00472	0.00472	0.00472	0.00472	0.00472	ND	ND	0.00472
CYCLOHEXANE	0.00012	0.00012	0.00012	0.00012	0.00012	0.00012	0.00012	0.00012	0.00012	0.00012	0.00012	0.00012	0.00026
HEXAMETHYLCYCLOTRISILOXANE	0.39206	0.24565	0.32393	0.14199	0.32131	0.41267	0.17413	0.53396	0.02817	0.37228	0.17642	0.24313	0.56910
C8-KETONE	0.00096	0.00096	0.00096	0.00096	0.00096	0.00096	0.00096	0.01283	0.00096	0.00096	0.00096	0.00096	0.00096
BENZALDEHYDE	0.00044	0.00037	0.00040	0.00014	0.00014	0.00031	0.00014	0.00060	0.00014	0.00014	0.00014	0.00014	0.00014
C12-ALKANE	0.00018	0.00018	0.00018	0.00130	0.00018	0.00018	0.00018	0.00018	0.00018	0.00018	0.00018	0.00018	0.00018
LIMONENE	0.00014	0.00021	0.00014	0.00026	0.00012	0.00039	0.00047	0.00004	0.00004	0.00078	0.00036	0.00064	0.00004
DECAMETHYLCYCLOPENTASILOXANE	0.04230	0.02556	0.01699	0.02357	0.02011	0.01882	0.01171	0.02685	0.00336	0.06903	0.03047	0.01668	0.00377

CHEMICAL CONTAMINANT	T-VALUE (180-d SMAC)												
	AA04090 SM S/N 1018 09/08/05 @ 14:54 GMT	AA04010 LAB S/N 1037 09/30/05 @ 09:50 GMT	AA04013 SM S/N 1054 10/26/05 @ 21:17 GMT	AA04011+ LAB S/N 1046 11/25/05 @ 17:32 GMT	AA04014 SM S/N 1056 12/21/05 @ 08:40 GMT	AA04012 LAB S/N 1052 01/18/06 @ 18:55 GMT	AA04016 FGB S/N 1077 02/21/06 @ 06:17 GMT	AA04017 LAB S/N 1091 3/29/06 @ 12:14 GMT	AA04021 LAB S/N 1095 04/20/06 @ 9:25 GMT	AA04008 SM S/N 1020 6/9/2006 @ 9:55 GMT	AA04009 LAB S/N 1022 06/27/06 @ 15:55 GMT	AA04009-DUP LAB S/N 1022 06/27/06 @ 15:55 GMT	AA04015 MPLM S/N 1068 07/07/06 @ 10:22 GMT
TARGET COMPOUNDS (GC)* **													
CARBON MONOXIDE	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
METHANE	0.01493	0.01365	0.00200	0.00019	0.00019	0.00019	0.00019	0.00019	0.00019	0.00019	0.00019	0.00019	0.00019
HYDROGEN	0.04406	0.03190	0.00109	0.00000	0.00109	0.00109	0.00109	0.00000	0.00109	0.00000	0.00000	0.00000	0.00000
CARBON DIOXIDE	0.75004	0.17202	0.72527	0.37312	0.74094	0.93110	0.73697	0.80663	0.58928	0.58274	0.56062	0.56062	0.44211
TOTAL T-VALUE	**2.28877**	**1.40613**	**1.79177**	**0.96380**	**1.79891**	**2.23839**	**1.56445**	**3.90924**	**2.20230**	**1.98956**	**1.53999**	**1.65433**	**1.75243**

*** FROM GC RESULTS**

***** FROM 2x DILUTION***

+ Received with valve open

 # Present, but not quantitated

ND : Value is less than the laboratory report detection limit.

Note: Number of decimal places in T-Values do not represent significant figures of measurements.

***Measurements are calibrated by multi-point initial calibration and verified by mid-point continuing calibration.

TABLE 2C
ANALYTICAL RESULTS OF
STS-121 CONTAINER AIR SAMPLES

CHEMICAL CONTAMINANT	T-VALUE (7-d SMAC)		
	AA04006 SN 1089 FLIGHT DECK 7/16/06 @13:30 GMT	AA04003 SN1048 PREFLIGHT 07/01/06 @ 10:10 EDT	AA04004 SN1088 PREFLIGHT 7/2/06 @ 09:20 EDT
TARGET COMPOUNDS (TO-14/POLAR)* **			
FREON12	0.00005	ND	ND
CHLOROMETHANE	0.00061	ND	ND
FREON114	ND	ND	ND
METHANOL	0.02196	0.02136	0.03670
ACETALDEHYDE	0.11010	0.00625	0.07652
VINYLCHLORIDE	ND	ND	ND
BROMOMETHANE	ND	ND	ND
ETHANOL	0.00026	0.00001	0.00001
CHLOROETHANE	0.00010	ND	ND
ACETONITRILE	0.00373	ND	ND
PROPENAL	0.33333	ND	0.33333
ACETONE	0.00476	0.00048	0.00230
PROPANAL	0.00787	ND	0.00802
ISOPROPANOL	0.00017	0.00988	0.00017
FREON11	ND	ND	ND
FURAN	ND	ND	ND
ACRYLONITRILE	ND	ND	ND
PENTANE	ND	ND	ND
2-METHYL-2-PROPANOL	0.00017	ND	ND
METHYLACETATE	ND	ND	ND
1,1-DICHLOROETHENE	ND	ND	ND
DICHLOROMETHANE	0.00050	ND	ND
3-CHLOROPROPENE	ND	ND	ND
FREON113	ND	ND	ND
N-PROPANOL	0.00026	ND	0.00026
1,1-DICHLOROETHANE	ND	ND	ND
BUTANAL	0.00292	ND	0.00433
2-BUTANONE	0.00083	0.00083	0.00083
CIS-1,2-DICHLOROETHENE	ND	ND	ND
2-METHYLFURAN	ND	ND	ND
ETHYLACETATE	0.00014	ND	ND
HEXANE	ND	ND	ND
CHLOROFORM	ND	ND	ND
2-BUTENAL	0.01471	ND	0.01471
1,2-DICHLOROETHANE	ND	ND	ND
1,1,1-TRICHLOROETHANE	ND	ND	ND
N-BUTANOL	0.00031	ND	0.00031
BENZENE	ND	ND	ND
CARBONTETRACHLORIDE	ND	ND	ND
2-PENTANONE	0.00036	ND	0.00036
2-METHYLHEXANE	ND	ND	ND
2,3-DIMETHYLPENTANE	ND	ND	ND
PENTANAL	0.00118	ND	0.00247
3-METHYLHEXANE	ND	ND	ND
1,2-DICHLOROPROPANE	ND	ND	ND
1,4-DIOXANE	ND	ND	ND
TRICHLOROETHENE	ND	ND	ND
2,5-DIMETHYLFURAN	ND	ND	ND
N-HEPTANE	ND	ND	ND

CHEMICAL CONTAMINANT	T-VALUE (7-d SMAC)		
	AA04006 SN 1089 FLIGHT DECK 7/16/06 @13:30 GMT	AA04003 SN1048 PREFLIGHT 07/01/06 @ 10:10 EDT	AA04004 SN1088 PREFLIGHT 7/2/06 @ 09:20 EDT
TARGET COMPOUNDS (TO-14/POLAR)* **			
4-METHYL2-PENTANONE	ND	ND	ND
CIS-1,3-DICHLOROPROPENE	ND	ND	ND
2-PENTENAL	ND	ND	ND
TRANS-1,3-DICHLOROPROPENE	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND
TOLUENE	ND	ND	ND
HEXANAL	0.00102	ND	0.00219
MESITYLOXIDE	ND	ND	ND
1,2-DIBROMOETHANE	ND	ND	ND
BUTYLACETATE	ND	ND	ND
TETRACHLOROETHENE	ND	ND	ND
CHLOROBENZENE	ND	ND	ND
ETHYLBENZENE	ND	ND	ND
M/P-XYLENES	ND	ND	ND
2-HEPTANONE	ND	ND	0.00109
CYCLOHEXANONE	ND	ND	0.00042
HEPTANAL	0.00089	ND	0.00089
STYRENE	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND
O-XYLENE	ND	ND	ND
1,3,5-TRIMETHYLBENZENE	ND	ND	ND
1,2,4-TRIMETHYLBENZENE	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND
1,2,4-TRICHLOROBENZENE	ND	ND	ND
HEXACHLORO-1,3-BUTADIENE	ND	ND	ND
TARGET COMPOUNDS (TOXIC)			
1,3-BUTADIENE	ND	ND	ND
ETHYLENE OXIDE	ND	ND	ND
CARBON DISULFIDE	ND	ND	ND
2-METHYL-2-PROPENAL	0.01471	ND	0.01471
3-BUTEN-2-ONE	0.05814	ND	0.05814
2-ETHOXYETHANOL	ND	ND	ND
DIMETHYLDISULFIDE	ND	ND	ND
OCTAMETHYLCYCLOTETRASILOXANE	0.00168	0.00009	0.00025
NON-TARGET COMPOUNDS			
OCTAFLUOROPROPANE	0.00000	ND	ND
BROMOTRIFLUOROMETHANE	0.00004	ND	ND
HEXAMETHYLCYCLOTRISILOXANE	0.01038	0.00183	0.00277
DECAMETHYLCYCLOPENTASILOXANE	0.00149	0.00200	0.00214
TARGET COMPOUNDS (GC)* **			
CARBON MONOXIDE	0.00000	0.00000	0.00000
METHANE	0.01226	0.00000	0.00000
HYDROGEN	0.02017	0.00000	0.00000
CARBON DIOXIDE	0.38788	0.01538	0.01538
TOTAL T-VALUE	**1.01299**	**0.05812**	**0.57830**

CHEMICAL CONTAMINANT	T-VALUE (7-d SMAC)		
	AA04006 SN 1089 FLIGHT DECK 7/16/06 @13:30 GMT	AA04003 SN1048 PREFLIGHT 07/01/06 @ 10:10 EDT	AA04004 SN1088 PREFLIGHT 7/2/06 @ 09:20 EDT
TARGET COMPOUNDS (TO-14/POLAR)* **			

ND : Value is less than the laboratory report detection limit.
Note: Number of decimal places in T-Values do not represent significant figures of measurements.
***Measurements are calibrated by multi-point initial calibration and verified by mid-point continuing calibration.