APPENDIX A

PHOTOGRAPH LOG

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Photograph Log

Photograph 1: Looking Downstream from UNR-SED01.

Photograph 2: Location of UNR-SED02.

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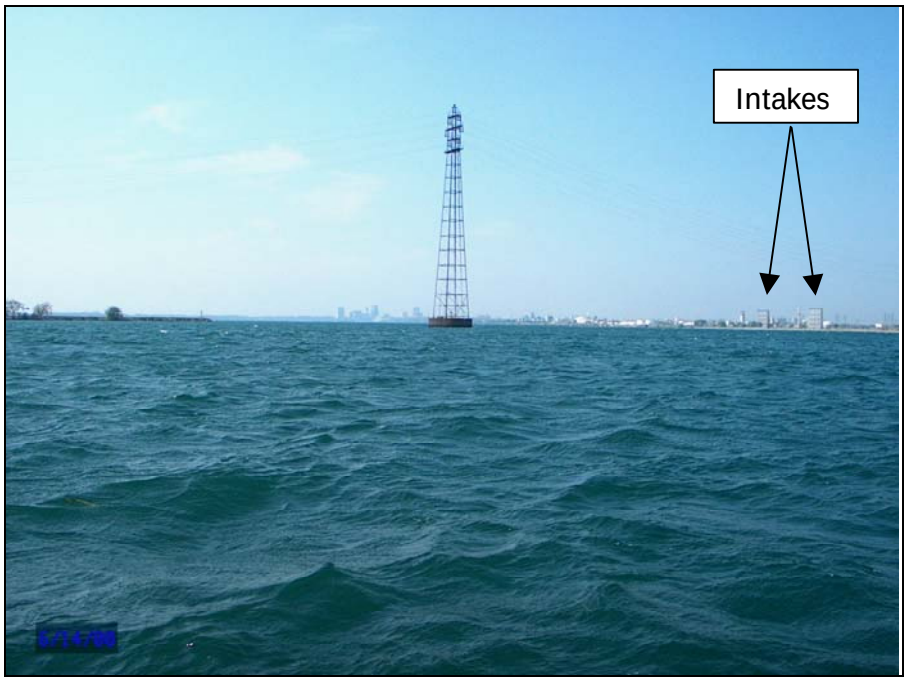

Photograph 3: Location of UNR-SED02 in relation to intakes on the Upper Niagara River.

Photograph 4: Core Sampler used for UNR-SED01 and UNR-SED02.

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Photograph 5: LNR-SED03 sampling location looking downstream to tailrace.

Photograph 6: Looking upstream from LNR-SED04 towards tailrace.

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Photograph 7: Typical sample from the reservoir.

Photograph 8: Typical sample location on the reservoir.

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Photograph 9: Dual ponar set up used in sampling from the crane in the forebay.

Photograph 10: Crane fully extended.

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Photograph 11: Limited sample volume from forebay (coarse-grained materials).

Photograph 12: Sample from BAY-SED11.

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APPENDIX B

COMPREHENSIVE ANALYTICAL RESULTS

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Niagara Power Project
October 2002 Sediment Sampling
Comprehensive Chemical Analytical Results

				Sample ID	NYPA-UNR-SED01				NYPA-UNR-SED02			
				Date Collected	10/01/02				10/01/02			
				Time Collected	1150				1315			
				Sample Matrix	SE				SE			
				Sample Type	NORMAL				NORMAL			
Group	Analyte	TEC	PEC	Units	NYSDEC Criteria	Results	Qualifiers	Reporting Detection Limit	NYSDEC Criteria	Results	Qualifiers	Reporting Detection Limit
VOA	Tetrachloroethylene	NG	NG	UG/KG	3.216		U	62	0.2176		U	5.4
SVOA	Acenaphthene			UG/KG			U	71000			U	340
	Acenaphthylene			UG/KG			U	71000			U	340
	Anthracene			UG/KG			U	71000		130	J	340
	Benzo(a)anthracene	108	1050	UG/KG	5.226		U	71000	0.3536		U	340
	Benzo(a)pyrene	150	1450	UG/KG	5.226		U	71000	0.3536	26	J	340
	Benzo(b)fluoranthene	NG	NG	UG/KG	5.226		U	71000	0.3536	27	J	340
	Benzo(ghi)perylene			UG/KG			U	71000			U	340
	Benzo(k)fluoranthene	NG	NG	UG/KG	5.226		U	71000	0.3536		U	340
	Chrysene	166	1290	UG/KG	5.226		U	71000	0.3536	55	J	340
	Dibenz(a,h)anthracene			UG/KG			U	71000			U	340
	Fluoranthene			UG/KG			U	71000		57	J	340
	Fluorene			UG/KG			U	71000			U	340
	Indeno(1,2,3-cd)pyrene			UG/KG			U	71000			U	340
	Naphthalene			UG/KG			U	71000			U	340
	Octachlorostyrene	NG	NG	UG/KG	2.01		U	71000	0.136		U	340
	Phenanthrene			UG/KG			U	71000		45	J	340
	Pyrene			UG/KG			U	71000		65	J	340
	Total PAHs	1610	22800	UG/KG	NG		U	71000	NG	405	J	340

Notes:
NG= No Guidance
A blank space in the criteria column indicates that this was not a target constituent.

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October 2002 Sediment Sampling
Comprehensive Chemical Analytical Results

				Sample ID	NYPA-UNR-SED01				NYPA-UNR-SED02			
				Date Collected	10/01/02				10/01/02			
				Time Collected	1150				1315			
				Sample Matrix	SE				SE			
				Sample Type	NORMAL				NORMAL			
Group	Analyte	TEC	PEC	Units	NYSDEC Criteria	Results	Qualifiers	Reporting Detection Limit	NYSDEC Criteria	Results	Qualifiers	Reporting Detection Limit
PEST	4,4'-DDD	4.88	28.0	UG/KG	0.0402		U	420	0.00272		UJ	11
	4,4'-DDE	3.16	31.3	UG/KG	0.0402		U	420	0.00272		UJ	11
	4,4'-DDT	5.28	572	UG/KG	0.0402		U	420	0.00272		U	11
	Chlordane (technical)	3.24	17.6	UG/KG	0.00402		U	4200	0.000272		U	110
	Dieldrin	1.90	61.8	UG/KG	0.402		U	420	0.0272		UJ	11
	Hexachlorobenzene	NG	NG	UG/KG	0.603	21000		820	0.0408		UJ	22
	Mirex	NG	NG	UG/KG	0.2814	6400	J	820	0.01904		U	22
	Toxaphene	NG	NG	UG/KG	0.0402		U	17000	0.00272		U	440
PCB	Aroclor 1016			UG/KG			U	410			U	44
	Aroclor 1221			UG/KG			U	410			U	44
	Aroclor 1232			UG/KG			U	410			U	44
	Aroclor 1242			UG/KG			U	410			U	44
	Aroclor 1248			UG/KG			U	410			U	44
	Aroclor 1254			UG/KG			U	410			U	44
	Aroclor 1260			UG/KG			U	410			U	44
	Total PCBs	59.8	676	UG/KG	0.003216		U	410	0.0002176		U	44
MISC	2,3,7,8-TCDD	NG	NG	UG/KG	0.0402	.065	R	.027	0.00272		U	.00015
	Total Organic Carbon			MG/KG		4020	J	118		272	J	144
METAL	Arsenic	9.79	33.0	MG/KG	6.0	1.6	J	0.62	6.0	4.7	J	0.66

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October 2002 Sediment Sampling
Comprehensive Chemical Analytical Results

				Sample ID	NYPA-UNR-SED01				NYPA-UNR-SED02			
				Date Collected	10/01/02				10/01/02			
				Time Collected	1150				1315			
				Sample Matrix	SE				SE			
				Sample Type	NORMAL				NORMAL			
Group	Analyte	TEC	PEC	Units	NYSDEC Criteria	Results	Qualifiers	Reporting Detection Limit	NYSDEC Criteria	Results	Qualifiers	Reporting Detection Limit
	Cadmium	0.990	4.98	MG/KG	0.6	0.40	R	0.12	0.6	0.14	R	0.13
	Lead	35.8	128	MG/KG	31.0	22.2	J	0.12	31.0	6.8	J	0.13
	Mercury	0.180	1.06	MG/KG	0.15	0.265		0.000328	0.15	0.0136	R	0.000412

Notes:
NG= No Guidance
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October 2002 Sediment Sampling
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				Sample ID	NYPA-LNR-SED03 (MS/MSD)				NYPA-LNR-SED04			
				Date Collected	10/01/02				10/01/02			
				Time Collected	1815				1850			
				Sample Matrix	SE				SE			
				Sample Type	NORMAL				NORMAL			
Group	Analyte	TEC	PEC	Units	NYSDEC Criteria	Results	Qualifiers	Reporting Detection Limit	NYSDEC Criteria	Results	Qualifiers	Reporting Detection Limit
VOA	Tetrachloroethylene	NG	NG	UG/KG	9.44	0.62	J	5.1	0.1992		U	5.2
SVOA	Acenaphthene			UG/KG		320	J	350			U	370
	Acenaphthylene			UG/KG		120	J	350			U	370
	Anthracene			UG/KG		350		350			U	370
	Benzo(a)anthracene	108	1050	UG/KG	15.34	2100		350	0.3237		U	370
	Benzo(a)pyrene	150	1450	UG/KG	15.34	2900		350	0.3237		U	370
	Benzo(b)fluoranthene	NG	NG	UG/KG	15.34	2600		350	0.3237		U	370
	Benzo(ghi)perylene			UG/KG		1400		350			U	370
	Benzo(k)fluoranthene	NG	NG	UG/KG	15.34	2400		350	0.3237		U	370
	Chrysene	166	1290	UG/KG	15.34	2200		350	0.3237		U	370
	Dibenz(a,h)anthracene			UG/KG			U	350			U	370
	Fluoranthene			UG/KG		2700		350			U	370
	Fluorene			UG/KG		310	J	350			U	370
	Indeno(1,2,3-cd)pyrene			UG/KG		1400		350			U	370
	Naphthalene			UG/KG		77	J	350			U	370
	Octachlorostyrene	NG	NG	UG/KG	5.9		U	350	0.1245		U	370
	Phenanthrene			UG/KG		1200		350			U	370
	Pyrene			UG/KG		2100		350			U	370
	Total PAHs	1610	22800	UG/KG	NG	22000	J	350	NG		U	370

Notes:
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Comprehensive Chemical Analytical Results

				Sample ID	NYPA-LNR-SED03 (MS/MSD)				NYPA-LNR-SED04			
				Date Collected	10/01/02				10/01/02			
				Time Collected	1815				1850			
				Sample Matrix	SE				SE			
				Sample Type	NORMAL				NORMAL			
Group	Analyte	TEC	PEC	Units	NYSDEC Criteria	Results	Qualifiers	Reporting Detection Limit	NYSDEC Criteria	Results	Qualifiers	Reporting Detection Limit
PEST	4,4'-DDD	4.88	28.0	UG/KG	0.118		U	21	0.00249		UJ	11
	4,4'-DDE	3.16	31.3	UG/KG	0.118		U	21	0.00249		UJ	11
	4,4'-DDT	5.28	572	UG/KG	0.118		U	21	0.00249		U	11
	Chlordane (technical)	3.24	17.6	UG/KG	0.0118		U	210	0.000249		U	110
	Dieldrin	1.90	61.8	UG/KG	1.18		U	21	0.0249		UJ	11
	Hexachlorobenzene	NG	NG	UG/KG	1.77	190		41	0.03735		UJ	21
	Mirex	NG	NG	UG/KG	0.826		UJ	41	0.01743		U	21
	Toxaphene	NG	NG	UG/KG	0.118		U	830	0.00249		U	430
PCB	Aroclor 1016			UG/KG			U	200			U	42
	Aroclor 1221			UG/KG			U	200			U	42
	Aroclor 1232			UG/KG			U	200			U	42
	Aroclor 1242			UG/KG			U	200		96		42
	Aroclor 1248			UG/KG		390		200			U	42
	Aroclor 1254			UG/KG			U	200			U	42
	Aroclor 1260			UG/KG		80	J	200		22	J	42
	Total PCBs	59.8	676	UG/KG	0.00944	470	J	200	0.0001992	120	J	42
MISC	2,3,7,8-TCDD	NG	NG	UG/KG	0.118	.0079		.00015	0.00249		U	.00053
	Total Organic Carbon			MG/KG		11800	J	120		249	J	117
METAL	Arsenic	9.79	33.0	MG/KG	6.0	4.9	J	0.62	6.0	2.2	J	0.64

Notes:
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				Sample ID	NYPA-LNR-SED03 (MS/MSD)				NYPA-LNR-SED04			
				Date Collected	10/01/02				10/01/02			
				Time Collected	1815				1850			
				Sample Matrix	SE				SE			
				Sample Type	NORMAL				NORMAL			
Group	Analyte	TEC	PEC	Units	NYSDEC Criteria	Results	Qualifiers	Reporting Detection Limit	NYSDEC Criteria	Results	Qualifiers	Reporting Detection Limit
	Cadmium	0.990	4.98	MG/KG	0.6	0.58	R	0.12	0.6	0.088	R	0.13
	Lead	35.8	128	MG/KG	31.0	39.7	J	0.62	31.0	4.2	J	0.13
	Mercury	0.180	1.06	MG/KG	0.15	0.577		0.000319	0.15	0.0207	R	0.000332

Notes:
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				Sample ID	NYPA-RES-SED05				NYPA-RES-SED06			
				Date Collected	10/02/02				10/02/02			
				Time Collected	1040				1115			
				Sample Matrix	SE				SE			
				Sample Type	NORMAL				NORMAL			
Group	Analyte	TEC	PEC	Units	NYSDEC Criteria	Results	Qualifiers	Reporting Detection Limit	NYSDEC Criteria	Results	Qualifiers	Reporting Detection Limit
VOA	Tetrachloroethylene	NG	NG	UG/KG	12.08		U	6.7	10.72		UJ	6.7
SVOA	Acenaphthene			UG/KG			U	430			UJ	440
	Acenaphthylene			UG/KG		170	J	430		170	J	440
	Anthracene			UG/KG		250	J	430		230	J	440
	Benzo(a)anthracene	108	1050	UG/KG	19.63	480		430	17.42	360	J	440
	Benzo(a)pyrene	150	1450	UG/KG	19.63	710		430	17.42	570	J	440
	Benzo(b)fluoranthene	NG	NG	UG/KG	19.63	860		430	17.42	670	J	440
	Benzo(ghi)perylene			UG/KG		200	J	430		200	J	440
	Benzo(k)fluoranthene	NG	NG	UG/KG	19.63	630		430	17.42	540	J	440
	Chrysene	166	1290	UG/KG	19.63	800		430	17.42	640	J	440
	Dibenz(a,h)anthracene			UG/KG			U	430			UJ	440
	Fluoranthene			UG/KG		1000		430		880	J	440
	Fluorene			UG/KG		330	J	430		330	J	440
	Indeno(1,2,3-cd)pyrene			UG/KG		240	J	430		220	J	440
	Naphthalene			UG/KG		170	J	430		130	J	440
	Octachlorostyrene	NG	NG	UG/KG	7.55		U	430	6.7		UJ	440
	Phenanthrene			UG/KG		410	J	430		340	J	440
	Pyrene			UG/KG		1100		430		850	J	440
	Total PAHs	1610	22800	UG/KG	NG	7400	J	430	NG	6100	J	440

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October 2002 Sediment Sampling
Comprehensive Chemical Analytical Results

				Sample ID	NYPA-RES-SED05				NYPA-RES-SED06			
				Date Collected	10/02/02				10/02/02			
				Time Collected	1040				1115			
				Sample Matrix	SE				SE			
				Sample Type	NORMAL				NORMAL			
Group	Analyte	TEC	PEC	Units	NYSDEC Criteria	Results	Qualifiers	Reporting Detection Limit	NYSDEC Criteria	Results	Qualifiers	Reporting Detection Limit
PEST	4,4'-DDD	4.88	28.0	UG/KG	0.151		UJ	34	0.134		UJ	35
	4,4'-DDE	3.16	31.3	UG/KG	0.151		UJ	34	0.134		UJ	35
	4,4'-DDT	5.28	572	UG/KG	0.151		U	34	0.134		UJ	35
	Chlordane (technical)	3.24	17.6	UG/KG	0.0151		U	340	0.0134		UJ	350
	Dieldrin	1.90	61.8	UG/KG	1.51		UJ	34	1.34		UJ	35
	Hexachlorobenzene	NG	NG	UG/KG	2.265		UJ	66	2.01		UJ	67
	Mirex	NG	NG	UG/KG	1.057	53	J	66	0.938		UJ	67
	Toxaphene	NG	NG	UG/KG	0.151		U	1300	0.134		UJ	1400
PCB	Aroclor 1016			UG/KG			U	66			UJ	51
	Aroclor 1221			UG/KG			U	66			UJ	51
	Aroclor 1232			UG/KG			U	66			UJ	51
	Aroclor 1242			UG/KG		150		66		130	J	51
	Aroclor 1248			UG/KG			U	66			UJ	51
	Aroclor 1254			UG/KG			U	66			UJ	51
	Aroclor 1260			UG/KG		43	J	66		37	J	51
	Total PCBs	59.8	676	UG/KG	0.01208	190	J	66	0.01072	170	J	51
MISC	2,3,7,8-TCDD	NG	NG	UG/KG	0.151		UJ	.0019	0.134		UJ	.00024
	Total Organic Carbon			MG/KG		15100	J	207		13400	J	205
METAL	Arsenic	9.79	33.0	MG/KG	6.0	5.0	J	0.99	6.0	5.4	J	1.0

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				Sample ID	NYPA-RES-SED05				NYPA-RES-SED06			
				Date Collected	10/02/02				10/02/02			
				Time Collected	1040				1115			
				Sample Matrix	SE				SE			
				Sample Type	NORMAL				NORMAL			
Group	Analyte	TEC	PEC	Units	NYSDEC Criteria	Results	Qualifiers	Reporting Detection Limit	NYSDEC Criteria	Results	Qualifiers	Reporting Detection Limit
	Cadmium	0.990	4.98	MG/KG	0.6	1.2	R	0.20	0.6	0.94	R	0.20
	Lead	35.8	128	MG/KG	31.0	36.8	J	0.20	31.0	32.6	J	0.20
	Mercury	0.180	1.06	MG/KG	0.15	0.206		0.000540	0.15	0.169	J	0.000562

Notes:
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				Sample ID	NYPA-RES-SED07				NYPA-RES-SED08			
				Date Collected	10/02/02				10/02/02			
				Time Collected	1135				1235			
				Sample Matrix	SE				SE			
				Sample Type	NORMAL				NORMAL			
Group	Analyte	TEC	PEC	Units	NYSDEC Criteria	Results	Qualifiers	Reporting Detection Limit	NYSDEC Criteria	Results	Qualifiers	Reporting Detection Limit
VOA	Tetrachloroethylene	NG	NG	UG/KG	13.44		UJ	7.7	12.24		UJ	13
SVOA	Acenaphthene			UG/KG			UJ	510			UJ	960
	Acenaphthylene			UG/KG		180	J	510		340	J	960
	Anthracene			UG/KG		240	J	510		430	J	960
	Benzo(a)anthracene	108	1050	UG/KG	21.84	280	J	510	19.89	450	J	960
	Benzo(a)pyrene	150	1450	UG/KG	21.84	490	J	510	19.89	840	J	960
	Benzo(b)fluoranthene	NG	NG	UG/KG	21.84	670	J	510	19.89	1100	J	960
	Benzo(ghi)perylene			UG/KG		190	J	510		310	J	960
	Benzo(k)fluoranthene	NG	NG	UG/KG	21.84	380	J	510	19.89	690	J	960
	Chrysene	166	1290	UG/KG	21.84	620	J	510	19.89	1100	J	960
	Dibenz(a,h)anthracene			UG/KG			UJ	510			UJ	960
	Fluoranthene			UG/KG		710	J	510		1200	J	960
	Fluorene			UG/KG		380	J	510		710	J	960
	Indeno(1,2,3-cd)pyrene			UG/KG		210	J	510		350	J	960
	Naphthalene			UG/KG		99	J	510		160	J	960
	Octachlorostyrene	NG	NG	UG/KG	8.4		UJ	510	7.65		UJ	960
	Phenanthrene			UG/KG		310	J	510		540	J	960
	Pyrene			UG/KG		750	J	510		1300	J	960
	Total PAHs	1610	22800	UG/KG	NG	5500	J	510	NG	9500	J	960

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				Sample ID	NYPA-RES-SED07				NYPA-RES-SED08			
				Date Collected	10/02/02				10/02/02			
				Time Collected	1135				1235			
				Sample Matrix	SE				SE			
				Sample Type	NORMAL				NORMAL			
Group	Analyte	TEC	PEC	Units	NYSDEC Criteria	Results	Qualifiers	Reporting Detection Limit	NYSDEC Criteria	Results	Qualifiers	Reporting Detection Limit
PEST	4,4'-DDD	4.88	28.0	UG/KG	0.168		UJ	21	0.153		UJ	40
	4,4'-DDE	3.16	31.3	UG/KG	0.168		UJ	21	0.153		UJ	40
	4,4'-DDT	5.28	572	UG/KG	0.168		UJ	21	0.153		UJ	40
	Chlordane (technical)	3.24	17.6	UG/KG	0.0168		UJ	210	0.0153		UJ	400
	Dieldrin	1.90	61.8	UG/KG	1.68		UJ	21	1.53		UJ	40
	Hexachlorobenzene	NG	NG	UG/KG	2.52		UJ	41	2.295		UJ	78
	Mirex	NG	NG	UG/KG	1.176		UJ	41	1.071		UJ	78
	Toxaphene	NG	NG	UG/KG	0.168		UJ	830	0.153		UJ	1600
PCB	Aroclor 1016			UG/KG			UJ	62			UJ	94
	Aroclor 1221			UG/KG			UJ	62			UJ	94
	Aroclor 1232			UG/KG			UJ	62			UJ	94
	Aroclor 1242			UG/KG		79	J	62			UJ	94
	Aroclor 1248			UG/KG			UJ	62		44	J	94
	Aroclor 1254			UG/KG			UJ	62			UJ	94
	Aroclor 1260			UG/KG		28	J	62			UJ	94
	Total PCBs	59.8	676	UG/KG	0.01344	110	J	62	0.01224	44	J	94
MISC	2,3,7,8-TCDD	NG	NG	UG/KG	0.168		UJ	.0011	0.153		UJ	.0014
	Total Organic Carbon			MG/KG		16800	J	246		15300	J	261
METAL	Arsenic	9.79	33.0	MG/KG	6.0	5.9	J	1.2	6.0	14.5	J	2.4

Notes:
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				Sample ID	NYPA-RES-SED07				NYPA-RES-SED08			
				Date Collected	10/02/02				10/02/02			
				Time Collected	1135				1235			
				Sample Matrix	SE				SE			
				Sample Type	NORMAL				NORMAL			
Group	Analyte	TEC	PEC	Units	NYSDEC Criteria	Results	Qualifiers	Reporting Detection Limit	NYSDEC Criteria	Results	Qualifiers	Reporting Detection Limit
	Cadmium	0.990	4.98	MG/KG	0.6	0.86	R	0.25	0.6	2.0	R	0.47
	Lead	35.8	128	MG/KG	31.0	31.6	J	0.25	31.0	72.4	J	0.47
	Mercury	0.180	1.06	MG/KG	0.15	0.171	J	0.000655	0.15	0.175	J	0.000699

Notes:
NG= No Guidance
A blank space in the criteria column indicates that this was not a target constituent.

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				Sample ID	NYPA-RES-SED09				NYPA-RES-SED12 (DUP OF SED-08)			
				Date Collected	10/02/02				10/02/02			
				Time Collected	1310				1240			
				Sample Matrix	SE				SE			
				Sample Type	NORMAL				NORMAL			
Group	Analyte	TEC	PEC	Units	NYSDEC Criteria	Results	Qualifiers	Reporting Detection Limit	NYSDEC Criteria	Results	Qualifiers	Reporting Detection Limit
VOA	Tetrachloroethylene	NG	NG	UG/KG	13.28		UJ	9.4	12.96		UJ	9.9
SVOA	Acenaphthene			UG/KG			UJ	650			UJ	700
	Acenaphthylene			UG/KG		220	J	650		240	J	700
	Anthracene			UG/KG		280	J	650		320	J	700
	Benzo(a)anthracene	108	1050	UG/KG	21.58	260	J	650	21.06	340	J	700
	Benzo(a)pyrene	150	1450	UG/KG	21.58	560	J	650	21.06	640	J	700
	Benzo(b)fluoranthene	NG	NG	UG/KG	21.58	750	J	650	21.06	840	J	700
	Benzo(ghi)perylene			UG/KG		190	J	650		240	J	700
	Benzo(k)fluoranthene	NG	NG	UG/KG	21.58	480	J	650	21.06	520	J	700
	Chrysene	166	1290	UG/KG	21.58	640	J	650	21.06	810	J	700
	Dibenz(a,h)anthracene			UG/KG			UJ	650			UJ	700
	Fluoranthene			UG/KG		750	J	650		910	J	700
	Fluorene			UG/KG		470	J	650		520	J	700
	Indeno(1,2,3-cd)pyrene			UG/KG		210	J	650		280	J	700
	Naphthalene			UG/KG		64	J	650		120	J	700
	Octachlorostyrene	NG	NG	UG/KG	8.3		UJ	650	8.1		UJ	700
	Phenanthrene			UG/KG		290	J	650		410	J	700
	Pyrene			UG/KG		870	J	650		990	J	700
	Total PAHs	1610	22800	UG/KG	NG	6000	J	650	NG	7200	J	700

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				Sample ID	NYPA-RES-SED09				NYPA-RES-SED12 (DUP OF SED-08)			
				Date Collected	10/02/02				10/02/02			
				Time Collected	1310				1240			
				Sample Matrix	SE				SE			
				Sample Type	NORMAL				NORMAL			
Group	Analyte	TEC	PEC	Units	NYSDEC Criteria	Results	Qualifiers	Reporting Detection Limit	NYSDEC Criteria	Results	Qualifiers	Reporting Detection Limit
PEST	4,4'-DDD	4.88	28.0	UG/KG	0.166		UJ	27	0.162		UJ	58
	4,4'-DDE	3.16	31.3	UG/KG	0.166		UJ	27	0.162		UJ	58
	4,4'-DDT	5.28	572	UG/KG	0.166		UJ	27	0.162		UJ	58
	Chlordane (technical)	3.24	17.6	UG/KG	0.0166		UJ	270	0.0162		UJ	580
	Dieldrin	1.90	61.8	UG/KG	1.66		UJ	27	1.62		UJ	58
	Hexachlorobenzene	NG	NG	UG/KG	2.49		UJ	52	2.43		UJ	110
	Mirex	NG	NG	UG/KG	1.162		UJ	52	1.134		UJ	110
	Toxaphene	NG	NG	UG/KG	0.166		UJ	1100	0.162		UJ	2300
PCB	Aroclor 1016			UG/KG			UJ	63			UJ	69
	Aroclor 1221			UG/KG			UJ	63			UJ	69
	Aroclor 1232			UG/KG			UJ	63			UJ	69
	Aroclor 1242			UG/KG		57	J	63		99	J	69
	Aroclor 1248			UG/KG			UJ	63			UJ	69
	Aroclor 1254			UG/KG			UJ	63			UJ	69
	Aroclor 1260			UG/KG			UJ	63			UJ	69
	Total PCBs	59.8	676	UG/KG	0.01328	57	J	63	0.01296	99	J	69
MISC	2,3,7,8-TCDD	NG	NG	UG/KG	0.166		UJ	.00053	0.162		UJ	.0021
	Total Organic Carbon			MG/KG		16600	J	243		16200	J	266
METAL	Arsenic	9.79	33.0	MG/KG	6.0	8.7	J	1.6	6.0	9.1	J	1.7

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				Sample ID	NYPA-RES-SED09				NYPA-RES-SED12 (DUP OF SED-08)			
				Date Collected	10/02/02				10/02/02			
				Time Collected	1310				1240			
				Sample Matrix	SE				SE			
				Sample Type	NORMAL				NORMAL			
Group	Analyte	TEC	PEC	Units	NYSDEC Criteria	Results	Qualifiers	Reporting Detection Limit	NYSDEC Criteria	Results	Qualifiers	Reporting Detection Limit
	Cadmium	0.990	4.98	MG/KG	0.6	1.1	R	0.31	0.6	1.2	R	0.34
	Lead	35.8	128	MG/KG	31.0	46.6	J	0.31	31.0	45.6	J	0.34
	Mercury	0.180	1.06	MG/KG	0.15	0.173	J	0.000654	0.15	0.163	J	0.000685

Notes:
NG= No Guidance
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		Sample ID	NYPA-UNR-SED01			NYPA-UNR-SED02			NYPA-LNR-SED03 (MS/MSD)		
		Date Collected	10/01/02			10/01/02			10/01/02		
		Time Collected	1150			1315			1815		
		Sample Matrix	SE			SE			SE		
		Sample Type	NORMAL			NORMAL			NORMAL		
Group	Analyte	Units	Results	Qualifiers	Reporting Detection Limit	Results	Qualifiers	Reporting Detection Limit	Results	Qualifiers	Reporting Detection Limit
MISC	Hydrometer, 1.3 Microns, Percent Retained	PERCE				6.0		0			
	Hydrometer, 1.4 Microns, Percent Retained	PERCE	1.4		0				1.1		0
	Hydrometer, 11.6 Microns, Percent Retained	PERCE									
	Hydrometer, 11.8 Microns, Percent Retained	PERCE									
	Hydrometer, 12.0 Microns, Percent Retained	PERCE				1.1		0			
	Hydrometer, 13.1 Microns, Percent Retained	PERCE	2.3		0						
	Hydrometer, 13.3 Microns, Percent Retained	PERCE							0.9		0
	Hydrometer, 19.9 Microns, Percent Retained	PERCE									
	Hydrometer, 20.1 Microns, Percent Retained	PERCE									
	Hydrometer, 20.6 Microns, Percent Retained	PERCE					U	0			
	Hydrometer, 22.2 Microns, Percent Retained	PERCE	2.3		0						
	Hydrometer, 22.9 Microns, Percent Retained	PERCE							2.4		0
	Hydrometer, 23.0 Microns, Percent Retained	PERCE									
	Hydrometer, 3.0 Microns, Percent Retained	PERCE				4.3		0			
	Hydrometer, 3.1 Microns, Percent Retained	PERCE									
	Hydrometer, 3.2 Microns, Percent Retained	PERCE	1.1		0						
	Hydrometer, 3.4 Microns, Percent Retained	PERCE							0.4		0
	Hydrometer, 30.7 Microns, Percent Retained	PERCE									
	Hydrometer, 31.1 Microns, Percent Retained	PERCE									
	Hydrometer, 32.6 Microns, Percent Retained	PERCE				3.2		0			
	Hydrometer, 34.4 Microns, Percent Retained	PERCE	13.4		0						
	Hydrometer, 35.3 Microns, Percent Retained	PERCE							5.5		0

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		Sample ID	NYPA-UNR-SED01			NYPA-UNR-SED02			NYPA-LNR-SED03 (MS/MSD)		
		Date Collected	10/01/02			10/01/02			10/01/02		
		Time Collected	1150			1315			1815		
		Sample Matrix	SE			SE			SE		
		Sample Type	NORMAL			NORMAL			NORMAL		
Group	Analyte	Units	Results	Qualifiers	Reporting Detection Limit	Results	Qualifiers	Reporting Detection Limit	Results	Qualifiers	Reporting Detection Limit
	Hydrometer, 36.1 Microns, Percent Retained	PERCE									
	Hydrometer, 5.9 Microns, Percent Retained	PERCE				2.3		0			
	Hydrometer, 6.0 Microns, Percent Retained	PERCE									
	Hydrometer, 6.2 Microns, Percent Retained	PERCE									
	Hydrometer, 6.3 Microns, Percent Retained	PERCE									
	Hydrometer, 6.4 Microns, Percent Retained	PERCE									
	Hydrometer, 6.7 Microns, Percent Retained	PERCE	1.2		0				0.5		0
	Hydrometer, 6.8 Microns, Percent Retained	PERCE									
	Hydrometer, 8.4 Microns, Percent Retained	PERCE									
	Hydrometer, 8.5 Microns, Percent Retained	PERCE									
	Hydrometer, 8.6 Microns, Percent Retained	PERCE									
	Hydrometer, 8.7 Microns, Percent Retained	PERCE				1.1		0			
	Hydrometer, 8.8 Microns, Percent Retained	PERCE									
	Hydrometer, 9.3 Microns, Percent Retained	PERCE							0.9		0
	Hydrometer, 9.4 Microns, Percent Retained	PERCE		U	0						
	Sieve No. 200, Percent Retained	PERCE	22.1		0	2.2		0	5.5		0
	Sieve No. 40, Percent Retained	PERCE	4.6		0	5.0		0	14.3		0
	Sieve No. 80, Percent Retained	PERCE	7.2		0	7.1		0	7.4		0
	Sieve, 19000 Microns, Percent Retained	PERCE		U	0		U	0		U	0
	Sieve, 25000 Microns, Percent Retained	PERCE		U	0		U	0		U	0
	Sieve, 37500 Microns, Percent Retained	PERCE		U	0		U	0		U	0
	Sieve, 50000 Microns, Percent Retained	PERCE		U	0		U	0		U	0

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		Sample ID	NYPA-UNR-SED01			NYPA-UNR-SED02			NYPA-LNR-SED03 (MS/MSD)		
		Date Collected	10/01/02			10/01/02			10/01/02		
		Time Collected	1150			1315			1815		
		Sample Matrix	SE			SE			SE		
		Sample Type	NORMAL			NORMAL			NORMAL		
Group	Analyte	Units	Results	Qualifiers	Reporting Detection Limit	Results	Qualifiers	Reporting Detection Limit	Results	Qualifiers	Reporting Detection Limit
	Sieve, 75000 Microns, Percent Retained	PERCE		U	0		U	0		U	0
	Sieve, 9500 Microns, Percent Retained	PERCE	1.8		0	4.5		0	3.9		0
	Sieve, No. 10, Percent Retained	PERCE	11.1		0	18.9		0	10.8		0
	Sieve, No. 100, Percent Retained	PERCE	7.3		0	1.6		0	2.3		0
	Sieve, No. 20, Percent Retained	PERCE	7.0		0	7.5		0	7.6		0
	Sieve, No. 4, Percent Retained	PERCE	8.3		0	6.3		0	11.3		0
	Sieve, No. 60, Percent Retained	PERCE	6.0		0	10.6		0	24.6		0

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		Sample ID	NYPA-LNR-SED04			NYPA-RES-SED05			NYPA-RES-SED06		
		Date Collected	10/01/02			10/02/02			10/02/02		
		Time Collected	1850			1040			1115		
		Sample Matrix	SE			SE			SE		
		Sample Type	NORMAL			NORMAL			NORMAL		
Group	Analyte	Units	Results	Qualifiers	Reporting Detection Limit	Results	Qualifiers	Reporting Detection Limit	Results	Qualifiers	Reporting Detection Limit
MISC	Hydrometer, 1.3 Microns, Percent Retained	PERCE									
	Hydrometer, 1.4 Microns, Percent Retained	PERCE	0.8		0	8.0		0	4.5		0
	Hydrometer, 11.6 Microns, Percent Retained	PERCE									
	Hydrometer, 11.8 Microns, Percent Retained	PERCE									
	Hydrometer, 12.0 Microns, Percent Retained	PERCE				11.1		0	11.5		0
	Hydrometer, 13.1 Microns, Percent Retained	PERCE									
	Hydrometer, 13.3 Microns, Percent Retained	PERCE	0.6		0						
	Hydrometer, 19.9 Microns, Percent Retained	PERCE									
	Hydrometer, 20.1 Microns, Percent Retained	PERCE				7.4		0	11.5		0
	Hydrometer, 20.6 Microns, Percent Retained	PERCE									
	Hydrometer, 22.2 Microns, Percent Retained	PERCE									
	Hydrometer, 22.9 Microns, Percent Retained	PERCE									
	Hydrometer, 23.0 Microns, Percent Retained	PERCE	0.6		0						
	Hydrometer, 3.0 Microns, Percent Retained	PERCE									
	Hydrometer, 3.1 Microns, Percent Retained	PERCE				12.6		0	11.2		0
	Hydrometer, 3.2 Microns, Percent Retained	PERCE									
	Hydrometer, 3.4 Microns, Percent Retained	PERCE	0.5		0						
	Hydrometer, 30.7 Microns, Percent Retained	PERCE							21		0
	Hydrometer, 31.1 Microns, Percent Retained	PERCE				23.9		0			
	Hydrometer, 32.6 Microns, Percent Retained	PERCE									
	Hydrometer, 34.4 Microns, Percent Retained	PERCE									
	Hydrometer, 35.3 Microns, Percent Retained	PERCE									

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		Sample ID	NYPA-LNR-SED04			NYPA-RES-SED05			NYPA-RES-SED06		
		Date Collected	10/01/02			10/02/02			10/02/02		
		Time Collected	1850			1040			1115		
		Sample Matrix	SE			SE			SE		
		Sample Type	NORMAL			NORMAL			NORMAL		
Group	Analyte	Units	Results	Qualifiers	Reporting Detection Limit	Results	Qualifiers	Reporting Detection Limit	Results	Qualifiers	Reporting Detection Limit
	Hydrometer, 36.1 Microns, Percent Retained	PERCE	6.5		0						
	Hydrometer, 5.9 Microns, Percent Retained	PERCE									
	Hydrometer, 6.0 Microns, Percent Retained	PERCE									
	Hydrometer, 6.2 Microns, Percent Retained	PERCE									
	Hydrometer, 6.3 Microns, Percent Retained	PERCE							7.7		0
	Hydrometer, 6.4 Microns, Percent Retained	PERCE				5.5		0			
	Hydrometer, 6.7 Microns, Percent Retained	PERCE									
	Hydrometer, 6.8 Microns, Percent Retained	PERCE	1.2		0						
	Hydrometer, 8.4 Microns, Percent Retained	PERCE									
	Hydrometer, 8.5 Microns, Percent Retained	PERCE							11.5		0
	Hydrometer, 8.6 Microns, Percent Retained	PERCE				11.1		0			
	Hydrometer, 8.7 Microns, Percent Retained	PERCE									
	Hydrometer, 8.8 Microns, Percent Retained	PERCE									
	Hydrometer, 9.3 Microns, Percent Retained	PERCE	1.2		0						
	Hydrometer, 9.4 Microns, Percent Retained	PERCE									
	Sieve No. 200, Percent Retained	PERCE	2.9		0	6.3		0	2.7		0
	Sieve No. 40, Percent Retained	PERCE	16.3		0	0.3		0	0.4		0
	Sieve No. 80, Percent Retained	PERCE	4.7		0	0.3		0	0.3		0
	Sieve, 19000 Microns, Percent Retained	PERCE		U	0		U	0		U	0
	Sieve, 25000 Microns, Percent Retained	PERCE		U	0		U	0		U	0
	Sieve, 37500 Microns, Percent Retained	PERCE		U	0		U	0		U	0
	Sieve, 50000 Microns, Percent Retained	PERCE		U	0		U	0		U	0

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		Sample ID	NYPA-LNR-SED04			NYPA-RES-SED05			NYPA-RES-SED06		
		Date Collected	10/01/02			10/02/02			10/02/02		
		Time Collected	1850			1040			1115		
		Sample Matrix	SE			SE			SE		
		Sample Type	NORMAL			NORMAL			NORMAL		
Group	Analyte	Units	Results	Qualifiers	Reporting Detection Limit	Results	Qualifiers	Reporting Detection Limit	Results	Qualifiers	Reporting Detection Limit
	Sieve, 75000 Microns, Percent Retained	PERCE		U	0		U	0		U	0
	Sieve, 9500 Microns, Percent Retained	PERCE	0.8		0		U	0		U	0
	Sieve, No. 10, Percent Retained	PERCE	23.7		0		U	0		U	0
	Sieve, No. 100, Percent Retained	PERCE	1.8		0	0.2		0	0.1		0
	Sieve, No. 20, Percent Retained	PERCE	23.5		0		U	0		U	0
	Sieve, No. 4, Percent Retained	PERCE	6.3		0		U	0		U	0
	Sieve, No. 60, Percent Retained	PERCE	8.2		0	0.3		0	0.4		0

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		Sample ID	NYPA-RES-SED07			NYPA-RES-SED08			NYPA-RES-SED09		
		Date Collected	10/02/02			10/02/02			10/02/02		
		Time Collected	1135			1235			1310		
		Sample Matrix	SE			SE			SE		
		Sample Type	NORMAL			NORMAL			NORMAL		
Group	Analyte	Units	Results	Qualifiers	Reporting Detection Limit	Results	Qualifiers	Reporting Detection Limit	Results	Qualifiers	Reporting Detection Limit
MISC	Hydrometer, 1.3 Microns, Percent Retained	PERCE									
	Hydrometer, 1.4 Microns, Percent Retained	PERCE	7.3		0	10.3		0	15.6		0
	Hydrometer, 11.6 Microns, Percent Retained	PERCE							4.8		0
	Hydrometer, 11.8 Microns, Percent Retained	PERCE				9.2		0			
	Hydrometer, 12.0 Microns, Percent Retained	PERCE	17.4		0						
	Hydrometer, 13.1 Microns, Percent Retained	PERCE									
	Hydrometer, 13.3 Microns, Percent Retained	PERCE									
	Hydrometer, 19.9 Microns, Percent Retained	PERCE	8.7		0	9.2		0	9.6		0
	Hydrometer, 20.1 Microns, Percent Retained	PERCE									
	Hydrometer, 20.6 Microns, Percent Retained	PERCE									
	Hydrometer, 22.2 Microns, Percent Retained	PERCE									
	Hydrometer, 22.9 Microns, Percent Retained	PERCE									
	Hydrometer, 23.0 Microns, Percent Retained	PERCE									
	Hydrometer, 3.0 Microns, Percent Retained	PERCE									
	Hydrometer, 3.1 Microns, Percent Retained	PERCE	10.5		0				14.0		0
	Hydrometer, 3.2 Microns, Percent Retained	PERCE				11.1		0			
	Hydrometer, 3.4 Microns, Percent Retained	PERCE									
	Hydrometer, 30.7 Microns, Percent Retained	PERCE	13.5		0	10.1		0	6.2		0
	Hydrometer, 31.1 Microns, Percent Retained	PERCE									
	Hydrometer, 32.6 Microns, Percent Retained	PERCE									
	Hydrometer, 34.4 Microns, Percent Retained	PERCE									
	Hydrometer, 35.3 Microns, Percent Retained	PERCE									

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		Sample ID	NYPA-RES-SED07			NYPA-RES-SED08			NYPA-RES-SED09		
		Date Collected	10/02/02			10/02/02			10/02/02		
		Time Collected	1135			1235			1310		
		Sample Matrix	SE			SE			SE		
		Sample Type	NORMAL			NORMAL			NORMAL		
Group	Analyte	Units	Results	Qualifiers	Reporting Detection Limit	Results	Qualifiers	Reporting Detection Limit	Results	Qualifiers	Reporting Detection Limit
	Hydrometer, 36.1 Microns, Percent Retained	PERCE									
	Hydrometer, 5.9 Microns, Percent Retained	PERCE									
	Hydrometer, 6.0 Microns, Percent Retained	PERCE							14.4		0
	Hydrometer, 6.2 Microns, Percent Retained	PERCE	8.7		0						
	Hydrometer, 6.3 Microns, Percent Retained	PERCE									
	Hydrometer, 6.4 Microns, Percent Retained	PERCE				13.7		0			
	Hydrometer, 6.7 Microns, Percent Retained	PERCE									
	Hydrometer, 6.8 Microns, Percent Retained	PERCE									
	Hydrometer, 8.4 Microns, Percent Retained	PERCE							9.6		0
	Hydrometer, 8.5 Microns, Percent Retained	PERCE									
	Hydrometer, 8.6 Microns, Percent Retained	PERCE				13.7		0			
	Hydrometer, 8.7 Microns, Percent Retained	PERCE									
	Hydrometer, 8.8 Microns, Percent Retained	PERCE	13.1		0						
	Hydrometer, 9.3 Microns, Percent Retained	PERCE									
	Hydrometer, 9.4 Microns, Percent Retained	PERCE									
	Sieve No. 200, Percent Retained	PERCE	0.6		0		U	0		U	0
	Sieve No. 40, Percent Retained	PERCE	0.2		0	0.1		0		U	0
	Sieve No. 80, Percent Retained	PERCE	0.2		0	0.1		0	0.1		0
	Sieve, 19000 Microns, Percent Retained	PERCE		U	0		U	0		U	0
	Sieve, 25000 Microns, Percent Retained	PERCE		U	0		U	0		U	0
	Sieve, 37500 Microns, Percent Retained	PERCE		U	0		U	0		U	0
	Sieve, 50000 Microns, Percent Retained	PERCE		U	0		U	0		U	0

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		Sample ID	NYPA-RES-SED07			NYPA-RES-SED08			NYPA-RES-SED09		
		Date Collected	10/02/02			10/02/02			10/02/02		
		Time Collected	1135			1235			1310		
		Sample Matrix	SE			SE			SE		
		Sample Type	NORMAL			NORMAL			NORMAL		
Group	Analyte	Units	Results	Qualifiers	Reporting Detection Limit	Results	Qualifiers	Reporting Detection Limit	Results	Qualifiers	Reporting Detection Limit
	Sieve, 75000 Microns, Percent Retained	PERCE		U	0		U	0		U	0
	Sieve, 9500 Microns, Percent Retained	PERCE		U	0		U	0		U	0
	Sieve, No. 10, Percent Retained	PERCE		U	0		U	0		U	0
	Sieve, No. 100, Percent Retained	PERCE	0.1		0		U	0		U	0
	Sieve, No. 20, Percent Retained	PERCE		U	0		U	0		U	0
	Sieve, No. 4, Percent Retained	PERCE		U	0		U	0		U	0
	Sieve, No. 60, Percent Retained	PERCE	0.2		0	0.1		0		U	0

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Niagara Power Project
October 2002 Sediment Sampling
Comprehensive Chemical Analytical Results

		Sample ID	NYPA-ERB-01		
		Date Collected	10/03/02		
		Time Collected	0850		
		Sample Matrix	WQ		
		Sample Type	EQUIPMENT BLANK		
Group	Analyte	Units	Results	Qualifiers	Reporting Detection Limit
VOA	Tetrachloroethylene	UG/L		U	1.0
SVOA	Acenaphthene	UG/L		U	9.6
	Acenaphthylene	UG/L		U	9.6
	Anthracene	UG/L		U	9.6
	Benzo(a)anthracene	UG/L		UJ	9.6
	Benzo(a)pyrene	UG/L		U	9.6
	Benzo(b)fluoranthene	UG/L		U	9.6
	Benzo(ghi)perylene	UG/L		U	9.6
	Benzo(k)fluoranthene	UG/L		U	9.6
	Chrysene	UG/L		U	9.6
	Dibenz(a,h)anthracene	UG/L		U	9.6
	Fluoranthene	UG/L		U	9.6
	Fluorene	UG/L		U	9.6
	Indeno(1,2,3-cd)pyrene	UG/L		U	9.6
	Naphthalene	UG/L		U	9.6
	Octachlorostyrene	UG/L		U	9.6
	Phenanthrene	UG/L		U	9.6
	Pyrene	UG/L		U	9.6
	Total PAHs	UG/L		U	9.6

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October 2002 Sediment Sampling
Comprehensive Chemical Analytical Results

		Sample ID	NYPA-ERB-01		
		Date Collected	10/03/02		
		Time Collected	0850		
		Sample Matrix	WQ		
		Sample Type	EQUIPMENT BLANK		
Group	Analyte	Units	Results	Qualifiers	Reporting Detection Limit
PEST	4,4'-DDD	UG/L		U	0.050
	4,4'-DDE	UG/L		U	0.050
	4,4'-DDT	UG/L		U	0.050
	Chlordane (technical)	UG/L		U	0.50
	Dieldrin	UG/L		U	0.050
	Hexachlorobenzene	UG/L		U	0.050
	Mirex	UG/L		UJ	0.10
	Toxaphene	UG/L		U	2.0
PCB	Aroclor 1016	UG/L		U	1.0
	Aroclor 1221	UG/L		U	1.0
	Aroclor 1232	UG/L		U	1.0
	Aroclor 1242	UG/L		U	1.0
	Aroclor 1248	UG/L		U	1.0
	Aroclor 1254	UG/L		U	1.0
	Aroclor 1260	UG/L		U	1.0
	Total PCBs	UG/L		U	1.0
MISC	2,3,7,8-TCDD	PG/L		U	1.7
	Total Organic Carbon	MG/L	3.4		1.0
METAL	Arsenic	UG/L		U	5.0

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October 2002 Sediment Sampling
Comprehensive Chemical Analytical Results

		Sample ID	NYPA-ERB-01		
		Date Collected	10/03/02		
		Time Collected	0850		
		Sample Matrix	WQ		
		Sample Type	EQUIPMENT BLANK		
Group	Analyte	Units	Results	Qualifiers	Reporting Detection Limit
	Cadmium	UG/L	48.1		1.0
	Lead	UG/L	0.34		1.0
	Mercury	NG/L	0.398		0.160

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APPENDIX C

QUALITY ASSURANCE REVIEW OF SEDIMENT SAMPLE ANALYTICAL DATA

Quality Assurance Review of Sediment Sample Analytical Data Collected for the Niagara Power Project Extent of Sedimentation and Quality of Sediments in the Lewiston Reservoir and Forebay

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QUALITY ASSURANCE REVIEW OF SEDIMENT SAMPLE ANALYTICAL DATA COLLECTED FOR THE NIAGARA POWER PROJECT - EXTENT OF SEDIMENTATION AND QUALITY OF SEDIMENTS IN THE LEWISTON RESERVOIR AND FOREBAY

APPENDIX C

Niagara Power Project

(FERC No. 2216)

Prepared for:

URS Corporation and
New York Power Authority

Prepared by:

Environmental Standards, Inc.

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June 2003

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1.0 INTRODUCTION

This quality assurance (QA) review is based upon a rigorous examination of all data generated from the analysis of the sediment samples and aqueous equipment blank that were collected by Environmental Standards, Inc., on October 1, 2, and 3, 2003, for the Niagara Power Project - Extent of Sedimentation and Quality of Sediments in the Lewiston Reservoir and Forebay. The samples included in this QA review are specified on Table 1.0-1.

This review has been performed with guidance from the following USEPA Region II data validation standard operating procedures.

- *Validation of Organic Data Acquired Using SW-846 Method 8260B*, Standard Operating Procedure (SOP) No. HW-24 Revision 1 (June 1999).
- *Validation of Organic Data Acquired Using SW-846 Method 8270C*, SOP HW-22, Revision 2 (June 2001).
- *Validation of Organochlorine Pesticides and Polychlorinated Biphenyls Data Acquired Using SW-846 Method 8080A in Conjunction with Method 8000A*, SOP HW-23 Revision 0 (April 1995).
- *US EPA Region II Data Validation SOP For SW-846 Method 8290 Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by High-Resolution Gas Chromatography/High-Resolution Mass Spectrometry (HRGC/HRMS)*, SOP HW-19, Revision 1 (October 1994).
- *Data Validation Guidelines for Contract Laboratory Program (CLP) OLM04.2*, SOP No. HW-6 Revision #12 (March 2001).
- *Evaluation of Metals Data for the Contract Laboratory Program (CLP) based on SOW 3/90*, SOP No. HW-2 Revision XI (January 1992).

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The reported analytical results are presented as a summary of the data in Attachment 1. Data were examined to determine the usability of the analytical results and compliance relative to the method requirements specified in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846, Final Update III, June 1997), American Society of Testing and Materials, Annual Book of ASTM Standards (Vol. 04.08), "Methods for Chemical Analysis of Water and Wastes" (March 1983), and the specific laboratory analytical SOPs included in the "Quality Assurance Project Plan Extent of Sedimentation and Quality of Sediments in the Lewiston Reservoir and Forebay Niagara Power Project (FERC No. 2216) (September 26, 2002) (QAPP). Qualifier codes have been placed next to results to enable the data user to quickly assess the qualitative and/or quantitative reliability of any result. This QA review identifies data quality issues for specific samples and specific evaluation criteria. The data qualifications allow the data user to best understand the usability of the analytical results. This report was prepared to provide a critical review of the laboratory analyses and reported analytical results. Rigorous QA reviews of laboratory-generated data routinely identify various problems associated with analytical measurements, even from the most experienced and capable laboratories.

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TABLE 1.0-1

SAMPLES INCLUDED IN THIS QUALITY ASSURANCE REVIEW

NYPA Sample Number	Laboratory Sample Number	Sample Delivery Group (SDG)	Matrix	Date Sample Collected	Parameter(s) Examined
UNR-SED01	A2J040261-001 503801 3910761 1899*1 A2J040301-001	A2J040261 90131 NYP01 1899 A2J040301	Sed	10/01/02	V, S, Pest, PCB, M PGS, TOC TVS Hg TCDD
UNR-SED02	A2J040261-002 503802 3910762 1899*2 A2J040301-002	A2J040261 90131 NYP01 1899 A2J040301	Sed	10/01/02	V, S, Pest, PCB, M PGS, TOC TVS Hg TCDD
LNR-SED03	A2J040261-003 503803 3911514 1899*3 A2J040301-003	A2J040261 90131 NYP01 1899 A2J040301	Sed	10/01/02	V, S, Pest, PCB, M PGS, TOC TVS Hg TCDD
LNR-SED03MS (Matrix Spike)	A2J040261-003S 503803MS 1899*3MS A2J040301-003S	A2J040261 90131 1899 A2J040301	Sed	10/01/02	V, S, Pest, PCB, M TOC Hg TCDD

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TABLE 1.0-1 (CONT.)

SAMPLES INCLUDED IN THIS QUALITY ASSURANCE REVIEW

NYPA Sample Number	Laboratory Sample Number	Sample Delivery Group (SDG)	Matrix	Date Sample Collected	Parameter(s) Examined
LNR-SED03MSD (Matrix Spike Duplicate)	A2J040261-003D 1899*3MSD A2J040301-003D	A2J040261 1899 A2J040301	Sed	10/01/02	V, S, Pest, PCB, M Hg TCDD
LNR-SED03DUP (Laboratory Duplicate)	503803DP	90131	Sed	10/01/02	TOC
LNR-SED04	A2J040261-004 503804 3911515 1899*4 A2J040301-004	A2J040261 90131 NYP01 1899 A2J040301	Sed	10/01/02	V, S, Pest, PCB, M PGS, TOC TVS Hg TCDD
RES-SED05	A2J040261-005 503805 3911516 1899*5 A2J040301-005	A2J040261 90131 NYP01 1899 A2J040301	Sed	10/02/02	V, S, Pest, PCB, M PGS, TOC TVS Hg TCDD
RES-SED05DUP (Laboratory Duplicate)	1899*5R	1899	Sed	10/02/02	Hg

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TABLE 1.0-1 (CONT.)

SAMPLES INCLUDED IN THIS QUALITY ASSURANCE REVIEW

NYPA Sample Number	Laboratory Sample Number	Sample Delivery Group (SDG)	Matrix	Date Sample Collected	Parameter(s) Examined
RES-SED06	A2J040261-006 503806 3911517 1899*6 A2J040301-006	A2J040261 90131 NYP01 1899 A2J040301	Sed	10/02/02	V, S, Pest, PCB, M PGS, TOC TVS Hg TCDD
RES-SED07	A2J040261-007 503807 3911518 1899*7 A2J040301-007	A2J040261 90131 NYP01 1899 A2J040301	Sed	10/02/02	V, S, Pest, PCB, M PGS, TOC TVS Hg TCDD
RES-SED08	A2J040261-008 503808 3911419 1899*8 A2J040301-008	A2J040261 90131 NYP01 1899 A2J040301	Sed	10/02/02	V, S, Pest, PCB, M PGS, TOC TVS Hg TCDD

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TABLE 1.0-1 (CONT.)

SAMPLES INCLUDED IN THIS QUALITY ASSURANCE REVIEW

NYPA Sample Number	Laboratory Sample Number	Sample Delivery Group (SDG)	Matrix	Date Sample Collected	Parameter(s) Examined
RES-SED09	A2J040261-009 503809 3911520 1899*9 A2J040301-009	A2J040261 90131 NYP01 1899 A2J040301	Sed	10/02/02	V, S, Pest, PCB, M PGS, TOC TVS Hg TCDD
RES-SED12 (Field Duplicate of RES-SED08)	A2J040261-010 503810 3911521 1899*10 A2J040301-010	A2J040261 90131 NYP01 1899 A2J040301	Sed	10/02/02	V, S, Pest, PCB, M TOC TVS Hg TCDD
ERB-01 (Equipment Blank)	A2J040261-011 503811 1899*11 A2J040301-011	A2J040261 90131 1899 A2J040301	Aq	10/03/02	V, S, Pest, PCB, M TOC Hg TCDD

NOTES:

V - Tetrachloroethene by SW-846 Method 8260B. (13 analyses)
S - Polynuclear Aromatic Hydrocarbons (PAH) and Octachlorostyrene by SW-846 Method 8270C. (13 analyses)
Pest - Select Pesticide Compounds by SW-846 Method 8081A. (13 analyses)

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NOTES (cont.):

PCB	-	PCB Compounds (specifically, Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254, and Aroclor-1260) by SW-846 Method 8082. (13 analyses)
TCDD	-	2,3,7,8-TCDD by SW-846 Method 8290. (13 analyses)
M	-	Arsenic, Cadmium, and Lead by SW-846 Method 6020. (13 analyses)
Hg	-	Total Mercury by US EPA modified Method 1631B. (14 analyses)
PGS	-	Particle Grain Size by ASTM Method D422. (9 analyses)
TOC	-	Total Organic Carbon by Lloyd Kahn Method. (13 analyses)
TVS	-	Total Volatile Solids by "Methods for Chemical Analysis of Water and Wastes" Method 160.4 (10 analyses)
Sed	-	Sediment.
Aq	-	Aqueous

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2.0 QUALITY ASSURANCE REVIEW

2.1 Organic Data

The organic analyses of 12 sediment samples (including quality control [QC] samples) and one aqueous equipment blank were performed by Severn Trent Laboratories of North Canton, Ohio; Austin, Texas; and Knoxville, Tennessee. The samples were collectively analyzed for polynuclear aromatic hydrocarbons (PAH) (reported individually as benzo(a)anthracene, benzo(a)pyrene, benzo(b) fluoranthene, benzo(k)fluoranthene, and chrysene, as well as total PAHs reported as a total concentration of acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(ghi)perylene, chrysene, dibenz (a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, and pyrene) and octachlorostyrene by SW-846 Method 8270C; for PCB compounds (specifically, Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254, and Aroclor-1260) by SW-846 Method 8082; for selected pesticide compounds (specifically, chlordane; 4,4´-DDD; 4,4´-DDE; 4,4´-DDT; dieldrin; hexachlorobenzene; mirex; and toxaphene) by SW-846 Method 8081A; for tetrachloroethene by SW-846 Method 8260B; and for 2,3,7,8-TCDD by SW-846 Method 8290. These analyses are indicated on Table 1.0-1. Full data package deliverables, which allowed for a comprehensive, third-party validation, were provided.

The findings offered in this report for the organic analyses are based on a review of holding times, sample condition upon laboratory receipt, blank analysis results, matrix spike (MS) and matrix spike duplicate (MSD) accuracy and precision, laboratory control sample (LCS)/LCS duplicate (LCSD) accuracy and precision, surrogate recoveries, gas chromatography/mass spectroscopy (GC/MS) tuning, instrument calibrations, internal standard recoveries, 4,4′-DDT and endrin breakdown checks, ion abundance ratios (for GC/MS analyses), signal-to-noise ratios, analytical sequences, retention time (RT) windows, GC column agreement, analytical sequence, and instrumental raw data.

Deficiencies identified during the data review are detailed below. The Environmental Standards data reviewer has included copies of all relevant raw data, QC forms, and other documentation needed to

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support any changes made to the data package in the Organic Data Support Documentation (Attachment 2) of this report. The following items do not necessarily affect data usability. Usability is addressed in the Organic Data Qualifiers section.

Correctable Deficiencies

1. For the volatiles fraction, the laboratory reported the initial calibration starting date and time on the Initial Calibration Data summary and the Continuing Calibration Compounds summaries for instrument A3UX9 as "12-AUG-2002" and "19:22," respectively. In addition, the laboratory reported the initial calibration ending date and time on the aforementioned Continuing Calibration Compounds summaries as "19-SEP-2002" and "10:52," respectively. According to the associated Volatile Organic GC/MS Tuning and Mass Calibration – Bromofluorobenzene summary (Form V VOA), the initial calibration starting and ending date and times for instrument A3UX9 are 8/13/02 at 8:49 and 8/13/02 at 10:46, respectively. The data reviewer manually edited the Initial Calibration Data summary and the Continuing Calibration Compounds summaries to reflect the correct calibration dates and times.

2. For the volatiles fraction, the laboratory reported incorrect sample weights on the GC/MS Volatiles analytical reports; however, the laboratory used the correct sample weight in the calculation of the tetrachloroethene results. The data reviewer manually edited the analytical reports to reflect the sample weights reported on the associated runlogs.

3. For the pesticides fraction, the laboratory did not include the RTs of the surrogate compounds tetrachloro-m-xylene and decachlorobiphenyl on the Pesticide Analytical Sequence summary forms (Form VIIIs) associated with the analytical sequences initiated on 10/9/02 and 10/16/02. Upon review of

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the raw data, it was determined that the surrogate compounds had been added to the standards, QC samples, and project samples and that all RTs and surrogate recoveries were within the acceptable limits.

4. For the pesticides fraction, the laboratory reported an incorrect initial calibration start date and time on all Initial Calibration Data summary forms (Form VIs) and the associated Continuing Calibration Check summary forms (Form VIIs). In addition, the laboratory reported an incorrect initial calibration start date on the Form VIIIs. The data reviewer manually edited all summary forms to reflect the correct initial calibration starting date and time.

5. For the pesticides fraction, the laboratory did not report the initial calibration standards for the AB standard mix or the initial calibration verification (ICV) on the Form VIII for the analytical sequence initiated on 10/9/02. The data reviewer manually edited this form to include the omitted standards.

6. For the PCB fraction, the laboratory reported incorrect initial calibration start dates and times on the Form VIs, Form VIIs, and Form VIIIs for the samples analyzed on instruments A2HP4 and A2HP5. The data reviewer manually edited these summary forms to reflect the correct initial calibration starting dates and times.

7. For the PAH and octachlorostyrene fraction, the laboratory did not report the octachlorostyrene calibration verification standards on the associated Form V's. The data reviewer manually edited the Form V's to report the octachlorostyrene calibration verification standards.

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8. For the PAH fraction, the laboratory did not report the result for phenanthrene on the GC/MS Semivolatiles analytical report for sample ERB-01. The data reviewer was able to determine the result for phenanthrene for sample ERB-01 from the raw data.

Noncorrectable Deficiencies

1. For the pesticides fraction, the laboratory did not analyze an instrument blank in the analytical sequences initiated on 10/16/02. According to SOP No. CORP-GC-0001NC (Rev. 5.6, Section 9.6), an instrument blank must be analyzed for any 12-hour period of analysis if a method blank is not analyzed in that period Instrument contamination could not be evaluated for the analytical sequence of 10/16/02

2. The TCDD fraction of sample UNR-SED01 was initially extracted within holding time. The TCDD fraction of sample UNR-SED01 was reextracted using a reduced initial sample weight (1.0 gram vs. 10 grams) due to method interferences present in the initial extraction. The reextraction was performed 12 days outside of the required holding time of 30 days from sample collection to extraction. Qualification of data due to this issue is addressed in the Organic Data Qualifiers section.

Comments

1. The volatiles fraction of sample UNR-SED01 was analyzed at a 10-fold dilution due to high levels of non-target compounds in this sample. The quantitation limit for tetrachloroethene in this sample has been raised accordingly.

2. For the pesticides fraction, the following samples were analyzed at the dilutions indicated on the table below. The quantitation limits have been

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adjusted accordingly. Samples LNR-SED03 and UNR-SED01 were diluted due to high concentrations of target compounds and/or matrix interference. The laboratory did not indicate in the data package provided for review nor could the data reviewer determine why the remaining samples were diluted.

Sample(s)	Dilution Factor
UNR-SED02, LNR-SED04, RES-SED07, RES-SED08, and RES-SED09	5×
LNR-SED03, RES-SED05, RES-SED06, and RES-SED12	10×
UNR-SED01	200×

3. For the pesticides fraction, the laboratory did not provide initial or daily RT window data with the samples analyses performed on 10/9/02 and 10/16/02 on instrument A2HP9. Upon Environmental Standards' request, the laboratory supplied these data.

4. For the PCB fraction, the following samples were analyzed at the dilutions indicated on the table below. The quantitation limits have been adjusted accordingly. Sample UNR-SED01 was diluted due to matrix interference. The laboratory did not indicate in the data package provided for review nor could the data reviewer determine why sample LNR-SED03 was diluted.

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Sample	Dilution Factor
LNR-SED03	5×
UNR-SED01	10×

5. For the PCB fraction, the laboratory did not include the RT window data for instrument A2HP5 in the data package provided for review. Upon Environmental Standards' request, the laboratory supplied these data.

6. For the PAH fraction, the Soil Surrogate Recovery summary and the quantitation report for the 80-ng standard analyzed on 10/8/02 at 14:57 on instrument MSB3 were not included in the data package provided for review. Upon Environmental Standards' request, the laboratory provided these omitted data.

7. The PAH fraction of sample UNR-SED01 was analyzed at a 200-fold dilution due to interfering non-target compounds. The quantitation limits for all target compounds in this sample have been raised accordingly.

8. For the TCDD fraction, the laboratory did not include the Specialty Organics Instrument MAT 95 Run Log for the samples analyzed on 11/21/02 on instrument M1A in the data package provided for review. Upon Environmental Standards' request, the laboratory provided the omitted runlog.

9. For the TCDD fraction, the laboratory did not include the summary forms and associated raw data for the continuing calibration standard analyzed on 11/7/02 at 09:30 on instrument MAT 95S in the data package provided for

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review. Upon Environmental Standards' request, the laboratory provided the omitted data.

10. On the 2,3,7,8-TCDD sample summary forms, the results are reported either as a numerical value representing the concentration of the analyte found in the sample or as "ND" (not-detected) with a numerical value representing the detection limit (i.e., the analyte was not detected at or above the concentration specified [as the detection limit]). In order to be reported as a positive concentration, the quantitation ions must be present with signal-to-noise ratios (S/N) of at least 2.5 to 1; these ions must maximize simultaneously (coincide within two scans); the ratio of peak responses must fall within the method acceptance limits; and the GC peaks must appear within the retention time window established prior to the analysis. If a peak meets all of these criteria, the result is reported as positive; if a peak meets none of the criteria, the result is reported "ND" at the calculated detection limit. When a peak meets some, but not all criteria, the analyst must use professional judgment. If the analyst thinks that 2,3,7,8-TCDD might be present in the sample, a concentration is calculated, and this result is reported as an estimated maximum possible concentration result ("EMPC"). The 2,3,7,8-TCDD result in sample UNR-SED01 was reported as "EMPC" by the laboratory.

With respect to data usability, the principal areas of concern are exceeded holding times, instrument calibration issues, analytical column disagreement, qualitative identification issues, low percent solids, and quantitation of positive results below the quantitation limit. Based on a rigorous review of the analytical data, the following organic data were qualified.

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Organic Data Qualifiers

The result for 2,3,7,8-TCDD in sample UNR-SED01 should be considered unusable and has been flagged "R" on the data tables. The retention time identification criteria (see Comment #11) were not met in the 2,3,7,8-TCDD analysis of sample UNR-SED01.

Sample UNR-SED01 was extracted for 2,3,7,8-TCDD 12 days beyond the 30-day holding time from sample collection to extraction. The result for 2,3,7,8-TCDD in sample UNR-SED01 was not qualified due to the exceeded holding time because it was previously flagged "R".

The quantitation limits for the following compounds in the samples listed below should be considered estimated and the "not-detected" results have been flagged "UJ" on the data tables. High percent differences (15%<%D≤90%) were observed for these compounds in the associated calibration verification standards.

Compound(s)	Sample(s) With Estimated Quantitation Limits ("UJ")
Mirex	LNR-SED03 and ERB-01
Hexachlorobenzene; dieldrin; 4,4´-DDD; and 4,4´-DDE	UNR-SED02, LNR-SED04, RES-SED05, RES-SED06, RES-SED07, RES-SED08, RES-SED09, and RES-SED12

The reported positive result for mirex in sample UNR-SED01 should be considered estimated and has been flagged "J" on the data tables. A high difference (>25%) was observed between the mirex results obtained from the two chromatographic columns used for the analysis of this sample.

The quantitation limit for benzo(a)anthracene in sample ERB-01 should be considered estimated and the "not-detected" result has been flagged "UJ". A high percent drift (20%<%D≤90%), was observed

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for benzo(a)anthracene in the associated CCV standard analysis. It should be noted that this high percent drift represents an increase in instrument sensitivity.

The quantitation limits for tetrachloroethene; pesticides; 2,3,7,8-TCDD; PCB compounds; and PAH compounds in samples RES-SED06, RES-SED07, RES-SED08, RES-SED09, and RES-SED12 and for 2,3,7,8-TCDD in sample RES-SED05 should be considered estimated and the "not-detected" results have been flagged "UJ" on the data tables. In addition, any reported positive results for PCB or PAH compounds in these samples should be considered estimated and have been flagged "J" on the data tables. Low percent solids (<50%) were observed for the aforementioned samples.

One field duplicate pair (sample RES-SED08 and its field duplicate, sample RES-SED12) was submitted to the laboratory for organic analyses. Good precision and sample representativeness were demonstrated by the positive results for all organic compounds in the field duplicate pair. Consequently, no qualification of the organic data was warranted due to field duplicate precision.

According to project-specific reporting requirements, all results reported at concentrations less than the sample-specific quantitation limits (adjusted for dilution factors, percent moisture, and sample volume) should be considered estimated; consequently, these results have been flagged "J" on the data tables.

The reported positive results for total PAHs in samples UNR-SED02, LRN-SED03, RES-SED05, RES-SED06, RES-SED07, RES-SED08, RES-SED09, and RES-SED12 and for total PCBs in samples LNR-SED03, LNR-SED04, RES-SED05, RES-SED06, RES-SED07, RES-SED08, RES-SED09, and RES-SED12 should be considered estimated and have been flagged "J" on the data tables. The total results in these samples were summed from individual PAH (including the full list of the PAH compounds) and/or Aroclor concentrations that have been previously flagged as estimated.

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Support documentation for this organic QA review is presented in Attachment 2 of this report. The cover sheet for this section is a checklist of all QA procedures required of the laboratory by the protocol and examined during the data review.

2.2 Inorganic and Wet Chemistry Data

The inorganic analyses of 14 sediment samples (including QC samples) and one aqueous equipment blank were performed by Severn Trent Laboratories of North Canton, Ohio, and Burlington, Vermont; by Lancaster Laboratories, Inc. of Lancaster, Pennsylvania; and by Battelle Marine Science Laboratory of Sequim, Washington. The samples were collectively analyzed for arsenic, cadmium and lead by SW-846 Method 6020; for particle grain size by ASTM Method D422; for total organic carbon (TOC) by Lloyd Kahn Method; for total volatile solids (TVS) by US EPA Method 160.4; and for total mercury by USEPA Method 1631B. These analyses are indicated on Table 1. Full data package deliverables, which allowed for a comprehensive, third-party validation, were provided.

The findings offered in this report for the inorganic and wet chemistry analyses are based on a review of holding times, sample condition upon laboratory receipt, blank analysis results, LCS/LCSD accuracy and precision, MS/MSD accuracy and precision, instrument calibrations, laboratory duplicate precision, contract-required detection limit (CRDL) standards, inductively coupled plasma/mass spectrometry (ICPMS) interference check sample results, analytical sequences, instrument detection limits (IDLs), ICPMS linear range, ICPMS serial dilution results, and sample preparation.

Deficiencies identified during the data review are detailed below. The Environmental Standards data reviewer has included copies of all relevant raw data, QC forms, and other documentation needed to support any changes made to the data package in the Inorganic and Wet Chemistry Data Support Documentation (Attachment 3) of this report. The following comments do not affect data usability. Usability is addressed in the Inorganic and Wet Chemistry Data Qualifiers section.

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Correctable Deficiencies

1. In the metals fraction, the laboratory reported incorrect concentrations for arsenic and cadmium on the LCS Evaluation Report form for LCS E9JKN. The data reviewer manually edited this summary form to reflect the concentrations for arsenic and cadmium for LCS E9JKN determined from the raw data. The recoveries for arsenic and cadmium were correct as reported.

2. In the metals fraction, the laboratory did not calculate the percent difference results for arsenic and cadmium on the Serial Dilution RPD Report for the serial dilution analysis of sample RES-SED12. The data reviewer was able to calculate the percent difference results for arsenic and cadmium for the serial dilution analysis from the serial dilution results reported on the Serial Dilution RPD Report. Qualification of data due to serial dilution results is addressed in the subsequent Inorganic and Wet Chemistry Data Qualifiers section.

3. The laboratory reported the collection date for samples RES-SED05, RES-SED06, RES-SED07, RES-SED08, RES-SED09, and RES-SED12 as "10/01/02" in the Case Narrative for the TOC fraction. According to the associated Chain-of-Custody, these samples were collected on 10/02/02. The data reviewer manually edited the Case Narrative for the TOC fraction to report the correct collection date.

Noncorrectable Deficiencies

1. For the TOC fraction, the laboratory analyzed samples LNR-SED03 and LNR-SED04 1-2 days beyond the 14-day holding time (SOP NO.LM-WC-

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TOC Lloyd, Rev 7, Section 8.0). Qualification of data due to this deficiency is addressed in the subsequent Inorganic and Wet Chemistry Data Qualifiers section.

2. For the TVS fraction, the Sample Administration Receipt Documentation Log indicated that the temperature upon laboratory receipt of samples UNR-SED01 and UNR-SED02 was 9°C. According to the QAPP (Table 4-1), samples analyzed for TVS should be cooled to 4±2°C. Qualification of data due to this deficiency is addressed in the subsequent Inorganic and Wet Chemistry Data Qualifiers section.

3. Samples UNR-SED01, UNR-SED02, LNR-SED003, and LNR-SED004 were analyzed for the TVS 1 day beyond the 7-day holding time (QAPP, Table 4-1). Qualification of data due to this deficiency is addressed in the subsequent Inorganic and Wet Chemistry Data Qualifiers section.

Comments

1. For the total volatile solids fraction, the laboratory did not include the Chain-of-Custody records for the samples collected on 10/2/02 and 10/3/02. Upon Environmental Standards' request, the laboratory provided the omitted Chain-of-Custody records.

2. For the total volatile solids fraction, the laboratory analyzed the samples using US EPA Method 160.4. According to the QAPP (Table 1-1), samples for this fraction would be analyzed for TVS by Method SM2540G (Standard Methods for the Examination of Water and Wastewater [20th Edition, 1998]). The analysis of the samples by US EPA Method 160.4 has no impact on the total volatile solids data quality because both methods follow the same analysis procedure.

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3. For the mercury fraction, sample ERB-01 was "cut off" on the copy of the Total Mercury Digestion Worksheet in the data package provided for review. Upon Environmental Standards' request, the laboratory provided a more legible copy of the Total Mercury Digestion Worksheet.

4. For the TOC fraction, the laboratory reported the result for sample UNR-SED02 as "not-detected." Based on the raw data, the data reviewer calculated the TOC result for sample UNR-SED02 as 188 mg/kg (wet weight.) Environmental Standards requested that the laboratory verify this result. The laboratory determined the reported "not-detected" result for sample UNR-SED02 was an error and provided a revised TOC Sample Report Summary. In addition, the data reviewer updated the data tables to report the positive TOC result of 272 mg/kg (dry weight) for sample UNR-SED02.

With respect to data usability, the principal areas of concern are blank contamination, exceeded holding times, elevated sample temperature upon laboratory receipt, a low MSD recovery, laboratory duplicate imprecision, serial dilution analysis imprecision, and low percent solids. Based on a rigorous review of the data provided, the following inorganic data qualifiers are offered.

Inorganic and Wet Chemistry Data Qualifiers

Due to the presence of cadmium and mercury in the associated equipment blank, the reported positive results for the cadmium in all sediment samples and for mercury in samples UNR-SED02 and LNR-SED04 should be considered unusable and have been flagged "R" on the data tables. It should be noted that sample weights, volumes, and percent solids were taken into consideration when evaluating blank contamination.

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The reported positive results for TOC in samples LNR-SED03 and LNR-SED04 should be considered estimated and have been flagged "J" on the data tables. These samples were analyzed 1-2 days beyond the 14-day holding time from sample collection to analysis.

The reported positive results for TVS in samples UNR-SED01, UNR-SED02, LNR-SED003, and LNR-SED004 should be considered estimated and have been flagged "J" on the data tables. These samples were analyzed 1 day beyond the 7-day holding time from sample collection to analysis.

The reported positive results for TVS in samples UNR-SED01 and UNR-SED02 should be considered estimated and have been flagged "J" on the data tables. The temperature of these samples upon laboratory receipt exceeded 6°C.

The reported positive results for lead in all sediment samples should be considered estimated and have been flagged "J" on the data tables. A low recovery (<75%) was observed for lead in the associated MSD analysis.

The reported positive results for TOC in all sediment samples should be considered estimated and have been flagged "J" on the data tables. Poor precision (relative percent difference [RPD]>40%) was observed for TOC in the associated laboratory duplicate analysis.

The reported positive results for arsenic in all sediment samples should be considered estimated and have been flagged "J" on the data tables. A high percent difference (>10%) was observed for arsenic in the associated ICP serial dilution analysis.

The detection limits for arsenic, cadmium, lead, mercury, and TOC in samples RES-SED06, RES-SED07, RES-SED08, RES-SED09, and RES-SED12 should be considered estimated and the "not-detected" results have been flagged "UJ" on the data tables. In addition, any reported positive results for arsenic, cadmium, lead, mercury, and TOC in these samples should be considered estimated and have

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been flagged "J" (unless previously flagged "U") on the data tables. Low percent solids (<50%) were observed for the aforementioned samples.

One field duplicate pair (sample RES-SED08 and its field duplicate, sample RES-SED12) was submitted to the laboratory for inorganic and wet chemistry analyses. Good precision and sample representativeness were demonstrated by the positive results for all inorganic and wet chemistry parameters in the field duplicate pair. Consequently, no qualification of the inorganic and wet chemistry data was warranted due to field duplicate precision.

Support documentation for this inorganic and wet chemistry QA review is presented in Attachment 3 of this report. The cover sheet for this section is a checklist of all QA procedures required of the laboratory by the protocol and examined during the data review.

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3.0 CONCLUSIONS

Based on this QA review, several organic results were qualified due to, instrument calibration issues, analytical column disagreement, qualitative identification issues, low percent solids, and quantitation of positive results below the quantitation limit. In addition, several inorganic and wet chemistry results were qualified due to blank contamination, exceeded holding times, elevated sample temperature upon laboratory receipt, a low MSD recovery, laboratory duplicate imprecision, serial dilution analysis imprecision, and low percent solids. To confidently use any of the analytical data within this sample set, the data user should understand the qualifications and limitations of the results. The Laboratory Case Narratives and Project Chain-of-Custody Records are provided in Attachment 4. The Project Correspondence is provided in Attachment 5.

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ATTACHMENT 1

ANALYTICAL RESULTS

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ORGANIC DATA QUALIFIERS

U The compound was not detected at or above the associated quantitation limit or this compound should be considered "not-detected" because it was detected in an associated blank at a similar level.

J Quantitation is approximate duel to limitations identified during the quality assurance review (data validation).

UJ This compound was not detected, but the quantitation limit is approximate due to limitations identified during the quality assurance review.

R Unusable result; compound may or may not be present in this sample.

INORGANIC AND WET CHEMISTRY DATA QUALIFIERS

U The analyte was not detected at or above the associated detection limit or this analyte should be considered "not-detected" because it was detected in an associated blank at a similar level.

J Quantitation is approximate due to limitations identified during the quality assurance review (data validation).

UJ This analyte was not detected, but the detection limit is approximate duel to limitations identified during the quality assurance review.

R Unusable result; analyte may or may not be present in this sample.

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Niagara Power Project
Sediment Quality Assessment

Sample Delivery Group = 2J04261
Report Date: 12/02/02

			Field Sample ID	NYPA-UNR-SED01				NYPA-UNR-SED02			
			Lab Sample ID	A2J040261001				A2J040261002			
			Sample Date	10/01/2002				10/01/2002			
			Sample Time	1150				1315			
			Matrix	SE				SE			
			Sample Type Code	N				N			
			Lab Code	CAN				CAN			
			Moisture Content	19				25			
			Run Number	0				0			
			Analysis Date	10/10/2002				10/10/2002			
			Analysis Time	0227				0402			
			Dilution Factor	10				0.81			
			Units	UG/KG				UG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
VOA	8260B	127-18-4	Tetrachloroethylene		U	62	ND		U	5.4	ND

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Sediment Quality Assessment

Sample Delivery Group = 2J04261
Report Date: 12/02/02

			Field Sample ID	NYPA-LNR-SED03				NYPA-LNR-SED04			
			Lab Sample ID	A2J040261003				A2J040261004			
			Sample Date	10/01/2002				10/01/2002			
			Sample Time	1815				1850			
			Matrix	SE				SE			
			Sample Type Code	N				N			
			Lab Code	CAN				CAN			
			Moisture Content	19				22			
			Run Number	0				0			
			Analysis Date	10/11/2002				10/09/2002			
			Analysis Time	0250				0427			
			Dilution Factor	0.83				0.82			
			Units	UG/KG				UG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
VOA	8260B	127-18-4	Tetrachloroethylene	0.62	J	5.1	=		U	5.2	ND

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Sample Delivery Group = 2J04261
Report Date: 12/02/02

			Field Sample ID	NYPA-RES-SED05				NYPA-RES-SED06			
			Lab Sample ID	A2J040261005				A2J040261006			
			Sample Date	10/02/2002				10/02/2002			
			Sample Time	1040				1115			
			Matrix	SE				SE			
			Sample Type Code	N				N			
			Lab Code	CAN				CAN			
			Moisture Content	50				51			
			Run Number	0				0			
			Analysis Date	10/09/2002				10/09/2002			
			Analysis Time	0450				0514			
			Dilution Factor	0.67				0.66			
			Units	UG/KG				UG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
VOA	8260B	127-18-4	Tetrachloroethylene		U	6.7	ND		UJ	6.7	ND

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Sediment Quality Assessment

Sample Delivery Group = 2J04261
Report Date: 12/02/02

			Field Sample ID	NYPA-RES-SED07				NYPA-RES-SED08			
			Lab Sample ID	A2J040261007				A2J040261008			
			Sample Date	10/02/2002				10/02/2002			
			Sample Time	1135				1235			
			Matrix	SE				SE			
			Sample Type Code	N				N			
			Lab Code	CAN				CAN			
			Moisture Content	60				79			
			Run Number	0				0			
			Analysis Date	10/09/2002				10/09/2002			
			Analysis Time	0537				0601			
			Dilution Factor	0.62				0.56			
			Units	UG/KG				UG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
VOA	8260B	127-18-4	Tetrachloroethylene		UJ	7.7	ND		UJ	13	ND

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Sample Delivery Group = 2J04261
Report Date: 12/02/02

			Field Sample ID	NYPA-RES-SED09				NYPA-RES-SED12			
			Lab Sample ID	A2J040261009				A2J040261010			
			Sample Date	10/02/2002				10/02/2002			
			Sample Time	1310				1240			
			Matrix	SE				SE			
			Sample Type Code	N				N			
			Lab Code	CAN				CAN			
			Moisture Content	68				71			
			Run Number	0				0			
			Analysis Date	10/09/2002				10/09/2002			
			Analysis Time	0624				0648			
			Dilution Factor	0.6				0.58			
			Units	UG/KG				UG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
VOA	8260B	127-18-4	Tetrachloroethylene		UJ	9.4	ND		UJ	9.9	ND

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Sediment Quality Assessment

Sample Delivery Group = 2J04261
Report Date: 12/02/02

Field Sample ID	NYPA-ERB-01
Lab Sample ID	A2J040261011
Sample Date	10/03/2002
Sample Time	0850
Matrix	WQ
Sample Type Code	EB
Lab Code	CAN
Moisture Content	
Run Number	0
Analysis Date	10/12/2002
Analysis Time	1852
Dilution Factor	1
Units	UG/L

Group	Method	Cas	Parameter Name	Value	Qualifier	RDL	Value Qual.
VOA	8260B	127-18-4	Tetrachloroethylene		U	1.0	ND

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Sample Delivery Group = 2J04261
Report Date: 03/19/03

			Field Sample ID	NYPA-UNR-SED01				NYPA-UNR-SED02			
			Lab Sample ID	A2J040261001				A2J040261002			
			Sample Date	10/01/2002				10/01/2002			
			Sample Time	1150				1315			
			Matrix	SE				SE			
			Sample Type Code	N				N			
			Lab Code	CAN				CAN			
			Moisture Content	19				25			
			Run Number	0				0			
			Analysis Date	10/17/2002				10/17/2002			
			Analysis Time	1547				1311			
			Dilution Factor	173.31				0.77			
			Units	UG/KG				UG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
SVOA	8270C	205-99-2	Benzo(b)fluoranthene		U	71000	ND	27	J	340	=
		207-08-9	Benzo(k)fluoranthene		U	71000	ND		U	340	ND
		218-01-9	Chrysene		U	71000	ND	55	J	340	=
		50-32-8	Benzo(a)pyrene		U	71000	ND	26	J	340	=
		56-55-3	Benzo(a)anthracene		U	71000	ND		U	340	ND
		Q2357	Total PAHs		U	71000	ND	405	J	340	=

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Niagara Power Project
Sediment Quality Assessment

Sample Delivery Group = 2J04261
Report Date: 03/19/03

			Field Sample ID	NYPA-LNR-SED03				NYPA-LNR-SED04			
			Lab Sample ID	A2J040261003				A2J040261004			
			Sample Date	10/01/2002				10/01/2002			
			Sample Time	1815				1850			
			Matrix	SE				SE			
			Sample Type Code	N				N			
			Lab Code	CAN				CAN			
			Moisture Content	19				22			
			Run Number	0				0			
			Analysis Date	10/17/2002				10/17/2002			
			Analysis Time	1342				1516			
			Dilution Factor	0.87				0.88			
			Units	UG/KG				UG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
SVOA	8270C	205-99-2	Benzo(b)fluoranthene	2600		350	=		U	370	ND
		207-08-9	Benzo(k)fluoranthene	2400		350	=		U	370	ND
		218-01-9	Chrysene	2200		350	=		U	370	ND
		50-32-8	Benzo(a)pyrene	2900		350	=		U	370	ND
		56-55-3	Benzo(a)anthracene	2100		350	=		U	370	ND
		Q2357	Total PAHs	22000	J	350	=		U	370	ND

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Sample Delivery Group = 2J04261
Report Date: 03/19/03

			Field Sample ID	NYPA-RES-SED05				NYPA-RES-SED06			
			Lab Sample ID	A2J040261005				A2J040261006			
			Sample Date	10/02/2002				10/02/2002			
			Sample Time	1040				1115			
			Matrix	SE				SE			
			Sample Type Code	N				N			
			Lab Code	CAN				CAN			
			Moisture Content	50				51			
			Run Number	0				0			
			Analysis Date	10/17/2002				10/17/2002			
			Analysis Time	1650				1721			
			Dilution Factor	0.66				0.66			
			Units	UG/KG				UG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
SVOA	8270C	205-99-2	Benzo(b)fluoranthene	860		430	=	670	J	440	=
		207-08-9	Benzo(k)fluoranthene	630		430	=	540	J	440	=
		218-01-9	Chrysene	800		430	=	640	J	440	=
		50-32-8	Benzo(a)pyrene	710		430	=	570	J	440	=
		56-55-3	Benzo(a)anthracene	480		430	=	360	J	440	=
		Q2357	Total PAHs	7400	J	430	=	6100	J	440	=

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Sample Delivery Group = 2J04261
Report Date: 03/19/03

			Field Sample ID	NYPA-RES-SED07				NYPA-RES-SED08			
			Lab Sample ID	A2J040261007				A2J040261008			
			Sample Date	10/02/2002				10/02/2002			
			Sample Time	1135				1235			
			Matrix	SE				SE			
			Sample Type Code	N				N			
			Lab Code	CAN				CAN			
			Moisture Content	60				79			
			Run Number	0				0			
			Analysis Date	10/17/2002				10/17/2002			
			Analysis Time	1752				1824			
			Dilution Factor	0.63				0.62			
			Units	UG/KG				UG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
SVOA	8270C	205-99-2	Benzo(b)fluoranthene	670	J	510	=	1100	J	960	=
		207-08-9	Benzo(k)fluoranthene	380	J	510	=	690	J	960	=
		218-01-9	Chrysene	620	J	510	=	1100	J	960	=
		50-32-8	Benzo(a)pyrene	490	J	510	=	840	J	960	=
		56-55-3	Benzo(a)anthracene	280	J	510	=	450	J	960	=
		Q2357	Total PAHs	5500	J	510	=	9500	J	960	=

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Sample Delivery Group = 2J04261
Report Date: 03/19/03

			Field Sample ID	NYPA-RES-SED09				NYPA-RES-SED12			
			Lab Sample ID	A2J040261009				A2J040261010			
			Sample Date	10/02/2002				10/02/2002			
			Sample Time	1310				1240			
			Matrix	SE				SE			
			Sample Type Code	N				N			
			Lab Code	CAN				CAN			
			Moisture Content	68				71			
			Run Number	0				0			
			Analysis Date	10/17/2002				10/17/2002			
			Analysis Time	1855				1926			
			Dilution Factor	0.63				0.62			
			Units	UG/KG				UG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
SVOA	8270C	205-99-2	Benzo(b)fluoranthene	750	J	650	=	840	J	700	=
		207-08-9	Benzo(k)fluoranthene	480	J	650	=	520	J	700	=
		218-01-9	Chrysene	640	J	650	=	810	J	700	=
		50-32-8	Benzo(a)pyrene	560	J	650	=	640	J	700	=
		56-55-3	Benzo(a)anthracene	260	J	650	=	340	J	700	=
		Q2357	Total PAHs	6000	J	650	=	7200	J	700	=

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Sediment Quality Assessment

Sample Delivery Group = 2J04261
Report Date: 03/19/03

Field Sample ID	NYPA-ERB-01
Lab Sample ID	A2J040261011
Sample Date	10/03/2002
Sample Time	0850
Matrix	WQ
Sample Type Code	EB
Lab Code	CAN
Moisture Content	
Run Number	0
Analysis Date	10/23/2002
Analysis Time	1206
Dilution Factor	0.96
Units	UG/L

Group	Method	Cas	Parameter Name	Value	Qualifier	RDL	Value Qual.
SVOA	8270C	205-99-2	Benzo(b)fluoranthene		U	9.6	ND
		207-08-9	Benzo(k)fluoranthene		U	9.6	ND
		218-01-9	Chrysene		U	9.6	ND
		50-32-8	Benzo(a)pyrene		U	9.6	ND
		56-55-3	Benzo(a)anthracene		UJ	9.6	ND
		Q2357	Total PAHs		U	9.6	ND

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Sediment Quality Assessment

Sample Delivery Group = 2J04261
Report Date: 12/02/02

			Field Sample ID	NYPA-UNR-SED01				NYPA-UNR-SED02			
			Lab Sample ID	A2J040261001				A2J040261002			
			Sample Date	10/01/2002				10/01/2002			
			Sample Time	1150				1315			
			Matrix	SE				SE			
			Sample Type Code	N				N			
			Lab Code	CAN				CAN			
			Moisture Content	19				25			
			Run Number	0				0			
			Analysis Date	10/17/2002				10/16/2002			
			Analysis Time	1242				2205			
			Dilution Factor	200				5			
			Units	UG/KG				UG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
PEST	8081A	118-74-1	Hexachlorobenzene	21000		820	=		UJ	22	ND
		2385-85-5	Mirex	6400	J	820	=		U	22	ND
		50-29-3	4,4'-DDT		U	420	ND		U	11	ND
		57-74-9	Chlordane (technical)		U	4200	ND		U	110	ND
		60-57-1	Dieldrin		U	420	ND		UJ	11	ND
		72-54-8	4,4'-DDD		U	420	ND		UJ	11	ND
		72-55-9	4,4'-DDE		U	420	ND		UJ	11	ND
		8001-35-2	Toxaphene		U	17000	ND		U	440	ND

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Sediment Quality Assessment

Sample Delivery Group = 2J04261
Report Date: 12/02/02

			Field Sample ID	NYPA-LNR-SED03				NYPA-LNR-SED04			
			Lab Sample ID	A2J040261003				A2J040261004			
			Sample Date	10/01/2002				10/01/2002			
			Sample Time	1815				1850			
			Matrix	SE				SE			
			Sample Type Code	N				N			
			Lab Code	CAN				CAN			
			Moisture Content	19				22			
			Run Number	0				0			
			Analysis Date	10/10/2002				10/16/2002			
			Analysis Time	0912				2227			
			Dilution Factor	10				5			
			Units	UG/KG				UG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
PEST	8081A	118-74-1	Hexachlorobenzene	190		41	=		UJ	21	ND
		2385-85-5	Mirex		UJ	41	ND		U	21	ND
		50-29-3	4,4'-DDT		U	21	ND		U	11	ND
		57-74-9	Chlordane (technical)		U	210	ND		U	110	ND
		60-57-1	Dieldrin		U	21	ND		UJ	11	ND
		72-54-8	4,4'-DDD		U	21	ND		UJ	11	ND
		72-55-9	4,4'-DDE		U	21	ND		UJ	11	ND
		8001-35-2	Toxaphene		U	830	ND		U	430	ND

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Sample Delivery Group = 2J04261
Report Date: 12/02/02

			Field Sample ID	NYPA-RES-SED05				NYPA-RES-SED06			
			Lab Sample ID	A2J040261005				A2J040261006			
			Sample Date	10/02/2002				10/02/2002			
			Sample Time	1040				1115			
			Matrix	SE				SE			
			Sample Type Code	N				N			
			Lab Code	CAN				CAN			
			Moisture Content	50				51			
			Run Number	0				0			
			Analysis Date	10/16/2002				10/16/2002			
			Analysis Time	2249				2311			
			Dilution Factor	10				10			
			Units	UG/KG				UG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
PEST	8081A	118-74-1	Hexachlorobenzene		UJ	66	ND		UJ	67	ND
		2385-85-5	Mirex	53	J	66	=		UJ	67	ND
		50-29-3	4,4'-DDT		U	34	ND		UJ	35	ND
		57-74-9	Chlordane (technical)		U	340	ND		UJ	350	ND
		60-57-1	Dieldrin		UJ	34	ND		UJ	35	ND
		72-54-8	4,4'-DDD		UJ	34	ND		UJ	35	ND
		72-55-9	4,4'-DDE		UJ	34	ND		UJ	35	ND
		8001-35-2	Toxaphene		U	1300	ND		UJ	1400	ND

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Sample Delivery Group = 2J04261
Report Date: 12/02/02

			Field Sample ID	NYPA-RES-SED07				NYPA-RES-SED08			
			Lab Sample ID	A2J040261007				A2J040261008			
			Sample Date	10/02/2002				10/02/2002			
			Sample Time	1135				1235			
			Matrix	SE				SE			
			Sample Type Code	N				N			
			Lab Code	CAN				CAN			
			Moisture Content	60				79			
			Run Number	0				0			
			Analysis Date	10/16/2002				10/16/2002			
			Analysis Time	2333				2355			
			Dilution Factor	5				5			
			Units	UG/KG				UG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
PEST	8081A	118-74-1	Hexachlorobenzene		UJ	41	ND		UJ	78	ND
		2385-85-5	Mirex		UJ	41	ND		UJ	78	ND
		50-29-3	4,4'-DDT		UJ	21	ND		UJ	40	ND
		57-74-9	Chlordane (technical)		UJ	210	ND		UJ	400	ND
		60-57-1	Dieldrin		UJ	21	ND		UJ	40	ND
		72-54-8	4,4'-DDD		UJ	21	ND		UJ	40	ND
		72-55-9	4,4'-DDE		UJ	21	ND		UJ	40	ND
		8001-35-2	Toxaphene		UJ	830	ND		UJ	1600	ND

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Sample Delivery Group = 2J04261
Report Date: 12/02/02

			Field Sample ID	NYPA-RES-SED09				NYPA-RES-SED12			
			Lab Sample ID	A2J040261009				A2J040261010			
			Sample Date	10/02/2002				10/02/2002			
			Sample Time	1310				1240			
			Matrix	SE				SE			
			Sample Type Code	N				N			
			Lab Code	CAN				CAN			
			Moisture Content	68				71			
			Run Number	0				0			
			Analysis Date	10/17/2002				10/17/2002			
			Analysis Time	0017				0039			
			Dilution Factor	5				10			
			Units	UG/KG				UG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
PEST	8081A	118-74-1	Hexachlorobenzene		UJ	52	ND		UJ	110	ND
		2385-85-5	Mirex		UJ	52	ND		UJ	110	ND
		50-29-3	4,4'-DDT		UJ	27	ND		UJ	58	ND
		57-74-9	Chlordane (technical)		UJ	270	ND		UJ	580	ND
		60-57-1	Dieldrin		UJ	27	ND		UJ	58	ND
		72-54-8	4,4'-DDD		UJ	27	ND		UJ	58	ND
		72-55-9	4,4'-DDE		UJ	27	ND		UJ	58	ND
		8001-35-2	Toxaphene		UJ	1100	ND		UJ	2300	ND

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Sample Delivery Group = 2J04261
Report Date: 12/02/02

Field Sample ID	NYPA-ERB-01
Lab Sample ID	A2J040261011
Sample Date	10/03/2002
Sample Time	0850
Matrix	WQ
Sample Type Code	EB
Lab Code	CAN
Moisture Content	
Run Number	0
Analysis Date	10/10/2002
Analysis Time	0533
Dilution Factor	1
Units	UG/L

Group	Method	Cas	Parameter Name	Value	Qualifier	RDL	Value Qual.
PEST	8081A	118-74-1	Hexachlorobenzene		U	0.050	ND
		2385-85-5	Mirex		UJ	0.10	ND
		50-29-3	4,4'-DDT		U	0.050	ND
		57-74-9	Chlordane (technical)		U	0.50	ND
		60-57-1	Dieldrin		U	0.050	ND
		72-54-8	4,4'-DDD		U	0.050	ND
		72-55-9	4,4'-DDE		U	0.050	ND
		8001-35-2	Toxaphene		U	2.0	ND

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Sample Delivery Group = 2J04261
Report Date: 12/02/02

			Field Sample ID	NYPA-UNR-SED01				NYPA-UNR-SED02			
			Lab Sample ID	A2J040261001				A2J040261002			
			Sample Date	10/01/2002				10/01/2002			
			Sample Time	1150				1315			
			Matrix	SE				SE			
			Sample Type Code	N				N			
			Lab Code	CAN				CAN			
			Moisture Content	19				25			
			Run Number	0				0			
			Analysis Date	10/11/2002				10/11/2002			
			Analysis Time	1026				1059			
			Dilution Factor	10				1			
			Units	UG/KG				UG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
PCB	8082	11096-82-5	Aroclor 1260		U	410	ND		U	44	ND
		11097-69-1	Aroclor 1254		U	410	ND		U	44	ND
		11104-28-2	Aroclor 1221		U	410	ND		U	44	ND
		11141-16-5	Aroclor 1232		U	410	ND		U	44	ND
		12672-29-6	Aroclor 1248		U	410	ND		U	44	ND
		12674-11-2	Aroclor 1016		U	410	ND		U	44	ND
		53469-21-9	Aroclor 1242		U	410	ND		U	44	ND
		TOTPCB	Total PCBs		U	410	ND		U	44	ND

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Sample Delivery Group = 2J04261
Report Date: 12/02/02

			Field Sample ID	NYPA-LNR-SED03				NYPA-LNR-SED04			
			Lab Sample ID	A2J040261003				A2J040261004			
			Sample Date	10/01/2002				10/01/2002			
			Sample Time	1815				1850			
			Matrix	SE				SE			
			Sample Type Code	N				N			
			Lab Code	CAN				CAN			
			Moisture Content	19				22			
			Run Number	0				0			
			Analysis Date	10/11/2002				10/11/2002			
			Analysis Time	1116				1206			
			Dilution Factor	5				1			
			Units	UG/KG				UG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
PCB	8082	11096-82-5	Aroclor 1260	80	J	200	=	22	J	42	=
		11097-69-1	Aroclor 1254		U	200	ND		U	42	ND
		11104-28-2	Aroclor 1221		U	200	ND		U	42	ND
		11141-16-5	Aroclor 1232		U	200	ND		U	42	ND
		12672-29-6	Aroclor 1248	390		200	=		U	42	ND
		12674-11-2	Aroclor 1016		U	200	ND		U	42	ND
		53469-21-9	Aroclor 1242		U	200	ND	96		42	=
		TOTPCB	Total PCBs	470	J	200	=	120	J	42	=

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Sample Delivery Group = 2J04261
Report Date: 12/02/02

			Field Sample ID	NYPA-RES-SED05				NYPA-RES-SED06			
			Lab Sample ID	A2J040261005				A2J040261006			
			Sample Date	10/02/2002				10/02/2002			
			Sample Time	1040				1115			
			Matrix	SE				SE			
			Sample Type Code	N				N			
			Lab Code	CAN				CAN			
			Moisture Content	50				51			
			Run Number	0				0			
			Analysis Date	10/11/2002				10/11/2002			
			Analysis Time	1241				1314			
			Dilution Factor	1				1			
			Units	UG/KG				UG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
PCB	8082	11096-82-5	Aroclor 1260	43	J	66	=	37	J	51	=
		11097-69-1	Aroclor 1254		U	66	ND		UJ	51	ND
		11104-28-2	Aroclor 1221		U	66	ND		UJ	51	ND
		11141-16-5	Aroclor 1232		U	66	ND		UJ	51	ND
		12672-29-6	Aroclor 1248		U	66	ND		UJ	51	ND
		12674-11-2	Aroclor 1016		U	66	ND		UJ	51	ND
		53469-21-9	Aroclor 1242	150		66	=	130	J	51	=
		TOTPCB	Total PCBs	190	J	66	=	170	J	51	=

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Sample Delivery Group = 2J04261
Report Date: 12/02/02

			Field Sample ID	NYPA-RES-SED07				NYPA-RES-SED08			
			Lab Sample ID	A2J040261007				A2J040261008			
			Sample Date	10/02/2002				10/02/2002			
			Sample Time	1135				1235			
			Matrix	SE				SE			
			Sample Type Code	N				N			
			Lab Code	CAN				CAN			
			Moisture Content	60				79			
			Run Number	0				0			
			Analysis Date	10/11/2002				10/11/2002			
			Analysis Time	1331				1813			
			Dilution Factor	1				1			
			Units	UG/KG				UG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
PCB	8082	11096-82-5	Aroclor 1260	28	J	62	=		UJ	94	ND
		11097-69-1	Aroclor 1254		UJ	62	ND		UJ	94	ND
		11104-28-2	Aroclor 1221		UJ	62	ND		UJ	94	ND
		11141-16-5	Aroclor 1232		UJ	62	ND		UJ	94	ND
		12672-29-6	Aroclor 1248		UJ	62	ND	44	J	94	=
		12674-11-2	Aroclor 1016		UJ	62	ND		UJ	94	ND
		53469-21-9	Aroclor 1242	79	J	62	=		UJ	94	ND
		TOTPCB	Total PCBs	110	J	62	=	44	J	94	=

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Sample Delivery Group = 2J04261
Report Date: 12/02/02

			Field Sample ID	NYPA-RES-SED09				NYPA-RES-SED12			
			Lab Sample ID	A2J040261009				A2J040261010			
			Sample Date	10/02/2002				10/02/2002			
			Sample Time	1310				1240			
			Matrix	SE				SE			
			Sample Type Code	N				N			
			Lab Code	CAN				CAN			
			Moisture Content	68				71			
			Run Number	0				0			
			Analysis Date	10/11/2002				10/11/2002			
			Analysis Time	1405				1422			
			Dilution Factor	1				1			
			Units	UG/KG				UG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
PCB	8082	11096-82-5	Aroclor 1260		UJ	63	ND		UJ	69	ND
		11097-69-1	Aroclor 1254		UJ	63	ND		UJ	69	ND
		11104-28-2	Aroclor 1221		UJ	63	ND		UJ	69	ND
		11141-16-5	Aroclor 1232		UJ	63	ND		UJ	69	ND
		12672-29-6	Aroclor 1248		UJ	63	ND		UJ	69	ND
		12674-11-2	Aroclor 1016		UJ	63	ND		UJ	69	ND
		53469-21-9	Aroclor 1242	57	J	63	=	99	J	69	=
		TOTPCB	Total PCBs	57	J	63	=	99	J	69	=

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Sample Delivery Group = 2J04261
Report Date: 12/02/02

Field Sample ID	NYPA-ERB-01
Lab Sample ID	A2J040261011
Sample Date	10/03/2002
Sample Time	0850
Matrix	WQ
Sample Type Code	EB
Lab Code	CAN
Moisture Content	
Run Number	0
Analysis Date	10/09/2002
Analysis Time	1941
Dilution Factor	1
Units	UG/L

Group	Method	Cas	Parameter Name	Value	Qualifier	RDL	Value Qual.
PCB	8082	11096-82-5	Aroclor 1260		U	1.0	ND
		11097-69-1	Aroclor 1254		U	1.0	ND
		11104-28-2	Aroclor 1221		U	1.0	ND
		11141-16-5	Aroclor 1232		U	1.0	ND
		12672-29-6	Aroclor 1248		U	1.0	ND
		12674-11-2	Aroclor 1016		U	1.0	ND
		53469-21-9	Aroclor 1242		U	1.0	ND
		TOTPCB	Total PCBs		U	1.0	ND

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Sample Delivery Group = A2J04301
Report Date: 12/10/02

			Field Sample ID	NYPA-UNR-SED01							
			Lab Sample ID	A2J040301001							
			Sample Date	10/01/2002							
			Sample Time	1150							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	KNOX							
			Moisture Content	17							
			Run Number	0				1			
			Analysis Date	10/07/2002				11/19/2002			
			Analysis Time	0851				1410			
			Dilution Factor	1				1			
			Units	PERCE				PG/G			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
MISC	160.3 M	Q1028	Percent Moisture	17.0		0.10	=				
	8290	1746-01-6	2,3,7,8-TCDD					65	R	27	=

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Sample Delivery Group = A2J04301
Report Date: 12/10/02

			Field Sample ID	NYPA-UNR-SED02							
			Lab Sample ID	A2J040301002							
			Sample Date	10/01/2002							
			Sample Time	1315							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	KNOX							
			Moisture Content	31							
			Run Number	0							
			Analysis Date	10/07/2002				11/07/2002			
			Analysis Time	0852				0421			
			Dilution Factor	1				1			
			Units	PERCE				PG/G			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
MISC	160.3 M	Q1028	Percent Moisture	30.6		0.10	=				
	8290	1746-01-6	2,3,7,8-TCDD						U	0.15	ND

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Sample Delivery Group = A2J04301
Report Date: 12/10/02

			Field Sample ID	NYPA-LNR-SED03							
			Lab Sample ID	A2J040301003							
			Sample Date	10/01/2002							
			Sample Time	1815							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	KNOX							
			Moisture Content	17							
			Run Number	0							
			Analysis Date	10/07/2002				11/06/2002			
			Analysis Time	0853				0709			
			Dilution Factor	1				1			
			Units	PERCE				PG/G			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
MISC	160.3 M	Q1028	Percent Moisture	16.6		0.10	=				
	8290	1746-01-6	2,3,7,8-TCDD					7.9		0.15	=

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Sample Delivery Group = A2J04301
Report Date: 12/10/02

			Field Sample ID	NYPA-LNR-SED04							
			Lab Sample ID	A2J040301004							
			Sample Date	10/01/2002							
			Sample Time	1850							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	KNOX							
			Moisture Content	20							
			Run Number	0							
			Analysis Date	10/07/2002				11/06/2002			
			Analysis Time	0853				1602			
			Dilution Factor	1				1			
			Units	PERCE				PG/G			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
MISC	160.3 M	Q1028	Percent Moisture	19.9		0.10	=				
	8290	1746-01-6	2,3,7,8-TCDD						U	0.53	ND

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Sample Delivery Group = A2J04301
Report Date: 12/10/02

			Field Sample ID	NYPA-RES-SED05							
			Lab Sample ID	A2J040301005							
			Sample Date	10/02/2002							
			Sample Time	1040							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	KNOX							
			Moisture Content	52							
			Run Number	0							
			Analysis Date	10/07/2002				11/06/2002			
			Analysis Time	0855				1650			
			Dilution Factor	1				1			
			Units	PERCE				PG/G			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
MISC	160.3 M	Q1028	Percent Moisture	52.3		0.10	=				
	8290	1746-01-6	2,3,7,8-TCDD						UJ	1.9	ND

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Sample Delivery Group = A2J04301
Report Date: 12/10/02

			Field Sample ID	NYPA-RES-SED06							
			Lab Sample ID	A2J040301006							
			Sample Date	10/02/2002							
			Sample Time	1115							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	KNOX							
			Moisture Content	53							
			Run Number	0							
			Analysis Date	10/07/2002				11/06/2002			
			Analysis Time	0856				1740			
			Dilution Factor	1				1			
			Units	PERCE				PG/G			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
MISC	160.3 M	Q1028	Percent Moisture	53.1		0.10	=				
	8290	1746-01-6	2,3,7,8-TCDD						UJ	0.24	ND

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Sample Delivery Group = A2J04301
Report Date: 12/10/02

			Field Sample ID	NYPA-RES-SED07							
			Lab Sample ID	A2J040301007							
			Sample Date	10/02/2002							
			Sample Time	1135							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	KNOX							
			Moisture Content	59							
			Run Number	0							
			Analysis Date	10/07/2002				11/06/2002			
			Analysis Time	0851				1827			
			Dilution Factor	1				1			
			Units	PERCE				PG/G			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
MISC	160.3 M	Q1028	Percent Moisture	59.1		0.10	=				
	8290	1746-01-6	2,3,7,8-TCDD						UJ	1.1	ND

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Sample Delivery Group = A2J04301
Report Date: 12/10/02

			Field Sample ID	NYPA-RES-SED08							
			Lab Sample ID	A2J040301008							
			Sample Date	10/02/2002							
			Sample Time	1235							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	KNOX							
			Moisture Content	62							
			Run Number	0							
			Analysis Date	10/07/2002				11/06/2002			
			Analysis Time	0854				1915			
			Dilution Factor	1				1			
			Units	PERCE				PG/G			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
MISC	160.3 M	Q1028	Percent Moisture	61.7		0.10	=				
	8290	1746-01-6	2,3,7,8-TCDD						UJ	1.4	ND

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Sample Delivery Group = A2J04301
Report Date: 12/10/02

			Field Sample ID	NYPA-RES-SED09							
			Lab Sample ID	A2J040301009							
			Sample Date	10/02/2002							
			Sample Time	1310							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	KNOX							
			Moisture Content	59							
			Run Number	0							
			Analysis Date	10/07/2002				11/06/2002			
			Analysis Time	0854				2005			
			Dilution Factor	1				1			
			Units	PERCE				PG/G			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
MISC	160.3 M	Q1028	Percent Moisture	59.4		0.10	=				
	8290	1746-01-6	2,3,7,8-TCDD						UJ	0.53	ND

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Sample Delivery Group = A2J04301
Report Date: 12/10/02

			Field Sample ID	NYPA-RES-SED12							
			Lab Sample ID	A2J040301010							
			Sample Date	10/02/2002							
			Sample Time	1240							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	KNOX							
			Moisture Content	61							
			Run Number	0							
			Analysis Date	10/07/2002				11/06/2002			
			Analysis Time	0856				2052			
			Dilution Factor	1				1			
			Units	PERCE				PG/G			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
MISC	160.3 M	Q1028	Percent Moisture	61.3		0.10	=				
	8290	1746-01-6	2,3,7,8-TCDD						UJ	2.1	ND

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Sample Delivery Group = A2J04301
Report Date: 12/10/02

Field Sample ID	NYPA-ERB-01
Lab Sample ID	A2J040301011
Sample Date	10/03/2002
Sample Time	0850
Matrix	WQ
Sample Type Code	EB
Lab Code	KNOX
Moisture Content	
Run Number	0
Analysis Date	11/05/2002
Analysis Time	1736
Dilution Factor	1
Units	PG/L

Group	Method	Cas	Parameter Name	Value	Qualifier	RDL	Value Qual.
MISC	160.3 M	Q1028	Percent Moisture				
	8290	1746-01-6	2,3,7,8-TCDD		U	1.7	ND

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Sample Delivery Group = 2J04261
Report Date: 03/19/03

			Field Sample ID	NYPA-UNR-SED01				NYPA-UNR-SED02			
			Lab Sample ID	A2J040261001				A2J040261002			
			Sample Date	10/01/2002				10/01/2002			
			Sample Time	1150				1315			
			Matrix	SE				SE			
			Sample Type Code	N				N			
			Lab Code	CAN				CAN			
			Moisture Content	19				25			
			Run Number	0				0			
			Analysis Date	10/08/2002				10/08/2002			
			Analysis Time	1637				1641			
			Dilution Factor	1				1			
			Units	MG/KG				MG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
METAL	6020	7439-92-1	Lead	22.2	J	0.12	=	6.8	J	0.13	=
		7440-38-2	Arsenic	1.6	J	0.62	=	4.7	J	0.66	=
		7440-43-9	Cadmium	0.40	R	0.12	=	0.14	R	0.13	=

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Sample Delivery Group = 2J04261
Report Date: 03/19/03

			Field Sample ID	NYPA-LNR-SED03							
			Lab Sample ID	A2J040261003							
			Sample Date	10/01/2002							
			Sample Time	1815							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	CAN							
			Moisture Content	19							
			Run Number	0							
			Analysis Date	10/08/2002							
			Analysis Time	1644				1932			
			Dilution Factor	1				5			
			Units	MG/KG				MG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
METAL	6020	7439-92-1	Lead					39.7	J	0.62	=
		7440-38-2	Arsenic	4.9	J	0.62	=				
		7440-43-9	Cadmium	0.58	R	0.12	=				

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Sample Delivery Group = 2J04261
Report Date: 03/19/03

			Field Sample ID	NYPA-LNR-SED04				NYPA-RES-SED05			
			Lab Sample ID	A2J040261004				A2J040261005			
			Sample Date	10/01/2002				10/02/2002			
			Sample Time	1850				1040			
			Matrix	SE				SE			
			Sample Type Code	N				N			
			Lab Code	CAN				CAN			
			Moisture Content	22				50			
			Run Number	0				0			
			Analysis Date	10/08/2002				10/08/2002			
			Analysis Time	1655				1658			
			Dilution Factor	1				1			
			Units	MG/KG				MG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
METAL	6020	7439-92-1	Lead	4.2	J	0.13	=	36.8	J	0.20	=
		7440-38-2	Arsenic	2.2	J	0.64	=	5.0	J	0.99	=
		7440-43-9	Cadmium	0.088	R	0.13	=	1.2	R	0.20	=

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Sample Delivery Group = 2J04261
Report Date: 03/19/03

			Field Sample ID	NYPA-RES-SED06				NYPA-RES-SED07			
			Lab Sample ID	A2J040261006				A2J040261007			
			Sample Date	10/02/2002				10/02/2002			
			Sample Time	1115				1135			
			Matrix	SE				SE			
			Sample Type Code	N				N			
			Lab Code	CAN				CAN			
			Moisture Content	51				60			
			Run Number	0				0			
			Analysis Date	10/08/2002				10/08/2002			
			Analysis Time	1702				1705			
			Dilution Factor	1				1			
			Units	MG/KG				MG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
METAL	6020	7439-92-1	Lead	32.6	J	0.20	=	31.6	J	0.25	=
		7440-38-2	Arsenic	5.4	J	1.0	=	5.9	J	1.2	=
		7440-43-9	Cadmium	0.94	R	0.20	=	0.86	R	0.25	=

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Sample Delivery Group = 2J04261
Report Date: 03/19/03

			Field Sample ID	NYPA-RES-SED08				NYPA-RES-SED09			
			Lab Sample ID	A2J040261008				A2J040261009			
			Sample Date	10/02/2002				10/02/2002			
			Sample Time	1235				1310			
			Matrix	SE				SE			
			Sample Type Code	N				N			
			Lab Code	CAN				CAN			
			Moisture Content	79				68			
			Run Number	0				0			
			Analysis Date	10/08/2002				10/08/2002			
			Analysis Time	1708				1721			
			Dilution Factor	1				1			
			Units	MG/KG				MG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
METAL	6020	7439-92-1	Lead	72.4	J	0.47	=	46.6	J	0.31	=
		7440-38-2	Arsenic	14.5	J	2.4	=	8.7	J	1.6	=
		7440-43-9	Cadmium	2.0	R	0.47	=	1.1	R	0.31	=

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Sample Delivery Group = 2J04261
Report Date: 03/19/03

			Field Sample ID	NYPA-RES-SED12				NYPA-ERB-01			
			Lab Sample ID	A2J040261010				A2J040261011			
			Sample Date	10/02/2002				10/03/2002			
			Sample Time	1240				0850			
			Matrix	SE				WQ			
			Sample Type Code	N				EB			
			Lab Code	CAN				CAN			
			Moisture Content	71							
			Run Number	0				0			
			Analysis Date	10/08/2002				10/09/2002			
			Analysis Time	1725				1118			
			Dilution Factor	1				1			
			Units	MG/KG				UG/L			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
METAL	6020	7439-92-1	Lead	45.6	J	0.34	=	0.34		1.0	=
		7440-38-2	Arsenic	9.1	J	1.7	=		U	5.0	ND
		7440-43-9	Cadmium	1.2	R	0.34	=	48.1		1.0	=

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Sample Delivery Group = 2J04261
Report Date: 12/02/02

			Field Sample ID	NYPA-UNR-SED01							
			Lab Sample ID	A2J040261001							
			Sample Date	10/01/2002							
			Sample Time	1150							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	CAN							
			Moisture Content	19							
			Run Number	0							
			Analysis Date	10/06/2002				10/10/2002			
			Analysis Time	0000				0800			
			Dilution Factor	1				1			
			Units	PERCE				PERCE			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
MISC	160.3 M	Q1082	Percent Solids	80.9		10.0	=				
	D 2216-	Q1082	Percent Solids					84.6		0.10	=

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Sample Delivery Group = 2J04261
Report Date: 12/02/02

			Field Sample ID	NYPA-UNR-SED02							
			Lab Sample ID	A2J040261002							
			Sample Date	10/01/2002							
			Sample Time	1315							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	CAN							
			Moisture Content	25							
			Run Number	0							
			Analysis Date	10/06/2002				10/10/2002			
			Analysis Time	0000				0800			
			Dilution Factor	1				1			
			Units	PERCE				PERCE			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
MISC	160.3 M	Q1082	Percent Solids	75.3		10.0	=				
	D 2216-	Q1082	Percent Solids					70.6		0.10	=

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Sample Delivery Group = 2J04261
Report Date: 12/02/02

			Field Sample ID	NYPA-LNR-SED03							
			Lab Sample ID	A2J040261003							
			Sample Date	10/01/2002							
			Sample Time	1815							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	CAN							
			Moisture Content	19							
			Run Number	0							
			Analysis Date	10/06/2002				10/10/2002			
			Analysis Time	0000				0800			
			Dilution Factor	1				1			
			Units	PERCE				PERCE			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
MISC	160.3 M	Q1082	Percent Solids	81.0		10.0	=				
	D 2216-	Q1082	Percent Solids					85.4		0.10	=

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Sample Delivery Group = 2J04261
Report Date: 12/02/02

			Field Sample ID	NYPA-LNR-SED04							
			Lab Sample ID	A2J040261004							
			Sample Date	10/01/2002							
			Sample Time	1850							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	CAN							
			Moisture Content	22							
			Run Number	0							
			Analysis Date	10/06/2002				10/10/2002			
			Analysis Time	0000				0800			
			Dilution Factor	1				1			
			Units	PERCE				PERCE			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
MISC	160.3 M	Q1082	Percent Solids	78.3		10.0	=				
	D 2216-	Q1082	Percent Solids					86.7		0.10	=

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Sample Delivery Group = 2J04261
Report Date: 12/02/02

			Field Sample ID	NYPA-RES-SED05							
			Lab Sample ID	A2J040261005							
			Sample Date	10/02/2002							
			Sample Time	1040							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	CAN							
			Moisture Content	50							
			Run Number	0							
			Analysis Date	10/06/2002				10/10/2002			
			Analysis Time	0000				0800			
			Dilution Factor	1				1			
			Units	PERCE				PERCE			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
MISC	160.3 M	Q1082	Percent Solids	50.3		10.0	=				
	D 2216-	Q1082	Percent Solids					48.4		0.10	=

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Sample Delivery Group = 2J04261
Report Date: 12/02/02

			Field Sample ID	NYPA-RES-SED06							
			Lab Sample ID	A2J040261006							
			Sample Date	10/02/2002							
			Sample Time	1115							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	CAN							
			Moisture Content	51							
			Run Number	0							
			Analysis Date	10/06/2002				10/10/2002			
			Analysis Time	0000				0800			
			Dilution Factor	1				1			
			Units	PERCE				PERCE			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
MISC	160.3 M	Q1082	Percent Solids	49.2		10.0	=				
	D 2216-	Q1082	Percent Solids					47.2		0.10	=

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Sample Delivery Group = 2J04261
Report Date: 12/02/02

			Field Sample ID	NYPA-RES-SED07							
			Lab Sample ID	A2J040261007							
			Sample Date	10/02/2002							
			Sample Time	1135							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	CAN							
			Moisture Content	60							
			Run Number	0							
			Analysis Date	10/06/2002				10/10/2002			
			Analysis Time	0000				0800			
			Dilution Factor	1				1			
			Units	PERCE				PERCE			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
MISC	160.3 M	Q1082	Percent Solids	40.5		10.0	=				
	D 2216-	Q1082	Percent Solids					40.7		0.10	=

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Sample Delivery Group = 2J04261
Report Date: 12/02/02

			Field Sample ID	NYPA-RES-SED08							
			Lab Sample ID	A2J040261008							
			Sample Date	10/02/2002							
			Sample Time	1235							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	CAN							
			Moisture Content	79							
			Run Number	0							
			Analysis Date	10/06/2002				10/10/2002			
			Analysis Time	0000				0800			
			Dilution Factor	1				1			
			Units	PERCE				PERCE			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
MISC	160.3 M	Q1082	Percent Solids	21.3		10.0	=				
	D 2216-	Q1082	Percent Solids					37.7		0.10	=

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Sample Delivery Group = 2J04261
Report Date: 12/02/02

			Field Sample ID	NYPA-RES-SED09							
			Lab Sample ID	A2J040261009							
			Sample Date	10/02/2002							
			Sample Time	1310							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	CAN							
			Moisture Content	68							
			Run Number	0							
			Analysis Date	10/06/2002				10/10/2002			
			Analysis Time	0000				0800			
			Dilution Factor	1				1			
			Units	PERCE				PERCE			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
MISC	160.3 M	Q1082	Percent Solids	31.9		10.0	=				
	D 2216-	Q1082	Percent Solids					40.7		0.10	=

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Sediment Quality Assessment

Sample Delivery Group = 2J04261
Report Date: 12/02/02

			Field Sample ID	NYPA-RES-SED12							
			Lab Sample ID	A2J040261010							
			Sample Date	10/02/2002							
			Sample Time	1240							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	CAN							
			Moisture Content	71							
			Run Number	0							
			Analysis Date	10/06/2002				10/10/2002			
			Analysis Time	0000				0800			
			Dilution Factor	1				1			
			Units	PERCE				PERCE			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
MISC	160.3 M	Q1082	Percent Solids	29.2		10.0	=				
	D 2216-	Q1082	Percent Solids					37.7		0.10	=

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Sample Delivery Group = NYP01
Report Date: 12/02/02

			Field Sample ID	NYPA-UNR-SED01				NYPA-UNR-SED02			
			Lab Sample ID	3910761				3910762			
			Sample Date	10/01/2002				10/01/2002			
			Sample Time	1150				1315			
			Matrix	SE				SE			
			Sample Type Code	N				N			
			Lab Code	LL				LL			
			Moisture Content	22.5				30.5			
			Run Number	1				1			
			Analysis Date	10/09/2002				10/09/2002			
			Analysis Time	1725				1725			
			Dilution Factor	1				1			
			Units	%W/W				%W/W			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
MISC	EPA 160	RESV	Volatile Residue	1.89	J	0.50	=	2.08	J	0.50	=

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Sediment Quality Assessment

Sample Delivery Group = NYP01
Report Date: 12/02/02

			Field Sample ID	NYPA-LNR-SED03				NYPA-LNR-SED04			
			Lab Sample ID	3911514				3911515			
			Sample Date	10/01/2002				10/01/2002			
			Sample Time	1815				1850			
			Matrix	SE				SE			
			Sample Type Code	N				N			
			Lab Code	LL				LL			
			Moisture Content	20.6				13.0			
			Run Number	1				1			
			Analysis Date	10/09/2002				10/09/2002			
			Analysis Time	1725				1725			
			Dilution Factor	1				1			
			Units	%W/W				%W/W			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
MISC	EPA 160	RESV	Volatile Residue	2.23	J	0.50	=	2.52	J	0.50	=

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Sample Delivery Group = NYP01
Report Date: 12/02/02

			Field Sample ID	NYPA-RES-SED05				NYPA-RES-SED06			
			Lab Sample ID	3911516				3911517			
			Sample Date	10/02/2002				10/02/2002			
			Sample Time	1040				1115			
			Matrix	SE				SE			
			Sample Type Code	N				N			
			Lab Code	LL				LL			
			Moisture Content	48.8				51.3			
			Run Number	1				1			
			Analysis Date	10/09/2002				10/09/2002			
			Analysis Time	1725				1725			
			Dilution Factor	1				1			
			Units	%W/W				%W/W			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
MISC	EPA 160	RESV	Volatile Residue	2.67		0.50	=	2.67		0.50	=

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Sample Delivery Group = NYP01
Report Date: 12/02/02

			Field Sample ID	NYPA-RES-SED07				NYPA-RES-SED08			
			Lab Sample ID	3911518				3911519			
			Sample Date	10/02/2002				10/02/2002			
			Sample Time	1135				1235			
			Matrix	SE				SE			
			Sample Type Code	N				N			
			Lab Code	LL				LL			
			Moisture Content	57.4				59.6			
			Run Number	1				1			
			Analysis Date	10/09/2002				10/09/2002			
			Analysis Time	1725				1725			
			Dilution Factor	1				1			
			Units	%W/W				%W/W			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
MISC	EPA 160	RESV	Volatile Residue	2.32		0.50	=	2.21		0.50	=

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Sample Delivery Group = NYP01
Report Date: 12/02/02

			Field Sample ID	NYPA-RES-SED09				NYPA-RES-SED12			
			Lab Sample ID	3911520				3911521			
			Sample Date	10/02/2002				10/02/2002			
			Sample Time	1310				1240			
			Matrix	SE				SE			
			Sample Type Code	N				N			
			Lab Code	LL				LL			
			Moisture Content	59.2				62.0			
			Run Number	1				1			
			Analysis Date	10/09/2002				10/09/2002			
			Analysis Time	1725				1725			
			Dilution Factor	1				1			
			Units	%W/W				%W/W			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
MISC	EPA 160	RESV	Volatile Residue	2.46		0.50	=	2.25		0.50	=

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Sample Delivery Group = 90131
Report Date: 12/02/02

			Field Sample ID	NYPA-UNR-SED01								
			Lab Sample ID	503801								
			Sample Date	10/01/2002								
			Sample Time	1150								
			Matrix	SE								
			Sample Type Code	N								
			Lab Code	SVTC								
			Moisture Content	13.7				15.1				
			Run Number	1				1				
			Analysis Date	10/15/2002				10/11/2002				
			Analysis Time	0000				1400				
			Dilution Factor	1				1				
			Units	PERCE				MG/KG				
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	
MISC	D422	GS001	Sieve, 75000 Microns, Percent Ret		U	0	ND					
		GS002	Sieve, 50000 Microns, Percent Ret		U	0	ND					
		GS003	Sieve, 25000 Microns, Percent Ret		U	0	ND					
			Sieve, 37500 Microns, Percent Ret		U	0	ND					
		GS005	Sieve, 19000 Microns, Percent Ret		U	0	ND					
		GS006	Sieve, 9500 Microns, Percent Reta	1.8		0	=					
		GS007	Sieve, No. 4, Percent Retained	8.3		0	=					
		GS008	Sieve, No. 10, Percent Retained	11.1		0	=					
		GS009	Sieve, No. 20, Percent Retained	7.0		0	=					
		GS010	Sieve No. 40, Percent Retained	4.6		0	=					
		GS011	Sieve, No. 60, Percent Retained	6.0		0	=					
		GS012	Sieve No. 80, Percent Retained	7.2		0	=					
		GS013	Sieve, No. 100, Percent Retained	7.3		0	=					
		GS014	Sieve No. 200, Percent Retained	22.1		0	=					
		HYD01	Hydrometer, 30.7 Microns, Percent									

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Sample Delivery Group = 90131
Report Date: 12/02/02

			Field Sample ID	NYPA-UNR-SED01							
			Lab Sample ID	503801							
			Sample Date	10/01/2002							
			Sample Time	1150							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	SVTC							
			Moisture Content	13.7				15.1			
			Run Number	1				1			
			Analysis Date	10/15/2002				10/11/2002			
			Analysis Time	0000				1400			
			Dilution Factor	1				1			
			Units	PERCE				MG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
			Hydrometer, 31.1 Microns, Percent								
			Hydrometer, 32.6 Microns, Percent								
			Hydrometer, 34.4 Microns, Percent	13.4		0	=				
			Hydrometer, 35.3 Microns, Percent								
			Hydrometer, 36.1 Microns, Percent								
		HYD02	Hydrometer, 19.9 Microns, Percent								
			Hydrometer, 20.1 Microns, Percent								
			Hydrometer, 20.6 Microns, Percent								
			Hydrometer, 22.2 Microns, Percent	2.3		0	=				
			Hydrometer, 22.9 Microns, Percent								
			Hydrometer, 23.0 Microns, Percent								
		HYD03	Hydrometer, 11.6 Microns, Percent								
			Hydrometer, 11.8 Microns, Percent								
			Hydrometer, 12.0 Microns, Percent								
			Hydrometer, 13.1 Microns, Percent	2.3		0	=				

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Sample Delivery Group = 90131
Report Date: 12/02/02

			Field Sample ID	NYPA-UNR-SED01							
			Lab Sample ID	503801							
			Sample Date	10/01/2002							
			Sample Time	1150							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	SVTC							
			Moisture Content	13.7				15.1			
			Run Number	1				1			
			Analysis Date	10/15/2002				10/11/2002			
			Analysis Time	0000				1400			
			Dilution Factor	1				1			
			Units	PERCE				MG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
			Hydrometer, 13.3 Microns, Percent								
		HYD04	Hydrometer, 8.4 Microns, Percent F								
			Hydrometer, 8.5 Microns, Percent F								
			Hydrometer, 8.6 Microns, Percent F								
			Hydrometer, 8.7 Microns, Percent F								
			Hydrometer, 8.8 Microns, Percent F								
			Hydrometer, 9.3 Microns, Percent F								
			Hydrometer, 9.4 Microns, Percent F		U	0	ND				
		HYD05	Hydrometer, 5.9 Microns, Percent F								
			Hydrometer, 6.0 Microns, Percent F								
			Hydrometer, 6.2 Microns, Percent F								
			Hydrometer, 6.3 Microns, Percent F								
			Hydrometer, 6.4 Microns, Percent F								
			Hydrometer, 6.7 Microns, Percent F	1.2		0	=				
			Hydrometer, 6.8 Microns, Percent F								

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Sample Delivery Group = 90131
Report Date: 12/02/02

			Field Sample ID	NYPA-UNR-SED01							
			Lab Sample ID	503801							
			Sample Date	10/01/2002							
			Sample Time	1150							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	SVTC							
			Moisture Content	13.7				15.1			
			Run Number	1				1			
			Analysis Date	10/15/2002				10/11/2002			
			Analysis Time	0000				1400			
			Dilution Factor	1				1			
			Units	PERCE				MG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
		HYD06	Hydrometer, 3.0 Microns, Percent F								
			Hydrometer, 3.1 Microns, Percent F								
			Hydrometer, 3.2 Microns, Percent F	1.1		0	=				
			Hydrometer, 3.4 Microns, Percent F								
		HYD07	Hydrometer, 1.3 Microns, Percent F								
			Hydrometer, 1.4 Microns, Percent F	1.4		0	=				
	E415.1	E701250	Total Organic Carbon								
	LYDKHN	E701250	Total Organic Carbon					4020	J	118	=

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Sediment Quality Assessment

Sample Delivery Group = 90131
Report Date: 12/02/02

			Field Sample ID	NYPA-UNR-SED02							
			Lab Sample ID	503802							
			Sample Date	10/01/2002							
			Sample Time	1315							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	SVTC							
			Moisture Content	27.3				30.5			
			Run Number	1				1			
			Analysis Date	10/15/2002				10/11/2002			
			Analysis Time	0000				1400			
			Dilution Factor	1				1			
			Units	PERCE				MG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
MISC	D422	GS001	Sieve, 75000 Microns, Percent Ret		U	0	ND				
		GS002	Sieve, 50000 Microns, Percent Ret		U	0	ND				
		GS003	Sieve, 25000 Microns, Percent Ret		U	0	ND				
			Sieve, 37500 Microns, Percent Ret		U	0	ND				
		GS005	Sieve, 19000 Microns, Percent Ret		U	0	ND				
		GS006	Sieve, 9500 Microns, Percent Reta	4.5		0	=				
		GS007	Sieve, No. 4, Percent Retained	6.3		0	=				
		GS008	Sieve, No. 10, Percent Retained	18.9		0	=				
		GS009	Sieve, No. 20, Percent Retained	7.5		0	=				
		GS010	Sieve No. 40, Percent Retained	5.0		0	=				
		GS011	Sieve, No. 60, Percent Retained	10.6		0	=				
		GS012	Sieve No. 80, Percent Retained	7.1		0	=				
		GS013	Sieve, No. 100, Percent Retained	1.6		0	=				
		GS014	Sieve No. 200, Percent Retained	2.2		0	=				
		HYD01	Hydrometer, 30.7 Microns, Percent								

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Sediment Quality Assessment

Sample Delivery Group = 90131
Report Date: 12/02/02

			Field Sample ID	NYPA-UNR-SED02							
			Lab Sample ID	503802							
			Sample Date	10/01/2002							
			Sample Time	1315							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	SVTC							
			Moisture Content	27.3				30.5			
			Run Number	1				1			
			Analysis Date	10/15/2002				10/11/2002			
			Analysis Time	0000				1400			
			Dilution Factor	1				1			
			Units	PERCE				MG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
			Hydrometer, 31.1 Microns, Percent								
			Hydrometer, 32.6 Microns, Percent	3.2		0	=				
			Hydrometer, 34.4 Microns, Percent								
			Hydrometer, 35.3 Microns, Percent								
			Hydrometer, 36.1 Microns, Percent								
		HYD02	Hydrometer, 19.9 Microns, Percent								
			Hydrometer, 20.1 Microns, Percent								
			Hydrometer, 20.6 Microns, Percent		U	0	ND				
			Hydrometer, 22.2 Microns, Percent								
			Hydrometer, 22.9 Microns, Percent								
			Hydrometer, 23.0 Microns, Percent								
		HYD03	Hydrometer, 11.6 Microns, Percent								
			Hydrometer, 11.8 Microns, Percent								
			Hydrometer, 12.0 Microns, Percent	1.1		0	=				
			Hydrometer, 13.1 Microns, Percent								

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Sediment Quality Assessment

Sample Delivery Group = 90131
Report Date: 12/02/02

			Field Sample ID	NYPA-UNR-SED02							
			Lab Sample ID	503802							
			Sample Date	10/01/2002							
			Sample Time	1315							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	SVTC							
			Moisture Content	27.3				30.5			
			Run Number	1				1			
			Analysis Date	10/15/2002				10/11/2002			
			Analysis Time	0000				1400			
			Dilution Factor	1				1			
			Units	PERCE				MG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
			Hydrometer, 13.3 Microns, Percent								
		HYD04	Hydrometer, 8.4 Microns, Percent F								
			Hydrometer, 8.5 Microns, Percent F								
			Hydrometer, 8.6 Microns, Percent F								
			Hydrometer, 8.7 Microns, Percent F	1.1		0	=				
			Hydrometer, 8.8 Microns, Percent F								
			Hydrometer, 9.3 Microns, Percent F								
			Hydrometer, 9.4 Microns, Percent F								
		HYD05	Hydrometer, 5.9 Microns, Percent F	2.3		0	=				
			Hydrometer, 6.0 Microns, Percent F								
			Hydrometer, 6.2 Microns, Percent F								
			Hydrometer, 6.3 Microns, Percent F								
			Hydrometer, 6.4 Microns, Percent F								
			Hydrometer, 6.7 Microns, Percent F								
			Hydrometer, 6.8 Microns, Percent F								

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Sediment Quality Assessment

Sample Delivery Group = 90131
Report Date: 12/02/02

			Field Sample ID	NYPA-UNR-SED02							
			Lab Sample ID	503802							
			Sample Date	10/01/2002							
			Sample Time	1315							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	SVTC							
			Moisture Content	27.3				30.5			
			Run Number	1				1			
			Analysis Date	10/15/2002				10/11/2002			
			Analysis Time	0000				1400			
			Dilution Factor	1				1			
			Units	PERCE				MG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
		HYD06	Hydrometer, 3.0 Microns, Percent F	4.3		0	=				
			Hydrometer, 3.1 Microns, Percent F								
			Hydrometer, 3.2 Microns, Percent F								
			Hydrometer, 3.4 Microns, Percent F								
		HYD07	Hydrometer, 1.3 Microns, Percent F	6.0		0	=				
			Hydrometer, 1.4 Microns, Percent F								
	E415.1	E701250	Total Organic Carbon								
	LYDKHN	E701250	Total Organic Carbon					272	J	144	=

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Sediment Quality Assessment

Sample Delivery Group = 90131
Report Date: 12/02/02

			Field Sample ID	NYPA-LNR-SED03							
			Lab Sample ID	503803							
			Sample Date	10/01/2002							
			Sample Time	1815							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	SVTC							
			Moisture Content	14.5				16.1			
			Run Number	1				1			
			Analysis Date	10/15/2002				10/16/2002			
			Analysis Time	0000				1650			
			Dilution Factor	1				1			
			Units	PERCE				MG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
MISC	D422	GS001	Sieve, 75000 Microns, Percent Ret		U	0	ND				
		GS002	Sieve, 50000 Microns, Percent Ret		U	0	ND				
		GS003	Sieve, 25000 Microns, Percent Ret		U	0	ND				
			Sieve, 37500 Microns, Percent Ret		U	0	ND				
		GS005	Sieve, 19000 Microns, Percent Ret		U	0	ND				
		GS006	Sieve, 9500 Microns, Percent Reta	3.9		0	=				
		GS007	Sieve, No. 4, Percent Retained	11.3		0	=				
		GS008	Sieve, No. 10, Percent Retained	10.8		0	=				
		GS009	Sieve, No. 20, Percent Retained	7.6		0	=				
		GS010	Sieve No. 40, Percent Retained	14.3		0	=				
		GS011	Sieve, No. 60, Percent Retained	24.6		0	=				
		GS012	Sieve No. 80, Percent Retained	7.4		0	=				
		GS013	Sieve, No. 100, Percent Retained	2.3		0	=				
		GS014	Sieve No. 200, Percent Retained	5.5		0	=				
		HYD01	Hydrometer, 30.7 Microns, Percent								

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Sample Delivery Group = 90131
Report Date: 12/02/02

			Field Sample ID	NYPA-LNR-SED03							
			Lab Sample ID	503803							
			Sample Date	10/01/2002							
			Sample Time	1815							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	SVTC							
			Moisture Content	14.5				16.1			
			Run Number	1				1			
			Analysis Date	10/15/2002				10/16/2002			
			Analysis Time	0000				1650			
			Dilution Factor	1				1			
			Units	PERCE				MG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
			Hydrometer, 31.1 Microns, Percent								
			Hydrometer, 32.6 Microns, Percent								
			Hydrometer, 34.4 Microns, Percent								
			Hydrometer, 35.3 Microns, Percent	5.5		0	=				
			Hydrometer, 36.1 Microns, Percent								
		HYD02	Hydrometer, 19.9 Microns, Percent								
			Hydrometer, 20.1 Microns, Percent								
			Hydrometer, 20.6 Microns, Percent								
			Hydrometer, 22.2 Microns, Percent								
			Hydrometer, 22.9 Microns, Percent	2.4		0	=				
			Hydrometer, 23.0 Microns, Percent								
		HYD03	Hydrometer, 11.6 Microns, Percent								
			Hydrometer, 11.8 Microns, Percent								
			Hydrometer, 12.0 Microns, Percent								
			Hydrometer, 13.1 Microns, Percent								

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Sample Delivery Group = 90131
Report Date: 12/02/02

			Field Sample ID	NYPA-LNR-SED03							
			Lab Sample ID	503803							
			Sample Date	10/01/2002							
			Sample Time	1815							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	SVTC							
			Moisture Content	14.5				16.1			
			Run Number	1				1			
			Analysis Date	10/15/2002				10/16/2002			
			Analysis Time	0000				1650			
			Dilution Factor	1				1			
			Units	PERCE				MG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
			Hydrometer, 13.3 Microns, Percent	0.9		0	=				
		HYD04	Hydrometer, 8.4 Microns, Percent F								
			Hydrometer, 8.5 Microns, Percent F								
			Hydrometer, 8.6 Microns, Percent F								
			Hydrometer, 8.7 Microns, Percent F								
			Hydrometer, 8.8 Microns, Percent F								
			Hydrometer, 9.3 Microns, Percent F	0.9		0	=				
			Hydrometer, 9.4 Microns, Percent F								
		HYD05	Hydrometer, 5.9 Microns, Percent F								
			Hydrometer, 6.0 Microns, Percent F								
			Hydrometer, 6.2 Microns, Percent F								
			Hydrometer, 6.3 Microns, Percent F								
			Hydrometer, 6.4 Microns, Percent F								
			Hydrometer, 6.7 Microns, Percent F	0.5		0	=				
			Hydrometer, 6.8 Microns, Percent F								

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Sample Delivery Group = 90131
Report Date: 12/02/02

			Field Sample ID	NYPA-LNR-SED03							
			Lab Sample ID	503803							
			Sample Date	10/01/2002							
			Sample Time	1815							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	SVTC							
			Moisture Content	14.5				16.1			
			Run Number	1				1			
			Analysis Date	10/15/2002				10/16/2002			
			Analysis Time	0000				1650			
			Dilution Factor	1				1			
			Units	PERCE				MG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
		HYD06	Hydrometer, 3.0 Microns, Percent F								
			Hydrometer, 3.1 Microns, Percent F								
			Hydrometer, 3.2 Microns, Percent F								
			Hydrometer, 3.4 Microns, Percent F	0.4		0	=				
		HYD07	Hydrometer, 1.3 Microns, Percent F								
			Hydrometer, 1.4 Microns, Percent F	1.1		0	=				
	E415.1	E701250	Total Organic Carbon								
	LYDKHN	E701250	Total Organic Carbon					11800	J	120	=

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Sample Delivery Group = 90131
Report Date: 12/02/02

			Field Sample ID	NYPA-LNR-SED04							
			Lab Sample ID	503804							
			Sample Date	10/01/2002							
			Sample Time	1850							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	SVTC							
			Moisture Content	14.4				16.9			
			Run Number	1				1			
			Analysis Date	10/17/2002				10/15/2002			
			Analysis Time	1445				0000			
			Dilution Factor	1				1			
			Units	MG/KG				PERCE			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
MISC	D422	GS001	Sieve, 75000 Microns, Percent Ret						U	0	ND
		GS002	Sieve, 50000 Microns, Percent Ret						U	0	ND
		GS003	Sieve, 25000 Microns, Percent Ret						U	0	ND
			Sieve, 37500 Microns, Percent Ret						U	0	ND
		GS005	Sieve, 19000 Microns, Percent Ret						U	0	ND
		GS006	Sieve, 9500 Microns, Percent Reta					0.8		0	=
		GS007	Sieve, No. 4, Percent Retained					6.3		0	=
		GS008	Sieve, No. 10, Percent Retained					23.7		0	=
		GS009	Sieve, No. 20, Percent Retained					23.5		0	=
		GS010	Sieve No. 40, Percent Retained					16.3		0	=
		GS011	Sieve, No. 60, Percent Retained					8.2		0	=
		GS012	Sieve No. 80, Percent Retained					4.7		0	=
		GS013	Sieve, No. 100, Percent Retained					1.8		0	=
		GS014	Sieve No. 200, Percent Retained					2.9		0	=
		HYD01	Hydrometer, 30.7 Microns, Percent								

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Sediment Quality Assessment

Sample Delivery Group = 90131
Report Date: 12/02/02

			Field Sample ID	NYPA-LNR-SED04							
			Lab Sample ID	503804							
			Sample Date	10/01/2002							
			Sample Time	1850							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	SVTC							
			Moisture Content	14.4				16.9			
			Run Number	1				1			
			Analysis Date	10/17/2002				10/15/2002			
			Analysis Time	1445				0000			
			Dilution Factor	1				1			
			Units	MG/KG				PERCE			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
			Hydrometer, 31.1 Microns, Percent								
			Hydrometer, 32.6 Microns, Percent								
			Hydrometer, 34.4 Microns, Percent								
			Hydrometer, 35.3 Microns, Percent								
			Hydrometer, 36.1 Microns, Percent					6.5		0	=
		HYD02	Hydrometer, 19.9 Microns, Percent								
			Hydrometer, 20.1 Microns, Percent								
			Hydrometer, 20.6 Microns, Percent								
			Hydrometer, 22.2 Microns, Percent								
			Hydrometer, 22.9 Microns, Percent								
			Hydrometer, 23.0 Microns, Percent					0.6		0	=
		HYD03	Hydrometer, 11.6 Microns, Percent								
			Hydrometer, 11.8 Microns, Percent								
			Hydrometer, 12.0 Microns, Percent								
			Hydrometer, 13.1 Microns, Percent								

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Sample Delivery Group = 90131
Report Date: 12/02/02

			Field Sample ID	NYPA-LNR-SED04							
			Lab Sample ID	503804							
			Sample Date	10/01/2002							
			Sample Time	1850							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	SVTC							
			Moisture Content	14.4				16.9			
			Run Number	1				1			
			Analysis Date	10/17/2002				10/15/2002			
			Analysis Time	1445				0000			
			Dilution Factor	1				1			
			Units	MG/KG				PERCE			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
			Hydrometer, 13.3 Microns, Percent					0.6		0	=
		HYD04	Hydrometer, 8.4 Microns, Percent F								
			Hydrometer, 8.5 Microns, Percent F								
			Hydrometer, 8.6 Microns, Percent F								
			Hydrometer, 8.7 Microns, Percent F								
			Hydrometer, 8.8 Microns, Percent F								
			Hydrometer, 9.3 Microns, Percent F					1.2		0	=
			Hydrometer, 9.4 Microns, Percent F								
		HYD05	Hydrometer, 5.9 Microns, Percent F								
			Hydrometer, 6.0 Microns, Percent F								
			Hydrometer, 6.2 Microns, Percent F								
			Hydrometer, 6.3 Microns, Percent F								
			Hydrometer, 6.4 Microns, Percent F								
			Hydrometer, 6.7 Microns, Percent F								
			Hydrometer, 6.8 Microns, Percent F					1.2		0	=

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Sample Delivery Group = 90131
Report Date: 12/02/02

			Field Sample ID	NYPA-LNR-SED04							
			Lab Sample ID	503804							
			Sample Date	10/01/2002							
			Sample Time	1850							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	SVTC							
			Moisture Content	14.4				16.9			
			Run Number	1				1			
			Analysis Date	10/17/2002				10/15/2002			
			Analysis Time	1445				0000			
			Dilution Factor	1				1			
			Units	MG/KG				PERCE			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
		HYD06	Hydrometer, 3.0 Microns, Percent F								
			Hydrometer, 3.1 Microns, Percent F								
			Hydrometer, 3.2 Microns, Percent F								
			Hydrometer, 3.4 Microns, Percent F					0.5		0	=
		HYD07	Hydrometer, 1.3 Microns, Percent F								
			Hydrometer, 1.4 Microns, Percent F					0.8		0	=
	E415.1	E701250	Total Organic Carbon								
	LYDKHN	E701250	Total Organic Carbon	249	J	117	=				

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Sample Delivery Group = 90131
Report Date: 12/02/02

			Field Sample ID	NYPA-RES-SED05							
			Lab Sample ID	503805							
			Sample Date	10/02/2002							
			Sample Time	1040							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	SVTC							
			Moisture Content	49.4				51.6			
			Run Number	1				1			
			Analysis Date	10/15/2002				10/11/2002			
			Analysis Time	0000				1400			
			Dilution Factor	1				1			
			Units	PERCE				MG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
MISC	D422	GS001	Sieve, 75000 Microns, Percent Ret		U	0	ND				
		GS002	Sieve, 50000 Microns, Percent Ret		U	0	ND				
		GS003	Sieve, 25000 Microns, Percent Ret		U	0	ND				
			Sieve, 37500 Microns, Percent Ret		U	0	ND				
		GS005	Sieve, 19000 Microns, Percent Ret		U	0	ND				
		GS006	Sieve, 9500 Microns, Percent Reta		U	0	ND				
		GS007	Sieve, No. 4, Percent Retained		U	0	ND				
		GS008	Sieve, No. 10, Percent Retained		U	0	ND				
		GS009	Sieve, No. 20, Percent Retained		U	0	ND				
		GS010	Sieve No. 40, Percent Retained	0.3		0	=				
		GS011	Sieve, No. 60, Percent Retained	0.3		0	=				
		GS012	Sieve No. 80, Percent Retained	0.3		0	=				
		GS013	Sieve, No. 100, Percent Retained	0.2		0	=				
		GS014	Sieve No. 200, Percent Retained	6.3		0	=				
		HYD01	Hydrometer, 30.7 Microns, Percent								

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Report Date: 12/02/02

			Field Sample ID	NYPA-RES-SED05							
			Lab Sample ID	503805							
			Sample Date	10/02/2002							
			Sample Time	1040							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	SVTC							
			Moisture Content	49.4				51.6			
			Run Number	1				1			
			Analysis Date	10/15/2002				10/11/2002			
			Analysis Time	0000				1400			
			Dilution Factor	1				1			
			Units	PERCE				MG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
			Hydrometer, 31.1 Microns, Percent	23.9		0	=				
			Hydrometer, 32.6 Microns, Percent								
			Hydrometer, 34.4 Microns, Percent								
			Hydrometer, 35.3 Microns, Percent								
			Hydrometer, 36.1 Microns, Percent								
		HYD02	Hydrometer, 19.9 Microns, Percent								
			Hydrometer, 20.1 Microns, Percent	7.4		0	=				
			Hydrometer, 20.6 Microns, Percent								
			Hydrometer, 22.2 Microns, Percent								
			Hydrometer, 22.9 Microns, Percent								
			Hydrometer, 23.0 Microns, Percent								
		HYD03	Hydrometer, 11.6 Microns, Percent								
			Hydrometer, 11.8 Microns, Percent								
			Hydrometer, 12.0 Microns, Percent	11.1		0	=				
			Hydrometer, 13.1 Microns, Percent								

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Report Date: 12/02/02

			Field Sample ID	NYPA-RES-SED05							
			Lab Sample ID	503805							
			Sample Date	10/02/2002							
			Sample Time	1040							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	SVTC							
			Moisture Content	49.4				51.6			
			Run Number	1				1			
			Analysis Date	10/15/2002				10/11/2002			
			Analysis Time	0000				1400			
			Dilution Factor	1				1			
			Units	PERCE				MG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
			Hydrometer, 13.3 Microns, Percent								
		HYD04	Hydrometer, 8.4 Microns, Percent F								
			Hydrometer, 8.5 Microns, Percent F								
			Hydrometer, 8.6 Microns, Percent F	11.1		0	=				
			Hydrometer, 8.7 Microns, Percent F								
			Hydrometer, 8.8 Microns, Percent F								
			Hydrometer, 9.3 Microns, Percent F								
			Hydrometer, 9.4 Microns, Percent F								
		HYD05	Hydrometer, 5.9 Microns, Percent F								
			Hydrometer, 6.0 Microns, Percent F								
			Hydrometer, 6.2 Microns, Percent F								
			Hydrometer, 6.3 Microns, Percent F								
			Hydrometer, 6.4 Microns, Percent F	5.5		0	=				
			Hydrometer, 6.7 Microns, Percent F								
			Hydrometer, 6.8 Microns, Percent F								

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			Field Sample ID	NYPA-RES-SED05							
			Lab Sample ID	503805							
			Sample Date	10/02/2002							
			Sample Time	1040							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	SVTC							
			Moisture Content	49.4				51.6			
			Run Number	1				1			
			Analysis Date	10/15/2002				10/11/2002			
			Analysis Time	0000				1400			
			Dilution Factor	1				1			
			Units	PERCE				MG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
		HYD06	Hydrometer, 3.0 Microns, Percent F								
			Hydrometer, 3.1 Microns, Percent F	12.6		0	=				
			Hydrometer, 3.2 Microns, Percent F								
			Hydrometer, 3.4 Microns, Percent F								
		HYD07	Hydrometer, 1.3 Microns, Percent F								
			Hydrometer, 1.4 Microns, Percent F	8.0		0	=				
	E415.1	E701250	Total Organic Carbon								
	LYDKHN	E701250	Total Organic Carbon					15100	J	207	=

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Sample Delivery Group = 90131
Report Date: 12/02/02

			Field Sample ID	NYPA-RES-SED06							
			Lab Sample ID	503806							
			Sample Date	10/02/2002							
			Sample Time	1115							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	SVTC							
			Moisture Content	50.3				51.0			
			Run Number	1				1			
			Analysis Date	10/15/2002				10/11/2002			
			Analysis Time	0000				1400			
			Dilution Factor	1				1			
			Units	PERCE				MG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
MISC	D422	GS001	Sieve, 75000 Microns, Percent Ret		U	0	ND				
		GS002	Sieve, 50000 Microns, Percent Ret		U	0	ND				
		GS003	Sieve, 25000 Microns, Percent Ret		U	0	ND				
			Sieve, 37500 Microns, Percent Ret		U	0	ND				
		GS005	Sieve, 19000 Microns, Percent Ret		U	0	ND				
		GS006	Sieve, 9500 Microns, Percent Reta		U	0	ND				
		GS007	Sieve, No. 4, Percent Retained		U	0	ND				
		GS008	Sieve, No. 10, Percent Retained		U	0	ND				
		GS009	Sieve, No. 20, Percent Retained		U	0	ND				
		GS010	Sieve No. 40, Percent Retained	0.4		0	=				
		GS011	Sieve, No. 60, Percent Retained	0.4		0	=				
		GS012	Sieve No. 80, Percent Retained	0.3		0	=				
		GS013	Sieve, No. 100, Percent Retained	0.1		0	=				
		GS014	Sieve No. 200, Percent Retained	2.7		0	=				
		HYD01	Hydrometer, 30.7 Microns, Percent	21		0	=				

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Sample Delivery Group = 90131
Report Date: 12/02/02

			Field Sample ID	NYPA-RES-SED06							
			Lab Sample ID	503806							
			Sample Date	10/02/2002							
			Sample Time	1115							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	SVTC							
			Moisture Content	50.3				51.0			
			Run Number	1				1			
			Analysis Date	10/15/2002				10/11/2002			
			Analysis Time	0000				1400			
			Dilution Factor	1				1			
			Units	PERCE				MG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
			Hydrometer, 31.1 Microns, Percent								
			Hydrometer, 32.6 Microns, Percent								
			Hydrometer, 34.4 Microns, Percent								
			Hydrometer, 35.3 Microns, Percent								
			Hydrometer, 36.1 Microns, Percent								
		HYD02	Hydrometer, 19.9 Microns, Percent								
			Hydrometer, 20.1 Microns, Percent	11.5		0	=				
			Hydrometer, 20.6 Microns, Percent								
			Hydrometer, 22.2 Microns, Percent								
			Hydrometer, 22.9 Microns, Percent								
			Hydrometer, 23.0 Microns, Percent								
		HYD03	Hydrometer, 11.6 Microns, Percent								
			Hydrometer, 11.8 Microns, Percent								
			Hydrometer, 12.0 Microns, Percent	11.5		0	=				
			Hydrometer, 13.1 Microns, Percent								

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Sample Delivery Group = 90131
Report Date: 12/02/02

			Field Sample ID	NYPA-RES-SED06							
			Lab Sample ID	503806							
			Sample Date	10/02/2002							
			Sample Time	1115							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	SVTC							
			Moisture Content	50.3				51.0			
			Run Number	1				1			
			Analysis Date	10/15/2002				10/11/2002			
			Analysis Time	0000				1400			
			Dilution Factor	1				1			
			Units	PERCE				MG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
			Hydrometer, 13.3 Microns, Percent								
		HYD04	Hydrometer, 8.4 Microns, Percent F								
			Hydrometer, 8.5 Microns, Percent F	11.5		0	=				
			Hydrometer, 8.6 Microns, Percent F								
			Hydrometer, 8.7 Microns, Percent F								
			Hydrometer, 8.8 Microns, Percent F								
			Hydrometer, 9.3 Microns, Percent F								
			Hydrometer, 9.4 Microns, Percent F								
		HYD05	Hydrometer, 5.9 Microns, Percent F								
			Hydrometer, 6.0 Microns, Percent F								
			Hydrometer, 6.2 Microns, Percent F								
			Hydrometer, 6.3 Microns, Percent F	7.7		0	=				
			Hydrometer, 6.4 Microns, Percent F								
			Hydrometer, 6.7 Microns, Percent F								
			Hydrometer, 6.8 Microns, Percent F								

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			Field Sample ID	NYPA-RES-SED06							
			Lab Sample ID	503806							
			Sample Date	10/02/2002							
			Sample Time	1115							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	SVTC							
			Moisture Content	50.3				51.0			
			Run Number	1				1			
			Analysis Date	10/15/2002				10/11/2002			
			Analysis Time	0000				1400			
			Dilution Factor	1				1			
			Units	PERCE				MG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
		HYD06	Hydrometer, 3.0 Microns, Percent F								
			Hydrometer, 3.1 Microns, Percent F	11.2		0	=				
			Hydrometer, 3.2 Microns, Percent F								
			Hydrometer, 3.4 Microns, Percent F								
		HYD07	Hydrometer, 1.3 Microns, Percent F								
			Hydrometer, 1.4 Microns, Percent F	4.5		0	=				
	E415.1	E701250	Total Organic Carbon								
	LYDKHN	E701250	Total Organic Carbon					13400	J	205	=

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Sample Delivery Group = 90131
Report Date: 12/02/02

			Field Sample ID	NYPA-RES-SED07							
			Lab Sample ID	503807							
			Sample Date	10/02/2002							
			Sample Time	1135							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	SVTC							
			Moisture Content	57.8				59.3			
			Run Number	1				1			
			Analysis Date	10/15/2002				10/11/2002			
			Analysis Time	0000				1400			
			Dilution Factor	1				1			
			Units	PERCE				MG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
MISC	D422	GS001	Sieve, 75000 Microns, Percent Ret		U	0	ND				
		GS002	Sieve, 50000 Microns, Percent Ret		U	0	ND				
		GS003	Sieve, 25000 Microns, Percent Ret		U	0	ND				
			Sieve, 37500 Microns, Percent Ret		U	0	ND				
		GS005	Sieve, 19000 Microns, Percent Ret		U	0	ND				
		GS006	Sieve, 9500 Microns, Percent Reta		U	0	ND				
		GS007	Sieve, No. 4, Percent Retained		U	0	ND				
		GS008	Sieve, No. 10, Percent Retained		U	0	ND				
		GS009	Sieve, No. 20, Percent Retained		U	0	ND				
		GS010	Sieve No. 40, Percent Retained	0.2		0	=				
		GS011	Sieve, No. 60, Percent Retained	0.2		0	=				
		GS012	Sieve No. 80, Percent Retained	0.2		0	=				
		GS013	Sieve, No. 100, Percent Retained	0.1		0	=				
		GS014	Sieve No. 200, Percent Retained	0.6		0	=				
		HYD01	Hydrometer, 30.7 Microns, Percent	13.5		0	=				

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Sample Delivery Group = 90131
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			Field Sample ID	NYPA-RES-SED07							
			Lab Sample ID	503807							
			Sample Date	10/02/2002							
			Sample Time	1135							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	SVTC							
			Moisture Content	57.8				59.3			
			Run Number	1				1			
			Analysis Date	10/15/2002				10/11/2002			
			Analysis Time	0000				1400			
			Dilution Factor	1				1			
			Units	PERCE				MG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
			Hydrometer, 31.1 Microns, Percent								
			Hydrometer, 32.6 Microns, Percent								
			Hydrometer, 34.4 Microns, Percent								
			Hydrometer, 35.3 Microns, Percent								
			Hydrometer, 36.1 Microns, Percent								
		HYD02	Hydrometer, 19.9 Microns, Percent	8.7		0	=				
			Hydrometer, 20.1 Microns, Percent								
			Hydrometer, 20.6 Microns, Percent								
			Hydrometer, 22.2 Microns, Percent								
			Hydrometer, 22.9 Microns, Percent								
			Hydrometer, 23.0 Microns, Percent								
		HYD03	Hydrometer, 11.6 Microns, Percent								
			Hydrometer, 11.8 Microns, Percent								
			Hydrometer, 12.0 Microns, Percent	17.4		0	=				
			Hydrometer, 13.1 Microns, Percent								

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Sample Delivery Group = 90131
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			Field Sample ID	NYPA-RES-SED07							
			Lab Sample ID	503807							
			Sample Date	10/02/2002							
			Sample Time	1135							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	SVTC							
			Moisture Content	57.8				59.3			
			Run Number	1				1			
			Analysis Date	10/15/2002				10/11/2002			
			Analysis Time	0000				1400			
			Dilution Factor	1				1			
			Units	PERCE				MG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
			Hydrometer, 13.3 Microns, Percent								
		HYD04	Hydrometer, 8.4 Microns, Percent F								
			Hydrometer, 8.5 Microns, Percent F								
			Hydrometer, 8.6 Microns, Percent F								
			Hydrometer, 8.7 Microns, Percent F								
			Hydrometer, 8.8 Microns, Percent F	13.1		0	=				
			Hydrometer, 9.3 Microns, Percent F								
			Hydrometer, 9.4 Microns, Percent F								
		HYD05	Hydrometer, 5.9 Microns, Percent F								
			Hydrometer, 6.0 Microns, Percent F								
			Hydrometer, 6.2 Microns, Percent F	8.7		0	=				
			Hydrometer, 6.3 Microns, Percent F								
			Hydrometer, 6.4 Microns, Percent F								
			Hydrometer, 6.7 Microns, Percent F								
			Hydrometer, 6.8 Microns, Percent F								

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Sample Delivery Group = 90131
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			Field Sample ID	NYPA-RES-SED07							
			Lab Sample ID	503807							
			Sample Date	10/02/2002							
			Sample Time	1135							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	SVTC							
			Moisture Content	57.8				59.3			
			Run Number	1				1			
			Analysis Date	10/15/2002				10/11/2002			
			Analysis Time	0000				1400			
			Dilution Factor	1				1			
			Units	PERCE				MG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
		HYD06	Hydrometer, 3.0 Microns, Percent F								
			Hydrometer, 3.1 Microns, Percent F	10.5		0	=				
			Hydrometer, 3.2 Microns, Percent F								
			Hydrometer, 3.4 Microns, Percent F								
		HYD07	Hydrometer, 1.3 Microns, Percent F								
			Hydrometer, 1.4 Microns, Percent F	7.3		0	=				
	E415.1	E701250	Total Organic Carbon								
	LYDKHN	E701250	Total Organic Carbon					16800	J	246	=

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Sediment Quality Assessment

Sample Delivery Group = 90131
Report Date: 12/02/02

			Field Sample ID	NYPA-RES-SED08							
			Lab Sample ID	503808							
			Sample Date	10/02/2002							
			Sample Time	1235							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	SVTC							
			Moisture Content	58.8				61.6			
			Run Number	1				1			
			Analysis Date	10/15/2002				10/11/2002			
			Analysis Time	0000				1400			
			Dilution Factor	1				1			
			Units	PERCE				MG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
MISC	D422	GS001	Sieve, 75000 Microns, Percent Ret		U	0	ND				
		GS002	Sieve, 50000 Microns, Percent Ret		U	0	ND				
		GS003	Sieve, 25000 Microns, Percent Ret		U	0	ND				
			Sieve, 37500 Microns, Percent Ret		U	0	ND				
		GS005	Sieve, 19000 Microns, Percent Ret		U	0	ND				
		GS006	Sieve, 9500 Microns, Percent Reta		U	0	ND				
		GS007	Sieve, No. 4, Percent Retained		U	0	ND				
		GS008	Sieve, No. 10, Percent Retained		U	0	ND				
		GS009	Sieve, No. 20, Percent Retained		U	0	ND				
		GS010	Sieve No. 40, Percent Retained	0.1		0	=				
		GS011	Sieve, No. 60, Percent Retained	0.1		0	=				
		GS012	Sieve No. 80, Percent Retained	0.1		0	=				
		GS013	Sieve, No. 100, Percent Retained		U	0	ND				
		GS014	Sieve No. 200, Percent Retained		U	0	ND				
		HYD01	Hydrometer, 30.7 Microns, Percent	10.1		0	=				

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Sediment Quality Assessment

Sample Delivery Group = 90131
Report Date: 12/02/02

			Field Sample ID	NYPA-RES-SED08							
			Lab Sample ID	503808							
			Sample Date	10/02/2002							
			Sample Time	1235							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	SVTC							
			Moisture Content	58.8				61.6			
			Run Number	1				1			
			Analysis Date	10/15/2002				10/11/2002			
			Analysis Time	0000				1400			
			Dilution Factor	1				1			
			Units	PERCE				MG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
			Hydrometer, 31.1 Microns, Percent								
			Hydrometer, 32.6 Microns, Percent								
			Hydrometer, 34.4 Microns, Percent								
			Hydrometer, 35.3 Microns, Percent								
			Hydrometer, 36.1 Microns, Percent								
		HYD02	Hydrometer, 19.9 Microns, Percent	9.2		0	=				
			Hydrometer, 20.1 Microns, Percent								
			Hydrometer, 20.6 Microns, Percent								
			Hydrometer, 22.2 Microns, Percent								
			Hydrometer, 22.9 Microns, Percent								
			Hydrometer, 23.0 Microns, Percent								
		HYD03	Hydrometer, 11.6 Microns, Percent								
			Hydrometer, 11.8 Microns, Percent	9.2		0	=				
			Hydrometer, 12.0 Microns, Percent								
			Hydrometer, 13.1 Microns, Percent								

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Niagara Power Project
Sediment Quality Assessment

Sample Delivery Group = 90131
Report Date: 12/02/02

			Field Sample ID	NYPA-RES-SED08							
			Lab Sample ID	503808							
			Sample Date	10/02/2002							
			Sample Time	1235							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	SVTC							
			Moisture Content	58.8				61.6			
			Run Number	1				1			
			Analysis Date	10/15/2002				10/11/2002			
			Analysis Time	0000				1400			
			Dilution Factor	1				1			
			Units	PERCE				MG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
			Hydrometer, 13.3 Microns, Percent								
		HYD04	Hydrometer, 8.4 Microns, Percent F								
			Hydrometer, 8.5 Microns, Percent F								
			Hydrometer, 8.6 Microns, Percent F	13.7		0	=				
			Hydrometer, 8.7 Microns, Percent F								
			Hydrometer, 8.8 Microns, Percent F								
			Hydrometer, 9.3 Microns, Percent F								
			Hydrometer, 9.4 Microns, Percent F								
		HYD05	Hydrometer, 5.9 Microns, Percent F								
			Hydrometer, 6.0 Microns, Percent F								
			Hydrometer, 6.2 Microns, Percent F								
			Hydrometer, 6.3 Microns, Percent F								
			Hydrometer, 6.4 Microns, Percent F	13.7		0	=				
			Hydrometer, 6.7 Microns, Percent F								
			Hydrometer, 6.8 Microns, Percent F								

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Sediment Quality Assessment

Sample Delivery Group = 90131
Report Date: 12/02/02

			Field Sample ID	NYPA-RES-SED08							
			Lab Sample ID	503808							
			Sample Date	10/02/2002							
			Sample Time	1235							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	SVTC							
			Moisture Content	58.8				61.6			
			Run Number	1				1			
			Analysis Date	10/15/2002				10/11/2002			
			Analysis Time	0000				1400			
			Dilution Factor	1				1			
			Units	PERCE				MG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
		HYD06	Hydrometer, 3.0 Microns, Percent F								
			Hydrometer, 3.1 Microns, Percent F								
			Hydrometer, 3.2 Microns, Percent F	11.1		0	=				
			Hydrometer, 3.4 Microns, Percent F								
		HYD07	Hydrometer, 1.3 Microns, Percent F								
			Hydrometer, 1.4 Microns, Percent F	10.3		0	=				
	E415.1	E701250	Total Organic Carbon								
	LYDKHN	E701250	Total Organic Carbon					15300	J	261	=

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Sediment Quality Assessment

Sample Delivery Group = 90131
Report Date: 12/02/02

			Field Sample ID	NYPA-RES-SED09							
			Lab Sample ID	503809							
			Sample Date	10/02/2002							
			Sample Time	1310							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	SVTC							
			Moisture Content	58.8				60.2			
			Run Number	1				1			
			Analysis Date	10/11/2002				10/15/2002			
			Analysis Time	1400				0000			
			Dilution Factor	1				1			
			Units	MG/KG				PERCE			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
MISC	D422	GS001	Sieve, 75000 Microns, Percent Ret						U	0	ND
		GS002	Sieve, 50000 Microns, Percent Ret						U	0	ND
		GS003	Sieve, 25000 Microns, Percent Ret						U	0	ND
			Sieve, 37500 Microns, Percent Ret						U	0	ND
		GS005	Sieve, 19000 Microns, Percent Ret						U	0	ND
		GS006	Sieve, 9500 Microns, Percent Reta						U	0	ND
		GS007	Sieve, No. 4, Percent Retained						U	0	ND
		GS008	Sieve, No. 10, Percent Retained						U	0	ND
		GS009	Sieve, No. 20, Percent Retained						U	0	ND
		GS010	Sieve No. 40, Percent Retained						U	0	ND
		GS011	Sieve, No. 60, Percent Retained						U	0	ND
		GS012	Sieve No. 80, Percent Retained					0.1		0	=
		GS013	Sieve, No. 100, Percent Retained						U	0	ND
		GS014	Sieve No. 200, Percent Retained						U	0	ND
		HYD01	Hydrometer, 30.7 Microns, Percent					6.2		0	=

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Sediment Quality Assessment

Sample Delivery Group = 90131
Report Date: 12/02/02

			Field Sample ID	NYPA-RES-SED09							
			Lab Sample ID	503809							
			Sample Date	10/02/2002							
			Sample Time	1310							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	SVTC							
			Moisture Content	58.8				60.2			
			Run Number	1				1			
			Analysis Date	10/11/2002				10/15/2002			
			Analysis Time	1400				0000			
			Dilution Factor	1				1			
			Units	MG/KG				PERCE			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
			Hydrometer, 31.1 Microns, Percent								
			Hydrometer, 32.6 Microns, Percent								
			Hydrometer, 34.4 Microns, Percent								
			Hydrometer, 35.3 Microns, Percent								
			Hydrometer, 36.1 Microns, Percent								
		HYD02	Hydrometer, 19.9 Microns, Percent					9.6		0	=
			Hydrometer, 20.1 Microns, Percent								
			Hydrometer, 20.6 Microns, Percent								
			Hydrometer, 22.2 Microns, Percent								
			Hydrometer, 22.9 Microns, Percent								
			Hydrometer, 23.0 Microns, Percent								
		HYD03	Hydrometer, 11.6 Microns, Percent					4.8		0	=
			Hydrometer, 11.8 Microns, Percent								
			Hydrometer, 12.0 Microns, Percent								
			Hydrometer, 13.1 Microns, Percent								

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Sediment Quality Assessment

Sample Delivery Group = 90131
Report Date: 12/02/02

			Field Sample ID	NYPA-RES-SED09							
			Lab Sample ID	503809							
			Sample Date	10/02/2002							
			Sample Time	1310							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	SVTC							
			Moisture Content	58.8				60.2			
			Run Number	1				1			
			Analysis Date	10/11/2002				10/15/2002			
			Analysis Time	1400				0000			
			Dilution Factor	1				1			
			Units	MG/KG				PERCE			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
			Hydrometer, 13.3 Microns, Percent								
		HYD04	Hydrometer, 8.4 Microns, Percent F					9.6		0	=
			Hydrometer, 8.5 Microns, Percent F								
			Hydrometer, 8.6 Microns, Percent F								
			Hydrometer, 8.7 Microns, Percent F								
			Hydrometer, 8.8 Microns, Percent F								
			Hydrometer, 9.3 Microns, Percent F								
			Hydrometer, 9.4 Microns, Percent F								
		HYD05	Hydrometer, 5.9 Microns, Percent F								
			Hydrometer, 6.0 Microns, Percent F					14.4		0	=
			Hydrometer, 6.2 Microns, Percent F								
			Hydrometer, 6.3 Microns, Percent F								
			Hydrometer, 6.4 Microns, Percent F								
			Hydrometer, 6.7 Microns, Percent F								
			Hydrometer, 6.8 Microns, Percent F								

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Sediment Quality Assessment

Sample Delivery Group = 90131
Report Date: 12/02/02

			Field Sample ID	NYPA-RES-SED09							
			Lab Sample ID	503809							
			Sample Date	10/02/2002							
			Sample Time	1310							
			Matrix	SE							
			Sample Type Code	N							
			Lab Code	SVTC							
			Moisture Content	58.8				60.2			
			Run Number	1				1			
			Analysis Date	10/11/2002				10/15/2002			
			Analysis Time	1400				0000			
			Dilution Factor	1				1			
			Units	MG/KG				PERCE			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
		HYD06	Hydrometer, 3.0 Microns, Percent F								
			Hydrometer, 3.1 Microns, Percent F					14.0		0	=
			Hydrometer, 3.2 Microns, Percent F								
			Hydrometer, 3.4 Microns, Percent F								
		HYD07	Hydrometer, 1.3 Microns, Percent F								
			Hydrometer, 1.4 Microns, Percent F					15.6		0	=
	E415.1	E701250	Total Organic Carbon								
	LYDKHN	E701250	Total Organic Carbon	16600	J	243	=				

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Sediment Quality Assessment

Sample Delivery Group = 90131
Report Date: 12/02/02

			Field Sample ID	NYPA-RES-SED12				NYPA-ERB-01			
			Lab Sample ID	503810				503811			
			Sample Date	10/02/2002				10/03/2002			
			Sample Time	1240				0850			
			Matrix	SE				WQ			
			Sample Type Code	N				EB			
			Lab Code	SVTC				SVTC			
			Moisture Content	62.4							
			Run Number	1				1			
			Analysis Date	10/11/2002				10/09/2002			
			Analysis Time	1400				1158			
			Dilution Factor	1				1			
			Units	MG/KG				MG/L			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
MISC	D422	GS001	Sieve, 75000 Microns, Percent Ret								
		GS002	Sieve, 50000 Microns, Percent Ret								
		GS003	Sieve, 25000 Microns, Percent Ret								
			Sieve, 37500 Microns, Percent Ret								
		GS005	Sieve, 19000 Microns, Percent Ret								
		GS006	Sieve, 9500 Microns, Percent Reta								
		GS007	Sieve, No. 4, Percent Retained								
		GS008	Sieve, No. 10, Percent Retained								
		GS009	Sieve, No. 20, Percent Retained								
		GS010	Sieve No. 40, Percent Retained								
		GS011	Sieve, No. 60, Percent Retained								
		GS012	Sieve No. 80, Percent Retained								
		GS013	Sieve, No. 100, Percent Retained								
		GS014	Sieve No. 200, Percent Retained								
		HYD01	Hydrometer, 30.7 Microns, Percent								

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Niagara Power Project
Sediment Quality Assessment

Sample Delivery Group = 90131
Report Date: 12/02/02

			Field Sample ID	NYPA-RES-SED12				NYPA-ERB-01			
			Lab Sample ID	503810				503811			
			Sample Date	10/02/2002				10/03/2002			
			Sample Time	1240				0850			
			Matrix	SE				WQ			
			Sample Type Code	N				EB			
			Lab Code	SVTC				SVTC			
			Moisture Content	62.4							
			Run Number	1				1			
			Analysis Date	10/11/2002				10/09/2002			
			Analysis Time	1400				1158			
			Dilution Factor	1				1			
			Units	MG/KG				MG/L			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
			Hydrometer, 31.1 Microns, Percent								
			Hydrometer, 32.6 Microns, Percent								
			Hydrometer, 34.4 Microns, Percent								
			Hydrometer, 35.3 Microns, Percent								
			Hydrometer, 36.1 Microns, Percent								
		HYD02	Hydrometer, 19.9 Microns, Percent								
			Hydrometer, 20.1 Microns, Percent								
			Hydrometer, 20.6 Microns, Percent								
			Hydrometer, 22.2 Microns, Percent								
			Hydrometer, 22.9 Microns, Percent								
			Hydrometer, 23.0 Microns, Percent								
		HYD03	Hydrometer, 11.6 Microns, Percent								
			Hydrometer, 11.8 Microns, Percent								
			Hydrometer, 12.0 Microns, Percent								
			Hydrometer, 13.1 Microns, Percent								

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Sediment Quality Assessment

Sample Delivery Group = 90131
Report Date: 12/02/02

			Field Sample ID	NYPA-RES-SED12				NYPA-ERB-01			
			Lab Sample ID	503810				503811			
			Sample Date	10/02/2002				10/03/2002			
			Sample Time	1240				0850			
			Matrix	SE				WQ			
			Sample Type Code	N				EB			
			Lab Code	SVTC				SVTC			
			Moisture Content	62.4							
			Run Number	1				1			
			Analysis Date	10/11/2002				10/09/2002			
			Analysis Time	1400				1158			
			Dilution Factor	1				1			
			Units	MG/KG				MG/L			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
			Hydrometer, 13.3 Microns, Percent								
		HYD04	Hydrometer, 8.4 Microns, Percent F								
			Hydrometer, 8.5 Microns, Percent F								
			Hydrometer, 8.6 Microns, Percent F								
			Hydrometer, 8.7 Microns, Percent F								
			Hydrometer, 8.8 Microns, Percent F								
			Hydrometer, 9.3 Microns, Percent F								
			Hydrometer, 9.4 Microns, Percent F								
		HYD05	Hydrometer, 5.9 Microns, Percent F								
			Hydrometer, 6.0 Microns, Percent F								
			Hydrometer, 6.2 Microns, Percent F								
			Hydrometer, 6.3 Microns, Percent F								
			Hydrometer, 6.4 Microns, Percent F								
			Hydrometer, 6.7 Microns, Percent F								
			Hydrometer, 6.8 Microns, Percent F								

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Niagara Power Project
Sediment Quality Assessment

Sample Delivery Group = 90131
Report Date: 12/02/02

			Field Sample ID	NYPA-RES-SED12				NYPA-ERB-01			
			Lab Sample ID	503810				503811			
			Sample Date	10/02/2002				10/03/2002			
			Sample Time	1240				0850			
			Matrix	SE				WQ			
			Sample Type Code	N				EB			
			Lab Code	SVTC				SVTC			
			Moisture Content	62.4							
			Run Number	1				1			
			Analysis Date	10/11/2002				10/09/2002			
			Analysis Time	1400				1158			
			Dilution Factor	1				1			
			Units	MG/KG				MG/L			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
		HYD06	Hydrometer, 3.0 Microns, Percent F								
			Hydrometer, 3.1 Microns, Percent F								
			Hydrometer, 3.2 Microns, Percent F								
			Hydrometer, 3.4 Microns, Percent F								
		HYD07	Hydrometer, 1.3 Microns, Percent F								
			Hydrometer, 1.4 Microns, Percent F								
	E415.1	E701250	Total Organic Carbon					3.4		1.0	=
	LYDKHN	E701250	Total Organic Carbon	16200	J	266	=				

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Sediment Quality Assessment

Sample Delivery Group = A2K14240
Report Date: 03/19/03

			Field Sample ID	NYPA-UNR-SED01				NYPA-UNR-SED02			
			Lab Sample ID	1899*1				1899*2			
			Sample Date	10/01/2002				10/01/2002			
			Sample Time	1150				1315			
			Matrix	SE				SE			
			Sample Type Code	N				N			
			Lab Code	BATT				BATT			
			Moisture Content	18				34			
			Run Number	0				0			
			Analysis Date	10/21/2002				10/21/2002			
			Analysis Time	0000				0000			
			Dilution Factor	1				1			
			Units	MG/KG				MG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
METAL	7201	7439-97-6	Mercury	0.265		0.000328	=	0.0136	R	0.000412	=

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Sediment Quality Assessment

Sample Delivery Group = A2K14240
Report Date: 03/19/03

			Field Sample ID	NYPA-LNR-SED03				NYPA-LNR-SED04			
			Lab Sample ID	1899*3				1899*4			
			Sample Date	10/01/2002				10/01/2002			
			Sample Time	1815				1850			
			Matrix	SE				SE			
			Sample Type Code	N				N			
			Lab Code	BATT				BATT			
			Moisture Content	15				19			
			Run Number	0				0			
			Analysis Date	10/21/2002				10/21/2002			
			Analysis Time	0000				0000			
			Dilution Factor	1				1			
			Units	MG/KG				MG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
METAL	7201	7439-97-6	Mercury	0.577		0.000319	=	0.0207	R	0.000332	=

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Sediment Quality Assessment

Sample Delivery Group = A2K14240
Report Date: 03/19/03

			Field Sample ID	NYPA-RES-SED05				NYPA-RES-SED06			
			Lab Sample ID	1899*5				1899*6			
			Sample Date	10/02/2002				10/02/2002			
			Sample Time	1040				1115			
			Matrix	SE				SE			
			Sample Type Code	N				N			
			Lab Code	BATT				BATT			
			Moisture Content	50				52			
			Run Number	0				0			
			Analysis Date	10/21/2002				10/21/2002			
			Analysis Time	0000				0000			
			Dilution Factor	1				1			
			Units	MG/KG				MG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
METAL	7201	7439-97-6	Mercury	0.206		0.000540	=	0.169	J	0.000562	=

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Sediment Quality Assessment

Sample Delivery Group = A2K14240
Report Date: 03/19/03

			Field Sample ID	NYPA-RES-SED07				NYPA-RES-SED08			
			Lab Sample ID	1899*7				1899*8			
			Sample Date	10/02/2002				10/02/2002			
			Sample Time	1135				1235			
			Matrix	SE				SE			
			Sample Type Code	N				N			
			Lab Code	BATT				BATT			
			Moisture Content	59				61			
			Run Number	0				0			
			Analysis Date	10/21/2002				10/21/2002			
			Analysis Time	0000				0000			
			Dilution Factor	1				1			
			Units	MG/KG				MG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
METAL	7201	7439-97-6	Mercury	0.171	J	0.000655	=	0.175	J	0.000699	=

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New York Power Authority
Niagara Power Project
Sediment Quality Assessment

Sample Delivery Group = A2K14240
Report Date: 03/19/03

			Field Sample ID	NYPA-RES-SED09				NYPA-RES-SED12			
			Lab Sample ID	1899*9				1899*10			
			Sample Date	10/02/2002				10/02/2002			
			Sample Time	1310				1240			
			Matrix	SE				SE			
			Sample Type Code	N				N			
			Lab Code	BATT				BATT			
			Moisture Content	59				61			
			Run Number	0				0			
			Analysis Date	10/21/2002				10/21/2002			
			Analysis Time	0000				0000			
			Dilution Factor	1				1			
			Units	MG/KG				MG/KG			
Group	**Method**	**Cas**	**Parameter Name**	**Value**	**Qualifier**	**RDL**	**Value Qual.**	**Value**	**Qualifier**	**RDL**	**Value Qual.**
METAL	7201	7439-97-6	Mercury	0.173	J	0.000654	=	0.163	J	0.000685	=

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New York Power Authority
Niagara Power Project
Sediment Quality Assessment

Sample Delivery Group = A2K14240
Report Date: 03/19/03

Field Sample ID	NYPA-ERB-01
Lab Sample ID	1899*11
Sample Date	10/03/2002
Sample Time	0850
Matrix	WQ
Sample Type Code	EB
Lab Code	BATT
Moisture Content	
Run Number	0
Analysis Date	10/18/2002
Analysis Time	0000
Dilution Factor	1
Units	NG/L

Group	Method	Cas	Parameter Name	Value	Qualifier	RDL	Value Qual.
METAL	7201	7439-97-6	Mercury	0.398		0.160	=

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ATTACHMENT 2

ORGANIC DATA SUPPORT DOCUMENTATION

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Organic Analyses Support Documentation

Environmental Standards Project Name: NMPA-Niagara
Sample Collection Dates: 10/1-3/02
Job Number: Y108164
Project Manager: Dina Y.
Laboratory: Vasiloos

Reviewed By: Glenn Eisler
Approved By: KV
Completion Date: 11/22/02

Applicable Sample No's.: ☐ Refer to Table 1 in the Quality Assurance Review

Sample No.	Lab. Control No.

Deliverables: CLP ☐
Tier I ☐
Tier II ☐
Limited ☐
Other _____

The following table indicates criteria which were examined, the identified problems, and support documentation attachments.

	Criteria Examined in Detail: Check (✓) If Yes or Footnote Letter for Comments Below								Problems Identified: Check (✓) If Yes or Footnote Number for Comments Below				Support Documentation Attachments: Check (✓) If Yes -- or Identify Attachment No.			
	VOA Method 8260B	BNA Method 8270C	PEST / PCB Method 8081/8082	Other Method(s) 8240	VOA Method	BNA Method 8270C	PEST / PCB Method 8081/8082	Other Method(s) 8240	VOA Method 8260B	BNA Method 8270C	PEST / PCB Method 8081/8082	Other Method(s) 8240
Holding Times	✓	✓	✓	✓				✓	✓	✓	✓	✓
Blank Analysis Results: Target Compounds	✓	✓	✓	✓					✓	✓	✓	✓
Blank Analysis Results: TICs												
System Mntr. Cmpds. &/or Surrogate Spike Rslts.	✓	✓	✓		✓				✓	✓	✓	
Matrix Spike / Matrix Spike Duplicate Results	✓	✓	✓	✓		✓			✓	✓	✓	✓
Blank Spike Results	✓	✓	✓	✓					✓	✓	✓	✓
Duplicate Analysis Results ☐ Field ☐ Lab												
Qualitative Identification: Target Compounds	✓	✓	✓	✓								
Qualitative Identification: TICs												
DFTPP & BFB Mass Tuning	✓	✓							✓	✓		
GC Instrument Performance			✓	✓							✓	✓
Initial Calibrations	✓	✓	✓	✓					✓	✓	✓	✓
Continuing Calibrations	✓	✓	✓	✓		✓	✓		✓	✓	✓	✓
Quantitation of Results	✓	✓	✓	✓								
DDT / Endrin Breakdown		✓	✓								✓	
Surrogate Retention Time Shifts			✓									
Internal Standards Performance	✓	✓		✓					✓	✓		✓
Resolution Check Standards												
Analytical Sequence	✓	✓	✓	✓					✓	✓	✓	✓
Florisil Cartridge Check & GPC Calibration												
GC Column Agreement			✓				✓				✓	
Others: Sample Receipt	✓	✓	✓	✓					✓	✓	✓	✓

Comments: _____

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BLANK ANALYSIS RESULTS FOR TARGET ORGANIC COMPOUNDS

Fraction (1)	Matrix (Aq., S)	Blank Type (2)	Blank Sample Number	Contaminant	Concentration (units)	Qualification Limit 5x	Qualification Limit 10x
V	S	MB	E9N7A1AA	None Detected			
	S	MB	E9RTX1AA				
	S	MB	E9W1R1AA				
	Aq	MB	E9D0L1AA				
	Aq	EB	N4PA-EB-01				
Pest	S	MB	E9K07 1AA	None Detected			
	Aq	MB	E9F64 1AA				
	Aq	EB	EB-01				
S	S	MB	E9V52 1AA	None Detected			
	Aq	MB	E9KV0 1AA				
	Aq	EB	N4PA-EB3-01				
PCB	S	MB	E9H0K 1AA	None Detected			
	Aq	MB	E9F65 1AA				
	Aq	EB	N4PA-EB3-01				

1 – V = Volatile; S = Semivolatile; P = Pesticide/PCB; O = Other: _____

Aq. = Aqueous; S = Solid

2 – MB = Method Blank; TB = Trip Blank; EB = Equipment Rinse Blank; FB = Field Blank
IB = Instrument Blank; SB = Storage Blank

* = Inferred from instrument printouts and/or supporting data; mass spectra not provided.

+ = Contaminant observed on one column only.

Notes: _____

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BLANK ANALYSIS RESULTS FOR TARGET ORGANIC COMPOUNDS

Fraction (1)	Matrix (Aq., S)	Blank Type (2)	Blank Sample Number	Contaminant	Concentration (units)	Qualification Limit 5x	Qualification Limit 10x
TCDD	Aq	MB	E9HAL1	None Detected			
	S	MB	E9JMD1	None Detected			
	S	MB	FCV541	None Detected			
	Aq	EB	NYPA-DRB-01	None Detected			

1 – V = Volatile; S = Semivolatile; P = Pesticide/PCB; O = Other: _____

Aq. = Aqueous; S = Solid

2 – MB = Method Blank; TB = Trip Blank; EB = Equipment Rinse Blank; FB = Field Blank
IB = Instrument Blank; SB = Storage Blank

* = Inferred from instrument printouts and/or supporting data; mass spectra not provided.

+ = Contaminant observed on one column only.

Notes: _____

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SW846 8260B SURROGATE RECOVERY

Lab Name: Severn Trent Laboratories, Inc. Client: ENVIRONMENTAL STANDARDS INC.

Lab Code: STLCAN SDG No: 2J04261

Lot #: A2J040261

Extraction: XXA15QK01

	CLIENT ID.	SRG01	SRG02	SRG03	SRG04	TOT OUT
01	NYPA-UNR-SED01	85	78	88	92	00
02	NYPA-UNR-SED02	88	79	101	82	00
03	NYPA-LNR-SED03	83	80	89	82	00
04	NYPA-LNR-SED04	87	79	88	89	00
05	NYPA-RES-SED05	89	85	88	88	00
06	NYPA-RES-SED06	86	85	88	90	00
07	NYPA-RES-SED07	90	85	91	90	00
08	NYPA-RES-SED08	86	83	86	82	00
09	NYPA-RES-SED09	86	84	89	87	00
10	NYPA-RES-SED12	89	85	92	88	00
11	METHOD BLK. E9W1R1AA	87	80	89	94	00
12	LCS E9W1R1AC	88	79	91	96	00
13	NYPA-LNR-SED03 D	88	79	91	93	00
14	LCSD E9W1R1AD	89	80	90	94	00
15	NYPA-LNR-SED03 S	87	79	93	92	00

SURROGATES		QC LIMITS
SRG01	= Dibromofluoromethane	(59-138)
SRG02	= 1,2-Dichloroethane-d4	(61-130)
SRG03	= Toluene-d8	(60-143)
SRG04	= 4-Bromofluorobenzene	(47-158)

\# Column to be used to flag recovery values
* Values outside of required QC Limits
D System monitoring Compound diluted out

FORM II

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SW846 8260B SURROGATE RECOVERY

Lab Name: Severn Trent Laboratories, Inc. Client: ENVIRONMENTAL STANDARDS INC.

Lab Code: STLCAN SDG No: 2J04261

Lot #: A2J040261

Extraction: XXA4PQK01

	CLIENT ID.	SRG01	SRG02	SRG03	SRG04	TOT OUT
01	INTRA-LAB QC	92	85	90	95	00
02	METHOD BLK. E9N7A1AA	89	82	90	93	00
03	METHOD BLK. E9RTX1AA	86	82	86	92	00
04	LCS E9N7A1AC	88	79	90	95	00
05	LCS E9RTX1AC	86	79	90	95	00
06	LAB MS/MSD D	86	75	97	76	00
07	LCSD E9N7A1AD	86	77	91	95	00
08	LCSD E9RTX1AD	87	79	90	94	00
09	LAB MS/MSD S	87	75	97	82	00

SURROGATES		QC LIMITS
SRG01	= Dibromofluoromethane	(59-138)
SRG02	= 1,2-Dichloroethane-d4	(61-130)
SRG03	= Toluene-d8	(60-143)
SRG04	= 4-Bromofluorobenzene	(47-158)

\# Column to be used to flag recovery values
* Values outside of required QC Limits
D System monitoring Compound diluted out

FORM II

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SW846 8260B SURROGATE RECOVERY

Lab Name: Severn Trent Laboratories, Inc. Client: ENVIRONMENTAL STANDARDS INC.

Lab Code: STLCAN SDG No: 2J04261

Lot #: A2J040261

Extraction: XXI25QK01

	CLIENT ID.	SRG01	SRG02	SRG03	SRG04	TOT OUT
01	INTRA-LAB QC	93	87	93	92	00
02	NYPA-ERB-01	94	88	91	92	00
03	METHOD BLK. E90DC1AA	93	86	93	93	00
04	LCS E90DC1AC	92	93	92	93	00
05	LAB MS/MSD D	93	92	93	92	00
06	LCSD E90DC1AD	95	92	91	93	00
07	LAB MS/MSD S	94	93	92	92	00

SURROGATES		QC LIMITS
SRG01	= Dibromofluoromethane	(73-122)
SRG02	= 1,2-Dichloroethane-d4	(61-128)
SRG03	= Toluene-d8	(76-110)
SRG04	= 4-Bromofluorobenzene	(74-116)

\# Column to be used to flag recovery values
* Values outside of required QC Limits
D System monitoring Compound diluted out

FORM II

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SW846 8260B MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Severn Trent Laboratories, Inc. Client: ENVIRONMENTAL STANDARDS INC.

Lab Code: STLCAN SDG No: 2J04261

Matrix Spike ID: NYPA-LNR-SED03

Lot #: A2J040261 WO #: E9FH71AQ
BATCH: 2284566

COMPOUND	SPIKE ADDED (ug/kg)	SAMPLE CONCENT. (ug/kg)	MS CONCENT. (ug/kg)	MS % REC	LIMITS REC	QUAL
1,1-Dichloroethene	51	ND	45	88	43 - 147	
Trichloroethene	51	ND	42	82	46 - 143	
Benzene	51	ND	46	89	55 - 138	
Toluene	51	ND	44	84	46 - 147	
Chlorobenzene	51	ND	40	77	49 - 139	

NOTES(S):

Results and reporting limits have been adjusted for dry weight.

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 5 outside limits

COMMENTS:

FORM III

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SW846 8260B MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Severn Trent Laboratories, Inc. Client: ENVIRONMENTAL STANDARDS INC.

Lab Code: STLCAN SDG No: 2J04261

Matrix Spike ID: NYPA-LNR-SED03

Lot #: A2J040261 WO #: E9FH71AR
BATCH: 2284566

COMPOUND	SPIKE ADDED (ug/kg)	MSD CONCENT. (ug/kg)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	QUAL
1,1-Dichloroethene	51	46	89	1.0	27	43 - 147	
Trichloroethene	51	43	83	1.0	23	46 - 143	
Benzene	51	46	89	0.65	20	55 - 138	
Toluene	51	42	81	3.2	24	46 - 147	
Chlorobenzene	51	39	76	2.2	22	49 - 139	

NOTES(S):

Results and reporting limits have been adjusted for dry weight.

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 5 outside limits

COMMENTS:

FORM III

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SW846 8260B CHECK SAMPLE RECOVERY

Lab Name: Severn Trent Laboratories, Inc. Client: ENVIRONMENTAL STANDARDS INC.

Lab Code: STLCAN SDG No: 2J04261

Lot #: A2J090000 WO #: E9N7A1AC
BATCH: 2282582

COMPOUND	SPIKE ADDED (ug/kg)	SAMPLE CONCENT. (ug/kg)	% REC	QC LIMITS REC	QUAL
1,1-Dichloroethene	50	50	100	55- 142	
Trichloroethene	50	51	102	70- 131	
Benzene	50	52	103	75- 129	
Toluene	50	50	99	71- 130	
Chlorobenzene	50	49	97	75- 127	

NOTES(S):

* Values outside of QC limits

Spike Recovery: 0 out of 5 outside limits

COMMENTS:

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SW846 8260B CHECK SAMPLE DUPLICATE RECOVERY

Lab Name: Severn Trent Laboratories, Inc. Client: ENVIRONMENTAL STANDARDS INC.

Lab Code: STLCAN SDG No: 2J04261

Lot #: A2J090000 WO #: E9N7A1AD
BATCH: 2282582

COMPOUND	SPIKE ADDED (ug/kg)	SAMPLE CONCENT. (ug/kg)	% REC	QC LIMITS REC	QUAL
1,1-Dichloroethene	50	47	94	55 - 142	
Trichloroethene	50	48	95	70 - 131	
Benzene	50	49	97	75 - 129	
Toluene	50	48	97	71 - 130	
Chlorobenzene	50	47	94	75 - 127	

NOTES(S):

* Values outside of QC limits

Spike Recovery: 0 out of 5 outside limits

COMMENTS:

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SW846 8260B CHECK SAMPLE RECOVERY

Lab Name: Severn Trent Laboratories, Inc. Client: ENVIRONMENTAL STANDARDS INC.

Lab Code: STLCAN SDG No: 2J04261

Lot #: A2J100000 WO #: E9RTX1AC

BATCH: 2283564

COMPOUND	SPIKE ADDED (ug/kg)	SAMPLE CONCENT. (ug/kg)	% REC	QC LIMITS REC	QUAL
1,1-Dichloroethene	50	51	102	55 - 142	
Trichloroethene	50	51	102	70 - 131	
Benzene	50	51	103	75 - 129	
Toluene	50	50	100	71 - 130	
Chlorobenzene	50	49	99	75 - 127	

NOTES(S):

* Values outside of QC limits

Spike Recovery: 0 out of 5 outside limits

COMMENTS:

FORM III

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SW846 8260B CHECK SAMPLE DUPLICATE RECOVERY

Lab Name: Severn Trent Laboratories, Inc. Client: ENVIRONMENTAL STANDARDS INC.

Lab Code: STLCAN SDG No: 2J04261

Lot #: A2J100000 WO #: E9RTX1AD
BATCH: 2283564

COMPOUND	SPIKE ADDED (ug/kg)	SAMPLE CONCENT. (ug/kg)	% REC	QC LIMITS REC	QUAL
1,1-Dichloroethene	50	50	100	55 - 142	
Trichloroethene	50	49	99	70 - 131	
Benzene	50	51	101	75 - 129	
Toluene	50	49	99	71 - 130	
Chlorobenzene	50	49	97	75 - 127	

NOTES(S):

* Values outside of QC limits

Spike Recovery: 0 out of 5 outside limits

COMMENTS:

FORM III

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SW846 8260B CHECK SAMPLE RECOVERY

Lab Name: Severn Trent Laboratories, Inc. Client: ENVIRONMENTAL STANDARDS INC.

Lab Code: STLCAN SDG No: 2J04261

Lot #: A2J110000 WO #: E9W1R1AC

BATCH: 2284566

COMPOUND	SPIKE ADDED (ug/kg)	SAMPLE CONCENT. (ug/kg)	% REC	QC LIMITS REC	QUAL
1,1-Dichloroethene	50	51	102	55 - 142	
Trichloroethene	50	53	105	70 - 131	
Benzene	50	52	103	75 - 129	
Toluene	50	51	102	71 - 130	
Chlorobenzene	50	50	99	75 - 127	

NOTES(S):

* Values outside of QC limits

Spike Recovery: 0 out of 5 outside limits

COMMENTS:

FORM III

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SW846 8260B CHECK SAMPLE DUPLICATE RECOVERY

Lab Name: Severn Trent Laboratories, Inc. Client: ENVIRONMENTAL STANDARDS INC.

Lab Code: STLCAN SDG No: 2J04261

Lot #: A2J110000 WO #: E9W1R1AD

BATCH: 2284566

COMPOUND	SPIKE ADDED (ug/kg)	SAMPLE CONCENT. (ug/kg)	% REC	QC LIMITS REC	QUAL
1,1-Dichloroethene	50	52	104	55 - 142	
Trichloroethene	50	52	104	70 - 131	
Benzene	50	53	106	75 - 129	
Toluene	50	50	100	71 - 130	
Chlorobenzene	50	49	98	75 - 127	

NOTES(S):

* Values outside of QC limits

Spike Recovery: 0 out of 5 outside limits

COMMENTS:

FORM III

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SW846 8260B CHECK SAMPLE RECOVERY

Lab Name: Severn Trent Laboratories, Inc. Client: ENVIRONMENTAL STANDARDS INC.

Lab Code: STLCAN SDG No: 2J04261

Lot #: A2J140000 WO #: E90DC1AC
BATCH: 2287154

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENT. (ug/L)	% REC	QC LIMITS REC	QUAL
Toluene	10	9.6	96	74 - 119	
Chlorobenzene	10	9.4	94	76 - 117	
1,1-Dichloroethene	10	9.4	94	63 - 130	
Trichloroethene	10	9.1	91	75 - 122	
Benzene	10	9.2	92	80 - 116	

NOTES(S):

* Values outside of QC limits

Spike Recovery: 0 out of 5 outside limits

COMMENTS:

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SW846 8260B CHECK SAMPLE DUPLICATE RECOVERY

Lab Name: Severn Trent Laboratories, Inc. Client: ENVIRONMENTAL STANDARDS INC.

Lab Code: STLCAN SDG No: 2J04261

Lot #: A2J140000 WO #: E90DC1AD

BATCH: 2287154

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENT. (ug/L)	% REC	QC LIMITS REC	QUAL
Trichloroethene	10	9.6	96	75- 122	
Benzene	10	9.5	95	80- 116	
Toluene	10	9.5	95	74- 119	
Chlorobenzene	10	9.5	95	76- 117	
1,1-Dichloroethene	10	9.7	97	63- 130	

NOTES(S):

* Values outside of QC limits

Spike Recovery: 0 out of 5 outside limits

COMMENTS:

FORM III

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SW846 8260B METHOD BLANK SUMMARY

BLANK WORKORDER NO.

E9N7A1AA

b Name: Severn Trent Laboratories, Inc.

b Code: STLCAN

SDG Number:2J04261

b File ID: UX95618.D

Lot Number: A2J040261

te Analyzed: 10/08/02

Time Analyzed: 20:35

trix: SOLID

Date Extracted:10/08/02

Column: DB 624 ID: .18

Extraction Method: 5030

strument ID: UX9

Level:(low/med) LOW

IS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, LCS, LCSD, MS , MSD:

CLIENT ID.	SAMPLE WORK ORDER #	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
NYPA-LNR-SED04	E9FJC1AC	UX95638.D	10/09/02	04:27
NYPA-RES-SED05	E9FJD1AC	UX95639.D	10/09/02	04:50
NYPA-RES-SED06	E9FJE1AC	UX95640.D	10/09/02	05:14
NYPA-RES-SED07	E9FJF1AC	UX95641.D	10/09/02	05:37
NYPA-RES-SED08	E9FJG1AC	UX95642.D	10/09/02	06:01
NYPA-RES-SED09	E9FJH1AC	UX95643.D	10/09/02	06:24
NYPA-RES-SED12	E9FJJ1AC	UX95644.D	10/09/02	06:48
INTRA-LAB QC	E9GTA1AU	UX95621.D	10/08/02	21:45
LAB MS/MSD	E9GTA1AV S	UX95624.D	10/08/02	22:56
LAB MS/MSD	E9GTA1AW D	UX95625.D	10/08/02	23:20
CHECK SAMPLE	E9N7A1AC C	UX95617.D	10/08/02	20:11
DUPLICATE CHECK	E9N7A1AD L	UX95619.D	10/08/02	20:58

MENTS:

FORM IV

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BLANK WORKORDER NO.

E9RTX1AA

SW846 8260B METHOD BLANK SUMMARY

Lab Name: Severn Trent Laboratories, Inc.

Lab Code: STLCAN

SDG Number: 2J04261

Lab File ID: E9RTX1AA.

Lot Number: A2J040261

Date Analyzed: 10/09/02

Time Analyzed: 21:44

Matrix: SOLID

Date Extracted: 10/09/02

GC Column: DB 624 ID: .18

Extraction Method: 5030

Instrument ID: UX9

Level: (low/med) LOW

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, LCS, LCSD, MS , MSD:

	CLIENT ID.	SAMPLE WORK ORDER #	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	NYPA-UNR-SED01	E9FHE1AC	UX95662.D	10/10/02	02:27
02	NYPA-UNR-SED02	E9FH21AC	UX95666.D	10/10/02	04:02
03	CHECK SAMPLE	E9RTX1AC C	E9RTX1AC.	10/09/02	21:21
04	DUPLICATE CHECK	E9RTX1AD L	E9RTX1AD.	10/09/02	22:08
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

COMMENTS:

FORM IV

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BLANK WORKORDER NO.

E9W1R1AA

SW846 8260B METHOD BLANK SUMMARY

Lab Name: Severn Trent Laboratories, Inc.

Lab Code: STLCAN

SDG Number: 2J04261

Lab File ID: UX95709.D

Lot Number: A2J040261

Date Analyzed: 10/10/02

Time Analyzed: 22:31

Matrix: SOLID

Date Extracted: 10/10/02

GC Column: DB 624 ID: .18

Extraction Method: 5030

Instrument ID: UX9

Level: (low/med) LOW

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, LCS, LCSD, MS , MSD:

	CLIENT ID.	SAMPLE WORK ORDER #	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	NYPA-LNR-SED03	E9FH71AC	UX95720.D	10/11/02	02:50
02	NYPA-LNR-SED03	E9FH71AQ S	UX95721.D	10/11/02	03:14
03	NYPA-LNR-SED03	E9FH71AR D	UX95722.D	10/11/02	03:37
04	CHECK SAMPLE	E9W1R1AC C	UX95708.D	10/10/02	22:07
05	DUPLICATE CHECK	E9W1R1AD L	UX95710.D	10/10/02	22:54
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

COMMENTS:

FORM IV

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SW846 8260B METHOD BLANK SUMMARY

BLANK WORKORDER NO.

E90DC1AA

Lab Name: Severn Trent Laboratories, Inc.

Lab Code: STLCAN

SDG Number:2J04261

Lab File ID: UX122975.

Lot Number: A2J040261

Date Analyzed: 10/12/02

Time Analyzed: 13:01

Matrix: WATER

Date Extracted:10/12/02

GC Column: DB-624 ID: .25

Extraction Method: 5030B/8260B

Instrument ID: UX12

Level:(low/med) LOW

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, LCS, LCSD, MS , MSD:

	CLIENT ID.	SAMPLE WORK ORDER #	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	INTRA-LAB QC	E9E0A1AL	UX122978.	10/12/02	14:24
02	LAB MS/MSD	E9E0A1AM S	UX122979.	10/12/02	14:46
03	LAB MS/MSD	E9E0A1AN D	UX122980.	10/12/02	15:09
04	NYPA-ERB-01	E9FJ51AA	UX122990.	10/12/02	18:52
05	CHECK SAMPLE	E90DC1AC C	UX122973.	10/12/02	12:16
06	DUPLICATE CHECK	E90DC1AD L	UX122974.	10/12/02	12:38
07					
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COMMENTS:

FORM IV

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5A
VOLATILE ORGANIC GC/MS TUNING AND MASS
CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: STL - NORTH CANTON Contract:

Lab Code: QESOH Case No.: SAS No.: SDG No.: A2J040261

Lab File ID: BFB978 BFB Injection Date: 08/13/02

Instrument ID: A3UX9 BFB Injection Time: 0809

Matrix: (soil/water) SOIL Level: (low/med) LOW Column: (pack/cap) CAP

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	30.1
75	30.0 - 60.0% of mass 95	42.5
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.4
173	Less than 2.0% of mass 174	0.4 (0.6)1
174	50.0 - 120.0% of mass 95	67.6
175	5.0 - 9.0% of mass 174	5.0 (7.4)1
176	Greater than 95.0%, but less than 101.0% of mass 174	66.4 (98.2)1
177	5.0 - 9.0% of mass 176	4.2 (6.3)2

1-Value is % of mass 174 2-Value is % of mass 176

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD200	1000NG-IC	UX94213	08/13/02	0849
02	VSTD100	500NG-IC	UX94214	08/13/02	0912
03	VSTD050	250NG-IC	UX94215	08/13/02	0936
04	VSTD020	100NG-IC	UX94216	08/13/02	0959
05	VSTD010	50NG-IC	UX94217	08/13/02	1023
06	VSTD005	25NG-IC	UX94218	08/13/02	1046
07					
08					
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15					
16					
17					
18					
19					
20					
21					
22					

FORM V VOA 1/87 Rev.

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STL - North Canton

INITIAL CALIBRATION DATA

11/4/02

Start Cal Date : ~~12~~ 13-AUG-2002 ~~19:22~~ 08:49
End Cal Date : 13-AUG-2002 10:46
Quant Method : ISTD
Origin : Disabled
Target Version : 4.04
Integrator : HP RTE
Method file : \\qcanoh04\dd\chem\MSV\a3ux9.i\N20813A.b\8260SUX9-3.m
Cal Date : 13-Aug-2002 11:03 tapsvc
Curve Type : Average

Calibration File Names:
Level 1: \\qcanoh04\dd\chem\MSV\a3ux9.i\N20813A.b\UX94218.D
Level 2: \\qcanoh04\dd\chem\MSV\a3ux9.i\N20813A.b\UX94217.D
Level 3: \\qcanoh04\dd\chem\MSV\a3ux9.i\N20813A.b\UX94216.D
Level 4: \\qcanoh04\dd\chem\MSV\a3ux9.i\N20813A.b\UX94215.D
Level 5: \\qcanoh04\dd\chem\MSV\a3ux9.i\N20813A.b\UX94214.D
Level 6: \\qcanoh04\dd\chem\MSV\a3ux9.i\N20813A.b\UX94213.D

	Compound	25.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	RRF	% RSD
	8 Dichlorodifluoromethane	0.21703	0.20911	0.21980	0.22938	0.23667	0.24307	0.22585	5.672
	9 Chloromethane	0.62030	0.59484	0.60127	0.59756	0.61067	0.62948	0.60902	2.253
	10 Vinyl Chloride	0.39341	0.38859	0.39648	0.39764	0.41330	0.41184	0.40021	2.520
	11 Bromomethane	0.18385	0.18199	0.17760	0.16170	0.13190	0.09786	0.15581	22.067
	12 Chloroethane	0.23576	0.23341	0.23345	0.22826	0.21074	0.17894	0.22010	10.055
	13 Trichlorofluoromethane	0.26218	0.25164	0.27992	0.29325	0.30973	0.31491	0.28527	8.914
	14 Acrolein	0.07973	0.08089	0.08205	0.07889	0.07684	0.07509	0.07891	3.271
	15 Acetone	0.30904	0.29446	0.27932	0.26029	0.25496	0.24031	0.27306	9.486
	16 1,1-Dichloroethene	0.25168	0.25434	0.24012	0.24755	0.25730	0.27044	0.25357	4.021
	17 Methylene Chloride	0.44374	0.36036	0.30467	0.29478	0.29121	0.29418	0.33149	18.358
	18 Carbon Disulfide	0.86677	0.87066	0.83359	0.88164	0.90403	0.94752	0.88403	4.368
	19 Acrylonitrile	0.19957	0.19953	0.19645	0.19488	0.18828	0.18835	0.19451	2.637
	20 trans-1,2-Dichloroethene	0.29191	0.27947	0.27596	0.27585	0.28310	0.27887	0.28086	2.148
	21 Vinyl acetate	0.80084	0.81275	0.89342	0.90661	0.92145	0.96833	0.88390	7.350
	22 1,1-Dichloroethane	0.59773	0.57597	0.56181	0.56321	0.58479	0.57921	0.57712	2.347
	23 2 Butanone	0.38686	0.36072	0.36242	0.35058	0.34222	0.33228	0.35584	5.328
	24 cis 1,2-dichloroethene	0.28928	0.28205	0.28505	0.29337	0.29544	0.29316	0.28972	1.818
M	25 1,2 Dichloroethene (total)	0.29060	0.28077	0.28051	0.28461	0.28927	0.28601	0.28529	1.473
	26 Chloroform	0.43156	0.41198	0.40617	0.41861	0.42950	0.42329	0.42019	2.361
	27 1,1,1-Trichloroethane	0.32222	0.30290	0.31444	0.31798	0.33900	0.32447	0.32017	3.730
	28 Carbon Tetrachloride	0.25724	0.25772	0.26159	0.27101	0.29015	0.29519	0.27215	6.144
	29 1,2-Dichloroethane	0.42835	0.40612	0.40282	0.40563	0.40939	0.40678	0.40985	2.271
	30 Benzene	1.19812	1.17154	1.12734	1.16530	1.20051	1.18338	1.17437	2.294
	31 Trichloroethene	0.28481	0.27677	0.26781	0.27659	0.29061	0.28786	0.28074	3.043
	32 1,2-Dichloropropane	0.34856	0.34987	0.33775	0.34606	0.35603	0.35683	0.34918	2.012

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STL - North Canton

INITIAL CALIBRATION DATA

jr 11/4/03

Start Cal Date : ~~12~~ 13-AUG-2002 1~~9:22~~
End Cal Date : 13-AUG-2002 10:46
Quant Method : ISTD
Origin : Disabled
Target Version : 4.04
Integrator : HP RTE
Method file : \\qcanch04\dd\chem\MSV\a3ux9.i\N20813A.b\8260SUX9-3.m
Cal Date : 13-Aug-2002 11:03 tapsvc
Curve Type : Average

	Compound	25.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	RRF	% RSD	
	33 Bromodichloromethane	0.30352	0.28843	0.28898	0.30709	0.31621	0.32197	0.30437	4.527	
	34 2-Chloroethyl vinyl ether	0.13545	0.14636	0.15927	0.16613	0.16944	0.17184	0.15808	9.098	
	35 4-Methyl 2-pentanone	0.51927	0.52773	0.55142	0.56122	0.56161	0.56286	0.54735	3.492	
	36 cis-1,3-Dichloropropene	0.36164	0.38356	0.38860	0.41331	0.44189	0.44750	0.40608	8.414	
	37 Toluene	1.83935	1.80302	1.74496	1.73856	1.84522	1.75698	1.78801	2.670	
	38 trans-1,3 Dichloropropene	0.45849	0.45363	0.47377	0.50819	0.54783	0.53547	0.49623	8.106	
	39 2-Hexanone	0.63962	0.64082	0.67090	0.67627	0.70212	0.66964	0.66656	3.534	
	40 1,1,2-Trichloroethane	0.35667	0.34492	0.33749	0.32559	0.34217	0.32975	0.33943	3.290	
	41 Tetrachloroethene	0.30857	0.28372	0.28114	0.27978	0.29728	0.28374	0.28904	3.957	
	42 Dibromochloromethane	0.29275	0.29041	0.30685	0.31039	0.33488	0.33021	0.31091	5.954	
	43 Chlorobenzene	1.25318	1.14491	1.13637	1.11987	1.19771	1.14290	1.16582	4.304	
	44 Ethylbenzene	0.64079	0.60804	0.62257	0.62983	0.67420	0.65371	0.63819	3.686	
	45 m + p-Xylene	0.78165	0.76076	0.76656	0.76510	0.82864	0.79010	0.78214	3.242	
	46 Xylene-o	0.73740	0.74039	0.75888	0.75456	0.82069	0.78492	0.76614	4.129	
M	47 Xylenes (total)	0.76690	0.75397	0.76400	0.76159	0.82599	0.78838	0.77680	3.439	
	48 Styrene	1.14800	1.15131	1.23738	1.29012	1.40493	1.35819	1.26499	8.387	
	49 Bromoform	0.16274	0.14767	0.16825	0.19115	0.21039	0.21323	0.18224	14.732	
	50 1,1,2,2-Tetrachloroethane	0.89511	0.88078	0.89856	0.88279	0.92541	0.89021	0.89548	1.808	
	51 1,3-Dichlorobenzene	1.88625	1.77682	1.74256	1.70300	1.81616	1.75043	1.77920	3.626	
	52 1,4 Dichlorobenzene	1.96637	1.83399	1.75229	1.74671	1.83766	1.79148	1.82142	4.439	
	53 1,2 Dichlorobenzene	1.75873	1.75106	1.65788	1.68279	1.72118	1.67557	1.70787	2.456	
	54 Freon-113	0.18021	0.17469	0.18179	0.18186	0.20180	0.21634	0.18945	8.495	
	55 Acetonitrile	0.07518	0.07325	0.07328	0.06931	0.06802	0.06863	0.07128	4.192	
	56 Iodomethane	0.36295	0.35868	0.34906	0.36336	0.37506	0.37868	0.36463	2.975	
	57 3-Chloropropene	0.11414	0.11747	0.12768	0.12773	0.13311	0.13520	0.12589	6.688	
	58 2 Chloro 1,3-butadiene	0.51164	0.51891	0.55942	0.57221	0.60434	0.60577	0.56205	7.211	
	59 Propionitrile	0.06600	0.06324	0.06852	0.06836	0.07438	0.06848	0.06816	5.400	
	60 Methacrylonitrile	0.31024	0.28878	0.30920	0.29602	0.32881	0.31291	0.30766	4.541	
	61 Isobutanol	0.01745	0.01615	0.01991	0.01813	0.02116	0.01838	0.01853	9.596	
	62 Methyl Methacrylate	0.36642	0.37768	0.42792	0.41411	0.47414	0.44466	0.41749	9.736	
	63 1,4-Dioxane	0.00349	0.00364	0.00368	0.00344	0.00351	0.00360	0.00356	2.631	<-
	64 Dibromomethane	0.14589	0.14083	0.14070	0.14129	0.14336	0.14329	0.14256	1.414	
	65 Ethyl Methacrylate	0.44143	0.47348	0.51436	0.53200	0.56350	0.55015	0.51249	9.143	

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STL - North Canton

INITIAL CALIBRATION DATA

jp 11/4/02

art Cal Date : ~~12~~ 13-AUG-2002 ~~19:22~~ 08:49
d Cal Date : 13-AUG-2002 10:46
ant Method : ISTD
igin : Disabled
rget Version : 4.04
tegrator : HP RTE
thod file : \\qcanoh04\dd\chem\MSV\a3ux9.i\N20813A.b\8260SUX9-3.m
l Date : 13-Aug-2002 11:03 tapsvc
rve Type : Average

Compound	25.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	RRF	% RSD	
66 1,2-Dibromoethane	0.32249	0.32743	0.31302	0.31974	0.33261	0.32294	0.32304	2.065	
67 1,1,1,2-Tetrachloroethane	0.36230	0.34004	0.34467	0.35048	0.38238	0.37549	0.35923	4.767	
68 1,2,3-Trichloropropane	1.08903	1.07946	1.06726	1.07213	1.14807	1.13194	1.09798	3.074	
69 1,4-Dichloro-2-butene	0.37309	0.35620	0.38627	0.41104	0.45110	0.44681	0.40408	9.683	
70 Pentachloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
71 Benzyl Chloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
45 1,2:3,4-Diepoxybutane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
72 1,2-Dibromo-3-chloropropane	0.14684	0.14977	0.14269	0.15764	0.17458	0.17361	0.15752	8.722	
73 Ethanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
74 n Butanol	0.01040	0.01149	0.01272	0.01332	0.01590	0.01373	0.01293	14.724	
75 Ethyl Acetate	0.51995	0.48552	0.52261	0.50275	0.55330	0.51083	0.51583	4.405	
76 Cyclohexanone	0.06874	0.06298	0.09054	0.08132	0.08253	0.08220	0.07805	13.037	
77 Ethyl Ether	0.32269	0.29667	0.31582	0.31169	0.33552	0.31111	0.31558	4.110	
78 Methyl tert-butyl ether	0.69655	0.70874	0.71615	0.73884	0.73293	0.74256	0.72263	2.538	
79 Tetrahydrofuran	0.17651	0.17855	0.16997	0.16811	0.17156	0.16787	0.17210	2.595	
80 Dichlorofluoromethane	0.32772	0.38686	0.38134	0.40956	0.42014	0.42741	0.39217	9.282	
81 2-Nitropropane	0.07207	0.07340	0.07964	0.08735	0.10553	0.10092	0.08649	16.336	
82 tert-Butyl Alcohol	0.03986	0.03991	0.04138	0.04031	0.04137	0.04226	0.04085	2.369	
83 Cyclohexane	0.69801	0.71847	0.70956	0.76456	0.80405	0.81359	0.75137	6.654	
84 Hexane	0.58180	0.56457	0.56282	0.58771	0.61063	0.62613	0.58894	4.284	
85 Isopropyl Ether	0.23128	0.23887	0.24884	0.25607	0.26142	0.24100	0.24625	4.592	
86 2,2-Dichloropropane	0.24393	0.22540	0.23195	0.23223	0.24780	0.22245	0.23396	4.290	
87 1,1-Dichloropropene	0.34914	0.34074	0.33076	0.34320	0.35934	0.35531	0.34642	3.003	
88 1,3-Dichloropropane	0.63781	0.62097	0.60335	0.60810	0.62648	0.59150	0.61470	2.744	
89 Isopropylbenzene	1.83185	1.78228	1.85120	1.90583	2.11875	2.06159	1.92525	7.009	
90 Bromobenzene	0.84153	0.86147	0.82198	0.82718	0.87421	0.85647	0.84714	2.412	
91 2-Chlorotoluene	0.88467	0.95851	0.88058	0.88418	0.96668	0.92928	0.91732	4.303	
92 n-Propylbenzene	1.04401	1.05841	1.06766	1.07319	1.17080	1.13772	1.09196	4.611	
93 4-Chlorotoluene	0.94560	0.95382	0.91249	0.93015	0.98288	0.94125	0.94437	2.507	
94 1,3,5-Trimethylbenzene	3.02185	3.10340	3.08896	3.14823	3.45401	3.36138	3.19630	5.356	
95 tert-Butylbenzene	2.72662	2.76936	2.75123	2.91291	3.14184	3.01660	2.88643	5.806	
96 1,2,4-Trimethylbenzene	3.10654	3.17106	3.16242	3.29439	3.53511	3.46746	3.28950	5.364	
97 sec-Butylbenzene	4.10853	4.18262	4.17898	4.34928	4.74133	4.59567	4.35940	5.880	

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STL - North Canton

INITIAL CALIBRATION DATA

Ja 11/4/02

Start Cal Date : ~~12~~ 13-AUG-2002 ~~19:22~~ 08:47
End Cal Date : 13-AUG-2002 10:46
Quant Method : ISTD
Origin : Disabled
Target Version : 4.04
Integrator : HP RTE
Method file : \\qcanoh04\dd\chem\MSV\a3ux9.i\N20813A.b\8260SUX9-3.m
Cal Date : 13-Aug-2002 11:03 tapsvc
Curve Type : Average

Compound	25.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	RRF	% RSD	
98 4-Isopropyltoluene	3.16636	3.31391	3.32600	3.47349	3.76433	3.68637	3.45508	6.719	
99 n-Butylbenzene	2.85948	3.01874	3.04880	3.26691	3.53362	3.47842	3.20099	8.440	
100 1,2,4 Trichlorobenzene	0.94695	1.02630	0.96298	1.06485	1.10896	1.06254	1.02876	6.132	
101 Naphthalene	2.48877	2.69085	2.77539	3.10331	3.17387	2.91287	2.85751	9.046	
102 Hexachlorobutadiene	0.49421	0.50465	0.46499	0.52755	0.53803	0.48765	0.50285	5.329	
103 1,2,3-Trichlorobenzene	0.92367	0.96824	0.92526	1.01757	1.03821	0.95302	0.97099	4.907	
104 Isopropyl Alcohol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
105 N-Propanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
106 Isopropyl Acetate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
107 N-Propyl Acetate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
108 N-Butyl acetate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
109 Dimethoxymethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
110 3,3,5 Trimethylcyclohexanone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
111 Bromochloromethane	0.13028	0.13134	0.13028	0.12953	0.13210	0.13143	0.13083	0.726	
112 Paraldehyde	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
135 1-Chlorohexane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
136 Chloropicrin	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
137 1,3,5-Trichlorobenzene	1.15070	1.13896	1.07913	1.19699	1.25532	1.21717	1.17304	5.361	
138 Methyl Acetate	0.40581	0.41381	0.40736	0.39954	0.39734	0.39661	0.40341	1.672	
139 Methylcyclohexane	0.46888	0.47871	0.48577	0.50481	0.53016	0.53508	0.50057	5.497	
140 Ethyl acrylate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
141 n-Butyl acrylate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
142 Allyl Alcohol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
143 Bromoacetone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
$ 4 1,2-Dichloroethane-d4	0.30501	0.28749	0.28278	0.27788	0.27950	0.30653	0.28986	4.402	✓
$ 5 Toluene d8	1.35466	1.34239	1.40721	1.37522	1.46134	1.43520	1.39600	3.351	
$ 6 Bromofluorobenzene	0.54815	0.50032	0.54600	0.52338	0.57365	0.57037	0.54364	5.156	
$ 7 Dibromofluoromethane	0.20688	0.19784	0.20719	0.20890	0.21079	✓ 0.21985	✓ 0.20857	3.405	

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5A

VOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: STL - NORTH CANTON Contract:

Lab Code: QESOH Case No.: SAS No.: SDG No.: A2J040261

Lab File ID: BFB152 BFB Injection Date: 10/08/02

Instrument ID: A3UX9 BFB Injection Time: 1910

Matrix: (soil/water) SOIL Level: (low/med) LOW Column: (pack/cap) CAP

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	29.8
75	30.0 - 60.0% of mass 95	43.6
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.8
173	Less than 2.0% of mass 174	0.2 (0.3)1
174	50.0 - 120.0% of mass 95	66.6
175	5.0 - 9.0% of mass 174	4.8 (7.2)1
176	Greater than 95.0%, but less than 101.0% of mass 174	65.4 (98.2)1
177	5.0 - 9.0% of mass 176	4.1 (6.3)2

1-Value is % of mass 174 2-Value is % of mass 176

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD050	250NG-C	UX95615	10/08/02	1924
02	E9N7A-CHK	E9N7A1AC	UX95617	10/08/02	2011
03	E9N7A-BLK	E9N7A1AA	UX95618	10/08/02	2035
04	E9N7A-CKDUP	E9N7A1AD	UX95619	10/08/02	2058
05	E9FJC-CHK	E9FJC1AC	UX95638	10/09/02	0427
06	NYPA-RES-SED	E9FJD1AC	UX95639	10/09/02	0450
07	NYPA-RES-SED	E9FJE1AC	UX95640	10/09/02	0514
08	NYPA-RES-SED	E9FJF1AC	UX95641	10/09/02	0537
09	NYPA-RES-SED	E9FJG1AC	UX95642	10/09/02	0601
10	NYPA-RES-SED	E9FJH1AC	UX95643	10/09/02	0624
11	NYPA-RES-SED	E9FJJ1AC	UX95644	10/09/02	0648
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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a3ux9.i
Lab File ID: UX95615.D
Analysis Type: SOIL
Lab Sample ID: 250NG-C
Method: \\qcanoh04\dd\chem\MSV\a3ux9.i\N21008A.b\8260SUX9-3.m

Injection Date: 08-OCT-2002 19:24
Init. Cal. Date(s): ~~12~~ 13-AUG-2002 ~~19-SEP~~ 13-AUG-2002
Init. Cal. Times: ~~19:22~~ 08:49 ~~10:52~~ 10:46
Quant Type: ISTD

	COMPOUND	RRF	RF250	MIN RRF	%D	MAX %D	
$	4 1,2-Dichloroethane-d4	0.28986	0.23239	0.010	-19.8	50.0	
$	5 Toluene-d8	1.39600	1.29141	0.010	-7.5	50.0	
$	6 Bromofluorobenzene	0.54364	0.54201	0.010	-0.3	50.0	
$	7 Dibromofluoromethane	0.20857	0.18800	0.010	-9.9	50.0	
	8 Dichlorodifluoromethane	0.22585	0.26221	0.010	16.1	50.0	
	9 Chloromethane	0.60902	0.68712	0.100	12.8	50.0	
	10 Vinyl Chloride	0.40021	0.44361	0.010	10.8	20.0	
	11 Bromomethane	250	295	0.010	-17.8	50.0	
	12 Chloroethane	0.22010	0.25505	0.010	15.9	50.0	
	13 Trichlorofluoromethane	0.28527	0.34650	0.010	21.5	50.0	
	14 Acrolein	0.07891	0.03374	0.010	-57.2	50.0	<-
	16 1,1-Dichloroethene	0.25357	0.25659	0.050	1.2	20.0	
	15 Acetone	0.27306	0.28675	0.010	5.0	50.0	
	54 Freon-113	0.18945	0.20661	0.010	9.1	50.0	
	56 Iodomethane	0.36463	0.37251	0.010	2.2	50.0	
	18 Carbon Disulfide	0.88403	0.86782	0.010	-1.8	50.0	
	55 Acetonitrile	0.07128	0.06857	0.010	-3.8	50.0	
	17 Methylene Chloride	250	248	0.010	0.7	50.0	
	19 Acrylonitrile	0.19451	0.19235	0.010	-1.1	50.0	
	78 Methyl tert-butyl ether	0.72263	0.79142	0.010	9.5	50.0	
	84 Hexane	0.58894	0.63890	0.010	8.5	50.0	
	21 Vinyl acetate	0.88390	0.32770	0.010	-62.9	50.0	<-
	22 1,1-Dichloroethane	0.57712	0.60017	0.100	4.0	50.0	
	23 2-Butanone	0.35584	0.39320	0.010	10.5	50.0	
	20 trans-1,2-Dichloroethene	0.28086	0.29350	0.010	4.5	50.0	
	24 cis-1,2-dichloroethene	0.28972	0.30615	0.010	5.7	50.0	
M	25 1,2-Dichloroethene (total)	0.28529	0.29982	0.010	5.1	50.0	
	86 2,2-Dichloropropane	0.23396	0.26148	0.010	11.8	50.0	
	111 Bromochloromethane	0.13083	0.13856	0.010	5.9	50.0	
	79 Tetrahydrofuran	0.17210	0.17120	0.010	-0.5	50.0	
	26 Chloroform	0.42019	0.44718	0.010	6.4	20.0	
	27 1,1,1-Trichloroethane	0.32017	0.35873	0.010	12.0	50.0	
	87 1,1-Dichloropropene	0.34642	0.37320	0.010	7.7	50.0	
	28 Carbon Tetrachloride	0.27215	0.30342	0.010	11.5	50.0	
	29 1,2-Dichloroethane	0.40985	0.43611	0.010	6.4	50.0	

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a3ux9.i
Lab File ID: UX95615.D
Analysis Type: SOIL
Lab Sample ID: 250NG-C
Injection Date: 08-OCT-2002 19:24 13-AUG
Init. Cal. Date(s): ~~12-AUG~~-2002 ~~19-SEP~~-2002
Init. Cal. Times: 13 ~~19:22~~ 08:44 ~~10:52~~ 10:46
Quant Type: ISTD
Method: \\qcanoh04\dd\chem\MSV\a3ux9.i\N21008A.b\8260SUX9-3.m

	COMPOUND	RRF	RF250	MIN RRF	%D	MAX %D	
	30 Benzene	1.17437	1.21479	0.010	3.4	50.0	
	31 Trichloroethene	0.28074	0.29972	0.010	6.8	50.0	
	32 1,2-Dichloropropane	0.34918	0.37099	0.010	6.2	20.0	
	63 1,4-Dioxane	0.00356	0.00374	0.010	5.0	50.0	<-
	64 Dibromomethane	0.14256	0.15099	0.010	5.9	50.0	
	33 Bromodichloromethane	0.30437	0.33212	0.010	9.1	50.0	
	34 2-Chloroethyl vinyl ether	0.15808	0.15655	0.010	-1.0	50.0	
	36 cis-1,3-Dichloropropene	0.40608	0.45333	0.010	11.6	50.0	
	35 4-Methyl-2-pentanone	0.54735	0.57570	0.010	5.2	50.0	
	37 Toluene	1.78801	1.86502	0.010	4.3	20.0	
	38 trans-1,3-Dichloropropene	0.49623	0.55273	0.010	11.4	50.0	
	65 Ethyl Methacrylate	0.51249	0.54588	0.010	6.5	50.0	
	40 1,1,2-Trichloroethane	0.33943	0.34890	0.010	2.8	50.0	
	88 1,3-Dichloropropane	0.61470	0.62122	0.010	1.1	50.0	
	41 Tetrachloroethene	0.28904	0.31219	0.010	8.0	50.0	
	39 2-Hexanone	0.66656	0.73035	0.010	9.6	50.0	
	42 Dibromochloromethane	0.31091	0.34025	0.010	9.4	50.0	
	66 1,2-Dibromoethane	0.32304	0.33812	0.010	4.7	50.0	
	43 Chlorobenzene	1.16582	1.20415	0.300	3.3	50.0	
	44 Ethylbenzene	0.63819	0.67056	0.010	5.1	20.0	
	45 m + p-Xylene	0.78214	0.83648	0.010	6.9	50.0	
	46 Xylene-o	0.76614	0.82081	0.010	7.1	50.0	
M	47 Xylenes (total)	0.77680	0.83126	0.010	7.0	50.0	
	48 Styrene	1.26499	1.35923	0.010	7.4	50.0	
	49 Bromoform	0.18224	0.20394	0.100	11.9	50.0	
	89 Isopropylbenzene	1.92525	2.08991	0.010	8.6	50.0	
	50 1,1,2,2-Tetrachloroethane	0.89548	0.94170	0.300	5.2	50.0	
	90 Bromobenzene	0.84714	0.90606	0.010	7.0	50.0	
	68 1,2,3-Trichloropropane	1.09798	1.14658	0.010	4.4	50.0	
	69 1,4-Dichloro-2-butene	0.40408	0.44096	0.010	9.1	50.0	
	92 n-Propylbenzene	1.09196	1.18853	0.010	8.8	50.0	
	91 2-Chlorotoluene	0.91732	0.98572	0.010	7.5	50.0	
	94 1,3,5-Trimethylbenzene	3.19630	3.51623	0.010	10.0	50.0	
	93 4-Chlorotoluene	0.94437	1.01820	0.010	7.8	50.0	
	95 tert-Butylbenzene	2.88643	3.15850	0.010	9.4	50.0	
	96 1,2,4-Trimethylbenzene	3.28950	3.65588	0.010	11.1	50.0	

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a3ux9.i
Lab File ID: UX95615.D
Analysis Type: SOIL
Lab Sample ID: 250NG-C
Method: \\qcanoh04\dd\chem\MSV\a3ux9.i\N21008A.b\8260SUX9-3.m

Injection Date: 08-OCT-2002 19:24
Init. Cal. Date(s): ~~12~~-AUG-2002 ~~19-SEP~~-2002
Init. Cal. Times: ~~19:22~~ 08:49 ~~10:52~~ 10:46
Quant Type: ISTD

COMPOUND	$\overline{RRF}$	RF250	MIN RRF	%D	MAX %D
97 sec-Butylbenzene	4.35940	4.72904	0.010	8.5	50.0
51 1,3-Dichlorobenzene	1.77920	1.85683	0.010	4.4	50.0
52 1,4-Dichlorobenzene	1.82142	1.86449	0.010	2.4	50.0
53 1,2-Dichlorobenzene	1.70787	1.78458	0.010	4.5	50.0
98 4-Isopropyltoluene	3.45508	3.82381	0.010	10.7	50.0
99 n-Butylbenzene	3.20099	3.57201	0.010	11.6	50.0
100 1,2,4-Trichlorobenzene	1.02876	1.13864	0.010	10.7	50.0
102 Hexachlorobutadiene	0.50285	0.55580	0.010	10.5	50.0
101 Naphthalene	2.85751	3.00060	0.010	5.0	50.0
103 1,2,3-Trichlorobenzene	0.97099	1.03318	0.010	6.4	50.0
82 tert-Butyl Alcohol	0.04085	0.04426	0.010	8.4	50.0
138 Methyl Acetate	0.40341	0.50478	0.010	25.1	50.0
139 Methylcyclohexane	0.50057	0.55081	0.010	10.0	50.0
83 Cyclohexane	0.75137	0.82699	0.010	10.1	50.0
137 1,3,5-Trichlorobenzene	1.17304	1.31212	0.010	11.9	50.0
67 1,1,1,2-Tetrachloroethane	0.35923	0.39369	0.010	9.6	50.0
72 1,2-Dibromo-3-chloropropane	0.15752	0.17332	0.010	10.0	50.0

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8A
VOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: STL - NORTH CANTON Contract:

Lab Code: QESOH Case No.: SAS No.: SDG No.: A2J040261

Lab File ID (Standard): UX95615 Date Analyzed: 10/08/02

Instrument ID: A3UX9 Time Analyzed: 1924

Matrix: (soil/water) SOIL Level: (low/med) LOW Column: (pack/cap) CAP

		IS1 AREA #	RT	IS2 (DCB) AREA #	RT	IS3 (CBZ) AREA #	RT
	12 HOUR STD	1188800	5.12	443267	10.04	856271	7.80
	UPPER LIMIT	2377600	5.62	886534	10.54	1712542	8.30
	LOWER LIMIT	594400	4.62	221634	9.54	428136	7.30
	EPA SAMPLE NO.						
01	E9N7A-CHK	1166681	5.12	436191	10.05	848465	7.80
02	E9N7A-BLK	1133554	5.12	400604	10.05	829611	7.80
03	E9N7A-CKDUP	1153044	5.12	418974	10.05	817372	7.80
04	E9FJC-CHK	1109832	5.13	383088	10.04	793237	7.80
05	NYPA-RES-SED	1055937	5.12	334431	10.05	750038	7.80
06	NYPA-RES-SED	1054466	5.12	324631	10.04	741619	7.80
07	NYPA-RES-SED	1044974	5.12	316533	10.05	735368	7.80
08	NYPA-RES-SED	1021776	5.12	298028	10.04	713268	7.80
09	NYPA-RES-SED	1050002	5.12	324744	10.05	729536	7.80
10	NYPA-RES-SED	1008360	5.12	270585	10.04	690120	7.80
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22							

IS1 = Fluorobenzene
IS2 (DCB) = 1,4-Dichlorobenzene-d4
IS3 (CBZ) = Chlorobenzene-d5

UPPER LIMIT = +100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk.

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5A

VOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: STL - NORTH CANTON Contract:

Lab Code: QESOH Case No.: SAS No.: SDG No.: A2J040261

Lab File ID: BFB154 BFB Injection Date: 10/09/02

Instrument ID: A3UX9 BFB Injection Time: 1958

Matrix: (soil/water) SOIL Level: (low/med) LOW Column: (pack/cap) CAP

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	30.9
75	30.0 - 60.0% of mass 95	43.9
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.8
173	Less than 2.0% of mass 174	0.4 (0.7)1
174	50.0 - 120.0% of mass 95	67.9
175	5.0 - 9.0% of mass 174	5.1 (7.6)1
176	Greater than 95.0%, but less than 101.0% of mass 174	66.8 (98.5)1
177	5.0 - 9.0% of mass 176	4.0 (6.0)2

1-Value is % of mass 174 2-Value is % of mass 176

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD050	250NG-CC	UX95646	10/09/02	2010
02	E9RTX-CHK	E9RTX1AC	E9RTX1AC	10/09/02	2121
03	E9RTX-BLK	E9RTX1AA	E9RTX1AA	10/09/02	2144
04	E9RTX-CKDUP	E9RTX1AD	E9RTX1AD	10/09/02	2208
05	NYPA-UNR-SED	E9FHE1AC	UX95662	10/10/02	0227
06	NYPA-UNR-SED	E9FH21AC	UX95666	10/10/02	0402
07					
08					
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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a3ux9.i
Lab File ID: UX95646.D
Analysis Type: SOIL
Lab Sample ID: 250NG-CC
Method: \\qcanoh04\dd\chem\MSV\a3ux9.i\N21009A.b\8260SUX9-3.m

Injection Date: 09-OCT-2002 20:10
Init. Cal. Date(s): ~~12~~-AUG-2002 ~~19-SEP~~-2002 13-AUG
Init. Cal. Times: ~~19:22~~ 08:41 ~~10:52~~ 10:46

	COMPOUND	RRF	RF250	MIN RRF	%D	MAX %D
$	4 1,2-Dichloroethane-d4	0.28986	0.23854	0.010	-17.7	50.0
$	5 Toluene-d8	1.39600	1.23973	0.010	-11.2	50.0
$	6 Bromofluorobenzene	0.54364	0.52597	0.010	-3.3	50.0
$	7 Dibromofluoromethane	0.20857	0.18410	0.010	-11.7	50.0
	8 Dichlorodifluoromethane	0.22585	0.25525	0.010	13.0	50.0
	9 Chloromethane	0.60902	0.67588	0.100	11.0	50.0
	10 Vinyl Chloride	0.40021	0.43125	0.010	7.8	20.0
	11 Bromomethane	250	298	0.010	-19.2	50.0
	12 Chloroethane	0.22010	0.24646	0.010	12.0	50.0
	13 Trichlorofluoromethane	0.28527	0.33479	0.010	17.4	50.0
	14 Acrolein	0.07891	0.07537	0.010	-4.5	50.0
	16 1,1-Dichloroethene	0.25357	0.27130	0.050	7.0	20.0
	15 Acetone	0.27306	0.30592	0.010	12.0	50.0
	54 Freon-113	0.18945	0.22775	0.010	20.2	50.0
	56 Iodomethane	0.36463	0.39151	0.010	7.4	50.0
	18 Carbon Disulfide	0.88403	0.94180	0.010	6.5	50.0
	55 Acetonitrile	0.07128	0.07091	0.010	-0.5	50.0
	17 Methylene Chloride	250	260	0.010	-4.0	50.0
	19 Acrylonitrile	0.19451	0.20222	0.010	4.0	50.0
	78 Methyl tert-butyl ether	0.72263	0.81197	0.010	12.4	50.0
	84 Hexane	0.58894	0.67706	0.010	15.0	50.0
	21 Vinyl acetate	0.88390	0.86617	0.010	-2.0	50.0
	22 1,1-Dichloroethane	0.57712	0.62815	0.100	8.8	50.0
	23 2-Butanone	0.35584	0.42020	0.010	18.1	50.0
	20 trans-1,2-Dichloroethene	0.28086	0.29885	0.010	6.4	50.0
	24 cis-1,2-dichloroethene	0.28972	0.32012	0.010	10.5	50.0
M	25 1,2-Dichloroethene (total)	0.28529	0.30948	0.010	8.5	50.0
	86 2,2-Dichloropropane	0.23396	0.28194	0.010	20.5	50.0
	111 Bromochloromethane	0.13083	0.14353	0.010	9.7	50.0
	79 Tetrahydrofuran	0.17210	0.18066	0.010	5.0	50.0
	26 Chloroform	0.42019	0.46428	0.010	10.5	20.0
	27 1,1,1-Trichloroethane	0.32017	0.39050	0.010	22.0	50.0
	87 1,1-Dichloropropene	0.34642	0.38317	0.010	10.6	50.0
	28 Carbon Tetrachloride	0.27215	0.32575	0.010	19.7	50.0
	29 1,2-Dichloroethane	0.40985	0.45731	0.010	11.6	50.0

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a3ux9.i
Lab File ID: UX95646.D
Analysis Type: SOIL
Lab Sample ID: 250NG-CC
Method: \\qcanoh04\dd\chem\MSV\a3ux9.i\N21009A.b\8260SUX9-3.m

Injection Date: 09-OCT-2002 20:10 B.a.
Init. Cal. Date(s): ~~12~~-AUG-2002 ~~19-SEP~~-2002
Init. Cal. Times: B ~~19:22~~ 08:44 ~~10:52~~ 10:46
Quant Type: ISTD

	COMPOUND	RRF	RF250	MIN RRF	%D	MAX %D	
	30 Benzene	1.17437	1.25582	0.010	6.9	50.0	
	31 Trichloroethene	0.28074	0.30937	0.010	10.2	50.0	
	32 1,2-Dichloropropane	0.34918	0.37973	0.010	8.7	20.0	
	63 1,4-Dioxane	0.00356	0.00351	0.010	-1.3	50.0	<-
	64 Dibromomethane	0.14256	0.15936	0.010	11.8	50.0	
	33 Bromodichloromethane	0.30437	0.34937	0.010	14.8	50.0	
	34 2-Chloroethyl vinyl ether	0.15808	0.15794	0.010	-0.1	50.0	
	36 cis-1,3-Dichloropropene	0.40608	0.47083	0.010	15.9	50.0	
	35 4-Methyl-2-pentanone	0.54735	0.60061	0.010	9.7	50.0	
	37 Toluene	1.78801	1.84311	0.010	3.1	20.0	
	38 trans-1,3-Dichloropropene	0.49623	0.54338	0.010	9.5	50.0	
	65 Ethyl Methacrylate	0.51249	0.54486	0.010	6.3	50.0	
	40 1,1,2-Trichloroethane	0.33943	0.34849	0.010	2.7	50.0	
	88 1,3-Dichloropropane	0.61470	0.62726	0.010	2.0	50.0	
	41 Tetrachloroethene	0.28904	0.30637	0.010	6.0	50.0	
	39 2-Hexanone	0.66656	0.75465	0.010	13.2	50.0	
	42 Dibromochloromethane	0.31091	0.34493	0.010	10.9	50.0	
	66 1,2-Dibromoethane	0.32304	0.34456	0.010	6.7	50.0	
	43 Chlorobenzene	1.16582	1.20043	0.300	3.0	50.0	
	44 Ethylbenzene	0.63819	0.67205	0.010	5.3	20.0	
	45 m + p-Xylene	0.78214	0.83620	0.010	6.9	50.0	
	46 Xylene-o	0.76614	0.81480	0.010	6.4	50.0	
M	47 Xylenes (total)	0.77680	0.82907	0.010	6.7	50.0	
	48 Styrene	1.26499	1.38306	0.010	9.3	50.0	
	49 Bromoform	0.18224	0.21234	0.100	16.5	50.0	
	89 Isopropylbenzene	1.92525	2.07682	0.010	7.9	50.0	
	50 1,1,2,2-Tetrachloroethane	0.89548	0.92038	0.300	2.8	50.0	
	90 Bromobenzene	0.84714	0.89579	0.010	5.7	50.0	
	68 1,2,3-Trichloropropane	1.09798	1.13575	0.010	3.4	50.0	
	69 1,4-Dichloro-2-butene	0.40408	0.43541	0.010	7.8	50.0	
	92 n-Propylbenzene	1.09196	1.15026	0.010	5.3	50.0	
	91 2-Chlorotoluene	0.91732	0.97098	0.010	5.9	50.0	
	94 1,3,5-Trimethylbenzene	3.19630	3.48143	0.010	8.9	50.0	
	93 4-Chlorotoluene	0.94437	0.99006	0.010	4.8	50.0	
	95 tert-Butylbenzene	2.88643	3.10804	0.010	7.7	50.0	
	96 1,2,4-Trimethylbenzene	3.28950	3.57583	0.010	8.7	50.0	

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a3ux9.i
Lab File ID: UX95646.D
Analysis Type: SOIL
Lab Sample ID: 250NG-CC
Method: \\qcanoh04\dd\chem\MSV\a3ux9.i\N21009A.b\8260SUX9-3.m

Injection Date: 09-OCT-2002 20:10 13-Aug
Init. Cal. Date(s): ~~12~~-AUG-2002 ~~19-SEP~~-2002
Init. Cal. Times: ~~19:22~~ 08:44 ~~10:52~~ 14:46
Quant Type: ISTD

COMPOUND	RRF	RF250	MIN RRF	%D	MAX %D
97 sec-Butylbenzene	4.35940	4.66225	0.010	6.9	50.0
51 1,3-Dichlorobenzene	1.77920	1.84538	0.010	3.7	50.0
52 1,4-Dichlorobenzene	1.82142	1.84668	0.010	1.4	50.0
53 1,2-Dichlorobenzene	1.70787	1.76223	0.010	3.2	50.0
98 4-Isopropyltoluene	3.45508	3.81239	0.010	10.3	50.0
99 n-Butylbenzene	3.20099	3.54272	0.010	10.7	50.0
100 1,2,4-Trichlorobenzene	1.02876	1.10197	0.010	7.1	50.0
102 Hexachlorobutadiene	0.50285	0.53948	0.010	7.3	50.0
101 Naphthalene	2.85751	2.81827	0.010	-1.4	50.0
103 1,2,3-Trichlorobenzene	0.97099	0.98432	0.010	1.4	50.0
82 tert-Butyl Alcohol	0.04085	0.04130	0.010	1.1	50.0
138 Methyl Acetate	0.40341	0.45565	0.010	12.9	50.0
139 Methylcyclohexane	0.50057	0.56177	0.010	12.2	50.0
83 Cyclohexane	0.75137	0.87363	0.010	16.3	50.0
137 1,3,5-Trichlorobenzene	1.17304	1.26055	0.010	7.5	50.0
67 1,1,1,2-Tetrachloroethane	0.35923	0.38080	0.010	6.0	50.0
72 1,2-Dibromo-3-chloropropane	0.15752	0.16901	0.010	7.3	50.0

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8A
VOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: STL - NORTH CANTON Contract:

Lab Code: QESOH Case No.: SAS No.: SDG No.: A2J040261

Lab File ID (Standard): UX95646 Date Analyzed: 10/09/02

Instrument ID: A3UX9 Time Analyzed: 2010

Matrix: (soil/water) SOIL Level: (low/med) LOW Column: (pack/cap) CAP

		IS1 AREA #	RT	IS2 (DCB) AREA #	RT	IS3 (CBZ) AREA #	RT
	12 HOUR STD	1097231	5.12	428410	10.04	817025	7.80
	UPPER LIMIT	2194462	5.62	856820	10.54	1634050	8.30
	LOWER LIMIT	548616	4.62	214205	9.54	408513	7.30
	EPA SAMPLE NO.						
01	E9RTX-CHK	1098755	5.12	414204	10.04	791555	7.79
02	E9RTX-BLK	1084543	5.12	393988	10.05	791401	7.80
03	E9RTX-CKDUP	1102578	5.13	408757	10.04	801162	7.79
04	NYPA-UNR-SED	1095859	5.12	394835	10.04	794937	7.80
05	NYPA-UNR-SED	960503	5.13	203690*	10.04	602519	7.79
06							
07							
08							
09							
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12							
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22							

IS1 = Fluorobenzene
IS2 (DCB) = 1,4-Dichlorobenzene-d4
IS3 (CBZ) = Chlorobenzene-d5

UPPER LIMIT = +100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk.

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Target compound not quantitated with this IS.

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5A
VOLATILE ORGANIC GC/MS TUNING AND MASS
CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: STL - NORTH CANTON Contract:

Lab Code: QESOH Case No.: SAS No.: SDG No.: A2J040261

Lab File ID: BFB157 BFB Injection Date: 10/10/02

Instrument ID: A3UX9 BFB Injection Time: 2109

Matrix: (soil/water) SOIL Level: (low/med) LOW Column: (pack/cap) CAP

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	30.4
75	30.0 - 60.0% of mass 95	44.9
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.8
173	Less than 2.0% of mass 174	0.4 (0.5)1
174	50.0 - 120.0% of mass 95	69.1
175	5.0 - 9.0% of mass 174	5.3 (7.7)1
176	Greater than 95.0%, but less than 101.0% of mass 174	66.7 (96.6)1
177	5.0 - 9.0% of mass 176	4.1 (6.1)2

1-Value is % of mass 174 2-Value is % of mass 176

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD050	250NG-CC	UX95706	10/10/02	2120
02	E9W1R-CHK	E9W1R1AC	UX95708	10/10/02	2207
03	E9W1R-BLK	E9W1R1AA	UX95709	10/10/02	2231
04	E9W1R-CKDUP	E9W1R1AD	UX95710	10/10/02	2254
05	NYPA-LNR-SED	E9FH71AC	UX95720	10/11/02	0250
06	NYPA-LNR-SED	E9FH71AQ	UX95721	10/11/02	0314
07	NYPA-LNR-SED	E9FH71AR	UX95722	10/11/02	0337
08					
09					
10					
11					
12					
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18					
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22					

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a3ux9.i
Lab File ID: UX95706.D
Analysis Type: SOIL
Lab Sample ID: 250NG-CC
Method: \\qcanoh04\dd\chem\MSV\a3ux9.i\N21010B.b\8260SUX9-3.m

Injection Date: 10-OCT-2002 21:20 13:A5b2
Init. Cal. Date(s): ~~12~~-AUG-2002 ~~19-SEP~~-2002
Init. Cal. Times: 13 ~~19:22~~ 08:49 ~~10:52~~ 12:46

	COMPOUND	RRF	RF250	MIN RRF	%D	MAX %D
$	4 1,2-Dichloroethane-d4	0.28986	0.23028	0.010	-20.6	50.0
$	5 Toluene-d8	1.39600	1.25848	0.010	-9.9	50.0
$	6 Bromofluorobenzene	0.54364	0.51524	0.010	-5.2	50.0
$	7 Dibromofluoromethane	0.20857	0.18190	0.010	-12.8	50.0
	8 Dichlorodifluoromethane	0.22585	0.26926	0.010	19.2	50.0
	9 Chloromethane	0.60902	0.68518	0.100	12.5	50.0
	10 Vinyl Chloride	0.40021	0.45483	0.010	13.6	20.0
	11 Bromomethane	250	311	0.010	-24.4	50.0
	12 Chloroethane	0.22010	0.25625	0.010	16.4	50.0
	13 Trichlorofluoromethane	0.28527	0.33338	0.010	16.9	50.0
	14 Acrolein	0.07891	0.06079	0.010	-23.0	50.0
	16 1,1-Dichloroethene	0.25357	0.26108	0.050	3.0	20.0
	15 Acetone	0.27306	0.29190	0.010	6.9	50.0
	54 Freon-113	0.18945	0.22960	0.010	21.2	50.0
	56 Iodomethane	0.36463	0.38220	0.010	4.8	50.0
	18 Carbon Disulfide	0.88403	0.91092	0.010	3.0	50.0
	55 Acetonitrile	0.07128	0.07206	0.010	1.1	50.0
	17 Methylene Chloride	250	255	0.010	-1.9	50.0
	19 Acrylonitrile	0.19451	0.19968	0.010	2.7	50.0
	78 Methyl tert-butyl ether	0.72263	0.78222	0.010	8.2	50.0
	84 Hexane	0.58894	0.69243	0.010	17.6	50.0
	21 Vinyl acetate	0.88390	0.67006	0.010	-24.2	50.0
	22 1,1-Dichloroethane	0.57712	0.60754	0.100	5.3	50.0
	23 2-Butanone	0.35584	0.40885	0.010	14.9	50.0
	20 trans-1,2-Dichloroethene	0.28086	0.29052	0.010	3.4	50.0
	24 cis-1,2-dichloroethene	0.28972	0.30957	0.010	6.9	50.0
M	25 1,2-Dichloroethene (total)	0.28529	0.30005	0.010	5.2	50.0
	86 2,2-Dichloropropane	0.23396	0.28699	0.010	22.7	50.0
	111 Bromochloromethane	0.13083	0.13533	0.010	3.4	50.0
	79 Tetrahydrofuran	0.17210	0.16956	0.010	-1.5	50.0
	26 Chloroform	0.42019	0.44917	0.010	6.9	20.0
	27 1,1,1-Trichloroethane	0.32017	0.37333	0.010	16.6	50.0
	87 1,1-Dichloropropene	0.34642	0.38039	0.010	9.8	50.0
	28 Carbon Tetrachloride	0.27215	0.30803	0.010	13.2	50.0
	29 1,2-Dichloroethane	0.40985	0.42980	0.010	4.9	50.0

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a3ux9.i
Lab File ID: UX95706.D
Analysis Type: SOIL
Lab Sample ID: 250NG-CC
Method: \\qcanoh04\dd\chem\MSV\a3ux9.i\N21010B.b\8260SUX9-3.m

Injection Date: 10-OCT-2002 21:20 13-AUG
Init. Cal. Date(s): ~~12~~-AUG-2002 ~~19-SEP~~-2002
Init. Cal. Times: ~~19:22~~ 08:44 ~~10:52~~ 10:46
Quant Type: ISTD

	COMPOUND	RRF	RF250	MIN RRF	%D	MAX %D	
	30 Benzene	1.17437	1.23161	0.010	4.9	50.0	
	31 Trichloroethene	0.28074	0.30411	0.010	8.3	50.0	
	32 1,2-Dichloropropane	0.34918	0.36563	0.010	4.7	20.0	
	63 1,4-Dioxane	0.00356	0.00382	0.010	7.4	50.0	<-
	64 Dibromomethane	0.14256	0.14463	0.010	1.5	50.0	
	33 Bromodichloromethane	0.30437	0.32488	0.010	6.7	50.0	
	34 2-Chloroethyl vinyl ether	0.15808	0.16898	0.010	6.9	50.0	
	36 cis-1,3-Dichloropropene	0.40608	0.44127	0.010	8.7	50.0	
	35 4-Methyl-2-pentanone	0.54735	0.59333	0.010	8.4	50.0	
	37 Toluene	1.78801	1.86941	0.010	4.6	20.0	
	38 trans-1,3-Dichloropropene	0.49623	0.51656	0.010	4.1	50.0	
	65 Ethyl Methacrylate	0.51249	0.52431	0.010	2.3	50.0	
	40 1,1,2-Trichloroethane	0.33943	0.33343	0.010	-1.8	50.0	
	88 1,3-Dichloropropane	0.61470	0.61792	0.010	0.5	50.0	
	41 Tetrachloroethene	0.28904	0.32230	0.010	11.5	50.0	
	39 2-Hexanone	0.66656	0.75864	0.010	13.8	50.0	
	42 Dibromochloromethane	0.31091	0.32340	0.010	4.0	50.0	
	66 1,2-Dibromoethane	0.32304	0.32306	0.010	0.0	50.0	
	43 Chlorobenzene	1.16582	1.18042	0.300	1.3	50.0	
	44 Ethylbenzene	0.63819	0.67183	0.010	5.3	20.0	
	45 m + p-Xylene	0.78214	0.82870	0.010	6.0	50.0	
	46 Xylene-o	0.76614	0.80200	0.010	4.7	50.0	
M	47 Xylenes (total)	0.77680	0.81980	0.010	5.5	50.0	
	48 Styrene	1.26499	1.35713	0.010	7.3	50.0	
	49 Bromoform	0.18224	0.19113	0.100	4.9	50.0	
	89 Isopropylbenzene	1.92525	2.08629	0.010	8.4	50.0	
	50 1,1,2,2-Tetrachloroethane	0.89548	0.84850	0.300	-5.2	50.0	
	90 Bromobenzene	0.84714	0.86996	0.010	2.7	50.0	
	68 1,2,3-Trichloropropane	1.09798	1.04607	0.010	-4.7	50.0	
	69 1,4-Dichloro-2-butene	0.40408	0.40032	0.010	-0.9	50.0	
	92 n-Propylbenzene	1.09196	1.16347	0.010	6.5	50.0	
	91 2-Chlorotoluene	0.91732	0.96029	0.010	4.7	50.0	
	94 1,3,5-Trimethylbenzene	3.19630	3.42150	0.010	7.0	50.0	
	93 4-Chlorotoluene	0.94437	0.97915	0.010	3.7	50.0	
	95 tert-Butylbenzene	2.88643	3.09031	0.010	7.1	50.0	
	96 1,2,4-Trimethylbenzene	3.28950	3.54433	0.010	7.7	50.0	

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a3ux9.i Injection Date: 10-OCT-2002 21:20 13-A362
Lab File ID: UX95706.D Init. Cal. Date(s): ~~12~~-AUG-2002 ~~19-SEP~~-2002
Analysis Type: SOIL Init. Cal. Times: 13 ~~19:22~~ 18:49 ~~10:52~~ 10:46
Lab Sample ID: 250NG-CC Quant Type: ISTD
Method: \\qcanoh04\dd\chem\MSV\a3ux9.i\N21010B.b\8260SUX9-3.m

COMPOUND	RRF	RF250	MIN RRF	%D	MAX %D
97 sec-Butylbenzene	4.35940	4.66144	0.010	6.9	50.0
51 1,3-Dichlorobenzene	1.77920	1.81604	0.010	2.1	50.0
52 1,4-Dichlorobenzene	1.82142	1.85721	0.010	2.0	50.0
53 1,2-Dichlorobenzene	1.70787	1.67925	0.010	-1.7	50.0
98 4-Isopropyltoluene	3.45508	3.76203	0.010	8.9	50.0
99 n-Butylbenzene	3.20099	3.54611	0.010	10.8	50.0
100 1,2,4-Trichlorobenzene	1.02876	1.08906	0.010	5.9	50.0
102 Hexachlorobutadiene	0.50285	0.53811	0.010	7.0	50.0
101 Naphthalene	2.85751	2.74640	0.010	-3.9	50.0
103 1,2,3-Trichlorobenzene	0.97099	0.97057	0.010	-0.0	50.0
82 tert-Butyl Alcohol	0.04085	0.04161	0.010	1.9	50.0
138 Methyl Acetate	0.40341	0.46590	0.010	15.5	50.0
139 Methylcyclohexane	0.50057	0.57901	0.010	15.7	50.0
83 Cyclohexane	0.75137	0.87898	0.010	17.0	50.0
137 1,3,5-Trichlorobenzene	1.17304	1.27855	0.010	9.0	50.0
67 1,1,1,2-Tetrachloroethane	0.35923	0.37269	0.010	3.7	50.0
72 1,2-Dibromo-3-chloropropane	0.15752	0.15547	0.010	-1.3	50.0

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8A
VOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: STL - NORTH CANTON Contract:

Lab Code: QESOH Case No.: SAS No.: SDG No.: A2J040261

Lab File ID (Standard): UX95706 Date Analyzed: 10/10/02

Instrument ID: A3UX9 Time Analyzed: 2120

Matrix: (soil/water) SOIL Level: (low/med) LOW Column: (pack/cap) CAP

		IS1 AREA #	RT	IS2 (DCB) AREA #	RT	IS3 (CBZ) AREA #	RT
	12 HOUR STD	1150672	5.12	441234	10.04	833929	7.80
	UPPER LIMIT	2301344	5.62	882468	10.54	1667858	8.30
	LOWER LIMIT	575336	4.62	220617	9.54	416965	7.30
	EPA SAMPLE NO.						
01	E9W1R-CHK	1147073	5.12	420118	10.04	831025	7.79
02	E9W1R-BLK	1087946	5.13	390510	10.04	796430	7.79
03	E9W1R-CKDUP	1127289	5.12	424877	10.04	830851	7.80
04	NYPA-LNR-SED	1102507	5.12	307173	10.04	772622	7.80
05	NYPA-LNR-SED	1115631	5.12	348258	10.04	775179	7.80
06	NYPA-LNR-SED	1082833	5.12	373470	10.04	772426	7.80
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22							

IS1 = Fluorobenzene
IS2 (DCB) = 1,4-Dichlorobenzene-d4
IS3 (CBZ) = Chlorobenzene-d5

UPPER LIMIT = +100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk.

FORM VIII VOA

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5A
VOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: STL - NORTH CANTON Contract:

Lab Code: QESOH Case No.: SAS No.: SDG No.: A2J040261

Lab File ID: BFB132 BFB Injection Date: 10/11/02

Instrument ID: A3UX12 BFB Injection Time: 1914

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	15.9
75	30.0 - 60.0% of mass 95	44.1
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.7
173	Less than 2.0% of mass 174	0.4 (0.6)1
174	50.0 - 100.0% of mass 95	74.7
175	5.0 - 9.0% of mass 174	5.6 (7.4)1
176	Greater than 95.0%, but less than 101.0% of mass 174	73.6 (98.6)1
177	5.0 - 9.0% of mass 176	5.1 (7.0)2

1-Value is % of mass 174 2-Value is % of mass 176

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD001	5NG-IC	UX122934	10/11/02	1938
02	VSTD002	10NG-IC	UX122935	10/11/02	2001
03	VSTD005	25NG-IC	UX122936	10/11/02	2023
04	VSTD010	50NG-IC	UX122937	10/11/02	2045
05	VSTD020	100NG-IC	UX122938	10/11/02	2108
06	VSTD040	200NG-IC	UX122939	10/11/02	2130
07					
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FORM V VOA 1/87 Rev.

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Report Date : 11-Oct-2002 20:49

STL - North Canton

INITIAL CALIBRATION DATA

Start Cal Date : 11-OCT-2002 19:38
End Cal Date : 11-OCT-2002 21:30
Quant Method : ISTD
Origin : Disabled
Target Version : 4.04
Integrator : HP RTE
Method file : \\qcanoh04\dd\chem\MSV\a3ux12.i\T21011-IC.b\8260LLUX12.m
Cal Date : 11-Oct-2002 21:46 tapsvc
Curve Type : Average

Calibration File Names:
Level 1: \\qcanoh04\dd\chem\MSV\a3ux12.i\T21011-IC.b\UX122934.D
Level 2: \\qcanoh04\dd\chem\MSV\a3ux12.i\T21011-IC.b\UX122935.D
Level 3: \\qcanoh04\dd\chem\MSV\a3ux12.i\T21011-IC.b\UX122936.D
Level 4: \\qcanoh04\dd\chem\MSV\a3ux12.i\T21011-IC.b\UX122937.D
Level 5: \\qcanoh04\dd\chem\MSV\a3ux12.i\T21011-IC.b\UX122938.D
Level 6: \\qcanoh04\dd\chem\MSV\a3ux12.i\T21011-IC.b\UX122939.D

	Compound	5.000 Level 1	10.000 Level 2	25.000 Level 3	50.000 Level 4	100.000 Level 5	200.000 Level 6	RRF	% RSD	
	8 Dichlorodifluoromethane	0.17726	0.21769	0.19897	0.17828	0.22107	0.21393	0.20120	9.769	
	9 Chloromethane	0.48155	0.42221	0.38594	0.37405	0.37594	0.36960	0.40155	10.857	
	10 Vinyl Chloride	0.41600	0.38655	0.36384	0.35545	0.35917	0.35469	0.37262	6.519	
	11 Bromomethane	0.21104	0.24269	0.23533	0.22227	0.24236	0.24112	0.23247	5.604	
	12 Chloroethane	0.25298	0.25586	0.24494	0.23967	0.23722	0.23333	0.24400	3.669	
	13 Trichlorofluoromethane	0.33513	0.27703	0.28042	0.28903	0.31216	0.31337	0.30119	7.547	
	14 Dichlorofluoromethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
	15 Acrolein	0.03993	0.03037	0.03137	0.02834	0.03028	0.02979	0.03168	13.131	
	16 Acetone	0.23755	0.14162	0.09193	0.07868	0.07722	0.07880	0.11763	54.133	<-
	17 1,1-Dichloroethene	0.23859	0.23834	0.22396	0.22743	0.23699	0.23996	0.23421	2.883	
	18 Freon-113	0.14257	0.17129	0.15514	0.15524	0.16993	0.17349	0.16128	7.587	
	19 Iodomethane	0.36960	0.35031	0.34721	0.34212	0.34686	0.34852	0.35077	2.742	
	20 Carbon Disulfide	0.93478	0.92641	0.87558	0.87967	0.88876	0.89520	0.90007	2.751	
	21 Methylene Chloride	0.37476	0.32777	0.28529	0.28661	0.28310	0.28185	0.30656	12.302	
	22 Acetonitrile	0.04416	0.03162	0.05373	0.04216	0.04940	0.05337	0.04574	18.294	
	23 Acrylonitrile	0.13654	0.12088	0.12070	0.11795	0.11896	0.12496	0.12333	5.596	
	24 Methyl tert-butyl ether	0.92708	0.76977	0.83842	0.83582	0.83972	0.86463	0.84591	6.012	
	25 trans-1,2-Dichloroethene	0.29878	0.27850	0.27714	0.27560	0.27908	0.28174	0.28181	3.039	
	26 Hexane	0.37098	0.38031	0.37243	0.36717	0.38762	0.39162	0.37836	2.590	
	27 Vinyl acetate	0.43224	0.31336	0.33229	0.32395	0.34753	0.35708	0.35108	12.183	
	28 1,1-Dichloroethane	0.53007	0.50625	0.48423	0.48635	0.49424	0.49294	0.49901	3.419	
	29 tert-Butyl Alcohol	0.02988	0.02186	0.02855	0.02833	0.02877	0.03117	0.02809	11.507	
	30 2-Butanone	0.22528	0.18333	0.14888	0.13293	0.13157	0.13915	0.16019	23.198	
M	31 1,2-Dichloroethene (total)	0.29749	0.29098	0.28493	0.28145	0.28827	0.28931	0.28874	1.896	
	32 cis-1,2-dichloroethene	0.29620	0.30346	0.29271	0.28729	0.29746	0.29688	0.29567	1.818	

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Report Date : 11-Oct-2002 20:49

STL - North Canton

INITIAL CALIBRATION DATA

Start Cal Date : 11-OCT-2002 19:38
End Cal Date : 11-OCT-2002 21:30
Quant Method : ISTD
Origin : Disabled
Target Version : 4.04
Integrator : HP RTE
Method file : \\qcanoh04\dd\chem\MSV\a3ux12.i\T21011-IC.b\8260LLUX12.m
Cal Date : 11-Oct-2002 21:46 tapsvc
Curve Type : Average

	Compound	5.000 Level 1	10.000 Level 2	25.000 Level 3	50.000 Level 4	100.000 Level 5	200.000 Level 6	RRF	% RSD	
	33 2,2-Dichloropropane	0.41137	0.38150	0.36690	0.35706	0.36031	0.35779	0.37249	5.665	
	34 Bromochloromethane	0.12767	0.12370	0.12430	0.12623	0.13194	0.13092	0.12746	2.666	
	35 Chloroform	0.47240	0.43421	0.43409	0.42540	0.43450	0.43387	0.43908	3.803	
	36 Tetrahydrofuran	0.10941	0.08916	0.09226	0.08655	0.08720	0.09434	0.09315	9.128	
	37 1,1,1-Trichloroethane	0.38793	0.38046	0.35087	0.35488	0.36814	0.37216	0.36907	3.886	
	38 1,1-Dichloropropene	0.36931	0.37824	0.34740	0.35733	0.37378	0.37700	0.36717	3.347	
	39 Carbon Tetrachloride	0.28122	0.28786	0.27006	0.28040	0.29606	0.30541	0.28683	4.370	
	40 1,2-Dichloroethane	0.35078	0.33622	0.32689	0.32626	0.33356	0.33162	0.33422	2.685	
	41 Benzene	1.29967	1.23652	1.18201	1.16407	1.21224	1.21352	1.21801	3.898	
	42 Trichloroethene	0.28508	0.27543	0.27314	0.28042	0.28168	0.28577	0.28025	1.817	
	43 1,2-Dichloropropane	0.32002	0.30327	0.30006	0.29485	0.30595	0.30474	0.30481	2.771	
	44 1,4-Dioxane	0.00209	0.00219	0.00238	0.00263	0.00304	0.00300	0.00256	15.765	<-
	45 Dibromomethane	0.14826	0.14616	0.14431	0.14591	0.14849	0.14974	0.14714	1.371	
	46 Bromodichloromethane	0.32851	0.30402	0.30143	0.30293	0.32046	0.32247	0.31330	3.780	
	47 2-Chloroethyl vinyl ether	0.19773	0.18584	0.19517	0.19350	0.19843	0.20643	0.19618	3.440	
	48 cis-1,3-Dichloropropene	0.46729	0.46229	0.45540	0.44810	0.47115	0.46860	0.46214	1.916	
	49 4-Methyl-2-pentanone	0.34561	0.31729	0.28910	0.27992	0.28377	0.30045	0.30269	8.254	
	50 Toluene	1.94507	1.80726	1.71599	1.67449	1.78955	1.79108	1.78724	5.196	
	51 trans-1,3-Dichloropropene	0.60945	0.56485	0.55281	0.54632	0.58906	0.59077	0.57554	4.291	
	52 Ethyl Methacrylate	0.59169	0.55832	0.56747	0.55761	0.58039	0.60325	0.57645	3.227	
	53 1,1,2-Trichloroethane	0.35100	0.34441	0.32715	0.31496	0.33237	0.33593	0.33430	3.813	
	54 1,3-Dichloropropane	0.70928	0.65387	0.61522	0.60426	0.63388	0.65010	0.64444	5.766	
	55 Tetrachloroethene	0.30086	0.30589	0.27706	0.27693	0.30223	0.29625	0.29320	4.410	
	56 2-Hexanone	0.43218	0.39199	0.29794	0.26609	0.27867	0.29735	0.32737	20.742	
	57 Dibromochloromethane	0.31563	0.27942	0.28726	0.28747	0.31604	0.33028	0.30268	6.800	
	58 1,2-Dibromoethane	0.34093	0.31850	0.32401	0.31096	0.32831	0.32859	0.32522	3.129	
	59 Chlorobenzene	1.21413	1.12215	1.07509	1.04741	1.10117	1.11122	1.11186	5.117	
	60 1,1,1,2-Tetrachloroethane	0.34549	0.32293	0.32409	0.32578	0.35191	0.35496	0.33753	4.406	
	61 Ethylbenzene	0.65176	0.62337	0.59314	0.58767	0.63104	0.63546	0.62041	4.044	
	62 m + p-Xylene	0.78591	0.77341	0.73502	0.72877	0.77894	0.79254	0.76576	3.537	
M	63 Xylenes (total)	0.78863	0.77418	0.73300	0.72592	0.77110	0.78643	0.76321	3.550	
	64 Xylene-o	0.79404	0.77571	0.72896	0.72022	0.75544	0.77421	0.75810	3.802	
	65 Styrene	1.31164	1.26217	1.22260	1.21170	1.31127	1.33755	1.27615	4.069	

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Report Date : 11-Oct-2002 20:49

STL - North Canton

INITIAL CALIBRATION DATA

Start Cal Date : 11-OCT-2002 19:38
End Cal Date : 11-OCT-2002 21:30
Quant Method : ISTD
Origin : Disabled
Target Version : 4.04
Integrator : HP RTE
Method file : \\qcanoh04\dd\chem\MSV\a3ux12.i\T21011-IC.b\8260LLUX12.m
Cal Date : 11-Oct-2002 21:46 tapsvc
Curve Type : Average

Compound	5.000 Level 1	10.000 Level 2	25.000 Level 3	50.000 Level 4	100.000 Level 5	200.000 Level 6	RRF	% RSD	
66 Bromoform	0.16494	0.16226	0.16531	0.17414	0.18707	0.20602	0.17662	9.641	
67 Isopropylbenzene	1.89165	1.85637	1.76031	1.73290	1.86849	1.89334	1.83384	3.793	
68 1,1,2,2-Tetrachloroethane	0.82064	0.78164	0.82896	0.79424	0.84528	0.83981	0.81843	3.107	
69 1,4-Dichloro-2-butene	0.21040	0.20175	0.21815	0.20952	0.22800	0.23498	0.21713	5.744	
70 1,2,3-Trichloropropane	0.25166	0.25564	0.25815	0.24768	0.25794	0.26635	0.25624	2.489	
71 Bromobenzene	0.88790	0.78707	0.81045	0.78004	0.81357	0.81304	0.81534	4.700	
72 n-Propylbenzene	0.98463	0.93945	0.95449	0.94711	1.00624	1.00941	0.97356	3.150	
73 2-Chlorotoluene	0.88790	0.82427	0.80014	0.79826	0.82717	0.83198	0.82829	3.923	
74 1,3,5-Trimethylbenzene	2.92523	2.85934	2.86922	2.81936	3.00015	3.06335	2.92278	3.185	
75 4-Chlorotoluene	0.86709	0.87524	0.84009	0.81634	0.86563	0.87132	0.85595	2.688	
76 tert-Butylbenzene	2.45061	2.40622	2.38414	2.38055	2.51567	2.55490	2.44868	2.967	
77 1,2,4-Trimethylbenzene	3.12228	2.98343	2.90783	2.91827	3.05701	3.12558	3.01907	3.220	
78 sec-Butylbenzene	3.54718	3.64195	3.50492	3.47582	3.74848	3.79523	3.61893	3.645	
79 4-Isopropyltoluene	2.96458	2.89696	2.92112	2.89336	3.05409	3.13450	2.97744	3.271	
80 1,3-Dichlorobenzene	1.65202	1.55752	1.57132	1.53418	1.60260	1.60788	1.58759	2.644	
81 1,4-Dichlorobenzene	1.73353	1.65544	1.59574	1.58349	1.67347	1.67498	1.65277	3.369	
82 n-Butylbenzene	2.73915	2.70540	2.69593	2.67874	2.87575	2.92668	2.77028	3.775	
83 1,2-Dichlorobenzene	1.71017	1.53770	1.55313	1.51223	1.58567	1.60053	1.58324	4.416	
84 1,2-Dibromo-3-chloropropane	0.14664	0.12475	0.15097	0.15734	0.16408	0.17762	0.15357	11.607	
85 1,2,4-Trichlorobenzene	1.15640	1.08906	1.12346	1.06317	1.12461	1.13338	1.11501	2.995	
86 Hexachlorobutadiene	0.39324	0.38775	0.38091	0.35779	0.38681	0.39057	0.38284	3.383	
87 Naphthalene	3.24570	2.95679	3.09597	3.11345	3.24388	3.39751	3.17555	4.815	
88 1,2,3-Trichlorobenzene	1.11341	1.04989	1.04700	1.02575	1.07329	1.08281	1.06536	2.915	
89 Ethyl Ether	*****	*****	*****	*****	*****	*****	*****	*****	<-
90 Ethanol	*****	*****	*****	*****	*****	*****	*****	*****	<-
91 3-Chloropropene	*****	*****	*****	*****	*****	*****	*****	*****	<-
92 Isopropyl Ether	*****	*****	*****	*****	*****	*****	*****	*****	<-
93 2-Chloro-1,3-butadiene	*****	*****	*****	*****	*****	*****	*****	*****	<-
94 Propionitrile	*****	*****	*****	*****	*****	*****	*****	*****	<-
95 Ethyl Acetate	*****	*****	*****	*****	*****	*****	*****	*****	<-
96 Methacrylonitrile	*****	*****	*****	*****	*****	*****	*****	*****	<-
97 Isobutanol	*****	*****	*****	*****	*****	*****	*****	*****	<-
98 Cyclohexane	0.50744	0.51508	0.47751	0.47943	0.50429	0.50693	0.49845	3.189	

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Report Date : 11-Oct-2002 20:49

STL - North Canton

INITIAL CALIBRATION DATA

Start Cal Date : 11-OCT-2002 19:38
End Cal Date : 11-OCT-2002 21:30
Quant Method : ISTD
Origin : Disabled
Target Version : 4.04
Integrator : HP RTE
Method file : \\qcanoh04\dd\chem\MSV\a3ux12.i\T21011-IC.b\8260LLUX12.m
Cal Date : 11-Oct-2002 21:46 tapsvc
Curve Type : Average

	Compound	5.000 Level 1	10.000 Level 2	25.000 Level 3	50.000 Level 4	100.000 Level 5	200.000 Level 6	RRF	% RSD	
	99 n-Butanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
	100 Methyl Methacrylate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
	101 2-Nitropropane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
	102 Chloropicrin	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
	103 Cyclohexanone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
	104 Pentachloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
	105 Benzyl Chloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
	134 Thiophene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
	135 Crotononitrile(1st Isomer)	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
	136 Crotononitrile(2nd Isomer)	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
M	137 Total Crotononitrile	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
	138 Paraldehyde	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
	139 3,3,5-Trimethylcyclohexanone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
	140 1-Chlorohexane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
	141 1,3,5-Trichlorobenzene	1.20140	1.10716	1.10132	1.07893	1.11530	1.13841	1.12375	3.797	
	143 Methyl Acetate	0.26397	0.27920	0.26037	0.24875	0.25029	0.26341	0.26100	4.236	
	144 Methylcyclohexane	0.46498	0.49272	0.45935	0.45657	0.48623	0.48821	0.47468	3.395	
	145 Dimethoxymethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
	146 2-Methylnaphthalene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
	147 Allyl Alcohol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
$	4 Dibromofluoromethane	0.20011	0.20892	0.21309	0.21446	0.21865	0.22064	0.21264	3.484	
$	5 1,2-Dichloroethane-d4	0.27195	0.28532	0.27882	0.27157	0.27749	0.27715	0.27705	1.824	
$	6 Toluene-d8	1.58650	1.49505	1.41497	1.39986	1.47198	1.45794	1.47105	4.539	
$	7 Bromofluorobenzene	0.60731	0.57489	0.52329	0.51095	0.53943	0.53897	0.54914	6.500	

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5A
VOLATILE ORGANIC GC/MS TUNING AND MASS
CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: STL - NORTH CANTON Contract:

Lab Code: QESOH Case No.: SAS No.: SDG No.: A2J040261

Lab File ID: BFB134 BFB Injection Date: 10/12/02

Instrument ID: A3UX12 BFB Injection Time: 1113

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	16.2
75	30.0 - 60.0% of mass 95	43.9
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.8
173	Less than 2.0% of mass 174	0.6 (0.8)1
174	50.0 - 100.0% of mass 95	73.7
175	5.0 - 9.0% of mass 174	5.1 (6.9)1
176	Greater than 95.0%, but less than 101.0% of mass 174	71.5 (97.0)1
177	5.0 - 9.0% of mass 176	4.4 (6.1)2

1-Value is % of mass 174 2-Value is % of mass 176

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD010	50NG-CC	UX122972	10/12/02	1137
02	E90DC-CHK	E90DC1AC	UX122973	10/12/02	1216
03	E90DC-CKDUP	E90DC1AD	UX122974	10/12/02	1238
04	E90DC-BLK	E90DC1AA	UX122975	10/12/02	1301
05	NYPA-ERB-01	E9FJ51AA	UX122990	10/12/02	1852
06					
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13					
14					
15					
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17					
18					
19					
20					
21					
22					

FORM V VOA 1/87 Rev.

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Data File: \\qcanoh04\dd\chem\MSV\a3ux12.i\T21012B.b\UX122972.D
Report Date: 14-Oct-2002 11:06

STL - North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a3ux12.i
Lab File ID: UX122972.D
Analysis Type: WATER
Lab Sample ID: 50NG-CC
Method: \\qcanoh04\dd\chem\MSV\a3ux12.i\T21012B.b\8260LLUX12.m

Injection Date: 12-OCT-2002 11:37
Init. Cal. Date(s): 11-OCT-2002 11-OCT-2002
Init. Cal. Times: 19:38 21:30
Quant Type: ISTD

	COMPOUND	RRF	RF50	MIN RRF	%D	MAX %D
$	4 Dibromofluoromethane	0.21264	0.19830	0.010	-6.7	50.0
$	5 1,2-Dichloroethane-d4	0.27705	0.25453	0.010	-8.1	50.0
$	6 Toluene-d8	1.47105	1.37229	0.010	-6.7	50.0
$	7 Bromofluorobenzene	0.54914	0.51884	0.010	-5.5	50.0
	8 Dichlorodifluoromethane	0.20120	0.21475	0.010	6.7	50.0
	9 Chloromethane	0.40155	0.36426	0.100	-9.3	50.0
	10 Vinyl Chloride	0.37262	0.34427	0.010	-7.6	20.0
	11 Bromomethane	0.23247	0.21697	0.010	-6.7	50.0
	12 Chloroethane	0.24400	0.22609	0.010	-7.3	50.0
	13 Trichlorofluoromethane	0.30119	0.29901	0.010	-0.7	50.0
	15 Acrolein	0.03168	0.02476	0.010	-21.8	50.0
	16 Acetone	100	149	0.010	-48.7	50.0
	17 1,1-Dichloroethene	0.23421	0.23750	0.010	1.4	20.0
	18 Freon-113	0.16128	0.17269	0.010	7.1	50.0
	19 Iodomethane	0.35077	0.35297	0.010	0.6	50.0
	20 Carbon Disulfide	0.90007	0.93409	0.010	3.8	50.0
	21 Methylene Chloride	0.30656	0.29655	0.010	-3.3	50.0
	22 Acetonitrile	500	473	0.010	5.3	50.0
	23 Acrylonitrile	0.12333	0.10872	0.010	-11.8	50.0
	24 Methyl tert-butyl ether	0.84591	0.85241	0.010	0.8	50.0
	25 trans-1,2-Dichloroethene	0.28181	0.28108	0.010	-0.3	50.0
	26 Hexane	0.37836	0.40665	0.010	7.5	50.0
	27 Vinyl acetate	0.35108	0.27528	0.010	-21.6	50.0
	28 1,1-Dichloroethane	0.49901	0.49968	0.100	0.1	50.0
	29 tert-Butyl Alcohol	0.02809	0.02812	0.010	0.1	50.0
	30 2-Butanone	100	122	0.010	-21.8	50.0
M	31 1,2-Dichloroethene (total)	0.28874	0.28876	0.010	0.0	50.0
	32 cis-1,2-dichloroethene	0.29567	0.29645	0.010	0.3	50.0
	33 2,2-Dichloropropane	0.37249	0.39338	0.010	5.6	50.0
	34 Bromochloromethane	0.12746	0.12913	0.010	1.3	50.0
	35 Chloroform	0.43908	0.44348	0.010	1.0	20.0
	36 Tetrahydrofuran	0.09315	0.08486	0.010	-8.9	50.0
	37 1,1,1-Trichloroethane	0.36907	0.36969	0.010	0.2	50.0
	38 1,1-Dichloropropene	0.36717	0.37546	0.010	2.3	50.0
	39 Carbon Tetrachloride	0.28683	0.29063	0.010	1.3	50.0
	40 1,2-Dichloroethane	0.33422	0.33787	0.010	1.1	50.0

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Data File: \\qcanoh04\dd\chem\MSV\a3ux12.i\T21012B.b\UX122972.D
Report Date: 14-Oct-2002 11:06

STL - North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a3ux12.i Injection Date: 12-OCT-2002 11:37
Lab File ID: UX122972.D Init. Cal. Date(s): 11-OCT-2002 11-OCT-2002
Analysis Type: WATER Init. Cal. Times: 19:38 21:30
Lab Sample ID: 50NG-CC Quant Type: ISTD
Method: \\qcanoh04\dd\chem\MSV\a3ux12.i\T21012B.b\8260LLUX12.m

	COMPOUND	RRF	RF50	MIN RRF	%D	MAX %D
	41 Benzene	1.21801	1.21463	0.010	-0.3	50.0
	42 Trichloroethene	0.28025	0.28351	0.010	1.2	50.0
	43 1,2-Dichloropropane	0.30481	0.30420	0.010	-0.2	20.0
	44 1,4-Dioxane	2500	2574	0.010	-3.0	50.0
	45 Dibromomethane	0.14714	0.14637	0.010	-0.5	50.0
	46 Bromodichloromethane	0.31330	0.30544	0.010	-2.5	50.0
	47 2-Chloroethyl vinyl ether	0.19618	0.18335	0.010	-6.5	50.0
	48 cis-1,3-Dichloropropene	0.46214	0.46795	0.010	1.3	50.0
	49 4-Methyl-2-pentanone	0.30269	0.28293	0.010	-6.5	50.0
	50 Toluene	1.78724	1.83047	0.010	2.4	20.0
	51 trans-1,3-Dichloropropene	0.57554	0.58427	0.010	1.5	50.0
	52 Ethyl Methacrylate	0.57645	0.56392	0.010	-2.2	50.0
	53 1,1,2-Trichloroethane	0.33430	0.33567	0.010	0.4	50.0
	54 1,3-Dichloropropane	0.64444	0.64353	0.010	-0.1	50.0
	55 Tetrachloroethene	0.29320	0.30023	0.010	2.4	50.0
	56 2-Hexanone	100	125	0.010	-24.6	50.0
	57 Dibromochloromethane	0.30268	0.28768	0.010	-5.0	50.0
	58 1,2-Dibromoethane	0.32522	0.32908	0.010	1.2	50.0
	59 Chlorobenzene	1.11186	1.11269	0.300	0.1	50.0
	60 1,1,1,2-Tetrachloroethane	0.33753	0.34372	0.010	1.8	50.0
	61 Ethylbenzene	0.62041	0.64232	0.010	3.5	20.0
	62 m + p-Xylene	0.76576	0.78720	0.010	2.8	50.0
M	63 Xylenes (total)	0.76321	0.78546	0.010	2.9	50.0
	64 Xylene-o	0.75810	0.78198	0.010	3.2	50.0
	65 Styrene	1.27615	1.30287	0.010	2.1	50.0
	66 Bromoform	0.17662	0.15563	0.100	-11.9	50.0
	67 Isopropylbenzene	1.83384	1.90769	0.010	4.0	50.0
	68 1,1,2,2-Tetrachloroethane	0.81843	0.84186	0.300	2.9	50.0
	69 1,4-Dichloro-2-butene	0.21713	0.20238	0.010	-6.8	50.0
	70 1,2,3-Trichloropropane	0.25624	0.25561	0.010	-0.2	50.0
	71 Bromobenzene	0.81534	0.81600	0.010	0.1	50.0
	72 n-Propylbenzene	0.97356	1.01520	0.010	4.3	50.0
	73 2-Chlorotoluene	0.82829	0.84477	0.010	2.0	50.0
	74 1,3,5-Trimethylbenzene	2.92278	3.05551	0.010	4.5	50.0
	75 4-Chlorotoluene	0.85595	0.85809	0.010	0.3	50.0
	76 tert-Butylbenzene	2.44868	2.51672	0.010	2.8	50.0

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Data File: \\qcanoh04\dd\chem\MSV\a3ux12.i\T21012B.b\UX122972.D
Report Date: 14-Oct-2002 11:06

STL - North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a3ux12.i Injection Date: 12-OCT-2002 11:37
Lab File ID: UX122972.D Init. Cal. Date(s): 11-OCT-2002 11-OCT-2002
Analysis Type: WATER Init. Cal. Times: 19:38 21:30
Lab Sample ID: 50NG-CC Quant Type: ISTD
Method: \\qcanoh04\dd\chem\MSV\a3ux12.i\T21012B.b\8260LLUX12.m

COMPOUND	RRF	RF50	MIN RRF	%D	MAX %D
77 1,2,4-Trimethylbenzene	3.01907	3.12463	0.010	3.5	50.0
78 sec-Butylbenzene	3.61893	3.72774	0.010	3.0	50.0
79 4-Isopropyltoluene	2.97744	3.16286	0.010	6.2	50.0
80 1,3-Dichlorobenzene	1.58759	1.61309	0.010	1.6	50.0
81 1,4-Dichlorobenzene	1.65277	1.67680	0.010	1.5	50.0
82 n-Butylbenzene	2.77028	2.93945	0.010	6.1	50.0
83 1,2-Dichlorobenzene	1.58324	1.57887	0.010	-0.3	50.0
84 1,2-Dibromo-3-chloropropane	0.15357	0.14097	0.010	-8.2	50.0
85 1,2,4-Trichlorobenzene	1.11501	1.11377	0.010	-0.1	50.0
86 Hexachlorobutadiene	0.38284	0.39802	0.010	4.0	50.0
87 Naphthalene	3.17555	3.16627	0.010	-0.3	50.0
88 1,2,3-Trichlorobenzene	1.06536	1.08130	0.010	1.5	50.0
98 Cyclohexane	0.49845	0.51926	0.010	4.2	50.0
143 Methyl Acetate	0.26100	0.24365	0.010	-6.6	50.0
144 Methylcyclohexane	0.47468	0.49068	0.010	3.4	50.0
141 1,3,5-Trichlorobenzene	1.12375	1.14906	0.010	2.3	50.0

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8A
VOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: STL - NORTH CANTON Contract:

Lab Code: QESOH Case No.: SAS No.: SDG No.: A2J040261

Lab File ID (Standard): UX122972 Date Analyzed: 10/12/02

Instrument ID: A3UX12 Time Analyzed: 1137

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

		IS1 (CBZ) AREA #	RT	IS2 AREA #	RT	IS3 (DCB) AREA #	RT
	12 HOUR STD	397689	7.27	564588	4.66	211808	9.48
	UPPER LIMIT	795378	7.77	1129176	5.16	423616	9.98
	LOWER LIMIT	198845	6.77	282294	4.16	105904	8.98
	EPA SAMPLE NO.						
01	E90DC-CHK	399758	7.27	568146	4.66	213965	9.48
02	E90DC-CKDUP	396805	7.27	554883	4.66	210711	9.48
03	E90DC-BLK	388339	7.27	551607	4.65	205469	9.48
04	NYPA-ERB-01	367754	7.27	513597	4.66	195536	9.48
05							
06							
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20							
21							
22							

IS1 (CBZ) = Chlorobenzene-d5
IS2 = Fluorobenzene
IS3 (DCB) = 1,4-Dichlorobenzene-d4

UPPER LIMIT = +100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk.

FORM VIII VOA 1/87 Rev.

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METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A2J040261
MB Lot-Sample #: A2J090000-582

Analysis Date..: 10/08/02
Dilution Factor: 1

Work Order #...: E9N7A1AA

Prep Date.....: 10/08/02
Prep Batch #...: 2282582
Initial Wgt/Vol: 5 g

Matrix.....: SOLID

Final Wgt/Vol..: 5 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Tetrachloroethylene	ND	5.0	ug/kg	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	89	(59 - 138)
1,2-Dichloroethane-d4	82	(61 - 130)
Toluene-d8	90	(60 - 143)
4-Bromofluorobenzene	93	(47 - 158)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

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METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A2J040261
MB Lot-Sample #: A2J100000-564

Work Order #...: E9RTX1AA
Prep Date.....: 10/09/02
Prep Batch #...: 2283564
Initial Wgt/Vol: 5 g

Matrix.....: SOLID
Final Wgt/Vol..: 5 mL

Analysis Date..: 10/09/02
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Tetrachloroethylene	ND	5.0	ug/kg	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	86	(59 - 138)
1,2-Dichloroethane-d4	82	(61 - 130)
Toluene-d8	86	(60 - 143)
4-Bromofluorobenzene	92	(47 - 158)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

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METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A2J040261
MB Lot-Sample #: A2J110000-566

Work Order #...: E9W1R1AA

Matrix.....: SOLID

Prep Date.....: 10/10/02

Final Wgt/Vol..: 5 mL

Analysis Date..: 10/10/02
Dilution Factor: 1

Prep Batch #...: 2284566
Initial Wgt/Vol: 5 g

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Tetrachloroethylene	ND	5.0	ug/kg	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	87	(59 - 138)
1,2-Dichloroethane-d4	80	(61 - 130)
Toluene-d8	89	(60 - 143)
4-Bromofluorobenzene	94	(47 - 158)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

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METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A2J040261
MB Lot-Sample #: A2J140000-154

Work Order #...: E90DC1AA
Prep Date.....: 10/12/02
Prep Batch #...: 2287154
Initial Wgt/Vol: 5 mL

Matrix.....: WATER
Final Wgt/Vol..: 5 mL

Analysis Date..: 10/12/02
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Tetrachloroethylene	ND	1.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	93	(73 - 122)
1,2-Dichloroethane-d4	86	(61 - 128)
Toluene-d8	93	(76 - 110)
4-Bromofluorobenzene	93	(74 - 116)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A2J040261 Work Order #...: E9FH71AQ-MS Matrix.....: SO
MS Lot-Sample #: A2J040261-003 E9FH71AR-MSD
Date Sampled...: 10/01/02 18:15 Date Received..: 10/03/02
Prep Date.....: 10/11/02 Analysis Date..: 10/11/02
Prep Batch #...: 2284566
Dilution Factor: 0.83 Initial Wgt/Vol: 5 g Final Wgt/Vol..: 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethene	88	(43 - 147)			SW846 8260B
	89	(43 - 147)	1.0	(0-27)	SW846 8260B
Trichloroethene	82	(46 - 143)			SW846 8260B
	83	(46 - 143)	1.0	(0-23)	SW846 8260B
Benzene	89	(55 - 138)			SW846 8260B
	89	(55 - 138)	0.65	(0-20)	SW846 8260B
Toluene	84	(46 - 147)			SW846 8260B
	81	(46 - 147)	3.2	(0-24)	SW846 8260B
Chlorobenzene	77	(49 - 139)			SW846 8260B
	76	(49 - 139)	2.2	(0-22)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	87	(59 - 138)
	88	(59 - 138)
1,2-Dichloroethane-d4	79	(61 - 130)
	79	(61 - 130)
Toluene-d8	93	(60 - 143)
	91	(60 - 143)
4-Bromofluorobenzene	92	(47 - 158)
	93	(47 - 158)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

Results and reporting limits have been adjusted for dry weight.

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MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A2J040261 Work Order #...: E9FH71AQ-MS Matrix.....: SO
MS Lot-Sample #: A2J040261-003 E9FH71AR-MSD
Date Sampled...: 10/01/02 18:15 Date Received..: 10/03/02
Prep Date.....: 10/11/02 Analysis Date..: 10/11/02
Prep Batch #...: 2284566
Dilution Factor: 0.83 Initial Wgt/Vol: 5 g Final Wgt/Vol..: 5 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
1,1-Dichloroethene	ND	51	45	ug/kg	88		SW846 8260B
	ND	51	46	ug/kg	89	1.0	SW846 8260B
Trichloroethene	ND	51	42	ug/kg	82		SW846 8260B
	ND	51	43	ug/kg	83	1.0	SW846 8260B
Benzene	ND	51	46	ug/kg	89		SW846 8260B
	ND	51	46	ug/kg	89	0.65	SW846 8260B
Toluene	ND	51	44	ug/kg	84		SW846 8260B
	ND	51	42	ug/kg	81	3.2	SW846 8260B
Chlorobenzene	ND	51	40	ug/kg	77		SW846 8260B
	ND	51	39	ug/kg	76	2.2	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	87	(59 - 138)
	88	(59 - 138)
1,2-Dichloroethane-d4	79	(61 - 130)
	79	(61 - 130)
Toluene-d8	93	(60 - 143)
	91	(60 - 143)
4-Bromofluorobenzene	92	(47 - 158)
	93	(47 - 158)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

Results and reporting limits have been adjusted for dry weight.

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A2J040261 Work Order #...: E9N7A1AC-LCS Matrix.....: SOLID
LCS Lot-Sample#: A2J090000-582 E9N7A1AD-LCSD
Prep Date.....: 10/08/02 Analysis Date..: 10/08/02
Prep Batch #...: 2282582
Dilution Factor: 1 Final Wgt/Vol..: 5 mL
Initial Wgt/Vol: 5 g

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethene	100	(55 - 142)			SW846 8260B
	94	(55 - 142)	5.4	(0-27)	SW846 8260B
Trichloroethene	102	(70 - 131)			SW846 8260B
	95	(70 - 131)	6.6	(0-23)	SW846 8260B
Benzene	103	(75 - 129)			SW846 8260B
	97	(75 - 129)	6.2	(0-20)	SW846 8260B
Toluene	99	(71 - 130)			SW846 8260B
	97	(71 - 130)	2.6	(0-24)	SW846 8260B
Chlorobenzene	97	(75 - 127)			SW846 8260B
	94	(75 - 127)	3.0	(0-22)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	88	(59 - 138)
	86	(59 - 138)
1,2-Dichloroethane-d4	79	(61 - 130)
	77	(61 - 130)
Toluene-d8	90	(60 - 143)
	91	(60 - 143)
4-Bromofluorobenzene	95	(47 - 158)
	95	(47 - 158)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

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LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A2J040261
LCS Lot-Sample#: A2J090000-582
Prep Date.....: 10/08/02
Prep Batch #...: 2282582
Dilution Factor: 1
Initial Wgt/Vol: 5 g

Work Order #...: E9N7A1AC-LCS
E9N7A1AD-LCSD
Analysis Date..: 10/08/02
Final Wgt/Vol..: 5 mL

Matrix.....: SOLID

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
1,1-Dichloroethene	50	50	ug/kg	100		SW846 8260B
	50	47	ug/kg	94	5.4	SW846 8260B
Trichloroethene	50	51	ug/kg	102		SW846 8260B
	50	48	ug/kg	95	6.6	SW846 8260B
Benzene	50	52	ug/kg	103		SW846 8260B
	50	49	ug/kg	97	6.2	SW846 8260B
Toluene	50	50	ug/kg	99		SW846 8260B
	50	48	ug/kg	97	2.6	SW846 8260B
Chlorobenzene	50	49	ug/kg	97		SW846 8260B
	50	47	ug/kg	94	3.0	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	88	(59 - 138)
	86	(59 - 138)
1,2-Dichloroethane-d4	79	(61 - 130)
	77	(61 - 130)
Toluene-d8	90	(60 - 143)
	91	(60 - 143)
4-Bromofluorobenzene	95	(47 - 158)
	95	(47 - 158)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A2J040261
LCS Lot-Sample#: A2J100000-564
Prep Date.....: 10/09/02
Prep Batch #...: 2283564
Dilution Factor: 1
Initial Wgt/Vol: 5 g

Work Order #...: E9RTX1AC-LCS
E9RTX1AD-LCSD
Analysis Date..: 10/09/02

Final Wgt/Vol..: 5 mL

Matrix.....: SOLID

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethene	102	(55 - 142)			SW846 8260B
	100	(55 - 142)	2.1	(0-27)	SW846 8260B
Trichloroethene	102	(70 - 131)			SW846 8260B
	99	(70 - 131)	3.4	(0-23)	SW846 8260B
Benzene	103	(75 - 129)			SW846 8260B
	101	(75 - 129)	1.5	(0-20)	SW846 8260B
Toluene	100	(71 - 130)			SW846 8260B
	99	(71 - 130)	1.3	(0-24)	SW846 8260B
Chlorobenzene	99	(75 - 127)			SW846 8260B
	97	(75 - 127)	1.8	(0-22)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	86	(59 - 138)
	87	(59 - 138)
1,2-Dichloroethane-d4	79	(61 - 130)
	79	(61 - 130)
Toluene-d8	90	(60 - 143)
	90	(60 - 143)
4-Bromofluorobenzene	95	(47 - 158)
	94	(47 - 158)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

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LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A2J040261 Work Order #...: E9RTX1AC-LCS Matrix.....: SOLID
LCS Lot-Sample#: A2J100000-564 E9RTX1AD-LCSD
Prep Date.....: 10/09/02 Analysis Date..: 10/09/02
Prep Batch #...: 2283564
Dilution Factor: 1 Final Wgt/Vol..: 5 mL
Initial Wgt/Vol: 5 g

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
1,1-Dichloroethene	50	51	ug/kg	102		SW846 8260B
	50	50	ug/kg	100	2.1	SW846 8260B
Trichloroethene	50	51	ug/kg	102		SW846 8260B
	50	49	ug/kg	99	3.4	SW846 8260B
Benzene	50	51	ug/kg	103		SW846 8260B
	50	51	ug/kg	101	1.5	SW846 8260B
Toluene	50	50	ug/kg	100		SW846 8260B
	50	49	ug/kg	99	1.3	SW846 8260B
Chlorobenzene	50	49	ug/kg	99		SW846 8260B
	50	49	ug/kg	97	1.8	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	86	(59 - 138)
	87	(59 - 138)
1,2-Dichloroethane-d4	79	(61 - 130)
	79	(61 - 130)
Toluene-d8	90	(60 - 143)
	90	(60 - 143)
4-Bromofluorobenzene	95	(47 - 158)
	94	(47 - 158)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A2J040261 Work Order #...: E9W1R1AC-LCS Matrix.....: SOLID
LCS Lot-Sample#: A2J110000-566 E9W1R1AD-LCSD
Prep Date.....: 10/10/02 Analysis Date..: 10/10/02
Prep Batch #...: 2284566
Dilution Factor: 1 Final Wgt/Vol..: 5 mL
Initial Wgt/Vol: 5 g

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethene	102	(55 - 142)			SW846 8260B
	104	(55 - 142)	1.6	(0-27)	SW846 8260B
Trichloroethene	105	(70 - 131)			SW846 8260B
	104	(70 - 131)	1.4	(0-23)	SW846 8260B
Benzene	103	(75 - 129)			SW846 8260B
	106	(75 - 129)	2.2	(0-20)	SW846 8260B
Toluene	102	(71 - 130)			SW846 8260B
	100	(71 - 130)	2.2	(0-24)	SW846 8260B
Chlorobenzene	99	(75 - 127)			SW846 8260B
	98	(75 - 127)	1.2	(0-22)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	88	(59 - 138)
	89	(59 - 138)
1,2-Dichloroethane-d4	79	(61 - 130)
	80	(61 - 130)
Toluene-d8	91	(60 - 143)
	90	(60 - 143)
4-Bromofluorobenzene	96	(47 - 158)
	94	(47 - 158)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

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LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A2J040261 Work Order #...: E9W1R1AC-LCS Matrix.....: SOLID
LCS Lot-Sample#: A2J110000-566 E9W1R1AD-LCSD
Prep Date.....: 10/10/02 Analysis Date..: 10/10/02
Prep Batch #...: 2284566
Dilution Factor: 1 Final Wgt/Vol..: 5 mL
Initial Wgt/Vol: 5 g

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
1,1-Dichloroethene	50	51	ug/kg	102		SW846 8260B
	50	52	ug/kg	104	1.6	SW846 8260B
Trichloroethene	50	53	ug/kg	105		SW846 8260B
	50	52	ug/kg	104	1.4	SW846 8260B
Benzene	50	52	ug/kg	103		SW846 8260B
	50	53	ug/kg	106	2.2	SW846 8260B
Toluene	50	51	ug/kg	102		SW846 8260B
	50	50	ug/kg	100	2.2	SW846 8260B
Chlorobenzene	50	50	ug/kg	99		SW846 8260B
	50	49	ug/kg	98	1.2	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	88	(59 - 138)
	89	(59 - 138)
1,2-Dichloroethane-d4	79	(61 - 130)
	80	(61 - 130)
Toluene-d8	91	(60 - 143)
	90	(60 - 143)
4-Bromofluorobenzene	96	(47 - 158)
	94	(47 - 158)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A2J040261
LCS Lot-Sample#: A2J140000-154
Prep Date.....: 10/12/02
Prep Batch #...: 2287154
Dilution Factor: 1
Initial Wgt/Vol: 5 mL

Work Order #...: E90DC1AC-LCS
E90DC1AD-LCSD
Analysis Date..: 10/12/02
Final Wgt/Vol..: 5 mL

Matrix.....: WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethene	94	(63 - 130)			SW846 8260B
	97	(63 - 130)	3.8	(0-20)	SW846 8260B
Trichloroethene	91	(75 - 122)			SW846 8260B
	96	(75 - 122)	4.7	(0-20)	SW846 8260B
Benzene	92	(80 - 116)			SW846 8260B
	95	(80 - 116)	3.2	(0-20)	SW846 8260B
Toluene	96	(74 - 119)			SW846 8260B
	95	(74 - 119)	1.2	(0-20)	SW846 8260B
Chlorobenzene	94	(76 - 117)			SW846 8260B
	95	(76 - 117)	1.8	(0-20)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	92	(73 - 122)
	95	(73 - 122)
1,2-Dichloroethane-d4	93	(61 - 128)
	92	(61 - 128)
Toluene-d8	92	(76 - 110)
	91	(76 - 110)
4-Bromofluorobenzene	93	(74 - 116)
	93	(74 - 116)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

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LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A2J040261
LCS Lot-Sample#: A2J140000-154
Prep Date.....: 10/12/02
Prep Batch #...: 2287154
Dilution Factor: 1
Initial Wgt/Vol: 5 mL

Work Order #...: E90DC1AC-LCS
E90DC1AD-LCSD
Analysis Date..: 10/12/02
Final Wgt/Vol..: 5 mL

Matrix.....: WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
1,1-Dichloroethene	10	9.4	ug/L	94		SW846 8260B
	10	9.7	ug/L	97	3.8	SW846 8260B
Trichloroethene	10	9.1	ug/L	91		SW846 8260B
	10	9.6	ug/L	96	4.7	SW846 8260B
Benzene	10	9.2	ug/L	92		SW846 8260B
	10	9.5	ug/L	95	3.2	SW846 8260B
Toluene	10	9.6	ug/L	96		SW846 8260B
	10	9.5	ug/L	95	1.2	SW846 8260B
Chlorobenzene	10	9.4	ug/L	94		SW846 8260B
	10	9.5	ug/L	95	1.8	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	92	(73 - 122)
	95	(73 - 122)
1,2-Dichloroethane-d4	93	(61 - 128)
	92	(61 - 128)
Toluene-d8	92	(76 - 110)
	91	(76 - 110)
4-Bromofluorobenzene	93	(74 - 116)
	93	(74 - 116)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

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UX9 S 2282582 nsRun# 2282314

Batch # H 2282581 nsRun# 2282313

STL-North Canton
GC/MS VOA Run Log

10/10

Date: 10·8·2

Column	BFB	Analysis	Purge & Trap
Type: DB624	100 C for 0.1 min	45 C for 2 min	Trap: 10
Length 20 M	to 200 C @ 36 C/min	to 200 C @ 15 C/min	Purge: 11
I.D. 0.18 mm	Hold 1 min	to — C @ — C/min	Desorb: 1 min @ 190 C
Flow Rate 0.4 ml/min		Hold 3 min	Bake: 5 min @ 210 C
	IS # ____ SS # ____		Heated purge: Yes No

Auto num	Sample ID Workorder#	Method	File Name	Amt purged	Std number / Sample prep	Comments	Sample status	
	BFB		BFB152	50ng	direct	injection (9:10)	OK	
1	8260 std		UX95615	250ng	U9891 U9897 U9900	U20813	OK	
2	App IX std		UX95616	250ng	U9892	U20812·A9	OK	
3	check		UX95617	250ng	U9898	E9N69·1AC E9N7A·1AC	OK	
4	Blank		UX95618	5.0g/5ml		1AA 1AA	OK	
5	check		UX95619	250ng		1Ad 1Ad	OK	
6	E960F·1AA		UX95620	5ml			OK	50165
7	E96TA·1AU	4PBd	UX95621	5.8g			OK	
8	E960F1AC		UX95622	5ml	+250ng		OK	
9	E960F1Ad		UX95623	5ml	+250ng		OK	
10	E96TA·1AV	4PBd	UX95624	5.6g	+250ng		OK	
11	E96TA·1AW		UX95625	5.8g	+250ng		OK	
12	E84MK·1AA		UX95626	5ml			OK	300103
H 13	E9AMX·1AA		UX95627	0.5ml/5ml			OK	030106
14	E9AM0·1AA		UX95628	5ml			OK	
15	E9FD5·1AE		UX95629	5ml			OK	40253
16	E9FEH·1AA		UX95630	5ml			OK	
17	E9E5R·1AF	4PBd	UX95631	5.5g			OK	40205
18	E9E6W·1AH		UX95632	5.3g			OK	
19	E9E61·1AK		UX95633	6.0g			OK	50156
20	E96R7·1AE		UX95634	5.5g			OK	
21	E96R9·1AH		UX95635	6.0g			OK	
22	E96Td·1AK		UX95636	5.9g			OK	
23	E96TH·1AE		UX95637	5.0g			OK	
24	E9FJC·1AC		UX95638	6.1g			OK	40261
25	E9FJA·1AC		UX95639	7.5g			OK	
26	E9FJE·1AC		UX95640	7.6g		Apart 54	OK	
27	E9FJF·1AC		UX95641	8.0g			OK	
28	E9FJG·1AC		UX95642	9.0g		Weights	OK	
29	E9FJH·1AC		UX95643	8.4g		on F1	OK	
30	E9FJJ·1AC		UX95644	8.6g			OK	
						10·9·2 SHH		

Analyst: SHH

Level 2 review: [signature]

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UX9 4P 2283564
Batch # A 2282565
MS Run# 2283271

STL-North Canton
GC/MS VOA Run Log

(10/17)

Date: 10-9-2

Column
Type: DB624
Length 20 M
I.D. 0.18 mm
Flow Rate 0.4 ml/min

BFB
100 C for 0.1 min
to 200 C @ 20 C/min
Hold — min
IS # U9886 SS # U9844

Analysis
45 C for 2 min
to 200 C @ 15 C/min
to — C @ — C/min
Hold 3 min

Purge & Trap
Trap: 10
Purge: 11
Desorb: 1 min @ 190 C
Bake: 5 min @ 210 C
Heated purge: Yes/No

Auto num	Sample ID Workorder#	Method	File Name	Amt purged	Std number / Sample prep	Comments	Sample status
	BFB		BFB154	50 ng	direct	injection (19:58)	OK
1	8260std		UX95646	250 ng	U9905 U9906 U9901	U20813	OK
2	AppIXstd		UX95647	250 ng	U9904	U20812-A9	OK
3	MRL check		UX95648	25 ng	U9905 U9906 U9901	A UCH 4P	OK
4	check		UX95649	250 ng	U9909	E9N5N-1AC E9RTX-1AC	OK
5	Blank		UX95650	5.0 g/5 ml		1AA 1AA	OK
6	check		UX95651	250 ng		1Ad 1Ad	OK
7	MDL check		UX95652	25 ng	U9920		OK
8	MDL check		UX95653	10 ng			OK
9	MDL check		UX95654	5 ng			—
10	E9CTP-1AC	A Ed	UX95655	5.0 g		ISL (X3)	OK
11	E9CTO-1AC		UX95656	5.0 g		ISL (X2)	OK
12	E9CTP-1AF		UX95657	5.0 g	+250 ng	ISL (X3)	OK
13	E9CTP-1AG		UX95658	5.0 g	+250 ng	ISL (X3)	OK
14	E9CTO-1AC		UX95659	5.0 g		ISLL (X2)	
15	MRL check		UX95660	25 ng			OK
16	E9FH7-1AC		UX95661	6.0 g		NP	
17	E9FHE-1AC	Ed	UX95662	0.5 g		MLP PCE only	OK
18	E9FH7-1AQ		UX95663	6.0 g	+250 ng	(R)	
19	E9FH7-1AR		UX95664	6.0 g	+250 ng	(R)	
20	E9K5E-1AC	4P	UX95665	3.0 g			OK
21	E9FH2-1AC	Ed	UX95666	6.2 g		ISL (X2)	OK
22	MS check		UX95667	100 ml/5 ml	2283565	prep 10-9-2 1AC 5.0 g +5 ml	OK
23	MS check		UX95668	100 ml/5 ml		E9RTO-1A1	OK
24	MS Blank		UX95669	100 ml/5 ml		1Ad	OK
25	E9K45-1A1	5.3 g	UX95670	20 ml/5 ml			OK
26	E9K45-1AC	5.1 g	UX95671	20 ml/5 ml	ms	-1AG MS Run# 2283272	OK
27	E9K45-1Ad	5.6 g	UX95672	20 ml/5 ml	msd	-1AH	OK
28	E9K49-1AC	4.5 g	UX95673	20 ml/5 ml		TIC	OK
29	E9K5C-1AC	4.3 g	UX95674	20 ml/5 ml		TIC	OK
30	E9K5d-1AC	5.2 g	UX95675	40 ml/5 ml		TIC	OK
						10-11-2 CAM	

Prepared by Wts on F2

80263

Analyst: SMM
Level 2 Review: [illegible]

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UX9
Batch # 2284566
MS Run # 2284302

STL-North Canton
GC/MS VOA Run Log

10/10

Date: 10·10·2

Column	BFB	Analysis	2nd shift	Purge & Trap
Type: DB624	100 C for 0.1 min	45 C for 2 min		Trap: 10
Length 20 M	to 200 C @ 20 C/min	to 200 C @ 15 C/min		Purge: 11
I.D. 0.18 mm	Hold — min	to — C @ — C/min		Desorb: 1 min @ 190 C
Flow Rate 0.4 ml/min		Hold 3 min		Bake: 5 min @ 210 C
	IS # U9886 SS # U9844			Heated purge: Yes No

Auto num	Sample ID Workorder#	Method	File Name	Amt purged	Std number / Sample prep	Comments	Sample status	
	BFB		BFB157	5.0 ng	direct	injection (21:09)	OK	
1	8260 std		UX95706	250 ng	U9905 U9911 U9906	U20813	OK	
2	Acid std		UX95707	250 ng	U9904	U20812-A9	OK	
3	check		UX95708	250 ng	U9909	E9W1R-1A	OK	
4	Blank		UX95709	5.0 g/5 ml		R 1A1	OK	
5	check		UX95710	250 ng		1Ad	OK	
6	check E9RTI-1A1	2HE	UX95711	1 ml/5 ml	2283561		OK	
7	check E9RTI-1A6		UX95712	1 ml/5 ml			OK	
8	Blank E9JLK-1A4		UX95713	1 ml/5 ml			OK	
9	E9A5H-1AK	Ed	UX95714	1 ml/5 ml		Rwk	OK	30149
10	E9A5H-1C6		UX95715	1 ml/5 ml	+250 ng		OK	
11	E9A5H-1CH		UX95716	1 ml/5 ml	+250 ng		OK	30286
12	E9A5L-1AK		UX95717	1 ml/5 ml			OK	
13	E9dJT-1A4		UX95718	1 ml/5 ml			OK	
14	E9FH7-1A		UX95719	6.0 g		squat not needed	OK	
15	E9FH7-1AC	Ed	UX95720	6.0 g			OK	40261
16	E9FH7-1AQ		UX95721	6.0 g	+250 ng		OK	
17	E9FH7-1AR		UX95722	6.0 g	+250 ng		OK	
18	E9FH2-1AC		UX95723	6.2 g		ISL (x2)		
19	E9H1R-1Ad		UX95724	5.0 g		ISLL (x2)	OK	70161
20	E9H10-1Ad		UX95725	5.0 g		ISLL (x2)	OK	
21	E9H11-1Ad		UX95726	5.0 g		ISLL (x2)	OK	
22	E9H12-1Ad		UX95727	5.0 g		ISL (x2)	OK	
23	E9H12-1Ad		UX95728	5.0 g		ISLLL (x2)		
24	E9H11-1Ad		UX95729	5.0 g		ISLL (x2)		
25	E9H10-1Ad		UX95730	5.0 g		ISLL (x2)		
26	E9H1R-1Ad		UX95731	5.0 g		ISLL (x2)		
						10·11·2 SMM		

Repd Sp wts in F2

Analyst: SMM
Level 2 review:

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UX12
Batch # 228715Y

STL-North Canton
GC/MS VOA Run Log

Date: 10-12-02

Column MJ# 228706 7
Type: DB624
Length 20 M
I.D. 0.18 mm
Flow Rate 0.4mL/min

BFB
100C for 0.1 min
to 200 C @ 20 C/min
Hold — min

Analysis
45 C for 2 min
to 200 C @ 15 C/min
to — C @ — C/min
Hold 3 min

10/18

Purge & Trap
Trap: 10
Purge: 11
Desorb: 1 min @ 190 C
Bake: 5 min @ 200 C
Heated purge: Yes (No)

IS # V9924 BS # V9925

Auto num	Sample ID Workorder#	Method	File Name	Amt purged	Std number / Sample prep	Comments	Sample status
	BFB		BFB134	5mg	DIC INJ	(1613)	ok
	F260 STD		UX12 2972	5mg	V9906, 11, 26	T21011	ok
	CHECK	8260C	73	5mg	V9909		ok
	CHECK	↓	74	5mg	↓		ok
	BLANK		75	5mL			ok
	29EVG 1A3		76	5mL			ok
	29EXE 1A2		77	↓			ok
	29E0A 1AL		78	5mL			ok
	29E0A 1AM	MS	79	↓	+5mg		ok
	29E0A1AN	MSD	80	↓	↓		ok
	29E0Q 1AF		81	5mL			ok
	29E02 1A2		82	↓			ok
	29E1C1A2		83				ok
	29E1E1A2		84				ok
	29E1W1AA		85				ok
	29E5C1AM	GM	86				ok
	29E5M1AM	↓	87				ok
	29E5Q1AM		88				ok
	29E6P1AA	↓	89				ok
	29E55 1AA		90	↓			ok
	29EM0 1AA		91	0.25mL/5mL			ok
	29EM1 1AA		92	5mL			ok
	29EM5 1AA		93	2.5mL/5mL			ok
	29EM7 1AA		94	5mL			ok
	29EMA1AA		95	↓			ok
	29EMD1AA		96	↓			ok
	29EMG AA		UX12 2997	2.5mL/5mL			ok
							ok

RA 10-17-02

Analyst: RA
Level 2 review: SMK

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ENVIRONMENTAL STANDARDS INC.

Client Sample ID: NYPA-UNR-SED01

GC/MS Volatiles

Lot-Sample #...: A2J040261-001 Work Order #...: E9FHE1AC Matrix.....: SO
Date Sampled...: 10/01/02 11:50 Date Received..: 10/02/02
Prep Date.....: 10/10/02 Analysis Date..: 10/10/02
Prep Batch #...: 2283564
Dilution Factor: 10 Initial Wgt/Vol: ~~5 g~~ 0.5 Final Wgt/Vol..: 5 mL
% Moisture.....: 19 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Tetrachloroethylene	ND	62	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	85	(59 - 138)
1,2-Dichloroethane-d4	78	(61 - 130)
Toluene-d8	88	(60 - 143)
4-Bromofluorobenzene	92	(47 - 158)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Elevated reporting limits due to TICs.

11/4/02

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ENVIRONMENTAL STANDARDS INC.

Client Sample ID: NYPA-UNR-SED02

GC/MS Volatiles

Lot-Sample #...: A2J040261-002 Work Order #...: E9FH21AC Matrix.....: SO
Date Sampled...: 10/01/02 13:15 Date Received..: 10/02/02
Prep Date.....: 10/10/02 Analysis Date..: 10/10/02
Prep Batch #...: 2283564
Dilution Factor: 0.81 Initial Wgt/Vol: 5 g 6.2 Final Wgt/Vol..: 5 mL
% Moisture.....: 25 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Tetrachloroethylene	ND	5.4	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	88	(59 - 138)
1,2-Dichloroethane-d4	79	(61 - 130)
Toluene-d8	101	(60 - 143)
4-Bromofluorobenzene	82	(47 - 158)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

11/4/02

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ENVIRONMENTAL STANDARDS INC.

Client Sample ID: NYPA-LNR-SED03

GC/MS Volatiles

Lot-Sample #...: A2J040261-003 Work Order #...: E9FH71AC Matrix.....: SO
Date Sampled...: 10/01/02 18:15 Date Received..: 10/03/02
Prep Date.....: 10/11/02 Analysis Date..: 10/11/02
Prep Batch #...: 2284566
Dilution Factor: 0.83 Initial Wgt/Vol: ~~5~~ 4.0 g Final Wgt/Vol..: 5 mL
% Moisture.....: 19 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Tetrachloroethylene	0.62 J	5.1	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	83	(59 - 138)
1,2-Dichloroethane-d4	80	(61 - 130)
Toluene-d8	89	(60 - 143)
4-Bromofluorobenzene	82	(47 - 158)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

11/4/02

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ENVIRONMENTAL STANDARDS INC.

Client Sample ID: NYPA-LNR-SED04

GC/MS Volatiles

Lot-Sample #...: A2J040261-004 Work Order #...: E9FJC1AC Matrix.....: SO
Date Sampled...: 10/01/02 18:50 Date Received..: 10/03/02
Prep Date.....: 10/09/02 Analysis Date..: 10/09/02
Prep Batch #...: 2282582
Dilution Factor: 0.82 Initial Wgt/Vol: 5 g Final Wgt/Vol..: 5 mL
% Moisture.....: 22 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Tetrachloroethylene	ND	5.2	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	87	(59 - 138)
1,2-Dichloroethane-d4	79	(61 - 130)
Toluene-d8	88	(60 - 143)
4-Bromofluorobenzene	89	(47 - 158)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

11/4/02

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ENVIRONMENTAL STANDARDS INC.

Client Sample ID: NYPA-RES-SED05

GC/MS Volatiles

Lot-Sample #...: A2J040261-005 Work Order #...: E9FJD1AC Matrix.....: SO
Date Sampled...: 10/02/02 10:40 Date Received..: 10/03/02
Prep Date.....: 10/09/02 Analysis Date..: 10/09/02
Prep Batch #...: 2282582
Dilution Factor: 0.67 Initial Wgt/Vol: ~~5~~ 7.5 g Final Wgt/Vol..: 5 mL
% Moisture.....: 50 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Tetrachloroethylene	ND	6.7	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	89	(59 - 138)
1,2-Dichloroethane-d4	85	(61 - 130)
Toluene-d8	88	(60 - 143)
4-Bromofluorobenzene	88	(47 - 158)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

11/4/02

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ENVIRONMENTAL STANDARDS INC.

Client Sample ID: NYPA-RES-SED06

GC/MS Volatiles

Lot-Sample #...: A2J040261-006 Work Order #...: E9FJE1AC Matrix.....: SO
Date Sampled...: 10/02/02 11:15 Date Received..: 10/03/02
Prep Date.....: 10/09/02 Analysis Date..: 10/09/02
Prep Batch #...: 2282582
Dilution Factor: 0.66 Initial Wgt/Vol: ~~5~~ 7.6 g Final Wgt/Vol..: 5 mL
% Moisture.....: 51 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Tetrachloroethylene	ND	6.7	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	86	(59 - 138)
1,2-Dichloroethane-d4	85	(61 - 130)
Toluene-d8	88	(60 - 143)
4-Bromofluorobenzene	90	(47 - 158)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

11/4/02

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ENVIRONMENTAL STANDARDS INC.

Client Sample ID: NYPA-RES-SED07

GC/MS Volatiles

Lot-Sample #...: A2J040261-007 Work Order #...: E9FJF1AC Matrix.....: SO
Date Sampled...: 10/02/02 11:35 Date Received..: 10/03/02
Prep Date.....: 10/09/02 Analysis Date..: 10/09/02
Prep Batch #...: 2282582
Dilution Factor: 0.62 Initial Wgt/Vol: ~~5~~ 8.0 g Final Wgt/Vol..: 5 mL
% Moisture.....: 60 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Tetrachloroethylene	ND	7.7	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	90	(59 - 138)
1,2-Dichloroethane-d4	85	(61 - 130)
Toluene-d8	91	(60 - 143)
4-Bromofluorobenzene	90	(47 - 158)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

JR 11/4/02

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ENVIRONMENTAL STANDARDS INC.

Client Sample ID: NYPA-RES-SKD08

GC/MS Volatiles

Lot-Sample #...: A2J040261-008 Work Order #...: E9FJG1AC Matrix.....: SO
Date Sampled...: 10/02/02 12:35 Date Received..: 10/03/02
Prep Date.....: 10/09/02 Analysis Date..: 10/09/02
Prep Batch #...: 2282582
Dilution Factor: 0.56 Initial Wgt/Vol: ~~5~~ 4.0 g Final Wgt/Vol..: 5 mL
% Moisture.....: 79 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Tetrachloroethylene	ND	13	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	86	(59 - 138)
1,2-Dichloroethane-d4	83	(61 - 130)
Toluene-d8	86	(60 - 143)
4-Bromofluorobenzene	82	(47 - 158)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

11/4/02

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ENVIRONMENTAL STANDARDS INC.

Client Sample ID: NYPA-RES-SED09

GC/MS Volatiles

Lot-Sample #...: A2J040261-009 Work Order #...: E9FJH1AC Matrix.....: SO
Date Sampled...: 10/02/02 13:10 Date Received..: 10/03/02
Prep Date.....: 10/09/02 Analysis Date..: 10/09/02
Prep Batch #...: 2282582
Dilution Factor: 0.6 Initial Wgt/Vol: ~~5~~ 8.4 g Final Wgt/Vol..: 5 mL
% Moisture.....: 68 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Tetrachloroethylene	ND	9.4	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	86	(59 - 138)
1,2-Dichloroethane-d4	84	(61 - 130)
Toluene-d8	89	(60 - 143)
4-Bromofluorobenzene	87	(47 - 158)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

11/4/03

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ENVIRONMENTAL STANDARDS INC.

Client Sample ID: NYPA-RES-SED12

GC/MS Volatiles

Lot-Sample #...: A2J040261-010 Work Order #...: E9FJJ1AC Matrix.....: SO
Date Sampled...: 10/02/02 12:40 Date Received..: 10/03/02
Prep Date.....: 10/09/02 Analysis Date..: 10/09/02
Prep Batch #...: 2282582
Dilution Factor: 0.58 Initial Wgt/Vol: 8 g Final Wgt/Vol..: 5 mL
% Moisture.....: 71 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Tetrachloroethylene	ND	9.9	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	89	(59 - 138)
1,2-Dichloroethane-d4	85	(61 - 130)
Toluene-d8	92	(60 - 143)
4-Bromofluorobenzene	88	(47 - 158)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

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SW846 8270C SURROGATE RECOVERY

Lab Name: Severn Trent Laboratories, Inc. Client: ENVIRONMENTAL STANDARDS INC.

Lab Code: STLCAN SDG No: 2J04261

Lot #: A2J040261

Extraction: XXA11QL01

	CLIENT ID.	SRG01	SRG02	SRG03	SRG04	SRG05	SRG06	TOT OUT
1	NYPA-UNR-SED01	0 *	0 *	0 *	0 *	0 *	0 *	06
2	NYPA-UNR-SED02	83	97	97	78	83	102	00
3	NYPA-LNR-SED03	75	91	86	59	74	98	00
4	NYPA-LNR-SED04	79	87	73	66	75	94	00
5	NYPA-RES-SED05	71	94	96	63	75	108	00
6	NYPA-RES-SED06	71	89	89	60	73	101	00
7	NYPA-RES-SED07	68	82	88	61	72	95	00
8	NYPA-RES-SED08	69	79	79	62	71	87	00
9	NYPA-RES-SED09	75	83	90	62	74	90	00
0	NYPA-RES-SED12	75	83	84	67	78	92	00
L	METHOD BLK. E9V521AA	86	97	89	84	84	84	00
2	LCS E9V521AC	85	101	96	81	84	101	00
3	NYPA-LNR-SED03 D	69	79	73	60	67	87	00
4	NYPA-LNR-SED03 S	72	87	88	64	72	96	00

-200K

SURROGATES		QC LIMITS
SRG01	= Nitrobenzene-d5	(52-134)
SRG02	= 2-Fluorobiphenyl	(58-130)
SRG03	= Terphenyl-d14	(56-138)
SRG04	= 2-Fluorophenol	(46-130)
SRG05	= Phenol-d5	(52-133)
SRG06	= 2,4,6-Tribromophenol	(18-144)

\# Column to be used to flag recovery values
* Values outside of required QC Limits
D System monitoring Compound diluted out

FORM II

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SW846 8270C SURROGATE RECOVERY

Lab Name: Severn Trent Laboratories, Inc. Client: ENVIRONMENTAL STANDARDS INC.

Lab Code: STLCAN SDG No: 2J04261

Lot #: A2J040261

Extraction: XXI49QL01

	CLIENT ID.	SRG01	SRG02	SRG03	SRG04	SRG05	SRG06	TOT OUT
01	NYPA-ERB-01	93	89	101	82	81	91	00
02	INTRA-LAB QC	98	93	88	88	89	94	00
03	METHOD BLK. E9KV81AA	95	91	90	80	73	91	00
04	LCS E9KV81AC	108	106	122*	99	97	107	01
05	LAB MS/MSD D	106	105	118	97	95	105	00
06	LAB MS/MSD S	104	101	110	94	88	101	00

QC sample no impact

SURROGATES		QC LIMITS
SRG01	= Nitrobenzene-d5	(42-112)
SRG02	= 2-Fluorobiphenyl	(30-116)
SRG03	= Terphenyl-d14	(22-120)
SRG04	= 2-Fluorophenol	(27-121)
SRG05	= Phenol-d5	(27-123)
SRG06	= 2,4,6-Tribromophenol	(30-129)

\# Column to be used to flag recovery values
* Values outside of required QC Limits
D System monitoring Compound diluted out

FORM II

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SW846 8270C MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Severn Trent Laboratories, Inc. Client: ENVIRONMENTAL STANDARDS INC.

Lab Code: STLCAN SDG No: 2J04261

Matrix Spike ID: NYPA-LNR-SED03

Lot #: A2J040261 WO #: E9FH71A7
BATCH: 2284442

COMPOUND	SPIKE ADDED (ug/kg)	SAMPLE CONCENT. (ug/kg)	MS CONCENT. (ug/kg)	MS % REC	LIMITS REC	QUAL
Acenaphthene	3600	320	3600	93	69- 106	
2-Chlorophenol	3600	ND	2500	69	65- 104	
4-Chloro-3-methylphenol	3600	ND	3200	91	69- 113	
1,4-Dichlorobenzene	3600	ND	2500	70	68- 104	
2,4-Dinitrotoluene	3600	ND	3700	103	74- 115	
4-Nitrophenol	3600	ND	3500	99	59- 111	
N-Nitrosodi-n-propylamine	3600	ND	3200	90	67- 126	
Pentachlorophenol	3600	ND	3900	109	40- 120	
Phenol	3600	ND	2800	78	70- 112	
Pyrene	3600	2100	4400	66*	68- 112	a
1,2,4-Trichlorobenzene	3600	100	2800	77	68- 107	

%R < LOQ Limit
flag RPD "J"

NOTES(S):

Results and reporting limits have been adjusted for dry weight.

a Spiked analyte recovery is outside stated control limits.

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 1 out of 11 outside limits

COMMENTS:

FORM III

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SW846 8270C MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Severn Trent Laboratories, Inc. Client: ENVIRONMENTAL STANDARDS INC.

Lab Code: STLCAN SDG No: 2J04261

Matrix Spike ID: NYPA-LNR-SED03

Lot #: A2J040261 WO #: E9FH71A8
BATCH: 2284442

COMPOUND	SPIKE ADDED (ug/kg)	MSD CONCENT. (ug/kg)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	QUAL
Acenaphthene	3600	3300	82	11	24	69- 106	
2-Chlorophenol	3600	2400	67	3.6	23	65- 104	
4-Chloro-3-methylphenol	3600	3000	84	7.7	27	69- 113	
1,4-Dichlorobenzene	3600	2400	68	2.7	26	68- 104	
2,4-Dinitrotoluene	3600	3400	95	7.8	25	74- 115	
4-Nitrophenol	3600	3300	94	5.0	39	59- 111	
N-Nitrosodi-n-propylamine	3600	3000	83	7.8	20	67- 126	
Pentachlorophenol	3600	3700	102	5.6	52	40- 120	
Phenol	3600	2700	74	4.2	26	70- 112	
Pyrene	3600	3600	43*	20	24	68- 112	a
1,2,4-Trichlorobenzene	3600	2700	72	5.9	27	68- 107	

Zero LQL limit
flag pos "J"

NOTES(S):

Results and reporting limits have been adjusted for dry weight.

a Spiked analyte recovery is outside stated control limits.

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 11 outside limits
Spike Recovery: 1 out of 11 outside limits

COMMENTS:

FORM III

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SW846 8270C CHECK SAMPLE RECOVERY

Lab Name: Severn Trent Laboratories, Inc. Client: ENVIRONMENTAL STANDARDS INC.

Job Code: STLCAN SDG No: 2J04261

Lot #: I2J110000 WO #: E9V521AC
BATCH: 2284442

COMPOUND	SPIKE ADDED (ug/kg)	SAMPLE CONCENT. (ug/kg)	% REC	QC LIMITS REC	QUAL
Acenaphthene	3300	3400	102	69- 106	
2-Chlorophenol	3300	2700	80	65- 104	
4-Chloro-3-methylphenol	3300	3100	94	69- 113	
1,4-Dichlorobenzene	3300	2900	86	68- 104	
2,4-Dinitrotoluene	3300	3500	106	74- 115	
4-Nitrophenol	3300	2900	88	59- 111	
N-Nitrosodi-n-propylamine	3300	3500	104	67- 126	
Pentachlorophenol	3300	3400	102	40- 120	
Phenol	3300	2900	87	70- 112	
Pyrene	3300	3200	95	68- 112	
1,2,4-Trichlorobenzene	3300	3000	91	68- 107	

NOTES(S):

* Values outside of QC limits

Spike Recovery: 0 out of 11 outside limits

COMMENTS:

FORM III

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SW846 8270C CHECK SAMPLE RECOVERY

Lab Name: Severn Trent Laboratories, Inc. Client: ENVIRONMENTAL STANDARDS INC.

Lab Code: STLCAN SDG No: 2J04261

Lot #: I2J080000 WO #: E9KV81AC

BATCH: 2281390

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENT. (ug/L)	% REC	QC LIMITS REC	QUAL
Acenaphthene	100	90	90	69- 108	
2-Chlorophenol	100	81	81	58- 109	
4-Chloro-3-methylphenol	100	91	91	61- 121	
1,4-Dichlorobenzene	100	82	82	65- 107	
2,4-Dinitrotoluene	100	110	108	71- 120	
4-Nitrophenol	100	91	91	49- 117	
N-Nitrosodi-n-propylamine	100	110	112	63- 121	
Pentachlorophenol	100	98	98	56- 126	
Phenol	100	95	95	62- 111	
Pyrene	100	97	97	67- 112	
1,2,4-Trichlorobenzene	100	83	83	68- 107	

NOTES(S):

* Values outside of QC limits

Spike Recovery: 0 out of 11 outside limits

COMMENTS:

FORM III

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BLANK WORKORDER NO.

E9V521AA

SW846 8270C METHOD BLANK SUMMARY

Lab Name: Severn Trent Laboratories, Inc.

Lab Code: STLCAN

SDG Number: 2J04261

Lab File ID: B101714.D

Lot Number: A2J040261

Date Analyzed: 10/17/02

Time Analyzed: 12:09

Matrix: SOLID

Date Extracted: 10/11/02

GC Column: RTX-5MS ID: .25

Extraction Method: 3540C

Instrument ID: B3

Level: (low/med) LOW

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, LCS, LCSD, MS , MSD:

	CLIENT ID.	SAMPLE WORK ORDER #	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	NYPA-UNR-SED01	E9FHE1AM	B101721.D	10/17/02	15:47
02	NYPA-UNR-SED02	E9FH21AM	B101716.D	10/17/02	13:11
03	NYPA-LNR-SED03	E9FH71AM	B101717.D	10/17/02	13:42
04	NYPA-LNR-SED03	E9FH71A7 S	B101718.D	10/17/02	14:14
05	NYPA-LNR-SED03	E9FH71A8 D	B101719.D	10/17/02	14:45
06	NYPA-LNR-SED04	E9FJC1AM	B101720.D	10/17/02	15:16
07	NYPA-RES-SED05	E9FJD1AM	B101723.D	10/17/02	16:50
	NYPA-RES-SED06	E9FJE1AM	B101724.D	10/17/02	17:21
	NYPA-RES-SED07	E9FJF1AM	B101725.D	10/17/02	17:52
10	NYPA-RES-SED08	E9FJG1AM	B101726.D	10/17/02	18:24
11	NYPA-RES-SED09	E9FJH1AM	B101727.D	10/17/02	18:55
12	NYPA-RES-SED12	E9FJJ1AL	B101728.D	10/17/02	19:26
13	CHECK SAMPLE	E9V521AC C	B101715.D	10/17/02	12:40
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

COMMENTS:

FORM IV

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BLANK WORKORDER NO.

E9KV81AA

SW846 8270C METHOD BLANK SUMMARY

Lab Name: Severn Trent Laboratories, Inc.

Lab Code: STLCAN

SDG Number: 2J04261

Lab File ID: B102305.D

Lot Number: A2J040261

Date Analyzed: 10/23/02

Time Analyzed: 09:31

Matrix: WATER

Date Extracted: 10/08/02

GC Column: RTX-5MS ID: .25

Extraction Method: 3520C

Instrument ID: B3

Level: (low/med) LOW

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, LCS, LCSD, MS , MSD:

	CLIENT ID.	SAMPLE WORK ORDER #	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	NYPA-ERB-01	E9FJ51AH	B102310.D	10/23/02	12:06
02	INTRA-LAB QC	E9J621AC	B102307.D	10/23/02	10:33
03	LAB MS/MSD	E9J621AD S	B102308.D	10/23/02	11:04
04	LAB MS/MSD	E9J621AE D	B102309.D	10/23/02	11:35
05	CHECK SAMPLE	E9KV81AC C	B102306.D	10/23/02	10:02
06					
07					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

MENTS:

FORM IV

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FORM 5

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

1st shift

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: I2J020350

Lab File ID: B100801A DFTPP Injection Date: 10/08/02

Instrument ID: MSB3 DFTPP Injection Time: 1303

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	45.3
68	Less than 2.0% of mass 69	0.5 (1.1)1
69	Mass 69 relative abundance	43.2
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	40.0 - 60.0% of mass 198	54.5
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.1
275	10.0 - 30.0% of mass 198	21.7
365	Greater than 1.0% of mass 198	2.30
441	Present, but less than mass 443	13.4
442	Greater than 40.0% of mass 198	81.8
443	17.0 - 23.0% of mass 442	16.1 (19.7)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	HSL_010	ICALIB_1	B100802	10/08/02	1324
02	HSL_020	ICALIB_2	B100803	10/08/02	1355
03	HSL_050	ICALIB_3	B100804	10/08/02	1426
04	HSL_080	ICALIB_4	B100805	10/08/02	1457
05	HSL_100	ICALIB_5	B100806	10/08/02	1529
06	HSL_120	ICALIB_6	B100807	10/08/02	1600
07	HSL_150	ICALIB_7	B100808	10/08/02	1632
08	HSL_050	SSV_1	B100809	10/08/02	1703
09	HSL_050	SSV_2	B100810	10/08/02	1734
10	APPIX_010	ICALIB_1	B100811	10/08/02	1805
11	APPIX_020	ICALIB_2	B100812	10/08/02	1837
12	APPIX_050	ICALIB_3	B100813	10/08/02	1908
13	APPIX_010	ICALIB_4	B100814	10/08/02	1939
14	APPIX_100	ICALIB_5	B100815	10/08/02	2010
15	APPIX_120	ICALIB_6	B100816	10/08/02	2041
16	APPIX_150	ICALIB_7	B100817	10/08/02	2113
17					
18					
19					
20					
21					
22					

FORM V SV

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Report Date : 09-Oct-2002 10:50

STL Austin

INITIAL CALIBRATION DATA

Start Cal Date : 08-OCT-2002 13:24
End Cal Date : 08-OCT-2002 21:13
Quant Method : ISTD
Target Version : 4.04
Integrator : HP RTE
Method file : \\SMTEXPO\INS_DATA\Msb\Msb3.i\b100802.b\B8270.m
Cal Date : 09-Oct-2002 10:50 malloym

Compound	10.0000 Level 1 / 150.0000 Level 7	20.0000 Level 2	50.0000 Level 3	80.0000 Level 4	100.0000 Level 5	120.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
37 a,a-Dimethylphenethylamine	0.79815	0.86737	0.78980	1.01401	1.05432	1.02708					
	1.00509						AVRG		0.93655		12.19286
38 1,2,4-Trichlorobenzene	0.34598	0.33242	0.30469	0.28680	0.27390	0.25431					
	0.24446						AVRG		0.29179		13.08215
39 Benzoic Acid	+++++	2085	32600	55416	74790	109355					
	146102						QUAD	0.41947	13.59927	-8.92320	0.99559
41 Naphthalene	136123	244890	581784	831029	961095	1095553					
	1395155						QUAD	-0.01724	0.81671	0.17646	0.99730
42 4-Chloroaniline	0.46769	0.45103	0.40681	0.37848	0.35891	0.32707					
	0.31862						AVRG		0.38694		14.97023

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STL Austin

INITIAL CALIBRATION DATA

Start Cal Date : 08-OCT-2002 13:24
End Cal Date : 08-OCT-2002 21:13
Quant Method : ISTD
Target Version : 4.04
Integrator : HP RTE
Method file : \\SMTEXPO\INS_DATA\Msb\Msb3.i\b100802.b\B8270.m
Cal Date : 09-Oct-2002 10:50 malloym

Compound	10.0000 Level 1 / 150.0000 Level 7	20.0000 Level 2	50.0000 Level 3	80.0000 Level 4	100.0000 Level 5	120.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
59 Dimethylphthalate	1.38121	1.31318	1.25736	1.22098	1.21047	1.17219					
	1.19962						AVRG		1.25072		5.86241
60 2,6-Dinitrotoluene	0.25967	0.28121	0.30914	0.30658	0.30681	0.28831					
	0.25238						AVRG		0.28630		8.12109
61 1,3-Dinitrobenzene	7315	17398	62399	109343	133120	166441					
	211759						LINR	0.12292	0.24244		0.99910
62 Acenaphthylene	119873	222187	547698	811437	928485	1055939					
	1292638						QUAD	0.07223	0.31585	0.07242	0.99905
63 3-Nitroaniline	0.30709	0.29458	0.31586	0.33390	0.34160	0.35612					
	0.33539						AVRG		0.32636		6.55780

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Report Date : 09-Oct-2002 10:50

STL Austin

INITIAL CALIBRATION DATA

Start Cal Date : 08-OCT-2002 13:24
End Cal Date : 08-OCT-2002 21:13
Quant Method : ISTD
Target Version : 4.04
Integrator : HP RTE
Method file : \\SMTEXPO\INS_DATA\Msb\Msb3.i\b100802.b\B8270.m
Cal Date : 09-Oct-2002 10:50 malloym

Compound	10.0000 Level 1 / 150.0000 Level 7	20.0000 Level 2	50.0000 Level 3	80.0000 Level 4	100.0000 Level 5	120.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
65 Acenaphthene	71825 / 808120	130804	321081	478558	554656	631672	QUAD	-0.02508	0.77193	0.11674	0.99805
66 2,4-Dinitrophenol	+++++ / 141249	5018	27420	56912	76199	101523	LINR	0.50273	0.17281		0.99347
67 Dibenzofuran	1.76211 / 1.23977	1.69485	1.54014	1.43329	1.38677	1.28417	AVRG		1.47730		13.43190
68 4-Nitrophenol	0.12363 / 0.16498	0.14126	0.16175	0.16903	0.17228	0.16552	AVRG		0.15692		11.33544
69 Pentachlorobenzene	0.41122 / 0.28834	0.39773	0.34939	0.32359	0.31270	0.29296	AVRG		0.33942		14.42648

cont 10/11/0

RRF = 1.1569

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STL Austin

INITIAL CALIBRATION DATA

Start Cal Date : 08-OCT-2002 13:24
End Cal Date : 08-OCT-2002 21:13
Quant Method : ISTD
Target Version : 4.04
Integrator : HP RTE
Method file : \\SMTEXPO\INS_DATA\Msb\Msb3.i\b100802.b\B8270.m
Cal Date : 09-Oct-2002 10:50 malloym

Compound	10.0000 Level 1 / 150.0000 Level 7	20.0000 Level 2	50.0000 Level 3	80.0000 Level 4	100.0000 Level 5	120.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
70 2,4-Dinitrotoluene	0.27392	0.32931	0.37745	0.37855	0.38334	0.37180					
	0.35399						AVRG		0.35262		11.18856
72 2,3,4,6-tetrachlorophenol	0.22875	0.24589	0.26691	0.26254	0.26263	0.24141					
	0.23895						AVRG		0.24958		5.81904
74 Diethylphthalate	1.34746	1.32270	1.30140	1.24474	1.23687	1.17056					
	1.12797						AVRG		1.25024		6.43439
75 4-Chlorophenyl-phenylether	0.60664	0.57653	0.53677	0.49230	0.47501	0.44014					
	0.42377						AVRG		0.50731		13.53393
76 Fluorene	77144	139820	353978	528838	617225	705106					
	807481						QUAD	0.17279	0.29619	0.22686	0.99398

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STL Austin

INITIAL CALIBRATION DATA

Start Cal Date : 08-OCT-2002 13:24
End Cal Date : 08-OCT-2002 21:13
Quant Method : ISTD
Target Version : 4.04
Integrator : HP RTE
Method file : \\SMTEXPO\INS_DATA\Msb\Msb3.i\b100802.b\B8270.m
Cal Date : 09-Oct-2002 10:50 malloym

Compound	10.0000 Level 1 / 150.0000 Level 7	20.0000 Level 2	50.0000 Level 3	80.0000 Level 4	100.0000 Level 5	120.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
94 Phenanthrene	104564	193989	486197	712854	823557	926800					
	1177538						QUAD	0.00817	0.63889	0.17012	0.99818
95 Anthracene	106794	198348	496870	726494	840783	947951					
	1158633						QUAD	0.08592	0.44809	0.22704	0.99918
96 Dinoseb	4507	12601	54102	96394	118578	143783					
	179359						WLINR	0.12814	0.14060		0.99505
97 Carbazole	105290	200132	513936	746531	856525	1003549					
	1218999						QUAD	0.05761	0.52462	0.17778	0.99990
98 Di-n-Butylphthalate	131704	242912	589997	859980	979303	1123416					
	1347625						QUAD	0.09421	0.33470	0.17960	0.99967

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INITIAL CALIBRATION DATA

Start Cal Date : 08-OCT-2002 13:24
End Cal Date : 08-OCT-2002 21:13
Quant Method : ISTD
Target Version : 4.04
Integrator : HP RTE
Method file : \\SMTEXPO\INS_DATA\Msb\Msb3.i\b100802.b\B8270.m
Cal Date : 09-Oct-2002 10:50 malloym

Compound	10.0000 Level 1 / 150.0000 Level 7	20.0000 Level 2	50.0000 Level 3	80.0000 Level 4	100.0000 Level 5	120.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2	
99 4-Nitroquinoline-1-oxide	1054	4176	25262	50049	61022	74300						
	100775						LINR	0.25972	0.07869		0.99824	
100 Methapyrilene	0.31782	0.31770	0.28029	0.25635	0.24301	0.23400						
	0.22251						AVRG		0.26738		14.55385	
101 Isodrin	11804	21922	55508	82357	94559	110740						
	133353						QUAD	0.06554	4.66496	14.99614	0.99973	
102 Fluoranthene	108140	197241	477017	691503	800133	928437						
	1142217						QUAD	0.00038	0.63774	0.18476	0.99986	
103 Benzidine	+++++	16284	53858	99936	119618	155117						
	227741						QUAD	0.11746	5.53489	-1.63830	0.99814	<-

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Report Date : 09-Oct-2002 10:50

STL Austin

INITIAL CALIBRATION DATA

Start Cal Date : 08-OCT-2002 13:24
End Cal Date : 08-OCT-2002 21:13
Quant Method : ISTD
Target Version : 4.04
Integrator : HP RTE
Method file : \\SMTEXPO\INS_DATA\Msb\Msb3.i\b100802.b\B8270.m
Cal Date : 09-Oct-2002 10:50 malloym

Compound	10.0000 Level 1 / 150.0000 Level 7	20.0000 Level 2	50.0000 Level 3	80.0000 Level 4	100.0000 Level 5	120.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
104 Pyrene	1.79840	1.69656	1.55911	1.43967	1.34301	1.26533					
	1.21588						AVRG		1.47399		14.92851
106 4-Dimethylaminoazobenzene	0.56665	0.54719	0.52366	0.48771	0.46176	0.43809					
	0.42176						AVRG		0.49240		11.24436
107 Chlorobenzilate	0.40357	0.40147	0.39262	0.37224	0.35587	0.33794					
	0.33048						AVRG		0.37060		8.11078
109 3,3'-Dimethylbenzidine	0.40994	0.38650	0.33629	0.33603	0.35008	0.35387					
	0.35831						AVRG		0.36157		7.53575
110 Butylbenzylphthalate	56119	103290	246826	357496	401017	461469					
	533653						QUAD	0.15790	0.45801	0.58004	0.99854

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INITIAL CALIBRATION DATA

Start Cal Date : 08-OCT-2002 13:24
End Cal Date : 08-OCT-2002 21:13
Quant Method : ISTD
Target Version : 4.04
Integrator : HP RTE
Method file : \\SMTEXPO\INS_DATA\Msb\Msb3.i\b100802.b\B8270.m
Cal Date : 09-Oct-2002 10:50 malloym

Compound	10.0000 Level 1 / 150.0000 Level 7	20.0000 Level 2	50.0000 Level 3	80.0000 Level 4	100.0000 Level 5	120.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
111 2-Acetylaminofluorene	0.62801	0.65312	0.66658	0.65595	0.62871	0.61972					
	0.60426						AVRG		0.63662		3.51956
112 3,3'-Dichlorobenzidine	0.43223	0.38704	0.39190	0.39813	0.38940	0.37969					
	0.35310						AVRG		0.39021		6.03680
113 Benzo(a)anthracene	92915	164956	364514	525215	598319	692179					
	847377						QUAD	-0.02792	0.66699	0.14062	0.99959
115 bis(2-Ethylhexyl)phthalate	75254	133849	297782	406539	449905	499044					
	572494						QUAD	0.26542	-0.08538	0.70941	0.99763
116 Chrysene	1.35872	1.29952	1.17573	1.10367	1.04095	0.97712					
	0.93379						AVRG		1.12707		14.19473

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INITIAL CALIBRATION DATA

Start Cal Date : 08-OCT-2002 13:24
End Cal Date : 08-OCT-2002 21:13
Quant Method : ISTD
Target Version : 4.04
Integrator : HP RTE
Method file : \\SMTEXPO\INS_DATA\Msb\Msb3.i\b100802.b\B8270.m
Cal Date : 09-Oct-2002 10:50 malloym

Compound	10.0000 Level 1 / 150.0000 Level 7	20.0000 Level 2	50.0000 Level 3	80.0000 Level 4	100.0000 Level 5	120.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
117 Di-n-octylphthalate	2.83408	2.75292	2.56940	2.33003	2.23700	2.05058					
	1.92239						AVRG		2.38520		14.54169
118 7,12-Dimethylbenz(a)anthracen	0.73501	0.71890	0.64493	0.58939	0.57709	0.54167					
	0.53451						AVRG		0.62021		13.14031
119 Benzo(b)fluoranthene	1.88497	1.74359	1.55802	1.42074	1.46846	1.44655					
	1.49025						AVRG		1.57323		11.11906
120 Benzo(k)fluoranthene	87498	159691	378888	516800	550111	685045					
	856539						QUAD	-0.08345	0.55925	0.06933	0.99418
121 Benzo(a)pyrene	1.63789	1.58522	1.47561	1.40175	1.36522	1.29898					
	1.24428						AVRG		1.42985		10.13681

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INITIAL CALIBRATION DATA

Start Cal Date : 08-OCT-2002 13:24
End Cal Date : 08-OCT-2002 21:13
Quant Method : ISTD
Target Version : 4.04
Integrator : HP RTE
Method file : \\SMTEXPO\INS_DATA\Msb\Msb3.i\b100802.b\B8270.m
Cal Date : 09-Oct-2002 10:50 malloym

Compound	10.0000 Level 1 / 150.0000 Level 7	20.0000 Level 2	50.0000 Level 3	80.0000 Level 4	100.0000 Level 5	120.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
123 3-MethylCholanthrene	0.82733	0.79621	0.75043	0.72242	0.70610	0.67191					
	0.64588						AVRG		0.73147		8.88442
124 Indeno(1,2,3-cd)pyrene	1.62209	1.55778	1.42308	1.33751	1.31289	1.25761					
	1.18175						AVRG		1.38468		11.51382
125 Dibenz(a,h)anthracene	1.36975	1.31203	1.16958	1.08753	1.06777	1.02369					
	0.97404						AVRG		1.14349		12.98157
126 Benzo(g,h,i)perylene	1.34137	1.35995	1.27088	1.19456	1.15947	1.08995					
	0.99635						AVRG		1.20179		11.05082
$ 6 2-Fluorophenol	1.37692	1.33669	1.30565	1.25947	1.25368	1.16781					
	1.11419						AVRG		1.25920		7.35267

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Report Date : 09-Oct-2002 10:50

STL Austin

INITIAL CALIBRATION DATA

Start Cal Date : 08-OCT-2002 13:24
End Cal Date : 08-OCT-2002 21:13
Quant Method : ISTD
Target Version : 4.04
Integrator : HP RTE
Method file : \\SMTEXPO\INS_DATA\Msb\Msb3.i\b100802.b\B8270.m
Cal Date : 09-Oct-2002 10:50 malloym

Compound	10.0000 Level 1 / 150.0000 Level 7	20.0000 Level 2	50.0000 Level 3	80.0000 Level 4	100.0000 Level 5	120.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
$ 12 Phenol-d5	1.66795	1.62137	1.49518	1.40086	1.37251	1.27733					
	1.28161						AVRG		1.44526		10.76914
$ 82 2,4,6-Tribromophenol	0.09218	0.09532	0.09050	0.08344	0.08122	0.07583					
	0.07446						AVRG		0.08471		9.63396
$ 29 Nitrobenzene-d5	0.35194	0.36974	0.38052	0.37899	0.37434	0.35693					
	0.35349						AVRG		0.36656		3.33608
$ 54 2-Fluorobiphenyl	80264	148213	362880	544917	625596	706798					
	888293						QUAD	0.02645	0.57525	0.12674	0.99816
$ 105 Terphenyl-d14	73822	135954	321341	469470	539742	625462					
	772281						QUAD	0.00207	0.77458	0.15219	0.99953

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INITIAL CALIBRATION DATA

Start Cal Date : 08-OCT-2002 13:24
End Cal Date : 08-OCT-2002 21:13
Quant Method : ISTD
Target Version : 4.04
Integrator : HP RTE
Method file : \\SMTEXPO\INS_DATA\Msb\Msb3.i\b100802.b\B8270.m
Cal Date : 09-Oct-2002 10:50 malloym

Curve	Formula	Units
Averaged	Amt = Rsp/m1	Response
Linear	Amt = b + Rsp/m1	Response
Wt Linear	Amt = b + Rsp/m1	Response
Quad	Amt = b + m1*Rsp + m2*Rsp^2	Response

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FORM 5

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: U2J070191

Lab File ID: B101001 DFTPP Injection Date: 10/10/02

Instrument ID: MSB3 DFTPP Injection Time: 1002

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	40.4
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	39.2
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	40.0 - 60.0% of mass 198	50.1
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.5
275	10.0 - 30.0% of mass 198	22.1
365	Greater than 1.0% of mass 198	2.35
441	Present, but less than mass 443	13.6
442	Greater than 40.0% of mass 198	86.1
443	17.0 - 23.0% of mass 442	17.1 (19.9)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	HSL_050	CCALIB_3	B101002	10/10/02	1022
02	SKNR_010	ICALIB_1	B101004	10/10/02	1125
03	SKNR_020	ICALIB_2	B101005	10/10/02	1155
04	SKNR_050	ICALIB_3	B101006	10/10/02	1227
05	SKNR_100	ICALIB_5	B101007	10/10/02	1257
06	SKNR_120	ICALIB_6	B101008	10/10/02	1329
07	Z4-4	E9DW31AC	B101009	10/10/02	1400
08	Z4-3	E9DW61AC	B101010	10/10/02	1431
09	MW-06	E9EQ52AC	B101011	10/10/02	1502
10	MW-02	E88RV2AD	B101012	10/10/02	1533
11	MW-01-DUP	E9ERL1AC	B101013	10/10/02	1604
12	MW-07	E9ERP1AC	B101014	10/10/02	1635
13	MW-10	E9EVP1AE	B101015	10/10/02	1706
14	SRZ-3	E9EV21AE	B101016	10/10/02	1737
15	PZ-1	E9EV31AE	B101017	10/10/02	1808
16	SRZ-1	E9E3C1AE	B101018	10/10/02	1839
17	I2J020000-42	E89DG1AAB	B101019	10/10/02	1910
18	I2J020000-42	E89DG1ACC	B101020	10/10/02	1941
19	PNC-SP-1	E86RC1AD	B101021	10/10/02	2012
20	PNC-SP-2A	E86RH1AD	B101022	10/10/02	2043
21	PNC-SP-3	E86RJ1AD	B101023	10/10/02	2114
22	PNC-SP-6W	E86RK1AD	B101024	10/10/02	2145

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INITIAL CALIBRATION DATA

Start Cal Date : 08-OCT-2002 13:24
End Cal Date : 10-OCT-2002 13:29
Quant Method : ISTD
Origin : Disabled
Target Version : 4.04
Integrator : HP RTE
Method file : \\SMTEXPO\INS_DATA\Msb\Msb3.i\B101002.B\B8270.m
Cal Date : 11-Oct-2002 15:40 malloym
Curve Type : Average

Calibration File Names:
Level 1: \\SMTEXPO\INS_DATA\Msb\Msb3.i\B101002.B\B101004.D
Level 2: \\SMTEXPO\INS_DATA\Msb\Msb3.i\B101002.B\B101005.D
Level 3: \\SMTEXPO\INS_DATA\Msb\Msb3.i\B101002.B\B101006.D
Level 4: \\SMTEXPO\INS_DATA\Msb\Msb3.i\b100802.b\B100814.D
Level 5: \\SMTEXPO\INS_DATA\Msb\Msb3.i\B101002.B\B101007.D
Level 6: \\SMTEXPO\INS_DATA\Msb\Msb3.i\B101002.B\B101008.D
Level 7: \\SMTEXPO\INS_DATA\Msb\Msb3.i\b100802.b\B100817.D

Compound	10.000 Level 1 / 150.000 Level 7	20.000 Level 2	50.000 Level 3	80.000 Level 4	100.000 Level 5	120.000 Level 6	RRF	% RSD	
134 Indene	2.15931	2.09275	1.99791	++++++	1.85785	1.80672			
	++++++						1.98291	7.568	<-
140 Quinoline	0.59748	0.59630	0.58189	++++++	0.53370	0.51067			
	++++++						0.56401	7.006	<-
164 6-Methylchrysene	0.95633	0.92543	0.83699	++++++	0.77268	0.75370			
	++++++						0.84903	10.602	<-
168 Dibenz(a,h)acridine	1.15665	1.14987	1.13653	++++++	1.08216	1.09336			
	++++++						1.12372	3.012	<-
211 Octachlorostyrene	0.08425	0.08068	0.07215	++++++	0.06349	0.06052			
	++++++						0.07222	14.351	<-

Does not appear to be a dropped point, This level just not analyzed. See Form X. -jal

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FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: I2J010190

Lab File ID: B101711 DFTPP Injection Date: 10/17/02

Instrument ID: MSB3 DFTPP Injection Time: 1046

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	38.2
68	Less than 2.0% of mass 69	0.4 (1.1)1
69	Mass 69 relative abundance	38.9
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	40.0 - 60.0% of mass 198	50.9
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.9
275	10.0 - 30.0% of mass 198	22.6
365	Greater than 1.0% of mass 198	2.30
441	Present, but less than mass 443	14.7
442	Greater than 40.0% of mass 198	91.8
443	17.0 - 23.0% of mass 442	18.2 (19.9)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	HSL_050	CCALIB_3	B101712	10/17/02	1107
02	I2J110000-44	E9V521AAB	B101714	10/17/02	1209
03	I2J110000-44	E9V521ACC	B101715	10/17/02	1240
04	NYPA-UNR-SED	E9FH21AM	B101716	10/17/02	1311
05	NYPA-LNR-SED	E9FH71AM	B101717	10/17/02	1342
06	A2J040261-03	E9FH71A7S	B101718	10/17/02	1414
07	A2J040261-03	E9FH71A8D	B101719	10/17/02	1445
08	NYPA-LNR-SED	E9FJC1AM	B101720	10/17/02	1516
09	NYPA-UNR-SED	E9FHE1AM	B101721	10/17/02	1547
10	A2J040261-01	E9FHE2AM	B101722	10/17/02	1618
11	NYPA-RES-SED	E9FJD1AM	B101723	10/17/02	1650
12	NYPA-RES-SED	E9FJE1AM	B101724	10/17/02	1721
13	NYPA-RES-SED	E9FJF1AM	B101725	10/17/02	1752
14	NYPA-RES-SED	E9FJG1AM	B101726	10/17/02	1824
15	NYPA-RES-SED	E9FJH1AM	B101727	10/17/02	1855
16	NYPA-RES-SED	E9FJJ1AL	B101728	10/17/02	1926
17	PNC-SP-2A	E86RH2AD	B101729	10/17/02	1957
18	I2J010190-08	E86RT1AJS	B101730	10/17/02	2028
19					
20	OCT_05D		B101713	10/17/02	11:38
21					
22					

FORM V SV

11/6/02

STL North Canton

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: MSB3.i
Lab File ID: B101712.D
Analysis Type:
Lab Sample ID: Ccalib_3
Method: \\AUSSVR02\INS_DATA\Msb\Msb3.i\B101702.b\B8270.m

Injection Date: 17-OCT-2002 11:07
Init. Cal. Date(s): 08-OCT-2002 10-OCT-2002
Init. Cal. Times: 13:24 13:29
Quant Type: ISTD

COMPOUND	RRF	RF50	MIN RRF	%D	MAX %D
$ 6 2-Fluorophenol	1.25920	1.24559	0.010	-1.1	50.0
$ 12 Phenol-d5	1.44526	1.43393	0.010	-0.8	50.0
$ 82 2,4,6-Tribromophenol	0.08471	0.08825	0.010	4.2	50.0
$ 29 Nitrobenzene-d5	0.36656	0.35812	0.010	-2.3	50.0
$ 54 2-Fluorobiphenyl	50.00000	51.14911	0.010	-2.3	50.0
$ 105 Terphenyl-d14	50.00000	51.57820	0.010	-3.2	50.0
1 Pyridine	1.65165	1.53024	0.010	-7.4	50.0
2 N-Nitrosodimethylamine	0.95902	0.87835	0.010	-8.4	50.0
3 2-Picoline	1.77796	1.70663	0.010	-4.0	50.0
4 N-Nitrosomethylethylamine	0.77756	0.73818	0.010	-5.1	50.0
5 Methyl methanesulfonate	0.74967	0.73642	0.010	-1.8	50.0
7 N-Nitrosodiethylamine	0.74351	0.72898	0.010	-2.0	50.0
8 Ethyl methanesulfonate	1.04414	0.98292	0.010	-5.9	50.0
9 Pentachloroethane	0.43675	0.45340	0.010	3.8	50.0
10 Aniline	1.93844	1.69831	0.010	-12.4	50.0
11 bis(2-Chloroethyl)ether	1.48938	1.64636	0.010	10.5	50.0
13 Phenol	1.54713	1.53594	0.010	-0.7	20.0
14 2-Chlorophenol	1.39086	1.35768	0.010	-2.4	50.0
15 1,3-Dichlorobenzene	1.50131	1.57670	0.010	5.0	50.0
16 1,4-Dichlorobenzene	1.47279	1.57786	0.010	7.1	20.0
18 1,2-Dichlorobenzene	1.40368	1.50417	0.010	7.2	50.0
19 Benzyl Alcohol	0.89951	0.86024	0.010	-4.4	50.0
20 bis(2-Chloroisopropyl)ether	1.99656	1.86859	0.010	-6.4	50.0
21 2-Methylphenol	1.21865	1.21769	0.010	-0.1	50.0
22 Acetophenone	50.00000	50.62301	0.010	-1.2	50.0
23 N-Nitroso-di-n-propylamine	0.79156	0.82629	0.050	4.4	50.0
24 N-Nitrosopyrrolidine	0.58846	0.61466	0.010	4.5	50.0
25 3-(and/or 4-)Methylphenol	100	93.85089	0.010	6.1	50.0
26 N-Nitrosomorpholine	0.25918	0.27684	0.010	6.8	50.0
27 o-Toluidine	1.85288	1.92272	0.010	3.8	50.0
28 Hexachloroethane	0.52044	0.52995	0.010	1.8	50.0
30 Nitrobenzene	0.36843	0.36148	0.010	-1.9	50.0
31 N-Nitrosopiperidine	0.19211	0.19186	0.010	-0.1	50.0
32 Isophorone	0.67501	0.67684	0.010	0.3	50.0
33 2-Nitrophenol	0.18896	0.16258	0.010	-14.0	20.0

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: MSB3.i Injection Date: 17-OCT-2002 11:07
Lab File ID: B101712.D Init. Cal. Date(s): 08-OCT-2002 10-OCT-2002
Analysis Type: Init. Cal. Times: 13:24 13:29
Lab Sample ID: Ccalib_3 Quant Type: ISTD
Method: \\AUSSVR02\INS_DATA\Msb\Msb3.i\B101702.b\B8270.m

COMPOUND	RRF	RF50	MIN RRF	%D	MAX %D
34 2,4-Dimethyphenol	0.32443	0.34576	0.010	6.6	50.0
35 Bis(2-chloroethoxy)methane	0.41439	0.41918	0.010	1.2	50.0
36 2,4-Dichlorophenol	0.28335	0.28752	0.010	1.5	20.0
37 a,a-Dimethylphenethylamine	0.93655	0.64752	0.010	-30.9	50.0
38 1,2,4-Trichlorobenzene	0.29179	0.31724	0.010	8.7	50.0
39 Benzoic Acid	50.00000	27.71175	0.010	44.6	50.0
41 Naphthalene	50.00000	52.37620	0.010	-4.8	50.0
42 4-Chloroaniline	0.38694	0.31351	0.010	-19.0	50.0
43 2,6-Dichlorophenol	0.25801	0.28000	0.010	8.5	50.0
44 Hexachloropropene	0.14882	0.15269	0.010	2.6	50.0
45 Hexachlorobutadiene	0.13568	0.15600	0.010	15.0	20.0
46 N-Nitroso-di-n-butylamine	0.21837	0.22222	0.010	1.8	50.0
47 4-Chloro-3-Methylphenol	0.27507	0.27664	0.010	0.6	20.0
48 Safrole	0.25384	0.27378	0.010	7.9	50.0
49 2-Methylnaphthalene	0.63631	0.68723	0.010	8.0	50.0
50 Hexachlorocyclopentadiene	0.18597	0.10225	0.050	-45.0	50.0
51 1,2,4,5-Tetrachlorobenzene	50.00000	54.92798	0.010	-9.9	50.0
52 2,4,6-Trichlorophenol	0.34589	0.33749	0.010	-2.4	20.0
53 2,4,5-Trichlorphenol	0.35409	0.34707	0.010	-2.0	50.0
55 2-Chloronaphthalene	50.00000	50.88320	0.010	-1.8	50.0
56 Isosafrole	0.49126	0.51178	0.010	4.2	50.0
57 2-Nitroaniline	0.35058	0.30208	0.010	-13.8	50.0
58 1,4-Naphthoquinone	0.49261	0.44391	0.010	-9.9	50.0
59 Dimethylphthalate	1.25072	1.23436	0.010	-1.3	50.0
60 2,6-Dinitrotoluene	0.28630	0.29194	0.010	2.0	50.0
61 1,3-Dinitrobenzene	50.00000	45.09954	0.010	9.8	50.0
62 Acenaphthylene	50.00000	48.92549	0.010	2.1	50.0
63 3-Nitroaniline	0.32636	0.25051	0.010	-23.2	50.0
65 Acenaphthene	50.00000	51.29078	0.010	-2.6	20.0
66 2,4-Dinitrophenol	50.00000	35.74155	0.050	28.5	50.0
67 Dibenzofuran	1.47730	1.55642	0.010	5.4	50.0
68 4-Nitrophenol	0.15692	0.12035	0.050	-23.3	50.0
69 Pentachlorobenzene	0.33942	0.38143	0.010	12.4	50.0
70 2,4-Dinitrotoluene	0.35262	0.36854	0.010	4.5	50.0
72 2,3,4,6-tetrachlorophenol	0.24958	0.24010	0.010	-3.8	50.0

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: MSB3.i
Lab File ID: B101712.D
Analysis Type:
Lab Sample ID: Ccalib 3
Method: \\AUSSVR02\INS_DATA\Msb\Msb3.i\B101702.b\B8270.m

Injection Date: 17-OCT-2002 11:07
Init. Cal. Date(s): 08-OCT-2002 10-OCT-2002
Init. Cal. Times: 13:24 13:29
Quant Type: ISTD

COMPOUND	RRF	RF50	MIN RRF	%D	MAX %D	
74 Diethylphthalate	1.25024	1.25091	0.010	0.1	50.0	
75 4-Chlorophenyl-phenylether	0.50731	0.54701	0.010	7.8	50.0	
76 Fluorene	50.00000	46.83489	0.010	6.3	50.0	
77 5-Nitro-o-toluidine	0.38827	0.34731	0.010	-10.5	50.0	
78 4,6-Dinitro-2-methylphenol	50.00000	39.43059	0.010	21.1	50.0	
79 4-Nitroaniline	0.32486	0.28375	0.010	-12.7	50.0	
80 N-Nitrosodiphenylamine/DPA	100	106	0.010	-5.7	20.0	
81 Azobenzene	0.83596	0.79839	0.010	-4.5	50.0	
83 Diallate #1	0.12932	0.12128	0.010	-6.2	50.0	
84 4-Bromophenyl-phenylether	50.00000	51.03857	0.010	-2.1	50.0	
85 Phenacetin	50.00000	36.91321	0.010	26.2	50.0	
86 Dialate #2	0.28577	0.27923	0.010	-2.3	50.0	
87 Hexachlorobenzene	0.19126	0.21416	0.010	12.0	50.0	
88 1,3,5-Trinitrobenzene	50.00000	48.60298	0.010	2.8	50.0	
89 4-Aminobiphenyl	0.49518	0.27228	0.010	-45.0	50.0	
90 Pentachlorophenol	0.10381	0.08996	0.010	-13.3	20.0	
91 Pronamide	50.00000	51.77760	0.010	-3.6	50.0	
92 Pentachloronitrobenzene	0.07289	0.08136	0.010	11.6	50.0	
94 Phenanthrene	50.00000	52.07302	0.010	-4.1	50.0	
95 Anthracene	50.00000	50.92231	0.010	-1.8	50.0	
96 Dinoseb	50.00000	45.51369	0.010	9.0	50.0	
97 Carbazole	50.00000	49.01686	0.010	2.0	50.0	
98 Di-n-Butylphthalate	50.00000	47.98783	0.010	4.0	50.0	
99 4-Nitroquinoline-1-oxide	50.00000	26.93218	0.010	46.1	50.0	
100 Methapyrilene	0.26738	0.26189	0.010	-2.1	50.0	
101 Isodrin	50.00000	47.24161	0.010	5.5	50.0	
102 Fluoranthene	50.00000	53.15885	0.010	-6.3	20.0	
103 Benzidine	50.00000	15.50968	0.010	69.0	50.0	<-
104 Pyrene	1.47399	1.56764	0.010	6.4	50.0	
106 4-Dimethylaminoazobenzene	0.49240	0.48196	0.010	-2.1	50.0	
107 Chlorobenzilate	0.37060	0.33269	0.010	-10.2	50.0	
109 3,3'-Dimethylbenzidine	0.36157	0.20563	0.010	-43.1	50.0	
110 Butylbenzylphthalate	50.00000	41.30469	0.010	17.4	50.0	
111 2-Acetylaminofluorene	0.63662	0.52070	0.010	-18.2	50.0	
112 3,3'-Dichlorobenzidine	0.39021	0.36927	0.010	-5.4	50.0	

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: MSB3.i
Lab File ID: B101712.D
Analysis Type:
Lab Sample ID: Ccalib_3
Method: \\AUSSVR02\INS_DATA\Msb\Msb3.i\B101702.b\B8270.m

Injection Date: 17-OCT-2002 11:07
Init. Cal. Date(s): 08-OCT-2002 10-OCT-2002
Init. Cal. Times: 13:24 13:29
Quant Type: ISTD

COMPOUND	RRF	RF50	MIN RRF	%D	MAX %D
113 Benzo(a)anthracene	50.00000	50.66848	0.010	-1.3	50.0
115 bis(2-Ethylhexyl)phthalate	50.00000	39.65733	0.010	20.7	50.0
116 Chrysene	1.12707	1.17654	0.010	4.4	50.0
117 Di-n-octylphthalate	2.38520	2.28947	0.010	-4.0	20.0
118 7,12-Dimethylbenz(a)anthrac	0.62021	0.65829	0.010	6.1	50.0
119 Benzo(b)fluoranthene	1.57323	1.63260	0.010	3.8	50.0
120 Benzo(k)fluoranthene	50.00000	54.35646	0.010	-8.7	50.0
121 Benzo(a)pyrene	1.42985	1.49987	0.010	4.9	20.0
123 3-MethylCholanthrene	0.73147	0.70674	0.010	-3.4	50.0
124 Indeno(1,2,3-cd)pyrene	1.38468	1.42636	0.010	3.0	50.0
125 Dibenz(a,h)anthracene	1.14349	1.17103	0.010	2.4	50.0
126 Benzo(g,h,i)perylene	1.20179	1.26132	0.010	5.0	50.0
211 ~~Octachlorostyrene~~	~~0.07222~~	++++	0.010	++++	50.0 <-

See B101713.D

Not in std mix

MW 10/24/02

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: MSB3.i
Lab File ID: B101713.D
Analysis Type:
Lab Sample ID: Ccalib_3
Method: \\AUSSVR02\INS_DATA\Msb\Msb3.i\B101702.b\B8270.m

Injection Date: 17-OCT-2002 11:38
Init. Cal. Date(s): 08-OCT-2002 10-OCT-2002
Init. Cal. Times: 13:24 13:29
Quant Type: ISTD

COMPOUND	RRF	RF50	MIN RRF	%D	MAX %D
211 Octachlorostyrene	0.07222	0.08482	0.010	17.4	50.0

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FORM 8
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: I2J010190

Lab File ID (Standard): B101712 Date Analyzed: 10/17/02

Instrument ID: MSB3 Time Analyzed: 1107

		IS1 (DCB) AREA #	RT #	IS2 (NPT) AREA #	RT #	IS3 (ANT) AREA #	RT #
	12 HOUR STD	120264	7.53	409853	9.47	208454	12.28
	UPPER LIMIT	240528	8.03	819706	9.97	416908	12.78
	LOWER LIMIT	60132	7.03	204927	8.97	104227	11.78
	CLIENT SAMPLE NO.						
01	I2J110000-44	114214	7.53	371821	9.47	182812	12.27
02	I2J110000-44	110249	7.53	377566	9.47	189553	12.28
03	NYPA-UNR-SED	110826	7.53	367898	9.47	187597	12.27
04	NYPA-LNR-SED	109997	7.53	361247	9.47	186486	12.27
05	A2J040261-03	109142	7.53	376396	9.47	192031	12.27
06	A2J040261-03	110957	7.53	380485	9.47	191644	12.28
07	NYPA-LNR-SED	114903	7.53	376004	9.47	185178	12.27
08	NYPA-UNR-SED	115957	7.53	380618	9.46	184711	12.27
09	A2J040261-01	109039	7.53	355505	9.46	175508	12.27
10	NYPA-RES-SED	106759	7.53	344682	9.47	178013	12.27
11	NYPA-RES-SED	108963	7.53	357947	9.47	188662	12.27
12	NYPA-RES-SED	125925	7.53	417074	9.47	216701	12.27
13	NYPA-RES-SED	130416	7.53	432596	9.47	222659	12.28
14	NYPA-RES-SED	136097	7.53	451514	9.47	230022	12.27
15	NYPA-RES-SED	136092	7.53	452866	9.47	231736	12.27
16	PNC-SP-2A	133450	7.53	450043	9.47	215715	12.27
17	I2J010190-08	148287	7.53	494912	9.47	240759	12.28
18							
19							
20							
21							
22							

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

FORM VIII SV

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FORM 8
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: I2J010190

Lab File ID (Standard): B101712 Date Analyzed: 10/17/02

Instrument ID: MSB3 Time Analyzed: 1107

		IS4 (PHN) AREA #	RT #	IS5 (CRY) AREA #	RT #	IS6 (PRY) AREA #	RT #
	12 HOUR STD	303214	14.64	234365	18.91	167558	21.17
	UPPER LIMIT	606428	15.14	468730	19.41	335116	21.67
	LOWER LIMIT	151607	14.14	117183	18.41	83779	20.67
	CLIENT SAMPLE NO.						
01	I2J110000-44	251291	14.63	224871	18.90	150396	21.16
02	I2J110000-44	278224	14.64	210358	18.92	151428	21.17
03	NYPA-UNR-SED	259085	14.63	203304	18.90	152010	21.16
04	NYPA-LNR-SED	260199	14.63	219728	18.92	160506	21.18
05	A2J040261-03	282156	14.64	209533	18.92	165578	21.18
06	A2J040261-03	280417	14.64	229517	18.92	150466	21.19
07	NYPA-LNR-SED	255929	14.63	245774	18.91	167066	21.16
08	NYPA-UNR-SED	260215	14.63	234388	18.90	159953	21.16
09	A2J040261-01	248923	14.63	238700	18.90	156598	21.16
10	NYPA-RES-SED	248468	14.64	188310	18.92	94441	21.18
11	NYPA-RES-SED	259883	14.63	213708	18.92	106586	21.18
12	NYPA-RES-SED	296124	14.63	227647	18.92	113192	21.18
13	NYPA-RES-SED	303468	14.64	232779	18.92	114514	21.19
14	NYPA-RES-SED	318301	14.64	234993	18.92	97679	21.18
15	NYPA-RES-SED	310304	14.63	232150	18.92	112189	21.19
16	PNC-SP-2A	300877	14.63	267781	18.91	125256	21.17
17	I2J010190-08	337435	14.63	120373	18.91	145630	21.17
18							
19							
20							
21							
22							

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

FORM VIII SV

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FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: A2J040261

Lab File ID: B102301 DFTPP Injection Date: 10/23/02

Instrument ID: MSB3 DFTPP Injection Time: 0738

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	45.5
68	Less than 2.0% of mass 69	0.3 (0.8)1
69	Mass 69 relative abundance	42.3
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	40.0 - 60.0% of mass 198	52.2
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.9
275	10.0 - 30.0% of mass 198	21.9
365	Greater than 1.0% of mass 198	2.32
441	Present, but less than mass 443	13.2
442	Greater than 40.0% of mass 198	79.5
443	17.0 - 23.0% of mass 442	15.7 (19.8)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	HSL_050	CCALIB_3	B102302	10/23/02	0759
02	I2J080000-39	E9KV81AAB	B102305	10/23/02	0931
03	I2J080000-39	E9KV81ACC	B102306	10/23/02	1002
04	RW-24	E9J621AC	B102307	10/23/02	1033
05	I2J080143-09	E9J621ADS	B102308	10/23/02	1104
06	I2J080143-09	E9J621AED	B102309	10/23/02	1135
07	NYPA-ERB-01	E9FJ51AH	B102310	10/23/02	1206
08	RW-26	E9J6J1AC	B102311	10/23/02	1237
09	RW-21	E9J6P1AC	B102312	10/23/02	1308
10	RW-22	E9J6Q1AC	B102313	10/23/02	1339
11	RW-23	E9J6R1AC	B102314	10/23/02	1410
12	RWC-1	E9J6T1AC	B102315	10/23/02	1442
13	MW-46	E9J6X1AC	B102316	10/23/02	1512
14	MW-43	E9J601AC	B102317	10/23/02	1544
15	MW-44	E9J611AC	B102318	10/23/02	1615
16	MW-40	E9J641AC	B102319	10/23/02	1646
17	RW-63	E9J651AC	B102320	10/23/02	1717
18	MW-21	E9J661AC	B102321	10/23/02	1748
19	MW-13	E9J691AC	B102322	10/23/02	1819
20	RW-24	E9J622AC	B102323	10/23/02	1850
21	I2J080143-05	E9J6T2AC	B102324	10/23/02	1921
22	DCT. 050		B102324	10/23/02	09:01

FORM V SV

11/10/02

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: MSB3.i
Lab File ID: B102302.D
Analysis Type:
Lab Sample ID: Ccalib_3
Method: \\AUSP1075\DD\MSB\MSB3.I\B102302.B\B8270.m

Injection Date: 23-OCT-2002 07:59
Init. Cal. Date(s): 08-OCT-2002 10-OCT-2002
Init. Cal. Times: 13:24 13:29
Quant Type: ISTD

COMPOUND	RRF	RF50	MIN RRF	%D	MAX %D
$ 6 2-Fluorophenol	1.25920	1.32116	0.010	4.9	50.0
$ 12 Phenol-d5	1.44526	1.54545	0.010	6.9	50.0
$ 82 2,4,6-Tribromophenol	0.08471	0.08955	0.010	5.7	50.0
$ 29 Nitrobenzene-d5	0.36656	0.41136	0.010	12.2	50.0
$ 54 2-Fluorobiphenyl	50.00000	50.96700	0.010	-1.9	50.0
$ 105 Terphenyl-d14	50.00000	52.61628	0.010	-5.2	50.0
1 Pyridine	1.65165	1.71552	0.010	3.9	50.0
2 N-Nitrosodimethylamine	0.95902	1.01766	0.010	6.1	50.0
3 2-Picoline	1.77796	1.79152	0.010	0.8	50.0
4 N-Nitrosomethylethylamine	0.77756	0.80030	0.010	2.9	50.0
5 Methyl methanesulfonate	0.74967	0.78964	0.010	5.3	50.0
7 N-Nitrosodiethylamine	0.74351	0.76106	0.010	2.4	50.0
8 Ethyl methanesulfonate	1.04414	1.10674	0.010	6.0	50.0
9 Pentachloroethane	0.43675	0.46077	0.010	5.5	50.0
10 Aniline	1.93844	1.97019	0.010	1.6	50.0
11 bis(2-Chloroethyl)ether	1.48938	1.55973	0.010	4.7	50.0
13 Phenol	1.54713	1.68504	0.010	8.9	20.0
14 2-Chlorophenol	1.39086	1.44651	0.010	4.0	50.0
15 1,3-Dichlorobenzene	1.50131	1.56167	0.010	4.0	50.0
16 1,4-Dichlorobenzene	1.47279	1.55541	0.010	5.6	20.0
18 1,2-Dichlorobenzene	1.40368	1.47465	0.010	5.1	50.0
19 Benzyl Alcohol	0.89951	0.92308	0.010	2.6	50.0
20 bis(2-Chloroisopropyl)ether	1.99656	2.20914	0.010	10.6	50.0
21 2-Methylphenol	1.21865	1.26556	0.010	3.8	50.0
22 Acetophenone	50.00000	46.22517	0.010	7.5	50.0
23 N-Nitroso-di-n-propylamine	0.79156	0.91444	0.050	15.5	50.0
24 N-Nitrosopyrrolidine	0.58846	0.60898	0.010	3.5	50.0
25 3-(and/or 4-)Methylphenol	100	87.69810	0.010	12.3	50.0
26 N-Nitrosomorpholine	0.25918	0.28417	0.010	9.6	50.0
27 o-Toluidine	1.85288	2.02606	0.010	9.3	50.0
28 Hexachloroethane	0.52044	0.54842	0.010	5.4	50.0
30 Nitrobenzene	0.36843	0.41304	0.010	12.1	50.0
31 N-Nitrosopiperidine	0.19211	0.19849	0.010	3.3	50.0
32 Isophorone	0.67501	0.73092	0.010	8.3	50.0
33 2-Nitrophenol	0.18896	0.22463	0.010	18.9	20.0

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Data File: \\AUSP1075\DD\MSB\MSB3.i\B102302.B\B102302.D
Report Date: 23-Oct-2002 08:28

STL Austin

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: MSB3.i
Lab File ID: B102302.D
Analysis Type:
Lab Sample ID: Ccalib 3
Method: \\AUSP1075\DD\MSB\MSB3.I\B102302.B\B8270.m

Injection Date: 23-OCT-2002 07:59
Init. Cal. Date(s): 08-OCT-2002 10-OCT-2002
Init. Cal. Times: 13:24 13:29
Quant Type: ISTD

COMPOUND	RRF	RF50	MIN RRF	%D	MAX %D
34 2,4-Dimethyphenol	0.32443	0.36032	0.010	11.1	50.0
35 Bis(2-chloroethoxy)methane	0.41439	0.44644	0.010	7.7	50.0
36 2,4-Dichlorophenol	0.28335	0.30547	0.010	7.8	20.0
37 a,a-Dimethylphenethylamine	0.93655	0.90038	0.010	-3.9	50.0
38 1,2,4-Trichlorobenzene	0.29179	0.30240	0.010	3.6	50.0
39 Benzoic Acid	50.00000	37.11266	0.010	25.8	50.0
41 Naphthalene	50.00000	51.54251	0.010	-3.1	50.0
42 4-Chloroaniline	0.38694	0.38164	0.010	-1.4	50.0
43 2,6-Dichlorophenol	0.25801	0.27682	0.010	7.3	50.0
44 Hexachloropropene	0.14882	0.15516	0.010	4.3	50.0
45 Hexachlorobutadiene	0.13568	0.14268	0.010	5.2	20.0
46 N-Nitroso-di-n-butylamine	0.21837	0.24471	0.010	12.1	50.0
47 4-Chloro-3-Methylphenol	0.27507	0.29577	0.010	7.5	20.0
48 Safrole	0.25384	0.27108	0.010	6.8	50.0
49 2-Methylnaphthalene	0.63631	0.68047	0.010	6.9	50.0
50 Hexachlorocyclopentadiene	0.18597	0.05266	0.050	-71.7	50.0 <- > 0.05
51 1,2,4,5-Tetrachlorobenzene	50.00000	51.71538	0.010	-3.4	50.0
52 2,4,6-Trichlorophenol	0.34589	0.36403	0.010	5.2	20.0
53 2,4,5-Trichlorphenol	0.35409	0.36913	0.010	4.2	50.0
55 2-Chloronaphthalene	50.00000	51.15735	0.010	-2.3	50.0
56 Isosafrole	0.49126	0.52186	0.010	6.2	50.0
57 2-Nitroaniline	0.35058	0.38953	0.010	11.1	50.0
58 1,4-Naphthoquinone	0.49261	0.46024	0.010	-6.6	50.0
59 Dimethylphthalate	1.25072	1.27080	0.010	1.6	50.0
60 2,6-Dinitrotoluene	0.28630	0.29842	0.010	4.2	50.0
61 1,3-Dinitrobenzene	50.00000	54.89662	0.010	-9.8	50.0
62 Acenaphthylene	50.00000	47.43048	0.010	5.1	50.0
63 3-Nitroaniline	0.32636	0.32426	0.010	-0.6	50.0
65 Acenaphthene	50.00000	51.84545	0.010	-3.7	20.0
66 2,4-Dinitrophenol	50.00000	47.56914	0.050	4.9	50.0 RF=0.0949
67 Dibenzofuran	1.47730	1.56408	0.010	5.9	50.0
68 4-Nitrophenol	0.15692	0.15606	0.050	-0.5	50.0
69 Pentachlorobenzene	0.33942	0.36291	0.010	6.9	50.0
70 2,4-Dinitrotoluene	0.35262	0.43409	0.010	23.1	50.0
72 2,3,4,6-tetrachlorophenol	0.24958	0.26633	0.010	6.7	50.0

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STL Austin

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: MSB3.i
Lab File ID: B102302.D
Analysis Type:
Lab Sample ID: Ccalib 3
Method: \\AUSP1075\DD\MSB\MSB3.I\B102302.B\B8270.m

Injection Date: 23-OCT-2002 07:59
Init. Cal. Date(s): 08-OCT-2002 10-OCT-2002
Init. Cal. Times: 13:24 13:29
Quant Type: ISTD

COMPOUND	RRF	RF50	MIN RRF	%D	MAX %D
74 Diethylphthalate	1.25024	1.30583	0.010	4.4	50.0
75 4-Chlorophenyl-phenylether	0.50731	0.51387	0.010	1.3	50.0
76 Fluorene	50.00000	44.59545	0.010	10.8	50.0
77 5-Nitro-o-toluidine	0.38827	0.40887	0.010	5.3	50.0
78 4,6-Dinitro-2-methylphenol	50.00000	54.64645	0.010	-9.3	50.0
79 4-Nitroaniline	0.32486	0.36270	0.010	11.6	50.0
80 N-Nitrosodiphenylamine/DPA	100	102	0.010	-2.2	20.0
81 Azobenzene	0.83596	0.91277	0.010	9.2	50.0
83 Diallate #1	0.12932	0.13361	0.010	3.3	50.0
84 4-Bromophenyl-phenylether	50.00000	43.49623	0.010	13.0	50.0
85 Phenacetin	50.00000	43.39986	0.010	13.2	50.0
86 Dialate #2	0.28577	0.30801	0.010	7.8	50.0
87 Hexachlorobenzene	0.19126	0.19582	0.010	2.4	50.0
88 1,3,5-Trinitrobenzene	50.00000	56.15296	0.010	-12.3	50.0
89 4-Aminobiphenyl	0.49518	0.49562	0.010	0.1	50.0
90 Pentachlorophenol	0.10381	0.10466	0.010	0.8	20.0
91 Pronamide	50.00000	53.96066	0.010	-7.9	50.0
92 Pentachloronitrobenzene	0.07289	0.08143	0.010	11.7	50.0
94 Phenanthrene	50.00000	51.95375	0.010	-3.9	50.0
95 Anthracene	50.00000	49.14655	0.010	1.7	50.0
96 Dinoseb	50.00000	62.26049	0.010	-24.5	50.0
97 Carbazole	50.00000	50.38776	0.010	-0.8	50.0
98 Di-n-Butylphthalate	50.00000	50.57652	0.010	-1.2	50.0
99 4-Nitroquinoline-1-oxide	50.00000	20.96737	0.010	58.1	50.0 <- NT
100 Methapyrilene	0.26738	0.28792	0.010	7.7	50.0
101 Isodrin	50.00000	44.69774	0.010	10.6	50.0
102 Fluoranthene	50.00000	52.60630	0.010	-5.2	20.0
103 Benzidine	50.00000	45.70331	0.010	8.6	50.0
104 Pyrene	1.47399	1.62447	0.010	10.2	50.0
106 4-Dimethylaminoazobenzene	0.49240	0.52595	0.010	6.8	50.0
107 Chlorobenzilate	0.37060	0.41992	0.010	13.3	50.0
109 3,3'-Dimethylbenzidine	0.36157	0.36005	0.010	-0.4	50.0
110 Butylbenzylphthalate	50.00000	51.33635	0.010	-2.7	50.0
111 2-Acetylaminofluorene	0.63662	0.70531	0.010	10.8	50.0
112 3,3'-Dichlorobenzidine	0.39021	0.42334	0.010	8.5	50.0

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: MSB3.i
Lab File ID: B102302.D
Analysis Type:
Lab Sample ID: Ccalib_3
Method: \\AUSP1075\DD\MSB\MSB3.I\B102302.B\B8270.m

Injection Date: 23-OCT-2002 07:59
Init. Cal. Date(s): 08-OCT-2002 10-OCT-2002
Init. Cal. Times: 13:24 13:29
Quant Type: ISTD

COMPOUND	RRF	RF50	MIN RRF	%D	MAX %D
113 Benzo(a)anthracene	50.00000	60.95904	0.010	-21.9	50.0
115 bis(2-Ethylhexyl)phthalate	50.00000	51.27292	0.010	-2.5	50.0
116 Chrysene	1.12707	1.24919	0.010	10.8	50.0
117 Di-n-octylphthalate	2.38520	2.41397	0.010	1.2	20.0
118 7,12-Dimethylbenz(a)anthrac	0.62021	0.62137	0.010	0.2	50.0
119 Benzo(b)fluoranthene	1.57323	1.60209	0.010	1.8	50.0
120 Benzo(k)fluoranthene	50.00000	51.37723	0.010	-2.8	50.0
121 Benzo(a)pyrene	1.42985	1.46783	0.010	2.7	20.0
123 3-MethylCholanthrene	0.73147	0.69049	0.010	-5.6	50.0
124 Indeno(1,2,3-cd)pyrene	1.38468	1.37836	0.010	-0.5	50.0
125 Dibenz(a,h)anthracene	1.14349	1.12300	0.010	-1.8	50.0
126 Benzo(g,h,i)perylene	1.20179	1.19079	0.010	0.9	50.0

%D > 20% flag ND "UJ"

ERB3-01

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STL Austin

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: MSB3.i
Lab File ID: B102304.D
Analysis Type:
Lab Sample ID: Ccalib_3
Method: \\AUSP1075\DD\MSB\MSB3.i\B102302.B\B8270.m

Injection Date: 23-OCT-2002 09:01
Init. Cal. Date(s): 08-OCT-2002 10-OCT-2002
Init. Cal. Times: 13:24 13:29
Quant Type: ISTD

COMPOUND	RRF	RF50	MIN RRF	%D	MAX %D	
134 Indene	1.98291	++++	0.010	++++	50.0	<-
140 Quinoline	0.56401	++++	0.010	++++	50.0	<-
164 6-Methylchrysene	0.84902	++++	0.010	++++	50.0	<-
168 Dibenz(a,h)acridine	1.12372	++++	0.010	++++	50.0	<-
211 Octachlorostyrene	0.07222	0.07531	0.010	4.3	50.0	

NOT IN MIX only

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FORM 8
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: A2J040261

Lab File ID (Standard): B102302 Date Analyzed: 10/23/02

Instrument ID: MSB3 Time Analyzed: 0759

		IS1 (DCB) AREA #	RT #	IS2 (NPT) AREA #	RT #	IS3 (ANT) AREA #	RT #
	12 HOUR STD	143261	7.45	493251	9.41	246220	12.22
	UPPER LIMIT	286522	7.95	986502	9.91	492440	12.72
	LOWER LIMIT	71631	6.95	246626	8.91	123110	11.72
	CLIENT SAMPLE NO.						
01	I2J080000-39	160868	7.46	529168	9.41	264513	12.21
02	I2J080000-39	152421	7.46	529516	9.41	256649	12.22
03	RW-24	159309	7.45	531627	9.41	269038	12.21
04	I2J080143-09	155740	7.46	542291	9.42	260873	12.22
05	I2J080143-09	154682	7.46	537594	9.42	258321	12.22
06	NYPA-ERB-01	156655	7.45	522618	9.41	262283	12.21
07	RW-26	163303	7.45	546164	9.41	274645	12.21
08	RW-21	157437	7.46	527319	9.45	265537	12.31
09	RW-22	158892	7.45	525805	9.43	264880	12.21
10	RW-23	150759	7.45	504009	9.41	252896	12.21
11	RWC-1	156610	7.46	520937	9.57	2324*	12.22
12	MW-46	154072	7.46	518867	9.41	263296	12.22
13	MW-43	160565	7.46	535976	9.41	267148	12.22
14	MW-44	155715	7.46	515187	9.41	261545	12.22
15	MW-40	158559	7.46	527223	9.41	264287	12.22
16	RW-63	155215	7.45	513241	9.41	259010	12.21
17	MW-21	156447	7.45	514849	9.41	259360	12.21
18	MW-13	157552	7.45	519366	9.41	263323	12.21
19	RW-24	155674	7.45	514447	9.41	260181	12.21
20	I2J080143-05	155498	7.45	517544	9.41	259274	12.22
21							
22							

not a project sample

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

FORM VIII SV

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FORM 8
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: A2J040261

Lab File ID (Standard): B102302 Date Analyzed: 10/23/02

Instrument ID: MSB3 Time Analyzed: 0759

		IS4 (PHN) AREA #	RT #	IS5 (CRY) AREA #	RT #	IS6 (PRY) AREA #	RT #
	12 HOUR STD	359331	14.57	263751	18.84	208848	21.02
	UPPER LIMIT	718662	15.07	527502	19.34	417696	21.52
	LOWER LIMIT	179666	14.07	131876	18.34	104424	20.52
	CLIENT SAMPLE NO.						
01	I2J080000-39	359003	14.57	313601	18.83	222475	21.02
02	I2J080000-39	381119	14.57	254207	18.84	225869	21.02
03	RW-24	368563	14.57	315360	18.83	223579	21.02
04	I2J080143-09	387557	14.58	259652	18.84	230898	21.02
05	I2J080143-09	388584	14.57	252109	18.85	225733	21.03
06	NYPA-ERB-01	364290	14.57	286175	18.84	219196	21.02
07	RW-26	374017	14.57	319332	18.83	228007	21.02
08	RW-21	184812	14.61	311866	18.84	228571	21.02
09	RW-22	372809	14.57	307741	18.83	218764	21.02
10	RW-23	344561	14.57	296863	18.84	207681	21.02
11	RWC-1	353333	14.60	282116	18.83	203759	21.02
12	MW-46	365668	14.57	299110	18.84	209615	21.02
13	MW-43	368924	14.57	316859	18.84	220071	21.02
14	MW-44	350778	14.57	299680	18.83	209532	21.02
15	MW-40	359012	14.57	305847	18.83	212439	21.02
16	RW-63	349445	14.57	303486	18.83	211072	21.02
17	MW-21	354810	14.56	304959	18.84	208118	21.02
18	MW-13	355407	14.57	309122	18.84	214091	21.02
19	RW-24	357564	14.57	302812	18.83	210204	21.02
20	I2J080143-05	350227	14.57	304773	18.83	206916	21.02
21							
22							

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

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METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: A2J040261
MB Lot-Sample #: I2J110000-442

Work Order #...: E9V521AA
Prep Date.....: 10/11/02
Prep Batch #...: 2284442

Matrix.....: SOLID

Analysis Date..: 10/17/02
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acenaphthene	ND	330	ug/kg	SW846 8270C
Acenaphthylene	ND	330	ug/kg	SW846 8270C
Anthracene	ND	330	ug/kg	SW846 8270C
Benzo(a)anthracene	ND	330	ug/kg	SW846 8270C
Benzo(b)fluoranthene	ND	330	ug/kg	SW846 8270C
Benzo(k)fluoranthene	ND	330	ug/kg	SW846 8270C
Benzo(ghi)perylene	ND	330	ug/kg	SW846 8270C
Benzo(a)pyrene	ND	330	ug/kg	SW846 8270C
Chrysene	ND	330	ug/kg	SW846 8270C
Dibenz(a,h)anthracene	ND	330	ug/kg	SW846 8270C
Fluoranthene	ND	330	ug/kg	SW846 8270C
Fluorene	ND	330	ug/kg	SW846 8270C
Indeno(1,2,3-cd)pyrene	ND	330	ug/kg	SW846 8270C
Naphthalene	ND	330	ug/kg	SW846 8270C
Phenanthrene	ND	330	ug/kg	SW846 8270C
Pyrene	ND	330	ug/kg	SW846 8270C
Octachlorostyrene	ND	330	ug/kg	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	86	(52 - 134)
2-Fluorobiphenyl	97	(58 - 130)
Terphenyl-d14	89	(56 - 138)
2-Fluorophenol	84	(46 - 130)
Phenol-d5	84	(52 - 133)
2,4,6-Tribromophenol	84	(18 - 144)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

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METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: A2J040261
MB Lot-Sample #: I2J080000-390

Work Order #...: E9KV81AA

Matrix.....: WATER

Prep Date.....: 10/08/02
Prep Batch #...: 2281390

Analysis Date..: 10/23/02
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acenaphthene	ND	10	ug/L	SW846 8270C
Acenaphthylene	ND	10	ug/L	SW846 8270C
Anthracene	ND	10	ug/L	SW846 8270C
Benzo(a)anthracene	ND	10	ug/L	SW846 8270C
Benzo(b)fluoranthene	ND	10	ug/L	SW846 8270C
Benzo(k)fluoranthene	ND	10	ug/L	SW846 8270C
Benzo(ghi)perylene	ND	10	ug/L	SW846 8270C
Benzo(a)pyrene	ND	10	ug/L	SW846 8270C
Chrysene	ND	10	ug/L	SW846 8270C
Fluoranthene	ND	10	ug/L	SW846 8270C
Fluorene	ND	10	ug/L	SW846 8270C
Indeno(1,2,3-cd)pyrene	ND	10	ug/L	SW846 8270C
Naphthalene	ND	10	ug/L	SW846 8270C
Pyrene	ND	10	ug/L	SW846 8270C
Dibenzo(a,h)anthracene	ND	10	ug/L	SW846 8270C
Octachlorostyrene	ND	10	ug/L	SW846 8270C
PAHs, Summed Target List	ND	10	ug/L	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	95	(42 - 112)
2-Fluorobiphenyl	91	(30 - 116)
Terphenyl-d14	90	(22 - 120)
2-Fluorophenol	80	(27 - 121)
Phenol-d5	73	(27 - 123)
2,4,6-Tribromophenol	91	(30 - 129)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A2J040261 Work Order #...: E9FH71A7-MS Matrix.....: SO
MS Lot-Sample #: A2J040261-003 E9FH71A8-MSD
Date Sampled...: 10/01/02 18:15 Date Received..: 10/03/02
Prep Date.....: 10/11/02 Analysis Date..: 10/17/02
Prep Batch #...: 2284442
Dilution Factor: 0.87

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
2-Chlorophenol	69	(65 - 104)			SW846 8270C
	67	(65 - 104)	3.6	(0-23)	SW846 8270C
4-Chloro-3-methylphenol	91	(69 - 113)			SW846 8270C
	84	(69 - 113)	7.7	(0-27)	SW846 8270C
1,4-Dichlorobenzene	70	(68 - 104)			SW846 8270C
	68	(68 - 104)	2.7	(0-26)	SW846 8270C
2,4-Dinitrotoluene	103	(74 - 115)			SW846 8270C
	95	(74 - 115)	7.8	(0-25)	SW846 8270C
4-Nitrophenol	99	(59 - 111)			SW846 8270C
	94	(59 - 111)	5.0	(0-39)	SW846 8270C
N-Nitrosodi-n-propyl-amine	90	(67 - 126)			SW846 8270C
	83	(67 - 126)	7.8	(0-20)	SW846 8270C
Pentachlorophenol	109	(40 - 120)			SW846 8270C
	102	(40 - 120)	5.6	(0-52)	SW846 8270C
Phenol	78	(70 - 112)			SW846 8270C
	74	(70 - 112)	4.2	(0-26)	SW846 8270C
1,2,4-Trichloro-benzene	77	(68 - 107)			SW846 8270C
	72	(68 - 107)	5.9	(0-27)	SW846 8270C
Acenaphthene	93	(69 - 106)			SW846 8270C
	82	(69 - 106)	11	(0-24)	SW846 8270C
Pyrene	66 a	(68 - 112)			SW846 8270C
	43 a	(68 - 112)	20	(0-24)	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	72	(52 - 134)
	69	(52 - 134)
2-Fluorobiphenyl	87	(58 - 130)
	79	(58 - 130)
Terphenyl-d14	88	(56 - 138)
	73	(56 - 138)
2-Fluorophenol	64	(46 - 130)
	60	(46 - 130)
Phenol-d5	72	(52 - 133)
	67	(52 - 133)

(Continued on next page)

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A2J040261 Work Order #...: E9FH71A7-MS Matrix.....: SO
MS Lot-Sample #: A2J040261-003 E9FH71A8-MSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2,4,6-Tribromophenol	96	(18 - 144)
	87	(18 - 144)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

Results and reporting limits have been adjusted for dry weight.

a Spiked analyte recovery is outside stated control limits.

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MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: A2J040261 Work Order #...: E9FH71A7-MS Matrix.....: SO
MS Lot-Sample #: A2J040261-003 E9FH71A8-MSD
Date Sampled...: 10/01/02 18:15 Date Received..: 10/03/02
Prep Date.....: 10/11/02 Analysis Date..: 10/17/02
Prep Batch #...: 2284442
Dilution Factor: 0.87

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
2-Chlorophenol	ND	3600	2500	ug/kg	69		SW846 8270C
	ND	3600	2400	ug/kg	67	3.6	SW846 8270C
4-Chloro-3-methylphenol	ND	3600	3200	ug/kg	91		SW846 8270C
	ND	3600	3000	ug/kg	84	7.7	SW846 8270C
1,4-Dichlorobenzene	ND	3600	2500	ug/kg	70		SW846 8270C
	ND	3600	2400	ug/kg	68	2.7	SW846 8270C
2,4-Dinitrotoluene	ND	3600	3700	ug/kg	103		SW846 8270C
	ND	3600	3400	ug/kg	95	7.8	SW846 8270C
4-Nitrophenol	ND	3600	3500	ug/kg	99		SW846 8270C
	ND	3600	3300	ug/kg	94	5.0	SW846 8270C
N-Nitrosodi-n-propyl-amine	ND	3600	3200	ug/kg	90		SW846 8270C
	ND	3600	3000	ug/kg	83	7.8	SW846 8270C
Pentachlorophenol	ND	3600	3900	ug/kg	109		SW846 8270C
	ND	3600	3700	ug/kg	102	5.6	SW846 8270C
Phenol	ND	3600	2800	ug/kg	78		SW846 8270C
	ND	3600	2700	ug/kg	74	4.2	SW846 8270C
1,2,4-Trichloro-benzene	100	3600	2800	ug/kg	77		SW846 8270C
	100	3600	2700	ug/kg	72	5.9	SW846 8270C
Acenaphthene	320	3600	3600	ug/kg	93		SW846 8270C
	320	3600	3300	ug/kg	82	11	SW846 8270C
Pyrene	2100	3600	4400	ug/kg	66 a		SW846 8270C
	2100	3600	3600	ug/kg	43 a	20	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	72	(52 - 134)
	69	(52 - 134)
2-Fluorobiphenyl	87	(58 - 130)
	79	(58 - 130)
Terphenyl-d14	88	(56 - 138)
	73	(56 - 138)
2-Fluorophenol	64	(46 - 130)
	60	(46 - 130)
Phenol-d5	72	(52 - 133)
	67	(52 - 133)

(Continued on next page)

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MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: A2J040261 Work Order #...: E9FH71A7-MS Matrix.....: SO
MS Lot-Sample #: A2J040261-003 E9FH71A8-MSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2,4,6-Tribromophenol	96	(18 - 144)
	87	(18 - 144)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

Results and reporting limits have been adjusted for dry weight.

a Spiked analyte recovery is outside stated control limits.

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A2J040261 Work Order #...: E9V521AC Matrix.....: SOLID
LCS Lot-Sample#: I2J110000-442
Prep Date.....: 10/11/02 Analysis Date..: 10/17/02
Prep Batch #...: 2284442
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
2-Chlorophenol	80	(65 - 104)	SW846 8270C
4-Chloro-3-methylphenol	94	(69 - 113)	SW846 8270C
1,4-Dichlorobenzene	86	(68 - 104)	SW846 8270C
2,4-Dinitrotoluene	106	(74 - 115)	SW846 8270C
4-Nitrophenol	88	(59 - 111)	SW846 8270C
N-Nitrosodi-n-propyl-amine	104	(67 - 126)	SW846 8270C
Pentachlorophenol	102	(40 - 120)	SW846 8270C
Phenol	87	(70 - 112)	SW846 8270C
1,2,4-Trichloro-benzene	91	(68 - 107)	SW846 8270C
Acenaphthene	102	(69 - 106)	SW846 8270C
Pyrene	95	(68 - 112)	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	85	(52 - 134)
2-Fluorobiphenyl	101	(58 - 130)
Terphenyl-d14	96	(56 - 138)
2-Fluorophenol	81	(46 - 130)
Phenol-d5	84	(52 - 133)
2,4,6-Tribromophenol	101	(18 - 144)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

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LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: A2J040261 Work Order #...: E9V521AC Matrix.....: SOLID
LCS Lot-Sample#: I2J110000-442
Prep Date.....: 10/11/02 Analysis Date..: 10/17/02
Prep Batch #...: 2284442
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
2-Chlorophenol	3300	2700	ug/kg	80	SW846 8270C
4-Chloro-3-methylphenol	3300	3100	ug/kg	94	SW846 8270C
1,4-Dichlorobenzene	3300	2900	ug/kg	86	SW846 8270C
2,4-Dinitrotoluene	3300	3500	ug/kg	106	SW846 8270C
4-Nitrophenol	3300	2900	ug/kg	88	SW846 8270C
N-Nitrosodi-n-propyl-amine	3300	3500	ug/kg	104	SW846 8270C
Pentachlorophenol	3300	3400	ug/kg	102	SW846 8270C
Phenol	3300	2900	ug/kg	87	SW846 8270C
1,2,4-Trichloro-benzene	3300	3000	ug/kg	91	SW846 8270C
Acenaphthene	3300	3400	ug/kg	102	SW846 8270C
Pyrene	3300	3200	ug/kg	95	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	85	(52 - 134)
2-Fluorobiphenyl	101	(58 - 130)
Terphenyl-d14	96	(56 - 138)
2-Fluorophenol	81	(46 - 130)
Phenol-d5	84	(52 - 133)
2,4,6-Tribromophenol	101	(18 - 144)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A2J040261 Work Order #...: E9KV81AC Matrix.....: WATER
LCS Lot-Sample#: I2J080000-390
Prep Date.....: 10/08/02 Analysis Date..: 10/23/02
Prep Batch #...: 2281390
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
2-Chlorophenol	81	(58 - 109)	SW846 8270C
4-Chloro-3-methylphenol	91	(61 - 121)	SW846 8270C
1,4-Dichlorobenzene	82	(65 - 107)	SW846 8270C
2,4-Dinitrotoluene	108	(71 - 120)	SW846 8270C
4-Nitrophenol	91	(49 - 117)	SW846 8270C
N-Nitrosodi-n-propyl-amine	112	(63 - 121)	SW846 8270C
Pentachlorophenol	98	(56 - 126)	SW846 8270C
Phenol	95	(62 - 111)	SW846 8270C
1,2,4-Trichloro-benzene	83	(68 - 107)	SW846 8270C
Acenaphthene	90	(69 - 108)	SW846 8270C
Pyrene	97	(67 - 112)	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	108	(42 - 112)
2-Fluorobiphenyl	106	(30 - 116)
Terphenyl-d14	122 *	(22 - 120)
2-Fluorophenol	99	(27 - 121)
Phenol-d5	97	(27 - 123)
2,4,6-Tribromophenol	107	(30 - 129)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

* Surrogate recovery is outside stated control limits.

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LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: A2J040261 Work Order #...: E9KV81AC Matrix.....: WATER
LCS Lot-Sample#: I2J080000-390
Prep Date.....: 10/08/02 Analysis Date..: 10/23/02
Prep Batch #...: 2281390
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
2-Chlorophenol	100	81	ug/L	81	SW846 8270C
4-Chloro-3-methylphenol	100	91	ug/L	91	SW846 8270C
1,4-Dichlorobenzene	100	82	ug/L	82	SW846 8270C
2,4-Dinitrotoluene	100	110	ug/L	108	SW846 8270C
4-Nitrophenol	100	91	ug/L	91	SW846 8270C
N-Nitrosodi-n-propyl-amine	100	110	ug/L	112	SW846 8270C
Pentachlorophenol	100	98	ug/L	98	SW846 8270C
Phenol	100	95	ug/L	95	SW846 8270C
1,2,4-Trichloro-benzene	100	83	ug/L	83	SW846 8270C
Acenaphthene	100	90	ug/L	90	SW846 8270C
Pyrene	100	97	ug/L	97	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	108	(42 - 112)
2-Fluorobiphenyl	106	(30 - 116)
Terphenyl-d14	122 *	(22 - 120)
2-Fluorophenol	99	(27 - 121)
Phenol-d5	97	(27 - 123)
2,4,6-Tribromophenol	107	(30 - 129)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

* Surrogate recovery is outside stated control limits.

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Severn Trent Laboratories, Inc.
EXTRACTION BENCH WORKSHEET

Run Date: 10/28/02
Time: 9:43:24

LEV 1	LEV 2		LEV 1	LEV 2	
Y	Y	Blank	Y	Y	Weights/Volumes
Y	Y	Check	Y	Y	Spike & Surrogate Worksheet
Y	Y	MS/MSD	_	Y	Vial contains correct volume
			Y	Y	Labels, greenbars, worksheets
					computer batch: correct & all match
			_	_	Anomalies to Extraction Method

_ Expanded Deliverable
_ COC Completed
Y Bench Sheet Copied
Y Package Submitted to AnalyticalGro
_ Bench Sheet Copied per COC

Extractionist: 008945 Beth Driskill
401316 Beth Driskill
400877 Heidi Marchette
Concentrationist: 400877 Heidi Marchette
400668 Wendy Mery

****
* *
* QC BATCH: 2284442 *
* *
****

PREP DATE: 10/11/02 15:30
COMP DATE: 10/12/02 8:00

Reviewer/Date: MERYW / 10/14/02

Base/Neutrals and Acids (8270C)
SOXHLET (NONE,Na2SO4)

EXTR EXPR	ANL DUE	LOT#,MSRUN#/ WORK ORDER	TEST FLGS	EXT	MTH	MATRIX	INIT/FIN WT/VOL	INIT	PH"S ADJI	ADJ2	SOLVENTS EXTRACTION	VOL	EXCHANGE	VOL	SPIKE STANDARD/ SURROGATE ID
10/15/02	10/18/02	A2J040261-001 E9FHR-1-AM	D	11	QL	SOLID	34.62g 1.00mL	NA	NA	NA	MECL2	300.0		.0	100UL 020PREP0012
COMMENTS:															
10/15/02	10/18/02	A2J040261-002 E9FH2-1-AM	D	11	QL	SOLID	38.91g 1.00mL	NA	NA	NA	MECL2	300.0		.0	100UL 020PREP0012
COMMENTS:															
10/15/02	10/18/02	A2J040261-003 E9FH7-1-AM	D	11	QL	SOLID	34.5g 1.00mL	NA	NA	NA	MECL2	300.0		.0	100UL 020PREP0012
COMMENTS:															
10/15/02	10/18/02	A2J040261-003 E9FH7-1-A7S	D	11	QL	SOLID	34.57g 1.00mL	NA	NA	NA	MECL2	300.0		.0	100UL020P75 250UL020P7 100UL 020PREP0012
COMMENTS:	500UL 020PREP0104														
10/15/02	10/18/02	A2J040261-003 E9FH7-1-ABD	D	11	QL	SOLID	34.54g 1.00mL	NA	NA	NA	MECL2	300.0		.0	100UL020P75 250UL020P7 100UL 020PREP0012
COMMENTS:	500UL 020PREP0104														
10/15/02	10/18/02	A2J040261-004 E9FJC-1-AM	D	11	QL	SOLID	34.03g 1.00mL	NA	NA	NA	MECL2	300.0		.0	100UL 020PREP0012
COMMENTS:															
10/16/02	10/18/02	A2J040261-005 E9FJD-1-AM	D	11	QL	SOLID	45.5g 1.00mL	NA	NA	NA	MECL2	300.0		.0	100UL 020PREP0012
COMMENTS:															

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Severn Trent Laboratories, Inc.
EXTRACTION BENCH WORKSHEET

Run Date: 10/28/02
Time: 9:43:24

****
* QC BATCH: 2284442 *
****

PREP DATE: 10/11/02 15:30
COMP DATE: 10/12/02 8:00

EXTR EXPR	ANL DUE	LOT#,MSRUN#/ WORK ORDER	TEST FLGS	EXT	MTH	MATRIX	INIT/FIN WT/VOL	INIT	PH"S ADJ1	ADJ2	SOLVENTS EXTRACTION	VOL	EXCHANGE	VOL	SPIKE STANDARD/ SURROGATE ID
10/16/02	10/18/02	A2J040261-006 E9FJE-1-AM	D	11	QL	SOLID	45.8g 1.00mL	NA	NA	NA	MECL2	300.0		.0	100UL 020PREP0012
COMMENTS:															
10/16/02	10/18/02	A2J040261-007 E9FJF-1-AM	D	11	QL	SOLID	47.97g 1.00mL	NA	NA	NA	MECL2	300.0		.0	100UL 020PREP0012
COMMENTS:															
10/16/02	10/18/02	A2J040261-008 E9FJG-1-AM	D	11	QL	SOLID	48.71g 1.00mL	NA	NA	NA	MECL2	300.0		.0	100UL 020PREP0012
COMMENTS:															
10/16/02	10/18/02	A2J040261-009 E9FJH-1-AM	D	11	QL	SOLID	47.93g 1.00mL	NA	NA	NA	MECL2	300.0		.0	100UL 020PREP0012
COMMENTS:															
10/16/02	10/18/02	A2J040261-010 E9FJJ-1-AL	D	11	QL	SOLID	48.71g 1.00mL	NA	NA	NA	MECL2	300.0		.0	100UL 020PREP0012
COMMENTS:															
10/15/02	0/00/00	I2J110000-442 E9V52-1-AAB		11	QL	SOLID	30g 1.00mL	NA	NA	NA	MECL2	300.0		.0	100UL 020PREP0012
COMMENTS:															
10/15/02	0/00/00	I2J110000-442 E9V52-1-ACC		11	QL	SOLID	30g 1.00mL	NA	NA	NA	MECL2	300.0		.0	100UL020P75 250UL020P7· 100UL 020PREP0012
COMMENTS: 500UL 020PREP0104															

R = RUSH C = CLP
E = EPA 600 D = EXP.DEL)
M = CLIENT REQ MS/MSD
↕

NUMBER OF WORK ORDERS IN BATCH: 14

STL North Canton

1630

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EXTRACTION BENCH WORKSHEET

Run Date: 10/28/02
Time: 9:43:11

LEV 1	LEV 2		LEV 1	LEV 2	
Y	Y	Blank	Y	Y	Weights/Volumes
Y	Y	Check	Y	Y	Spike & Surrogate Worksheet
Y	Y	MS/MSD	_	Y	Vial contains correct volume
			Y	Y	Labels, greenbars, worksheets computer batch: correct & all match
			_	_	Anomalies to Extraction Method

_ Expanded Deliverable
_ COC Completed
Y Bench Sheet Copied
Y Package Submitted to AnalyticalGro
_ Bench Sheet Copied per COC

Extractionist: 401316
008945 Beth Driskill
034090 Cynthia A. Anderson
Concentrationist: 034090 Cynthia A. Anderson

****
* QC BATCH: 2281390 *
****

PREP DATE: 10/08/02 13:45
COMP DATE: 10/10/02 8:00

Reviewer/Date: MERYW / 10/11/02

Base/Neutrals and Acids (8270C)
LIQ/LIQ, CONT (A/B/N) - Acid->Base

EXTR EXPR	ANL DUE	LOT#,MSRUN#/ WORK ORDER	TEST FLGS	EXT	MTH	MATRIX	INIT/FIN WT/VOL	INIT	PH"S ADJ1	ADJ2	SOLVENTS EXTRACTION	VOL	EXCHANGE	VOL	SPIKE STANDARD/ SURROGATE ID
10/10/02	10/18/02	A2J040261-011 E9FJ5-1-AH	D	49	QL	WATER	1040mL 1.00mL	7.0	2.0	12.0	MECL2	500.0		.0	100UL 020PREP0012
COMMENTS:															
10/14/02	10/22/02	I2J080143-001 E9J6J-1-AC		49	QL	WATER	1000mL 1.00mL	7.0	2.0	12.0	MECL2	500.0		.0	100UL 020PREP0012
COMMENTS:															
10/14/02	10/22/02	I2J080143-001 E9J6J-2-AC		49	QL	WATER	1000mL 1.00mL	7.0	2.0	12.0	MECL2	500.0		.0	100UL 020PREP0012
COMMENTS:															
10/14/02	10/22/02	I2J080143-002 E9J6P-1-AC		49	QL	WATER	1050mL 1.00mL	7.0	2.0	12.0	MECL2	500.0		.0	100UL 020PREP0012
COMMENTS:															
10/14/02	10/22/02	I2J080143-002 E9J6P-2-AC		49	QL	WATER	1050mL 1.00mL	7.0	2.0	12.0	MECL2	500.0		.0	100UL 020PREP0012
COMMENTS:															
10/14/02	10/22/02	I2J080143-002 E9J6P-3-AC		49	QL	WATER	1050mL 1.00mL	7.0	2.0	12.0	MECL2	500.0		.0	100UL 020PREP0012
COMMENTS:															
10/14/02	10/22/02	I2J080143-002 E9J6P-4-AC		49	QL	WATER	1050mL 1.00mL	7.0	2.0	12.0	MECL2	500.0		.0	100UL 020PREP0012
COMMENTS:															

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Severn Trent Laboratories, Inc.
EXTRACTION BENCH WORKSHEET

Run Date: 10/28/02
Time: 9:43:11

****
* QC BATCH: 2281390 *
****

PREP DATE: 10/08/02 13:45
COMP DATE: 10/10/02 8:00

EXTR EXPR	ANL DUE	LOT#,MSRUN#/ WORK ORDER	TEST FLGS	EXT	MTH	MATRIX	INIT/FIN WT/VOL	INIT	PH"S ADJ1	ADJ2	SOLVENTS EXTRACTION	VOL	EXCHANGE	VOL	SPIKE STANDARD/ SURROGATE ID
10/14/02	10/22/02	I2J080143-003 E9J6Q-1-AC		49	QL	WATER	1000mL 1.00mL	7.0	2.0	12.0	MECL2	500.0		.0	100UL 020PREP0012
COMMENTS:															
10/14/02	10/22/02	I2J080143-003 E9J6Q-2-AC		49	QL	WATER	1000mL 1.00mL	7.0	2.0	12.0	MECL2	500.0		.0	100UL 020PREP0012
COMMENTS:															
10/14/02	10/22/02	I2J080143-003 E9J6Q-3-AC		49	QL	WATER	1000mL 1.00mL	7.0	2.0	12.0	MECL2	500.0		.0	100UL 020PREP0012
COMMENTS:															
10/14/02	10/22/02	I2J080143-004 E9J6R-1-AC		49	QL	WATER	1040mL 1.00mL	7.0	2.0	12.0	MECL2	500.0		.0	100UL 020PREP0012
COMMENTS:															
10/14/02	10/22/02	I2J080143-005 E9J6T-1-AC		49	QL	WATER	1020mL 1.00mL	7.0	2.0	12.0	MECL2	500.0		.0	100UL 020PREP0012
COMMENTS:															
10/14/02	10/22/02	I2J080143-005 E9J6T-2-AC		49	QL	WATER	1020mL 1.00mL	7.0	2.0	12.0	MECL2	500.0		.0	100UL 020PREP0012
COMMENTS:															
10/14/02	10/22/02	I2J080143-005 E9J6T-3-AC		49	QL	WATER	1020mL 1.00mL	7.0	2.0	12.0	MECL2	500.0		.0	100UL 020PREP0012
COMMENTS:															
10/14/02	10/22/02	I2J080143-006 E9J6X-1-AC		49	QL	WATER	980mL 1.00mL	7.0	2.0	12.0	MECL2	500.0		.0	100UL 020PREP0012
COMMENTS:															
10/14/02	10/22/02	I2J080143-006 E9J6X-2-AC		49	QL	WATER	980mL 1.00mL	7.0	2.0	12.0	MECL2	500.0		.0	100UL 020PREP0012
COMMENTS:															
10/14/02	10/22/02	I2J080143-007 E9J60-1-AC		49	QL	WATER	950mL 1.00mL	7.0	2.0	12.0	MECL2	500.0		.0	100UL 020PREP0012
COMMENTS:															

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EXTRACTION BENCH WORKSHEET

Run Date: 10/28/02
Time: 9:43:11

****
* QC BATCH: 2281390 *
****

PREP DATE: 10/08/02 13:45
COMP DATE: 10/10/02 8:00

EXTR EXPR	ANL DUE	LOT#,MSRUN#/ WORK ORDER	TEST FLGS	EXT	MTH	MATRIX	INIT/FIN WT/VOL	PH"S INIT	PH"S ADJ1	PH"S ADJ2	SOLVENTS EXTRACTION	SOLVENTS VOL	SOLVENTS EXCHANGE	SOLVENTS VOL	SPIKE STANDARD/ SURROGATE ID
10/14/02	10/22/02	I2J080143-008 E9J61-1-AC		49	QL	WATER	970mL 1.00mL	7.0	2.0	12.0	MECL2	500.0		.0	100UL 020PREP0012
COMMENTS:															
10/14/02	10/22/02	I2J080143-009 E9J62-1-AC	D	49	QL	WATER	950mL 1.00mL	7.0	2.0	12.0	MECL2	500.0		.0	100UL 020PREP0012
COMMENTS:															
10/14/02	10/22/02	I2J080143-009 E9J62-1-ADS	D	49	QL	WATER	970mL 1.00mL	7.0	2.0	12.0	MECL2	500.0		.0	100UL020P75 250UL020P7 100UL 020PREP0012
COMMENTS:	500UL 020PREP0039														
10/14/02	10/22/02	I2J080143-009 E9J62-1-AED	D	49	QL	WATER	970mL 1.00mL	7.0	2.0	12.0	MECL2	500.0		.0	100UL020P75 250UL020P7 100UL 020PREP0012
COMMENTS:	500UL 020PREP0039														
10/14/02	10/22/02	I2J080143-009 E9J62-2-AC	D	49	QL	WATER	950mL 1.00mL	7.0	2.0	12.0	MECL2	500.0		.0	100UL 020PREP0012
COMMENTS:															
10/14/02	10/22/02	I2J080143-010 E9J64-1-AC		49	QL	WATER	980mL 1.00mL	7.0	2.0	12.0	MECL2	500.0		.0	100UL 020PREP0012
COMMENTS:															
10/14/02	10/22/02	I2J080143-011 E9J65-1-AC		49	QL	WATER	950mL 1.00mL	7.0	2.0	12.0	MECL2	500.0		.0	100UL 020PREP0012
COMMENTS:															
10/14/02	10/22/02	I2J080143-011 E9J65-2-AC		49	QL	WATER	950mL 1.00mL	7.0	2.0	12.0	MECL2	500.0		.0	100UL 020PREP0012
COMMENTS:															
10/14/02	10/22/02	I2J080143-012 E9J66-1-AC		49	QL	WATER	1040mL 1.00mL	7.0	2.0	12.0	MECL2	500.0		.0	100UL 020PREP0012
COMMENTS:															
10/14/02	10/22/02	I2J080143-013 E9J69-1-AC		49	QL	WATER	950mL 1.00mL	7.0	2.0	12.0	MECL2	500.0		.0	100UL 020PREP0012
COMMENTS:															

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RQC058

Severn Trent Laboratories, Inc.
EXTRACTION BENCH WORKSHEET

Run Date: 10/28/02
Time: 9:43:11

****
* QC BATCH: 2281390 *
****

PREP DATE: 10/08/02 13:45
COMP DATE: 10/10/02 8:00

EXTR EXPR	ANL DUE	LOT#,MSRUN#/ WORK ORDER	TEST FLGS	EXT	MTH	MATRIX	INIT/FIN WT/VOL	PH"S INIT	PH"S ADJ1	PH"S ADJ2	SOLVENTS EXTRACTION	SOLVENTS VOL	SOLVENTS EXCHANGE	VOL	SPIKE STANDARD/ SURROGATE ID
10/14/02	10/22/02	I2J080143-013 E9J69-2-AC		49	QL	WATER	950mL 1.00mL	7.0	2.0	12.0	MECL2	500.0		.0	100UL 020PREP0012
COMMENTS:															
10/14/02	0/00/00	I2J080000-390 E9KV8-1-AAB		49	QL	WATER	1000mL 1.00mL	7.0	2.0	12.0	MECL2	500.0		.0	100UL 020PREP0012
COMMENTS:															
10/14/02	0/00/00	I2J080000-390 E9KV8-1-ACC		49	QL	WATER	1000mL 1.00mL	7.0	2.0	12.0	MECL2	500.0		.0	100UL020P75 250UL020P7· 100UL 020PREP0012
COMMENTS:		500UL 020PREP0039													

R = RUSH C = CLP
E = EPA 600 D = EXP.DEL)
M = CLIENT REQ MS/MSD

NUMBER OF WORK ORDERS IN BATCH: 30

STL North Canton

162

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— 011

STL Austin

Method 8270C Semivolatiles

Data file : \\AUSSVR02\INS_DATA\Msb\Msb3.i\B102302.B\B102310.D
Lab Smp Id: E9FJ51AH Client Smp ID: NYPA-ERB-01
Inj Date : 23-OCT-2002 12:06 MS Autotune Date: 27-JUL-1998 23:19
Operator : malloym Inst ID: MSB3.i
Smp Info : E9FJ51AH;A2J040261-11;1;0;;1;1040;;1000;
Misc Info : ; 2-hsl.sub; 2281390
Comment : SOP NO. : AUS_MS_00005
Method : \\AUSSVR02\INS_DATA\Msb\Msb3.i\B102302.B\B8270.m
Meth Date : 23-Oct-2002 14:47 target Quant Type: ISTD
Cal Date : 10-OCT-2002 13:29 Cal File: B101008.D
Als bottle: 10
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 2-HSL.sub
Target Version: 4.04
Processing Host: AUSB8S01

Concentration Formula: Amt * DF * (Uf*Vt*Vd)/(1000*Vo)

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	1000.000	Final volume of the extract (uL)
Vd	1000.000	Default sample volume
Vo	1040.000	Volume of sample extracted (mL)

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/L)	REVIEW CODE
* 17 1,4-Dichlorobenzene-d4	152	7.452	7.450	(1.000)	156655	40.0000		R
* 40 Naphthalene-d8	136	9.407	9.410	(1.000)	522618	40.0000		R
* 64 Acenaphthene-d10	164	12.212	12.215	(1.000)	262283	40.0000		R
* 93 Phenanthrene-d10	188	14.567	14.565	(1.000)	364290	40.0000		R
* 114 Chrysene-d12	240	18.836	18.834	(1.000)	286175	40.0000		R
* 122 Perylene-d12	264	21.015	21.019	(1.000)	219196	40.0000		R
$ 6 2-Fluorophenol	112	5.641	5.646	(0.757)	609281	123.549	118.80	R
$ 12 Phenol-d5	99	6.976	6.977	(0.936)	691917	122.243	117.54	R
$ 82 2,4,6-Tribromophenol	330	13.494	13.499	(0.926)	104954	136.048	130.81	R
$ 29 Nitrobenzene-d5	82	8.338	8.339	(0.886)	443187	92.5363	88.977	R
$ 54 2-Fluorobiphenyl	172	11.127	11.127	(0.911)	650061	89.2305	85.798	R
$ 105 Terphenyl-d14	244	17.132	17.127	(0.910)	643687	100.573	96.704	R
115 bis(2-Ethylhexyl)phthalate	149	18.857	18.852	(1.001)	898327	279.514	268.76(A) NT	R

Report Phenanthrene as ND on Analytical report.

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SW846 8081A SURROGATE RECOVERY

Lab Name: Severn Trent Laboratories, Inc. Client: ENVIRONMENTAL STANDARDS INC.

Lab Code: STLCAN SDG No: 2J04261

Lot #: A2J040261

Extraction: XXA13QJ01

	CLIENT ID.	SRG01	SRG02	TOT OUT	
01	NYPA-UNR-SED01	600D	504D	02	- 200 x
02	NYPA-UNR-SED02	65 D	86 D	00	- 5x
03	NYPA-LNR-SED03	95 D	251D	01	- 10x
04	NYPA-LNR-SED04	76 D	104D	00	- 5x
05	NYPA-RES-SED05	87 D	131D	00	- 10x
06	NYPA-RES-SED06	85 D	136D	00	- 10x
07	NYPA-RES-SED07	68 D	90 D	00	- 5x
08	NYPA-RES-SED08	85 D	107D	00	- 5x
09	NYPA-RES-SED09	68 D	93 D	00	- 5x
10	NYPA-RES-SED12	73 D	92 D	00	- 10x
11	METHOD BLK. E9K071AA	81	92	00	
12	LCS E9K071AC	81	79	00	
13	NYPA-LNR-SED03 D	0.0D	0.0D	02	- 10x
14	NYPA-LNR-SED03 S	0.0D	0.0D	02	- 10x

SURROGATES		QC LIMITS
SRG01	= Tetrachloro-m-xylene	(31-131)
SRG02	= Decachlorobiphenyl	(18-145)

\# Column to be used to flag recovery values
* Values outside of required QC Limits
D System monitoring Compound diluted out

FORM II

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SW846 8081A SURROGATE RECOVERY

Lab Name: Severn Trent Laboratories, Inc. Client: ENVIRONMENTAL STANDARDS INC.

Lab Code: STLCAN SDG No: 2J04261

Lot #: A2J040261

Extraction: XXI10QJ01

	CLIENT ID.	SRG01	SRG02	TOT OUT
01	NYPA-ERB-01	66	59	00
02	METHOD BLK. E9F641AA	98	82	00
03	LCS E9F641AC	102	114	00
04	LCSD E9F641AD	87	44	00

SURROGATES		QC LIMITS
SRG01	= Tetrachloro-m-xylene	(39-130)
SRG02	= Decachlorobiphenyl	(10-147)

\# Column to be used to flag recovery values
* Values outside of required QC Limits
D System monitoring Compound diluted out

FORM II

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SW846 8081A MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Severn Trent Laboratories, Inc. Client: ENVIRONMENTAL STANDARDS INC.

Lab Code: STLCAN SDG No: 2J04261

Matrix Spike ID: NYPA-LNR-SED03

Lot #: A2J040261 WO #: E9FH71AV
BATCH: 2281410

COMPOUND	SPIKE ADDED (ug/kg)	SAMPLE CONCENT. (ug/kg)	MS CONCENT. (ug/kg)	MS % REC	LIMITS REC	QUAL
gamma-BHC (Lindane)	41	ND	41	100	33- 130	DIL
Heptachlor	41	ND	36	88	32- 128	DIL
Aldrin	41	ND	40	96	33- 122	DIL
Dieldrin	41	ND	44	106	33- 133	DIL
Endrin	41	ND	36	87	33- 138	DIL
4,4'-DDT	41	ND	56	137	23- 144	DIL

NOTES(S):

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.
Results and reporting limits have been adjusted for dry weight.

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 6 outside limits

COMMENTS:

FORM III

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SW846 8081A MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Severn Trent Laboratories, Inc. Client: ENVIRONMENTAL STANDARDS INC.

Lab Code: STLCAN SDG No: 2J04261

Matrix Spike ID: NYPA-LNR-SED03

Lot #: A2J040261 WO #: E9FH71AW
BATCH: 2281410

COMPOUND	SPIKE ADDED (ug/kg)	MSD CONCENT. (ug/kg)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	QUAL
gamma-BHC (Lindane)	41	35	86	15	36	33- 130	DIL
Heptachlor	41	37	89	1.9	44	32- 128	DIL
Aldrin	41	38	93	3.6	40	33- 122	DIL
Dieldrin	41	44	106	0.11	33	33- 133	DIL
Endrin	41	37	90	2.9	38	33- 138	DIL
4,4'-DDT	41	55	134	2.7	42	23- 144	DIL

NOTES(S):

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.
Results and reporting limits have been adjusted for dry weight.

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 6 outside limits
Spike Recovery: 0 out of 6 outside limits

COMMENTS:

FORM III

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SW846 8081A CHECK SAMPLE RECOVERY

Lab Name: Severn Trent Laboratories, Inc. Client: ENVIRONMENTAL STANDARDS INC.

Lab Code: STLCAN SDG No: 2J04261

Lot #: A2J080000 WO #: E9K071AC
BATCH: 2281410

COMPOUND	SPIKE ADDED (ug/kg)	SAMPLE CONCENT. (ug/kg)	% REC	QC LIMITS REC	QUAL
gamma-BHC (Lindane)	33	36	108	47- 130	
Heptachlor	33	35	107	39- 126	
Aldrin	33	35	105	39- 122	
Dieldrin	33	35	105	45- 128	
Endrin	33	38	113	47- 133	
4,4'-DDT	33	34	103	35- 144	

NOTES(S):

* Values outside of QC limits

Spike Recovery: 0 out of 6 outside limits

COMMENTS:

FORM III

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SW846 8081A CHECK SAMPLE RECOVERY

Lab Name: Severn Trent Laboratories, Inc. Client: ENVIRONMENTAL STANDARDS INC.

Lab Code: STLCAN SDG No: 2J04261

Lot #: A2J040000 WO #: E9F641AC

BATCH: 2277485

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENT. (ug/L)	% REC	QC LIMITS REC	QUAL
gamma-BHC (Lindane)	1.0	1.1	114	49- 137	
Heptachlor	1.0	1.1	109	57- 124	
Aldrin	1.0	1.1	113	62- 120	
Dieldrin	1.0	1.1	112	68- 130	
Endrin	1.0	1.1	115	46- 137	
4,4'-DDT	1.0	1.0	103	60- 140	

NOTES(S):

* Values outside of QC limits

Spike Recovery: 0 out of 6 outside limits

COMMENTS:

FORM III

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SW846 8081A CHECK SAMPLE DUPLICATE RECOVERY

Lab Name: Severn Trent Laboratories, Inc. Client: ENVIRONMENTAL STANDARDS INC.

Lab Code: STLCAN SDG No: 2J04261

Lot #: A2J040000 WO #: E9F641AD
BATCH: 2277485

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENT. (ug/L)	% REC	QC LIMITS REC	QUAL
gamma-BHC (Lindane)	1.0	1.2	117	49- 137	
Heptachlor	1.0	1.0	101	57- 124	
Aldrin	1.0	0.97	97	62- 120	
Dieldrin	1.0	1.2	117	68- 130	
Endrin	1.0	1.2	123	46- 137	
4,4'-DDT	1.0	1.2	118	60- 140	

NOTES(S):

* Values outside of QC limits

Spike Recovery: 0 out of 6 outside limits

COMMENTS:

FORM III

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BLANK WORKORDER NO.

E9F641AA

SW846 8081A METHOD BLANK SUMMARY

Lab Name: Severn Trent Laboratories, Inc.

Lab Code: STLCAN

SDG Number:2J04261

Lab File ID: 052F5201.

Lot Number: A2J040261

Matrix: WATER

Extraction Method:

Date Extracted: 10/05/02

Date Analyzed(1): 10/10/02

Date Analyzed(2): N/A

Time Analyzed(1): 06:17

Time Analyzed(2): N/A

Instrument ID(1): P9

Instrument ID(2): N/A

GC Column(1): RTXPESTCLP ID: 053 GC Column(2): N/A ID: N/A

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, AND MSD:

	CLIENT ID.	SAMPLE WORK ORDER #	DATE ANALYZED(1)	DATE ANALYZED(2)
01	NYPA-ERB-01	E9FJ51AD	10/10/02	N/A
02	CHECK SAMPLE	E9F641AC C	10/16/02	N/A
03	DUPLICATE CHECK	E9F641AD L	10/16/02	N/A
04				
05				
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

COMMENTS:

FORM IV

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BLANK WORKORDER NO.

E9K071AA

SW846 8081A METHOD BLANK SUMMARY

Lab Name: Severn Trent Laboratories, Inc.

Lab Code: STLCAN

SDG Number: 2J04261

Lab File ID: 071F7101.

Lot Number: A2J040261

Matrix: SOLID

Extraction Method: 3550

Date Extracted: 10/08/02

Date Analyzed(1): 10/10/02

Date Analyzed(2): N/A

Time Analyzed(1): 13:13

Time Analyzed(2): N/A

Instrument ID(1): P9

Instrument ID(2): N/A

GC Column(1): RTXPESTCLP ID: 053 GC Column(2): N/A ID: N/A

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, AND MSD:

	CLIENT ID.	SAMPLE WORK ORDER #	DATE ANALYZED(1)	DATE ANALYZED(2)
01	NYPA-UNR-SED01	E9FHE1AE	10/17/02	N/A
02	NYPA-UNR-SED02	E9FH21AE	10/16/02	N/A
03	NYPA-LNR-SED03	E9FH71AE	10/10/02	N/A
04	NYPA-LNR-SED03	E9FH71AV S	10/10/02	N/A
05	NYPA-LNR-SED03	E9FH71AW D	10/10/02	N/A
06	NYPA-LNR-SED04	E9FJC1AE	10/16/02	N/A
07	NYPA-RES-SED05	E9FJD1AE	10/16/02	N/A
08	NYPA-RES-SED06	E9FJE1AE	10/16/02	N/A
09	NYPA-RES-SED07	E9FJF1AE	10/16/02	N/A
10	NYPA-RES-SED08	E9FJG1AE	10/16/02	N/A
11	NYPA-RES-SED09	E9FJH1AE	10/17/02	N/A
12	NYPA-RES-SED12	E9FJJ1AE	10/17/02	N/A
13	CHECK SAMPLE	E9K071AC C	10/10/02	N/A
14				
15				
16				
17				
18				
19				
20				

COMMENTS:

FORM IV

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8D
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: STL - NORTH CANTON Contract:

Lab Code: QESOH Case No.: SAS No.: SDG No.: A2J040261

GC Column: CLP PESTICIDES ID: 0.53(mm) Init. Calib. Date(s): ~~07/11/02~~ 10/09/02
10/09/02

Instrument ID: A2HP9

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	RT #	RT #
01	PEM	PEM	10/09/02	1307		
02		AP9	10/09/02	1329		
03		AP9	10/09/02	1351		
04		AP9	10/09/02	1413		
05		AP9	10/09/02	1435		
06		AP9	10/09/02	1457		
07		AP9	10/09/02	1519		
08		MIREX	10/09/02	1540		
09		MIREX	10/09/02	1602		
10		MIREX	10/09/02	1624		
11		MIREX	10/09/02	1646		
12		MIREX	10/09/02	1708		
13		MIREX	10/09/02	1730		
14		TOX	10/09/02	2025		
15		TECHLOR	10/09/02	2047		
16	PEM	PEM	10/10/02	0321		
17		AB3	10/10/02	0343		
18	NYPA-ERB-01	E9FJ51AD	10/10/02	0533		
19	E9F64BLK	E9F641AA	10/10/02	0617		
20	NYPA-LNR-SED	E9FH71AE	10/10/02	0912		
21	NYPA-LNR-SED	E9FH71AV	10/10/02	0934		
22	NYPA-LNR-SED	E9FH71AW	10/10/02	0956		
23	E9K07CHK	E9K071AC	10/10/02	1251		
24	E9K07BLK	E9K071AA	10/10/02	1313		
25	PEM	PEM	10/10/02	1335		
26		AB3	10/10/02	1357		
27		TOX	10/10/02	1609		
28		TCLOR3	10/10/02	1631		
29		MIREX 3	10/10/02	1653		
30		AP9 3	10/10/02	1715		
31						
32						

See I-CAL

-011
-003

QC LIMITS

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

AB 10/9/02 17:52
18:14
18:36
18:58
19:20
19:41
20:03

page 1 of 1

FORM VIII PEST OLM04.2

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STL - North Canton

Data file : \\qcanoh04\dd\chem\GCS\a2hp9.i\021009IC-1.b\005F0501.D
Lab Smp Id: PEM
Client Smp ID: PEM
Inj Date : 09-OCT-2002 13:07
Inst ID: a2hp9.i
Operator : 9272
Smp Info : PEM
Misc Info : 12-PEM.SUB
Comment :
Method : \\QCANOH04\DD\chem\GCS\a2hp9.i\021009IC-1.b\PEST9.m
Meth Date : 11-Oct-2002 09:31 lip
Quant Type: ESTD
Cal Date : 14-SEP-2002 02:57
Cal File: 019F1901.D
Als bottle: 5
QC Sample: PEM
Dil Factor: 1.00000
Integrator: Falcon
Compound Sublist: 12-PEM.SUB
Target Version: 4.04
Processing Host: QCANOH05

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ng)
M 1 Total Endrin				2684298		
M 2 Total DDT				5090291		
10 alpha-BHC	6.471	6.469	0.002	791685	0.00932	0.009315
12 gamma-BHC (Lindane)	7.087	7.086	0.001	703183	0.00897	0.008970
13 beta-BHC	7.305	7.304	0.001	301535	0.00967	0.009670
24 4,4'-DDE	Compound Not Detected.					
28 Endrin	10.889	10.888	0.001	2684298	0.04882	0.04882
30 4,4'-DDD	Compound Not Detected.					
32 Endosulfan II	Compound Not Detected.					
34 4,4'-DDT	11.687	11.686	0.001	5090291	0.11157	0.1116
36 Endrin aldehyde	Compound Not Detected.					
37 Methoxychlor	12.934	12.933	0.001	6469262	0.27285	0.2728
38 Endosulfan sulfate	Compound Not Detected.					
39 Endrin ketone	Compound Not Detected.					

Endrin Breakdown:

0%

DDT Breakdown:

0%

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STL - North Canton

Data file : \\qcanoh04\dd\chem\GCS\a2hp9.i\021009IC-2.b\005F0501.D
Lab Smp Id: PEM Client Smp ID: PEM
Inj Date : 09-OCT-2002 13:07
Operator : 9272 Inst ID: a2hp9.i
Smp Info : PEM
Misc Info : 12-PEM.SUB
Comment :
Method : \\QCANOH04\DD\chem\GCS\a2hp9.i\021009IC-2.b\PEST9r.m
Meth Date : 11-Oct-2002 09:33 lip Quant Type: ESTD
Cal Date : 09-OCT-2002 16:24 Cal File: 014F1401.D
Als bottle: 5 QC Sample: PEM
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: 12-PEM.SUB
Target Version: 4.04
Processing Host: CANPGCSV04

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ng)
M 2 Total DDT				3884700	0.10231	0.1023
11 alpha-BHC	7.505	7.504	0.001	734682	0.00904	0.009037
13 gamma-BHC (Lindane)	8.198	8.198	0.000	686733	0.00930	0.009303
21 beta-BHC	8.400	8.400	0.000	306123	0.01007	0.01007
29 4,4'-DDE	Compound Not Detected.					
33 Endrin	12.430	12.429	0.001	2574475	0.04649	0.04649
37 4,4'-DDD	Compound Not Detected.					
36 Endosulfan II	Compound Not Detected.					
38 4,4'-DDT	13.542	13.541	0.001	3884700	0.10231	0.1023
40 Endrin aldehyde	Compound Not Detected.					
43 Methoxychlor	14.721	14.719	0.002	5408853	0.22872	0.2287
42 Endosulfan sulfate	Compound Not Detected.					
39 Endrin ketone	Compound Not Detected.					

Endrin Breakdown:

0% ✓

DDT Breakdown:

0% ✓

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STL - North Canton

INITIAL CALIBRATION DATA

Start Cal Date : ~~11-JUL~~ 04-OCT-2002 ~~16:03~~ 13:29
End Cal Date : 09-OCT-2002 20:47
Quant Method : ESTD
Target Version : 4.04
Integrator : Falcon
Method file : \\qcanoh04\dd\chem\GCS\a2hp9.i\021009IC-1.b\PEST9.m
Cal Date : 11-Oct-2002 14:29 lip

Calibration File Names:
Level 1: \\qcanoh04\dd\chem\GCS\a2hp9.i\021009IC-1.b\012F1201.D
Level 2: \\qcanoh04\dd\chem\GCS\a2hp9.i\021009IC-1.b\013F1301.D
Level 3: \\qcanoh04\dd\chem\GCS\a2hp9.i\021009IC-1.b\014F1401.D
Level 4: \\qcanoh04\dd\chem\GCS\a2hp9.i\021009IC-1.b\015F1501.D
Level 5: \\qcanoh04\dd\chem\GCS\a2hp9.i\021009IC-1.b\016F1601.D
Level 6: \\qcanoh04\dd\chem\GCS\a2hp9.i\020913IC-1.b\028F2801.D

Compound	0.0050000 Level 1	0.0100000 Level 2	0.0250000 Level 3	0.0500000 Level 4	0.1000000 Level 5	0.2000000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2	
M 1 Total Endrin	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
52 hexabromobiphenyl	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
M 2 Total DDT	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
4 Aroclor-1221(1)	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
(2)	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
(3)	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
5 Aroclor-1232(1)	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
(2)	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
(3)	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
(4)	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
(5)	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-

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INITIAL CALIBRATION DATA

Start Cal Date : ~~11-JUL~~-2002 ~~16:03~~ D4-OCT 13:24
End Cal Date : 09-OCT-2002 20:47
Quant Method : ESTD
Target Version : 4.04
Integrator : Falcon
Method file : \\qcanoh04\dd\chem\GCS\a2hp9.i\021009IC-1.b\PEST9.m
Cal Date : 11-Oct-2002 14:29 lip

Compound	0.0050000 Level 1	0.0100000 Level 2	0.0250000 Level 3	0.0500000 Level 4	0.1000000 Level 5	0.2000000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2	
6 Hexachlorobenzene	74323000	67123350	68976700	70505920	73140430	75849358	AVRG		71653126		4.66840	
7 Aroclor-1242(1)	++++++	++++++	++++++	++++++	++++++	++++++	AVRG		0.000e+000		0.000e+000	<-
(2)	++++++	++++++	++++++	++++++	++++++	++++++	AVRG		0.000e+000		0.000e+000	<-
(3)	++++++	++++++	++++++	++++++	++++++	++++++	AVRG		0.000e+000		0.000e+000	<-
(4)	++++++	++++++	++++++	++++++	++++++	++++++	AVRG		0.000e+000		0.000e+000	<-
(5)	++++++	++++++	++++++	++++++	++++++	++++++	AVRG		0.000e+000		0.000e+000	<-
8 Aroclor-1016(1)	++++++	++++++	++++++	++++++	++++++	++++++	AVRG		0.000e+000		0.000e+000	<-
(2)	++++++	++++++	++++++	++++++	++++++	++++++	AVRG		0.000e+000		0.000e+000	<-
(3)	++++++	++++++	++++++	++++++	++++++	++++++	AVRG		0.000e+000		0.000e+000	<-
(4)	++++++	++++++	++++++	++++++	++++++	++++++	AVRG		0.000e+000		0.000e+000	<-
(5)	++++++	++++++	++++++	++++++	++++++	++++++	AVRG		0.000e+000		0.000e+000	<-
9 Diallate(1)	1427720	1233020	1172345	1040268	968308	++++++	AVRG		1168332		15.30476	
(2)	1117800	943730	883085	782920	733078	++++++	AVRG		892123		16.89729	
10 alpha-BHC	83390000	81300100	81067560	87111640	92056230	93453745	AVRG		86396546		6.24936	
11 Aroclor-1248(1)	++++++	++++++	++++++	++++++	++++++	++++++	AVRG		0.000e+000		0.000e+000	<-
(2)	++++++	++++++	++++++	++++++	++++++	++++++	AVRG		0.000e+000		0.000e+000	<-
(3)	++++++	++++++	++++++	++++++	++++++	++++++	AVRG		0.000e+000		0.000e+000	<-
(4)	++++++	++++++	++++++	++++++	++++++	++++++	AVRG		0.000e+000		0.000e+000	<-
(5)	++++++	++++++	++++++	++++++	++++++	++++++	AVRG		0.000e+000		0.000e+000	<-

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STL - North Canton

INITIAL CALIBRATION DATA

Start Cal Date : ~~11-JUL~~ 09-OCT-2002 ~~16:03~~ 13:29
End Cal Date : 09-OCT-2002 20:47
Quant Method : ESTD
Target Version : 4.04
Integrator : Falcon
Method file : \\qcanoh04\dd\chem\GCS\a2hp9.i\021009IC-1.b\PEST9.m
Cal Date : 11-Oct-2002 14:29 lip

Compound	0.0050000 Level 1	0.0100000 Level 2	0.0250000 Level 3	0.0500000 Level 4	0.1000000 Level 5	0.2000000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2	
12 gamma-BHC (Lindane)	74470600	71612800	71738000	76200740	80418760	81936195	AVRG		76062849		5.71651	
13 beta-BHC	34057000	31299700	29205840	29068100	29838360	29848290	AVRG		30552882		6.18637	
14 delta-BHC	66479400	64601000	66234840	70659080	75558020	77647495	AVRG		70196639		7.67943	
15 Heptachlor	77298600	73849200	72817520	76219540	79470100	80084620	AVRG		76623263		3.82208	
16 Tech Chlordane(1)	+++++	+++++	2736630	+++++	+++++	+++++	AVRG		2736630		0.000e+000	
(2)	+++++	+++++	4092500	+++++	+++++	+++++	AVRG		4092500		0.000e+000	<-
(3)	+++++	+++++	9155830	+++++	+++++	+++++	AVRG		9155830		0.000e+000	<-
(4)	+++++	+++++	16123060	+++++	+++++	+++++	AVRG		16123060		0.000e+000	<-
17 Aldrin	70320800	67672700	67380640	71800280	75402760	77003920	AVRG		71596850		5.53655	
18 Isodrin	64016200	59464500	62459600	65887900	69800100	72498380	AVRG		65687780		7.30983	
19 Aroclor-1254(1)	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
(2)	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
(3)	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
(4)	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
(5)	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
20 Heptachlor epoxide	67955800	64216200	62027520	64343760	66090050	66215535	AVRG		65141478		3.15825	
21 gamma-Chlordane	67745600	64286800	62716160	65915000	68997020	70711025	AVRG		66728601		4.48401	

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INITIAL CALIBRATION DATA

Start Cal Date : ~~11-JUL~~-2002 ~~16:03~~ 04 OCT 13:29
End Cal Date : 09-OCT-2002 20:47
Quant Method : ESTD
Target Version : 4.04
Integrator : Falcon
Method file : \\qcanoh04\dd\chem\GCS\a2hp9.i\021009IC-1.b\PEST9.m
Cal Date : 11-Oct-2002 14:29 lip

Compound	0.0050000 Level 1	0.0100000 Level 2	0.0250000 Level 3	0.0500000 Level 4	0.1000000 Level 5	0.2000000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2	
22 alpha-Chlordane	73738600	74420500	66388600	66312660	67825430	68534540	AVRG		69536722		5.21474	
23 Endosulfan I	64576200	62182100	59070760	60539200	61410200	61591770	AVRG		61561705		2.97278	
24 4,4'-DDE	53757400	54077000	53739080	57935520	61487110	62507805	AVRG		57250653		7.01559	
25 Dieldrin	65322800	62554000	62156280	65725100	68486480	69437020	AVRG		65613613		4.53566	
26 Aroclor-1260(1)	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
(2)	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
(3)	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
(4)	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
(5)	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
27 Toxaphene(1)	+++++	+++++	876571	+++++	+++++	+++++	AVRG		876571		0.000e+000	
(2)	+++++	+++++	1272130	+++++	+++++	+++++	AVRG		1272130		0.000e+000	
(3)	+++++	+++++	2211327	+++++	+++++	+++++	AVRG		2211327		0.000e+000	
(4)	+++++	+++++	1511399	+++++	+++++	+++++	AVRG		1511399		0.000e+000	
(5)	+++++	+++++	1123019	+++++	+++++	+++++	AVRG		1123019		0.000e+000	
28 Endrin	57708200	60060500	55921000	57532380	58319680	60124300	AVRG		58277677		2.76939	
29 Kepone	587467	1897921	3427686	13390326	32000142	62096942	QUAD	0.000e+000	5.453e-008	-5.337e-01	0.99720	
30 4,4'-DDD	44729200	43430000	43727160	45843040	48162180	49681970	AVRG		45928925		5.47462	

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INITIAL CALIBRATION DATA

09-OCT

Start Cal Date : ~~11-JUL~~-2002 ~~16:03~~ 13:29
End Cal Date : 09-OCT-2002 20:47
Quant Method : ESTD
Target Version : 4.04
Integrator : Falcon
Method file : \\qcanoh04\dd\chem\GCS\a2hp9.i\021009IC-1.b\PEST9.m
Cal Date : 11-Oct-2002 14:29 lip

Compound	0.0050000 Level 1	0.0100000 Level 2	0.0250000 Level 3	0.0500000 Level 4	0.1000000 Level 5	0.2000000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2	
31 Chlorobenzilate	3810640	3301550	3203675	3048166	2878610	++++++	AVRG		3248528		10.85928	
32 Endosulfan II	60935200	57470500	54781360	55752060	56762720	57098910	AVRG		57133458		3.68361	
33 Methyl Parathion	++++++	++++++	++++++	++++++	++++++	++++++	AVRG		0.000e+000		0.000e+000	<-
34 4,4'-DDT	51059400	48821500	48559280	49972500	52305560	54185630	AVRG		50817312		4.25841	
35 Parathion	++++++	++++++	++++++	++++++	++++++	++++++	AVRG		0.000e+000		0.000e+000	<-
36 Endrin aldehyde	52326400	48451900	45540000	45225160	45477380	45179140	AVRG		47033330		6.11707	
37 Methoxychlor	32895600	30608300	29500040	28431780	27687590	27228080	AVRG		29391898		7.18132	
38 Endosulfan sulfate	60869000	56205400	53202680	53042480	53150020	53375680	AVRG		54974210		5.69548	
39 Endrin ketone	67785000	64582500	62103800	62279780	62296680	61663525	AVRG		63451881		3.71468	
40 Alachlor	++++++	++++++	++++++	++++++	++++++	++++++	AVRG		0.000e+000		0.000e+000	<-
41 ENDO2/DDD	++++++	++++++	++++++	++++++	++++++	++++++	AVRG		0.000e+000		0.000e+000	<-
43 DDE/ENDOSULF I	++++++	++++++	++++++	++++++	++++++	++++++	AVRG		0.000e+000		0.000e+000	<-
44 Mirex	60253600	55336550	54299380	49570820	51012585	48607563	AVRG		53180083		8.17794	
45 ENDOSULFATE/METHOXY	++++++	++++++	++++++	++++++	++++++	++++++	AVRG		0.000e+000		0.000e+000	<-
46 Famphur	++++++	++++++	++++++	++++++	++++++	++++++	AVRG		0.000e+000		0.000e+000	<-
$ 13 Tetrachloro-m-xylene	56321800	53029100	50595040	51728500	53373850	53600665	AVRG		53108159		3.65759	

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INITIAL CALIBRATION DATA

09-OCT 13:29

Start Cal Date : ~~11-JUL~~-2002 ~~16:03~~
End Cal Date : 09-OCT-2002 20:47
Quant Method : ESTD
Target Version : 4.04
Integrator : Falcon
Method file : \\qcanoh04\dd\chem\GCS\a2hp9.i\021009IC-1.b\PEST9.m
Cal Date : 11-Oct-2002 14:29 lip

Compound	0.0050000 Level 1	0.0100000 Level 2	0.0250000 Level 3	0.0500000 Level 4	0.1000000 Level 5	0.2000000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
$ 12 Decachlorobiphenyl	65125200	59222200	53590240	51164560	49388120	48792395	AVRG		54547119		11.76277

Curve	Formula	Units
Averaged	Amt = Rsp/m1	Response
Quad	Amt = b + m1*Rsp + m2*Rsp^2	Response

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Report Date : 11-Oct-2002 14:33

STL - North Canton

INITIAL CALIBRATION DATA

Start Cal Date : ~~11-JUL~~-2002 ~~16:03~~ 13:29 09 OCT
End Cal Date : 09-OCT-2002 20:47
Quant Method : ESTD
Target Version : 4.04
Integrator : Falcon
Method file : \\qcanoh04\dd\chem\GCS\a2hp9.i\021009IC-2.b\PEST9r.m
Cal Date : 11-Oct-2002 14:30 lip

Calibration File Names:
Level 1: \\qcanoh04\dd\chem\GCS\a2hp9.i\021009IC-2.b\012F1201.D
Level 2: \\qcanoh04\dd\chem\GCS\a2hp9.i\021009IC-2.b\013F1301.D
Level 3: \\qcanoh04\dd\chem\GCS\a2hp9.i\021009IC-2.b\014F1401.D
Level 4: \\qcanoh04\dd\chem\GCS\a2hp9.i\021009IC-2.b\015F1501.D
Level 5: \\qcanoh04\dd\chem\GCS\a2hp9.i\021009IC-2.b\016F1601.D
Level 6: \\qcanoh04\dd\chem\GCS\a2hp9.i\020913IC-2.b\028F2801.D

Compound	0.0050000 Level 1	0.0100000 Level 2	0.0250000 Level 3	0.0500000 Level 4	0.1000000 Level 5	0.2000000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2	
M 2 Total DDT	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
52 hexabromobiphenyl	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
8 Aroclor-1232(1)	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
(2)	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
(3)	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
(4)	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
(5)	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
6 Aroclor-1221(1)	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
(2)	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
(3)	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-

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INITIAL CALIBRATION DATA

D4-OCT 13:29

Start Cal Date : ~~11-JUL~~-2002 ~~16:03~~
End Cal Date : 09-OCT-2002 20:47
Quant Method : ESTD
Target Version : 4.04
Integrator : Falcon
Method file : \\qcanoh04\dd\chem\GCS\a2hp9.i\021009IC-2.b\PEST9r.m
Cal Date : 11-Oct-2002 14:30 lip

Compound	0.0050000 Level 1	0.0100000 Level 2	0.0250000 Level 3	0.0500000 Level 4	0.1000000 Level 5	0.2000000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2	
10 Aroclor-1016(1)	++++++	++++++	++++++	++++++	++++++	++++++	AVRG		0.000e+000		0.000e+000	<-
(2)	++++++	++++++	++++++	++++++	++++++	++++++	AVRG		0.000e+000		0.000e+000	<-
(3)	++++++	++++++	++++++	++++++	++++++	++++++	AVRG		0.000e+000		0.000e+000	<-
(4)	++++++	++++++	++++++	++++++	++++++	++++++	AVRG		0.000e+000		0.000e+000	<-
(5)	++++++	++++++	++++++	++++++	++++++	++++++	AVRG		0.000e+000		0.000e+000	<-
9 Aroclor-1242(1)	++++++	++++++	++++++	++++++	++++++	++++++	AVRG		0.000e+000		0.000e+000	<-
(2)	++++++	++++++	++++++	++++++	++++++	++++++	AVRG		0.000e+000		0.000e+000	<-
(3)	++++++	++++++	++++++	++++++	++++++	++++++	AVRG		0.000e+000		0.000e+000	<-
(4)	++++++	++++++	++++++	++++++	++++++	++++++	AVRG		0.000e+000		0.000e+000	<-
(5)	++++++	++++++	++++++	++++++	++++++	++++++	AVRG		0.000e+000		0.000e+000	<-
3 Hexachlorobenzene	69457900	62341150	64160450	66148370	68632250	71405668	AVRG		67024298		5.10799	
5 Diallate(1)	1585440	1421660	1318335	1144590	1050135	++++++	AVRG		1304032		16.40763	
(2)	1252300	1128070	1059900	920838	839434	++++++	AVRG		1040108		15.77241	
11 alpha-BHC	76585600	75039000	76397440	82285540	87754960	89711880	AVRG		81295737		7.75745	
12 Aroclor-1248(1)	++++++	++++++	++++++	++++++	++++++	++++++	AVRG		0.000e+000		0.000e+000	<-
(2)	++++++	++++++	++++++	++++++	++++++	++++++	AVRG		0.000e+000		0.000e+000	<-
(3)	++++++	++++++	++++++	++++++	++++++	++++++	AVRG		0.000e+000		0.000e+000	<-
(4)	++++++	++++++	++++++	++++++	++++++	++++++	AVRG		0.000e+000		0.000e+000	<-
(5)	++++++	++++++	++++++	++++++	++++++	++++++	AVRG		0.000e+000		0.000e+000	<-

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INITIAL CALIBRATION DATA

04 OCT

Start Cal Date : ~~11-JUL~~-2002 ~~16:03~~ 13:24
End Cal Date : 09-OCT-2002 20:47
Quant Method : ESTD
Target Version : 4.04
Integrator : Falcon
Method file : \\qcanoh04\dd\chem\GCS\a2hp9.i\021009IC-2.b\PEST9r.m
Cal Date : 11-Oct-2002 14:30 lip

Compound	0.0050000 Level 1	0.0100000 Level 2	0.0250000 Level 3	0.0500000 Level 4	0.1000000 Level 5	0.2000000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2	
13 gamma-BHC (Lindane)	72000000	69363900	69612480	73900960	78275490	79774935	AVRG		73821294		5.94158	
21 beta-BHC	34870000	31467900	28948640	28630500	29187820	29240930	AVRG		30390965		7.94782	
22 delta-BHC	66847800	64144900	65958920	70417240	75362140	76730335	AVRG		69910223		7.42502	
7 Tech Chlordane(1)	+++++	+++++	2738170	+++++	+++++	+++++	AVRG		2738170		0.000e+000	
(2)	+++++	+++++	4999980	+++++	+++++	+++++	AVRG		4999980		0.000e+000	<-
(3)	+++++	+++++	3797180	+++++	+++++	+++++	AVRG		3797180		0.000e+000	<-
(4)	+++++	+++++	8688270	+++++	+++++	+++++	AVRG		8688270		0.000e+000	<-
16 Heptachlor	72823400	69302900	67362360	70795800	73764780	74870655	AVRG		71486649		3.99027	
19 Aroclor-1254(1)	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
(2)	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
(3)	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
(4)	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
(5)	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
18 Aldrin	71352000	68737700	68034080	72438160	75885010	77268835	AVRG		72285964		5.15196	
17 Methyl Parathion	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
20 Parathion	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
23 Heptachlor epoxide	68018800	63750100	61400840	63594540	65341270	65364220	AVRG		64578295		3.44777	

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STL - North Canton

INITIAL CALIBRATION DATA

Start Cal Date : ~~11-JUL~~ 04 OCT -2002 ~~16:03~~ 13:29
End Cal Date : 09-OCT-2002 20:47
Quant Method : ESTD
Target Version : 4.04
Integrator : Falcon
Method file : \\qcanoh04\dd\chem\GCS\a2hp9.i\021009IC-2.b\PEST9r.m
Cal Date : 11-Oct-2002 14:30 lip

Compound	0.0050000 Level 1	0.0100000 Level 2	0.0250000 Level 3	0.0500000 Level 4	0.1000000 Level 5	0.2000000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2	
26 gamma-Chlordane	68653400	64420600	62523080	65620900	68617770	70285175	AVRG		66686821		4.45609	
28 alpha-Chlordane	69067000	64244700	61698000	63914180	66298530	67644050	AVRG		65477743		4.12642	
14 Isodrin	65004400	59737000	62525000	65857720	69709470	72268995	AVRG		65850431		6.96697	
29 4,4'-DDE	54749000	50758100	52181920	55250120	58378250	59987630	AVRG		55217503		6.38065	
51 DDE/ENDOSULF I	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
24 Endosulfan I	61614200	57595100	55334000	57589600	59407070	59989725	AVRG		58588283		3.76778	
32 Aroclor-1260(1)	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
(2)	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
(3)	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
(4)	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
(5)	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
31 Dieldrin	66882400	62644500	61549560	64722860	67661850	69019290	AVRG		65413410		4.49817	
33 Endrin	57876400	54108900	52525280	54402140	55699840	57660120	AVRG		55378780		3.80962	
25 Kepone	314295	1182567	2210159	9886543	25889308	52766370	QUAD	0.000e+000	7.125e-008	-2.085e-01	0.99591	
37 4,4'-DDD	45570600	42615700	42814480	44558360	47022760	48479450	AVRG		45176892		5.14303	
27 Chlorobenzilate	4251420	3703900	3466955	3290276	3087350	+++++	AVRG		3559980		12.59029	
36 Endosulfan II	60996200	56860700	54426360	55348180	56164640	56762445	AVRG		56759754		3.99812	

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STL - North Canton

INITIAL CALIBRATION DATA

Start Cal Date : ~~11-JUL~~ 09-OCT-2002 ~~16:03~~ 13:24
End Cal Date : 09-OCT-2002 20:47
Quant Method : ESTD
Target Version : 4.04
Integrator : Falcon
Method file : \\qcanoh04\dd\chem\GCS\a2hp9.i\021009IC-2.b\PEST9r.m
Cal Date : 11-Oct-2002 14:30 lip

Compound	0.0050000 Level 1	0.0100000 Level 2	0.0250000 Level 3	0.0500000 Level 4	0.1000000 Level 5	0.2000000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2	
30 Toxaphene(1)	+++++	+++++	1453779	+++++	+++++	+++++	AVRG		1453779		0.000e+000	
(2)	+++++	+++++	1420755	+++++	+++++	+++++	AVRG		1420755		0.000e+000	<-
(3)	+++++	+++++	2762320	+++++	+++++	+++++	AVRG		2762320		0.000e+000	<-
(4)	+++++	+++++	1445947	+++++	+++++	+++++	AVRG		1445947		0.000e+000	<-
(5)	+++++	+++++	1019101	+++++	+++++	+++++	AVRG		1019101		0.000e+000	<-
38 4,4'-DDT	33299400	33538000	37017920	39369760	41929240	42663545	AVRG		37969644		10.66741	
40 Endrin aldehyde	50112600	46247000	43788480	43800440	44083610	43797165	AVRG		45304883		5.61265	
43 Methoxychlor	26103000	24610800	23222240	22645400	22585740	22722850	AVRG		23648338		6.01738	
34 Mirex	53521800	49906450	49724740	45824730	47462445	45217128	AVRG		48609549		6.34977	
42 Endosulfan sulfate	57355400	53539700	51133240	51212340	51523570	51723390	AVRG		52747940		4.59472	
39 Endrin ketone	61230000	57998300	56843840	57183380	57449780	57183015	AVRG		57981386		2.82393	
15 Alachlor	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
35 ENDO2/DDD	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
41 ENDOSULFATE/METHOXY	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
44 Famphur	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
$ 4 Tetrachloro-m-xylene	56812000	52960800	50131040	51330080	53027590	53537915	AVRG		52966571		4.29165	

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STL - North Canton

INITIAL CALIBRATION DATA

Start Cal Date : ~~11-JUL~~ 09-OCT-2002 ~~16:03~~ 13:24
End Cal Date : 09-OCT-2002 20:47
Quant Method : ESTD
Target Version : 4.04
Integrator : Falcon
Method file : \\qcanoh04\dd\chem\GCS\a2hp9.i\021009IC-2.b\PEST9r.m
Cal Date : 11-Oct-2002 14:30 lip

Compound	0.0050000 Level 1	0.0100000 Level 2	0.0250000 Level 3	0.0500000 Level 4	0.1000000 Level 5	0.2000000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
$ 45 Decachlorobiphenyl	58198400	54346100	50043320	48118180	46851560	46392890	AVRG		50658408		9.25758

Curve	Formula	Units
Averaged	Amt = Rsp/m1	Response
Quad	Amt = b + m1*Rsp + m2*Rsp^2	Response

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Data File: \\qcanoh04\dd\chem\GCS\a2hp9.i\021009IC-1.b\024F2401.D Page 1
Report Date: 11-Oct-2002 16:26

STL - North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp9.i
Lab File ID: 024F2401.D
Analysis Type:
Lab Sample ID: ICV
Method: \\QCANOH04\DD\chem\GCS\a2hp9.i\021009IC-1.b\PEST9.m

Injection Date: 09-OCT-2002 20:03
Init. Cal. Date(s): ~~11-JUL~~-2002 09-OCT-2002
Init. Cal. Times: ~~16:03~~ 20:47
Quant Type: ESTD 13:24 09-OCT

	COMPOUND	RRF	RF0	MIN RRF	%D	MAX %D	
$	3 Tetrachloro-m-xylene	53108159	62312440	0.000	17.3	15.0	<-
	10 alpha-BHC	86396546	102380160	0.010	18.5	15.0	<-
	12 gamma-BHC (Lindane)	76062849	91627440	0.010	20.5	15.0	<-
	13 beta-BHC	30552882	37072640	0.010	21.3	15.0	<-
	14 delta-BHC	70196639	86051960	0.010	22.6	15.0	<-
	15 Heptachlor	76623263	92352280	0.010	20.5	15.0	<-
	17 Aldrin	71596850	84573680	0.010	18.1	15.0	<-
	20 Heptachlor epoxide	65141478	77590320	0.010	19.1	15.0	<-
	21 gamma-Chlordane	66728601	78542440	0.010	17.7	15.0	<-
	22 alpha-Chlordane	69536722	82715240	0.010	19.0	15.0	<-
	24 4,4'-DDE	57250653	68881240	0.010	20.3	15.0	<-
	23 Endosulfan I	61561705	73294960	0.010	19.1	15.0	<-
	25 Dieldrin	65613613	77595560	0.010	18.3	15.0	<-
	28 Endrin	58277677	64532680	0.010	10.7	15.0	
	30 4,4'-DDD	45928925	55288040	0.010	20.4	15.0	<-
	32 Endosulfan II	57133458	68361000	0.010	19.7	15.0	<-
	34 4,4'-DDT	50817312	61299240	0.010	20.6	15.0	<-
	36 Endrin aldehyde	47033330	55427640	0.010	17.8	15.0	<-
	37 Methoxychlor	29391898	36484760	0.010	24.1	15.0	<-
	38 Endosulfan sulfate	54974210	65944920	0.010	20.0	15.0	<-
	39 Endrin ketone	63451881	78823080	0.010	24.2	15.0	<-
$	42 Decachlorobiphenyl	54547119	65542080	0.010	20.2	15.0	<-

No STs bracketed

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Data File: \\qcanoh04\dd\chem\GCS\a2hp9.i\021009IC-2.b\024F2401.D Page 1
Report Date: 11-Oct-2002 14:30

STL - North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp9.i
Lab File ID: 024F2401.D
Analysis Type:
Lab Sample ID: ICV
Method: \\QCANOH04\DD\chem\GCS\a2hp9.i\021009IC-2.b\PEST9r.m

Injection Date: 09-OCT-2002 20:03
Init. Cal. Date(s): ~~11-JUL-2002~~ 09-OCT-2002
Init. Cal. Times: ~~16:03~~ 13:29 20:47
Quant Type: ESTD

COMPOUND	RRF	RFO	MIN RRF	%D	MAX %D	
$ 4 Tetrachloro-m-xylene	52966571	61677960	0.000	16.4	15.0	<-
11 alpha-BHC	81295737	96882920	0.010	19.2	15.0	<-
13 gamma-BHC (Lindane)	73821294	88940520	0.010	20.5	15.0	<-
21 beta-BHC	30390965	36495320	0.010	20.1	15.0	<-
22 delta-BHC	69910223	85780400	0.010	22.7	15.0	<-
16 Heptachlor	71486649	84657000	0.010	18.4	15.0	<-
18 Aldrin	72285964	85421480	0.010	18.2	15.0	<-
23 Heptachlor epoxide	64578295	77004160	0.010	19.2	15.0	<-
26 gamma-Chlordane	66686821	78336360	0.010	17.5	15.0	<-
28 alpha-Chlordane	65477743	77432240	0.010	18.3	15.0	<-
29 4,4'-DDE	55217503	66259240	0.010	20.0	15.0	<-
24 Endosulfan I	58588283	68219760	0.010	16.4	15.0	<-
31 Dieldrin	65413410	77013480	0.010	17.7	15.0	<-
33 Endrin	55378780	61419680	0.010	10.9	15.0	
37 4,4'-DDD	45176892	54696400	0.010	21.1	15.0	<-
36 Endosulfan II	56759754	67713040	0.010	19.3	15.0	<-
38 4,4'-DDT	37969644	48304200	0.010	27.2	15.0	<-
40 Endrin aldehyde	45304803	53453000	0.010	18.0	15.0	<-
42 Endosulfan sulfate	52747940	63556280	0.010	20.5	15.0	<-
43 Methoxychlor	23648338	29547240	0.010	24.9	15.0	<-
39 Endrin ketone	57981386	73235200	0.010	26.3	15.0	<-
$ 45 Decachlorobiphenyl	50658408	61122320	0.010	20.7	15.0	<-

No Sat's bracketed

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Data file : \\qcanoh04\dd\chem\GCS\a2hp9.i\021009IC-1.b\044F4401.D
Lab Smp Id: PEM Client Smp ID: PEM
Inj Date : 10-OCT-2002 03:21
Operator : 9272 Inst ID: a2hp9.i
Smp Info : PEM
Misc Info : 12-PEM.SUB
Comment :
Method : \\QCANOH04\DD\chem\GCS\a2hp9.i\021009IC-1.b\PEST9.m
Meth Date : 11-Oct-2002 09:31 lip Quant Type: ESTD
Cal Date : 14-SEP-2002 06:14 Cal File: 028F2801.D
Als bottle: 44 QC Sample: PEM
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: 12-PEM.SUB
Target Version: 4.04
Processing Host: QCANOH05

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ng)
M 1 Total Endrin				3123935		
M 2 Total DDT				5839869		
10 alpha-BHC	6.471	6.469	0.002	858735	0.00994	0.009939
12 gamma-BHC (Lindane)	7.087	7.086	0.001	778506	0.01024	0.01024
13 beta-BHC	7.304	7.304	0.000	340725	0.01115	0.01115
24 4,4'-DDE	Compound Not Detected.					
28 Endrin	10.889	10.888	0.001	3123935	0.05360	0.05360
30 4,4'-DDD	Compound Not Detected.					
32 Endosulfan II	Compound Not Detected.					
34 4,4'-DDT	11.688	11.686	0.002	5839869	0.11492	0.1149
36 Endrin aldehyde	Compound Not Detected.					
37 Methoxychlor	12.933	12.933	0.000	7420707	0.25247	0.2525
38 Endosulfan sulfate	13.165	13.192	-0.027	55628	0.00101	0.001012
39 Endrin ketone	Compound Not Detected.					

Endrin Breakdown:
0 %

DDT Breakdown:
0 %

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Data file : \\qcanoh04\dd\chem\GCS\a2hp9.i\021009IC-2.b\044F4401.D
Lab Smp Id: PEM Client Smp ID: PEM
Inj Date : 10-OCT-2002 03:21
Operator : 9272 Inst ID: a2hp9.i
Smp Info : PEM
Misc Info : 12-PEM.SUB
Comment :
Method : \\QCANOH04\DD\chem\GCS\a2hp9.i\021009IC-2.b\PEST9r.m
Meth Date : 11-Oct-2002 09:33 lip Quant Type: ESTD
Cal Date : 14-SEP-2002 06:14 Cal File: 028F2801.D
Als bottle: 44 QC Sample: PEM
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: 12-PEM.SUB
Target Version: 4.04
Processing Host: QCANOH05

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ng)
M 2 Total DDT				4963198	0.13071	0.1307
11 alpha-BHC	7.504	7.504	0.000	828630	0.01019	0.01019
13 gamma-BHC (Lindane)	8.198	8.198	0.000	780773	0.01058	0.01058
21 beta-BHC	8.399	8.400	-0.001	351760	0.01157	0.01157
29 4,4'-DDE	Compound Not Detected.					
33 Endrin	12.429	12.429	0.000	3111939	0.05619	0.05619
37 4,4'-DDD	Compound Not Detected.					
36 Endosulfan II	Compound Not Detected.					
38 4,4'-DDT	13.543	13.541	0.002	4963198	0.13071	0.1307
40 Endrin aldehyde	Compound Not Detected.					
43 Methoxychlor	14.720	14.719	0.001	6787768	0.28703	0.2870
42 Endosulfan sulfate	Compound Not Detected.					
39 Endrin ketone	Compound Not Detected.					

Endrin Breakdown:
0%

DDT Breakdown:
0%

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp9.i
Lab File ID: 045F4501.D
Analysis Type:
Lab Sample ID: AB3
Injection Date: 10-OCT-2002 03:43
Init. Cal. Date(s): ~~11-JUL~~-2002 09-OCT-2002
Init. Cal. Times: ~~16:03~~ 13:29 ~~19:41~~ 20:47
Quant Type: ESTD
Method: \\QCANOH04\DD\chem\GCS\a2hp9.i\021009IC-1.b\PEST9.m

COMPOUND	RRF	RF0	MIN RRF	%D	MAX %D
$ 3 Tetrachloro-m-xylene	53108159	54564000	0.000	2.7	15.0
10 alpha-BHC	86396546	87286840	0.010	1.0	15.0
12 gamma-BHC (Lindane)	76062849	77511280	0.010	1.9	15.0
13 beta-BHC	30552882	32116160	0.010	5.1	15.0
14 delta-BHC	70196639	72861600	0.010	3.8	15.0
15 Heptachlor	76623263	79331360	0.010	3.5	15.0
17 Aldrin	71596850	71768520	0.010	0.2	15.0
20 Heptachlor epoxide	65141478	65724840	0.010	0.9	15.0
21 gamma-Chlordane	66728601	66541000	0.010	-0.3	15.0
22 alpha-Chlordane	69536722	68983120	0.010	-0.8	15.0
24 4,4'-DDE	57250653	56833440	0.010	-0.7	15.0
23 Endosulfan I	61561705	59051200	0.010	-4.1	15.0
25 Dieldrin	65613613	64754200	0.010	-1.3	15.0
28 Endrin	58277677	59017440	0.010	1.3	15.0
30 4,4'-DDD	45928925	46553440	0.010	1.4	15.0
32 Endosulfan II	57133458	57967440	0.010	1.5	15.0
34 4,4'-DDT	50817312	52705640	0.010	3.7	15.0
36 Endrin aldehyde	47033330	47535680	0.010	1.1	15.0
37 Methoxychlor	29391898	32521680	0.010	10.6	15.0
38 Endosulfan sulfate	54974210	56570320	0.010	2.9	15.0
39 Endrin ketone	63451881	65018480	0.010	2.5	15.0
$ 42 Decachlorobiphenyl	54547119	58142960	0.010	6.6	15.0

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Data File: \\qcanoh04\dd\chem\GCS\a2hp9.i\021009IC-2.b\045F4501.D Page 1
Report Date: 10-Oct-2002 12:28

STL - North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp9.i
Lab File ID: 045F4501.D
Analysis Type:
Lab Sample ID: AB3
Method: \\QCANOH04\DD\chem\GCS\a2hp9.i\021009IC-2.b\PEST9.m

Injection Date: 10-OCT-2002 03:43
Init. Cal. Date(s): ~~11-JUL-2002~~ 09-OCT-2002
Init. Cal. Times: ~~16:03~~ 20:47
Quant Type: ESTD

COMPOUND	RRF	RF0	MIN RRF	%D	MAX %D	
$ 4 Tetrachloro-m-xylene	52966571	54838880	0.000	3.5	15.0	
11 alpha-BHC	81295737	84419360	0.010	3.8	15.0	
13 gamma-BHC (Lindane)	73821294	76948840	0.010	4.2	15.0	
21 beta-BHC	30390965	32361760	0.010	6.5	15.0	
22 delta-BHC	69910223	74137680	0.010	6.0	15.0	
16 Heptachlor	71486649	72998240	0.010	2.1	15.0	
18 Aldrin	72285964	72612840	0.010	0.5	15.0	
23 Heptachlor epoxide	64578295	65848680	0.010	2.0	15.0	
26 gamma-Chlordane	66686821	65673720	0.010	-1.5	15.0	
28 alpha-Chlordane	65477743	65192280	0.010	-0.4	15.0	
29 4,4'-DDE	55217503	56742480	0.010	2.8	15.0	
24 Endosulfan I	58588283	58917360	0.010	0.6	15.0	
31 Dieldrin	65413410	65785680	0.010	0.6	15.0	
33 Endrin	55378780	58572240	0.010	5.8	15.0	
37 4,4'-DDD	45176892	47746240	0.010	5.7	15.0	
36 Endosulfan II	56759754	58650240	0.010	3.3	15.0	
38 4,4'-DDT	37969644	40289760	0.010	6.1	15.0	
40 Endrin aldehyde	45304883	46332920	0.010	2.3	15.0	
42 Endosulfan sulfate	52747940	55223040	0.010	4.7	15.0	
43 Methoxychlor	23648338	28344960	0.010	19.9	15.0	<-
39 Endrin ketone	57981386	61317960	0.010	5.8	15.0	
$ 45 Decachlorobiphenyl	50658408	54028320	0.010	6.7	15.0	

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Data file : \\qcanoh04\dd\chem\GCS\a2hp9.i\021009IC-1.b\072F7201.D
Lab Smp Id: PEM Client Smp ID: PEM
Inj Date : 10-OCT-2002 13:35
Operator : 9272 Inst ID: a2hp9.i
Smp Info : PEM
Misc Info : 12-PEM.SUB
Comment :
Method : \\QCANOH04\DD\chem\GCS\a2hp9.i\021009IC-1.b\PEST9.m
Meth Date : 11-Oct-2002 09:31 lip Quant Type: ESTD
Cal Date : 09-OCT-2002 16:24 Cal File: 014F1401.D
Als bottle: 72 QC Sample: PEM
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: 12-PEM.SUB
Target Version: 4.04
Processing Host: QCANOH05

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ng)
M 1 Total Endrin				3256444		
M 2 Total DDT				4959604		
10 alpha-BHC	6.469	6.469	0.000	877623	0.01016	0.01016
12 gamma-BHC (Lindane)	7.085	7.086	-0.001	776629	0.01021	0.01021
13 beta-BHC	7.304	7.304	0.000	339442	0.01111	0.01111
24 4,4'-DDE	Compound Not Detected.					
28 Endrin	10.888	10.888	0.000	3256444	0.05588	0.05588
30 4,4'-DDD	Compound Not Detected.					
32 Endosulfan II	Compound Not Detected.					
34 4,4'-DDT	11.686	11.686	0.000	4959604	0.09760	0.09760
36 Endrin aldehyde	Compound Not Detected.					
37 Methoxychlor	12.932	12.933	-0.001	6302715	0.21444	0.2144
38 Endosulfan sulfate	Compound Not Detected.					
39 Endrin ketone	Compound Not Detected.					

Endrin Breakdown:

0%

DDT Breakdown:

0%

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Data file : \\qcanoh04\dd\chem\GCS\a2hp9.i\021009IC-2.b\072F7201.D
Lab Smp Id: PEM Client Smp ID: PEM
Inj Date : 10-OCT-2002 13:35
Operator : 9272 Inst ID: a2hp9.i
Smp Info : PEM
Misc Info : 12-PEM.SUB
Comment :
Method : \\QCANOH04\DD\chem\GCS\a2hp9.i\021009IC-2.b\PEST9r.m
Meth Date : 11-Oct-2002 09:33 lip Quant Type: ESTD
Cal Date : 09-OCT-2002 16:24 Cal File: 014F1401.D
Als bottle: 72 QC Sample: PEM
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: 12-PEM.SUB
Target Version: 4.04
Processing Host: CANPGCSV04

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ng)
M 2 Total DDT				4425207	0.11558	0.1156
11 alpha-BHC	7.504	7.504	0.000	811414	0.00998	0.009981
13 gamma-BHC (Lindane)	8.197	8.198	-0.001	766763	0.01039	0.01039
21 beta-BHC	8.398	8.400	-0.002	343362	0.01130	0.01130
29 4,4'-DDE	Compound Not Detected.					
33 Endrin	12.429	12.429	0.000	3146433	0.05682	0.05682
37 4,4'-DDD	12.893	12.894	-0.001	229911	0.00509	0.005089
36 Endosulfan II	Compound Not Detected.					
38 4,4'-DDT	13.542	13.541	0.001	4195296	0.11049	0.1105
40 Endrin aldehyde	Compound Not Detected.					
43 Methoxychlor	14.719	14.719	0.000	5624947	0.23786	0.2378
42 Endosulfan sulfate	Compound Not Detected.					
39 Endrin ketone	Compound Not Detected.					

Endrin Breakdown:

0%

DDT Breakdown:

229911 / 4425207 = 5.2 %

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp9.i
Lab File ID: 073F7301.D
Analysis Type:
Lab Sample ID: AB3
Injection Date: 10-OCT-2002 13:57
Init. Cal. Date(s): ~~11-JUL~~-2002 09-OCT-2002
Init. Cal. Times: ~~16:03~~ 13:24 20:47
Quant Type: ESTD
Method: \\QCANOH04\DD\chem\GCS\a2hp9.i\021009IC-1.b\PEST9.m

COMPOUND	RRF	RFO	MIN RRF	%D	MAX %D
$ 3 Tetrachloro-m-xylene	53108159	53753640	0.000	1.2	15.0
10 alpha-BHC	86396546	86264960	0.010	-0.2	15.0
12 gamma-BHC (Lindane)	76062849	76136640	0.010	0.1	15.0
13 beta-BHC	30552882	31444560	0.010	2.9	15.0
14 delta-BHC	70196639	70475480	0.010	0.4	15.0
15 Heptachlor	76623263	75648600	0.010	-1.3	15.0
17 Aldrin	71596850	70146920	0.010	-2.0	15.0
20 Heptachlor epoxide	65141478	65076880	0.010	-0.1	15.0
21 gamma-Chlordane	66728601	66074080	0.010	-1.0	15.0
22 alpha-Chlordane	69536722	70254440	0.010	1.0	15.0
24 4,4'-DDE	57250653	56200720	0.010	-1.8	15.0
23 Endosulfan I	61561705	62998640	0.010	2.3	15.0
25 Dieldrin	65613613	65021400	0.010	-0.9	15.0
26 Endrin	58277677	60297320	0.010	3.5	15.0
30 4,4'-DDD	45928925	46651200	0.010	1.6	15.0
32 Endosulfan II	57133458	56196120	0.010	-1.6	15.0
34 4,4'-DDT	50817312	44282720	0.010	-12.9	15.0
36 Endrin aldehyde	47033330	44219080	0.010	-6.0	15.0
37 Methoxychlor	29391898	27538480	0.010	-6.3	15.0
38 Endosulfan sulfate	54974210	53539080	0.010	-2.6	15.0
39 Endrin ketone	63451881	60963320	0.010	-3.9	15.0
$ 42 Decachlorobiphenyl	54547119	52809360	0.010	-3.2	15.0

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STL - North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp9.i
Lab File ID: 073F7301.D
Analysis Type:
Lab Sample ID: AB3
Injection Date: 10-OCT-2002 13:57
Init. Cal. Date(s): ~~11-JUL-2002~~ 09-OCT-2002
Init. Cal. Times: ~~16:03~~ 20:47
Quant Type: ESTD
Method: \\QCANOH04\DD\chem\GCS\a2hp9.i\021009IC-2.b\PEST9r.m

COMPOUND	RRF	RF0	MIN RRF	%D	MAX %D
$ 4 Tetrachloro-m-xylene	52966571	53181640	0.000	0.4	15.0
11 alpha-BHC	81295737	81365720	0.010	0.1	15.0
13 gamma-BHC (Lindane)	73821294	74464040	0.010	0.9	15.0
21 beta-BHC	30390965	31271320	0.010	2.9	15.0
22 delta-BHC	69910223	70520880	0.010	0.9	15.0
16 Heptachlor	71486649	71670400	0.010	0.3	15.0
18 Aldrin	72285964	71134040	0.010	-1.6	15.0
23 Heptachlor epoxide	64578295	64653480	0.010	0.1	15.0
26 gamma-Chlordane	66686821	65712960	0.010	-1.5	15.0
28 alpha-Chlordane	65477743	64757000	0.010	-1.1	15.0
29 4,4'-DDE	55217503	54855960	0.010	-0.7	15.0
24 Endosulfan I	58588283	57671280	0.010	-1.6	15.0
31 Dieldrin	65413410	64453440	0.010	-1.5	15.0
33 Endrin	55378780	58399520	0.010	5.5	15.0
37 4,4'-DDD	45176892	46383840	0.010	2.7	15.0
36 Endosulfan II	56759754	56262000	0.010	-0.9	15.0
38 4,4'-DDT	37969644	35217040	0.010	-7.2	15.0
40 Endrin aldehyde	45304883	42639840	0.010	-5.9	15.0
42 Endosulfan sulfate	52747940	51559800	0.010	-2.3	15.0
43 Methoxychlor	23648338	23638840	0.010	-0.0	15.0
39 Endrin ketone	57981386	56493800	0.010	-2.6	15.0
$ 45 Decachlorobiphenyl	50658408	48753560	0.010	-3.8	15.0

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp9.i
Lab File ID: 079F7901.D
Analysis Type:
Lab Sample ID: TOX
Method: \\QCANOH04\DD\chem\GCS\a2hp9.i\021009IC-1.b\PEST9.m

Injection Date: 10-OCT-2002 16:09
Init. Cal. Date(s): 11-JUL-2002 09-OCT-2002
Init. Cal. Times: 16:03 13:21 20:47
Quant Type: ESTD

COMPOUND	RRF	RF0	MIN RRF	%D	MAX %D	
27 Toxaphene(1)	876571	931163	0.010	6.2	15.0	
(2)	1272130	1275702	0.010	0.3	15.0	
(3)	2211327	2078295	0.010	-6.0	15.0	
(4)	1511399	1438363	0.010	-4.8	15.0	
(5)	1123019	806291	0.010	-28.2	15.0	<-

Avg -15%

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Data File: \\qcanoh04\dd\chem\GCS\a2hp9.i\021009IC-2.b\079F7901.D Page 1
Report Date: 11-Oct-2002 09:31

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp9.i
Lab File ID: 079F7901.D
Analysis Type:
Lab Sample ID: TOX
Method: \\QCANOH04\DD\chem\GCS\a2hp9.i\021009IC-2.b\PEST9.m

Injection Date: 10-OCT-2002 16:09
Init. Cal. Date(s): 11-JUL-2002 09-OCT-2002
Init. Cal. Times: 16:03 13:29 20:47
Quant Type: ESTD

COMPOUND	RRF	RF0	MIN RRF	%D	MAX %D
30 Toxaphene(1)	1453779	1610498	0.010	10.8	15.0
(2)	1420755	1478299	0.010	4.1	15.0
(3)	2762320	2351312	0.010	-14.9	15.0
(4)	1445947	1197170	0.010	-17.2	15.0 <-
(5)	1019101	889058	0.010	-12.8	15.0

Avg <15%

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp9.i
Lab File ID: 080F8001.D
Analysis Type:
Lab Sample ID: TCLOR3
Method: \\QCANOH04\DD\chem\GCS\a2hp9.i\021009IC-1.b\PEST9.m

Injection Date: 10-OCT-2002 16:31
Init. Cal. Date(s): ~~11-JUL-2002~~ 09-OCT-2002
Init. Cal. Times: ~~16:03~~ 13:29 20:47
Quant Type: ESTD

COMPOUND	RRF	RF0	MIN RRF	%D	MAX %D
16 Tech Chlordane(1)	2736630	2788900	0.010	1.9	15.0
(2)	4092500	4053380	0.010	-1.0	15.0
(3)	9155830	9053970	0.010	-1.1	15.0
(4)	16123060	16147130	0.010	0.1	15.0

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Data File: \\qcanoh04\dd\chem\GCS\a2hp9.i\021009IC-2.b\080F8001.D Page 1
Report Date: 11-Oct-2002 09:31

STL - North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp9.i
Lab File ID: 080F8001.D
Analysis Type:
Lab Sample ID: TCLOR3
Method: \\QCANOH04\DD\chem\GCS\a2hp9.i\021009IC-2.b\PEST9r.m

Injection Date: 10-OCT-2002 16:31
Init. Cal. Date(s): ~~11-JUL-2002~~ 09-OCT-2002
Init. Cal. Times: ~~16:03~~ 20:47
13.29
Quant Type: ESTD

COMPOUND	RRF	RF0	MIN RRF	%D	MAX %D
7 Tech Chlordane(1)	2738170	2751070	0.010	0.5	15.0
(2)	4999980	5066110	0.010	1.3	15.0
(3)	3797180	3815180	0.010	0.5	15.0
(4)	8688270	8665920	0.010	-0.3	15.0

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Data File: \\qcanoh04\dd\chem\GCS\a2hp9.i\021009IC-1.b\081F8101.D Page 1
Report Date: 14-Oct-2002 15:07

STL - North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp9.i
Lab File ID: 081F8101.D
Analysis Type:
Lab Sample ID: MIREX 3
Method: \\QCANOH04\DD\chem\GCS\a2hp9.i\021009IC-1.b\PEST9.m

Injection Date: 10-OCT-2002 16:53
Init. Cal. Date(s): ~~11-JUL-2002~~ 09-OCT-2002
Init. Cal. Times: ~~16:03~~ 13:24 20:47
Quant Type: ESTD

COMPOUND	RRF	RF0	MIN RRF	%D	MAX %D	
44 Mirex	53180083	72881480	0.000	37.0	15.0	<-

%D > 15% (both columns)

flag ND "UJ"

— 011

— 003

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp9.i
Lab File ID: 081F8101.D
Analysis Type:
Lab Sample ID: MIREX 3
Method: \\QCANOH04\DD\chem\GCS\a2hp9.i\021009IC-2.b\PEST9r.m

Injection Date: 10-OCT-2002 16:53
Init. Cal. Date(s): ~~11-JUL-2002~~ 09-OCT-2002
Init. Cal. Times: ~~16:03~~ 13:29 20:47
Quant Type: ESTD

COMPOUND	RRF	RF0	MIN RRF	%D	MAX %D	
34 Mirex	48609549	65393740	0.000	34.5	15.0	<-

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Data File: \\qcanoh04\dd\chem\GCS\a2hp9.i\021009IC-1.b\082F8201.D Page 1
Report Date: 14-Oct-2002 15:08

STL - North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp9.i
Lab File ID: 082F8201.D
Analysis Type:
Lab Sample ID: AP9 3
Method: \\QCANOH04\DD\chem\GCS\a2hp9.i\021009IC-1.b\PEST9.m

Injection Date: 10-OCT-2002 17:15
Init. Cal. Date(s): ~~11-JUL~~-2002 09-OCT-2002
Init. Cal. Times: ~~16:03~~ 13:21 20:47
Quant Type: ESTD

COMPOUND	RRF	RF0	MIN RRF	%D	MAX %D	
18 Isodrin	65687780	67191300	0.010	2.3	15.0	
29 Kepone	0.32000	0.15559	0.010	51.4	15.0	<-
6 Hexachlorobenzene	71653126	79275425	0.000	10.6	15.0	

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp9.i
Lab File ID: 082F8201.D
Analysis Type:
Lab Sample ID: AP9 3
Method: \\QCANOH04\DD\chem\GCS\a2hp9.i\021009IC-2.b\PEST9r.m

Injection Date: 10-OCT-2002 17:15
Init. Cal. Date(s): ~~11-JUL-2002~~ 09-OCT-2002
Init. Cal. Times: ~~16:03~~ 13:24 20:47
Quant Type: ESTD

COMPOUND	RRF	RF0	MIN RRF	%D	MAX %D	
14 Isodrin	65850431	66908250	0.010	1.6	15.0	
25 Kepone	0.32000	0.08367	0.010	73.9	15.0	<- NAT
3 Hexachlorobenzene	67024298	73918850	0.000	10.3	15.0	

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8D
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: STL - NORTH CANTON Contract:

Lab Code: QESOH Case No.: SAS No.: SDG No.: A2J040261

GC Column: CLP PESTICIDES ID: 0.53(mm) Init. Calib. Date(s): ~~07/11/02~~ 10/09/02 10/9/02

Instrument ID: A2HP9

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

	MEAN SURROGATE RT FROM INITIAL CALIBRATION					
	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	RT #	RT #
01	PEM	PEM	10/16/02	1826		
02		AB	10/16/02	1848		
03		TOX	10/16/02	1910		
04		TECHLOR	10/16/02	1932		
05		MIREX	10/16/02	1954		
06		AP9	10/16/02	2016		
07	E9F64CHK	E9F641AC	10/16/02	2100		
08	E9F64CHKDUP	E9F641AD	10/16/02	2122		
09	NYPA-UNR-SED	E9FH21AE	10/16/02	2205		
10	NYPA-LNR-SED	E9FJC1AE	10/16/02	2227		
11	NYPA-RES-SED	E9FJD1AE	10/16/02	2249		
12	NYPA-RES-SED	E9FJE1AE	10/16/02	2311		
13	NYPA-RES-SED	E9FJF1AE	10/16/02	2333		
14	NYPA-RES-SED	E9FJG1AE	10/16/02	2355		
15	NYPA-RES-SED	E9FJH1AE	10/17/02	0017		
16	NYPA-RES-SED	E9FJJ1AE	10/17/02	0039		
17	PEM	PEM	10/17/02	0524		
18		AB3	10/17/02	0546		
19	PEM	PEM	10/17/02	1114		
20		AB	10/17/02	1136		
21		AP9	10/17/02	1158		
22	NYPA-UNR-SED	E9FHE1AE	10/17/02	1242		
23	PEM	PEM	10/17/02	1749		
24		AB	10/17/02	1811		
25		TOX	10/17/02	1833		
26		TCLOR3	10/17/02	1855		
27		MIREX 3	10/17/02	1917		
28		AP9 3	10/17/02	1939		
29						
30						
31						
32						

QC LIMITS

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM VIII PEST OLM04.2

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STL - North Canton

Data file : \\qcanoh04\dd\chem\GCS\a2hp9.i\021016A-1.b\003F0301.D
Lab Smp Id: PEM Client Smp ID: PEM
Inj Date : 16-OCT-2002 18:26
Operator : 9272 Inst ID: a2hp9.i
Smp Info : PEM
Misc Info : 12-PEM.SUB
Comment :
Method : \\QCANOH04\DD\chem\GCS\a2hp9.i\021016A-1.b\PEST9.m
Meth Date : 17-Oct-2002 12:53 lip Quant Type: ESTD
Cal Date : 09-OCT-2002 16:24 Cal File: 014F1401.D
Als bottle: 3 QC Sample: PEM
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: 12-PEM.SUB
Target Version: 4.04
Processing Host: QCANOH05

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ng)
M 1 Total Endrin				3286360		
M 2 Total DDT				5305167		
10 alpha-BHC	6.463	6.466	-0.003	804665	0.00931	0.009314
12 gamma-BHC (Lindane)	7.078	7.081	-0.003	754802	0.00992	0.009923
13 beta-BHC	7.297	7.300	-0.003	341290	0.01117	0.01117
24 4,4'-DDE	Compound Not Detected.					
28 Endrin	10.877	10.879	-0.002	3124474	0.05361	0.05361
30 4,4'-DDD	11.150	11.151	-0.001	256205	0.00558	0.005578
32 Endosulfan II	Compound Not Detected.					
34 4,4'-DDT	11.672	11.676	-0.004	5048962	0.09936	0.09936
36 Endrin aldehyde	12.179	12.181	-0.002	64041	0.00136	0.001362
37 Methoxychlor	12.916	12.918	-0.002	6445020	0.21928	0.2193
38 Endosulfan sulfate	Compound Not Detected.					
39 Endrin ketone	13.667	13.671	-0.004	97845	0.00154	0.001542

Endrin Breakdown:
161886 / 3286360 = 4.9% ✓

DDT Breakdown:
256205 / 5305167 = 4.8% ✓

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STL - North Canton

Data file : \\qcanoh04\dd\chem\GCS\a2hp9.i\021016A-2.b\003F0301.D
Lab Smp Id: PEM
Client Smp ID: PEM
Inj Date : 16-OCT-2002 18:26
Operator : 9272
Inst ID: a2hp9.i
Smp Info : PEM
Misc Info : 12-PEM.SUB
Comment :
Method : \\QCANOH04\DD\chem\GCS\a2hp9.i\021016A-2.b\PEST9r.m
Meth Date : 17-Oct-2002 13:00 lip
Quant Type: ESTD
Cal Date : 09-OCT-2002 16:24
Cal File: 014F1401.D
Als bottle: 3
QC Sample: PEM
Dil Factor: 1.00000
Integrator: Falcon
Compound Sublist: 12-PEM.SUB
Target Version: 4.04
Processing Host: QCANOH05

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ng)
M 2 Total DDT				5115137	0.13348	0.1335
11 alpha-BHC	7.500	7.504	-0.004	869232	0.01069	0.01069
13 gamma-BHC (Lindane)	8.193	8.196	-0.003	820189	0.01111	0.01111
21 beta-BHC	8.395	8.398	-0.003	381161	0.01254	0.01254
29 4,4'-DDE	Compound Not Detected.					
33 Endrin	12.415	12.420	-0.005	3234197	0.05840	0.05840
37 4,4'-DDD	12.882	12.886	-0.004	293874	0.00650	0.006505
36 Endosulfan II	Compound Not Detected.					
38 4,4'-DDT	13.533	13.538	-0.005	4821263	0.12698	0.1270
40 Endrin aldehyde	Compound Not Detected.					
43 Methoxychlor	14.714	14.718	-0.004	6262323	0.26481	0.2648
42 Endosulfan sulfate	Compound Not Detected.					
39 Endrin ketone	Compound Not Detected.					

Endrin Breakdown:

0% ✓

DDT Breakdown:

293874/5115137 = 5.7% ✓

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Data File: \\qcanoh04\dd\chem\GCS\a2hp9.i\021016A-1.b\004F0401.D Page 2
Report Date: 17-Oct-2002 12:58

STL - North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp9.i
Lab File ID: 004F0401.D
Analysis Type:
Lab Sample ID: AB
Method: \\QCANOH04\DD\chem\GCS\a2hp9.i\021016A-1.b\PEST9.m

Injection Date: 16-OCT-2002 18:48
Init. Cal. Date(s): ~~11-JUL~~-2002 09-OCT-2002
Init. Cal. Times: ~~16:03~~ 13:24 20:47
Quant Type: ESTD

	COMPOUND	RRF	RF0	MIN RRF	%D	MAX %D	
$	3 Tetrachloro-m-xylene	53108159	51126840	0.000	-3.7	15.0	
	10 alpha-BHC	86396546	78601560	0.010	-9.0	15.0	
	12 gamma-BHC (Lindane)	76062849	71972640	0.010	-5.4	15.0	
	13 beta-BHC	30552882	30687680	0.010	0.4	15.0	
	14 delta-BHC	70196639	67098600	0.010	-4.4	15.0	
	15 Heptachlor	76623263	71796680	0.010	-6.3	15.0	
	17 Aldrin	71596850	68159840	0.010	-4.8	15.0	
	20 Heptachlor epoxide	65141478	62885080	0.010	-3.5	15.0	
	21 gamma-Chlordane	66728601	63180600	0.010	-5.3	15.0	
	22 alpha-Chlordane	69536722	63772320	0.010	-8.3	15.0	
	24 4,4'-DDE	57250653	55522520	0.010	-3.0	15.0	
	23 Endosulfan I	61561705	59061280	0.010	-4.1	15.0	
	25 Dieldrin	65613613	62564800	0.010	-4.6	15.0	
	28 Endrin	58277677	52257360	0.010	-10.3	15.0	
	30 4,4'-DDD	45928925	44583560	0.010	-2.9	15.0	
	32 Endosulfan II	57133458	54503840	0.010	-4.6	15.0	
	34 4,4'-DDT	50817312	40058400	0.010	-21.2	15.0	<-
	36 Endrin aldehyde	47033330	44910480	0.010	-4.5	15.0	
	37 Methoxychlor	29391898	24841240	0.010	-15.5	15.0	<-
	38 Endosulfan sulfate	54974210	52368360	0.010	-4.7	15.0	
	39 Endrin ketone	63451881	62580760	0.010	-1.4	15.0	
$	12 Decachlorobiphenyl	54547119	57488840	0.010	5.4	15.0	

%D > 15%

no limit pos

Ok on 2° column

∴ no DQ

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STL - North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp9.i
Lab File ID: 004F0401.D
Analysis Type:
Lab Sample ID: AB
Method: \\QCANOH04\DD\chem\GCS\a2hp9.i\021016A-2.b\PEST9r.m

Injection Date: 16-OCT-2002 18:48
Init. Cal. Date(s): ~~11-JUL-2002~~ 09-OCT-2002
Init. Cal. Times: ~~16:03~~ 13:24 20:47
Quant Type: ESTD

	COMPOUND	RRF	RF0	MIN RRF	%D	MAX %D
$ 4	Tetrachloro-m-xylene	52966571	53902960	0.000	1.8	15.0
11	alpha-BHC	81295737	83394360	0.010	2.6	15.0
13	gamma-BHC (Lindane)	73821294	76306880	0.010	3.4	15.0
21	beta-BHC	30390965	33330880	0.010	9.7	15.0
22	delta-BHC	69910223	75027400	0.010	7.3	15.0
16	Heptachlor	71486649	72898080	0.010	2.0	15.0
18	Aldrin	72285964	71150680	0.010	-1.6	15.0
23	Heptachlor epoxide	64578295	65505120	0.010	1.4	15.0
26	gamma-Chlordane	66686821	66805280	0.010	0.2	15.0
28	alpha-Chlordane	65477743	65900880	0.010	0.6	15.0
29	4,4'-DDE	55217503	58595240	0.010	6.1	15.0
24	Endosulfan I	58588283	59933360	0.010	2.3	15.0
31	Dieldrin	65413410	65213600	0.010	-0.3	15.0
33	Endrin	55378780	54459480	0.010	-1.7	15.0
37	4,4'-DDD	45176892	49465800	0.010	9.5	15.0
36	Endosulfan II	56759754	59721160	0.010	5.2	15.0
38	4,4'-DDT	37969644	40201280	0.010	5.9	15.0
40	Endrin aldehyde	45304883	46715960	0.010	3.1	15.0
42	Endosulfan sulfate	52747940	54166640	0.010	2.7	15.0
43	Methoxychlor	23648338	24623480	0.010	4.1	15.0
39	Endrin ketone	57981386	62973640	0.010	8.6	15.0
$ 45	Decachlorobiphenyl	50658408	53759680	0.010	6.1	15.0

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STL - North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp9.i
Lab File ID: 005F0501.D
Analysis Type:
Lab Sample ID: TOX
Method: \\QCANOH04\DD\chem\GCS\a2hp9.i\021016A-1.b\PEST9.m

Injection Date: 16-OCT-2002 19:10
Init. Cal. Date(s): ~~11-JUL-2002~~ 09-OCT-2002
Init. Cal. Times: ~~16:03~~ 13:21 20:47
Quant Type: ESTD

COMPOUND	RRF	RF0	MIN RRF	%D	MAX %D	
27 Toxaphene(1)	876571	956511	0.010	9.1	15.0	
(2)	1272130	1181056	0.010	-7.2	15.0	
(3)	2211327	2093886	0.010	-5.3	15.0	
(4)	1511399	1443129	0.010	-4.5	15.0	
(5)	1123019	873231	0.010	-22.2	15.0	<-

Avg -15%

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp9.i
Lab File ID: 005F0501.D
Analysis Type:
Lab Sample ID: TOX
Method: \\QCANOH04\DD\chem\GCS\a2hp9.i\021016A-2.b\PEST9r.m

Injection Date: 16-OCT-2002 19:10
Init. Cal. Date(s): 11-JUL-2002 09-OCT-2002
Init. Cal. Times: 16:03 20:47
Quant Type: ESTD

COMPOUND	RRF	RF0	MIN RRF	%D	MAX %D
30 Toxaphene(1)	1453779	1562211	0.010	7.5	15.0
(2)	1420755	1406700	0.010	-1.0	15.0
(3)	2762320	2535415	0.010	-8.2	15.0
(4)	1445947	1302528	0.010	-9.9	15.0
(5)	1019101	964039	0.010	-5.4	15.0

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp9.i
Lab File ID: 006F0601.D
Analysis Type:
Lab Sample ID: TECHLOR
Method: \\QCANOH04\DD\chem\GCS\a2hp9.i\021016A-1.b\PEST9.m

Injection Date: 16-OCT-2002 19:32
Init. Cal. Date(s): ~~11-JUL-2002~~ 09-OCT-2002
Init. Cal. Times: ~~16:03~~ 13:27 20:47
Quant Type: ESTD

COMPOUND	RRF	RF0	MIN RRF	%D	MAX %D
16 Tech Chlordane(1)	2736630	2774800	0.010	1.4	15.0
(2)	4092500	4238070	0.010	3.6	15.0
(3)	9155830	9076210	0.010	-0.9	15.0
(4)	16123060	15413100	0.010	-4.4	15.0

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp9.i
Lab File ID: 006F0601.D
Analysis Type:
Lab Sample ID: TECHLOR
Method: \\QCANOH04\DD\chem\GCS\a2hp9.i\021016A-2.b\PEST9r.m

Injection Date: 16-OCT-2002 19:32
Init. Cal. Date(s): ~~11-JUL-2002~~ 09-OCT-2002
Init. Cal. Times: ~~16:03~~ 13:24 20:47
Quant Type: ESTD

COMPOUND	RRF	RF0	MIN RRF	%D	MAX %D
7 Tech Chlordane(1)	2738170	3040120	0.010	11.0	15.0
(2)	4999980	5456470	0.010	9.1	15.0
(3)	3797180	4198580	0.010	10.6	15.0
(4)	8688270	9421360	0.010	8.4	15.0

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp9.i
Lab File ID: 007F0701.D
Analysis Type:
Lab Sample ID: MIREX
Method: \\QCANOH04\DD\chem\GCS\a2hp9.i\021016A-1.b\PEST9.m

Injection Date: 16-OCT-2002 19:54
Init. Cal. Date(s): ~~11-JUL-2002~~ 09-OCT-2002
Init. Cal. Times: ~~16:03~~ 13:29 20:47
Quant Type: ESTD

COMPOUND	RRF	RFO	MIN RRF	%D	MAX %D
44 Mirex	53180083	52893220	0.000	-0.5	15.0

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp9.i
Lab File ID: 007F0701.D
Analysis Type:
Lab Sample ID: MIREX
Method: \\QCANOH04\DD\chem\GCS\a2hp9.i\021016A-2.b\PEST9r.m

Injection Date: 16-OCT-2002 19:54
Init. Cal. Date(s): 11-JUL-2002 09-OCT-2002
Init. Cal. Times: 16:03 13:24 20:47
Quant Type: ESTD

COMPOUND	RRF	RF0	MIN RRF	%D	MAX %D
34 Mirex	48609549	49306460	0.000	1.4	15.0

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp9.i
Lab File ID: 008F0801.D
Analysis Type:
Lab Sample ID: AP9
Method: \\QCANOH04\DD\chem\GCS\a2hp9.i\021016A-1.b\PEST9.m

Injection Date: 16-OCT-2002 20:16
Init. Cal. Date(s): ~~11-JUL~~-2002 09-OCT-2002
Init. Cal. Times: ~~16:03~~ 13:24 20:47
Quant Type: ESTD

COMPOUND	RRF	RF0	MIN RRF	%D	MAX %D	
18 Isodrin	65687780	65514400	0.010	-0.3	15.0	
29 Kepone	0.32000	0.08814	0.010	72.5	15.0	<-
6 Hexachlorobenzene	71653126	83694400	0.000	16.8	15.0	<-

%D >15% bottom columns
flag NO "UJ"
- 002
- 004
- 005
- 006
- 007
- 008
- 009
- 010

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp9.i
Lab File ID: 008F0801.D
Analysis Type:
Lab Sample ID: AP9
Method: \\QCANOH04\DD\chem\GCS\a2hp9.i\021016A-2.b\PEST9r.m

Injection Date: 16-OCT-2002 20:16
Init. Cal. Date(s): ~~11-JUL-2002~~ 09-OCT-2002
Init. Cal. Times: ~~16:03~~ 13:29 20:47
Quant Type: ESTD

COMPOUND	RRF	RFO	MIN RRF	%D	MAX %D	
14 Isodrin	65850431	68491850	0.010	4.0	15.0	
25 Kepone	0.32000	0.04986	0.010	84.4	15.0	<-
3 Hexachlorobenzene	67024298	83852975	0.000	25.1	15.0	<-

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Data file : \\qcanoh04\dd\chem\GCS\a2hp9.i\021016A-1.b\033F3301.D
Lab Smp Id: PEM Client Smp ID: PEM
Inj Date : 17-OCT-2002 05:24
Operator : 9272 Inst ID: a2hp9.i
Smp Info : PEM
Misc Info : 12-PEM.SUB
Comment :
Method : \\QCANOH04\DD\chem\GCS\a2hp9.i\021016A-1.b\PEST9.m
Meth Date : 17-Oct-2002 12:53 lip Quant Type: ESTD
Cal Date : 09-OCT-2002 16:24 Cal File: 014F1401.D
Als bottle: 33 QC Sample: PEM
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: 12-PEM.SUB
Target Version: 4.04
Processing Host: QCANOH05

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ng)
M 1 Total Endrin				3290920		
M 2 Total DDT				5298111		
10 alpha-BHC	6.466	6.466	0.000	803565	0.00930	0.009301
12 gamma-BHC (Lindane)	7.081	7.081	0.000	754424	0.00992	0.009918
13 beta-BHC	7.300	7.300	0.000	346325	0.01134	0.01134
24 4,4'-DDE	Compound Not Detected.					
28 Endrin	10.879	10.879	0.000	3290920	0.05647	0.05647
30 4,4'-DDD	11.151	11.151	0.000	357813	0.00779	0.007790
32 Endosulfan II	Compound Not Detected.					
34 4,4'-DDT	11.675	11.676	-0.001	4940298	0.09722	0.09722
36 Endrin aldehyde	Compound Not Detected.					
37 Methoxychlor	12.919	12.918	0.001	6362005	0.21645	0.2164
38 Endosulfan sulfate	Compound Not Detected.					
39 Endrin ketone	Compound Not Detected.					

Endrin Breakdown:

0%

DDT Breakdown:

357813 / 5298111 = 6.7%

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Data file : \\qcanoh04\dd\chem\GCS\a2hp9.i\021016A-2.b\033F3301.D
Lab Smp Id: PEM Client Smp ID: PEM
Inj Date : 17-OCT-2002 05:24
Operator : 9272 Inst ID: a2hp9.i
Smp Info : PEM
Misc Info : 12-PEM.SUB
Comment :
Method : \\QCANOH04\DD\chem\GCS\a2hp9.i\021016A-2.b\PEST9r.m
Meth Date : 17-Oct-2002 13:00 lip Quant Type: ESTD
Cal Date : 09-OCT-2002 16:24 Cal File: 014F1401.D
Als bottle: 33 QC Sample: PEM
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: 12-PEM.SUB
Target Version: 4.04
Processing Host: QCANOH05

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ng)
M 2 Total DDT				4759409	0.12368	0.1237
11 alpha-BHC	7.502	7.504	-0.002	857872	0.01055	0.01055
13 gamma-BHC (Lindane)	8.196	8.196	0.000	813916	0.01103	0.01102
21 beta-BHC	8.397	8.398	-0.001	380076	0.01251	0.01251
29 4,4'-DDE	Compound Not Detected.					
33 Endrin	12.417	12.420	-0.003	3351329	0.06052	0.06052
37 4,4'-DDD	12.885	12.886	-0.001	397623	0.00880	0.008801
36 Endosulfan II	Compound Not Detected.					
38 4,4'-DDT	13.536	13.538	-0.002	4361786	0.11488	0.1149
40 Endrin aldehyde	Compound Not Detected.					
43 Methoxychlor	14.717	14.718	-0.001	6100987	0.25799	0.2580
42 Endosulfan sulfate	Compound Not Detected.					
39 Endrin ketone	Compound Not Detected.					

Endrin Breakdown:

0% ✓

DDT Breakdown:

397623 / 4759409 = 8.4% ✓

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp9.i
Lab File ID: 034F3401.D
Analysis Type:
Lab Sample ID: AB3
Method: \\QCANOH04\DD\chem\GCS\a2hp9.i\021016A-1.b\PEST9.m

Injection Date: 17-OCT-2002 05:46
Init. Cal. Date(s): ~~11-JUL-2002~~ 09-OCT-2002
Init. Cal. Times: ~~16:03~~ 13:29 20:47
Quant Type: ESTD

COMPOUND	RRF	RF0	MIN RRF	%D	MAX %D	
$ 3 Tetrachloro-m-xylene	53108159	62857840	0.000	18.4	15.0	<-
10 alpha-BHC	86396546	99988480	0.010	15.7	15.0	<-
12 gamma-BHC (Lindane)	76062849	91402600	0.010	20.2	15.0	<-
13 beta-BHC	30552882	38655080	0.010	26.5	15.0	<-
14 delta-BHC	70196639	87668520	0.010	24.9	15.0	<-
15 Heptachlor	76623263	91545200	0.010	19.5	15.0	<-
17 Aldrin	71596850	85672800	0.010	19.7	15.0	<-
20 Heptachlor epoxide	65141478	78859600	0.010	21.1	15.0	<-
21 gamma-Chlordane	66728601	80063440	0.010	20.0	15.0	<-
22 alpha-Chlordane	69536722	79914400	0.010	14.9	15.0	
24 4,4'-DDE	57250653	73473120	0.010	28.3	15.0	<-
23 Endosulfan I	61561705	73837440	0.010	19.9	15.0	<-
25 Dieldrin	65613613	79557640	0.010	21.3	15.0	<-
28 Endrin	58277677	72895220	0.010	25.1	15.0	<-
30 4,4'-DDD	45928925	60942320	0.010	32.7	15.0	<-
32 Endosulfan II	57133458	71188680	0.010	24.6	15.0	<-
34 4,4'-DDT	50817312	52865560	0.010	4.0	15.0	
36 Endrin aldehyde	47033330	56161520	0.010	19.4	15.0	<-
37 Methoxychlor	29391898	32566840	0.010	10.8	15.0	
38 Endosulfan sulfate	54974210	67692480	0.010	23.1	15.0	<-
39 Endrin ketone	63451881	78418240	0.010	23.6	15.0	<-
$ 42 Decachlorobiphenyl	54547119	71875880	0.010	31.8	15.0	<-

%D > 15% on both columns for DD "4J"

- DD2
- DD4
- DD5
- DD6
- DD7
- DD8
- DD9
- D10

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp9.i
Lab File ID: 034F3401.D
Analysis Type:
Lab Sample ID: AB3
Method: \\QCANOH04\DD\chem\GCS\a2hp9.i\021016A-2.b\PEST9r.m

Injection Date: 17-OCT-2002 05:46
Init. Cal. Date(s): ~~11-JUL-2002~~ 09-OCT-2002
Init. Cal. Times: ~~16:03~~ 13:29 20:47
Quant Type: ESTD

COMPOUND	RRF	RF0	MIN RRF	%D	MAX %D	
$ 4 Tetrachloro-m-xylene	52966571	66744360	0.000	26.0	15.0	<-
11 alpha-BHC	81295737	104920440	0.010	29.1	15.0	<-
13 gamma-BHC (Lindane)	73821294	95723000	0.010	29.7	15.0	<-
21 beta-BHC	30390965	41227320	0.010	35.7	15.0	<-
22 delta-BHC	69910223	96303760	0.010	37.8	15.0	<-
16 Heptachlor	71486649	91640000	0.010	28.2	15.0	<-
18 Aldrin	72285964	88451680	0.010	22.4	15.0	<-
23 Heptachlor epoxide	64578295	81318920	0.010	25.9	15.0	<-
26 gamma-Chlordane	66686821	83283360	0.010	24.9	15.0	<-
28 alpha-Chlordane	65477743	81840000	0.010	25.0	15.0	<-
29 4,4'-DDE	55217503	75361800	0.010	36.5	15.0	<-
24 Endosulfan I	58588283	74264080	0.010	26.8	15.0	<-
31 Dieldrin	65413410	81748000	0.010	25.0	15.0	<-
33 Endrin	53378780	74623840	0.010	34.8	15.0	<-
37 4,4'-DDD	45176892	65342440	0.010	44.6	15.0	<-
36 Endosulfan II	56759754	74449920	0.010	31.2	15.0	<-
38 4,4'-DDT	37969644	51147840	0.010	34.7	15.0	<-
40 Endrin aldehyde	45304883	57583040	0.010	27.1	15.0	<-
42 Endosulfan sulfate	52747940	68698680	0.010	30.2	15.0	<-
43 Methoxychlor	23648338	31007080	0.010	31.1	15.0	<-
39 Endrin ketone	57981386	76210000	0.010	31.4	15.0	<-
$ 45 Decachlorobiphenyl	50658408	69056760	0.010	36.3	15.0	<-

Ok on 1° Column
∴ no DQ

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Data file : \\qcanoh04\dd\chem\GCS\a2hp9.i\021016A-1.b\049F4901.D
Lab Smp Id: PEM Client Smp ID: PEM
Inj Date : 17-OCT-2002 11:14
Operator : 9272 Inst ID: a2hp9.i
Smp Info : PEM
Misc Info : 12-PEM.SUB
Comment :
Method : \\QCANOH04\DD\chem\GCS\a2hp9.i\021016A-1.b\PEST9.m
Meth Date : 17-Oct-2002 12:53 lip Quant Type: ESTD
Cal Date : 09-OCT-2002 16:24 Cal File: 014F1401.D
Als bottle: 49 QC Sample: PEM
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: 12-PEM.SUB
Target Version: 4.04
Processing Host: QCANOH05

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ng)
M 1 Total Endrin				3295446		
M 2 Total DDT				5442118		
10 alpha-BHC	6.465	6.466	-0.001	802754	0.00929	0.009292
12 gamma-BHC (Lindane)	7.080	7.081	-0.001	752415	0.00989	0.009892
13 beta-BHC	7.299	7.300	-0.001	344521	0.01128	0.01128
24 4,4'-DDE	Compound Not Detected.					
28 Endrin	10.880	10.879	0.001	3295446	0.05655	0.05655
30 4,4'-DDD	11.152	11.151	0.001	248795	0.00542	0.005417
32 Endosulfan II	Compound Not Detected.					
34 4,4'-DDT	11.675	11.676	-0.001	5193323	0.10220	0.1022
36 Endrin aldehyde	Compound Not Detected.					
37 Methoxychlor	12.919	12.918	0.001	6570338	0.22354	0.2235
38 Endosulfan sulfate	Compound Not Detected.					
39 Endrin ketone	Compound Not Detected.					

Endrin Breakdown:

0% ✓

DDT Breakdown:

248795 / 5442118 = 4.6% ✓

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Data file : \\qcanoh04\dd\chem\GCS\a2hp9.i\021016A-2.b\049F4901.D
Lab Smp Id: PEM
Client Smp ID: PEM
Inj Date : 17-OCT-2002 11:14
Operator : 9272
Inst ID: a2hp9.i
Smp Info : PEM
Misc Info : 12-PEM.SUB
Comment :
Method : \\QCANOH04\DD\chem\GCS\a2hp9.i\021016A-2.b\PEST9r.m
Meth Date : 17-Oct-2002 13:00 lip
Quant Type: ESTD
Cal Date : 09-OCT-2002 16:24
Cal File: 014F1401.D
Als bottle: 49
QC Sample: PEM
Dil Factor: 1.00000
Integrator: Falcon
Compound Sublist: 12-PEM.SUB
Target Version: 4.04
Processing Host: QCANOH05

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ng)
M 2 Total DDT				4780526	0.12474	0.1247
11 alpha-BHC	7.503	7.504	-0.001	848037	0.01043	0.01043
13 gamma-BHC (Lindane)	8.195	8.196	-0.001	803918	0.01089	0.01089
21 beta-BHC	8.398	8.398	0.000	375594	0.01236	0.01236
29 4,4'-DDE	Compound Not Detected.					
33 Endrin	12.419	12.420	-0.001	3341211	0.06033	0.06033
37 4,4'-DDD	12.886	12.886	0.000	278010	0.00615	0.006154
36 Endosulfan II	Compound Not Detected.					
38 4,4'-DDT	13.538	13.538	0.000	4502516	0.11858	0.1186
40 Endrin aldehyde	Compound Not Detected.					
43 Methoxychlor	14.718	14.718	0.000	6270403	0.26515	0.2652
42 Endosulfan sulfate	Compound Not Detected.					
39 Endrin ketone	Compound Not Detected.					

Endrin Breakdown:

0%

DDT Breakdown:

278010 / 4780526 = 5.8%

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp9.i
Lab File ID: 050F5001.D
Analysis Type:
Lab Sample ID: AB
Method: \\QCANOH04\DD\chem\GCS\a2hp9.i\021016A-1.b\PEST9.m

Injection Date: 17-OCT-2002 11:36
Init. Cal. Date(s): 11-JUL-2002 09-OCT-2002
Init. Cal. Times: 16:03 20:47
Quant Type: ESTD

	COMPOUND	RRF	RF0	MIN RRF	%D	MAX %D	
$	3 Tetrachloro-m-xylene	53108159	50455400	0.000	-5.0	15.0	
	10 alpha-BHC	86396546	78566680	0.010	-9.1	15.0	
	12 gamma-BHC (Lindane)	76062849	72063040	0.010	-5.3	15.0	
	13 beta-BHC	30552882	30697040	0.010	0.5	15.0	
	14 delta-BHC	70196639	67243000	0.010	-4.2	15.0	
	15 Heptachlor	76623263	72325840	0.010	-5.6	15.0	
	17 Aldrin	71596850	67665720	0.010	-5.5	15.0	
	20 Heptachlor epoxide	65141478	62845240	0.010	-3.5	15.0	
	21 gamma-Chlordane	66728601	63375800	0.010	-5.0	15.0	
	22 alpha-Chlordane	69536722	63892400	0.010	-8.1	15.0	
	24 4,4'-DDE	57250653	56424720	0.010	-1.4	15.0	
	23 Endosulfan I	61561705	58448960	0.010	-5.1	15.0	
	25 Dieldrin	65613613	62716520	0.010	-4.4	15.0	
	28 Endrin	58277677	57990360	0.010	-0.5	15.0	
	30 4,4'-DDD	45928925	44875840	0.010	-2.3	15.0	
	32 Endosulfan II	57133458	55588520	0.010	-2.7	15.0	
	34 4,4'-DDT	50817312	41373640	0.010	-18.6	15.0	<-
	36 Endrin aldehyde	47033330	42365600	0.010	-9.9	15.0	
	37 Methoxychlor	29391898	24695280	0.010	-16.0	15.0	<-
	38 Endosulfan sulfate	54974210	51958680	0.010	-5.5	15.0	
	39 Endrin ketone	63451881	59371100	0.010	-6.4	15.0	
$	42 Decachlorobiphenyl	54547119	55042800	0.010	0.9	15.0	

%D > 15%
no tent. pos.
ok on 2° column
∴ no DR

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp9.i
Lab File ID: 050F5001.D
Analysis Type:
Lab Sample ID: AB
Method: \\QCANOH04\DD\chem\GCS\a2hp9.i\021016A-2.b\PEST9r.m

Injection Date: 17-OCT-2002 11:36
Init. Cal. Date(s): 11-JUL-2002 09-OCT-2002
Init. Cal. Times: 16:03 13:24 20:47
Quant Type: ESTD

COMPOUND	RRF	RF0	MIN RRF	%D	MAX %D
$ 4 Tetrachloro-m-xylene	52966571	53396560	0.000	0.8	15.0
11 alpha-BHC	81295737	82338400	0.010	1.3	15.0
13 gamma-BHC (Lindane)	73821294	74653960	0.010	1.1	15.0
21 beta-BHC	30390965	32375200	0.010	6.5	15.0
22 delta-BHC	69910223	73369800	0.010	4.9	15.0
16 Heptachlor	71486649	72936920	0.010	2.0	15.0
18 Aldrin	72285964	70518120	0.010	-2.4	15.0
23 Heptachlor epoxide	64578295	64944520	0.010	0.6	15.0
26 gamma-Chlordane	66686821	65958320	0.010	-1.1	15.0
28 alpha-Chlordane	65477743	65141520	0.010	-0.5	15.0
29 4,4'-DDE	55217503	56737440	0.010	2.8	15.0
24 Endosulfan I	58588283	59363400	0.010	1.3	15.0
31 Dieldrin	65413410	64452640	0.010	-1.5	15.0
33 Endrin	55378780	59446800	0.010	7.3	15.0
37 4,4'-DDD	45176892	47757360	0.010	5.7	15.0
36 Endosulfan II	56759754	58358800	0.010	2.8	15.0
38 4,4'-DDT	37969644	32309400	0.010	-14.9	15.0
40 Endrin aldehyde	45304883	42613840	0.010	-5.9	15.0
42 Endosulfan sulfate	52747940	52854160	0.010	0.2	15.0
43 Methoxychlor	23648338	24272560	0.010	2.6	15.0
39 Endrin ketone	57981386	58779760	0.010	1.4	15.0
$ 45 Decachlorobiphenyl	50658408	54159400	0.010	6.9	15.0

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp9.i
Lab File ID: 051F5101.D
Analysis Type:
Lab Sample ID: AP9
Method: \\QCANOH04\DD\chem\GCS\a2hp9.i\021016A-1.b\PEST9.m

Injection Date: 17-OCT-2002 11:58
Init. Cal. Date(s): ~~11-JUL-2002~~ 09-OCT-2002
Init. Cal. Times: ~~16:03~~ 13:29 20:47
Quant Type: ESTD

COMPOUND	RRF	RF0	MIN RRF	%D	MAX %D	
18 Isodrin	65687780	62739950	0.010	-4.5	15.0	
29 Kepone	0.32000	0.12706	0.010	60.3	15.0	<-
6 Hexachlorobenzene	71653126	74954550	0.000	4.6	15.0	

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp9.i
Lab File ID: 051F5101.D
Analysis Type:
Lab Sample ID: AP9
Injection Date: 17-OCT-2002 11:58
Init. Cal. Date(s): 11-JUL-2002 09-OCT-2002
Init. Cal. Times: 16:03 13:29 20:47
Quant Type: ESTD
Method: \\QCANOH04\DD\chem\GCS\a2hp9.i\021016A-2.b\PEST9r.m

COMPOUND	RRF	RF0	MIN RRF	%D	MAX %D	
14 Isodrin	65850431	64555600	0.010	-2.0	15.0	
25 Kepone	0.32000	0.08770	0.010	72.6	15.0	<-
3 Hexachlorobenzene	67024298	74891975	0.000	11.7	15.0	

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Data file : \\qcanoh04\dd\chem\GCS\a2hp9.i\021016A-1.b\067F6701.D
Lab Smp Id: PEM
Client Smp ID: PEM
Inj Date : 17-OCT-2002 17:49
Operator : 9272
Inst ID: a2hp9.i
Smp Info : PEM
Misc Info : 12-PEM.SUB
Comment :
Method : \\QCANOH04\DD\chem\GCS\a2hp9.i\021016A-1.b\PEST9.m
Meth Date : 18-Oct-2002 09:15 lip
Quant Type: ESTD
Cal Date : 09-OCT-2002 16:24
Cal File: 014F1401.D
Als bottle: 67
QC Sample: PEM
Dil Factor: 1.00000
Integrator: Falcon
Compound Sublist: 12-PEM.SUB
Target Version: 4.04
Processing Host: CANPGCSV04

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ng)
M 1 Total Endrin				3241768		
M 2 Total DDT				5317414		
10 alpha-BHC	6.465	6.466	-0.001	804674	0.00931	0.009314
12 gamma-BHC (Lindane)	7.080	7.081	-0.001	754667	0.00992	0.009922
13 beta-BHC	7.300	7.299	0.001	343845	0.01125	0.01125
24 4,4'-DDE	Compound Not Detected.					
28 Endrin	10.879	10.880	-0.001	3241768	0.05563	0.05563
30 4,4'-DDD	Compound Not Detected.					
32 Endosulfan II	Compound Not Detected.					
34 4,4'-DDT	11.676	11.676	0.000	5317414	0.10464	0.1046
36 Endrin aldehyde	Compound Not Detected.					
37 Methoxychlor	12.919	12.921	-0.002	6528687	0.22213	0.2221
38 Endosulfan sulfate	Compound Not Detected.					
39 Endrin ketone	Compound Not Detected.					

Endrin Breakdown:

0%

DDT Breakdown:

0%

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Data file : \\qcanoh04\dd\chem\GCS\a2hp9.i\021016A-2.b\067F6701.D
Lab Smp Id: PEM Client Smp ID: PEM
Inj Date : 17-OCT-2002 17:49
Operator : 9272 Inst ID: a2hp9.i
Smp Info : PEM
Misc Info : 12-PEM.SUB
Comment :
Method : \\QCANOH04\DD\chem\GCS\a2hp9.i\021016A-2.b\PEST9r.m
Meth Date : 18-Oct-2002 09:17 lip Quant Type: ESTD
Cal Date : 09-OCT-2002 16:24 Cal File: 014F1401.D
Als bottle: 67 QC Sample: PEM
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: 12-PEM.SUB
Target Version: 4.04
Processing Host: CANPGCSV04

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ng)
M 2 Total DDT				4425460	0.11655	0.1166
11 alpha-BHC	7.503	7.503	0.000	846882	0.01042	0.01042
13 gamma-BHC (Lindane)	8.196	8.196	0.000	797029	0.01080	0.01080
21 beta-BHC	8.399	8.398	0.001	371474	0.01222	0.01222
29 4,4'-DDE	Compound Not Detected.					
33 Endrin	12.419	12.420	-0.001	3307099	0.05972	0.05972
37 4,4'-DDD	Compound Not Detected.					
36 Endosulfan II	Compound Not Detected.					
38 4,4'-DDT	13.538	13.537	0.001	4425460	0.11655	0.1166
40 Endrin aldehyde	Compound Not Detected.					
43 Methoxychlor	14.717	14.717	0.000	6314923	0.26703	0.2670
42 Endosulfan sulfate	Compound Not Detected.					
39 Endrin ketone	Compound Not Detected.					

Endrin Breakdown:

0% ✓

DDT Breakdown:

0% ✓

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp9.i
Lab File ID: 068F6801.D
Analysis Type:
Lab Sample ID: AB
Method: \\QCANOH04\DD\chem\GCS\a2hp9.i\021016A-1.b\PEST9.m

Injection Date: 17-OCT-2002 18:11
Init. Cal. Date(s): ~~11-JUL-2002~~ 09-OCT-2002
Init. Cal. Times: ~~16:03~~ 13:24 20:47
Quant Type: ESTD

	COMPOUND	RRF	RF0	MIN RRF	%D	MAX %D
$	3 Tetrachloro-m-xylene	53108159	52423880	0.000	-1.3	15.0
	10 alpha-BHC	86396546	82265480	0.010	-4.8	15.0
	12 gamma-BHC (Lindane)	76062849	75521120	0.010	-0.7	15.0
	13 beta-BHC	30552882	32115760	0.010	5.1	15.0
	14 delta-BHC	70196639	71145400	0.010	1.4	15.0
	15 Heptachlor	76623263	75722160	0.010	-1.2	15.0
	17 Aldrin	71596850	71213840	0.010	-0.5	15.0
	20 Heptachlor epoxide	65141478	65608160	0.010	0.7	15.0
	21 gamma-Chlordane	66728601	66401120	0.010	-0.5	15.0
	22 alpha-Chlordane	69536722	66754000	0.010	-4.0	15.0
	24 4,4'-DDE	57250653	59424400	0.010	3.8	15.0
	23 Endosulfan I	61561705	61007840	0.010	-0.9	15.0
	25 Dieldrin	65613613	65421680	0.010	-0.3	15.0
	28 Endrin	58277677	60229240	0.010	3.3	15.0
	30 4,4'-DDD	45928925	45992040	0.010	0.1	15.0
	32 Endosulfan II	57133458	56298840	0.010	-1.5	15.0
	34 4,4'-DDT	50817312	45768840	0.010	-9.9	15.0
	36 Endrin aldehyde	47033330	45166560	0.010	-4.0	15.0
	37 Methoxychlor	29391898	26651400	0.010	-9.3	15.0
	38 Endosulfan sulfate	54974210	54309560	0.010	-1.2	15.0
	39 Endrin ketone	63451881	62220360	0.010	-1.9	15.0
$	42 Decachlorobiphenyl	54547119	55041400	0.010	0.9	15.0

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp9.i
Lab File ID: 068F6801.D
Analysis Type:
Lab Sample ID: AB
Method: \\QCANOH04\DD\chem\GCS\a2hp9.i\021016A-2.b\PEST9r.m

Injection Date: 17-OCT-2002 18:11
Init. Cal. Date(s): ~~11-JUL-2002~~ 09-OCT-2002
Init. Cal. Times: ~~16:03~~ 13:24 20:47
Quant Type: ESTD

COMPOUND	RRF	RF0	MIN RRF	%D	MAX %D
$ 4 Tetrachloro-m-xylene	52966571	54977280	0.000	3.8	15.0
11 alpha-BHC	81295737	85458000	0.010	5.1	15.0
13 gamma-BHC (Lindane)	73821294	78251560	0.010	6.0	15.0
21 beta-BHC	30390965	33923280	0.010	11.6	15.0
22 delta-BHC	69910223	76592400	0.010	9.6	15.0
16 Heptachlor	71486649	75685240	0.010	5.9	15.0
18 Aldrin	72285964	72735560	0.010	0.6	15.0
23 Heptachlor epoxide	64578295	67007360	0.010	3.8	15.0
26 gamma-Chlordane	66686821	68032440	0.010	2.0	15.0
28 alpha-Chlordane	65477743	67030560	0.010	2.4	15.0
29 4,4'-DDE	55217503	58879800	0.010	6.6	15.0
24 Endosulfan I	58588283	61263360	0.010	4.6	15.0
31 Dieldrin	65413410	66776960	0.010	2.1	15.0
33 Endrin	55378780	61132440	0.010	10.4	15.0
37 4,4'-DDD	45176892	49196320	0.010	8.9	15.0
36 Endosulfan II	56759754	60762120	0.010	7.1	15.0
38 4,4'-DDT	37969644	38241760	0.010	0.7	15.0
40 Endrin aldehyde	45304883	45194080	0.010	-0.2	15.0
42 Endosulfan sulfate	52747940	54846240	0.010	4.0	15.0
43 Methoxychlor	23648338	26127280	0.010	10.5	15.0
39 Endrin ketone	57981386	59677880	0.010	2.9	15.0
$ 45 Decachlorobiphenyl	50658408	53457120	0.010	5.5	15.0

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp9.i
Lab File ID: 069F6901.D
Analysis Type:
Lab Sample ID: TOX
Method: \\QCANOH04\DD\chem\GCS\a2hp9.i\021016A-1.b\PEST9.m

Injection Date: 17-OCT-2002 18:33
Init. Cal. Date(s): ~~11-JUL~~-2002 09-OCT-2002
Init. Cal. Times: ~~16:03~~ 13:29 20:47
Quant Type: ESTD

COMPOUND	RRF	RF0	MIN RRF	%D	MAX %D	
27 Toxaphene(1)	876571	969005	0.010	10.5	15.0	
(2)	1272130	1053458	0.010	-17.2	15.0	<-
(3)	2211327	2223570	0.010	0.6	15.0	
(4)	1511399	1525859	0.010	1.0	15.0	
(5)	1123019	1035226	0.010	-7.8	15.0	

Avg < 15%

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp9.i
Lab File ID: 069F6901.D
Analysis Type:
Lab Sample ID: TOX
Method: \\QCANOH04\DD\chem\GCS\a2hp9.i\021016A-2.b\PEST9r.m

Injection Date: 17-OCT-2002 18:33
Init. Cal. Date(s): ~~11-JUL~~-2002 09-OCT-2002
Init. Cal. Times: ~~16:03~~ 13:24 20:47
Quant Type: ESTD

COMPOUND	RRF	RF0	MIN RRF	%D	MAX %D	
30 Toxaphene(1)	1453779	1756174	0.010	20.8	15.0	<-
(2)	1420755	1545040	0.010	8.7	15.0	
(3)	2762320	2800172	0.010	1.4	15.0	
(4)	1445947	1486558	0.010	2.8	15.0	
(5)	1019101	938430	0.010	-7.9	15.0	

Avg < 15%

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp9.i
Lab File ID: 070F7001.D
Analysis Type:
Lab Sample ID: TCLOR3
Method: \\QCANOH04\DD\chem\GCS\a2hp9.i\021016A-1.b\PEST9.m

Injection Date: 17-OCT-2002 18:55
Init. Cal. Date(s): 11-JUL-2002 09-OCT-2002
Init. Cal. Times: 16:03 20:47
Quant Type: ESTD

COMPOUND	RRF	RF0	MIN RRF	%D	MAX %D
16 Tech Chlordane(1)	2736630	2861360	0.010	4.6	15.0
(2)	4092500	4387500	0.010	7.2	15.0
(3)	9155830	9499430	0.010	3.8	15.0
(4)	16123060	16163900	0.010	0.3	15.0

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp9.i
Lab File ID: 070F7001.D
Analysis Type:
Lab Sample ID: TCLOR3
Method: \\QCANOH04\DD\chem\GCS\a2hp9.i\021016A-2.b\PEST9r.m

Injection Date: 17-OCT-2002 18:55
Init. Cal. Date(s): ~~11-JUL-2002~~ 09-OCT-2002
Init. Cal. Times: ~~16:03~~ 13:29 20:47
Quant Type: ESTD

COMPOUND	RRF	RF0	MIN RRF	%D	MAX %D
7 Tech Chlordane(1)	2738170	3042620	0.010	11.1	15.0
(2)	4999980	5602500	0.010	12.1	15.0
(3)	3797180	4210920	0.010	10.9	15.0
(4)	8688270	9347250	0.010	7.6	15.0

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp9.i
Lab File ID: 071F7101.D
Analysis Type:
Lab Sample ID: MIREX 3
Method: \\QCANOH04\DD\chem\GCS\a2hp9.i\021016A-1.b\PEST9.m

Injection Date: 17-OCT-2002 19:17
Init. Cal. Date(s): ~~11-JUL~~-2002 09-OCT-2002
Init. Cal. Times: ~~16:03~~ 13.24 20:47
Quant Type: ESTD

COMPOUND	RRF	RF0	MIN RRF	%D	MAX %D
44 Mirex	53180083	55165320	0.000	3.7	15.0

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp9.i
Lab File ID: 071F7101.D
Analysis Type:
Lab Sample ID: MIREX 3
Method: \\QCANOH04\DD\chem\GCS\a2hp9.i\021016A-2.b\PEST9r.m

Injection Date: 17-OCT-2002 19:17
Init. Cal. Date(s): 11-JUL-2002 09-OCT-2002
Init. Cal. Times: 16:03 13:29 20:47
Quant Type: ESTD

COMPOUND	RRF	RF0	MIN RRF	%D	MAX %D
34 Mirex	48609549	49301220	0.000	1.4	15.0

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp9.i
Lab File ID: 072F7201.D
Analysis Type:
Lab Sample ID: AP9 3
Method: \\QCANOH04\DD\chem\GCS\a2hp9.i\021016A-1.b\PEST9.m

Injection Date: 17-OCT-2002 19:39
Init. Cal. Date(s): ~~11-JUL-2002~~ 09-OCT-2002
Init. Cal. Times: ~~16:03~~ 13:29 20:47
Quant Type: ESTD

COMPOUND	RRF	RF0	MIN RRF	%D	MAX %D	
18 Isodrin	65687780	63908750	0.010	-2.7	15.0	
29 Kepone	0.32000	0.12660	0.010	60.4	15.0	<-
6 Hexachlorobenzene	71653126	72612350	0.000	1.3	15.0	

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp9.i Injection Date: 17-OCT-2002 19:39
Lab File ID: 072F7201.D Init. Cal. Date(s): 11-JUL-2002 09-OCT-2002
Analysis Type: Init. Cal. Times: 16:03 13 24 20:47
Lab Sample ID: AP9 3 Quant Type: ESTD
Method: \\QCANOH04\DD\chem\GCS\a2hp9.i\021016A-2.b\PEST9r.m

COMPOUND	RRF	RF0	MIN RRF	%D	MAX %D	
14 Isodrin	65850431	64536850	0.010	-2.0	15.0	
25 Kepone	0.32000	0.08451	0.010	73.6	15.0	<-
3 Hexachlorobenzene	67024298	71187850	0.000	6.2	15.0	

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METHOD BLANK REPORT

GC Semivolatiles

Client Lot #...: A2J040261
MB Lot-Sample #: A2J040000-485

Work Order #...: E9F641AA

Matrix.....: WATER

Prep Date.....: 10/05/02

Final Wgt/Vol..: 5 mL

Analysis Date..: 10/10/02
Dilution Factor: 1

Prep Batch #...: 2277485
Initial Wgt/Vol: 1000 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Dieldrin	ND	0.050	ug/L	SW846 8081A
4,4'-DDD	ND	0.050	ug/L	SW846 8081A
4,4'-DDE	ND	0.050	ug/L	SW846 8081A
4,4'-DDT	ND	0.050	ug/L	SW846 8081A
Hexachlorobenzene	ND	0.050	ug/L	SW846 8081A
Toxaphene	ND	2.0	ug/L	SW846 8081A
Chlordane (technical)	ND	0.50	ug/L	SW846 8081A
Mirex	ND	0.10	ug/L	SW846 8081A

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	98	(39 - 130)
Decachlorobiphenyl	82	(10 - 147)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

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METHOD BLANK REPORT

GC Semivolatiles

Client Lot #...: A2J040261
MB Lot-Sample #: A2J080000-410

Work Order #...: E9K071AA

Matrix.....: SOLID

Analysis Date..: 10/10/02
Dilution Factor: 1

Prep Date.....: 10/08/02
Prep Batch #...: 2281410
Initial Wgt/Vol: 30 g

Final Wgt/Vol..: 10 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Chlordane (technical)	ND	17	ug/kg	SW846 8081A
4,4'-DDD	ND	1.7	ug/kg	SW846 8081A
4,4'-DDE	ND	1.7	ug/kg	SW846 8081A
4,4'-DDT	ND	1.7	ug/kg	SW846 8081A
Dieldrin	ND	1.7	ug/kg	SW846 8081A
Hexachlorobenzene	ND	3.3	ug/kg	SW846 8081A
Mirex	ND	3.3	ug/kg	SW846 8081A
Toxaphene	ND	67	ug/kg	SW846 8081A

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	81	(31 - 131)
Decachlorobiphenyl	92	(18 - 145)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: A2J040261 **Work Order #...:** E9FH71AV-MS **Matrix.....:** SO
MS Lot-Sample #: A2J040261-003 E9FH71AW-MSD
Date Sampled...: 10/01/02 18:15 **Date Received..:** 10/03/02
Prep Date.....: 10/08/02 **Analysis Date..:** 10/10/02
Prep Batch #...: 2281410
Dilution Factor: 10 **Initial Wgt/Vol:** 30.04 g **Final Wgt/Vol..:** 10 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Dieldrin	**106 DIL**	**(33 - 133)**			**SW846 8081A**
	106 DIL	**(33 - 133)**	**0.11**	**(0-33)**	**SW846 8081A**
4,4'-DDT	**137 DIL**	**(23 - 144)**			**SW846 8081A**
	134 DIL	**(23 - 144)**	**2.7**	**(0-42)**	**SW846 8081A**
gamma-BHC (Lindane)	**100 DIL**	**(33 - 130)**			**SW846 8081A**
	86 DIL	**(33 - 130)**	**15**	**(0-36)**	**SW846 8081A**
Heptachlor	**88 DIL**	**(32 - 128)**			**SW846 8081A**
	89 DIL	**(32 - 128)**	**1.9**	**(0-44)**	**SW846 8081A**
Aldrin	**96 DIL**	**(33 - 122)**			**SW846 8081A**
	93 DIL	**(33 - 122)**	**3.6**	**(0-40)**	**SW846 8081A**
Endrin	**87 DIL**	**(33 - 138)**			**SW846 8081A**
	90 DIL	**(33 - 138)**	**2.9**	**(0-38)**	**SW846 8081A**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	0.0	(31 - 131)
	Qualifiers: DIL,*	
	0.0	(31 - 131)
	Qualifiers: DIL,*	
Decachlorobiphenyl	0.0	(18 - 145)
	Qualifiers: DIL,*	
	0.0	(18 - 145)
	Qualifiers: DIL,*	

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

Results and reporting limits have been adjusted for dry weight.

* Surrogate recovery is outside stated control limits.

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MATRIX SPIKE SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: A2J040261 Work Order #...: E9FH71AV-MS Matrix.....: SO
MS Lot-Sample #: A2J040261-003 E9FH71AW-MSD
Date Sampled...: 10/01/02 18:15 Date Received..: 10/03/02
Prep Date.....: 10/08/02 Analysis Date..: 10/10/02
Prep Batch #...: 2281410
Dilution Factor: 10 Initial Wgt/Vol: 30.04 g Final Wgt/Vol..: 10 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Dieldrin	ND	41	44	ug/kg	106		SW846 8081A
		Qualifiers:	DIL				
	ND	41	44	ug/kg	106	0.11	SW846 8081A
		Qualifiers:	DIL				
4,4'-DDT	ND	41	56	ug/kg	137		SW846 8081A
		Qualifiers:	DIL				
	ND	41	55	ug/kg	134	2.7	SW846 8081A
		Qualifiers:	DIL				
gamma-BHC (Lindane)	ND	41	41	ug/kg	100		SW846 8081A
		Qualifiers:	DIL				
	ND	41	35	ug/kg	86 DIL	15	SW846 8081A
Heptachlor	ND	41	36	ug/kg	88 DIL		SW846 8081A
	ND	41	37	ug/kg	89 DIL	1.9	SW846 8081A
Aldrin	ND	41	40	ug/kg	96 DIL		SW846 8081A
	ND	41	38	ug/kg	93 DIL	3.6	SW846 8081A
Endrin	ND	41	36	ug/kg	87 DIL		SW846 8081A
	ND	41	37	ug/kg	90 DIL	2.9	SW846 8081A

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	0.0	(31 - 131)
	Qualifiers: DIL,*	
	0.0	(31 - 131)
	Qualifiers: DIL,*	
Decachlorobiphenyl	0.0	(18 - 145)
	Qualifiers: DIL,*	
	0.0	(18 - 145)
	Qualifiers: DIL,*	

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

Results and reporting limits have been adjusted for dry weight.

* Surrogate recovery is outside stated control limits.

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: A2J040261 Work Order #...: E9K071AC Matrix.....: SOLID
LCS Lot-Sample#: A2J080000-410
Prep Date.....: 10/08/02 Analysis Date..: 10/10/02
Prep Batch #...: 2281410
Dilution Factor: 1 Final Wgt/Vol..: 10 mL
Initial Wgt/Vol: 30 g

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Dieldrin	105	(45 - 128)	SW846 8081A
4,4'-DDT	103	(35 - 144)	SW846 8081A
gamma-BHC (Lindane)	108	(47 - 130)	SW846 8081A
Heptachlor	107	(39 - 126)	SW846 8081A
Aldrin	105	(39 - 122)	SW846 8081A
Endrin	113	(47 - 133)	SW846 8081A

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	81	(31 - 131)
Decachlorobiphenyl	79	(18 - 145)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

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LABORATORY CONTROL SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: A2J040261 Work Order #...: E9K071AC Matrix.....: SOLID
LCS Lot-Sample#: A2J080000-410
Prep Date.....: 10/08/02 Analysis Date..: 10/10/02
Prep Batch #...: 2281410
Dilution Factor: 1 Final Wgt/Vol..: 10 mL
Initial Wgt/Vol: 30 g

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Dieldrin	33	35	ug/kg	105	SW846 8081A
4,4'-DDT	33	34	ug/kg	103	SW846 8081A
gamma-BHC (Lindane)	33	36	ug/kg	108	SW846 8081A
Heptachlor	33	35	ug/kg	107	SW846 8081A
Aldrin	33	35	ug/kg	105	SW846 8081A
Endrin	33	38	ug/kg	113	SW846 8081A

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	81	(31 - 131)
Decachlorobiphenyl	79	(18 - 145)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: A2J040261
LCS Lot-Sample#: A2J040000-485
Prep Date.....: 10/05/02
Prep Batch #...: 2277485
Dilution Factor: 2
Initial Wgt/Vol: 1000 mL

Work Order #...: E9F641AC-LCS
E9F641AD-LCSD
Analysis Date..: 10/16/02
Final Wgt/Vol..: 5 mL

Matrix.....: WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
gamma-BHC (Lindane)	114	(49 - 137)			SW846 8081A
	117	(49 - 137)	3.0	(0-22)	SW846 8081A
Heptachlor	109	(57 - 124)			SW846 8081A
	101	(57 - 124)	8.4	(0-32)	SW846 8081A
Aldrin	113	(62 - 120)			SW846 8081A
	97	(62 - 120)	16	(0-33)	SW846 8081A
Endrin	115	(46 - 137)			SW846 8081A
	123	(46 - 137)	7.1	(0-40)	SW846 8081A
Dieldrin	112	(68 - 130)			SW846 8081A
	117	(68 - 130)	4.4	(0-37)	SW846 8081A
4,4'-DDT	103	(60 - 140)			SW846 8081A
	118	(60 - 140)	14	(0-50)	SW846 8081A

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	102	(39 - 130)
	87	(39 - 130)
Decachlorobiphenyl	114	(10 - 147)
	44	(10 - 147)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

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LABORATORY CONTROL SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: A2J040261 Work Order #...: E9F641AC-LCS Matrix.....: WATER
LCS Lot-Sample#: A2J040000-485 E9F641AD-LCSD
Prep Date.....: 10/05/02 Analysis Date..: 10/16/02
Prep Batch #...: 2277485
Dilution Factor: 2 Final Wgt/Vol..: 5 mL
Initial Wgt/Vol: 1000 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
gamma-BHC (Lindane)	1.0	1.1	ug/L	114		SW846 8081A
	1.0	1.2	ug/L	117	3.0	SW846 8081A
Heptachlor	1.0	1.1	ug/L	109		SW846 8081A
	1.0	1.0	ug/L	101	8.4	SW846 8081A
Aldrin	1.0	1.1	ug/L	113		SW846 8081A
	1.0	0.97	ug/L	97	16	SW846 8081A
Endrin	1.0	1.1	ug/L	115		SW846 8081A
	1.0	1.2	ug/L	123	7.1	SW846 8081A
Dieldrin	1.0	1.1	ug/L	112		SW846 8081A
	1.0	1.2	ug/L	117	4.4	SW846 8081A
4,4'-DDT	1.0	1.0	ug/L	103		SW846 8081A
	1.0	1.2	ug/L	118	14	SW846 8081A

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	102	(39 - 130)
	87	(39 - 130)
Decachlorobiphenyl	114	(10 - 147)
	44	(10 - 147)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

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RQC058

Severn Trent Laboratories, Inc.
EXTRACTION BENCH WORKSHEET

Run Date: 10/08/02
Time: 20:02:43

LEV 1	LEV 2		LEV 1	LEV 2	
Y	Y	Blank	Y	Y	Weights/Volumes
Y	Y	Check	Y	Y	Spike & Surrogate Worksheet
Y	Y	MS/MSD	Y	Y	Vial contains correct volume
			Y	Y	Labels, greenbars, worksheets computer batch: correct & all match
			_	_	Anomalies to Extraction Method

Y Expanded Deliverable
Y COC Completed
Y Bench Sheet Copied
_ Package Submitted to AnalyticalGroup
_ Bench Sheet Copied per COC

Extractionist: 401088 Renee E. McGrath

Concentrationist: 401088 Renee E. McGrath
009223 Steffani D. Deubner

Reviewer/Date: DEUBNERS / 10/08/02

QC BATCH: 2281410

PREP DATE: 10/08/02
COMP DATE: 10/07/02

Pesticides (8081A)
SONICATION - Low Level

EXTR EXPR	ANL DUE	LOT#,MSRUN#/ WORK ORDER	TEST FLGS	EXT	MTH	MATRIX	INIT/FIN WT/VOL	INIT	PH'S ADJ1	ADJ2	SOLVENTS EXTRACTION	VOL	EXCHANGE	VOL	SPIKE STANDARD/ SURROGATE ID
10/15/02	10/18/02	A2J040261-001 E9FHE-1-AE	D	13	QJ	SOLID	30.1g 10.00mL	NA	NA	NA	DCM/ACE	300.0	HEXANE	50.0	1 ML 2/.2 SURR #3946
COMMENTS:															
10/15/02	10/18/02	A2J040261-002 E9FH2-1-AE	D	13	QJ	SOLID	30.14g 10.00mL	NA	NA	NA	DCM/ACE	300.0	HEXANE	50.0	1 ML 2/.2 SURR #3946
COMMENTS:															
10/15/02	10/18/02	A2J040261-003 E9FH7-1-AE	D	13	QJ	SOLID	30.2g 10.00mL	NA	NA	NA	DCM/ACE	300.0	HEXANE	50.0	1 ML 2/.2 SURR #3946
COMMENTS:															
10/15/02	10/18/02	A2J040261-003 E9FH7-1-AVS	D	13	QJ	SOLID	30.04g 10.00mL	NA	NA	NA	DCM/ACE	300.0	HEXANE	50.0	1 ML NPDES SPIKE #3919 1 ML 2/.2 SURR #3946
COMMENTS:															
10/15/02	10/18/02	A2J040261-003 E9FH7-1-AWD	D	13	QJ	SOLID	30.12g 10.00mL	NA	NA	NA	DCM/ACE	300.0	HEXANE	50.0	1 ML NPDES SPIKE #3919 1 ML 2/.2 SURR #3946
COMMENTS:															
10/15/02	10/18/02	A2J040261-004 E9FJC-1-AE	D	13	QJ	SOLID	30.2g 10.00mL	NA	NA	NA	DCM/ACE	300.0	HEXANE	50.0	1 ML 2/.2 SURR #3946
COMMENTS:															
10/15/02	10/18/02	A2J040261-005 E9FJD-1-AE	D	13	QJ	SOLID	30.2g 10.00mL	NA	NA	NA	DCM/ACE	300.0	HEXANE	50.0	1 ML 2/.2 SURR #3946
COMMENTS:															

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Severn Trent Laboratories, Inc.
EXTRACTION BENCH WORKSHEET

Run Date: 10/08/02
Time: 20:02:43

QC BATCH: 2281410

PREP DATE: 10/08/02
COMP DATE: 10/07/02

EXTR EXPR	ANL DUE	LOT#,MSRUN#/ WORK ORDER	TEST FLGS	EXT	MTH	MATRIX	INIT/FIN WT/VOL	PH"S INIT	PH"S ADJ1	PH"S ADJ2	SOLVENTS EXTRACTION	VOL	SOLVENTS EXCHANGE	VOL	SPIKE STANDARD/ SURROGATE ID
10/15/02	10/18/02	A2J040261-006 E9FJE-1-AE	D	13	QJ	SOLID	40.15g 10.00mL	NA	NA	NA	DCM/ACE	300.0	HEXANE	50.0	DECANT H20 1 ML 2/.2 SURR #3946
COMMENTS:															
10/15/02	10/18/02	A2J040261-007 E9FJF-1-AE	D	13	QJ	SOLID	40.14g 10.00mL	NA	NA	NA	DCM/ACE	300.0	HEXANE	50.0	DECANT H20 1 ML 2/.2 SURR #3946
COMMENTS:															
10/15/02	10/18/02	A2J040261-008 E9FJG-1-AE	D	13	QJ	SOLID	60.2g 10.00mL	NA	NA	NA	DCM/ACE	300.0	HEXANE	50.0	DECANT H20 1 ML 2/.2 SURR #3946
COMMENTS:															
10/15/02	10/18/02	A2J040261-009 E9FJH-1-AE	D	13	QJ	SOLID	60.2g 10.00mL	NA	NA	NA	DCM/ACE	300.0	HEXANE	50.0	1 ML 2/.2 SURR #3946
COMMENTS:															
10/15/02	10/18/02	A2J040261-010 E9FJJ-1-AE	D	13	QJ	SOLID	60.02g 10.00mL	NA	NA	NA	DCM/ACE	300.0	HEXANE	50.0	DECANT H20 1 ML 2/.2 SURR #3946
COMMENTS:															
10/15/02	0/00/00	A2J080000-410 E9K07-1-AAB		13	QJ	SOLID	30.00g 10.00mL	NA	NA	NA	DCM/ACE	300.0	HEXANE	50.0	1 ML 2/.2 SURR #3946
COMMENTS:															
10/15/02	0/00/00	A2J080000-410 E9K07-1-ACC		13	QJ	SOLID	30.00g 10.00mL	NA	NA	NA	DCM/ACE	300.0	HEXANE	50.0	1 ML NPDES SPIKE #3919 1 ML 2/.2 SURR #3946
COMMENTS:															

S/S BY RM
DCM #X17E18 ACE #X22E02 HEX #X08E01
ASSOC SAMPLES AND BLK W/ 2281409

R = RUSH C = CLP
E = EPA 600 D = EXP.DEL)
M = CLIENT REQ MS/MSD
$

NUMBER OF WORK ORDERS IN BATCH: 14

STL North Canton

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RQC058

Severn Trent Laboratories, Inc.
EXTRACTION BENCH WORKSHEET

Run Date: 10/06/02
Time: 23:22:57

LEV 1	LEV 2		LEV 1	LEV 2	
Y	Y	Blank	Y	Y	Weights/Volumes
Y	Y	Check	Y	Y	Spike & Surrogate Worksheet
_	_	MS/MSD	Y	Y	Vial contains correct volume
			Y	Y	Labels, greenbars, worksheets computer batch: correct & all match
			_	_	Anomalies to Extraction Method

Y Expanded Deliverable
Y COC Completed
Y Bench Sheet Copied
_ Package Submitted to AnalyticalGroup
_ Bench Sheet Copied per COC

Extractionist: 002811 Dave S. Thomas

Concentrationist: 009223 Steffani D. Deubner
401088 Renee E. McGrath

Reviewer/Date: THOMASD / 10/05/02

QC BATCH: 2277485

PREP DATE: 10/05/02 10:00
COMP DATE: 10/06/02 6:00

Pesticides (8081A)
LIQ/LIQ, CONT (PAH,P/P,TPH) - Nominal

EXTR EXPR	ANL DUE	LOT#,MSRUN#/ WORK ORDER	TEST FLGS	EXT	MTH	MATRIX	INIT/FIN WT/VOL	INIT	PH"S ADJ1	ADJ2	SOLVENTS EXTRACTION	VOL	EXCHANGE	VOL	SPIKE STANDARD/ SURROGATE ID
10/07/02	10/18/02	D2J010290-001 E87HV-1-AP		10	QJ	WATER	1000mL 5.00mL	7.0	NA	NA	DCM	250.0	HEXANE	50.0	1.0ML 2/.2 #3946
COMMENTS:															
10/07/02	10/18/02	D2J010290-002 E87H2-1-AP		10	QJ	WATER	1000mL 5.00mL	7.0	NA	NA	DCM	250.0	HEXANE	50.0	1.0ML 2/.2 #3946
COMMENTS:															
10/08/02	10/17/02	A2J030309-001 E9DJN-1-A6		10	QJ	WATER	1000mL 5.00mL	7.0	NA	NA	DCM	250.0	HEXANE	50.0	1.0ML 2/.2 #3946
COMMENTS:															
10/09/02	10/18/02	A2J040189-007 E9E1F-1-CA		10	QJ	WATER	1000mL 5.00mL	7.0	NA	NA	DCM	250.0	HEXANE	50.0	1.0ML 2/.2 #3946
COMMENTS:															
10/10/02	10/18/02	A2J040261-011 E9FJ5-1-AD	D	10	QJ	WATER	1000mL 5.00mL	7.0	NA	NA	DCM	250.0	HEXANE	50.0	1.0ML 2/.2 #3946
COMMENTS:															
10/10/02	10/17/02	A2J040328-001 E9FVM-1-AN	R	10	QJ	WATER	1000mL 5.00mL	7.0	NA	NA	DCM	250.0	HEXANE	50.0	1.0ML 2/.2 #3946
COMMENTS:															
10/07/02	0/00/00	A2J040000-485 E9F64-1-AAB		10	QJ	WATER	1000mL 5.00mL	7.0	NA	NA	DCM	250.0	HEXANE	50.0	1.0ML 2/.2 #3946
COMMENTS:															

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RQC058

Severn Trent Laboratories, Inc.
EXTRACTION BENCH WORKSHEET

Run Date: 10/06/02
Time: 23:22:57

****
* QC BATCH: 2277485 *
****

PREP DATE: 10/05/02 10:00
COMP DATE: 10/06/02 6:00

EXTR EXPR	ANL DUE	LOT#,MSRUN#/ WORK ORDER	TEST FLGS	EXT	MTH	MATRIX	INIT/FIN WT/VOL	INIT	PH"S ADJ1	ADJ2	SOLVENTS EXTRACTION	VOL	EXCHANGE	VOL	SPIKE STANDARD/ SURROGATE ID
10/07/02	0/00/00	A2J040000-485 E9F64-1-ACC		10	QJ	WATER	1000mL 5.00mL	7.0	NA	NA	DCM	250.0	HEXANE	50.0	1.0ML NPDES #3919 1.0ML 2/.2 #3946
COMMENTS:															
10/07/02	0/00/00	A2J040000-485 E9F64-1-ADL	R	10	QJ	WATER	1000mL 5.00mL	7.0	NA	NA	DCM	250.0	HEXANE	50.0	1.0ML NPDES #3919 1.0ML 2/.2 #3946
COMMENTS:															

S/S BY D.T.
DCM #X17E18 HEXANE #X08E01 NA2SO4 #025158
ASSOC. QC AND SOME SAMPS W/2277486

R = RUSH C = CLP
E = EPA 600 D = EXP.DEL)
M = CLIENT REQ MS/MSD

NUMBER OF WORK ORDERS IN BATCH: 9

STL North Canton

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Add to Form 8D

STL - North Canton

Data file : \\qcanoh04\dd\chem\GCS\a2hp9.i\021009IC-1.b\018F1801.D
Lab Smp Id: AB
Inj Date : 09-OCT-2002 17:52
Operator : 9272 Inst ID: a2hp9.i
Smp Info : AB,,1,1
Misc Info : 1-AB.SUB
Comment :
Method : \\QCANOH04\DD\chem\GCS\a2hp9.i\021009IC-1.b\PEST9.m
Meth Date : 11-Oct-2002 09:31 lip Quant Type: ESTD
Cal Date : 14-SEP-2002 02:13 Cal File: 017F1701.D
Als bottle: 18 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: 1-AB.SUB
Target Version: 4.04
Processing Host: QCANOH05

Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
# 3 Tetrachloro-m-xylene	5.308	5.308	0.000	281609	0.00500	0.005346
10 alpha-BHC	6.470	6.469	0.001	416950	0.00500	0.004875
12 gamma-BHC (Lindane)	7.086	7.086	0.000	372353	0.00500	0.004773
13 beta-BHC	7.304	7.304	0.000	170285	0.00500	0.005469
14 delta-BHC	7.597	7.597	0.000	332397	0.00500	0.004848
15 Heptachlor	7.936	7.935	0.001	386493	0.00500	0.005028
17 Aldrin	8.438	8.438	0.000	351604	0.00500	0.004894
20 Heptachlor epoxide	9.513	9.514	-0.001	339779	0.00500	0.005217
21 gamma-Chlordane	9.718	9.719	-0.001	338728	0.00500	0.005146
22 alpha-Chlordane	9.940	9.939	0.001	368693	0.00500	0.005619
24 4,4'-DDE	10.170	10.169	0.001	268787	0.00500	0.005146
23 Endosulfan I	10.134	10.134	0.000	322881	0.00500	0.005273
25 Dieldrin	10.529	10.528	0.001	326614	0.00500	0.004992
28 Endrin	10.889	10.888	0.001	288541	0.00500	0.008185
30 4,4'-DDD	11.160	11.161	-0.001	223646	0.00500	0.006615
32 Endosulfan II	11.298	11.299	-0.001	304676	0.00500	0.004700
34 4,4'-DDT	11.687	11.686	0.001	255297	0.00500	0.005474
36 Endrin aldehyde	12.196	12.194	0.002	261632	0.00500	0.005677
37 Methoxychlor	12.933	12.933	0.000	164478	0.00500	0.006625
38 Endosulfan sulfate	13.193	13.192	0.001	304348	0.00500	0.005680
39 Endrin ketone	13.683	13.681	0.002	338925	0.00500	0.005406
# 42 Decachlorobiphenyl	15.283	15.282	0.001	325626	0.00500	0.006469

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Add to Form 8D

STL - North Canton

Data file : \\qcanoh04\dd\chem\GCS\a2hp9.i\021009IC-1.b\019F1901.D
Lab Smp Id: AB
Inj Date : 09-OCT-2002 18:14
Operator : 9272 Inst ID: a2hp9.i
Smp Info : AB,,1,2
Misc Info : 1-AB.SUB
Comment :
Method : \\QCANOH04\DD\chem\GCS\a2hp9.i\021009IC-1.b\PEST9.m
Meth Date : 11-Oct-2002 09:31 lip Quant Type: ESTD
Cal Date : 14-SEP-2002 02:35 Cal File: 018F1801.D
Als bottle: 19 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: 1-AB.SUB
Target Version: 4.04
Processing Host: QCANOH05

Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
# 3 Tetrachloro-m-xylene	5.307	5.308	-0.001	530291	0.01000	0.01005
10 alpha-BHC	6.471	6.469	0.002	813001	0.01000	0.009469
12 gamma-BHC (Lindane)	7.087	7.086	0.001	716128	0.01000	0.009242
13 beta-BHC	7.305	7.304	0.001	312997	0.01000	0.01004
14 delta-BHC	7.596	7.597	-0.001	646010	0.01000	0.009352
15 Heptachlor	7.936	7.935	0.001	738492	0.01000	0.009669
17 Aldrin	8.438	8.438	0.000	676727	0.01000	0.009490
20 Heptachlor epoxide	9.514	9.514	0.000	642162	0.01000	0.009898
21 gamma-Chlordane	9.718	9.719	-0.001	642868	0.01000	0.009779
22 alpha-Chlordane	9.940	9.939	0.001	744205	0.01000	0.01106
24 4,4'-DDE	10.171	10.169	0.002	540770	0.01000	0.01010
23 Endosulfan I	10.134	10.134	0.000	621821	0.01000	0.01015
25 Dieldrin	10.528	10.528	0.000	625540	0.01000	0.009594
28 Endrin	10.890	10.888	0.002	600605	0.01000	0.01062
30 4,4'-DDD	11.161	11.161	0.000	434300	0.01000	0.01184
32 Endosulfan II	11.301	11.299	0.002	574705	0.01000	0.009074
34 4,4'-DDT	11.687	11.686	0.001	488215	0.01000	0.01019
36 Endrin aldehyde	12.195	12.194	0.001	484519	0.01000	0.01041
37 Methoxychlor	12.934	12.933	0.001	308083	0.01000	0.01184
38 Endosulfan sulfate	13.193	13.192	0.001	562054	0.01000	0.01040
39 Endrin ketone	13.682	13.681	0.001	645825	0.01000	0.01024
# 42 Decachlorobiphenyl	15.282	15.282	0.000	592222	0.01000	0.01152

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Add to Form 8D

STL - North Canton

Data file : \\qcanoh04\dd\chem\GCS\a2hp9.i\021009IC-1.b\020F2001.D
Lab Smp Id: AB
Inj Date : 09-OCT-2002 18:36
Operator : 9272 Inst ID: a2hp9.i
Smp Info : AB,,1,3
Misc Info : 1-AB.SUB
Comment :
Method : \\QCANOH04\DD\chem\GCS\a2hp9.i\021009IC-1.b\PEST9.m
Meth Date : 11-Oct-2002 09:31 lip Quant Type: ESTD
Cal Date : 14-SEP-2002 02:57 Cal File: 019F1901.D
Als bottle: 20 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: 1-AB.SUB
Target Version: 4.04
Processing Host: QCANOH05

Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
# 3 Tetrachloro-m-xylene	5.308	5.308	0.000	1264876	0.02500	0.02394
10 alpha-BHC	6.471	6.469	0.002	2026689	0.02500	0.02361
12 gamma-BHC (Lindane)	7.086	7.086	0.000	1793450	0.02500	0.02330
13 beta-BHC	7.305	7.304	0.001	730146	0.02500	0.02350
14 delta-BHC	7.596	7.597	-0.001	1655871	0.02500	0.02380
15 Heptachlor	7.936	7.935	0.001	1820438	0.02500	0.02391
17 Aldrin	8.439	8.438	0.001	1684516	0.02500	0.02373
20 Heptachlor epoxide	9.514	9.514	0.000	1550688	0.02500	0.02396
21 gamma-Chlordane	9.718	9.719	-0.001	1567904	0.02500	0.02385
22 alpha-Chlordane	9.941	9.939	0.002	1659715	0.02500	0.02440
24 4,4'-DDE	10.171	10.169	0.002	1343477	0.02500	0.02459
23 Endosulfan I	10.134	10.134	0.000	1476769	0.02500	0.02410
25 Dieldrin	10.529	10.528	0.001	1353907	0.02500	0.02387
28 Endrin	10.889	10.888	0.001	1398025	0.02500	0.02451
30 4,4'-DDD	11.161	11.161	0.000	1093179	0.02500	0.02778
32 Endosulfan II	11.300	11.299	0.001	1369534	0.02500	0.02217
34 4,4'-DDT	11.687	11.686	0.001	1213982	0.02500	0.02480
36 Endrin aldehyde	12.194	12.194	0.000	1138500	0.02500	0.02629
37 Methoxychlor	12.933	12.933	0.000	737501	0.02500	0.02730
38 Endosulfan sulfate	13.194	13.192	0.002	1330067	0.02500	0.02444
39 Endrin ketone	13.682	13.681	0.001	1552595	0.02500	0.02445
# 42 Decachlorobiphenyl	15.282	15.282	0.000	1339756	0.02500	0.02560

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Add to Form 8D

STL - North Canton

Data file : \\qcanoh04\dd\chem\GCS\a2hp9.i\021009IC-1.b\021F2101.D
Lab Smp Id: AB
Inj Date : 09-OCT-2002 18:58
Operator : 9272 Inst ID: a2hp9.i
Smp Info : AB,,1,4
Misc Info : 1-AB.SUB
Comment :
Method : \\QCANOH04\DD\chem\GCS\a2hp9.i\021009IC-1.b\PEST9.m
Meth Date : 11-Oct-2002 09:31 lip Quant Type: ESTD
Cal Date : 14-SEP-2002 03:19 Cal File: 020F2001.D
Als bottle: 21 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: 1-AB.SUB
Target Version: 4.04
Processing Host: QCANOH05

Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
# 3 Tetrachloro-m-xylene	5.308	5.308	0.000	2586425	0.05000	0.04897
10 alpha-BHC	6.470	6.469	0.001	4355582	0.05000	0.05071
12 gamma-BHC (Lindane)	7.086	7.086	0.000	3810037	0.05000	0.04983
13 beta-BHC	7.304	7.304	0.000	1453405	0.05000	0.04713
14 delta-BHC	7.596	7.597	-0.001	3532954	0.05000	0.05063
15 Heptachlor	7.936	7.935	0.001	3810977	0.05000	0.05015
17 Aldrin	8.439	8.438	0.001	3590014	0.05000	0.05062
20 Heptachlor epoxide	9.514	9.514	0.000	3217188	0.05000	0.04975
21 gamma-Chlordane	9.719	9.719	0.000	3295750	0.05000	0.05003
22 alpha-Chlordane	9.940	9.939	0.001	3315633	0.05000	0.04843
24 4,4'-DDE	10.170	10.169	0.001	2896776	0.05000	0.05207
23 Endosulfan I	10.134	10.134	0.000	3026960	0.05000	0.04938
25 Dieldrin	10.528	10.528	0.000	3286255	0.05000	0.05046
28 Endrin	10.889	10.888	0.001	2876619	0.05000	0.05005
30 4,4'-DDD	11.160	11.161	-0.001	2292152	0.05000	0.05482
32 Endosulfan II	11.299	11.299	0.000	2787603	0.05000	0.04635
34 4,4'-DDT	11.687	11.686	0.001	2438625	0.05000	0.05028
36 Endrin aldehyde	12.194	12.194	0.000	2261258	0.05000	0.04817
37 Methoxychlor	12.933	12.933	0.000	1421589	0.05000	0.05093
38 Endosulfan sulfate	13.193	13.192	0.001	2652124	0.05000	0.04860
39 Endrin ketone	13.682	13.681	0.001	3113989	0.05000	0.04894
# 42 Decachlorobiphenyl	15.282	15.282	0.000	2558228	0.05000	0.04814

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STL - North Canton

Add to Form 8D

Data file : \\qcanoh04\dd\chem\GCS\a2hp9.i\021009IC-1.b\022F2201.D
Lab Smp Id: AB
Inj Date : 09-OCT-2002 19:20
Operator : 9272 Inst ID: a2hp9.i
Smp Info : AB,,1,5
Misc Info : 1-AB.SUB
Comment :
Method : \\QCANOH04\DD\chem\GCS\a2hp9.i\021009IC-1.b\PEST9.m
Meth Date : 11-Oct-2002 09:31 lip Quant Type: ESTD
Cal Date : 14-SEP-2002 03:41 Cal File: 021F2101.D
Als bottle: 22 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: 1-AB.SUB
Target Version: 4.04
Processing Host: QCANOH05

Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
# 3 Tetrachloro-m-xylene	5.308	5.308	0.000	5337385	0.10000	0.1007
10 alpha-BHC	6.471	6.469	0.002	5205623	0.10000	0.1067
12 gamma-BHC (Lindane)	7.086	7.086	0.000	8041876	0.10000	0.1053
13 beta-BHC	7.304	7.304	0.000	2983836	0.10000	0.09701
14 delta-BHC	7.597	7.597	0.000	7555802	0.10000	0.1076
15 Heptachlor	7.936	7.935	0.001	7947010	0.10000	0.1041
17 Aldrin	8.439	8.438	0.001	7540276	0.10000	0.1059
20 Heptachlor epoxide	9.514	9.514	0.000	6609005	0.10000	0.1018
21 gamma-Chlordane	9.718	9.719	-0.001	6899702	0.10000	0.1041
22 alpha-Chlordane	9.940	9.939	0.001	6782543	0.10000	0.09823
24 4,4'-DDE	10.171	10.169	0.002	6148711	0.10000	0.1084
23 Endosulfan I	10.133	10.134	-0.001	6141020	0.10000	0.09997
25 Dieldrin	10.528	10.528	0.000	6848648	0.10000	0.1048
28 Endrin	10.888	10.888	0.000	5831968	0.10000	0.1009
30 4,4'-DDD	11.162	11.161	0.001	4816218	0.10000	0.1091
32 Endosulfan II	11.299	11.299	0.000	5676272	0.10000	0.09694
34 4,4'-DDT	11.688	11.686	0.002	5230556	0.10000	0.1038
36 Endrin aldehyde	12.194	12.194	0.000	4547738	0.10000	0.09659
37 Methoxychlor	12.933	12.933	0.000	2768759	0.10000	0.09643
38 Endosulfan sulfate	13.193	13.192	0.001	5315002	0.10000	0.09694
39 Endrin ketone	13.683	13.681	0.002	6229668	0.10000	0.09784
# 42 Decachlorobiphenyl	15.283	15.282	0.001	4938812	0.10000	0.09169

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STL - North Canton Add to Form 8D

Data file : \\qcanoh04\dd\chem\GCS\a2hp9.i\021009IC-1.b\023F2301.D
Lab Smp Id: AB
Inj Date : 09-OCT-2002 19:41
Operator : 9272 Inst ID: a2hp9.i
Smp Info : AB,,1,6
Misc Info : 1-AB.SUB
Comment :
Method : \\QCANOH04\DD\chem\GCS\a2hp9.i\021009IC-1.b\PEST9.m
Meth Date : 11-Oct-2002 09:31 lip Quant Type: ESTD
Cal Date : 14-SEP-2002 06:14 Cal File: 028F2801.D
Als bottle: 23 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: 1-AB.SUB
Target Version: 4.04
Processing Host: QCANOH05

Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
$ 3 Tetrachloro-m-xylene	5.308	5.308	0.000	10730133	0.20000	0.2018
10 alpha-BHC	6.472	6.469	0.003	18690749	0.20000	0.2163
12 gamma-BHC (Lindane)	7.087	7.086	0.001	16387239	0.20000	0.2154
13 beta-BHC	7.305	7.304	0.001	5969658	0.20000	0.1954
14 delta-BHC	7.597	7.597	0.000	15529499	0.20000	0.2212
15 Heptachlor	7.936	7.935	0.001	16016924	0.20000	0.2090
17 Aldrin	8.438	8.438	0.000	15400784	0.20000	0.2151
20 Heptachlor epoxide	9.514	9.514	0.000	13243107	0.20000	0.2033
21 gamma-Chlordane	9.719	9.719	0.000	14142205	0.20000	0.2119
22 alpha-Chlordane	9.940	9.939	0.001	13706908	0.20000	0.1971
24 4,4'-DDE	10.170	10.169	0.001	12501561	0.20000	0.2184
23 Endosulfan I	10.133	10.134	-0.001	12318354	0.20000	0.2001
25 Dieldrin	10.528	10.528	0.000	13867404	0.20000	0.2116
28 Endrin	10.889	10.888	0.001	12024860	0.20000	0.2063
30 4,4'-DDD	11.161	11.161	0.000	9936394	0.20000	0.2163
32 Endosulfan II	11.299	11.299	0.000	11419782	0.20000	0.1999
34 4,4'-DDT	11.687	11.686	0.001	10837126	0.20000	0.2132
36 Endrin aldehyde	12.194	12.194	0.000	9035828	0.20000	0.1921
37 Methoxychlor	12.933	12.933	0.000	5445616	0.20000	0.1853
38 Endosulfan sulfate	13.193	13.192	0.001	10675136	0.20000	0.1942
39 Endrin ketone	13.682	13.681	0.001	12332705	0.20000	0.1944
$ 42 Decachlorobiphenyl	15.282	15.282	0.000	9758479	0.20000	0.1789

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COMPOUNDS and EXP. RT REPORT

— 8D1

Operator: 9272 Date Acquired: 17-OCT-2002 12:42
Data File: //QCANOH04/DD/chem/GCS/a2hp9.i/021016A-1.b/053F5301.D
Lab Sample ID: E9FHE1AE
Misc. Info:
Instrument: a2hp9.i
Method: \\QCANOH04\DD\chem\GCS\a2hp9.i\021016A-1.b\PEST9.m
Dilution Factor: 200

Compound	RT	Area	Amount	Conc
3) Tetrachloro-m-xylene	5.306	319004	0.006	12.010 ug/Kg
9) Diallate	NOT DETECTED Expected RT = 5.663			
6) Hexachlorobenzene	6.084	17567828	0.245	16290.000 ug/Kg
10) alpha-BHC	6.466	1222429	0.014	940.100 ug/Kg
12) gamma-BHC (Lindane)	NOT DETECTED Expected RT = 7.082			
13) beta-BHC	7.316	68760	0.002	149.500 ug/Kg
14) delta-BHC	7.592	201490	0.003	190.700 ug/Kg
16) Tech Chlordane	NOT DETECTED Expected RT = 7.787			
15) Heptachlor	7.961	147240	0.002	127.700 ug/Kg
17) Aldrin	8.446	146053	0.002	135.500 ug/Kg
18) Isodrin	NOT DETECTED Expected RT = 8.990			
20) Heptachlor epoxide	9.491	376624	0.006	384.200 ug/Kg
21) gamma-Chlordane	NOT DETECTED Expected RT = 9.711			
22) alpha-Chlordane	9.941	97769	0.001	93.420 ug/Kg
23) Endosulfan I	10.099	129252	0.002	139.500 ug/Kg
24) 4,4'-DDE	10.192	219480	0.004	254.700 ug/Kg
31) Chlorobenzilate	10.481	834049	0.257	17060.000 ug/Kg
25) Dieldrin	NOT DETECTED Expected RT = 10.520			
28) Endrin	NOT DETECTED Expected RT = 10.879			
29) Kepone	10.932	1946756	0.106	7040.000 ug/Kg
30) 4,4'-DDD	NOT DETECTED Expected RT = 11.152			
32) Endosulfan II	11.336	168630	0.003	196.100 ug/Kg
27) Toxaphene	NOT DETECTED Expected RT = 11.409			
34) 4,4'-DDT	NOT DETECTED Expected RT = 11.676			
36) Endrin aldehyde	12.156	360827	0.008	509.700 ug/Kg
44) Mirex	12.777	4140327	0.078	5173.000 ug/Kg
37) Methoxychlor	12.946	515978	0.018	1166.000 ug/Kg
38) Endosulfan sulfate	NOT DETECTED Expected RT = 13.180			
41) ENDO2/DDD	NOT DETECTED Expected RT = 13.218			
39) Endrin ketone	NOT DETECTED Expected RT = 13.671			
42) Decachlorobiphenyl	15.240	274784	0.005	10.080 ug/Kg

Column Comparison

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COMPOUNDS and EXP. RT REPORT

Operator: 9272 Date Acquired: 17-OCT-2002 12:42
Data File: //QCANON04/DD/chem/GCS/a2hp9.i/021016A-2.b/053F5301.D
Lab Sample ID: E9FHB1AE
Misc. Info:
Instrument: a2hp9.i
Method: \\QCANON04\DD\chem\GCS\a2hp9.i\021016A-2.b\PEST9r.m
Dilution Factor: 200

Compound	RT	Area	Amount	Conc
4) Tetrachloro-m-xylene	NOT DETECTED	Expected RT = 6.179		
5) Diallate	NOT DETECTED	Expected RT = 6.821		
3) Hexachlorobenzene	7.156	17218020	0.257	17070.000 ug/Kg
11) alpha-BHC	7.505	1317414	0.016	1077.000 ug/Kg
13) gamma-BHC (Lindane)	NOT DETECTED	Expected RT = 8.197		
21) beta-BHC	NOT DETECTED	Expected RT = 8.399		
7) Tech Chlordane	NOT DETECTED	Expected RT = 8.706		
22) delta-BHC	NOT DETECTED	Expected RT = 8.920		
16) Heptachlor	NOT DETECTED	Expected RT = 8.969		
18) Aldrin	NOT DETECTED	Expected RT = 9.515		
14) Isodrin	NOT DETECTED	Expected RT = 10.187		
23) Heptachlor epoxide	NOT DETECTED	Expected RT = 10.527		
26) gamma-Chlordane	10.864	489843	0.007	488.100 ug/Kg
28) alpha-Chlordane	11.107	440440	0.007	446.900 ug/Kg
24) Endosulfan I	NOT DETECTED	Expected RT = 11.189		
29) 4,4'-DDE	NOT DETECTED	Expected RT = 11.536		
31) Dieldrin	NOT DETECTED	Expected RT = 11.741		
27) Chlorobenzilate	12.066	723906	0.203	13510.000 ug/Kg
33) Endrin	NOT DETECTED	Expected RT = 12.420		
25) Kepone	12.730	1619039	0.115	7629.000 ug/Kg
37) 4,4'-DDD	12.895	3172067	0.070	4665.000 ug/Kg
36) Endosulfan II	12.991	497619	0.009	582.500 ug/Kg
30) Toxaphene	NOT DETECTED	Expected RT = 13.151		
38) 4,4'-DDT	NOT DETECTED	Expected RT = 13.539		
40) Endrin aldehyde	NOT DETECTED	Expected RT = 13.679		
42) Endosulfan sulfate	NOT DETECTED	Expected RT = 14.159		
43) Methoxychlor	14.734	1521621	0.064	4281.000 ug/Kg
34) Mirex	14.821	1703893	0.035	2329.000 ug/Kg
39) Endrin ketone	14.926	1608524	0.026	1843.000 ug/Kg
45) Decachlorobiphenyl	NOT DETECTED	Expected RT = 15.639		

Column Comparison

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SW846 8082 SURROGATE RECOVERY

Lab Name: Severn Trent Laboratories, Inc. Client: ENVIRONMENTAL STANDARDS INC.

Lab Code: STLCAN SDG No: 2J04261

Lot #: A2J040261

Extraction: XXA71QH01

deleted out ∴ no DQ

	CLIENT ID.	SRG01	SRG02	TOT OUT	
01	NYPA-UNR-SED01	0.0D	0.0D	02	10X
02	NYPA-UNR-SED02	74	69	00	
03	NYPA-LNR-SED03	0.0D	0.0D	02	5X
04	NYPA-LNR-SED04	99	96	00	
05	NYPA-RES-SED05	80	90	00	
06	NYPA-RES-SED06	92	97	00	
07	NYPA-RES-SED07	71	70	00	
08	NYPA-RES-SED08	75	70	00	
09	NYPA-RES-SED09	68	71	00	
10	NYPA-RES-SED12	78	79	00	
11	METHOD BLK. E9K0X1AA	81	93	00	
12	LCS E9K0X1AC	96	88	00	
13	NYPA-LNR-SED03 D	0.0D	0.0D	02	5X
14	NYPA-LNR-SED03 S	0.0D	0.0D	02	5X

SURROGATES		QC LIMITS
SRG01	= Tetrachloro-m-xylene	(31-127)
SRG02	= Decachlorobiphenyl	(23-141)

\# Column to be used to flag recovery values
* Values outside of required QC Limits
D System monitoring Compound diluted out

FORM II

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SW846 8082 SURROGATE RECOVERY

Lab Name: Severn Trent Laboratories, Inc. Client: ENVIRONMENTAL STANDARDS INC.

Lab Code: STLCAN SDG No: 2J04261

Lot #: A2J040261

Extraction: XXI61QH01

	CLIENT ID.	SRG01	SRG02	TOT OUT
01	NYPA-ERB-01	80	55	00
02	METHOD BLK. E9F651AA	91	73	00
03	LCS E9F651AC	97	93	00
04	LCSD E9F651AD	82	68	00

SURROGATES		QC LIMITS
SRG01	= Tetrachloro-m-xylene	(45-120)
SRG02	= Decachlorobiphenyl	(24-128)

\# Column to be used to flag recovery values
* Values outside of required QC Limits
D System monitoring Compound diluted out

FORM II

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SW846 8082 MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Severn Trent Laboratories, Inc. Client: ENVIRONMENTAL STANDARDS INC.

Lab Code: STLCAN SDG No: 2J04261

Matrix Spike ID: NYPA-LNR-SED03

Lot #: A2J040261 WO #: E9FH71AT
BATCH: 2281409

COMPOUND	SPIKE ADDED (ug/kg)	SAMPLE CONCENT. (ug/kg)	MS CONCENT. (ug/kg)	MS % REC	LIMITS REC	QUAL
Aroclor 1016	410	ND	540	132	26- 144	DIL
Aroclor 1260	410	80	400	78	37- 138	DIL

NOTES(S):

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.
Results and reporting limits have been adjusted for dry weight.

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 2 outside limits

COMMENTS:

FORM III

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SW846 8082 MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Severn Trent Laboratories, Inc. Client: ENVIRONMENTAL STANDARDS INC.

Lab Code: STLCAN SDG No: 2J04261

Matrix Spike ID: NYPA-LNR-SED03

Lot #: A2J040261 WO #: E9FH71AU
BATCH: 2281409

COMPOUND	SPIKE ADDED (ug/kg)	MSD CONCENT. (ug/kg)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	QUAL
Aroclor 1016	410	820	201*	41 *	39	26- 144	DIL a p
Aroclor 1260	410	480	98	18	33	37- 138	DIL

no DQ

NO DQ Report from 5x dilution

NOTES(S):

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

a Spiked analyte recovery is outside stated control limits.

p Relative percent difference (RPD) is outside stated control limits.

Results and reporting limits have been adjusted for dry weight.

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 1 out of 2 outside limits
Spike Recovery: 1 out of 2 outside limits

COMMENTS:

FORM III

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SW846 8082 CHECK SAMPLE RECOVERY

Lab Name: Severn Trent Laboratories, Inc. Client: ENVIRONMENTAL STANDARDS INC.

Lab Code: STLCAN SDG No: 2J04261

Lot #: A2J040000 WO #: E9F651AC
BATCH: 2277486

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENT. (ug/L)	% REC	QC LIMITS REC	QUAL
Aroclor 1016	10	8.2	82	61- 118	
Aroclor 1260	10	8.7	87	61- 124	

NOTES(S):

* Values outside of QC limits

Spike Recovery: 0 out of 2 outside limits

COMMENTS:

FORM III

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SW846 8082 CHECK SAMPLE DUPLICATE RECOVERY

Lab Name: Severn Trent Laboratories, Inc. Client: ENVIRONMENTAL STANDARDS INC.

Lab Code: STLCAN SDG No: 2J04261

Lot #: A2J040000 WO #: E9F651AD
BATCH: 2277486

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENT. (ug/L)	% REC	QC LIMITS REC	QUAL
Aroclor 1016	10	8.0	80	61- 118	
Aroclor 1260	10	8.9	89	61- 124	

NOTES(S):

* Values outside of QC limits

Spike Recovery: 0 out of 2 outside limits

COMMENTS:

FORM III

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SW846 8082 CHECK SAMPLE RECOVERY

Lab Name: Severn Trent Laboratories, Inc. Client: ENVIRONMENTAL STANDARDS INC.

Lab Code: STLCAN SDG No: 2J04261

Lot #: A2J080000 WO #: E9K0X1AC
BATCH: 2281409

COMPOUND	SPIKE ADDED (ug/kg)	SAMPLE CONCENT. (ug/kg)	% REC.	QC LIMITS REC	QUAL
Aroclor 1016	330	290	87	49- 122	
Aroclor 1260	330	270	82	51- 127	

NOTES(S):

* Values outside of QC limits

Spike Recovery: 0 out of 2 outside limits

COMMENTS:

FORM III

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BLANK WORKORDER NO.

E9F651AA

SW846 8082 METHOD BLANK SUMMARY

Lab Name: Severn Trent Laboratories, Inc.

Lab Code: STLCAN

SDG Number: 2J04261

Lab File ID: 025F1901.

Lot Number: A2J040261

Matrix: WATER

Extraction Method:

Date Extracted: 10/05/02

Date Analyzed(1): 10/10/02

Date Analyzed(2): N/A

Time Analyzed(1): 14:00

Time Analyzed(2): N/A

Instrument ID(1): P5

Instrument ID(2): N/A

GC Column(1): N/A ID: N/A GC Column(2): N/A ID: N/A

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, AND MSD:

	CLIENT ID.	SAMPLE WORK ORDER #	DATE ANALYZED(1)	DATE ANALYZED(2)
01	NYPA-ERB-01	E9FJ51AC	10/09/02	N/A
02	CHECK SAMPLE	E9F651AC C	10/10/02	N/A
03	DUPLICATE CHECK	E9F651AD L	10/09/02	N/A
04				
05				
06				
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20				

COMMENTS:

FORM IV

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BLANK WORKORDER NO.

E9K0X1AA

SW846 8082 METHOD BLANK SUMMARY

Lab Name: Severn Trent Laboratories, Inc.

Lab Code: STLCAN

SDG Number: 2J04261

Lab File ID: 038B3801.

Lot Number: A2J040261

Matrix: SOLID

Extraction Method: 3550

Date Extracted: 10/08/02

Date Analyzed(1): 10/10/02

Date Analyzed(2): N/A

Time Analyzed(1): 03:05

Time Analyzed(2): N/A

Instrument ID(1): P4

Instrument ID(2): N/A

GC Column(1): N/A ID: N/A GC Column(2): N/A ID: N/A

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, AND MSD:

	CLIENT ID.	SAMPLE WORK ORDER #	DATE ANALYZED(1)	DATE ANALYZED(2)
01	NYPA-UNR-SED01	E9FHE1AD	10/11/02	N/A
02	NYPA-UNR-SED02	E9FH21AD	10/11/02	N/A
03	NYPA-LNR-SED03	E9FH71AD	10/11/02	N/A
04	NYPA-LNR-SED03	E9FH71AT S	10/11/02	N/A
05	NYPA-LNR-SED03	E9FH71AU D	10/11/02	N/A
06	NYPA-LNR-SED04	E9FJC1AD	10/11/02	N/A
07	NYPA-RES-SED05	E9FJD1AD	10/11/02	N/A
08	NYPA-RES-SED06	E9FJE1AD	10/11/02	N/A
09	NYPA-RES-SED07	E9FJF1AD	10/11/02	N/A
10	NYPA-RES-SED08	E9FJG1AD	10/11/02	N/A
11	NYPA-RES-SED09	E9FJH1AD	10/11/02	N/A
12	NYPA-RES-SED12	E9FJJ1AD	10/11/02	N/A
13	CHECK SAMPLE	E9K0X1AC C	10/10/02	N/A
14				
15				
16				
17				
18				
19				
20				

COMMENTS:

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Report Date : 09-Oct-2002 11:58

STL - North Canton

INITIAL CALIBRATION DATA

08 OCT 17:53

Start Cal Date : ~~10-SEP~~-2002 ~~14:56~~
End Cal Date : 09-OCT-2002 01:20
Quant Method : ESTD
Origin : Disabled
Target Version : 4.04
Integrator : Falcon
Method file : \\qcanoh04\dd\chem\GCS\a2hp5.i\021008IC-2.b\HP5PCBR.m
Cal Date : 09-Oct-2002 11:25 molm
Curve Type : Average

Calibration File Names:
Level 1: \\qcanoh04\dd\chem\GCS\a2hp5.i\021008IC-2.b\026F2601.D
Level 2: \\qcanoh04\dd\chem\GCS\a2hp5.i\021008IC-2.b\027F2701.D
Level 3: \\qcanoh04\dd\chem\GCS\a2hp5.i\021008IC-2.b\028F2801.D
Level 4: \\qcanoh04\dd\chem\GCS\a2hp5.i\021008IC-2.b\029F2901.D
Level 5: \\qcanoh04\dd\chem\GCS\a2hp5.i\021008IC-2.b\030F3001.D
Level 6: \\qcanoh04\dd\chem\GCS\a2hp5.i\021008IC-2.b\031F3101.D

Compound	0.05000 Level 1	0.10000 Level 2	0.20000 Level 3	0.50000 Level 4	1.000 Level 5	2.000 Level 6	RRF	% RSD
2 AROCLOR-1221 (1)	553140	568900	517425	509488	443472	+++++	528485	9.375
(2)	379180	378400	344385	341716	287946	+++++	346325	10.747
(3)	1427120	1438860	1292880	1255946	1102451	+++++	1301451	10.451
3 AROCLOR-1016 (1)	1104060	965270	892435	882404	829902	+++++	934814	11.361
(2)	1430820	2120110	1957745	1742714	1636003	+++++	1777478	15.182
(3)	2943760	2558810	2390725	2441688	2386390	+++++	2544275	9.193
(4)	1879520	1778720	1661455	1534988	1463975	+++++	1663732	10.248
(5)	1112700	1010810	986445	971692	928884	+++++	996106	7.187
4 AROCLOR-1232 (1)	1129560	1135110	1090960	1013268	1009925	+++++	1075765	5.671
(2)	371340	901840	844880	776934	776984	+++++	734396	28.536 <- MM 10/9/02
(3)	1121860	1139950	1079695	1024784	1071032	+++++	1087464	4.163 <-
(4)	728340	711100	708370	676636	686681	+++++	702225	2.931 <-
(5)	519240	516910	491125	461054	457869	+++++	491240	5.482 <-
5 AROCLOR-1242 (1)	850500	794050	764935	666858	679118	+++++	751092	10.355
(2)	1090880	1591680	1510470	1320662	1289869	+++++	1360712	14.476
(3)	2257540	2032340	1998515	1810176	1849317	+++++	1989578	8.905
(4)	1450500	1335200	1285880	1142276	1209329	+++++	1284637	9.211
(5)	1084660	1070240	1031505	917148	913669	+++++	1003444	8.241
6 AROCLOR-1248 (1)	1374440	1315730	1267700	1181800	1115042	+++++	1250942	8.286
(2)	1686980	1756110	1674250	1601484	1523249	+++++	1648415	5.394
(3)	2047740	2016810	1948900	1853560	1773633	+++++	1928129	5.915
(4)	2387020	2324030	2236585	2141208	2061173	+++++	2230003	5.929
(5)	2150200	2142240	2092505	2022574	1980694	+++++	2077643	3.577
7 AROCLOR-1254 (1)	1270400	1156730	1030670	982602	848604	+++++	1057801	15.327
(2)	2288880	2207170	1993460	1939976	1736979	+++++	2033293	10.821
(3)	3892500	3585310	3309425	3276752	2951698	+++++	3403137	10.402
(4)	2589580	2531410	2341330	2339038	2128132	+++++	2385898	7.651
(5)	2731120	3135790	3158340	3160656	2885445	+++++	3014270	6.504

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Report Date : 09-Oct-2002 11:58

STL - North Canton

INITIAL CALIBRATION DATA

08 OCT 17:53

Start Cal Date : ~~10-SEP-2002 14:36~~
End Cal Date : 09-OCT-2002 01:20
Quant Method : ESTD
Origin : Disabled
Target Version : 4.04
Integrator : Falcon
Method file : \\qcanoh04\dd\chem\GCS\a2hp5.i\021008IC-2.b\HP5PCBR.m
Cal Date : 09-Oct-2002 11:25 molm
Curve Type : Average

Compound	0.05000 Level 1	0.10000 Level 2	0.20000 Level 3	0.50000 Level 4	1.000 Level 5	2.000 Level 6	--- RRF	% RSD
# AROCLOR-1260(1)	3171000	2885240	2647685	2497390	2413246	+++++	2722912	11.313
(2)	3553080	3302470	2997020	2827216	2746294	+++++	3085216	10.935
(3)	4529000	4121750	4016520	3836926	3974639	+++++	4095767	6.417
(4)	2708560	2535710	2423070	2308770	2235568	+++++	2442336	7.675
(5)	5623620	5245950	4991850	4797228	4748356	+++++	5081401	7.101
# 1 TCMX	54999600	48872200	47237100	48032040	47869660	+++++	49402120	6.443
# 9 DCB	76440400	70996600	63745500	58726240	56125680	+++++	65206884	12.975

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Data File: \\qcanoh04\dd\chem\GCS\a2hp5.i\021008IC-2.b\032F3201.D
Report Date: 09-Oct-2002 12:04

STL - North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp5.i
Lab File ID: 032F3201.D
Analysis Type:
Lab Sample ID: ICV
Method: \\qcanoh04\dd\chem\GCS\a2hp5.i\021008IC-2.b\HP5PCBR.m

Injection Date: 09-OCT-2002 01:36
Init. Cal. Date(s): ~~10-SEP-2002~~ 09-OCT-2002
Init. Cal. Times: ~~14:56~~ 17:53 01:20
Quant Type: ESTD

COMPOUND	RRF	RF1	MIN RRF	%D	MAX %D
3 AROCLOR-1016(1)	934814	801432	0.010	-14.3	15.0
(2)	1777478	1766484	0.010	-0.6	15.0
(3)	2544275	2302560	0.010	-9.5	15.0
(4)	1663732	1497856	0.010	-10.0	15.0
(5)	996106	898992	0.010	-9.7	15.0
8 AROCLOR-1260(1)	2722912	2517684	0.010	-7.5	15.0
(2)	3085216	2860584	0.010	-7.3	15.0
(3)	4095767	4195800	0.010	2.4	15.0
(4)	2442335	2346594	0.010	-3.9	15.0
(5)	5081401	4903584	0.010	-3.5	15.0

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FORM 8
SEMIVOLATILE ANALYTICAL SEQUENCE

Lab Name: STL - NORTH CANTON Contract:

Lab Code: QESOH Case No.: SAS No.: SDG No.: A2J040261

GC Column: RESTEK PEST CLPI ID: 0.32 (mm) Init. Calib. Date(s): ~~09~~ 10/~~10~~ 08/02 10/09/0

Instrument ID: A2HP5

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

	MEAN SURROGATE RT FROM INITIAL CALIBRATION					
	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	RT #	RT #
01		1232	10/09/02	1620		
02		1242	10/09/02	1636		
03		1248	10/09/02	1651		
04		2154	10/09/02	1707		
05		1660	10/09/02	1722		
06	NYPA-ERB-01	E9FJ51AC	10/09/02	1941		
07	E9F65CKDUP	E9F651AD	10/09/02	2043		
08		1660	10/09/02	2058		
09						
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QC LIMITS

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM VIII SV

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Data File: \\QCANOH04\dd\chem\GCS\a2hp5.i\021009-2.b\006F0601.D
Report Date: 09-Oct-2002 17:35

STL - North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp5.i
Lab File ID: 006F0601.D
Analysis Type:
Lab Sample ID: 1660
Method: \\QCANOH04\dd\chem\GCS\a2hp5.i\021009-2.b\HP5PCBR.m

Injection Date: 09-OCT-2002 17:22
Init. Cal. Date(s): ~~10-SEP-2002~~ 09-OCT-2002
Init. Cal. Times: ~~14:56~~ 17:53 01:20
Quant Type: ESTD

COMPOUND	RRF	RF1	MIN RRF	%D	MAX %D
# 1 TCMX	49402120	48683280	0.010	-1.5	15.0
3 AROCLOR-1016 (1)	934814	865286	0.010	-7.4	15.0
(2)	1777478	1770080	0.010	-0.4	15.0
(3)	2544275	2465036	0.010	-3.1	15.0
(4)	1663732	1552914	0.010	-6.7	15.0
(5)	996106	974034	0.010	-2.2	15.0
8 AROCLOR-1260 (1)	2722912	2564320	0.010	-5.8	15.0
(2)	3085216	2934096	0.010	-4.9	15.0
(3)	4095767	4044240	0.010	-1.3	15.0
(4)	2442336	2363334	0.010	-3.2	15.0
(5)	5081401	4945348	0.010	-2.7	15.0
# 9 DCB	65206884	60946160	0.010	-6.5	15.0

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Data File: \\QCANOH04\dd\chem\GCS\a2hp5.i\021009-2.b\020F2001.D
Report Date: 09-Oct-2002 21:10

STL - North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp5.i
Lab File ID: 020F2001.D
Analysis Type:
Lab Sample ID: 1660

Injection Date: 09-OCT-2002 20:58
Init. Cal. Date(s): ~~10-SEP-2002~~ 09-OCT-2002
Init. Cal. Times: ~~14:56~~ 19:53 01:20
Quant Type: ESTD

Method: \\QCANOH04\dd\chem\GCS\a2hp5.i\021009-2.b\HP5PCBR.m

COMPOUND	RRF	RF1	MIN RRF	%D	MAX %D
$ 1 TCMX	49402120	49444800	0.010	0.1	15.0
3 AROCLOR-1016 (1)	934814	879702	0.010	-5.9	15.0
(2)	1777478	1771998	0.010	-0.3	15.0
(3)	2544275	2482544	0.010	-2.4	15.0
(4)	1663732	1558580	0.010	-6.3	15.0
(5)	996106	975888	0.010	-2.0	15.0
8 AROCLOR-1260 (1)	2722912	2577254	0.010	-5.3	15.0
(2)	3085216	2946432	0.010	-4.5	15.0
(3)	4095767	4099510	0.010	0.1	15.0
(4)	2442336	2314340	0.010	-5.2	15.0
(5)	5081401	4825252	0.010	-5.0	15.0
$ 9 DCB	65206884	58453440	0.010	-10.4	15.0

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FORM 8
SEMIVOLATILE ANALYTICAL SEQUENCE

Lab Name: STL - NORTH CANTON Contract:

Lab Code: QESOH Case No.: SAS No.: SDG No.: A2J040261

GC Column: RESTEK PEST CLPI ID: 0.32 (mm) Init. Calib. Date(s): ~~09~~ 10/~~10~~ 08/02 10/09/0

Instrument ID: A2HP5

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	RT	#	RT	#
01		1232	10/10/02	0729				
02		1242	10/10/02	0745				
03		1248	10/10/02	0800				
04		2154	10/10/02	0815				
05		1660	10/10/02	1054				
06	E9F65BLK	E9F651AA	10/10/02	1400				
07	E9F65CHK	E9F651AC	10/10/02	1415				
08		1660	10/10/02	1517				
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QC LIMITS

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM VIII SV

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Data File: \\QCANOH04\dd\chem\GCS\a2hp5.i\021010-2.b\013F0701.D
Report Date: 10-Oct-2002 11:06

STL - North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp5.i
Lab File ID: 013F0701.D
Analysis Type:
Lab Sample ID: 1660

Injection Date: 10-OCT-2002 10:54
Init. Cal. Date(s): ~~10-SEP-2002~~ 09-OCT-2002
Init. Cal. Times: ~~14:56~~ 01:20
Quant Type: ESTD

Method: \\QCANOH04\dd\chem\GCS\a2hp5.i\021010-2.b\HP5PCBR.m

COMPOUND	$\overline{RRF}$	RF1	MIN RRF	%D	MAX %D
# 1 TCMX	49402120	46902840	0.010	-5.1	15.0
3 AROCLOR-1016 (1)	934814	834526	0.010	-10.7	15.0
(2)	1777478	1698098	0.010	-4.5	15.0
(3)	2544275	2349962	0.010	-7.6	15.0
(4)	1663732	1467664	0.010	-11.8	15.0
(5)	996106	910214	0.010	-8.6	15.0
8 AROCLOR-1260 (1)	2722912	2516512	0.010	-7.6	15.0
(2)	3085216	2830090	0.010	-8.3	15.0
(3)	4095767	4088770	0.010	-0.2	15.0
(4)	2442336	2345316	0.010	-4.0	15.0
(5)	5081401	4901138	0.010	-3.5	15.0
# 9 DCB	65206884	61177720	0.010	-6.2	15.0

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Data File: \\QCANOH04\dd\chem\GCS\a2hp5.i\021010-2.b\030F2401.D
Report Date: 10-Oct-2002 15:29

STL - North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp5.i
Lab File ID: 030F2401.D
Analysis Type:
Lab Sample ID: 1660

Injection Date: 10-OCT-2002 15:17
Init. Cal. Date(s): ~~10-SEP~~-2002 09-OCT-2002
Init. Cal. Times: 08 ~~14:56~~ 17:53 01:20
Quant Type: ESTD

Method: \\QCANOH04\dd\chem\GCS\a2hp5.i\021010-2.b\HP5PCBR.m

COMPOUND	RRF	RF1	MIN RRF	%D	MAX %D
$ 1 TCMX	49402120	47376640	0.010	-4.1	15.0
3 AROCLOR-1016 (1)	934814	841894	0.010	-9.9	15.0
(2)	1777478	1711054	0.010	-3.7	15.0
(3)	2544275	2416750	0.010	-5.0	15.0
(4)	1663732	1490640	0.010	-10.4	15.0
(5)	996106	929934	0.010	-6.6	15.0
8 AROCLOR-1260 (1)	2722912	2504344	0.010	-8.0	15.0
(2)	3085216	2834060	0.010	-8.1	15.0
(3)	4095767	3781108	0.010	-7.7	15.0
(4)	2442336	2341578	0.010	-4.1	15.0
(5)	5081401	4901700	0.010	-3.5	15.0
$ 9 DCB	65206884	61732320	0.010	-5.3	15.0

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Report Date : 09-Oct-2002 11:09

STL - North Canton

INITIAL CALIBRATION DATA

Start Cal Date : ~~03~~ 09-OCT-2002 ~~15:25~~ 03:14
End Cal Date : 09-OCT-2002 10:03
Quant Method : ESTD
Origin : Disabled
Target Version : 4.04
Integrator : Falcon
Method file : \\qcanoh04\dd\chem\GCS\a2hp4.i\021008IC-2.b\HP4PCBR.m
Cal Date : 09-Oct-2002 11:08 molm
Curve Type : Average

Calibration File Names:
Level 1: \\qcanoh04\dd\chem\GCS\a2hp4.i\021008IC-2.b\022B2201.D
Level 2: \\qcanoh04\dd\chem\GCS\a2hp4.i\021008IC-2.b\023B2301.D
Level 3: \\qcanoh04\dd\chem\GCS\a2hp4.i\021008IC-2.b\024B2401.D
Level 4: \\qcanoh04\dd\chem\GCS\a2hp4.i\021008IC-2.b\025B2501.D
Level 5: \\qcanoh04\dd\chem\GCS\a2hp4.i\021008IC-2.b\026B2601.D

Compound	0.10000 Level 1	0.20000 Level 2	0.50000 Level 3	1.000 Level 4	2.000 Level 5	___ RRF	% RSD
2 AROCLOR-1221 (1)	878170	886995	750126	814726	848241	835652	6.651
(2)	607780	604790	508856	544148	553062	563727	7.492
(3)	1941760	1979430	1650510	1791173	1828843	1838343	7.103
3 AROCLOR-1016 (1)	1663910	1467400	1272296	1481371	1248815	1426758	11.956
(2)	2504750	2291595	2002190	2207636	1882434	2177721	11.220
(3)	4264460	4039995	3675386	4212744	3602588	3959035	7.700
(4)	2287130	2143320	1900010	2169091	1850129	2069936	9.025
(5)	1559670	1506958	1338528	1557632	1328563	1458270	7.945
4 AROCLOR-1232 (1)	1685210	1393135	1460326	1585747	1471571	1519198	7.621
(2)	999860	847325	880356	897984	850679	895241	6.944
(3)	1617110	1419980	1496388	1525707	1523374	1516512	4.660
(4)	894300	763745	801978	806186	796798	812601	5.986
(5)	692520	593080	629452	610982	600816	625310	6.393
5 AROCLOR-1242 (1)	1324200	1282290	1069962	1129792	1035019	1168253	11.013
(2)	1894200	1851380	1526086	1638006	1493434	1680621	10.952
(3)	3124250	3053845	2735320	3006124	2837382	2951384	5.439
(4)	1704150	1631085	1452570	1579285	1471938	1567806	6.780
(5)	1527360	1442900	1304000	1389130	1307839	1396246	6.766
6 AROCLOR-1248 (1)	1026260	930500	868998	794356	794294	882882	11.141
(2)	2517910	2261440	2181418	2115697	2090057	2233304	7.718
(3)	2824010	2563490	2457002	2422356	2407649	2534901	6.814
(4)	2309850	2107835	2061490	2047705	2059357	2117247	5.200
(5)	1286230	1183705	1131182	1104309	1085211	1158127	6.962
7 AROCLOR-1254 (1)	1472310	1515225	1264658	1334736	1300293	1377444	7.992
(2)	2881380	3046880	2415806	2552842	2477042	2674790	10.276
(3)	3471400	3911720	3362396	3685032	3851502	3596410	5.893
(4)	2248110	2516135	2159590	2362378	2292709	2315784	5.786
(5)	2303030	2493110	2227566	2448577	2361113	2366679	4.537

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Report Date : 09-Oct-2002 11:09

STL - North Canton

INITIAL CALIBRATION DATA

Start Cal Date : ~~03~~ 09-OCT-2002 ~~15:25~~ 03:19
End Cal Date : 09-OCT-2002 10:03
Quant Method : ESTD
Origin : Disabled
Target Version : 4.04
Integrator : Falcon
Method file : \\qcanoh04\dd\chem\GCS\a2hp4.i\021008IC-2.b\HP4PCBR.m
Cal Date : 09-Oct-2002 11:08 molm
Curve Type : Average

Compound	0.10000 Level 1	0.20000 Level 2	0.50000 Level 3	1.000 Level 4	2.000 Level 5	--- RRF	% RSD
8 AROCLOR-1260(1)	3019300	2833190	2535460	2804875	2380765	2714718	9.365
(2)	3567380	3302445	2951102	3367062	2826041	3202806	9.562
(3)	3033280	2836615	2595402	3028511	2506813	2800124	8.671
(4)	2227650	2104745	1913926	2143224	1816977	2041704	8.344
(5)	4868560	4553410	4285848	4991767	4232018	4586321	7.402
# 1 TCMX	100629400	88544900	81893120	99804760	92157620	92605960	8.497
# 9 DCB	38893400	36008600	32468200	36010620	30070280	34690220	9.926

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FORM 8
SEMIVOLATILE ANALYTICAL SEQUENCE

Lab Name: STL - NORTH CANTON Contract:

Lab Code: QESOH Case No.: SAS No.: SDG No.: A2J040261

GC Column: RESTEK PEST CLPI ID: 0.53 (mm) Init. Calib. Date(s): 10/~~03~~ 04/02 10/09/0

Instrument ID: A2HP4

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

	MEAN SURROGATE RT FROM INITIAL CALIBRATION					
	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	RT #	RT #
01		1232	10/09/02	1612		
02		1242	10/09/02	1629		
03		1248	10/09/02	1646		
04		2154	10/09/02	1703		
05		1660	10/10/02	0112		
06	E9K0XBLK	E9K0X1AA	10/10/02	0305		
07	E9K0XCHK	E9K0X1AC	10/10/02	0322		
08		1660	10/10/02	0339		
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QC LIMITS

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM VIII SV

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Data File: \\QCANOH04\DD\chem\GCS\a2hp4.i\021009-2.b\034B3401.D
Report Date: 10-Oct-2002 01:24

STL - North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp4.i
Lab File ID: 034B3401.D
Analysis Type:
Lab Sample ID: 1660
Method: \\QCANOH04\DD\chem\GCS\a2hp4.i\021009-2.b\HP4PCBR.m

Injection Date: 10-OCT-2002 01:12
Init. Cal. Date(s): 03-OCT-2002 09-OCT-2002
Init. Cal. Times: ~~15:25~~ 10:03
Quant Type: ESTD

COMPOUND	RRF	RF1	MIN RRF	%D	MAX %D
# 1 TCMX	92605960	103660360	0.010	11.9	15.0
3 AROCLOR-1016(1)	1426758	1551722	0.010	8.8	15.0
(2)	2177721	2308942	0.010	6.0	15.0
(3)	3959035	4401666	0.010	11.2	15.0
(4)	2069936	2268674	0.010	9.6	15.0
(5)	1458270	1602308	0.010	9.9	15.0
8 AROCLOR-1260(1)	2714718	2970542	0.010	9.4	15.0
(2)	3202806	3529042	0.010	10.2	15.0
(3)	2800124	3151416	0.010	12.5	15.0
(4)	2041704	2258136	0.010	10.6	15.0
(5)	4586321	5165062	0.010	12.6	15.0
# 9 DCB	34690220	38707400	0.010	11.6	15.0

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Data File: \\QCANOH04\DD\chem\GCS\a2hp4.i\021009-2.b\040B4001.D
Report Date: 10-Oct-2002 03:51

STL - North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp4.i
Lab File ID: 040B4001.D
Analysis Type:
Lab Sample ID: 1660
Method: \\QCANOH04\DD\chem\GCS\a2hp4.i\021009-2.b\HP4PCBR.m

Injection Date: 10-OCT-2002 03:39
Init. Cal. Date(s): ~~03-OCT-2002~~ 09-OCT-2002
Init. Cal. Times: ~~15:25~~ 03:14 10:03
Quant Type: ESTD

COMPOUND	RRF	RF1	MIN RRF	%D	MAX %D
$ 1 TCMX	92605960	78834600	0.010	-14.9	15.0
3 AROCLOR-1016 (1)	1426758	1244056	0.010	-12.8	15.0
(2)	2177721	1863206	0.010	-14.4	15.0
(3)	3959035	3698856	0.010	-6.6	15.0
(4)	2069936	1928640	0.010	-6.8	15.0
(5)	1458270	1355288	0.010	-7.1	15.0
8 AROCLOR-1260 (1)	2714718	2493944	0.010	-8.1	15.0
(2)	3202806	2888812	0.010	-9.8	15.0
(3)	2800124	2595526	0.010	-7.3	15.0
(4)	2041704	1846826	0.010	-9.5	15.0
(5)	4586321	4189050	0.010	-8.7	15.0
$ 9 DCB	34690220	32761000	0.010	-5.6	15.0

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Report Date : 11-Oct-2002 09:17

STL - North Canton

INITIAL CALIBRATION DATA

Start Cal Date : 10-OCT-2002 11:32
End Cal Date : 10-OCT-2002 18:15
Quant Method : ESTD
Origin : Disabled
Target Version : 4.04
Integrator : Falcon
Method file : \\qcanoh04\dd\chem\GCS\a2hp2.i\021010IC-2.b\HP2PCBR.m
Cal Date : 11-Oct-2002 09:15 molm
Curve Type : Average

Calibration File Names:
Level 1: \\qcanoh04\dd\chem\GCS\a2hp2.i\021010IC-2.b\022F2201.D
Level 2: \\qcanoh04\dd\chem\GCS\a2hp2.i\021010IC-2.b\023F2301.D
Level 3: \\qcanoh04\dd\chem\GCS\a2hp2.i\021010IC-2.b\024F2401.D
Level 4: \\qcanoh04\dd\chem\GCS\a2hp2.i\021010IC-2.b\025F2501.D
Level 5: \\qcanoh04\dd\chem\GCS\a2hp2.i\021010IC-2.b\026F2601.D

Compound	0.10000 Level 1	0.20000 Level 2	0.50000 Level 3	1.000 Level 4	2.000 Level 5	RRF	% RSD
2 AROCLOR-1221(1)	492460	486750	457208	453284	433646	464670	5.280
(2)	328370	320470	301684	294915	277705	304629	6.652
(3)	1307240	1223625	1131370	1113100	1065822	1168231	8.264
3 AROCLOR-1016(1)	855730	914765	884834	811900	773201	848086	6.663
(2)	1912640	1941955	1854574	1713640	1642473	1813056	7.151
(3)	4020550	3846570	3867682	3743674	3654383	3826573	3.608
(4)	1744050	1619810	1590308	1563243	1484395	1600361	5.924
(5)	1011030	961190	953680	927741	905494	951827	4.177
4 AROCLOR-1232(1)	1117670	1046850	951704	890248	902294	981753	9.967
(2)	918350	879840	788802	727466	728906	808673	10.789
(3)	1629280	1578020	1481316	1446384	1512463	1529493	4.830
(4)	666750	674520	653766	623339	649211	653517	3.008
(5)	495040	456825	460184	442475	443843	459673	4.622
5 AROCLOR-1242(1)	771950	756975	709368	658302	601593	699636	10.090
(2)	1609690	1540040	1421290	1320283	1208467	1419954	11.415
(3)	1997830	1948470	1945386	1876974	1866885	1927109	2.834
(4)	1262490	1299445	1251396	1118403	1127810	1211909	6.854
(5)	1037300	965010	971364	938000	863140	954963	6.596
6 AROCLOR-1248(1)	748820	706740	670216	666524	620919	682644	7.019
(2)	1744430	1595800	1492256	1539355	1477379	1569844	6.879
(3)	2210550	2065860	1996730	2076988	2021492	2074324	3.993
(4)	2110370	1927925	1917702	2011486	1979681	1989433	3.905
(5)	1050870	977985	928440	1102484	1068991	1025754	6.918
7 AROCLOR-1254(1)	1050100	988660	924690	914146	878694	951258	7.153
(2)	2334130	2187460	2042728	2037710	2000401	2120486	6.562
(3)	3761770	3643670	3472740	3347196	3337897	3512655	5.302
(4)	2365920	2337600	2284760	2247176	2295696	2306230	2.011
(5)	3464870	3294510	3190464	3331013	3318753	3319922	2.957

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Report Date : 11-Oct-2002 09:17

STL - North Canton

INITIAL CALIBRATION DATA

Start Cal Date : 10-OCT-2002 11:32
End Cal Date : 10-OCT-2002 18:15
Quant Method : ESTD
Origin : Disabled
Target Version : 4.04
Integrator : Falcon
Method file : \\qcanoh04\dd\chem\GCS\a2hp2.i\021010IC-2.b\HP2PCBR.m
Cal Date : 11-Oct-2002 09:15 molm
Curve Type : Average

Compound	0.10000 Level 1	0.20000 Level 2	0.50000 Level 3	1.000 Level 4	2.000 Level 5	RRF	% RSD
$ AROCLOR-1260 (1)	3045240	2607000	2770054	2634303	2551159	2721551	7.277
(2)	3469540	3150460	3083600	2963402	2882085	3109817	7.280
(3)	5074990	4607955	4386122	4333089	4291871	4538805	7.130
(4)	2709100	2612430	2571246	2481103	2398308	2554637	4.686
(5)	5591120	5086525	5074654	5019894	4906409	5135720	5.147
$ 1 TCMX	49664600	47972800	48500920	47228220	47496050	48172518	2.003
$ 9 DCB	70474400	62127300	57227600	55178080	52211880	59443852	12.022

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Data File: \\QCANOH04\DD\chem\GCS\a2hp2.i\021010IC-2.b\027F2701.D
Report Date: 10-Oct-2002 18:44

STL - North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp2.i
Lab File ID: 027F2701.D
Analysis Type:
Lab Sample ID: ICV
Method: \\QCANOH04\DD\chem\GCS\a2hp2.i\021010IC-2.b\HP2PCBR.m

Injection Date: 10-OCT-2002 18:32
Init. Cal. Date(s): 10-OCT-2002 10-OCT-2002
Init. Cal. Times: 11:32 18:15
Quant Type: ESTD

COMPOUND	RRF	RF1	MIN RRF	%D	MAX %D	
$ 1 TCMX	48172518	2558800	0.010	-94.7	15.0	<-
3 AROCLOR-1016 (1)	848086	772190	0.010	-8.9	15.0	
(2)	1813056	1644982	0.010	-9.3	15.0	
(3)	3319477	3409420	0.010	2.7	15.0	
(4)	1600361	1428070	0.010	-10.8	15.0	
(5)	951827	831846	0.010	-12.6	15.0	
8 AROCLOR-1260 (1)	2721551	2516736	0.010	-7.5	15.0	
(2)	3109817	2798064	0.010	-10.0	15.0	
(3)	4538805	4155574	0.010	-8.4	15.0	
(4)	2554437	2344312	0.010	-8.2	15.0	
(5)	5135720	4645776	0.010	-9.5	15.0	
$ 9 DCB	59443852	++++	0.010	++++	15.0	<-

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FORM 8
SEMIVOLATILE ANALYTICAL SEQUENCE

Lab Name: STL - NORTH CANTON Contract:

Lab Code: QESOH Case No.: SAS No.: SDG No.: A2J040261

GC Column: RESTEK PEST CLPII ID: 0.53 (mm) Init. Calib. Date(s): 10/10/02 10/10/

Instrument ID: A2HP2

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

	MEAN SURROGATE RT FROM INITIAL CALIBRATION					
	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	RT #	RT #
01		1232	10/10/02	2223		
02		1242	10/10/02	2239		
03		1248	10/10/02	2256		
04		2154	10/10/02	2313		
05		1660	10/11/02	0739		
06	NYPA-UNR-SED	E9FHE1AD	10/11/02	1026		
07	NYPA-UNR-SED	E9FH21AD	10/11/02	1059		
08	NYPA-LNR-SED	E9FH71AD	10/11/02	1116		
09	NYPA-LNR-SED	E9FH71AT	10/11/02	1132		
10	NYPA-LNR-SED	E9FH71AU	10/11/02	1149		
11	NYPA-LNR-SED	E9FJC1AD	10/11/02	1206		
12	NYPA-RES-SED	E9FJD1AD	10/11/02	1241		
13		1660	10/11/02	1258		
14	NYPA-RES-SED	E9FJE1AD	10/11/02	1314		
15	NYPA-RES-SED	E9FJF1AD	10/11/02	1331		
16	NYPA-RES-SED	E9FJH1AD	10/11/02	1405		
17	NYPA-RES-SED	E9FJJ1AD	10/11/02	1422		
18		1660	10/11/02	1455		
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QC LIMITS

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM VIII SV

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Data File: \\qcanoh04\dd\chem\GCS\a2hp2.i\021010A-2.b\031F3101.D
Report Date: 11-Oct-2002 09:25

STL - North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp2.i
Lab File ID: 031F3101.D
Analysis Type:
Lab Sample ID: 1660
Method: \\qcanoh04\dd\chem\GCS\a2hp2.i\021010A-2.b\HP2PCBR.m

Injection Date: 11-OCT-2002 07:39
Init. Cal. Date(s): 10-OCT-2002 10-OCT-2002
Init. Cal. Times: 11:32 18:15

COMPOUND	RRF	RF1	MIN RRF	%D	MAX %D
$ 1 TCMX	48172518	48664160	0.010	1.0	15.0
3 AROCLOR-1016(1)	848086	874722	0.010	3.1	15.0
(2)	1813056	1837134	0.010	1.3	15.0
(3)	3826573	3832298	0.010	0.1	15.0
(4)	1600361	1603300	0.010	0.2	15.0
(5)	951827	946738	0.010	-0.5	15.0
8 AROCLOR-1260(1)	2721551	2654240	0.010	-2.5	15.0
(2)	3109817	3029310	0.010	-2.6	15.0
(3)	4538805	4401542	0.010	-3.0	15.0
(4)	2554437	2444486	0.010	-4.3	15.0
(5)	5135720	4864360	0.010	-5.3	15.0
$ 9 DCB	59443852	55296400	0.010	-7.0	15.0

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Data File: \\QCANOH04\DD\chem\GCS\a2hp2.i\021010A-2.b\050F5001.D
Report Date: 11-Oct-2002 13:10

STL - North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp2.i
Lab File ID: 050F5001.D
Analysis Type:
Lab Sample ID: 1660
Method: \\QCANOH04\DD\chem\GCS\a2hp2.i\021010A-2.b\HP2PCBR.m

Injection Date: 11-OCT-2002 12:58
Init. Cal. Date(s): 10-OCT-2002 10-OCT-2002
Init. Cal. Times: 11:32 18:15
Quant Type: ESTD

COMPOUND	$\overline{RRF}$	RF1	MIN RRF	%D	MAX %D	
$ 1 TCMX	48172518	45821360	0.010	-4.9	15.0	
3 AROCLOR-1016(1)	848086	790622	0.010	-6.8	15.0	
(2)	1813056	1661346	0.010	-8.4	15.0	
(3)	3826573	3632794	0.010	-5.1	15.0	
(4)	1600361	1412994	0.010	-11.7	15.0	
(5)	951827	886588	0.010	-6.9	15.0	
8 AROCLOR-1260(1)	2721551	2353904	0.010	-13.5	15.0	
(2)	3109817	2639156	0.010	-15.1	15.0	<-
(3)	4538805	2923750	0.010	-13.6	15.0	
(4)	2554437	2133470	0.010	-16.5	15.0	<-
(5)	5135720	4385956	0.010	-14.6	15.0	
$ 9 DCB	59443852	51518480	0.010	-13.3	15.0	

MM
10/11/02

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Data File: \\QCANOH04\DD\chem\GCS\a2hp2.i\021010A-2.b\057F5701.D
Report Date: 11-Oct-2002 15:08

STL - North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp2.i
Lab File ID: 057F5701.D
Analysis Type:
Lab Sample ID: 1660

Injection Date: 11-OCT-2002 14:55
Init. Cal. Date(s): 10-OCT-2002 10-OCT-2002
Init. Cal. Times: 11:32 18:15
Quant Type: ESTD

Method: \\QCANOH04\DD\chem\GCS\a2hp2.i\021010A-2.b\HP2PCBR.m

COMPOUND	RRF	RF1	MIN RRF	%D	MAX %D
$ 1 TCMX	48172518	46733360	0.010	-3.0	15.0
3 AROCLOR-1016 (1)	848086	852426	0.010	0.5	15.0
(2)	1813056	1788284	0.010	-1.4	15.0
(3)	3826573	3784602	0.010	-1.1	15.0
(4)	1600361	1577234	0.010	-1.4	15.0
(5)	951827	947168	0.010	-0.5	15.0
8 AROCLOR-1260 (1)	2721551	2653854	0.010	-2.5	15.0
(2)	3109817	2955460	0.010	-5.0	15.0
(3)	4538805	4350296	0.010	-4.2	15.0
(4)	2554437	2385814	0.010	-6.6	15.0
(5)	5135720	4693304	0.010	-8.6	15.0
$ 9 DCB	59443852	54465480	0.010	-8.4	15.0

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FORM 8
SEMIVOLATILE ANALYTICAL SEQUENCE

Lab Name: STL - NORTH CANTON Contract:

Lab Code: QESOH Case No.: SAS No.: SDG No.: A2J040261

GC Column: RESTEK PEST CLPI ID: 0.53 (mm) Init. Calib. Date(s): 10/10/02 10/10/0

Instrument ID: A2HP2

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

	MEAN SURROGATE RT FROM INITIAL CALIBRATION					
	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	RT #	RT #
01		1232	10/11/02	1633		
02		1242	10/11/02	1649		
03		1248	10/11/02	1706		
04		2154	10/11/02	1723		
05		1660	10/11/02	1739		
06	NYPA-RES-SED	E9FJG1AD	10/11/02	1813		
07		1660	10/11/02	1953		
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QC LIMITS

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM VIII SV

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Data File: \\QCANOH04\DD\chem\GCS\a2hp2.i\021011-2.b\006F0601.D
Report Date: 11-Oct-2002 17:52

STL - North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp2.i
Lab File ID: 006F0601.D
Analysis Type:
Lab Sample ID: 1660
Injection Date: 11-OCT-2002 17:39
Init. Cal. Date(s): 10-OCT-2002 10-OCT-2002
Init. Cal. Times: 11:32 18:15
Quant Type: ESTD
Method: \\QCANOH04\DD\chem\GCS\a2hp2.i\021011-2.b\HP2PCBR.m

COMPOUND	RRF	RF1	MIN RRF	%D	MAX %D
$ 1 TCMX	48172518	47100440	0.010	-2.2	15.0
3 AROCLOR-1016 (1)	948086	863958	0.010	1.9	15.0
(2)	1813056	1836528	0.010	1.3	15.0
(3)	3826573	3852532	0.010	0.7	15.0
(4)	1600361	1603378	0.010	0.2	15.0
(5)	951827	954060	0.010	0.2	15.0
8 AROCLOR-1260 (1)	2721551	2753236	0.010	1.2	15.0
(2)	3109817	3085740	0.010	-0.8	15.0
(3)	4538805	4479028	0.010	-1.3	15.0
(4)	2554437	2424948	0.010	-5.1	15.0
(5)	5135720	4895270	0.010	-4.7	15.0
$ 9 DCB	59463852	55547000	0.010	-6.6	15.0

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Data File: \\QCANOH04\DD\chem\GCS\a2hp2.i\021011-2.b\014F1401.D
Report Date: 11-Oct-2002 20:05

STL - North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp2.i
Lab File ID: 014F1401.D
Analysis Type:
Lab Sample ID: 1660
Method: \\QCANOH04\DD\chem\GCS\a2hp2.i\021011-2.b\HP2PCBR.m

Injection Date: 11-OCT-2002 19:53
Init. Cal. Date(s): 10-OCT-2002 10-OCT-2002
Init. Cal. Times: 11:32 18:15
Quant Type: ESTD

COMPOUND	RRF	RF1	MIN RRF	%D	MAX %D
# 1 TCMX	48172518	50943720	0.010	5.8	15.0
3 AROCLOR-1016 (1)	848086	927052	0.010	9.3	15.0
(2)	1813056	1950670	0.010	7.6	15.0
(3)	3826573	4201336	0.010	9.8	15.0
(4)	1600361	1740466	0.010	8.8	15.0
(5)	951827	1030254	0.010	8.2	15.0
8 AROCLOR-1260 (1)	2721551	2893122	0.010	6.3	15.0
(2)	3109817	3223046	0.010	3.6	15.0
(3)	4538805	4672850	0.010	3.0	15.0
(4)	2554437	2580888	0.010	1.0	15.0
(5)	5135720	5140808	0.010	0.1	15.0
# 9 DCB	59443852	57151400	0.010	-3.9	15.0

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METHOD BLANK REPORT

GC Semivolatiles

Client Lot #...: A2J040261
MB Lot-Sample #: A2J040000-486

Work Order #...: E9F651AA
Prep Date.....: 10/05/02
Prep Batch #...: 2277486
Initial Wgt/Vol: 1000 mL

Matrix.....: WATER
Final Wgt/Vol..: 5 mL

Analysis Date..: 10/10/02
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Aroclor 1016	ND	1.0	ug/L	SW846 8082
Aroclor 1221	ND	1.0	ug/L	SW846 8082
Aroclor 1232	ND	1.0	ug/L	SW846 8082
Aroclor 1242	ND	1.0	ug/L	SW846 8082
Aroclor 1248	ND	1.0	ug/L	SW846 8082
Aroclor 1254	ND	1.0	ug/L	SW846 8082
Aroclor 1260	ND	1.0	ug/L	SW846 8082

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	91	(45 - 120)
Decachlorobiphenyl	73	(24 - 128)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

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METHOD BLANK REPORT

GC Semivolatiles

Client Lot #...: A2J040261
MB Lot-Sample #: A2J080000-409

Work Order #...: E9K0X1AA
Prep Date.....: 10/08/02
Prep Batch #...: 2281409
Initial Wgt/Vol: 30 g

Matrix.....: SOLID
Final Wgt/Vol..: 10 mL

Analysis Date..: 10/10/02
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Aroclor 1016	ND	20	ug/kg	SW846 8082
Aroclor 1221	ND	20	ug/kg	SW846 8082
Aroclor 1232	ND	20	ug/kg	SW846 8082
Aroclor 1242	ND	20	ug/kg	SW846 8082
Aroclor 1248	ND	20	ug/kg	SW846 8082
Aroclor 1254	ND	20	ug/kg	SW846 8082
Aroclor 1260	ND	20	ug/kg	SW846 8082

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	81	(31 - 127)
Decachlorobiphenyl	93	(23 - 141)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: A2J040261 Work Order #...: E9FH71AT-MS Matrix.....: SO
MS Lot-Sample #: A2J040261-003 E9FH71AU-MSD
Date Sampled...: 10/01/02 18:15 Date Received..: 10/03/02
Prep Date.....: 10/08/02 Analysis Date..: 10/11/02
Prep Batch #...: 2281409
Dilution Factor: 5 Initial Wgt/Vol: 30.2 g Final Wgt/Vol..: 10 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Aroclor 1016	132 DIL	(26 - 144)			SW846 8082
	201	(26 - 144)	41	(0-39)	SW846 8082
	Qualifiers: DIL,a,p				
Aroclor 1260	78 DIL	(37 - 138)			SW846 8082
	98 DIL	(37 - 138)	18	(0-33)	SW846 8082

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	0.0	(31 - 127)
	Qualifiers: DIL,*	
	0.0	(31 - 127)
	Qualifiers: DIL,*	
Decachlorobiphenyl	0.0	(23 - 141)
	Qualifiers: DIL,*	
	0.0	(23 - 141)
	Qualifiers: DIL,*	

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

a Spiked analyte recovery is outside stated control limits.

p Relative percent difference (RPD) is outside stated control limits.

Results and reporting limits have been adjusted for dry weight.

* Surrogate recovery is outside stated control limits.

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MATRIX SPIKE SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: A2J040261 Work Order #...: E9FH71AT-MS Matrix.....: SO
MS Lot-Sample #: A2J040261-003 E9FH71AU-MSD
Date Sampled...: 10/01/02 18:15 Date Received..: 10/03/02
Prep Date.....: 10/08/02 Analysis Date..: 10/11/02
Prep Batch #...: 2281409
Dilution Factor: 5 Initial Wgt/Vol: 30.2 g Final Wgt/Vol..: 10 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Aroclor 1016	**ND**	**410**	**540**	**ug/kg**	**132**		**SW846 8082**
	Qualifiers:		DIL				
	ND	**410**	**820**	**ug/kg**	**201**	**41**	**SW846 8082**
	Qualifiers:		DIL,a,p				
Aroclor 1260	**80**	**410**	**400**	**ug/kg**	**78 DIL**		**SW846 8082**
	80	**410**	**480**	**ug/kg**	**98 DIL**	**18**	**SW846 8082**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	0.0	(31 - 127)
	Qualifiers: DIL,*	
	0.0	(31 - 127)
	Qualifiers: DIL,*	
Decachlorobiphenyl	0.0	(23 - 141)
	Qualifiers: DIL,*	
	0.0	(23 - 141)
	Qualifiers: DIL,*	

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

a Spiked analyte recovery is outside stated control limits.

p Relative percent difference (RPD) is outside stated control limits.

Results and reporting limits have been adjusted for dry weight.

* Surrogate recovery is outside stated control limits.

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: A2J040261 **Work Order #...:** E9F651AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A2J040000-486 E9F651AD-LCSD
Prep Date.....: 10/05/02 **Analysis Date..:** 10/10/02
Prep Batch #...: 2277486
Dilution Factor: 2 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 1000 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Aroclor 1016	**82**	**(61 - 118)**			**SW846 8082**
	80	**(61 - 118)**	**1.6**	**(0-20)**	**SW846 8082**
Aroclor 1260	**87**	**(61 - 124)**			**SW846 8082**
	89	**(61 - 124)**	**2.1**	**(0-27)**	**SW846 8082**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	97	(45 - 120)
	82	(45 - 120)
Decachlorobiphenyl	93	(24 - 128)
	68	(24 - 128)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

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LABORATORY CONTROL SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: A2J040261 **Work Order #...:** E9F651AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A2J040000-486 E9F651AD-LCSD
Prep Date.....: 10/05/02 **Analysis Date..:** 10/10/02
Prep Batch #...: 2277486
Dilution Factor: 2 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 1000 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Aroclor 1016	**10**	**8.2**	**ug/L**	**82**		**SW846 8082**
	10	**8.0**	**ug/L**	**80**	**1.6**	**SW846 8082**
Aroclor 1260	**10**	**8.7**	**ug/L**	**87**		**SW846 8082**
	10	**8.9**	**ug/L**	**89**	**2.1**	**SW846 8082**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	97	(45 - 120)
	82	(45 - 120)
Decachlorobiphenyl	93	(24 - 128)
	68	(24 - 128)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: A2J040261 Work Order #...: E9K0X1AC Matrix.....: SOLID
LCS Lot-Sample#: A2J080000-409
Prep Date.....: 10/08/02 Analysis Date..: 10/10/02
Prep Batch #...: 2281409
Dilution Factor: 1 Final Wgt/Vol..: 10 mL
Initial Wgt/Vol: 30 g

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Aroclor 1016	**87**	**(49 - 122)**	**SW846 8082**
Aroclor 1260	**82**	**(51 - 127)**	**SW846 8082**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	96	(31 - 127)
Decachlorobiphenyl	88	(23 - 141)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

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LABORATORY CONTROL SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: A2J040261 Work Order #...: E9K0X1AC Matrix.....: SOLID
LCS Lot-Sample#: A2J080000-409
Prep Date.....: 10/08/02 Analysis Date..: 10/10/02
Prep Batch #...: 2281409
Dilution Factor: 1 Final Wgt/Vol..: 10 mL
Initial Wgt/Vol: 30 g

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Aroclor 1016	**330**	**290**	**ug/kg**	**87**	**SW846 8082**
Aroclor 1260	**330**	**270**	**ug/kg**	**82**	**SW846 8082**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	96	(31 - 127)
Decachlorobiphenyl	88	(23 - 141)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

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RQC058

Severn Trent Laboratories, Inc.
EXTRACTION BENCH WORKSHEET

Run Date: 10/08/02
Time: 20:02:39

LEV 1	LEV 2		LEV 1	LEV 2	
Y	Y	Blank	Y	Y	Weights/Volumes
Y	Y	Check	Y	Y	Spike & Surrogate Worksheet
Y	Y	MS/MSD	Y	Y	Vial contains correct volume
			Y	Y	Labels, greenbars, worksheets computer batch: correct & all match
			_	_	Anomalies to Extraction Method

Y Expanded Deliverable
Y COC Completed
Y Bench Sheet Copied
_ Package Submitted to AnalyticalGro
_ Bench Sheet Copied per COC

Extractionist: 401088 Renee E. McGrath

Concentrationist: 401088 Renee E. McGrath
009223 Steffani D. Deubner

Reviewer/Date: DEUBNERS / 10/08/02

****
* QC BATCH: 2281409 *
****

PREP DATE: 10/08/02
COMP DATE: 10/07/02

PCBs (8082)
SONICATION w/ACID STRIP (PCB)

EXTR EXPR	ANL DUE	LOT#,MSRUN#/ WORK ORDER	TEST FLGS	EXT	MTH	MATRIX	INIT/FIN WT/VOL	INIT	PH*S ADJ1	ADJ2	SOLVENTS EXTRACTION	VOL	EXCHANGE	VOL	SPIKE STANDARD/ SURROGATE ID
10/15/02	10/18/02	A2J040261-001 E9FHE-1-AD	D	71	QH	SOLID	30.1g 10.00mL	NA	NA	NA	DCM/ACE	300.0	HEXANE	50.0	1 ML 2/.2 SURR #3946
COMMENTS:															
10/15/02	10/18/02	A2J040261-002 E9FH2-1-AD	D	71	QH	SOLID	30.14g 10.00mL	NA	NA	NA	DCM/ACE	300.0	HEXANE	50.0	1 ML 2/.2 SURR #3946
COMMENTS:															
10/15/02	10/18/02	A2J040261-003 E9FH7-1-AD	D	71	QH	SOLID	30.2g 10.00mL	NA	NA	NA	DCM/ACE	300.0	HEXANE	50.0	1 ML 2/.2 SURR #3946
COMMENTS:															
10/15/02	10/18/02	A2J040261-003 E9FH7-1-ATS	D	71	QH	SOLID	30.2g 10.00mL	NA	NA	NA	DCM/ACE	300.0	HEXANE	50.0	1 ML 10PPM SPIKE #3941 1 ML 2/.2 SURR #3946
COMMENTS:															
10/15/02	10/18/02	A2J040261-003 E9FH7-1-AUD	D	71	QH	SOLID	30.2g 10.00mL	NA	NA	NA	DCM/ACE	300.0	HEXANE	50.0	1 ML 10PPM SPIKE #3941 1 ML 2/.2 SURR #3946
COMMENTS:															
10/15/02	10/18/02	A2J040261-004 E9FJC-1-AD	D	71	QH	SOLID	30.2g 10.00mL	NA	NA	NA	DCM/ACE	300.0	HEXANE	50.0	1 ML 2/.2 SURR #3946
COMMENTS:															
10/15/02	10/18/02	A2J040261-005 E9FJD-1-AD	D	71	QH	SOLID	30.2g 10.00mL	NA	NA	NA	DCM/ACE	300.0	HEXANE	50.0	1 ML 2/.2 SURR #3946
COMMENTS:															

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Severn Trent Laboratories, Inc.
EXTRACTION BENCH WORKSHEET

Run Date: 10/08/02
Time: 20:02:39

QC BATCH: 2281409

PREP DATE: 10/08/02
COMP DATE: 10/07/02

EXTR EXPR	ANL DUE	LOT#,MSRUN#/ WORK ORDER	TEST FLGS	EXT	MTH	MATRIX	INIT/FIN WT/VOL	PH"S INIT	PH"S ADJ1	PH"S ADJ2	SOLVENTS EXTRACTION	SOLVENTS VOL	SOLVENTS EXCHANGE	SOLVENTS VOL	SPIKE STANDARD/ SURROGATE ID
10/15/02	10/18/02	A2J040261-006 E9FJE-1-AD	D	71	QH	SOLID	40.15g 10.00mL	NA	NA	NA	DCM/ACE	300.0	HEXANE	50.0	1 ML 2/.2 SURR #3946
COMMENTS:															
10/15/02	10/18/02	A2J040261-007 E9FJF-1-AD	D	71	QH	SOLID	40.14g 10.00mL	NA	NA	NA	DCM/ACE	300.0	HEXANE	50.0	1 ML 2/.2 SURR #3946
COMMENTS:															
10/15/02	10/18/02	A2J040261-008 E9FJG-1-AD	D	71	QH	SOLID	60.2g 10.00mL	NA	NA	NA	DCM/ACE	300.0	HEXANE	50.0	1 ML 2/.2 SURR #3946
COMMENTS:															
10/15/02	10/18/02	A2J040261-009 E9FJH-1-AD	D	71	QH	SOLID	60.2g 10.00mL	NA	NA	NA	DCM/ACE	300.0	HEXANE	50.0	1 ML 2/.2 SURR #3946
COMMENTS:															
10/15/02	10/18/02	A2J040261-010 E9FJJ-1-AD	D	71	QH	SOLID	60.02g 10.00mL	NA	NA	NA	DCM/ACE	300.0	HEXANE	50.0	1 ML 2/.2 SURR #3946
COMMENTS:															
10/14/02	10/18/02	A2J050101-013 E9GCK-1-AC	D	71	QH	SOLID	30.05g 10.00mL	NA	NA	NA	DCM/ACE	300.0	HEXANE	50.0	1 ML 2/.2 SURR #3946
COMMENTS:															
10/21/02	10/10/02	A2J080128-001 E9J1G-1-AE	DR	71	QH	SOLID	30.00g 10.00mL	NA	NA	NA	DCM/ACE	300.0	HEXANE	50.0	1 ML 2/.2 SURR #3946
COMMENTS:															
10/20/02	10/11/02	A2J080239-001 E9KV1-1-AC	DR	71	QH	SOLID	30.16g 10.00mL	NA	NA	NA	DCM/ACE	300.0	HEXANE	50.0	1 ML 2/.2 SURR #3946
COMMENTS:															
10/19/02	10/11/02	A2J080239-002 E9KWG-1-AC	DR	71	QH	SOLID	30.11g 10.00mL	NA	NA	NA	DCM/ACE	300.0	HEXANE	50.0	1 ML 2/.2 SURR #3946
COMMENTS:															
10/19/02	10/11/02	A2J080239-003 E9KWX-1-AC	DR	71	QH	SOLID	30.08g 10.00mL	NA	NA	NA	DCM/ACE	300.0	HEXANE	50.0	1 ML 2/.2 SURR #3946
COMMENTS:															

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Severn Trent Laboratories, Inc.
EXTRACTION BENCH WORKSHEET

Run Date: 10/08/02
Time: 20:02:39

QC BATCH: 2281409

PREP DATE: 10/08/02
COMP DATE: 10/08/02

EXTR EXPR	ANL DUE	LOT#,MSRUN#/ WORK ORDER	TEST FLGS	EXT	MTH	MATRIX	INIT/FIN WT/VOL	INIT	PH"S ADJ1	ADJ2	SOLVENTS EXTRACTION	VOL	EXCHANGE	VOL	SPIKE STANDARD/ SURROGATE ID
10/19/02	10/11/02	A2J080239-004 E9KW4-1-AC	DR	71	QH	SOLID	30.00g 10.00mL	NA	NA	NA	DCM/ACE	300.0	HEXANE	50.0	1 ML 2/.2 SURR #3946
COMMENTS:															
10/19/02	10/11/02	A2J080239-004 E9KW4-1-ADS	DR	71	QH	SOLID	30.00g 10.00mL	NA	NA	NA	DCM/ACE	300.0	HEXANE	50.0	1 ML 10PPM SPIKE #3941 1 ML 2/.2 SURR #3946
COMMENTS:															
10/19/02	10/11/02	A2J080239-004 E9KW4-1-ARD	DR	71	QH	SOLID	30.04g 10.00mL	NA	NA	NA	DCM/ACE	300.0	HEXANE	50.0	1 ML 10PPM SPIKE #3941 1 ML 2/.2 SURR #3946
COMMENTS:															
10/15/02	0/00/00	A2J080000-409 E9K0X-1-AAB		71	QH	SOLID	30.00g 10.00mL	NA	NA	NA	DCM/ACE	300.0	HEXANE	50.0	1 ML 2/.2 SURR #3946
COMMENTS:															
10/15/02	0/00/00	A2J080000-409 E9K0X-1-ACC		71	QH	SOLID	30.00g 10.00mL	NA	NA	NA	DCM/ACE	300.0	HEXANE	50.0	1 ML 10PPM SPIKE #3941 1 ML 2/.2 SURR #3946
COMMENTS:															

S/S BY RM
DCM #X17E18 ACE #X22E02 HEX #X08E01
ASSOC SOME SAMPLES AND BLK W/ 2281410

R = RUSH C = CLP
E = EPA 600 D = EXP.DEL)
M = CLIENT REQ MS/MSD
*

NUMBER OF WORK ORDERS IN BATCH: 22

STL North Canton

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RQC058

Severn Trent Laboratories, Inc.
EXTRACTION BENCH WORKSHEET

Run Date: 10/06/02
Time: 23:23:02

LEV 1	LEV 2		LEV 1	LEV 2	
Y	Y	Blank	Y	Y	Weights/Volumes
Y	Y	Check	Y	Y	Spike & Surrogate Worksheet
_	_	MS/MSD	Y	Y	Vial contains correct volume
			Y	Y	Labels, greenbars, worksheets computer batch: correct & all match
			_	_	Anomalies to Extraction Method

Y Expanded Deliverable
Y COC Completed
Y Bench Sheet Copied
_ Package Submitted to AnalyticalGrou
_ Bench Sheet Copied per COC

Extractionist: 002811 Dave S. Thomas

Concentrationist: 009223 Steffani D. Deubner
401088 Renee E. McGrath

Reviewer/Date: THOMASD / 10/05/02

****
* QC BATCH: 2277486 *
****

PREP DATE: 10/05/02 10:00
COMP DATE: 10/06/02

PCBs (8082)
LIQ/LIQ, CONT w/ACID STRIP (PCB) - Nominal

EXTR EXPR	ANL DUE	LOT#,MSRUN#/ WORK ORDER	TEST FLGS	EXT	MTH	MATRIX	INIT/FIN WT/VOL	INIT	PH'S ADJ1	ADJ2	EXTRACTION	SOLVENTS VOL	EXCHANGE	VOL	SPIKE STANDARD/ SURROGATE ID
10/09/02	10/24/02	A2J030290-006 E9DF3-1-AA	D	61	QH	WATER	1000mL 5.00mL	7.0	NA	NA	DCM	250.0	HEXANE	50.0	1.0ML 2/.2 #3946
COMMENTS:															
10/09/02	10/24/02	A2J030290-009 E9DGA-1-AA	D	61	QH	WATER	1000mL 5.00mL	7.0	NA	NA	DCM	250.0	HEXANE	50.0	1.0ML 2/.2 #3946
COMMENTS:															
10/08/02	10/17/02	A2J030309-001 E9DJN-1-A7		61	QH	WATER	1000mL 5.00mL	7.0	NA	NA	DCM	250.0	HEXANE	50.0	1.0ML 2/.2 #3946
COMMENTS:															
10/09/02	10/18/02	A2J040189-007 E9E1F-1-CC		61	QH	WATER	1000mL 5.00mL	7.0	NA	NA	DCM	250.0	HEXANE	50.0	1.0ML 2/.2 #3946
COMMENTS:															
10/10/02	10/18/02	A2J040261-011 E9FJ5-1-AC	D	61	QH	WATER	1000mL 5.00mL	7.0	NA	NA	DCM	250.0	HEXANE	50.0	1.0ML 2/.2 #3946
COMMENTS:															
10/10/02	10/17/02	A2J040328-001 E9FVM-1-AP	R	61	QH	WATER	1000mL 5.00mL	7.0	NA	NA	DCM	250.0	HEXANE	50.0	1.0ML 2/.2 #3946
COMMENTS:															
10/09/02	0/00/00	A2J040000-486 E9F65-1-AAB		61	QH	WATER	1000mL 5.00mL	7.0	NA	NA	DCM	250.0	HEXANE	50.0	1.0ML 2/.2 #3946
COMMENTS:															

STL North Canton

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EXTRACTION BENCH WORKSHEET

Run Date: 10/06/02
Time: 23:23:02

QC BATCH: 2277486

PREP DATE: 10/05/02 10:00
COMP DATE: 10/06/02

EXTR EXPR	ANL DUE	LOT#,MSRUN#/ WORK ORDER	TEST FLGS	EXT	MTH	MATRIX	INIT/FIN WT/VOL	INIT	PH"S ADJ1	ADJ2	EXTRACTION	SOLVENTS VOL	EXCHANGE	VOL	SPIKE STANDARD/ SURROGATE ID
10/09/02	0/00/00	A2J040000-486 E9F65-1-ACC		61	QH	WATER	1000mL 5.00mL	7.0	NA	NA	DCM	250.0	HEXANE	50.0	1.0ML 10PPM #3941 1.0ML 2/.2 #3946
COMMENTS:															
10/09/02	0/00/00	A2J040000-486 E9F65-1-ADL	R	61	QH	WATER	1000mL 5.00mL	7.0	NA	NA	DCM	250.0	HEXANE	50.0	1.0ML 10PPM #3941 1.0ML 2/.2 #3946
COMMENTS:															

S/S BY D.T.
DCM #X17E18 HEXANE #X08E01 NA2SO4 #025158
ASSOC. QC AND SOME SAMPS W/2277485

R = RUSH C = CLP
E = EPA 600 D = EXP.DEL)
M = CLIENT REQ MS/MSD

NUMBER OF WORK ORDERS IN BATCH: 9

STL North Canton

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Data File: \\qcanoh04\dd\chem\GCS\a2hp5.i\021008IC-2.b\002F0201.D
Report Date: 09-Oct-2002 11:59

Starting ICAL Date & Time

STL - North Canton

Data file : \\qcanoh04\dd\chem\GCS\a2hp5.i\021008IC-2.b\002F0201.D
Lab Smp Id: 1232
Inj Date : 08-OCT-2002 17:53
Operator : 09237
Smp Info : 1232,,1,1
Misc Info : 1-AR1232.SUB
Comment :
Method : \\QCANOH04\dd\chem\GCS\a2hp5.i\021008IC-2.b\HP5PCBR.m
Meth Date : 09-Oct-2002 11:58 molm
Cal Date : 26-SEP-2002 02:17
Als bottle: 2
Dil Factor: 1.00000
Integrator: Falcon
Target Version: 4.04
Processing Host: QCANOH04

Inst ID: a2hp5.i

Quant Type: ESTD
Cal File: 026F2601.D
Calibration Sample, Level: 1

Compound Sublist: 1-AR1232.SUB
Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)	TARGET RANGE	RATIO
4 AROCLOR-1232					CAS #: 11141-16-5		
2.731	2.732	(-0.001)	56478	0.05000	0.05688	75.00- 125.00	100.00(M)
3.060	3.065	(-0.005)	18567	0.05000	0.04072	60.82- 101.37	37.21
3.492	3.493	(-0.001)	56093	0.05000	0.05366	74.05- 123.42	81.25
3.632	3.632	(0.000)	36417	0.05000	0.05485	48.02- 80.04	48.10
4.149	4.149	(0.000)	25962	0.05000	0.05509	35.17- 58.62	35.78
		Average of Peak Amounts =			0.0522		

QC Flag Legend

M - Compound response manually integrated.

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Data File: \\qcanoh04\dd\chem\GCS\a2hp4.i\021008IC-2.b\002B0201.D
Report Date: 09-Oct-2002 11:09

Starting IRAN data here

STL - North Canton

Data file : \\qcanoh04\dd\chem\GCS\a2hp4.i\021008IC-2.b\002B0201.D
Lab Smp Id: 1232
Inj Date : 09-OCT-2002 03:19
Operator : 9237 Inst ID: a2hp4.i
Smp Info : 1232,,1,1
Misc Info : 1-AR1232.sub
Comment :
Method : \\QCANOH04\DD\chem\GCS\a2hp4.i\021008IC-2.b\HP4PCBR.m
Meth Date : 09-Oct-2002 11:09 molm Quant Type: ESTD
Cal Date : 03-OCT-2002 21:03 Cal File: 022B2201.D
Als bottle: 1 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: 1-AR1232.sub
Target Version: 4.04 Sample Matrix: None
Processing Host: QCANOH05

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)	TARGET RANGE	RATIO
4 AROCLOR-1332					CAS #: 11141-16-5		
2.724	2.725	(-0.001)	168521	0.10000	0.08529	75.00- 125.00	100.00
3.062	3.063	(-0.001)	99986	0.10000	0.09150	45.21- 75.36	59.33
3.490	3.490	(0.000)	161711	0.10000	0.08491	76.85- 128.09	95.96
3.630	3.630	(0.000)	89430	0.10000	0.08757	41.19- 68.65	53.07
4.154	4.153	(0.001)	69252	0.10000	0.08971	32.33- 53.88	41.09
		Average of Peak Amounts =			0.0878		

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MATRIX SPIKE SAMPLE DATA REPORT

Trace Level Organic Compounds

Client Lot #...: A2J040301 Work Order #...: E9FQN1AD-MS Matrix.....: SO
MS Lot-Sample #: A2J040301-003 E9FQN1AE-MSD
Date Sampled...: 10/01/02 18:15 Date Received..: 10/03/02
Prep Date.....: 10/08/02 Analysis Date..: 11/06/02
Prep Batch #...: 2281130
Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
2,3,7,8-TCDD	7.9	24	31	pg/g	98		SW846 8290
	7.9	24	31	pg/g	95	2.1	SW846 8290
1,2,3,7,8-PeCDD	0.50	120	120	pg/g	101		SW846 8290
	0.50	120	120	pg/g	100	0.74	SW846 8290
1,2,3,4,7,8-HxCDD	0.44	120	130	pg/g	108		SW846 8290
	0.44	120	130	pg/g	108	0.35	SW846 8290
1,2,3,6,7,8-HxCDD	2.5	120	130	pg/g	104		SW846 8290
	2.5	120	120	pg/g	102	1.9	SW846 8290
1,2,3,7,8,9-HxCDD	1.6	120	140	pg/g	113		SW846 8290
	1.6	120	140	pg/g	111	1.8	SW846 8290
1,2,3,4,6,7,8-HpCDD	17	120	130	pg/g	95		SW846 8290
	17	120	120	pg/g	89	5.6	SW846 8290
OCDD	71	240	280	pg/g	83 B		SW846 8290
	71	240	270	pg/g	82 B	5.6	SW846 8290
2,3,7,8-TCDF	4.5	24	27	pg/g	95		SW846 8290
	4.5	24	28	pg/g	99	3.7	SW846 8290
1,2,3,7,8-PeCDF	1.2	120	130	pg/g	107		SW846 8290
	1.2	120	130	pg/g	107 Q	0.01	SW846 8290
2,3,4,7,8-PeCDF	2.5	120	130	pg/g	106		SW846 8290
	2.5	120	130	pg/g	107 Q	0.93	SW846 8290
1,2,3,4,7,8-HxCDF	19	120	130	pg/g	91		SW846 8290
	19	120	130	pg/g	93 Q	1.7	SW846 8290
1,2,3,6,7,8-HxCDF	1.8	120	110	pg/g	87		SW846 8290
	1.8	120	110	pg/g	87	0.13	SW846 8290
2,3,4,6,7,8-HxCDF	0.83	120	110	pg/g	94 B		SW846 8290
	0.83	120	110	pg/g	94 B	0.25	SW846 8290
1,2,3,7,8,9-HxCDF	ND	120	120	pg/g	97		SW846 8290
	ND	120	120	pg/g	99	1.6	SW846 8290
1,2,3,4,6,7,8-HpCDF	34	120	140	pg/g	88 B		SW846 8290
	34	120	140	pg/g	92 B	3.6	SW846 8290
1,2,3,4,7,8,9-HpCDF	2.7	120	130	pg/g	108 B		SW846 8290
	2.7	120	140	pg/g	115 B	6.5	SW846 8290
OCDF	98	240	340	pg/g	100 B		SW846 8290
	98	240	360	pg/g	109 B	6.4	SW846 8290

(Continued on next page)

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MATRIX SPIKE SAMPLE EVALUATION REPORT

Trace Level Organic Compounds

Client Lot #...: A2J040301 Work Order #...: E9FQN1AD-MS Matrix.....: SO
MS Lot-Sample #: A2J040301-003 E9FQN1AE-MSD

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	86	(40 - 135)
	85	(40 - 135)
13C-1,2,3,7,8-PeCDD	80	(40 - 135)
	86	(40 - 135)
13C-1,2,3,6,7,8-HxCDD	71	(40 - 135)
	66	(40 - 135)
13C-1,2,3,4,6,7,8-HpCDD	76	(40 - 135)
	76	(40 - 135)
13C-OCDD	57	(40 - 135)
	55	(40 - 135)
13C-2,3,7,8-TCDF	86	(40 - 135)
	85	(40 - 135)
13C-1,2,3,7,8-PeCDF	76	(40 - 135)
	79	(40 - 135)
13C-1,2,3,4,7,8-HxCDF	81	(40 - 135)
	74	(40 - 135)
13C-1,2,3,4,6,7,8-HpCDF	70	(40 - 135)
	65	(40 - 135)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

Results and reporting limits have been adjusted for dry weight.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Q Estimated maximum possible concentration (EMPC).

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LABORATORY CONTROL SAMPLE DATA REPORT

Trace Level Organic Compounds

Client Lot #...: A2J040301 Work Order #...: E9HAL1AC-LCS Matrix.....: WATER
LCS Lot-Sample#: H2J070000-140 E9HAL1AD-LCSD
Prep Date.....: 10/07/02 Analysis Date..: 11/04/02
Prep Batch #...: 2280140
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
2,3,7,8-TCDD	200	200	pg/L	99		SW846 8290
	200	190	pg/L	96	2.6	SW846 8290
1,2,3,7,8-PeCDD	1000	940 B	pg/L	94		SW846 8290
	1000	930 B	pg/L	93	0.44	SW846 8290
1,2,3,4,7,8-HxCDD	1000	1100 B	pg/L	106		SW846 8290
	1000	990 B	pg/L	99	7.0	SW846 8290
1,2,3,6,7,8-HxCDD	1000	970 B	pg/L	97		SW846 8290
	1000	980 B	pg/L	98	1.4	SW846 8290
1,2,3,7,8,9-HxCDD	1000	1100 B	pg/L	108		SW846 8290
	1000	1100 B	pg/L	106	1.1	SW846 8290
1,2,3,4,6,7,8-HpCDD	1000	910 B	pg/L	91		SW846 8290
	1000	910 B	pg/L	91	0.0	SW846 8290
OCDD	2000	1800 B	pg/L	91		SW846 8290
	2000	1800 B	pg/L	92	1.1	SW846 8290
2,3,7,8-TCDF	200	190	pg/L	97		SW846 8290
	200	200	pg/L	98	1.2	SW846 8290
1,2,3,7,8-PeCDF	1000	1100 B	pg/L	106		SW846 8290
	1000	1000 B	pg/L	105	1.0	SW846 8290
2,3,4,7,8-PeCDF	1000	1100 B	pg/L	112		SW846 8290
	1000	1100 B	pg/L	109	2.7	SW846 8290
1,2,3,4,7,8-HxCDF	1000	970 B	pg/L	97		SW846 8290
	1000	980 B	pg/L	98	0.54	SW846 8290
1,2,3,6,7,8-HxCDF	1000	940 B	pg/L	94		SW846 8290
	1000	940 B	pg/L	94	0.23	SW846 8290
2,3,4,6,7,8-HxCDF	1000	960 B	pg/L	96		SW846 8290
	1000	950 B	pg/L	95	0.86	SW846 8290
1,2,3,7,8,9-HxCDF	1000	970 B	pg/L	97		SW846 8290
	1000	980 B	pg/L	98	0.75	SW846 8290
1,2,3,4,6,7,8-HpCDF	1000	1000 B	pg/L	101		SW846 8290
	1000	1000 B	pg/L	103	2.3	SW846 8290
1,2,3,4,7,8,9-HpCDF	1000	1100 B	pg/L	108		SW846 8290
	1000	1000 B	pg/L	102	5.9	SW846 8290
OCDF	2000	1700 B	pg/L	87		SW846 8290
	2000	1700 B	pg/L	83	5.0	SW846 8290

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

Trace Level Organic Compounds

Client Lot #...: A2J040301 **Work Order #...:** E9HAL1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: H2J070000-140 E9HAL1AD-LCSD

INTERNAL STANDARD	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	86	(40 - 135)
	81	(40 - 135)
13C-1,2,3,7,8-PeCDD	100	(40 - 135)
	97	(40 - 135)
13C-1,2,3,6,7,8-HxCDD	72	(40 - 135)
	70	(40 - 135)
13C-1,2,3,4,6,7,8-HpCDD	85	(40 - 135)
	78	(40 - 135)
13C-OCDD	87	(40 - 135)
	82	(40 - 135)
13C-2,3,7,8-TCDF	85	(40 - 135)
	80	(40 - 135)
13C-1,2,3,7,8-PeCDF	92	(40 - 135)
	86	(40 - 135)
13C-1,2,3,4,7,8-HxCDF	78	(40 - 135)
	73	(40 - 135)
13C-1,2,3,4,6,7,8-HpCDF	75	(40 - 135)
	71	(40 - 135)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

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LABORATORY CONTROL SAMPLE DATA REPORT

Trace Level Organic Compounds

Client Lot #...: A2J040301 Work Order #...: E9JMD1AC Matrix.....: SOLID
LCS Lot-Sample#: H2J080000-130
Prep Date.....: 10/08/02 Analysis Date..: 11/06/02
Prep Batch #...: 2281130
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
2,3,7,8-TCDD	20	20	pg/g	100	SW846 8290
1,2,3,7,8-PeCDD	100	98	pg/g	98	SW846 8290
1,2,3,4,7,8-HxCDD	100	110	pg/g	107	SW846 8290
1,2,3,6,7,8-HxCDD	100	100	pg/g	102	SW846 8290
1,2,3,7,8,9-HxCDD	100	110	pg/g	110	SW846 8290
1,2,3,4,6,7,8-HpCDD	100	93	pg/g	93	SW846 8290
OCDD	200	180 B	pg/g	92	SW846 8290
2,3,7,8-TCDF	20	20	pg/g	100	SW846 8290
1,2,3,7,8-PeCDF	100	110	pg/g	108	SW846 8290
2,3,4,7,8-PeCDF	100	120	pg/g	122	SW846 8290
1,2,3,4,7,8-HxCDF	100	94	pg/g	94	SW846 8290
1,2,3,6,7,8-HxCDF	100	86	pg/g	86	SW846 8290
2,3,4,6,7,8-HxCDF	100	100 B	pg/g	101	SW846 8290
1,2,3,7,8,9-HxCDF	100	110	pg/g	106	SW846 8290
1,2,3,4,6,7,8-HpCDF	100	92 B	pg/g	92	SW846 8290
1,2,3,4,7,8,9-HpCDF	100	120 B	pg/g	118	SW846 8290
OCDF	200	210 B	pg/g	106	SW846 8290

INTERNAL STANDARD	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	48	(40 - 135)
13C-1,2,3,7,8-PeCDD	61	(40 - 135)
13C-1,2,3,6,7,8-HxCDD	59	(40 - 135)
13C-1,2,3,4,6,7,8-HpCDD	81	(40 - 135)
13C-OCDD	65	(40 - 135)
13C-2,3,7,8-TCDF	49	(40 - 135)
13C-1,2,3,7,8-PeCDF	51	(40 - 135)
13C-1,2,3,4,7,8-HxCDF	63	(40 - 135)
13C-1,2,3,4,6,7,8-HpCDF	65	(40 - 135)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

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LABORATORY CONTROL SAMPLE DATA REPORT

Trace Level Organic Compounds

Client Lot #...: A2J040301 Work Order #...: FCV841AC Matrix.....: SOLID
LCS Lot-Sample#: H2K120000-125
Prep Date.....: 11/12/02 Analysis Date..: 11/21/02
Prep Batch #...: 2316125
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
2,3,7,8-TCDD	20	21	pg/g	103	SW846 8290
1,2,3,7,8-PeCDD	100	94	pg/g	94	SW846 8290
1,2,3,4,7,8-HxCDD	100	92 B	pg/g	92	SW846 8290
1,2,3,6,7,8-HxCDD	100	99	pg/g	99	SW846 8290
1,2,3,7,8,9-HxCDD	100	69 a	pg/g	69	SW846 8290
1,2,3,4,6,7,8-HpCDD	100	87 B	pg/g	87	SW846 8290
OCDD	200	170 B	pg/g	83	SW846 8290
2,3,7,8-TCDF	20	20	pg/g	99	SW846 8290
1,2,3,7,8-PeCDF	100	100	pg/g	103	SW846 8290
2,3,4,7,8-PeCDF	100	110 B	pg/g	108	SW846 8290
1,2,3,4,7,8-HxCDF	100	89 B	pg/g	89	SW846 8290
1,2,3,6,7,8-HxCDF	100	93	pg/g	93	SW846 8290
2,3,4,6,7,8-HxCDF	100	72 a,B	pg/g	72	SW846 8290
1,2,3,7,8,9-HxCDF	100	84 B	pg/g	84	SW846 8290
1,2,3,4,6,7,8-HpCDF	100	85 B	pg/g	85	SW846 8290
1,2,3,4,7,8,9-HpCDF	100	82 B	pg/g	82	SW846 8290
OCDF	200	210 B	pg/g	106	SW846 8290

INTERNAL STANDARD	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	71	(40 - 135)
13C-1,2,3,7,8-PeCDD	63	(40 - 135)
13C-1,2,3,6,7,8-HxCDD	119	(40 - 135)
13C-1,2,3,4,6,7,8-HpCDD	75	(40 - 135)
13C-OCDD	45	(40 - 135)
13C-2,3,7,8-TCDF	78	(40 - 135)
13C-1,2,3,7,8-PeCDF	69	(40 - 135)
13C-1,2,3,4,7,8-HxCDF	123	(40 - 135)
13C-1,2,3,4,6,7,8-HpCDF	85	(40 - 135)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

a Spiked analyte recovery is outside stated control limits.

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METHOD BLANK REPORT

Trace Level Organic Compounds

Client Lot #...: A2J040301 **Work Order #...:** E9HAL1AA **Matrix.....:** WATER
MB Lot-Sample #: H2J070000-140

Prep Date.....: 10/07/02
Analysis Date..: 11/04/02 **Prep Batch #...:** 2280140
Dilution Factor: 1

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
2,3,7,8-TCDD	ND	2.5	pg/L	SW846 8290

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	84	(40 - 135)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

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METHOD BLANK REPORT

Trace Level Organic Compounds

Client Lot #...: A2J040301 **Work Order #...:** E9JMD1AA **Matrix.....:** SOLID
MB Lot-Sample #: H2J080000-130

Prep Date.....: 10/08/02
Analysis Date..: 11/06/02 **Prep Batch #...:** 2281130
Dilution Factor: 1

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
2,3,7,8-TCDD	ND	0.60	pg/g	SW846 8290

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	74	(40 - 135)
13C-1,2,3,7,8-PeCDD	68	(40 - 135)
13C-1,2,3,6,7,8-HxCDD	58	(40 - 135)
13C-1,2,3,4,6,7,8-HpCDD	71	(40 - 135)
13C-OCDD	55	(40 - 135)
13C-2,3,7,8-TCDF	76	(40 - 135)
13C-1,2,3,7,8-PeCDF	63	(40 - 135)
13C-1,2,3,4,7,8-HxCDF	67	(40 - 135)
13C-1,2,3,4,6,7,8-HpCDF	60	(40 - 135)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

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METHOD BLANK REPORT

Trace Level Organic Compounds

Client Lot #...: A2J040301 **Work Order #...:** FCV841AA **Matrix.....:** SOLID
MB Lot-Sample #: H2K120000-125

Prep Date.....: 11/12/02
Analysis Date..: 11/19/02 **Prep Batch #...:** 2316125
Dilution Factor: 1

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
2,3,7,8-TCDD	ND	0.40	pg/g	SW846 8290

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	78	(40 - 135)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

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STL KNOXVILLE
SPECIALTY ORGANICS INSTRUMENT MAT 95 RUN LOG

7-16-02 17:56 MSD C34W51AA te34w5 OK solid SAW -014

Date	Time	Opr	Sample ID	Filename	Code	Matrix	Type	Tape	Lot#/Comments
7-16-02	16:55	MSD	E34W31AA	te34w3	OK	solid	SAW		C2G020126-013
7-16-02	~~17:57~~	MSD	Noname	r	OK	—	QC		blsh
7-16-02	19:14	MSD	2427:45	t020716s2	PS	—	VER WIN		Ver Win
7-16-02	20:34	PMP	2427:45	t020716s3	OK to close	—	VER WIN		Ver/win
7-16-02	21:29	PMP	PFK	—	OK	—	Res		MASS RES CHK
7-17-02	11:22	MSD	PFK	—	OK	—	RES		Mass Res Chk
7-17-02	11:24	MSD	2427:45	t020717l1	OK	—	WIN VER		window switch pt locate
7-17-02	13:45	MSD	PFK	—	OK	—	RES		Mass Res Check
7-17-02	13:49	MSD	2427:45	t020717w1	OK	—	WIN		8290 ICAL WIN
7-17-02	14:51	MSD	Noname	r	OK	—	QC		blushes
7-17-02	15:06	MSD		r	OK	—	QC		
7-17-02	15:20	MSD		tsb0717	OK	—	QC		
7-17-02	16:21	MSD	2223:26 CS1	t020717i1	OK	—	ICAL		8290 ICAL
7-17-02	17:23	MSD	CS2	t020717i2	OK	—	ICAL		
7-17-02	18:25	MSD	CS3	t020717i3	OK	—	ICAL		
7-17-02	19:27	MSD	CS4	t020717i4	OK	—	ICAL		
7-17-02	20:28	MSD	CS5	t020717i5	OK	—	ICAL		
7-18-02	00:07	PMP	PFK	—	OK	—	RES		MASS RES CHK
-			PFK						

Read and Understood by:

_____ Date: _____

ID016R1.doc, 4/23/01

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STL Knoxville Specialty Organics GC/MS Initial Calibration Data Review / Narrative Checklist

Methods: 8290/23 - KNOX-ID-0003, Rev. 5

PFK Date/Time:	7-17-02 13:45	Inst:	MAT95	Win Filename:	t020717w1	Col Perf Filename:	t020717w

7-18-02 00:07

CS1 Filename	CS2 Filename	CS3 Filename	CS4 Filename	CS5 Filename
t020717i1	t020717i2	t020717i3	t020717i4	t020717i5

Review Items	N/A	Yes	No	If No, why is data reportable?	2nd Level
1. Was the mass resolution documented before beginning the initial calibration?		✓			✓
2. Was the instrument resolution >10,000 (<100 ppm) on PFK m/z 304.9824 and m/z 380.9760 (at reduced voltage)?		✓			✓
3. Was the measured exact mass of m/z 380.9760 (PFK) within 5 ppm at reduced accelerating voltage?		✓			✓
4. Was the Window Defining Mixture analyzed and the MID switchpoints set to encompass the retention time windows of each congener group?		✓			✓
5. Was the Column Performance solution analyzed and the %Valley ≤25 for separation between 2378-TCDD/F and the closest eluting non-2378 isomer?		✓			✓
6. Were the five calibration standard solutions, at the concentrations specified in the SOP, analyzed?		✓			✓
7. Was date/time of analysis verified between analysis header and logbook as correct?		✓			✓
8. Were the response factors calculated for each labeled standard and unlabeled native analyte using the SOP specified reference compound, quantitation ions, and formula.		✓			✓
9. Are %RSD ≤20% for all unlabeled native analytes?		✓			✓
10. Are %RSD ≤30% for all labeled internal standards?		✓			✓
11. Are all S/N ratios ≥10 for the GC signals in each EICP (extracted ion chromatographic profile) including internal standards?		✓			✓
12. Are the ion abundance ratios for all labeled and unlabeled analytes within the specified control limits?		✓			✓
13. If manual integrations were performed, are they clearly identified, initialed and dated?	✓				✓
14. If criteria were not met, was a NCM generated, approved by supervisor, and copy included in folder?	✓				✓
15. Does the ICAL folder contain **complete** data in the following order? Data review checklist, a **complete** runlog, Avg. %RSD summary, Ratio summary, Calculation summary, PFK resolution/peak match documentation, and Total RIC, EICP's and manual integration - for window and all standards, in order from low to high standard.		✓			✓

Analyst: PMP	Date: 7-18-02	2nd Level Reviewer : NTM	Date: 07-18-02
Comments:		Comments:	

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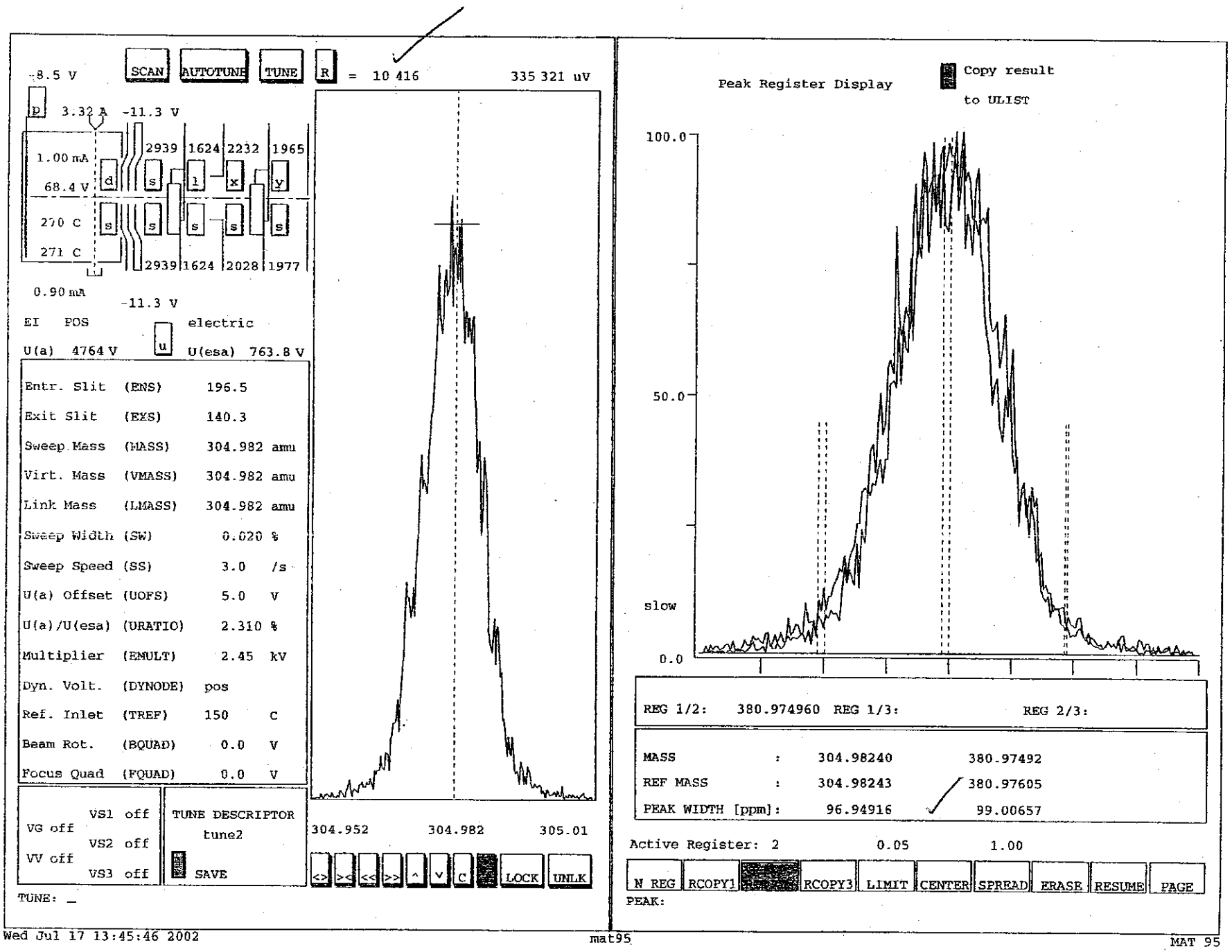

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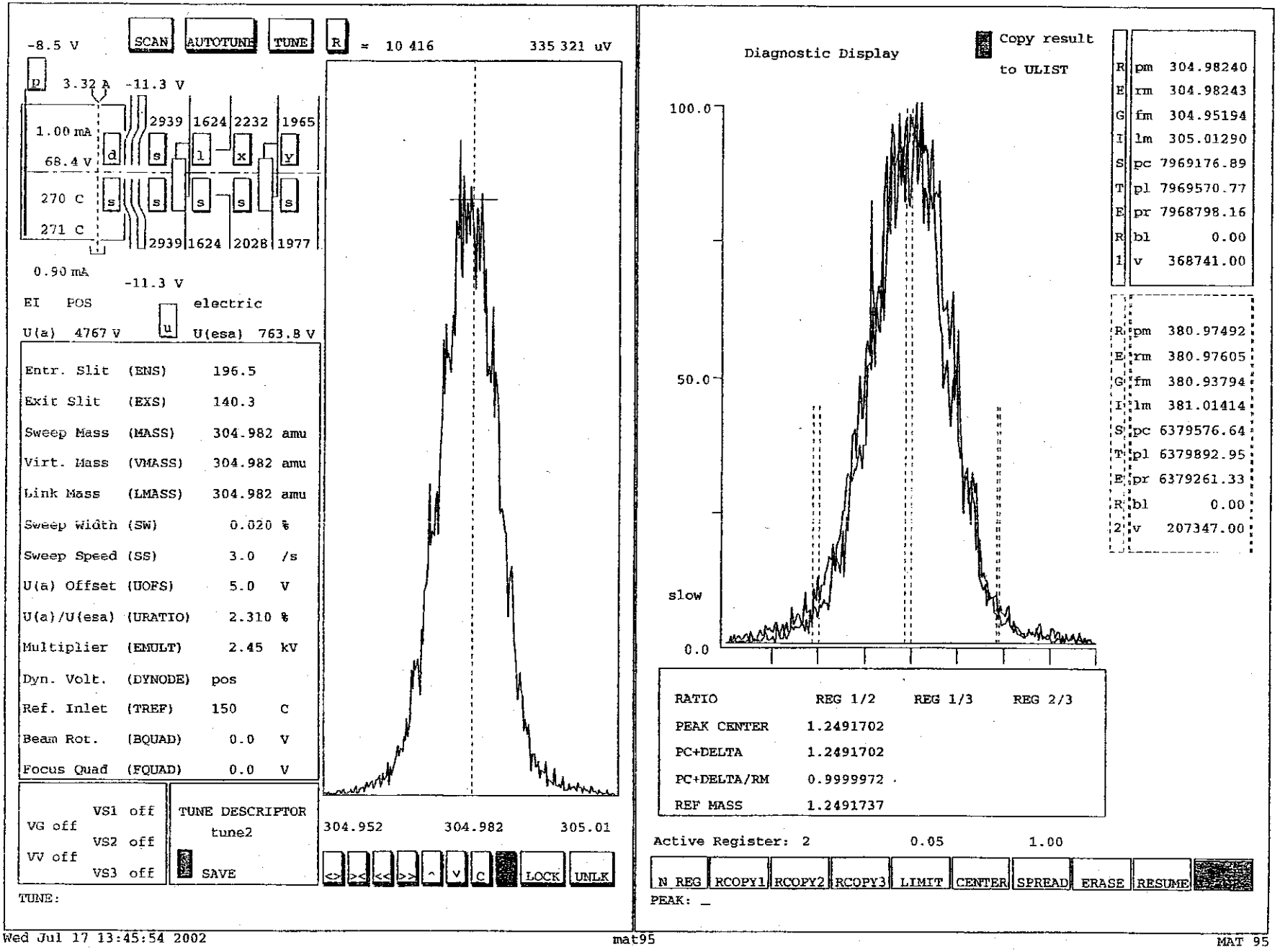

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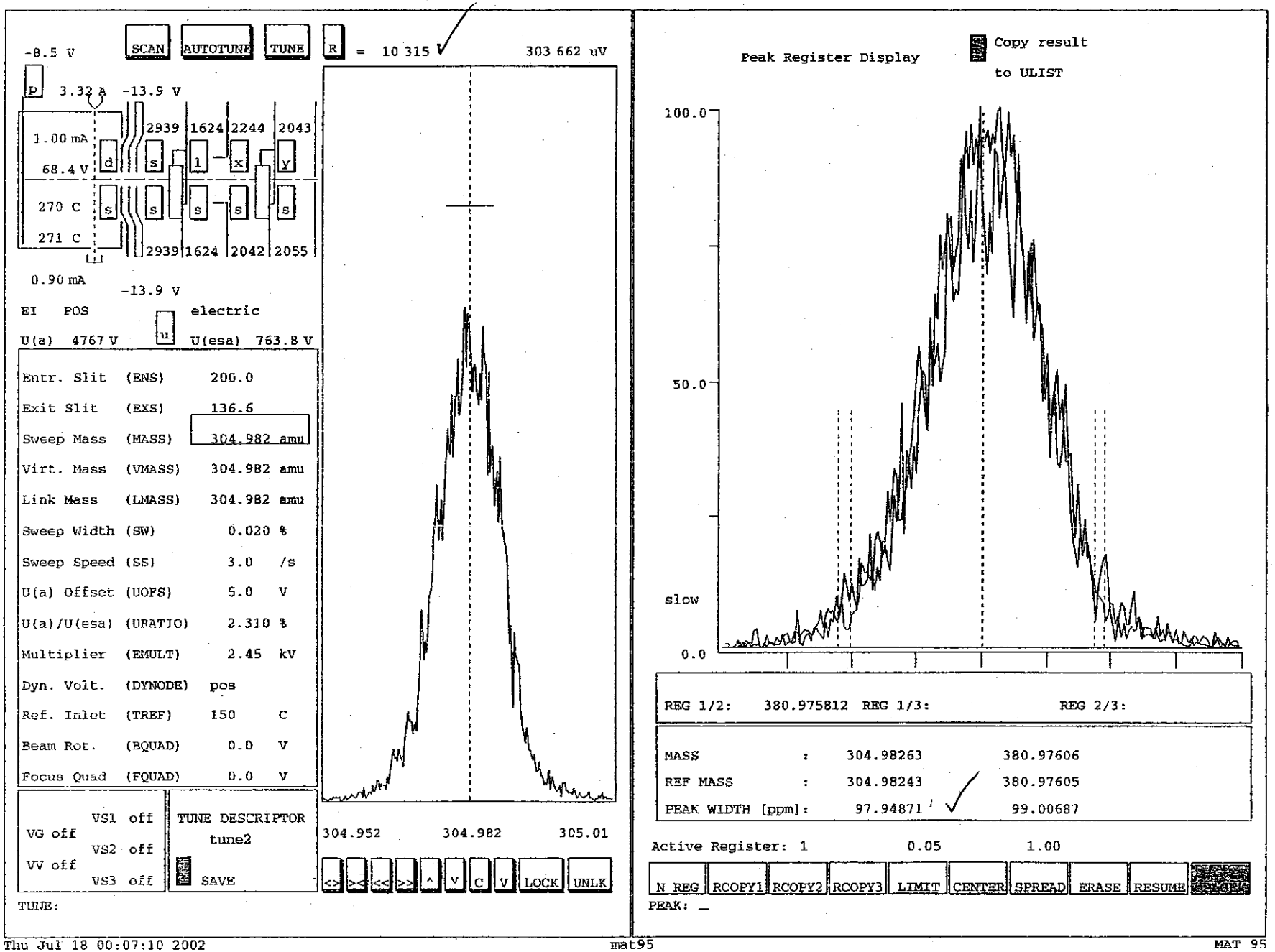

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-8.5 V SCAN AUTOTUNE TUNE R = 10 315 303 662 uV

p 3.32 A -13.9 V

1.00 mA 68.4 V d s 1 x y 2939 1624 2244 2043

270 C 271 C s s s s s 2939 1624 2042 2055

0.94 mA -13.9 V

EI POS u electric

U(a) 4764 V U(esa) 763.8 V

Entr. Slit	(ENS)	200.0	
Exit Slit	(EXS)	136.6	
Sweep Mass	(MASS)	304.982	amu
Virt. Mass	(VMASS)	304.982	amu
Link Mass	(LMASS)	304.982	amu
Sweep Width	(SW)	0.020	%
Sweep Speed	(SS)	3.0	/s
U(a) Offset	(UOFS)	5.0	V
U(a)/U(esa)	(URATIO)	2.310	%
Multiplier	(EMULT)	2.45	kV
Dyn. Volt.	(DYNODE)	pos	
Ref. Inlet	(TREF)	150	C
Beam Rot.	(BQUAD)	0.0	V
Focus Quad	(FQUAD)	0.0	V

VG off VS1 off VS2 off VV off VS3 off

TUNE DESCRIPTOR
tune2
SAVE

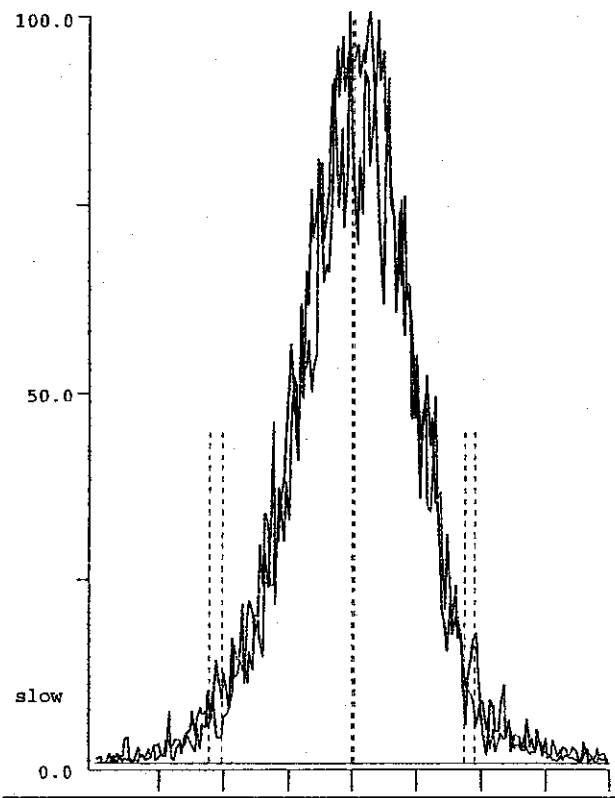
304.952 304.982 305.01

<> >> << >> ^ v C V LOCK UNLK

TUNE:

Diagnostic Display

Copy result to ULIST



R	pm	304.98263
E	rm	304.98243
G	fm	304.95194
I	lm	305.01290
S	pc	7969170.88
T	pl	7969578.73
E	pr	7968798.16
R	bl	0.00
1	v	235745.00

R	pm	380.97606
E	rm	380.97605
G	fm	380.93794
I	lm	381.01414
S	pc	6379557.56
T	pl	6379912.09
E	pr	6379280.47
R	bl	0.00
2	v	272812.00

RATIO	REG 1/2	REG 1/3	REG 2/3
PEAK CENTER	1.2491730		
PC+DELTA	1.2491730		
PC+DELTA/RM	0.9999994		
REF MASS	1.2491737		

Active Register: 1 0.05 1.00

N REG RCOPY1 RCOPY2 RCOPY3 LIMIT CENTER SPREAD ERASE RESUME

PEAK: _

Thu Jul 18 00:07:16 2002 mat95 MAT 95

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USEPA Method 8290
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs)
By High-Resolution Gas Chromatography/High-Resolution Mass Spectroscopy (HRGC/HRMS)

PCDD/PCDF Initial Calibration Response Factors

Laboratory ID: Quanterra Knoxville
Init. Calibration Date: 17-Jul-02 ✓
Instrument ID: MAT-95 ✓
GC Column ID: RTX-5 ✓

CS1 Data Filename: t020717i1 ✓
CS2 Data Filename: t020717i2 ✓
CS3 Data Filename: t020717i3 ✓
CS4 Data Filename: t020717i4 ✓
CS5 Data Filename: t020717i5 ✓

Analytes	Response Factors (RF) CS1	CS2	CS3	CS4	CS5	Mean RF	Cv (%RSD)	%RSD Limit (1)	%RSD Flag
13C-2378-TCDD	1.087	1.079	1.082	1.108	1.183	1.108	3.9%	30%	TRUE
37Cl4-2378-TCDD	1.225	1.118	1.106	1.125	1.261	1.167	6.0%	30%	TRUE
2378-TCDD	1.082	1.034	1.070	1.063	1.105	1.071	2.4%	20%	TRUE
13C-2378-TCDF	1.645	1.633	1.632	1.652	1.727	1.658	2.4%	30%	TRUE
2378-TCDF	1.154	0.974	1.014	0.995	1.030	1.033	6.9%	20%	TRUE
13C-12378-PeCDD	1.058	0.983	1.018	1.031	1.164	1.051	6.6%	30%	TRUE
12378-PeCDD	1.116	1.007	1.020	1.029	1.082	1.051	4.4%	20%	TRUE
13C-12378-PeCDF	1.460	1.472	1.491	1.553	1.747	1.545	7.7%	30%	TRUE
12378-PeCDF	1.004	0.965	0.995	1.009	1.056	1.006	3.3%	20%	TRUE
23478-PeCDF	1.051	1.015	1.029	1.045	1.101	1.048	3.1%	20%	TRUE
Total PeCDF						1.027			
13C-123678-HxCDD	1.099	1.084	1.101	1.082	1.069	1.087	1.2%	30%	TRUE
123478-HxCDD	1.030	0.940	0.985	1.027	1.079	1.012	5.2%	20%	TRUE
123678-HxCDD	1.096	1.024	1.055	1.082	1.114	1.074	3.3%	20%	TRUE
123789-HxCDD	1.083	1.032	1.059	1.097	1.138	1.082	3.7%	20%	TRUE
Total HxCDD						1.056			
13C-123478-HxCDF	1.400	1.366	1.382	1.392	1.377	1.383	0.9%	30%	TRUE
123478-HxCDF	1.279	1.203	1.231	1.245	1.265	1.245	2.4%	20%	TRUE
123678-HxCDF	1.382	1.299	1.300	1.321	1.333	1.327	2.6%	20%	TRUE
234678-HxCDF	1.203	1.150	1.193	1.200	1.215	1.192	2.1%	20%	TRUE
123789-HxCDF	1.078	1.065	1.083	1.117	1.168	1.102	3.8%	20%	TRUE
Total HxCDF						1.217			
13C-1234678-HpCDD	1.044	1.025	1.020	1.015	1.007	1.022	1.4%	30%	TRUE
1234678-HpCDD	1.051	1.003	1.024	1.038	1.068	1.037	2.4%	20%	TRUE
13C-1234678-HpCDF	1.135	1.140	1.130	1.131	1.108	1.129	1.1%	30%	TRUE
1234678-HpCDF	1.698	1.539	1.589	1.602	1.633	1.612	3.6%	20%	TRUE
1234789-HpCDF	1.242	1.163	1.189	1.242	1.310	1.229	4.6%	20%	TRUE
Total HpCDF						1.421			
13C--OCDD	0.876	0.908	0.899	0.948	0.923	0.911	3.0%	30%	TRUE
OCDD	1.121	1.030	1.074	1.085	1.122	1.086	3.5%	20%	TRUE
OCDF	1.237	1.181	1.231	1.319	1.409	1.276	7.0%	20%	TRUE

(1) SW-846 Method 8290 Revision 0, November 1992 - Section 7.7.4, page 28

Int Prep 7-17-02
NTM 07-18-02

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USEPA Method 8290
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs)
By High-Resolution Gas Chromatography/High-Resolution Mass Spectroscopy (HRGC/HRMS)

PCDD/PCDF Initial Calibration Ion Abundance Ratios

Laboratory ID: Quanterra Knoxville
Init. Calibration Date: 17-Jul-02
Instrument ID: MAT-95
GC Column ID: RTX-5

CS1 Data Filename: t020717i1
CS2 Data Filename: t020717i2
CS3 Data Filename: t020717i3
CS4 Data Filename: t020717i4
CS5 Data Filename: t020717i5

Analytes	m/z's Forming Ratio	Ion Abundance Ratios CS1	CS2	CS3	CS4	CS5	Ratio Limits (1)	Ratio Flag
13C-1234-TCDD	M/M+2	0.78	0.79	0.79	0.79	0.78	0.65 - 0.89	TRUE
13C-2378-TCDD	M/M+2	0.78	0.77	0.78	0.76	0.78	0.65 - 0.89	TRUE
37Cl4-2378-TCDD	NA	NA	NA	NA	NA	NA	NA	NA
2378-TCDD	M/M+2	0.75	0.72	0.77	0.77	0.76	0.65 - 0.89	TRUE
13C-2378-TCDF	M/M+2	0.80	0.80	0.80	0.81	0.80	0.65 - 0.89	TRUE
2378-TCDF	M/M+2	0.89	0.73	0.76	0.79	0.77	0.65 - 0.89	TRUE
13C-12378-PeCDD	M+2/M+4	1.57	1.60	1.59	1.58	1.60	1.32 - 1.78	TRUE
12378-PeCDD	M+2/M+4	1.58	1.55	1.57	1.57	1.56	1.32 - 1.78	TRUE
13C-12378-PeCDF	M+2/M+4	1.60	1.58	1.62	1.59	1.61	1.32 - 1.78	TRUE
12378-PeCDF	M+2/M+4	1.66	1.63	1.58	1.59	1.57	1.32 - 1.78	TRUE
23478-PeCDF	M+2/M+4	1.55	1.58	1.57	1.57	1.56	1.32 - 1.78	TRUE
13C-123678-HxCDD	M+2/M+4	1.25	1.21	1.23	1.21	1.24	1.05 - 1.43	TRUE
13C-123789-HxCDD	M+2/M+4	1.24	1.22	1.21	1.23	1.21	1.05 - 1.43	TRUE
123478-HxCDD	M+2/M+4	1.31	1.31	1.30	1.36	1.34	1.05 - 1.43	TRUE
123678-HxCDD	M+2/M+4	1.31	1.31	1.28	1.25	1.25	1.05 - 1.43	TRUE
123789-HxCDD	M+2/M+4	1.20	1.31	1.29	1.30	1.29	1.05 - 1.43	TRUE
13C-123478-HxCDF	M/M+2	0.54	0.53	0.53	0.53	0.53	0.43 - 0.59	TRUE
123478-HxCDF	M+2/M+4	1.36	1.24	1.29	1.31	1.31	1.05 - 1.43	TRUE
123678-HxCDF	M+2/M+4	1.30	1.29	1.30	1.27	1.28	1.05 - 1.43	TRUE
234678-HxCDF	M+2/M+4	1.26	1.30	1.30	1.29	1.29	1.05 - 1.43	TRUE
123789-HxCDF	M+2/M+4	1.20	1.30	1.31	1.30	1.29	1.05 - 1.43	TRUE
13C-1234678-HpCDD	M+2/M+4	1.03	1.01	1.00	1.00	1.00	0.88 - 1.20	TRUE
1234678-HpCDD	M+2/M+4	1.03	1.05	1.06	1.06	1.06	0.88 - 1.20	TRUE
13C-1234678-HpCDF	M/M+2	0.44	0.44	0.44	0.44	0.45	0.37 - 0.51	TRUE
1234678-HpCDF	M+2/M+4	1.01	1.03	1.06	1.05	1.05	0.88 - 1.20	TRUE
1234789-HpCDF	M+2/M+4	1.07	1.08	1.06	1.05	1.05	0.88 - 1.20	TRUE
13C--OCDD	M+2/M+4	0.89	0.89	0.89	0.88	0.89	0.76 - 1.02	TRUE
OCDD	M+2/M+4	0.91	0.90	0.89	0.88	0.89	0.76 - 1.02	TRUE
OCDF	M+2/M+4	0.95	0.94	0.91	0.92	0.92	0.76 - 1.02	TRUE

(1) SW-846 Method 8290 Revision 0, November 1992 - Table 8, page 63

PMP 7-17-02
MM 07-18-02

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USEPA Method 1613/8290
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs)
By High-Resolution Gas Chromatography/High-Resolution Mass Spectroscopy (HRGC/HRMS)

PCDD/PCDF Initial Calibration CS1

Laboratory ID: Quanterra Knoxville
Instrument ID: MAT-95
GC Column ID: RTX-5

CS1 Data Filename: t020717l1
Analysis Date: 17-Jul-02
Analysis Time: 16:21

Analytes	m/z Mass 1	m/z Mass 2	Area Mass 1	Area Mass 2	RT	RRT	Ratio	Ratio Limits	Conc. (ng/mL)	1613 RF	8290 RF
13C-1234-TCDD	331.9368	333.9339	620527	792240	27:35	1.000	0.78	0.65 - 0.89	100	1.000	1.000
13C-2378-TCDD	331.9368	333.9339	670863	864318	28:02	1.016	0.78	0.65 - 0.89	100	1.087	1.087
37Cl4-2378-TCDD	327.8847		8650		28:05	1.018		NA	0.5	1.225	1.225
2378-TCDD	319.8965	321.8936	3569	4740	28:05	1.002	0.75	0.65 - 0.89	0.5	1.082	1.082
13C-2378-TCDF	315.9419	317.9389	1029736	1294896	26:22	0.956	0.80	0.65 - 0.89	100	1.645	1.645
2378-TCDF	303.9016	305.8987	6322	7094	26:22	1.000	0.89	0.65 - 0.89	0.5	1.154	1.154
13C-12378-PeCDD	367.8949	369.8919	912490	582881	39:46	1.442	1.57	1.32 - 1.78	100	1.058	1.058
12378-PeCDD	355.8546	357.8516	25545	16162	39:48	1.001	1.58	1.32 - 1.78	2.5	1.116	1.116
13C-12378-PeCDF	351.9000	353.8970	1270855	791903	37:29	1.359	1.60	1.32 - 1.78	100	1.460	1.460
13C-23478-PeCDF	351.9000	353.8970	1230346	773757	39:07	1.418	1.59	1.32 - 1.78	100	1.419	NA
12378-PeCDF	339.8597	341.8567	32304	19460	37:29	1.000	1.66	1.32 - 1.78	2.5	1.004	1.004
23478-PeCDF	339.8597	341.8567	32941	21269	39:08	1.000	1.55	1.32 - 1.78	2.5	1.082	1.051
13C-123478-HxCDD	401.8559	403.8529	708490	575537	44:28	0.990	1.23	1.05 - 1.43	100	0.937	NA
13C-123678-HxCDD	401.8559	403.8529	836787	668569	44:34	0.992	1.25	1.05 - 1.43	100	1.099	1.099
13C-123789-HxCDD	401.8559	403.8529	758187	611905	44:56	1.000	1.24	1.05 - 1.43	100	1.000	1.000
123478-HxCDD	389.8157	391.8127	21949	16811	44:29	1.000	1.31	1.05 - 1.43	2.5	1.207	1.030
123678-HxCDD	389.8157	391.8127	23346	17886	44:35	1.000	1.31	1.05 - 1.43	2.5	1.096	1.096
123789-HxCDD	389.8157	391.8127	22278	18498	44:57	1.009	1.20	1.05 - 1.43	2.5	1.169	1.083
13C-123478-HxCDF	383.8639	385.8610	671505	1246301	43:27	0.967	0.54	0.43 - 0.59	100	1.400	1.400
13C-123678-HxCDF	383.8639	385.8610	724790	1362235	43:35	0.970	0.53	0.43 - 0.59	100	1.523	NA
13C-234678-HxCDF	383.8639	385.8610	669158	1276201	44:19	0.986	0.52	0.43 - 0.59	100	1.420	NA
13C-123789-HxCDF	383.8639	385.8610	582350	1088050	45:08	1.004	0.54	0.43 - 0.59	100	1.219	NA
123478-HxCDF	373.8208	375.8178	35367	25966	43:28	1.000	1.36	1.05 - 1.43	2.5	1.279	1.279
123678-HxCDF	373.8208	375.8178	37455	28825	43:36	1.000	1.30	1.05 - 1.43	2.5	1.270	1.382
234678-HxCDF	373.8208	375.8178	32127	25563	44:20	1.000	1.26	1.05 - 1.43	2.5	1.186	1.203
123789-HxCDF	373.8208	375.8178	28163	23517	45:09	1.000	1.20	1.05 - 1.43	2.5	1.238	1.078
13C-1234678-HpCDD	435.8169	437.8140	725296	705303	48:46	1.085	1.03	0.88 - 1.20	100	1.044	1.044
1234678-HpCDD	423.7766	425.7737	19043	18558	48:47	1.000	1.03	0.88 - 1.20	2.5	1.051	1.051
13C-1234678-HpCDF	417.8253	419.8220	475145	1080289	47:17	1.052	0.44	0.37 - 0.51	100	1.135	1.135
13C-1234789-HpCDF	417.8253	419.8220	392866	888619	49:20	1.098	0.44	0.37 - 0.51	100	0.935	NA
1234678-HpCDF	407.7818	409.7789	33237	32794	47:18	1.000	1.01	0.88 - 1.20	2.5	1.698	1.698
1234789-HpCDF	407.7818	409.7789	24996	23318	49:21	1.000	1.07	0.88 - 1.20	2.5	1.508	1.242
13C-OCDD	469.7779	471.7750	1131919	1268757	53:25	1.189	0.89	0.76 - 1.02	200	0.876	0.876
OCDD	457.7377	459.7348	31996	35290	53:26	1.000	0.91	0.76 - 1.02	5.0	1.121	1.121
OCDF	441.7428	443.7399	36206	38033	53:34	1.003	0.95	0.76 - 1.02	5.0	1.237	1.237

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USEPA Method 1613/8290
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs)
By High-Resolution Gas Chromatography/High-Resolution Mass Spectroscopy (HRGC/HRMS)

PCDD/PCDF Initial Calibration CS2

Laboratory ID: Quanterra Knoxville
Instrument ID: MAT-95
GC Column ID: RTX-5

CS2 Data Filename: t02071712
Analysis Date: 17-Jul-02
Analysis Time: 17:23

Analytes	m/z Mass 1	m/z Mass 2	Area Mass 1	Area Mass 2	RT	RRT	Ratio	Ratio Limits	Conc. (ng/mL)	1613 RF	8290 RF
13C-1234-TCDD	331.9368	333.9339	497948	632277	27:23	1.000	0.79	0.65 - 0.89	100	1.000	1.000
13C-2378-TCDD	331.9368	333.9339	530797	688165	27:50	1.016	0.77	0.65 - 0.89	100	1.079	1.079
37Cl4-2378-TCDD	327.8847		25277		27:53	1.018		NA	2.0	1.118	1.118
2378-TCDD	319.8965	321.8936	10580	14621	27:52	1.001	0.72	0.65 - 0.89	2.0	1.034	1.034
13C-2378-TCDF	315.9419	317.9389	817907	1027958	26:10	0.956	0.80	0.65 - 0.89	100	1.633	1.633
2378-TCDF	303.9016	305.8987	15195	20750	26:11	1.001	0.73	0.65 - 0.89	2.0	0.974	0.974
13C-12378-PeCDD	367.8949	369.8919	683267	427632	39:35	1.446	1.60	1.32 - 1.78	100	0.983	0.983
12378-PeCDD	355.8546	357.8516	68033	43862	39:36	1.000	1.55	1.32 - 1.78	10	1.007	1.007
13C-12378-PeCDF	351.9000	353.8970	1019310	644317	37:17	1.362	1.58	1.32 - 1.78	100	1.472	1.472
13C-23478-PeCDF	351.9000	353.8970	988426	622243	38:55	1.421	1.59	1.32 - 1.78	100	1.425	NA
12378-PeCDF	339.8597	341.8567	99574	60956	37:18	1.000	1.63	1.32 - 1.78	10	0.965	0.965
23478-PeCDF	339.8597	341.8567	103525	65318	38:57	1.001	1.58	1.32 - 1.78	10	1.048	1.015
13C-123478-HxCDD	401.8559	403.8529	556901	461344	44:16	0.990	1.21	1.05 - 1.43	100	0.922	NA
13C-123678-HxCDD	401.8559	403.8529	656280	540655	44:23	0.992	1.21	1.05 - 1.43	100	1.084	1.084
13C-123789-HxCDD	401.8559	403.8529	606170	497728	44:44	1.000	1.22	1.05 - 1.43	100	1.000	1.000
123478-HxCDD	389.8157	391.8127	63827	48653	44:17	1.000	1.31	1.05 - 1.43	10	1.105	0.940
123678-HxCDD	389.8157	391.8127	69485	53116	44:24	1.000	1.31	1.05 - 1.43	10	1.024	1.024
123789-HxCDD	389.8157	391.8127	70062	53435	44:44	1.008	1.31	1.05 - 1.43	10	1.115	1.032
13C-123478-HxCDF	383.8639	385.8610	523180	984469	43:15	0.967	0.53	0.43 - 0.59	100	1.366	1.366
13C-123678-HxCDF	383.8639	385.8610	579766	1088961	43:24	0.970	0.53	0.43 - 0.59	100	1.512	NA
13C-234678-HxCDF	383.8639	385.8610	537734	1010509	44:07	0.986	0.53	0.43 - 0.59	100	1.403	NA
13C-123789-HxCDF	383.8639	385.8610	471906	884553	44:57	1.005	0.53	0.43 - 0.59	100	1.229	NA
123478-HxCDF	373.8208	375.8178	100538	80906	43:16	1.000	1.24	1.05 - 1.43	10	1.203	1.203
123678-HxCDF	373.8208	375.8178	110304	85571	43:25	1.000	1.29	1.05 - 1.43	10	1.174	1.299
234678-HxCDF	373.8208	375.8178	98192	75263	44:08	1.000	1.30	1.05 - 1.43	10	1.120	1.150
123789-HxCDF	373.8208	375.8178	90665	69851	44:58	1.000	1.30	1.05 - 1.43	10	1.183	1.065
13C-1234678-HpCDD	435.8169	437.8140	567770	563409	48:35	1.086	1.01	0.88 - 1.20	100	1.025	1.025
1234678-HpCDD	423.7766	425.7737	57985	55456	48:36	1.000	1.05	0.88 - 1.20	10	1.003	1.003
13C-1234678-HpCDF	417.8253	419.8220	384621	873740	47:05	1.053	0.44	0.37 - 0.51	100	1.140	1.140
13C-1234789-HpCDF	417.8253	419.8220	313413	706121	49:09	1.099	0.44	0.37 - 0.51	100	0.924	NA
1234678-HpCDF	407.7818	409.7789	98293	95340	47:06	1.000	1.03	0.88 - 1.20	10	1.539	1.539
1234789-HpCDF	407.7818	409.7789	75961	70340	49:10	1.000	1.08	0.88 - 1.20	10	1.435	1.163
13C-OCDD	469.7779	471.7750	945640	1058979	53:13	1.190	0.89	0.76 - 1.02	200	0.908	0.908
OCDD	457.7377	459.7348	97608	108792	53:14	1.000	0.90	0.76 - 1.02	20	1.030	1.030
OCDF	441.7428	443.7399	114470	122260	53:22	1.003	0.94	0.76 - 1.02	20	1.181	1.181

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USEPA Method 1613/8290
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs)
By High-Resolution Gas Chromatography/High-Resolution Mass Spectroscopy (HRGC/HRMS)

PCDD/PCDF Initial Calibration CS3

Laboratory ID: Quanterra Knoxville
Instrument ID: MAT-95
GC Column ID: RTX-5

CS3 Data Filename: t02071713
Analysis Date: 17-Jul-02
Analysis Time: 18:25

Analytes	m/z Mass 1	m/z Mass 2	Area Mass 1	Area Mass 2	RT	RRT	Ratio	Ratio Limits	Conc. (ng/mL)	1613 RF	8290 RF
13C-1234-TCDD	331.9368	333.9339	492421	620406	27:22	1.000	0.79	0.65 - 0.89	100	1.000	1.000
13C-2378-TCDD	331.9368	333.9339	526644	676899	27:50	1.017	0.78	0.65 - 0.89	100	1.082	1.082
37Cl4-2378-TCDD	327.8847		123132		27:52	1.018		NA	10	1.106	1.106
2378-TCDD	319.8965	321.8936	56202	72525	27:51	1.001	0.77	0.65 - 0.89	10	1.070	1.070
13C-2378-TCDF	315.9419	317.9389	806714	1009674	26:09	0.956	0.80	0.65 - 0.89	100	1.632	1.632
2378-TCDF	303.9016	305.8987	79684	104419	26:10	1.001	0.76	0.65 - 0.89	10	1.014	1.014
13C-12378-PeCDD	367.8949	369.8919	695960	436561	39:34	1.446	1.59	1.32 - 1.78	100	1.018	1.018
12378-PeCDD	355.8546	357.8516	352404	225035	39:35	1.000	1.57	1.32 - 1.78	50	1.020	1.020
13C-12378-PeCDF	351.9000	353.8970	1026770	632755	37:16	1.362	1.62	1.32 - 1.78	100	1.491	1.491
13C-23478-PeCDF	351.9000	353.8970	990114	618092	38:55	1.422	1.60	1.32 - 1.78	100	1.445	NA
12378-PeCDF	339.8597	341.8567	505302	320290	37:17	1.000	1.58	1.32 - 1.78	50	0.995	0.995
23478-PeCDF	339.8597	341.8567	521090	332923	38:56	1.000	1.57	1.32 - 1.78	50	1.062	1.029
13C-123478-HxCDD	401.8559	403.8529	580384	459529	44:16	0.990	1.26	1.05 - 1.43	100	0.946	NA
13C-123678-HxCDD	401.8559	403.8529	669017	541766	44:22	0.992	1.23	1.05 - 1.43	100	1.101	1.101
13C-123789-HxCDD	401.8559	403.8529	601435	498195	44:43	1.000	1.21	1.05 - 1.43	100	1.000	1.000
123478-HxCDD	389.8157	391.8127	336859	259563	44:17	1.000	1.30	1.05 - 1.43	50	1.147	0.985
123678-HxCDD	389.8157	391.8127	358465	280379	44:23	1.000	1.28	1.05 - 1.43	50	1.055	1.055
123789-HxCDD	389.8157	391.8127	361248	279916	44:44	1.008	1.29	1.05 - 1.43	50	1.139	1.059
13C-123478-HxCDF	383.8639	385.8610	529179	990461	43:15	0.967	0.53	0.43 - 0.59	100	1.382	1.382
13C-123678-HxCDF	383.8639	385.8610	582034	1080681	43:23	0.970	0.54	0.43 - 0.59	100	1.512	NA
13C-234678-HxCDF	383.8639	385.8610	537625	1011166	44:07	0.987	0.53	0.43 - 0.59	100	1.408	NA
13C-123789-HxCDF	383.8639	385.8610	464690	868386	44:57	1.005	0.54	0.43 - 0.59	100	1.212	NA
123478-HxCDF	373.8208	375.8178	527819	407720	43:16	1.000	1.29	1.05 - 1.43	50	1.231	1.231
123678-HxCDF	373.8208	375.8178	559230	428775	43:24	1.000	1.30	1.05 - 1.43	50	1.188	1.300
234678-HxCDF	373.8208	375.8178	513037	393370	44:08	1.000	1.30	1.05 - 1.43	50	1.170	1.193
123789-HxCDF	373.8208	375.8178	466164	356459	44:58	1.000	1.31	1.05 - 1.43	50	1.234	1.083
13C-1234678-HpCDD	435.8169	437.8140	561859	559821	48:33	1.086	1.00	0.88 - 1.20	100	1.020	1.020
1234678-HpCDD	423.7766	425.7737	295347	278675	48:34	1.000	1.06	0.88 - 1.20	50	1.024	1.024
13C-1234678-HpCDF	417.8253	419.8220	380018	862318	47:05	1.053	0.44	0.37 - 0.51	100	1.130	1.130
13C-1234789-HpCDF	417.8253	419.8220	306184	695438	49:07	1.098	0.44	0.37 - 0.51	100	0.911	NA
1234678-HpCDF	407.7818	409.7789	507850	479214	47:05	1.000	1.06	0.88 - 1.20	50	1.589	1.589
1234789-HpCDF	407.7818	409.7789	380249	358541	49:09	1.001	1.06	0.88 - 1.20	50	1.475	1.189
13C--OCDD	469.7779	471.7750	931951	1045263	53:13	1.190	0.89	0.76 - 1.02	200	0.899	0.899
OCDD	457.7377	459.7348	501169	560450	53:13	1.000	0.89	0.76 - 1.02	100	1.074	1.074
OCDF	441.7428	443.7399	578278	638732	53:21	1.003	0.91	0.76 - 1.02	100	1.231	1.231

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USEPA Method 1613/8290
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs)
By High-Resolution Gas Chromatography/High-Resolution Mass Spectroscopy (HRGC/HRMS)

PCDD/PCDF Initial Calibration CS4

Laboratory ID: Quanterra Knoxville
Instrument ID: MAT-95
GC Column ID: RTX-5

CS4 Data Filename: t0207171i4
Analysis Date: 17-Jul-02
Analysis Time: 19:27

Analytes	m/z Mass 1	m/z Mass 2	Area Mass 1	Area Mass 2	RT	RRT	Ratio	Ratio Limits	Conc. (ng/mL)	1613 RF	8290 RF
13C-1234-TCDD	331.9368	333.9339	499560	635909	27:35	1.000	0.79	0.65 - 0.89	100	1.000	1.000
13C-2378-TCDD	331.9368	333.9339	542220	715985	28:01	1.016	0.76	0.65 - 0.89	100	1.108	1.108
37Cl4-2378-TCDD	327.8847		511136		28:04	1.018		NA	40	1.125	1.125
2378-TCDD	319.8965	321.8936	232600	302485	28:04	1.002	0.77	0.65 - 0.89	40	1.063	1.063
13C-2378-TCDF	315.9419	317.9389	838808	1036713	26:21	0.955	0.81	0.65 - 0.89	100	1.652	1.652
2378-TCDF	303.9016	305.8987	328187	417982	26:23	1.001	0.79	0.65 - 0.89	40	0.995	0.995
13C-12378-PeCDD	367.8949	369.8919	717146	453508	39:46	1.442	1.58	1.32 - 1.78	100	1.031	1.031
12378-PeCDD	355.8546	357.8516	1471602	938186	39:48	1.001	1.57	1.32 - 1.78	200	1.029	1.029
13C-12378-PeCDF	351.9000	353.8970	1083032	680129	37:28	1.358	1.59	1.32 - 1.78	100	1.553	1.553
13C-23478-PeCDF	351.9000	353.8970	1066767	659417	39:06	1.418	1.62	1.32 - 1.78	100	1.520	NA
12378-PeCDF	339.8597	341.8567	2183714	1373523	37:29	1.000	1.59	1.32 - 1.78	200	1.009	1.009
23478-PeCDF	339.8597	341.8567	2254092	1431886	39:08	1.001	1.57	1.32 - 1.78	200	1.068	1.045
13C-123478-HxCDD	401.8559	403.8529	610269	508744	44:28	0.990	1.20	1.05 - 1.43	100	0.963	NA
13C-123678-HxCDD	401.8559	403.8529	689113	568331	44:35	0.993	1.21	1.05 - 1.43	100	1.082	1.082
13C-123789-HxCDD	401.8559	403.8529	642078	520138	44:55	1.000	1.23	1.05 - 1.43	100	1.000	1.000
123478-HxCDD	389.8157	391.8127	1487538	1094228	44:28	1.000	1.36	1.05 - 1.43	200	1.154	1.027
123678-HxCDD	389.8157	391.8127	1512415	1209723	44:36	1.000	1.25	1.05 - 1.43	200	1.082	1.082
123789-HxCDD	389.8157	391.8127	1558342	1199267	44:56	1.008	1.30	1.05 - 1.43	200	1.160	1.097
13C-123478-HxCDF	383.8639	385.8610	563025	1054290	43:27	0.967	0.53	0.43 - 0.59	100	1.392	1.392
13C-123678-HxCDF	383.8639	385.8610	607792	1137200	43:35	0.970	0.53	0.43 - 0.59	100	1.501	NA
13C-234678-HxCDF	383.8639	385.8610	568146	1070277	44:18	0.986	0.53	0.43 - 0.59	100	1.410	NA
13C-123789-HxCDF	383.8639	385.8610	501307	947134	45:09	1.005	0.53	0.43 - 0.59	100	1.246	NA
123478-HxCDF	373.8208	375.8178	2283767	1743042	43:28	1.000	1.31	1.05 - 1.43	200	1.245	1.245
123678-HxCDF	373.8208	375.8178	2387445	1885025	43:36	1.000	1.27	1.05 - 1.43	200	1.224	1.321
234678-HxCDF	373.8208	375.8178	2183148	1697592	44:19	1.000	1.29	1.05 - 1.43	200	1.184	1.200
123789-HxCDF	373.8208	375.8178	2044554	1568363	45:10	1.000	1.30	1.05 - 1.43	200	1.247	1.117
13C-1234678-HpCDD	435.8169	437.8140	589744	589433	48:45	1.085	1.00	0.88 - 1.20	100	1.015	1.015
1234678-HpCDD	423.7766	425.7737	1258260	1190399	48:46	1.000	1.06	0.88 - 1.20	200	1.038	1.038
13C-1234678-HpCDF	417.8253	419.8220	404427	910525	47:17	1.053	0.44	0.37 - 0.51	100	1.131	1.131
13C-1234789-HpCDF	417.8253	419.8220	331667	761219	49:20	1.098	0.44	0.37 - 0.51	100	0.940	NA
1234678-HpCDF	407.7818	409.7789	2161025	2052906	47:17	1.000	1.05	0.88 - 1.20	200	1.602	1.602
1234789-HpCDF	407.7818	409.7789	1670670	1595826	49:21	1.000	1.05	0.88 - 1.20	200	1.494	1.242
13C-OCDD	469.7779	471.7750	1034635	1169842	53:24	1.189	0.88	0.76 - 1.02	200	0.948	0.948
OCDD	457.7377	459.7348	2245366	2539807	53:25	1.000	0.38	0.76 - 1.02	400	1.085	1.085
OCDF	441.7428	443.7399	2765433	3031230	53:33	1.003	0.92	0.76 - 1.02	400	1.319	1.319

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USEPA Method 1613/8290
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs)
By High-Resolution Gas Chromatography/High-Resolution Mass Spectroscopy (HRGC/HRMS)

PCDD/PCDF Initial Calibration CS5

Laboratory ID: Quanterra Knoxville
Instrument ID: MAT-95
GC Column ID: RTX-5

CS5 Data Filename: t02071715
Analysis Date: 17-Jul-02
Analysis Time: 20:28

Analytes	m/z Mass 1	m/z Mass 2	Area Mass 1	Area Mass 2	RT	RRT	Ratio	Ratio Limits	Conc. (ng/mL)	1613 RF	8290 RF
13C-1234-TCDD	331.9368	333.9339	492167	627259	27:35	1.000	0.78	0.65 - 0.89	100	1.000	1.000
13C-2378-TCDD	331.9368	333.9339	578765	745382	28:01	1.016	0.78	0.65 - 0.89	100	1.183	1.183
37Cl4-2378-TCDD	327.8847		2822801		28:03	1.017		NA	200	1.261	1.261
2378-TCDD	319.8965	321.8936	1265702	1659524	28:03	1.001	0.76	0.65 - 0.89	200	1.105	1.105
13C-2378-TCDF	315.9419	317.9389	858529	1075147	26:21	0.955	0.80	0.65 - 0.89	100	1.727	1.727
2378-TCDF	303.9016	305.8987	1731872	2250669	26:22	1.001	0.77	0.65 - 0.89	200	1.030	1.030
13C-12378-PeCDD	367.8949	369.8919	801318	501693	39:46	1.442	1.60	1.32 - 1.78	100	1.164	1.164
12378-PeCDD	355.8546	357.8516	8586626	5513141	39:48	1.001	1.56	1.32 - 1.78	1000	1.082	1.082
13C-12378-PeCDF	351.9000	353.8970	1206150	748932	37:27	1.358	1.61	1.32 - 1.78	100	1.747	1.747
13C-23478-PeCDF	351.9000	353.8970	1186345	740038	39:06	1.418	1.60	1.32 - 1.78	100	1.721	NA
12378-PeCDF	339.8597	341.8567	12605332	8048846	37:29	1.001	1.57	1.32 - 1.78	1000	1.056	1.056
23478-PeCDF	339.8597	341.8567	13111064	8408319	39:07	1.000	1.56	1.32 - 1.78	1000	1.117	1.101
13C-123478-HxCDD	401.8559	403.8529	705553	576763	44:29	0.990	1.22	1.05 - 1.43	100	0.980	NA
13C-123678-HxCDD	401.8559	403.8529	772950	625389	44:35	0.992	1.24	1.05 - 1.43	100	1.069	1.069
13C-123789-HxCDD	401.8559	403.8529	716888	591193	44:56	1.000	1.21	1.05 - 1.43	100	1.000	1.000
123478-HxCDD	389.8157	391.8127	8642375	6443953	44:29	1.000	1.34	1.05 - 1.43	1000	1.176	1.079
123678-HxCDD	389.8157	391.8127	8638531	6937748	44:36	1.000	1.25	1.05 - 1.43	1000	1.114	1.114
123789-HxCDD	389.8157	391.8127	8970294	6938852	44:57	1.008	1.29	1.05 - 1.43	1000	1.187	1.138
13C-123478-HxCDF	383.8639	385.8610	625269	1176489	43:27	0.967	0.53	0.43 - 0.59	100	1.377	1.377
13C-123678-HxCDF	383.8639	385.8610	661923	1264545	43:35	0.970	0.52	0.43 - 0.59	100	1.473	NA
13C-234678-HxCDF	383.8639	385.8610	623408	1184188	44:18	0.986	0.53	0.43 - 0.59	100	1.382	NA
13C-123789-HxCDF	383.8639	385.8610	570107	1084824	45:09	1.005	0.53	0.43 - 0.59	100	1.265	NA
123478-HxCDF	373.8208	375.8178	12927787	9860382	43:28	1.000	1.31	1.05 - 1.43	1000	1.265	1.265
123678-HxCDF	373.8208	375.8178	13468001	10546844	43:36	1.000	1.28	1.05 - 1.43	1000	1.247	1.333
234678-HxCDF	373.8208	375.8178	12322120	9576408	44:19	1.000	1.29	1.05 - 1.43	1000	1.211	1.215
123789-HxCDF	373.8208	375.8178	11857055	9191224	45:09	1.000	1.29	1.05 - 1.43	1000	1.272	1.168
									1000		
13C-1234678-HpCDD	435.8169	437.8140	660036	656919	48:46	1.085	1.00	0.88 - 1.20	100	1.007	1.007
1234678-HpCDD	423.7766	425.7737	7232049	6828362	48:47	1.000	1.06	0.88 - 1.20	1000	1.068	1.068
13C-1234678-HpCDF	417.8253	419.8220	447718	1002034	47:17	1.052	0.45	0.37 - 0.51	100	1.108	1.108
13C-1234789-HpCDF	417.8253	419.8220	378153	849582	49:20	1.098	0.45	0.37 - 0.51	100	0.939	NA
1234678-HpCDF	407.7818	409.7789	12136395	11540281	47:18	1.000	1.05	0.88 - 1.20	1000	1.633	1.633
1234789-HpCDF	407.7818	409.7789	9735930	9255617	49:21	1.000	1.05	0.88 - 1.20	1000	1.547	1.310
13C-OCDD	469.7779	471.7750	1134372	1279732	53:25	1.189	0.39	0.76 - 1.02	200	0.923	0.923
OCDD	457.7377	459.7348	12724555	14373587	53:26	1.000	0.89	0.76 - 1.02	2000	1.122	1.122
OCDF	441.7428	443.7399	16295975	17728450	53:34	1.003	0.92	0.76 - 1.02	2000	1.409	1.409

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STL KNOXVILLE
SPECIALTY ORGANICS INSTRUMENT MAT 95 RUN LOG

Date	Time	Opr	Sample ID	Filename	Code	Matrix	Type	Tape	Lot#/Comments
11-4-02	14:23	MSD	PFK	–	ok	–	Res		MASS RESCHK
11-4-02	14:27	MSD	2427:85	t02110451	ok	–	ver/win		ver/win
11-4-02	15:36	MSD	E9HAL1AC	te9halc	OK	H_2O	QC		H2J070000-140C
11-4-02	16:37	MSD	E9HAL1AD	te9hall	OK	H_2O	QC		↓ -140L
11-4-02	17:39	MSD	E9E8D1AC	te9e8ds	OK	H_2O	QC		A2J040209-002S
11-4-02	18:41	MSD	E9E8D1AD	te9e8dd	OK	H_2O	QC		↓ -002D
11-4-02	19:43	MSD	noname	r	OK	–	QC		Flush
11-4-02	19:58	MSD	noname	r	OK	–	QC		Flush
11-4-02	20:14	MSD	E9HAL1AA	te9halb	OK	H_2O	QC		H2J070000-140B
11-4-02	21:16	MSD	E864N1AC	te864n	OK	H_2O	SAM		H2J010232-001
11-4-02	22:06	MSD	E9E8D1AA	te9e8d	OK	H_2O	SAM		A2J040209-002
11-4-02	—	MSD	E9DKC1AA	te9dkc	DR	H_2O	SAM		A2J030313-001
11-4-02	23:08	MSD	noname	r	OK	–	QC		Flush
11-4-02	23:23	MSD	2427:85	t02110452	OK to close	–	ver/win		ver/win
11-5-02	00:25	PMP	PFK	–	OK	–	Res		Mass Res Chk
11-5-02	10:09	JW	PFK	–	OK	–	Res		Mass Res chk
11-5-02	10:15	JW	2427:85	t02110551	OK	–	ver/win		ver/win
11-5-02	11:22	JW	~~E9HAL1AB~~ nonamewb	r	OK	–	QC		Flush
11-5-02	11:38	JW	noname	tsb1105	OK	–	QC		↓
11-5-02	12:27	JW	E9HAL1AA	te9halba	OK	–	QC		System blank
11-5-02	13:29	JW	E9DKC1AA	te9dkc	OK	H_2O	SAM		A2J030313-001
11-5-02	14:30	JW	E9E221AA	te9e22 PMP 11-6	OK IF	H_2O	SAM		A2J040209-001
11-5-02	15:32	JW	E9E86 1AA	te9e8g	OK	H_2O	SAM		A2J040209-003
11-5-02	16:34	JW	E9E8L1AA	te9e8L	OK	H_2O	SAM		A2J040209-004
11-5-02	17:36	JW	E9FG81AA	te9fg8	OK	H_2O	SAM		A2J040301-011
11-5-02	18:35	JW	E9L04 1AA	te9g0h	OK	H_2O	SAM		A2J050106-001
11-5-02	19:27	JW	E9L04 1AA	te9g0L	OK	H_2O	SAM		A2J050106-002
11-5-02	20:29	JW	noname	r	OK	–	QC		Flush
11-5-02	20:45	JW	2427:85	t02110552	OK	–	ver/win		ver/win
11-5-02	21:54	PMP	PFK	–	OK	–	Res		Mass Res Chk
11-5-02	21:58	PMP	Noname	r	OK	–	QC		flush
11-5-02	22:13	PMP	Noname	r	OK	–	QC		↓

Read and Understood by:

PMP Date: 11-5-02

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STL Knoxville Specialty Organics GC/MS Continuing Calibration Review / Narrative Checklist
Methods: 8290/23 - KNOX-ID-0003, Rev. 5

Start PFK:	14:23 ✓	CS3 Filename:	+0211045I	Win Filename:	+0211045I	Inst:	MP55
End PFK:	00:25 ✓	CS3 Filename:	+0211045S2	Col Perf Filename:	+0211045I	ICAL Date:	7-7-02

Review Items	N/A	Yes	No	If No, why is data reportable?	2nd Level
1. Was the mass resolution documented at both the beginning and end of the 12 hour shift?		✓			✓
2. Was the instrument resolution >10,000 (<100 ppm) on PFK m/z 304.9824 and m/z 380.9760 (at reduced voltage)?		✓			✓
3. Was the measured exact mass of m/z 380.9760 (PFK) within 5 ppm at reduced accelerating voltage?		✓			✓
4. Was date/time of analysis verified between analysis header and logbook as correct?		✓			✓
5. Was the Window Defining Mixture analyzed and the MID switchpoints set to encompass the retention time windows of each congener group?		✓			✓
6. Was the Column Performance solution analyzed and the %Valley ≤25 for separation between 2378-TCDD/F and the closest eluting non-2378 isomer?		✓			✓
7. Was the continuing calibration performed at the beginning of the 12 hour period after successful mass resolution and GC resolution performance check?		✓			✓
8. Was the continuing calibration performed at the end of the 12 hour period?					✓
9. Were the response factors calculated for each labeled standard and unlabeled native analyte using the SOP specified reference compound, quantitation ions, and formula.		✓			✓
10. Are %D ≤20 for all unlabeled native analytes in the beginning and ending calibration?		✓		Ending %D ≤25 and mean RRF from two continuing calibrations used to calculate samples. Ending %D >25 corrective action performed and all positive sample extracts reanalyzed.	✓
11. Are %D ≤30 for all labeled standards in the beginning and ending calibration?		✓		Ending %D ≤35 and mean RRF from two continuing calibrations used to calculate samples. Ending %D >35 and corrective action performed and all positive sample extracts reanalyzed.	✓
12. Are all S/N ratios ≥10 for the GC signals in each EICP (extracted ion chromatographic profile) including internal standards?		✓			✓
13. Are the ion abundance ratios for all labeled and unlabeled analytes within the specified control limits?		✓			✓
14. If manual integrations were performed, are they clearly identified, initialed and dated?	✓				✓
15. If criteria were not met, was a NCM generated, approved by supervisor, and copy included in folder?	✓				✓
16. Does the CCAL folder contain **complete** data in the following order? Data review checklist, a **complete** runlog, CCAL summary, Ratio summary, Calculation summary, PFK resolution/peak match documentation, and Total RIC, EICP's and manual integration - for window and both standards.					✓

Analyst: DCS	Date: 11.4.02	2nd Level Reviewer : VMK	Date: 11-6-02
Comments:		Comments:	

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-10.4 V SCAN AUTOTUNE TUNE = 10 875 472 005 uV

p 4.31 A -16.4 V

1.00 mA 58.6 V 270 C 271 C

2675 1277 2590 2517

2675 1317 2432 2367

0.90 mA -16.4 V

EI POS electric

U(a) 4762 V U(esa) 763.8 V

Entr. Slit	(ENS)	188.0	
Exit Slit	(EXS)	139.0	
Sweep Mass	(MASS)	304.982	amu
Virt. Mass	(VMASS)	304.982	amu
Link Mass	(LMASS)	304.982	amu
Sweep Width	(SW)	0.020	%
Sweep Speed	(SS)	3.0	/s
U(a) Offset	(UOFS)	5.0	V
U(a)/U(esa)	(URATIO)	2.282	%
Multiplier	(EMULT)	1.80	kV
Dyn. Volt.	(DYNODE)	pos	
Ref. Inlet	(TREF)	150	C
Beam Rot.	(BQUAD)	0.0	V
Focus Quad	(FQUAD)	0.0	V

VG off VS1 off VS2 off VV off VS3 off

TUNE DESCRIPTOR tune2 SAVE

304.952 304.982 305.01

<> >< << >> ^ v C v LOCK UNLK

TUNE: _

Peak Register Display Copy result to ULIST

100.0 50.0 slow 0.0

REG 1/2: 380.974777 REG 1/3: REG 2/3:

MASS :	304.98248	380.97483
REF MASS :	304.98243	380.97605
PEAK WIDTH [ppm]:	91.95180	95.00628

Active Register: 2 0.05 1.00

N REG RCOPY1 RCOPY2 RCOPY3 LIMIT CENTER SPREAD ERASE RESUME PAGE

PEAK:

Mon Nov 4 14:23:40 2002 mat95 MAT 95

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-10.4 V SCAN AUTOTUNE TUNE = 10 875 472 005 uV

p 4.31 A -16.4 V

1.00 mA 58.6 V d s 2675 1277 1 2590 x 2517 y

270 C s s s s s

271 C 2675 1317 2432 2367

0.86 mA -16.4 V

EI POS u electric

U(a) 4762 V U(esa) 763.8 V

Entr. Slit	(ENS)	188.0	
Exit Slit	(EXS)	139.0	
Sweep Mass	(MASS)	304.982	amu
Virt. Mass	(VMASS)	304.982	amu
Link Mass	(LMASS)	304.982	amu
Sweep Width	(SW)	0.020	%
Sweep Speed	(SS)	3.0	/s
U(a) Offset	(UOFS)	5.0	V
U(a)/U(esa)	(URATIO)	2.282	%
Multiplier	(EMULT)	1.80	kV
Dyn. Volt.	(DYNODE)	pos	
Ref. Inlet	(TREF)	150	C
Beam Rot.	(BQUAD)	0.0	V
Focus Quad	(FQUAD)	0.0	V

VG off VS1 off VS2 off VV off VS3 off

TUNE DESCRIPTOR tune2 SAVE

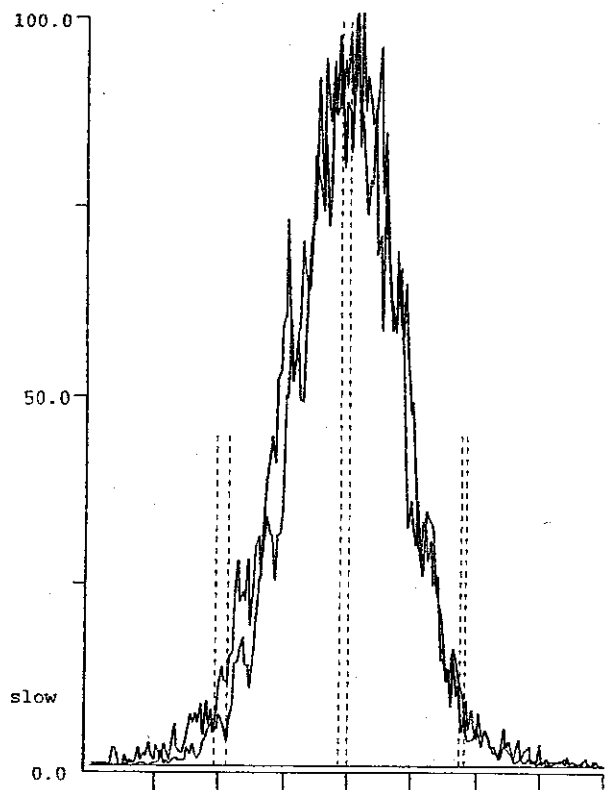
304.952 304.982 305.01

<> >< << >> ^ v C V LOCK UNLK

TUNE:

Diagnostic Display

Copy result to ULIST



REGISTER 1	
pm	304.98248
rm	304.98243
fm	304.95194
lm	305.01290
pc	7969174.98
pl	7969546.87
pr	7968814.09
bl	0.00
v	479407.00

REGISTER 2	
pm	380.97483
rm	380.97605
fm	380.93800
lm	381.01420
pc	6379578.19
pl	6379885.57
pr	6379279.47
bl	0.00
v	407366.00

RATIO	REG 1/2	REG 1/3	REG 2/3
PEAK CENTER	1.2491696		
PC+DELTA	1.2491696		
PC+DELTA/RM	0.9999967 ✓		
REF MASS	1.2491737		

Active Register: 2 0.05 1.00

N REG RCOPY1 RCOPY2 RCOPY3 LIMIT CENTER SPREAD ERASE RESUME

PEAK: _

Mon Nov 4 14:23:48 2002 mat95 MAT 95

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USEPA Method 1613/8290
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs)
By High-Resolution Gas Chromatography/High-Resolution Mass Spectroscopy (HRGC/HRMS)

PCDD/PCDF Daily Calibration Verification

Laboratory ID: Quanterra Knoxville
Init. Calibration Date: 17-Jul-02
Instrument ID: MAT-95
GC Column ID: RTX-5

CS3 Data Filename: t021104s1
Analysis Date: 04-Nov-02
Analysis Time: 14:27

Analytes	m/z Mass 1	m/z Mass 2	Area Mass 1	Area Mass 2	RT	RRT	Ratio	Ratio Limits	Std Conc	1613 ICAL RF	1613 Calc RF	1613 Conc. (ng/mL)
13C-1,2,3,4-TCDD	331.9368	333.9339	896853	1147895	33:57	1.000	0.78	0.65-0.89	100.0	1.000	1.000	100.0
13C-2,3,7,8-TCDD	331.9368	333.9339	955300	1234933	34:33	1.018	0.77	0.65-0.89	100.0	1.108	1.071	96.7
37Cl-2,3,7,8-TCDD	327.8847		216883		34:35	1.019		NA	10.0	1.167	1.061	9.1
2,3,7,8-TCDD	319.8965	321.8936	100016	132629	34:35	1.001	0.75	0.65-0.89	10.0	1.071	1.062	9.9
13C-2,3,7,8-TCDF	315.9419	317.9389	1494655	1878064	32:19	0.952	0.80	0.65-0.89	100.0	1.658	1.649	99.5
2,3,7,8-TCDF	303.9016	305.8987	148198	183290	32:23	1.002	0.81	0.65-0.89	10.0	1.033	0.983	9.5
13C-1,2,3,7,8-PeCDD	367.8949	369.8919	1287191	825037	42:38	1.256	1.56	1.32-1.78	100.0	1.051	1.033	98.3
2,3,7,8-PeCDD	355.8546	357.8516	644329	409060	42:39	1.000	1.58	1.32-1.78	50.0	1.051	0.997	47.5
13C-1,2,3,7,8-PeCDF	351.9000	353.8970	1974036	1250245	41:01	1.208	1.58	1.32-1.78	100.0	1.545	1.577	102.1
13C-2,3,4,7,8-PeCDF	351.9000	353.8970	1954171	1231833	42:09	1.242	1.59	1.32-1.78	100.0	1.506	1.558	103.5
1,2,3,7,8-PeCDF	339.8597	341.8567	968793	616895	41:03	1.001	1.57	1.32-1.78	50.0	1.006	0.984	48.9
2,3,4,7,8-PeCDF	339.8597	341.8567	994552	627289	42:10	1.000	1.59	1.32-1.78	50.0	1.075	1.018	47.4
13C-1,2,3,4,7,8-HxCDD	401.8559	403.8529	1109860	924230	46:49	0.989	1.20	1.05-1.43	100.0	0.950	0.972	102.3
13C-1,2,3,6,7,8-HxCDD	401.8559	403.8529	1215609	989211	46:56	0.992	1.23	1.05-1.43	100.0	1.087	1.054	97.0
13C-1,2,3,7,8,9-HxCDD	401.8559	403.8529	1146008	946099	47:20	1.000	1.21	1.05-1.43	100.0	1.000	1.000	100.0
1,2,3,4,7,8-HxCDD	389.8157	391.8127	636296	488882	46:50	1.000	1.30	1.05-1.43	50.0	1.158	1.106	47.8
1,2,3,6,7,8-HxCDD	389.8157	391.8127	633889	495240	46:57	1.000	1.28	1.05-1.43	50.0	1.074	1.024	47.7
1,2,3,7,8,9-HxCDD	389.8157	391.8127	671945	516747	47:22	1.009	1.30	1.05-1.43	50.0	1.154	1.122	48.6
13C-1,2,3,4,7,8-HxCDF	383.8639	385.8610	989316	1832388	45:45	0.967	0.54	0.43-0.59	100.0	1.383	1.349	97.5
13C-1,2,3,6,7,8-HxCDF	383.8639	385.8610	1019302	1917011	45:53	0.969	0.53	0.43-0.59	100.0	1.504	1.404	93.3
13C-2,3,4,6,7,8-HxCDF	383.8639	385.8610	992549	1849095	46:38	0.985	0.54	0.43-0.59	100.0	1.404	1.358	96.7
13C-1,2,3,7,8,9-HxCDF	383.8639	385.8610	892755	1687774	47:38	1.006	0.53	0.43-0.59	100.0	1.234	1.233	100.0
1,2,3,4,7,8-HxCDF	373.8208	375.8178	997471	746410	45:46	1.000	1.34	1.05-1.43	50.0	1.245	1.236	49.6
1,2,3,6,7,8-HxCDF	373.8208	375.8178	995543	754693	45:54	1.000	1.32	1.05-1.43	50.0	1.221	1.192	48.8
2,3,4,6,7,8-HxCDF	373.8208	375.8178	921747	708185	46:39	1.000	1.30	1.05-1.43	50.0	1.175	1.147	48.8
1,2,3,7,8,9-HxCDF	373.8208	375.8178	873151	662963	47:39	1.000	1.32	1.05-1.43	50.0	1.235	1.191	48.2
13C-1,2,3,4,6,7,8-HpCDD	435.8169	437.8140	1131098	1018090	51:52	1.096	1.11	0.88-1.20	100.0	1.022	1.027	100.5
1,2,3,4,6,7,8-HpCDD	423.7766	425.7737	544404	513530	51:54	1.001	1.06	0.88-1.20	50.0	1.037	0.984	47.5
13C-1,2,3,4,6,7,8-HpCDF	417.8253	419.8220	689193	1487004	50:10	1.060	0.46	0.37-0.51	100.0	1.129	1.040	92.1
13C-1,2,3,4,7,8,9-HpCDF	417.8253	419.8220	612755	1353430	52:29	1.109	0.45	0.37-0.51	100.0	0.930	0.940	101.1
1,2,3,4,6,7,8-HpCDF	407.7818	409.7789	861393	816692	50:11	1.000	1.05	0.88-1.20	50.0	1.612	1.542	47.8
1,2,3,4,7,8,9-HpCDF	407.7818	409.7789	717138	693364	52:31	1.001	1.03	0.88-1.20	50.0	1.492	1.435	48.1
13C-OCDD	469.7779	471.7750	1917093	2152131	56:01	1.183	0.89	0.76-1.02	200.0	0.911	0.973	213.5
OCDD	457.7377	459.7348	994210	1115215	56:02	1.000	0.89	0.76-1.02	100.0	1.086	1.037	95.5
OCDF	441.7428	443.7399	1236783	1331416	56:10	1.003	0.93	0.76-1.02	100.0	1.276	1.262	98.9

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STL - Knoxville

IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290

SEVERN TRENT SERVICES

CCAL ID: 1,096 - X021104S1

CCAL Filename: t021104s1

CCAL Sample ID: 2427:85

CCAL Result Dir: /20021104s1/x021104s1.d

CCAL Date/Time: 11/04/02 14:27

ICAL Date: 07/17/02

Method: IN - DX8290

Instrument: M1A

Column SN: 472963

Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Analytes	m/z's Forming Ratio	Ion Abund Ratio	QC Limits	Calc Conc (ng/mL)	ICAL RF	CCAL RF	%D	QC Limit	Valid?
2,3,7,8-TCDD	M/M+2	0.75	0.65-0.89	9.9	1.071	1.062	-0.8	20.0	True
2,3,7,8-TCDF	M/M+2	0.81	0.65-0.89	9.5	1.033	0.983	-4.9	20.0	True
1,2,3,7,8-PeCDD	M+2/M+4	1.58	1.32-1.78	47	1.051	0.997	-5.1	20.0	True
1,2,3,7,8-PeCDF	M+2/M+4	1.57	1.32-1.78	49	1.006	0.984	-2.2	20.0	True
2,3,4,7,8-PeCDF	M+2/M+4	1.59	1.32-1.78	47	1.048	1.006	-4.0	20.0	True
1,2,3,4,7,8-HxCDD	M+2/M+4	1.30	1.05-1.43	48	1.012	1.021	0.8	20.0	True
1,2,3,6,7,8-HxCDD	M+2/M+4	1.28	1.05-1.43	48	1.074	1.024	-4.7	20.0	True
1,2,3,7,8,9-HxCDD	M+2/M+4	1.30	1.05-1.43	49	1.082	1.078	-0.3	20.0	True
1,2,3,4,7,8-HxCDF	M+2/M+4	1.34	1.05-1.43	50	1.245	1.236	-0.7	20.0	True
1,2,3,6,7,8-HxCDF	M+2/M+4	1.32	1.05-1.43	49	1.327	1.241	-6.5	20.0	True
2,3,4,6,7,8-HxCDF	M+2/M+4	1.30	1.05-1.43	49	1.192	1.155	-3.1	20.0	True
1,2,3,7,8,9-HxCDF	M+2/M+4	1.32	1.05-1.43	48	1.102	1.089	-1.2	20.0	True
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.06	0.88-1.20	47	1.037	0.984	-5.0	20.0	True
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.05	0.88-1.20	48	1.612	1.542	-4.3	20.0	True
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.03	0.88-1.20	48	1.229	1.296	5.5	20.0	True
OCDD	M+2/M+4	0.89	0.76-1.02	95	1.086	1.037	-4.6	20.0	True
OCDF	M+2/M+4	0.93	0.76-1.02	99	1.276	1.262	-1.0	20.0	True
13C-2,3,7,8-TCDD	M/M+2	0.77	0.65-0.89	97	1.108	1.071	-3.3	30.0	True
13C-2,3,7,8-TCDF	M/M+2	0.80	0.65-0.89	99	1.658	1.649	-0.5	30.0	True
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.56	1.32-1.78	98	1.051	1.033	-1.7	30.0	True
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.32-1.78	102	1.545	1.577	2.1	30.0	True
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.23	1.05-1.43	97	1.087	1.054	-3.0	30.0	True
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.54	0.43-0.59	98	1.383	1.349	-2.5	30.0	True
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.11	0.88-1.20	101	1.022	1.027	0.5	30.0	True
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.46	0.37-0.51	92	1.129	1.040	-7.9	30.0	True
13C-OCDD	M+2/M+4	0.89	0.76-1.02	214	0.911	0.973	6.8	30.0	True

DC 11-04-02

VMK 11-6-02

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IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290

SEVERN TRENT SERVICES

CCAL ID: 1,096 - X021104S1

CCAL Filename: t021104s1

CCAL Sample ID: 2427:85

CCAL Result Dir: /20021104s1/x021104s1.d

CCAL Date/Time: 11/04/02 14:27

ICAL Date: 07/17/02

Method: IN - DX8290

Instrument: M1A

Column SN: 472963

Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Analytes	ICAL RT	CCAL RT	RT Diff	ICAL RRT	CCAL RRT	RRT QC Limit	Valid?
2,3,7,8-TCDD	27:59	34:35	396	1.001	1.001	-	
2,3,7,8-TCDF	26:18	32:23	365	1.001	1.002	-	
1,2,3,7,8-PeCDD	39:43	42:39	176	1.001	1.000	-	
1,2,3,7,8-PeCDF	37:25	41:04	219	1.001	1.001	-	
2,3,4,7,8-PeCDF	39:03	42:10	187	1.044	1.028	-	
1,2,3,4,7,8-HxCDD	44:24	46:50	146	0.998	0.998	-	
1,2,3,6,7,8-HxCDD	44:31	46:57	146	1.000	1.000	-	
1,2,3,7,8,9-HxCDD	44:52	47:22	150	1.008	1.009	-	
1,2,3,4,7,8-HxCDF	43:23	45:46	143	1.000	1.000	-	
1,2,3,6,7,8-HxCDF	43:31	45:54	143	1.004	1.003	-	
2,3,4,6,7,8-HxCDF	44:15	46:39	144	1.020	1.020	-	
1,2,3,7,8,9-HxCDF	45:05	47:39	154	1.040	1.042	-	
1,2,3,4,6,7,8-HpCDD	48:42	51:54	192	1.000	1.001	-	
1,2,3,4,6,7,8-HpCDF	47:13	50:11	178	1.000	1.000	-	
1,2,3,4,7,8,9-HpCDF	49:16	52:31	195	1.044	1.047	-	
OCDD	53:21	56:02	161	1.000	1.000	-	
OCDF	53:29	56:10	161	1.003	1.003	-	
13C-2,3,7,8-TCDD	27:57	34:33	396	1.016	1.018	-	
13C-2,3,7,8-TCDF	26:17	32:19	362	0.956	0.952	-	
13C-1,2,3,7,8-PeCDD	39:42	42:38	176	1.443	1.256	-	
13C-1,2,3,7,8-PeCDF	37:23	41:01	218	1.360	1.208	-	
13C-1,2,3,6,7,8-HxCDD	44:30	46:56	146	0.992	0.992	-	
13C-1,2,3,4,7,8-HxCDF	43:22	45:45	143	0.967	0.967	-	
13C-1,2,3,4,6,7,8-HpCDD	48:41	51:52	191	1.086	1.096	-	
13C-1,2,3,4,6,7,8-HpCDF	47:12	50:10	178	1.053	1.060	-	
13C-OCDD	53:20	56:01	161	1.189	1.183	-	

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IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290

SEVERN TRENT SERVICES

CCAL ID: 1,096 - X021104S1

WIN Filename: t021104s1 **Method:** IN - DX8290

WIN Sample ID: 2427:85 **Instrument:** M1A

WIN Result Dir: /20021104s1/x021104s1.d **Column SN:** 472963

WIN Date/Time: 11/04/02 14:27 **Column Desc:** Rtx-5 60m x 0.32mm ID x 0.25um

Window Defining First/Last Eluter Retention Times

Analyte	Reference	M/Z	Ref RT	First Eluter RT	First Eluter RRT	Last Eluter RT	Last Eluter RRT
Total TCDD	13C-2,3,7,8-TCDD	320	34:33	28:05	0.8128	37:09	1.0753
Total TCDF	13C-2,3,7,8-TCDF	304	32:19	25:26	0.7870	37:03	1.1465
Total PeCDD	13C-1,2,3,7,8-PeCDD	356	42:38	40:02	0.9390	43:16	1.0149
Total PeCDF	13C-1,2,3,7,8-PeCDF	340	41:01	37:39	0.9179	43:23	1.0577
Total HxCDD	13C-1,2,3,6,7,8-HxCDD	390	46:56	45:12	0.9631	47:22	1.0092
Total HxCDF	13C-1,2,3,4,7,8-HxCDF	374	45:45	44:31	0.9730	47:46	1.0441
Total HpCDD	13C-1,2,3,4,6,7,8-HpCDD	424	51:52	50:42	0.9775	51:54	1.0006
Total HpCDF	13C-1,2,3,4,6,7,8-HpCDF	408	50:10	50:11	1.0003	52:31	1.0468
OCDD	13C-OCDD	458	56:01	56:02	1.0003	56:02	1.0003
OCDF	13C-OCDD	442	56:01	56:10	1.0027	56:10	1.0027

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Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs)
By High-Resolution Gas Chromatography/High-Resolution Mass Spectroscopy (HRGC/HRMS)

PCDD/PCDF RT Window and Isomer Specificity Standards

Laboratory ID:	STL Knoxville		
Instrument ID:	MAT-95		
Init. Calibration Date:	17-Jul-02		
DB-5 Data Filename:	t021104s1 ✓	DB-225 Data Filename:	
Analysis Date:	04-Nov-02	Analysis Date:	
Analysis Time:	14:27 ✓	Analysis Date:	

DB-5 Window Defining Standards Results

Isomer	RT (Peak W/6 hr)	RRT		RT	RRT
13C-2,3,7,8-TCDD	~~34:02~~ 34:33		13C-2,3,7,8-TCDF	32:19	
1,3,6,8-TCDD (F)	28:06	0.8257	1,3,6,8-TCDF (F)	25:25	0.7865
1,2,8,9-TCDD (L)	37:10	1.0921	1,2,8,9-TCDF (L)	37:03	1.1465
13C-1,2,3,7,8-PeCDD	42:38		13C-1,2,3,7,8-PeCDF	41:01	
1,2,4,7,9-PeCDD (F)	40:02	0.9390	1,3,4,6,8-PeCDF (F)	37:39	0.9179
1,2,3,8,9-PeCDD (L)	43:16	1.0149	1,2,3,8,9-PeCDF (L)	43:23	1.0577
13C-1,2,3,6,7,8-HxCDD	46:56		13C-1,2,3,4,7,8-HxCDF	45:45	
1,2,4,6,7,9-HxCDD (F)	45:12	0.9631	1,2,3,4,6,8-HxCDF (F)	44:31	0.9730
1,2,3,4,6,7-HxCDD (L)	47:22	1.0092	1,2,3,4,8,9-HxCDF (L)	47:46	1.0441
13C-1,2,3,4,6,7,8-HpCDD	51:52		13C-1,2,3,4,6,7,8-HpCDF	50:10	
1,2,3,4,6,7,9-HpCDD (F)	50:42	0.9775	1,2,3,4,6,7,8-HpCDF (F)	50:11	1.0003
1,2,3,4,6,7,8-HpCDD (L)	51:54	1.0006	1,2,3,4,7,8,9-HpCDF (L)	52:31	1.0468
13C-OCDD	56:01				
OCDD	56:02	1.0003			
OCDF	56:09	1.0024			

Isomer Specificity (IS) Test Standards Results

DB-5 Isomers	% Valley	DB-225	% Valley
1,2,3,7/1,2,3,8-TCDD		2,3,4,7-TCDF	
2,3,7,8-TCDD		2,3,7,8-TCDF	
2,3,7,8-TCDD		2,3,7,8-TCDF	
1,2,3,9-TCDD		1,2,3,9-TCDF	

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-10.4 V SCAN AUTOTUNE TUNE R = 10 875 806 843 uV

p 4.16 A -16.4 V

1.00 mA 58.6 V d s 2675 1277 1 2590 x 2517 y

270 C 271 C s s s s s 2675 1317 2432 2367

0.90 mA -16.4 V

EI POS u electric

U(a) 4762 V U(esa) 763.8 V

Entr. Slit	(ENS)	188.0	
Exit Slit	(EXS)	139.0	
Sweep Mass	(MASS)	304.982	amu
Virt. Mass	(VMASS)	304.982	amu
Link Mass	(LMASS)	304.982	amu
Sweep Width	(SW)	0.020	%
Sweep Speed	(SS)	3.0	/s
U(a) Offset	(UOFS)	5.0	V
U(a)/U(esa)	(URATIO)	2.282	%
Multiplier	(EMULT)	1.80	kV
Dyn. Volt.	(DYNODE)	pos	
Ref. inlet	(TREF)	150	C
Beam Rot.	(BQUAD)	0.0	V
Focus Quad	(FQUAD)	0.0	V

VG off VS1 off VS2 off VV off VS3 off

TUNE DESCRIPTOR tune2 SAVE

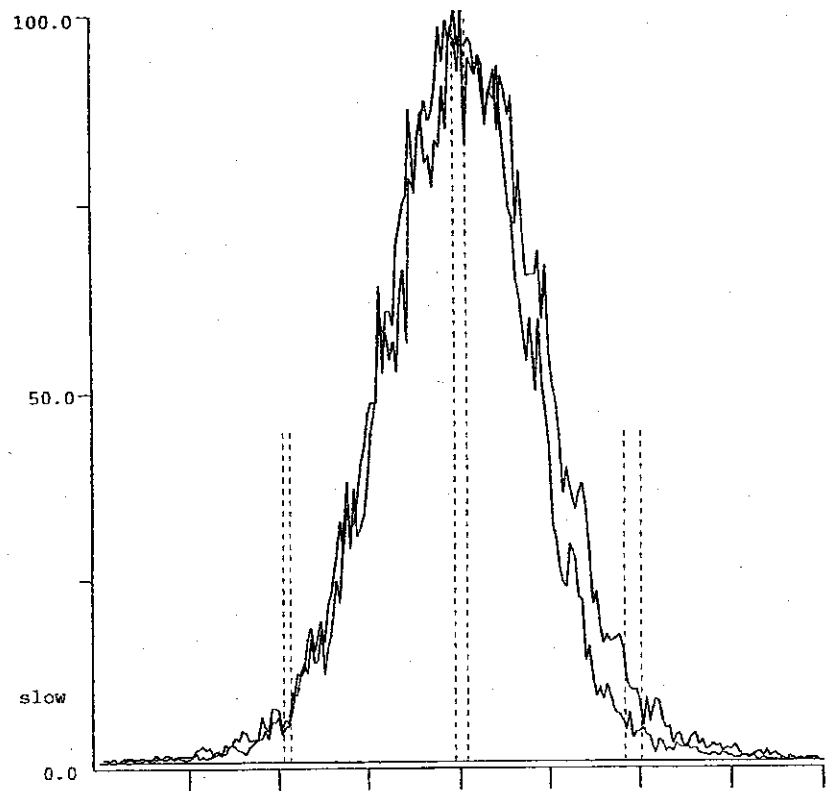
304.952 304.982 305.01

<> >< << >> ^ v C V LOCK UNLK

TUNE:

Peak Register Display

Copy result to ULIST



REG 1/2: 380.977363 REG 1/3: REG 2/3:

MASS	:	304.98205	380.97689
REF MASS	:	304.98243	380.97605
PEAK WIDTH [ppm]:		91.95167	99.00708

Active Register: 1 0.05 1.00

N REG RCOPY1 RCOPY2 RCOPY3 LIMIT CENTER SPREAD ERASE RESUME

PEAK: _

Tue Nov 5 00:25:40 2002 mat95 MAT 95

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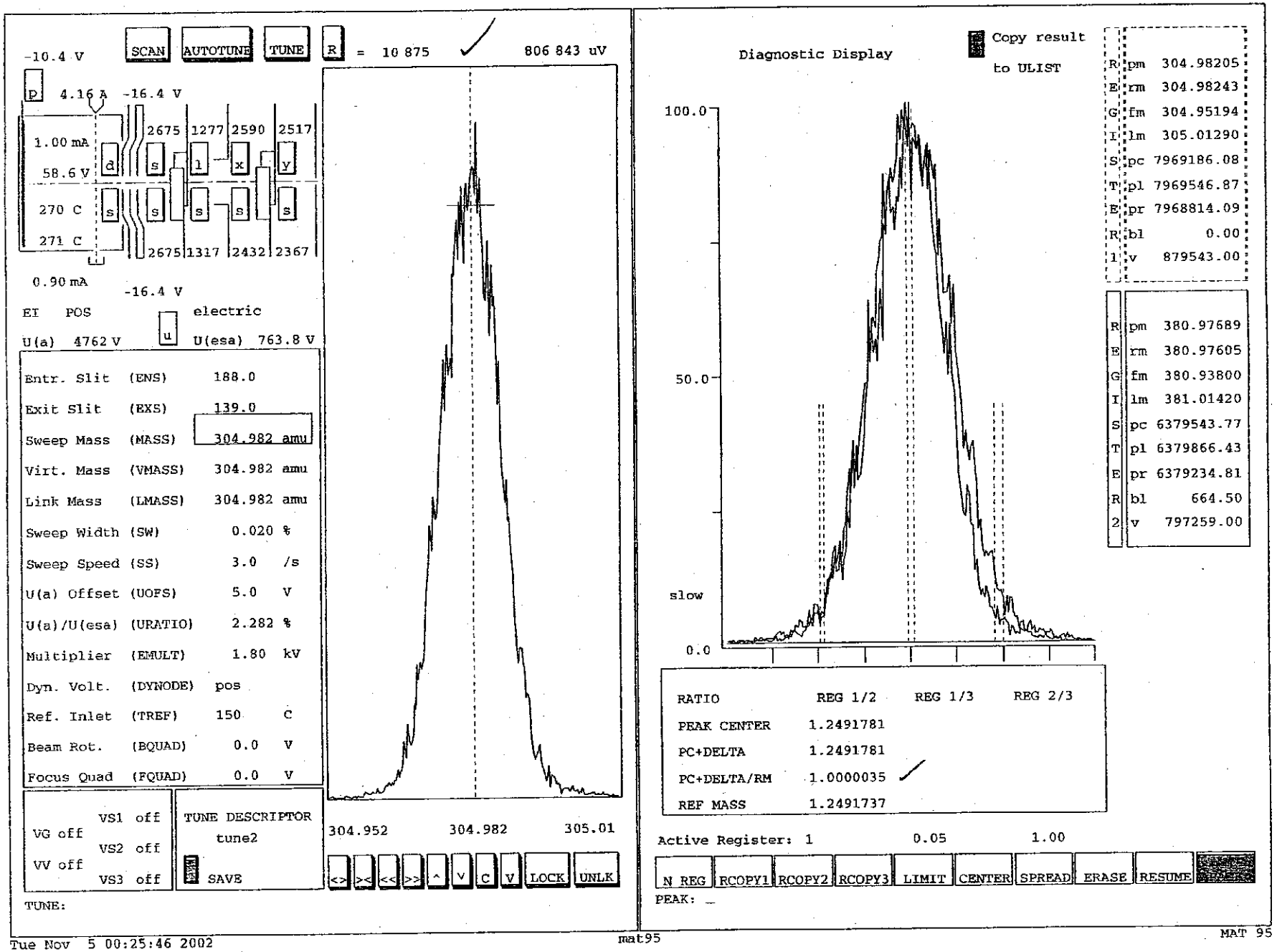

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USEPA Method 1613/8290
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs)
By High-Resolution Gas Chromatography/High-Resolution Mass Spectroscopy (HRGC/HRMS)

PCDD/PCDF Daily Calibration Verification

Laboratory ID: Quanterra Knoxville
Init. Calibration Date: 17-Jul-02
Instrument ID: MAT-95
GC Column ID: RTX-5

CS3 Data Filename: t021104s2
Analysis Date: 04-Nov-02
Analysis Time: 23:23

Analytes	m/z Mass 1	m/z Mass 2	Area Mass 1	Area Mass 2	RT	RRT	Ratio	Ratio Limits	Std Conc	1613 ICAL RF	1613 Calc RF	1613 Conc. (ng/mL)
13C-1,2,3,4-TCDD	331.9368	333.9339	500444	644925	33:39	1.000	0.78	0.65-0.89	100.0	1.000	1.000	100.0
13C-2,3,7,8-TCDD	331.9368	333.9339	501451	661146	34:13	1.017	0.76	0.65-0.89	100.0	1.108	1.015	91.6
37Cl-2,3,7,8-TCDD	327.8847		118890		34:15	1.018		NA	10.0	1.167	1.038	8.9
2,3,7,8-TCDD	319.8965	321.8936	54931	71376	34:17	1.002	0.77	0.65-0.89	10.0	1.071	1.086	10.1
13C-2,3,7,8-TCDF	315.9419	317.9389	775249	965239	32:00	0.951	0.80	0.65-0.89	100.0	1.658	1.520	91.7
2,3,7,8-TCDF	303.9016	305.8987	75862	98946	32:02	1.001	0.77	0.65-0.89	10.0	1.033	1.004	9.7
13C-1,2,3,7,8-PeCDD	367.8949	369.8919	844013	532167	42:24	1.260	1.59	1.32-1.78	100.0	1.051	1.202	114.3
[illegible]3,7,8-PeCDD	355.8546	357.8516	417392	268309	42:25	1.000	1.56	1.32-1.78	50.0	1.051	0.997	47.4
13C-1,2,3,7,8-PeCDF	351.9000	353.8970	1327971	844531	40:47	1.212	1.57	1.32-1.78	100.0	1.545	1.897	122.8
13C-2,3,4,7,8-PeCDF	351.9000	353.8970	1301757	819801	41:54	1.245	1.59	1.32-1.78	100.0	1.506	1.852	123.0
1,2,3,7,8-PeCDF	339.8597	341.8567	672686	429397	40:49	1.001	1.57	1.32-1.78	50.0	1.006	1.015	50.4
2,3,4,7,8-PeCDF	339.8597	341.8567	668335	427901	41:55	1.000	1.56	1.32-1.78	50.0	1.075	1.033	48.1
13C-1,2,3,4,7,8-HxCDD	401.8559	403.8529	669832	521198	46:34	0.988	1.29	1.05-1.43	100.0	0.950	0.835	87.9
13C-1,2,3,6,7,8-HxCDD	401.8559	403.8529	851175	730208	46:42	0.991	1.17	1.05-1.43	100.0	1.087	1.109	102.0
13C-1,2,3,7,8,9-HxCDD	401.8559	403.8529	779097	647203	47:07	1.000	1.20	1.05-1.43	100.0	1.000	1.000	100.0
1,2,3,4,7,8-HxCDD	389.8157	391.8127	382417	281390	46:35	1.000	1.36	1.05-1.43	50.0	1.158	1.115	48.1
1,2,3,6,7,8-HxCDD	389.8157	391.8127	452065	367343	46:43	1.000	1.23	1.05-1.43	50.0	1.074	1.036	48.2
1,2,3,7,8,9-HxCDD	389.8157	391.8127	443816	346884	47:07	1.009	1.28	1.05-1.43	50.0	1.154	1.141	49.4
13C-1,2,3,4,7,8-HxCDF	383.8639	385.8610	605654	1146284	45:30	0.966	0.53	0.43-0.59	100.0	1.383	1.228	88.8
13C-1,2,3,6,7,8-HxCDF	383.8639	385.8610	766957	1442107	45:38	0.969	0.53	0.43-0.59	100.0	1.504	1.549	103.0
13C-2,3,4,6,7,8-HxCDF	383.8639	385.8610	661245	1259875	46:23	0.984	0.52	0.43-0.59	100.0	1.404	1.347	95.9
13C-1,2,3,7,8,9-HxCDF	383.8639	385.8610	582176	1098991	47:23	1.006	0.53	0.43-0.59	100.0	1.234	1.179	95.5
1,2,3,4,7,8-HxCDF	373.8208	375.8178	613067	481259	45:31	1.000	1.27	1.05-1.43	50.0	1.245	1.249	50.2
1,2,3,6,7,8-HxCDF	373.8208	375.8178	738054	580364	45:39	1.000	1.27	1.05-1.43	50.0	1.221	1.194	48.9
2,3,4,6,7,8-HxCDF	373.8208	375.8178	616491	484837	46:24	1.000	1.27	1.05-1.43	50.0	1.175	1.147	48.8
1,2,3,7,8,9-HxCDF	373.8208	375.8178	509237	377179	47:24	1.000	1.35	1.05-1.43	50.0	1.235	1.055	42.7
13C-1,2,3,4,6,7,8-HpCDD	435.8169	437.8140	686233	622577	51:38	1.096	1.10	0.88-1.20	100.0	1.022	0.918	89.8
1,2,3,4,6,7,8-HpCDD	423.7766	425.7737	333592	304885	51:39	1.000	1.09	0.88-1.20	50.0	1.037	0.976	47.0
13C-1,2,3,4,6,7,8-HpCDF	417.8253	419.8220	437535	961299	49:54	1.059	0.46	0.37-0.51	100.0	1.129	0.981	86.9
13C-1,2,3,4,7,8,9-HpCDF	417.8253	419.8220	347939	744467	52:14	1.109	0.47	0.37-0.51	100.0	0.930	0.766	82.4
1,2,3,4,6,7,8-HpCDF	407.7818	409.7789	605229	564154	49:55	1.000	1.07	0.88-1.20	50.0	1.612	1.672	51.9
1,2,3,4,7,8,9-HpCDF	407.7818	409.7789	416683	391301	52:15	1.000	1.06	0.88-1.20	50.0	1.492	1.479	49.6
[illegible]C--OCDD	469.7779	471.7750	1119279	1252194	55:47	1.184	0.89	0.76-1.02	200.0	0.911	0.831	182.5
[illegible]CDD	457.7377	459.7348	565405	651050	55:47	1.000	0.87	0.76-1.02	100.0	1.086	1.026	94.5
OCDF	441.7428	443.7399	658538	723024	55:55	1.002	0.91	0.76-1.02	100.0	1.276	1.165	91.3

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IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290

CCAL ID: 1,099 - X021104S2

CCAL Filename: t021104s2

CCAL Sample ID: 2427:85

CCAL Result Dir: /20021104s2/x021104s2.d

CCAL Date/Time: 11/04/02 23:23

ICAL Date: 07/17/02

Method: IN - DX8290

Instrument: M1A

Column SN: 472963

Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Analytes	m/z's Forming Ratio	Ion Abund Ratio	QC Limits	Calc Conc (ng/mL)	ICAL RF	CCAL RF	%D	QC Limit	Valid?
2,3,7,8-TCDD	M/M+2	0.77	0.65-0.89	10.1	1.071	1.086	1.5	20.0	True
2,3,7,8-TCDF	M/M+2	0.77	0.65-0.89	9.7	1.033	1.004	-2.8	20.0	True
1,2,3,7,8-PeCDD	M+2/M+4	1.56	1.32-1.78	47	1.051	0.997	-5.2	20.0	True
1,2,3,7,8-PeCDF	M+2/M+4	1.57	1.32-1.78	50	1.006	1.015	0.9	20.0	True
2,3,4,7,8-PeCDF	M+2/M+4	1.56	1.32-1.78	48	1.048	1.009	-3.7	20.0	True
1,2,3,4,7,8-HxCDD	M+2/M+4	1.36	1.05-1.43	48	1.012	0.840	-17.0	20.0	True
1,2,3,6,7,8-HxCDD	M+2/M+4	1.23	1.05-1.43	48	1.074	1.036	-3.5	20.0	True
1,2,3,7,8,9-HxCDD	M+2/M+4	1.28	1.05-1.43	49	1.082	1.000	-7.6	20.0	True
1,2,3,4,7,8-HxCDF	M+2/M+4	1.27	1.05-1.43	50	1.245	1.249	0.4	20.0	True
1,2,3,6,7,8-HxCDF	M+2/M+4	1.27	1.05-1.43	49	1.327	1.505	13.4	20.0	True
2,3,4,6,7,8-HxCDF	M+2/M+4	1.27	1.05-1.43	49	1.192	1.257	5.4	20.0	True
1,2,3,7,8,9-HxCDF	M+2/M+4	1.35	1.05-1.43	43	1.102	1.012	-8.2	20.0	True
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.09	0.88-1.20	47	1.037	0.976	-5.9	20.0	True
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.07	0.88-1.20	52	1.612	1.672	3.7	20.0	True
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.06	0.88-1.20	50	1.229	1.155	-6.0	20.0	True
OCDD	M+2/M+4	0.87	0.76-1.02	94	1.086	1.026	-5.6	20.0	True
OCDF	M+2/M+4	0.91	0.76-1.02	91	1.276	1.165	-8.7	20.0	True
13C-2,3,7,8-TCDD	M/M+2	0.76	0.65-0.89	92	1.108	1.015	-8.4	30.0	True
13C-2,3,7,8-TCDF	M/M+2	0.80	0.65-0.89	92	1.658	1.520	-8.3	30.0	True
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.59	1.32-1.78	114	1.051	1.202	14.3	30.0	True
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.57	1.32-1.78	123	1.545	1.897	22.8	30.0	True
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.17	1.05-1.43	102	1.087	1.109	2.0	30.0	True
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.53	0.43-0.59	89	1.383	1.228	-11.2	30.0	True
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.10	0.88-1.20	90	1.022	0.918	-10.2	30.0	True
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.46	0.37-0.51	87	1.129	0.981	-13.1	30.0	True
13C-OCDD	M+2/M+4	0.89	0.76-1.02	183	0.911	0.831	-8.7	30.0	True

PMP 11-5-02

VMK 11-6-02

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IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290

CCAL ID: 1,099 - X021104S2

CCAL Filename: t021104s2

CCAL Sample ID: 2427:85

CCAL Result Dir: /20021104s2/x021104s2.d

CCAL Date/Time: 11/04/02 23:23

ICAL Date: 07/17/02

Method: IN - DX8290

Instrument: M1A

Column SN: 472963

Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Analytes	ICAL RT	CCAL RT	RT Diff	ICAL RRT	CCAL RRT	RRT QC Limit	Valid?
2,3,7,8-TCDD	27:59	34:17	378	1.001	1.002	-	
2,3,7,8-TCDF	26:18	32:02	344	1.001	1.001	-	
1,2,3,7,8-PeCDD	39:43	42:25	162	1.001	1.000	-	
1,2,3,7,8-PeCDF	37:25	40:48	203	1.001	1.000	-	
2,3,4,7,8-PeCDF	39:03	41:55	172	1.044	1.028	-	
1,2,3,4,7,8-HxCDD	44:24	46:35	131	0.998	0.998	-	
1,2,3,6,7,8-HxCDD	44:31	46:43	132	1.000	1.000	-	
1,2,3,7,8,9-HxCDD	44:52	47:07	135	1.008	1.009	-	
1,2,3,4,7,8-HxCDF	43:23	45:31	128	1.000	1.000	-	
1,2,3,6,7,8-HxCDF	43:31	45:39	128	1.004	1.003	-	
2,3,4,6,7,8-HxCDF	44:15	46:24	129	1.020	1.020	-	
1,2,3,7,8,9-HxCDF	45:05	47:24	139	1.040	1.042	-	
1,2,3,4,6,7,8-HpCDD	48:42	51:39	177	1.000	1.000	-	
1,2,3,4,6,7,8-HpCDF	47:13	49:55	162	1.000	1.000	-	
1,2,3,4,7,8,9-HpCDF	49:16	52:15	179	1.044	1.047	-	
OCDD	53:21	55:47	146	1.000	1.000	-	
OCDF	53:29	55:55	146	1.003	1.002	-	
13C-2,3,7,8-TCDD	27:57	34:13	376	1.016	1.017	-	
13C-2,3,7,8-TCDF	26:17	32:00	343	0.956	0.951	-	
13C-1,2,3,7,8-PeCDD	39:42	42:24	162	1.443	1.260	-	
13C-1,2,3,7,8-PeCDF	37:23	40:47	204	1.360	1.212	-	
13C-1,2,3,6,7,8-HxCDD	44:30	46:42	132	0.992	0.991	-	
13C-1,2,3,4,7,8-HxCDF	43:22	45:30	128	0.967	0.966	-	
13C-1,2,3,4,6,7,8-HpCDD	48:41	51:38	177	1.086	1.096	-	
13C-1,2,3,4,6,7,8-HpCDF	47:12	49:54	162	1.053	1.059	-	
13C-OCDD	53:20	55:47	147	1.189	1.184	-	

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STL Knoxville Specialty Organics GC/MS Continuing Calibration Review / Narrative Checklist
Methods: 8290/23 - KNOX-ID-0003, Rev. 5

Start PFK:	10:09	CS3 Filename:	to211055l	Win Filename:	to211055l	Inst:	M1A
End PFK:	21:54	CS3 Filename:	to211055s2	Col Perf Filename:	to211055l	ICAL Date:	7/17/02

Review Items	N/A	Yes	No	If No, why is data reportable?	2nd Level
1. Was the mass resolution documented at both the beginning and end of the 12 hour shift?		✓			✓
2. Was the instrument resolution >10,000 (<100 ppm) on PFK m/z 304.9824 and m/z 380.9760 (at reduced voltage)?		✓			✓
3. Was the measured exact mass of m/z 380.9760 (PFK) within 5 ppm at reduced accelerating voltage?		✓			✓
4. Was date/time of analysis verified between analysis header and logbook as correct?		✓			✓
5. Was the Window Defining Mixture analyzed and the MID switchpoints set to encompass the retention time windows of each congener group?		✓			✓
6. Was the Column Performance solution analyzed and the %Valley ≤25 for separation between 2378-TCDD/F and the closest eluting non-2378 isomer?		✓			✓
7. Was the continuing calibration performed at the beginning of the 12 hour period after successful mass resolution and GC resolution performance check?		✓			✓
8. Was the continuing calibration performed at the end of the 12 hour period?					✓
9. Were the response factors calculated for each labeled standard and unlabeled native analyte using the SOP specified reference compound, quantitation ions, and formula.		✓			✓
10. Are %D ≤20 for all unlabeled native analytes in the beginning and ending calibration?		✓		Ending %D ≤25 and mean RRF from two continuing calibrations used to calculate samples. Ending %D >25 corrective action performed and all positive sample extracts reanalyzed.	✓
11. Are %D ≤30 for all labeled standards in the beginning and ending calibration?		✓		Ending %D ≤35 and mean RRF from two continuing calibrations used to calculate samples. Ending %D >35 and corrective action performed and all positive sample extracts reanalyzed.	✓
12. Are all S/N ratios ≥10 for the GC signals in each EICP (extracted ion chromatographic profile) including internal standards?		✓			✓
13. Are the ion abundance ratios for all labeled and unlabeled analytes within the specified control limits?		✓			✓
14. If manual integrations were performed, are they clearly identified, initialed and dated?	✓				✓
15. If criteria were not met, was a NCM generated, approved by supervisor, and copy included in folder?	✓				✓
16. Does the CCAL folder contain **complete** data in the following order? Data review checklist, a **complete** runlog, CCAL summary, Ratio summary, Calculation summary, PFK resolution/peak match documentation, and Total RIC, EICP's and manual integration - for window and both standards.		✓			✓

Analyst: [signature]	Date: 11/5/02	2nd Level Reviewer : PMM	Date: 11-5-02
Comments:		Comments:	

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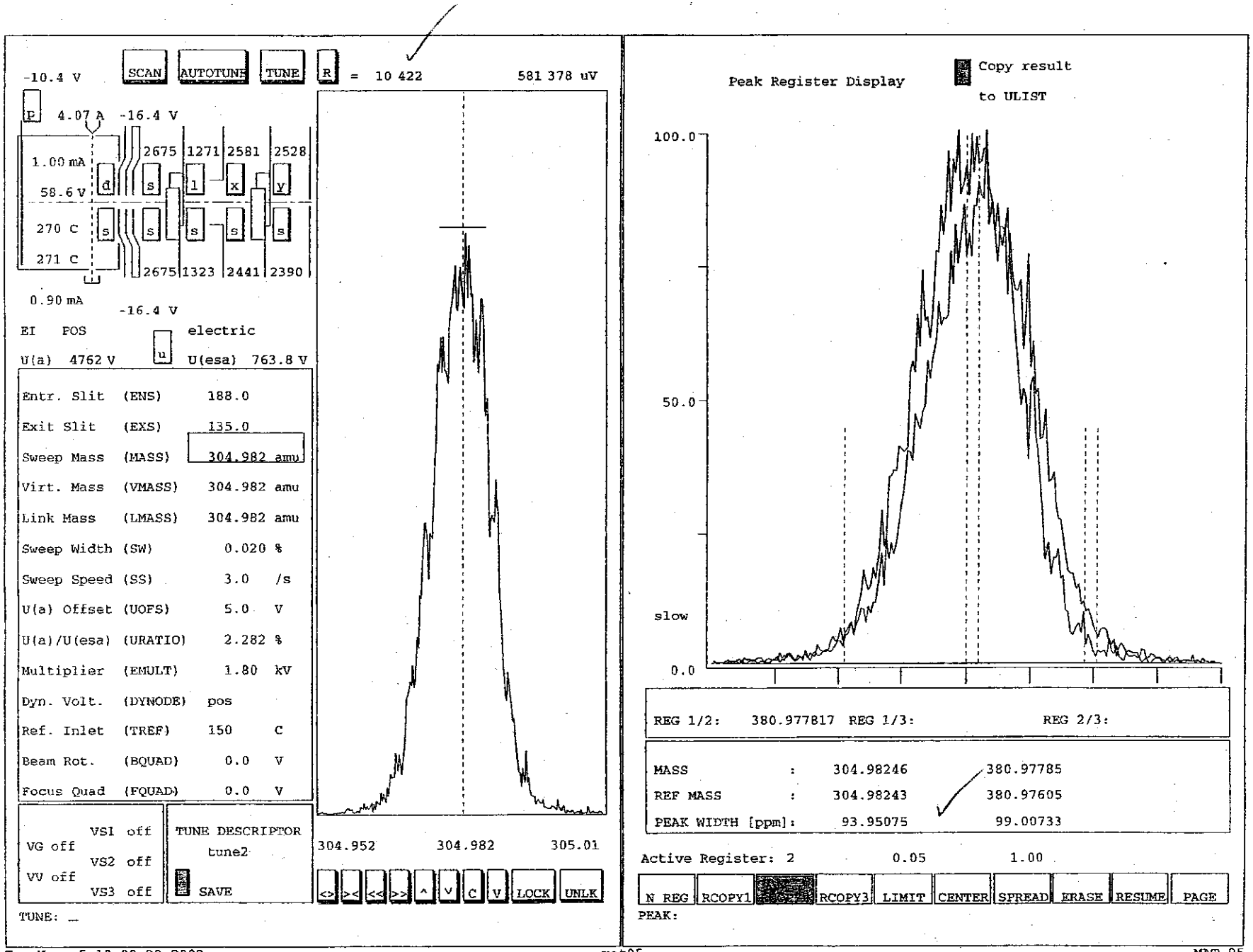

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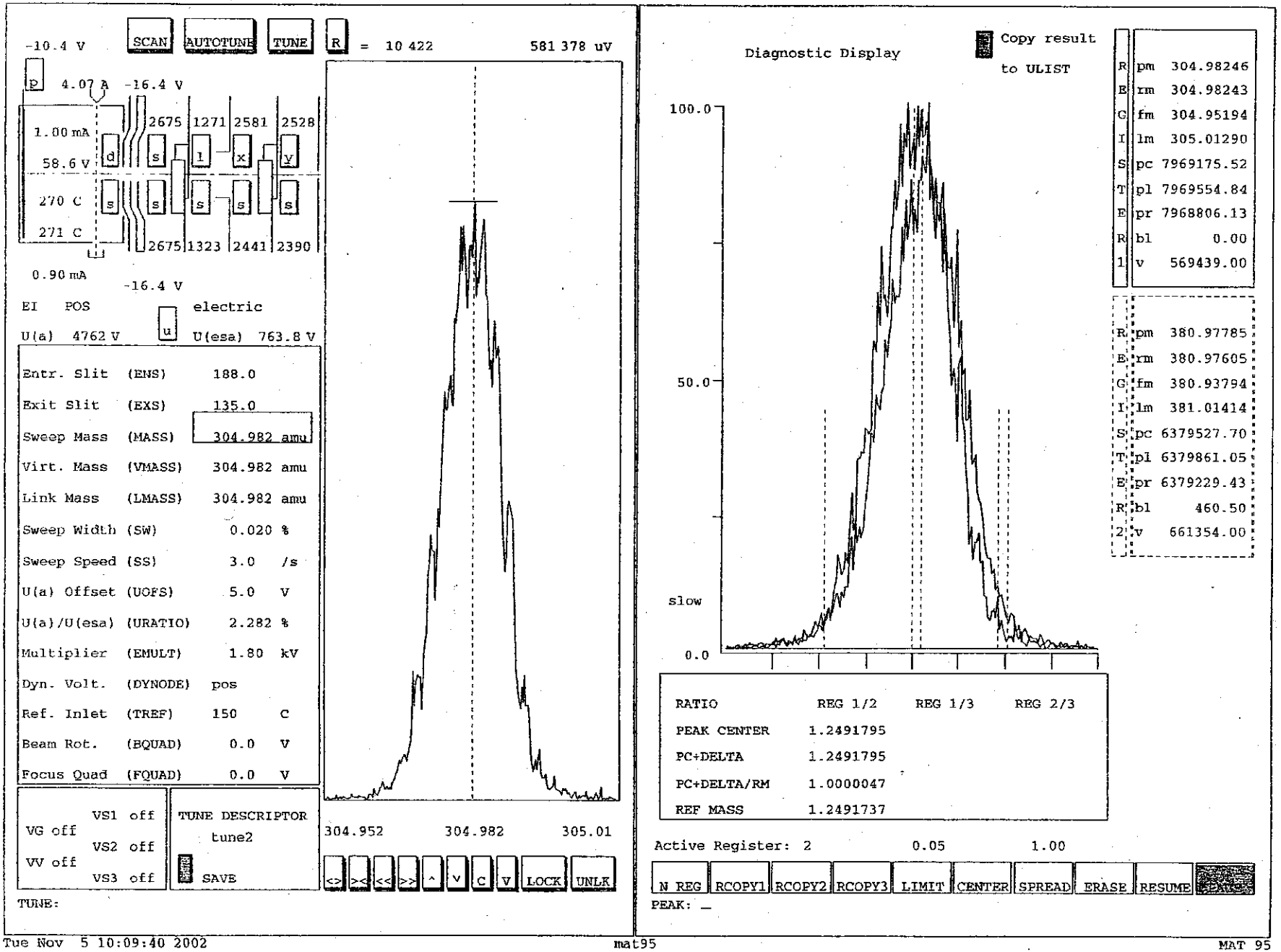

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IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290

CCAL ID: 1,111 - X021105S1

CCAL Filename: t021105s1

CCAL Sample ID: 2427:85

CCAL Result Dir: /20021105s1/x021105s1.d

CCAL Date/Time: 11/05/02 10:15

ICAL Date: 07/17/02

Method: IN - DX8290

Instrument: M1A

Column SN: 472963

Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Analytes	m/z's Forming Ratio	Ion Abund Ratio	QC Limits	Calc Conc (ng/mL)	ICAL RF	CCAL RF	%D	QC Limit	Valid?
2,3,7,8-TCDD	M/M+2	0.75	0.65-0.89	9.9	1.071	1.064	-0.7	20.0	True
2,3,7,8-TCDF	M/M+2	0.77	0.65-0.89	9.7	1.033	0.999	-3.3	20.0	True
1,2,3,7,8-PeCDD	M+2/M+4	1.65	1.32-1.78	46	1.051	0.962	-8.5	20.0	True
1,2,3,7,8-PeCDF	M+2/M+4	1.61	1.32-1.78	49	1.006	0.988	-1.8	20.0	True
2,3,4,7,8-PeCDF	M+2/M+4	1.55	1.32-1.78	48	1.048	1.009	-3.7	20.0	True
1,2,3,4,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	47	1.012	0.886	-12.4	20.0	True
1,2,3,6,7,8-HxCDD	M+2/M+4	1.29	1.05-1.43	47	1.074	1.019	-5.1	20.0	True
1,2,3,7,8,9-HxCDD	M+2/M+4	1.26	1.05-1.43	45	1.082	0.944	-12.7	20.0	True
1,2,3,4,7,8-HxCDF	M+2/M+4	1.28	1.05-1.43	51	1.245	1.269	2.0	20.0	True
1,2,3,6,7,8-HxCDF	M+2/M+4	1.29	1.05-1.43	50	1.327	1.407	6.0	20.0	True
2,3,4,6,7,8-HxCDF	M+2/M+4	1.30	1.05-1.43	49	1.192	1.338	12.2	20.0	True
1,2,3,7,8,9-HxCDF	M+2/M+4	1.31	1.05-1.43	44	1.102	0.968	-12.2	20.0	True
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.10	0.88-1.20	48	1.037	0.989	-4.6	20.0	True
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.05	0.88-1.20	50	1.612	1.621	0.5	20.0	True
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.04	0.88-1.20	50	1.229	1.211	-1.5	20.0	True
OCDD	M+2/M+4	0.87	0.76-1.02	96	1.086	1.041	-4.2	20.0	True
OCDF	M+2/M+4	0.92	0.76-1.02	96	1.276	1.229	-3.6	20.0	True
13C-2,3,7,8-TCDD	M/M+2	0.77	0.65-0.89	94	1.108	1.039	-6.2	30.0	True
13C-2,3,7,8-TCDF	M/M+2	0.80	0.65-0.89	97	1.658	1.606	-3.1	30.0	True
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.56	1.32-1.78	94	1.051	0.992	-5.6	30.0	True
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.32-1.78	97	1.545	1.501	-2.8	30.0	True
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.23	1.05-1.43	109	1.087	1.189	9.4	30.0	True
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.52	0.43-0.59	95	1.383	1.311	-5.2	30.0	True
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.11	0.88-1.20	88	1.022	0.898	-12.2	30.0	True
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.47	0.37-0.51	89	1.129	1.000	-11.5	30.0	True
13C-OCDD	M+2/M+4	0.88	0.76-1.02	177	0.911	0.807	-11.4	30.0	True

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USEPA Method 1613/8290
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs)
By High-Resolution Gas Chromatography/High-Resolution Mass Spectroscopy (HRGC/HRMS)

PCDD/PCDF Daily Calibration Verification

Laboratory ID: Quanterra Knoxville
Init. Calibration Date: 17-Jul-02

Instrument ID: MAT-95
GC Column ID: RTX-5

CS3 Data Filename: t021105s1
Analysis Date: 05-Nov-02
Analysis Time: 10:15

Analytes	m/z Mass 1	m/z Mass 2	Area Mass 1	Area Mass 2	RT	RRT	Ratio	Ratio Limits	Std Conc	1613 ICAL RF	1613 Calc RF	1613 Conc. (ng/mL)
13C-1,2,3,4-TCDD	331.9368	333.9339	459183	592085	33:34	1.000	0.78	0.65-0.89	100.0	1.000	1.000	100.0
13C-2,3,7,8-TCDD	331.9368	333.9339	475898	616703	34:07	1.016	0.77	0.65-0.89	100.0	1.108	1.039	93.8
37Cl-2,3,7,8-TCDD	327.8847		111964		34:11	1.018		NA	10.0	1.167	1.065	9.1
2,3,7,8-TCDD	319.8965	321.8936	49891	66312	34:11	1.002	0.75	0.65-0.89	10.0	1.071	1.064	9.9
13C-2,3,7,8-TCDF	315.9419	317.9389	750966	937562	31:57	0.952	0.80	0.65-0.89	100.0	1.658	1.606	96.9
2,3,7,8-TCDF	303.9016	305.8987	73604	95026	31:59	1.001	0.77	0.65-0.89	10.0	1.033	0.999	9.7
13C-1,2,3,7,8-PeCDD	367.8949	369.8919	634698	407891	42:22	1.262	1.56	1.32-1.78	100.0	1.051	0.992	94.4
[illegible]3,7,8-PeCDD	355.8546	357.8516	312215	189014	42:23	1.000	1.65	1.32-1.78	50.0	1.051	0.962	45.7
13C-1,2,3,7,8-PeCDF	351.9000	353.8970	966543	611483	40:46	1.214	1.58	1.32-1.78	100.0	1.545	1.501	97.2
13C-2,3,4,7,8-PeCDF	351.9000	353.8970	953675	597798	41:53	1.248	1.60	1.32-1.78	100.0	1.506	1.476	98.0
1,2,3,7,8-PeCDF	339.8597	341.8567	480414	299257	40:47	1.000	1.61	1.32-1.78	50.0	1.006	0.988	49.1
2,3,4,7,8-PeCDF	339.8597	341.8567	483689	312490	41:54	1.000	1.55	1.32-1.78	50.0	1.075	1.026	47.7
13C-1,2,3,4,7,8-HxCDD	401.8559	403.8529	540184	441175	46:34	0.989	1.22	1.05-1.43	100.0	0.950	0.963	101.4
13C-1,2,3,6,7,8-HxCDD	401.8559	403.8529	667166	544440	46:41	0.992	1.23	1.05-1.43	100.0	1.087	1.189	109.4
13C-1,2,3,7,8,9-HxCDD	401.8559	403.8529	562801	456395	47:05	1.000	1.23	1.05-1.43	100.0	1.000	1.000	100.0
1,2,3,4,7,8-HxCDD	389.8157	391.8127	299985	237049	46:35	1.000	1.27	1.05-1.43	50.0	1.158	1.094	47.3
1,2,3,6,7,8-HxCDD	389.8157	391.8127	348226	269373	46:42	1.000	1.29	1.05-1.43	50.0	1.074	1.019	47.5
1,2,3,7,8,9-HxCDD	389.8157	391.8127	318340	253449	47:06	1.009	1.26	1.05-1.43	50.0	1.154	1.043	45.2
13C-1,2,3,4,7,8-HxCDF	383.8639	385.8610	458925	876977	45:30	0.966	0.52	0.43-0.59	100.0	1.383	1.311	94.8
13C-1,2,3,6,7,8-HxCDF	383.8639	385.8610	533748	1019876	45:38	0.969	0.52	0.43-0.59	100.0	1.504	1.524	101.4
13C-2,3,4,6,7,8-HxCDF	383.8639	385.8610	529193	1017398	46:23	0.985	0.52	0.43-0.59	100.0	1.404	1.517	108.1
13C-1,2,3,7,8,9-HxCDF	383.8639	385.8610	415462	784553	47:23	1.006	0.53	0.43-0.59	100.0	1.234	1.177	95.4
1,2,3,4,7,8-HxCDF	373.8208	375.8178	475565	372195	45:31	1.000	1.28	1.05-1.43	50.0	1.245	1.269	51.0
1,2,3,6,7,8-HxCDF	373.8208	375.8178	529968	409811	45:39	1.000	1.29	1.05-1.43	50.0	1.221	1.210	49.5
2,3,4,6,7,8-HxCDF	373.8208	375.8178	504422	389405	46:24	1.000	1.30	1.05-1.43	50.0	1.175	1.156	49.2
1,2,3,7,8,9-HxCDF	373.8208	375.8178	367632	279738	47:23	1.000	1.31	1.05-1.43	50.0	1.235	1.079	43.7
13C-1,2,3,4,6,7,8-HpCDD	435.8169	437.8140	480669	434260	51:37	1.096	1.11	0.88-1.20	100.0	1.022	0.898	87.8
1,2,3,4,6,7,8-HpCDD	423.7766	425.7737	236882	215497	51:39	1.001	1.10	0.88-1.20	50.0	1.037	0.989	47.7
13C-1,2,3,4,6,7,8-HpCDF	417.8253	419.8220	324110	694580	49:53	1.059	0.47	0.37-0.51	100.0	1.129	1.000	88.5
13C-1,2,3,4,7,8,9-HpCDF	417.8253	419.8220	260313	569645	52:14	1.109	0.46	0.37-0.51	100.0	0.930	0.814	87.6
1,2,3,4,6,7,8-HpCDF	407.7818	409.7789	423525	401936	49:54	1.000	1.05	0.88-1.20	50.0	1.612	1.621	50.3
1,2,3,4,7,8,9-HpCDF	407.7818	409.7789	314597	302028	52:15	1.000	1.04	0.88-1.20	50.0	1.492	1.486	49.8
[illegible]-OCDD	469.7779	471.7750	767673	877146	55:46	1.184	0.88	0.76-1.02	200.0	0.911	0.807	177.2
[illegible]DD	457.7377	459.7348	399513	456690	55:47	1.000	0.87	0.76-1.02	100.0	1.086	1.041	95.9
OCDF	441.7428	443.7399	485223	525827	55:55	1.003	0.92	0.76-1.02	100.0	1.276	1.229	96.3

VER Quan Data

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IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290

CCAL ID:	1,111 - X021105S1	ICAL Date:	07/17/02
CCAL Filename:	t021105s1	Method:	IN - DX8290
CCAL Sample ID:	2427:85	Instrument:	M1A
CCAL Result Dir:	/20021105s1/x021105s1.d	Column SN:	472963
CCAL Date/Time:	11/05/02 10:15	Column Desc:	Rtx-5 60m x 0.32mm ID x 0.25um

Analytes	ICAL RT	CCAL RT	RT Diff	ICAL RRT	CCAL RRT	RRT QC Limit	Valid?
2,3,7,8-TCDD	27:59	34:11	372	1.001	1.002	-	
2,3,7,8-TCDF	26:18	31:59	341	1.001	1.001	-	
1,2,3,7,8-PeCDD	39:43	42:23	160	1.001	1.000	-	
1,2,3,7,8-PeCDF	37:25	40:47	202	1.001	1.000	-	
2,3,4,7,8-PeCDF	39:03	41:54	171	1.044	1.028	-	
1,2,3,4,7,8-HxCDD	44:24	46:35	131	0.998	0.998	-	
1,2,3,6,7,8-HxCDD	44:31	46:42	131	1.000	1.000	-	
1,2,3,7,8,9-HxCDD	44:52	47:06	134	1.008	1.009	-	
1,2,3,4,7,8-HxCDF	43:23	45:31	128	1.000	1.000	-	
1,2,3,6,7,8-HxCDF	43:31	45:39	128	1.004	1.003	-	
2,3,4,6,7,8-HxCDF	44:15	46:24	129	1.020	1.020	-	
1,2,3,7,8,9-HxCDF	45:05	47:23	138	1.040	1.041	-	
1,2,3,4,6,7,8-HpCDD	48:42	51:39	177	1.000	1.001	-	
1,2,3,4,6,7,8-HpCDF	47:13	49:54	161	1.000	1.000	-	
1,2,3,4,7,8,9-HpCDF	49:16	52:15	179	1.044	1.047	-	
OCDD	53:21	55:47	146	1.000	1.000	-	
OCDF	53:29	55:55	146	1.003	1.003	-	
13C-2,3,7,8-TCDD	27:57	34:07	370	1.016	1.016	-	
13C-2,3,7,8-TCDF	26:17	31:57	340	0.956	0.952	-	
13C-1,2,3,7,8-PeCDD	39:42	42:22	160	1.443	1.262	-	
13C-1,2,3,7,8-PeCDF	37:23	40:46	203	1.360	1.214	-	
13C-1,2,3,6,7,8-HxCDD	44:30	46:41	131	0.992	0.992	-	
13C-1,2,3,4,7,8-HxCDF	43:22	45:30	128	0.967	0.966	-	
13C-1,2,3,4,6,7,8-HpCDD	48:41	51:37	176	1.086	1.096	-	
13C-1,2,3,4,6,7,8-HpCDF	47:12	49:53	161	1.053	1.059	-	
13C-OCDD	53:20	55:46	146	1.189	1.184	-	

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STL - Knoxville

IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290

CCAL ID: 1,111 - X021105S1

WIN Filename: t021105s1

WIN Sample ID: 2427:85

WIN Result Dir: /20021105s1/x021105s1.d

WIN Date/Time: 11/05/02 10:15

Method: IN - DX8290

Instrument: M1A

Column SN: 472963

Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Window Defining First/Last Eluter Retention Times

Analyte	Reference	M/Z	Ref RT	First Eluter RT	First Eluter RRT	Last Eluter RT	Last Eluter RRT
Total TCDD	13C-2,3,7,8-TCDD	320	34:07	27:44	0.8129	36:50	1.0796
Total TCDF	13C-2,3,7,8-TCDF	304	31:57	25:04	0.7846	36:44	1.1497
Total PeCDD	13C-1,2,3,7,8-PeCDD	356	42:22	39:45	0.9382	43:01	1.0153
Total PeCDF	13C-1,2,3,7,8-PeCDF	340	40:46	37:20 ~~40:47~~	1.0004	43:08	1.0581
Total HxCDD	13C-1,2,3,6,7,8-HxCDD	390	46:41	44:57	0.9629	47:06	1.0089
Total HxCDF	13C-1,2,3,4,7,8-HxCDF	374	45:30	44:16	0.9729	47:31	1.0443
Total HpCDD	13C-1,2,3,4,6,7,8-HpCDD	424	51:37	50:26	0.9771	51:39	1.0006
Total HpCDF	13C-1,2,3,4,6,7,8-HpCDF	408	49:53	49:54	1.0003	52:15	1.0474
OCDD	13C-OCDD	458	55:46	55:47	1.0003	55:47	1.0003
OCDF	13C-OCDD	442	55:46	55:55	1.0027	55:55	1.0027

PMP 11/5/02

PMP 11-5-02

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USEPA Method 1613B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs)
By High-Resolution Gas Chromatography/High-Resolution Mass Spectroscopy (HRGC/HRMS)

PCDD/PCDF Daily Calibration Verification

Laboratory ID: Quanterra Knoxville
Instrument ID: MAT-95
Init. Calibration Date: 17-Jul-02
GC Column ID: RTX-5

VER Data Filename: t021105s1
Analysis Date: 05-Nov-02
Analysis Time: 10:15

Analytes	m/z's Forming Ratio	Ion Abund. Ratio	QC Limits	Conc. Found	ICAL RF	VER RF	%D	QC LIMIT	Flag
13C-2,3,7,8-TCDD	M/M+2	0.77	0.65-0.89	93.8	1.108	1.039	6.2%	30%	TRUE
37Cl-2,3,7,8-TCDD	M/M+2		NA	9.1	1.167	1.065	8.7%	30%	TRUE
2,3,7,8-TCDD	M/M+2	0.75	0.65-0.89	9.9	1.071	1.064	0.7%	20%	TRUE
13C-2,3,7,8-TCDF	M/M+2	0.80	0.65-0.89	96.9	1.658	1.606	3.1%	30%	TRUE
2,3,7,8-TCDF	M/M+2	0.77	0.65-0.89	9.7	1.033	0.999	3.3%	20%	TRUE
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.56	1.32-1.78	94.4	1.051	0.992	5.6%	30%	TRUE
1,2,3,7,8-PeCDD	M+2/M+4	1.65	1.32-1.78	45.7	1.051	0.962	8.5%	20%	TRUE
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.32-1.78	97.2	1.545	1.501	2.8%	30%	TRUE
1,2,3,7,8-PeCDF	M+2/M+4	1.61	1.32-1.78	49.1	1.006	0.988	1.8%	20%	TRUE
2,3,4,7,8-PeCDF	M+2/M+4	1.55	1.32-1.78	48.1	1.048	1.009	3.7%	20%	TRUE
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.23	1.05-1.43	109.4	1.087	1.189	-9.4%	30%	TRUE
1,2,3,4,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	43.8	1.012	0.886	12.4%	20%	TRUE
1,2,3,6,7,8-HxCDD	M+2/M+4	1.29	1.05-1.43	47.5	1.074	1.019	5.1%	20%	TRUE
1,2,3,7,8,9-HxCDD	M+2/M+4	1.26	1.05-1.43	43.6	1.082	0.944	12.8%	20%	TRUE
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.52	0.43-0.59	94.8	1.383	1.311	5.2%	30%	TRUE
1,2,3,4,7,8-HxCDF	M+2/M+4	1.28	1.05-1.43	51.0	1.245	1.269	-1.9%	20%	TRUE
1,2,3,6,7,8-HxCDF	M+2/M+4	1.29	1.05-1.43	53.0	1.327	1.407	-6.0%	20%	TRUE
2,3,4,6,7,8-HxCDF	M+2/M+4	1.30	1.05-1.43	56.1	1.192	1.338	-12.3%	20%	TRUE
1,2,3,7,8,9-HxCDF	M+2/M+4	1.31	1.05-1.43	44.0	1.102	0.969	12.1%	20%	TRUE
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.11	0.88-1.20	87.8	1.022	0.898	12.2%	30%	TRUE
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.10	0.88-1.20	47.7	1.037	0.989	4.6%	20%	TRUE
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.47	0.37-0.51	88.5	1.129	1.000	11.5%	30%	TRUE
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.05	0.88-1.20	50.3	1.612	1.621	-0.5%	20%	TRUE
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.04	0.88-1.20	49.3	1.229	1.211	1.5%	20%	TRUE
13C–OCDD	M+2/M+4	0.88	0.76-1.02	177.2	0.911	0.807	11.4%	30%	TRUE
OCDD	M+2/M+4	0.87	0.76-1.02	95.9	1.086	1.041	4.1%	20%	TRUE
OCDF	M+2/M+4	0.92	0.76-1.02	96.3	1.276	1.229	3.7%	20%	TRUE

(1) SW-846 Method 8290, Revision 0 September 1994, Section 7.7.4, Page 29

11/5/02

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STL Knoxville Specialty Organics GC/MS Continuing Calibration Review / Narrative Checklist
Methods: 8290/23 - KNOX-ID-0003, Rev. 5

Start PFK:	21:54	CS3 Filename:	t021105S2	Win Filename:	t021105S2	Inst:	MAT95
End PFK:	09:27	CS3 Filename:	t021106S1	Col/Perf Filename:	t021105S2	ICAL Date:	7-12-02

Review Items	N/A	Yes	No	If No, why is data reportable?	2nd Level
1. Was the mass resolution documented at both the beginning and end of the 12 hour shift?		✓			✓
2. Was the instrument resolution >10,000 (<100 ppm) on PFK m/z 304.9824 and m/z 380.9760 (at reduced voltage)?		✓			✓
3. Was the measured exact mass of m/z 380.9760 (PFK) within 5 ppm at reduced accelerating voltage?		✓			✓
4. Was date/time of analysis verified between analysis header and logbook as correct?		✓			✓
5. Was the Window Defining Mixture analyzed and the MID switchpoints set to encompass the retention time windows of each congener group?		✓			✓
6. Was the Column Performance solution analyzed and the %Valley ≤25 for separation between 2378-TCDD/F and the closest eluting non-2378 isomer?		✓			✓
7. Was the continuing calibration performed at the beginning of the 12 hour period after successful mass resolution and GC resolution performance check?		✓			✓
8. Was the continuing calibration performed at the end of the 12 hour period?					✓
9. Were the response factors calculated for each labeled standard and unlabeled native analyte using the SOP specified reference compound, quantitation ions, and formula.		✓			✓
10. Are %D ≤20 for all unlabeled native analytes in the beginning and ending calibration?		✓		Ending %D ≤25 and mean RRF from two continuing calibrations used to calculate samples. Ending %D >25 corrective action performed and all positive sample extracts reanalyzed.	✓
11. Are %D ≤30 for all labeled standards in the beginning and ending calibration?		✓		Ending %D ≤35 and mean RRF from two continuing calibrations used to calculate samples. Ending %D >35 and corrective action performed and all positive sample extracts reanalyzed.	✓
12. Are all S/N ratios ≥10 for the GC signals in each EICP (extracted ion chromatographic profile) including internal standards?		✓			✓
13. Are the ion abundance ratios for all labeled and unlabeled analytes within the specified control limits?		✓			✓
14. If manual integrations were performed, are they clearly identified, initialed and dated?	✓				✓
15. If criteria were not met, was a NCM generated, approved by supervisor, and copy included in folder?		✓			✓
16. Does the CCAL folder contain **complete** data in the following order? Data review checklist, a **complete** runlog, CCAL summary, Ratio summary, Calculation summary, PFK resolution/peak match documentation, and Total RIC, EICP's and manual integration - for window and both standards.		✓			✓

Analyst: PNM	Date: 11-5-02	2nd Level Reviewer : NTM	Date: 11-06-02
Comments:		Comments:	

ID022R1.doc, 8/22/01

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-10.4 V SCAN AUTOTUNE TUNE R = 10 875 317 989 uV

P 3.98 A -16.4 V

1.00 mA 58.6 V d s l x y 2675 1271 2585 2528

270 C 271 C s s s s s 2675 1323 2437 2390

0.90 mA -16.4 V

EI POS u electric

U(a) 4764 V U(esa) 763.8 V

Entr. Slit	(ENS)	188.0	
Exit Slit	(EXS)	135.0	
Sweep Mass	(MASS)	304.982	amu
Virt. Mass	(VMASS)	304.982	amu
Link Mass	(LMASS)	304.982	amu
Sweep Width	(SW)	0.020	%
Sweep Speed	(SS)	3.0	/s
U(a) Offset	(UOFS)	5.0	V
U(a)/U(esa)	(URATIO)	2.282	%
Multiplier	(EMULT)	1.80	kV
Dyn. Volt.	(DYNODE)	pos	
Ref. Inlet	(TREF)	150	C
Beam Rot.	(BQUAD)	0.0	V
Focus Quad	(FQUAD)	0.0	V

VG off VS1 off VS2 off VV off VS3 off

TUNE DESCRIPTOR tune2 SAVE

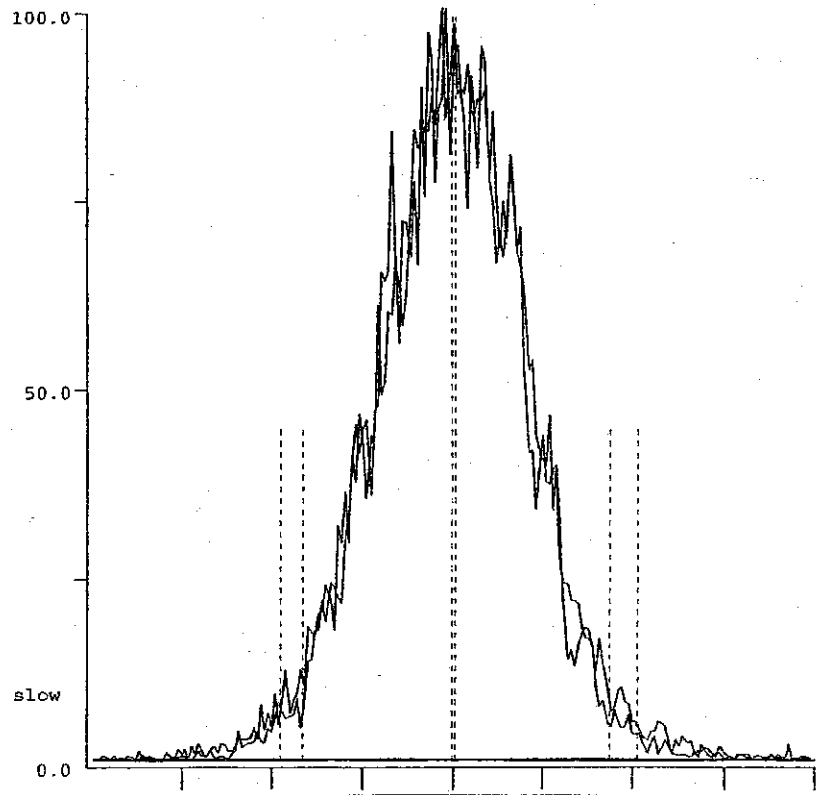
304.952 304.982 305.01

<< >> << >> ^ V C V LOCK UNLK

TUNE: _

Peak Register Display

Copy result to ULIST



REG 1/2: 380.976339 REG 1/3: REG 2/3:

MASS	:	304.98234	380.97622
REF MASS	:	304.98243	380.97605
PEAK WIDTH [ppm]:		84.95543	99.00691

Active Register: 2 0.05 1.00

N REG RCOPY1 RCOPY3 LIMIT CENTER SPREAD ERASE RESUME PAGE

PEAK:

Tue Nov 5 21:54:35 2002 mat95 MAT 95

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-10.4 V SCAN AUTOTUNE TUNE R = 10 875 317 989 uV

p 3.98 A -16.4 V

1.00 mA 58.6 V 270 C 271 C

2675 1271 2585 2528

2675 1323 2437 2390

0.90 mA -16.4 V

EI POS electric

U(a) 4764 V U(esa) 763.8 V

Entr. Slit	(ENS)	188.0	
Exit Slit	(EXS)	135.0	
Sweep Mass	(MASS)	304.982	amu
Virt. Mass	(VMASS)	304.982	amu
Link Mass	(LMASS)	304.982	amu
Sweep Width	(SW)	0.020	%
Sweep Speed	(SS)	3.0	/s
U(a) Offset	(UOFS)	5.0	V
U(a)/U(esa)	(URATIO)	2.282	%
Multiplier	(EMULT)	1.80	kV
Dyn. Volt.	(DYNODE)	pos	
Ref. Inlet	(TREF)	150	C
Beam Rot.	(BQUAD)	0.0	V
Focus Quad	(FQUAD)	0.0	V

VG off VS1 off VS2 off VS3 off VV off

TUNE DESCRIPTOR tune2 SAVE

TUNE:

304.952 304.982 305.01

<> >< << >> ^ v C V LOCK UNLK

Diagnostic Display

Copy result to ULIST

100.0 50.0 slow 0.0

R	pm	304.98234
E	rm	304.98243
G	fm	304.95194
I	lm	305.01290
S	pc	7969178.57
T	pl	7969507.05
E	pr	7968830.02
R	bl	0.00
1	v	358165.00

R	pm	380.97622
E	rm	380.97605
G	fm	380.93794
I	lm	381.01414
S	pc	6379554.90
T	pl	6379861.05
E	pr	6379229.43
R	bl	492.13
2	v	367828.00

RATIO	REG 1/2	REG 1/3	REG 2/3
PEAK CENTER	1.2491747		
PC+DELTA	1.2491747		
PC+DELTA/RM	1.0000008		
REF MASS	1.2491737		

Active Register: 2 0.05 1.00

N REG RCOPY1 RCOPY2 RCOPY3 LIMIT CENTER SPREAD ERASE RESUME

PEAK: _

Tue Nov 5 21:54:41 2002 mat95 MAT 95

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USEPA Method 1613/8290
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDF
By High-Resolution Gas Chromatography/High-Resolution Mass Spectroscopy (HRGC/I

PCDD/PCDF Daily Calibration Verification

Laboratory ID: Quanterra Knoxville
Init. Calibration Date: 17-Jul-02

Instrument ID: MAT-95
GC Column ID: RTX-5

CS3 Data Filename: t021105s2
Analysis Date: 05-Nov-02
Analysis Time: 20:45

Analytes	m/z Mass 1	m/z Mass 2	Area Mass 1	Area Mass 2	RT	RRT	Ratio	Ratio Limits	Std Conc	8290 ICAL RF	8290 Calc RF	8290 Conc. (ng/mL)
13C-1,2,3,4-TCDD	331.9368	333.9339	324633	422449	33:45	1.000	0.77	0.65-0.89	100.0	1.000	1.000	100.0
13C-2,3,7,8-TCDD	331.9368	333.9339	342849	457351	34:19	1.017	0.75	0.65-0.89	100.0	1.108	1.071	96.7
37Cl-2,3,7,8-TCDD	327.8847		79727		34:22	1.018		NA	10.0	1.167	1.067	9.1
2,3,7,8-TCDD	319.8965	321.8936	39082	51457	34:21	1.001	0.76	0.65-0.89	10.0	1.071	1.131	10.6
13C-2,3,7,8-TCDF	315.9419	317.9389	530717	671860	32:07	0.952	0.79	0.65-0.89	100.0	1.658	1.610	97.1
2,3,7,8-TCDF	303.9016	305.8987	51722	67057	32:12	1.003	0.77	0.65-0.89	10.0	1.033	0.988	9.6
13C-1,2,3,7,8-PeCDD	367.8949	369.8919	453145	288828	42:35	1.262	1.57	1.32-1.78	100.0	1.051	0.993	94.5
3,7,8-PeCDD	355.8546	357.8516	219402	138898	42:36	1.000	1.58	1.32-1.78	50.0	1.051	0.966	45.9
13C-1,2,3,7,8-PeCDF	351.9000	353.8970	687862	436146	40:57	1.213	1.58	1.32-1.78	100.0	1.545	1.505	97.4
13C-2,3,4,7,8-PeCDF	351.9000	353.8970	665137	428162	42:05	1.247	1.55	1.32-1.78	100.0	--	--	--
1,2,3,7,8-PeCDF	339.8597	341.8567	341933	220236	40:58	1.000	1.55	1.32-1.78	50.0	1.006	1.000	49.7
2,3,4,7,8-PeCDF	339.8597	341.8567	339763	217109	42:06	1.000	1.56	1.32-1.78	50.0	1.048	0.991	47.3
13C-1,2,3,4,7,8-HxCDD	401.8559	403.8529	411342	338840	46:45	0.988	1.21	1.05-1.43	100.0	--	--	--
13C-1,2,3,6,7,8-HxCDD	401.8559	403.8529	492050	406454	46:54	0.992	1.21	1.05-1.43	100.0	1.087	1.166	107.3
13C-1,2,3,7,8,9-HxCDD	401.8559	403.8529	420367	350065	47:18	1.000	1.20	1.05-1.43	100.0	1.000	1.000	100.0
1,2,3,4,7,8-HxCDD	389.8157	391.8127	233530	180431	46:46	1.000	1.29	1.05-1.43	50.0	1.012	0.921	45.5
1,2,3,6,7,8-HxCDD	389.8157	391.8127	256428	200469	46:55	1.000	1.28	1.05-1.43	50.0	1.074	1.017	47.3
1,2,3,7,8,9-HxCDD	389.8157	391.8127	240898	190824	47:19	1.009	1.26	1.05-1.43	50.0	1.082	0.961	44.4
13C-1,2,3,4,7,8-HxCDF	383.8639	385.8610	329917	632719	45:42	0.966	0.52	0.43-0.59	100.0	1.383	1.249	90.3
13C-1,2,3,6,7,8-HxCDF	383.8639	385.8610	384409	727157	45:50	0.969	0.53	0.43-0.59	100.0	--	--	--
13C-2,3,4,6,7,8-HxCDF	383.8639	385.8610	387849	734431	46:35	0.985	0.53	0.43-0.59	100.0	--	--	--
13C-1,2,3,7,8,9-HxCDF	383.8639	385.8610	310230	590395	47:34	1.006	0.53	0.43-0.59	100.0	--	--	--
1,2,3,4,7,8-HxCDF	373.8208	375.8178	341469	261136	45:43	1.000	1.31	1.05-1.43	50.0	1.245	1.252	50.3
1,2,3,6,7,8-HxCDF	373.8208	375.8178	380686	286521	45:50	1.000	1.33	1.05-1.43	50.0	1.327	1.386	52.2
2,3,4,6,7,8-HxCDF	373.8208	375.8178	362078	285101	46:36	1.000	1.27	1.05-1.43	50.0	1.192	1.345	56.4
1,2,3,7,8,9-HxCDF	373.8208	375.8178	279553	213047	47:35	1.000	1.31	1.05-1.43	50.0	1.102	1.023	46.4
13C-1,2,3,4,6,7,8-HpCDI	435.8169	437.8140	346436	321622	51:49	1.095	1.08	0.88-1.20	100.0	1.022	0.867	84.8
1,2,3,4,6,7,8-HpCDD	423.7766	425.7737	169538	160272	51:51	1.001	1.06	0.88-1.20	50.0	1.037	0.987	47.6
13C-1,2,3,4,6,7,8-HpCDF	417.8253	419.8220	230736	498301	50:05	1.059	0.46	0.37-0.51	100.0	1.129	0.946	83.8
13C-1,2,3,4,7,8,9-HpCDF	417.8253	419.8220	187321	394759	52:26	1.109	0.47	0.37-0.51	100.0	--	--	--
1,2,3,4,6,7,8-HpCDF	407.7818	409.7789	301347	283723	50:06	1.000	1.06	0.88-1.20	50.0	1.612	1.605	49.8
1,2,3,4,7,8,9-HpCDF	407.7818	409.7789	219667	216094	52:28	1.001	1.02	0.88-1.20	50.0	1.229	1.195	48.6
--OCDD	469.7779	471.7750	638026	720271	55:59	1.184	0.89	0.76-1.02	200.0	0.911	0.882	193.5
DD	457.7377	459.7348	320868	370434	56:00	1.000	0.87	0.76-1.02	100.0	1.086	1.018	93.7
OCDF	441.7428	443.7399	376686	420954	56:07	1.002	0.89	0.76-1.02	100.0	1.276	1.174	92.0

VER Quan Data

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USEPA Method 1613B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs)
By High-Resolution Gas Chromatography/High-Resolution Mass Spectroscopy (HRGC/HRMS)

PCDD/PCDF Daily Calibration Verification

Laboratory ID: Quanterra Knoxville
Init. Calibration Date: 17-Jul-02
Instrument ID: MAT-95
GC Column ID: RTX-5

VER Data Filename: t021105s2
Analysis Date: 05-Nov-02
Analysis Time: 20:45

Analytes	m/z's Forming Ratio	Ion Abund. Ratio	QC Limits	Conc. Found	ICAL RF	VER RF	%D	QC LIMIT	Flag
13C-2,3,7,8-TCDD	M/M+2	0.75	0.65-0.89	96.7	1.108	1.071	3.3%	30%	TRUE
37Cl-2,3,7,8-TCDD	M/M+2		NA	9.1	1.167	1.067	8.6%	30%	TRUE
2,3,7,8-TCDD	M/M+2	0.76	0.65-0.89	10.6	1.071	1.131	-5.6%	20%	TRUE
13C-2,3,7,8-TCDF	M/M+2	0.79	0.65-0.89	97.1	1.658	1.610	2.9%	30%	TRUE
2,3,7,8-TCDF	M/M+2	0.77	0.65-0.89	9.6	1.033	0.988	4.4%	20%	TRUE
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.57	1.32-1.78	94.5	1.051	0.993	5.5%	30%	TRUE
1,2,3,7,8-PeCDD	M+2/M+4	1.58	1.32-1.78	45.9	1.051	0.966	8.1%	20%	TRUE
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.32-1.78	97.4	1.545	1.505	2.6%	30%	TRUE
1,2,3,7,8-PeCDF	M+2/M+4	1.55	1.32-1.78	49.7	1.006	1.000	0.6%	20%	TRUE
2,3,4,7,8-PeCDF	M+2/M+4	1.56	1.32-1.78	47.3	1.048	0.991	5.5%	20%	TRUE
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.21	1.05-1.43	107.3	1.087	1.166	-7.3%	30%	TRUE
1,2,3,4,7,8-HxCDD	M+2/M+4	1.29	1.05-1.43	45.5	1.012	0.921	8.9%	20%	TRUE
1,2,3,6,7,8-HxCDD	M+2/M+4	1.28	1.05-1.43	47.3	1.074	1.017	5.3%	20%	TRUE
1,2,3,7,8,9-HxCDD	M+2/M+4	1.26	1.05-1.43	44.4	1.082	0.961	11.2%	20%	TRUE
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.52	0.43-0.59	90.3	1.383	1.249	9.7%	30%	TRUE
1,2,3,4,7,8-HxCDF	M+2/M+4	1.31	1.05-1.43	50.3	1.245	1.252	-0.6%	20%	TRUE
1,2,3,6,7,8-HxCDF	M+2/M+4	1.33	1.05-1.43	52.2	1.327	1.386	-4.5%	20%	TRUE
2,3,4,6,7,8-HxCDF	M+2/M+4	1.27	1.05-1.43	56.4	1.192	1.345	-12.8%	20%	TRUE
1,2,3,7,8,9-HxCDF	M+2/M+4	1.31	1.05-1.43	46.4	1.102	1.023	7.1%	20%	TRUE
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.08	0.88-1.20	84.8	1.022	0.867	15.2%	30%	TRUE
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.06	0.88-1.20	47.6	1.037	0.987	4.8%	20%	TRUE
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.46	0.37-0.51	83.8	1.129	0.946	16.2%	30%	TRUE
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.06	0.88-1.20	49.8	1.612	1.605	0.4%	20%	TRUE
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.02	0.88-1.20	48.6	1.229	1.195	2.7%	20%	TRUE
13C--OCDD	M+2/M+4	0.89	0.76-1.02	193.5	0.911	0.882	3.2%	30%	TRUE
OCDD	M+2/M+4	0.87	0.76-1.02	93.7	1.086	1.018	6.3%	20%	TRUE
OCDF	M+2/M+4	0.89	0.76-1.02	92.0	1.276	1.174	8.0%	20%	TRUE

(1) SW-846 Method 8290, Revision 0 September 1994, Section 7.7.4, Page 29

PMP 11-5-02
NTM 11-06-02

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IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290

SEVERN TRENT SERVICES

CCAL ID: 1,128 - X021105S2

CCAL Filename: t021105s2

CCAL Sample ID: 2427:85

CCAL Result Dir: /20021105s2/x021105s2.d

CCAL Date/Time: 11/05/02 20:45

ICAL Date: 07/17/02

Method: IN - DX8290

Instrument: M1A

Column SN: 472963

Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Analytes	ICAL RT	CCAL RT	RT Diff	ICAL RRT	CCAL RRT	RRT QC Limit	Valid?
2,3,7,8-TCDD	27:59	34:21	382	1.001	1.001	-	
2,3,7,8-TCDF	26:18	32:12	354	1.001	1.003	-	
1,2,3,7,8-PeCDD	39:43	42:36	173	1.001	1.000	-	
1,2,3,7,8-PeCDF	37:25	40:58	213	1.001	1.000	-	
2,3,4,7,8-PeCDF	39:03	42:06	183	1.044	1.028	-	
1,2,3,4,7,8-HxCDD	44:24	46:46	142	0.998	0.997	-	
1,2,3,6,7,8-HxCDD	44:31	46:55	144	1.000	1.000	-	
1,2,3,7,8,9-HxCDD	44:52	47:19	147	1.008	1.009	-	
1,2,3,4,7,8-HxCDF	43:23	45:43	140	1.000	1.000	-	
1,2,3,6,7,8-HxCDF	43:31	45:50	139	1.004	1.003	-	
2,3,4,6,7,8-HxCDF	44:15	46:36	141	1.020	1.020	-	
1,2,3,7,8,9-HxCDF	45:05	47:35	150	1.040	1.041	-	
1,2,3,4,6,7,8-HpCDD	48:42	51:51	189	1.000	1.001	-	
1,2,3,4,6,7,8-HpCDF	47:13	50:06	173	1.000	1.000	-	
1,2,3,4,7,8,9-HpCDF	49:16	52:27	191	1.044	1.047	-	
OCDD	53:21	56:00	159	1.000	1.000	-	
OCDF	53:29	56:07	158	1.003	1.002	-	
13C-2,3,7,8-TCDD	27:57	34:19	382	1.016	1.017	-	
13C-2,3,7,8-TCDF	26:17	32:07	350	0.956	0.952	-	
13C-1,2,3,7,8-PeCDD	39:42	42:35	173	1.443	1.262	-	
13C-1,2,3,7,8-PeCDF	37:23	40:57	214	1.360	1.213	-	
13C-1,2,3,6,7,8-HxCDD	44:30	46:54	144	0.992	0.992	-	
13C-1,2,3,4,7,8-HxCDF	43:22	45:42	140	0.967	0.966	-	
13C-1,2,3,4,6,7,8-HpCDD	48:41	51:49	188	1.086	1.095	-	
13C-1,2,3,4,6,7,8-HpCDF	47:12	50:05	173	1.053	1.059	-	
13C-OCDD	53:20	55:59	159	1.189	1.184	-	

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IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290

SEVERN TRENT SERVICES

CCAL ID: 1,128 - X021105S2

WIN Filename: t021105s2

Method: IN - DX8290

WIN Sample ID: 2427:85

Instrument: M1A

WIN Result Dir: /20021105s2/x021105s2.d

Column SN: 472963

WIN Date/Time: 11/05/02 20:45

Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Window Defining First/Last Eluter Retention Times

Analyte	Reference	M/Z	Ref RT	First Eluter RT	First Eluter RRT	Last Eluter RT	Last Eluter RRT
Total TCDD	13C-2,3,7,8-TCDD	320	34:19	27:56	0.8140	37:02	1.0792
Total TCDF	13C-2,3,7,8-TCDF	304	32:07	25:15	0.7862	36:55	1.1495
Total PeCDD	13C-1,2,3,7,8-PeCDD	356	42:35	39:57	0.9382	43:13	1.0149
Total PeCDF	13C-1,2,3,7,8-PeCDF	340	40:57	37:32	0.9166	43:19	1.0578
Total HxCDD	13C-1,2,3,6,7,8-HxCDD	390	46:54	45:09	0.9627	47:19	1.0089
Total HxCDF	13C-1,2,3,4,7,8-HxCDF	374	45:42	44:29	0.9734	47:43	1.0441
Total HpCDD	13C-1,2,3,4,6,7,8-HpCDD	424	51:49	50:39	0.9775	51:51	1.0006
Total HpCDF	13C-1,2,3,4,6,7,8-HpCDF	408	50:05	50:06	1.0003	52:27	1.0473
OCDD	13C-OCDD	458	55:59	56:00	1.0003	56:00	1.0003
OCDF	13C-OCDD	442	55:59	56:07	1.0024	56:07	1.0024

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ENVIRONMENTAL STANDARDS INC.

Client Sample ID: NYPA-UNR-SED01

Trace Level Organic Compounds

Lot-Sample #...: A2J040301-001 Work Order #...: E9FQJ2AA Matrix.....: SO
Date Sampled...: 10/01/02 11:50 Date Received..: 10/02/02
Prep Date.....: 11/12/02 Analysis Date..: 11/19/02
Prep Batch #...: 2316125
Dilution Factor: 1
% Moisture.....: 17

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
2,3,7,8-TCDD	65 Q	27	pg/g	SW846 8290

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	78	(40 - 135)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Q Estimated maximum possible concentration (EMPC).

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IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290

SEVERN TRENT SERVICES

Workorder	E9FQJ2AA	Prep Batch	2316125	Lot No	A2J040301-001
Data File	/20021119s2/te9fqj2.d	Prep Date	11/12/02	SDG No	
IDB ID	65961	Prep Exp Date	10/31/02	Date Received	10/02/02
Analysis Date	11/19/02 14:10	Matrix	SOLID	Date Sampled	10/01/02
Anal Exp Date	12/27/02	Initial Wt/Vol	1.0 g	Lims Test Code	XXA11IN01
Instrument	M2A	Extract Vol	20 uL	Method	DX8290
Analyst	JMN	Diluton Factor	1.00	Code	IN

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
304											
	Noise	00:00	00:00	0	485	578	194	231	0.84	/	
	Unidentified	32:32	00:00	0	230133	578391	20885	26208	0.40 *	AVV/AVV	R
					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
316											
	Noise	00:00	00:00	0	945	1230	378	492	0.77	/	
	13C-2,3,7,8-TCDF	32:45	32:44	1	2038583	2229807	131762	142771	0.91 *	AVV/AVV	R
					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
320											
	Noise	00:00	00:00	0	305	1533	122	613	0.20 *	/	
	Unidentified	32:59	00:00	0	6467	35248248	1387	2365990	0.00 *	ABB/AVV	RT
	Unidentified	34:17	00:00	0	9274	135487	1141	13894	0.07 *	AVV/AVB	RT
	2,3,7,8-TCDD	34:39	34:32	7	18025	24917	1872	2535	0.72	AVB/ABB	TM
	Unidentified	35:19	00:00	0	14434	1417299	1936	151145	0.01 *	AVB/ABB	RT
					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
332											
	Noise	00:00	00:00	0	450	403	180	161	1.12 *	/	
	13C-1,2,3,4-TCDD	34:02	34:05	-3	743400	913562	67353	82876	0.81	AVV/AVV	
	13C-2,3,7,8-TCDD	34:33	34:30	3	331310	411338	35231	40077	0.81	AVV/AVV	
					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
340											
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
352											
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
356											
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
368											
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
374											
	Noise	00:00	00:00	0.	0	0	0	0	0.00 *		
					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
384											
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
390											
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
402											
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
408											
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
418											
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
424											
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
436											
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
442											
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		

Notes:
R = ratio is oustide limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

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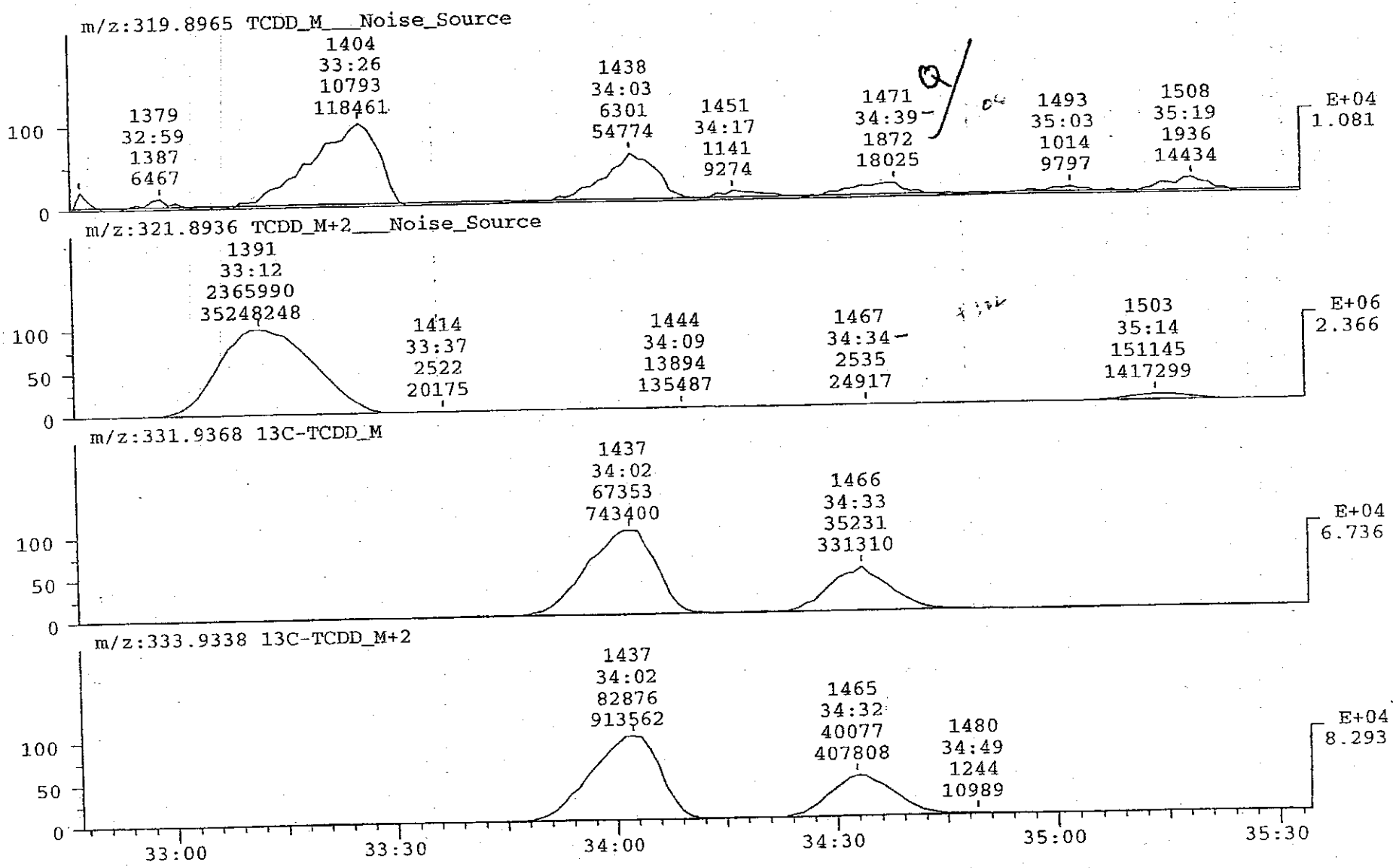
-001

CHRO: te9fqj2 19-Nov-02 Elapse: 34:28 1461
Samp: Vial 37 WO=e9fqj2aa Meth=IN Dil=1 Start : 14:10:13 1949
Comm: Inst=m2a/334061 Batch=20021119s2 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM Study : 2316125 (1.0g)
Oper: JMN Client: A2J040301-001 Inlet : GC Vial 37
Peak: 100.00 ppm Label wndw: 1368 > 1521 Masses: 293 > 410
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



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ENVIRONMENTAL STANDARDS INC.

Client Sample ID: NYPA-UNR-SED02

Trace Level Organic Compounds

Lot-Sample #...: A2J040301-002 **Work Order #...:** E9FQM1AA **Matrix.....:** SO
Date Sampled...: 10/01/02 13:15 **Date Received..:** 10/02/02
Prep Date.....: 10/08/02 **Analysis Date..:** 11/07/02
Prep Batch #...: 2281130
Dilution Factor: 1
% Moisture.....: 31

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
2,3,7,8-TCDD	ND	0.15	pg/g	SW846 8290

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	83	(40 - 135)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

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IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290

SEVERN TRENT SERVICES

Workorder	E9FQM1AA	Prep Batch	2281130	Lot No	A2J040301-002
Data File	/20021106s4/te9fqm.d	Prep Date	10/08/02	SDG No	
IDB ID	65726	Prep Exp Date	10/31/02	Date Received	10/02/02
Analysis Date	11/07/02 04:21	Matrix	SOLID	Date Sampled	10/01/02
Anal Exp Date	11/22/02	Initial Wt/Vol	10.0 g	Lims Test Code	XXA11IN01
Instrument	M2A	Extract Vol	20 uL	Method	DX8290
Analyst	PMP	Diluton Factor	1.00	Code	IN

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	125	135	50	54	0.93 *	/	
	2,3,7,8-TCDF	32:56	32:54	2	1879	1906	282	291	0.99 *	AVV/AVV	RD
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	250	203	100	81	1.23 *	/	
	13C-2,3,7,8-TCDF	32:51	32:50	1	1193920	1508282	123399	156556	0.79	ABV/AVV	D
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	100	138	40	55	0.73	/	
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	518	378	207	151	1.37 *	/	
	13C-1,2,3,4-TCDD	34:27	34:30	-3	1824764	2267754	180243	222650	0.80	ABV/ABV	
	13C-2,3,7,8-TCDD	35:03	35:01	2	867236	1100534	94529	116637	0.79	AVV/AVV	
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

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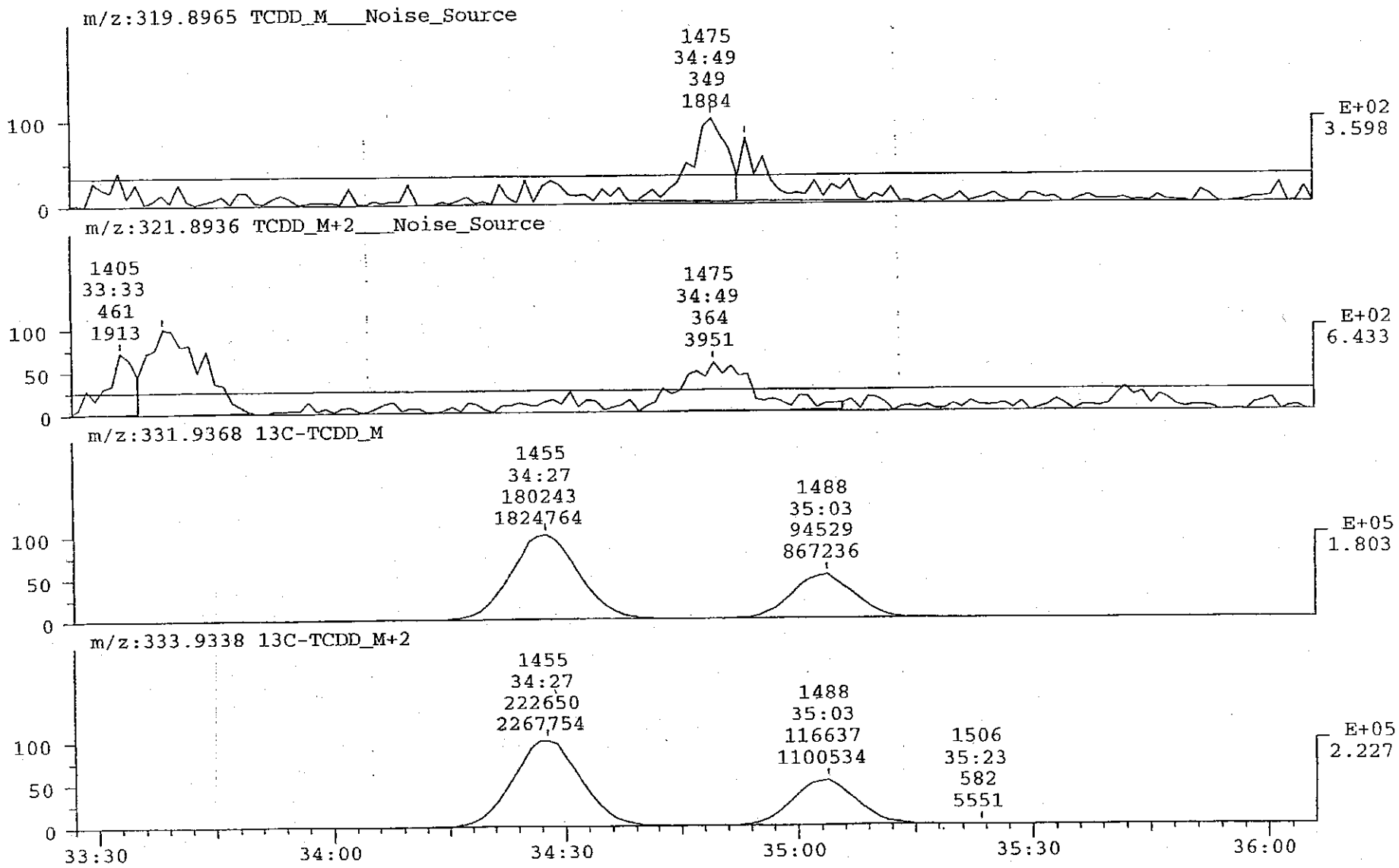
STL North Canton

CHRO: te9fqm 07-Nov-02 Elapse: 35:03 1488
Samp: Vial 40 WO=e9fqm1aa Meth=IN Dil=1 Start : 04:21:25 1943
Comm: Inst=m2a/334061 Batch=20021106s4 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM Study : 2281130 (10.0g)
Oper: PMP Client: A2J040301-002 Inlet : GC Vial 40
Peak: 100.00 ppm Label wndw: 1399 > 1545 Masses: 293 > 410
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



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ENVIRONMENTAL STANDARDS INC.

Client Sample ID: NYPA-LNR-SED03

Trace Level Organic Compounds

Lot-Sample #...: A2J040301-003 **Work Order #...:** E9FQN1AA **Matrix.....:** SO
Date Sampled...: 10/01/02 18:15 **Date Received..:** 10/03/02
Prep Date.....: 10/08/02 **Analysis Date..:** 11/06/02
Prep Batch #...: 2281130
Dilution Factor: 1
% Moisture.....: 17

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
2,3,7,8-TCDD	**7.9**	**0.15**	**pg/g**	**SW846 8290**

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	84	(40 - 135)
13C-1,2,3,7,8-PeCDD	73	(40 - 135)
13C-1,2,3,6,7,8-HxCDD	66	(40 - 135)
13C-1,2,3,4,6,7,8-HpCDD	70	(40 - 135)
13C-OCDD	54	(40 - 135)
13C-2,3,7,8-TCDF	85	(40 - 135)
13C-1,2,3,7,8-PeCDF	69	(40 - 135)
13C-1,2,3,4,7,8-HxCDF	71	(40 - 135)
13C-1,2,3,4,6,7,8-HpCDF	63	(40 - 135)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

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STL - Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290

SEVERN TRENT SERVICES

Workorder	E9FQN1AA	**Prep Batch**	2281130	**Lot No**	A2J040301-003
Data File	/20021106s1/te9fqn.d	**Prep Date**	10/08/02	**SDG No**	
IDB ID	65709	**Prep Exp Date**	10/31/02	**Date Received**	10/02/02
Analysis Date	11/06/02 07:09	**Matrix**	SOLID	**Date Sampled**	10/01/02
Anal Exp Date	11/22/02	**Initial Wt/Vol**	10.0 g	**Lims Test Code**	XXA11IN01
Instrument	M2A	**Extract Vol**	20 uL	**Method**	DX8290
Analyst	PMP	**Diluton Factor**	1.00	**Code**	IN

View Small Peaks? False **View deleted peaks?** False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					**303.9016**	**305.8987**	**303.9016**	**305.8987**	**0.65-0.89**		
	Noise	00:00	00:00	0	148	178	59	71	0.83	/	
	Unidentified	31:46	00:00	0	10028	12586	1335	1526	0.80	ABB/ABB	
	Unidentified	32:13	00:00	0	5100	6872	595	925	0.74	ABV/ABV	
	Unidentified	32:27	00:00	0	6797	8460	716	889	0.80	AVV/AVB	
	2,3,7,8-TCDF	33:06	33:22	-16	38999	51569	2942	3555	0.76	ABV/AVV	M
	Unidentified	36:47	00:00	0	61360	80915	9690	11441	0.76	ABB/ABB	
316					**315.9419**	**317.9389**	**315.9419**	**317.9389**	**0.65-0.89**		
	Noise	00:00	00:00	0	273	233	109	93	1.17 *	/	
	13C-2,3,7,8-TCDF	33:01	33:19	-18	1042391	1310592	105828	133424	0.80	ABV/AVV	DM
320					**319.8965**	**321.8936**	**319.8965**	**321.8936**	**0.65-0.89**		
	Noise	00:00	00:00	0	105	130	42	52	0.81	/	
	Unidentified	35:06	00:00	0	1935	2670	284	458	0.72	ABV/ABV	
	2,3,7,8-TCDD	35:17	35:17	0	47887	65050	5158	7513	0.74	AVV/AVV	
32					**331.9368**	**333.9338**	**331.9368**	**333.9338**	**0.65-0.89**		
	Noise	00:00	00:00	0	193	310	77	124	0.62 *	/	
	13C-1,2,3,4-TCDD	34:43	34:47	-4	1478386	1839636	155604	195572	0.80	AVV/AVV	
	13C-2,3,7,8-TCDD	35:15	35:15	0	709563	896864	79361	99986	0.79	AVV/AVV	
340					**339.8597**	**341.8567**	**339.8597**	**341.8567**	**1.32-1.78**		
	Noise	00:00	00:00	0	170	173	68	69	0.99 *	/	
	Unidentified	40:58	00:00	0	26734	16419	3980	2561	1.63	ABB/ABB	M
	Unidentified	41:18	00:00	0	16665	9674	3830	2405	1.72	ABV/ABV	
	1,2,3,7,8-PeCDF	41:24	40:58	26	11453	8208	2679	1719	1.40	AVV/AVV	M
	Unidentified	41:38	00:00	0	5190	3508	1192	755	1.48	AVV/AVB	
	Unidentified	41:50	00:00	0	96282	60861	25224	16631	1.58	AVV/ABB	
	Unidentified	42:04	00:00	0	10747	6472	2582	1442	1.66	AVB/ABB	M
	2,3,4,7,8-PeCDF	42:29	42:03	26	26136	17908	5627	4006	1.46	ABV/ABV	M
	Unidentified	42:43	00:00	0	15826	9524	2962	1730	1.66	AVB/AVB	
	Unidentified	42:55	00:00	0	3155	2363	997	776	1.34	ABB/ABB	
352					**351.9000**	**353.8970**	**351.9000**	**353.8970**	**1.32-1.78**		
	Noise	00:00	00:00	0	275	288	110	115	0.96 *	/	
	13C-1,2,3,7,8-PeCDF	41:22	40:57	25	1249552	796150	306114	196620	1.57	AVV/AVV	M
	Unidentified	41:38	00:00	0	7854	4752	1523	1207	1.65	AVV/AVV	
	Unidentified	41:49	00:00	0	19727	19113	3555	3595	1.03 *	AVV/AVV	R
	Unidentified	42:04	00:00	0	25028	15591	5701	3639	1.61	AVB/AVB	
	Unidentified	42:28	00:00	0	1336453	841781	358152	228063	1.59	ABV/ABV	
	Unidentified	42:40	00:00	0	17960	18745	4134	3788	0.96 *	AVV/AVV	R
	Unidentified	42:49	00:00	0	6078	7462	1656	2029	0.81 *	AVB/AVB	R
356					**355.8546**	**357.8516**	**355.8546**	**357.8516**	**1.32-1.78**		
	Noise	00:00	00:00	0	163	168	65	67	0.97 *	/	
	Unidentified	40:23	00:00	0	14472	317852	2389	69741	0.05 *	AVB/AVV	RT
	Unidentified	42:33	00:00	0	2079	991	494	255	2.10 *	ABB/ABB	R
	Unidentified	42:54	00:00	0	5554	9972	1723	2543	0.56 *	ABV/ABV	R
	1,2,3,7,8-PeCDD	42:58	42:30	28	3666	2214	1153	619	1.66	AVB/AVB	M

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

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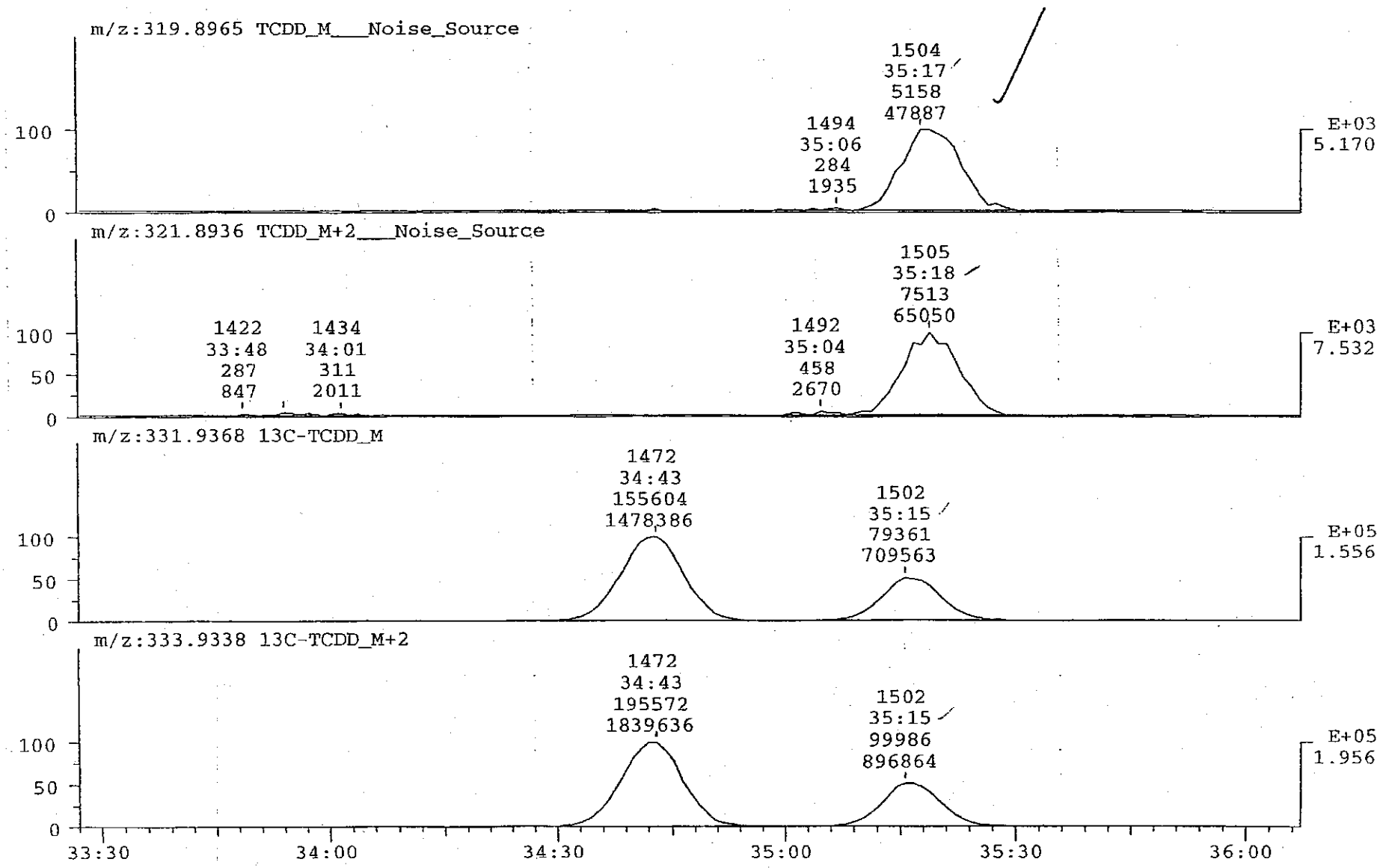
STL North Canton

CHRO: te9fqn 06-Nov-02 Elapse: 34:47 1476
Samp: Vial 41 WO=e9fqn1aa Meth=IN Dil=1 Start : 07:09:39 2780
Comm: Inst=m2a/334061 Batch=20021106s1 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM Study : 2281130 (10.0g)
Oper: PMP Client: A2J040301-003 Inlet : GC Vial 41
Peak: 100.00 ppm Label wndw: 1402 > 1549 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



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ENVIRONMENTAL STANDARDS INC.

Client Sample ID: NYPA-LNR-SED04

Trace Level Organic Compounds

Lot-Sample #...: A2J040301-004 **Work Order #...:** E9FQR1AA **Matrix.....:** SO
Date Sampled...: 10/01/02 18:50 **Date Received..:** 10/03/02
Prep Date.....: 10/08/02 **Analysis Date..:** 11/06/02
Prep Batch #...: 2281130
Dilution Factor: 1
% Moisture.....: 20

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
2,3,7,8-TCDD	ND	0.53	pg/g	SW846 8290

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	78	(40 - 135)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

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IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290

SEVERN TRENT SERVICES

Workorder	E9FQR1AA	Prep Batch	2281130	Lot No	A2J040301-004
Data File	/20021106s3/te9fqr.d	Prep Date	10/08/02	SDG No	
IDB ID	65722	Prep Exp Date	10/31/02	Date Received	10/02/02
Analysis Date	11/06/02 16:02	Matrix	SOLID	Date Sampled	10/01/02
Anal Exp Date	11/22/02	Initial Wt/Vol	10.0 g	Lims Test Code	XXA11IN01
Instrument	M2A	Extract Vol	20 uL	Method	DX8290
Analyst	MAS	Diluton Factor	1.00	Code	IN

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	95	105	38	42	0.90 *	/	
	2,3,7,8-TCDF	32:57	32:55	2	524	474	117	178	1.11 *	AVV/AVB	RDT
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	260	228	104	91	1.14 *	/	
	13C-2,3,7,8-TCDF	32:52	32:51	1	270408	329714	26434	32362	0.82	AVV/AVV	D
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	70	118	28	47	0.60 *	/	
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	275	258	110	103	1.07 *	/	
	13C-1,2,3,4-TCDD	34:28	34:30	-2	397986	485268	38875	47691	0.82	AVV/ABV	
	13C-2,3,7,8-TCDD	35:03	35:01	2	174639	222262	18191	23131	0.79	AVV/AVV	
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		

Notes:
R = ratio is oustide limits M = date changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

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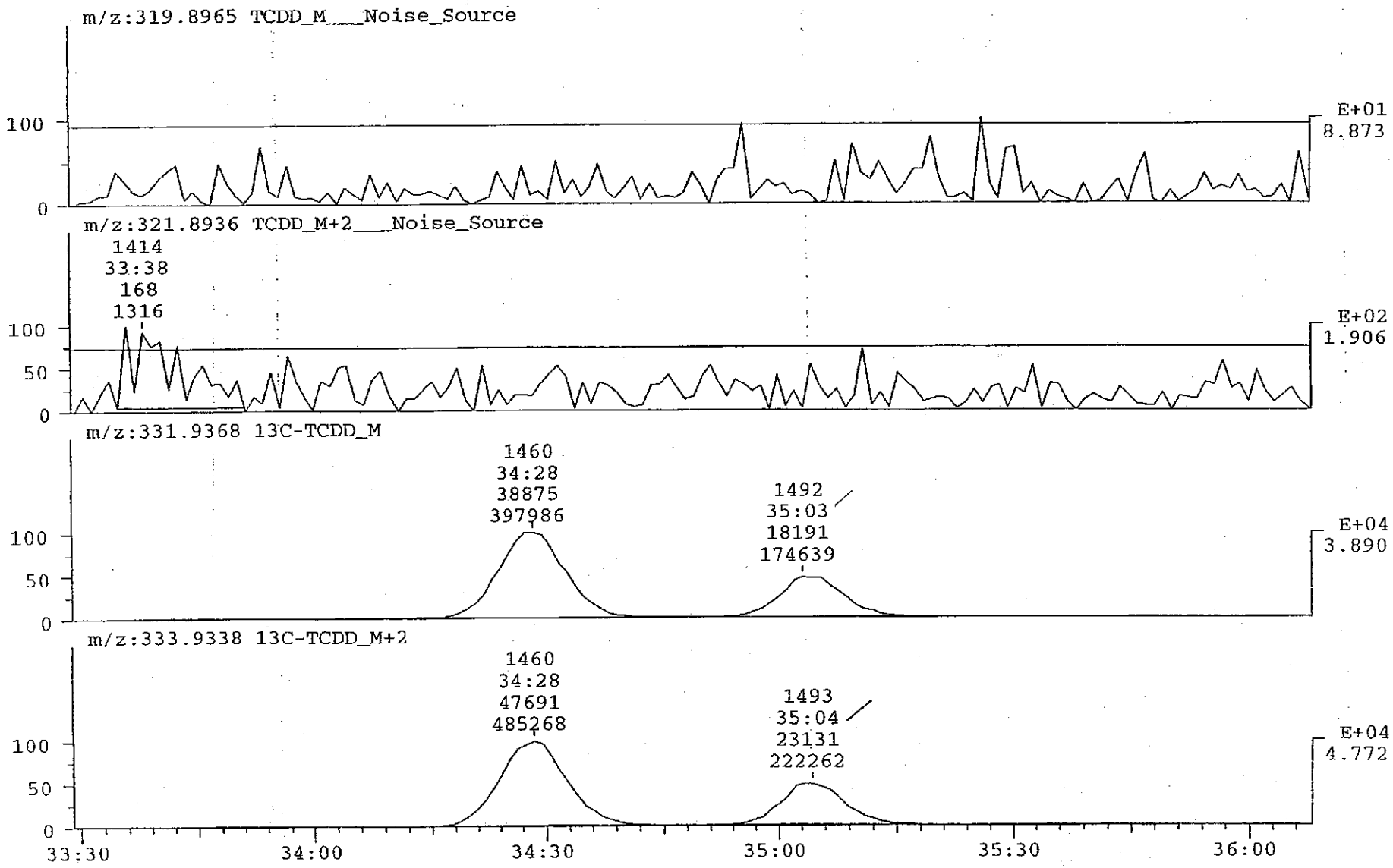
STL North Canton

CHRO: te9fqr 06-Nov-02 Elapse: 35:06 1495
Samp: Vial 44 WO=e9fqr1aa Meth=IN Dil=1 Start : 16:02:41 1948
Comm: Inst=m2a/334061 Batch=20021106s3 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM Study : 2281130 (10.0g)
Oper: MSD Client: A2J040301-004 Inlet : GC Vial 44
Peak: 100.00 ppm Label wndw: 1406 > 1551 Masses: 293 > 410
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



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ENVIRONMENTAL STANDARDS INC.

Client Sample ID: NYPA-RES-SED05

Trace Level Organic Compounds

Lot-Sample #...: A2J040301-005 **Work Order #...:** E9FQT1AA **Matrix.....:** SO
Date Sampled...: 10/02/02 10:40 **Date Received..:** 10/03/02
Prep Date.....: 10/08/02 **Analysis Date..:** 11/06/02
Prep Batch #...: 2281130
Dilution Factor: 1
% Moisture.....: 52

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
2,3,7,8-TCDD	ND	1.9	pg/g	SW846 8290

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	85	(40 - 135)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

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IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290

SEVERN TRENT SERVICES

Workorder	E9FQT1AA	Prep Batch	2281130	Lot No	A2J040301-005
Data File	/20021106s3/te9fqt.d	Prep Date	10/08/02	SDG No	
IDB ID	65723	Prep Exp Date	11/01/02	Date Received	10/02/02
Analysis Date	11/06/02 16:50	Matrix	SOLID	Date Sampled	10/02/02
Anal Exp Date	11/22/02	Initial Wt/Vol	10.0 g	Lims Test Code	XXA11IN01
Instrument	M2A	Extract Vol	20 uL	Method	DX8290
Analyst	MAS	Diluton Factor	1.00	Code	IN

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	133	133	53	53	1.00 *	/	
	Unidentified	33:00	00:00	0	1777	2398	231	337	0.74	AVV/ABV	T
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	243	248	97	99	0.98 *	/	
	13C-2,3,7,8-TCDF	32:54	32:53	1	147887	183020	14692	17169	0.81	ABV/AVV	D
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	93	125	37	50	0.74	/	
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	250	183	100	73	1.37 *	/	
	13C-1,2,3,4-TCDD	34:29	34:32	-3	201538	243017	20162	23684	0.83	ABV/AVV	
	13C-2,3,7,8-TCDD	35:05	35:03	2	97655	118903	9899	12158	0.82	AVV/ABV	
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		

Notes:
R = ratio is oustide limits M - data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

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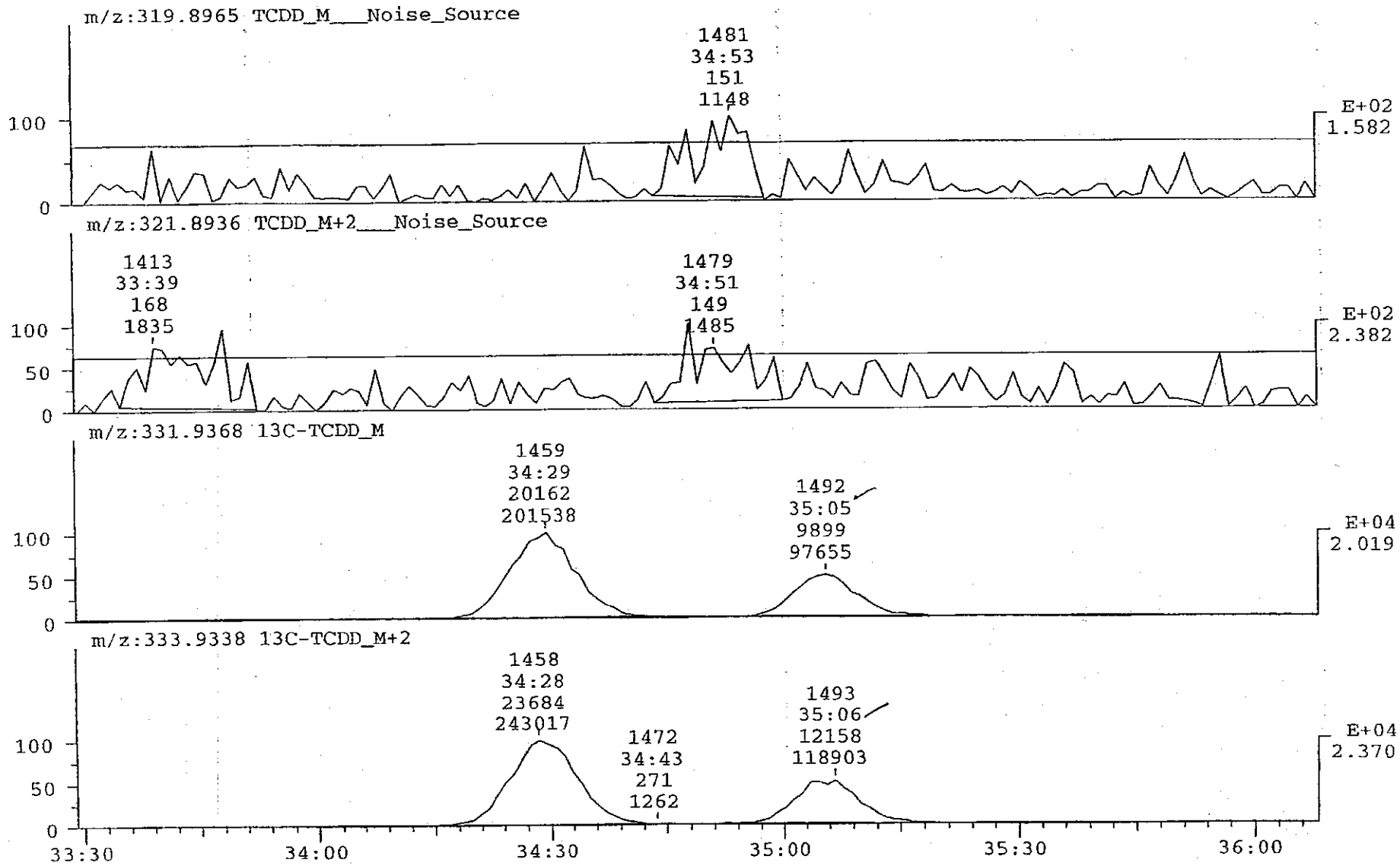
STL North Canton

CHRO: te9fqt 06-Nov-02 Elapse: 35:05 1492
Samp: Vial 45 WO=e9fqt1aa Meth=IN Dil=1 Start : 16:50:18 1945
Comm: Inst=m2a/334061 Batch=20021106s3 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM Study : 2281130 (10.0g)
Oper: MSD Client: A2J040301-005 Inlet : GC Vial 45
Peak: 100.00 ppm Label wndw: 1404 > 1549 Masses: 293 > 410
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



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ENVIRONMENTAL STANDARDS INC.

Client Sample ID: NYPA-RES-SED06

Trace Level Organic Compounds

Lot-Sample #...: A2J040301-006 **Work Order #...:** E9FQ21AA **Matrix.....:** SO
Date Sampled...: 10/02/02 11:15 **Date Received..:** 10/03/02
Prep Date.....: 10/08/02 **Analysis Date..:** 11/06/02
Prep Batch #...: 2281130
Dilution Factor: 1
% Moisture.....: 53

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
2,3,7,8-TCDD	ND	0.24	pg/g	SW846 8290

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	77	(40 - 135)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

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IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290

SEVERN TRENT SERVICES

Workorder	E9FQ21AA	Prep Batch	2281130	Lot No	A2J040301-006
Data File	/20021106s3/te9fq2.d	Prep Date	10/08/02	SDG No	
IDB ID	65713	Prep Exp Date	11/01/02	Date Received	10/02/02
Analysis Date	11/06/02 17:40	Matrix	SOLID	Date Sampled	10/02/02
Anal Exp Date	11/22/02	Initial Wt/Vol	10.0 g	Lims Test Code	XXA11IN01
Instrument	M2A	Extract Vol	20 uL	Method	DX8290
Analyst	MAS	Diluton Factor	1.00	Code	IN

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	133	143	53	57	0.93 *	/	
	Unidentified	32:56	00:00	0	5803	9349	545	1221	0.62 *	ABB/AVV	R
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	220	205	88	82	1.07 *	/	
	13C-2,3,7,8-TCDF	34:21	34:21	0	550165	686827	78347	99201	0.80	ABB/ABB	
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	103	145	41	58	0.71	/	
	Unidentified	36:03	00:00	0	6184	8513	949	1205	0.73	AVB/ABV	
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	180	135	72	54	1.33 *	/	
	13C-1,2,3,4-TCDD	35:44	35:46	-2	1213214	1503863	143714	180180	0.81	AVV/AVV	
	13C-2,3,7,8-TCDD	36:13	36:12	1	533359	674683	88663	116975	0.79	AVV/AVV	
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02		

Notes:
R = ratio is oustide limits N = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from cal W = peak outside first/last X = peak has dup match

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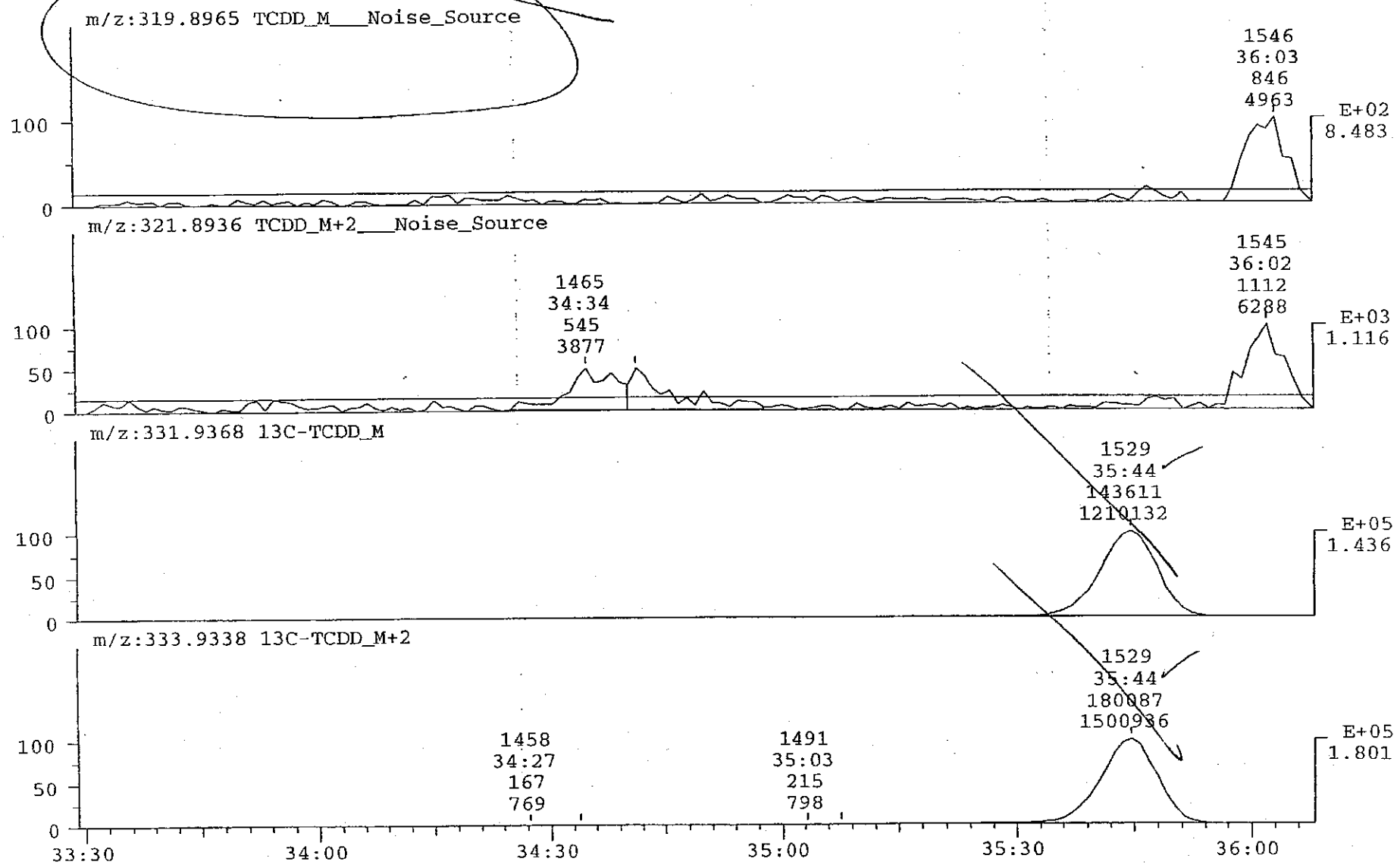
STL North Canton

CHRO: te9fq2 06-Nov-02 Elapse: 35:06 1494
Samp: Vial 46 WO=e9fq21aa Meth=IN Dil=1 Start : 17:40:07 1947
Comm: Inst=m2a/334061 Batch=20021106s3 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM Study : 2281130 (10.0g)
Oper: MSD Client: A2J040301-006 Inlet : GC Vial 46
Peak: 100.00 ppm Label wndw: 1405 > 1550 Masses: 293 > 410
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



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ENVIRONMENTAL STANDARDS INC.

Client Sample ID: NYPA-RES-SED07

Trace Level Organic Compounds

Lot-Sample #...: A2J040301-007 **Work Order #...:** E9FQ31AA **Matrix.....:** SO
Date Sampled...: 10/02/02 11:35 **Date Received..:** 10/03/02
Prep Date.....: 10/08/02 **Analysis Date..:** 11/06/02
Prep Batch #...: 2281130
Dilution Factor: 1
% Moisture.....: 59

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
2,3,7,8-TCDD	ND	1.1	pg/g	SW846 8290

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	75	(40 - 135)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

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STL - Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290

SEVERN TRENT SERVICES

Workorder	E9FQ31AA	Prep Batch	2281130	Lot No	A2J040301-007
Data File	/20021106s3/te9fq3.d	Prep Date	10/06/02	SDG No	
IDB ID	65718	Prep Exp Date	11/01/02	Date Received	10/02/02
Analysis Date	11/06/02 18:27	Matrix	SOLID	Date Sampled	10/02/02
Anal Exp Date	11/22/02	Initial Wt/Vol	10.0 g	Lims Test Code	XXA11IN01
Instrument	M2A	Extract Vol	20 uL	Method	DX8290
Analyst	MAS	Diluton Factor	1.00	Code	IN

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	118	125	47	50	0.94 *	/	
	Unidentified	32:58	00:00	0	1820	2255	270	395	0.81	AVV/ABV	
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	248	223	99	89	1.11 *	/	
	13C-2,3,7,8-TCDF	32:52	32:51	1	307869	380655	32141	39214	0.81	AVV/AVV	D
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	85	138	34	55	0.62 *	/	
	Unidentified	34:52	00:00	0	1609	2076	306	270	0.78	AVV/ABB	
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	255	330	102	132	0.77	/	
	13C-1,2,3,4-TCDD	34:27	34:30	-3	475130	596426	45439	58230	0.80	ABV/AVV	
	13C-2,3,7,8-TCDD	35:03	35:01	2	203389	257365	21510	26356	0.79	AVV/AVV	
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
70					469.7780	471.7750	469.7780	471.7750	0.76-1.02		

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

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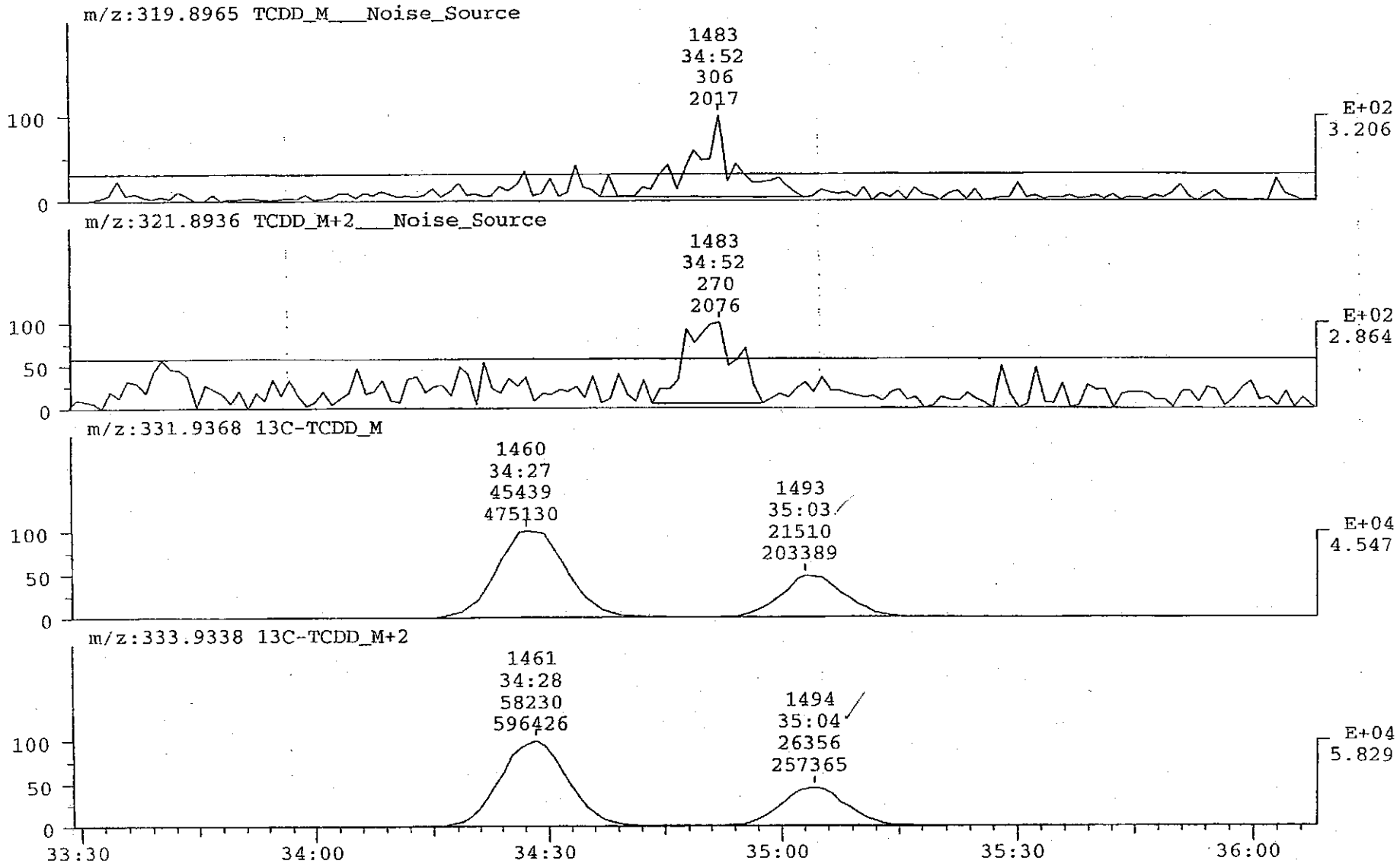
STL North Canton

CHRO: te9fq3 06-Nov-02 Elapse: 35:06 1496
Samp: Vial 47 WO=e9fq31aa Meth=IN Dil=1 Start : 18:27:47 1949
Comm: Inst=m2a/334061 Batch=20021106s3 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM Study : 2281130 (10.0g)
Oper: MSD Client: A2J040301-007 Inlet : GC Vial 47
Peak: 100.00 ppm Label wndw: 1406 > 1553 Masses: 293 > 410
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



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21C

ENVIRONMENTAL STANDARDS INC.

Client Sample ID: NYPA-RES-SED08

Trace Level Organic Compounds

Lot-Sample #...: A2J040301-008 **Work Order #...:** E9FQ41AA **Matrix.....:** SO
Date Sampled...: 10/02/02 12:35 **Date Received..:** 10/03/02
Prep Date.....: 10/08/02 **Analysis Date..:** 11/06/02
Prep Batch #...: 2281130
Dilution Factor: 1
% Moisture.....: 62

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
2,3,7,8-TCDD	ND	1.4	pg/g	SW846 8290

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	73	(40 - 135)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

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IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290

SEVERN TRENT SERVICES

Workorder	E9FQ41AA	Prep Batch	2281130	Lot No	A2J040301-008
Data File	/20021106s3/te9fq4.d	Prep Date	10/08/02	SDG No	
IDB ID	65719	Prep Exp Date	11/01/02	Date Received	10/02/02
Analysis Date	11/06/02 19:15	Matrix	SOLID	Date Sampled	10/02/02
Anal Exp Date	11/22/02	Initial Wt/Vol	10.0 g	Lims Test Code	XXA11IN01
Instrument	M2A	Extract Vol	20 uL	Method	DX8290
Analyst	MAS	Diluton Factor	1.00	Code	IN

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	88	105	35	42	0.83	/	
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	200	198	80	79	1.01 *	/	
	13C-2,3,7,8-TCDF	32:52	32:51	1	239998	301160	23507	30578	0.80	ABV/ABV	D
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	85	120	34	48	0.71	/	
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	233	178	93	71	1.31 *	/	
	13C-1,2,3,4-TCDD	34:27	34:31	-4	377560	459758	38256	46472	0.82	ABV/AVV	
	13C-2,3,7,8-TCDD	35:04	35:01	3	157368	195427	16370	19818	0.81	AVV/AVV	DM
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

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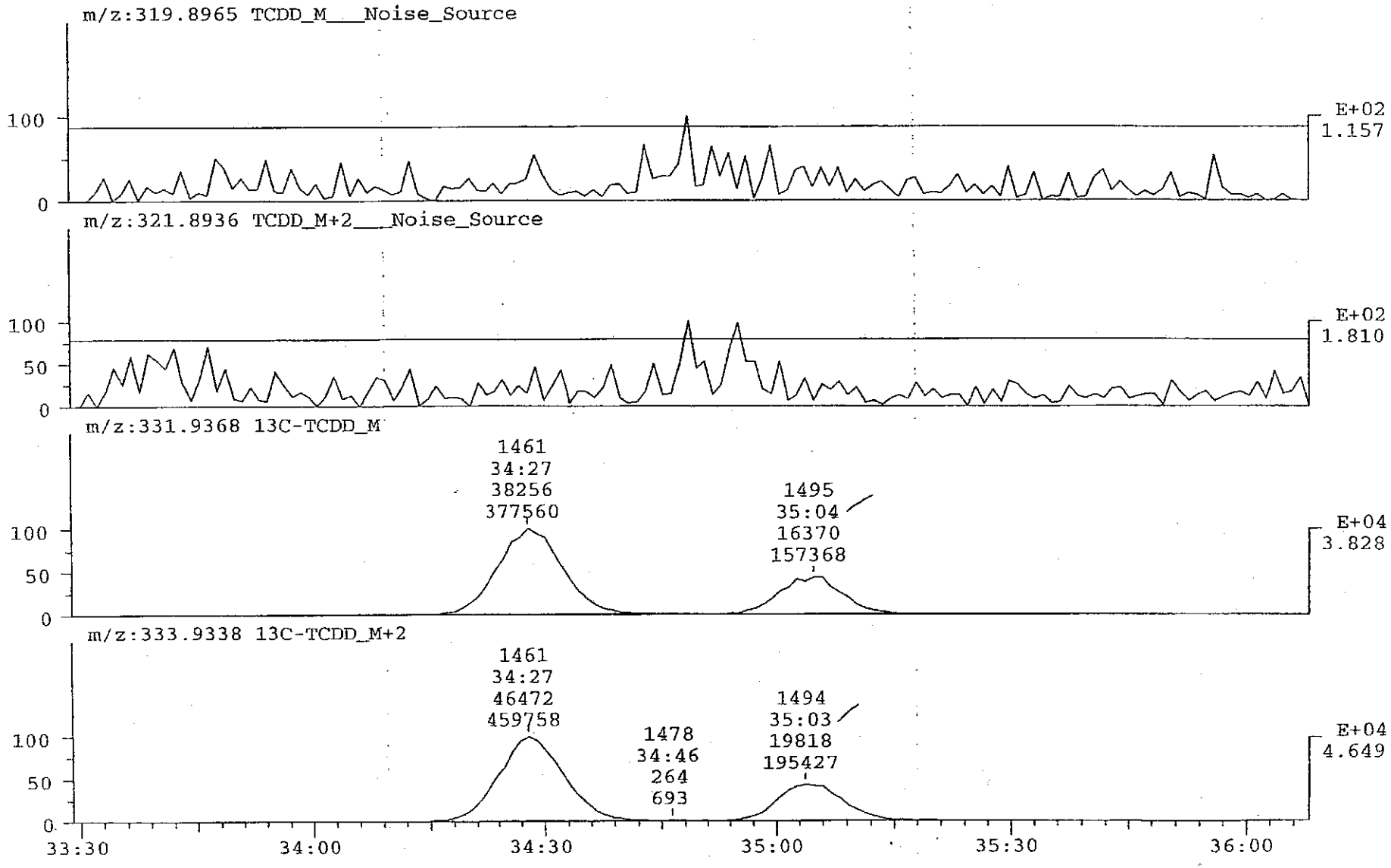
STL North Canton

CHRO: te9fq4 06-Nov-02 Elapse: 35:05 1496
Samp: Vial 48 WO=e9fq41aa Meth=IN Dil=1 Start : 19:15:26 1950
Comm: Inst=m2a/334061 Batch=20021106s3 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM Study : 2281130 (10.0g)
Oper: MSD Client: A2J040301-008 Inlet : GC Vial 48
Peak: 100.00 ppm Label wndw: 1407 > 1553 Masses: 293 > 410
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



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ENVIRONMENTAL STANDARDS INC.

Client Sample ID: NYPA-RES-SED09

Trace Level Organic Compounds

Lot-Sample #...: A2J040301-009 Work Order #...: E9FQ51AA Matrix.....: SO
Date Sampled...: 10/02/02 13:10 Date Received..: 10/03/02
Prep Date.....: 10/08/02 Analysis Date..: 11/06/02
Prep Batch #...: 2281130
Dilution Factor: 1
% Moisture.....: 59

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
2,3,7,8-TCDD	ND	0.53	pg/g	SW846 8290

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	74	(40 - 135)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

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IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290

SEVERN TRENT SERVICES

Workorder	E9FQ51AA	Prep Batch	2281130	Lot No	A2J040301-009
Data File	/20021106s3/te9fq5.d	Prep Date	10/08/02	SDG No	
IDB ID	65720	Prep Exp Date	11/01/02	Date Received	10/02/02
Analysis Date	11/06/02 20:05	Matrix	SOLID	Date Sampled	10/02/02
Anal Exp Date	11/22/02	Initial Wt/Vol	10.0 g	Lims Test Code	XXA11IN01
Instrument	M2A	Extract Vol	20 uL	Method	DX8290
Analyst	MAS	Diluton Factor	1.00	Code	IN

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	133	140	53	56	0.95 *	/	
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	258	205	103	82	1.26 *	/	
	13C-2,3,7,8-TCDF	32:52	32:52	0	639307	779728	65251	80521	0.82	ABV/AVV	D
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	88	140	35	56	0.63 *	/	
	Unidentified	34:49	00:00	0	8392	9712	851	1051	0.86	ABB/ABV	
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	280	345	112	138	0.81	/	
	13C-1,2,3,4-TCDD	34:28	34:30	-2	989491	1226353	98735	120365	0.81	ABV/AVV	
	13C-2,3,7,8-TCDD	35:02	35:00	2	420410	526523	44353	54929	0.80	AVV/AVV	
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal M = peak outside first/last X = peak has dup match

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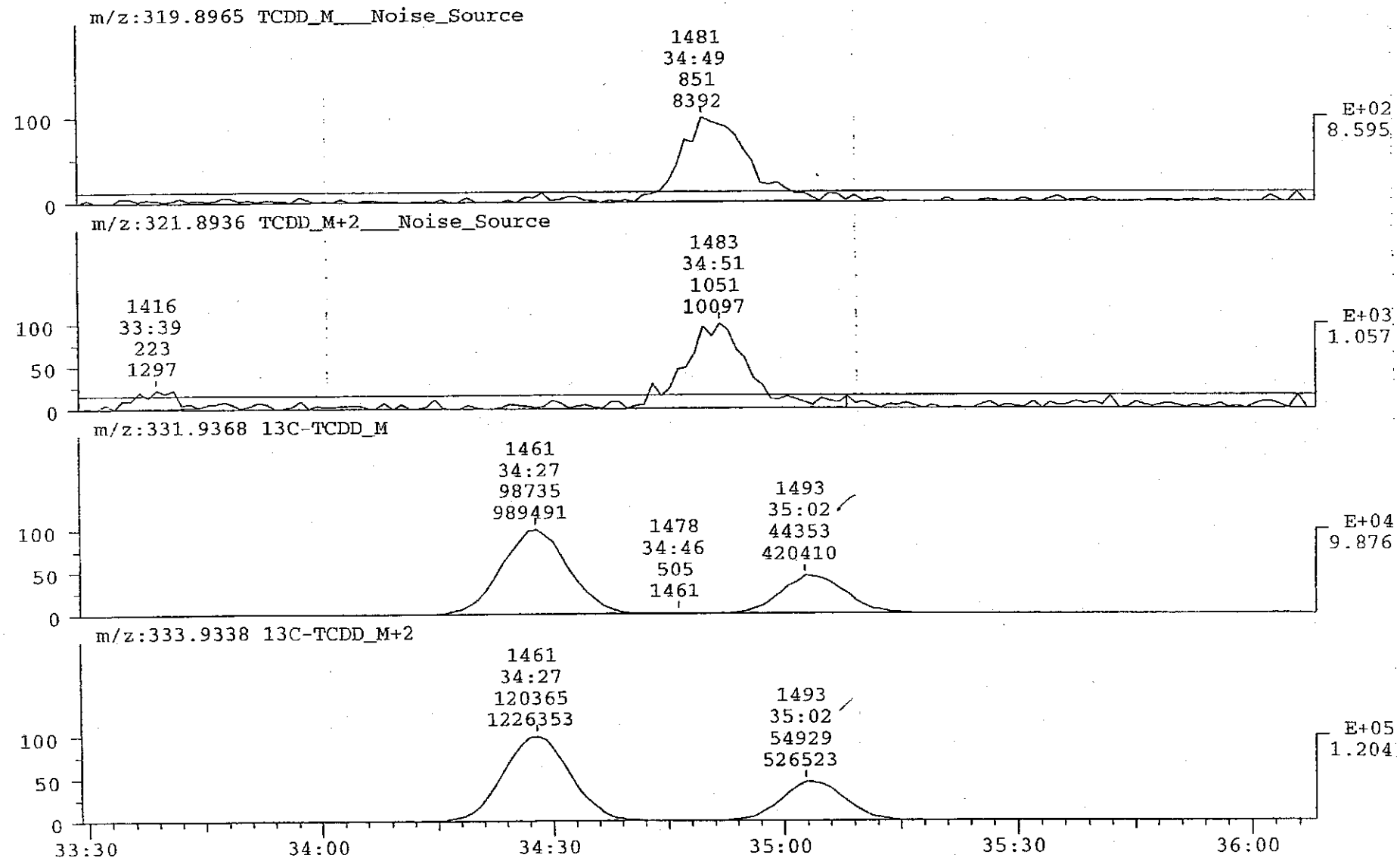
CHRO: te9fq5 06-Nov-02 Elapse: 35:06 1496
Samp: Vial 49 WO=e9fq51aa Meth=IN Dil=1 Start : 20:05:09 1950
Comm: Inst=m2a/334061 Batch=20021106s3 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM Study : 2281130 (10.0g)
Oper: MSD Client: A2J040301-009 Inlet : GC Vial 49
Peak: 100.00 ppm Label wndw: 1407 > 1553 Masses: 293 > 410
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



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ENVIRONMENTAL STANDARDS INC.

Client Sample ID: NYPA-RES-SED12

Trace Level Organic Compounds

Lot-Sample #...: A2J040301-010 **Work Order #...:** E9FQ61AA **Matrix.....:** SO
Date Sampled...: 10/02/02 12:40 **Date Received..:** 10/03/02
Prep Date.....: 10/08/02 **Analysis Date..:** 11/06/02
Prep Batch #...: 2281130
Dilution Factor: 1
% Moisture.....: 61

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
2,3,7,8-TCDD	ND	2.1	pg/g	SW846 8290

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	74	(40 - 135)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

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IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290

SEVERN TRENT SERVICES

Workorder	E9FQ61AA	Prep Batch	2281130	Lot No	A2J040301-010
Data File	/20021106s3/te9fq6.d	Prep Date	10/08/02	SDG No	
IDB ID	65721	Prep Exp Date	11/01/02	Date Received	10/02/02
Analysis Date	11/06/02 20:52	Matrix	SOLID	Date Sampled	10/02/02
Anal Exp Date	11/22/02	Initial Wt/Vol	10.0 g	Lims Test Code	XXA11IN01
Instrument	M2A	Extract Vol	20 uL	Method	DX8290
Analyst	MAS	Diluton Factor	1.00	Code	IN

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	85	105	34	42	0.81	/	
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	225	153	90	61	1.48 *	/	
	13C-2,3,7,8-TCDF	32:53	32:52	1	134358	168762	14166	15999	0.80	AVV/AVV	D
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	70	103	28	41	0.68	/	
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	205	248	82	99	0.83	/	
	13C-1,2,3,4-TCDD	34:29	34:32	-3	203375	248060	19761	23670	0.82	ABV/ABV	
	13C-2,3,7,8-TCDD	35:05	35:03	2	86197	107473	8821	11151	0.80	AVV/AVV	
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

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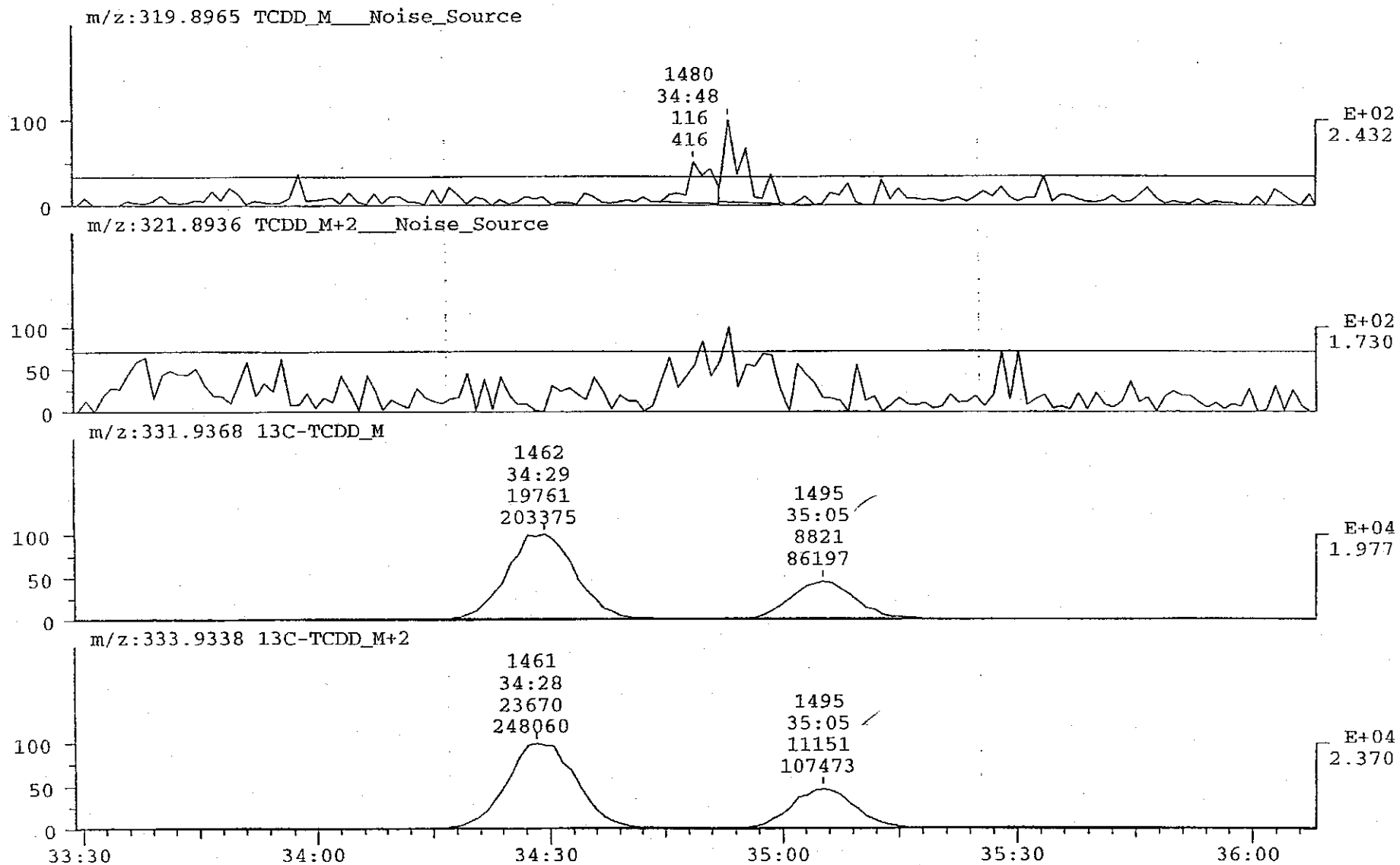
```
CHRO:  te9fq6                                  06-Nov-02   Elapse:  35:06      1496
Samp:  Vial 50 WO=e9fq61aa Meth=IN Dil=1                   Start :  20:52:47   1950
Comm:  Inst=m2a/334061 Batch=20021106s3 Ccal=20020912i
Mode:  EI +VE +LMR  ESCAN LR NRM                           Study :  2281130 (10.0g)
Oper:  MSD            Client:  A2J040301-010               Inlet :  GC     Vial  50
Peak:  100.00  ppm      Label wndw:  1407 > 1553           Masses:  293 > 410
Area:  5, 0.50, 15      Baseline  :  100, 3                Label :  -2, 3.0
Disp:  Height  Area
```



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ENVIRONMENTAL STANDARDS INC.

Client Sample ID: NYPA-ERB-01

Trace Level Organic Compounds

Lot-Sample #...: A2J040301-011 Work Order #...: E9FQ81AA Matrix.....: WQ
Date Sampled...: 10/03/02 08:50 Date Received..: 10/04/02
Prep Date.....: 10/07/02 Analysis Date..: 11/05/02
Prep Batch #...: 2280140
Dilution Factor: 1

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
2,3,7,8-TCDD	ND	1.7	pg/L	SW846 8290

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	61	(40 - 135)

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IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290

SEVERN TRENT SERVICES

Workorder	E9FQ81AA	Prep Batch	2280140	Lot No	A2J040301-011
Data File	/20021105s1/te9fq8.d	Prep Date	10/07/02	SDG No	
IDB ID	65704	Prep Exp Date	11/02/02	Date Received	10/02/02
Analysis Date	11/05/02 17:36	Matrix	AQUEOUS	Date Sampled	10/03/02
Anal Exp Date	11/21/02	Initial Wt/Vol	1000 mL	Lims Test Code	XXI09IN01
Instrument	M1A	Extract Vol	20 uL	Method	DX8290
Analyst	PMP	Diluton Factor	1.00	Code	IN

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	45	93	18	37	0.49 *	/	
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	160	180	64	72	0.89	/	
	13C-2,3,7,8-TCDF	32:08	32:08	0	464633	586340	47707	60295	0.79	ABV/ABV	
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	48	75	19	30	0.63 *	/	
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	298	350	119	140	0.85	/	
	13C-1,2,3,4-TCDD	33:45	33:44	1	925286	1197338	94681	122214	0.77	AVV/ABV	
	13C-2,3,7,8-TCDD	34:19	34:20	-1	308971	407434	29413	39647	0.76	AVV/AVV	
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

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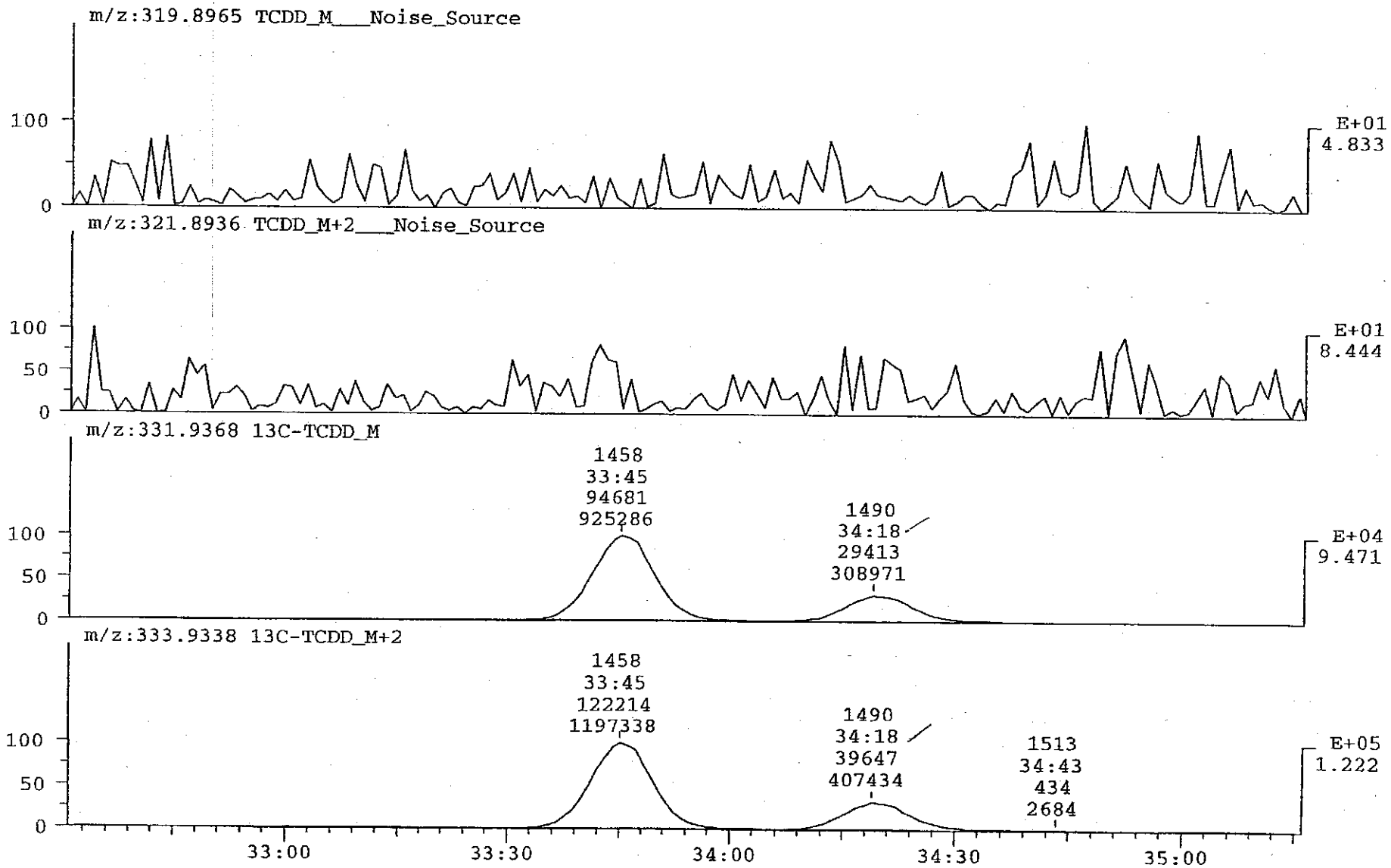
CHRO: te9fq8 05-Nov-02
Samp: Vial 59 WO=e9fq81aa Meth=IN Dil=1
Comm: Inst=m1a/472961 Batch=20021105s1 Ccal=20020717i
Mode: EI +VE +LMR ESCAN LR NRM
Oper: PMP Client: A2J040301-011
Peak: 100.00 ppm Label wndw: 1388 > 1544
Area: 5, 0.50, 15 Baseline : 100, 3
Disp: Height Area

Elapse: 34:11 1483
Start : 17:36:04 2016
Study : 2280140 (1.00L)
Inlet : GC Vial 59
Masses: 293 > 410
Label : -2, 3.0



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STL KNOXVILLE
SPECIALTY ORGANICS INSTRUMENT MAT 95 RUN LOG

Date	Time	Opr	Sample ID	Filename	Code	Matrix	Type	Tape	Lot#/Comments
11-20-02	02:43	PMP	E870A1AA	te870a	IF/DS	SOLID			C2J010331-013
11-20-02	03:45	PMP	E870C1AA	te870c	OK	SOLID			014
11-20-02	04:47	PMP	E870D1AA	te870d	OK	SOLID			015
11-20-02	05:49	PMP	E870E1AA	te870e	OK	SOLID			016
11-20-02	06:50	PMP	E870F1AA	te870f	OK	SOLID			017
11-20-02	07:51	PMP	Noname	r	OK	–	QC		flush
11-20-02	08:08	PMP	2553:08	t021120s1	OK	–	win ver		Ver/Win
11-20-02	09:08	JMW	PFK	–	OK	–	RES		Mass res chk.
11-20-02	09:17	JMW	E91XA1AC	te91xac	OK	SOLID	QC		H2J150000-190C
11-20-02	10:20	JMW	noname	r	OK	–	QC		flush
11-20-02	10:36	JMW	noname	r	OK	–	QC		flush
11-20-02	10:51	JMW	E91XA1AA	te91xab	OK	SOLID	QC		H2J150000-190B method blank
11-20-02	12:55	JMW	E870A1AA	te870a2	OK	SOLID	SAM		C2J010331-013
11-20-02	13:56	JMW	E870G1AA	te870g	OK	SOLID	SAM		C2J010331-018
11-20-02	14:58	JMW	E870H1AA	te870h	OK	SOLID	SAM		C2J010331-019
11-20-02	16:00	JMW	E870J1AA	te870j	OK	SOLID	SAM		C2J010331-020
11-20-02	17:02	JMW	E9PMV1CA	te9pmv	OK	SOLID	SAM		H2J100140-002
11-20-02	18:03	JMW	E90E11AC	te90e1	~~SR~~	SOLID	SAM		H2J140113-001
11-20-02	19:05	JMW	noname	r	OK	–	QC		flush
11-20-02	20:04	JMW	2553:08	t021120s2	OK to dm	–	win ver		win ver
11-20-02	11:53	JMW	E9RWD1AA	te9rwd	OK	H2O	SAM		H2J110103-003
11-20-02	21:04	PMP	PFK	–	OK	–	Res		Mass Res Chk
11-21-02	01:37	PMP	PFK	–	OK	–	Res		Mass Res Chk
11-21-02	01:40	PMP	2553:08	t021121s1	OK	–	win ver		Ver/Win
11-21-02	02:42	PMP	FCV841AC	tfcv84ca	OK	SOLID	QC		H2K120000-125C
11-21-02	03:44	PMP	Noname	r	OK	–	QC		flush
11-21-02	03:59	PMP	Noname	r	OK	–	QC		flush
11-21-02	04:15	PMP	E91XA1AA	te91xaba	OK	SOLID	QC		System Blank
11-21-02	05:17	PMP	E90E11AC (1.0g)	te90ela	DV	SOLID	SAM		H2J140113-001
11-21-02	06:19	PMP	E90QA1AA	te90qa	OK	SOLID	SAM		H2J140138-001
11-21-02	07:20	PMP	E90QD1AA	te90qd	OK	SOLID	SAM		002
11-21-02	08:22	PMP	E90QE1AA	te90qe	OK	SOLID	SAM		003

daily QC

Read and Understood by:

TJCS Date: 11-21-02

ID016R1.doc, 4/23/01

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STL KNOXVILLE
SPECIALTY ORGANICS INSTRUMENT MAT 95 RUN LOG

Date	Time	Opr	Sample ID	Filename	Code	Matrix	Type	Tape	Lot#/Comments
11-21-02	09:24	PMP	E9DQG1AA	te90gg	OK	SOLID	SAM		HZJ140138-004
11-21-02	10:26	PMP	E90QF1AF	te90gh	OK	SOLID	SAM		⊥ 005
11-21-02	11:27	PMP	Noname	r	OK	—	QC		flush
11-21-02	11:39	PMP	2553:08	t02112152	OK to close		Ver win		Ver/Win
11-21-02	12:42	MSD	PFK	—	OK	—	RES		Mass ResChK
11-21-02	12:58	MSD	PFK	—	OK	—	RES		⊥
11-21-02	13:02	DCG	2553:08	t02112153	Smaq CS comm/offcal.		VER WIN		Ver Win
11-21-02	14:03	MSD	PFK	—	OK	—	RES		Mass ResChK
11-21-02	14:07	DCG	2553:08	t02112153	OK	—	VER WIN		Ver/Win
11-21-02	15:08	DCG	E90QP1AG	te90qps	DS	Solid	QC		H2J140138-0075
11-21-02	16:10	DCG	E90QP1AH	te90qpd	DS	Solid	QC		⊥ -007D
11-21-02	17:12	DCG	noname	r	DS	—	QC		Flush
11-21-02	17:28	DCG	noname	r	DS	—	QC		flush
11-21-02	17:43	DCG	E91XA1AA	te91xabb	DS	Solid	QC		System Blk
11-21-02	18:43	DCG	E90E11AC	te90e1b	DS	Solid	SAM		H2J140113-001
11-21-02	19:47	DCG	E90QL1AD	te90ql	DS	Solid	SAM		H2J140138-006
11-21-02	20:49	DCG	E90QP1AF	te90qp	DS	Solid	SAM		-007
11-21-02	21:50	DCG	E90QT1AC	te90qt	DS	Solid	SAM		-008
11-21-02	22:52	DCG	E90QV1AC	te90qv	DS	Solid	SAM		⊥ 009
11-22-02	00:26	DCG	noname	r	DS	—	QC		Flush
11-22-02	00:42	DCG	2553:08	t02112154	DS	—	Ver win		Ver/Win
11-22-02	07:33	MSD	PFK	—	OK	—	Res		Mass Res ChK
11-22-02	09:37	MSD	2553:08	t02112252	OK	—	Ver		Ver (Tetra's only)
11-22-02	09:08	MSD	noname	r	OK	—	QC		flush
11-22-02	09:24	MSD	noname	r	OK	—	QC		flush
11-22-02	09:40	VMK	FCGGE1AA	tfcggeb	OK	H_2O	QC		Sep blk
11-22-02	10:29	VMK	F86KW1AA	tfa6kw	OK		SAM		H2J310284-001
11-22-02	11:11	VMK	FA69NG1AA	tfa9ng	OK				H2K010307-001
11-22-02	1200	VMK	FCE1D1AA	tfce1d	OK				H2K050171-004
11-22-02	12:42	VMK	FCE11 1AA	tfce11	OK				-005
11-22-02	13:30	VMK	FCE12 1AA	tfce12	OK				-006
11-22-02	14:16	VMK	FCE14 1AA	tfce14	OK				-008

Daily RC

R2WSP11/22/02

Read and Understood by:

MMSDavidson Date: 11/22/02

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STL Knoxville Specialty Organics GC/MS Continuing Calibration Review / Narrative Checklist
Methods: 8290/23 - KNOX-ID-0003, Rev. 5

Start PFK:	01:37	CS3 Filename:	t021121S1	Win Filename:	t021121S1	Inst:	MAT95
End PFK:	12:42	CS3 Filename:	t021121S2	Col Perf Filename:	t021121S1	ICAL Date:	7-17-02

Review Items	N/A	Yes	No	If No, why is data reportable?	2nd Level
1. Was the mass resolution documented at both the beginning and end of the 12 hour shift?		✓			✓
2. Was the instrument resolution >10,000 (<100 ppm) on PFK m/z 304.9824 and m/z 380.9760 (at reduced voltage)?		✓			✓
3. Was the measured exact mass of m/z 380.9760 (PFK) within 5 ppm at reduced accelerating voltage?		✓			✓
4. Was date/time of analysis verified between analysis header and logbook as correct?		✓			✓
5. Was the Window Defining Mixture analyzed and the MID switchpoints set to encompass the retention time windows of each congener group?		✓			✓
6. Was the Column Performance solution analyzed and the %Valley ≤25 for separation between 2378-TCDD/F and the closest eluting non-2378 isomer?		✓			✓
7. Was the continuing calibration performed at the beginning of the 12 hour period after successful mass resolution and GC resolution performance check?		✓			✓
8. Was the continuing calibration performed at the end of the 12 hour period?		✓			✓
9. Were the response factors calculated for each labeled standard and unlabeled native analyte using the SOP specified reference compound, quantitation ions, and formula.		✓			✓
10. Are %D ≤20 for all unlabeled native analytes in the beginning and ending calibration?			✓	✓ Ending %D ≤25 and mean RRF from two continuing calibrations used to calculate samples. Ending %D >25 corrective action performed and all positive sample extracts reanalyzed.	✓
11. Are %D ≤30 for all labeled standards in the beginning and ending calibration?		✓		Ending %D ≤35 and mean RRF from two continuing calibrations used to calculate samples. Ending %D >35 and corrective action performed and all positive sample extracts reanalyzed.	✓
12. Are all S/N ratios ≥10 for the GC signals in each EICP (extracted ion chromatographic profile) including internal standards?		✓			✓
13. Are the ion abundance ratios for all labeled and unlabeled analytes within the specified control limits?		✓			✓
14. If manual integrations were performed, are they clearly identified, initialed and dated?	✓				✓
15. If criteria were not met, was a NCM generated, approved by supervisor, and copy included in folder?	✓				✓
16. Does the CCAL folder contain **complete** data in the following order? Data review checklist, a **complete** runlog, CCAL summary, Ratio summary, Calculation summary, PFK resolution/peak match documentation, and Total RIC, EICP's and manual integration - for window and both standards.		✓			✓

Analyst: PMP	Date: 11-21-02	2nd Level Reviewer : DCG	Date: 11-21-02
Comments:		Comments:	

	open	close	X
123789 HxCDF	0.961	0.956	0.879

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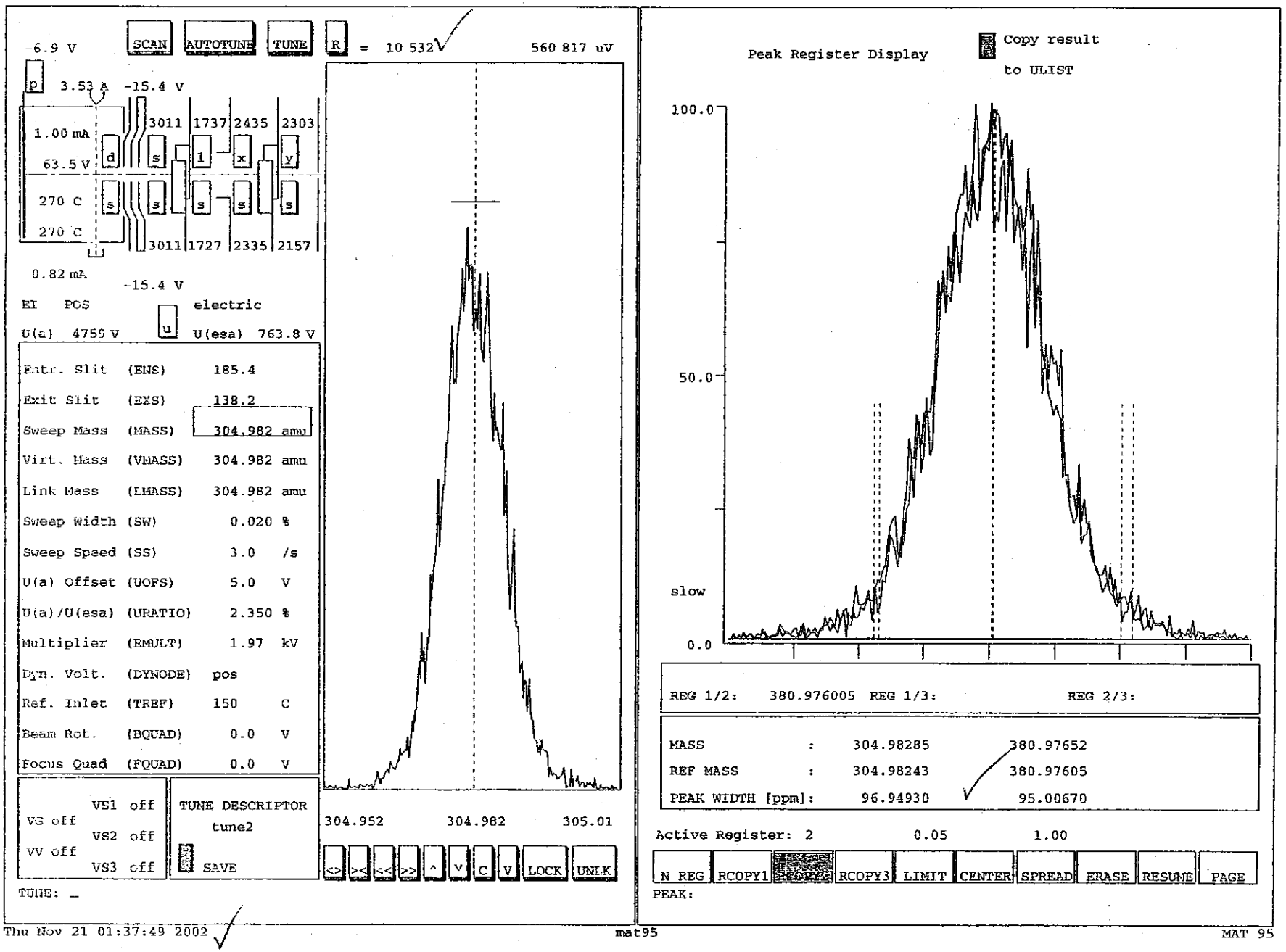

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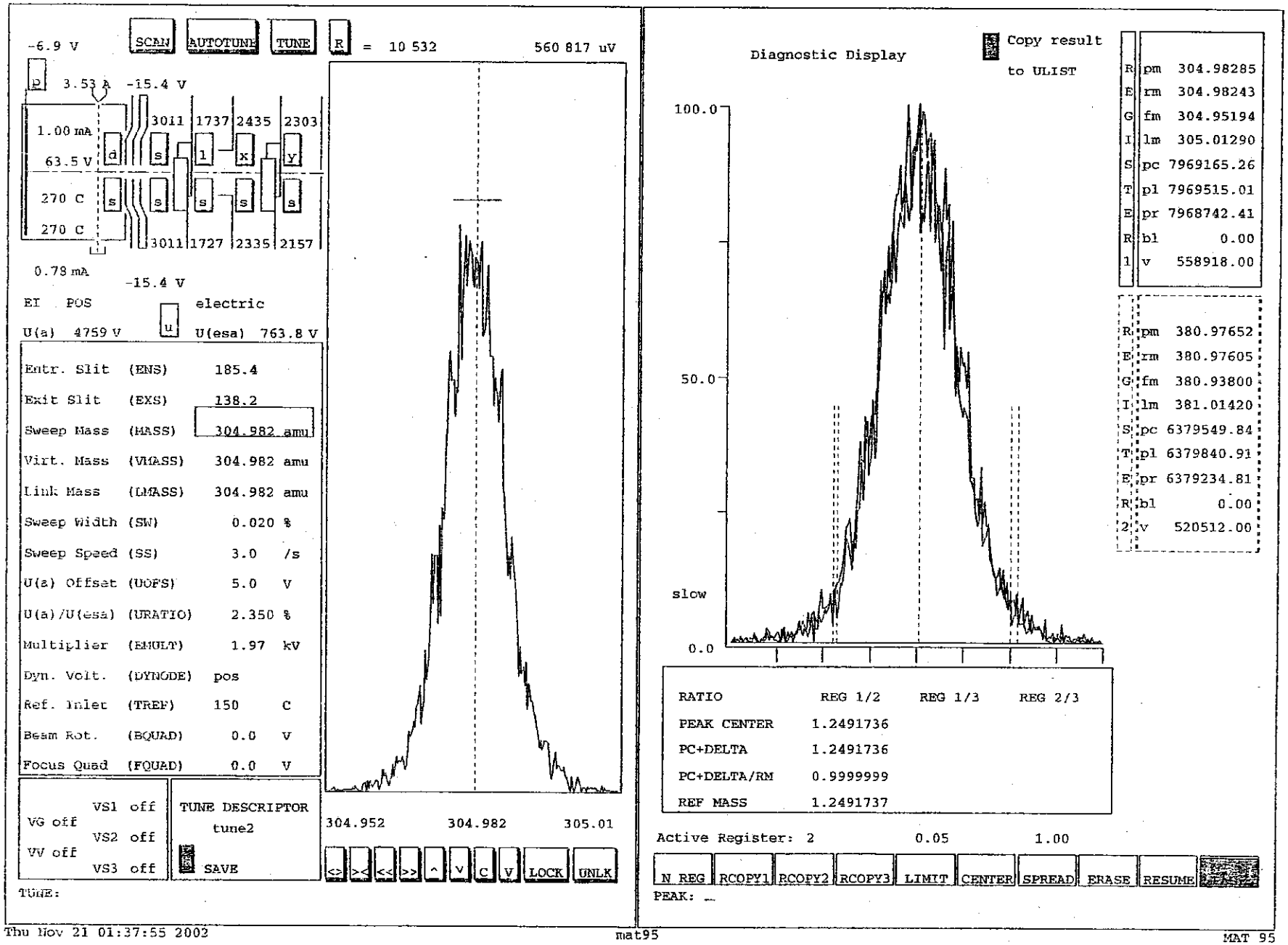

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USEPA Method 1613/8290
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDF
By High-Resolution Gas Chromatography/High-Resolution Mass Spectroscopy (HRGC/I

PCDD/PCDF Daily Calibration Verification

Laboratory ID: Quanterra Knoxville
Init. Calibration Date: 17-Jul-02
Instrument ID: MAT-95
GC Column ID: RTX-5

CS3 Data Filename: t021121s1
Analysis Date: 21-Nov-02
Analysis Time: 01:40

Analytes	m/z Mass 1	m/z Mass 2	Area Mass 1	Area Mass 2	RT	RRT	Ratio	Ratio Limits	Std Conc	8290 ICAL RF	8290 Calc RF	8290 Conc. (ng/mL)
13C-1,2,3,4-TCDD	331.9368	333.9339	550384	706948	31:38	1.000	0.78	0.65-0.89	100.0	1.000	1.000	100.0
13C-2,3,7,8-TCDD	331.9368	333.9339	589611	750705	32:09	1.016	0.79	0.65-0.89	100.0	1.108	1.066	96.2
37Cl-2,3,7,8-TCDD	327.8847		142285		32:11	1.017		NA	10.0	1.167	1.132	9.7
2,3,7,8-TCDD	319.8965	321.8936	64065	83274	32:13	1.002	0.77	0.65-0.89	10.0	1.071	1.099	10.3
13C-2,3,7,8-TCDF	315.9419	317.9389	950463	1183213	30:07	0.952	0.80	0.65-0.89	100.0	1.658	1.697	102.4
2,3,7,8-TCDF	303.9016	305.8987	91493	119395	30:09	1.001	0.77	0.65-0.89	10.0	1.033	0.988	9.6
13C-1,2,3,7,8-PeCDD	367.8949	369.8919	867727	550137	41:44	1.319	1.58	1.32-1.78	100.0	1.051	1.128	107.3
1,2,3,7,8-PeCDD	355.8546	357.8516	434442	285308	41:46	1.001	1.52	1.32-1.78	50.0	1.051	1.015	48.3
13C-1,2,3,7,8-PeCDF	351.9000	353.8970	1337796	843320	39:58	1.263	1.59	1.32-1.78	100.0	1.545	1.735	112.3
13C-2,3,4,7,8-PeCDF	351.9000	353.8970	1315807	827087	41:12	1.302	1.59	1.32-1.78	100.0	--	--	--
1,2,3,7,8-PeCDF	339.8597	341.8567	666874	423784	39:59	1.000	1.57	1.32-1.78	50.0	1.006	1.000	49.7
2,3,4,7,8-PeCDF	339.8597	341.8567	689999	421093	41:14	1.001	1.64	1.32-1.78	50.0	1.048	1.019	48.6
13C-1,2,3,4,7,8-HxCDD	401.8559	403.8529	769690	545395	45:57	0.989	1.41	1.05-1.43	100.0	--	--	--
13C-1,2,3,6,7,8-HxCDD	401.8559	403.8529	905924	717960	46:05	0.992	1.26	1.05-1.43	100.0	1.087	1.124	103.4
13C-1,2,3,7,8,9-HxCDD	401.8559	403.8529	813806	630626	46:27	1.000	1.29	1.05-1.43	100.0	1.000	1.000	100.0
1,2,3,4,7,8-HxCDD	389.8157	391.8127	420708	329093	45:58	1.000	1.28	1.05-1.43	50.0	1.012	0.923	45.6
1,2,3,6,7,8-HxCDD	389.8157	391.8127	469028	370401	46:06	1.000	1.27	1.05-1.43	50.0	1.074	1.034	48.1
1,2,3,7,8,9-HxCDD	389.8157	391.8127	462982	362556	46:29	1.009	1.28	1.05-1.43	50.0	1.082	1.017	47.0
13C-1,2,3,4,7,8-HxCDF	383.8639	385.8610	664808	1269613	44:56	0.967	0.52	0.43-0.59	100.0	1.383	1.339	96.8
13C-1,2,3,6,7,8-HxCDF	383.8639	385.8610	738049	1391504	45:03	0.970	0.53	0.43-0.59	100.0	--	--	--
13C-2,3,4,6,7,8-HxCDF	383.8639	385.8610	682232	1291075	45:47	0.986	0.53	0.43-0.59	100.0	--	--	--
13C-1,2,3,7,8,9-HxCDF	383.8639	385.8610	598830	1106174	46:43	1.006	0.54	0.43-0.59	100.0	--	--	--
1,2,3,4,7,8-HxCDF	373.8208	375.8178	638533	494301	44:57	1.000	1.29	1.05-1.43	50.0	1.245	1.171	47.0
1,2,3,6,7,8-HxCDF	373.8208	375.8178	680258	520157	45:05	1.001	1.31	1.05-1.43	50.0	1.327	1.241	46.8
2,3,4,6,7,8-HxCDF	373.8208	375.8178	601630	470399	45:48	1.000	1.28	1.05-1.43	50.0	1.192	1.108	46.5
1,2,3,7,8,9-HxCDF	373.8208	375.8178	486740	384428	46:44	1.000	1.27	1.05-1.43	50.0	1.102	0.901	40.9
13C-1,2,3,4,6,7,8-HpCDF	435.8169	437.8140	732803	680452	50:46	1.093	1.08	0.88-1.20	100.0	1.022	0.978	95.7
1,2,3,4,6,7,8-HpCDD	423.7766	425.7737	355242	341583	50:47	1.000	1.04	0.88-1.20	50.0	1.037	0.986	47.5
13C-1,2,3,4,6,7,8-HpCDF	417.8253	419.8220	474440	1033590	49:06	1.057	0.46	0.37-0.51	100.0	1.129	1.044	92.5
13C-1,2,3,4,7,8,9-HpCDF	417.8253	419.8220	386516	851894	51:25	1.107	0.45	0.37-0.51	100.0	--	--	--
1,2,3,4,6,7,8-HpCDF	407.7818	409.7789	595645	567841	49:07	1.000	1.05	0.88-1.20	50.0	1.612	1.543	47.9
1,2,3,4,7,8,9-HpCDF	407.7818	409.7789	467817	445752	51:26	1.000	1.05	0.88-1.20	50.0	1.229	1.212	49.3
13C-OCDD	469.7779	471.7750	1205097	1336074	55:09	1.187	0.90	0.76-1.02	200.0	0.911	0.880	193.1
OCDD	457.7377	459.7348	620123	702077	55:10	1.000	0.88	0.76-1.02	100.0	1.086	1.041	95.8
OCDF	441.7428	443.7399	744350	805549	55:18	1.003	0.92	0.76-1.02	100.0	1.276	1.220	95.6

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USEPA Method 1613B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs)
By High-Resolution Gas Chromatography/High-Resolution Mass Spectroscopy (HRGC/HRMS)

PCDD/PCDF Daily Calibration Verification

Laboratory ID: Quanterra Knoxville
Init. Calibration Date: 17-Jul-02
Instrument ID: MAT-95
GC Column ID: RTX-5

VER Data Filename: t021121s1
Analysis Date: 21-Nov-02
Analysis Time: 01:40

Analytes	m/z's Forming Ratio	Ion Abund. Ratio	QC Limits	Conc. Found	ICAL RF	VER RF	%D	QC LIMIT	Flag
13C-2,3,7,8-TCDD	M/M+2	0.79	0.65-0.89	96.2	1.108	1.066	3.8%	30%	TRUE
37Cl-2,3,7,8-TCDD	M/M+2		NA	9.7	1.167	1.132	3.0%	30%	TRUE
2,3,7,8-TCDD	M/M+2	0.77	0.65-0.89	10.3	1.071	1.099	-2.6%	20%	TRUE
13C-2,3,7,8-TCDF	M/M+2	0.80	0.65-0.89	102.4	1.658	1.697	-2.4%	30%	TRUE
2,3,7,8-TCDF	M/M+2	0.77	0.65-0.89	9.6	1.033	0.988	4.3%	20%	TRUE
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.58	1.32-1.78	107.3	1.051	1.128	-7.3%	30%	TRUE
1,2,3,7,8-PeCDD	M+2/M+4	1.52	1.32-1.78	48.3	1.051	1.015	3.4%	20%	TRUE
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.59	1.32-1.78	112.3	1.545	1.735	-12.3%	30%	TRUE
1,2,3,7,8-PeCDF	M+2/M+4	1.57	1.32-1.78	49.7	1.006	1.000	0.6%	20%	TRUE
2,3,4,7,8-PeCDF	M+2/M+4	1.64	1.32-1.78	48.6	1.048	1.019	2.8%	20%	TRUE
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.26	1.05-1.43	103.4	1.087	1.124	-3.4%	30%	TRUE
1,2,3,4,7,8-HxCDD	M+2/M+4	1.28	1.05-1.43	45.6	1.012	0.923	8.7%	20%	TRUE
1,2,3,6,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	48.1	1.074	1.034	3.7%	20%	TRUE
1,2,3,7,8,9-HxCDD	M+2/M+4	1.28	1.05-1.43	47.0	1.082	1.017	6.0%	20%	TRUE
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.52	0.43-0.59	96.8	1.383	1.339	3.2%	30%	TRUE
1,2,3,4,7,8-HxCDF	M+2/M+4	1.29	1.05-1.43	47.0	1.245	1.171	5.9%	20%	TRUE
1,2,3,6,7,8-HxCDF	M+2/M+4	1.31	1.05-1.43	46.8	1.327	1.241	6.5%	20%	TRUE
2,3,4,6,7,8-HxCDF	M+2/M+4	1.28	1.05-1.43	46.5	1.192	1.108	7.0%	20%	TRUE
1,2,3,7,8,9-HxCDF	M+2/M+4	1.27	1.05-1.43	40.9	1.102	0.901	18.3%	20%	TRUE
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.08	0.88-1.20	95.7	1.022	0.978	4.3%	30%	TRUE
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.04	0.88-1.20	47.5	1.037	0.986	4.9%	20%	TRUE
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.46	0.37-0.51	92.5	1.129	1.044	7.5%	30%	TRUE
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.05	0.88-1.20	47.9	1.612	1.543	4.3%	20%	TRUE
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.05	0.88-1.20	49.3	1.229	1.212	1.4%	20%	TRUE
13C--OCDD	M+2/M+4	0.90	0.76-1.02	193.1	0.911	0.880	3.4%	30%	TRUE
OCDD	M+2/M+4	0.88	0.76-1.02	95.8	1.086	1.041	4.2%	20%	TRUE
OCDF	M+2/M+4	0.92	0.76-1.02	95.6	1.276	1.220	4.4%	20%	TRUE

(1) SW-846 Method 8290, Revision 0 September 1994, Section 7.7.4, Page 29

PMP 11-21-02
DCB 11.21.02

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IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290

TRENT SERVICES

CCAL ID: 1,342 - X021121S1

CCAL Filename: t021121s1

CCAL Sample ID: 2553:08

CCAL Result Dir: /20021121s1/x021121s1.d

CCAL Date/Time: 11/21/02 01:40

ICAL Date: 07/17/02

Method: IN - DX8290

Instrument: M1A

Column SN: 472962

Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Analytes	m/z's Forming Ratio	Ion Abund Ratio	QC Limits	Calc Conc (ng/mL)	ICAL RF	CCAL RF	%D	QC Limit	Valid?
2,3,7,8-TCDD	M/M+2	0.77	0.65-0.89	10.3	1.071	1.099	2.7	20.0	True
2,3,7,8-TCDF	M/M+2	0.77	0.65-0.89	9.6	1.033	0.988	-4.3	20.0	True
1,2,3,7,8-PeCDD	M+2/M+4	1.52	1.32-1.78	48	1.051	1.015	-3.4	20.0	True
1,2,3,7,8-PeCDF	M+2/M+4	1.57	1.32-1.78	50	1.006	1.000	-0.6	20.0	True
2,3,4,7,8-PeCDF	M+2/M+4	1.64	1.32-1.78	48	1.048	1.019	-2.8	20.0	True
1,2,3,4,7,8-HxCDD	M+2/M+4	1.28	1.05-1.43	49	1.012	0.923	-8.8	20.0	True
1,2,3,6,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	48	1.074	1.034	-3.8	20.0	True
1,2,3,7,8,9-HxCDD	M+2/M+4	1.28	1.05-1.43	49	1.082	1.017	-6.0	20.0	True
1,2,3,4,7,8-HxCDF	M+2/M+4	1.29	1.05-1.43	47	1.245	1.171	-5.9	20.0	True
1,2,3,6,7,8-HxCDF	M+2/M+4	1.31	1.05-1.43	46	1.327	1.241	-6.5	20.0	True
2,3,4,6,7,8-HxCDF	M+2/M+4	1.28	1.05-1.43	46	1.192	1.108	-7.0	20.0	True
1,2,3,7,8,9-HxCDF	M+2/M+4	1.27	1.05-1.43	41	1.102	0.901	-18.3	20.0	True
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.04	0.88-1.20	48	1.037	0.986	-4.9	20.0	True
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.05	0.88-1.20	48	1.612	1.543	-4.3	20.0	True
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.05	0.88-1.20	49	1.229	1.212	-1.4	20.0	True
OCDD	M+2/M+4	0.88	0.76-1.02	96	1.086	1.041	-4.2	20.0	True
OCDF	M+2/M+4	0.92	0.76-1.02	96	1.276	1.220	-4.4	20.0	True
13C-2,3,7,8-TCDD	M/M+2	0.79	0.65-0.89	96	1.108	1.066	-3.7	30.0	True
13C-2,3,7,8-TCDF	M/M+2	0.80	0.65-0.89	102	1.658	1.697	2.4	30.0	True
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.58	1.32-1.78	107	1.051	1.128	7.3	30.0	True
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.59	1.32-1.78	112	1.545	1.735	12.3	30.0	True
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.26	1.05-1.43	103	1.087	1.124	3.4	30.0	True
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.52	0.43-0.59	97	1.383	1.339	-3.2	30.0	True
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.08	0.88-1.20	96	1.022	0.978	-4.3	30.0	True
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.46	0.37-0.51	92	1.129	1.044	-7.5	30.0	True
13C-OCDD	M+2/M+4	0.90	0.76-1.02	193	0.911	0.880	-3.4	30.0	True

PNLP 11-21-02
DCJ 11.21.02

Printed 11/21/02 4:41:51AM

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IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290

CCAL ID: 1,342 - X021121S1

CCAL Filename: t021121s1

CCAL Sample ID: 2553:08

CCAL Result Dir: /20021121s1/x021121s1.d

CCAL Date/Time: 11/21/02 01:40

ICAL Date: 07/17/02

Method: IN - DX8290

Instrument: M1A

Column SN: 472962

Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Analytes	ICAL RT	CCAL RT	RT Diff	ICAL RRT	CCAL RRT	RRT QC Limit	Valid?
2,3,7,8-TCDD	27:59	32:12	253	1.001	1.002	-	
2,3,7,8-TCDF	26:18	30:09	231	1.001	1.001	-	
1,2,3,7,8-PeCDD	39:43	41:46	123	1.001	1.001	-	
1,2,3,7,8-PeCDF	37:25	39:59	154	1.001	1.000	-	
2,3,4,7,8-PeCDF	39:03	41:14	131	1.044	1.032	-	
1,2,3,4,7,8-HxCDD	44:24	45:58	94	0.998	0.997	-	
1,2,3,6,7,8-HxCDD	44:31	46:06	95	1.000	1.000	-	
1,2,3,7,8,9-HxCDD	44:52	46:28	96	1.008	1.008	-	
1,2,3,4,7,8-HxCDF	43:23	44:57	94	1.000	1.000	-	
1,2,3,6,7,8-HxCDF	43:31	45:04	93	1.004	1.003	-	
2,3,4,6,7,8-HxCDF	44:15	45:48	93	1.020	1.019	-	
1,2,3,7,8,9-HxCDF	45:05	46:44	99	1.040	1.040	-	
1,2,3,4,6,7,8-HpCDD	48:42	50:47	125	1.000	1.000	-	
1,2,3,4,6,7,8-HpCDF	47:13	49:07	114	1.000	1.000	-	
1,2,3,4,7,8,9-HpCDF	49:16	51:26	130	1.044	1.048	-	
OCDD	53:21	55:10	109	1.000	1.000	-	
OCDF	53:29	55:18	109	1.003	1.003	-	
13C-2,3,7,8-TCDD	27:57	32:09	252	1.016	1.016	-	
13C-2,3,7,8-TCDF	26:17	30:07	230	0.956	0.952	-	
13C-1,2,3,7,8-PeCDD	39:42	41:44	122	1.443	1.319	-	
13C-1,2,3,7,8-PeCDF	37:23	39:58	155	1.360	1.263	-	
13C-1,2,3,6,7,8-HxCDD	44:30	46:05	95	0.992	0.992	-	
13C-1,2,3,4,7,8-HxCDF	43:22	44:56	94	0.967	0.967	-	
13C-1,2,3,4,6,7,8-HpCDD	48:41	50:46	125	1.086	1.093	-	
13C-1,2,3,4,6,7,8-HpCDF	47:12	49:06	114	1.053	1.057	-	
13C-OCDD	53:20	55:09	109	1.189	1.187	-	

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STL - Knoxville

IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290

CCAL ID: 1,342 - X021121S1

WIN Filename: t021121s1

Method: IN - DX8290

WIN Sample ID: 2553:08

Instrument: M1A

WIN Result Dir: /20021121s1/x021121s1.d

Column SN: 472962

WIN Date/Time: 11/21/02 01:40

Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Window Defining First/Last Eluter Retention Times

Analyte	Reference	M/Z	Ref RT	First Eluter RT	First Eluter RRT	Last Eluter RT	Last Eluter RRT
Total TCDD	13C-2,3,7,8-TCDD	320	32:09	26:12	0.8149	35:20	1.0990
Total TCDF	13C-2,3,7,8-TCDF	304	30:07	23:45	0.7886	35:11	1.1682
Total PeCDD	13C-1,2,3,7,8-PeCDD	356	41:44	38:51	0.9309	42:24	1.0160
Total PeCDF	13C-1,2,3,7,8-PeCDF	340	39:58	35:58	0.8999	42:30	1.0634
Total HxCDD	13C-1,2,3,6,7,8-HxCDD	390	46:05	44:25	0.9638	46:28	1.0083
Total HxCDF	13C-1,2,3,4,7,8-HxCDF	374	44:56	43:44	0.9733	46:51	1.0427
Total HpCDD	13C-1,2,3,4,6,7,8-HpCDD	424	50:46	49:37	0.9773	50:47	1.0003
Total HpCDF	13C-1,2,3,4,6,7,8-HpCDF	408	49:06	49:07	1.0003	51:26	1.0475
OCDD	13C-OCDD	458	55:09	55:10	1.0003	55:10	1.0003
OCDF	13C-OCDD	442	55:09	55:18	1.0027	55:18	1.0027

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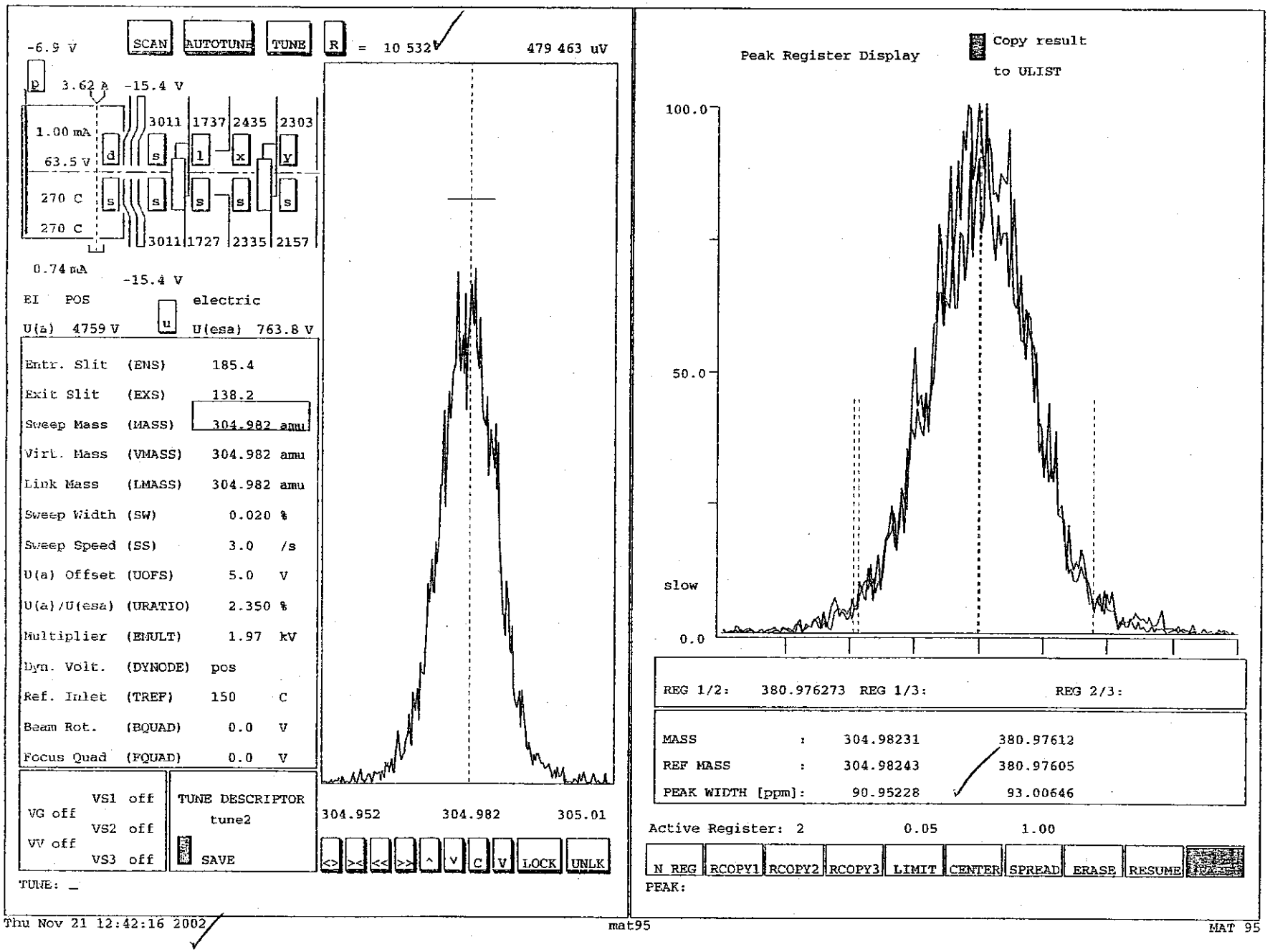

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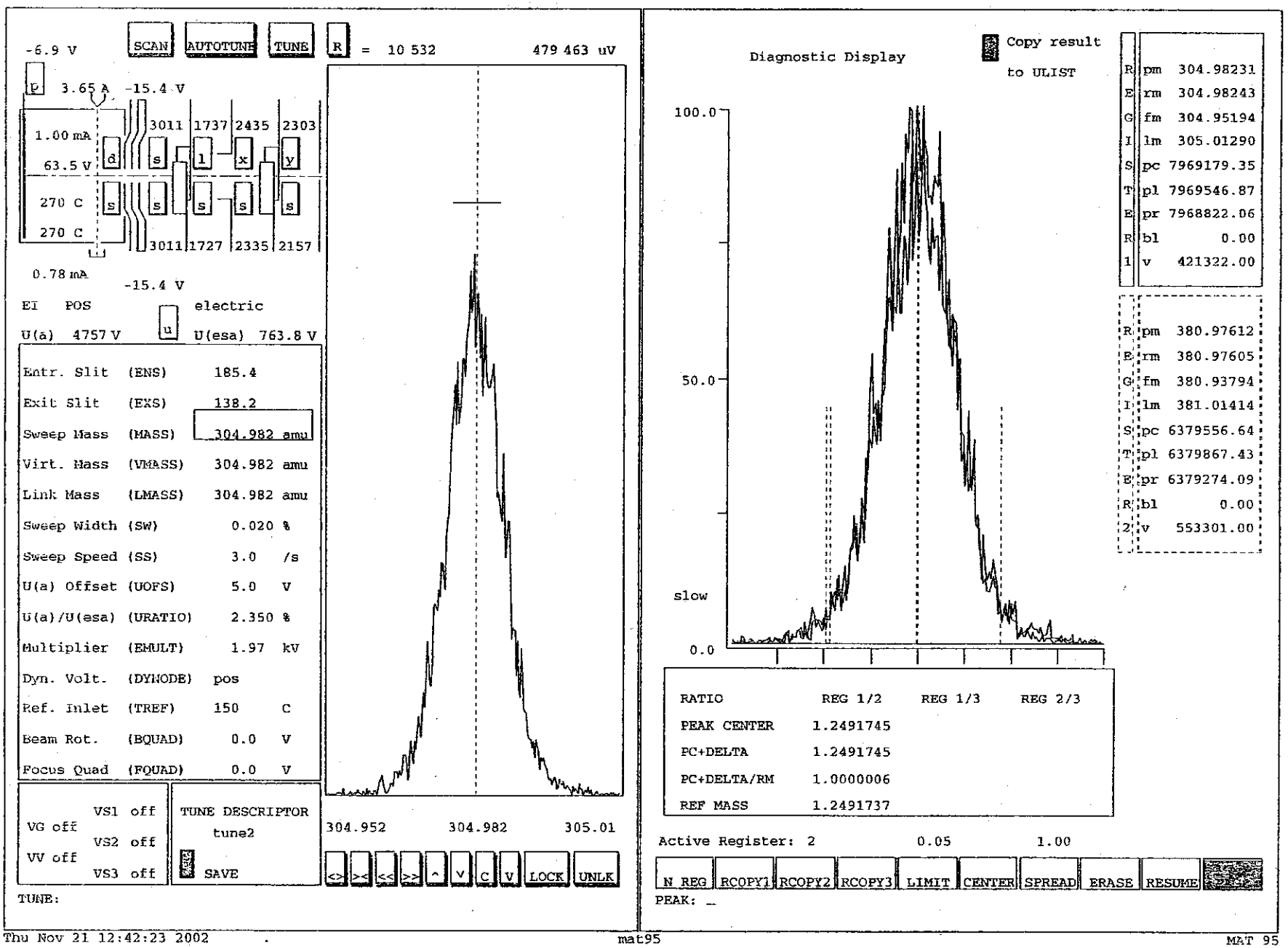

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USEPA Method 1613/8290
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDF
By High-Resolution Gas Chromatography/High-Resolution Mass Spectroscopy (HRGC/I

PCDD/PCDF Daily Calibration Verification

Laboratory ID: Quanterra Knoxville
it. Calibration Date: 17-Jul-02

Instrument ID: MAT-95
GC Column ID: RTX-5

CS3 Data Filename: t021121s2
Analysis Date: 21-Nov-02
Analysis Time: 11:39

lytes	m/z Mass 1	m/z Mass 2	Area Mass 1	Area Mass 2	RT	RRT	Ratio	Ratio Limits	Std Conc	8290 ICAL RF	8290 Calc RF	8290 Conc. (ng/mL)
-1,2,3,4-TCDD	331.9368	333.9339	464553	595941	31:37	1.000	0.78	0.65-0.89	100.0	1.000	1.000	100.0
-2,3,7,8-TCDD	331.9368	333.9339	472823	603767	32:07	1.016	0.78	0.65-0.89	100.0	1.108	1.015	91.6
I-2,3,7,8-TCDD	327.8847		108993		32:09	1.017		NA	10.0	1.167	1.028	8.8
7,8-TCDD	319.8965	321.8936	52047	67175	32:11	1.002	0.77	0.65-0.89	10.0	1.071	1.107	10.3
-2,3,7,8-TCDF	315.9419	317.9389	740814	923554	30:06	0.952	0.80	0.65-0.89	100.0	1.658	1.569	94.7
7,8-TCDF	303.9016	305.8987	70028	93548	30:08	1.001	0.75	0.65-0.89	10.0	1.033	0.983	9.5
-1,2,3,7,8-PeCDD	367.8949	369.8919	538814	333831	41:44	1.320	1.61	1.32-1.78	100.0	1.051	0.823	78.3
3,7,8-PeCDD	355.8546	357.8516	255675	167003	41:45	1.000	1.53	1.32-1.78	50.0	1.051	0.969	46.1
-1,2,3,7,8-PeCDF	351.9000	353.8970	834106	535020	39:58	1.264	1.56	1.32-1.78	100.0	1.545	1.291	83.6
-2,3,4,7,8-PeCDF	351.9000	353.8970	800023	496777	41:12	1.303	1.61	1.32-1.78	100.0	--	--	--
3,7,8-PeCDF	339.8597	341.8567	400178	250027	39:59	1.000	1.60	1.32-1.78	50.0	1.006	0.950	47.2
4,7,8-PeCDF	339.8597	341.8567	393825	260233	41:13	1.000	1.51	1.32-1.78	50.0	1.048	0.955	45.6
-1,2,3,4,7,8-HxCDD	401.8559	403.8529	403237	309982	45:58	0.989	1.30	1.05-1.43	100.0	--	--	--
-1,2,3,6,7,8-HxCDD	401.8559	403.8529	548209	419585	46:04	0.991	1.31	1.05-1.43	100.0	1.087	1.218	112.1
-1,2,3,7,8,9-HxCDD	401.8559	403.8529	441856	352548	46:28	1.000	1.25	1.05-1.43	100.0	1.000	1.000	100.0
3,4,7,8-HxCDD	389.8157	391.8127	222692	178793	45:59	1.000	1.25	1.05-1.43	50.0	1.012	0.830	41.0
3,6,7,8-HxCDD	389.8157	391.8127	270295	211358	46:05	1.000	1.28	1.05-1.43	50.0	1.074	0.995	46.3
3,7,8,9-HxCDD	389.8157	391.8127	245687	198939	46:28	1.009	1.23	1.05-1.43	50.0	1.082	0.919	42.5
-1,2,3,4,7,8-HxCDF	383.8639	385.8610	370259	699543	44:55	0.967	0.53	0.43-0.59	100.0	1.383	1.347	97.4
-1,2,3,6,7,8-HxCDF	383.8639	385.8610	466120	861949	45:04	0.970	0.54	0.43-0.59	100.0	--	--	--
-2,3,4,6,7,8-HxCDF	383.8639	385.8610	399848	728164	45:46	0.985	0.55	0.43-0.59	100.0	--	--	--
-1,2,3,7,8,9-HxCDF	383.8639	385.8610	323535	616938	46:42	1.005	0.52	0.43-0.59	100.0	--	--	--
3,4,7,8-HxCDF	373.8208	375.8178	351264	276851	44:56	1.000	1.27	1.05-1.43	50.0	1.245	1.174	47.2
3,6,7,8-HxCDF	373.8208	375.8178	423641	320935	45:05	1.000	1.32	1.05-1.43	50.0	1.327	1.392	52.4
4,6,7,8-HxCDF	373.8208	375.8178	338851	256060	45:47	1.000	1.32	1.05-1.43	50.0	1.192	1.112	46.7
3,7,8,9-HxCDF	373.8208	375.8178	256696	201412	46:43	1.000	1.27	1.05-1.43	50.0	1.102	0.856	38.9
-1,2,3,4,6,7,8-HpCDI	435.8169	437.8140	393474	365360	50:46	1.093	1.08	0.88-1.20	100.0	1.022	0.955	93.5
3,4,6,7,8-HpCDD	423.7766	425.7737	189711	185337	50:47	1.000	1.02	0.88-1.20	50.0	1.037	0.988	47.7
-1,2,3,4,6,7,8-HpCDF	417.8253	419.8220	273281	589647	49:05	1.056	0.46	0.37-0.51	100.0	1.129	1.086	96.2
-1,2,3,4,7,8,9-HpCDF	417.8253	419.8220	212477	468002	51:24	1.106	0.45	0.37-0.51	100.0	--	--	--
3,4,6,7,8-HpCDF	407.7818	409.7789	329862	322086	49:06	1.000	1.02	0.88-1.20	50.0	1.612	1.511	46.9
3,4,7,8,9-HpCDF	407.7818	409.7789	247506	237627	51:25	1.000	1.04	0.88-1.20	50.0	1.229	1.124	45.7
-OCDD	469.7779	471.7750	671278	741048	55:09	1.187	0.91	0.76-1.02	200.0	0.911	0.889	195.2
ID	457.7377	459.7348	337777	388925	55:09	1.000	0.87	0.76-1.02	100.0	1.086	1.029	94.8
IF	441.7428	443.7399	420626	458930	55:17	1.002	0.92	0.76-1.02	100.0	1.276	1.246	97.6

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USEPA Method 1613B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs)
By High-Resolution Gas Chromatography/High-Resolution Mass Spectroscopy (HRGC/HRMS)

PCDD/PCDF Daily Calibration Verification

Laboratory ID: Quanterra Knoxville
Init. Calibration Date: 17-Jul-02
Instrument ID: MAT-95
GC Column ID: RTX-5

VER Data Filename: t021121s2
Analysis Date: 21-Nov-02
Analysis Time: 11:39

Analytes	m/z's Forming Ratio	Ion Abund. Ratio	QC Limits	Conc. Found	ICAL RF	VER RF	%D	QC LIMIT	Flag
13C-2,3,7,8-TCDD	M/M+2	0.78	0.65-0.89	91.6	1.108	1.015	8.4%	30%	TRUE
37Cl-2,3,7,8-TCDD	M/M+2		NA	8.8	1.167	1.028	11.9%	30%	TRUE
2,3,7,8-TCDD	M/M+2	0.77	0.65-0.89	10.3	1.071	1.107	-3.4%	20%	TRUE
13C-2,3,7,8-TCDF	M/M+2	0.80	0.65-0.89	94.7	1.658	1.569	5.3%	30%	TRUE
2,3,7,8-TCDF	M/M+2	0.75	0.65-0.89	9.5	1.033	0.983	4.9%	20%	TRUE
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.61	1.32-1.78	78.3	1.051	0.823	21.7%	30%	TRUE
1,2,3,7,8-PeCDD	M+2/M+4	1.53	1.32-1.78	46.1	1.051	0.969	7.8%	20%	TRUE
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.56	1.32-1.78	83.6	1.545	1.291	16.4%	30%	TRUE
1,2,3,7,8-PeCDF	M+2/M+4	1.60	1.32-1.78	47.2	1.006	0.950	5.6%	20%	TRUE
2,3,4,7,8-PeCDF	M+2/M+4	1.51	1.32-1.78	45.6	1.048	0.955	8.8%	20%	TRUE
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.31	1.05-1.43	112.1	1.087	1.218	-12.1%	30%	TRUE
1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05-1.43	41.0	1.012	0.830	18.0%	20%	TRUE
1,2,3,6,7,8-HxCDD	M+2/M+4	1.28	1.05-1.43	46.3	1.074	0.995	7.3%	20%	TRUE
1,2,3,7,8,9-HxCDD	M+2/M+4	1.23	1.05-1.43	42.5	1.082	0.919	15.1%	20%	TRUE
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.53	0.43-0.59	97.4	1.383	1.347	2.6%	30%	TRUE
1,2,3,4,7,8-HxCDF	M+2/M+4	1.27	1.05-1.43	47.2	1.245	1.174	5.7%	20%	TRUE
1,2,3,6,7,8-HxCDF	M+2/M+4	1.32	1.05-1.43	52.4	1.327	1.392	-4.9%	20%	TRUE
2,3,4,6,7,8-HxCDF	M+2/M+4	1.32	1.05-1.43	46.7	1.192	1.112	6.7%	20%	TRUE
1,2,3,7,8,9-HxCDF	M+2/M+4	1.27	1.05-1.43	38.9	1.102	0.856	22.3%	20%	FALSE
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.08	0.88-1.20	93.5	1.022	0.955	6.5%	30%	TRUE
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.02	0.88-1.20	47.7	1.037	0.988	4.7%	20%	TRUE
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.46	0.37-0.51	96.2	1.129	1.086	3.8%	30%	TRUE
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.02	0.88-1.20	46.9	1.612	1.511	6.3%	20%	TRUE
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.04	0.88-1.20	45.7	1.229	1.124	8.5%	20%	TRUE
13C--OCDD	M+2/M+4	0.91	0.76-1.02	195.2	0.911	0.889	2.4%	30%	TRUE
OCDD	M+2/M+4	0.87	0.76-1.02	94.8	1.086	1.029	5.2%	20%	TRUE
OCDF	M+2/M+4	0.92	0.76-1.02	97.6	1.276	1.246	2.4%	20%	TRUE

(1) SW-846 Method 8290, Revision 0 September 1994, Section 7.7.4, Page 29

WMSD 11/21/02
DCS 11/21/02

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IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290

CCAL ID: 1,356 - X021121S2

CCAL Filename: t021121s2

CCAL Sample ID: 2553:08

CCAL Result Dir: /20021121s2/x021121s2.d

CCAL Date/Time: 11/21/02 11:39

ICAL Date: 07/17/02

Method: IN - DX8290

Instrument: M1A

Column SN: 472962

Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Analytes	m/z's Forming Ratio	Ion Abund Ratio	QC Limits	Calc Conc (ng/mL)	ICAL RF	CCAL RF	%D	QC Limit	Valid?
2,3,7,8-TCDD	M/M+2	0.77	0.65-0.89	10.3	1.071	1.107	3.4	20.0	True
2,3,7,8-TCDF	M/M+2	0.75	0.65-0.89	9.5	1.033	0.983	-4.9	20.0	True
1,2,3,7,8-PeCDD	M+2/M+4	1.53	1.32-1.78	46	1.051	0.969	-7.8	20.0	True
1,2,3,7,8-PeCDF	M+2/M+4	1.60	1.32-1.78	47	1.006	0.950	-5.6	20.0	True
2,3,4,7,8-PeCDF	M+2/M+4	1.51	1.32-1.78	47	1.048	0.955	-8.9	20.0	True
1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05-1.43	49	1.012	0.830	-18.0	20.0	True
1,2,3,6,7,8-HxCDD	M+2/M+4	1.28	1.05-1.43	46	1.074	0.995	-7.3	20.0	True
1,2,3,7,8,9-HxCDD	M+2/M+4	1.23	1.05-1.43	46	1.082	0.919	-15.1	20.0	True
1,2,3,4,7,8-HxCDF	M+2/M+4	1.27	1.05-1.43	47	1.245	1.174	-5.7	20.0	True
1,2,3,6,7,8-HxCDF	M+2/M+4	1.32	1.05-1.43	46	1.327	1.392	4.9	20.0	True
2,3,4,6,7,8-HxCDF	M+2/M+4	1.32	1.05-1.43	45	1.192	1.112	-6.7	20.0	True
1,2,3,7,8,9-HxCDF	M+2/M+4	1.27	1.05-1.43	39	1.102	0.856	-22.3	20.0	False
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.02	0.88-1.20	48	1.037	0.988	-4.7	20.0	True
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.02	0.88-1.20	47	1.612	1.511	-6.3	20.0	True
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.04	0.88-1.20	48	1.229	1.124	-8.5	20.0	True
OCDD	M+2/M+4	0.87	0.76-1.02	95	1.086	1.029	-5.3	20.0	True
OCDF	M+2/M+4	0.92	0.76-1.02	98	1.276	1.246	-2.4	20.0	True
13C-2,3,7,8-TCDD	M/M+2	0.78	0.65-0.89	92	1.108	1.015	-8.3	30.0	True
13C-2,3,7,8-TCDF	M/M+2	0.80	0.65-0.89	95	1.658	1.569	-5.3	30.0	True
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.61	1.32-1.78	78	1.051	0.823	-21.7	30.0	True
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.56	1.32-1.78	84	1.545	1.291	-16.4	30.0	True
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.31	1.05-1.43	112	1.087	1.218	12.1	30.0	True
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.53	0.43-0.59	97	1.383	1.347	-2.6	30.0	True
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.08	0.88-1.20	93	1.022	0.955	-6.5	30.0	True
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.46	0.37-0.51	96	1.129	1.086	-3.8	30.0	True
13C-OCDD	M+2/M+4	0.91	0.76-1.02	195	0.911	0.889	-2.4	30.0	True

WMSD 11/21/02
DCG 11/21/02

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IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290

CCAL ID: 1,356 - X021121S2

CCAL Filename: t021121s2

CCAL Sample ID: 2553:08

CCAL Result Dir: /20021121s2/x021121s2.d

CCAL Date/Time: 11/21/02 11:39

ICAL Date: 07/17/02

Method: IN - DX8290

Instrument: M1A

Column SN: 472962

Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Analytes	ICAL RT	CCAL RT	RT Diff	ICAL RRT	CCAL RRT	RRT QC Limit	Valid?
2,3,7,8-TCDD	27:59	32:10	251	1.001	1.002	-	
2,3,7,8-TCDF	26:18	30:08	230	1.001	1.001	-	
1,2,3,7,8-PeCDD	39:43	41:45	122	1.001	1.000	-	
1,2,3,7,8-PeCDF	37:25	39:59	154	1.001	1.000	-	
2,3,4,7,8-PeCDF	39:03	41:13	130	1.044	1.031	-	
1,2,3,4,7,8-HxCDD	44:24	45:59	95	0.998	0.998	-	
1,2,3,6,7,8-HxCDD	44:31	46:05	94	1.000	1.000	-	
1,2,3,7,8,9-HxCDD	44:52	46:28	96	1.008	1.009	-	
1,2,3,4,7,8-HxCDF	43:23	44:56	93	1.000	1.000	-	
1,2,3,6,7,8-HxCDF	43:31	45:05	94	1.004	1.004	-	
2,3,4,6,7,8-HxCDF	44:15	45:47	92	1.020	1.019	-	
1,2,3,7,8,9-HxCDF	45:05	46:43	98	1.040	1.040	-	
1,2,3,4,6,7,8-HpCDD	48:42	50:47	125	1.000	1.000	-	
1,2,3,4,6,7,8-HpCDF	47:13	49:06	113	1.000	1.000	-	
1,2,3,4,7,8,9-HpCDF	49:16	51:25	129	1.044	1.048	-	
OCDD	53:21	55:09	108	1.000	1.000	-	
OCDF	53:29	55:17	108	1.003	1.002	-	
13C-2,3,7,8-TCDD	27:57	32:07	250	1.016	1.016	-	
13C-2,3,7,8-TCDF	26:17	30:06	229	0.956	0.953	-	
13C-1,2,3,7,8-PeCDD	39:42	41:44	122	1.443	1.321	-	
13C-1,2,3,7,8-PeCDF	37:23	39:58	155	1.360	1.265	-	
13C-1,2,3,6,7,8-HxCDD	44:30	46:04	94	0.992	0.991	-	
13C-1,2,3,4,7,8-HxCDF	43:22	44:55	93	0.967	0.967	-	
13C-1,2,3,4,6,7,8-HpCDD	48:41	50:46	125	1.086	1.093	-	
13C-1,2,3,4,6,7,8-HpCDF	47:12	49:05	113	1.053	1.056	-	
13C-OCDD	53:20	55:09	109	1.189	1.187	-	

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STL KNOXVILLE
SPECIALTY ORGANICS INSTRUMENT MAT 95S RUN LOG

did not run at 4th MID — did magnetic calibration.

Date	Time	Opr	Sample ID	Filename	Code	Matrix	Type	Tape	Lot#/Comments
				MSD9-11-02					
9-11-02	13:20	MSD	PFK	—	OK	—	RES		Mass Res Chk
9-11-02	13:23	MSD	2427:58	t020911s2	IF	—	USER WIN		User Win
9-11-02	14:23	MSD	PFK	—	OK	—	RES		Mass Res Chk
9-11-02	14:25	MSD	2427:58	t020911s7	DS	—	USER WIN		User Win
9-11-02	15:30	MSD	PFK	—	OK	—	RES		Mass Res Chk
9-11-02	15:34	MSD	2427:58	t020911w1	OK	—	WIN		8290/1613 ICAL
	15:37	MSD	Nonane	tsb0911	OK	—	QC		flushes
	16:39	MSD	↓	tsb0911	OK	—	QC		↓
	18:21	MSD	2427:27cs1	t020911i1	DS	—	ICAL		ICAL 1,2,3,4,9 HxCDF Ratio Out
	19:21	MSD	cs2	t020911i2		—			
	20:23	MSD	cs3	t020911i3		—			
	21:25	MSD	cs4	t020911i4		—			
	22:26	MSD	cs5	t020911i5	—	—	↓		↓
9-11-02	23:28	PMP	Nonane	tsb0911	OK	—	QC		flush
9-12-02	00:22	PMP	Nonane	tsb0911	OK	—	↓		↓
9-12-02	01:12	PMP	2427:27cs1	t020911i6	DS	—	ICAL		ICAL
9-12-02	02:46	PMP	PFK	—	OK	—	RES		MASS RES CHK
9-12-02	02:49	PMP	2427:58	t020912w1	DS	—	WIN		8290/1613 ICAL
9-12-02	03:51	PMP	Nonane	tsb0912	DS	—	QC		flush
9-12-02	04:38	PMP	Nonane	tsb0912	DS	—	QC		↓
9-12-02	05:27	PMP	2427:46cs1	t020912i1	DS		ICAL		8290/1613 ICAL
9-12-02	06:29	PMP	cs2	t020912i2	DS		ICAL		
9-12-02	07:31	PMP	cs3	t020912i3	DS		ICAL		
9-12-02	08:32	PMP	cs4	t020912i4	DS		ICAL		
9-12-02	10:55	PMP	↓ cs5	t020912i5	DS	—	ICAL		↓
9-12-02	16:19	DCG	✓ PFK	—	OK	—	RES		MASS RES CHK
9-12-02	16:30	DCG	2427:58	t020912w2	OK	—	WIN		WIN
9-12-02	17:32	DCG	Nonane	r	OK	—	QC		Flush
9-12-02	17:48	DCG	Nonane	r	OK	—	QC		↓
9-12-02	18:04	DCG	Nonane	tsb0912	~~DS~~ OK	—	QC		↓
9-12-02	18:50	DCG	2427:46 cs1	t020912ia1	DS - carryover		ICAL		1613/8290 ICAL
9-12-02	19:52	DCG	↓ ✓cs2	t020912ia2	~~DS~~ OK		↓		↓

Read and Understood by: X2 MSD 9/13/02

Date: 9/13/02

ID016R1.doc, 4/2

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STL KNOXVILLE
SPECIALTY ORGANICS INSTRUMENT MAT 95S RUN LOG

X3MSD9-13-0

Date	Time	Opr	Sample ID	Filename	Code	Matrix	Type	Tape	Lot#/Comments
			PMP 9-12-02						
9-12-02	20:53	DCG	2427:46 CS3	t020912i03	~~DS~~OK	—	ICAL		1613/8290 ICAL
9-12-02	21:55	DCG	CS4	t020912i04	~~DS~~OK	—	ICAL		↓
9-12-02	22:57	DCG	↓ CS5	t020912i05	~~DS~~OK	—	ICAL		↓
9-13-02	00:53	PMP	PFK	—	OK	—	RES		MASS RES CHK
9-13-02	10:34	WSD	PFK	—	OK	—	RES		Mass Res Chk
9-13-02	10:41	WSD	2427:46 CS1	t020913i1	OK	—	ICAL		1613/8290 ICAL
9-13-02	13:42	WSD	PFK	—	OK	—	RES		Mass Res Chk

Read and Understood by:

_____ Date: _____

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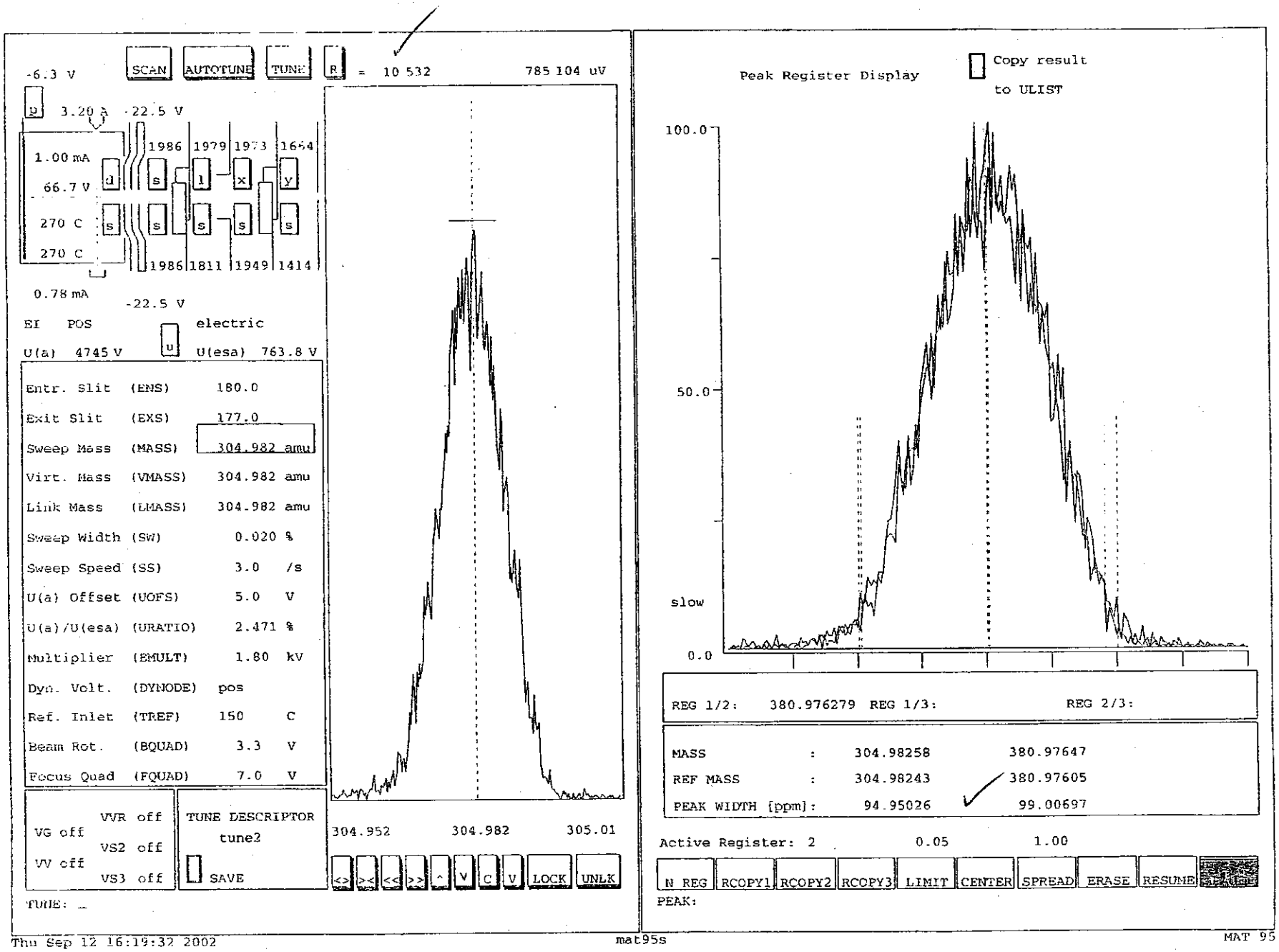

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-6.3 V SCAN AUTOTUNE TUNE R = :0 53: 785 104 uV

p 3.20 A -22.5 V

1.00 mA 1986 1979 1973 1664

66.7 V d s l x y

270 C s s s s s

270 C 1986 1811 1949 1414

0.78 mA -22.5 V

EI POS electric

U(a) 4745 V u U(esa) 763.8 V

Entr. Slit	(ENS)	180.0	
Exit Slit	(EXS)	177.0	
Sweep Mass	(MASS)	304.982	amu
Virt. Mass	(VMASS)	304.982	amu
Link Mass	(LMASS)	304.982	amu
Sweep Width	(SW)	0.020	%
Sweep Speed	(SS)	3.0	/s
U(a) Offset	(UOFS)	5.0	V
U(a)/U(esa)	(URATIO)	2.471	%
Multiplier	(EMULT)	1.80	kV
Dyn. Volt.	(DYNODE)	pos	
Ref. Inlet	(TREF)	150	C
Beam Rot.	(BQUAD)	3.3	V
Focus Quad	(FQUAD)	7.0	V

VG off VVR off VS2 off VV off VS3 off

TUNE DESCRIPTOR tune2 SAVE

304.952 304.982 305.01

<> >< << >> ^ v c v LOCK UNLK

TUNE:

Diagnostic Display

Copy result to ULIST

100.0 50.0 slow 0.0

REG 1		
pm	304.98258	
rm	304.98243	
fm	304.95194	
lm	305.01290	
pc	7969172.18	
pl	7969570.77	
pr	7968814.09	
bl	0.00	
v	801209.00	

REG 2		
pm	380.97647	
rm	380.97605	
fm	380.93794	
lm	381.01414	
pc	6379550.78	
pl	6379867.43	
pr	6379235.81	
bl	0.00	
v	638806.00	

RATIO	REG 1/2	REG 1/3	REG 2/3
PEAK CENTER	1.2491745		
PC+DELTA	1.2491745		
PC+DELTA/RM	1.0000006		
REF MASS	1.2491737		

Active Register: 2 0.05 1.00

N REG RCOPY1 RCOPY2 RCOPY3 LIMIT CENTER SPREAD ERASE RESUME

PEAK: _

Thu Sep 12 16:19:41 2002 mat95s MAT 95

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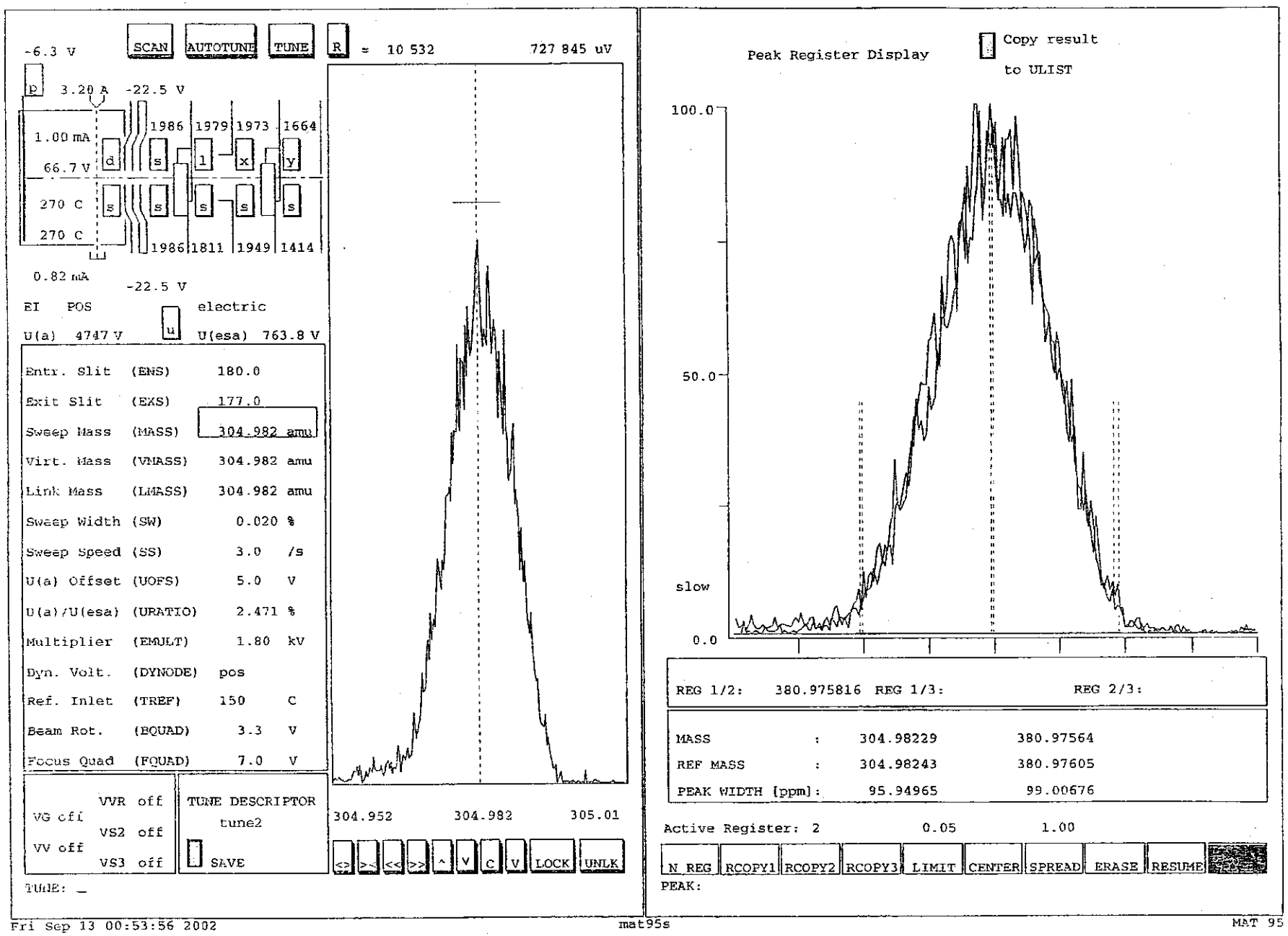

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-6.3 V SCAN AUTOTUNE TUNE R = 10 532 727 845 uV

p 3.20 A -22.5 V

1.00 mA 66.7 V 270 C 270 C

1986 1979 1973 1664

1986 1811 1949 1414

0.78 mA -22.5 V

EI POS electric

U(a) 4745 V U(esa) 763.8 V

Entr. Slit	(ENS)	180.0	
Exit Slit	(EXS)	177.0	
Sweep Mass	(MASS)	304.982	amu
Virt. Mass	(VMASS)	304.982	amu
Link Mass	(LMASS)	304.982	amu
Sweep Width	(SW)	0.020	%
Sweep Speed	(SS)	3.0	/s
U(a) Offset	(UOFS)	5.0	V
U(a)/U(esa)	(URATIO)	2.471	%
Multiplier	(EMULT)	1.80	kV
Dyn. Volt.	(DYNODE)	pos	
Ref. Inlet	(TREF)	150	C
Beam Rot.	(BQUAD)	3.3	V
Focus Quad	(FQUAD)	7.0	V

VG off VVR off VS2 off VS3 off VV off

TUNE DESCRIPTOR tune2 SAVE

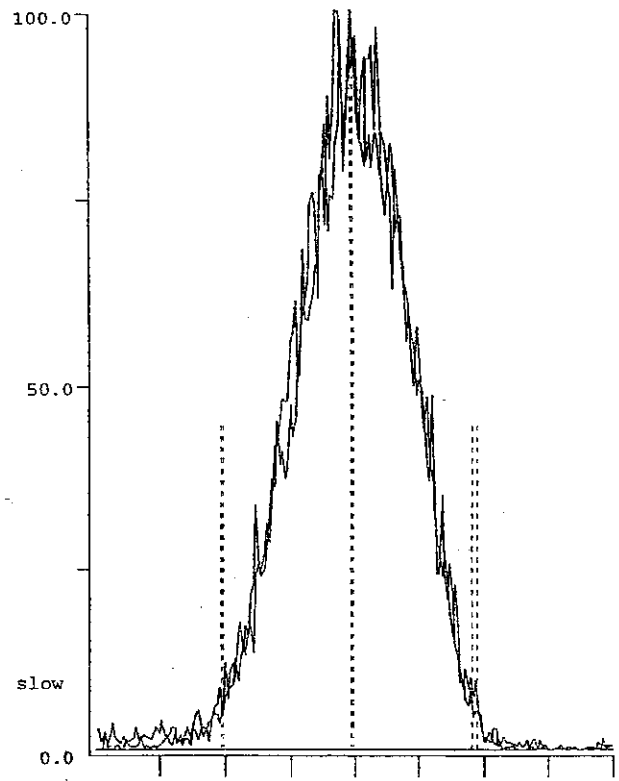
304.952 304.982 305.01

<> >< << >> ^ v C V LOCK UNLK

TUNE:

Diagnostic Display

Copy result to ULIST



REGIST		
R	pm	304.98229
E	rm	304.98243
G	fm	304.95194
I	lm	305.01290
S	pc	7969179.87
T	pl	7969578.73
E	pr	7968814.09
R	bl	0.00
1	v	699503.00

REGIST		
R	pm	380.97564
E	rm	380.97605
G	fm	380.93794
I	lm	381.01414
S	pc	6379564.70
T	pl	6379886.57
E	pr	6379254.95
R	bl	0.00
2	v	683878.00

RATIO	REG 1/2	REG 1/3	REG 2/3
PEAK CENTER	1.2491730		
PC+DELTA	1.2491730		
PC+DELTA/RM	0.9999994		
REF MASS	1.2491737		

Active Register: 2 0.05 1.00

N_REG RCOPY1 RCOPY2 RCOPY3 LIMIT CENTER SPREAD ERASE RESUME

PEAK:

Fri Sep 13 00:54:02 2002 mat95s MAT 95

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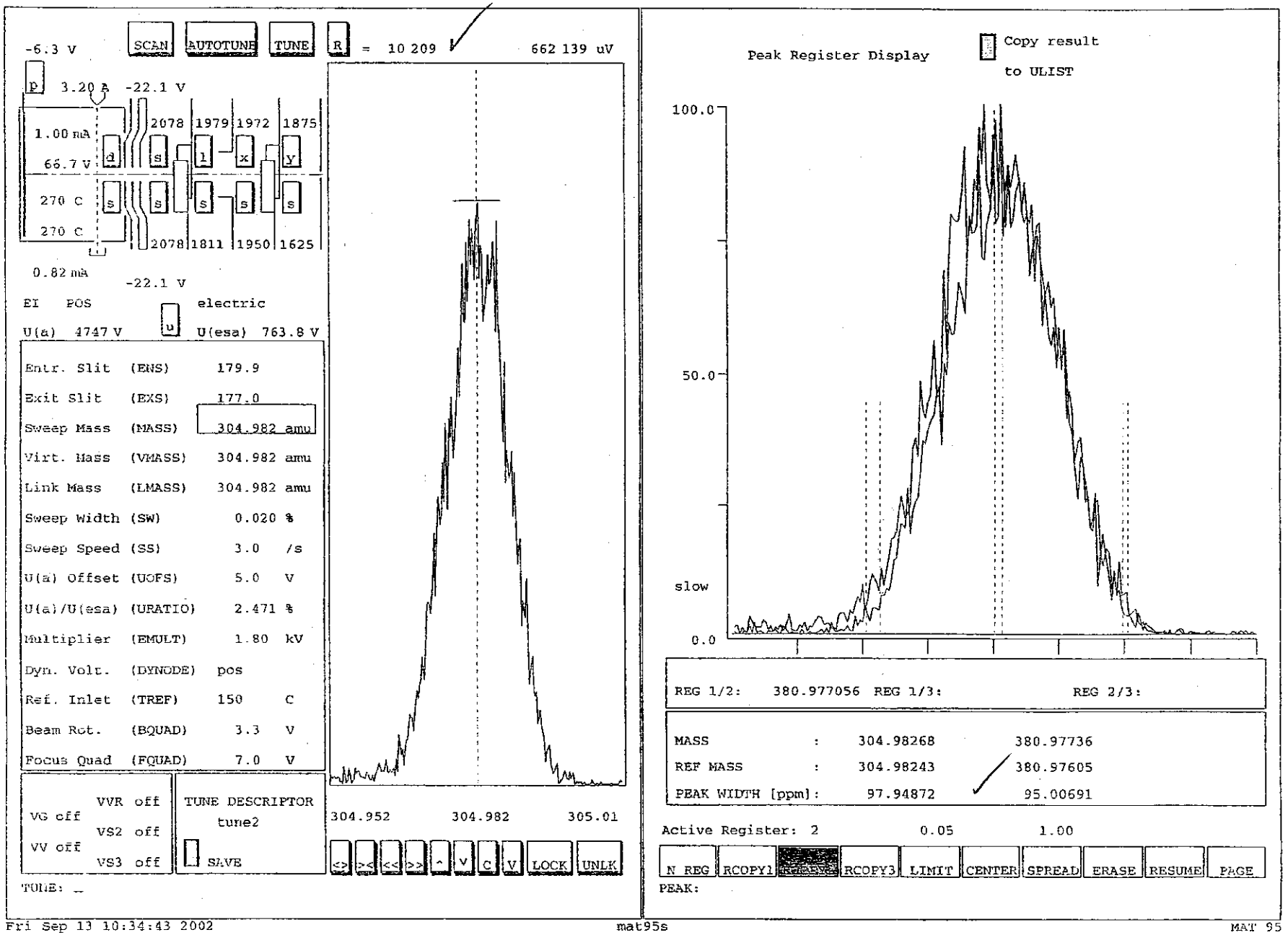

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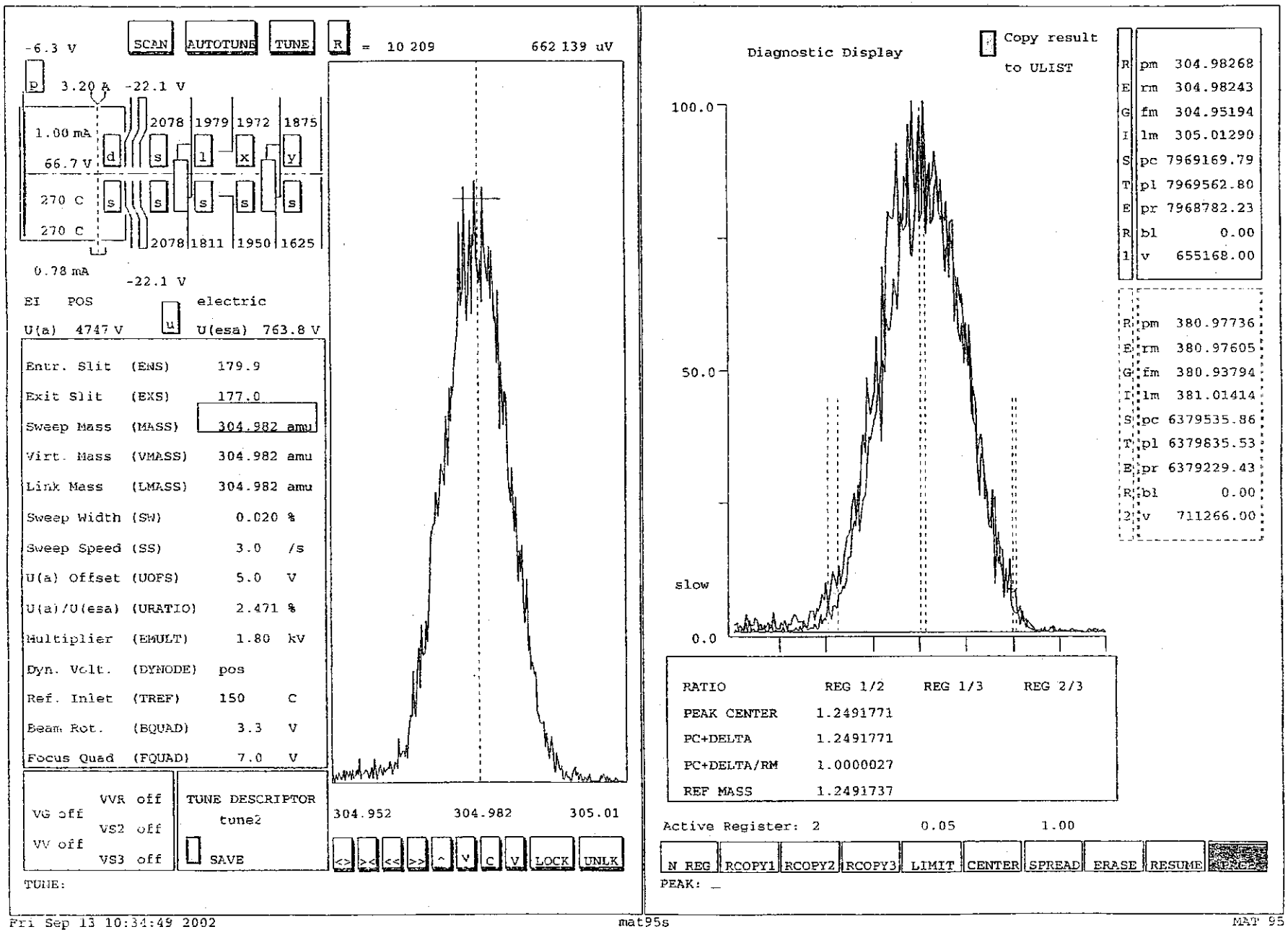

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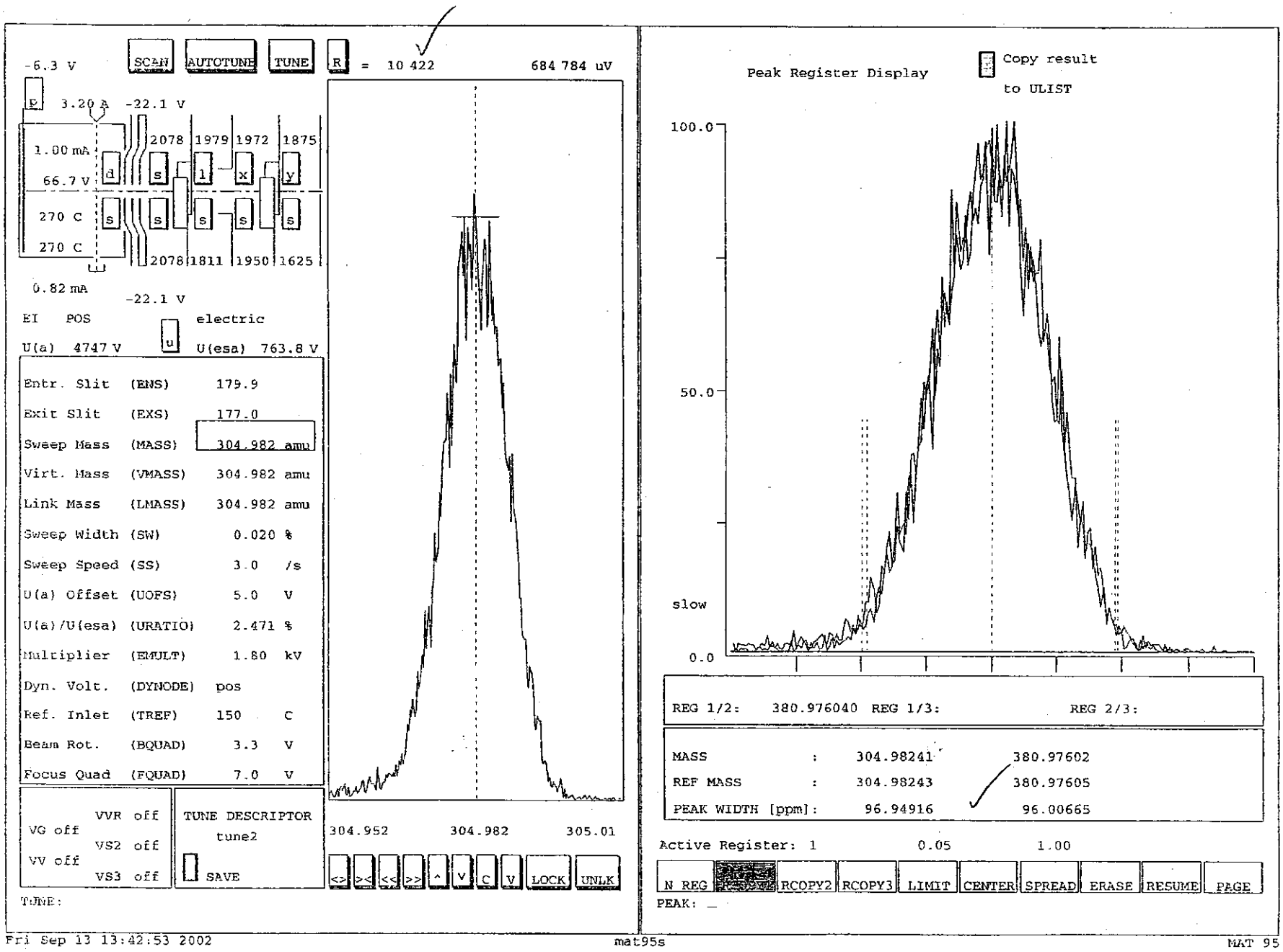

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-6.3 V SCAN AUTOTUNE TUNE R = 10 422 684 784 uV

P 3.20 A -22.1 V

1.00 mA 2078 1979 1972 1875

66.7 V G S I X Y

270 C S S S S S

270 C 2078 1811 1950 1625

0.82 mA -22.1 V

EI POS electric

U(a) 4747 V U(esa) 763.8 V

Entr. Slit	(ENS)	179.9	
Exit Slit	(EXS)	177.0	
Sweep Mass	(MASS)	304.982	amu
Virt. Mass	(VMASS)	304.982	amu
Link Mass	(LMASS)	304.982	amu
Sweep Width	(SW)	0.020	%
Sweep Speed	(SS)	3.0	/s
U(a) Offset	(UOFS)	5.0	V
U(a)/U(esa)	(URATIO)	2.471	%
Multiplier	(EMULT)	1.80	kV
Dyn. Volt.	(DYNODE)	pos	
Ref. Inlet	(TREF)	150	C
Beam Rot.	(BQUAD)	3.3	V
Focus Quad	(FQUAD)	7.0	V

VG off VVR off VS2 off VV off VS3 off

TUNE DESCRIPTOR
tune2
SAVE

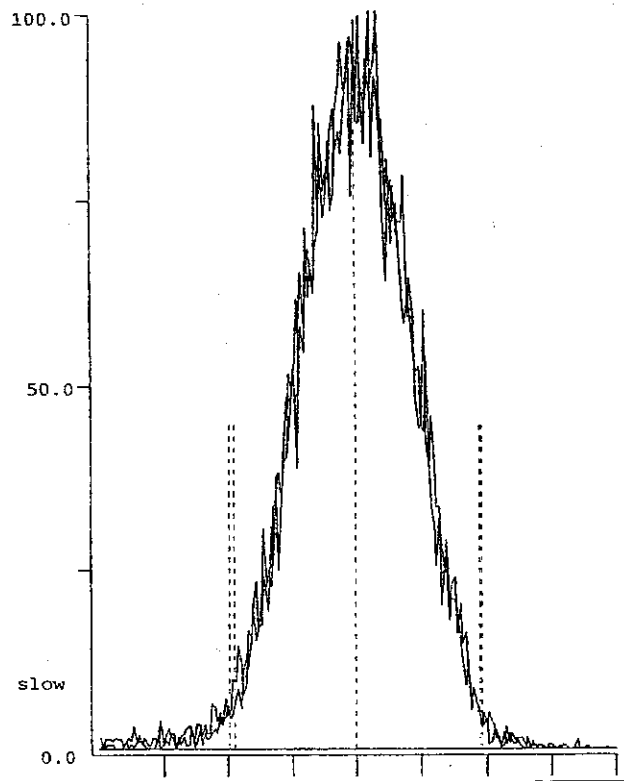
304.952 304.982 305.01

<> >< << >> ^ v C V LOCK UNLK

TUNE:

Diagnostic Display

Copy result to ULIST



R	pm	304.98241
E	rm	304.98243
G	fm	304.95194
I	lm	305.01290
S	pc	7969176.63
T	pl	7969570.77
E	pr	7968798.16
R	bl	0.00
1	v	737467.00

R	pm	380.97602
E	rm	380.97605
G	fm	380.93794
I	lm	381.01414
S	pc	6379558.35
T	pl	6379861.05
E	pr	6379248.57
R	bl	0.00
2	v	791995.00

RATIO	REG 1/2	REG 1/3	REG 2/3
PEAK CENTER	1.2491737		
PC+DELTA	1.2491737		
PC+DELTA/RM	1.0000000		
REF MASS	1.2491737		

Active Register: 1 0.05 1.00

N REG RCOPY1 RCOPY2 RCOPY3 LIMIT CENTER SPREAD ERASE RESUME PAGE

PEAK: _

Fri Sep 13 13:42:58 2002 mat95s MAT 95

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STL - Knoxville

Isocalc Initial Calibration Report

TCDD/F in Drinking Water by EPA Method 1613B

TRENT SERVICES

Date: 9/12/02 7:52:03PM

Method: DX1613_L

Instrument: M2A

Level	Filename		Analysis Date/Time
CS1:	/20020912i/020913i1.d	0.5	9/13/02 10:41:33AM
CS2:	/20020912i/020912i2.d	2	9/12/02 7:52:03PM
CS3:	/20020912i/020912i3.d	10	9/12/02 8:53:48PM
CS4:	/20020912i/020912i4.d	40	9/12/02 9:55:31PM
CS5:	/20020912i/020912i5.d	200	9/12/02 10:57:14PM

Response Factors

Analyte	CS1	CS2	CS3	CS4	CS5	Mean RF	%RSD	Limit	Valid?
2,3,7,8-TCDD	1.158	1.011	1.073	1.029	1.078	1.070	5.3	20.0	True
2,3,7,8-TCDF	1.128	0.993	1.041	0.978	0.988	1.026	6.1	20.0	True
37Cl4-2,3,7,8-TCDD	1.211	1.144	1.171	1.141	1.254	1.184	4.1	35.0	True
13C-2,3,7,8-TCDD	1.093	1.118	1.118	1.181	1.248	1.152	5.5	35.0	True
13C-2,3,7,8-TCDF	1.652	1.632	1.638	1.653	1.733	1.662	2.5	35.0	True
13C-1,2,3,4-TCDD	1.000	1.000	1.000	1.000	1.000	1.000	0.0		

MSD 9/13/02

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Isocalc Initial Calibration Report

TCDD/F in Drinking Water by EPA Method 1613B

Date: 9/12/02 7:52:03PM

Method: DX1613_L

Instrument: M2A

Level	Filename	Analysis Date/Time
CS1:	/20020912i/020913i1.d	9/13/02 10:41:33AM
CS2:	/20020912i/020912i2.d	9/12/02 7:52:03PM
CS3:	/20020912i/020912i3.d	9/12/02 8:53:48PM
CS4:	/20020912i/020912i4.d	9/12/02 9:55:31PM
CS5:	/20020912i/020912i5.d	9/12/02 10:57:14PM

Ion Abundance Ratios

Analyte	M/Z's	CS1	CS2	CS3	CS4	CS5	Ratio Limits	Valid?
2,3,7,8-TCDD	M/M+2	0.76	0.86	0.75	0.80	0.79	0.65-0.89	True
2,3,7,8-TCDF	M/M+2	0.81	0.80	0.79	0.81	0.79	0.65-0.89	True
37Cl4-2,3,7,8-TCDD	M	0.00	0.00	0.00	0.00	0.00		
13C-2,3,7,8-TCDD	M/M+2	0.80	0.80	0.81	0.81	0.81	0.65-0.89	True
13C-2,3,7,8-TCDF	M/M+2	0.79	0.80	0.79	0.79	0.78	0.65-0.89	True
13C-1,2,3,4-TCDD	M/M+2	0.82	0.82	0.82	0.80	0.82	0.65-0.89	True

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Isocalc Initial Calibration Report

TCDD/F in Drinking Water by EPA Method 1613B

Date: 9/12/02 7:52:03PM

Method: DX1613_L

Instrument: M2A

Level	Filename	Analysis Date/Time
CS1:	/20020912i/020913i1.d	9/13/02 10:41:33AM
CS2:	/20020912i/020912i2.d	9/12/02 7:52:03PM
CS3:	/20020912i/020912i3.d	9/12/02 8:53:48PM
CS4:	/20020912i/020912i4.d	9/12/02 9:55:31PM
CS5:	/20020912i/020912i5.d	9/12/02 10:57:14PM

Relative Retention Time

Analyte	CS1	CS2	CS3	CS4	CS5	RRT Limits	Valid?
2,3,7,8-TCDD	1.001	1.000	1.002	1.001	1.000	0.999-1.002	True
2,3,7,8-TCDF	1.001	1.001	1.001	1.002	1.001	0.999-1.003	True
37Cl4-2,3,7,8-TCDD	1.013	1.012	1.013	1.013	1.012	0.989-1.052	True
13C-2,3,7,8-TCDD	1.012	1.012	1.012	1.012	1.012	0.976-1.043	True
13C-2,3,7,8-TCDF	0.961	0.961	0.962	0.961	0.961	0.923-1.103	True
13C-1,2,3,4-TCDD	1.000	1.000	1.000	1.000	1.000	1.000-1.000	True

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IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B

Workorder	2427:46	Prep Batch		Lot No	
Data File	/20020912i/02091311.d	Prep Date		SDG No	
IDB ID	64661	Prep Exp Date		Date Received	
Analysis Date	09/13/02 10:41	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	M2A	Extract Vol		Method	DX1613B
Analyst	MAS	Diluton Factor	1.00	Code	F8

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9020	305.8990	303.9020	305.8990	0.65-0.89		
	Noise	00:00	00:00	0	123	170	49	68	0.72	/	
	2,3,7,8-TCDF	34:52	00:00	0	45439	56034	4730	6650	0.81	ABB/ABB	M
316					315.9420	317.9390	315.9420	317.9390	0.65-0.89		
	Noise	00:00	00:00	0	280	360	112	144	0.78	/	
	13C-2,3,7,8-TCDF	34:50	00:00	0	7957826	10036383	835230	1086499	0.79	AVV/ABV	
320					319.8970	321.8940	319.8970	321.8940	0.65-0.89		
	Noise	00:00	00:00	0	120	150	48	60	0.80	/	
	2,3,7,8-TCDD	36:41	00:00	0	29887	39073	3744	5397	0.76	ABB/ABV	M
328					327.8850		327.8850				
	Noise	00:00	00:00	0	158		63				
	37Cl4-2,3,7,8-TCDD	36:42	00:00	0	65933		9731			ABB	M
332					331.9370	333.9340	331.9370	333.9340	0.65-0.89		
	Noise	00:00	00:00	0	313	333	125	133	0.94 *	/	
	13C-1,2,3,4-TCDD	36:14	00:00	0	4900417	5989361	674464	819759	0.82	ABV/ABV	
	13C-2,3,7,8-TCDD	36:39	00:00	0	5283884	6623511	739611	933818	0.80	AVV/AVV	
340					339.8600	341.8570	339.8600	341.8570	1.32-1.78		
	Noise	00:00	00:00	0	203	228	81	91	0.89 *	/	
	1,2,3,7,8-PeCDF	42:06	00:00	0	311592	196960	73844	48869	1.58	ABV/ABV	M
	2,3,4,7,8-PeCDF	43:09	00:00	0	353068	219897	99778	59981	1.61	ABV/ABV	M
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	663	528	265	211	1.26 *	/	
	13C-1,2,3,7,8-PeCDF	42:06	00:00	0	11766949	7371376	2891547	1762601	1.60	ABV/ABV	
	13C-2,3,4,7,8-PeCDF	43:08	00:00	0	12390385	7810246	3441530	2159951	1.59	ABV/ABV	
356					355.8550	357.8520	355.8550	357.8520	1.32-1.78		
	Noise	00:00	00:00	0	145	135	58	54	1.07 *	/	
	1,2,3,7,8-PeCDD	43:35	00:00	0	199352	126419	52961	35455	1.58	ABV/ABV	M
368					367.8950	369.8920	367.8950	369.8920	1.32-1.78		
	Noise	00:00	00:00	0	323	315	129	126	1.02 *	/	
	13C-1,2,3,7,8-PeCDD	43:34	00:00	0	7464623	4754193	2043848	1316629	1.57	ABV/ABV	
374					373.8210	375.8180	373.8210	375.8180	1.05-1.43		
	Noise	00:00	00:00	0	225	238	90	95	0.95 *	/	
	1,2,3,4,7,8-HxCDF	46:43	00:00	0	289431	229682	78940	63328	1.26	ABV/ABV	M
	1,2,3,6,7,8-HxCDF	46:52	00:00	0	305140	244913	75373	62607	1.25	AVV/AVV	M
	2,3,4,6,7,8-HxCDF	47:40	00:00	0	282766	218893	71197	54698	1.29	ABV/ABV	M
	1,2,3,7,8,9-HxCDF	48:44	00:00	0	270971	200113	59743	45143	1.35	AVV/ABV	M
384					383.8640	385.8610	383.8640	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	480	493	192	197	0.97 *	/	
	13C-1,2,3,4,7,8-HxCDF	46:42	00:00	0	5431146	10229867	1493905	2840301	0.53	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDF	46:51	00:00	0	5917856	11238293	1454652	2827302	0.53	AVV/AVV	
	13C-2,3,4,6,7,8-HxCDF	47:39	00:00	0	5513208	10433499	1332241	2571265	0.53	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDF	48:43	00:00	0	4800788	8975290	1073398	2046117	0.53	ABV/ABV	
390					389.8160	391.8130	389.8160	391.8130	1.05-1.43		

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

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IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B

Workorder	2427:46	Prep Batch		Lot No	
Data File	/20020912i/02091212.d	Prep Date		SDG No	
IDB ID	64667	Prep Exp Date		Date Received	
Analysis Date	09/12/02 19:52	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	M2A	Extract Vol		Method	DX1613B
Analyst	DCG	Diluton Factor	1.00	Code	F8

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9020	305.8990	303.9020	305.8990	0.65-0.89		
	Noise	00:00	00:00	0	110	133	44	53	0.83	/	
	2,3,7,8-TCDF	34:58	00:00	0	28457	35356	2943	3770	0.80	ABB/ABV	T
316					315.9420	317.9390	315.9420	317.9390	0.65-0.89		
	Noise	00:00	00:00	0	368	460	147	184	0.80	/	
	13C-2,3,7,8-TCDF	34:56	00:00	0	1424377	1789402	143236	188369	0.80	ABV/ABV	
320					319.8970	321.8940	319.8970	321.8940	0.65-0.89		
	Noise	00:00	00:00	0	93	115	37	46	0.80	/	
	2,3,7,8-TCDD	36:47	00:00	0	20595	23909	3259	4323	0.86	ABB/ABV	
328					327.8850		327.8850				
	Noise	00:00	00:00	0	128		51				
	37Cl4-2,3,7,8-TCDD	36:47	00:00	0	45050		6774			ABV	
332					331.9370	333.9340	331.9370	333.9340	0.65-0.89		
	Noise	00:00	00:00	0	305	183	122	73	1.67 *	/	
	13C-1,2,3,4-TCDD	36:20	00:00	0	886286	1082980	112173	139531	0.82	ABV/ABV	
	13C-2,3,7,8-TCDD	36:46	00:00	0	981662	1220415	130713	160496	0.80	AVV/AVV	
340					339.8600	341.8570	339.8600	341.8570	1.32-1.78		
	Noise	00:00	00:00	0	155	243	62	97	0.64 *	/	
	1,2,3,7,8-PeCDF	42:13	00:00	0	196915	130494	44085	28970	1.51	ABV/ABV	
	2,3,4,7,8-PeCDF	43:14	00:00	0	210880	133525	52413	34771	1.58	ABV/ABV	
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	265	270	106	108	0.98 *	/	
	13C-1,2,3,7,8-PeCDF	42:12	00:00	0	2042483	1260658	453263	274361	1.62	ABV/ABV	
	13C-2,3,4,7,8-PeCDF	43:13	00:00	0	1990648	1251484	511429	321345	1.59	ABV/ABV	
356					355.8550	357.8520	355.8550	357.8520	1.32-1.78		
	Noise	00:00	00:00	0	165	125	66	50	1.32	/	
	1,2,3,7,8-PeCDD	43:41	00:00	0	129390	82100	33282	22575	1.58	ABV/ABV	
368					367.8950	369.8920	367.8950	369.8920	1.32-1.78		
	Noise	00:00	00:00	0	200	195	80	78	1.03 *	/	
	13C-1,2,3,7,8-PeCDD	43:40	00:00	0	1319240	841415	344749	222467	1.57	ABV/ABV	
374					373.8210	375.8180	373.8210	375.8180	1.05-1.43		
	Noise	00:00	00:00	0	158	160	63	64	0.98 *	/	
	1,2,3,4,7,8-HxCDF	46:49	00:00	0	203180	150197	51072	42170	1.35	ABV/ABV	
	1,2,3,6,7,8-HxCDF	46:57	00:00	0	212600	173470	49214	40205	1.23	AVV/AVV	
	2,3,4,6,7,8-HxCDF	47:46	00:00	0	186281	148489	43409	34041	1.25	ABV/AVV	
	1,2,3,7,8,9-HxCDF	48:50	00:00	0	167622	132156	34519	26526	1.27	ABV/ABV	
384					383.8640	385.8610	383.8640	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	360	380	144	152	0.95 *	/	
	13C-1,2,3,4,7,8-HxCDF	46:48	00:00	0	950290	1788940	253623	474957	0.53	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDF	46:56	00:00	0	1097882	2055364	260767	491609	0.53	AVV/AVV	
	13C-2,3,4,6,7,8-HxCDF	47:44	00:00	0	955716	1797147	220411	425917	0.53	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDF	48:49	00:00	0	793957	1492869	168719	312393	0.53	ABV/ABV	
390					389.8160	391.8130	389.8160	391.8130	1.05-1.43		

Notes:
R = ratio is oustide limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
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IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B

Workorder	2427:46	Prep Batch		Lot No	
Data File	/20020912i/02091213.d	Prep Date		SDG No	
IDB ID	64668	Prep Exp Date		Date Received	
Analysis Date	09/12/02 20:53	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	M2A	Extract Vol		Method	DX1613B
Analyst	DCG	Diluton Factor	1.00	Code	F8

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration Flags
304					303.9020	305.8990	303.9020	305.8990	0.65-0.89	
	Noise	00:00	00:00	0	153	170	61	68	0.90 *	/
	2,3,7,8-TCDF	34:58	00:00	0	137120	173002	14143	17931	0.79	ABV/ABV
316					315.9420	317.9390	315.9420	317.9390	0.65-0.89	
	Noise	00:00	00:00	0	225	405	90	162	0.56 *	/
	13C-2,3,7,8-TCDF	34:56	00:00	0	1315692	1663718	133675	169628	0.79	AVV/AVV
320					319.8970	321.8940	319.8970	321.8940	0.65-0.89	
	Noise	00:00	00:00	0	105	145	42	58	0.72	/
	2,3,7,8-TCDD	36:49	00:00	0	93812	124393	12812	16330	0.75	ABV/ABV
328					327.8850		327.8850			
	Noise	00:00	00:00	0	135		54			
	37Cl4-2,3,7,8-TCDD	36:48	00:00	0	212905		28835			ABV
332					331.9370	333.9340	331.9370	333.9340	0.65-0.89	
	Noise	00:00	00:00	0	293	225	117	90	1.30 *	/
	13C-1,2,3,4-TCDD	36:19	00:00	0	818335	1000510	107621	127455	0.82	AVV/ABV
	13C-2,3,7,8-TCDD	36:45	00:00	0	911221	1123023	120451	150299	0.81	AVB/AVV
[illegible]0					339.8600	341.8570	339.8600	341.8570	1.32-1.78	
	Noise	00:00	00:00	0	190	210	76	84	0.90 *	/
	1,2,3,7,8-PeCDF	42:12	00:00	0	932657	601206	217561	136977	1.55	ABV/ABV
	2,3,4,7,8-PeCDF	43:15	00:00	0	939056	601847	232210	149201	1.56	ABV/ABV
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78	
	Noise	00:00	00:00	0	258	253	103	101	1.02 *	/
	13C-1,2,3,7,8-PeCDF	42:11	00:00	0	1934489	1209012	437682	280464	1.60	ABV/ABV
	13C-2,3,4,7,8-PeCDF	43:14	00:00	0	1873965	1172945	472626	297692	1.60	ABV/ABV
356					355.8550	357.8520	355.8550	357.8520	1.32-1.78	
	Noise	00:00	00:00	0	178	160	71	64	1.11 *	/
	1,2,3,7,8-PeCDD	43:41	00:00	0	612005	375924	147097	94153	1.63	ABV/ABV
368					367.8950	369.8920	367.8950	369.8920	1.32-1.78	
	Noise	00:00	00:00	0	243	160	97	64	1.52	/
	13C-1,2,3,7,8-PeCDD	43:40	00:00	0	1235698	776949	313785	199403	1.59	ABV/ABV
374					373.8210	375.8180	373.8210	375.8180	1.05-1.43	
	Noise	00:00	00:00	0	243	260	97	104	0.93 *	/
	1,2,3,4,7,8-HxCDF	46:49	00:00	0	865677	692119	225669	176434	1.25	ABV/ABV
	1,2,3,6,7,8-HxCDF	46:58	00:00	0	951661	761031	232426	174796	1.25	AVV/AVV
	2,3,4,6,7,8-HxCDF	47:46	00:00	0	815159	639988	195816	152603	1.27	AVV/AVV
	1,2,3,7,8,9-HxCDF	48:50	00:00	0	704486	549195	150154	113983	1.28	ABV/ABV
384					383.8640	385.8610	383.8640	385.8610	0.43-0.59	
	Noise	00:00	00:00	0	170	330	68	132	0.52	/
	13C-1,2,3,4,7,8-HxCDF	46:48	00:00	0	892720	1666687	228796	420960	0.54	ABV/ABV
	13C-1,2,3,6,7,8-HxCDF	46:57	00:00	0	1029588	1904809	252909	463559	0.54	AVV/AVV
	13C-2,3,4,6,7,8-HxCDF	47:44	00:00	0	892134	1643655	220416	393493	0.54	AVB/AVV
	13C-1,2,3,7,8,9-HxCDF	48:49	00:00	0	739608	1383345	155064	292848	0.53	ABV/ABV
[illegible]0					389.8160	391.8130	389.8160	391.8130	1.05-1.43	

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
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IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B

Workorder	2427:46	Prep Batch		Lot No	
Data File	/20020912i/02091214.d	Prep Date		SDG No	
IDB ID	64669	Prep Exp Date		Date Received	
Analysis Date	09/12/02 21:55	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	M2A	Extract Vol		Method	DX1613B
Analyst	DCG	Diluton Factor	1.00	Code	F8

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration Flags
304					303.9020	305.8990	303.9020	305.8990	0.65-0.89	
	Noise	00:00	00:00	0	193	285	77	114	0.68	/
	2,3,7,8-TCDF	34:58	00:00	0	552929	684505	60271	69518	0.81	ABV/ABV
316					315.9420	317.9390	315.9420	317.9390	0.65-0.89	
	Noise	00:00	00:00	0	263	603	105	241	0.44 *	/
	13C-2,3,7,8-TCDF	34:54	00:00	0	1394821	1767181	142952	182967	0.79	ABV/ABV
320					319.8970	321.8940	319.8970	321.8940	0.65-0.89	
	Noise	00:00	00:00	0	100	128	40	51	0.78	/
	2,3,7,8-TCDD	36:46	00:00	0	413902	516059	55979	70055	0.80	ABV/ABV
328					327.8850		327.8850			
	Noise	00:00	00:00	0	130		52			
	37Cl4-2,3,7,8-TCDD	36:46	00:00	0	873298		117241			ABV
332					331.9370	333.9340	331.9370	333.9340	0.65-0.89	
	Noise	00:00	00:00	0	353	263	141	105	1.34 *	/
	13C-1,2,3,4-TCDD	36:18	00:00	0	851551	1061391	112806	137274	0.80	ABV/ABV
	13C-2,3,7,8-TCDD	36:44	00:00	0	1010358	1248147	134717	172453	0.81	AVV/AVV
340					339.8600	341.8570	339.8600	341.8570	1.32-1.78	
	Noise	00:00	00:00	0	475	320	190	128	1.48	/
	1,2,3,7,8-PeCDF	42:11	00:00	0	3979381	2562781	934485	604043	1.55	ABV/ABV
	2,3,4,7,8-PeCDF	43:13	00:00	0	4045004	2603980	1083405	681997	1.55	ABV/ABV
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78	
	Noise	00:00	00:00	0	358	400	143	160	0.89 *	/
	13C-1,2,3,7,8-PeCDF	42:09	00:00	0	2116112	1336340	501216	321468	1.58	ABV/ABV
	13C-2,3,4,7,8-PeCDF	43:12	00:00	0	2054874	1304213	549684	344871	1.58	ABV/ABV
356					355.8550	357.8520	355.8550	357.8520	1.32-1.78	
	Noise	00:00	00:00	0	308	243	123	97	1.27 *	/
	1,2,3,7,8-PeCDD	43:40	00:00	0	2645638	1693639	732486	467885	1.56	ABV/ABV
368					367.8950	369.8920	367.8950	369.8920	1.32-1.78	
	Noise	00:00	00:00	0	190	143	76	57	1.33	/
	13C-1,2,3,7,8-PeCDD	43:39	00:00	0	1362059	857615	376800	233386	1.59	ABV/ABV
374					373.8210	375.8180	373.8210	375.8180	1.05-1.43	
	Noise	00:00	00:00	0	408	380	163	152	1.07	/
	1,2,3,4,7,8-HxCDF	46:48	00:00	0	3689172	2942289	1022059	811119	1.25	ABV/ABV
	1,2,3,6,7,8-HxCDF	46:56	00:00	0	4085970	3241385	1023478	813847	1.26	AVB/AVV
	2,3,4,6,7,8-HxCDF	47:44	00:00	0	3454207	2725286	840808	661429	1.27	AVV/AVV
	1,2,3,7,8,9-HxCDF	48:49	00:00	0	3088180	2454516	685865	546311	1.26	ABV/ABV
384					383.8640	385.8610	383.8640	385.8610	0.43-0.59	
	Noise	00:00	00:00	0	333	285	133	114	1.17 *	/
	13C-1,2,3,4,7,8-HxCDF	46:46	00:00	0	966249	1844549	262397	500843	0.52	ABV/ABV
	13C-1,2,3,6,7,8-HxCDF	46:55	00:00	0	1110164	2087147	274330	514809	0.53	AVV/AVV
	13C-2,3,4,6,7,8-HxCDF	47:43	00:00	0	962402	1833939	231816	447697	0.52	AVB/AVV
	13C-1,2,3,7,8,9-HxCDF	48:47	00:00	0	815233	1550019	176572	340396	0.53	ABV/ABV
390					389.8160	391.8130	389.8160	391.8130	1.05-1.43	

Notes:
R = ratio is oustide limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup macch

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IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B

Workorder	2427:46	Prep Batch		Lot No	
Data File	/200209121/02091215.d	Prep Date		SDG No	
IDB ID	64666	Prep Exp Date		Date Received	
Analysis Date	09/12/02 22:57	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	M2A	Extract Vol		Method	DX1613B
Analyst	DCG	Diluton Factor	1.00	Code	F8

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration Flags
304					303.9020	305.8990	303.9020	305.8990	0.65-0.89	
	Noise	00:00	00:00	0	280	335	112	134	0.84	/
	2,3,7,8-TCDF	34:57	00:00	0	2892322	3638816	307020	383222	0.79	ABV/ABV
316					315.9420	317.9390	315.9420	317.9390	0.65-0.89	
	Noise	00:00	00:00	0	353	298	141	119	1.18 *	/
	13C-2,3,7,8-TCDF	34:55	00:00	0	1453867	1852305	153388	195820	0.78	ABV/AVV
320					319.8970	321.8940	319.8970	321.8940	0.65-0.89	
	Noise	00:00	00:00	0	128	190	51	76	0.67	/
	2,3,7,8-TCDD	36:46	00:00	0	2265690	2869721	318871	404558	0.79	ABV/ABV
328					327.8850		327.8850			
	Noise	00:00	00:00	0	135		54			
	37Cl4-2,3,7,8-TCDD	36:46	00:00	0	4785554		672918			ABV
332					331.9370	333.9340	331.9370	333.9340	0.65-0.89	
	Noise	00:00	00:00	0	300	215	120	86	1.40 *	/
	13C-1,2,3,4-TCDD	36:19	00:00	0	861565	1046443	110968	134598	0.82	AVV/ABV
	13C-2,3,7,8-TCDD	36:45	00:00	0	1065265	1316804	145447	184229	0.81	AVV/AVV
340					339.8600	341.8570	339.8600	341.8570	1.32-1.78	
	Noise	00:00	00:00	0	803	540	321	216	1.49	/
	1,2,3,7,8-PeCDF	42:12	00:00	0	22622560	14294209	5766845	3562819	1.58	ABV/ABV
	2,3,4,7,8-PeCDF	43:14	00:00	0	23384396	14810925	6667967	4234328	1.58	ABV/ABV
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78	
	Noise	00:00	00:00	0	255	188	102	75	1.36	/
	13C-1,2,3,7,8-PeCDF	42:11	00:00	0	2361213	1492835	595867	381085	1.58	ABV/ABV
	13C-2,3,4,7,8-PeCDF	43:13	00:00	0	2347718	1499433	674496	432196	1.57	ABV/ABV
356					355.8550	357.8520	355.8550	357.8520	1.32-1.78	
	Noise	00:00	00:00	0	405	288	162	115	1.41	/
	1,2,3,7,8-PeCDD	43:40	00:00	0	15384899	9819992	4697816	3005069	1.57	ABV/ABV
368					367.8950	369.8920	367.8950	369.8920	1.32-1.78	
	Noise	00:00	00:00	0	213	145	85	58	1.47	/
	13C-1,2,3,7,8-PeCDD	43:39	00:00	0	1583884	1011414	474040	300341	1.57	ABV/ABV
374					373.8210	375.8180	373.8210	375.8180	1.05-1.43	
	Noise	00:00	00:00	0	605	523	242	209	1.16	/
	1,2,3,4,7,8-HxCDF	46:49	00:00	0	21611682	17274476	5715158	4664668	1.25	ABV/ABV
	1,2,3,6,7,8-HxCDF	46:58	00:00	0	22511642	17822522	5980394	4614582	1.26	AVV/AVB
	2,3,4,6,7,8-HxCDF	47:45	00:00	0	19816194	15858024	5228612	4115478	1.25	AVV/AVV
	1,2,3,7,8,9-HxCDF	48:50	00:00	0	18308560	14544461	4293104	3350908	1.26	ABV/ABV
384					383.8640	385.8610	383.8640	385.8610	0.43-0.59	
	Noise	00:00	00:00	0	183	310	73	124	0.59	/
	13C-1,2,3,4,7,8-HxCDF	46:48	00:00	0	1140868	2114695	303322	553248	0.54	ABV/ABV
	13C-1,2,3,6,7,8-HxCDF	46:57	00:00	0	1222602	2269643	327217	582669	0.54	AVV/AVV
	13C-2,3,4,6,7,8-HxCDF	47:44	00:00	0	1119161	2075397	306134	553124	0.54	AVB/AVV
	13C-1,2,3,7,8,9-HxCDF	48:49	00:00	0	980034	1833196	232469	431818	0.53	ABV/ABV
390					389.8160	391.8130	389.8160	391.8130	1.05-1.43	

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

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STL KNOXVILLE
SPECIALTY ORGANICS INSTRUMENT MAT 95S RUN LOG

Date	Time	Opr	Sample ID	Filename	Code	Matrix	Type	Tape	Lot#/Comments
11/5/02	18:35	WSD	FA02JIAA	tfa02j	OK	H_2O	SAM		H2J290127-002
11/5/02	19:37	WSD	FA02LIAA	tfa02l	OK	H_2O	SAM		⊥ -003
11/5/02	20:24	WSD	E857CIAA	te857c	OK	solid	SAM		H2J010124-005
11/5/02	21:26	WSD	E857DIAA	te857d	OK	solid	SAM		⊥ -006
11/5/02	22:28	WSD	Nonane	r	OK	—	QC		flush
11/5/02	22:43	WSD	2427:85	t02110552	OK to close	—	DEL WIN		Del win
11-5-02	23:42	PMP	PFK	—	OK	—	Res		Mass Res Chk
11-6-02	00:20	PMP	PFK	—	OK	—	Res		Mass Res Chk
11-6-02	00:22	PMP	2427:85	t02110651	OK	—	win ver		Ver/win
11-6-02	01:27	PMP	E9JMDIAC	te9jmdc	OK	SOLID	QC		H2J080000-130C
11-6-02	02:29	PMP	PMP 11-6-02 E9FQJNIAD	te9fqns	OK	SOLID	QC		A2J040301-003S
11-6-02	03:30	PMP	E9FQNIAE	te9fqnd	OK	SOLID	QC		⊥ 003D
11-6-02	04:31	PMP	Nonane	tsb1106	OK	—	QC		flush
11-6-02	05:20	PMP	Nonane	tsb1106	OK	—	QC		⊥
11-6-02	06:07	PMP	E9JMDIAA	te9jmdb	OK	SOLID	QC		H2J080000-130B
11-6-02	07:09	PMP	E9FQNIAA	te9fqn	OK	SOLID	SAM		A2J040301-003
11-6-02	08:11	PMP	E9FQJIAA	te9fqj	RE bad sample	SOLID	SAM		⊥ -001
11-6-02	—	PMP	E9FQMIAA	te9fqm	DR	SOLID	SAM		-002
11-6-02	—	PMP	E9FQRIAA	te9fqr	DR	SOLID	SAM		⊥ -004
11-6-02	08:58	PMP	Nonane	tsb1106	~~DR~~ OK	WSD 11-6-02	QC		flush
11-6-02	10:10	PMP	2427:85	PMP 11-6-02 t02110652	CS	—	win ver		Ver/W
11-6-02	10:50	WSD	2427:85	t02110652	OK to close		DEL		Close Win
11-6-02	12:14	WSD	PFK	—	OK	—	RES		Mass Res Chk
11-6-02	12:52	WSD	PFK	—	OK	—	RES		⊥
11-6-02	12:55	WSD	2427:85	t02110653	OK	—	DEL WIN		Del win
11-6-02	13:57	WSD	Nonane	r	OK	—	QC		flushes
11-6-02	14:13	WSD	⊥	r	OK	—	QC		⊥
11-6-02	14:28	WSD	E9JMDIAA	te9jmdba	OK	solid	QC		Sep blk
11-6-02	15:15	WSD	E9FQMIAA	te9fqm	IF	solid	SAM		A2J040301-002
11-6-02	16:02	WSD	E9FQRIAA	te9fqr	OK	solid	SAM		-004
11-6-02	16:50	WSD	E9FQTIAA	te9fqt	OK	solid	SAM		-005
11-6-02	17:40	WSD	E9FQZIAA	te9fqz	OK	solid	SAM		⊥ -006

Read and Understood by: WSDavidson Date: 11/7/02

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STL KNOXVILLE
SPECIALTY ORGANICS INSTRUMENT MAT 95S RUN LOG

Date	Time	Opr	Sample ID	Filename	Code	Matrix	Type	Tape	Lot#/Comments
11-6-02	18:27	WSD	E9FQ31AA	te9fq3	OK	solid	SAM		A2J040301-007
11-6-02	19:15	WSD	E9FQ41AA	te9fq4	OK	solid	SAM		-008
11-6-02	20:05	WSD	E9FQ51AA	te9fq5	OK	solid	SAM		-009
11-6-02	20:52	WSD	E9FQ61AA	te9fq6	OK	solid	SAM		-010
11-6-02	22:02	WSD	Noname	r	OK	—	QC		flush
~~11-6-02~~		~~WSD~~	~~2427.85~~	~~t02110653~~	PMP 11-6-02		~~VER WIN~~		~~Ver/Win~~
11-6-02	22:28	PMP	PFK	—	OK	—	Res		To open 1613 MASS Res CHK
11-6-02	22:31	PMP	2427.85	t02110654	OK	—	win ver		Ver/Win
11-6-02	23:31	PMP	PFK	—	OK	—	Res		To open/close SOP 0 Mass Res Chk
11-6-02	23:38	PMP	FA1591AC	tfa159c	OK	H_2O	QC		H2J290000-435C
11-7-02	00:40	PMP	Noname	tsb1107	OK	—	QC		flush
11-7-02	01:29	PMP	Noname	tsb1107	OK	—	QC		⊥
11-7-02	02:17	PMP	FA1591AA	tfa159b	OK	H_2O	QC		H2J290000-435B
11-7-02	03:19	PMP	E88EH1AA	te88eh	OK	H_2O	SAM		H2J020124-001
11-7-02	04:21	PMP	E9FQM1AA	te9fqm	OK	SOLID	SAM		A2J040301-002
11-7-02	05:08	PMP	E9A751DA	te9a75	DL	SOLID	SAM		C2J030160-001
11-7-02	06:09	PMP	E9A761AA	te9a76	DL	SOLID	SAM		-002
11-7-02	07:11	PMP	E9A771AA	te9a77	DL	SOLID	SAM		-003
11-7-02	08:13	PMP	E9A781AA	te9a78	DL	SOLID	SAM		-004
11-7-02	09:14	PMP	Noname	r	OK	—	QC		flush
11-7-02	09:30	PMP	2427.85	t02110751	OK	—	win ver		Ver/win
11-7-02	09:13	WSD	PFK	—	OK	—	RES		to close 1613 on!
11-7-02	10:37	WSD	PFK	—	OK	—	RES		to open/close 8290
11-7-02	~~10:50~~	WSD	E9C2R1AC	te9c2rc	IF ~~OK~~	solid	QC		H2J030000-358C
11-7-02	11:58	WSD	Noname	tsb1107	OK	—	QC		flushes
11-7-02	12:45	WSD	Noname	tsb1107	OK	—	QC		⊥
11-7-02	13:31	WSD	E9C2R1AA	te9c2rb	OK	solid	QC		H2J030000-358B
11-7-02		WSD	E9A751AA 1/10	te9a75a	OK	solid	SAM		C2J030160-001
11-7-02		WSD	E9A761AA 1/10	te9a76a	OK	solid	SAM		-002
11-7-02		WSD	E9A771AA 1/10	te9a77a	OK	solid	SAM		-003
11-7-02		WSD	E9A781AA 1/10	te9a78a	OK	solid	SAM		-004
11-7-02		WSD	E9A791AA 1/10	te9a79	OK	solid	SAM		-005

Cadcaglockup

Read and Understood by:

_____ Date: _____

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STL Knoxville Specialty Organics GC/MS Continuing Calibration Review / Narrative Checklist
Methods: 8290/23 - KNOX-ID-0003, Rev. 5

Start PFK:	00:20 ✓	CS3 Filename:	t021065(✓	Win Filename:	t021065(	Inst:	MAT95(✓
End PFK:	12:14 ✓	CS3 Filename:	t021065 2 ✓	Col Perf Filename:	t021065(	ICAL Date:	9-12-02 ✓

Review Items	N/A	Yes	No	If No, why is data reportable?	2nd Level
1. Was the mass resolution documented at both the beginning and end of the 12 hour shift?		✓			
2. Was the instrument resolution >10,000 (<100 ppm) on PFK m/z 304.9824 and m/z 380.9760 (at reduced voltage)?		✓			
3. Was the measured exact mass of m/z 380.9760 (PFK) within 5 ppm at reduced accelerating voltage?		✓			
4. Was date/time of analysis verified between analysis header and logbook as correct?		✓			
5. Was the Window Defining Mixture analyzed and the MID switchpoints set to encompass the retention time windows of each congener group?		✓			
6. Was the Column Performance solution analyzed and the %Valley ≤25 for separation between 2378-TCDD/F and the closest eluting non-2378 isomer?		✓			
7. Was the continuing calibration performed at the beginning of the 12 hour period after successful mass resolution and GC resolution performance check?		✓			
8. Was the continuing calibration performed at the end of the 12 hour period?		✓			
9. Were the response factors calculated for each labeled standard and unlabeled native analyte using the SOP specified reference compound, quantitation ions, and formula.		✓			
10. Are %D ≤20 for all unlabeled native analytes in the beginning and ending calibration?		✓		Ending %D ≤25 and mean RRF from two continuing calibrations used to calculate samples. Ending %D >25 corrective action performed and all positive sample extracts reanalyzed.	
11. Are %D ≤30 for all labeled standards in the beginning and ending calibration?		✓		Ending %D ≤35 and mean RRF from two continuing calibrations used to calculate samples. Ending %D >35 and corrective action performed and all positive sample extracts reanalyzed.	
12. Are all S/N ratios ≥10 for the GC signals in each EICP (extracted ion chromatographic profile) including internal standards?		✓			
13. Are the ion abundance ratios for all labeled and unlabeled analytes within the specified control limits?		✓			
14. If manual integrations were performed, are they clearly identified, initialed and dated?		✓		Manual on 234678-HxCDF due to interference carryover from client samples.	
15. If criteria were not met, was a NCM generated, approved by supervisor, and copy included in folder?	✓				
16. Does the CCAL folder contain **complete** data in the following order? Data review checklist, a **complete** runlog, CCAL summary, Ratio summary, Calculation summary, PFK resolution/peak match documentation, and Total RIC, EICP's and manual integration - for window and both standards.		✓			

Analyst: PMW	Date: 11-6-02	2nd Level Reviewer :	Date:
Comments:		Comments:	

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-7.8 V SCAN AUTOTUNE TUNE R = 10 995 374 303 uV

P 3.79 A -7.9 V

1.00 mA 2409 1129 680 2540

57.1 V d s 1 x y

270 C s s s s s

270 C 2409 1325 634 2680

0.86 mA -7.8 V

E1 POS u electric

U(a) 4747 V U(esa) 763.8 V

Entr. Slit	(ENS)	171.0	
Exit Slit	(EXS)	179.0	
Sweep Mass	(MASS)	304.982	amu
Virt. Mass	(VMASS)	304.982	amu
Link Mass	(LMASS)	304.982	amu
Sweep Width	(SW)	0.020	%
Sweep Speed	(SS)	3.0	/s
U(a) Offset	(UOFS)	5.0	V
U(a)/U(esa)	(URATIO)	2.441	%
Multiplier	(EMULT)	1.95	kV
Dyn. Volt.	(DYNODE)	pos	
Ref. Inlet	(TREF)	150	C
Beam Rot.	(BQUAD)	3.3	V
Focus Quad	(FQUAD)	5.7	V

VG off VVR off VS2 off VV off VS3 off

TUNE DESCRIPTOR tune2

SAVE

304.952 304.982 305.01

<> >< << >> ^ V C V LOCK UNLK

TUNE:

Peak Register Display

Copy result to ULIST

100.0

50.0

slow

0.0

REG 1/2: 380.975276 REG 1/3: REG 2/3:

MASS	:	304.98323	380.97627
REF MASS	:	304.98243	380.97605
PEAK WIDTH [ppm]:		91.95203	94.00657

Active Register: 1 0.05 1.00

N REG RCOPY1 RCOPY2 RCOPY3 LIMIT CENTER SPREAD ERASE RESUME

PEAK: _

Wed Nov 6 00:20:41 2002 mat95s MAT 95

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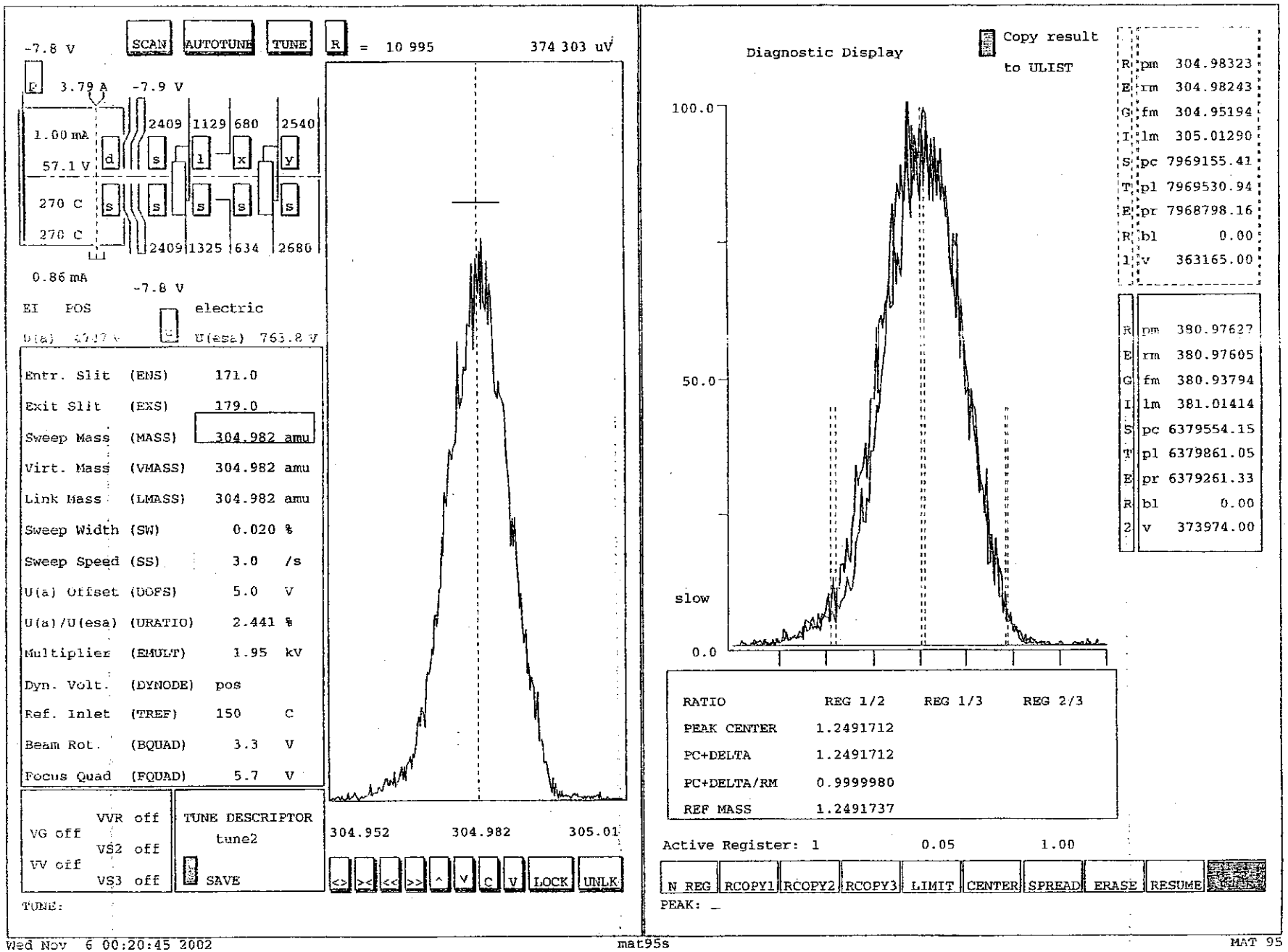

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USEPA Method 1613/8290
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDF
By High-Resolution Gas Chromatography/High-Resolution Mass Spectroscopy (HRGC/

PCDD/PCDF Daily Calibration Verification

Laboratory ID: STL Knoxville
Init. Calibration Date: 12-Sep-02

Instrument ID: MAT-95S
GC Column ID: Rtx-5

CS3 Data Filename: t021106s1
Analysis Date: 06-Nov-02
Analysis Time: 00:22

Analytes	m/z Mass 1	m/z Mass 2	Area Mass 1	Area Mass 2	RT	RRT	Ratio	Ratio Limits	Std Conc	8290 ICAL RF	8290 Calc RF	8290 Conc. (ng/mL)
13C-1,2,3,4-TCDD	331.9368	333.9339	1057594	1303251	34:26	1.000	0.81	0.65-0.89	100.0	1.000	1.000	100.0
13C-2,3,7,8-TCDD	331.9368	333.9339	1134463	1415448	35:02	1.017	0.80	0.65-0.89	100.0	1.152	1.080	93.8
37Cl-2,3,7,8-TCDD	327.8847		266385		35:06	1.019		NA	10.0	1.184	1.128	9.5
2,3,7,8-TCDD	319.8965	321.8936	128730	160259	35:06	1.002	0.80	0.65-0.89	10.0	1.070	1.133	10.6
13C-2,3,7,8-TCDF	315.9419	317.9389	1733213	2162328	32:52	0.955	0.80	0.65-0.89	100.0	1.662	1.650	99.3
2,3,7,8-TCDF	303.9016	305.8987	183716	226326	32:54	1.001	0.81	0.65-0.89	10.0	1.026	1.053	10.3
13C-1,2,3,7,8-PeCDD	367.8949	369.8919	1660131	1047090	42:53	1.245	1.59	1.32-1.78	100.0	1.169	1.147	98.1
2,3,7,8-PeCDD	355.8546	357.8516	850460	543069	42:54	1.000	1.57	1.32-1.78	50.0	0.995	1.029	51.7
13C-1,2,3,7,8-PeCDF	351.9000	353.8970	2463472	1553550	41:17	1.199	1.59	1.32-1.78	100.0	1.798	1.702	94.6
13C-2,3,4,7,8-PeCDF	351.9000	353.8970	2505158	1576172	42:24	1.231	1.59	1.32-1.78	100.0	--	--	--
1,2,3,7,8-PeCDF	339.8597	341.8567	1279886	800788	41:19	1.001	1.60	1.32-1.78	50.0	0.987	1.036	52.5
2,3,4,7,8-PeCDF	339.8597	341.8567	1302479	827590	42:25	1.000	1.57	1.32-1.78	50.0	1.035	1.061	51.2
13C-1,2,3,4,7,8-HxCDD	401.8559	403.8529	1419673	1112207	47:03	0.988	1.28	1.05-1.43	100.0	--	--	--
13C-1,2,3,6,7,8-HxCDD	401.8559	403.8529	1506979	1179802	47:11	0.991	1.28	1.05-1.43	100.0	1.142	1.013	88.7
13C-1,2,3,7,8,9-HxCDD	401.8559	403.8529	1489275	1163917	47:36	1.000	1.28	1.05-1.43	100.0	1.000	1.000	100.0
1,2,3,4,7,8-HxCDD	389.8157	391.8127	800397	635653	47:04	1.000	1.26	1.05-1.43	50.0	0.958	1.069	55.8
1,2,3,6,7,8-HxCDD	389.8157	391.8127	788297	623571	47:12	1.000	1.26	1.05-1.43	50.0	1.020	1.051	51.5
1,2,3,7,8,9-HxCDD	389.8157	391.8127	861689	690876	47:37	1.009	1.25	1.05-1.43	50.0	0.984	1.156	58.7
13C-1,2,3,4,7,8-HxCDF	383.8639	385.8610	1297000	2430165	45:59	0.966	0.53	0.43-0.59	100.0	1.422	1.405	98.8
13C-1,2,3,6,7,8-HxCDF	383.8639	385.8610	1334401	2504997	46:07	0.969	0.53	0.43-0.59	100.0	--	--	--
13C-2,3,4,6,7,8-HxCDF	383.8639	385.8610	1238088	2334112	46:54	0.985	0.53	0.43-0.59	100.0	--	--	--
13C-1,2,3,7,8,9-HxCDF	383.8639	385.8610	1114661	2109798	47:54	1.006	0.53	0.43-0.59	100.0	--	--	--
1,2,3,4,7,8-HxCDF	373.8208	375.8178	1304322	1041308	45:59	1.000	1.25	1.05-1.43	50.0	1.241	1.259	50.7
1,2,3,6,7,8-HxCDF	373.8208	375.8178	1305194	1044152	46:08	1.000	1.25	1.05-1.43	50.0	1.339	1.261	47.1
2,3,4,6,7,8-HxCDF	373.8208	375.8178	1178449	924811	46:55	1.000	1.27	1.05-1.43	50.0	1.167	1.129	48.4
1,2,3,7,8,9-HxCDF	373.8208	375.8178	1125408	854813	47:55	1.000	1.32	1.05-1.43	50.0	1.054	1.063	50.4
13C-1,2,3,4,6,7,8-HpCDD	435.8169	437.8140	1428582	1340459	52:09	1.096	1.07	0.88-1.20	100.0	1.017	1.044	102.6
1,2,3,4,6,7,8-HpCDD	423.7766	425.7737	719561	682248	52:10	1.000	1.05	0.88-1.20	50.0	0.967	1.012	52.4
13C-1,2,3,4,6,7,8-HpCDF	417.8253	419.8220	903019	1933612	50:27	1.060	0.47	0.37-0.51	100.0	1.123	1.069	95.2
13C-1,2,3,4,7,8,9-HpCDF	417.8253	419.8220	797219	1736285	52:46	1.109	0.46	0.37-0.51	100.0	--	--	--
1,2,3,4,6,7,8-HpCDF	407.7818	409.7789	1120289	1073003	50:28	1.000	1.04	0.88-1.20	50.0	1.492	1.546	51.8
1,2,3,4,7,8,9-HpCDF	407.7818	409.7789	947977	898432	52:47	1.000	1.06	0.88-1.20	50.0	1.201	1.302	54.2
13C-OCDD	469.7779	471.7750	2365138	2588550	56:14	1.181	0.91	0.76-1.02	200.0	1.040	0.934	179.5
OCDD	457.7377	459.7348	1236423	1375301	56:15	1.000	0.90	0.76-1.02	100.0	1.021	1.054	103.3
OCDF	441.7428	443.7399	1472859	1612110	56:23	1.003	0.91	0.76-1.02	100.0	1.182	1.246	105.4

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USEPA Method 1613B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs)
By High-Resolution Gas Chromatography/High-Resolution Mass Spectroscopy (HRGC/HRMS)

PCDD/PCDF Daily Calibration Verification

Laboratory ID: STL Knoxville
Init. Calibration Date: 12-Sep-02
Instrument ID: MAT-95S
GC Column ID: Rtx-5

VER Data Filename: t021106s1
Analysis Date: 06-Nov-02
Analysis Time: 00:22

Analytes	m/z's Forming Ratio	Ion Abund. Ratio	QC Limits	Conc. Found	ICAL RF	VER RF	%D	QC LIMIT	Flag
13C-2,3,7,8-TCDD	M/M+2	0.80	0.65-0.89	93.8	1.152	1.080	6.2%	30%	TRUE
37Cl-2,3,7,8-TCDD	M/M+2		NA	9.5	1.184	1.128	4.7%	30%	TRUE
2,3,7,8-TCDD	M/M+2	0.80	0.65-0.89	10.6	1.070	1.133	-5.9%	20%	TRUE
13C-2,3,7,8-TCDF	M/M+2	0.80	0.65-0.89	99.3	1.662	1.650	0.7%	30%	TRUE
2,3,7,8-TCDF	M/M+2	0.81	0.65-0.89	10.3	1.026	1.053	-2.6%	20%	TRUE
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.59	1.32-1.78	98.1	1.169	1.147	1.9%	30%	TRUE
1,2,3,7,8-PeCDD	M+2/M+4	1.57	1.32-1.78	51.7	0.995	1.029	-3.5%	20%	TRUE
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.59	1.32-1.78	94.6	1.798	1.702	5.4%	30%	TRUE
1,2,3,7,8-PeCDF	M+2/M+4	1.60	1.32-1.78	52.5	0.987	1.036	-5.0%	20%	TRUE
2,3,4,7,8-PeCDF	M+2/M+4	1.57	1.32-1.78	51.2	1.035	1.061	-2.5%	20%	TRUE
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.28	1.05-1.43	88.7	1.142	1.013	11.3%	30%	TRUE
1,2,3,4,7,8-HxCDD	M+2/M+4	1.26	1.05-1.43	55.8	0.958	1.069	-11.6%	20%	TRUE
1,2,3,6,7,8-HxCDD	M+2/M+4	1.26	1.05-1.43	51.5	1.020	1.051	-3.0%	20%	TRUE
1,2,3,7,8,9-HxCDD	M+2/M+4	1.25	1.05-1.43	58.7	0.984	1.156	-17.4%	20%	TRUE
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.53	0.43-0.59	98.8	1.422	1.405	1.2%	30%	TRUE
1,2,3,4,7,8-HxCDF	M+2/M+4	1.25	1.05-1.43	50.7	1.241	1.259	-1.4%	20%	TRUE
1,2,3,6,7,8-HxCDF	M+2/M+4	1.25	1.05-1.43	47.1	1.339	1.261	5.9%	20%	TRUE
2,3,4,6,7,8-HxCDF	M+2/M+4	1.27	1.05-1.43	48.4	1.167	1.129	3.3%	20%	TRUE
1,2,3,7,8,9-HxCDF	M+2/M+4	1.32	1.05-1.43	50.4	1.054	1.063	-0.8%	20%	TRUE
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.07	0.88-1.20	102.6	1.017	1.044	-2.6%	30%	TRUE
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88-1.20	52.4	0.967	1.012	-4.7%	20%	TRUE
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.47	0.37-0.51	95.2	1.123	1.069	4.8%	30%	TRUE
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.04	0.88-1.20	51.8	1.492	1.546	-3.6%	20%	TRUE
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.06	0.88-1.20	54.2	1.201	1.302	-8.4%	20%	TRUE
13C--OCDD	M+2/M+4	0.91	0.76-1.02	179.5	1.040	0.934	10.2%	30%	TRUE
OCDD	M+2/M+4	0.90	0.76-1.02	103.3	1.021	1.054	-3.3%	20%	TRUE
OCDF	M+2/M+4	0.91	0.76-1.02	105.4	1.182	1.246	-5.4%	20%	TRUE

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Prep 11-6-02
NTM 11-06-02

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IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290

CCAL ID: 1,134 - 021106S1

CCAL Filename: t021106s1

CCAL Sample ID: 2427:85

CCAL Result Dir: /20021106s1/021106s1.d

CCAL Date/Time: 11/06/02 00:22

ICAL Date: 09/12/02

Method: IN - DX8290

Instrument: M2A

Column SN: 334061

Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Analytes	ICAL RT	CCAL RT	RT Diff	ICAL RRT	CCAL RRT	RRT QC Limit	Valid?
2,3,7,8-TCDD	36:46	35:06	-100	1.001	1.002	-	
2,3,7,8-TCDF	34:57	32:54	-123	1.001	1.001	-	
1,2,3,7,8-PeCDD	43:39	42:54	-45	1.000	1.001	-	
1,2,3,7,8-PeCDF	42:11	41:19	-52	1.000	1.001	-	
2,3,4,7,8-PeCDF	43:13	42:25	-48	1.025	1.027	-	
1,2,3,4,7,8-HxCDD	47:55	47:04	-51	0.998	0.998	-	
1,2,3,6,7,8-HxCDD	48:03	47:12	-51	1.000	1.000	-	
1,2,3,7,8,9-HxCDD	48:29	47:37	-52	1.010	1.009	-	
1,2,3,4,7,8-HxCDF	46:48	45:59	-49	1.000	1.000	-	
1,2,3,6,7,8-HxCDF	46:56	46:08	-48	1.003	1.003	-	
2,3,4,6,7,8-HxCDF	47:44	46:55	-49	1.021	1.020	-	
1,2,3,7,8,9-HxCDF	48:49	47:55	-54	1.044	1.042	-	
1,2,3,4,6,7,8-HpCDD	53:06	52:10	-56	1.000	1.000	-	
1,2,3,4,6,7,8-HpCDF	51:29	50:28	-61	1.000	1.000	-	
1,2,3,4,7,8,9-HpCDF	53:42	52:47	-55	1.043	1.046	-	
OCDD	57:01	56:15	-46	1.000	1.000	-	
OCDF	57:09	56:23	-46	1.003	1.003	-	
13C-2,3,7,8-TCDD	36:44	35:02	-102	1.012	1.017	-	
13C-2,3,7,8-TCDF	34:54	32:52	-122	0.962	0.955	-	
13C-1,2,3,7,8-PeCDD	43:38	42:52	-46	1.202	1.245	-	
13C-1,2,3,7,8-PeCDF	42:10	41:17	-53	1.162	1.199	-	
13C-1,2,3,6,7,8-HxCDD	48:02	47:11	-51	0.991	0.991	-	
13C-1,2,3,4,7,8-HxCDF	46:46	45:59	-47	0.965	0.966	-	
13C-1,2,3,4,6,7,8-HpCDD	53:05	52:09	-56	1.095	1.096	-	
13C-1,2,3,4,6,7,8-HpCDF	51:28	50:27	-61	1.062	1.060	-	
13C-OCDD	57:00	56:14	-46	1.176	1.181	-	

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IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290

SEVERN TRENT SERVICES

CCAL ID: 1,134 - 021106S1

WIN Filename: t021106s1 ✓

Method: IN - DX8290

WIN Sample ID: 2427:85

Instrument: M2A ✓

WIN Result Dir: /20021106s1/021106s1.d ✓

Column SN: 334061

WIN Date/Time: 11/06/02 ✓ 00:22 ✓

Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Window Defining First/Last Eluter Retention Times

Analyte	Reference	M/Z	Ref RT	First Eluter RT	First Eluter RRT	Last Eluter RT	Last Eluter RRT
Total TCDD	13C-2,3,7,8-TCDD	320	35:02 ✓	28:28 ✓	0.8126	37:31 ✓	1.0709
Total TCDF	13C-2,3,7,8-TCDF	304	32:52 ✓	25:44 ✓	0.7830	37:26 ✓	1.1389
Total PeCDD	13C-1,2,3,7,8-PeCDD	356	42:52 ✓	40:17 ✓	0.9397	43:30 ✓	1.0148
Total PeCDF	13C-1,2,3,7,8-PeCDF	340	41:17 ✓	37:58 ✓	0.9197	43:37 ✓	1.0565
Total HxCDD	13C-1,2,3,6,7,8-HxCDD	390	47:11 ✓	45:25 ✓	0.9626	47:37 ✓	1.0092
Total HxCDF	13C-1,2,3,4,7,8-HxCDF	374	45:59 ✓	44:44 ✓	0.9728	48:03 ✓	1.0449
Total HpCDD	13C-1,2,3,4,6,7,8-HpCDD	424	52:09 ✓	51:00 ✓	0.9779	52:10 ✓	1.0003
Total HpCDF	13C-1,2,3,4,6,7,8-HpCDF	408	50:27 ✓	50:28 ✓	1.0003	52:47 ✓	1.0463
OCDD	13C-OCDD	458	56:14 ✓	56:15 ✓	1.0003	56:15	1.0003
OCDF	13C-OCDD	442	56:14 ✓	56:23 ✓	1.0027	56:23	1.0027

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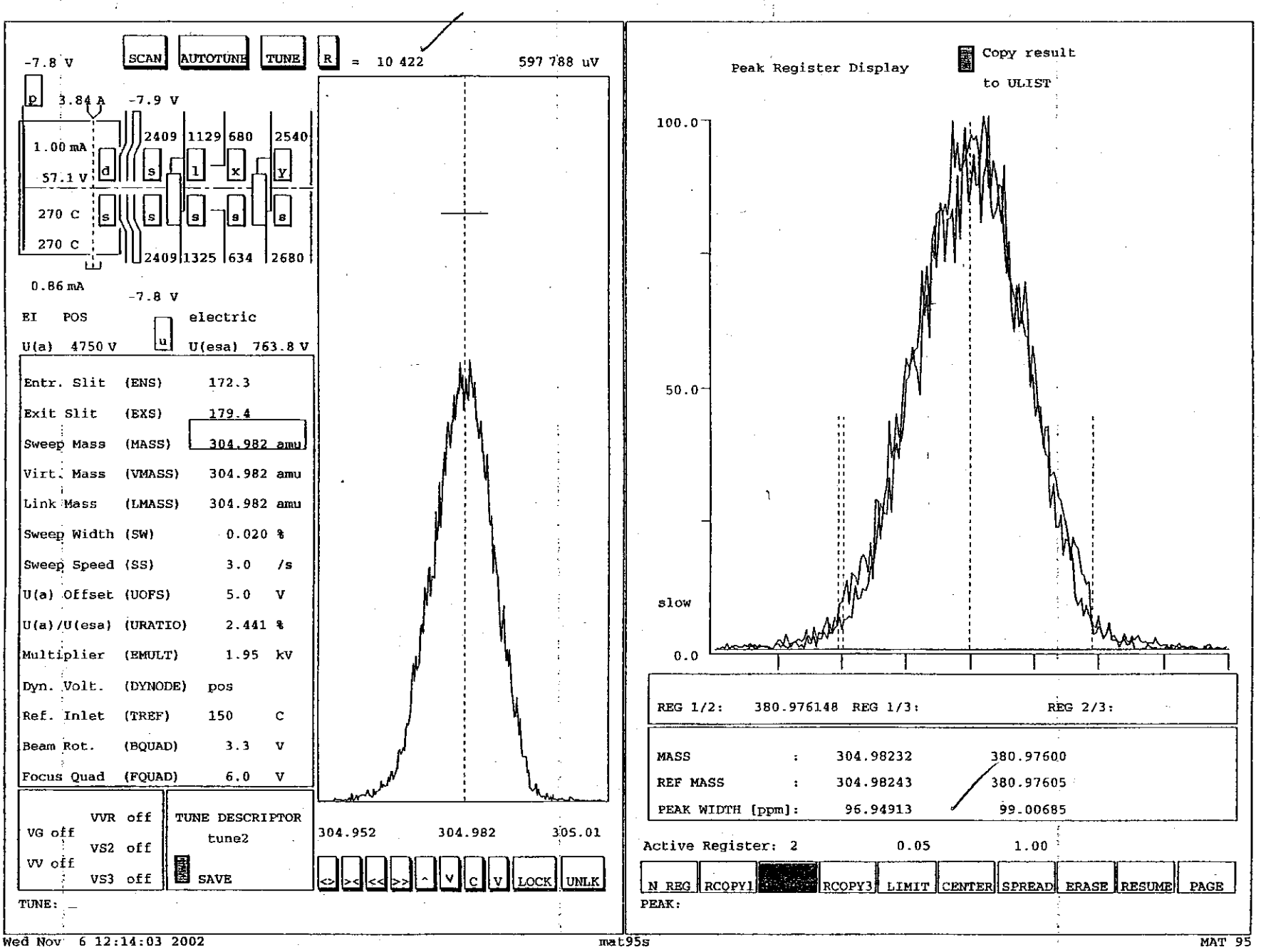

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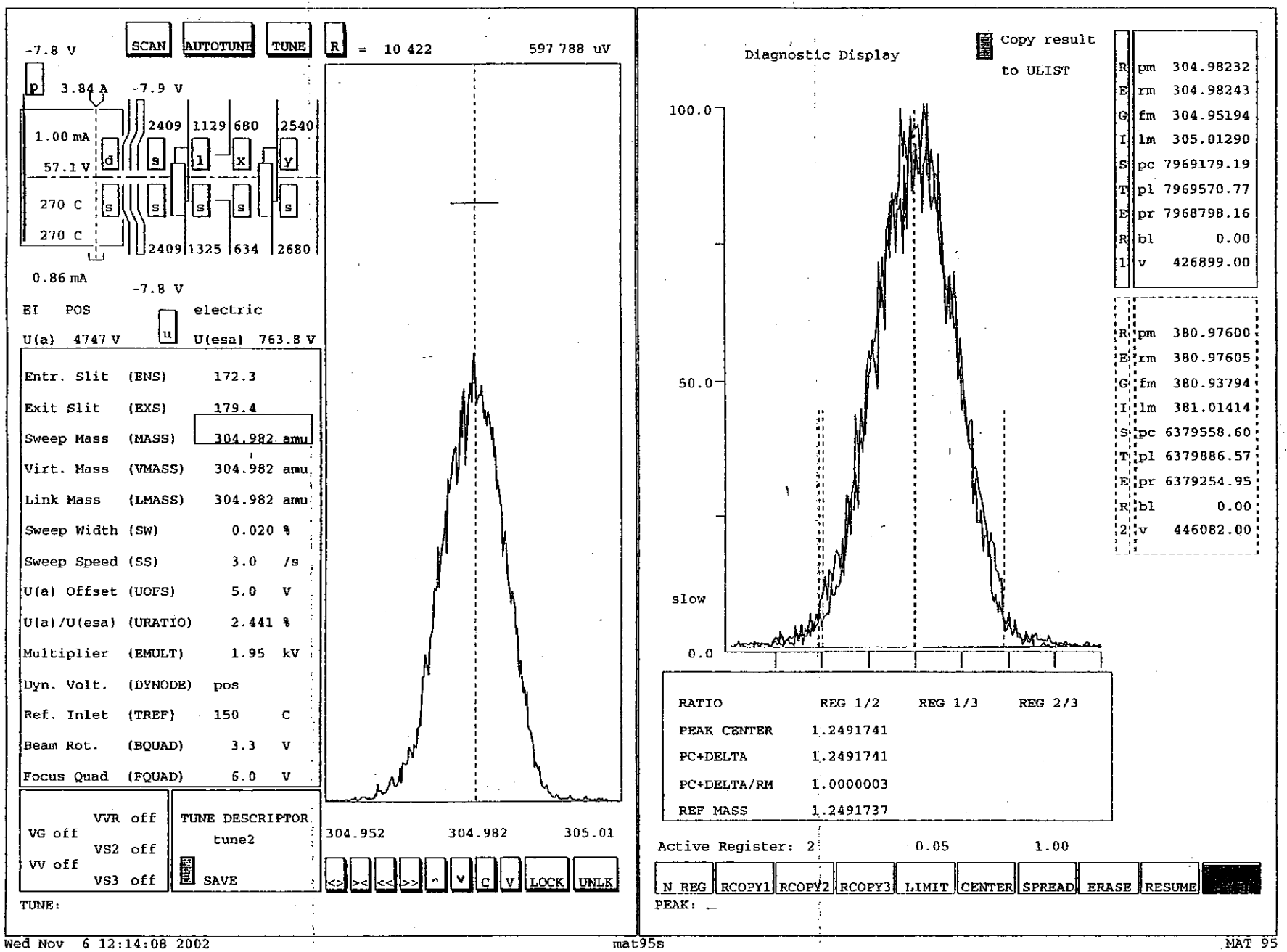

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E	rm	304.98243
G	fm	304.95194
I	lm	305.01290
S	pc	7969179.19
T	pl	7969570.77
E	pr	7968798.16
R	bl	0.00
1	v	426899.00

R	pm	380.97600
E	rm	380.97605
G	fm	380.93794
I	lm	381.01414
S	pc	6379558.60
T	pl	6379886.57
E	pr	6379254.95
R	bl	0.00
2	v	446082.00

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USEPA Method 1613/8290
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDF
By High-Resolution Gas Chromatography/High-Resolution Mass Spectroscopy (HRGC/I

PCDD/PCDF Daily Calibration Verification

Laboratory ID: STL Knoxville
Init. Calibration Date: 12-Sep-02

Instrument ID: MAT-95S
GC Column ID: Rtx-5

CS3 Data Filename: t021106s2
Analysis Date: 06-Nov-02
Analysis Time: 10:50

Analytes	m/z Mass 1	m/z Mass 2	Area Mass 1	Area Mass 2	RT	RRT	Ratio	Ratio Limits	Std Conc	8290 ICAL RF	8290 Calc RF	8290 Conc. (ng/mL)
13C-1,2,3,4-TCDD	331.9368	333.9339	994753	1207340	34:27	1.000	0.82	0.65-0.89	100.0	1.000	1.000	100.0
13C-2,3,7,8-TCDD	331.9368	333.9339	1071207	1331779	35:02	1.017	0.80	0.65-0.89	100.0	1.152	1.091	94.7
37Cl-2,3,7,8-TCDD	327.8847		252162		35:05	1.018		NA	10.0	1.184	1.145	9.7
2,3,7,8-TCDD	319.8965	321.8936	119908	153931	35:04	1.001	0.78	0.65-0.89	10.0	1.070	1.140	10.7
13C-2,3,7,8-TCDF	315.9419	317.9389	1650869	2052089	32:51	0.954	0.80	0.65-0.89	100.0	1.662	1.682	101.2
2,3,7,8-TCDF	303.9016	305.8987	172814	217735	32:55	1.002	0.79	0.65-0.89	10.0	1.026	1.055	10.3
13C-1,2,3,7,8-PeCDD	367.8949	369.8919	1577418	1009579	42:52	1.244	1.56	1.32-1.78	100.0	1.169	1.175	100.5
1,2,3,7,8-PeCDD	355.8546	357.8516	820631	530707	42:53	1.000	1.55	1.32-1.78	50.0	0.995	1.045	52.5
13C-1,2,3,7,8-PeCDF	351.9000	353.8970	2436997	1581867	41:18	1.199	1.54	1.32-1.78	100.0	1.798	1.825	101.5
13C-2,3,4,7,8-PeCDF	351.9000	353.8970	2324323	1466872	42:25	1.231	1.58	1.32-1.78	100.0	--	--	--
1,2,3,7,8-PeCDF	339.8597	341.8567	1259273	801820	41:19	1.000	1.57	1.32-1.78	50.0	0.987	1.026	52.0
2,3,4,7,8-PeCDF	339.8597	341.8567	1232053	777577	42:26	1.000	1.58	1.32-1.78	50.0	1.035	1.000	48.3
13C-1,2,3,4,7,8-HxCDD	401.8559	403.8529	1315196	1036727	47:04	0.989	1.27	1.05-1.43	100.0	--	--	--
13C-1,2,3,6,7,8-HxCDD	401.8559	403.8529	1433513	1102979	47:11	0.991	1.30	1.05-1.43	100.0	1.142	0.919	80.5
13C-1,2,3,7,8,9-HxCDD	401.8559	403.8529	1425916	1332714	47:36	1.000	1.07	1.05-1.43	100.0	1.000	1.000	100.0
1,2,3,4,7,8-HxCDD	389.8157	391.8127	734596	585616	47:05	1.000	1.25	1.05-1.43	50.0	0.958	1.041	54.3
1,2,3,6,7,8-HxCDD	389.8157	391.8127	741257	592496	47:12	1.000	1.25	1.05-1.43	50.0	1.020	1.052	51.6
1,2,3,7,8,9-HxCDD	389.8157	391.8127	811135	649029	47:37	1.009	1.25	1.05-1.43	50.0	0.984	1.151	58.5
13C-1,2,3,4,7,8-HxCDF	383.8639	385.8610	1196471	2232857	45:59	0.966	0.54	0.43-0.59	100.0	1.422	1.243	87.4
13C-1,2,3,6,7,8-HxCDF	383.8639	385.8610	1209944	2266230	46:08	0.969	0.53	0.43-0.59	100.0	--	--	--
13C-2,3,4,6,7,8-HxCDF	383.8639	385.8610	1179192	2216278	46:53	0.985	0.53	0.43-0.59	100.0	--	--	--
13C-1,2,3,7,8,9-HxCDF	383.8639	385.8610	1049846	2005004	47:54	1.006	0.52	0.43-0.59	100.0	--	--	--
1,2,3,4,7,8-HxCDF	373.8208	375.8178	1223531	972266	46:00	1.000	1.26	1.05-1.43	50.0	1.241	1.281	51.6
1,2,3,6,7,8-HxCDF	373.8208	375.8178	1172444	941553	46:09	1.000	1.25	1.05-1.43	50.0	1.339	1.233	46.0
2,3,4,6,7,8-HxCDF	373.8208	375.8178	1192079	996548	46:54	1.000	1.20	1.05-1.43	50.0	1.167	1.276	54.7
1,2,3,7,8,9-HxCDF	373.8208	375.8178	1035857	812750	47:55	1.000	1.27	1.05-1.43	50.0	1.054	1.078	51.1
13C-1,2,3,4,6,7,8-HpCDI	435.8169	437.8140	1305191	1282133	52:10	1.096	1.02	0.88-1.20	100.0	1.017	0.938	92.2
1,2,3,4,6,7,8-HpCDD	423.7766	425.7737	684390	632365	52:11	1.000	1.08	0.88-1.20	50.0	0.967	1.018	52.6
13C-1,2,3,4,6,7,8-HpCDF	417.8253	419.8220	824110	1796157	50:27	1.060	0.46	0.37-0.51	100.0	1.123	0.950	84.6
13C-1,2,3,4,7,8,9-HpCDF	417.8253	419.8220	725297	1592997	52:46	1.109	0.46	0.37-0.51	100.0	--	--	--
1,2,3,4,6,7,8-HpCDF	407.7818	409.7789	1091682	1033227	50:28	1.000	1.06	0.88-1.20	50.0	1.492	1.622	54.4
1,2,3,4,7,8,9-HpCDF	407.7818	409.7789	853670	820102	52:47	1.000	1.04	0.88-1.20	50.0	1.201	1.278	53.2
13C--OCDD	469.7779	471.7750	2119679	2320347	56:14	1.181	0.91	0.76-1.02	200.0	1.040	0.805	154.8
OCDD	457.7377	459.7348	1098326	1242947	56:15	1.000	0.88	0.76-1.02	100.0	1.021	1.055	103.3
OCDF	441.7428	443.7399	1281795	1404636	56:23	1.003	0.91	0.76-1.02	100.0	1.182	1.210	102.4

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USEPA Method 1613B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs)
By High-Resolution Gas Chromatography/High-Resolution Mass Spectroscopy (HRGC/HRMS)

PCDD/PCDF Daily Calibration Verification

Laboratory ID: STL Knoxville
Init. Calibration Date: 12-Sep-02
Instrument ID: MAT-95S
GC Column ID: Rtx-5

VER Data Filename: t021106s2
Analysis Date: 06-Nov-02
Analysis Time: 10:50

Analytes	m/z's Forming Ratio	Ion Abund. Ratio	QC Limits	Conc. Found	ICAL RF	VER RF	✓ %D	QC LIMIT	Flag
13C-2,3,7,8-TCDD	M/M+2	0.80	0.65-0.89	94.7	1.152	1.091	5.3%	30%	TRUE
37Cl-2,3,7,8-TCDD	M/M+2		NA	9.7	1.184	1.145	3.3%	30%	TRUE
2,3,7,8-TCDD	M/M+2	0.78	0.65-0.89	10.7	1.070	1.140	-6.5%	20%	TRUE
13C-2,3,7,8-TCDF	M/M+2	0.80	0.65-0.89	101.2	1.662	1.682	-1.2%	30%	TRUE
2,3,7,8-TCDF	M/M+2	0.79	0.65-0.89	10.3	1.026	1.055	-2.8%	20%	TRUE
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.56	1.32-1.78	100.5	1.169	1.175	-0.5%	30%	TRUE
1,2,3,7,8-PeCDD	M+2/M+4	1.55	1.32-1.78	52.5	0.995	1.045	-5.0%	20%	TRUE
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.54	1.32-1.78	101.5	1.798	1.825	-1.5%	30%	TRUE
1,2,3,7,8-PeCDF	M+2/M+4	1.57	1.32-1.78	52.0	0.987	1.026	-3.9%	20%	TRUE
2,3,4,7,8-PeCDF	M+2/M+4	1.58	1.32-1.78	48.3	1.035	1.000	3.4%	20%	TRUE
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.30	1.05-1.43	80.5	1.142	0.919	19.5%	30%	TRUE
1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05-1.43	54.3	0.958	1.041	-8.7%	20%	TRUE
1,2,3,6,7,8-HxCDD	M+2/M+4	1.25	1.05-1.43	51.6	1.020	1.052	-3.1%	20%	TRUE
1,2,3,7,8,9-HxCDD	M+2/M+4	1.25	1.05-1.43	58.5	0.984	1.151	-17.0%	20%	TRUE
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.54	0.43-0.59	87.4	1.422	1.243	12.6%	30%	TRUE
1,2,3,4,7,8-HxCDF	M+2/M+4	1.26	1.05-1.43	51.6	1.241	1.281	-3.2%	20%	TRUE
1,2,3,6,7,8-HxCDF	M+2/M+4	1.25	1.05-1.43	46.0	1.339	1.233	7.9%	20%	TRUE
2,3,4,6,7,8-HxCDF	M+2/M+4	1.20	1.05-1.43	54.7	1.167	1.276	-9.4%	20%	TRUE
1,2,3,7,8,9-HxCDF	M+2/M+4	1.27	1.05-1.43	51.1	1.054	1.078	-2.3%	20%	TRUE
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.02	0.88-1.20	92.2	1.017	0.938	7.8%	30%	TRUE
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.08	0.88-1.20	52.6	0.967	1.018	-5.3%	20%	TRUE
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.46	0.37-0.51	84.6	1.123	0.950	15.4%	30%	TRUE
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.06	0.88-1.20	54.4	1.492	1.622	-8.7%	20%	TRUE
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.04	0.88-1.20	53.2	1.201	1.278	-6.4%	20%	TRUE
13C–OCDD	M+2/M+4	0.91	0.76-1.02	154.8	1.040	0.805	22.6%	30%	TRUE
OCDD	M+2/M+4	0.88	0.76-1.02	103.3	1.021	1.055	-3.3%	20%	TRUE
OCDF	M+2/M+4	0.91	0.76-1.02	102.4	1.182	1.210	-2.4%	20%	TRUE

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WSD 11-6-02
NTM 11-06-02

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STL - Knoxville

IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290

SEVERN TRENT SERVICES

CCAL ID: 1,143 - 021106S2

CCAL Filename: t021106s2

CCAL Sample ID: 2427:85

CCAL Result Dir: /20021106s2/021106s2.d

CCAL Date/Time: 11/06/02 10:50

ICAL Date: 09/12/02

Method: IN - DX8290

Instrument: M2A

Column SN: 334061

Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Analytes	m/z's Forming Ratio	Ion Abund Ratio	QC Limits	Calc Conc (ng/mL)	ICAL RF	CCAL RF	%D	QC Limit	Valid?
2,3,7,8-TCDD	M/M+2	0.78	0.65-0.89	10.7	1.070	1.140	6.5	20.0	True
2,3,7,8-TCDF	M/M+2	0.79	0.65-0.89	10.3	1.026	1.055	2.8	20.0	True
1,2,3,7,8-PeCDD	M+2/M+4	1.55	1.32-1.78	52	0.995	1.045	5.0	20.0	True
1,2,3,7,8-PeCDF	M+2/M+4	1.57	1.32-1.78	52	0.987	1.026	3.9	20.0	True
2,3,4,7,8-PeCDF	M+2/M+4	1.58	1.32-1.78	51	1.035	1.000	-3.4	20.0	True
1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05-1.43	51	0.958	1.041	8.6	20.0	True
1,2,3,6,7,8-HxCDD	M+2/M+4	1.25	1.05-1.43	52	1.020	1.052	3.1	20.0	True
1,2,3,7,8,9-HxCDD	M+2/M+4	1.25	1.05-1.43	57	0.984	1.151	17.0	20.0	True
1,2,3,4,7,8-HxCDF	M+2/M+4	1.26	1.05-1.43	52	1.241	1.281	3.2	20.0	True
1,2,3,6,7,8-HxCDF	M+2/M+4	1.25	1.05-1.43	51	1.339	1.233	-7.9	20.0	True
2,3,4,6,7,8-HxCDF	M+2/M+4	1.20	1.05-1.43	55	1.167	1.276	9.4	20.0	True
1,2,3,7,8,9-HxCDF	M+2/M+4	1.27	1.05-1.43	49	1.054	1.078	2.2	20.0	True
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.08	0.88-1.20	53	0.967	1.018	5.2	20.0	True
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.06	0.88-1.20	54	1.492	1.622	8.7	20.0	True
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.04	0.88-1.20	50	1.201	1.278	6.4	20.0	True
OCDD	M+2/M+4	0.88	0.76-1.02	103	1.021	1.055	3.3	20.0	True
OCDF	M+2/M+4	0.91	0.76-1.02	102	1.182	1.210	2.3	20.0	True
13C-2,3,7,8-TCDD	M/M+2	0.80	0.65-0.89	95	1.152	1.091	-5.3	30.0	True
13C-2,3,7,8-TCDF	M/M+2	0.80	0.65-0.89	101	1.662	1.682	1.2	30.0	True
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.56	1.32-1.78	100	1.169	1.175	0.5	30.0	True
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.54	1.32-1.78	102	1.798	1.825	1.5	30.0	True
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.30	1.05-1.43	81	1.142	0.919	-19.5	30.0	True
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.54	0.43-0.59	87	1.422	1.243	-12.6	30.0	True
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.02	0.88-1.20	92	1.017	0.938	-7.8	30.0	True
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.46	0.37-0.51	85	1.123	0.950	-15.4	30.0	True
13C-OCDD	M+2/M+4	0.91	0.76-1.02	155	1.040	0.805	-22.6	30.0	True

WSD 11-6-02
NTM 11-06-02

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STL - Knoxville

IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290

SEVERN TRENT SERVICES

CCAL ID: 1,143 - 021106S2

CCAL Filename: t021106s2

CCAL Sample ID: 2427:85

CCAL Result Dir: /20021106s2/021106s2.d

CCAL Date/Time: 11/06/02 10:50

ICAL Date: 09/12/02

Method: IN - DX8290

Instrument: M2A

Column SN: 334061

Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Analytes	ICAL RT	CCAL RT	RT Diff	ICAL RRT	CCAL RRT	RRT QC Limit	Valid?
2,3,7,8-TCDD	36:46	35:04	-102	1.001	1.001	-	
2,3,7,8-TCDF	34:57	32:55	-122	1.001	1.002	-	
1,2,3,7,8-PeCDD	43:39	42:53	-46	1.000	1.000	-	
1,2,3,7,8-PeCDF	42:11	41:19	-52	1.000	1.000	-	
2,3,4,7,8-PeCDF	43:13	42:26	-47	1.025	1.027	-	
1,2,3,4,7,8-HxCDD	47:55	47:05	-50	0.998	0.998	-	
1,2,3,6,7,8-HxCDD	48:03	47:12	-51	1.000	1.000	-	
1,2,3,7,8,9-HxCDD	48:29	47:37	-52	1.010	1.009	-	
1,2,3,4,7,8-HxCDF	46:48	46:00	-48	1.000	1.000	-	
1,2,3,6,7,8-HxCDF	46:56	46:09	-47	1.003	1.004	-	
2,3,4,6,7,8-HxCDF	47:44	46:54	-50	1.021	1.020	-	
1,2,3,7,8,9-HxCDF	48:49	47:55	-54	1.044	1.042	-	
1,2,3,4,6,7,8-HpCDD	53:06	52:11	-55	1.000	1.001	-	
1,2,3,4,6,7,8-HpCDF	51:29	50:28	-61	1.000	1.001	-	
1,2,3,4,7,8,9-HpCDF	53:42	52:47	-55	1.043	1.047	-	
OCDD	57:01	56:15	-46	1.000	1.000	-	
OCDF	57:09	56:23	-46	1.003	1.003	-	
13C-2,3,7,8-TCDD	36:44	35:02	-102	1.012	1.017	-	
13C-2,3,7,8-TCDF	34:54	32:51	-123	0.962	0.954	-	
13C-1,2,3,7,8-PeCDD	43:38	42:52	-46	1.202	1.244	-	
13C-1,2,3,7,8-PeCDF	42:10	41:18	-52	1.162	1.199	-	
13C-1,2,3,6,7,8-HxCDD	48:02	47:11	-51	0.991	0.991	-	
13C-1,2,3,4,7,8-HxCDF	46:46	45:59	-47	0.965	0.966	-	
13C-1,2,3,4,6,7,8-HpCDD	53:05	52:09	-56	1.095	1.096	-	
13C-1,2,3,4,6,7,8-HpCDF	51:28	50:26	-62	1.062	1.060	-	
13C-OCDD	57:00	56:14	-46	1.176	1.181	-	

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STL Knoxville Specialty Organics GC/MS Continuing Calibration Review / Narrative Checklist
Methods: 8290/23 - KNOX-ID-0003, Rev. 5

Start PFK:	12:52	CS3 Filename:	t02110653	Win Filename:	t02110653	Inst:	HT95S
End PFK:	23:31	CS3 Filename:	t02110654	Col Perf Filename:	—	ICAL Date:	9-12-02

Review Items	N/A	Yes	No	If No, why is data reportable?	2nd Level
1. Was the mass resolution documented at both the beginning and end of the 12 hour shift?		✓			✓
2. Was the instrument resolution >10,000 (<100 ppm) on PFK m/z 304.9824 and m/z 380.9760 (at reduced voltage)?		✓			✓
3. Was the measured exact mass of m/z 380.9760 (PFK) within 5 ppm at reduced accelerating voltage?		✓			✓
4. Was date/time of analysis verified between analysis header and logbook as correct?		✓			✓
5. Was the Window Defining Mixture analyzed and the MID switchpoints set to encompass the retention time windows of each congener group?		✓			✓
6. Was the Column Performance solution analyzed and the %Valley ≤25 for separation between 2378-TCDD/F and the closest eluting non-2378 isomer?		✓			✓
7. Was the continuing calibration performed at the beginning of the 12 hour period after successful mass resolution and GC resolution performance check?		✓			✓
8. Was the continuing calibration performed at the end of the 12 hour period?		✓			✓
9. Were the response factors calculated for each labeled standard and unlabeled native analyte using the SOP specified reference compound, quantitation ions, and formula.		✓			✓
10. Are %D ≤20 for all unlabeled native analytes in the beginning and ending calibration?		✓		Ending %D ≤25 and mean RRF from two continuing calibrations used to calculate samples. Ending %D >25 corrective action performed and all positive sample extracts reanalyzed.	✓
11. Are %D ≤30 for all labeled standards in the beginning and ending calibration?		✓		Ending %D ≤35 and mean RRF from two continuing calibrations used to calculate samples. Ending %D >35 and corrective action performed and all positive sample extracts reanalyzed.	✓
12. Are all S/N ratios ≥10 for the GC signals in each EICP (extracted ion chromatographic profile) including internal standards?		✓			✓
13. Are the ion abundance ratios for all labeled and unlabeled analytes within the specified control limits?		✓			✓
14. If manual integrations were performed, are they clearly identified, initialed and dated?	✓				✓
15. If criteria were not met, was a NCM generated, approved by supervisor, and copy included in folder?	✓				✓
16. Does the CCAL folder contain **complete** data in the following order? Data review checklist, a **complete** runlog, CCAL summary, Ratio summary, Calculation summary, PFK resolution/peak match documentation, and Total RIC, EICP's and manual integration - for window and both standards.		✓			✓

Analyst: [signature]	Date: 11/6/02	2nd Level Reviewer: [signature]	Date: 11-7-02
Comments:		Comments:	

ID022R1.doc, 8/22/01

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-7.8 V SCAN AUTOTUNE TUNE R = 10 422 420 144 uV

p 3.79 A -7.9 V

1.00 mA 57.1 V 270 C 270 C

2409 1129 680 2540

2409 1325 634 2680

0.86 mA -7.8 V

EI POS electric

U(a) 4750 V U(esa) 763.8 V

Entr. Slit	(ENS)	172.3	
Exit Slit	(EXS)	179.4	
Sweep Mass	(MASS)	304.982	amu
Virt. Mass	(VMASS)	304.982	amu
Link Mass	(LMASS)	304.982	amu
Sweep Width	(SW)	0.020	%
Sweep Speed	(SS)	3.0	/s
U(a) Offset	(UOFS)	5.0	V
U(a)/U(esa)	(URATIO)	2.441	%
Multiplier	(EMULT)	1.95	kV
Dyn. Volt.	(DYNODE)	pos	
Ref. Inlet	(TREF)	150	C
Beam Rot.	(BQUAD)	3.3	V
Focus Quad	(FQUAD)	6.0	V

VG off VVR off VS2 off VV off VS3 off

TUNE DESCRIPTOR tune2 SAVE

304.952 304.982 305.01

<> >< << >> ^ V C V LOCK UNLK

TUNE: _

Wed Nov 6 12:52:38 2002

Peak Register Display

Copy result to ULIST

100.0 50.0 slow 0.0

REG 1/2: 380.975678 REG 1/3: REG 2/3:

MASS	:	304.98246	380.97571
REF MASS	:	304.98243	380.97605
PEAK WIDTH [ppm]:		95.94970	96.00657

Active Register: 2 0.05 1.00

N REG RCOPY1 RCOPY3 LIMIT CENTER SPREAD ERASE RESUME PAGE

PEAK:

mat95s MAT 95

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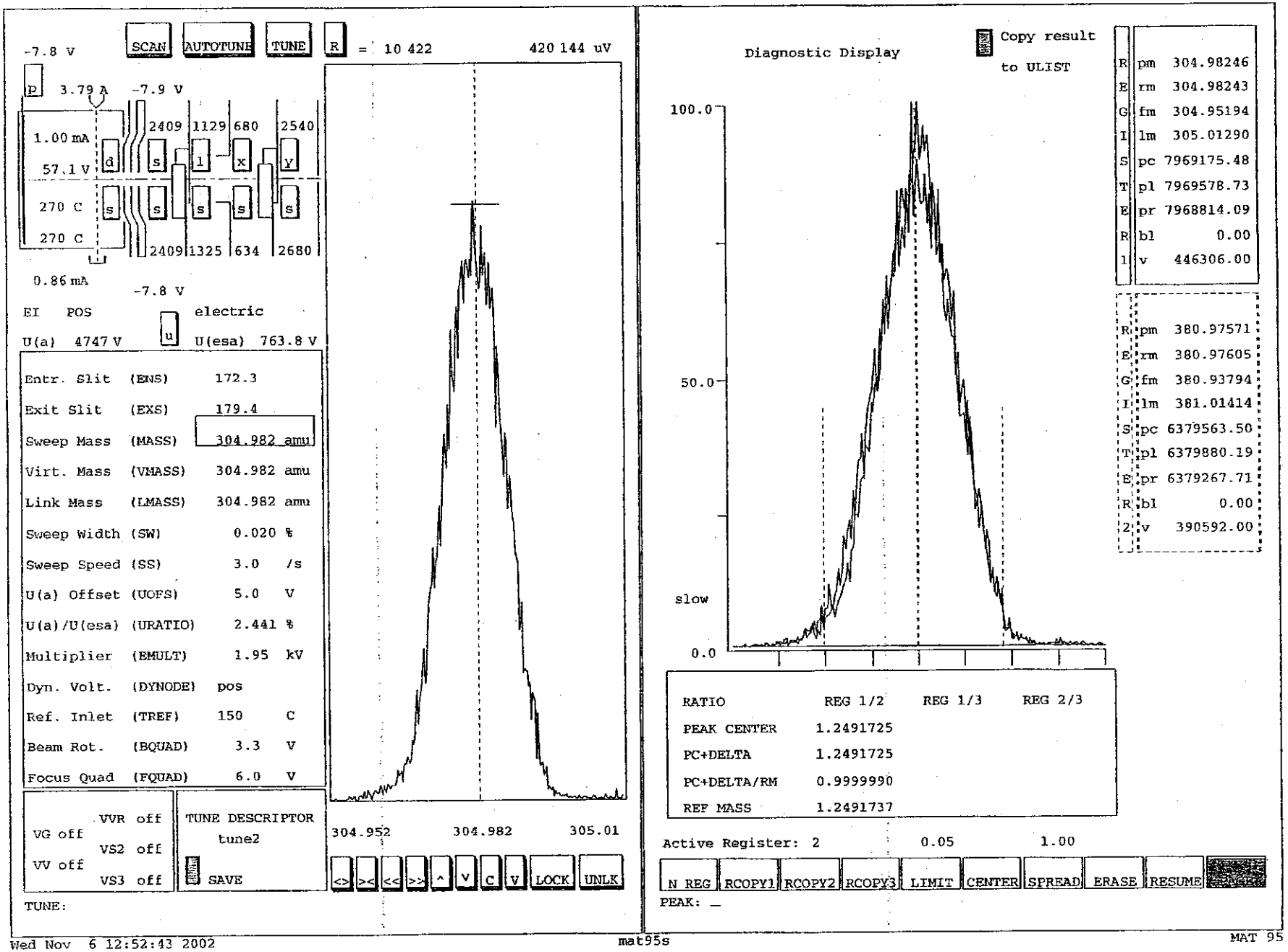

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USEPA Method 1613/8290
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDF
By High-Resolution Gas Chromatography/High-Resolution Mass Spectroscopy (HRGC/I

PCDD/PCDF Daily Calibration Verification

Laboratory ID: STL Knoxville
Init. Calibration Date: 12-Sep-02

Instrument ID: MAT-95S
GC Column ID: Rtx-5

CS3 Data Filename: t021106s3
Analysis Date: 06-Nov-02
Analysis Time: 12:55

Analytes	m/z Mass 1	m/z Mass 2	Area Mass 1	Area Mass 2	RT	RRT	Ratio	Ratio Limits	Std Conc	8290 CAL RF	8290 Calc RF	8290 Conc. (ng/mL)
13C-1,2,3,4-TCDD	331.9368	333.9339	953053	1178960	34:28	1.000	0.81	0.65-0.89	100.0	1.000	1.000	100.0
13C-2,3,7,8-TCDD	331.9368	333.9339	1022005	1288389	35:03	1.017	0.79	0.65-0.89	100.0	1.152	1.084	94.1
37Cl-2,3,7,8-TCDD	327.8847		235784		35:06	1.018		NA	10.0	1.184	1.106	9.3
2,3,7,8-TCDD	319.8965	321.8936	117682	147489	35:06	1.001	0.80	0.65-0.89	10.0	1.070	1.148	10.7
13C-2,3,7,8-TCDF	315.9419	317.9389	1597208	2011789	32:51	0.953	0.79	0.65-0.89	100.0	1.662	1.693	101.9
2,3,7,8-TCDF	303.9016	305.8987	170665	214658	32:53	1.001	0.80	0.65-0.89	10.0	1.026	1.068	10.4
13C-1,2,3,7,8-PeCDD	367.8949	369.8919	1298998	802353	42:54	1.245	1.62	1.32-1.78	100.0	1.169	0.986	84.3
1,2,3,7,8-PeCDD	355.8546	357.8516	680757	428495	42:55	1.000	1.59	1.32-1.78	50.0	0.995	1.056	53.1
13C-1,2,3,7,8-PeCDF	351.9000	353.8970	2136957	1327414	41:19	1.199	1.61	1.32-1.78	100.0	1.798	1.625	90.4
13C-2,3,4,7,8-PeCDF	351.9000	353.8970	2086430	1325976	42:25	1.231	1.57	1.32-1.78	100.0	--	--	--
1,2,3,7,8-PeCDF	339.8597	341.8567	1131493	709894	41:20	1.000	1.59	1.32-1.78	50.0	0.987	1.063	53.9
2,3,4,7,8-PeCDF	339.8597	341.8567	1140531	728173	42:27	1.001	1.57	1.32-1.78	50.0	1.035	1.079	52.1
13C-1,2,3,4,7,8-HxCDD	401.8559	403.8529	1088546	843581	47:05	0.989	1.29	1.05-1.43	100.0	--	--	--
13C-1,2,3,6,7,8-HxCDD	401.8559	403.8529	1172697	913430	47:13	0.992	1.28	1.05-1.43	100.0	1.142	1.028	90.0
13C-1,2,3,7,8,9-HxCDD	401.8559	403.8529	1138094	891490	47:37	1.000	1.28	1.05-1.43	100.0	1.000	1.000	100.0
1,2,3,4,7,8-HxCDD	389.8157	391.8127	623412	502961	47:06	1.000	1.24	1.05-1.43	50.0	0.958	1.080	56.4
1,2,3,6,7,8-HxCDD	389.8157	391.8127	634782	513475	47:14	1.000	1.24	1.05-1.43	50.0	1.020	1.101	54.0
1,2,3,7,8,9-HxCDD	389.8157	391.8127	672846	541904	47:38	1.009	1.24	1.05-1.43	50.0	0.984	1.165	59.2
13C-1,2,3,4,7,8-HxCDF	383.8639	385.8610	1027103	1936112	46:01	0.966	0.53	0.43-0.59	100.0	1.422	1.460	102.7
13C-1,2,3,6,7,8-HxCDF	383.8639	385.8610	1074532	2008341	46:09	0.969	0.54	0.43-0.59	100.0	--	--	--
13C-2,3,4,6,7,8-HxCDF	383.8639	385.8610	1022075	1894173	46:55	0.985	0.54	0.43-0.59	100.0	--	--	--
13C-1,2,3,7,8,9-HxCDF	383.8639	385.8610	891476	1675129	47:55	1.006	0.53	0.43-0.59	100.0	--	--	--
1,2,3,4,7,8-HxCDF	373.8208	375.8178	1101802	868663	46:02	1.000	1.27	1.05-1.43	50.0	1.241	1.330	53.6
1,2,3,6,7,8-HxCDF	373.8208	375.8178	1083873	864555	46:10	1.000	1.25	1.05-1.43	50.0	1.339	1.315	49.1
2,3,4,6,7,8-HxCDF	373.8208	375.8178	993232	786808	46:56	1.000	1.26	1.05-1.43	50.0	1.167	1.201	51.5
1,2,3,7,8,9-HxCDF	373.8208	375.8178	911341	714193	47:56	1.000	1.28	1.05-1.43	50.0	1.054	1.097	52.0
13C-1,2,3,4,6,7,8-HpCDD	435.8169	437.8140	1005768	945479	52:11	1.096	1.06	0.88-1.20	100.0	1.017	0.961	94.5
1,2,3,4,6,7,8-HpCDD	423.7766	425.7737	521460	496857	52:12	1.000	1.05	0.88-1.20	50.0	0.967	1.044	54.0
13C-1,2,3,4,6,7,8-HpCDF	417.8253	419.8220	689116	1509001	50:28	1.060	0.46	0.37-0.51	100.0	1.123	1.083	96.4
13C-1,2,3,4,7,8,9-HpCDF	417.8253	419.8220	568893	1250843	52:47	1.109	0.45	0.37-0.51	100.0	--	--	--
1,2,3,4,6,7,8-HpCDF	407.7818	409.7789	934873	887049	50:29	1.000	1.05	0.88-1.20	50.0	1.492	1.658	55.6
1,2,3,4,7,8,9-HpCDF	407.7818	409.7789	707407	676529	52:48	1.000	1.05	0.88-1.20	50.0	1.201	1.259	52.4
13C--OCDD	469.7779	471.7750	1560058	1703154	56:15	1.181	0.92	0.76-1.02	200.0	1.040	0.804	154.6
OCDD	457.7377	459.7348	840731	935726	56:16	1.000	0.90	0.76-1.02	100.0	1.021	1.089	106.6
OCDF	441.7428	443.7399	1016246	1091984	56:25	1.003	0.93	0.76-1.02	100.0	1.182	1.292	109.3

VER Quan Data

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USEPA Method 1613B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs)
By High-Resolution Gas Chromatography/High-Resolution Mass Spectroscopy (HRGC/HRMS)

PCDD/PCDF Daily Calibration Verification

Laboratory ID: STL Knoxville
Init. Calibration Date: 12-Sep-02
Instrument ID: MAT-95S
GC Column ID: Rtx-5

VER Data Filename: t021106s3
Analysis Date: 06-Nov-02
Analysis Time: 12:55

Analytes	m/z's Forming Ratio	Ion Abund. Ratio	QC Limits	Conc. Found	ICAL RF	VER RF	%D	QC LIMIT	Flag
13C-2,3,7,8-TCDD	M/M+2	0.79	0.65-0.89	94.1	1.152	1.084	5.9%	30%	TRUE
37Cl-2,3,7,8-TCDD	M/M+2		NA	9.3	1.184	1.106	6.6%	30%	TRUE
2,3,7,8-TCDD	M/M+2	0.80	0.65-0.89	10.7	1.070	1.148	-7.3%	20%	TRUE
13C-2,3,7,8-TCDF	M/M+2	0.79	0.65-0.89	101.9	1.662	1.693	-1.9%	30%	TRUE
2,3,7,8-TCDF	M/M+2	0.80	0.65-0.89	10.4	1.026	1.068	-4.1%	20%	TRUE
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.62	1.32-1.78	84.3	1.169	0.986	15.7%	30%	TRUE
1,2,3,7,8-PeCDD	M+2/M+4	1.59	1.32-1.78	53.1	0.995	1.056	-6.1%	20%	TRUE
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.61	1.32-1.78	90.4	1.798	1.625	9.6%	30%	TRUE
1,2,3,7,8-PeCDF	M+2/M+4	1.59	1.32-1.78	53.9	0.987	1.063	-7.7%	20%	TRUE
2,3,4,7,8-PeCDF	M+2/M+4	1.57	1.32-1.78	52.1	1.035	1.079	-4.2%	20%	TRUE
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.28	1.05-1.43	90.0	1.142	1.028	10.0%	30%	TRUE
1,2,3,4,7,8-HxCDD	M+2/M+4	1.24	1.05-1.43	56.4	0.958	1.080	-12.7%	20%	TRUE
1,2,3,6,7,8-HxCDD	M+2/M+4	1.24	1.05-1.43	54.0	1.020	1.101	-7.9%	20%	TRUE
1,2,3,7,8,9-HxCDD	M+2/M+4	1.24	1.05-1.43	59.2	0.984	1.165	-18.4%	20%	TRUE
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.53	0.43-0.59	102.7	1.422	1.460	-2.7%	30%	TRUE
1,2,3,4,7,8-HxCDF	M+2/M+4	1.27	1.05-1.43	53.6	1.241	1.330	-7.2%	20%	TRUE
1,2,3,6,7,8-HxCDF	M+2/M+4	1.25	1.05-1.43	49.1	1.339	1.315	1.8%	20%	TRUE
2,3,4,6,7,8-HxCDF	M+2/M+4	1.26	1.05-1.43	51.5	1.167	1.201	-2.9%	20%	TRUE
1,2,3,7,8,9-HxCDF	M+2/M+4	1.28	1.05-1.43	52.0	1.054	1.097	-4.1%	20%	TRUE
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.06	0.88-1.20	94.5	1.017	0.961	5.5%	30%	TRUE
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88-1.20	54.0	0.967	1.044	-7.9%	20%	TRUE
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.46	0.37-0.51	96.4	1.123	1.083	3.6%	30%	TRUE
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.05	0.88-1.20	55.6	1.492	1.658	-11.1%	20%	TRUE
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.05	0.88-1.20	52.4	1.201	1.259	-4.8%	20%	TRUE
13C--OCDD	M+2/M+4	0.92	0.76-1.02	154.6	1.040	0.804	22.7%	30%	TRUE
OCDD	M+2/M+4	0.90	0.76-1.02	106.6	1.021	1.089	-6.6%	20%	TRUE
OCDF	M+2/M+4	0.93	0.76-1.02	109.3	1.182	1.292	-9.3%	20%	TRUE

(1) SW-846 Method 8290, Revision 0 September 1994, Section 7.7.4, Page 29

WSD 11/6/02

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STL - Knoxville

IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290

SEVERN TRENT SERVICES

CCAL ID: 1,149 - 021106S3

CCAL Filename: t021106s3

CCAL Sample ID: 2427:85

CCAL Result Dir: /20021106s3/021106s3.d

CCAL Date/Time: 11/06/02 12:55

ICAL Date: 09/12/02

Method: IN - DX8290

Instrument: M2A

Column SN: 334061

Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Analytes	m/z's Forming Ratio	Ion Abund Ratio	QC Limits	Calc Conc (ng/mL)	ICAL RF	CCAL RF	%D	QC Limit	Valid?
2,3,7,8-TCDD	M/M+2	0.80	0.65-0.89	10.7	1.070	1.148	7.3	20.0	True
2,3,7,8-TCDF	M/M+2	0.80	0.65-0.89	10.4	1.026	1.068	4.1	20.0	True
1,2,3,7,8-PeCDD	M+2/M+4	1.59	1.32-1.78	53	0.995	1.056	6.1	20.0	True
1,2,3,7,8-PeCDF	M+2/M+4	1.59	1.32-1.78	54	0.987	1.063	7.7	20.0	True
2,3,4,7,8-PeCDF	M+2/M+4	1.57	1.32-1.78	53	1.035	1.079	4.2	20.0	True
1,2,3,4,7,8-HxCDD	M+2/M+4	1.24	1.05-1.43	52	0.958	1.080	12.7	20.0	True
1,2,3,6,7,8-HxCDD	M+2/M+4	1.24	1.05-1.43	54	1.020	1.101	8.0	20.0	True
1,2,3,7,8,9-HxCDD	M+2/M+4	1.24	1.05-1.43	57	0.984	1.165	18.3	20.0	True
1,2,3,4,7,8-HxCDF	M+2/M+4	1.27	1.05-1.43	54	1.241	1.330	7.1	20.0	True
1,2,3,6,7,8-HxCDF	M+2/M+4	1.25	1.05-1.43	53	1.339	1.315	-1.8	20.0	True
2,3,4,6,7,8-HxCDF	M+2/M+4	1.26	1.05-1.43	52	1.167	1.201	2.9	20.0	True
1,2,3,7,8,9-HxCDF	M+2/M+4	1.28	1.05-1.43	51	1.054	1.097	4.0	20.0	True
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88-1.20	54	0.967	1.044	7.9	20.0	True
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.05	0.88-1.20	56	1.492	1.658	11.1	20.0	True
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.05	0.88-1.20	52	1.201	1.259	4.9	20.0	True
OCDD	M+2/M+4	0.90	0.76-1.02	107	1.021	1.089	6.6	20.0	True
OCDF	M+2/M+4	0.93	0.76-1.02	109	1.182	1.292	9.3	20.0	True
13C-2,3,7,8-TCDD	M/M+2	0.79	0.65-0.89	94	1.152	1.084	-5.9	30.0	True
13C-2,3,7,8-TCDF	M/M+2	0.79	0.65-0.89	102	1.662	1.693	1.9	30.0	True
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.62	1.32-1.78	84	1.169	0.986	-15.7	30.0	True
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.61	1.32-1.78	90	1.798	1.625	-9.6	30.0	True
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.28	1.05-1.43	90	1.142	1.028	-10.0	30.0	True
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.53	0.43-0.59	103	1.422	1.460	2.7	30.0	True
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.06	0.88-1.20	95	1.017	0.961	-5.5	30.0	True
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.46	0.37-0.51	96	1.123	1.083	-3.6	30.0	True
13C-OCDD	M+2/M+4	0.92	0.76-1.02	155	1.040	0.804	-22.7	30.0	True

WSD 11/6/02
PMP 11-7-02

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STL - Knoxville

IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290

CCAL ID: 1,149 - 021106S3

CCAL Filename: t021106s3

CCAL Sample ID: 2427:85

CCAL Result Dir: /20021106s3/021106s3.d

CCAL Date/Time: 11/06/02 12:55

ICAL Date: 09/12/02

Method: IN - DX8290

Instrument: M2A

Column SN: 334061

Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Analytes	ICAL RT	CCAL RT	RT Diff	ICAL RRT	CCAL RRT	RRT QC Limit	Valid?
2,3,7,8-TCDD	36:46	35:06	-100	1.001	1.001	-	
2,3,7,8-TCDF	34:57	32:53	-124	1.001	1.001	-	
1,2,3,7,8-PeCDD	43:39	42:55	-44	1.000	1.000	-	
1,2,3,7,8-PeCDF	42:11	41:20	-51	1.000	1.000	-	
2,3,4,7,8-PeCDF	43:13	42:27	-46	1.025	1.027	-	
1,2,3,4,7,8-HxCDD	47:55	47:06	-49	0.998	0.998	-	
1,2,3,6,7,8-HxCDD	48:03	47:14	-49	1.000	1.000	-	
1,2,3,7,8,9-HxCDD	48:29	47:38	-51	1.010	1.009	-	
1,2,3,4,7,8-HxCDF	46:48	46:02	-46	1.000	1.000	-	
1,2,3,6,7,8-HxCDF	46:56	46:10	-46	1.003	1.003	-	
2,3,4,6,7,8-HxCDF	47:44	46:56	-48	1.021	1.020	-	
1,2,3,7,8,9-HxCDF	48:49	47:56	-53	1.044	1.042	-	
1,2,3,4,6,7,8-HpCDD	53:06	52:12	-54	1.000	1.000	-	
1,2,3,4,6,7,8-HpCDF	51:29	50:29	-60	1.000	1.000	-	
1,2,3,4,7,8,9-HpCDF	53:42	52:48	-54	1.043	1.046	-	
OCDD	57:01	56:16	-45	1.000	1.000	-	
OCDF	57:09	56:25	-44	1.003	1.003	-	
13C-2,3,7,8-TCDD	36:44	35:03	-101	1.012	1.017	-	
13C-2,3,7,8-TCDF	34:54	32:51	-123	0.962	0.953	-	
13C-1,2,3,7,8-PeCDD	43:38	42:54	-44	1.202	1.245	-	
13C-1,2,3,7,8-PeCDF	42:10	41:19	-51	1.162	1.199	-	
13C-1,2,3,6,7,8-HxCDD	48:02	47:13	-49	0.991	0.992	-	
13C-1,2,3,4,7,8-HxCDF	46:46	46:01	-45	0.965	0.966	-	
13C-1,2,3,4,6,7,8-HpCDD	53:05	52:11	-54	1.095	1.096	-	
13C-1,2,3,4,6,7,8-HpCDF	51:28	50:28	-60	1.062	1.060	-	
13C-OCDD	57:00	56:15	-45	1.176	1.181	-	

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STL - Knoxville

IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290

SEVERN TRENT SERVICES

CCAL ID: 1,149 - 021106S3

WIN Filename: t021106s3

WIN Sample ID: 2427:85

WIN Result Dir: /20021106s3/021106s3.d

WIN Date/Time: 11/06/02 12:55

Method: IN - DX8290

Instrument: M2A

Column SN: 334061

Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Window Defining First/Last Eluter Retention Times

Analyte	Reference	M/Z	Ref RT	First Eluter RT	First Eluter RRT	Last Eluter RT	Last Eluter RRT
Total TCDD	13C-2,3,7,8-TCDD	320	35:03	28:29	0.8126	37:33	1.0713
Total TCDF	13C-2,3,7,8-TCDF	304	32:51	25:46	0.7844	37:29	1.1410
Total PeCDD	13C-1,2,3,7,8-PeCDD	356	42:54	40:19	0.9398	43:32	1.0148
Total PeCDF	13C-1,2,3,7,8-PeCDF	340	41:19	38:00	0.9197	43:39	1.0565
Total HxCDD	13C-1,2,3,6,7,8-HxCDD	390	47:13	45:27	0.9626	47:38	1.0088
Total HxCDF	13C-1,2,3,4,7,8-HxCDF	374	46:01	44:46	0.9728	48:04	1.0445
Total HpCDD	13C-1,2,3,4,6,7,8-HpCDD	424	52:11	51:01	0.9776	52:12	1.0003
Total HpCDF	13C-1,2,3,4,6,7,8-HpCDF	408	50:28	50:29	1.0003	52:48	1.0462
OCDD	13C-OCDD	458	56:15	56:16	1.0003	56:16	1.0003
OCDF	13C-OCDD	442	56:15	56:25	1.0030	56:25	1.0030

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STL Knoxville Dioxin GC/MS Continuing Calibration Review / Narrative Checklist
Method: 1613B - KNOX-ID-0004-R1

Start PFK:	22:28	VER Filename:	t02110654	Win Filename:	t02110654	Inst:	MR798
End PFK:	9:13			Col Perf Filename:	t02110654	ICAL Date:	9-12-02

Review Items	N/A	Yes	No	If No, why is data reportable?	2nd Level
1. Was the mass resolution documented at both the beginning and end of the 12 hour shift?		✓			✓
2. Was the instrument resolution >10,000 (<100 ppm) on PFK m/z 304.9824 and m/z 380.9760 (at reduced voltage)?		✓			✓
3. Was the measured exact mass of m/z 380.9760 (PFK) within 5 ppm at reduced accelerating voltage?		✓			✓
4. Was date/time of analysis verified between analysis header and logbook as correct?		✓			✓
5. Was the Window Defining Mixture analyzed and the MID switchpoints set to encompass the retention time windows of each congener group?		✓			✓
6. Was the Column Performance solution analyzed and the %Valley ≤25 for separation between 2378-TCDD/F and the closest eluting non-2378 isomer?		✓			✓
7. Was the continuing calibration performed at the beginning of the 12 hour period after successful mass resolution and GC resolution performance check?		✓			✓
8. Were the response factors calculated for each labeled standard and unlabeled native analyte using the SOP specified reference compound, quantitation ions, and formula.		✓			✓
9. Are the measured RRFs for each compound within the specified control limits in Table 9 for all PCDDs/PCDFs or Table 10 if only TCDD/TCDF are being determined?		✓			✓
10. Are the relative retention times of all PCDDs/PCDFs and all labeled compounds within the limits specified in Table 8?		✓			✓
11. Are all S/N ratios ≥10 for the GC signals in each EICP (extracted ion chromatographic profile) including internal standards?		✓			✓
12. Are the ion abundance ratios for all labeled and unlabeled analytes within the specified control limits?		✓			✓
13. If manual integrations were performed, are they clearly identified, initialed and dated?	✓				✓
14. If criteria were not met, was a NCM generated, approved by supervisor, and copy included in folder?	✓				✓
15. Does the CCAL folder contain **complete** data in the following order? Data review checklist, a **complete** runlog, CCAL summary, Ratio summary, Calculation summary, PFK resolution/peak match documentation, and Total RIC, EICP's and manual integration - for window and standard.		✓			✓

Analyst: PMP	**Date:** 11-7-02	**2nd Level Reviewer :** NTM	**Date:** 11-07-02
Comments:		**Comments:**	

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STL Knoxville Specialty Organics GC/MS Continuing Calibration Review / Narrative Checklist
Methods: 8290/23 - KNOX-ID-0003, Rev. 5

Start PFK:	23:31 ✓	CS3 Filename:	t021106S4 ✓	Win Filename:	t021106S4 ✓	Inst:	MMT95S ✓
End PFK:	10:37 ✓	CS3 Filename:	t021107S1 ✓	Col Perf Filename:	t021106S4 ✓	ICAL Date:	9-12-02 ✓

Review Items	N/A	Yes	No	If No, why is data reportable?	2nd Level
1. Was the mass resolution documented at both the beginning and end of the 12 hour shift?		✓			✓
2. Was the instrument resolution >10,000 (<100 ppm) on PFK m/z 304.9824 and m/z 380.9760 (at reduced voltage)?		✓			✓
3. Was the measured exact mass of m/z 380.9760 (PFK) within 5 ppm at reduced accelerating voltage?		✓			✓
4. Was date/time of analysis verified between analysis header and logbook as correct?		✓			✓
5. Was the Window Defining Mixture analyzed and the MID switchpoints set to encompass the retention time windows of each congener group?		✓			✓
6. Was the Column Performance solution analyzed and the %Valley ≤25 for separation between 2378-TCDD/F and the closest eluting non-2378 isomer?		✓			✓
7. Was the continuing calibration performed at the beginning of the 12 hour period after successful mass resolution and GC resolution performance check?		✓			✓
8. Was the continuing calibration performed at the end of the 12 hour period?		✓			✓
9. Were the response factors calculated for each labeled standard and unlabeled native analyte using the SOP specified reference compound, quantitation ions, and formula.		✓			✓
10. Are %D ≤20 for all unlabeled native analytes in the beginning and ending calibration?		✓		Ending %D ≤25 and mean RRF from two continuing calibrations used to calculate samples. Ending %D >25 corrective action performed and all positive sample extracts reanalyzed.	✓
11. Are %D ≤30 for all labeled standards in the beginning and ending calibration?		✓		Ending %D ≤35 and mean RRF from two continuing calibrations used to calculate samples. Ending %D >35 and corrective action performed and all positive sample extracts reanalyzed.	✓
12. Are all S/N ratios ≥10 for the GC signals in each EICP (extracted ion chromatographic profile) including internal standards?		✓			✓
13. Are the ion abundance ratios for all labeled and unlabeled analytes within the specified control limits?		✓			✓
14. If manual integrations were performed, are they clearly identified, initialed and dated?	✓				✓
15. If criteria were not met, was a NCM generated, approved by supervisor, and copy included in folder?	✓				✓
16. Does the CCAL folder contain **complete** data in the following order? Data review checklist, a **complete** runlog, CCAL summary, Ratio summary, Calculation summary, PFK resolution/peak match documentation, and Total RIC, EICP's and manual integration - for window and both standards.		✓			✓

Analyst: P Hup	Date: 11-7-02	2nd Level Reviewer: NTM	Date: 11-07-02
Comments:		Comments:	

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-7.8 V SCAN AUTOTUNE TUNE R = 10 416 383 429 uV

p 3.79 A -7.9 V

1.00 mA 57.1 V 270 C 270 C

d s l x y

2409 1129 691 2540

s s s s s

2409 1325 623 2680

0.86 mA -7.8 V

EI POS electric

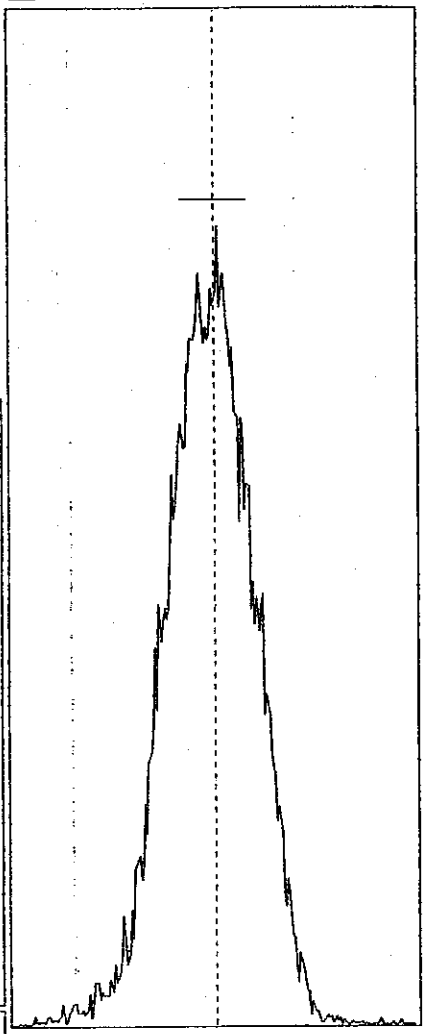
U(a) 4747 V u U(esa) 763.8 V

Entr. Slit	(ENS)	172.5	
Exit Slit	(EXS)	179.2	
Sweep Mass	(MASS)	304.982	amu
Virt. Mass	(VMASS)	304.982	amu
Link Mass	(LMASS)	304.982	amu
Sweep Width	(SW)	0.020	%
Sweep Speed	(SS)	3.0	/s
U(a) Offset	(UOFS)	5.0	V
U(a)/U(esa)	(URATIO)	2.441	%
Multiplier	(EMULT)	1.95	kV
Dyn. Volt.	(DYNODE)	pos	
Ref. Inlet	(TREF)	150	C
Beam Rot.	(BQUAD)	3.3	V
Focus Quad	(FQUAD)	5.0	V

VG off VVR off VS2 off VV off VS3 off

TUNE DESCRIPTOR tune2 RESTORE

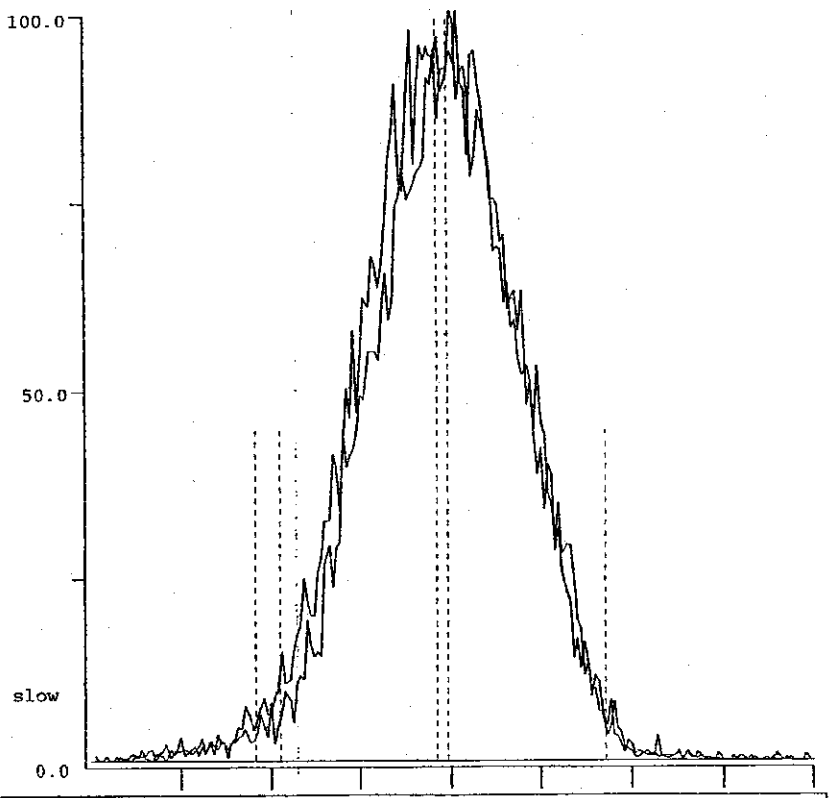
TUNE: _



<> >< << >> ^ v C V LOCK UNLK

Peak Register Display

Copy result to ULIST



REG 1/2: 380.974974 REG 1/3: REG 2/3:

MASS	:	304.98214	380.97461
REF MASS	:	304.98243	380.97605
PEAK WIDTH [ppm]:		89.95275	97.00636

Active Register: 2 0.05 1.00

N REG RCOPY1 RCOPY2 RCOPY3 LIMIT CENTER SPREAD ERASE RESUME

PEAK:

Wed Nov 6 22:28:28 2002 mat95s MAT 95

To open 1613

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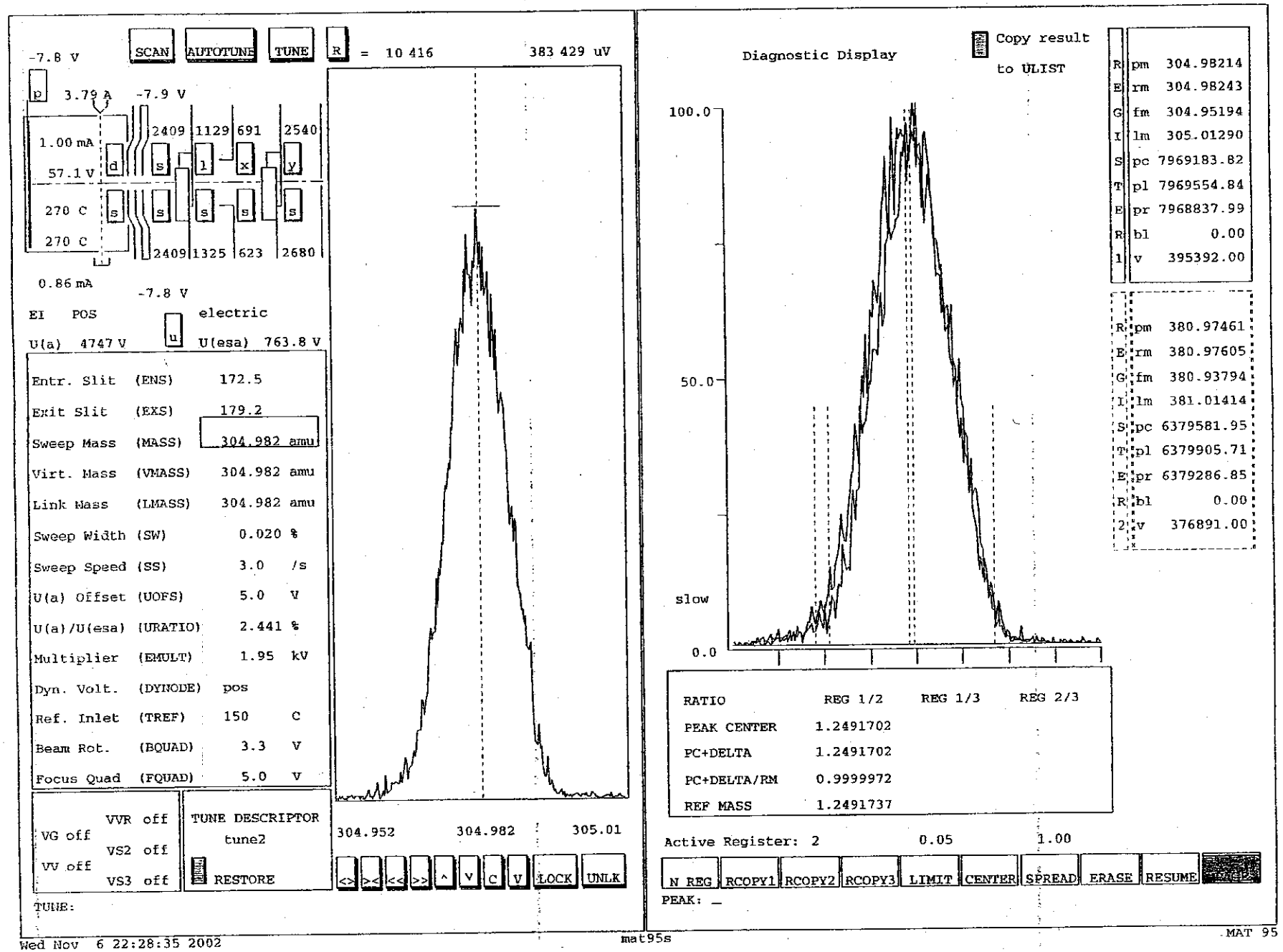

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-7.8 V SCAN AUTOTUNE TUNE R = 10 416 419 079 uV

p 3.81 A -7.9 V

1.00 mA 57.1 V 270 C 270 C

d s l x y s s s s s

2409 1129 691 2540

2409 1325 623 2680

0.86 mA -7.8 V

EI POS electric

U(a) 4747 V u U(esa) 763.8 V

Entr. Slit	(ENS)	172.5	
Exit Slit	(EXS)	179.2	
Sweep Mass	(MASS)	304.982	amu
Virt. Mass	(VMASS)	304.982	amu
Link Mass	(LMASS)	304.982	amu
Sweep Width	(SW)	0.020	%
Sweep Speed	(SS)	3.0	/s
U(a) Offset	(UOFS)	5.0	V
U(a)/U(esa)	(URATIO)	2.441	%
Multiplier	(EMULT)	1.95	kV
Dyn. Volt.	(DYNODE)	pos	
Ref. Inlet	(TREF)	150	C
Beam Rot.	(BQUAD)	3.3	V
Focus Quad	(FQUAD)	5.0	V

VG off VVR off VS2 off VV off VS3 off

TUNE DESCRIPTOR tune2 RESTORE

TUNE: _

304.952 304.982 305.01

<> >< << >> ^ V C V LOCK UNLK

Peak Register Display

Copy result to ULIST

100.0 50.0 slow 0.0

REG 1/2: 380.974866 REG 1/3: REG 2/3:

MASS	:	304.98241	380.97484
REF MASS	:	304.98243	380.97605
PEAK WIDTH [ppm]:		94.95021	93.00615

Active Register: 2 0.05 1.00

N REG RCOPY1 RCOPY2 RCOPY3 LIMIT CENTER SPREAD ERASE RESUME

PEAK:

Wed Nov 6 23:31:33 2002 mat95s MAT 95

To open/close 8290

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-7.8 V SCAN AUTOTUNE TUNE R = 10 416 419 079 uV

P 3.81 A -7.9 V

1.00 mA 57.1 V 270 C 270 C

d s l x y

2409 1129 691 2540

2409 1325 623 2680

0.86 mA -7.8 V

EI POS electric

U(a) 4750 V u U(esa) 763.8 V

Entr. Slit	(ENS)	172.5	
Exit Slit	(EXS)	179.2	
Sweep Mass	(MASS)	304.982	amu
Virt. Mass	(VMASS)	304.982	amu
Link Mass	(LMASS)	304.982	amu
Sweep Width	(SW)	0.020	%
Sweep Speed	(SS)	3.0	/s
U(a) Offset	(UOFS)	5.0	V
U(a)/U(esa)	(URATIO)	2.441	%
Multiplier	(EMULT)	1.95	kV
Dyn. Volt.	(DYNODE)	pos	
Ref. Inlet	(TREF)	150	C
Beam Rot.	(EQUAD)	3.3	V
Focus Quad	(FQUAD)	5.0	V

VG off VVR off VS2 off VV off VS3 off

TUNE DESCRIPTOR tune2 RESTORE

TUNE:

304.952 304.982 305.01

<> >< << >> ^ v C V LOCK UNLK

Diagnostic Display

Copy result to ULIST

100.0 50.0 slow 0.0

RESULT 1		
pm	304.98241	
rm	304.98243	
fm	304.95194	
lm	305.01290	
pc	7969176.70	
pl	7969578.73	
pr	7968822.06	
bl	0.00	
v	407868.00	

RESULT 2		
pm	380.97484	
rm	380.97605	
fm	380.93794	
lm	381.01414	
pc	6379578.07	
pl	6379899.33	
pr	6379305.99	
bl	0.00	
v	388758.00	

RATIO	REG 1/2	REG 1/3	REG 2/3
PEAK CENTER	1.2491699		
PC+DELTA	1.2491699		
PC+DELTA/RM	0.9999969		
REF MASS	1.2491737		

Active Register: 2 0.05 1.00

N REG RCOPY1 RCOPY2 RCOPY3 LIMIT CENTER SPREAD ERASE RESUME

PEAK: _

Wed Nov 6 23:31:40 2002 mat95s MAT 95

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-7.8 V SCAN AUTOTUNE TUNE R = 10 416 419 079 uV

p 3.81 A -7.9 V

1.00 mA 57.1 V d s l x y 2409 1129 691 2540

270 C s s s s s

270 C 2409 1325 623 2680

0.86 mA -7.8 V

EI POS u electric

U(a) 4747 V U(esa) 763.8 V

Entr. Slit	(ENS)	172.5	
Exit Slit	(EXS)	179.2	
Sweep Mass	(MASS)	304.982	amu
Virt. Mass	(VMASS)	304.982	amu
Link Mass	(LMASS)	304.982	amu
Sweep Width	(SW)	0.020	%
Sweep Speed	(SS)	3.0	/s
U(a) Offset	(UOFS)	5.0	V
U(a)/U(esa)	(URATIO)	2.441	%
Multiplier	(EMULT)	1.95	kV
Dyn. Volt.	(DYNODE)	pos	
Ref. Inlet	(TREF)	150	C
Beam Rot.	(BQUAD)	3.3	V
Focus Quad	(FQUAD)	5.5	V

VG off VVR off VS2 off VV off VS3 off

TUNE DESCRIPTOR tune2 RESTORE

304.952 304.982 305.01

<< >> << >> ^ V C V LOCK UNLK

TUNE:

Thu Nov 7 09:13:14 2002

Peak Register Display

Copy result to ULIST

100.0 50.0 slow 0.0

REG 1/2: 380.975208 REG 1/3: REG 2/3:

MASS :	304.98252	380.97531
REF MASS :	304.98243	380.97605
PEAK WIDTH [ppm]:	91.95181	99.00667

Active Register: 1 0.05 1.00

N REG RCOPY1 RCOPY2 RCOPY3 LIMIT CENTER SPREAD ERASE RESUME PAGE

PEAK: _

mat95s MAT 95

to close 1613

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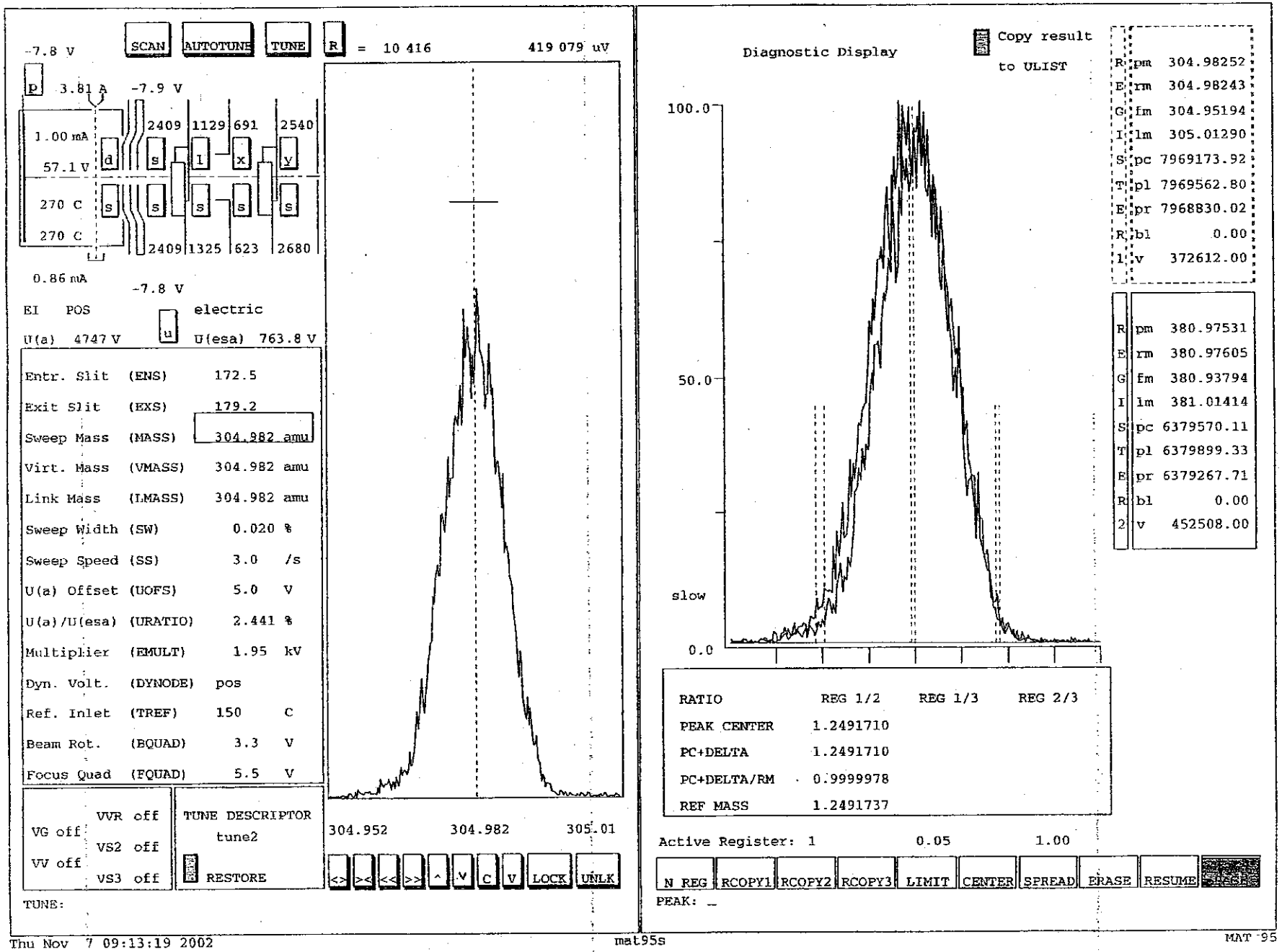

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USEPA Method 1613/8290
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDF
By High-Resolution Gas Chromatography/High-Resolution Mass Spectroscopy (HRGC/I

PCDD/PCDF Daily Calibration Verification

Laboratory ID: STL Knoxville
Init. Calibration Date: 12-Sep-02

Instrument ID: MAT-95S
GC Column ID: Rtx-5

CS3 Data Filename: 1021106s4
Analysis Date: 06-Nov-02
Analysis Time: 22:31

Analytes	m/z Mass 1	m/z Mass 2	Area Mass 1	Area Mass 2	RT	RRT	Ratio	Ratio Limits	Std Conc	8290 ICAL RF	8290 Calc RF	8290 Conc. (ng/mL)
13C-1,2,3,4-TCDD	331.9368	333.9339	1077380	1340260	34:26	1.000	0.80	0.65-0.89	100.0	1.000	1.000	100.0
13C-2,3,7,8-TCDD	331.9368	333.9339	1097198	1366000	35:01	1.017	0.80	0.65-0.89	100.0	1.152	1.019	88.4
37Cl-2,3,7,8-TCDD	327.8847		253275		35:04	1.018		NA	10.0	1.184	1.048	8.8
2,3,7,8-TCDD	319.8965	321.8936	123273	154741	35:04	1.001	0.80	0.65-0.89	10.0	1.070	1.129	10.5
13C-2,3,7,8-TCDF	315.9419	317.9389	1676611	2113343	32:50	0.954	0.79	0.65-0.89	100.0	1.662	1.568	94.3
2,3,7,8-TCDF	303.9016	305.8987	175718	220830	32:52	1.001	0.80	0.65-0.89	10.0	1.026	1.046	10.2
13C-1,2,3,7,8-PeCDD	367.8949	369.8919	1545718	987061	42:53	1.245	1.57	1.32-1.78	100.0	1.169	1.048	89.6
2,3,7,8-PeCDD	355.8546	357.8516	796164	494263	42:54	1.000	1.61	1.32-1.78	50.0	0.995	1.019	51.2
13C-1,2,3,7,8-PeCDF	351.9000	353.8970	2426355	1514111	41:19	1.200	1.60	1.32-1.78	100.0	1.798	1.630	90.6
13C-2,3,4,7,8-PeCDF	351.9000	353.8970	2424355	1496815	42:24	1.231	1.62	1.32-1.78	100.0	--	--	--
1,2,3,7,8-PeCDF	339.8597	341.8567	1255709	788184	41:20	1.000	1.59	1.32-1.78	50.0	0.987	1.037	52.6
2,3,4,7,8-PeCDF	339.8597	341.8567	1261545	807475	42:26	1.001	1.56	1.32-1.78	50.0	1.035	1.050	50.7
13C-1,2,3,4,7,8-HxCDD	401.8559	403.8529	1329637	1035296	47:05	0.989	1.28	1.05-1.43	100.0	--	--	--
13C-1,2,3,6,7,8-HxCDD	401.8559	403.8529	1445861	1135285	47:12	0.991	1.27	1.05-1.43	100.0	1.142	0.993	87.0
13C-1,2,3,7,8,9-HxCDD	401.8559	403.8529	1454197	1143837	47:37	1.000	1.27	1.05-1.43	100.0	1.000	1.000	100.0
1,2,3,4,7,8-HxCDD	389.8157	391.8127	752998	597207	47:06	1.000	1.26	1.05-1.43	50.0	0.958	1.046	54.6
1,2,3,6,7,8-HxCDD	389.8157	391.8127	769118	612669	47:13	1.000	1.26	1.05-1.43	50.0	1.020	1.071	52.5
1,2,3,7,8,9-HxCDD	389.8157	391.8127	837924	674668	47:38	1.009	1.24	1.05-1.43	50.0	0.984	1.172	59.6
13C-1,2,3,4,7,8-HxCDF	383.8639	385.8610	1200024	2269706	46:00	0.966	0.53	0.43-0.59	100.0	1.422	1.336	93.9
13C-1,2,3,6,7,8-HxCDF	383.8639	385.8610	1259715	2369906	46:08	0.969	0.53	0.43-0.59	100.0	--	--	--
13C-2,3,4,6,7,8-HxCDF	383.8639	385.8610	1199004	2236966	46:54	0.985	0.54	0.43-0.59	100.0	--	--	--
13C-1,2,3,7,8,9-HxCDF	383.8639	385.8610	1091341	2046653	47:55	1.006	0.53	0.43-0.59	100.0	--	--	--
1,2,3,4,7,8-HxCDF	373.8208	375.8178	1242237	982176	46:01	1.000	1.26	1.05-1.43	50.0	1.241	1.282	51.7
1,2,3,6,7,8-HxCDF	373.8208	375.8178	1224828	965347	46:09	1.000	1.27	1.05-1.43	50.0	1.339	1.262	47.1
2,3,4,6,7,8-HxCDF	373.8208	375.8178	1127166	894232	46:55	1.000	1.26	1.05-1.43	50.0	1.167	1.165	49.9
1,2,3,7,8,9-HxCDF	373.8208	375.8178	1073876	853847	47:56	1.000	1.26	1.05-1.43	50.0	1.054	1.111	52.7
13C-1,2,3,4,6,7,8-HpCDI	435.8169	437.8140	1311467	1235492	52:09	1.095	1.06	0.88-1.20	100.0	1.017	0.980	96.4
1,2,3,4,6,7,8-HpCDD	423.7766	425.7737	660881	628013	52:10	1.000	1.05	0.88-1.20	50.0	0.967	1.012	52.3
13C-1,2,3,4,6,7,8-HpCDF	417.8253	419.8220	829324	1824411	50:27	1.060	0.45	0.37-0.51	100.0	1.123	1.021	91.0
13C-1,2,3,4,7,8,9-HpCDF	417.8253	419.8220	715968	1574203	52:47	1.109	0.45	0.37-0.51	100.0	--	--	--
1,2,3,4,6,7,8-HpCDF	407.7818	409.7789	1092885	1058560	50:29	1.001	1.03	0.88-1.20	50.0	1.492	1.621	54.3
1,2,3,4,7,8,9-HpCDF	407.7818	409.7789	866804	824661	52:48	1.000	1.05	0.88-1.20	50.0	1.201	1.275	53.1
13C--OCDD	469.7779	471.7750	2090510	2313659	56:15	1.181	0.90	0.76-1.02	200.0	1.040	0.848	163.0
OCDD	457.7377	459.7348	1108271	1232379	56:16	1.000	0.90	0.76-1.02	100.0	1.021	1.063	104.1
OCDF	441.7428	443.7399	1300539	1415388	56:24	1.003	0.92	0.76-1.02	100.0	1.182	1.233	104.3

VER Quan Data

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USEPA Method 1613B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs)
By High-Resolution Gas Chromatography/High-Resolution Mass Spectroscopy (HRGC/HRMS)

PCDD/PCDF Daily Calibration Verification

Laboratory ID: STL Knoxville
Init. Calibration Date: 12-Sep-02
Instrument ID: MAT-95S
GC Column ID: Rtx-5

VER Data Filename: t021106s4
Analysis Date: 06-Nov-02
Analysis Time: 22:31

Analytes	m/z's Forming Ratio	Ion Abund. Ratio	QC Limits	Conc. Found	ICAL RF	VER RF	%D	QC LIMIT	Flag
13C-2,3,7,8-TCDD	M/M+2	0.80	0.65-0.89	88.4	1.152	1.019	11.6%	30%	TRUE
37Cl-2,3,7,8-TCDD	M/M+2		NA	8.8	1.184	1.048	11.5%	30%	TRUE
2,3,7,8-TCDD	M/M+2	0.80	0.65-0.89	10.5	1.070	1.129	-5.5%	20%	TRUE
13C-2,3,7,8-TCDF	M/M+2	0.79	0.65-0.89	94.3	1.662	1.568	5.7%	30%	TRUE
2,3,7,8-TCDF	M/M+2	0.80	0.65-0.89	10.2	1.026	1.046	-2.0%	20%	TRUE
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.57	1.32-1.78	89.6	1.169	1.048	10.4%	30%	TRUE
1,2,3,7,8-PeCDD	M+2/M+4	1.61	1.32-1.78	51.2	0.995	1.019	-2.4%	20%	TRUE
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.60	1.32-1.78	90.6	1.798	1.630	9.4%	30%	TRUE
1,2,3,7,8-PeCDF	M+2/M+4	1.59	1.32-1.78	52.6	0.987	1.037	-5.1%	20%	TRUE
2,3,4,7,8-PeCDF	M+2/M+4	1.56	1.32-1.78	50.7	1.035	1.050	-1.5%	20%	TRUE
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	87.0	1.142	0.993	13.0%	30%	TRUE
1,2,3,4,7,8-HxCDD	M+2/M+4	1.26	1.05-1.43	54.6	0.958	1.046	-9.2%	20%	TRUE
1,2,3,6,7,8-HxCDD	M+2/M+4	1.26	1.05-1.43	52.5	1.020	1.071	-5.0%	20%	TRUE
1,2,3,7,8,9-HxCDD	M+2/M+4	1.24	1.05-1.43	59.6	0.984	1.172	-19.1%	20%	TRUE
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.53	0.43-0.59	93.9	1.422	1.336	6.1%	30%	TRUE
1,2,3,4,7,8-HxCDF	M+2/M+4	1.26	1.05-1.43	51.7	1.241	1.282	-3.3%	20%	TRUE
1,2,3,6,7,8-HxCDF	M+2/M+4	1.27	1.05-1.43	47.1	1.339	1.262	5.7%	20%	TRUE
2,3,4,6,7,8-HxCDF	M+2/M+4	1.26	1.05-1.43	49.9	1.167	1.165	0.2%	20%	TRUE
1,2,3,7,8,9-HxCDF	M+2/M+4	1.26	1.05-1.43	52.7	1.054	1.111	-5.4%	20%	TRUE
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.06	0.88-1.20	96.4	1.017	0.980	3.6%	30%	TRUE
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88-1.20	52.3	0.967	1.012	-4.7%	20%	TRUE
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.45	0.37-0.51	91.0	1.123	1.021	9.0%	30%	TRUE
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.03	0.88-1.20	54.3	1.492	1.621	-8.7%	20%	TRUE
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.05	0.88-1.20	53.1	1.201	1.275	-6.1%	20%	TRUE
13C--OCDD	M+2/M+4	0.90	0.76-1.02	163.0	1.040	0.848	18.5%	30%	TRUE
OCDD	M+2/M+4	0.90	0.76-1.02	104.1	1.021	1.063	-4.1%	20%	TRUE
OCDF	M+2/M+4	0.92	0.76-1.02	104.3	1.182	1.233	-4.3%	20%	TRUE

(1) SW-846 Method 8290, Revision 0 September 1994, Section 7.7.4, Page 29

PREP 11-7-02
NTM 11-07-02

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STL - Knoxville

IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290

CCAL ID: 1,155 - 021106S4

CCAL Filename: t021106s4

CCAL Sample ID: 2427:85

CCAL Result Dir: /20021106s4/021106s4.d

CCAL Date/Time: 11/06/02 22:31

ICAL Date: 09/12/02

Method: IN - DX8290

Instrument: M2A

Column SN: 334061

Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Analytes	m/z's Forming Ratio	Ion Abund Ratio	QC Limits	Calc Conc (ng/mL)	ICAL RF	CCAL RF	%D	QC Limit	Valid?
2,3,7,8-TCDD	M/M+2	0.80	0.65-0.89	10.6	1.070	1.129	5.5	20.0	True
2,3,7,8-TCDF	M/M+2	0.80	0.65-0.89	10.2	1.026	1.046	2.0	20.0	True
1,2,3,7,8-PeCDD	M+2/M+4	1.61	1.32-1.78	51	0.995	1.019	2.4	20.0	True
1,2,3,7,8-PeCDF	M+2/M+4	1.59	1.32-1.78	53	0.987	1.037	5.1	20.0	True
2,3,4,7,8-PeCDF	M+2/M+4	1.56	1.32-1.78	51	1.035	1.050	1.5	20.0	True
1,2,3,4,7,8-HxCDD	M+2/M+4	1.26	1.05-1.43	51	0.958	1.046	9.2	20.0	True
1,2,3,6,7,8-HxCDD	M+2/M+4	1.26	1.05-1.43	53	1.020	1.071	5.0	20.0	True
1,2,3,7,8,9-HxCDD	M+2/M+4	1.24	1.05-1.43	58	0.984	1.172	19.1	20.0	True
1,2,3,4,7,8-HxCDF	M+2/M+4	1.26	1.05-1.43	52	1.241	1.282	3.3	20.0	True
1,2,3,6,7,8-HxCDF	M+2/M+4	1.27	1.05-1.43	50	1.339	1.262	-5.7	20.0	True
2,3,4,6,7,8-HxCDF	M+2/M+4	1.26	1.05-1.43	50	1.167	1.165	-0.2	20.0	True
1,2,3,7,8,9-HxCDF	M+2/M+4	1.26	1.05-1.43	50	1.054	1.111	5.4	20.0	True
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88-1.20	52	0.967	1.012	4.6	20.0	True
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.03	0.88-1.20	54	1.492	1.621	8.7	20.0	True
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.05	0.88-1.20	51	1.201	1.275	6.2	20.0	True
OCDD	M+2/M+4	0.90	0.76-1.02	104	1.021	1.063	4.1	20.0	True
OCDF	M+2/M+4	0.92	0.76-1.02	104	1.182	1.233	4.3	20.0	True
13C-2,3,7,8-TCDD	M/M+2	0.80	0.65-0.89	88	1.152	1.019	-11.5	30.0	True
13C-2,3,7,8-TCDF	M/M+2	0.79	0.65-0.89	94	1.662	1.568	-5.7	30.0	True
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.57	1.32-1.78	90	1.169	1.048	-10.4	30.0	True
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.60	1.32-1.78	91	1.798	1.630	-9.3	30.0	True
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	87	1.142	0.993	-13.0	30.0	True
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.53	0.43-0.59	94	1.422	1.336	-6.1	30.0	True
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.06	0.88-1.20	96	1.017	0.980	-3.6	30.0	True
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.45	0.37-0.51	91	1.123	1.021	-9.0	30.0	True
13C-OCDD	M+2/M+4	0.90	0.76-1.02	163	1.040	0.848	-18.5	30.0	True

Prep 11-07

NTM 11-07-02

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STL - Knoxville

IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290

SEVERN TRENT SERVICES

CCAL ID: 1,155 - 021106S4

CCAL Filename: t021106s4

CCAL Sample ID: 2427:85

CCAL Result Dir: /20021106s4/021106s4.d

CCAL Date/Time: 11/06/02 22:31

ICAL Date: 09/12/02

Method: IN - DX8290

Instrument: M2A

Column SN: 334061

Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Analytes	ICAL RT	CCAL RT	RT Diff	ICAL RRT	CCAL RRT	RRT QC Limit	Valid?
2,3,7,8-TCDD	36:46	35:04	-102	1.001	1.001	-	
2,3,7,8-TCDF	34:57	32:52	-125	1.001	1.001	-	
1,2,3,7,8-PeCDD	43:39	42:54	-45	1.000	1.000	-	
1,2,3,7,8-PeCDF	42:11	41:20	-51	1.000	1.000	-	
2,3,4,7,8-PeCDF	43:13	42:25	-48	1.025	1.027	-	
1,2,3,4,7,8-HxCDD	47:55	47:06	-49	0.998	0.998	-	
1,2,3,6,7,8-HxCDD	48:03	47:13	-50	1.000	1.000	-	
1,2,3,7,8,9-HxCDD	48:29	47:38	-51	1.010	1.009	-	
1,2,3,4,7,8-HxCDF	46:48	46:01	-47	1.000	1.000	-	
1,2,3,6,7,8-HxCDF	46:56	46:09	-47	1.003	1.003	-	
2,3,4,6,7,8-HxCDF	47:44	46:55	-49	1.021	1.020	-	
1,2,3,7,8,9-HxCDF	48:49	47:56	-53	1.044	1.042	-	
1,2,3,4,6,7,8-HpCDD	53:06	52:10	-56	1.000	1.000	-	
1,2,3,4,6,7,8-HpCDF	51:29	50:29	-60	1.000	1.001	-	
1,2,3,4,7,8,9-HpCDF	53:42	52:48	-54	1.043	1.047	-	
OCDD	57:01	56:16	-45	1.000	1.000	-	
OCDF	57:09	56:24	-45	1.003	1.003	-	
13C-2,3,7,8-TCDD	36:44	35:01	-103	1.012	1.017	-	
13C-2,3,7,8-TCDF	34:54	32:50	-124	0.962	0.954	-	
13C-1,2,3,7,8-PeCDD	43:38	42:53	-45	1.202	1.245	-	
13C-1,2,3,7,8-PeCDF	42:10	41:19	-51	1.162	1.200	-	
13C-1,2,3,6,7,8-HxCDD	48:02	47:12	-50	0.991	0.992	-	
13C-1,2,3,4,7,8-HxCDF	46:46	46:00	-46	0.965	0.966	-	
13C-1,2,3,4,6,7,8-HpCDD	53:05	52:09	-56	1.095	1.096	-	
13C-1,2,3,4,6,7,8-HpCDF	51:28	50:27	-61	1.062	1.060	-	
13C-OCDD	57:00	56:15	-45	1.176	1.182	-	

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IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290

SEVERN TRENT SERVICES

CCAL ID: 1,155 - 021106S4

WIN Filename: t021106s4

Method: IN - DX8290

WIN Sample ID: 2427:85

Instrument: M2A

WIN Result Dir: /20021106s4/021106s4.d

Column SN: 334061

WIN Date/Time: 11/06/02 22:31

Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Window Defining First/Last Eluter Retention Times

Analyte	Reference	M/Z	Ref RT	First Eluter RT	First Eluter RRT	Last Eluter RT	Last Eluter RRT
Total TCDD	13C-2,3,7,8-TCDD	320	35:01	28:27	0.8125	37:32	1.0719
Total TCDF	13C-2,3,7,8-TCDF	304	32:50	25:44	0.7838	37:26	1.1401
Total PeCDD	13C-1,2,3,7,8-PeCDD	356	42:53	40:18	0.9398	43:30	1.0144
Total PeCDF	13C-1,2,3,7,8-PeCDF	340	41:19	37:59	0.9193	43:38	1.0561
Total HxCDD	13C-1,2,3,6,7,8-HxCDD	390	47:12	45:26	0.9626	47:38	1.0092
Total HxCDF	13C-1,2,3,4,7,8-HxCDF	374	46:00	44:45	0.9728	48:03	1.0446
Total HpCDD	13C-1,2,3,4,6,7,8-HpCDD	424	52:09	51:00	0.9779	52:10	1.0003
Total HpCDF	13C-1,2,3,4,6,7,8-HpCDF	408	50:27	50:29	1.0007	52:48	1.0466
OCDD	13C-OCDD	458	56:15	56:16	1.0003	56:16	1.0003
OCDF	13C-OCDD	442	56:15	56:24	1.0027	56:24	1.0027

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USEPA Method 1613/8290
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDF
By High-Resolution Gas Chromatography/High-Resolution Mass Spectroscopy (HRGC/I

PCDD/PCDF Daily Calibration Verification

Laboratory ID: STL Knoxville
Instrument ID: MAT-95S
Init. Calibration Date: 12-Sep-02
GC Column ID: Rtx-5

CS3 Data Filename: t021107s1
Analysis Date: 07-Nov-02
Analysis Time: 09:30

Analytes	m/z Mass 1	m/z Mass 2	Area Mass 1	Area Mass 2	RT	RRT	Ratio	Ratio Limits	Std Conc	8290 ICAL RF	8290 Calc RF	8290 Conc. (ng/mL)
13C-1,2,3,4-TCDD	331.9368	333.9339	852173	1061933	34:28	1.000	0.80	0.65-0.89	100.0	1.000	1.000	100.0
13C-2,3,7,8-TCDD	331.9368	333.9339	907716	1159449	35:03	1.017	0.78	0.65-0.89	100.0	1.152	1.080	93.7
37Cl-2,3,7,8-TCDD	327.8847		210338		35:06	1.018		NA	10.0	1.184	1.099	9.3
2,3,7,8-TCDD	319.8965	321.8936	99809	126007	35:06	1.001	0.79	0.65-0.89	10.0	1.070	1.092	10.2
13C-2,3,7,8-TCDF	315.9419	317.9389	1320383	1671333	32:52	0.954	0.79	0.65-0.89	100.0	1.662	1.563	94.0
2,3,7,8-TCDF	303.9016	305.8987	136848	175823	32:54	1.001	0.78	0.65-0.89	10.0	1.026	1.045	10.2
13C-1,2,3,7,8-PeCDD	367.8949	369.8919	1341317	839763	42:55	1.245	1.60	1.32-1.78	100.0	1.169	1.139	97.5
[illegible]3,7,8-PeCDD	355.8546	357.8516	664850	416782	42:56	1.000	1.60	1.32-1.78	50.0	0.995	0.992	49.8
13C-1,2,3,7,8-PeCDF	351.9000	353.8970	1855619	1168549	41:20	1.199	1.59	1.32-1.78	100.0	1.798	1.580	87.9
13C-2,3,4,7,8-PeCDF	351.9000	353.8970	1864926	1178931	42:26	1.231	1.58	1.32-1.78	100.0	--	--	--
1,2,3,7,8-PeCDF	339.8597	341.8567	944129	599476	41:21	1.000	1.57	1.32-1.78	50.0	0.987	1.021	51.7
2,3,4,7,8-PeCDF	339.8597	341.8567	978260	614504	42:27	1.000	1.59	1.32-1.78	50.0	1.035	1.053	50.9
13C-1,2,3,4,7,8-HxCDD	401.8559	403.8529	1064178	842321	47:05	0.988	1.26	1.05-1.43	100.0	--	--	--
13C-1,2,3,6,7,8-HxCDD	401.8559	403.8529	1147035	899047	47:13	0.991	1.28	1.05-1.43	100.0	1.142	1.020	89.3
13C-1,2,3,7,8,9-HxCDD	401.8559	403.8529	1116311	890310	47:38	1.000	1.25	1.05-1.43	100.0	1.000	1.000	100.0
1,2,3,4,7,8-HxCDD	389.8157	391.8127	592571	472637	47:06	1.000	1.25	1.05-1.43	50.0	0.958	1.041	54.3
1,2,3,6,7,8-HxCDD	389.8157	391.8127	593931	473147	47:14	1.000	1.26	1.05-1.43	50.0	1.020	1.043	51.1
1,2,3,7,8,9-HxCDD	389.8157	391.8127	637232	510824	47:39	1.009	1.25	1.05-1.43	50.0	0.984	1.122	57.0
13C-1,2,3,4,7,8-HxCDF	383.8639	385.8610	928658	1743299	46:01	0.966	0.53	0.43-0.59	100.0	1.422	1.332	93.6
13C-1,2,3,6,7,8-HxCDF	383.8639	385.8610	944258	1793939	46:09	0.969	0.53	0.43-0.59	100.0	--	--	--
13C-2,3,4,6,7,8-HxCDF	383.8639	385.8610	925039	1738549	46:56	0.985	0.53	0.43-0.59	100.0	--	--	--
13C-1,2,3,7,8,9-HxCDF	383.8639	385.8610	805199	1522640	47:56	1.006	0.53	0.43-0.59	100.0	--	--	--
1,2,3,4,7,8-HxCDF	373.8208	375.8178	942533	747833	46:02	1.000	1.26	1.05-1.43	50.0	1.241	1.265	51.0
1,2,3,6,7,8-HxCDF	373.8208	375.8178	939538	744122	46:10	1.000	1.26	1.05-1.43	50.0	1.339	1.260	47.1
2,3,4,6,7,8-HxCDF	373.8208	375.8178	865401	685672	46:57	1.000	1.26	1.05-1.43	50.0	1.167	1.161	49.7
1,2,3,7,8,9-HxCDF	373.8208	375.8178	787197	633847	47:57	1.000	1.24	1.05-1.43	50.0	1.054	1.064	50.5
13C-1,2,3,4,6,7,8-HpCDI	435.8169	437.8140	1040445	990599	52:11	1.096	1.05	0.88-1.20	100.0	1.017	1.012	99.5
1,2,3,4,6,7,8-HpCDD	423.7766	425.7737	525310	497491	52:12	1.000	1.06	0.88-1.20	50.0	0.967	1.007	52.1
13C-1,2,3,4,6,7,8-HpCDF	417.8253	419.8220	619795	1367110	50:28	1.059	0.45	0.37-0.51	100.0	1.123	0.990	88.2
13C-1,2,3,4,7,8,9-HpCDF	417.8253	419.8220	544374	1217453	52:48	1.108	0.45	0.37-0.51	100.0	--	--	--
1,2,3,4,6,7,8-HpCDF	407.7818	409.7789	858966	814109	50:29	1.000	1.06	0.88-1.20	50.0	1.492	1.684	56.4
1,2,3,4,7,8,9-HpCDF	407.7818	409.7789	651857	621688	52:49	1.000	1.05	0.88-1.20	50.0	1.201	1.282	53.4
13C--OCDD	469.7779	471.7750	1686390	1860442	56:16	1.181	0.91	0.76-1.02	200.0	1.040	0.884	170.0
[illegible]D	457.7377	459.7348	913908	1021732	56:17	1.000	0.89	0.76-1.02	100.0	1.021	1.091	106.9
[illegible]F	441.7428	443.7399	956329	1037178	56:25	1.003	0.92	0.76-1.02	100.0	1.182	1.124	95.1

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IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290

SEVERN TRENT SERVICES

CCAL ID: 1,164 - 021107S1

CCAL Filename: t021107s1

CCAL Sample ID: 2427:85

CCAL Result Dir: /20021107s1/021107s1.d

CCAL Date/Time: 11/07/02 09:30

ICAL Date: 09/12/02

Method: IN - DX8290

Instrument: M2A

Column SN: 334061

Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Analytes	m/z's Forming Ratio	Ion Abund Ratio	QC Limits	Calc Conc (ng/mL)	ICAL RF	CCAL RF	%D	QC Limit	Valid?
2,3,7,8-TCDD	M/M+2	0.79	0.65-0.89	10.2	1.070	1.092	2.1	20.0	True
2,3,7,8-TCDF	M/M+2	0.78	0.65-0.89	10.2	1.026	1.045	1.9	20.0	True
1,2,3,7,8-PeCDD	M+2/M+4	1.60	1.32-1.78	50	0.995	0.992	-0.3	20.0	True
1,2,3,7,8-PeCDF	M+2/M+4	1.57	1.32-1.78	52	0.987	1.021	3.4	20.0	True
2,3,4,7,8-PeCDF	M+2/M+4	1.59	1.32-1.78	50	1.035	1.053	1.8	20.0	True
1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05-1.43	50	0.958	1.041	8.7	20.0	True
1,2,3,6,7,8-HxCDD	M+2/M+4	1.26	1.05-1.43	51	1.020	1.043	2.3	20.0	True
1,2,3,7,8,9-HxCDD	M+2/M+4	1.25	1.05-1.43	55	0.984	1.122	14.0	20.0	True
1,2,3,4,7,8-HxCDF	M+2/M+4	1.26	1.05-1.43	51	1.241	1.265	1.9	20.0	True
1,2,3,6,7,8-HxCDF	M+2/M+4	1.26	1.05-1.43	51	1.339	1.260	-5.9	20.0	True
2,3,4,6,7,8-HxCDF	M+2/M+4	1.26	1.05-1.43	50	1.167	1.161	-0.5	20.0	True
1,2,3,7,8,9-HxCDF	M+2/M+4	1.24	1.05-1.43	49	1.054	1.064	0.9	20.0	True
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.06	0.88-1.20	52	0.967	1.007	4.1	20.0	True
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.06	0.88-1.20	56	1.492	1.684	12.9	20.0	True
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.05	0.88-1.20	50	1.201	1.282	6.8	20.0	True
OCDD	M+2/M+4	0.89	0.76-1.02	107	1.021	1.091	6.9	20.0	True
OCDF	M+2/M+4	0.92	0.76-1.02	95	1.182	1.124	-4.9	20.0	True
13C-2,3,7,8-TCDD	M/M+2	0.78	0.65-0.89	94	1.152	1.080	-6.2	30.0	True
13C-2,3,7,8-TCDF	M/M+2	0.79	0.65-0.89	94	1.662	1.563	-5.9	30.0	True
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.60	1.32-1.78	97	1.169	1.139	-2.5	30.0	True
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.59	1.32-1.78	88	1.798	1.580	-12.1	30.0	True
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.28	1.05-1.43	89	1.142	1.020	-10.7	30.0	True
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.53	0.43-0.59	94	1.422	1.332	-6.4	30.0	True
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88-1.20	100	1.017	1.012	-0.5	30.0	True
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.45	0.37-0.51	88	1.123	0.990	-11.8	30.0	True
13C-OCDD	M+2/M+4	0.91	0.76-1.02	170	1.040	0.884	-15.0	30.0	True

WSD 11-7-02
PMP 11-7-02

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IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290

SEVERN TRENT SERVICES

CCAL ID: 1,164 - 021107S1

CCAL Filename: t021107s1

CCAL Sample ID: 2427:85

CCAL Result Dir: /20021107s1/021107s1.d

CCAL Date/Time: 11/07/02 09:30

ICAL Date: 09/12/02

Method: IN - DX8290

Instrument: M2A

Column SN: 334061

Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Analytes	ICAL RT	CCAL RT	RT Diff	ICAL RRT	CCAL RRT	RRT QC Limit	Valid?
2,3,7,8-TCDD	36:46	35:06	-100	1.001	1.001	-	
2,3,7,8-TCDF	34:57	32:54	-123	1.001	1.001	-	
1,2,3,7,8-PeCDD	43:39	42:56	-43	1.000	1.000	-	
1,2,3,7,8-PeCDF	42:11	41:21	-50	1.000	1.000	-	
2,3,4,7,8-PeCDF	43:13	42:27	-46	1.025	1.027	-	
1,2,3,4,7,8-HxCDD	47:55	47:06	-49	0.998	0.998	-	
1,2,3,6,7,8-HxCDD	48:03	47:14	-49	1.000	1.000	-	
1,2,3,7,8,9-HxCDD	48:29	47:39	-50	1.010	1.009	-	
1,2,3,4,7,8-HxCDF	46:48	46:02	-46	1.000	1.000	-	
1,2,3,6,7,8-HxCDF	46:56	46:10	-46	1.003	1.003	-	
2,3,4,6,7,8-HxCDF	47:44	46:57	-47	1.021	1.020	-	
1,2,3,7,8,9-HxCDF	48:49	47:57	-52	1.044	1.042	-	
1,2,3,4,6,7,8-HpCDD	53:06	52:12	-54	1.000	1.000	-	
1,2,3,4,6,7,8-HpCDF	51:29	50:29	-60	1.000	1.000	-	
1,2,3,4,7,8,9-HpCDF	53:42	52:49	-53	1.043	1.047	-	
OCDD	57:01	56:17	-44	1.000	1.000	-	
OCDF	57:09	56:25	-44	1.003	1.003	-	
13C-2,3,7,8-TCDD	36:44	35:03	-101	1.012	1.017	-	
13C-2,3,7,8-TCDF	34:54	32:52	-122	0.962	0.954	-	
13C-1,2,3,7,8-PeCDD	43:38	42:55	-43	1.202	1.245	-	
13C-1,2,3,7,8-PeCDF	42:10	41:20	-50	1.162	1.199	-	
13C-1,2,3,6,7,8-HxCDD	48:02	47:13	-49	0.991	0.991	-	
13C-1,2,3,4,7,8-HxCDF	46:46	46:01	-45	0.965	0.966	-	
13C-1,2,3,4,6,7,8-HpCDD	53:05	52:11	-54	1.095	1.096	-	
13C-1,2,3,4,6,7,8-HpCDF	51:28	50:28	-60	1.062	1.059	-	
13C-OCDD	57:00	56:16	-44	1.176	1.181	-	

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lost lock HDY, locked up!

STL KNOXVILLE
SPECIALTY ORGANICS INSTRUMENT MAT 95S RUN LOG

Date	Time	Opr	Sample ID	Filename	Code	Matrix	Type	Tape	Lot#/Comments
11-18-02	12:45	MSD	PFK	—	OK	—	RES		Mass Res Check
11-18-02	12:48	MSD	2427:89	t021118S1	OK	—	WIN VER		Win Ver
11-18-02	15:26	MSD	FAGLH1AC	tfaglhc	ok	Solid	QC		H2J220000-130C
11-18-02	16:26	MSD	FAGLH1AD	tfaglhd	OK	Solid	QC		⊥ -130C
11-18-02	17:28	MSD	Nonane	tsb1118	OK	—	QC		flush
11-18-02	18:15	MSD	⊥	⊥	OK	—	QC		⊥
11-18-02	19:02	MSD	FAGLH1AA	tfaglhb	BI	solid	QC		H2J220000-130B
11-18-02	20:04	MSD	E9KKZ1AA	te9kkz	OK	solid	SAM		H2J080198-001
11-18-02	21:06	MSD	E9KLN1AA	te9kln	OK	solid	SAM		-002
11-18-02	22:07	MSD	E9KLR1AA	te9klr	OK	solid	SAM		-003
11-18-02	23:09	MSD	E9KLV1AA	te9klv	OK	Solid	SAM		⊥ -004
11-19-02	00:11	PMP	PFK	—	OK	—	Res		Mass Res Chk
11-19-02	00:41	PMP	PFK	—	OK	—	Res		Mass Res Chk
11-19-02	00:43	PMP	2427:89	t021119S1	OK	—	Win Ver		Ver/Win
11-19-02	01:45	PMP	Nonane	r	OK	—	QC		flush
11-19-02	02:01	PMP	Nonane	r	OK	—	QC		⊥
11-19-02	02:16	PMP	FAG1H1AA	tfaglhba	OK	SOLID	QC		H2J220000-130B
11-19-02	03:18	PMP	E9KOW1AA	te9kow	OK	H_2O	SAM		A2J080253-004
11-19-02	04:20	PMP	E9K001AA	te9k00	OK	H_2O	SAM		⊥ -005
11-19-02	05:21	PMP	E9K181AA	te9k18	OK	H_2O	SAM		A2J080253-001
11-19-02	06:23	PMP	E9K261AA	te9k2g	OK	H_2O	SAM		⊥ -002
11-19-02	07:25	PMP	E9RV31AA	te9rv3	OK	H_2O	SAM		A2J110101-001
11-19-02	08:25	PMP	E9RV91AA	te9rv9	OK	H_2O	SAM		A2J110103-001
11-19-02	09:27	PMP	E9RWC1AA	te9rwc	OK	H_2O	SAM		⊥ -002
11-19-02	✓	PMP	Nonane	r	DR	—	QC		flush
11-19-02	10:28	PMP	2427:89 ✓	t021119S2	OK	—	WIN VER		Ver/Win
11-19-02	11:34 12:28	JM	FCV841AC	tfcv84c	SOLID OK	SOLID —	QC QC		H2K120000-125C
			Nonane	r					flush
11-19-02	12:54	JM	Nonane	r		—	QC		flush
11-19-02	13:08	JM	FCV841AA ✓	tfcv84b	OK	SOLID	QC		H2K120000-125B
11-19-02	14:10	JM	e9fgj2AA	te9fgj2 ✓	OK	SOLID	SAM		A2J040301-001
11-19-02	14:56	JM	e9rwd1AA	te9rwd CS	RS	H_2O	SAM		A2J110103-003
11-19-02	15:58	JM	e9rwe1AA	te9rwe	OK	H_2O	SAM		A2J110103-004
11-19-02	11:34	JM	PFK ✓		OK	—	RES		mass res chk

Read and Understood by: _____ Date: _____

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STL KNOXVILLE
SPECIALTY ORGANICS INSTRUMENT MAT 95S RUN LOG

Date	Time	Opr	Sample ID	Filename	Code	Matrix	Type	Tape	Lot#/Comments
11.19.02	17:00	JW	e9rwf1AA	te9rwf	OK	H_2O	SAM		A2J110103-005
11.19.02	18:02	JW	e9rwg1AA	te9rwg	OK	H_2O	SAM		A2J110103-006
11.19.02	20:31	JW	e9rwh1AA	LOCK UP te9rwh	1st OK	H_2O	SAM		A2J110103-007
11.19.02	21:32	JW	nonane	r	OK	—	QC		flush
11-19-02	21:48	JW	2427:89	t02112053	OK	—	win/ver		win/ver
11-19-02	22:51	PMP	PFK	—	OK	—	Reo		Mass Res Chk
11-19-02	22:54	PMP	E91XA1AC	te91xac		SOLID	QC		H2J150000-190C
11-19-02	23:56	PMP	Nonane	tsb1119		—	QC		flush
11-20-02	00:43	PMP	Nonane	tsb1119		—	QC		↓
11-20-02		PMP	E91XA1AA	te91xab		SOLID	QC		H2J150000-190B
11-20-02		PMP	E9XLT1AA	te9xlt		H_2O			A2J120156-001
11-20-02		PMP	E9XLX1AA	te9xlx		H_2O			002
11-20-02		PMP	E9XLO1AA	te9xlo		H_2O			003
11-20-02		PMP	E9XL11AA	te9xl1		H_2O			004
11-20-02		PMP	E9OPM1AA	te9opm		H_2O			H2J140134-001
~~11-20-02~~		~~PMP~~	~~E9PMV1CA~~	~~te9pmv~~		~~SOLID~~	~~SAM~~		~~H2J100H6-002~~
~~11-20-02~~		PMP	Nonane	3x r PMP 11-20-02			QC		~~flush~~
~~11-20-02~~		~~PMP~~	~~2427:89~~	~~t02112051~~		—	~~win ver~~		~~Ver/win~~
11-20-02		PMP	E9RWD1AA	te9rwd9		H_2O	SAM		A2J110103-003
11-20-02		PMP	Nonane	r		—	QC		flush
11-20-02		PMP	2427:89	t02112051		—	win ver		Ver/win

Read and Understood by:

_____ Date: _____

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STL Knoxville Specialty Organics GC/MS Continuing Calibration Review / Narrative Checklist
Methods: 8290/23 - KNOX-ID-0003, Rev. 5

Start PFK:	11:34	CS3 Filename:	t021119s2	Win Filename:	t021119s2	Inst:	MAT85
End PFK:	22:51	CS3 Filename:	t021119s23	Col Perf Filename:	t021119s2	ICAL Date:	9.12.02

PMP 11-19-02

Review Items	N/A	Yes	No	If No, why is data reportable?	2nd Level
1. Was the mass resolution documented at both the beginning and end of the 12 hour shift?		✓			✓
2. Was the instrument resolution >10,000 (<100 ppm) on PFK m/z 304.9824 and m/z 380.9760 (at reduced voltage)?		✓			✓
3. Was the measured exact mass of m/z 380.9760 (PFK) within 5 ppm at reduced accelerating voltage?		✓			✓
4. Was date/time of analysis verified between analysis header and logbook as correct?		✓			✓
5. Was the Window Defining Mixture analyzed and the MID switchpoints set to encompass the retention time windows of each congener group?		✓			✓
6. Was the Column Performance solution analyzed and the %Valley ≤25 for separation between 2378-TCDD/F and the closest eluting non-2378 isomer?		✓			✓
7. Was the continuing calibration performed at the beginning of the 12 hour period after successful mass resolution and GC resolution performance check?		✓			✓
8. Was the continuing calibration performed at the end of the 12 hour period?					✓
9. Were the response factors calculated for each labeled standard and unlabeled native analyte using the SOP specified reference compound, quantitation ions, and formula.		✓			✓
10. Are %D ≤20 for all unlabeled native analytes in the beginning and ending calibration?		✓		Ending %D ≤25 and mean RRF from two continuing calibrations used to calculate samples. Ending %D >25 corrective action performed and all positive sample extracts reanalyzed.	✓
11. Are %D ≤30 for all labeled standards in the beginning and ending calibration?		✓		Ending %D ≤35 and mean RRF from two continuing calibrations used to calculate samples. Ending %D >35 and corrective action performed and all positive sample extracts reanalyzed.	✓
12. Are all S/N ratios ≥10 for the GC signals in each EICP (extracted ion chromatographic profile) including internal standards?		✓			✓
13. Are the ion abundance ratios for all labeled and unlabeled analytes within the specified control limits?		✓			✓
14. If manual integrations were performed, are they clearly identified, initialed and dated?	✓				✓
15. If criteria were not met, was a NCM generated, approved by supervisor, and copy included in folder?	✓				✓
16. Does the CCAL folder contain **complete** data in the following order? Data review checklist, a **complete** runlog, CCAL summary, Ratio summary, Calculation summary, PFK resolution/peak match documentation, and Total RIC, EICP's and manual integration - for window and both standards.		✓			✓

Analyst:	Date: 11/19/02	2nd Level Reviewer : PMP	Date: 11-19-02
Comments:		Comments:	

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-7.7 V SCAN AUTOTUNE TUNE R = 10 758 823 814 uV

p 3.81 A -51.5 V

1.00 mA 1422 2184 1111 1357

66.3 V d s l x y

270 C s s s s s

270 C 1422 2184 1167 1373

0.70 mA -51.5 V

EI POS u electric

U(a) 4781 V U(esa) 763.8 V

Entr. Slit	(ENS)	168.3	
Exit Slit	(EXS)	170.0	
Sweep Mass	(MASS)	304.982	amu
Virt. Mass	(VMASS)	304.982	amu
Link Mass	(LMASS)	304.982	amu
Sweep Width	(SW)	0.020	%
Sweep Speed	(SS)	3.0	/s
U(a) Offset	(UOFS)	5.0	V
U(a)/U(esa)	(URATIO)	1.976	%
Multiplier	(EMULT)	2.13	kV
Dyn. Volt.	(DYNODE)	pos	
Ref. Inlet	(TREF)	150	C
Beam Rot.	(BQUAD)	3.3	V
Focus Quad	(FQUAD)	3.0	V

VG off VVR off VS2 off VS3 off VV off

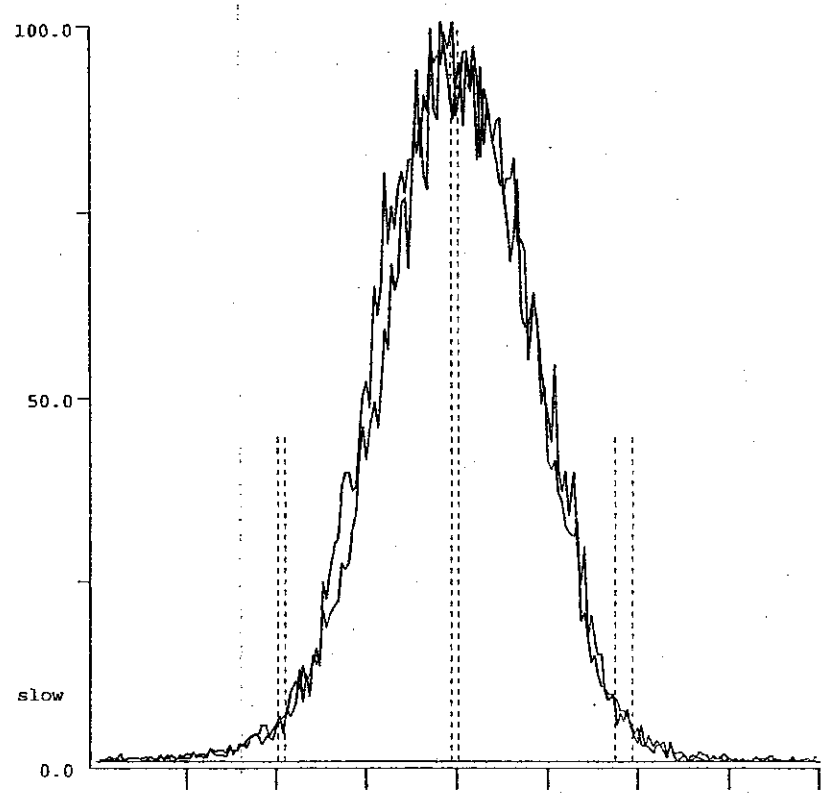
TUNE DESCRIPTOR tune2 SAVE

TUNE: _

304.952 304.982 305.01

<> >> << >> ^ v C LOCK UNLK

Peak Register Display Copy result to ULIST



REG 1/2: 380.976927 REG 1/3: REG 2/3:

MASS	:	304.98197	380.97635
REF MASS	:	304.98243	380.97605
PEAK WIDTH [ppm]:		92.95112	96.00673

Active Register: 2 0.05 1.00

N REG RCOPY1 RCOPY2 RCOPY3 LIMIT CENTER SPREAD ERASE RESUME PAGE

PEAK:

Tue Nov 19 11:34:38 2002 mat95s MAT 95

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-7.7 V SCAN AUTOTUNE TUNE R = 10 758 823 814 uV

p 3.81 A -51.5 V

1.00 mA 66.3 V d s 1 x y 1422 2184 1111 1357

270 C s s s s s

270 C 1422 2184 1167 1373

0.70 mA -51.5 V

EI POS u electric

U(a) 4781 V U(esa) 763.8 V

Entr. Slit	(ENS)	168.3	
Exit Slit	(EXS)	170.0	
Sweep Mass	(MASS)	304.982	amu
Virt. Mass	(VMASS)	304.982	amu
Link Mass	(LMASS)	304.982	amu
Sweep Width	(SW)	0.020	%
Sweep Speed	(SS)	3.0	/s
U(a) Offset	(UOFS)	5.0	V
U(a)/U(esa)	(URATIO)	1.976	%
Multiplier	(EMULT)	2.13	kV
Dyn. Volt.	(DYNODE)	pos	
Ref. Inlet	(TREF)	150	C
Beam Rot.	(BQUAD)	3.3	V
Focus Quad	(FQUAD)	3.0	V

VG off VVR off VS2 off VS3 off VV off

TUNE DESCRIPTOR tune2 SAVE

TUNE:

304.952 304.982 305.01

<> >< << >> ^ v C LOCK UNLK

Diagnostic Display

Copy result to ULIST

100.0 50.0 slow 0.0

R	pm	304.98197
E	rm	304.98243
G	fm	304.95194
I	lm	305.01290
S	pc	7969188.18
T	pl	7969570.77
E	pr	7968830.02
R	bl	0.00
1	v	802996.00

R	pm	380.97635
E	rm	380.97605
G	fm	380.93794
I	lm	381.01414
S	pc	6379552.74
T	pl	6379861.05
E	pr	6379248.57
R	bl	0.00
2	v	809895.00

RATIO	REG 1/2	REG 1/3	REG 2/3
PEAK CENTER	1.2491766		
PC+DELTA	1.2491766		
PC+DELTA/RM	1.0000023		
REF MASS	1.2491737		

Active Register: 2 0.05 1.00

N REG RCOPY1 RCOPY2 RCOPY3 LIMIT CENTER SPREAD ERASE RESUME

PEAK: _

Tue Nov 19 11:34:46 2002 mat95s MAT 95

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USEPA Method 1613/8290
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDF
By High-Resolution Gas Chromatography/High-Resolution Mass Spectroscopy (HRGC/H

PCDD/PCDF Daily Calibration Verification

Laboratory ID: STL Knoxville
Init. Calibration Date: 12-Sep-02

Instrument ID: MAT-95S
GC Column ID: Rtx-5

CS3 Data Filename: t021119s2
Analysis Date: 19-Nov-02
Analysis Time: 10:28

Analytes	m/z Mass 1	m/z Mass 2	Area Mass 1	Area Mass 2	RT	RRT	Ratio	Ratio Limits	Std Conc	8290 ICAL RF	8290 Calc RF	8290 Conc. (ng/mL)
13C-1,2,3,4-TCDD	331.9368	333.9339	540942	673922	33:49	1.000	0.80	0.65-0.89	100.0	1.000	1.000	100.0
13C-2,3,7,8-TCDD	331.9368	333.9339	596985	743364	34:26	1.018	0.80	0.65-0.89	100.0	1.152	1.103	95.8
37Cl-2,3,7,8-TCDD	327.8847		136882		34:28	1.019		NA	10.0	1.184	1.127	9.5
2,3,7,8-TCDD	319.8965	321.8936	66386	87114	34:28	1.001	0.76	0.65-0.89	10.0	1.070	1.145	10.7
13C-2,3,7,8-TCDF	315.9419	317.9389	914025	1152988	32:15	0.954	0.79	0.65-0.89	100.0	1.662	1.701	102.4
2,3,7,8-TCDF	303.9016	305.8987	97397	128975	32:19	1.002	0.76	0.65-0.89	10.0	1.026	1.095	10.7
13C-1,2,3,7,8-PeCDD	367.8949	369.8919	751422	475189	42:40	1.262	1.58	1.32-1.78	100.0	1.169	1.010	86.4
[illegible],7,8-PeCDD	355.8546	357.8516	377377	244588	42:42	1.001	1.54	1.32-1.78	50.0	0.995	1.014	51.0
13C-1,2,3,7,8-PeCDF	351.9000	353.8970	1180309	740847	41:04	1.214	1.59	1.32-1.78	100.0	1.798	1.581	88.0
13C-2,3,4,7,8-PeCDF	351.9000	353.8970	1154260	727806	42:12	1.248	1.59	1.32-1.78	100.0	--	--	--
1,2,3,7,8-PeCDF	339.8597	341.8567	603674	382693	41:05	1.000	1.58	1.32-1.78	50.0	0.987	1.027	52.0
2,3,4,7,8-PeCDF	339.8597	341.8567	610914	379542	42:13	1.000	1.61	1.32-1.78	50.0	1.035	1.031	49.8
13C-1,2,3,4,7,8-HxCDD	401.8559	403.8529	636599	501841	46:52	0.989	1.27	1.05-1.43	100.0	--	--	--
13C-1,2,3,6,7,8-HxCDD	401.8559	403.8529	709222	549617	46:59	0.991	1.29	1.05-1.43	100.0	1.142	1.090	95.4
13C-1,2,3,7,8,9-HxCDD	401.8559	403.8529	646429	508508	47:24	1.000	1.27	1.05-1.43	100.0	1.000	1.000	100.0
1,2,3,4,7,8-HxCDD	389.8157	391.8127	349809	277963	46:53	1.000	1.26	1.05-1.43	50.0	0.958	0.997	52.1
1,2,3,6,7,8-HxCDD	389.8157	391.8127	348308	281942	47:01	1.001	1.24	1.05-1.43	50.0	1.020	1.001	49.1
1,2,3,7,8,9-HxCDD	389.8157	391.8127	341284	275695	47:25	1.009	1.24	1.05-1.43	50.0	0.984	0.980	49.8
13C-1,2,3,4,7,8-HxCDF	383.8639	385.8610	535496	1005371	45:48	0.966	0.53	0.43-0.59	100.0	1.422	1.334	93.8
13C-1,2,3,6,7,8-HxCDF	383.8639	385.8610	575658	1096493	45:56	0.969	0.52	0.43-0.59	100.0	--	--	--
13C-2,3,4,6,7,8-HxCDF	383.8639	385.8610	543397	1007660	46:42	0.985	0.54	0.43-0.59	100.0	--	--	--
13C-1,2,3,7,8,9-HxCDF	383.8639	385.8610	452202	853414	47:42	1.006	0.53	0.43-0.59	100.0	--	--	--
1,2,3,4,7,8-HxCDF	373.8208	375.8178	539604	424061	45:49	1.000	1.27	1.05-1.43	50.0	1.241	1.251	50.4
1,2,3,6,7,8-HxCDF	373.8208	375.8178	549285	441170	45:57	1.000	1.25	1.05-1.43	50.0	1.339	1.286	48.0
2,3,4,6,7,8-HxCDF	373.8208	375.8178	490103	396894	46:42	1.000	1.23	1.05-1.43	50.0	1.167	1.151	49.3
1,2,3,7,8,9-HxCDF	373.8208	375.8178	402594	321053	47:43	1.000	1.25	1.05-1.43	50.0	1.054	0.939	44.6
13C-1,2,3,4,6,7,8-HpCDD	435.8169	437.8140	552497	525472	51:56	1.096	1.05	0.88-1.20	100.0	1.017	0.933	91.8
1,2,3,4,6,7,8-HpCDD	423.7766	425.7737	256184	244483	51:57	1.000	1.05	0.88-1.20	50.0	0.967	0.929	48.0
13C-1,2,3,4,6,7,8-HpCDF	417.8253	419.8220	374546	809833	50:12	1.059	0.46	0.37-0.51	100.0	1.123	1.025	91.3
13C-1,2,3,4,7,8,9-HpCDF	417.8253	419.8220	309614	686193	52:33	1.109	0.45	0.37-0.51	100.0	--	--	--
1,2,3,4,6,7,8-HpCDF	407.7818	409.7789	437707	415088	50:13	1.000	1.05	0.88-1.20	50.0	1.492	1.440	48.3
1,2,3,4,7,8,9-HpCDF	407.7818	409.7789	343357	323100	52:33	1.000	1.06	0.88-1.20	50.0	1.201	1.125	46.9
[illegible]-OCDD	469.7779	471.7750	1013109	1110868	56:04	1.183	0.91	0.76-1.02	200.0	1.040	0.920	176.8
[illegible]DD	457.7377	459.7348	491639	546910	56:05	1.000	0.90	0.76-1.02	100.0	1.021	0.978	95.8
OCDF	441.7428	443.7399	569945	623400	56:12	1.002	0.91	0.76-1.02	100.0	1.182	1.124	95.1

VER Quan Data

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USEPA Method 1613B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs)
By High-Resolution Gas Chromatography/High-Resolution Mass Spectroscopy (HRGC/HRMS)

PCDD/PCDF Daily Calibration Verification

Laboratory ID: STL Knoxville
Init. Calibration Date: 12-Sep-02
Instrument ID: MAT-95S
GC Column ID: Rtx-5

VER Data Filename: t021119s2
Analysis Date: 19-Nov-02
Analysis Time: 10:28

Analytes	m/z's Forming Ratio	Ion Abund. Ratio	QC Limits	Conc. Found	ICAL RF	VER RF	%D	QC LIMIT	Flag
13C-2,3,7,8-TCDD	M/M+2	0.80	0.65-0.89	95.8	1.152	1.103	4.2%	30%	TRUE
37Cl-2,3,7,8-TCDD	M/M+2		NA	9.5	1.184	1.127	4.8%	30%	TRUE
2,3,7,8-TCDD	M/M+2	0.76	0.65-0.89	10.7	1.070	1.145	-7.0%	20%	TRUE
13C-2,3,7,8-TCDF	M/M+2	0.79	0.65-0.89	102.4	1.662	1.701	-2.4%	30%	TRUE
2,3,7,8-TCDF	M/M+2	0.76	0.65-0.89	10.7	1.026	1.095	-6.7%	20%	TRUE
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.58	1.32-1.78	86.4	1.169	1.010	13.6%	30%	TRUE
1,2,3,7,8-PeCDD	M+2/M+4	1.54	1.32-1.78	51.0	0.995	1.014	-1.9%	20%	TRUE
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.59	1.32-1.78	88.0	1.798	1.581	12.0%	30%	TRUE
1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.32-1.78	52.0	0.987	1.027	-4.0%	20%	TRUE
2,3,4,7,8-PeCDF	M+2/M+4	1.61	1.32-1.78	49.8	1.035	1.031	0.4%	20%	TRUE
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.29	1.05-1.43	95.4	1.142	1.090	4.6%	30%	TRUE
1,2,3,4,7,8-HxCDD	M+2/M+4	1.26	1.05-1.43	52.1	0.958	0.997	-4.1%	20%	TRUE
1,2,3,6,7,8-HxCDD	M+2/M+4	1.24	1.05-1.43	49.1	1.020	1.001	1.8%	20%	TRUE
1,2,3,7,8,9-HxCDD	M+2/M+4	1.24	1.05-1.43	49.8	0.984	0.980	0.4%	20%	TRUE
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.53	0.43-0.59	93.8	1.422	1.334	6.2%	30%	TRUE
1,2,3,4,7,8-HxCDF	M+2/M+4	1.27	1.05-1.43	50.4	1.241	1.251	-0.8%	20%	TRUE
1,2,3,6,7,8-HxCDF	M+2/M+4	1.25	1.05-1.43	48.0	1.339	1.286	4.0%	20%	TRUE
2,3,4,6,7,8-HxCDF	M+2/M+4	1.23	1.05-1.43	49.3	1.167	1.151	1.3%	20%	TRUE
1,2,3,7,8,9-HxCDF	M+2/M+4	1.25	1.05-1.43	44.6	1.054	0.939	10.9%	20%	TRUE
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88-1.20	91.8	1.017	0.933	8.2%	30%	TRUE
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88-1.20	48.0	0.967	0.929	3.9%	20%	TRUE
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.46	0.37-0.51	91.3	1.123	1.025	8.7%	30%	TRUE
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.05	0.88-1.20	48.3	1.492	1.440	3.5%	20%	TRUE
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.06	0.88-1.20	46.9	1.201	1.125	6.3%	20%	TRUE
13C--OCDD	M+2/M+4	0.91	0.76-1.02	176.8	1.040	0.920	11.6%	30%	TRUE
OCDD	M+2/M+4	0.90	0.76-1.02	95.8	1.021	0.978	4.2%	20%	TRUE
OCDF	M+2/M+4	0.91	0.76-1.02	95.1	1.182	1.124	4.9%	20%	TRUE

(1) SW-846 Method 8290, Revision 0 September 1994, Section 7.7.4, Page 29

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STL - Knoxville

IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290

CCAL ID: 1,318 - 021119S2

CCAL Filename: t021119s2

CCAL Sample ID: 2427:89

CCAL Result Dir: /20021119s2/021119s2.d

CCAL Date/Time: 11/19/02 10:28

ICAL Date: 09/12/02

Method: IN - DX8290

Instrument: M2A

Column SN: 334061

Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Analytes	m/z's Forming Ratio	Ion Abund Ratio	QC Limits	Calc Conc (ng/mL)	ICAL RF	CCAL RF	%D	QC Limit	Valid?
2,3,7,8-TCDD	M/M+2	0.76	0.65-0.89	10.7	1.070	1.145	7.1	20.0	True
2,3,7,8-TCDF	M/M+2	0.76	0.65-0.89	10.7	1.026	1.095	6.8	20.0	True
1,2,3,7,8-PeCDD	M+2/M+4	1.54	1.32-1.78	51	0.995	1.014	1.9	20.0	True
1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.32-1.78	52	0.987	1.027	4.0	20.0	True
2,3,4,7,8-PeCDF	M+2/M+4	1.61	1.32-1.78	51	1.035	1.031	-0.4	20.0	True
1,2,3,4,7,8-HxCDD	M+2/M+4	1.26	1.05-1.43	50	0.958	0.997	4.1	20.0	True
1,2,3,6,7,8-HxCDD	M+2/M+4	1.24	1.05-1.43	49	1.020	1.001	-1.8	20.0	True
1,2,3,7,8,9-HxCDD	M+2/M+4	1.24	1.05-1.43	49	0.984	0.980	-0.4	20.0	True
1,2,3,4,7,8-HxCDF	M+2/M+4	1.27	1.05-1.43	50	1.241	1.251	0.8	20.0	True
1,2,3,6,7,8-HxCDF	M+2/M+4	1.25	1.05-1.43	50	1.339	1.286	-4.0	20.0	True
2,3,4,6,7,8-HxCDF	M+2/M+4	1.23	1.05-1.43	49	1.167	1.151	-1.4	20.0	True
1,2,3,7,8,9-HxCDF	M+2/M+4	1.25	1.05-1.43	45	1.054	0.939	-10.9	20.0	True
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88-1.20	48	0.967	0.929	-4.0	20.0	True
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.05	0.88-1.20	48	1.492	1.440	-3.5	20.0	True
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.06	0.88-1.20	46	1.201	1.125	-6.3	20.0	True
OCDD	M+2/M+4	0.90	0.76-1.02	96	1.021	0.978	-4.2	20.0	True
OCDF	M+2/M+4	0.91	0.76-1.02	95	1.182	1.124	-5.0	20.0	True
13C-2,3,7,8-TCDD	M/M+2	0.80	0.65-0.89	96	1.152	1.103	-4.2	30.0	True
13C-2,3,7,8-TCDF	M/M+2	0.79	0.65-0.89	102	1.662	1.701	2.4	30.0	True
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.58	1.32-1.78	86	1.169	1.010	-13.6	30.0	True
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.59	1.32-1.78	88	1.798	1.581	-12.0	30.0	True
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.29	1.05-1.43	95	1.142	1.090	-4.5	30.0	True
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.53	0.43-0.59	94	1.422	1.334	-6.2	30.0	True
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88-1.20	92	1.017	0.933	-8.2	30.0	True
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.46	0.37-0.51	91	1.123	1.025	-8.7	30.0	True
13C-OCDD	M+2/M+4	0.91	0.76-1.02	177	1.040	0.920	-11.6	30.0	True

PMP 11-19-02

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STL - Knoxville

IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290

TRENT SERVICES

CCAL ID: 1,318 - 021119S2

CCAL Filename: t021119s2

CCAL Sample ID: 2427:89

CCAL Result Dir: /20021119s2/021119s2.d

CCAL Date/Time: 11/19/02 10:28

ICAL Date: 09/12/02

Method: IN - DX8290

Instrument: M2A

Column SN: 334061

Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Analytes	ICAL RT	CCAL RT	RT Diff	ICAL RRT	CCAL RRT	RRT QC Limit	Valid?
2,3,7,8-TCDD	36:46	34:28	-138	1.001	1.001	-	
2,3,7,8-TCDF	34:57	32:19	-158	1.001	1.002	-	
1,2,3,7,8-PeCDD	43:39	42:42	-57	1.000	1.001	-	
1,2,3,7,8-PeCDF	42:11	41:05	-66	1.000	1.000	-	
2,3,4,7,8-PeCDF	43:13	42:13	-60	1.025	1.028	-	
1,2,3,4,7,8-HxCDD	47:55	46:53	-62	0.998	0.998	-	
1,2,3,6,7,8-HxCDD	48:03	47:00	-63	1.000	1.000	-	
1,2,3,7,8,9-HxCDD	48:29	47:25	-64	1.010	1.009	-	
1,2,3,4,7,8-HxCDF	46:48	45:49	-59	1.000	1.000	-	
1,2,3,6,7,8-HxCDF	46:56	45:57	-59	1.003	1.003	-	
2,3,4,6,7,8-HxCDF	47:44	46:42	-62	1.021	1.020	-	
1,2,3,7,8,9-HxCDF	48:49	47:43	-66	1.044	1.042	-	
1,2,3,4,6,7,8-HpCDD	53:06	51:57	-69	1.000	1.000	-	
1,2,3,4,6,7,8-HpCDF	51:29	50:13	-76	1.000	1.000	-	
1,2,3,4,7,8,9-HpCDF	53:42	52:33	-69	1.043	1.047	-	
OCDD	57:01	56:05	-56	1.000	1.000	-	
OCDF	57:09	56:12	-57	1.003	1.002	-	
13C-2,3,7,8-TCDD	36:44	34:26	-138	1.012	1.018	-	
13C-2,3,7,8-TCDF	34:54	32:15	-159	0.962	0.954	-	
13C-1,2,3,7,8-PeCDD	43:38	42:40	-58	1.202	1.262	-	
13C-1,2,3,7,8-PeCDF	42:10	41:04	-66	1.162	1.214	-	
13C-1,2,3,6,7,8-HxCDD	48:02	46:59	-63	0.991	0.991	-	
13C-1,2,3,4,7,8-HxCDF	46:46	45:48	-58	0.965	0.966	-	
13C-1,2,3,4,6,7,8-HpCDD	53:05	51:56	-69	1.095	1.096	-	
13C-1,2,3,4,6,7,8-HpCDF	51:28	50:12	-76	1.062	1.059	-	
13C-OCDD	57:00	56:04	-56	1.176	1.183	-	

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IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290

TRENT SERVICES

CCAL ID: 1,318 - 021119S2

WIN Filename: t021119s2

WIN Sample ID: 2427:89

WIN Result Dir: /20021119s2/021119s2.d

WIN Date/Time: 11/19/02 10:28

Method: IN - DX8290

Instrument: M2A

Column SN: 334061

Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Window Defining First/Last Eluter Retention Times

Analyte	Reference	M/Z	Ref RT	First Eluter RT	First Eluter RRT	Last Eluter RT	Last Eluter RRT
Total TCDD	13C-2,3,7,8-TCDD	320	34:26	27:57	0.8117	37:09	1.0789
Total TCDF	13C-2,3,7,8-TCDF	304	32:15	25:19	0.7850	37:03	1.1488
Total PeCDD	13C-1,2,3,7,8-PeCDD	356	42:40	40:02	0.9383	43:20	1.0156
Total PeCDF	13C-1,2,3,7,8-PeCDF	340	41:04	37:37	0.9160	43:27	1.0580
Total HxCDD	13C-1,2,3,6,7,8-HxCDD	390	46:59	45:15	0.9631	47:25	1.0092
Total HxCDF	13C-1,2,3,4,7,8-HxCDF	374	45:48	44:34	0.9731	47:50	1.0444
Total HpCDD	13C-1,2,3,4,6,7,8-HpCDD	424	51:56	50:45	0.9772	51:57	1.0003
Total HpCDF	13C-1,2,3,4,6,7,8-HpCDF	408	50:12	50:13	1.0003	52:33	1.0468
OCDD	13C-OCDD	458	56:04	56:05	1.0003	56:05	1.0003
OCDF	13C-OCDD	442	56:04	56:12	1.0024	56:12	1.0024

11/19/02

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STL Knoxville Specialty Organics GC/MS Continuing Calibration Review / Narrative Checklist
Methods: 8290/23 - KNOX-ID-0003, Rev. 5

Start PFK:	22:51 ✓	CS3 Filename:	t02111953 ✓	Win Filename:	t02111953	Inst:	MA795
End PFK:	10:27	CS3 Filename:	t02112051	Col Perf Filename:	t02111953	ICAL Date:	9-12-02

Review Items	N/A	Yes	No	If No, why is data reportable?	2nd Level
1. Was the mass resolution documented at both the beginning and end of the 12 hour shift?		✓			✓
2. Was the instrument resolution >10,000 (<100 ppm) on PFK m/z 304.9824 and m/z 380.9760 (at reduced voltage)?		✓			✓
3. Was the measured exact mass of m/z 380.9760 (PFK) within 5 ppm at reduced accelerating voltage?		✓			✓
4. Was date/time of analysis verified between analysis header and logbook as correct?		✓			✓
5. Was the Window Defining Mixture analyzed and the MID switchpoints set to encompass the retention time windows of each congener group?		✓			✓
6. Was the Column Performance solution analyzed and the %Valley ≤25 for separation between 2378-TCDD/F and the closest eluting non-2378 isomer?		✓			✓
7. Was the continuing calibration performed at the beginning of the 12 hour period after successful mass resolution and GC resolution performance check?		✓			✓
8. Was the continuing calibration performed at the end of the 12 hour period?		✓			✓
9. Were the response factors calculated for each labeled standard and unlabeled native analyte using the SOP specified reference compound, quantitation ions, and formula.		✓			✓
10. Are %D ≤20 for all unlabeled native analytes in the beginning and ending calibration?		✓		Ending %D ≤25 and mean RRF from two continuing calibrations used to calculate samples. Ending %D >25 corrective action performed and all positive sample extracts reanalyzed.	✓
11. Are %D ≤30 for all labeled standards in the beginning and ending calibration?		✓		Ending %D ≤35 and mean RRF from two continuing calibrations used to calculate samples. Ending %D >35 and corrective action performed and all positive sample extracts reanalyzed.	✓
12. Are all S/N ratios ≥10 for the GC signals in each EICP (extracted ion chromatographic profile) including internal standards?		✓			✓
13. Are the ion abundance ratios for all labeled and unlabeled analytes within the specified control limits?		✓			✓
14. If manual integrations were performed, are they clearly identified, initialed and dated?	✓				✓
15. If criteria were not met, was a NCM generated, approved by supervisor, and copy included in folder?	✓				✓
16. Does the CCAL folder contain **complete** data in the following order? Data review checklist, a **complete** runlog, CCAL summary, Ratio summary, Calculation summary, PFK resolution/peak match documentation, and Total RIC, EICP's and manual integration - for window and both standards.		✓			✓

Analyst: P May	Date: 11-19-02	2nd Level Reviewer : VMK	Date: 11.20.02
Comments:		Comments:	

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-7.7 V SCAN AUTOTUNE TUNE R = 10 644 558 702 uV

p 3.81 A -51.5 V

1.00 mA 1422 2184 1112 1357

66.3 V d s l x y

270 C s s s s s

270 C 1422 2184 1166 1373

0.70 mA -51.5 V

EI POS electric

U(a) 4779 V u U(esa) 763.8 V

Entr. Slit	(ENS)	163.7	
Exit Slit	(EXS)	176.6	
Sweep Mass	(MASS)	304.982	amu
Virt. Mass	(VMASS)	304.982	amu
Link Mass	(LMASS)	304.982	amu
Sweep Width	(SW)	0.020	%
Sweep Speed	(SS)	3.0	/s
U(a) Offset	(UOFS)	5.0	V
U(a)/U(esa)	(URATIO)	1.976	%
Multiplier	(EMULT)	2.13	kV
Dyn. Volt.	(DYNODE)	pos	
Ref. Inlet	(TREF)	150	C
Beam Rot.	(BQUAD)	3.3	V
Focus Quad	(FQUAD)	2.6	V

VG off VVR off VS2 off VS3 off VV off

TUNE DESCRIPTOR tune2 RESTORE

TUNE:

304.952 304.982 305.01

<> >> << >> ^ v C V LOCK UNLK

Peak Register Display Copy result to ULIST

100.0

50.0

slow

0.0

REG 1/2: 380.975327 REG 1/3: REG 2/3:

MASS	:	304.98148	380.97413
REF MASS	:	304.98243	380.97605
PEAK WIDTH [ppm]:		86.95414	99.00636

Active Register: 1 0.05 1.00

N REG RCOPY2 RCOPY3 LIMIT CENTER SPREAD ERASE RESUME PAGE

PEAK: _

Tue Nov 19 22:51:20 2002 mat95s MAT 95

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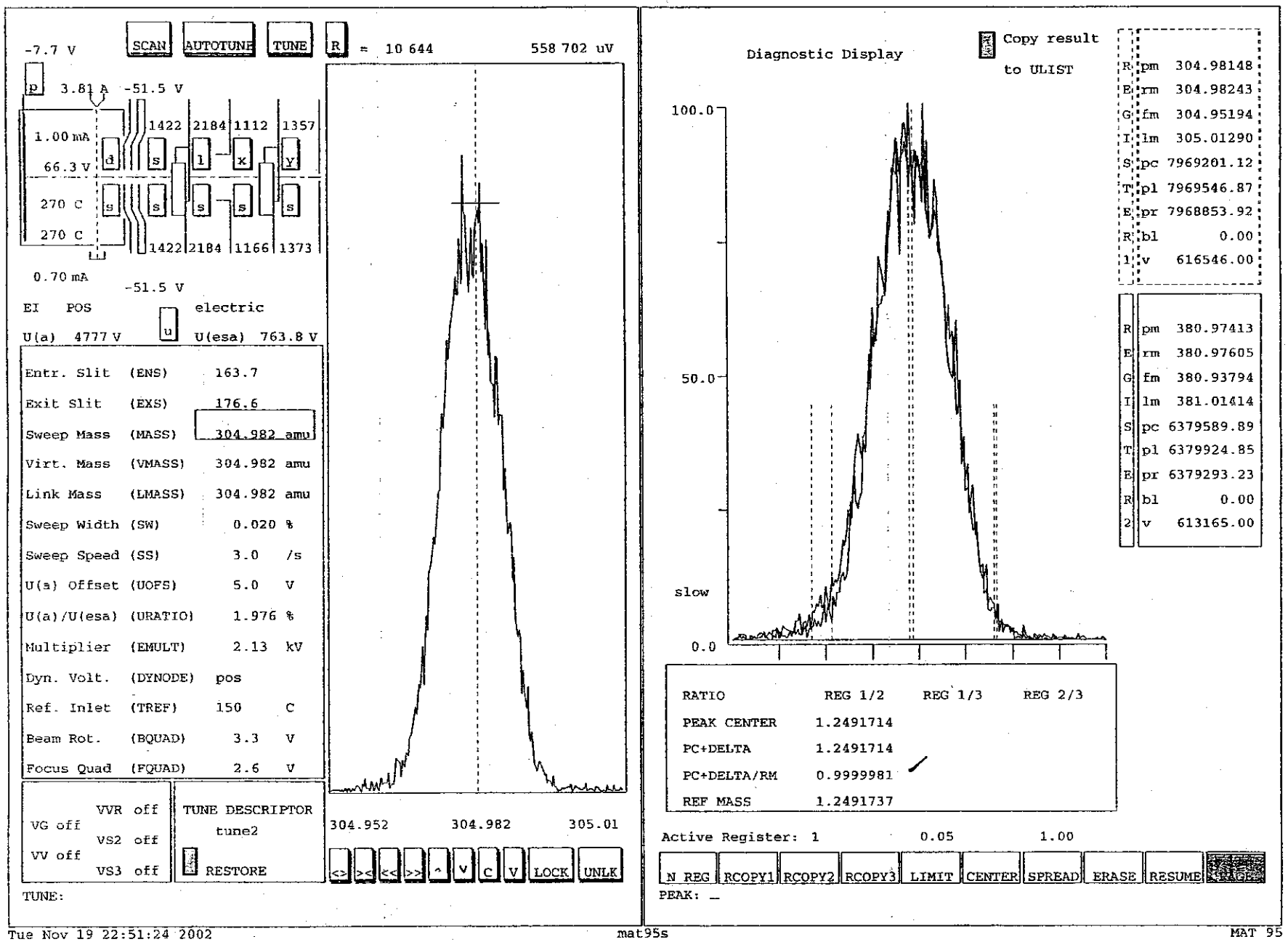

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USEPA Method 1613/8290
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDF
By High-Resolution Gas Chromatography/High-Resolution Mass Spectroscopy (HRGC/I

PCDD/PCDF Daily Calibration Verification

Laboratory ID: STL Knoxville
Init. Calibration Date: 12-Sep-02

Instrument ID: MAT-95S
GC Column ID: Rtx-5

CS3 Data Filename: t021119s3
Analysis Date: 19-Nov-02
Analysis Time: 21:48

Analytes	m/z Mass 1	m/z Mass 2	Area Mass 1	Area Mass 2	RT	RRT	Ratio	Ratio Limits	Std Conc	8290 ICAL RF	8290 Calc RF	8290 Conc. (ng/mL)
13C-1,2,3,4-TCDD	331.9368	333.9339	446266	552647	33:49	1.000	0.81	0.65-0.89	100.0	1.000	1.000	100.0
13C-2,3,7,8-TCDD	331.9368	333.9339	474842	585774	34:27	1.019	0.81	0.65-0.89	100.0	1.152	1.062	92.2
37Cl-2,3,7,8-TCDD	327.8847		111617		34:29	1.020		NA	10.0	1.184	1.117	9.4
2,3,7,8-TCDD	319.8965	321.8936	54265	69645	34:29	1.001	0.78	0.65-0.89	10.0	1.070	1.168	10.9
13C-2,3,7,8-TCDF	315.9419	317.9389	710033	892358	32:16	0.954	0.80	0.65-0.89	100.0	1.662	1.604	96.5
2,3,7,8-TCDF	303.9016	305.8987	73756	93683	32:17	1.001	0.79	0.65-0.89	10.0	1.026	1.045	10.2
13C-1,2,3,7,8-PeCDD	367.8949	369.8919	577960	378324	42:41	1.262	1.53	1.32-1.78	100.0	1.169	0.957	81.9
1,2,3,7,8-PeCDD	355.8546	357.8516	300469	193953	42:42	1.000	1.55	1.32-1.78	50.0	0.995	1.034	52.0
13C-1,2,3,7,8-PeCDF	351.9000	353.8970	925147	573667	41:04	1.214	1.61	1.32-1.78	100.0	1.798	1.500	83.5
13C-2,3,4,7,8-PeCDF	351.9000	353.8970	904574	569271	42:12	1.248	1.59	1.32-1.78	100.0	--	--	--
1,2,3,7,8-PeCDF	339.8597	341.8567	461009	297941	41:05	1.000	1.55	1.32-1.78	50.0	0.987	1.013	51.3
2,3,4,7,8-PeCDF	339.8597	341.8567	482676	305859	42:13	1.000	1.58	1.32-1.78	50.0	1.035	1.052	50.8
13C-1,2,3,4,7,8-HxCDD	401.8559	403.8529	477432	372440	46:52	0.988	1.28	1.05-1.43	100.0	--	--	--
13C-1,2,3,6,7,8-HxCDD	401.8559	403.8529	530569	417811	46:59	0.991	1.27	1.05-1.43	100.0	1.142	1.102	96.5
13C-1,2,3,7,8,9-HxCDD	401.8559	403.8529	482330	378594	47:25	1.000	1.27	1.05-1.43	100.0	1.000	1.000	100.0
1,2,3,4,7,8-HxCDD	389.8157	391.8127	263433	208655	46:53	1.000	1.26	1.05-1.43	50.0	0.958	0.996	52.0
1,2,3,6,7,8-HxCDD	389.8157	391.8127	274765	220451	47:00	1.000	1.25	1.05-1.43	50.0	1.020	1.044	51.2
1,2,3,7,8,9-HxCDD	389.8157	391.8127	272566	214875	47:26	1.010	1.27	1.05-1.43	50.0	0.984	1.028	52.2
13C-1,2,3,4,7,8-HxCDF	383.8639	385.8610	425379	809719	45:48	0.966	0.53	0.43-0.59	100.0	1.422	1.435	100.9
13C-1,2,3,6,7,8-HxCDF	383.8639	385.8610	466000	876812	45:57	0.969	0.53	0.43-0.59	100.0	--	--	--
13C-2,3,4,6,7,8-HxCDF	383.8639	385.8610	413509	782367	46:42	0.985	0.53	0.43-0.59	100.0	--	--	--
13C-1,2,3,7,8,9-HxCDF	383.8639	385.8610	351796	657752	47:42	1.006	0.53	0.43-0.59	100.0	--	--	--
1,2,3,4,7,8-HxCDF	373.8208	375.8178	427736	345503	45:49	1.000	1.24	1.05-1.43	50.0	1.241	1.252	50.4
1,2,3,6,7,8-HxCDF	373.8208	375.8178	442321	359053	45:58	1.000	1.23	1.05-1.43	50.0	1.339	1.298	48.5
2,3,4,6,7,8-HxCDF	373.8208	375.8178	391867	314370	46:43	1.000	1.25	1.05-1.43	50.0	1.167	1.144	49.0
1,2,3,7,8,9-HxCDF	373.8208	375.8178	315818	253781	47:43	1.000	1.24	1.05-1.43	50.0	1.054	0.922	43.8
13C-1,2,3,4,6,7,8-HpCDD	435.8169	437.8140	426096	395558	51:56	1.095	1.08	0.88-1.20	100.0	1.017	0.954	93.8
1,2,3,4,6,7,8-HpCDD	423.7766	425.7737	208353	205075	51:57	1.000	1.02	0.88-1.20	50.0	0.967	1.006	52.0
13C-1,2,3,4,6,7,8-HpCDF	417.8253	419.8220	283891	636419	50:13	1.059	0.45	0.37-0.51	100.0	1.123	1.069	95.2
13C-1,2,3,4,7,8,9-HpCDF	417.8253	419.8220	230626	518352	52:33	1.108	0.44	0.37-0.51	100.0	--	--	--
1,2,3,4,6,7,8-HpCDF	407.7818	409.7789	352623	331634	50:14	1.000	1.06	0.88-1.20	50.0	1.492	1.487	49.8
1,2,3,4,7,8,9-HpCDF	407.7818	409.7789	268164	260039	52:34	1.000	1.03	0.88-1.20	50.0	1.201	1.148	47.8
13C--OCDD	469.7779	471.7750	697286	767923	56:03	1.182	0.91	0.76-1.02	200.0	1.040	0.851	163.6
OCDD	457.7377	459.7348	356772	395506	56:04	1.000	0.90	0.76-1.02	100.0	1.021	1.027	100.6
OCDF	441.7428	443.7399	423775	461734	56:12	1.003	0.92	0.76-1.02	100.0	1.182	1.209	102.3

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USEPA Method 1613B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs)
By High-Resolution Gas Chromatography/High-Resolution Mass Spectroscopy (HRGC/HRMS)

PCDD/PCDF Daily Calibration Verification

Laboratory ID: STL Knoxville
Init. Calibration Date: 12-Sep-02
Instrument ID: MAT-95S
GC Column ID: Rtx-5

VER Data Filename: t021119s3
Analysis Date: 19-Nov-02
Analysis Time: 21:48

Analytes	m/z's Forming Ratio	Ion Abund. Ratio	QC Limits	Conc. Found	ICAL RF	VER RF	%D	QC LIMIT	Flag
13C-2,3,7,8-TCDD	M/M+2	0.81	0.65-0.89	92.2	1.152	1.062	7.8%	30%	TRUE
37Cl-2,3,7,8-TCDD	M/M+2		NA	9.4	1.184	1.117	5.6%	30%	TRUE
2,3,7,8-TCDD	M/M+2	0.78	0.65-0.89	10.9	1.070	1.168	-9.2%	20%	TRUE
13C-2,3,7,8-TCDF	M/M+2	0.80	0.65-0.89	96.5	1.662	1.604	3.5%	30%	TRUE
2,3,7,8-TCDF	M/M+2	0.79	0.65-0.89	10.2	1.026	1.045	-1.8%	20%	TRUE
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.53	1.32-1.78	81.9	1.169	0.957	18.1%	30%	TRUE
1,2,3,7,8-PeCDD	M+2/M+4	1.55	1.32-1.78	52.0	0.995	1.034	-3.9%	20%	TRUE
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.61	1.32-1.78	83.5	1.798	1.500	16.5%	30%	TRUE
1,2,3,7,8-PeCDF	M+2/M+4	1.55	1.32-1.78	51.3	0.987	1.013	-2.6%	20%	TRUE
2,3,4,7,8-PeCDF	M+2/M+4	1.58	1.32-1.78	50.8	1.035	1.052	-1.7%	20%	TRUE
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	96.5	1.142	1.102	3.5%	30%	TRUE
1,2,3,4,7,8-HxCDD	M+2/M+4	1.26	1.05-1.43	52.0	0.958	0.996	-3.9%	20%	TRUE
1,2,3,6,7,8-HxCDD	M+2/M+4	1.25	1.05-1.43	51.2	1.020	1.044	-2.4%	20%	TRUE
1,2,3,7,8,9-HxCDD	M+2/M+4	1.27	1.05-1.43	52.2	0.984	1.028	-4.5%	20%	TRUE
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.53	0.43-0.59	100.9	1.422	1.435	-0.9%	30%	TRUE
1,2,3,4,7,8-HxCDF	M+2/M+4	1.24	1.05-1.43	50.4	1.241	1.252	-0.9%	20%	TRUE
1,2,3,6,7,8-HxCDF	M+2/M+4	1.23	1.05-1.43	48.5	1.339	1.298	3.1%	20%	TRUE
2,3,4,6,7,8-HxCDF	M+2/M+4	1.25	1.05-1.43	49.0	1.167	1.144	2.0%	20%	TRUE
1,2,3,7,8,9-HxCDF	M+2/M+4	1.24	1.05-1.43	43.8	1.054	0.922	12.5%	20%	TRUE
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.08	0.88-1.20	93.8	1.017	0.954	6.2%	30%	TRUE
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.02	0.88-1.20	52.0	0.967	1.006	-4.1%	20%	TRUE
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.45	0.37-0.51	95.2	1.123	1.069	4.8%	30%	TRUE
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.06	0.88-1.20	49.8	1.492	1.487	0.3%	20%	TRUE
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.03	0.88-1.20	47.8	1.201	1.148	4.4%	20%	TRUE
13C--OCDD	M+2/M+4	0.91	0.76-1.02	163.6	1.040	0.851	18.2%	30%	TRUE
OCDD	M+2/M+4	0.90	0.76-1.02	100.6	1.021	1.027	-0.6%	20%	TRUE
OCDF	M+2/M+4	0.92	0.76-1.02	102.3	1.182	1.209	-2.3%	20%	TRUE

(1) SW-846 Method 8290, Revision 0 September 1994, Section 7.7.4, Page 29

PMP 11-19-02

VMIL 11.20.02

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STL - Knoxville

IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290

CCAL ID: 1,325 - 021119S3

CCAL Filename: t021119s3

CCAL Sample ID: 2427:89

CCAL Result Dir: /20021119s3/021119s3.d

CCAL Date/Time: 11/19/02 21:48

ICAL Date: 09/12/02

Method: IN - DX8290

Instrument: M2A

Column SN: 334061

Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Analytes	m/z's Forming Ratio	Ion Abund Ratio	QC Limits	Calc Conc (ng/mL)	ICAL RF	CCAL RF	%D	QC Limit	Valid?
2,3,7,8-TCDD	M/M+2	0.78	0.65-0.89	10.9	1.070	1.168	9.2	20.0	True
2,3,7,8-TCDF	M/M+2	0.79	0.65-0.89	10.2	1.026	1.045	1.9	20.0	True
1,2,3,7,8-PeCDD	M+2/M+4	1.55	1.32-1.78	52	0.995	1.034	3.9	20.0	True
1,2,3,7,8-PeCDF	M+2/M+4	1.55	1.32-1.78	51	0.987	1.013	2.6	20.0	True
2,3,4,7,8-PeCDF	M+2/M+4	1.58	1.32-1.78	52	1.035	1.052	1.7	20.0	True
1,2,3,4,7,8-HxCDD	M+2/M+4	1.26	1.05-1.43	50	0.958	0.996	3.9	20.0	True
1,2,3,6,7,8-HxCDD	M+2/M+4	1.25	1.05-1.43	51	1.020	1.044	2.4	20.0	True
1,2,3,7,8,9-HxCDD	M+2/M+4	1.27	1.05-1.43	51	0.984	1.028	4.4	20.0	True
1,2,3,4,7,8-HxCDF	M+2/M+4	1.24	1.05-1.43	50	1.241	1.252	0.9	20.0	True
1,2,3,6,7,8-HxCDF	M+2/M+4	1.23	1.05-1.43	50	1.339	1.298	-3.1	20.0	True
2,3,4,6,7,8-HxCDF	M+2/M+4	1.25	1.05-1.43	51	1.167	1.144	-2.0	20.0	True
1,2,3,7,8,9-HxCDF	M+2/M+4	1.24	1.05-1.43	46	1.054	0.922	-12.5	20.0	True
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.02	0.88-1.20	52	0.967	1.006	4.0	20.0	True
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.06	0.88-1.20	50	1.492	1.487	-0.3	20.0	True
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.03	0.88-1.20	49	1.201	1.148	-4.4	20.0	True
OCDD	M+2/M+4	0.90	0.76-1.02	101	1.021	1.027	0.6	20.0	True
OCDF	M+2/M+4	0.92	0.76-1.02	102	1.182	1.209	2.2	20.0	True
13C-2,3,7,8-TCDD	M/M+2	0.81	0.65-0.89	92	1.152	1.062	-7.8	30.0	True
13C-2,3,7,8-TCDF	M/M+2	0.80	0.65-0.89	97	1.662	1.604	-3.5	30.0	True
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.53	1.32-1.78	82	1.169	0.957	-18.1	30.0	True
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.61	1.32-1.78	83	1.798	1.500	-16.5	30.0	True
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	96	1.142	1.102	-3.5	30.0	True
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.53	0.43-0.59	101	1.422	1.435	0.9	30.0	True
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.08	0.88-1.20	94	1.017	0.954	-6.2	30.0	True
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.45	0.37-0.51	95	1.123	1.069	-4.8	30.0	True
13C-OCDD	M+2/M+4	0.91	0.76-1.02	164	1.040	0.851	-18.2	30.0	True

PMP 11-20-02

VMK 11.20.02

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STL - Knoxville

IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290

CCAL ID: 1,325 - 021119S3

CCAL Filename: t021119s3

CCAL Sample ID: 2427:89

CCAL Result Dir: /20021119s3/021119s3.d

CCAL Date/Time: 11/19/02 21:48

ICAL Date: 09/12/02

Method: IN - DX8290

Instrument: M2A

Column SN: 334061

Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Analytes	ICAL RT	CCAL RT	RT Diff	ICAL RRT	CCAL RRT	RRT QC Limit	Valid?
2,3,7,8-TCDD	36:46	34:29	-137	1.001	1.001	-	
2,3,7,8-TCDF	34:57	32:17	-160	1.001	1.001	-	
1,2,3,7,8-PeCDD	43:39	42:42	-57	1.000	1.000	-	
1,2,3,7,8-PeCDF	42:11	41:05	-66	1.000	1.000	-	
2,3,4,7,8-PeCDF	43:13	42:13	-60	1.025	1.028	-	
1,2,3,4,7,8-HxCDD	47:55	46:53	-62	0.998	0.998	-	
1,2,3,6,7,8-HxCDD	48:03	47:00	-63	1.000	1.000	-	
1,2,3,7,8,9-HxCDD	48:29	47:26	-63	1.010	1.010	-	
1,2,3,4,7,8-HxCDF	46:48	45:49	-59	1.000	1.000	-	
1,2,3,6,7,8-HxCDF	46:56	45:58	-58	1.003	1.004	-	
2,3,4,6,7,8-HxCDF	47:44	46:43	-61	1.021	1.020	-	
1,2,3,7,8,9-HxCDF	48:49	47:43	-66	1.044	1.042	-	
1,2,3,4,6,7,8-HpCDD	53:06	51:57	-69	1.000	1.000	-	
1,2,3,4,6,7,8-HpCDF	51:29	50:14	-75	1.000	1.000	-	
1,2,3,4,7,8,9-HpCDF	53:42	52:34	-68	1.043	1.047	-	
OCDD	57:01	56:04	-57	1.000	1.000	-	
OCDF	57:09	56:12	-57	1.003	1.003	-	
13C-2,3,7,8-TCDD	36:44	34:27	-137	1.012	1.019	-	
13C-2,3,7,8-TCDF	34:54	32:16	-158	0.962	0.954	-	
13C-1,2,3,7,8-PeCDD	43:38	42:41	-57	1.202	1.262	-	
13C-1,2,3,7,8-PeCDF	42:10	41:04	-66	1.162	1.214	-	
13C-1,2,3,6,7,8-HxCDD	48:02	46:59	-63	0.991	0.991	-	
13C-1,2,3,4,7,8-HxCDF	46:46	45:48	-58	0.965	0.966	-	
13C-1,2,3,4,6,7,8-HpCDD	53:05	51:56	-69	1.095	1.095	-	
13C-1,2,3,4,6,7,8-HpCDF	51:28	50:13	-75	1.062	1.059	-	
13C-OCDD	57:00	56:03	-57	1.176	1.182	-	

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STL - Knoxville

IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290

CCAL ID: 1,325 - 021119S3

WIN Filename: t021119s3

WIN Sample ID: 2427:89

WIN Result Dir: /20021119s3/021119s3.d

WIN Date/Time: 11/19/02 21:48

Method: IN - DX8290

Instrument: M2A

Column SN: 334061

Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Window Defining First/Last Eluter Retention Times

Analyte	Reference	M/Z	Ref RT	First Eluter RT	First Eluter RRT	Last Eluter RT	Last Eluter RRT
Total TCDD	13C-2,3,7,8-TCDD	320	34:27	28:00	0.8128	37:09	1.0784
Total TCDF	13C-2,3,7,8-TCDF	304	32:16	25:20	0.7851	37:03	1.1482
Total PeCDD	13C-1,2,3,7,8-PeCDD	356	42:41	40:02	0.9379	43:20	1.0152
Total PeCDF	13C-1,2,3,7,8-PeCDF	340	41:04	37:37	0.9160	43:27	1.0580
Total HxCDD	13C-1,2,3,6,7,8-HxCDD	390	46:59	45:15	0.9631	47:26	1.0096
Total HxCDF	13C-1,2,3,4,7,8-HxCDF	374	45:48	44:35	0.9734	47:50	1.0444
Total HpCDD	13C-1,2,3,4,6,7,8-HpCDD	424	51:56	50:44	0.9769	51:57	1.0003
Total HpCDF	13C-1,2,3,4,6,7,8-HpCDF	408	50:13	50:14	1.0003	52:34	1.0468
OCDD	13C-OCDD	458	56:03	56:04	1.0003	56:04	1.0003
OCDF	13C-OCDD	442	56:03	56:12	1.0027	56:12	1.0027

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RQC058

Severn Trent Laboratories, Inc.
EXTRACTION BENCH WORKSHEET

Run Date: 11/19/0
Time: 7:48:3

12 days late of 30 + 18 day Time

LEV 1	LEV 2		LEV 1	LEV 2	
Y	Y	Blank	Y	Y	Weights/Volumes
Y	Y	Check	Y	Y	Spike & Surrogate Worksheet
Y	Y	MS/MSD	-	Y	Vial contains correct volume
			Y	Y	Labels, greenbars, worksheets
					computer batch: correct & all match
			-	-	Anomalies to Extraction Method

Y Expanded Deliverable
Y COC Completed
Y Bench Sheet Copied
Y Package Submitted to AnalyticalG
Y Bench Sheet Copied per COC

Extractionist: 400856 Alan Sudderth
004403 Cornelia Apahidean

Concentrationist: 007259 Syed I. Ahmed

****
* QC BATCH: 2316125 *
****

PREP DATE: 11/12/02 15:00
COMP DATE: 11/19/02 10:00

Reviewer/Date: APAHIDEC / 11/19/02

23785

Dioxins/Furans, HRGC/HRMS (8290)
SOXHLET (NONE,Na2SO4)

EXTR EXPR	ANL DUE	LOT#,MSRUN#/ WORK ORDER	TEST FLGS	EXT	MTH	MATRIX	INIT/FIN WT/VOL	PH"S INIT	PH"S ADJ1	PH"S ADJ2	SOLVENTS EXTRACTION	VOL	SOLVENTS EXCHANGE	VOL	SPIKE STANDARD/ SURROGATE ID
10/31/02	10/18/02	A2J040301-001 ~~E9FQJ-2-AA~~	D	11	IN	SOLID	1.0g 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	2427:77 1.0ML 13C
COMMENTS:		37 TCDD													
11/27/02	12/03/02	D2J290262-001 FA2A9-1-AA		11	IN	SOLID	10g 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	2427:77 1.0ML 13C
COMMENTS:															
11/28/02	12/04/02	D2J300171-001 FA3N3-1-AA		11	IN	SOLID	10g 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	2427:77 1.0ML 13C
COMMENTS:															
11/28/02	12/04/02	D2J300171-002 FA3P1-1-AA		11	IN	SOLID	10g 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	2427:77 1.0ML 13C
COMMENTS:															
11/29/02	12/05/02	D2J310373-001 FA7C8-1-AA		11	IN	SOLID	10g 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	2427:77 1.0ML 13C
COMMENTS:															
11/29/02	12/05/02	D2J310373-001 FA7C8-1-ACS		11	IN	SOLID	10g 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	2427:75 1.0ML NATIVE 2427:77 1.0ML 13C
COMMENTS:															
11/29/02	12/05/02	D2J310373-001 FA7C8-1-ADD		11	IN	SOLID	10g 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	2427:75 1.0ML NATIVE 2427:77 1.0ML 13C
COMMENTS:															

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RQC058

Severn Trent Laboratories, Inc.
EXTRACTION BENCH WORKSHEET

Run Date: 11/19/(
Time: 7:48:

QC BATCH: 2316125

PREP DATE: 11/12/02 15:00
COMP DATE: 11/19/02 10:00

EXTR EXPR	ANL DUE	LOT#,MSRUN#/ WORK ORDER	TEST FLGS	EXT	MTH	MATRIX	INIT/FIN WT/VOL	PH"S INIT	PH"S ADJ1	ADJ2	SOLVENTS EXTRACTION	VOL	EXCHANGE	VOL	SPIKE STANDARD/ SURROGATE ID
11/29/02	12/05/02	D2J310373-002 FA7C9-1-AA		11	IN	SOLID	10g 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	2427:77 1.0ML 13C
COMMENTS:															
11/29/02	12/05/02	D2J310373-003 FA7DA-1-AA		11	IN	SOLID	10g 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	2427:77 1.0ML 13C
COMMENTS:															
11/30/02	12/06/02	D2K010230-001 FA80E-1-AA		11	IN	SOLID	10g 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	2427:77 1.0ML 13C
COMMENTS:															
12/06/02	12/09/02	H2K110228-001 FCV2C-1-AC		11	IN	SOLID	10g 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	2427:77 1.0ML 13C
COMMENTS:															
11/27/02	0/00/00	H2K120000-125 FCV84-1-AAB 38		11	IN	SOLID	10g 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	2427:77 1.0ML 13C
COMMENTS:															
11/27/02	0/00/00	H2K120000-125 FCV84-1-ACC 39		11	IN	SOLID	10g 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	2427:75 1.0ML NATIVE 2427:77 1.0ML 13C
COMMENTS:															

SAMPLE-E9FQJ2AA:RE-EXTRACTED OUTSIDE HOLDING TIME PER PM.
MS RUN # 2316026.

R = RUSH C = CLP
E = EPA 600 D = EXP.DEL)
M = CLIENT REQ MS/MSD
‡

NUMBER OF WORK ORDERS IN BATCH: 13

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STL North Canton

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Specialty Organics Group - Sample Tracking Sheet - GC/MS Analysis Group

QC Batch No 2316125

Relinquished to GC/MS By: CA Date: 11-19-02

Received in GC/MS By: VMK Date: 11-19-02

Work Order Number		Column: DB-5 or RTX-5				Column: DB-5 or RTX-5				Column: DB-225 or RTX-225			
		Date	Instrument	Analyst	Code	Date	Instrument	Analyst	Code	Date	Instrument	Analyst	Code
E9FQJ2AA		11-19-02	MS5	JMN	OK						—		
FA2A91AA													
FA3N31AA													
FA3P11AA													
FA7C81AA													
FA7C81AD	D										—		
FA7C81AC	S										—		
FA7C91AA													
FA7DA1AA													
FA80E1AA													
FCV2C1AC													
FCV841AA	B	11-19-02	MS5	JMN	OK						—		
FCV841AC	C	↓	↓	↓	OK - For READ ONLY						—		
						VMK 11/20/02							

Comments:

ID0035R2 08/27/02

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Specialty Organics Group - Sample Tracking Sheet - Organic Preparation Group

QC Batch No: 2316125

Internal Std. Spiked By: AU Verified By: CA

Native LCS/D Spiked By: ALS Verified By: CA

Native MS/D Spiked By: ALS Verified By: CA

Work Order Number		Filtered Y/N?	Vol of Sampling Surrogate (uL)	Soxhlet Started (Date/Time)	Soxhlet Finished (Date/Time AU 11/13/02 11-13-02 5:30	Blow Down (Initial/Date)	Recovery Standard (Book:Page)	Recovery Std Vol (uL)	Vol Delivered (uL)	Comments
E9FQJ2AA		N		11-12-02 16:30	11-12-02 17:30	SA 11-18-02	2417:80	20 µl	20 µl	
FA2A91AA										
FA3N31AA										
FA3P11AA										
FA7C81AA										
FA7C81AD	D									
FA7C81AC	S									
FA7C91AA										
FA7DA1AA										
FA80E1AA										
FCV2C1AC										
FCV841AA	B									
FCV841AC	C									

Comments:

Volume of Alt Standard: N/A

Split Ratios: Post I.S. 1
Post F.C. N/A
Post C.S.
Post R.S. ↓

Blk Matrix: GF Thimble

W.B. Temp

1850

ID0034P2 08/27/02

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Specialty Organics Group - Sample Tracking Sheet - Organic Preparation Group

QC Batch No: 2316125 Cleanup Std. Spiked By: _____ Verified By: _____

Work Order Number		Cleanup Spike (Book:Page)	Cleanup Spike Volume (uL)	SilicaGel Alumina Col (Initial/Date)	Acid/Base Wash (Initial/Date)	Carbon Column (Initial/Date)	Florisil Column (Initial/Date)	Mercury Cleanup (Initial/Date)	TBA Cleanup (Initial/Date)	Other Cleanup (Initial/Date)	Comments
9FQJ2AA				SDO 11/17/02	SA 11-15-02	ACS CA 11-18-02					
FA2A91AA											
FA3N31AA											
FA3P11AA											
FA7C81AA											
FA7C81AD	D										
FA7C81AC	S										
FA7C91AA											
FA7DA1AA											
FA80E1AA											
FCV2C1AC											
FCV841AA	B					ACS CA 11-18-02					
FCV841AC	C					ACS CA 11-18-02					

Comments: _____

STL North Canton

1851

ID0033R1 4/04/01

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RQC058

Severn Trent Laboratories, Inc.
EXTRACTION BENCH WORKSHEET

Run Date: 10/16/02
Time: 14:40:23

LEV 1	LEV 2		LEV 1	LEV 2	
Y	Y	Blank	Y	Y	Weights/Volumes
Y	Y	Check	Y	Y	Spike & Surrogate Worksheet
Y	Y	MS/MSD		Y	Vial contains correct volume
			Y	Y	Labels, greenbars, worksheets computer batch: correct & all match
					Anomalies to Extraction Method

Expanded Deliverable
Y COC Completed
Y Bench Sheet Copied
Y Package Submitted to AnalyticalGrou
Y Bench Sheet Copied per COC

Extractionist: 400856 Alan Sudderth
085079 Vanhseng (MO) Khounlavong

Concentrationist: 013451 Susan D. Oxendine

Reviewer/Date: OXENDINS / 10/16/02

****
* QC BATCH: 2280140 *
****

PREP DATE: 10/07/02 10:00
COMP DATE: 10/16/02 14:30

Dioxins/Furans, HRGC/HRMS (8290)
LIQ/LIQ, SEP FUNNEL (PAH,P/P,TPH,Dioxin) - Nominal

EXTR EXPR	ANL DUE	LOT#,MSRUN#/ WORK ORDER	TEST FLGS	EXT	MTH	MATRIX	INIT/FIN WT/VOL	INIT	PH"S ADJ1	ADJ2	SOLVENTS EXTRACTION	VOL	EXCHANGE	VOL	SPIKE STANDARD/ SURROGATE ID
10/25/02	10/31/02	H2I260161-020 E8XAP-1-AA	Totals	09	IN	WATER	1050mL 20.00uL	NA	NA	NA	MECL2	350.0	HEXANE	10.0	2427:72,1.0 ML,HR 13C
COMMENTS:		49													
10/26/02	11/01/02	H2I270144-015 E81QR-1-AA	Totals	09	IN	WATER	1050mL 20.00uL	NA	NA	NA	MECL2	350.0	HEXANE	10.0	2427:72,1.0 ML,HR 13C
COMMENTS:		50													
10/29/02	10/21/02	H2J010232-001 E864N-1-AC		09	IN	WATER	1000mL 20.00uL	NA	NA	NA	MECL2	350.0	HEXANE	10.0	2427:72,1.0 ML,HR 13C
COMMENTS:		* 51 TCDD tetras													
10/31/02	10/31/02	A2J030313-001 E9DKC-1-AA	Totals	09	IN	WATER	1000mL 20.00uL	NA	NA	NA	MECL2	350.0	HEXANE	10.0	2427:72,1.0 ML,HR 13C
COMMENTS:		52													
11/01/02	11/01/02	A2J040209-001 E9E22-1-AA	Totals	09	IN	WATER	1000mL 20.00uL	NA	NA	NA	MECL2	350.0	HEXANE	10.0	2427:72,1.0 ML,HR 13C
COMMENTS:		53													
11/01/02	11/01/02	A2J040209-002 E9E8D-1-AA	Totals	09	IN	WATER	1050mL 20.00uL	NA	NA	NA	MECL2	350.0	HEXANE	10.0	2427:72,1.0 ML,HR 13C
COMMENTS:		54													
11/01/02	11/01/02	A2J040209-002 E9E8D-1-ACS		09	IN	WATER	1050mL 20.00uL	NA	NA	NA	MECL2	350.0	HEXANE	10.0	2427:63,1.0 ML,NATIVE 2427:72,1.0 ML,HR 13C
COMMENTS:		55													

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EXTRACTION BENCH WORKSHEET

Run Date: 10/16/02
Time: 14:40:23

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* QC BATCH: 2280140 *
****

PREP DATE: 10/07/02 10:00
COMP DATE: 10/16/02 14:30

EXTR EXPR	ANL DUE	LOT#,MSRUN#/ WORK ORDER	TEST FLGS	EXT	MTH	MATRIX	INIT/FIN WT/VOL	INIT	PH"S ADJ1	ADJ2	SOLVENTS EXTRACTION	VOL	EXCHANGE	VOL	SPIKE STANDARD/ SURROGATE ID
11/01/02	11/01/02	A2J040209-002 E9E8D-1-ADD		09	IN	WATER	1050mL 20.00uL	NA	NA	NA	MECL2	350.0	HEXANE	10.0	2427:63,1.0 ML,NATIVE 2427:72,1.0 ML,HR 13C
COMMENTS:		56													
11/01/02	11/01/02	A2J040209-003 E9E8G-1-AA		09	IN	WATER	1000mL 20.00uL	NA	NA	NA	MECL2	350.0	HEXANE	10.0	2427:72,1.0 ML,HR 13C
COMMENTS:		57 Totals													
11/01/02	11/01/02	A2J040209-004 E9E8L-1-AA		09	IN	WATER	1000mL 20.00uL	NA	NA	NA	MECL2	350.0	HEXANE	10.0	2427:72,1.0 ML,HR 13C
COMMENTS:		58 Totals													
11/02/02	10/18/02	A2J040301-011 E9FQ8-1-AA	D	09	IN	WATER	1000mL 20.00uL	NA	NA	NA	MECL2	350.0	HEXANE	10.0	2427:72,1.0 ML,HR 13C
COMMENTS:		59 * TCDD													
11/02/02	11/01/02	A2J050166-001 E9G0H-1-AA		09	IN	WATER	1000mL 20.00uL	NA	NA	NA	MECL2	350.0	HEXANE	10.0	2427:72,1.0 ML,HR 13C
COMMENTS:		60 — Totals													
11/02/02	11/01/02	A2J050166-002 E9G0L-1-AA		09	IN	WATER	1000mL 20.00uL	NA	NA	NA	MECL2	350.0	HEXANE	10.0	2427:72,1.0 ML,HR 13C
COMMENTS:		61													
11/02/02	11/01/02	A2J050166-003 E9G0M-1-AA		09	IN	WATER	990mL 20.00uL	NA	NA	NA	MECL2	350.0	HEXANE	10.0	2427:72,1.0 ML,HR 13C
COMMENTS:		62													
11/02/02	11/01/02	A2J050166-004 E9G0P-1-AA		09	IN	WATER	1000mL 20.00uL	NA	NA	NA	MECL2	350.0	HEXANE	10.0	2427:72,1.0 ML,HR 13C
COMMENTS:		63													
11/02/02	11/01/02	A2J050166-005 E9G0Q-1-AA		09	IN	WATER	1050mL 20.00uL	NA	NA	NA	MECL2	350.0	HEXANE	10.0	2427:72,1.0 ML,HR 13C
COMMENTS:		64													
11/02/02	11/01/02	A2J050166-006 E9G0R-1-AA		09	IN	WATER	1050mL 20.00uL	NA	NA	NA	MECL2	350.0	HEXANE	10.0	2427:72,1.0 ML,HR 13C
COMMENTS:		65													

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EXTRACTION BENCH WORKSHEET

Run Date: 10/16/02
Time: 14:40:23

****
* QC BATCH: 2280140 *
****

PREP DATE: 10/07/02 10:00
COMP DATE: 10/16/02 14:30

EXTR EXPR	ANL DUE	LOT#,MSRUN#/ WORK ORDER	TEST FLGS	EXT	MTH	MATRIX	INIT/FIN WT/VOL	INIT	PH"S ADJ1	ADJ2	EXTRACTION	SOLVENTS VOL	EXCHANGE	VOL	SPIKE STANDARD/ SURROGATE ID
11/02/02	11/01/02	A2J050166-007 E9G0T-1-AA		09	IN	WATER	1000mL 20.00uL	NA	NA	NA	MECL2	350.0	HEXANE	10.0	2427:72,1.0 ML,HR 13C
COMMENTS:		66													
11/02/02	11/01/02	A2J050166-008 E9G0V-1-AA		09	IN	WATER	1000mL 20.00uL	NA	NA	NA	MECL2	350.0	HEXANE	10.0	2427:72,1.0 ML,HR 13C
COMMENTS:		67													
11/02/02	11/01/02	A2J050166-009 E9G0X-1-AA		09	IN	WATER	1000mL 20.00uL	NA	NA	NA	MECL2	350.0	HEXANE	10.0	2427:72,1.0 ML,HR 13C
COMMENTS:		68													
11/02/02	0/00/00	H2J070000-140 E9HAL-1-AAB		09	IN	WATER	1000mL 20.00uL	NA	NA	NA	MECL2	350.0	HEXANE	10.0	2427:72,1.0 ML,HR 13C
COMMENTS:		46													
11/02/02	0/00/00	H2J070000-140 E9HAL-1-ACC		09	IN	WATER	1000mL 20.00uL	NA	NA	NA	MECL2	350.0	HEXANE	10.0	2427:63,1.0 ML,NATIVE 2427:72,1.0 ML,HR 13C
COMMENTS:		47													
11/02/02	0/00/00	H2J070000-140 E9HAL-1-ADL	R	09	IN	WATER	1000mL 20.00uL	NA	NA	NA	MECL2	350.0	HEXANE	10.0	2427:63,1.0 ML,NATIVE 2427:72,1.0 ML,HR 13C
COMMENTS:		48													

MS RUN 2280035

R = RUSH C = CLP
E = EPA 600 D = EXP.DEL)
M = CLIENT REQ MS/MSD
‡

NUMBER OF WORK ORDERS IN BATCH: 23

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Knoxville

Specialty Organics Group - Sample Tracking Sheet - GC/MS Analysis Group

QC Batch No 2280140

Relinquished to GC/MS By: S. Okendine Date: 10/16/02

Received in GC/MS By: DCJ Date: 10/16/02

Work Order Number		Column: DB-5 or RTX-5				Column: DB-5 or RTX-5				Column: DB-225 or RTX-225			
		Date	Instrument	Analyst	Code	Date	Instrument	Analyst	Code	Date	Instrument	Analyst	Code
E9DKC1AA		10/31/02	MAT95	JMW	DS	11/5/02	MAT95	JMW	OK		—		
E9E221AA		11/5/02	MAT95	JMW	OK IF	~~11/16/02~~	~~MAT95~~	~~JMW~~			—		
E9E8D1AA		10/31/02	MAT95	JMW	DS	11-4-02	MAT95	MSD	ok		—		
E9E8D1AD	D	10/31/02	MAT95	JMW	DS	↓	↓	↓	ok		—		
E9E8D1AC	S	10/31/02	MAT95	JMW	DS	↓	↓	↓	ok		—		
E9E8G1AA		11/5/02	MAT95	JMW	ok	~~11/5/02~~	~~MAT95~~				—		
E9E8L1AA		↓	↓	↓	ok						—		
E9FQ81AA					ok						—		
E9G0H1AA					ok						—		
E9G0L1AA					ok						—		
E9G0M1AA		11/6/02	MAT95	RWP	OK						—		
E9G0P1AA		↓	MAT95	↓	OK						—		
E9G0Q1AA			MAT95		OK						—		
E9G0R1AA			MAT95		OK						—		
E9G0T1AA			MAT95		OK						—		
E9G0V1AA		↓	MAT95	↓	OK						—		
E9G0X1AA		11/6/02	MAT95	JMW	OK						—		
E8XAP1AA		↓	MAT95	↓	OK						—		
E81QR1AA			MAT95	↓	OK						—		
E864N1AC		10/31/02	MAT95	JMW	DS	11-4-02	MAT95	MSD	OK		—		
E9HAL1AA	B	10/31/02	MAT95	JMW	DS	↓	↓	↓	OK		—		
E9HAL1AC	C	10/31/02	MAT95	JMW	DS				OK		—		
E9HAL1AD	L	10/31/02	MAT95	JMW	DS	↓	↓	↓	ok		—		
E9E221DA						11/16/02	MAT95	JMW	OK				

Comments:

ID0035R2 08/27/02

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Specialty Organics Group - Sample Tracking Sheet - Organic Preparation Group

QC Batch No: 2280140

Internal Std. Spiked By: AJ Verified By: VMK

Native LCS/D Spiked By: AJ Verified By: VMK

Native MS/D Spiked By: AJ Verified By: VMK

Work Order Number		Filtered Y/N?	Vol of Sampling Surrogate (uL)	Soxhlet Started (Date/Time)	Soxhlet Finished (Date/Time	Blow Down (Initial/Date)	Recovery Standard (Book:Page)	Recovery Std Vol (uL)	Vol Delivered (uL)	Comments
E9DKC1AA		N				SDD 10/16/02	2427:68	20	20	
E9E221AA										
E9E8D1AA										
E9E8D1AD	D									
E9E8D1AC	S									
E9E8G1AA										
E9E8L1AA										
E9FQ81AA ✓										
E9G0H1AA										
E9G0L1AA										
E9G0M1AA										
E9G0P1AA										
E9G0Q1AA										
E9G0R1AA										
E9G0T1AA										
E9G0V1AA										
E9G0X1AA										
E8XAP1AA										
E81QR1AA										
E864N1AC										
E9HAL1AA	B									
E9HAL1AC	C									
E9HAL1AD	L									

ID0034R2 08/27/02

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Comments:

Blk Matrix: DI WATER W.B. Temp 46.7C

Volume of Alt Standard: N/A

Split Ratios: Post I.S. 1

Post F.C. N/A

Post C.S. ↓

Post R.S. ↓

ID0034R2 08/27/02

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Specialty Organics Group - Sample Tracking Sheet - Organic Preparation Group

QC Batch No: 2280140 Cleanup Std. Spiked By: _____ Verified By: _____

Work Order Number		Cleanup Spike (Book:Page)	Cleanup Spike Volume (uL)	SilicaGel Alumina Col (Initial/Date)	Acid/Base Wash (Initial/Date)	Carbon Column (Initial/Date)	Florisil Column (Initial/Date)	Mercury Cleanup (Initial/Date)	TBA Cleanup (Initial/Date)	Other Cleanup (Initial/Date)	Comments
E9DKC1AA				SLCB 10/15/02							
E9E221AA											
E9E8D1AA											
E9E8D1AD	D										
E9E8D1AC	S										
E9E8G1AA											
E9E8L1AA											
E9FQ81AA											
E9G0H1AA											
E9G0L1AA											
E9G0M1AA											
E9G0P1AA											
E9G0Q1AA											
E9G0R1AA											
E9G0T1AA											
E9G0V1AA											
E9G0X1AA											
E8XAP1AA											
E81QR1AA											
E864N1AC											
E9HAL1AA	B										
E9HAL1AC	C										
E9HAL1AD	L										

Comments: _____

ID0033R1 4/04/01

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EXTRACTION BENCH WORKSHEET

Run Date: 10/15/0
Time: 11:04:2

LEV 1	LEV 2		LEV 1	LEV 2	
Y	Y	Blank	Y	Y	Weights/Volumes
Y	Y	Check	Y	Y	Spike & Surrogate Worksheet
Y	Y	MS/MSD	-	Y	Vial contains correct volume
			Y	Y	Labels, greenbars, worksheets computer batch: correct & all match
			-	-	Anomalies to Extraction Method

Y Expanded Deliverable
Y COC Completed
Y Bench Sheet Copied
Y Package Submitted to AnalyticalG
Y Bench Sheet Copied per COC

Extractionist: 400856 Alan Sudderth

Concentrationist: 013451 Susan D. Oxendine

Reviewer/Date: OXENDINS / 10/15/02

****
* *
* QC BATCH: 2281130 *
* *
****

PREP DATE: 10/08/02 10:00
COMP DATE: 10/15/02 13:00

Dioxins/Furans, HRGC/HRMS (8290)
SOXHLET (NONE,Na2SO4)

EXTR EXPR	ANL DUE	LOT#,MSRUN#/ WORK ORDER	TEST FLGS	EXT	MTH	MATRIX	INIT/FIN WT/VOL	INIT	PH"S ADJ1	ADJ2	EXTRACTION	SOLVENTS VOL	EXCHANGE	VOL	SPIKE STANDARD/ SURROGATE ID
10/24/02	10/25/02	C2J030160-001 E9A75-1-AA 33	Totals	11	IN	SOLID	10.0g 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	2427:72,1.0 ML,HR 13(
10/24/02	10/25/02	C2J030160-002 E9A76-1-AA 34		11	IN	SOLID	10.0g 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	2427:72,1.0 ML,HR 13(
10/24/02	10/25/02	C2J030160-003 E9A77-1-AA 35		11	IN	SOLID	10.0g 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	2427:72,1.0 ML,HR 13(
10/24/02	10/25/02	C2J030160-004 E9A78-1-AA 36		11	IN	SOLID	10.0g 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	2427:72,1.0 ML,HR 13(
10/24/02	10/25/02	C2J030160-005 E9A79-1-AA 37		11	IN	SOLID	10.0g 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	2427:72,1.0 ML,HR 13(
10/19/02	11/08/02	C2J040213-001 E9R3N-1-AC 38		11	IN	SOLID	10.0g 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	2427:72,1.0 ML,HR 13(
10/31/02	10/18/02	A2J040301-001 E9FQJ-1-AA 39	D TCDD	11	IN	SOLID	10.0g 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	2427:72,1.0 ML,HR 13(

COMMENTS:

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EXTRACTION BENCH WORKSHEET

Run Date: 10/15/02
Time: 11:04:29

****
* QC BATCH: 2281130 *
****

PREP DATE: 10/08/02 10:00
COMP DATE: 10/15/02 13:00

EXTR EXPR	ANL DUE	LOT#,MSRUN#/ WORK ORDER	TEST FLGS	EXT	MTH	MATRIX	INIT/FIN WT/VOL	INIT	PH"S ADJ1	ADJ2	SOLVENTS EXTRACTION	VOL	EXCHANGE	VOL	SPIKE STANDARD/ SURROGATE ID
10/31/02	10/18/02	A2J040301-002 E9FQM-1-AA	D	11	IN	SOLID	10.0g 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	2427:72,1.0 ML,HR 13C
COMMENTS:		40	TCDD												
10/31/02	10/18/02	A2J040301-003 E9FQN-1-AA	D	11	IN	SOLID	10.0g 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	2427:72,1.0 ML,HR 13C
COMMENTS:		41													
10/31/02	10/18/02	A2J040301-003 E9FQN-1-ADS	D	11	IN	SOLID	10.0g 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	2427:63,1.0 ML,NATIVE 2427:72,1.0 ML,HR 13C
COMMENTS:		42													
10/31/02	10/18/02	A2J040301-003 E9FQN-1-AED	D	11	IN	SOLID	10.0g 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	2427:63,1.0 ML,NATIVE 2427:72,1.0 ML,HR 13C
COMMENTS:		43													
10/31/02	10/18/02	A2J040301-004 E9FQR-1-AA	D	11	IN	SOLID	10.0g 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	2427:72,1.0 ML,HR 13C
COMMENTS:		44													
11/01/02	10/18/02	A2J040301-005 E9FQT-1-AA	D	11	IN	SOLID	10.0g 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	2427:72,1.0 ML,HR 13C
COMMENTS:		45													
11/01/02	10/18/02	A2J040301-006 E9FQ2-1-AA	D	11	IN	SOLID	10.0g 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	2427:72,1.0 ML,HR 13C
COMMENTS:		46													
11/01/02	10/18/02	A2J040301-007 E9FQ3-1-AA	D	11	IN	SOLID	10.0g 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	2427:72,1.0 ML,HR 13C
COMMENTS:		47													
11/01/02	10/18/02	A2J040301-008 E9FQ4-1-AA	D	11	IN	SOLID	10.0g 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	2427:72,1.0 ML,HR 13C
COMMENTS:		48													
11/01/02	10/18/02	A2J040301-009 E9FQ5-1-AA	D	11	IN	SOLID	10.0g 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	2427:72,1.0 ML,HR 13C
COMMENTS:		49													

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EXTRACTION BENCH WORKSHEET

Run Date: 10/1
Time: 11:0

QC BATCH: 2281130

PREP DATE: 10/08/02 10:00
COMP DATE: 10/15/02 13:00

EXTR EXPR	ANL DUE	LOT#,MSRUN#/ WORK ORDER	TEST FLGS	EXT	MTH	MATRIX	INIT/FIN WT/VOL	PH"S INIT	PH"S ADJ1	PH"S ADJ2	SOLVENTS EXTRACTION	SOLVENTS VOL	SOLVENTS EXCHANGE	SOLVENTS VOL	SPIKE STANDARD/ SURROGATE ID
11/01/02	10/18/02	A2J040301-010 E9FQ6-1-AA	D	11	IN	SOLID	10.0g 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	2427:72,1.0 ML,HR
COMMENTS:		50 TCDD													
10/31/02	0/00/00	H2J080000-130 E9JMD-1-AAB		11	IN	SOLID	10.0g 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	2427:72,1.0 ML,HR
COMMENTS:		51 Totals													
10/31/02	0/00/00	H2J080000-130 E9JMD-1-ACC		11	IN	SOLID	10.0g 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	2427:63,1.0 ML,NA 2427:72,1.0 ML,HR
COMMENTS:		52													

MS RUN # 2281024

R = RUSH C = CLP
E = EPA 600 D = EXP.DEL)
M = CLIENT REQ MS/MSD
‡

NUMBER OF WORK ORDERS IN BATCH: 20

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Specialty Organics Group - Sample Tracking Sheet - GC/MS Analysis Group

HT 11/22/02

QC Batch No 2281130 Relinquished to GC/MS By: S. Oxendine Date: 10/15/02

Received in GC/MS By: VMK Date: 10/15/02

	Work Order Number		Column: DB-5 or RTX-5				Column: DB-5 or RTX-5				Column: DB-225 or RTX-225			
			Date	Instrument	Analyst	Code	Date	Instrument	Analyst	Code	Date	Instrument	Analyst	Code
	E9FQJ1AA		11-6-02	MAT955	PMP	RE						—		
	E9FQM1AA		11-6-02	MAT955	MSD	1F	11-7-02	MAT955	PMP	OK		J-level		
	E9FQN1AA		11-6-02	MAT955	PMP	OK						~~MAT~~ MSD 11-6-02		
	E9FQN1AE	D	↓	↓	↓	OK						—		
	E9FQN1AD	S	↓	↓	↓	OK						—		
	E9FQR1AA		11-6-02	MAT955	MSD	OK						—		
	E9FQT1AA		↓	↓	↓	OK						—		
	E9FQ21AA					OK						—		
	E9FQ31AA					OK						—		
	E9FQ41AA					OK						—		
	E9FQ51AA					OK						—		
	E9FQ61AA		↓	↓	↓	OK						—		
10	E9A751AA/1AD		11-7-02	MAT955	PMP	DL	11-7-02	MAT	MSD	1/10 OK		MAT 905		1/10
11	E9A761AA/1AD		↓	MAT955	↓	DL	↓	↓	↓	1/10 OK		MAT 905		1/10
12	E9A771AA/1AD			MAT955		DL				1/10 OK		MAT 905		1/10
13	E9A781AA/1AD		↓	MAT955	↓	DL	↓	↓	↓	1/10 DL		MAT 905		1/10
14	E9A791AA/1AD		11-7-02	MAT955	MSD	1/10 OK						~~MAT 905~~		1/10
	E9E3N1AC		11-7-02	↓	↓	DIL	11-8-02	MAT955	PMP	1/10 OK		—		
	E9JMD1AA	B	11-6-02	MAT955	PMP	OK						—		
	E9JMD1AC	C	↓	↓	↓	OK						—		

OK MSD 11-8-0

Comments:

ID0035R2 08/27/02

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S[illegible] Knoxville

Specialty Organics Group - Sample Tracking Sheet - Organic Preparation Group

QC Batch No: 2281130

Internal Std. Spiked By: ACS Verified By: CM

Native LCS/D Spiked By: ACS Verified By: CM

Native MS/D Spiked By: ACS Verified By: CM

Work Order Number		Filtered Y/N?	Vol of Sampling Surrogate (uL)	Soxhlet Started (Date/Time)	Soxhlet Finished (Date/Time	Blow Down (Initial/Date)	Recovery Standard (Book:Page)	Recovery Std Vol (uL)	Vol Delivered (uL)	Comments
				10/8/02	10/9/02					
E9FQJ1AA		N	DKW 10/9/02	~~8/10/02~~ 15:30	~~8/10/02~~ 7:30 DKW 10/9/02	SDO 10/15/02	2427:68	20	20	
E9FQM1AA										
E9FQN1AA										
E9FQN1AE	D									
E9FQN1AD	S									
E9FQR1AA										
E9FQT1AA										
E9FQ21AA										
E9FQ31AA										
E9FQ41AA										
E9FQ51AA										
E9FQ61AA										
E9A751AA										
E9A761AA										
E9A771AA										
E9A781AA										
E9A791AA										
E9E3N1AC										
E9JMD1AA	B									
E9JMD1AC	C									

ID0034R2 08/27/02

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STL Knoxville

Specialty Organics Group - Sample Tracking Sheet - Organic Preparation Group

QC Batch No: 2281130 Cleanup Std. Spiked By: _____ Verified By: _____

Work Order Number		Cleanup Spike (Book:Page)	Cleanup Spike Volume (uL)	SilicaGel Alumina Col (Initial/Date)	Acid/Base Wash (Initial/Date)	Carbon Column (Initial/Date)	Florisil Column (Initial/Date)	Mercury Cleanup (Initial/Date)	TBA Cleanup (Initial/Date)	Other Cleanup (Initial/Date)	Comments
E9FQJ1AA				SACA 10/10/02	DKW 10/10/02	SACA 10/11/02					
E9FQM1AA											
E9FQN1AA											
E9FQN1AE	D										
E9FQN1AD	S										
E9FQR1AA											
E9FQT1AA											
E9FQ21AA											
E9FQ31AA											
E9FQ41AA											
E9FQ51AA											
E9FQ61AA											
E9A751AA											
E9A761AA											
E9A771AA											
E9A781AA											
E9A791AA											
E9E3N1AC											
E9JMD1AA	B										
E9JMD1AC	C										

Comments: _____

ID0033R1 4/04/01

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STL Norwalk Canton

ATTACHMENT 3

INORGANIC AND WET CHEMISTRY DATA SUPPORT DOCUMENTATION

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Inorganic Analyses Support Documentation

Environmental Standards Project Name: NYPA Niagara
Sample Collection Dates: 10/1-31/02
Job Number: Y1081641
Project Manager: Dina V.
Laboratory: VARIOUS

Reviewed By: GLENN ESLER
Approved By: [illegible]
Completion Date: 11/22/02

Applicable Sample No's.: ☐ Refer to Table 1 in the Quality Assurance Review

Sample No.	Lab. Control No.

Deliverables: CLP ☐ Tier I ☐ Tier II ☐ Limited ☐ Other _____

The following table indicates criteria which were examined, the identified problems, and support documentation attachments.

	Criteria Examined in Detail (Check (✓) if Yes or Footnote Letter for Comments Below)					Problems Identified (Check (✓) if Yes or Footnote Number for Comments Below)					Support Documentation Attachments (Check (✓) if Yes — or Identify Attachment No.)				
	ICP or A.A. Metals	Furnace Metals	Cold Vapor Mercury	Cyanide	Other Method(s) *	ICP or A.A. Metals	Furnace Metals	Cold Vapor Mercury	Cyanide	Other Method(s) *	ICP or A.A. Metals	Furnace Metals	Cold Vapor Mercury	Cyanide	Other Method(s) *
Holding Times	✓		✓		✓					✓	✓		✓		✓
Blank Analysis Results	✓		✓		✓						✓		✓		✓
Matrix Spike (Predigestion) Results	✓		✓		✓	✓					✓		✓		✓
Duplicate Analysis Results ☐ Field ☒ Lab			✓		✓					✓			✓		✓
Quantitation of Results	✓		✓		✓						✓		✓		✓
Detection Limits / Sensitivity	✓		✓		✓						✓		✓		✓
Initial Calibrations	✓		✓		✓						✓		✓		✓
Continuing Calibrations	✓		✓		✓						✓		✓		✓
Laboratory Control Standards (LCS)	✓		✓		✓						✓		✓		✓
ICP Linear Range Analysis	✓										✓				
ICP Interference Checks	✓										✓				
ICP Serial Dilutions	✓					✓									
ICP Post-Digestion Spike															
GFAA Post-Digestion Spikes															
GFAA Duplicate Injections															
ICP Multiple Exposures															
GFAA Standard Additions															
CRDL Standards	✓										✓				
Other: Sample Receipt	✓		✓		✓					✓	✓		✓		✓

Comments: * TOC, particle grain size, TVS

1 Method 1631B

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BLANK ANALYSIS RESULTS FOR INORGANIC PARAMETERS

	MATRIX (Aq., S)	BLANK TYPE (✓) METHOD ICB	CCB	PREP.	TRIP	EQUIPMENT	FIELD	BLANK SAMPLE NUMBER	CONTAMINANT	CONCENTRATION (units) (ug/L)	QUALIFICATION LIMIT FOR AQUEOUS SAMPLES (ug/L) 5x	QUALIFICATION LIMIT FOR SOLID SAMPLES (mg/Kg) 5x
ICP/MS	S	✓						10/8/02	Lead	0.019		0.0095
			✓						Lead	0.023		0.0115
	S			✓				E9JKG	None Detected			
	Aq.			✓				E9JKN	None Detected			
	Aq					✓		ERB-01	Cadmium	48.1		24.0
									Lead	0.34		1.7 ~~0.17~~
TOC	S	✓	✓	✓				101102	None Detected			
	S	✓	✓	✓				101602	None Detected			
	S	✓	✓	✓				101702				
	Aq	✓	✓	✓				100902				
						✓		ERB-01	TOC	3400		~~34~~ 17
Hg	Aq					✓		ERB-01	Mercury ng/L	0.348	ug/g	0.286
	S			✓				Blank 101402	None Detected			

Aq. = Aqueous; S = Solid

Notes: Mercury Fractur Soils 0.500 g / 21.573 mL

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STL North Canton

Metals Data Reporting Form

Initial Calibration Verification Standard

Instrument: ICPMS **Units:** ug/L

Chart Number: 100802b.rep **Acceptable Range:** 90% - 110%

Standard Source: _____ **Standard ID:** _____

Element	WL/ Mass	True Conc	QC Std 1 10/8/02 2:41 PM Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec
Arsenic	75	25.0	24.96	**99.8**								
Cadmium	111	25.0	24.90	**99.6**								
Lead	208	25.0	25.15	**100.6**								

Version 4.91.3

Form 2A Equivalent

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Metals Data Reporting Form

Continuing Calibration Verification

Instrument: ICPMS **Units:** ug/L

Chart Number: 100802b.rep **Acceptable Range:** 90% - 110%

Standard Source: _____ **Standard ID:** _____

Element	WL/ Mass	True Conc	QC Std 6 10/8/02 3:02 PM		QC Std 6 10/8/02 4:30 PM		QC Std 6 10/8/02 5:14 PM		QC Std 6 10/8/02 5:58 PM		QC Std 6 10/8/02 6:42 PM	
			Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec
Arsenic	75	50.0	50.08	**100.2**	49.40	**98.8**	50.88	**101.8**	50.69	**101.4**	50.32	**100.6**
Cadmium	111	50.0	49.42	**98.8**	49.30	**98.6**	49.35	**98.7**	47.32	**94.6**	48.69	**97.4**
Lead	208	50.0	49.76	**99.5**	49.30	**98.6**	49.76	**99.5**	48.97	**97.9**	49.99	**100.0**

90-110%

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Metals Data Reporting Form

Continuing Calibration Verification

Instrument: ICPMS **Units:** ug/L

Chart Number: 100802b.rep **Acceptable Range:** 90% - 110%

Standard Source: _____ **Standard ID:** _____

Element	WL/ Mass	True Conc	QC Std 6 10/8/02 7:12 PM		QC Std 6 10/8/02 7:45 PM							
			Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec
Arsenic	75	50.0	49.68	**99.4**	50.20	**100.4**						
Cadmium	111	50.0	48.44	**96.9**	48.75	**97.5**						
Lead	208	50.0	48.51	**97.0**	49.37	**98.7**						

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STL North Canton

Metals Data Reporting Form

Initial Calibration Verification Standard

Instrument: ICPMS **Units:** ug/L

Chart Number: 100902a.rep **Acceptable Range:** 90% - 110%

Standard Source: _____ **Standard ID:** _____

Element	WL/ Mass	True Conc	QC Std 1 10/9/02 10:43 AM ✓ Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec
Arsenic	75	25.0	✓ 25.55	**102.2**								
Cadmium	111	25.0	✓ 25.67	**102.7**								
Lead	208	25.0	✓ 25.10	**100.4**								

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Metals Data Reporting Form

Continuing Calibration Verification

Instrument: ICPMS **Units:** ug/L

Chart Number: 100902a.rep **Acceptable Range:** 90% - 110%

Standard Source: _____ **Standard ID:** _____

Element	WL/ Mass	True Conc	QC Std 6 10/9/02 11:04 AM Found	% Rec	QC Std 6 10/9/02 11:48 AM Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec
Arsenic	75	50.0	50.97	**101.9**	50.67	**101.3**						
Cadmium	111	50.0	52.10	**104.2**	51.47	**102.9**						
Lead	208	50.0	51.53	**103.1**	50.85	**101.7**						

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Metals Data Reporting Form

Contract Required Detection Limit Standard

Instrument: ICPMS

Units: ug/L

Chart Number: 100802b.rep

Acceptable Range: 50% - 150%

Standard Source:

Standard ID:

Element	WL/ Mass	True Conc	QC Std 3 10/8/02 2:48 PM ✓ Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec
Arsenic	75	10.0	10.20	**102.0**								
Cadmium	111	10.0	✓ 9.72	**97.2**								
Lead	208	10.0	9.85	**98.5**								

Version 4.91.3

Form 2B Equivalent

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Metals Data Reporting Form

Contract Required Detection Limit Standard

Instrument: ICPMS **Units:** ug/L

Chart Number: 100902a.rep **Acceptable Range:** 50% - 150%

Standard Source: _____ **Standard ID:** _____

Element	WL/ Mass	True Conc	QC Std 3 10/9/02 10:50 AM Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec
Arsenic	75	10.0	10.29	**102.9**								
Cadmium	111	10.0	10.16	**101.6**								
Lead	208	10.0	9.75	**97.5**								

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STL North Canton

Metals Data Reporting Form

Initial Calibration Blank Results

Instrument: ICPMS **Units:** ug/L

Chart Number: 100802b.rep

Standard Source: 42+ DL4 **Standard ID:**

Element	WL/ Mass	Report Limit	QC Std 2 10/8/02 2:45 PM Found	Q	Found	Q	Found	Q	Found	Q	Found	Q
Arsenic	75	5	-0.24	B								
Cadmium	111	1	0.017	U								
Lead	208	1	0.019	B								

Version 4.91.3

U Result is less than the IDL

B Result is between IDL and RL

Form 3 Equivalent

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STL North Canton

Metals Data Reporting Form

Continuing Calibration Blank Results

Instrument: ICPMS **Units:** ug/L

Chart Number: 100802b.rep

Standard Source: _____ **Standard ID:** _____

Element	WL/ Mass	Report Limit	QC Std 7 10/8/02 3:05 PM		QC Std 7 10/8/02 4:34 PM		QC Std 7 10/8/02 5:18 PM		QC Std 7 10/8/02 6:02 PM		QC Std 7 10/8/02 6:45 PM	
			Found	Q	Found	Q	Found	Q	Found	Q	Found	Q
Arsenic	75	5	0.22	U	0.22	U	0.22	U	0.22	U	0.22	U
Cadmium	111	1	0.017	U	0.017	U	0.017	U	**-0.025**	**B**	**-0.023**	**B**
Lead	208	1	**0.016**	**B**	**0.022**	**B**	**0.023**	**B**	**0.018**	**B**	**0.012**	**B**

Version 4.91.3

U Result is less than the IDL

B Result is between IDL and RL

Form 3 Equivalent

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STL North Canton

Metals Data Reporting Form

Continuing Calibration Blank Results

Instrument: ICPMS **Units:** ug/L

Chart Number: 100802b.rep

Standard Source: _____ **Standard ID:** _____

Element	WL/ Mass	Report Limit	QC Std 7 10/8/02 7:15 PM		QC Std 7 10/8/02 7:49 PM							
			Found	Q	Found	Q	Found	Q	Found	Q	Found	Q
Arsenic	75	5	0.22	U	0.22	U						
Cadmium	111	1	**-0.022**	**B**	0.017	U						
Lead	208	1	**0.015**	**B**	**0.014**	**B**						

Version 4.91.3

U Result is less than the IDL
B Result is between IDL and RL

Form 3 Equivalent

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Metals Data Reporting Form

Initial Calibration Blank Results

Instrument: ICPMS **Units:** ug/L

Chart Number: 100902a.rep

Standard Source: _____ **Standard ID:** _____

Element	WL/ Mass	Report Limit	QC Std 2 10/9/02 10:47 AM Found	Q	Found	Q	Found	Q	Found	Q	Found	Q
Arsenic	75	5	0.22	U								
Cadmium	111	1	0.017	U								
Lead	208	1	0.0071	B								

Version 4.91.3

U Result is less than the IDL

B Result is between IDL and RL

Form 3 Equivalent

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STL North Canton

Metals Data Reporting Form

Continuing Calibration Blank Results

Instrument: ICPMS **Units:** ug/L

Chart Number: 100902a.rep

Standard Source: _____ **Standard ID:** _____

Element	WL/ Mass	Report Limit	QC Std 7 10/9/02 11:07 AM		QC Std 7 10/9/02 11:51 AM							
			Found	Q	Found	Q	Found	Q	Found	Q	Found	Q
Arsenic	75	5	0.22	U	0.22	U						
Cadmium	111	1	-0.021	B	-0.032	B						
Lead	208	1	0.0049	U	0.027	B						

Version 4.91.3

U Result is less than the IDL
B Result is between IDL and RL

Form 3 Equivalent

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METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: A2J040261 Matrix.....: SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: A2J080000-100 Prep Batch #...: 2281100						
Arsenic	ND	0.50	mg/kg	SW846 6020	10/08/02	E9JKG1AA
		Dilution Factor: 1				
		Analysis Time..: 16:21		Analyst ID.....: 001644	Instrument ID..: I7	
Cadmium	ND	0.10	mg/kg	SW846 6020	10/08/02	E9JKG1AC
		Dilution Factor: 1				
		Analysis Time..: 16:21		Analyst ID.....: 001644	Instrument ID..: I7	
Lead	ND	0.10	mg/kg	SW846 6020	10/08/02	E9JKG1AD
		Dilution Factor: 1				
		Analysis Time..: 16:21		Analyst ID.....: 001644	Instrument ID..: I7	

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

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METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: A2J040261 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: A2J080000-103 Prep Batch #...: 2281103						
Arsenic	ND	5.0	ug/L	SW846 6020	10/08-10/09/02	E9JKN1CG
		Dilution Factor: 1				
		Analysis Time..: 11:11		Analyst ID.....: 001644	Instrument ID..: I7	
Cadmium	ND	1.0	ug/L	SW846 6020	10/08-10/09/02	E9JKN1CH
		Dilution Factor: 1				
		Analysis Time..: 11:11		Analyst ID.....: 001644	Instrument ID..: I7	
Lead	ND	1.0	ug/L	SW846 6020	10/08-10/09/02	E9JKN1CJ
		Dilution Factor: 1				
		Analysis Time..: 11:11		Analyst ID.....: 001644	Instrument ID..: I7	

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

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STL North Canton

Metals Data Reporting Form

Interference Check Standard A

Instrument: ICPMS **Units:** ug/L

Chart Number: 100802b.rep **Acceptable Range:** 0% - 0%

Standard Source: _____ **Standard ID:** _____

Element	WL/ Mass	Reporting Limit	True Conc	QC Std 4 10/8/02 2:52 PM Found	Found	Found	Found	Found
Arsenic	75	5		0.069				
Cadmium	111	1		2				
Lead	208	1		0.540				

U Result is less than the IDL
B Result is between IDL and RL

Form 4 Equivalent

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Metals Data Reporting Form

Interference Check Standard AB

Instrument: ICPMS **Units:** ug/L

Chart Number: 100802b.rep **Acceptable Range:** 50% - 150%

Standard Source: _____ **Standard ID:** _____

Element	WL/ Mass	True Conc	QC Std 5 10/8/02 2:56 PM Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec
Arsenic	75	100	99.6	**99.6**								
Cadmium	111	100	102.7	**102.7**								
Lead	208	100	101.7	**101.7**								

U Result is less than the IDL
B Result is between IDL and RL

Form 4 Equivalent

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STL North Canton

Metals Data Reporting Form

Interference Check Standard A

Instrument: ICPMS **Units:** ug/L

Chart Number: 100902a.rep **Acceptable Range:** 0% - 0%

Standard Source: _____ **Standard ID:** _____

Element	WL/ Mass	Reporting Limit	True Conc	QC Std 4 10/9/02 10:54 AM Found	Found	Found	Found	Found
Arsenic	75	5		0.140				
Cadmium	111	1		2				
Lead	208	1		0.550				

Version 4.91.3

U Result is less than the IDL

B Result is between IDL and RL

Form 4 Equivalent

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Metals Data Reporting Form

Interference Check Standard AB

Instrument: ICPMS **Units:** ug/L

Chart Number: 100902a.rep **Acceptable Range:** 50% - 150%

Standard Source: **Standard ID:**

Element	WL/ Mass	True Conc	QC Std 5 10/9/02 10:58 AM Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec
Arsenic	75	100	102.6	**102.6**								
Cadmium	111	100	106.3	**106.3**								
Lead	208	100	104.5	**104.5**								

Version 4.91.3

U Result is less than the IDL

B Result is between IDL and RL

Form 4 Equivalent

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A2J040261 Matrix.....: SOLID

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: A2J080000-100 **Prep Batch #...:** 2281100					
Arsenic	84	(74 - 110)	SW846 6020	10/08/02	E9JKG1AE
		Dilution Factor: 1	Analysis Time..: 16:25		Analyst ID.....: 001644
		Instrument ID..: I7			
Cadmium	82	(75 - 110)	SW846 6020	10/08/02	E9JKG1AF
		Dilution Factor: 1	Analysis Time..: 16:25		Analyst ID.....: 001644
		Instrument ID..: I7			
Lead	86	(80 - 120)	SW846 6020	10/08/02	E9JKG1AG
		Dilution Factor: 1	Analysis Time..: 16:25		Analyst ID.....: 001644
		Instrument ID..: I7			

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

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LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A2J040261 Matrix.....: SOLID

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: A2J080000-100 Prep Batch #...: 2281100							
Arsenic	10.0	8.4	mg/kg	84	SW846 6020	10/08/02	E9JKG1AE
			Dilution Factor: 1		Analysis Time..: 16:25	Analyst ID.....: 001644	
			Instrument ID..: I7				
Cadmium	10.0	8.2	mg/kg	82	SW846 6020	10/08/02	E9JKG1AF
			Dilution Factor: 1		Analysis Time..: 16:25	Analyst ID.....: 001644	
			Instrument ID..: I7				
Lead	10.0	8.6	mg/kg	86	SW846 6020	10/08/02	E9JKG1AG
			Dilution Factor: 1		Analysis Time..: 16:25	Analyst ID.....: 001644	
			Instrument ID..: I7				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A2J040261 Matrix.....: WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: A2J080000-103 **Prep Batch #...:** 2281103					
Cadmium	102	(80 - 120)	SW846 6020	10/08-10/09/02	E9JKN1A9
		Dilution Factor: 1	Analysis Time..: 11:14		Analyst ID.....: 001644
		Instrument ID..: I7			
Arsenic	102	(80 - 120)	SW846 6020	10/08-10/09/02	E9JKN1CK
		Dilution Factor: 1	Analysis Time..: 11:14		Analyst ID.....: 001644
		Instrument ID..: I7			
Lead	97	(80 - 120)	SW846 6020	10/08-10/09/02	E9JKN1CL
		Dilution Factor: 1	Analysis Time..: 11:14		Analyst ID.....: 001644
		Instrument ID..: I7			

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

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LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A2J040261 Matrix.....: WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: A2J080000-103 Prep Batch #...: 2281103							
Cadmium	100	~~100~~ 102	ug/L	102	SW846 6020	10/08-10/09/02	E9JKN1A9
			Dilution Factor: 1		Analysis Time..: 11:14	Analyst ID.....: 001644	
			Instrument ID..: I7				
Arsenic	100	~~100~~ 102	ug/L	102	SW846 6020	10/08-10/09/02	E9JKN1CK
			Dilution Factor: 1		Analysis Time..: 11:14	Analyst ID.....: 001644	
			Instrument ID..: I7				
Lead	100	97.0	ug/L	97	SW846 6020	10/08-10/09/02	E9JKN1CL
			Dilution Factor: 1		Analysis Time..: 11:14	Analyst ID.....: 001644	
			Instrument ID..: I7				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

11/6/02

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MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A2J040261 Matrix.....: SO
Date Sampled...: 10/01/02 18:15 Date Received..: 10/03/02

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: A2J040261-003 Prep Batch #...: 2281100									
Arsenic									
	4.9	12.3	16.1	mg/kg	90		SW846 6020	10/08/02	E9FH71AX
	4.9	12.3	16.9	mg/kg	97	5.1	SW846 6020	10/08/02	E9FH71A0
			Dilution Factor: 1						
			Analysis Time..: 16:48			Instrument ID..: I7		Analyst ID.....: 001644	
Cadmium									
	0.58	12.3	10.7	mg/kg	82		SW846 6020	10/08/02	E9FH71A1
	0.58	12.3	10.9	mg/kg	84	2.0	SW846 6020	10/08/02	E9FH71A2
			Dilution Factor: 1						
			Analysis Time..: 16:48			Instrument ID..: I7		Analyst ID.....: 001644	
Lead									
	39.7	12.3	50.1	mg/kg	84		SW846 6020	10/08/02	E9FH71A3
	39.7	12.3	45.1 N	mg/kg	44	10	SW846 6020	10/08/02	E9FH71A4
			Dilution Factor: 5						
			Analysis Time..: 19:36			Instrument ID..: I7		Analyst ID.....: 001644	

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

N Spiked analyte recovery is outside stated control limits.

%R < 75%

flag pos "J"

All sediment Sx's

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MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A2J040261 Matrix.....: SO
Date Sampled...: 10/01/02 18:15 Date Received..: 10/03/02

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: A2J040261-003 Prep Batch #...: 2281100							
Arsenic	90	(70 - 130)			SW846 6020	10/08/02	E9FH71AX
	97	(70 - 130)	5.1	(0-20)	SW846 6020	10/08/02	E9FH71A0
		Dilution Factor: 1					
		Analysis Time..: 16:48			Instrument ID..: I7	Analyst ID.....: 001644	
Cadmium	82	(70 - 130)			SW846 6020	10/08/02	E9FH71A1
	84	(70 - 130)	2.0	(0-20)	SW846 6020	10/08/02	E9FH71A2
		Dilution Factor: 1					
		Analysis Time..: 16:48			Instrument ID..: I7	Analyst ID.....: 001644	
Lead	84	(70 - 130)			SW846 6020	10/08/02	E9FH71A3
	44 N	(70 - 130)	10	(0-20)	SW846 6020	10/08/02	E9FH71A4
		Dilution Factor: 5					
		Analysis Time..: 19:36			Instrument ID..: I7	Analyst ID.....: 001644	

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

N Spiked analyte recovery is outside stated control limits.

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STL North Canton

Metals Data Reporting Form

Serial Dilution RPD Report

Serial Dilution Sample ID E9FJJL

Original Sample ID E9FJJ **Client ID** NYPA-RES-SED12

Matrix: Solid **Units:** ug/L **Prep Date:** 10/8/02 **Prep Batch:** 2281100

Weight: NA **Volume:** NA **Percent Moistur** NA

Element	WL/ Mass	OS Conc	Q	Serial Dilution Conc	Q	Percent Diff	OS DF	Ser Dil DF	Instr	OS Anal Date	OS Anal Time	Ser Dil Anal Date	Ser Dil Anal Time
Arsenic	75	26.5		29.9		13	1	5	ICPMS	10/8/02	17:25	10/8/02	17:28
Cadmium	111	3.6		3.7	B	2.8	1	5	ICPMS	10/8/02	17:25	10/8/02	17:28
Lead	208	133		137		2.7	1	5	ICPMS	10/8/02	17:25	10/8/02	17:28

%D > 10%

flag pos "J" all SLd sr's

As %D = $\left(\frac{29.9 - 26.5}{26.5}\right) \times 100\% = 13\%$

Comments:

Version 4.91.3

U Result is less than the IDL

B Result is between IDL and RL

Form 9 Equivalent

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STL North Canton

Metals Data Reporting Form

Instrument Detection Limits

Instrument: ICPMS **Units:** ppb

Element	Mass	Reporting Limit	IDL	Date of IDL
Arsenic	75	5.0	0.22	9/6/02
Cadmium	111	1.0	0.017	9/6/02
Lead	208	1.0	0.0049	9/6/02

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STL North Canton

Metals Data Reporting Form

Linear Dynamic Ranges

Instrument: ICPMS **Units:** ppb

Element	Wavelength /Mass	Linear Range	Date of Linear Range
Arsenic	75.00	5000	6/17/02
Cadmium	111.00	5000	6/17/02
Lead	208.00	5000	6/17/02

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Severn Trent Laboratories, Inc.

Metals Prep Log/ Batch Summary

Batch Number 2281100

Initials LPM/KLL

Prep Date: 10/08/02

Due Date: 2002/10/18

Lot	Work Order				ICP Weight	ICPMS Weight	GFAA Weight	Hg Weight
A2J080000	E9JKG	B	Due Date:	/ / 0				
Solid	Total			SDG:				
A2J080000	E9JKG	C	Due Date:	/ / 0				
Solid	Total			SDG:				
A2J040261	E9FHE		Due Date:	10/18/02		1.00g		
Solid	Total			SDG:				
A2J040261	E9FH2		Due Date:	10/18/02				
Solid	Total			SDG:				
A2J040261	E9FH7		Due Date:	10/18/02				
Solid	Total			SDG:				
A2J040261	E9FH7	D	Due Date:	10/18/02				
Solid	Total			SDG:				
A2J040261	E9FH7	S	Due Date:	10/18/02				
Solid	Total			SDG:				
A2J040261	E9FJC		Due Date:	10/18/02				
Solid	Total			SDG:				
A2J040261	E9FJD		Due Date:	10/18/02				
Solid	Total			SDG:				
A2J040261	E9FJE		Due Date:	10/18/02				
Solid	Total			SDG:				
A2J040261	E9FJF		Due Date:	10/18/02				
Solid	Total			SDG:				
A2J040261	E9FJG		Due Date:	10/18/02				
Solid	Total			SDG:				
A2J040261	E9FJH		Due Date:	10/18/02				
Solid	Total			SDG:				
A2J040261	E9FJJ		Due Date:	10/18/02				
Solid	Total			SDG:				

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Severn Trent Laboratories, Inc.

Batch Number 2281100

Metals Prep Log/ Batch Summary

Initials LPM/KCL

Prep Date: 10/08/02

Due Date: 2002/10/18

Lot	Work Order	ICP Weight	ICPMS Weight	GFAA Weight	Hg Weight

LEVEL 2

BLANK AND CHECK STANDARD ON BATCH	✓
MS/MSD AND PDS ON BATCH	✓
CURVE PREPARED FOR Hg	
CORRECT SPIKES ADDED	✓
SPIKING SOLUTIONS DOCUMENTED ON BATCH LOG	✓

Comments:

B - BLANK ; C - CHECK SAMPLE ; L - CHECK SAMPLE DUPLICATE ; P - SERIAL DILUTION ; S - MATRIX SPIKE SAMPLE ; D - MATRIX SPIKE DUPLICATE SAMPLE

ICP ELEMENTS WITHIN THE BATCH:

ICPMS ELEMENTS WITHIN THE BATCH:

AS CD PB

MS/MSD 1: E9FH7	ICP-1	ICP-2A	GFAA	Hg	Ag	ICPMS-1	ICPMS-2
MS/MSD2:	ICP-1	ICP-2A	GFAA	Hg	Ag	ICPMS-1	ICPMS-2
MS/MSD3:	ICP-1	ICP-2A	GFAA	Hg	Ag	ICPMS-1	ICPMS-2
LCS/LCSD : E9JK6	ICP-1	ICP-2A	GFAA	Hg	Ag	ICPMS-1	ICPMS-2
STANDARD NUMBERS						HPS218917	

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Batch Number 2281103

Severn Trent Laboratories, Inc.
Metals Prep Log/ Batch Summary

Initials LPM

Prep Date: 10/08/02

Due Date: 2002/10/18

Lot	Work Order				ICP Weight	ICPMS Weight	GFAA Weight	Hg Weight
A2J080000	E9JKN	B	Due Date:	/ / 0				
Water	Total			SDG:				
A2J080000	E9JKN	C	Due Date:	/ / 0				
Water	Total			SDG:				
A2J040261	E9FJ5		Due Date:	10/18/02				
Water	Total			SDG:				
A2J050123	E9GJX		Due Date:	10/18/02				
Water	Total			SDG:				
A2J050123	E9GJX	D	Due Date:	10/18/02				
Water	Total			SDG:				
A2J050123	E9GJX	S	Due Date:	10/18/02				
Water	Total			SDG:				
A2J050123	E9GJ0		Due Date:	10/18/02				
Water	Total			SDG:				
A2J050123	E9GJ1		Due Date:	10/18/02				
Water	Total			SDG:				
A2J050123	E9GJ2		Due Date:	10/18/02				
Water	Total			SDG:				
H2J040196	E9E0C		Due Date:	10/21/02				
Water	Total			SDG:				
H2J040196	E9E0X		Due Date:	10/21/02				
Water	Total			SDG:				
H2J040196	E9E1M		Due Date:	10/21/02				
Water	Total			SDG:				
H2J040196	E9E1X		Due Date:	10/21/02				
Water	Total			SDG:				
H2J040196	E9E1X	D	Due Date:	10/21/02				
Water	Total			SDG:				
H2J040196	E9E1X	S	Due Date:	10/21/02				
Water	Total			SDG:				
H2J040196	E9E11		Due Date:	10/21/02				
Water	Total			SDG:				
H2J040196	E9E2H		Due Date:	10/21/02				
Water	Total			SDG:				
H2J030249	E9C18		Due Date:	10/25/02				
Water	Total			SDG: MSS39014				
H2J030249	E9C2D		Due Date:	10/25/02				
Water	Total			SDG: MSS39014				
H2J030249	E9C2G		Due Date:	10/25/02				
Water	Total			SDG: MSS39014				

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Batch Number 2281103

Severn Trent Laboratories, Inc.
Metals Prep Log/ Batch Summary

Initials WM

Prep Date: 10/08/02

Due Date: 2002/10/18

Lot	Work Order	ICP Weight	ICPMS Weight	GFAA Weight	Hg Weight

LEVEL 2

BLANK AND CHECK STANDARD ON BATCH	✓
MS/MSD AND PDS ON BATCH	✓
CURVE PREPARED FOR Hg	
CORRECT SPIKES ADDED	✓
SPIKING SOLUTIONS DOCUMENTED ON BATCH LOG	✓

Comments:

B - BLANK ; C - CHECK SAMPLE ; L - CHECK SAMPLE DUPLICATE ; P - SERIAL DILUTION ; S - MATRIX SPIKE SAMPLE ; D - MATRIX SPIKE DUPLICATE SAMPLE

ICP ELEMENTS WITHIN THE BATCH:

AS BA BE CO CR CU MN NI PB SE VX

ICPMS ELEMENTS WITHIN THE BATCH:

AG AS CD PB SB TL ZN

MS/MSD 1: E9GJX	ICP-1	ICP-2A	GFAA	Hg	Ag	ICPMS-1	ICPMS-2
MS/MSD2: E9EIX	ICP-1	ICP-2A	GFAA	Hg	Ag	ICPMS-1	ICPMS-2
MS/MSD3:	ICP-1	ICP-2A	GFAA	Hg	Ag	ICPMS-1	ICPMS-2
LCS/LCSD : E9JKN	ICP-1	ICP-2A	GFAA	Hg	Ag	ICPMS-1	ICPMS-2
STANDARD NUMBERS	2I820			2J902		HPS 218917	

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Analysis Run Log ICP MS

Instrument Upload
Started Thu Oct 10 04:06:38 2002 by WILLIAML
Data File: UPL$CAN_DATA_ROOT:<REP>100902A.REP;1

I7

#	WorkOrder	Dilution	Date	Time	Batch	Lot	Instrument
1	BLANK		09-OCT-2002	10:29:55			I7
2	STANDARD 1		09-OCT-2002	10:33:23			I7
3	STANDARD 2		09-OCT-2002	10:36:52			I7
4	STANDARD 3		09-OCT-2002	10:40:21			I7
5	QC STD 1 ICV		09-OCT-2002	10:43:51			I7
6	QC STD 2 ICB		09-OCT-2002	10:47:15			I7
7	QC STD 3 LRDL		09-OCT-2002	10:50:39			I7
8	QC STD 4 ICSA		09-OCT-2002	10:54:03			I7
9	QC STD 5 ICSAB		09-OCT-2002	10:58:30			I7
10	QC STD 6 CCV		09-OCT-2002	11:04:15			I7
11	QC STD 7 CCB		09-OCT-2002	11:07:49			I7
12	E9JKNB MB		09-OCT-2002	11:11:11	2281103	A2J080000	I7
13	E9JKNC LCS		09-OCT-2002	11:14:34	2281103	A2J080000	I7
14	E9FJ5 - DIL		09-OCT-2002	11:18:17	2281103	A2J040261	I7
15	E9GJX		09-OCT-2002	11:21:41	2281103	A2J050123	I7
16	E9GJXS		09-OCT-2002	11:25:05	2281103	A2J050123	I7
17	E9GJXD		09-OCT-2002	11:28:29	2281103	A2J050123	I7
18	E9GJ0		09-OCT-2002	11:32:13	2281103	A2J050123	I7
19	E9GJ1		09-OCT-2002	11:35:38	2281103	A2J050123	I7
20	E9GJ2		09-OCT-2002	11:39:03	2281103	A2J050123	I7
21	E9E0C		09-OCT-2002	11:42:29	2281103	H2J040196	I7
22	QC STD 6 CCV		09-OCT-2002	11:48:14			I7
23	QC STD 7 CCB		09-OCT-2002	11:51:47			I7
24	E9E0X		09-OCT-2002	11:55:12	2281103	H2J040196	I7
25	E9E1M		09-OCT-2002	11:58:38	2281103	H2J040196	I7
26	E9E1X		09-OCT-2002	12:02:03	2281103	H2J040196	I7
27	E9E1XS		09-OCT-2002	12:05:26	2281103	H2J040196	I7
28	E9E1XD		09-OCT-2002	12:08:50	2281103	H2J040196	I7
29	E9E11		09-OCT-2002	12:12:34	2281103	H2J040196	I7
30	E9E2H		09-OCT-2002	12:15:58	2281103	H2J040196	I7
31	E9C18		09-OCT-2002	12:19:23	2281103	MSS39014	I7
32	E9C2D		09-OCT-2002	12:22:48	2281103	MSS39014	I7
33	E9C2G		09-OCT-2002	12:26:13	2281103	MSS39014	I7
34	QC STD 6		09-OCT-2002	12:31:58			I7
35	QC STD 7		09-OCT-2002	12:35:32			I7
36	E9C2GL		09-OCT-2002	12:38:56			I7
37	E9JKJB		09-OCT-2002	12:42:42	2281101	A2J080000	I7
38	E9JKJC		09-OCT-2002	12:46:08	2281101	A2J080000	I7
39	E9DKK		09-OCT-2002	12:49:55	2281101	COPPER77	I7
40	E9DKKF		09-OCT-2002	12:53:20	2281101	COPPER77	I7
41	E9DKL		09-OCT-2002	12:56:44	2281101	COPPER77	I7
42	E9DKLF		09-OCT-2002	13:00:08	2281101	COPPER77	I7
43	E9DKM		09-OCT-2002	13:03:32	2281101	COPPER77	I7
44	E9DKMS		09-OCT-2002	13:06:57	2281101	COPPER77	I7

(continued)

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Analysis Run Log ICP MS

: Instrument Upload Run Log - Page 1 :
: Started Wed Oct 9 04:56:29 2002 by WILLIAML :
: Data File: UPLSCAN_DATA_ROOT:<REP>100802B.REP;1 I7 :

#	WorkOrder	Dilution	Date	Time	Batch	Lot	Instrument
1	BLANK		08-OCT-2002	14:27:58			I7
2	STANDARD 1		08-OCT-2002	14:31:26			I7
3	STANDARD 2		08-OCT-2002	14:34:54			I7
4	STANDARD 3		08-OCT-2002	14:38:24			I7
5	QC STD 1 ILV		08-OCT-2002	14:41:54			I7
6	QC STD 2 ICP		08-OCT-2002	14:45:18			I7
7	QC STD 3 CRDL		08-OCT-2002	14:48:41			I7
8	QC STD 4 ICSA		08-OCT-2002	14:52:06			I7
9	QC STD 5 ICSAB		08-OCT-2002	14:56:32			I7
10	QC STD 6 CCV		08-OCT-2002	15:02:18			I7
11	QC STD 7 LCS		08-OCT-2002	15:05:51			I7
12	E9HXMB		08-OCT-2002	15:53:34	2280358	A2J070000	I7
13	E9HXMC		08-OCT-2002	15:56:57	2280358	A2J070000	I7
14	E836HR		08-OCT-2002	16:00:40	2280358	C2I280161	I7
15	E836HS		08-OCT-2002	16:04:03	2277120	C2I280161	I7
16	E836HD		08-OCT-2002	16:07:27	2277120	C2I280161	I7
17	E836HFR		08-OCT-2002	16:11:11	2280358	C2I280161	I7
18	E836HFS		08-OCT-2002	16:14:36	2277120	C2I280161	I7
19	E836HFD		08-OCT-2002	16:18:01	2277120	C2I280161	I7
20	E9JKGB MB		08-OCT-2002	16:21:46	2281100	A2J080000	I7
21	E9JKGC LCS		08-OCT-2002	16:25:12	2281100	A2J080000	I7
22	QC STD 6 CCV		08-OCT-2002	16:30:57			I7
23	QC STD 7		08-OCT-2002	16:34:30			I7
24	E9FHE -001		08-OCT-2002	16:37:54	2281100	A2J040261	I7
25	E9FH2 -002		08-OCT-2002	16:41:21	2281100	A2J040261	I7
26	E9FH7 -003		08-OCT-2002	16:44:45	2281100	A2J040261	I7
27	E9FH7S		08-OCT-2002	16:48:09	2281100	A2J040261	I7
28	E9FH7D		08-OCT-2002	16:51:32	2281100	A2J040261	I7
29	E9FJC -004		08-OCT-2002	16:55:17	2281100	A2J040261	I7
30	E9FJD -005		08-OCT-2002	16:58:41	2281100	A2J040261	I7
31	E9FJE -006		08-OCT-2002	17:02:06	2281100	A2J040261	I7
32	E9FJF -007		08-OCT-2002	17:05:31	2281100	A2J040261	I7
33	E9FJG -008		08-OCT-2002	17:08:56	2281100	A2J040261	I7
34	QC STD 6 CCV		08-OCT-2002	17:14:41			I7
35	QC STD 7		08-OCT-2002	17:18:15			I7
36	E9FJH -009		08-OCT-2002	17:21:39	2281100	A2J040261	I7
37	E9FJJ -010		08-OCT-2002	17:25:05	2281100	A2J040261	I7
38	E9FJJL		08-OCT-2002	17:28:31			I7
39	E9JKLB		08-OCT-2002	17:32:18	2281102	A2J080000	I7
40	E9JKLC		08-OCT-2002	17:35:44	2281102	A2J080000	I7
41	E9GW9		08-OCT-2002	17:39:27	2281102	A2J050162	I7
42	E9GXA		08-OCT-2002	17:42:51	2281102	A2J050162	I7
43	E9GXD		08-OCT-2002	17:46:16	2281102	A2J050162	I7
44	E9GXE		08-OCT-2002	17:49:40	2281102	A2J050162	I7

(continued)

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:       Instrument Upload                                        Run Log - Page  2 :
:       Started Wed Oct  9 04:56:29 2002 by WILLIAML                               :
:       Data File: UPL$CAN_DATA_ROOT:<REP>100802B.REP;1                            :
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#	WorkOrder	Dilution	Date	Time	Batch	Lot	Instrument
45	E9GXG		08-OCT-2002	17:53:05	2281102	A2J050162	I7
46	QC STD 6 CCV		08-OCT-2002	17:58:50			I7
47	QC STD 7		08-OCT-2002	18:02:24			I7
48	E9GXH		08-OCT-2002	18:05:48	2281102	A2J050162	I7
49	E9GXJ		08-OCT-2002	18:09:13	2281102	A2J050162	I7
50	E9GXL		08-OCT-2002	18:12:39	2281102	A2J050162	I7
51	E9GXN		08-OCT-2002	18:16:06	2281102	A2J050162	I7
52	E9GXQ		08-OCT-2002	18:19:33	2281102	A2J050162	I7
53	E9GXR		08-OCT-2002	18:23:00	2281102	A2J050162	I7
54	E9GXT		08-OCT-2002	18:26:26	2281102	A2J050162	I7
55	E9GXV		08-OCT-2002	18:29:50	2281102	A2J050162	I7
56	E9GXVS		08-OCT-2002	18:33:14	2281102	A2J050162	I7
57	E9GXVD		08-OCT-2002	18:36:39	2281102	A2J050162	I7
58	QC STD 6 CCV		08-OCT-2002	18:42:24			I7
59	QC STD 7		08-OCT-2002	18:45:57			I7
60	E9GX0		08-OCT-2002	18:49:21	2281102	A2J050162	I7
61	E9GX4		08-OCT-2002	18:52:47	2281102	A2J050162	I7
62	E9GX5		08-OCT-2002	18:56:13	2281102	A2J050162	I7
63	E9GX6		08-OCT-2002	18:59:39	2281102	A2J050162	I7
64	E9GX8		08-OCT-2002	19:03:05	2281102	A2J050162	I7
65	E9GX8L		08-OCT-2002	19:06:32			I7
66	QC STD 6 CCV		08-OCT-2002	19:12:18			I7
67	QC STD 7		08-OCT-2002	19:15:51			I7
68	E9FH7	5	08-OCT-2002	19:32:15	2281100	A2J040261	I7
69	E9FH7S	5	08-OCT-2002	19:36:42	2281100	A2J040261	I7
70	E9FH7D	5	08-OCT-2002	19:41:08	2281100	A2J040261	I7
71	QC STD 6 CCV		08-OCT-2002	19:45:33			I7
72	QC STD 7		08-OCT-2002	19:49:06			I7
73	QC STD 8		08-OCT-2002	19:52:31			I7

---------- End of Report ----------

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STL-N. Canton Elan 6100 ICPMS

Quantitative Analysis Report

Sample ID: E9JKNC

Sample Date/Time: Wednesday, October 09, 2002 11:14:34
Method File: d:\elandata\Method\analysis-al,fe,mn,mo with se corr..mth
Dataset File: D:\elandata\Dataset\100902a\E9JKNC.013
Number of Replicates: 2

Concentration Results

Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
Li	6			404101.838	ppb	313616.198
Be	9	104.700660	1.354	24587.387	ppb	1.000
> Sc	45			170593.263	ppb	159265.703
V	51	97.883233	3.434	510811.430	ppb	1367.716
Cr	52	96.440190	2.674	446471.005	ppb	5292.534
Cr	53	94.488222	1.407	63150.904	ppb	14271.282
Co	59	95.637681	1.911	497256.854	ppb	191.003
Ni	60	93.918577	3.199	102032.898	ppb	57.501
Ni	62	91.413860	0.319	14769.279	ppb	43.501
Cu	63	101.055516	1.014	226951.853	ppb	266.005
Cu	65	102.653546	1.083	107870.319	ppb	134.502
Zn	66	103.959551	2.476	63014.337	ppb	323.007
Zn	67	102.695767	3.332	12109.753	ppb	1977.157
Zn	68	101.767917	3.379	45956.798	ppb	449.012
> Ge	72			186730.321	ppb	178522.311
As	75	102.089499	1.059	72602.229	ppb	76.311
Se	77	103.709410	2.087	5457.097	ppb	317.007
Se	82	102.146549	4.084	6798.904	ppb	-7.213
Kr	83			106.501	ppb	91.001
Y	89			149777.566	ppb	148008.990
Ag	107	100.096112	0.065	379041.265	ppb	45.001
Ag	109	98.592925	0.219	357694.673	ppb	36.500
Cd	110	99.625044	3.889	83366.294	ppb	-502.622
Cd	111	102.425215	2.453	85502.966	ppb	49.001
Cd	114	102.134444	0.195	193887.282	ppb	101.238
> In	115			142422.796	ppb	143369.887
Sb	121	98.521759	0.775	248107.660	ppb	88.501
Sb	123	100.161236	2.412	188679.290	ppb	73.247
Ba	135	97.840895	0.785	67786.681	ppb	12.500
Ba	137	96.953250	1.921	118485.509	ppb	12.000
Tb	159			194323.961	ppb	205572.202
Ho	165			199675.554	ppb	205568.521
Tl	203	96.299884	2.043	306637.015	ppb	1434.586
Tl	205	94.493747	1.447	730587.735	ppb	3364.931
Pb	208	96.892124	1.227	1015853.827	ppb	353.005
> Bi	209			245290.755	ppb	249443.901

AJ 10-9-02

Edit LCS form

Report Date/Time: Wednesday, October 09, 2002 11:16:09

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			STL North Canton			
		Percent Total Solid/Percent Moisture Logsheet				
Analysis	TS			Batch	227818	
Prep Date	10/5/02	Time In	16:58	Analyst	AS/JAK	
Anal date	10/6/02	Time Out	2:20	RL	10	
Sample	Tare	Wet	Dry	Result TS	Result MS	comments
Id	wt	wt	wt	%	%	
BLANKD	5.652	5.7111	5.6943	1.97	ND	
E9GP6	5.652	12.8274	11.7288	84.689	15.311	
E9GP7	5.652	13.4595	13.1419	95.932	4.068	
E9GP8	5.652	9.102	8.5627	84.368	15.632	
E9GP9	5.652	14.2874	13.9783	96.421	3.579	
E9FHE ✓	5.652	20.86	17.953	80.885	19.115	
E9FH2 ✓	5.652	16.9622	14.1735	75.343	24.657	
E9FH7 ✓	5.652	15.45	13.5876	80.992	19.008	
E9FH7-X	5.652	15.1332	13.1697	79.291	20.709	
E9FJC ✓	5.652	18.6223	15.8039	78.270	21.730	
E9FJD ✓	5.652	20.996	13.3653	✓ 50.269	49.731	
E9FJE ✓	5.652	16.0552	10.7742	49.237	50.763	
E9FJF ✓	5.652	13.0515	8.6484	40.495	59.505	
E9FJG ✓	5.652	10.8	6.7473	21.276	78.724	
E9FJH ✓	5.652	14.943	8.6135	31.875	68.125	
E9FJJ ✓	5.652	12.6428	7.6926	29.190	70.810	
E9DRQ	5.652	16.0148	14.5757	86.113	13.887	
E8DRW	5.652	17.5027	15.4891	83.009	16.991	
E9DRX	5.652	16.8538	15.2893	86.033	13.967	
E9DR2	5.652	14.3546	12.4977	78.663	21.337	
E9DR3	5.652	15.8693	14.396	85.580	14.420	
E9DR6	5.652	13.4507	12.7847	91.460	8.540	
E9DR6-X	5.652	10.9459	10.5048	91.668	8.332	
TS1005D	5.652			100.000	0.000	
	5.652			100.000	0.000	
	5.652			100.000	0.000	
	5.652			100.000	0.000	
	5.652			100.000	0.000	

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STL North Canton

Particle Size Analysis
Sieve Data

Client: STLOHN	ETR(s): 90131	Project: 22022	Date Rec: 05-Oct-02	Start Date: 08-Oct-02
Client Code: STLOHN	SDG(s): 90131	Case: 22022		End Date: 15-Oct-02

SET: 90131

Dry prep = D421
Wet prep = D2217

Standard Values

Sieve	Opening, um
3 inch	75000
2 inch	50000
1.5 inch	37500
1 inch	25000
3/4 inch	19000
3/8 inch	9500
#4	4750
#10	2000
#20	850
#40	425
#60	250
#80	180
#100	150
#200	75

Sieve (tares)

Size	Mass, g
3 inch	
2 inch	
1.5 inch	
1 inch	
3/4 inch	
3/8 inch	447.96
#4	443.03
#10	437.36
#20	378.36 d
#40	347.08 d
#60	326.96 d
#80	314.31 d
#100	314.81 d
#200	305.03 d

Test	1	2	3	4	5	6	7	8	9	10	11	12
Laboratory No			503801	503802	503803	503804	503805	503806	503807	503808	503809	
Sample ID			UNRSED01	UNRSED02	LNRSED03	LNRSED04	RESSED05	RESSED06	RESSED07	RESSED08	RESSED09	
Sample Prep Method			D2217	D2217	D2217	D2217	D2217	D2217	D2217	D2217	D2217	
Pan, g												
Pan/sample, g			161.26	98.75	201.45	166.82	85.75	84.76	87.51	85.57	85.85	
Pan/dry sampl, g												
Non-soil material												
Description			grass,shells	grass,shells	glass,wood	n/a	n/a	shells	shells	shells	shells	
Pan, g			3.68	3.68	3.68			3.68	3.68	3.68	3.68	
Pan/dry sampl, g			4.84	4.43	5.74			3.87	3.76	3.82	4.28	
Non-soil, g			1.16	0.75	2.06			0.19	0.08	0.14	0.60	
Hydroscopic Moisture correction factor (HMCF) for dry prep / Percent Solids for dry and wet prep												
Pan, g			1.28	1.28	1.28	1.27	1.27	1.27	1.27	1.27	1.28	
Pan/sample, g			40.17	36.88	36.18	38.67	35.51	34.26	35.54	33.23	38.37	
Pan/dry sampl, g			34.86	27.15	31.12	32.36	18.61	17.67	15.74	14.43	16.04	
HMCF			100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
Sample % Solids			86.3%	72.7%	85.5%	83.1%	50.6%	49.7%	42.2%	41.2%	39.8%	
Sample used, g			138.08	71.01	170.18	138.67	43.43	41.95	36.87	35.09	33.56	
Sieve + Sample Weights												
Size	Mass, g	Mass, g	Mass, g	Mass, g	Mass, g	Mass, g	Mass, g	Mass, g	Mass, g	Mass, g	Mass, g	Mass, g
3 inch												
2 inch												
1.5 inch												
1 inch												
3/4 inch												
3/8 inch			450.39	451.13	454.65	449.13						
#4			454.50	447.48	462.32	451.82						
#10			452.67	450.79	455.68	470.16	0.00	0.00	0.00	0.00	0.00	
#20			387.97	383.71	391.22	410.89	378.38	378.38	378.36	378.36	378.36	
#40			353.49	350.66	371.47	369.69	347.23	347.26	347.15	347.11	347.09	
#60			335.31	334.52	368.91	338.29	327.07	327.12	327.03	326.98	326.96	
#80			324.24	319.38	326.97	320.87	314.45	314.45	314.38	314.34	314.33	
#100			324.90	315.96	318.65	317.31	314.89	314.87	314.83	314.81	314.81	
#200			335.56	306.56	314.45	309.08	307.75	306.17	305.24	305.04	305.03	
Maximum Particle size			19 mm	19 mm	19 mm	19 mm	Med sand	Med sand	Med sand	Med sand	Med sand	
Description of >#10 particles												
Shape	N/A	N/A	rounded	rounded	rounded	rounded	N/A	N/A	N/A	N/A	N/A	N/A
Hardness	N/A	N/A	hard	hard	hard	soft	N/A	N/A	N/A	N/A	N/A	N/A
Sample Mass Parameters												
Pan/sample, g			161.26	98.75	201.45	166.82	85.75	84.76	87.51	85.57	85.85	
Mass removed, g	0.00	0.00	30.37	21.80	46.36	42.76	0.00	0.19	0.08	0.14	0.60	0.00
Sample mass, g			108.87	49.96	125.88	95.91	43.43	41.95	36.87	35.09	33.56	

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STL North Canton

Particle Size Analysis
Hydrometer Data

Set Number	Client:	Project No.:	ETR(s) #:
90131	STLOHN	22022	90131
	Client Code: STLOHN	Job No.: N/A	SDG(s): 90131
	Date Received: 05-Oct-02	Start Date: 08-Oct-02	End Date: 15-Oct-02

Date and Analyst

Percent Solids	Weighed/Mixed	Hydrometer	Large sieves	Non-soil	Small sieves
CPC 10/10/02	CPC 10/10/02	DJP 10/11/02	ERB 10/11/02	ERB 10/11/02	CPC 10/12/02
DJP 10/11/02	ERB 10/11/02	CPC 10/12/02	ERB 10/12/02	ERB 10/12/02	SAL 10/15/02

Test number	1	2	3	4	5	6	7	8	9	10	11	12
Lab number			503801	503802	503803	503804	503805	503806	503807	503808	503809	
Time, min. (2)	2	2	2	2	2	2	2	2	2	2	2	2
Reading			1.0130	1.0180	1.0105	1.0080	1.0220	1.0230	1.0230	1.0230	1.0230	
Temperature, C			20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	
Time, min. (5)	5	5	5	5	5	5	5	5	5	5	5	5
Reading			1.0110	1.0180	1.0080	1.0075	1.0200	1.0200	1.0210	1.0210	1.0210	
Temperature, C			20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	
Time, min. (15)	15	15	15	15	15	15	15	15	15	15	15	15
Reading			1.0090	1.0175	1.0070	1.0070	1.0170	1.0170	1.0170	1.0190	1.0200	
Temperature, C			20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	
Time, min. (30)	30	30	29	29	31	31	31	32	30	30	30	31
Reading			1.0090	1.0170	1.0060	1.0060	1.0140	1.0140	1.0140	1.0160	1.0180	
Temperature, C			20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	
Time, min. (60)	59	58	58	63	60	59	59	60	63	57	63	57
Reading			1.0080	1.0160	1.0055	1.0050	1.0125	1.0120	1.0120	1.0130	1.0150	
Temperature, C			20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	
Time, min. (250)	256	256	250	250	240	234	265	259	253	247	241	235
Reading			1.0070	1.0140	1.0050	1.0045	1.0090	1.0090	1.0095	1.0105	1.0120	
Temperature, C			21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	
Time, min. (1440)	1440	1440	1434	1434	1424	1418	1412	1406	1400	1394	1388	1382
Reading			1.0060	1.0115	1.0040	1.0040	1.0070	1.0080	1.0080	1.0085	1.0090	
Temperature, C			20.0	20.0	20.0	20.0	20.0	20.0	20.0	19.5	19.5	

Hydrometer used: 548358 **Model #:** ASTM 151H **Manufacturer:** CHASE **Hydrometer start time:** 9:30

Calibrations:

L temp, C	L read	H Temp, C	H read
17.0	1.0040	23.0	1.0030

Cal. Date: 18-Feb-02 **Hydrometer data entered:** MRD 10/15/02

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STL North Canton

Particle Size Analysis
Hydrometer Data

Set Number	Client	Project No.	ETR(s) #:
90131	STLOHN	22022	90131
	Client Code: STLOHN	Job No.: N/A	SDG(s): 90131
	Date Received: 5-Oct-02	Start Date: 8-Oct-02	End Date: 0-Jan-00

Date and Analyst

Percent Solids	Weighed/Mixed	Hydrometer	Large sieves	Non-soil	Small sieves
CPC 10/10/02	CPC 10/10/02	~~ERB 10/11/02~~	ERB 10/11/02	ERB 10/11/02	CPC 10/12/02
DJP 10/11/02	ERB 10/11/02	DJP 10/11/02	ERB 10/12/02	ERB 10/12/02	SAC 10/15/02
		CPC 10/12/02			

Test number	1	2	3	4	5	6	7	8	9	10	11	12
Lab number			503801	503802	503803	503804	503805	503806	503807	503808	503809	
Time, min. (2)	2	2	2	2	2	2	2	2	2	2	2	2
Reading			1.0130	1.0180	1.0105	1.0080	1.0220	1.0230	1.0230	1.0230	1.0230	
Temperature, C			20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	
Time, min. (5)	5	5	5	5	5	5	5	5	5	5	5	5
Reading			1.0110	1.0180	1.0080	1.0075	1.0200	1.0200	1.0210	1.0210	1.0210	
Temperature, C			20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	
Time, min. (15)	15	15	15	15	15	15	15	15	15	15	15	15
Reading			1.0090	1.0175	1.0070	1.0070	1.0170	1.0170	1.0170	1.0190	1.0200	
Temperature, C			20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	
Time, min. (30)	30	30	29	29	31	31	31	32	30	30	30	31
Reading			1.0090	1.0170	1.0060	1.0060	1.0140	1.0140	1.0140	1.0160	1.0190	
Temperature, C			20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	
Time, min. (60)	59	58	58	63	60	59	59	60	63	57	63	57
Reading			1.0080	1.0160	1.0055	1.0050	1.0125	1.0120	1.0120	1.0130	1.0150	
Temperature, C			20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	
Time, min. (250)	256	256	250	250	240	234	265	259	253	247	241	235
Reading			1.0070	1.0140	1.0050	1.0045	1.0090	1.0090	1.0095	1.0105	1.0120	
Temperature, C			21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	
Time, min. (1440)	1440	1440	1434	1434	1424	1418	1412	1406	1400	1394	1388	1382
Reading			1.0060	1.0115	1.0040	1.0040	1.0070	1.0080	1.0080	1.0085	1.0090	
Temperature, C			20.0	20.0	20.0	20.0	20.0	20.0	20.0	19.5	19.5	

Hydrometer used: 548358 Model #: ASTM 151H Manufacturer: Hydrometer start time: 09:30

Calibrations:

L temp, C	L read	H Temp, C	H read
17.0		23.0	

Cal. Date: 18-Feb-02 Hydrometer data entered: MRD 10/15/02

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Balance Calibration Log

Type:	Mettler PB3002-S
Serial #:	1120173088
Asset #:	n/a
Location:	Soils Lab
Calibrate to:	2000g

Date	Time	Calibration Weight	Initials
01-Oct-02	0815	2000.00	MRD
02-Oct-02	07:51	2000.00	DJT
03-Oct-02	07:51	2000.00	DJT
04-Oct-02	07:49	2000.00	DJT
[redacted]			
07-Oct-02	7:50	2000.00	DJT
08-Oct-02	7:50	2000.00	DJT
09-Oct-02	10:10	2000.00	DJT
10-Oct-02	7:42	2000.00	DJT
11-Oct-02	07:00	2000.00	DJT
[redacted]			
14-Oct-02	07:44	2000.00	DJT
15-Oct-02	0810	2000.00	MRD
16-Oct-02			

Date	Time	Calibration Weight	Initials
17-Oct-02			
18-Oct-02			
[redacted]			
21-Oct-02			
22-Oct-02			
23-Oct-02			
24-Oct-02			
25-Oct-02			
[redacted]			
28-Oct-02			
29-Oct-02			
30-Oct-02			
31-Oct-02			

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Balance Calibration Log

Type:	Mettler PB3002-S
Serial #:	1120173088
Asset #:	n/a
Location:	Soils Lab
Calibrate to:	2000g

Date	Time	Calibration Weight	Initials
01-Sep-02	[illegible]	2000.00	[illegible]
02-Sep-02	[illegible]	[illegible]	[illegible]
03-Sep-02	08:39	2000.00	DJP
04-Sep-02	07:00	2000.00	DJP
05-Sep-02	07:50	2000.00	DJP
06-Sep-02	07:50	2000.00	DJP
07-Sep-02	[illegible]	[illegible]	[illegible]
08-Sep-02	[illegible]	[illegible]	[illegible]
09-Sep-02	08:00	2000.00	DJP
10-Sep-02	08:00	2000.00	DJP
11-Sep-02	08:03	2000.00	DJP
12-Sep-02	07:50	2000.00	DJP
13-Sep-02	07:50	2000.00	DJP
14-Sep-02	[illegible]	[illegible]	[illegible]
15-Sep-02	[illegible]	[illegible]	[illegible]
16-Sep-02	0800	2000.00	MRD

Date	Time	Calibration Weight	Initials
17-Sep-02	08:00	2000.00	DJP
18-Sep-02	08:00	2000.00	DJP
19-Sep-02	08:01	2000.00	DJP
20-Sep-02	08:03	2000.00	DJP
21-Sep-02	[illegible]	[illegible]	[illegible]
22-Sep-02	[illegible]	[illegible]	[illegible]
23-Sep-02	0800	2000.00	MRD
24-Sep-02	0800	2000.00	CPC
25-Sep-02	07:59	2000.00	DJP
26-Sep-02	06:30	2000.00	DJP
27-Sep-02	09:14	2000.00	JCL
28-Sep-02	16:01	2000.00	JLH
29-Sep-02	[illegible]	[illegible]	[illegible]
30-Sep-02	[illegible]	[illegible]	[illegible]
01-Oct-02			
30Sep02	07:53	2000.00	DJP

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Balance Calibration Log

Type:	Mettler Toledo PB3002
Serial #:	1116283195
Asset #:	N/A
Location:	Soils Lab
Calibrate to:	2000g

Date	Time	Calibration Weight	Initials
01-Oct-02	0759	2000.00	DJP
02-Oct-02	07:49	2000.00	DJP
03-Oct-02	07:55	2000.00	DJP
04-Oct-02	07:57	2000.00	DJP
07-Oct-02	07:51	2000.00	DJP
08-Oct-02	07:51	2000.00	DJP
09-Oct-02	10:11	2000.00	DJP
10-Oct-02	7:44	2000.00	DJP
11-Oct-02	07:02	2000.00	DJP
14-Oct-02	07:45	2000.00	DJP
15-Oct-02	0910	2000.00	MPD
16-Oct-02			

Date	Time	Calibration Weight	Initials
17-Oct-02			
18-Oct-02			
21-Oct-02			
22-Oct-02			
23-Oct-02			
24-Oct-02			
25-Oct-02			
28-Oct-02			
29-Oct-02			
30-Oct-02			
31-Oct-02			

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Balance Calibration Log

Type:	Mettler Toledo PB3002
Serial #:	1116283195
Asset #:	N/A
Location:	Soils Lab
Calibrate to:	2000g

Date	Time	Calibration Weight	Initials
02-Sep-02	[illegible]	[illegible]	[illegible]
03-Sep-02	08:40	2000.00	DJP
04-Sep-02	07:01	2000.00	DJP
05-Sep-02	07:51	2000.00	DJP
06-Sep-02	07:51	2000.00	DJP
07-Sep-02	[illegible]	[illegible]	[illegible]
08-Sep-02	[illegible]	[illegible]	[illegible]
09-Sep-02	08:01	2000.00	DJP
10-Sep-02	08:02	2000.00	DJP
11-Sep-02	08:04	2000.00	DJP
12-Sep-02	07:55	2000.00	DJP
13-Sep-02	07:51	2000.00	DJP
14-Sep-02	[illegible]	[illegible]	[illegible]
15-Sep-02	[illegible]	[illegible]	[illegible]
16-Sep-02	0800	2000.00	MRD

Date	Time	Calibration Weight	Initials
17-Sep-02	08:01	2000.00	DJP
18-Sep-02	08:01	2000.00	DJP
19-Sep-02	08:07	2000.00	DJP
20-Sep-02	08:08	2000.00	DJP
21-Sep-02	[illegible]	[illegible]	[illegible]
22-Sep-02	[illegible]	[illegible]	[illegible]
23-Sep-02	0800	2000.00	MRD
24-Sep-02	0801	2000.00	DJP
25-Sep-02	08:00	2000.00	DJP
26-Sep-02	06:31	2000.00	DJP
27-Sep-02	09:11	2000.00	JTE
28-Sep-02	[illegible]	[illegible]	[illegible]
29-Sep-02	[illegible]	[illegible]	[illegible]
30-Sep-02	07:55	2000.00	DJP
01-Oct-02			

CalSheets:Scale 2
ENV.0010.111099

STL Burlington

0320

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Oven #2 Quality Control Log

Type:	Baxter/Scientific Products (H6620-13A)
Serial #:	0292-0485
Asset #:	3333
Location:	Soils Lab
Calibration Range:	110°C ±5

Date	Temperature	Oven Setting	Initials
01-Oct-02	110°	4.6	DJP
02-Oct-02	113°	4.6	DJP
03-Oct-02	115°	4.6	DJP
04-Oct-02	105	4.6	DJP
07-Oct-02	113°	4.6	DJP
08-Oct-02	115°	4.6	DJP
09-Oct-02	107°	4.6	DJP
10-Oct-02	115	4.6	DJP
11-Oct-02	113	4.6	DJP
14-Oct-02	114°	4.6	DJP
15-Oct-02	115°	4.6	MRD
16-Oct-02			

Date	Temperature	Oven Setting	Initials
17-Oct-02			
18-Oct-02			
21-Oct-02			
22-Oct-02			
23-Oct-02			
24-Oct-02			
25-Oct-02			
28-Oct-02			
29-Oct-02			
30-Oct-02			
31-Oct-02			

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Oven #2 Quality Control Log

Type:	Baxter/Scientific Products (H6620-13A)
Serial #:	0292-0485
Asset #:	3333
Location:	Soils Lab
Calibration Range:	110°C ±5

Date	Temperature	Oven Setting	Initials
02-Sep-02			
03-Sep-02	115°	4.5	DJP
04-Sep-02	105°	4.5	DJP
05-Sep-02	115°	4.5	DJP
06-Sep-02	105°	4.5	DJP
07-Sep-02			
08-Sep-02			
09-Sep-02	112°	4.8	DJP
10-Sep-02	105°	4.8	DJP
11-Sep-02	115°	4.8	DJP
12-Sep-02	105°	4.8	DJP
13-Sep-02	106°	4.8	DJP
14-Sep-02			
15-Sep-02			
16-Sep-02	110°	4.7	MRD

Date	Temperature	Oven Setting	Initials
17-Sep-02	111°	4.7	DJP
18-Sep-02	115°	4.7	DJP
19-Sep-02	113°	4.7	DJP
20-Sep-02	114°	4.7	DJP
21-Sep-02			
22-Sep-02			
23-Sep-02	112°	4.7	MRD
24-Sep-02	113°	4.7	DJP
25-Sep-02	112	4.7	DJP
26-Sep-02	115°	4.7	DJP
27-Sep-02	115°	4.7	JTE
28-Sep-02			
29-Sep-02			
30-Sep-02	115°	4.7	DJP
01-Oct-02			

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Oven #1 Quality Control Log

Type:	Baxter/Scientific Products (H6620-13A)
Serial #:	1090-0313
Asset #:	N/A
Location:	Soils Lab
Calibration Range:	110°C ±5

Date	Temperature	Oven Setting	Initials
01-Oct-02	110°	4.7	DJP
02-Oct-02	105°	5.0	DJP
03-Oct-02	105°	5.0	DJP
04-Oct-02	115	5.0	DJP
07-Oct-02	106°	5.0	DJP
08-Oct-02	105°	5.0	DJP
09-Oct-02	105°	5.0	DJP
10-Oct-02	105°	5.0	DJP
11-Oct-02	107°	5.0	DJP
14-Oct-02	105°	4.8	DJP
15-Oct-02	105°	4.9	MSP
16-Oct-02			

Date	Temperature	Oven Setting	Initials
17-Oct-02			
18-Oct-02			
21-Oct-02			
22-Oct-02			
23-Oct-02			
24-Oct-02			
25-Oct-02			
28-Oct-02			
29-Oct-02			
30-Oct-02			
31-Oct-02			

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Oven #1 Quality Control Log

Type:	Baxter/Scientific Products (H6620-13A)
Serial #:	1090-0313
Asset #:	N/A
Location:	Soils Lab
Calibration Range:	110°C ±5

Date	Temperature	Oven Setting	Initials
01-Sep-02			
02-Sep-02			
03-Sep-02	114°	5.4	DJP
04-Sep-02	115°	5.1	DJP
05-Sep-02	110°	5.1	DJP
06-Sep-02	105°	5.1	DJP
07-Sep-02			
08-Sep-02			
09-Sep-02	110°	5.1	DJP
10-Sep-02	109°	5.1	DJP
11-Sep-02	108	5.1	DJP
12-Sep-02	107°	5.1	DJP
13-Sep-02	115°	5.1	DJP
14-Sep-02			
15-Sep-02			
16-Sep-02	114°	5.1	MRO

Date	Temperature	Oven Setting	Initials
17-Sep-02	110°	5.1	DJP
18-Sep-02	107°	5.1	DJP
19-Sep-02	113°	5.1	DJP
20-Sep-02	107°	5.1	DJP
21-Sep-02			
22-Sep-02			
23-Sep-02	107°	5.1	MRO
24-Sep-02	110°	5.1	DJP
25-Sep-02	114°	5.1	DJP
26-Sep-02	113°	5.1	DJP
27-Sep-02	115°	5.1	JTE
28-Sep-02			
29-Sep-02			
30-Sep-02	115	5.1	DJP
01-Oct-02			

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Quality Control Summary
Duplicate Analysis
Miscellaneous Wet Chemistry
SDG: NYP01

Sample Information	Duplicate Analysis							Matrix: SOIL				
Sample Number	Sample Code	Batch Number	Parameter	ME	Analysis Date	BKG Sample	BKG Results	DUP Sample	DUP Results	Units	RPD (%)	Control Limits % <=
3910761	NYPA1	02282820009	Moisture	OD	10/9/02	P905996	9.94	P905996	10.77	%	8	15
3910762	NYPA2											
3911514	LNR03											
3911515	LNR04											
3911516	RES05											
3911517	RES06											
3911518	RES07											
3911519	RES08											
3911520	NYP09											
3911521	RES12											

Comments: If the background and/or the duplicate result was less than the limit of quantitation, the RPD is not required.

ABBREVIATION KEY

CO = Colorimetric	MDL = Method Detection Limit
DI = Distillation	LOQ = Limit of Quantitation
G = Gravimetric	NA = Not Applicable
IR = Infrared Spectrophotometry	J = Estimated Value < LOQ
M = Meter	ME = Method
OD = Oven Dried	ND = Not Detected
TI = Titration	* = Out of Specification

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Lancaster Laboratories

Quality Control Summary
Laboratory Control Standard
Laboratory Control Standard Duplicate
Miscellaneous Wet Chemistry
SDG: NYP01

Sample Information: Laboratory Control Standards — Matrix: SOIL

Sample Number	Sample Code	Batch Number	Parameter	Analysis Date	TRUE LCS/LCSD Value	LCS Results	LCSD Results	Units	Acceptance Range	% RPD Results	% RPD Acceptance <=
3910761	NYPA1	02282820009	Moisture	10/9/02	89.5	89.47	NA	%	88.6 - 90.4	NA	NA
3910762	NYPA2										
3911514	LNR03										
3911515	LNR04										
3911516	RES05										
3911517	RES06										
3911518	RES07										
3911519	RES08										
3911520	NYP09										
3911521	RES12										

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Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Raw Data Logbook
Moisture/Total Residue/Volatile Residue/Total Fixed Residue
Analysis #111/521/522/1029
Analysis #1353

Added to LLENS @ 1725

Batch No. 022822 820 009 B

Date/Time: 10-9-02 Initials/Emp. #: JMS/1664 Temperature In: 103° Temperature Out: 105°

Balance ID #: 3636 Oven ID #: 7492 Std. Ref. (Book/Page): 035064 p.39 LOQ = 0.5% by wt.

Sample Number	Tare ID	Tare Weight (g)	Sample Weight (g)	Oven Dried Weight (g)	Furnace Ignited Weight (g)	Calc. Value (% by wt.) Moist.	Analysis # 521	Analysis # 522	Comments
3910761	18	45.8708	7.0906	51.3660	51.2323	22.5	77.5	1.89	Soft Clay 1029= 75.6 20A
3910762	19	47.5450	6.4623	52.0386	51.9044	30.5	69.5	2.08	1029= 67.5
3911514	15	48.3251	7.0655	53.9369	53.7795	20.6	79.4	2.23	Sandy Clay 1029= 77.2
3911515	K1	44.7928	6.3857	50.5469	50.1859	13.0	87.0	2.52	Course Sand 1029= 84.5
3911516	10	48.8210	6.3397	52.0693	51.8998	48.8	51.2	2.67	Silty Mud 1029= 48.6
3911517	16	45.9988	5.7465	48.7990	48.6456	51.3	48.7	2.67	1029= 46.1
3911518	17	45.8477	8.0231	49.2688	49.0824	57.4	42.6	2.32	1029= 40.3
3911519	7	48.3293	8.8778	51.9191	51.7232	59.6	40.4	2.21	1029= 38.2
3911520	9	47.8788	6.7308	50.6247	50.4590	59.2	40.8	2.46	1029= 38.3
3911521	A	38.8127	7.3798	41.6194	41.4531	62.0	38.0	2.25	1029= 35.8

Verified by: 20463 Date: 10/15/02

1113 Rev. 02/08/00

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BATTELLE MARINE SCIENCE LABORATORY
1529 West Sequim Bay Road
Sequim, Washington 98382-9099
360-681-3689

NYPA Niagara Power Project
Total Mercury in Sediment - EPA 1631B Mod.
(Samples Received 10/03/02)
Data is not blank corrected since average method blank was less than the current detection limit.

MSL Code	Sponsor ID	Collection Date	Percent Moisture	Analytical Batch ID	Total Hg [ug/g dw basis]
1899*1	NYPA_UNR_SED01	10/01/02	17.6	102102HGA1	0.265
1899*2	NYPA_UNR_SED02	10/01/02	34.5	102102HGA1	0.0136
1899*3a	NYPA_LNR_SED03	10/01/02	17.8	102102HGA1	NA
1899*3b	NYPA_LNR_SED03	10/01/02	14.5	102102HGA1	NA
1899*3c	NYPA_LNR_SED03	10/01/02	14.2	102102HGA1	NA
1899*3 Composited	NYPA_LNR_SED03	10/01/02	NA	102102HGA1	0.577
1899*4	NYPA_LNR_SED04	10/01/02	18.8	102102HGA1	0.0207
1899*5r1	NYPA_RES_SED05	10/02/02	50.0	102102HGA1	0.206
1899*5r2	NYPA_RES_SED05	10/02/02	50.0	102102HGA1	0.241
1899*6	NYPA_RES_SED06	10/02/02	52.0	102102HGA1	0.169
1899*7	NYPA_RES_SED07	10/02/02	58.8	102102HGA1	0.171
1899*8	NYPA_RES_SED08	10/02/02	61.4	102102HGA1	0.175
1899*9	NYPA_RES_SED09	10/02/02	58.7	102102HGA1	0.173
1899*10	NYPA_RES_SED12	10/02/02	60.6	102102HGA1	0.163
Average Method Blank				102102HGA1	0.000270 U
Current Detection Limit					0.000270

STANDARD REFERENCE MATERIAL

NIST 2704			102102HGA1	1.34
		Certified value		1.44
		Range		±0.07
		Percent Difference		7%
NIST 1944			102102HGA1	3.31
		Reference value		3.4
		Range		±0.5
		Percent Difference		3%

OPR SPIKE RESULTS

Amount Spiked			0.008
Average Method Blank		102102HGA1	0.000270 U
OPR 101402	Run 1	102102HGA1	0.00816
Amount Recovered			0.00816
Percent Recovery			102%
Amount Spiked			0.008
Average Method Blank		102102HGA1	0.000270 U
OPR 101402	Run 2	102102HGA1	0.00769
Amount Recovered			0.00769
Percent Recovery			96%

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TOTAL MERCURY DATA

PROJECT: NYPA Niagara Power
ANALYSIS: Total Hg
ANALYZED: 10/18/2002
ANALYTICAL RUN# 101802HGA1

ANALYST: Deuth
FILE #: 1899
Addendum #: Kit

ID	BATTELLE ID	BATCH DATE	PEAK SEQ#	DIGESTED VOLUME	TOTAL VOLUME	SAMPLE VOL ANALYZED ml	AREA	TOTAL Hg [Hg] ng/l	QA DATA	MDL [Hg]ng/l
	BLANK 101702		27899	96.775	97.525	60.00	11324	0.284		0.1118
	OPR101702run1		27900	100.646	101.446	44.16	132241	5.26	100.9%	0.1519
	OPR101702run2		27927	100.646	101.446	31.63	98086	5.42	104.1%	0.2121
SRM	1641d 101702		27904	0.025	102.902	0.500	103290	1474917	PD =7.2%	13.420
	Method Blank		27898	1.000	1.000	100.00	7419	0.100	mean =	0.0671
	Method Blank		27906	1.000	1.000	100.00	7989	0.110	0.102	0.0671
	Method Blank		27914	1.000	1.000	100.00	7079	0.0943		0.0671
1892*	26		27907	100.953	101.703	64.86	73660	1.97		0.1035
1892*	27		27908	100.825	101.575	65.37	62677	1.66		0.103
1892*	28 r-1		27909	94.447	95.197	65.38	71165	1.89		0.103
1892*	28 r-2		27910	99.320	100.070	70.60	78443	1.93	RPD = 2.3%	0.095
1892*	29		27911	98.859	99.609	59.57	45606	1.31		0.113
1892*	30		27912	101.844	102.594	54.35	63139	2.01		0.123
1892*	31		27917	100.627	101.377	64.74	51830	1.38		0.104
1892*	32		27918	99.476	100.226	71.47	85975	2.10		0.094
1769*	13		27919	93.448	94.198	68.86	165413	4.23		0.097
1769*	14		27922	96.941	97.691	68.44	13817	0.314		0.098
1769*	15 r-1		27923	99.378	100.128	19.56	78423	6.97		0.343
1769*	15 r-2		27924	96.548	97.298	21.43	87329	7.10	RPD = 1.9%	0.313
1769*	16		27925	104.508	105.258	76.12	9274	0.176		0.088
1899*	11		27926	97.053	97.803	63.69	15997	0.398		0.105
1892*	30 MS		27913	96.900	97.850	39.56	412799	18.5	101.6%	0.170
1892*	30 MSD		27915	100.964	101.914	48.34	482973	17.7	100.8%	0.139
1769*	13 MS		27920	98.089	99.039	36.07	421607	20.7	102.8%	0.1860
1769*	13 MSD		27921	101.369	102.319	28.36	326918	20.4	104.2%	0.2366

DATA ARE NOT BLANK CORRECTED.
MEAN MDL : 0.137
CERTIFIED VALUE FOR 1641d = 1590000±40000 ng/L

CALIBRATION DATA

FACTOR	BLANK
566840.0	1732

SPIKE DATA			1892*	1892*	1769*	1769*
Sample Number:	OPRrun1	OPRrun2	30 MS	30 MSD	13 MS	13 MSD
Amount Spiked:	4.93	4.93	16.25	15.60	16.05	15.54
Sample Only:	0.284	0.284	2.008	2.008	4.227	4.227
Sample + Spike:	5.26	5.42	18.5	17.7	20.7	20.4
Amount Recovered:	4.97	5.13	16.5	15.7	16.5	16.2
Percent Recovery:	100.9%	104.1%	101.6%	100.8%	102.8%	104.2%
RPD		3.20%		0.8%		1.3%

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PROJECT ID: Niagara Power
ANALYSIS: Total Hg
ANALYZED: 10/21/02
ANALYTICAL RUN#: 102102HGA

ANALYST: Lasorsa/Niewolny
FILE #: 1899
ADD#: kit

BATTELLE ID	ANALYTICAL DATE	PEAK SEQ#	Digestion Type	TOTAL VOLUME (ml)	TOTAL MASS (g)	SAMPLE VOL ANALYZED (ml)	AREA	UNCORR [Hg] µg/g	BLK CORR [Hg] µg/g	MDL (ng/g dry)	QA DATA
Blank 101402 r1	10/21/02	27943	AR	21.573	0.500	1.000	3572	0.000137	0.000137	0.000290	Blk Avg =
Blank 101402 r2	10/21/02	27944	AR	21.573	0.500	1.000	7629	0.000424	0.000424	0.000290	0.000141
Blank 101402 r3	10/21/02	27949	AR	21.573	0.500	1.000	2896	0.0000898	0.0000898	0.000290	AvgBlk<DL
OPR 101402 run 1	10/21/02	27945	AR	21.573	0.500	1.000	117372	0.00816	0.00774	0.000290	102.0%
OPR 101402 run 2	10/21/02	27968	AR	21.573	0.500	1.000	110663	0.00769	0.00727	0.000290	96.1%
NIST 2704 101402	10/21/02	27970	AR	21.573	0.271	0.100	1033425	1.34	1.34	0.005342	Rec =93.2%
NIST 1944 101402	10/21/02	27959	AR	21.573	0.399	0.025	936924	3.31	3.31	0.014512	Rec =97.2%
1899-1	10/21/02	27953	AR	21.573	0.513	0.100	386478	0.265	0.264	0.002822	
1899-2	10/21/02	27954	AR	21.573	0.521	0.100	21707	0.0136	0.0135	0.002778	
1899-3	10/21/02	27955	AR	21.573	0.513	0.100	840901	0.577	0.576	0.002822	
1899-4	10/21/02	27958	AR	21.573	0.502	0.100	31154	0.0207	0.0203	0.002884	
1899-5 r1	10/21/02	27961	AR	21.573	0.523	0.100	306609	0.206	0.205	0.002768	RPD = 15.7%
1899-5 r2	10/21/02	27962	AR	21.573	0.547	0.100	374950	0.241	0.240	0.002646	
1899-6	10/21/02	27963	AR	21.573	0.496	0.100	238843	0.169	0.168	0.002918	
1899-7	10/21/02	27964	AR	21.573	0.519	0.100	253958	0.171	0.171	0.002789	
1899-8	10/21/02	27965	AR	21.573	0.509	0.100	253869	0.175	0.174	0.002844	
1899-9	10/21/02	27966	AR	21.573	0.524	0.100	257988	0.173	0.172	0.002762	
1899-10	10/21/02	27967	AR	21.573	0.515	0.100	240408	0.163	0.163	0.002811	
Matrix Spike Data											
1899-3 MS	10/21/02	27956	AR	21.573	0.511	0.025	841039	2.32	2.32	0.0113	88.9%
1899-3 MSD	10/21/02	27957	AR	21.573	0.517	0.025	881947	2.40	2.40	0.0112	94.3%

Average sample MDL= 0.00280
All results reported on dry wt basis

NIST2704 is certified at 1.44 µg/g
NIST1944 is certified at 3.4 µg/g

CALIBRATION DATA

FACTOR	BLANK
611847.5	1623

SPIKE DATA

Sample Number:	OPR 101402 run 1	OPR 101402 run 2	1899-3 MS	1899-3 MSD
Amount Spiked:	0.00800	0.00800	1.96	1.93
Sample Only:	0.000000	0.000000	0.577	0.577
Sample + Spike:	0.00816	0.00769	2.32	2.40
Amount Recovered:	0.00816	0.00769	1.74	1.82
Percent Recovery:	102.0%	96.1%	88.9%	94.3%
RPD:				5.9%

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Type: ER (Total) Methyl A Methyl B

Analyst: Deutch

Project Names: CHPPM - Jefferson + PCA

File Names: 1892 + 1769

Date: 10/18/02

Peak #	Sample ID	Bubbler	Sample Volume	Units	[Hg]	Comments
27916	CCV Std#217	1 - Pe	25 ul	142412	0.248/0.25	99.3%
27917	1892 #31	2 - SD	144.06 79.32 64.74	51830	1.365	
27918	#32	3 - Tr	142.47 71.00 71.47	85975	2.079	
27919	1769 #13	1 - Ed	133.17 64.31 68.86	165413	4.193	
27920	#13MS	2 - SD	139.14 103.07 36.07	421607	20.536-4.193=16.342/16.054	101.8%
27921	#13MSD	3 RT	143.63 115.27 28.36	326918	20.229-4.193=16.036/15.540	103.2%
27922	#14	1 - Pe	140.76 72.32 68.44	13817	0.312	
27923	#15r-1	2 - SD	138.23 134.57 3.66	16309	7.026	mean = 6.938 ±0.088 RPD=2.5%
27924	#15r-2	3 - Tr	134.67 132.12 2.55	11633	6.850	
27925	#16	1 - Ed	147.87 71.75 76.12	9274	0.175	
27926	1899 #11	2 SD	142.07 78.38 63.69	15997	0.395	
27927	OPR 101702rm2	3 RT	100.23 68.60 31.63	98086	5.374-0.282=5.092/4.929	103.3%
27928	Bubbler Blk	1 - Pe	—	1904		
27929	CCV Std#217	2 SD	25 ul	142012	0.247/0.25	99.0%
27930	#15r-1	3 - Tr	134.49 114.53 19.56	78423	6.917	mean = 6.982 ±0.0650 RPD = 1.9%
27931	#15r-2	1 - Ed	132.16 110.73 21.43	87329	7.047	
27932	CCV Std#217	2 SD	25 ul	143660	0.250/0.25	100.2%

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PROJECT ID: Niagara Power Project

SPIKE: ~~LN 10/14/02 210 1641d 1.54 µg/mL~~ std 323 Stock Std 10 µg/mL

BALANCE ID: 5

DIGESTION DATE: 10/14/02

SPIKE VOLUME: 100 µL

ACID TYPE/VOLUME: Aqua Regia 8mL HCl : 2mL H

SEQUENCE NUMBER	SAMPLE ID	SAMPLE WEIGHT GRAMS ~~(wet)~~ dry	[SPIKE] µg/g	COMMENTS
1	Blank 10/14/02 rep 1	0.5 LN 10/14/02		
2	rep 2			
3	rep 3			
4	OPR 101402	0.508	8 µg/g	80 µL of std 1354 [50 µg/L]
5	NIST 2704	0.271		
6	NIST 1944	0.~~40~~399 LN 10/14/02		3.4 ± 0.5
7	1899 * 1	0.513		1.44 ± 0.07
8	2	0.521		
9	3 composited a, b, + c	0.513		
10	3 ~~a~~ ms	0.511		
11	LN 10/14/02 3 ~~a~~ msD	0.517		
12	~~3 b~~			
13	~~3 c~~			
14	4	0.502		
15	5 r1	0.523		
16	5 r2	0.547		
17	6	0.496		
18	7	0.519		
19	8	0.509		
20	9	0.524		
21	10	0.515		
22	LN 10/14/02 ~~10 ms~~			
23	~~10 msD~~			
24				
25				
26				
27				
28				
29				
30				
31				
32				
33				

Analyst: Niewolny

TOTAL VOLUME: 21.573 ~~22.028~~ mL LN 10/14/02

SAMPLES PROCESSED WET DRY

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Total Mercury Digestion Worksheet

PROJECT ID: 1892, 1769, 1899 2
DIGESTION DATE: 10/17/02
ANALYST: Beauty
BALANCE ID: #5

	MS/MSD	OPR
SPIKING STANDARD NUMBER:	Std #214	Std #217
SPIKE CONCENTRATION:	7.95 ng/ml	10.0 ng/ml
SPIKE VOLUME:	200 µl	50 µl
SRM/LCS STANDARD:	1641d # 270	25 µl 1.59 µg/ml

BrCl Volume: 500 µl

NH2OH-HCl Volume: 250 µl

	SAMPLE ID	BOTTLE WT grams	BOTTLE+SAMPLE grams	SAMPLE WT grams	SAMPLE VOL ml	TOTAL VOL ml	[SPIKE] ng/l
1	Method Blank	Method Blank is made up of 5 aliquots each of the BrCl and NH2OH-HCl listed above					
2	OPR Blank 101702				96.775		
3	OPR 101702				100.646	101.446	4.929
4	1641d 101702	40.35	142.477		102.127	102.902	386.290
5	1892 # 26				100.953		
6	# 27				100.825		
7	# 28 r-1				94.447		
8	# 28 r-2				99.320		
9	# 29				98.859		
10	# 30				101.844		
11	# 30 MS				96.900	97.850	16.249
12	# 30 MSD				100.964	101.914	15.601
13	# 31				100.627		
14	# 32				99.476		
15	1769 # 13				93.448		
16	# 13 MS				98.089	99.039	16.054
17	# 13 MSD				101.369	102.319	15.540
18	# 14				96.941		
19	# 15 r-1	37.076	136.454		99.378		
20	# 15 r-2	36.030	132.578		96.548		
	# 11				104.508		

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BATTELLE MARINE SCIENCE LABORATORY
1529 West Sequim Bay Road
Sequim, Washington 98382-9099
360-681-3689

NYPA Niagara Power Project
Total Mercury in Sediment - EPA 1631B Mod.
(Samples Received 10/03/02)
Data is not blank corrected since average method blank was less than the current detection limit.

MSL Code	Sponsor ID	Collection Date	Percent Moisture	Analytical Batch ID	Total Hg [ug/g dw basis]
MATRIX SPIKE RESULTS					
Amount Spiked					1.96
1899*3 Composited	NYPA_LNR_SED03	10/01/02	NA	102102HGA1	0.577
1899*3 Composited MS					2.32
Amount Recovered					1.74
Percent Recovery					89%
Amount Spiked					1.93
1899*3 Composited	NYPA_LNR_SED03	10/01/02	NA	102102HGA1	0.577
1899*3 Composited MSD					2.40
Amount Recovered					1.82
Percent Recovery					94%
		Relative percent difference			**6%**
REPLICATE ANALYSIS RESULTS					
1899*5r1	NYPA_RES_SED05	10/02/02	50.0	102102HGA1	0.206
1899*5r2	NYPA_RES_SED05	10/02/02	50.0	102102HGA1	0.241
		Relative percent difference			**16%**

NA Not applicable or analyzed.
U Not detected at or above DL shown.

APPROVALS:

Project Manager	Date	QA/QC Reviewer	Date
[signature]	10/28/02	[signature]	10/29/02

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BATTELLE MARINE SCIENCE LABORATORY
1529 West Sequim Bay Road
Sequim, Washington 98382-9099
360-681-3689

NYPA Niagara Power Project
Rinse Blank Data
(Samples Received 10/04/02)
Data is not blank corrected since average method blank was less than the current detection limit.

MSL Code	Sponsor ID	Collection Date	Analytical Batch ID	Total Hg (ng/L)
1899*11	NYPA-ERB-01	10/03/02	101802HGA1	0.398
Average Method Blank			101802HGA1	0.160 U
Current Detection Limit				0.160
STANDARD REFERENCE MATERIAL				
1641d			101802HGA1	1470000
		Certified value		1590000
		Range		±40000
		Percent Difference		**8%**
OPR SPIKE RESULTS				
Amount Spiked				4.93
OPR Blank			101802HGA1	0.284
OPR Blank Spike	Run 1		101802HGA1	5.26
Amount Recovered				4.98
Percent Recovery				101%
Amount Spiked				4.93
OPR Blank			101802HGA1	0.284
OPR Blank Spike	Run 2		101802HGA1	5.42
Amount Recovered				5.14
Percent Recovery				104%

U Not detected at or above DL shown.

APPROVALS:

Project Manager 10/28/02 Date

QA/QC Reviewer 10/28/02 Date

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Mercury Calibration File

Project ID: CHPPM Mefferson Proving Ground & Packaging Cor. Of America

Date: 18-Oct-02

Analyst: Deuth

File ID: 1892 & 1769

	Units	pg Hg
Bub Blk 1	2286	4.03
Bub Blk 2	1565	2.76
Bub Blk 3	1345	2.37
Bub Blk Ave	1732	3.06
	Std Dev	0.87

Standard A Used: 217 [Hg] (ng/ml): 10

Standard B Used: 218 [Hg] (ng/ml): 0.1

Standard Volume (µl)	Hg ng	Area	Blank Corrected	Response Factor	Predicted Area	% Deviation
0	0	1732	0		0	
250	0.0250	16390	14658	586320	15903	3.4
500	0.0500	29781	28049	560980	30074	-1.0
10	0.100	59660	57928	579280	58416	2.2
25	0.250	136794	135062	540248	143442	-4.7
50	0.500	289502	287770	575540	285152	1.5
100	1.00	560404	558672	558672	568572	-1.4

CF_m 566840.0

$STD_{(CFm)}$ 16841.0

RSD 3.0%

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Mercury Calibration File

Project ID: Niagara Power

Date: 21-Oct-02

Analyst: Lasorsa/Niewolny

File ID: 1899

	Units	pg Hg
Bub Blk 1	2002	3.27
Bub Blk 2	1261	2.06
Bub Blk 3	1606	2.62
Bub Blk Ave	1623	2.65

Standard A Used: 217 [Hg] (ng/ml): 10

Standard B Used: 218 [Hg] (ng/ml): 0.1

Standard Volume (µl)	Hg ng	Area	Blank Corrected	Response Factor	Predicted Area	% Deviation
0	0	1623	0		0	
250	0.025	17344	15721	628840	16919	2.78
500	0.05	32768	31145	622900	32215	1.81
10	0.1	62290	60667	606670	62808	-0.85
50	0.5	309547	307924	615848	307547	0.65
100	1.0	601407	599784	599784	613471	-1.97
200	2.0	1195709	1194086	597043	1225318	-2.42

CF_m 611847.5

$STD_{(CFm)}$ 12793.9

RSD 2.1%

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Mercury Data Sheet

Type: ER (Total) Methyl A Methyl B

Date: 10/21/02 ✓

Analyst: L350130

Project Names: NYPA Niagara

CF#s: 1899

Calibration Factor: 611847.5

Y-intercept OR Bubbler Blank: 1623

Calibration Type: 2

R-Squared OR RSD: 2.1%

Matrix Type: Water (Sediment) Tissue

Peak #	Sample ID	Bubbler	Sample Volume	Units	[Hg]	Comments
27937	Std # 217	1 E	10µl	62290		
38	"	2 L	50µl	309547		
39	"	3 R	100µl	601407		
40	"	1 P	200µl	1195709		
41	Std #218	2 S	250µl	17344		
42	"	3 T	500µl	32768		
43	Blank r1	1-E	1ml	3572		
44	r2	2-L	1ml	7629		
45	OPR run1	3-R	1ml	117372		
46	Bubbler Blank	1-P	–	2002		
47	"	2-S	–	1261		
48	"	3-T	–	1606		
49	Blank r3	1-E	1000µl	2896		
50	ICV # 1347	2-L	25µl	186585	0.306/0.313	96.6% ✓
51	NIST 2704	3-R	100µl	992738		
52	NIST 1944	1-P	"	3641577	off scale - redo @ 25µl	
53	1899 #1	2-S	"	386478		
54	#2	3-T	"	21707		
55	#3	1 E	100µl	840901		
56	#3MS	2 L	25µl	841039		
57	#3MSD	3 R	25µl	881947		
58	#4	1-P	100µl	31154		
59	NIST 1944	2-S	25µl	936924		
60	CCV # 217	3-T	50µl	323613	0.526/0.500	105.3% ✓

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Type: ER (Total) Methyl A Methyl B

Page 2

Analyst: Lasorsa

File Names: 1899

Project Names: Niagara Power

Date: 10/21/01

Peak #	Sample ID	Bubbler	Sample Volume	Units	[Hg]	Comments
2761	5 r1	1 E	100µl	306609		
62	5 r2	2 L		374950		
63	6	3 R		238843		
64	7	1 P		253958		
65	8	2 S		253869		
66	9	3 T		257988		
67	10	1 E		240408		
68	OPR run2	2 L	1000µl	110663		
69	Bubbler Blank ~~CCV #217~~	3 R	~~50µl~~	5820	9.5pg	
70	NIST 2704	1 P	100µl	1033425		
71	CCV #217	2 S	10µl	63007	0.1003 / 0.1	100.3%
72	CCV #217	3 T	50µl	307983	0.5007 / 0.5	100.1%

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Percent Dry Weight Calculations

Project: Niagara Power Project
Central File #: 1899
Analyst: Niewolny

Date: 22-Oct-02
Balance: 5
Matrix: sediment

Battelle Sample ID	Tare Weight (g)	Tare + Wet Weight (g)	Tare+Dry Weight (g)	Wet Weight (g)	Dry Weight (g)	% Dry Weight	% Wet Weight
1899*1	30.371	293.282	247.014	262.911	216.643	82.40	17.60
1899*2	30.354	197.741	140.010	167.387	109.656	65.51	34.49
1899*3a	30.689	261.256	220.339	230.567	189.650	82.25	17.75
1899*3b	30.872	238.873	208.765	208.001	177.893	85.53	14.47
1899*3c	29.217	245.045	214.343	215.828	185.126	85.77	14.23
1899*4	30.393	268.484	223.828	238.091	193.435	81.24	18.76
1899*5	30.015	198.576	114.259	168.561	84.244	49.98	50.02
1899*6	30.358	225.900	124.278	195.542	93.920	48.03	51.97
1899*7	29.694	211.705	104.744	182.011	75.050	41.23	58.77
1899*8	30.864	210.160	100.103	179.296	69.239	38.62	61.38
1899*9	30.364	216.970	107.381	186.606	77.017	41.27	58.73
1899*10	30.193	209.900	100.979	179.707	70.786	39.39	60.61

QA review DSC 10/28/02

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WET CHEMISTRY

Method Blank Report Summary

Lab Name: STL BURLINGTON

Contract:

SDG No.: 90131

Lab Code: STLVT

Case No.: 22022

Matrix: SOIL

Client: STLOHN

% Solids:

Lab Sample ID	Method	Parameter	Conc.	Units	Qual.	DF	RL	Analytical Run Date	Analytical Run Time	Analytical Batch
BLKLK1011A	IN847	TOC by Lloyd Kahn	100	mg/Kg	U	1.0	100	10/11/02	14:00	BLKLK1011A
BLKLK1016A	IN847	TOC by Lloyd Kahn	100	mg/Kg	U	1.0	100	10/16/02	16:50	BLKLK1016A
BLKLK1017A	IN847	TOC by Lloyd Kahn	100	mg/Kg	U	1.0	100	10/17/02	14:45	BLKLK1017A
BLKTO1009A	415.1	Organic Carbon, Total	1.0	mg/L	U	1	1.0	10/09/02	11:58	BLKTO1009A

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WET CHEMISTRY

Matrix Spike Sample Report Summary

Client Sample No.

NYPA-LNR-SED03MS

Lab Name: STL BURLINGTON

Lab Code: STLVT

Matrix: SOLID

% Solids: 83.9

Contract:

Case No.: 22022

Client: STLOHN

SDG No.: 90131

Lab Sample ID: 503803MS

Date Received: 10/05/02

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	Matrix Spike Result Conc.	Qual.	Sample Result Conc.	Qual.	Spike Added	% Recovery*
IN623	Solids, Percent	10/15/02	19:35	N/A	%	83.9		83.9			
IN847	TOC by Lloyd Kahn	10/16/02	16:50	BLKLK1016A	mg/Kg	64400		11800		62800	83.8

*Control Limit for Percent Recovery is 75-125%, unless otherwise specified.

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WET CHEMISTRY

Duplicate Sample Report Summary

Client Sample No.
NYPA-LNR-SED03REP

Lab Name: STL BURLINGTON
Lab Code: STLVT
Matrix: SOLID
% Solids: 83.9

Contract:
Case No.: 22022
Client: STLOHN

SDG No.: 90131
Lab Sample ID: 503803DP
Date Received: 10/05/02

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	Sample Result Conc.	Qual.	Duplicate Sample Result Conc.	Qual.	RPD*
IN623	Solids, Percent	10/16/02	19:35	N/A	%	83.9		86.6		3
IN847	TOC by Lloyd Kahn	10/16/02	16:50	BLKLK1016A	mg/Kg	11800		19600		50

RPD > 40% flag all pos "J" All SL SH Dilight - 502

*Control Limit for RPD is +/- 20%, unless otherwise specified.

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WET CHEMISTRY

Laboratory Control Sample Report Summary

Lab Name: STL BURLINGTON

Contract:

SDG No.: 90131

Lab Code: STLVT

Case No.: 22022

Matrix: SOIL

Client: STLOHN

% Solids:

Lab Sample ID	Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	LCS Conc.	True Value	% Recovery*
LCSLK1011A	IN847	TOC by Lloyd Kahn	10/11/02	14:00	BLKLK1011A	mg/Kg	8010	8800.0	91.1
LCSLK1016A	IN847	TOC by Lloyd Kahn	10/16/02	16:50	BLKLK1016A	mg/Kg	8890	8800.0	101.0
LCSLK1017A	IN847	TOC by Lloyd Kahn	10/17/02	14:45	BLKLK1017A	mg/Kg	8830	8800.0	100.3
LCSTO1009A	415.1	Organic Carbon, Total	10/09/02	11:58	BLKTO1009A	mg/L	32.4	31.2	103.8

** Control Limit for Percent Recovery is 80-120%, unless otherwise specified.*

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WET CHEMISTRY

Laboratory Control Sample Duplicate Report Summary

Lab Name: STL BURLINGTON

Contract:

SDG No.: 90131

Lab Code: STLVT

Case No.: 22022

Matrix: SOIL

Client: STLOHN

% Solids:

Lab Sample ID	Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	LCSD Conc.	True Value	% Recovery*	RPD**
LCSDLK1011A	IN847	TOC by Lloyd Kahn	10/11/02	14:00	BLKLK1011A	mg/Kg	8610	8800.0	97.9	7
LCSDTO1009A	415.1	Organic Carbon, Total	10/09/02	11:58	BLKTO1009A	mg/L	30.6	31.2	98.1	6

** Control Limit for Percent Recovery is 80-120%, unless otherwise specified.*
*** Control Limit for RPD is +/- 20%, unless otherwise specified.*

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Calibration Curve 091102

General Information

Organization: STL Burlington
User: wet lab
Filename: C:\TOCCNTR\DATA\091102.CAL

Instrument Conditions

Instrument Attachments: TOC-5000 + ASI 5000
TC-Cat Type: Normal sense TC catalyst
Syringe Size: 500 µl

Calibration Curves

Filename: 091102.cal
Title: Calibration Curve 091102
Calculation method: Lin. regression without zero shift
Catalyst: Normal sense TC catalyst

Analysis	No. of Washes	Unit	Range	Inj.Vol
NPOC	4	ppm	1	36

Sample Name	Sample ID	Vial	Conc.	No. of Inj.	Max No. of Inj.	Mean Area	SD	CV
STD 1	0	S	0.000	2	3	443	121	27.5%
STD 2	1	S	1.000	2	3	1823	5	3.14%
STD 3	3	S	3.000	2	3	4124	161	3.93%
STD 4	5	S	5.000	2	3	6431	148	2.31%
STD 5	10	S	10.00	2	3	13024	368	2.83%
STD 6	15	S	15.00	2	3	17746	776	4.38%

Slope: 1169.9
Intercept: 635.40
R^2: 0.996921

r: 0.998459313

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Total Organic Carbon 415.1/9060

Analyst: S

Date: 10/9/02

Time: 1158

10 % H_3PO_4 Lot #: T0070102Ø1

2N HCl Lot #: T0110101Ø1

Curve/MS Lot #: T0071102Ø1

ICV/CCV Lot #: T0091302Ø1

ICV/CCV TV: 31.2 mg/L

Run #	Sample ID	Dilution	Comments	Result (mg/L)
1	ICV	x5		32.4 (104% rec)
2	ICB			<1.0
3	ICVD	x5		30.6 (98% rec)
4	LLS		TV: 2.0 mg/L	2.0 (100% rec)
5	501549	x20		172
6	504042			1.2
7	504044			1.6
8	503811			3.4
9	503954			8.9
10	503955			4.0
11	503111			<1.0
12	503112			10.5
13	CCV	x5		32.3 (104% rec)
14	CCB			<1.0
15	503113	—	reanalyze @ 2x	—
16	503114	—	reanalyze @ 2x	—
17	503115			3.6
18	503116			1.6
19	503117			5.2
20	503118			6.8
21	503119	1/2		1.1
22	503120			1.2
23	503121			12.2
24	503122			4.2
25	CCV	x5		31.3 (100% rec)
26	CCB			<1.0

Instrument ID
Analyzed By S Date 10/9/02
Reviewed By S Date 10/9/02
QC Review By KLP Date 10/10/02
QC use: Cal #___ Prep #___ Inst #___

0034

MS Spiked By: _____ Witnessed By: _____

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100902A

Samples

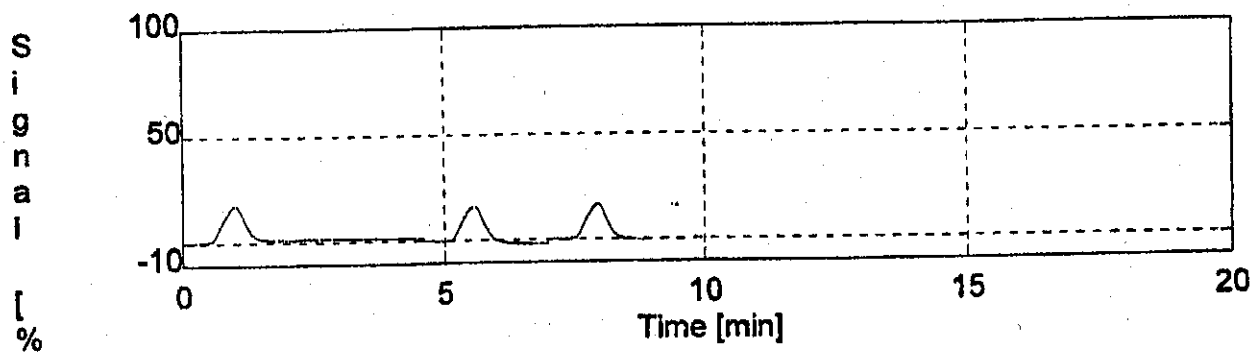
Sample Name: ICV
Sample ID: ERA 99111
Method: icv.met
Cal Curve: 1: 091102.CAL

Type	Analysis	Dilution	Sparge Time	Date/Time
Control	NPOC	5.000	3	10/09/2002 11:58:27

Mean Area	Conc	Result	No. Of Washes	SD	CV
8225	32.44 ppm		4	121	1.48%

No.	Range	Inj.Vol.	Area	Conc	Excl.	Cal Curve
1	1	36	11004	44.313	E	091102.CAL
2	1	36	8311	32.804		091102.CAL
3	1	36	8139	32.069		091102.CAL

Peak Profile



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100902A

Samples

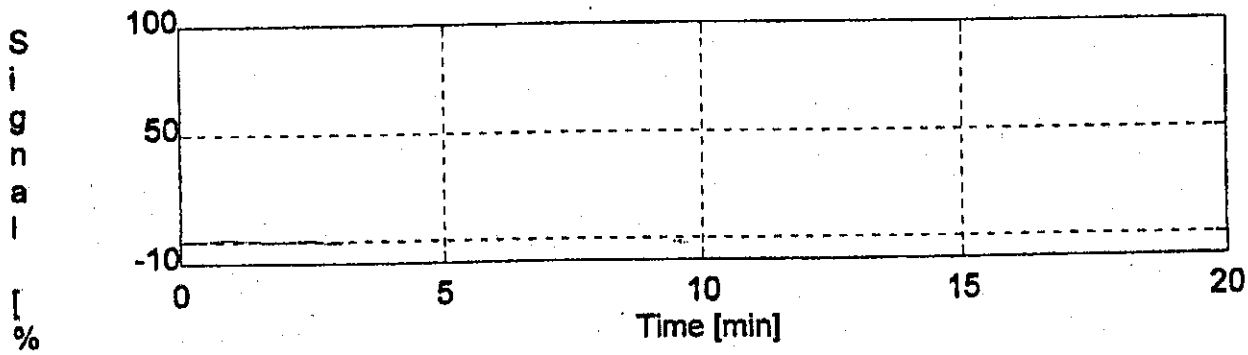
Sample Name: ICB
Sample ID:
Method: icb.met
Cal Curve: 1: 091102.CAL

Type	Analysis	Dilution	Sparge Time	Date/Time
Control	NPOC	1.000	3	10/09/2002 12:04:46

Mean Area	Conc	Result	No. Of Washes	SD	CV
404	-0.1974 ppm		4	7	1.92%

No.	Range	Inj.Vol.	Area	Conc	Excl.	Cal Curve
1	1	36	410	-0.1926		091102.CAL
2	1	36	399	-0.2020		091102.CAL

Peak Profile



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100902A

Samples

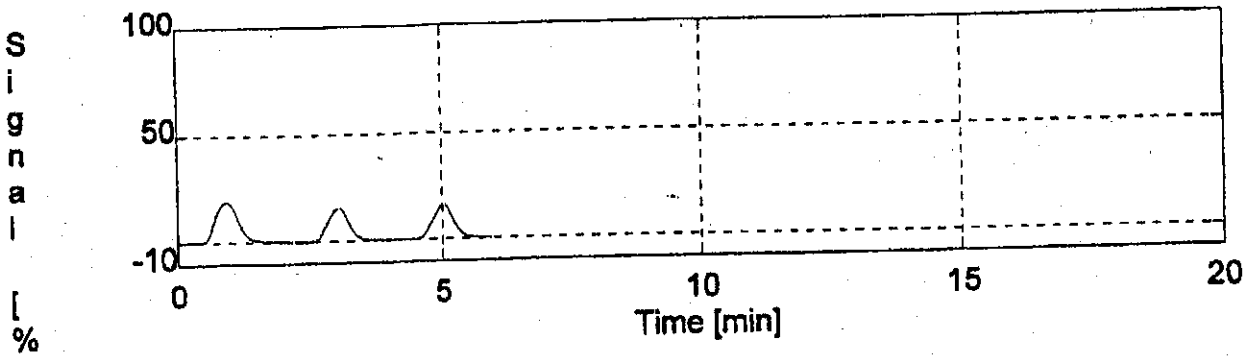
Sample Name: ICV2
Sample ID: ERA 99111
Method: icv2.met
Cal Curve: 1: 091102.CAL

Type	Analysis	Dilution	Sparge Time	Date/Time
Control	NPOC	5.000	3	10/09/2002 12:14:47

Mean Area	Conc	Result	No. Of Washes	SD	CV
7802	30.63 ppm		4	3	0.498%

No.	Range	Inj.Vol.	Area	Conc	Excl.	Cal Curve
1	1	36	10293	41.275	E	091102.CAL
2	1	36	7830	30.748		091102.CAL
3	1	36	7775	30.513		091102.CAL

Peak Profile



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100902A

Samples

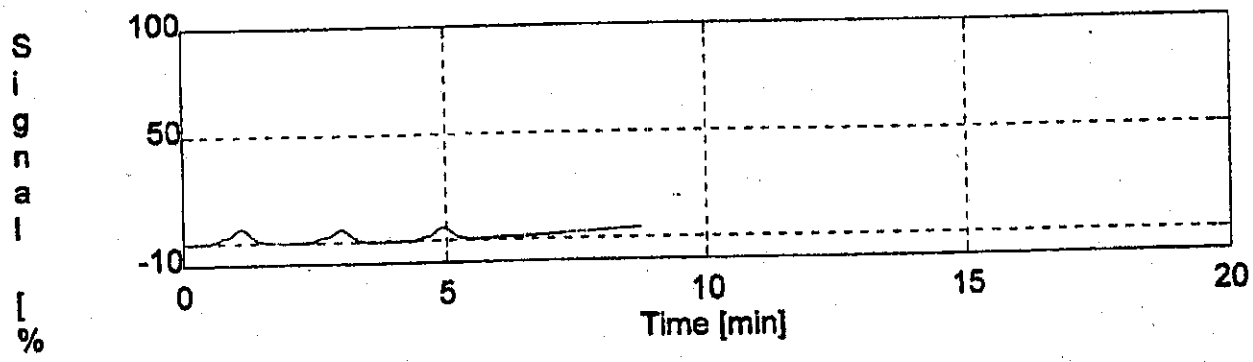
Sample Name: LLS
Sample ID: LLS
Method: lls.met
Cal Curve: 1: 091102.cal

Type	Analysis	Dilution	Sparge Time	Date/Time
Control	NPOC	1.000	3	10/09/2002 12:27:37

Mean Area	Conc	Result	No. Of Washes	SD	CV
2957	1.984 ppm		4	264	8.94%

No.	Range	Inj.Vol.	Area	Conc	Excl.	Cal Curve
1	1	36	3144	2.1443		091102.cal
2	1	36	2770	1.8246		091102.cal
3	1	36	0	-0.5431	E	091102.cal

Peak Profile



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100902A

Samples

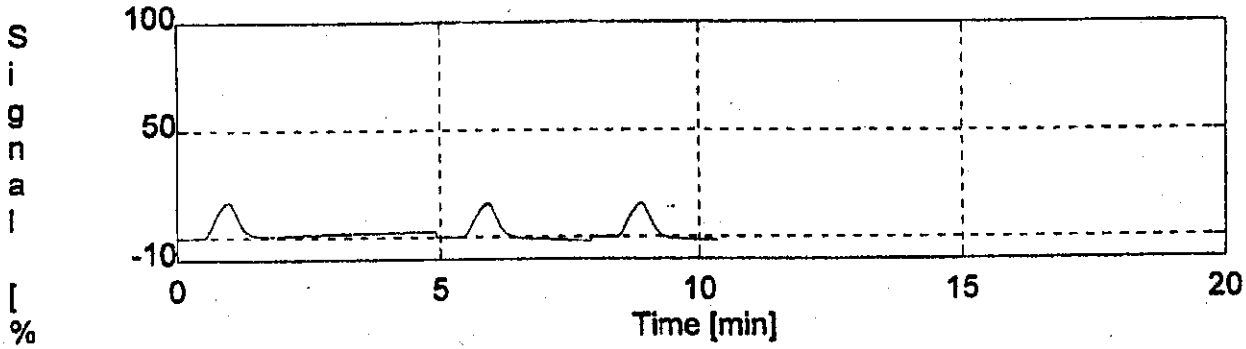
Sample Name: CCV
Sample ID: ERA 99111
Method: ccv.met
Cal Curve: 1: 091102.CAL

Type	Analysis	Dilution	Sparge Time	Date/Time
Control	NPOC	5.000	3	10/09/2002 14:12:16

Mean Area	Conc	Result	No. Of Washes	SD	CV
8201	32.33 ppm		4	138	1.69%

No.	Range	Inj.Vol.	Area	Conc	Excl.	Cal Curve
1	1	36	8299	32.753		091102.CAL
2	1	36	8781	34.813	E	091102.CAL
3	1	36	8103	31.915		091102.CAL

Peak Profile



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100902A

Samples

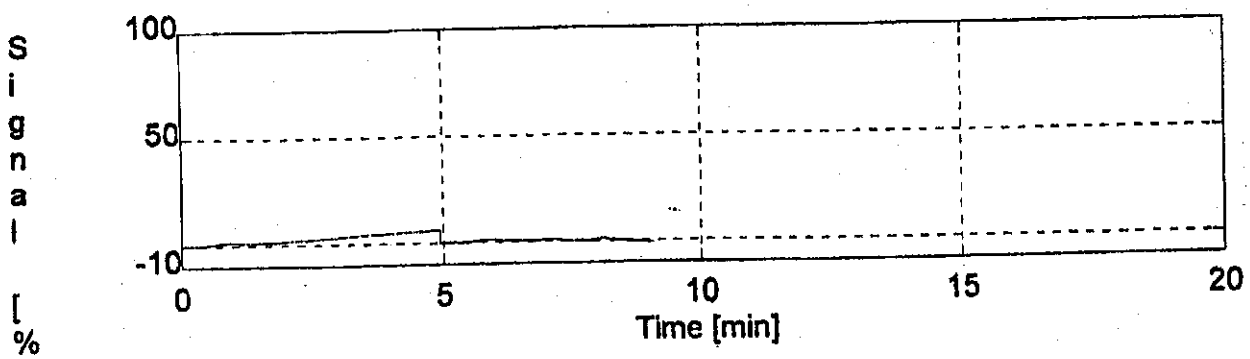
Sample Name: CCB
Sample ID:
Method: ccb.met
Cal Curve: 1: 091102.CAL

Type	Analysis	Dilution	Sparge Time	Date/Time
Control	NPOC	1.000	3	10/09/2002 14:25:24

Mean Area	Conc	Result	No. Of Washes	SD	CV
541	-0.08069 ppm		4	5	10.5%

No.	Range	Inj.Vol.	Area	Conc	Excl.	Cal Curve
1	1	36	0	-0.5431	E	091102.CAL
2	1	36	501	-0.1148		091102.CAL
3	1	36	581	-0.046496		091102.CAL

Peak Profile



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100902A

Samples

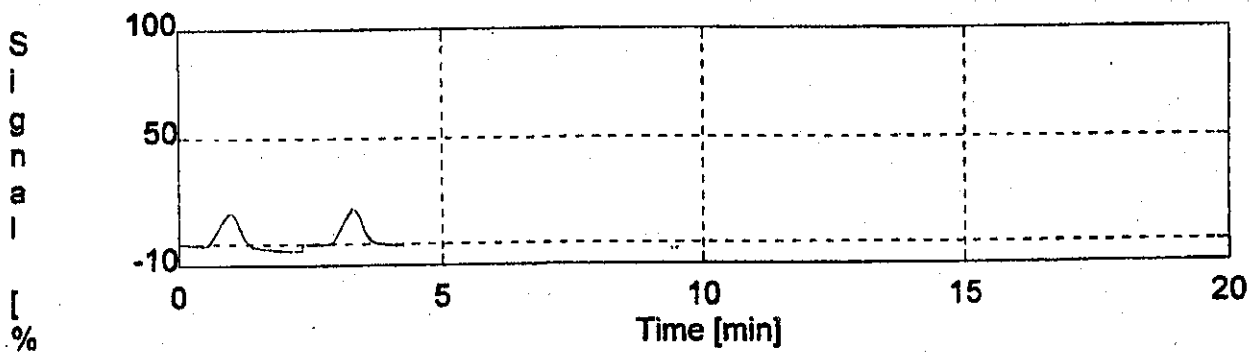
Sample Name: CCV
Sample ID: ERA 99111
Method: ccv.met
Cal Curve: 1: 091102.CAL

Type	Analysis	Dilution	Sparge Time	Date/Time
Control	NPOC	5.000	3	10/09/2002 16:39:02

Mean Area	Conc	Result	No. Of Washes	SD	CV
7962	31.31 ppm		4	106	1.34%

No.	Range	Inj.Vol.	Area	Conc	Excl.	Cal Curve
1	1	36	7887	30.992		091102.CAL
2	1	36	8038	31.637		091102.CAL

Peak Profile



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100902A

Samples

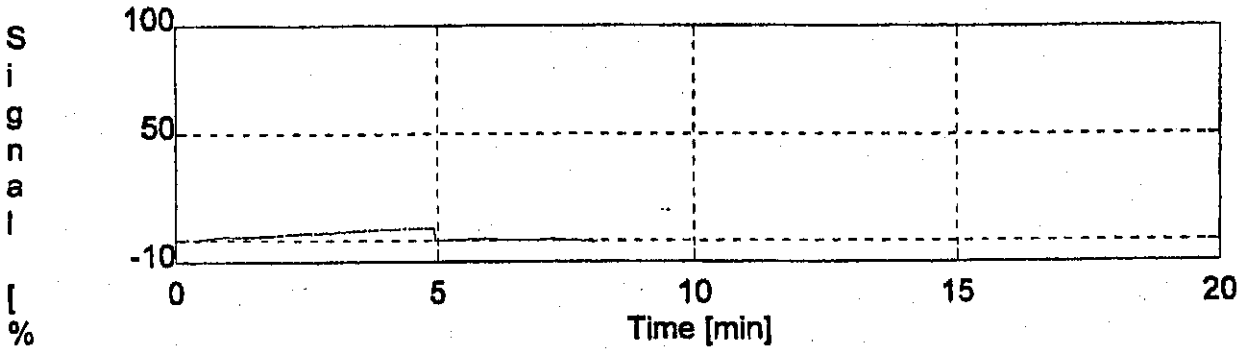
Sample Name: CCB
Sample ID:
Method: ccb.met
Cal Curve: 1: 091102.CAL

Type	Analysis	Dilution	Sparge Time	Date/Time
Control	NPOC	1.000	3	10/09/2002 16:51:11

Mean Area	Conc	Result	No. Of Washes	SD	CV
347	-0.2461 ppm		4	3	9.97%

No.	Range	Inj.Vol.	Area	Conc	Excl.	Cal Curve
1	1	36	1173	0.45852	E	091102.CAL
2	1	36	372	-0.2251		091102.CAL
3	1	36	323	-0.2670		091102.CAL

Peak Profile



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Total Organic Carbon by Lloyd Kahn - Instrument EA1108

client: _____ sdg _____

Analyst: JMD/DI File Name: ~~G1010B~~ C1011 Sulfanilamide Tag #: WC-02-005-17

Prep Date: 10/10/02 Prep Time: 1830 Acetanilide Tag #: 01-2392

Analysis Date: 10/10/02 Analysis Time: 1400 LCS Tag #: LEC01004

Curve Run: ~~0.072, 0.441, 0.959, 1.685, 2.457~~ Matrix Spike Tag #: —

Phosphoric Acid Lot #: T01010021 HCl Tag #: —

DI 10/11/02

).097
).439
).939
.711
.515

#	Sample ID	Weight (mg)
	Acetanilide	0.662
	Acetanilide	0.483
	Blank	30
	Blank	30
	LCS1	9.501
	LCS2	10.010
	LCS3	9.887
	LCS4	8.871
	LCSD1	10.055
	LCSD2	8.004
	LCSD3	9.054
	LCSD4	7.916
	503 801	7.026
	503 801	~~6.2~~ 6.187
	Acetanilide	0.773
	Acetanilide	0.527
	Blank	30
	Blank	30
	503 801	5.528
	802	7.549
	802	4.265
	802	5.307
	803	6.279
	803	6.379
	803	8.100
	804	4.943
	804	4.463
	804	4.189
	Acetanilide	0.638
	Acetanilide	0.640

#	Sample ID	Weight (mg)
	Blank	30
	Blank	30
	503805	4.885
	805	6.360
	805	5.560
	806	6.363
	806	7.099
	806	4.100
	807	4.622
	807	5.259
	807	7.682
	808	5.245
	Acetanilide	0.744
	Acetanilide	0.759
	Blank	30
	Blank	30
	808	4.786
	808	4.716
	809	6.537
	809	6.977
	809	7.302
	810	5.306
	810	5.657
	810	4.144
	~~811~~	
	Acetanilide	0.506
	Acetanilide	0.665
	Blank	30
	Blank	30

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Group No : 1 Element →

Sample Name	Nitrogen	Carbon	Hydrogen	Sulphur
ByPass	0	0	0	0
BLANK	0	0	0	0
BLANK	0	0	0	0
SULPHANILAMIDE	0	41.84000015	0	0
SULPHANILAMIDE	0	41.84000015	0	0
SULPHANILAMIDE	0	41.84000015	0	0
SULPHANILAMIDE	0	41.84000015	0	0
SULPHANILAMIDE	0	41.84000015	0	0
ICV ACETANILIDE	0	61.37854767	0	0
ACETANILIDE	0	71.56446838	0	0
BLANK	0	0	0	0
ICB BLANK	0	-0.02192891017	0	0
LCS1	0	0.8155477643	0	0
LCS2	0	0.7394282818	0	0
LCS3	0	0.8030304909	0	0
LCS4	0	0.8474658728	0	0
LCSD1	0	0.8126929998	0	0
LCSD2	0	0.8760581613	0	0
LCSD3	0	0.791585505	0	0
LCSD4	0	0.9649628997	0	0
503801	0	0.2863608003	0	0
503801	0	0.3222484887	0	0
CCV ACETANILIDE	0	71.5044632	0	0
ACETANILIDE	0	71.33296967	0	0
BLANK	0	0	0	0
CCB BLANK	0	0	0	0
503801	0	0.4164654016	0	0
503802	0	0.06710670143	0	0
503802	0	-0.02014844865	0	0
503802	0	0.009779127315	0	0
503803	0	0.6066308022	0	0
503803	0	0.6388930678	0	0
503803	0	0.7583679557	0	0
503804	0	0.2643116117	0	0
503804	0	-0.08070161939	0	0
503804	0	0.02486108802	0	0
CCV ACETANILIDE	0	69.67856598	0	0
ACETANILIDE	0	64.03674316	0	0
BLANK	0	0	0	0
CCB BLANK	0	0	0	0
503805	0	0.775295794	0	0
503805	0	0.6805007458	0	0
503805	0	0.7322995663	0	0
503806	0	0.5424511433	0	0
503806	0	0.6630139947	0	0
503806	0	0.7586027384	0	0
503807	0	0.7181435823	0	0
503807	0	0.6095170975	0	0
503807	0	0.7274792194	0	0
503808	0	0.6205504537	0	0
ACETANILIDE	0	71.85820007	0	0
ACETANILIDE	0	69.91146088	0	0

TV=71.09
101%
<100
101%
<100
98%
<100
101%

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BLANK	0	0	0 LOD	0
503808	0	0.5465363264	0	0
503808	0	0.5982223749	0	0
503809	0	0.5946384072	0	0
503809	0	0.600984633	0	0
503809	0	0.8547856212	0	0
503810	0	0.5735713243	0	0
503810	0	0.5837513208	0	0
503810	0	0.6671426892	0	0
ACETANILIDE	0	72.44808197	0 102%	0
ACETANILIDE	0	70.329216	0	0
BLANK	0	0	0 LOD	0
BLANK	0	0	0	0

66 Sample(s) in Group No : 1

Component Name	Average	Std. Dev.	% Rel. S. D.	Variance
Nitrogen	0	0.000000	0.000000	0.000000
Carbon	14.01535	26.046070	185.839600	678.397600
Hydrogen	0	0.000000	0.000000	0.000000
Sulphur	0	0.000000	0.000000	0.000000

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Total Organic Carbon by Lloyd Kahn - Instrument NA1500

client: _____ sdg _____

Analyst: JMD File Name: CHNS1016 Sulfanilamide Tag #: WC-02-005-17

Prep Date: 10/16/02 Prep Time: 1200 Acetanilide Tag #: 01-2392

Analysis Date: 10/16/02 Analysis Time: 1650 LCS Tag #: LEC01004

Curve Run: 0.043, 0.556, 1.042, 1.836, 2.497 Matrix Spike Tag #: 590706

Phosphoric Acid Lot #: T010100201 HCl Tag #: —

#	Sample ID	Weight (mg)
	Acetanilide	0.647
	Acetanilide	0.421
	Blank	30
	Blank	30
	LCS1	7.789
	LCS2	9.025
	LCS3	9.600
	LCS4	9.410
	504076	5.187
	504076	5.380
	504076	5.576
	503803	2.472
	503803	5.645
	503803	7.800
	Acetanilide	0.522
	Acetanilide	0.402
	Blank	30
	Blank	30
	503 803MS	6.871 + 0.387
	803MS	5.136 + 0.338
	803MS	5.394 + 0.335
	803DP	7.946
	803DP	5.775
	803DP	6.744
	505266	5.902
	266	5.012
	266	4.661
	266MS	7.590 + 0.503
	Acetanilide	0.460
	Acetanilide	0.638

#	Sample ID	Weight (mg)
	Blank	30
	Blank	30
	505266 MS	6.377 + 0.311
	266 MS	~~4.152 + 0.530~~ 8.499 + 0.658
	266 DP	7.353
	266DP	4.192
	266DP	4.692
	267	6.969
	267	8.057
	267	7.739
	268	8.052
	268	7.819
	Acetanilide	0.578
	Acetanilide	0.471
	Blank	30
	Blank	30
	268	5.101
	269	5.337
	269	7.334
	269	4.103
	270	5.702
	270	5.972
	270	7.427
	271	4.153
	271	5.773
	271	5.410
	Acetanilide	0.505
	Acetanilide	0.483
	Blank	30
	Blank	30

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Total Organic Carbon by Lloyd Kahn - Instrument NA1500

client:_____ sdg_____

Analyst:_____ File Name:_____ Sulfanilamide Tag #:_____

Prep Date:_____ Prep Time:_____ Acetanilide Tag #:_____

Analysis Date:_____ Analysis Time:_____ LCS Tag #:_____

Curve Run:_____ Matrix Spike Tag #:_____

Phosphoric Acid Lot #:_____ HCl Tag #:_____

#	Sample ID	Weight (mg)
	Acetanilide	
	Acetanilide	SMD 10/16/02
	Blank	30
	Blank	30
	272	4.281
	272	5.816
	272	6.784
	273	6.375
	273	4.910
	273	6.088
	274	7.430
	274	5.595
	274	7.059
	275	4.600
	Acetanilide	0.523
	Acetanilide	0.376
	Blank	30
	Blank	30
	275	SMD 10/16/02 ~~4.600~~ 4.096
	275	~~4.096~~ 7.530
	276	~~7.530~~ 4.487
	276	5.702
	276	~~5.8~~ 5.777
	277	7.419
	277	5.016
	277	5.688
		SMD 10/16/02
	Acetanilide	0.418
	Acetanilide	0.496

#	Sample ID	Weight (mg)
	Blank	30
	Blank	30
		SMD 10/16/02
	Acetanilide	
	Acetanilide	
	Blank	30
	Blank	30
	Acetanilide	
	Acetanilide	
	Blank	30
	Blank	30

0148

0114

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Group No : 1

Sample Name	Nitrogen	Carbon	Hydrogen	Sulphur
yPass	0	0	0	0
BLANK	0	0	0	0
BLANK	0	0	0	0
SULPHANILAMIDE	0	41.84000015	0	0
SULPHANILAMIDE	0	41.84000015	0	0
SULPHANILAMIDE	0	41.84000015	0	0
SULPHANILAMIDE	0	41.84000015	0	0
SULPHANILAMIDE	0	41.84000015	0	0
ACETANILIDE	0	71.98448944	0 TU=71.09	0
ACETANILIDE	0	71.84210968	0 101%	0
BLANK	0	0	0 <100 mg/kg	0
BLANK	0	0	0	0
LCS1	0	0.9085563421	0	0
LCS2	0	0.9051433802	0	0
LCS3	0	0.8872523308	0	0
LCS4	0	0.8549868464	0	0
504076	0	3.979260206	0	0
504076	0	4.246033669	0	0
504076	0	4.432782173	0	0
503803	0	1.480860114	0	0
503803	0	0.9933465719	0	0
503803	0	0.4852212071	0	0
ACETANILIDE	0	73.69953156	0 104%	0
ACETANILIDE	0	72.72151184	0	0
BLANK	0	0	0 <100 mg/kg	0
BLANK	0	0	0	0
503803MS	0	5.211402416	0	0
503803MS	0	5.405840874	0	0
503803MS	0	5.376921654	0	0
503803DP	0	1.627938986	0	0
503803DP	0	2.070308208	0	0
503803DP	0	1.229837537	0	0
505266	0	0.4928916693	0	0
505266	0	0.4583623111	0	0
505266	0	0.4641609788	0	0
505266MS	0	5.253830433	0	0
ACETANILIDE	0	72.99869537	0 103%	0
ACETANILIDE	0	72.544487	0	0
BLANK	0	0	0 <100 mg/kg	0
BLANK	0	0	0	0
505266MS	0	3.927215338	0	0
505266MS	0	6.314693928	0	0
505266DP	0	0.3945102394	0	0
505266DP	0	0.4466092288	0	0
505266DP	0	0.3700099587	0	0
505267	0	0.2212350816	0	0
505267	0	0.3009823263	0	0
505267	0	0.240226239	0	0

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Total Organic Carbon by Lloyd Kahn - Instrument EA1108

client:_____ sdg_____

Analyst: JM 2 File Name: CHAS1017 Sulfanilamide Tag #: WC-02-005-17

Prep Date: 10/12/02 Prep Time: 11:18 Acetanilide Tag #: 01-2392

Analysis Date: 10/17/02 Analysis Time: ~~18:15~~ 14:40 LCS Tag #: LEC01004

Curve Run: 0.076, 0.488, 1.140, 1.755, 2.433 Matrix Spike Tag #: 590206

Phosphoric Acid Lot #: T010102201 HCl Tag #: ——

#	Sample ID	Weight (mg)
	Acetanilide	0.817
	Acetanilide	0.415
	Blank	30
	Blank	30
	LCS1	8.904
	LCS2	8.465
	LCS3	9.733
	LCS4	8.155
	PBS1	5.0
	PBS2	5.0
	PBS3	5.0
	503700	6.148
	700	6.825
	700	7.525
	Acetanilide	0.606
	Acetanilide	0.756
	Blank	30
	Blank	30
	503701	7.735
	701	5.743
	701	8.174
	702	5.315
	702	7.348
	702	6.455
	703	4.994
	703	8.113
	703	4.990
	704	5.950
	Acetanilide	0.899
	Acetanilide	0.641

#	Sample ID	Weight (mg)
	Blank	30
	Blank	30
	503704	8.035
	704	6.879
	705	7.763
	705	5.567
	705	4.245
	706	6.523
	706	5.181
	706	5.836
	707	8.340
	707	4.230
	Acetanilide	0.705
	Acetanilide	0.684
	Blank	30
	Blank	30
	503707	4.477
	708	6.371
	708	6.108
	708	8.786
	709	5.747
	709	4.178
	709	5.461
	710	7.101
	710	7.703
	710	7.034
	Acetanilide	0.393
	Acetanilide	0.690
	Blank	30
	Blank	30

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Total Organic Carbon by Lloyd Kahn - Instrument EA1108

client:_____ sdg_____

Analyst: JM2 File Name:_____ Sulfanilamide Tag #:_____

Prep Date: 10/17/02 Prep Time:_____ Acetanilide Tag #:_____

Analysis Date:_____ Analysis Time:_____ LCS Tag #:_____

Curve Run:_____ Matrix Spike Tag #:_____

Phosphoric Acid Lot #:_____ HCl Tag #:_____

#	Sample ID	Weight (mg)
	~~Acetanilide~~	
	Acetanilide	
	Blank	30
	Blank	30
	503711	7.750
	711	5.299
	711	5.721
503804	~~712~~ JM2 10/17/02	7.214
804	712	7.959
804	~~712~~	6.475
	713	4.022
	713	6.201
	713	7.987
	714	6.837
	Acetanilide	0.865
	Acetanilide	0.776
	Blank	30
	Blank	30
	503714	7.117
	714	7.687
	715	6.240
	715	6.382
	715	5.933
	715 MS	4.524 + 0.377
	715 MS	6.182 + 0.420
	715 MS	5.080 + 0.459
	715 DP	7.120
	715 DP	8.243
	Acetanilide	0.560
	Acetanilide	0.749

#	Sample ID	Weight (mg)
	Blank	30
	Blank	30
	503715 DP	8.304
	JM2 10/17/02	
	Acetanilide	0.712
	Acetanilide	0.801
	Blank	30
	Blank	30
	JM2 10/17/02	
	Acetanilide	
	Acetanilide	
	Blank	30
	~~Blank~~	~~30~~

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Sample Name	Nitrogen	Carbon	Hydrogen	Sulphur
ByPass	0	0	0	0
BLANK	0	0	0	0
BLANK	0	0	0	0
SULPHANILAMIDE	0	41.84000015	0	0
SULPHANILAMIDE	0	41.84000015	0	0
SULPHANILAMIDE	0	41.84000015	0	0
SULPHANILAMIDE	0	41.84000015	0	0
SULPHANILAMIDE	0	41.84000015	0 TV=71.09	0
ACETANILIDE	0	72.11325836	0 101%	0
ACETANILIDE	0	73.94906616	0	0
BLANK	0	0	0 <100	0
BLANK	0	0	0	0
LCS1	0	0.8126366735	0	0
LCS2	0	0.9942228794	0	0
LCS3	0	0.8373164535	0	0
LCS4	0	0.8862880468	0	0
PBS1	0	-0.009801669978	0	0
PBS2	0	0.02713890374	0	0
PBS3	0	0	0	0
503700	0	0.1131777242	0	0
503700	0	0.001437764848	0	0
503700	0	0.04901602119	0	0
ACETANILIDE	0	71.55362701	0 101%	0
ACETANILIDE	0	71.91825867	0	0
BLANK	0	0	0 <100	0
BLANK	0	0	0	0
503701	0	0	0	0
503701	0	0.005740931258	0	0
503701	0	0	0	0
503702	0	-0.001428780844	0	0
503702	0	0.08808974177	0	0
503702	0	0.1500920057	0	0
503703	0	0.281218648	0	0
503703	0	0.1167310625	0	0
503703	0	0.227012679	0	0
503704	0	0.3223303258	0	0
ACETANILIDE	0	71.81704712	0 101%	0
ACETANILIDE	0	72.59192657	0	0
BLANK	0	0	0 <100	0
BLANK	0	0	0	0
503704	0	0.08826146275	0	0
503704	0	0.3015580177	0	0
503705	0	0.02497710288	0	0
503705	0	0.06473398209	0	0
503705	0	0.3048944175	0	0
503706	0	0.0172310248	0	0
503706	0	0.04745013267	0	0
503706	0	0.03386802226	0	0
503707	0	0	0	0
503707	0	0	0	0
ACETANILIDE	0	71.79267883	0 101%	0
ACETANILIDE	0	71.90834045	0	0

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LLB	BLANK	0	0	0	0
	503707	0	0	0	0
	503708	0	0	0	0
	503708	0	-0.01696792431	0	0
	503708	0	0.02222372405	0	0
	503709	0	1.044124246	0	0
	503709	0	1.61678195	0	0
	503709	0	1.325871944	0	0
	503710	0	0.04988767579	0	0
	503710	0	0.0561125204	0	0
	503710	0	0.05683300644	0	0
LLV	ACETANILIDE	0	75.39040375	0 106%	0
	ACETANILIDE	0	70.89927673	0	0
LLB	BLANK	0	0	0 <100	0
	BLANK	0	0	0	0
	503711	0	0.006572051905	0	0
	503711	0	0.02343416587	0	0
	503711	0	0.01980868727	0	0
	503804	0	0.02527930588	0	0
	503804	0	0.0431791693	0	0
	503804	0	-0.004485434387	0	0
	503713	0	0.13374044	0	0
	503713	0	0.6668483615	0	0
	503713	0	1.310776114	0	0
	503714	0	0.6207610369	0	0
LLV	ACETANILIDE	0	73.03059387	0 103%	0
	ACETANILIDE	0	72.55947876	0	0
LLB	BLANK	0	0	0 <100	0
	BLANK	0	0	0	0
	503714	0	0.7033324838	0	0
	503714	0	0.6418201923	0	0
	503715	0	0.0245416481	0	0
	503715	0	0.09857470542	0	0
	503715	0	0.1400700361	0	0
	503715MS	0	7.411206245	0	0
	503715MS	0	4.252509117	0	0
	503715MS	0	7.780978203	0	0
	503715DP	0	0.06374354661	0	0
	503715DP	0	0.0344430916	0	0
	ACETANILIDE	0	78.23171234	0 110%	0
	ACETANILIDE	0	72.59845734	0	0
	BLANK	0	0	0 <100	0
	BLANK	0	0	0	0
	503715DP	0	0.1033446118	0	0
	ACETANILIDE	0	72.04612732	0 101%	0
	ACETANILIDE	0	73.17076111	0	0
	BLANK	0	0	0 <100	0
	BLANK	0	0	0	0

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Component Name	Average	Std. Dev.	% Rel. S. D.	Variance
Nitrogen	0	0.000000	0.000000	0.000000
Carbon	13.94862	27.240680	195.293000	742.054700
Hydrogen	0	0.000000	0.000000	0.000000
Sulphur	0	0.000000	0.000000	0.000000

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Burlington

Aquatec, Inc. --- PERCENT SOLID REPORT --- 15-OCT-2002 16:13:57 --- KLP

Method: IN623

Analyst: MNT

Date/Time in: 10-08-02 1600

Date/Time out: 10-09-02 1040

Batch: EY

Date Entered: 10-12-02
Entered by: JTD

Date Verified: 10-15-02
Verified by: KLP

Lab ID	Mass of Dish (g)	Mass of Dish and Wet Sample (g)	Mass of Dish and Dry Sample (g)	Percent Solid
503796	0.98	14.04	7.81	52.2971
503801	0.98	13.02	11.20	84.8837
503802	0.98	15.19	10.86	69.5285
503803	0.98	11.53	9.83	83.8863
503804	0.98	10.88	9.45	85.5556
503805	0.98	12.75	6.68	48.4282
503806	0.98	11.18	5.98	49.0196
503807	0.99	13.34	6.02	40.7287
503808	0.98	10.06	4.47	38.4361
503809	0.98	10.50	4.90	41.1765
503810	0.98	11.03	4.76	37.6119
503812	0.99	10.13	9.00	87.6368
503813	0.97	11.25	9.90	86.8677
503814	0.98	10.49	9.10	85.3838
503815	0.97	11.52	9.94	85.0237
503816	0.97	15.15	13.13	85.7546
503817	0.97	11.49	10.35	89.1635
503818	0.97	10.95	8.68	77.2545
503819	0.98	11.64	10.53	89.5872
503820	0.95	10.69	9.46	87.3717

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Burlington

Aquatec, Inc. --- PERCENT SOLID REPORT --- 17-OCT-2002 14:09:44 --- KLP

Method: IN623

Analyst: MNT

Date/Time in: 10-15-02 1935

Date/Time out: 10-16-02 0950

Batch: FS

Date Entered: 10-16-02
Entered by: JTD

Date Verified: 10-17-02
Verified by: KLP

Lab ID	Mass of Dish (g)	Mass of Dish and Wet Sample (g)	Mass of Dish and Dry Sample (g)	Percent Solid
503803DP	0.97	16.13	14.10	86.6095
503803MS	0.98	11.53	9.83	83.8863
505268	0.97	12.63	9.18	70.4117
505269	0.97	17.23	12.26	69.4342
505270	0.98	17.00	12.24	70.2871
505271	0.98	17.54	11.94	66.1836
505272	0.97	14.86	7.93	50.1080
505273	0.96	21.71	11.44	50.5060
505274	0.96	19.89	14.42	71.1041
505275	0.97	15.76	10.74	66.0581
505276	0.97	14.32	10.72	73.0337
505277	0.98	14.38	10.86	73.7313

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ATTACHMENT 4

LABORATORY CASE NARRATIVES AND PROJECT CHAIN-OF-CUSTODY RECORDS

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CASE NARRATIVE

A2J040261

The following report contains the analytical results for eleven solid samples submitted to STL North Canton by Environmental Standards, Inc. from the NYPA Niagara Power (NY). The samples were received October 2, 2002, according to documented sample acceptance procedures.

The Grain Size and TOC analyses were performed at the STL Burlington laboratory and the PAH analysis at the STL Austin laboratory. A copy of their data is provided in this report.

STL North Canton utilizes USEPA approved methods in all analytical work. The sample(s) presented in this report were analyzed for the parameter(s) listed on the Analytical Methods Summary page in accordance with the method(s) indicated. Preliminary results were provided to Dan Claycomb on October 22 and 24, 2002.

The results included in this report have been reviewed for compliance with the laboratory QA/QC plan. All data have been found to be compliant with laboratory protocol.

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The temperature of the coolers upon sample receipt was 3.3, 5.8, 2.7, 5.4 and 4.8° C.

See STL's Cooler Receipt Form for additional information.

GC/MS VOLATILES

Sample(s) that contain results between the MDL and the RL were flagged with "J". There is the possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

The internal standard areas were outside acceptance limits for sample NYPA-UNR-SED02 due to matrix effects.

Sample NYPA-UNR-SED01 had elevated reporting limits due to TICs.

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CASE NARRATIVE (continued)

PESTICIDES

Sample(s) that contain results between the MDL and the RL were flagged with "J". There is the possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

The analyses reported herein were performed using a GC instrument that has two columns or detectors (HPLC), one of which is used to confirm the results of the other. Peak interferences may result in some cases, which cause a quantitation difference between the two columns. If the difference between the two results is greater than 40%, the lower of the two results is normally reported. The higher result is reported if there is obvious chromatographic interference on the column with the lower result, or if the continuing or bracketing calibration on the column with the lower result fails. The reported results are flagged with "PG".

POLYCHLORINATED BIPHENYLS

The sample NYPA-UNR-SED01 had elevated reporting limits due to matrix interferences.

Sample(s) that contain results between the MDL and the RL were flagged with "J". There is the possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

METALS

No ICP MS Form IX was provided for batch 2281103. The serial dilution was performed on a different client's sample from the same QC batch(es).

Samples that contain results between the MDL and the RL were flagged with "B". There is the possibility of false positive of mis-identification at these quantitation levels. The acceptance criteria for the ICB, CCB, and Method Blank are ± the standard reporting limit (SRL).

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CASE NARRATIVE (continued)

STL AUSTIN - POLYNUCLEAR AROMATIC HYDROCARBONS

Sample(s) that contain results between the MDL and the RL were flagged with "J". There is the possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

The RL for sample NYPA-UNR-SED01 is elevated due to the presence of interfering, non-target, compounds.

The following analytes were detected above POLs:
(results reported are on wet wt. basis)

1,2,4-Trichlorobenzene - 246000 ug/Kg
Hexachlorobutadiene - 70800 ug/Kg
1,2,4,5-Tetrachlorobenzene - 161000 ug/Kg
Pentachlorobenzene - 372000 ug/Kg.

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QUALITY CONTROL ELEMENTS OF SW-846 METHODS

STL North Canton conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data.

QC BATCH

Environmental samples are taken through the testing process in groups called QUALITY CONTROL BATCHES (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. STL North Canton requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples. These QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) pair or a MATRIX SPIKE/SAMPLE DUPLICATE (MS/DU) pair. If there is insufficient sample to perform an MS/MSD or an MS/DU, then a LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) is included in the QC batch.

LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the repreparation and reanalysis of all samples in the QC batch. The only exception is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

At times, a Laboratory Control Sample Duplicate (LCSD) is also included in the QC batch. An LCSD is a QC sample that is created and handled identically to the LCS. Analyte recovery data from the LCSD is assessed in the same way as that of the LCS. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system. Precision data are expressed as relative percent differences (RPDs). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still acceptable.

METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed below.)

Volatile (GC or GC/MS)	Semivolatile (GC/MS)	Metals
Methylene chloride	Phthalate Esters	Copper
Acetone		Iron
2-Butanone		Zinc
		Lead*

- *for analyses run on TJA Trace ICP, ICPMS or GFAA only*

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.

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- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the repreparation and reanalysis of all samples in the QC batch.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results may not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable. The acceptance criteria do not apply to samples that are diluted for organics if the native sample amount is 4x the concentration of the spike.

For certain methods, a Matrix Spike/Sample Duplicate (MS/DU) may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepped and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepped and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater.

For the Pesticide, PCB, PAH, and Herbicide methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria.

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SAMPLE SUMMARY

A2J040261

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
E9FHE	001	NYPA-UNR-SED01	10/01/02	11:50
E9FH2	002	NYPA-UNR-SED02	10/01/02	13:15
E9FH7	003	NYPA-LNR-SED03	10/01/02	18:15
E9FJC	004	NYPA-LNR-SED04	10/01/02	18:50
E9FJD	005	NYPA-RES-SED05	10/02/02	10:40
E9FJE	006	NYPA-RES-SED06	10/02/02	11:15
E9FJF	007	NYPA-RES-SED07	10/02/02	11:35
E9FJG	008	NYPA-RES-SED08	10/02/02	12:35
E9FJH	009	NYPA-RES-SED09	10/02/02	13:10
E9FJJ	010	NYPA-RES-SED12	10/02/02	12:40
E9FJ5	011	NYPA-ERB-01	10/03/02	08:50

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

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Chain of Custody Record

SEVERN TRENT SERVICES — **Severn Trent Laboratories, Inc.**

STL-4124 (0901)

Client	Environmental Standards, Inc.
Address	1140 Valley Forge Rd. PO Box 810
City	Valley Forge
State	PA
Zip Code	19482-0810
Project Manager	Daniel Claycomb
Telephone Number (Area Code)/Fax Number	610-935-5577 / 610-935-5593
Site Contact	Daniel Claycomb
Lab Contact	Frank Calovini
Carrier/Waybill Number	UPS
Project Name and Location (State)	NYPA Niagara Power (NY)
Contract/Purchase Order/Quote No.	Y1081641
Date	10/01/02
Chain of Custody Number	120846
Lab Number	
Page	1 of 1

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Air	Aqueous	Sed.	Soil		Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Pesticides	As, Pb, Cd	Total PCBs	2,3,7,8-TCDD	Total PAHs	Tetrabutylstannane	Grain Size	TOC					Special Instructions/ Conditions of Receipt
NYPA-UNR-SED01 ✓	10/01/02	1150			✓			✓						✓	✓	✓	✓	✓	✓	✓	✓					
NYPA-UNR-SED02 ✓	10/01/02	1315			✓			✓						✓	✓	✓	✓	✓	✓	✓	✓					

Analysis (Attach list if more space is needed)

Possible Hazard Identification: ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other Normal (3-4 wks)

QC Requirements (Specify)

1. Relinquished By: Dan Claycomb	Date: 10/01/02	Time: 1500	1. Received By: [signature]	Date: 10-2-02	Time: 1015
2. Relinquished By	Date	Time	2. Received By	Date	Time
3. Relinquished By	Date	Time	3. Received By	Date	Time

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

STL North Canton

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Chain of Custody Record

STL-4124 (0901)

SEVERN TRENT SERVICES — Severn Trent Laboratories, Inc.

14

Client	Environmental Standards, Inc.
Address	1140 Valley Forge Rd. / PO Box 810
City / State / Zip Code	Valley Forge / PA / 19482-0810
Project Name and Location (State)	NYPA Niagara Power (NY)
Contract/Purchase Order/Quote No.	4108 1641
Project Manager	Daniel Claycomb
Telephone Number (Area Code)/Fax Number	610-935-5577 / 610-935-5583
Site Contact	Daniel Claycomb
Lab Contact	Frank Calvini
Carrier/Waybill Number	UPS
Date	10/02/02
Chain of Custody Number	120845
Lab Number	
Page	1 of 1

Analysis (Attach list if more space is needed)

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Air	Aqueous	Sed.	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Pesticides	As Pb Cd	Total PCBs	2378-TCDD	Total PAHs	Tetrachlorothylene	Grain Size	TOC	Special Instructions/ Conditions of Receipt
NYPA-LNR-SED03	10/01/02	1815			✓		✓						✓	✓	✓	✓	✓	✓	✓	✓	
NYPA-LNR-SED04	10/01/02	1850			✓		✓						✓	✓	✓	✓	✓	✓	✓	✓	
NYPA-RES-SED05	10/02/02	1040			✓		✓						✓	✓	✓	✓	✓	✓	✓	✓	
NYPA-RES-SED06	↓	1115			✓		✓						✓	✓	✓	✓	✓	✓	✓	✓	
NYPA-RES-SED07	↓	1135			✓		✓						✓	✓	✓	✓	✓	✓	✓	✓	
NYPA-RES-SED08	↓	1235			✓		✓						✓	✓	✓	✓	✓	✓	✓	✓	
NYPA-RES-SED09	↓	1310			✓		✓						✓	✓	✓	✓	✓	✓	✓	✓	
NYPA-RES-SED12	↓	1240			✓		✓						✓	✓	✓	✓	✓	✓		✓	NO GRAIN SIZE

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other Normal (3-4 wks)

QC Requirements (Specify)

1. Relinquished By: Dan Claycomb	Date: 10/02/02	Time: 1730	1. Received By: [signature]	Date: 10-3-02	Time: 1005
2. Relinquished By	Date	Time	2. Received By	Date	Time
3. Relinquished By	Date	Time	3. Received By	Date	Time

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

STL North Canton

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Chain of Custody Record

SEVERN TRENT SERVICES — Severn Trent Laboratories, Inc.

STL-4124 (0901)

Client: Environmental Standards, Inc.	Project Manager: Daniel Claycomb	Date: 10/02/02	Chain of Custody Number: 120845
Address: 1140 Valley Forge Rd. / PO Box 810	Telephone Number (Area Code)/Fax Number: 610-935-5577 / 610-935-5583	Lab Number:	Page 1 of 1
City: Valley Forge; State: PA; Zip Code: 19482-0810	Site Contact: Daniel Claycomb	Lab Contact: Frank Calvini	
Project Name and Location (State): NYPA Niagara Power (NY)	Carrier/Waybill Number: UPS		
Contract/Purchase Order/Quote No.: 4108 1641			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil		Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH		Pesticides	As Pb Cd	Total PCBs	2,3,7,8-TCDD	Total PAHs	Tetrahydrofuran/Hexane	Grain Size	TOC					Special Instructions/ Conditions of Receipt
NYPA-LNR-SED03	10/01/02	1815			✓			✓							✓	✓	✓	✓	✓	✓	✓	✓					MS/MSD
NYPA-LNR-SED04	10/01/02	1850			✓			✓							✓	✓	✓	✓	✓	✓	✓	✓					
NYPA-RES-SED05	10/02/02	1040			✓			✓							✓	✓	✓	✓	✓	✓	✓	✓					
NYPA-RES-SED06	↓	1115			✓			✓							✓	✓	✓	✓	✓	✓	✓	✓					
NYPA-RES-SED07		1135			✓			✓							✓	✓	✓	✓	✓	✓	✓	✓					
NYPA-RES-SED08		1235			✓			✓							✓	✓	✓	✓	✓	✓	✓	✓					
NYPA-RES-SED09		1310			✓			✓							✓	✓	✓	✓	✓	✓	✓	✓					
NYPA-RES-SED12	↓	1240			✓			✓							✓	✓	✓	✓	✓	✓		✓					No GRAIN SIZE

Analysis (Attach list if more space is needed)

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other Normal (3-4 wks)

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: Dan Claycomb	10/02/02	1730	1. Received By		
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

STL North Canton

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Chain of Custody Record

SEVERN TRENT SERVICES — Severn Trent Laboratories, Inc.

STL-4124 (0901)

Client: Environmental Standards, Inc.	Project Manager: Daniel Claycomb	Date: 10/03/02	Chain of Custody Number: 120844
Address: 1140 Valley Forge Rd. / PO Box 810	Telephone Number (Area Code)/Fax Number: 610-935-5577 / 610-935-5583	Lab Number:	Page 1 of 1
City: Valley Forge; State: PA; Zip Code: 19482 0810	Site Contact: Daniel Claycomb	Lab Contact: Frank Calovini	
Project Name and Location (State): NYPA Niagara Power (NY)	Carrier/Waybill Number: UPS		
Contract/Purchase Order/Quote No.: Y1081641			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Air	Aqueous	Sed.	Soil		Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH		Pesticides	Arsenic	Total Cr	Total PAHs	Tetrachlorophenol	Basic Size	TOC	2,3,7,8-TCDD					Special Instructions/ Conditions of Receipt
NYPA-ECB-01	10/03/02	0850		✓						✓	✓				✓	✓	✓	✓	✓		✓	✓					Equipment Blank

Matrix: Air, Aqueous, Sed., Soil. Containers & Preservatives: Unpres., H2SO4, HNO3, HCl, NaOH, ZnAc/NaOH. Analysis (Attach list if more space is needed).

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other Normal (3-4 wks)

QC Requirements (Specify):

1. Relinquished By: Don Clayton	Date: 10/03/02	Time: 1700	1. Received By:	Date: 10-4-02	Time: 955
2. Relinquished By:	Date:	Time:	2. Received By:	Date:	Time:
3. Relinquished By:	Date:	Time:	3. Received By:	Date:	Time:

Comments:

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

STL North Canton

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STL Cooler Receipt Form/Narrative
North Canton Facility

Lot Number: A2304026 1

Client: Env Standards Project: _____ Quote#: 497916

Cooler Received on: 10-2-02 Opened on: 10-2-02 by: [signature] (Signature)

Fedx ☐ Client Drop Off ☐ UPS ☑ Airborne ☐ Other: _____

Cooler ☐ Safe ☐ Foam Box ☐ Client Cooler ☑ Other: _____

STL Shipper No#: _____

1. Were custody seals on the outside of the cooler? Yes ☑ No ☐ Intact? Yes ☑ No ☐ NA ☐
   If YES, Quantity 1 Location over seal
   Were the custody seals signed and dated? Yes ☑ No ☐ NA ☐
2. Shipper's packing slip attached to this form? Yes ☑ No ☐
3. Were custody papers included inside the cooler and relinquished? Yes ☑ No ☐
4. Did you sign the custody papers in the appropriate place? Yes ☑ No ☐
5. Packing material used:
   Peanuts ☐ Bubble Wrap ☑ Vermiculite ☐ Foam ☐ None ☐ Other: _____
6. Cooler temperature upon receipt 3.3 °C (see back of form for multiple coolers/temp)
   METHOD: Temp Vial ☐ Coolant & Sample ☐ Against Bottles ☐ IR ☑ ICE/H_2O Slurry ☐
   COOLANT: Wet Ice ☑ Blue Ice ☐ Dry Ice ☐ Water ☐ None ☐
7. Did all bottles arrive in good condition (Unbroken)? Yes ☑ No ☐
8. Did all bottle labels and tags agree with the custody papers? Yes ☑ No ☐
9. Were samples at the correct pH? (record on back) Yes ☐ No ☐ NA ☑
10. Were correct bottles used for the tests indicated? Yes ☑ No ☐
11. Were air bubbles >6 mm in any VOA vials? Yes ☐ No ☐ NA ☑
12. Was a sufficient amount of sample sent in each bottle? Yes ☑ No ☐

Contacted PM _____ Date: _____ by: _____ via Voice Mail ☐ Verbal ☐ Other ☐

Concerning:

√	MACRO	MACRO
1. CHAIN OF CUSTODY		
	SR1A	The chain of custody and sample bottles did not agree. The following discrepancies occurred _____
2. SAMPLE CONDITION		
	SR2A	Sample(s) _____ were received or requested after the recommended holding time had expired.
	SR2B	Sample(s) were received with insufficient volume.
	SR2C	Sample(s) were received in a broken container.
3. SAMPLE PRESERVATION		
	SR3A	Sample(s) _____ were further preserved in sample receiving to meet recommended pH level(s). *Nitric Acid Lot # 120701-HNO3; Sulfuric Acid Lot # 010802-H2SO4; Sodium Hydroxide Lot # 011102-NaOH; Hydrochloric Acid Lot # 041400-HCl; Sodium Hydroxide and Zinc Acetate Lot # 112801-CH3COO2ZN/NaOH*
	SR3B	Sample(s) were received with bubble > 6 mm in diameter (cc: PM)
4. Other (see below or back)		

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STL Cooler Receipt Form/Narrative
North Canton Facility

Lot Number: A2J0410201

Client: Env. Standards Project: _____ Quote#: _____
Cooler Received on: 10-3-02 Opened on: 10-3-02 by: _____ (Signature)

Fedx ☐ Client Drop Off ☐ UPS ☑ Airborne ☐ Other: _____
Cooler ☐ Safe ☐ Foam Box ☐ Client Cooler ☑ Other: _____
STL Shipper No#: _____

1. Were custody seals on the outside of the cooler? Yes ☑ No ☐ Intact? Yes ☑ No ☐ NA ☐
   If YES, Quantity 1 ea Location over seal (unsalv)
   Were the custody seals signed and dated? Yes ☑ No ☐ NA ☐
2. Shipper's packing slip attached to this form? Yes ☑ No ☐
3. Were custody papers included inside the cooler and relinquished? Yes ☑ No ☐
4. Did you sign the custody papers in the appropriate place? Yes ☑ No ☐
5. Packing material used:
   Peanuts ☐ Bubble Wrap ☑ Vermiculite ☐ Foam ☐ None ☐ Other: _____
6. Cooler temperature upon receipt _____ °C (see back of form for multiple coolers/temp)
   METHOD: Temp Vial ☑ Coolant & Sample ☐ Against Bottles ☐ IR ☐ ICE/H_2O Slurry ☐
   COOLANT: Wet Ice ☑ Blue Ice ☐ Dry Ice ☐ Water ☐ None ☐
7. Did all bottles arrive in good condition (Unbroken)? Yes ☑ No ☐
8. Did all bottle labels and tags agree with the custody papers? Yes ☐ No ☑
9. Were samples at the correct pH? (record on back) Yes ☐ No ☐ NA ☑
10. Were correct bottles used for the tests indicated? Yes ☑ No ☐
11. Were air bubbles >6 mm in any VOA vials? Yes ☐ No ☐ NA ☑
12. Was a sufficient amount of sample sent in each bottle? Yes ☑ No ☐

Contacted PM FSC Date: 10-3-02 by: ldo via Voice Mail ☐ Verbal ☑ Other ☐
Concerning: SR1A

√	MACRO	MACRO
	1. CHAIN OF CUSTODY	
✓	SR1A	The chain of custody and sample bottles did not agree. The following discrepancies occurred Did not receive any of SED03 or SED04 ~~Missing 2x500 for SED12~~
	2. SAMPLE CONDITION	
	SR2A	Sample(s) _____ were received or requested after the recommended holding time had expired.
	SR2B	Sample(s) were received with insufficient volume.
	SR2C	Sample(s) were received in a broken container.
	3. SAMPLE PRESERVATION	
	SR3A	Sample(s) _____ were further preserved in sample receiving to meet recommended pH level(s). *Nitric Acid Lot # 120701-HNO3; Sulfuric Acid Lot # 010802-H2SO4; Sodium Hydroxide Lot # 011102-NaOH; Hydrochloric Acid Lot # 041400-HCl; Sodium Hydroxide and Zinc Acetate Lot # 112801-CH3COO2ZN/NaOH*
	SR3B	Sample(s) _____ were received with bubble > 6 mm in diameter (cc: PM)
	4. Other (see below or back)	

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STL Cooler Receipt Form/Narrative
North Canton Facility

Client ID	pH	Date	Initials

Cooler	Temp	Method	Comments
clt cooler	5.8°C ✓ temp vial	~~Coolant~~	wet ice
clt cooler	✓ 2.7°C	temp vial	—

Discrepancies Cont.

Macro Name:

Macro Name:

Macro Name:

Other Anomalies:

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STL Cooler Receipt Form/Narrative
North Canton Facility

Lot Number: A2J040261

Client: Env. Standards Project: _____ Quote#: _____
Cooler Received on: 10-4-02 Opened on: 10-4-02 by: _____ (Signature)

Fedx ☐ Client Drop Off ☐ UPS ☑ Airborne ☐ Other: _____
Cooler ☐ Safe ☐ Foam Box ☐ Client Cooler ☑ Other: _____
STL Shipper No#: _____

1. Were custody seals on the outside of the cooler? Yes ☑ No ☐ Intact? Yes ☑ No ☐ NA ☐
   If YES, Quantity 1 ea Location over seal
   Were the custody seals signed and dated? Yes ☑ No ☐ NA ☐
2. Shipper's packing slip attached to this form? Yes ☑ No ☐
3. Were custody papers included inside the cooler and relinquished? Yes ☑ No ☐
4. Did you sign the custody papers in the appropriate place? Yes ☑ No ☐
5. Packing material used:
   Peanuts ☐ Bubble Wrap ☑ Vermiculite ☐ Foam ☐ None ☐ Other: _____
6. Cooler temperature upon receipt _____ °C (see back of form for multiple coolers/temp)
   METHOD: Temp Vial ☐ Coolant & Sample ☐ Against Bottles ☐ IR ☑ ICE/H_2O Slurry ☐
   COOLANT: Wet Ice ☑ Blue Ice ☐ Dry Ice ☐ Water ☐ None ☐
7. Did all bottles arrive in good condition (Unbroken)? Yes ☑ No ☐
8. Did all bottle labels and tags agree with the custody papers? Yes ☑ No ☑
9. Were samples at the correct pH? (record on back) Yes ☑ No ☐ NA ☐
10. Were correct bottles used for the tests indicated? Yes ☑ No ☐
11. Were air bubbles >6 mm in any VOA vials? Yes ☐ No ☑ NA ☐
12. Was a sufficient amount of sample sent in each bottle? Yes ☑ No ☐

Contacted PM FSC Date: 10-4-02 by: LP via Voice Mail ☐ Verbal ☑ Other ☐
Concerning: SR1A

√	MACRO	MACRO
	1. CHAIN OF CUSTODY	
√	SR1A	The chain of custody and sample bottles did not agree. The following discrepancies occurred Received samples for SED03 and SED04 and MS/MSD volume for SED03. Missing from 10-3-02 delivery date - log all together 1 lot per FSC
	2. SAMPLE CONDITION	
	SR2A	Sample(s) _____ were received or requested after the recommended holding time had expired.
	SR2B	Sample(s) were received with insufficient volume.
	SR2C	Sample(s) were received in a broken container.
	3. SAMPLE PRESERVATION	
	SR3A	Sample(s) _____ were further preserved in sample receiving to meet recommended pH level(s). *Nitric Acid Lot # 120701-HNO3; Sulfuric Acid Lot # 010802-H2SO4; Sodium Hydroxide Lot # 011102-NaOH; Hydrochloric Acid Lot # 041400-HCl; Sodium Hydroxide and Zinc Acetate Lot # 112801-CH3COO2ZN/NaOH*
	SR3B	Sample(s) were received with bubble > 6 mm in diameter (cc: PM)
	4. Other (see below or back)	

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STL Cooler Receipt Form/Narrative
North Canton Facility

Client ID	pH	Date	Initials
ERB	<2	10-4-02	CDe

Cooler	Temp	Method	Comments
clt cooler	5.4°C ✓	IR	wet ice
clt cooler	4.8°C ✓	⊥	⊥

Discrepancies Cont.

Macro Name:

Macro Name:

Macro Name:

Other Anomalies:

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SEVERN TRENT **STL** Austin

CHAIN–OF–CUSTODY ADDENDUM

Lot No: A2J040261

RECEIVED BY: DW

COC NUMBER:

DATE/TIME RECEIVED: 10/8/02 1150

QUOTE/PROFILE:

UNPACKED DATE/TIME: 10/8/02 1205

CLIENT/PROJECT: STL-N. Canton

SAMPLES LOGGED IN:

LOG-IN REVISED:

Number of Shipping Containers Received with Chain of Custody: 1

VOC AIR SAMPLES ☐ YES **SEE SECTIONS 1.0, 2.0, & 6.0**

1.0 CONTAINERS EXAMINED UPON RECEIPT: DW

Container Sealed: ☑ YES ☐ NO

Custody Seal Present: ☑ YES ☐ NO

Custody Seal Signed/Dated: ☑ YES ☐ NO

If seal not intact, list air bill number of that container(s):

2.0 VOC CANISTERS EXAMINED UPON RECEIPT:

Canister Valves Closed: ☐ YES ☐ NO

Samples Received Match Chain: ☐ YES ☐ NO

Canister Valves Capped: ☐ YES ☐ NO

See Additional Comments: ☐ YES ☐ NO

Packing Material Used: (circle)
None / Absorbent / Paper / Bubble Wrap

Can Size: ☐ 6L ☐ 15L Other

3.0 SAMPLE TEMPERATURE UPON RECEIPT: DW **PYROMETER #:** P-5

The temperature of the container(s) is: *(acceptable tolerance 1-4°C)*

2.9										

If temperature is outside acceptable tolerance, Project Manager was notified (_____PM). Date: _____ Time: _____

Samples received do not require cooling _____

OK to analyze samples: ☑ YES ☐ NO

PRESERVATION OF SAMPLES REQUIRED: ☑ NA ☐ YES **VERIFIED BY:** DW

Base samples are>pH 12: ☐ YES ☐ NO

Acid preserved are<pH 2: ☐ YES ☐ NO

Cyanide samples checked for sulfides: ☐ YES

Sulfide samples appear to be preserved with zinc acetate: ☐ YES ☐ NO

Samples checked for chlorine per specification: ☐ YES

Free chlorine present: ☐ YES ☐ NO

If sample preservation/temperature (°C) is outside acceptable tolerance, Project Manager was notified (_____PM)
Date: _____ Time: _____ ☐ see pH adjustment form

VOLATILE SAMPLES FILLED COMPLETELY, IF NOT, LIST ID AND HEADSPACE OF VOAs CONTAINING BUBBLES EXCEEDING 6MM IN DIAMETER:

Sample ID	mm Headspace

Sample ID	mm Headspace

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Austin

4.0 CONDITION OF BOTTLES/CONTAINERS

VERIFIED BY: _____

Samples received match COC: ☑ YES ☐ NO

Bottles received intact: ☑ YES ☐ NO

See additional discrepancies/comments section: ☑ YES ☐ NO

Samples received from USDA restricted area: ☐ YES ☑ NO

VOA trip blanks included: ☐ YES ☐ NO ☑ N/A

5.0 ADDITIONAL DISCREPANCIES

Appears on COC		Appears on Label		
Sample ID	Date/Time	Sample ID	Date/Time	Comments

6.0 SHIPPING DOCUMENTATION

Air/freight bill is available and attached to COC: ☑ YES ☐ NO Air bill #: _____

Hand-delivered Carrier: _____ Date: _____ Time: _____

7.0 OTHER COMMENTS:

Rec'd 12x120ml (5 for -003) & 2x1L (6ml/now)

CORRECTIVE ACTION:

Client's Name: _____ Informed verbally on: _____ By: _____

Client's Name: _____ Informed verbally on: _____ By: _____

Sample(s) processed "as is" comments: _____

Samples(s) on hold until: _____ If released, notify: _____

REVIEW:

Client COC is "received"; i.e., signed and dated with time of receipt. ☐ YES

COC Addendum number is noted in the 'Comments' section of COC, as required for Horizon LIMS. ☐ YES ☐ N/A

Project Management: _____ Date: _____

SIGNED ORIGINAL MUST BE RETAINED IN THE PROJECT FILE

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SEVERN TRENT SERVICES

STL Burlington
208 South Park Drive
Suite 1
Colchester, VT 05446

Tel: 802 655 1203
Fax: 802 655 1248
www.stl-inc.com

October 22, 2002

Mr. Frank Calovini
Severn Trent Laboratories
4101 Shuffel Drive NW
North Canton, OH 44720

Re: Laboratory Project No. 22022
SDG: 90131

Dear Mr. Calovini:

Enclosed are the analytical results of samples received intact by Severn Trent Laboratories on October 05, 2002. Laboratory numbers have been assigned and designated as follows:

Lab ID	Client Sample ID	Sample Date	Sample Matrix
	Received: 10/05/02 ETR No: 90131		
503801	NYPA-UNR-SED01	10/01/02	Solid
503802	NYPA-UNR-SED02	10/01/02	Solid
503803	NYPA-LNR-SED03	10/01/02	Solid
503804	NYPA-LNR-SED04	10/01/02	Solid
503805	NYPA-RES-SED05	10/01/02	Solid
503806	NYPA-RES-SED06	10/01/02	Solid
503807	NYPA-RES-SED07	10/01/02	Solid
503808	NYPA-RES-SED08	10/01/02	Solid
503809	NYPA-RES-SED09	10/01/02	Solid
503810	NYPA-RES-SED12	10/01/02	Solid
503811	NYPA-ERB-01	10/03/02	Liquid

10/2/02

Documentation that identifies the condition of the samples at the time of sample receipt and the issues arising at the time of sample log-in is included in the Sample Handling section of this submittal.

Total Organic Carbon (TOC) by Lloyd Kahn Method:
Please note that the replicate analysis performed on NYPA-LNR-SED03 yielded a Relative Percent Difference (RPD) that was outside the established control limits (0-20%) at 50%.

The original analysis performed on 10/10/02 of the sample identified as NYPA-LNR-SED04 exhibited tailing of the carbon peak in the chromatogram from one replicate. This sample was subsequently re-analyzed three days beyond the method specified holding times and did not exhibit tailing in the chromatogram. Three replicates from the re-analysis confirm well with the two replicates that were within the control limits from the original analysis. The results of the re-analysis of this sample have been presented in this case submittal.

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SEVERN TRENT SERVICES

STL Burlington

Total Organic Carbon (TOC) by Lloyd Kahn Method (cont.):
Please note that the Laboratory was requested by the client to perform matrix spike and replicate analyses on the field sample NYPA-LNR-SED03 on 10/15/02 on the last day of the method prescribed holding time. Consequently, the analyses were accomplished on 10/16/02, one day beyond the method holding time.

Particle Size by ASTM Method D422:
Please note that no exceptions to the method prescribed quality control criteria were observed during the analyses of the samples in this delivery group.

If there are any questions regarding this submittal, please contact Ron Pentkowski at (802) 655-1203.

This report shall not be reproduced, except in full, without the written approval of the laboratory.
This report is sequentially numbered starting with page 0001 and ending with page 0330.

I certify that this package is in compliance with the NELAC requirements, both technically and for completeness, for other than the conditions detailed above. The release of the data contained in this hardcopy data package has been authorized by the Laboratory Director or his designee, as verified by the following signature.

Sincerely,

Ron Pentkowski for

Michael F. Wheeler, Ph.D.
Laboratory Director

Enclosure
MFW/jta

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Box 1-8

SEVERN TRENT LABORATORIES LOG-IN SHEET - Form DC-1

Lab Name: STL Burlington

Received By (Print or Type Name): Frank N. Bessette

Log-in Date: 10/08/02

Received By (Signature):

Case Number:	22022
Sample Delivery Group No.:	90131
ETR Number:	90131
REMARKS:	
1. Custody Seal	Present and Intact
2. Custody Seal Nos:	
3. Chain-of-Custody Records	Present
4. Sample Information Sheets	Absent*
5. Airbill Present	As Sticker
6. Airbill Number(s):	25196205171
7. Sample Tags	Absent*
8. Tag Nos. Listed on COC	N/A
9. Sample Condition:	Broken*
10. VOA Vial Bubbles	N/A
11. Does info on the custody records, sample info sheets, sample tags and labels agree?	No*
12. Date Received at Lab:	10/05/02
13. Time Received at Lab:	1315
14. Cooler Temperature(s):	4 C
SAMPLE TRANSFER:	
Fraction(s):	ALL
Area Number:	Level 4 Storage
Transferred By:	FNB
Transferred On:	10/08/02

CORRESPONDING			
CLIENT SAMPLE #	SAMPLE TAG #	ASSIGNED LAB #	REMARKS: CONDITION OF SAMPLE SHIPMENT ETC.
NYPA-UNR-SED01	NA	503801	No sample times on c-o-c
NYPA-UNR-SED02	NA	503802	used times off jars.
NYPA-LNR-SED03	NA	503803	
NYPA-LNR-SED04	NA	503804	Sample NYPA-RES-SED08
NYPA-RES-SED05	NA	503805	1-500ml jar recv'd broken
NYPA-RES-SED06	NA	503806	sample was put in new jar
NYPA-RES-SED07	NA	503807	
NYPA-RES-SED08	NA	503808	
NYPA-RES-SED09	NA	503809	
NYPA-RES-SED12	NA	503810	
NYPA-ERB-01	NA	503811	

FN 10-8-02

0329

* *Contact Project Director*

Reviewed By: _____ Date: 10/11/02

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STL Burlington

** COOLER RECEIPT CHECKLIST **

List ETR 90131

WERE CUSTODY SEALS PRESENT ON THE COOLERS?

YES NO

WERE THE CUSTODY SEALS SIGNED?

YES NO

WERE THERE CUSTODY SEAL NUMBERS?

YES NO

LIST THE CUSTODY SEAL NUMBERS. _____ _____

WHAT TYPE OF COOLING WAS UTILIZED?

ICE MELTED ICE PACKS NONE

COOLER TEMPERATURE (degrees c): 4° (2-6 °C Acceptable)

DATE AND TIME COOLER RECEIVED: 10/5/02 1315

DO SAMPLES APPEAR TO BE INTACT: YES NO

DO ANY SAMPLES HAVE SHORT HOLDING TIMES?
(less than seven days)

WET CHEM	YES	NO
EXTRACTABLES	YES	NO
UNPRES VOA	YES	NO

RADIATION SCREEN RESULTS <0.05 MR/HR YES NO

0330

SM02 Cooler Rnt Chklist
STL Burlington

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Lancaster Laboratories

Where quality is a science.

CLIENT: Environmental Standards, Inc.
SDG: NYP01

LANCASTER LABORATORIES

MISCELLANEOUS WET CHEMISTRY

SAMPLE NUMBERS:

Sample #	Sample Code	Comments
3910761	NYPA1	
3910762	NYPA2	
3911514	LNR03	
3911515	LNR04	
3911516	RES05	
3911517	RES06	
3911518	RES07	
3911519	RES08	
3911520	NYP09	
3911521	RES12	

ANALYSIS:
No problems were encountered during analysis.

QUALITY CONTROL AND NONCONFORMANCE SUMMARY:
QC was within specification.

DATA INTERPRETATION:
The total residue is the difference between 100 and the moisture value (expressed as % by weight).

The residue obtained from the moisture determination is ignited to a constant weight at 550 C in a muffle furnace. The loss of weight on ignition is the volatile residue.

Case Narrative Reviewed and Approved by:

Date: 10.28.02

Sandra J. Miller
Specialist/Coordinator

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Sample Reference List for SDG Number NYP01 with a Data Package Type of I

05686 - Environmental Standards, Inc.
NYPA Niagara Power

Lab Sample Number	Lab Sample Code	Client Sample Description
3910761	NYPA1	NYPA-UNR-SED01 Grab Sediment Sample
3910762	NYPA2	NYPA-UNR-SED02 Grab Sediment Sample
3911514	LNR03	NYPA-LNR-SED03 Grab Sediment Sample
3911515	LNR04	NYPA-LNR-SED04 Grab Sediment Sample
3911516	RES05	NYPA-RES-SED05 Grab Sediment Sample
3911517	RES06	NYPA-RES-SED06 Grab Sediment Sample
3911518	RES07	NYPA-RES-SED07 Grab Sediment Sample
3911519	RES08	NYPA-RES-SED08 Grab Sediment Sample
3911520	NYP09	NYPA-RES-SED09 Grab Sediment Sample
3911521	RES12	NYPA-RES-SED12 Grab Sediment Sample

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Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Sample Administration
Receipt Documentation Log

Client/Project: Environmental Standards (N.Y.)

Date of Receipt: 10-2-02

Time of Receipt: 0920

Source Code: SO-1

Shipping Container Sealed: (Y) / N

COC Seal Present: (Y) / N

COC Seal Intact: (Y) / N

Package: (Chilled) / Not Chilled

Unpacker Emp. No.: 1425

Temperature of Shipping Containers	
#1	#2
Thermometer ID: 7012940	Thermometer ID:
Temp.: 9°	Temp.:
Temp. Bottle / (Surface Temp.) (High-temp)	Temp. Bottle / Surface Temp.
(Wet Ice) / Dry Ice / Ice Packs	Wet Ice / Dry Ice / Ice Packs
Ice Present? (Y) / N Loose / (Bagged)	Ice Present? Y / N Loose / Bagged
#3	#4
Thermometer ID:	Thermometer ID:
Temp.:	Temp.:
Temp. Bottle / Surface Temp.	Temp. Bottle / Surface Temp.
Wet Ice / Dry Ice / Ice Packs	Wet Ice / Dry Ice / Ice Packs
Ice Present? Y / N Loose / Bagged	Ice Present? Y / N Loose / Bagged

Paperwork Discrepancy/Unpacking Problems: (High-temps)

Sample ID's:
NYPA-UNR-SEDO1 = (9°)
NYPA-UNR-SEDO2 = (9°)

Sample Administration Internal Chain of Custody			
Name	Date	Time	Reason for Transfer
Jason P. Berger	10-2-02	1315	Unpacking
Heather Eubinger	10/2/02	1330	Place in Storage or Entry
Heather Eubinger	10/2/02	1443	Remove from Storage
			Place in Storage or Entry
			Entry

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Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Sample Administration
Receipt Documentation Log

Client/Project: Environmental Standards (NY)

Date of Receipt: 10/3/02

Time of Receipt: 0855

Source Code: 60

Shipping Container Sealed: Y / N

COC Seal Present: Y / N

COC Seal Intact: Y / N

Package: Chilled / Not Chilled

Unpacker Emp. No.: 1075

Temperature of Shipping Containers	
#1	#2
Thermometer ID: 3F5030	Thermometer ID:
Temp.: 5.5°C	Temp.:
Temp. Bottle / Surface Temp.	Temp. Bottle / Surface Temp.
Wet Ice / Dry Ice / Ice Packs	Wet Ice / Dry Ice / Ice Packs
Ice Present? Y / N Loose / Bagged	Ice Present? Y / N Loose / Bagged
#3	#4
Thermometer ID:	Thermometer ID:
Temp.:	Temp.:
Temp. Bottle / Surface Temp.	Temp. Bottle / Surface Temp.
Wet Ice / Dry Ice / Ice Packs	Wet Ice / Dry Ice / Ice Packs
Ice Present? Y / N Loose / Bagged	Ice Present? Y / N Loose / Bagged

Paperwork Discrepancy/Unpacking Problems:

Sample Administration Internal Chain of Custody			
Name	Date	Time	Reason for Transfer
[illegible]	10/3/02	0905	Unpacking
[illegible]	10-3-02	0930	Place in Storage or Entry
[illegible]	10-3-02	1045	Remove from Storage [illegible]
			Place in Storage or Entry
			Entry

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Lancaster Laboratories
Where quality is a science.

For Lancaster Laboratories use only
Acct. # 5086 Group# 825156 Sample # 3910741-62

COC # 0002998

Please print. Instructions on reverse side correspond with circled numbers.

(1)
Client: Environmental Standards Acct. #:
Project Name/#: NYPA Niagara Power PWSID #:
Project Manager: Daniel Claycomb P.O.#:
Sampler: Daniel Claycomb Quote #:
Name of state where samples were collected: NY

For Lab Use Only
FSC:
SCR #:

(2) (3) (4) (5) (6)

Sample Identification	Date Collected	Time Collected	Grab	Composite	Matrix: Soil	Matrix: Potable (Check if Applicable) / Water / NPDES	Matrix: Other SEDIMENT	Total # of Containers	Total Volatile Solids								Remarks
NYPA-UNR-SED01	10/01/02	1150	✓				✓	1	✓								
NYPA-UNR-SED02	10/01/02	1315	✓				✓	1	✓								

Temperature of samples upon receipt (if requested)

(7)
Turnaround Time Requested (TAT) (please circle): (Normal) Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
Date results are needed: 3 wks
Rush results requested by (please circle): Phone Fax E-mail
Phone #: Fax #:
E-mail address:

(8)
Data Package Options (please circle if required)
QC Summary Type VI (Raw Data)
Type I (Tier I) GLP
Type II (Tier II) Other
Type III (NJ Red. Del.)
Type IV (CLP) FULL DV

SDG Complete? Yes (No)

State-specific QC required? Yes No
(If yes, indicate QC sample and submit triplicate volume.)
Internal Chain of Custody required? Yes No

(9)

Relinquished by:	Date	Time	Received by:	Date	Time
Dan Claycomb	10/9/02	1500			
			Joseph P. Bergin	10/10/02	0920

Lancaster Laboratories, Inc., 2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 (717) 656-2300

2102 Rev. 7/1/02

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Analysis Request / Environmental Services Chain of Custody

Lancaster Laboratories
Where quality is a science.

For Lancaster Laboratories use only
Acct. # 5686 Group# 825330 Sample # 3911514-21

COC # 0003801

Please print. Instructions on reverse side correspond with circled numbers.

(1) Client: Environmental Standards Acct. #:
Project Name/#: NYPA Niagara Power PWSID #:
Project Manager: Daniel Claycomb P.O.#:
Sampler: Daniel Claycomb Quote #:
Name of state where samples were collected: NY

For Lab Use Only
FSC:
SCR #: 1116457

(2) Sample Identification	Date Collected	Time Collected	(3) Matrix	(4) Containers	Total Volatile Solids	Remarks
NYPA-LNR-SED03	10/01/02	1815	✓	✓ 3	✓	MS/MSD DPC 10/02/02
NYPA-LNR-SED04	10/01/02	1850	✓	✓ 1	✓	
NYPA-RES-SED05	10/02/02	1040	✓	✓ 1	✓	
NYPA-RES-SED06		1115	✓	✓ 1	✓	
NYPA-RES-SED07		1135	✓	✓ 1	✓	
NYPA-RES-SED08		1235	✓	✓ 1	✓	
NYPA-RES-SED09		1310	✓	✓ 1	✓	
NYPA-RES-SED12		1270	✓	✓ 1	✓	

(7) Turnaround Time Requested (TAT) (please circle): Normal Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
Date results are needed: 3 weeks
Rush results requested by (please circle): Phone Fax E-mail
Phone #: Fax #:
E-mail address:

(8) Data Package Options (please circle if required)
QC Summary Type VI (Raw Data)
Type I (Tier I) GLP
Type II (Tier II) Other
Type III (NJ Red. Del.)
Type IV (CLP) FULL DV

SDG Complete? Yes No
State-specific QC required? Yes No
(If yes, indicate QC sample and submit triplicate volume.)
Internal Chain of Custody required? Yes No

Relinquished by:	Date	Time	Received by:	Date	Time
[signature]	10/4/02	0335	[signature]	10/4/02	0335
Dan Clayton	10/01/02	1730			

Lancaster Laboratories, Inc., 2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 (717) 656-2300
Copies: White and yellow should accompany samples to Lancaster Laboratories. The pink copy should be retained by the client.

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Analysis Request / Environmental Services Chain of Custody

Lancaster Laboratories
Where quality is a science.

Acct. # 5086 For Lancaster Laboratories use only Group# 825150 Sample # 3910741-62

COC # 0002998

Please print. Instructions on reverse side correspond with circled numbers.

(1)
Client: Environmental Standards Acct. #:
Project Name/#: NYPA Niagara Power PWSID #:
Project Manager: Daniel Craycomb P.O.#:
Sampler: Daniel Craycomb Quote #:
Name of state where samples were collected: NY

For Lab Use Only
FSC:
SCR #:

(2) (3) (4) (5) (6)

Sample Identification	Date Collected	Time Collected	Total # of containers	Total Volatile Solids	Remarks
NYPA-UNR-SED01	10/01/02	1150	1	✓	
NYPA-UNR-SED02	10/01/02	1315	1	✓	

(7)
Turnaround Time Requested (TAT) (please circle): Normal Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
Date results are needed: 3 wks
Rush results requested by (please circle): Phone Fax E-mail
Phone #: Fax #:
E-mail address:

(8)
Data Package Options (please circle if required)
QC Summary Type VI (Raw Data)
Type I (Tier I) GLP
Type II (Tier II) Other
Type III (NJ Red/Del.)
Type IV (CLP) FOIII DV

SDG Complete? Yes No
State-specific QC required? Yes No
(If yes, indicate QC sample and submit triplicate volume.)
Internal Chain of Custody required? Yes No

Relinquished by:	Date	Time	Received by:	Date	Time
Daniel Craycomb	10/3/02	1500			
			Joseph P. Bergin	10/2/02	0920

Lancaster Laboratories, Inc., 2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 (717) 656-2300
Copies: White and yellow should accompany samples to Lancaster Laboratories. The pink copy should be retained by the client.

2102. Rev. 7/1/02

NOV 12'02 11:52 No.004 P.03 ID:

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Battelle

Data Summary
NYPA Niagara Power Project

Sample Receipt and Custody
Battelle Marine Sciences Laboratory (MSL) received twelve sediment samples on 10/3/02 and a water sample (rinse blank) on 10/4/02. Both sets of samples were received in good condition with cooler temperatures recorded at 5.6°C and 2.0°C, respectively. All samples were logged in and assigned an MSL code (1899).

Sample Preparation
The sediment samples were freeze-dried, samples 1899*3 a, b, and c were composited, and all samples were then digested with aqua regia on 10/14/02 according to EPA Method 1631B (modified). The rinse blank water sample was digested on 10/17/02 for total mercury by adding bromine monochloride for a minimum of 24 hours. The water and sediment samples were analyzed via EPA Method 1631 on 10/18/02 and 10/21/02, respectively, which is within the holding time of 28 days.

Analysis
Mercuric ions in the oxidized sample were reduced to Hg^{o} with $SnCl_2$, and then purged onto gold-coated sand traps as a means of preconcentration and interference removal. Mercury vapor was thermally desorbed to a second "analytical" gold trap, and from that into a fluorescence cell. Fluorescence (peak area) is proportional to the quantity of mercury collected, which is quantified using a calibration factor as a function of the quantity of sample purged.

Results
Sediment samples: Three method blanks, two standard reference materials, one Ongoing Precision and Recovery (OPR) spiked sample, one matrix spike/matrix spike duplicate pair, and one set of replicates were analyzed with the samples. Mercury concentrations in the sediment samples ranged from 0.0136 ug/g to 0.577 ug/g. Mercury concentrations in the method blanks averaged less than the current detection limit of 0.000270 ug/g. Because mercury was not detected in the blanks, the data are not blank corrected. The two SRMs recovered at 7% and 3% of the certified value. OPR spike recoveries ranged from 102% and 96%. The matrix spike recoveries were 89% and 94%, with an RPD of 6%. The RPD for the duplicates was 16%. All QC criteria for accuracy and precision were met.

Rinse blank water sample: Three method blanks, one standard reference material sample (1641d, equivalent to a laboratory control sample), and one Ongoing Precision and Recovery sample (OPR) was analyzed with the rinse water sample. Mercury concentrations in the method blanks averaged less than the current detection limit of 0.160 ng/L. Because the average mercury concentration was less than the detection limit, the data are not blank corrected. SRM 1641d has a higher mercury concentration than the samples; therefore it was diluted to ensure that the instrument response was similar to that of the samples. The SRM recovery was within 8% of the certified value. OPR recoveries were 101% (Run 1) and 104% (Run 2), which is within the method data quality objective of 77-123% recovery. Within the analytical batch, other field samples were analyzed with MS/MSDs and replicates that were within acceptable method data quality objectives. All data quality objectives for accuracy and precision were met.

Total Mercury Analysis by EPA 1631

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SAMPLE CUSTODY RECORD

(SOP# MSL-A-001 & MSL-A-002)

Date: 10/02/02

Battelle
. . . Putting Technology To Work
Pacific Northwest Division
Marine Sciences Laboratory
1529 West Sequim Bay Road
Sequim, Washington 98382

Project Name: NYPA Niagara Power Project
Project Manager: Daniel Claycomb
Phone Number: 610-435-5577

Shipment Method: UPS
Preservation: NONE

Line	Field Sample ID	Collection Date/Time	Matrix	No. of Containers	Test Parameters: 1631B Mercury					Laboratory ID	Observations/Comments
1	NYPA-UNR-SED01	10/01/02 / 1150	SEDIMENT	1	✓					1899-1	
2	NYPA-UNR-SED02	/ 1315		1	✓					2	
3	NYPA-LNR-SED03	/ 1815		3	✓					3a-c	MS/MSD #unreadable, time match
4	NYPA-LNR-SED04	/ 1850		1	✓					4	#unreadable but time match
5	NYPA-RES-SED05	10/02/02 / 1040		1	✓					5	
6	NYPA-RES-SED06	/ 1115		1	✓					6	
7	NYPA-RES-SED07	/ 1135		1	✓					7	
8	NYPA-RES-SED08	/ 1235		1	✓					8	
9	NYPA-RES-SED09	/ 1310		1	✓					9	
10	NYPA-RES-SED12	/ 1240		1	✓					1899-10	
11											
12											
13											
14											
15											

Relinquished By:	Company: ENV SPDS
Dan Claycomb / DAN CLAYCOMB	10/02/02 / 1730
Signature/Printed Name	Date/Time

Received By:	Company: MSL
[signature]	10/03/02 1200
Signature/Printed Name	Date/Time

Relinquished By:	Company:
Signature/Printed Name	Date/Time

Received By:	Company:
Signature/Printed Name	Date/Time

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cc: Project Manager/Central File
Login File

1899

SAMPLE LOGIN

(SOP# MSL-A-001)

Project Manager: Niewolny
Date Received: 10/03/02
Batch: 1

PROJECT: NYPA Niagara Power Project

UNR

SPONSOR CODE	Site Description	BATTELLE CODE	MATRIX	STORAGE LOCATION	PARAMETERS REQUESTED	COLLECTION DATE	INITIALS
NYPA-~~V~~NR-SED01	NA	1899-1	sediment	Deep Freezer	Hg/ 1631B	10/01/02	MLFM
NYPA-~~V~~NR-SED02	NA	1899-2	sediment	Deep Freezer	Hg/ 1631B	10/01/02	MLFM
NYPA-LNR-SED03	NA	1899-3a-c*	sediment	Deep Freezer	Hg/ 1631B	10/01/02	MLFM
NYPA-LNR-SED04	NA	1899-4*	sediment	Deep Freezer	Hg/ 1631B	10/01/02	MLFM
NYPA-RES-SED05	NA	1899-5	sediment	Deep Freezer	Hg/ 1631B	10/02/02	MLFM
NYPA-RES-SED06	NA	1899-6	sediment	Deep Freezer	Hg/ 1631B	10/02/02	MLFM
NYPA-RES-SED07	NA	1899-7	sediment	Deep Freezer	Hg/ 1631B	10/02/02	MLFM
NYPA-RES-SED08	NA	1899-8	sediment	Deep Freezer	Hg/ 1631B	10/02/02	MLFM
NYPA-RES-SED09	NA	1899-9	sediment	Deep Freezer	Hg/ 1631B	10/02/02	MLFM
NYPA-RES-SED12	NA	1899-10	sediment	Deep Freezer	Hg/ 1631B	10/02/02	MLFM

*number on bottle unreadable, but date & time match that on COC for these samples

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LOG-IN CHECKLIST

Central File #: 1899 Project Manager: Niewoling

TO BE COMPLETED BY PROJECT MANAGER (prior to arrival when possible)

Matrix: Sediment ✓ WP#

Yes	No	
	✓	Navy-type Project (requires high-level sample tracking procedures)
	✓	Filter Samples: Amount: Entire sample / Half of sample
✓		Freeze dry sample(s) - samples will be weighed and placed in ultralow temp freezer (Lab# 130)
	✓	Special instructions:

Sample Preservation Instructions: Freezing

Date To Archive: Date To Dispose:

TO BE COMPLETED UPON SAMPLE ARRIVAL/LOG-IN

Yes	No	N/A	Indicate in Appropriate Box
✓			Was a custody seal present?
✓			Was the custody seal intact?
✓			Was cooler(s) temperature(s) within acceptable range of 4±2°C? 5.6 ✓ °C (if multiple coolers, note temp. of each) °C
		✓	Was Project Manager notified of any custody/login discrepancies (cooler temp, sponsor codes, etc)? Comment/Remedy:
✓			Were all chain of custody forms signed and dated?
	✓		Were samples filtered at MSL?

Sample condition(s): Acceptable Other (explain):

Container type: Teflon Poly Glass Spex Other:

Notes:

Completed By: [signature] Date/Time: 10/03/02 1200 ✓

SAMPLE PRESERVATION

- [ ] Sample(s) were preserved at MSL
- [ ] Sample(s) were preserved upon arrival at MSL (noted on CoC / Sample / per PM Instruction)
- [ ] Random pH checked for ~10% of samples (use dip paper) Sample IDs:
- [ ] Complete pH check required for project (use pH meter and record on pH Record form)

If preservation necessary, record Acid Lot#

Type:
- [ ] 0.2% HNO3 Notes:
- [ ] 0.5% HCl (Hg samples) Notes:
- [ ] Refrigerate/Freeze Notes: Deep freeze
- [ ] Other Notes:

Completed By: [signature] Date/Time: 10/03/02 1200

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SAMPLE CUSTODY RECORD

(SOP# MSL-A-001 & MSL-A-002)

Date: 10/03/02

Battelle
. . . Putting Technology To Work

Pacific Northwest Division
Marine Sciences Laboratory
1529 West Sequim Bay Road
Sequim, Washington 98382

Project Name: NYPA Niagara Power Project
Project Manager: Daniel Claycomb
Phone Number: 610-935-5577

Shipment Method: UPS
Preservation: NONE

Line	Field Sample ID	Collection Date/Time	Matrix	No. of Containers	Test Parameters: Mercury					Laboratory ID	Observations/Comments
1	NYPA-ERB-01	10/03/02 / 0850	WATER	1	✓					1899v11	Equipment BLANK
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											

Relinquished By:	Company: ENV STDS	Received By:	Company: MSL
Dan Claycomb	10/03/02 / 1700	McGahan / MLF McGahan	10/04/02 1345
Signature/Printed Name	Date/Time	Signature/Printed Name	Date/Time

Relinquished By:	Company:	Received By:	Company:
Signature/Printed Name	Date/Time	Signature/Printed Name	Date/Time

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cc: Project Manager/Central File
Login File 1899

SAMPLE LOGIN

(SOP# MSL-A-001)

Project Manager: Niewolny
Date Received: 10/04/02
Batch: 2

PROJECT: NYPA Niagara Power Project

SPONSOR CODE	Site Description	BATTELLE CODE	MATRIX	STORAGE LOCATION	PARAMETERS REQUESTED	COLLECTION DATE	INITIALS
NYPA-ERB-01	Equip. Blank	1899-11	water	Hg Lab	Hg	10/03/02	MLFM

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LOG-IN CHECKLIST

Central File #: 1899 Project Manager:

TO BE COMPLETED BY PROJECT MANAGER (prior to arrival when possible)

Matrix: WP#

Yes	No	
		Navy-type Project (requires high-level sample tracking procedures)
		Filter Samples: Amount: Entire sample Half of sample
		Freeze dry sample(s) - samples will be weighed and placed in ultralow temp freezer (Lab# 130)
		Special instructions:

Sample Preservation Instructions:

Date To Archive: Date To Dispose:

TO BE COMPLETED UPON SAMPLE ARRIVAL/LOG-IN

Yes	No	N/A	Indicate in Appropriate Box
			Was a custody seal present?
			Was the custody seal intact?
			Was cooler(s) temperature(s) within acceptable range of 4±2°C? 20 °C (if multiple coolers, note temp. of each) °C
			Was Project Manager notified of any custody/login discrepancies (cooler temp, sponsor codes, etc)? Comment/Remedy:
			Were all chain of custody forms signed and dated?
			Were samples filtered at MSL?

Sample condition(s): Acceptable Other (explain):

Container type: Teflon Poly Glass Spex Other:

Notes:

Completed By: Date/Time: 10/04/02 1345

SAMPLE PRESERVATION

- [x] Sample(s) were preserved at MSL
- [ ] Sample(s) were preserved upon arrival at MSL (noted on CoC / Sample / per PM Instruction)
- [ ] Random pH checked for ~10% of samples (use dip paper) Sample IDs:
- [ ] Complete pH check required for project (use pH meter and record on pH Record form)

If preservation necessary, record Acid Lot#

Type:			Notes:
		0.2% HNO3	
	[x]	0.5% HCl (Hg samples)	Baker Lot # X13037
		Refrigerate/Freeze	
		Other	

Completed By: Mary Ann Deutte Date/Time: 10/4/02 1350

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CASE NARRATIVE

A2J040301

The following report contains the analytical results for one water sample and ten solid samples submitted to STL North Canton by Environmental Standards, Inc. from the NYPA Niagara Power (NY). The samples were received October 2, 3 and 4, 2002, according to documented sample acceptance procedures.

The Dioxin/Furans analysis was performed at the STL Knoxville laboratory. A copy of their data is provided in this report.

STL North Canton utilizes USEPA approved methods in all analytical work. The sample(s) presented in this report were analyzed for the parameter(s) listed on the Analytical Methods Summary page in accordance with the method(s) indicated. Preliminary results were provided to Dan Claycomb on November 22, 2002.

The results included in this report have been reviewed for compliance with the laboratory QA/QC plan. All data have been found to be compliant with laboratory protocol.

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The temperature of the coolers upon sample receipt was 3.3, 5.8, 2.7, 5.4 and 4.8° C.

See STL's Cooler Receipt Form for additional information.

STL KNOXVILLE – DIOXIN/FURANS

Please refer to the narrative provided by STL Knoxville.

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PROJECT NARRATIVE

Lot Number: A2J040301

Method(s): SW-846 8290

Dioxin Analysis

Batch 2280140

All QC criteria were met.

Batch 2281130

All QC criteria were met.

Batch 2316125

All QC criteria were met with the following exceptions:

The sample NYPA-UNR-SED01 was originally extracted within the method holding. Due to matrix interferences, a smaller aliquot of the sample was re-extracted outside holding time as per project manager's request.

The following flags are used to qualify results for chlorinated dioxin and furan results:

J – The reported result is an estimate. The amount reported is below the Minimum Level (ML). The qualitative definition of the ML is "the lowest level at which the analytical system must give a reliable signal and an acceptable calibration point". The ML was introduced in EPA Methods 1624 and 1625 in 1980 and was promulgated in these methods in 1984 at 40 CFR Part 136, Appendix A. For the purposes of this report the ML is qualitatively defined as described above, and quantitatively defined as follows: **Minimum Level:** The concentration or mass of analyte in the sample that corresponds to the lowest calibration level in the initial calibration. It represents a concentration (in the sample extract) equivalent to that of the lowest calibration standard, after corrections for method-specified sample weights, volumes and cleanup procedures has been employed.

Example: The lowest calibration level for TCDD in the initial calibration is 0.05 pg/uL. A mass of 10 pg of 2,3,7,8-TCDD in the sample would result in a concentration of 0.05 pg/uL in the sample extract (at a final volume of 20 uL). Since the concentration in the sample extract corresponds to the concentration in the lowest calibration standard, the 10 pg mass in the sample components is the ML. If the sample extract is further diluted, the ML will increase by the dilution factor.

Example: A 1/10 dilution is performed on the sample extract described above. The ML for 2,3,7,8-TCDD becomes 100 pg rather than the default of 10 pg.

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E – The reported result is an estimate. The amount reported is above the UCL described below.
The E qualifier is applied on the basis of the **Upper Calibration Level (UCL)**. The quantitative definition of the UCL is listed below:
Upper Calibration Level: The concentration or mass of analyte in the sample that corresponds to the highest calibration level in the initial calibration. It is equivalent to the concentration of the highest calibration standard, assuming that all method-specified sample weights, volumes, and cleanup procedures have been employed.
Example:
The maximum calibration level for TCDD in the initial calibration is 200 pg/uL. A mass of 4000 pg of 2,3,7,8-TCDD in the sampling components would result in a concentration of 200 pg/uL in the sample extract (at a final volume of 20 uL). Since the concentration in the sample extract corresponds to the concentration in the highest calibration standard, the 4000 pg mass in the sample components is the UCL. If the sample extract is further diluted, the ML will increase by the dilution factor.
Example:
A 1/10 dilution is performed on the sample extract described above. The UCL for 2,3,7,8-TCDD becomes 40,000 pg rather than the default of 4000 pg. In this examples all positive 2,3,7,8-TCDD results above 40,000 pg are flagged with an E.
B – The analyte is present in the associated method blank at a reportable level. For this analysis, there is no method specified reporting level, other than the qualitative criterion that peaks must exhibit a signal-to-noise ratio of 2.5-to-1. Therefore, the presence of any amount of the analyte present in the blank will result a B qualifier on all associated samples.
If the blank has analytes present above the ML (described above) the need for corrective action beyond qualifying the associated data is evaluated. The determination is made whether the amount in the blank is less than 5% of the lowest amount in associated client samples or regulatory limit. If this is the case, sample processing may continue with the qualification of the data. If the amount in the blank is greater than 5% of the lowest amount in associated client samples or regulatory limit, corrective action must be taken.
The corrective actions may include extracting a second aliquot of sample if available, or notifying the client to assess the impact on the project objectives.
Note: Some laboratories do not report contamination in the blank unless it is above their lower calibration limit, or an established percentage of the level in the samples, or an established percentage of the regulatory limit. Likewise, some laboratories set a reporting limit at one half the lower calibration limit.
Q – Estimated maximum possible concentration. This qualifier is used when the result is generated from chromatographic data that does not meet all the qualitative criteria for a positive identification given in the method. The criteria include the following areas:
- Ion abundance ratios must be within specified limits (+/-15% of theoretical ion abundance ratio.)

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• Retention time criteria (relative to the method-specified isotope labeled retention time standard).
• Co-maximization criterion. The two quantitation ion peaks must reach their maxima within 2 seconds of each other.
• Polychlorinated dibenzofuran purity. No peak can be identified as a polychlorinated dibenzofuran if a polychlorinated diphenyl ether peak maximizes within +/- 2 seconds of the furan candidate.
S – Ion suppression evident. The trace indicating the signal from the lock mass of the calibration compound shows a deflection at the retention time of the analyte. This may indicate a temporary suppression of the instrument sensitivity, due to a matrix-borne interference.
C – Coeluting Isomer. The isomer is known to coelute with another member of its homologue group, or the peak shape is shouldered, indicating the likelihood of a coeluting isomer
X – Other. See explanation in narrative.

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QUALITY CONTROL ELEMENTS OF SW-846 METHODS

STL North Canton conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data.

QC BATCH

Environmental samples are taken through the testing process in groups called QUALITY CONTROL BATCHES (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. STL North Canton requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples. These QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) pair or a MATRIX SPIKE/SAMPLE DUPLICATE (MS/DU) pair. If there is insufficient sample to perform an MS/MSD or an MS/DU, then a LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) is included in the QC batch.

LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the repreparation and reanalysis of all samples in the QC batch. The only exception is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

At times, a Laboratory Control Sample Duplicate (LCSD) is also included in the QC batch. An LCSD is a QC sample that is created and handled identically to the LCS. Analyte recovery data from the LCSD is assessed in the same way as that of the LCS. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system. Precision data are expressed as relative percent differences (RPDs). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still acceptable.

METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed below.)

Volatile (GC or GC/MS)	Semivolatile (GC/MS)	Metals
Methylene chloride	Phthalate Esters	Copper
Acetone		Iron
2-Butanone		Zinc
		Lead*

- *for analyses run on TJA Trace ICP, ICPMS or GFAA only*

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.

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- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the repreparation and reanalysis of all samples in the QC batch.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results may not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable. The acceptance criteria do not apply to samples that are diluted for organics if the native sample amount is 4x the concentration of the spike.

For certain methods, a Matrix Spike/Sample Duplicate (MS/DU) may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepped and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepped and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater.

For the Pesticide, PCB, PAH, and Herbicide methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria.

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SAMPLE SUMMARY

A2J040301

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
E9FQJ	001	NYPA-UNR-SED01	10/01/02	11:50
E9FQM	002	NYPA-UNR-SED02	10/01/02	13:15
E9FQN	003	NYPA-LNR-SED03	10/01/02	18:15
E9FQR	004	NYPA-LNR-SED04	10/01/02	18:50
E9FQT	005	NYPA-RES-SED05	10/02/02	10:40
E9FQ2	006	NYPA-RES-SED06	10/02/02	11:15
E9FQ3	007	NYPA-RES-SED07	10/02/02	11:35
E9FQ4	008	NYPA-RES-SED08	10/02/02	12:35
E9FQ5	009	NYPA-RES-SED09	10/02/02	13:10
E9FQ6	010	NYPA-RES-SED12	10/02/02	12:40
E9FQ8	011	NYPA-ERB-01	10/03/02	08:50

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

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Chain of Custody Record

SEVERN TRENT SERVICES — Severn Trent Laboratories, Inc.

TL-4124 (0901)

Client: Environmental Standards, Inc.	Project Manager: Daniel Claycomb	Date: 10/01/02	Chain of Custody Number: 120846
Address: 140 Valley Forge Rd. PO Box 810	Telephone Number (Area Code)/Fax Number: 610-935-5577 / 610-935-5583	Lab Number:	Page 1 of 1
City: Valley Forge; State: PA; Zip Code: 19482-0810	Site Contact: Daniel Claycomb	Lab Contact: Frank Calovini	
Project Name and Location (State): NYPA Niagara Power (NY)	Carrier/Waybill Number: UPS		
Contract/Purchase Order/Quote No.: Y1081641			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil		Containers & Preservatives: Unpres.	H_2SO_4	HNO_3	HCl	NaOH	ZnAc/NaOH		Analysis (Attach list if more space is needed): Pesticides	As, Pb, Cd	Total PCBs	2,3,7,8-TCDD	Total PAHs	Tetrachlorodibenzofuran	Grain Size	TOC					Special Instructions/ Conditions of Receipt
NYPA-UNR-SED01	10/01/02	1150			✓			✓							✓	✓	✓	✓	✓	✓	✓	✓					
NYPA-UNR-SED02	10/01/02	1315			✓			✓							✓	✓	✓	✓	✓	✓	✓	✓					

Possible Hazard Identification: ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other Normal (3-4 wks)

QC Requirements (Specify):

1. Relinquished By: Dan Claycomb	Date: 10/01/02	Time: 1500	1. Received By: [signature]	Date: 10-2-02	Time: 1015
2. Relinquished By:	Date:	Time:	2. Received By:	Date:	Time:
3. Relinquished By:	Date:	Time:	3. Received By:	Date:	Time:

Comments:

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

STL North Canton

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Chain of Custody Record

SEVERN TRENT SERVICES — Severn Trent Laboratories, Inc.

STL-4124 (0901)

Client: Environmental Standards, Inc.	Project Manager: Daniel Claycomb	Date: 10/02/02	Chain of Custody Number: 120845
Address: 1140 Valley Forge Rd. / PO Box 810	Telephone Number (Area Code)/Fax Number: 610-935-5577 / 610-935-5583	Lab Number	Page 1 of 1
City: Valley Forge; State: PA; Zip Code: 19482-0810	Site Contact: Daniel Claycomb	Lab Contact: Frank Calvini	
Project Name and Location (State): NYPA Niagara Power (NY)	Carrier/Waybill Number: UPS		
Contract/Purchase Order/Quote No.: 4108 1641			

Analysis (Attach list if more space is needed)

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Air	Aqueous	Sed.	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Pesticides	As Pb Cd	Total PCBs	2,3,7,8-TCDD	Total PAHs	Tetrahydrofuran	Grain Size	TOC	Special Instructions/ Conditions of Receipt
NYPA-LNR-SED03	10/01/02	1815			✓		✓						✓	✓	✓	✓	✓	✓	✓	✓	
NYPA-LNR-SED04	10/01/02	1850			✓		✓						✓	✓	✓	✓	✓	✓	✓	✓	
NYPA-RES-SED05	10/02/02	1040			✓		✓						✓	✓	✓	✓	✓	✓	✓	✓	
NYPA-RES-SED06	↓	1115			✓		✓						✓	✓	✓	✓	✓	✓	✓	✓	
NYPA-RES-SED07		1135			✓		✓						✓	✓	✓	✓	✓	✓	✓	✓	
NYPA-RES-SED08		1235			✓		✓						✓	✓	✓	✓	✓	✓	✓	✓	
NYPA-RES-SED09		1310			✓		✓						✓	✓	✓	✓	✓	✓	✓	✓	
NYPA-RES-SED12	↓	1240			✓		✓						✓	✓	✓	✓	✓	✓		✓	NO GRAIN SIZE

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☑ Other Normal (3-4 wks)

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: Dan Claycomb	10/02/02	1730	1. Received By: [signature]	10-3-02	1005
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

STL North Canton

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Chain of Custody Record

SEVERN TRENT SERVICES — Severn Trent Laboratories, Inc.

STL-4124 (0901)

Client	Environmental Standards, Inc.
Address	1140 Valley Forge Rd. / PO Box 810
City / State / Zip Code	Valley Forge / PA / 19482-0810
Project Name and Location (State)	NYPA Niagara Power (NY)
Contract/Purchase Order/Quote No.	Y1081641
Project Manager	Daniel Claycomb
Telephone Number (Area Code)/Fax Number	610-935-5577 / 610-935-5583
Site Contact	Daniel Claycomb
Lab Contact	Frank Calomini
Carrier/Waybill Number	UPS
Date	10/03/02
Chain of Custody Number	120844
Lab Number	
Page	1 of 1

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Air	Aqueous	Sed.	Soil		Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Pesticides	Herbicides	Total PAHs	Total Phenols	Total Metals	Total Cyanide	Total Sulfide	Total Organic Carbon	Total Phosphorus	Total Kjeldahl Nitrogen	Total Nitrate/Nitrite	Special Instructions/ Conditions of Receipt
NYPA-ERB-01	10/03/02	0850		✓						✓	✓			✓	✓	✓	✓	✓		✓	✓				Equipment Blank

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☑ Other Normal (3-4 wks)

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: Dan Claycomb	10/03/02	1700	1. Received By: [signature]	10-4-02	955
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

STL North Canton

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STL Cooler Receipt Form/Narrative
North Canton Facility

Lot Number: A25040301

Client: ENV Standards Project: _____ Quote#: 49796

Cooler Received on: 10-2-02 Opened on: 10-2-02 by: [signature] (Signature)

Fedx ☐ Client Drop Off ☐ UPS ☑ Airborne ☐ Other: _____

Cooler ☐ Safe ☐ Foam Box ☐ Client Cooler ☑ Other: _____

STL Shipper No#: _____

1. Were custody seals on the outside of the cooler? Yes ☑ No ☐ Intact? Yes ☑ No ☐ NA ☐
   If YES, Quantity 1 Location over seal
   Were the custody seals signed and dated? Yes ☑ No ☐ NA ☐
2. Shipper's packing slip attached to this form? Yes ☑ No ☐
3. Were custody papers included inside the cooler and relinquished? Yes ☑ No ☐
4. Did you sign the custody papers in the appropriate place? Yes ☑ No ☐
5. Packing material used:

Peanuts ☐ Bubble Wrap ☑ Vermiculite ☐ Foam ☐ None ☐ Other: _____

6. Cooler temperature upon receipt 3.3 °C (see back of form for multiple coolers/temp)

METHOD: Temp Vial ☐ Coolant & Sample ☑ Against Bottles ☐ IR ☑ ICE/H_2O Slurry ☐

COOLANT: Wet Ice ☑ Blue Ice ☐ Dry Ice ☐ Water ☐ None ☐

7. Did all bottles arrive in good condition (Unbroken)? Yes ☑ No ☐
8. Did all bottle labels and tags agree with the custody papers? Yes ☑ No ☐
9. Were samples at the correct pH? (record on back) Yes ☐ No ☐ NA ☑
10. Were correct bottles used for the tests indicated? Yes ☑ No ☐
11. Were air bubbles >6 mm in any VOA vials? Yes ☐ No ☐ NA ☑
12. Was a sufficient amount of sample sent in each bottle? Yes ☑ No ☐

Contacted PM _____ Date: _____ by: _____ via Voice Mail ☐ Verbal ☐ Other ☐

Concerning:

√	MACRO	MACRO
1. CHAIN OF CUSTODY		
	SR1A	The chain of custody and sample bottles did not agree. The following discrepancies occurred _____
2. SAMPLE CONDITION		
	SR2A	Sample(s) _____ were received or requested after the recommended holding time had expired.
	SR2B	Sample(s) were received with insufficient volume.
	SR2C	Sample(s) were received in a broken container.
3. SAMPLE PRESERVATION		
	SR3A	Sample(s) _____ were further preserved in sample receiving to meet recommended pH level(s). *Nitric Acid Lot # 120701-HNO3; Sulfuric Acid Lot # 010802-H2SO4; Sodium Hydroxide Lot # 011102-NaOH; Hydrochloric Acid Lot # 041400-HCl; Sodium Hydroxide and Zinc Acetate Lot # 112801-CH3COO2ZN/NaOH*
	SR3B	Sample(s) were received with bubble > 6 mm in diameter (cc: PM)
4. Other (see below or back)		

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STL Cooler Receipt Form/Narrative
North Canton Facility

Lot Number: A2J040301

Client: Env Standards Project: _____ Quote#: _____
Cooler Received on: 10-3-02 Opened on: 10-3-02 by: _____ (Signature)

Fedx ☐ Client Drop Off ☐ UPS ☑ Airborne ☐ Other: _____
Cooler ☐ Safe ☐ Foam Box ☐ Client Cooler ☑ Other: _____
STL Shipper No#: _____

1. Were custody seals on the outside of the cooler? Yes ☑ No ☐ Intact? Yes ☑ No ☐ NA ☐
   If YES, Quantity 1 ea Location over seal (unsdv).
   Were the custody seals signed and dated? Yes ☑ No ☐ NA ☐
2. Shipper's packing slip attached to this form? Yes ☑ No ☐
3. Were custody papers included inside the cooler and relinquished? Yes ☑ No ☐
4. Did you sign the custody papers in the appropriate place? Yes ☑ No ☐
5. Packing material used:
   Peanuts ☐ Bubble Wrap ☑ Vermiculite ☐ Foam ☐ None ☐ Other: _____
6. Cooler temperature upon receipt _____ °C (see back of form for multiple coolers/temp)
   METHOD: Temp Vial ☑ Coolant & Sample ☐ Against Bottles ☐ IR ☐ ICE/H_2O Slurry ☐
   COOLANT: Wet Ice ☑ Blue Ice ☐ Dry Ice ☐ Water ☐ None ☐
7. Did all bottles arrive in good condition (Unbroken)? Yes ☑ No ☐
8. Did all bottle labels and tags agree with the custody papers? Yes ☐ No ☑
9. Were samples at the correct pH? (record on back) Yes ☐ No ☐ NA ☑
10. Were correct bottles used for the tests indicated? Yes ☑ No ☐
11. Were air bubbles >6 mm in any VOA vials? Yes ☐ No ☐ NA ☑
12. Was a sufficient amount of sample sent in each bottle? Yes ☑ No ☐

Contacted PM FSC Date: 10-3-02 by: [illegible] via Voice Mail ☐ Verbal ☑ Other ☐
Concerning:

√	MACRO	MACRO
	1. CHAIN OF CUSTODY	
	SR1A	The chain of custody and sample bottles did not agree. The following discrepancies occurred Did not receive any of SED03 or SED04 ~~Missing 2x500 for SED12~~
	2. SAMPLE CONDITION	
	SR2A	Sample(s) _____ were received or requested after the recommended holding time had expired.
	SR2B	Sample(s) were received with insufficient volume.
	SR2C	Sample(s) were received in a broken container.
	3. SAMPLE PRESERVATION	
	SR3A	Sample(s) _____ were further preserved in sample receiving to meet recommended pH level(s). *Nitric Acid Lot # 120701-HNO3; Sulfuric Acid Lot # 010802-H2SO4; Sodium Hydroxide Lot # 011102-NaOH; Hydrochloric Acid Lot # 041400-HCl; Sodium Hydroxide and Zinc Acetate Lot # 112801-CH3COO2ZNiNaOH*
	SR3B	Sample(s) _____ were received with bubble > 6 mm in diameter (cc: PM)
	4. Other (see below or back)	

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STL Cooler Receipt Form/Narrative
North Canton Facility

Client ID	pH	Date	Initials

Cooler	Temp		Method	Comments
clt cooler	5.8°C ✓	temp vial	~~3% coolant~~	wet ice
clt cooler	2.7°C ✓		temp vial	—

Discrepancies Cont.

Macro Name:

Macro Name:

Macro Name:

Other Anomalies:

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STL Cooler Receipt Form/Narrative
North Canton Facility

Lot Number: A2J040301

Client: Env. Standards Project: _____ Quote#: _____
Cooler Received on: 10-4-02 Opened on: 10-4-02 by: _____ (Signature)

Fedx ☐ Client Drop Off ☐ UPS ☑ Airborne ☐ Other: _____
Cooler ☐ Safe ☐ Foam Box ☐ Client Cooler ☑ Other: _____
STL Shipper No#: _____

1. Were custody seals on the outside of the cooler? Yes ☑ No ☐ Intact? Yes ☑ No ☐ NA ☐
   If YES, Quantity 1 ea Location over seal
   Were the custody seals signed and dated? Yes ☑ No ☐ NA ☐
2. Shipper's packing slip attached to this form? Yes ☑ No ☐
3. Were custody papers included inside the cooler and relinquished? Yes ☑ No ☐
4. Did you sign the custody papers in the appropriate place? Yes ☑ No ☐
5. Packing material used:
   Peanuts ☐ Bubble Wrap ☑ Vermiculite ☐ Foam ☐ None ☐ Other: _____
6. Cooler temperature upon receipt _____ °C (see back of form for multiple coolers/temp)
   METHOD: Temp Vial ☐ Coolant & Sample ☐ Against Bottles ☐ IR ☑ ICE/H_2O Slurry ☐
   COOLANT: Wet Ice ☑ Blue Ice ☐ Dry Ice ☐ Water ☐ None ☐
7. Did all bottles arrive in good condition (Unbroken)? Yes ☑ No ☐
8. Did all bottle labels and tags agree with the custody papers? Yes ☑ No ☑
9. Were samples at the correct pH? (record on back) Yes ☑ No ☐ NA ☐
10. Were correct bottles used for the tests indicated? Yes ☑ No ☐
11. Were air bubbles >6 mm in any VOA vials? Yes ☐ No ☑ NA ☐
12. Was a sufficient amount of sample sent in each bottle? Yes ☑ No ☐

Contacted PM _____ Date: _____ by: _____ via Voice Mail ☐ Verbal ☐ Other ☐
Concerning:

√	MACRO	MACRO
	1. CHAIN OF CUSTODY	
√	SR1A	The chain of custody and sample bottles did not agree. The following discrepancies occurred Received samples for SED03 and SED04 and MS/MSD volume for SED03. Missing from 10-3-02 delivery date - log all together 1 lot per FOC
	2. SAMPLE CONDITION	
	SR2A	Sample(s) _____ were received or requested after the recommended holding time had expired.
	SR2B	Sample(s) were received with insufficient volume.
	SR2C	Sample(s) were received in a broken container.
	3. SAMPLE PRESERVATION	
	SR3A	Sample(s) _____ were further preserved in sample receiving to meet recommended pH level(s). *Nitric Acid Lot # 120701-HNO3; Sulfuric Acid Lot # 010802-H2SO4; Sodium Hydroxide Lot # 011102-NaOH; Hydrochloric Acid Lot # 041400-HCl; Sodium Hydroxide and Zinc Acetate Lot # 112801-CH3COO2ZN/NaOH*
	SR3B	Sample(s) were received with bubble > 6 mm in diameter (cc: PM)
	4. Other (see below or back)	

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STL Cooler Receipt Form/Narrative
North Canton Facility

Client ID	pH	Date	Initials
ERB	<2	10-4-02	Cde

Cooler	Temp	Method	Comments
clt cooler	5.4°C ✓	TR	wet ice
clt cooler	4.8°C	"	"

Discrepancies Cont.

Macro Name:

Macro Name:

Macro Name:

Other Anomalies:

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RSR280

Severn Trent Laboratories, Inc.
Sample Control Record

Client: 127714

Lot #: A2J040301

Case Number/SDG: Y1081641

Storage Location: OUT

Laboratory Sample I.D.	Transferred By	Date	Entered	Removed	Reason	Date Returned
E9FQJ	EZZOL	10/02/02	Yes		Storage	
E9FQM	EZZOL	10/02/02	Yes		Storage	
E9FQN	EZZOL	10/03/02	Yes		Storage	
E9FQR	EZZOL	10/03/02	Yes		Storage	
E9FQT	EZZOL	10/03/02	Yes		Storage	
E9FQ2	EZZOL	10/03/02	Yes		Storage	
E9FQ3	EZZOL	10/03/02	Yes		Storage	
E9FQ4	EZZOL	10/03/02	Yes		Storage	
E9FQ5	EZZOL	10/03/02	Yes		Storage	
E9FQ6	EZZOL	10/03/02	Yes		Storage	
E9FQ8	EZZOL	10/04/02	Yes		Storage	

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ATTACHMENT 5

PROJECT CORRESPONDENCE

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Glenn Esler

From: Konstadina Vlahogiani
Sent: Tuesday, November 05, 2002 12:39 PM
To: 'FCalovini@stl-inc.com'
Cc: Glenn Esler
Subject: NYPA

Frank,

In the pesticide fraction of SDG A2J040261, the data package did not include initial or daily RT window data for the sample analyses performed on 10/9/02 and 10/16/02 on instrument A2HP9. Could you please supply this data?

Thanks

Dina

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Glenn Esler

From: Konstadina Vlahogiani
Sent: Wednesday, November 06, 2002 11:25 AM
To: 'FCalovini@stl-inc.com'
Cc: Glenn Esler
Subject: NYPA/Niagara project/SDG A2J040261

Frank,

These pages/forms are missing from the data package for the SVOA fraction. Could you provide:

8270C Soil Surrogate Recovery summary (Form II) ✓

page 4 of the quantitation report for the 80ng standard analyzed on MSB3 on 10/8/02 at 14:57 (data file B100805.d)

We also need the following deliverables for the PCB fraction:

Retention time window data for instrument A2HP5.

Normalized chromatograms for samples with positive results (the solvent peak dwarfs the Aroclor peaks..we cannot determine pattern recognition).

Thanks
Dina

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Glenn Esler

From: Konstadina Vlahogiani
Sent: Wednesday, November 06, 2002 12:35 PM
To: Glenn Esler
Subject: FW: NYPA/Niagara project/SDG A2J040261

-----Original Message-----
From: FCalovini@stl-inc.com [SMTP:FCalovini@stl-inc.com]
Sent: Wednesday, November 06, 2002 12:25 PM
To: kvlahogiani@envstd.com
Subject: RE: NYPA/Niagara project/SDG A2J040261

Dina, Let me know if you have any other questions related to this issue.

Frank

PCB questions response:

The retention time windows for all Pest and PCBs is 0.05. The Gcsemi group updates the retention times off of the continuing calibrations. The last page of each quant report for samples have the expected retention times for the pesticide compounds. The windows are +/-0.05.

For PCBs you will see the retention times on the continuing calibrations. They are also 0.05.

-----Original Message-----
From: Konstadina Vlahogiani [mailto:kvlahogiani@envstd.com]
Sent: Wednesday, November 06, 2002 11:25 AM
To: Calovini, Frank
Cc: Glenn Esler
Subject: NYPA/Niagara project/SDG A2J040261

Frank,

These pages/forms are missing from the data package for the SVOA fraction. Could you provide:

8270C Soil Surrogate Recovery summary (Form II)

page 4 of the quantitation report for the 80ng standard analyzed on MSB3 on 10/8/02 at 14:57 (data file B100805.d)

We also need the following deliverables for the PCB fraction:

Retention time window data for instrument A2HP5.

Normalized chromatograms for samples with positive results (the solvent peak dwarfs the Aroclor peaks..we cannot determine pattern recognition).

Thanks
Dina

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-----Original Message-----
From: Calovini, Frank
Sent: Wednesday, November 06, 2002 1:47 PM
To: Voigt, Linda
Subject: FW: NYPA/Niagara project/SDG A2J040261

more info needed.
-----Original Message-----
From: Konstadina Vlahogiani [mailto:kvlahogiani@envstd.com]
Sent: Wednesday, November 06, 2002 2:45 PM
To: Calovini, Frank
Subject: FW: NYPA/Niagara project/SDG A2J040261

-----Original Message-----
From: Glenn Esler
Sent: Wednesday, November 06, 2002 2:38 PM
To: Konstadina Vlahogiani
Subject: RE: NYPA/Niagara project/SDG A2J040261

Dina, the attachment is the Aqueous surrogate summary which I don't need. I asked for the Soil surrogate summary.

-----Original Message-----
From: Konstadina Vlahogiani
Sent: Wednesday, November 06, 2002 2:35 PM
To: Glenn Esler
Subject: FW: NYPA/Niagara project/SDG A2J040261

-----Original Message-----
From: FCalovini@stl-inc.com [SMTP:FCalovini@stl-inc.com]
Sent: Wednesday, November 06, 2002 2:28 PM
To: kvlahogiani@envstd.com
Subject: FW: NYPA/Niagara project/SDG A2J040261

-----Original Message-----
From: Voigt, Linda
Sent: Wednesday, November 06, 2002 2:27 PM
To: Calovini, Frank
Cc: Salcher, Neal; Voigt, Linda
Subject: RE: NYPA/Niagara project/SDG A2J040261

Frank,

This info was included in our copy of the data package. It is in the attached file. Let me know if you need anything else.

Thanks,

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Linda

Linda Bendele Voigt
STL Austin
Customer Service Manager
phone: (512) 310-5202
fax: (512) 244-0160
email: lvoigt@stl-inc.com

-----Original Message-----
From: Calovini, Frank
Sent: Wednesday, November 06, 2002 12:29 PM
To: Voigt, Linda
Subject: FW: NYPA/Niagara project/SDG A2J040261

Linda,

could you handle this for me?

Frank
-----Original Message-----
From: Calovini, Frank
Sent: Wednesday, November 06, 2002 1:27 PM
To: Salcher, Neal
Subject: FW: NYPA/Niagara project/SDG A2J040261

Neal,

Could you have someone find and send this information over to me? Only for the 8270 analyses listed below.

Thanks,

Frank Calovini
-----Original Message-----
From: Konstadina Vlahogiani [<mailto:kvlahogiani@envstd.com>]
Sent: Wednesday, November 06, 2002 11:25 AM
To: Calovini, Frank
Cc: Glenn Esler
Subject: NYPA/Niagara project/SDG A2J040261

Frank,

These pages/forms are missing from the data package for the SVOA fraction. Could you provide:

8270C Soil Surrogate Recovery summary (Form II)

page 4 of the quantitation report for the 80ng standard analyzed on MSB3 on 10/8/02 at 14:57 (data file B100805.d)

We also need the following deliverables for the PCB fraction:

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Retention time window data for instrument A2HP5.

Normalized chromatograms for samples with positive results (the solvent peak dwarfs the Aroclor peaks..we cannot determine pattern recognition).

Thanks
Dina

<< File: image17.pdf >>

image17.pdf

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Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)	REVIEW CODE
124 Indeno(1,2,3-cd)pyrene	276	23.312	23.285	(1.098)	486791	80.0000	77.275	R
125 Dibenz(a,h)anthracene	278	23.307	23.285	(1.098)	395810	80.0000	76.086	R
126 Benzo(g,h,i)perylene	276	23.905	23.883	(1.126)	434761	80.0000	79.518	R

QC Flag Legend

Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.

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Glenn Esler

From: Konstadina Vlahogiani
Sent: Thursday, November 07, 2002 9:18 AM
To: Glenn Esler
Subject: FW: NYPA/Niagara project/SDG A2J040261

-----Original Message----
From: FCalovini@stl-inc.com [SMTP:FCalovini@stl-inc.com]
Sent: Wednesday, November 06, 2002 3:35 PM
To: kvlahogiani@envstd.com
Subject: FW: NYPA/Niagara project/SDG A2J040261

-----Original Message-----
From: Voigt, Linda
Sent: Wednesday, November 06, 2002 3:24 PM
To: Voigt, Linda; Calovini, Frank; Hostetler, Mandy
Cc: Salcher, Neal
Subject: RE: NYPA/Niagara project/SDG A2J040261

Frank,

The info is attached.

Linda

Linda Bendele Voigt
STL Austin
Customer Service Manager
phone: (512) 310-5202
fax: (512) 244-0160
email: lvoigt@stl-inc.com

-----Original Message-----
From: Voigt, Linda
Sent: Wednesday, November 06, 2002 2:03 PM
To: Calovini, Frank; Hostetler, Mandy
Cc: Salcher, Neal; Voigt, Linda
Subject: RE: NYPA/Niagara project/SDG A2J040261

Frank - My apology for the oversight.

Mandy - Please provide a pdf of the 8270 Soils Surrogate Summary Form II for the soil data for this lot.

Thanks,
Linda

Linda Bendele Voigt
STL Austin
Customer Service Manager
phone: (512) 310-5202
fax: (512) 244-0160
email: lvoigt@stl-inc.com

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Glenn Esler

From: Konstadina Vlahogiani
Sent: Thursday, November 07, 2002 1:12 PM
To: Glenn Esler
Subject: FW: additional info

-----Original Message-----
From: FCalovini@stl-inc.com [SMTP:FCalovini@stl-inc.com]
Sent: Thursday, November 07, 2002 12:51 PM
To: dclaycomb@envstd.com
Cc: kvlahogiani@envstd.com
Subject: additional info

I've put a package in overnight mail containing some blown-up peaks that Dina had requested. I didn't want to scan these since some resolution is lost.

Let me know if you need anything else.

Frank J. Calovini
Project Manager
STL North Canton
4101 Shuffel Drive NW
North Canton, OH 44720
(330) 966-9294

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Mol, Marcel

From: Belding, Brad
Sent: Wednesday, November 06, 2002 11:58 AM
To: Risden, Ray; Mol, Marcel
Subject: FW: NYPA/Niagara project/SDG A2J040261

I posted this lot on y drive under review. Marcel can you please blow up the chromatograms that they are requesting. Thanks.

Bradley Belding
Severn Trent Laboratories (STL)
North Canton, OH
(330) 966-9684
bbelding@stl-inc.com

2277486
2281409

----Original Message----
From: Gurney, Kim
Sent: Wednesday, November 06, 2002 11:35 AM
To: Belding, Brad
Subject: FW: NYPA/Niagara project/SDG A2J040261

----Original Message----
From: Calovini, Frank
Sent: Wednesday, November 06, 2002 11:28 AM
To: Gurney, Kim; Tokos, Tammy
Subject: FW: NYPA/Niagara project/SDG A2J040261

More information needed for validation questions. Let me know if either of you have any questions.

-----Original Message-----
From: Konstadina Vlahogiani [mailto:kvlahogiani@envstd.com]
Sent: Wednesday, November 06, 2002 11:25 AM
To: Calovini, Frank
Cc: Glenn Esler
Subject: NYPA/Niagara project/SDG A2J040261

Frank,

These pages/forms are missing from the data package for the SVOA fraction. Could you provide:

8270C Soil Surrogate Recovery summary (Form II)

page 4 of the quantitation report for the 80ng standard analyzed on MSB3 on 10/8/02 at 14:57 (data file B100805.d)

We also need the following deliverables for the PCB fraction:

Retention time window data for instrument A2HP5.

Normalized chromatograms for samples with positive results (the solvent peak dwarfs the Aroclor peaks..we cannot determine pattern recognition).

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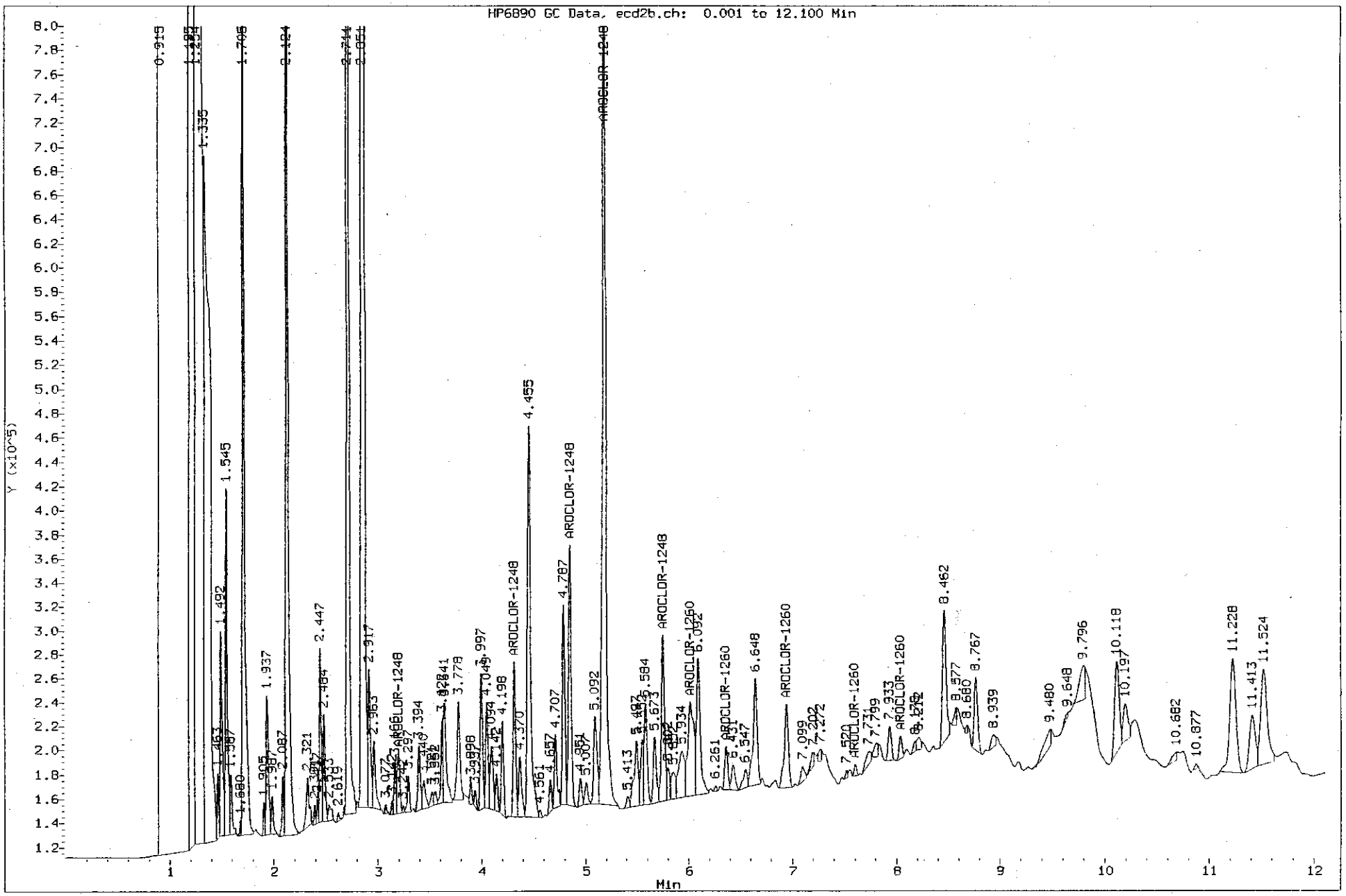
Data File: \\qcanoh04\dd\chem\GC5\a2hp2.i\021010A-2.b\044F4401.D
Injection Date: 11-OCT-2002 11:16
Instrument: a2hp2.i
Client Sample ID: NYPA-LNR-SED03



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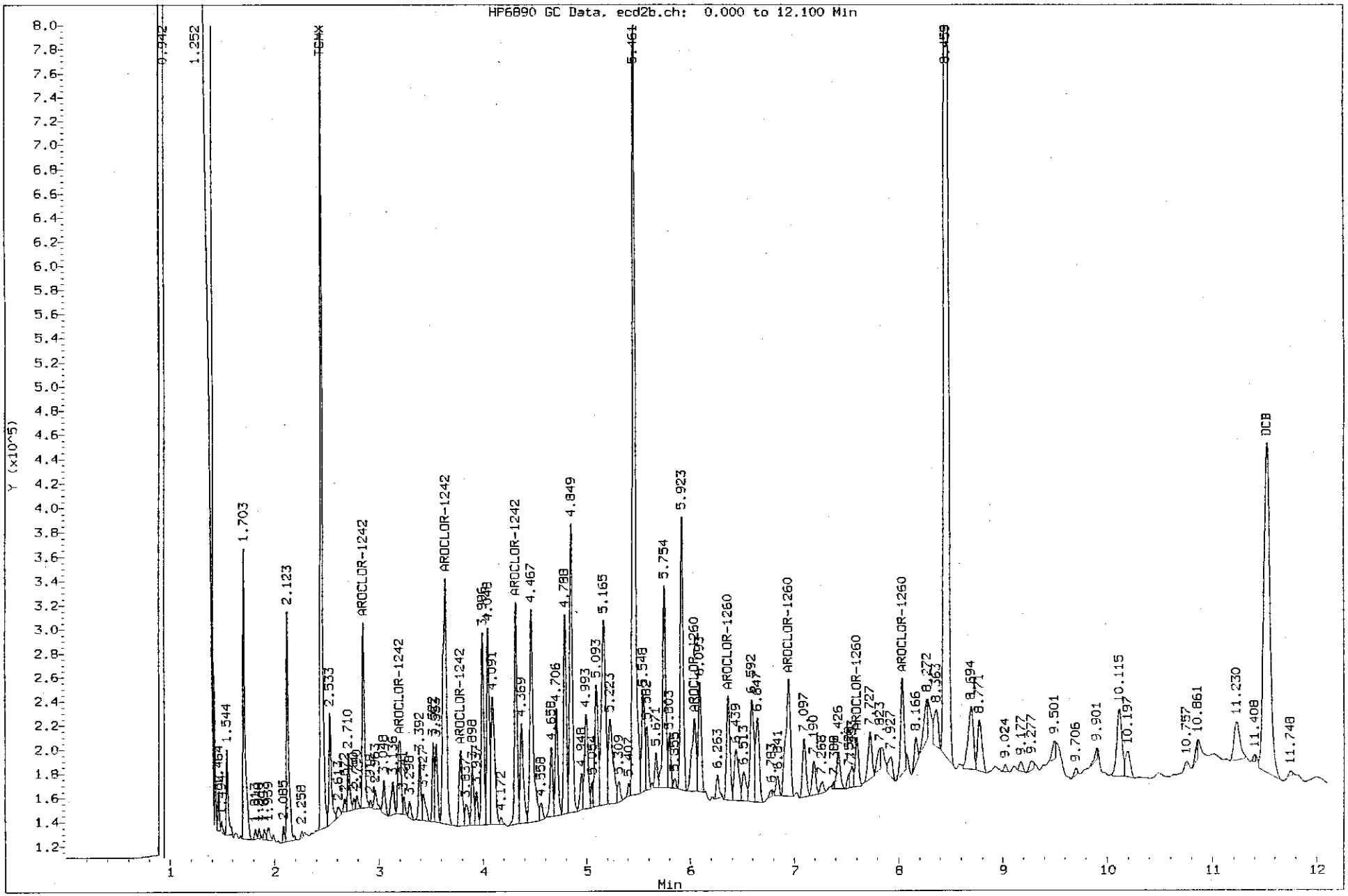
Data File: \\qcanoh04\dd\chem\GCS\a2hp2.i\021010A-2.b\047F4701.D
Injection Date: 11-OCT-2002 12:06
Instrument: a2hp2.i
Client Sample ID: NYPA-LNR-SED04



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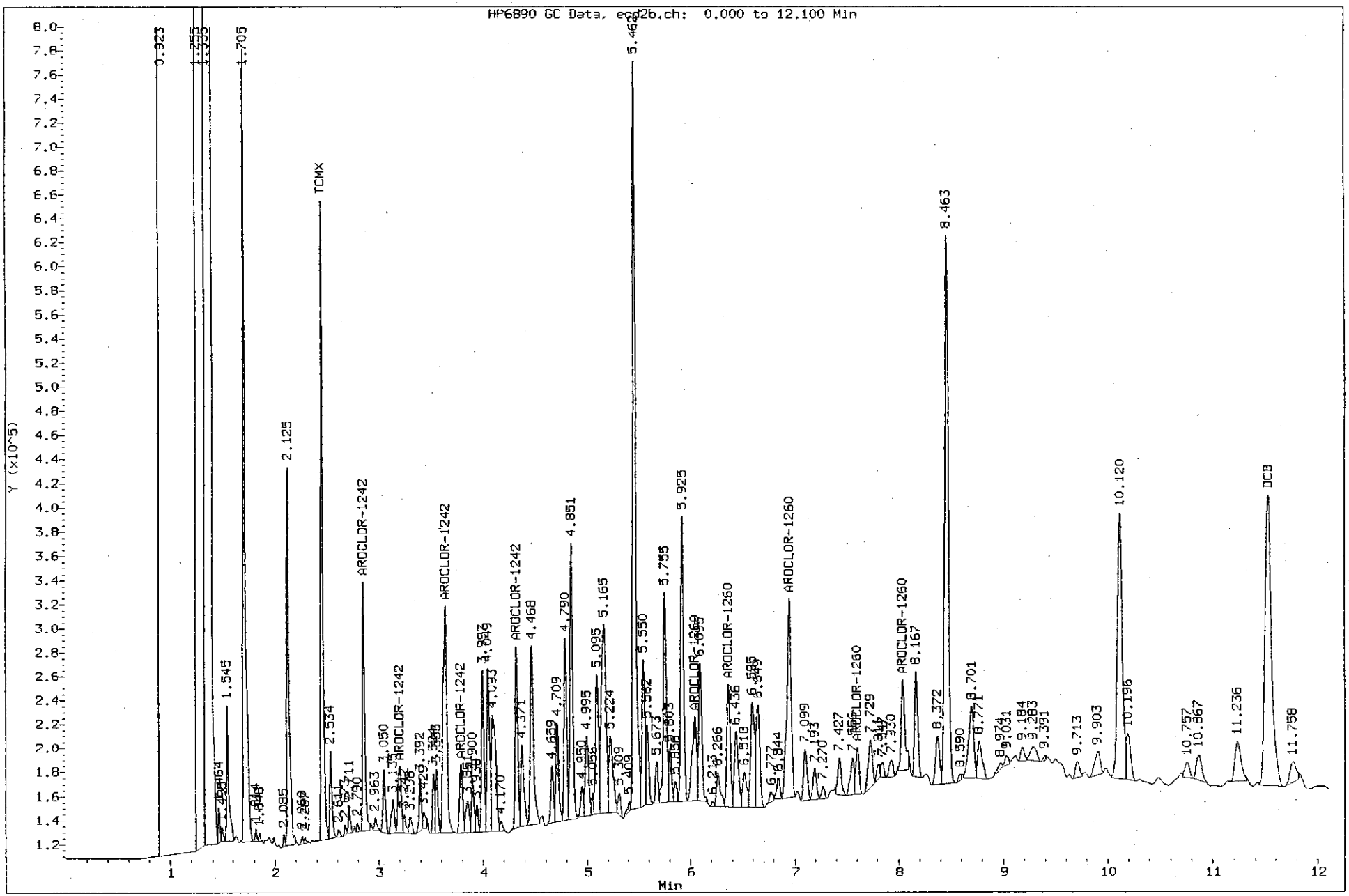
Data File: \\qcanoh04\dd\chem\GCS\a2hp2.i\021010A-2.b\049F4901.D
Injection Date: 11-OCT-2002 12:41
Instrument: a2hp2.i
Client Sample ID: NYPA-RES-SED05



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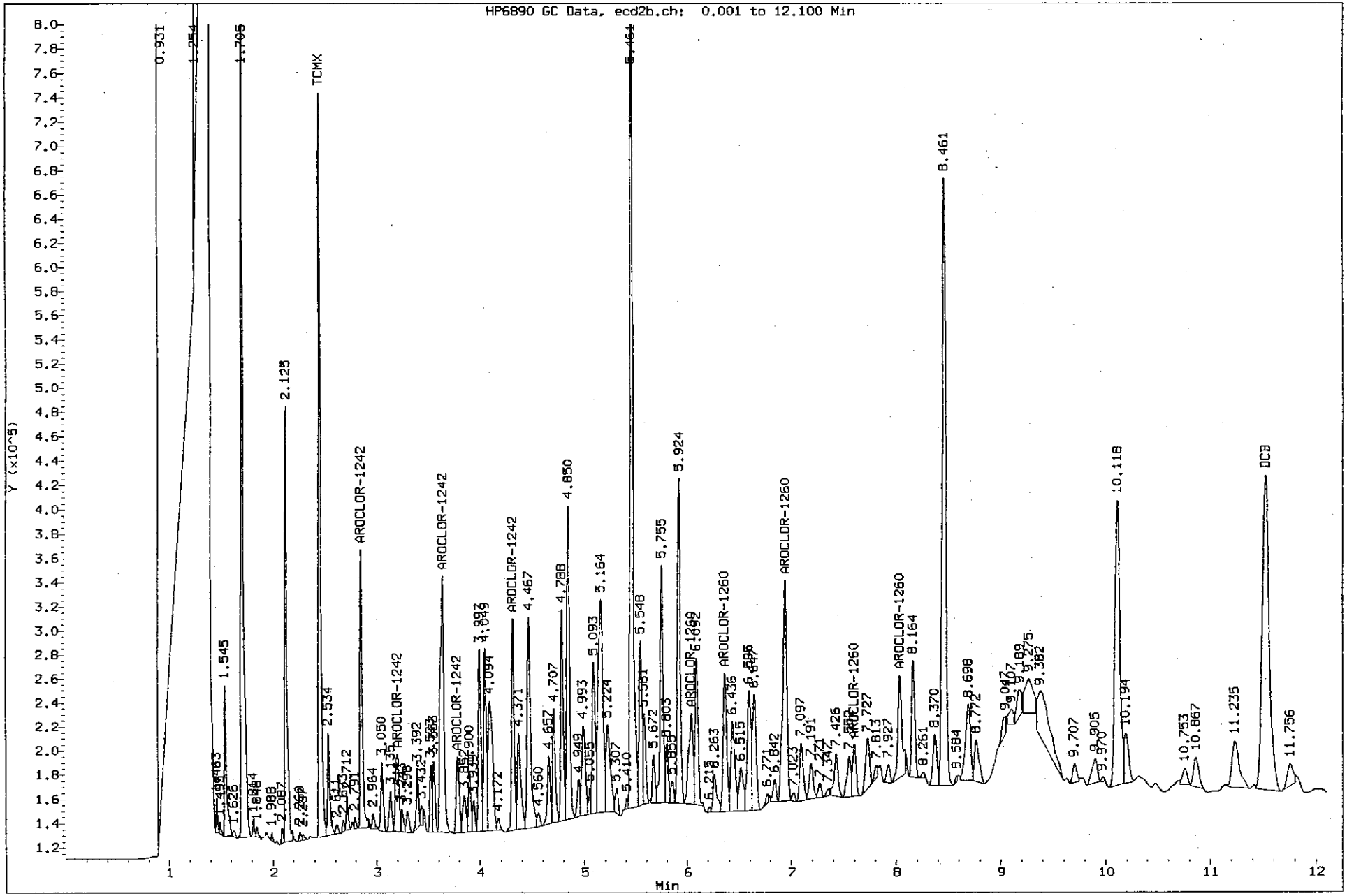
Data File: \\qcanoh04\dd\chem\GCS\a2hp2.i\021010A-2.b\051F5101.D
Injection Date: 11-OCT-2002 13:14
Instrument: a2hp2.i
Client Sample ID: NYPA-RES-SED06



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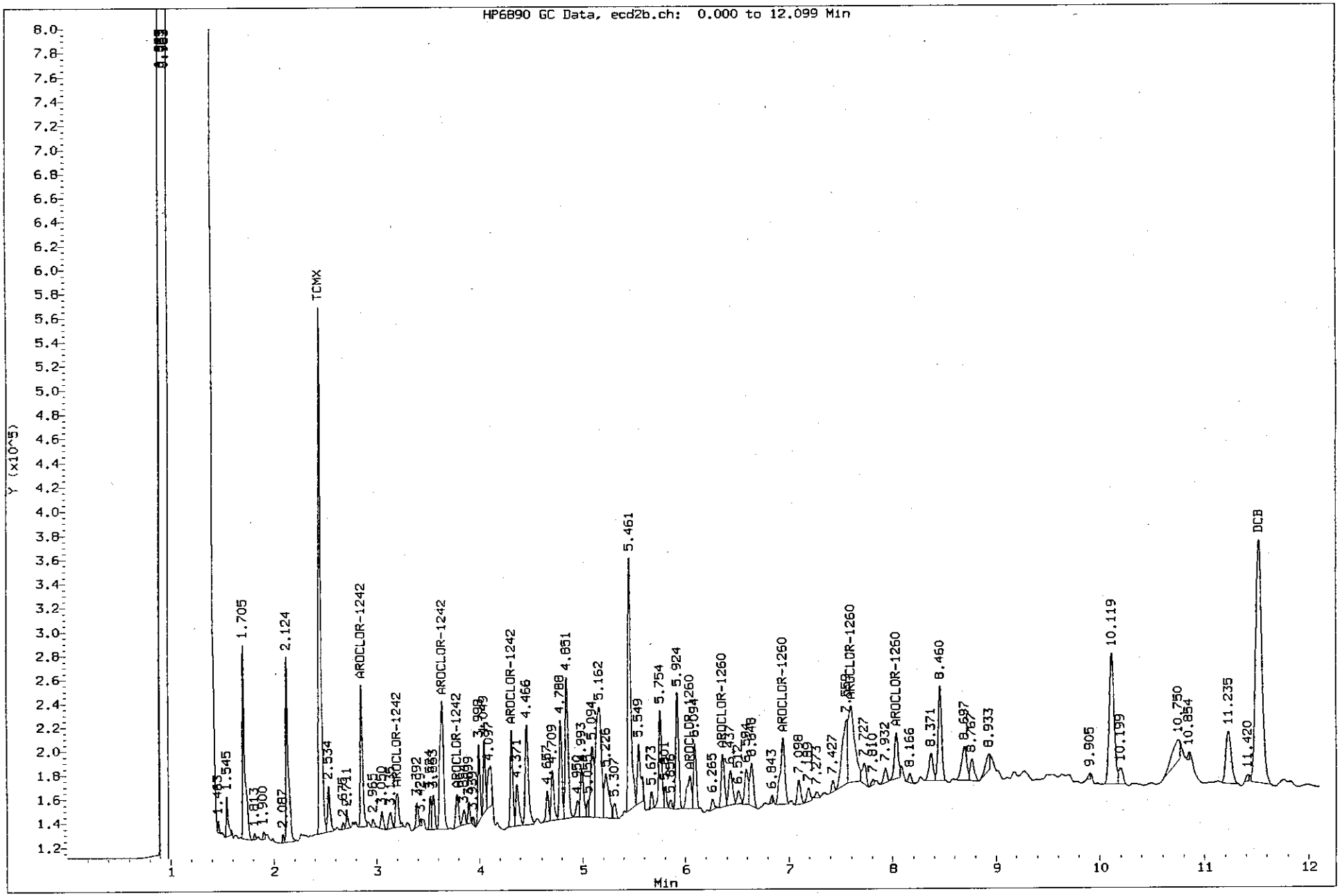
Data File: \\qcanoh04\dd\chem\GCS\a2hp2.i\021010A-2.b\052F5201.D
Injection Date: 11-OCT-2002 13:31
Instrument: a2hp2.i
Client Sample ID: NYPA-RES-SED07



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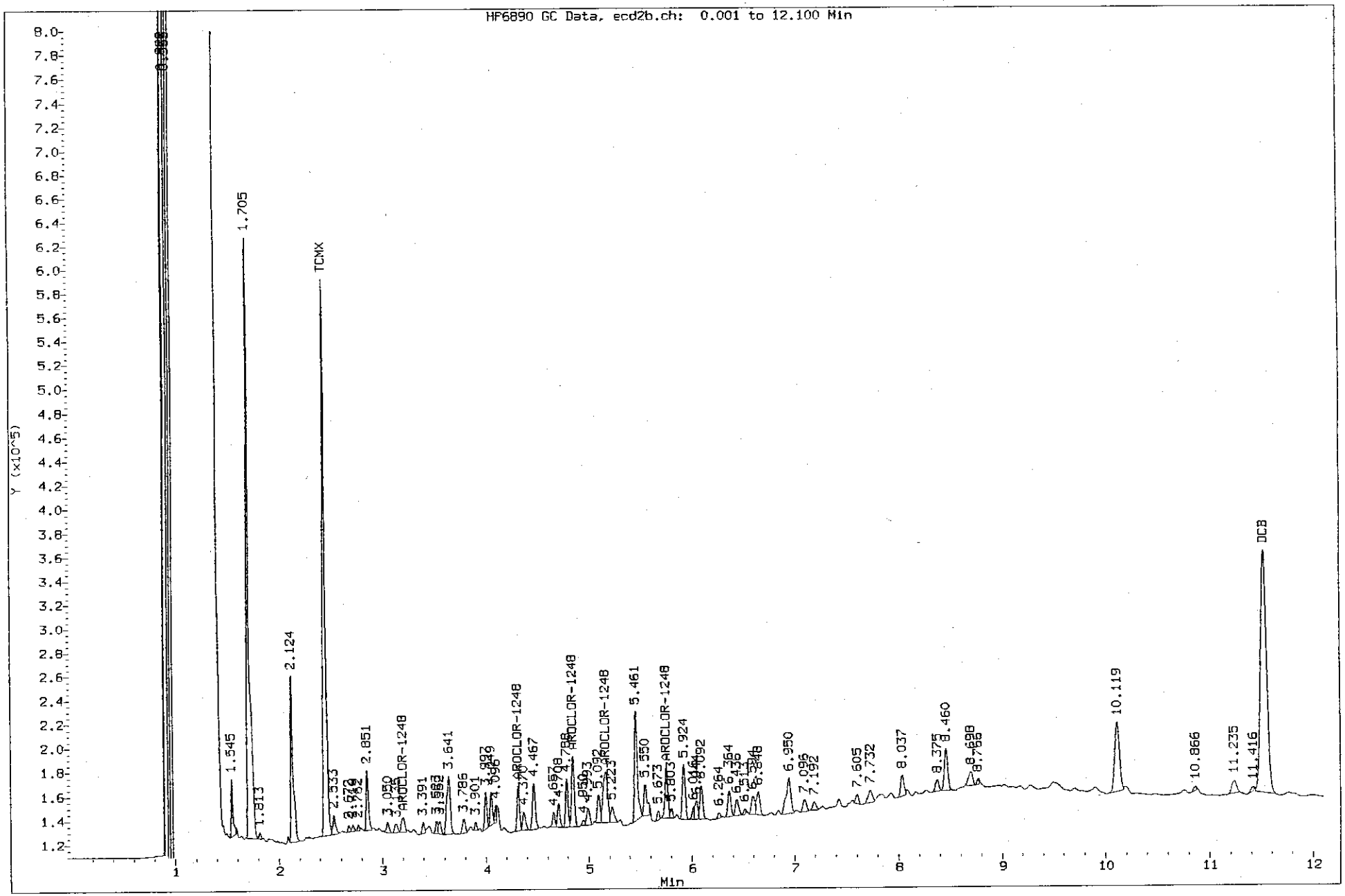
Data File: \\qcanoh04\dd\chem\GCS\a2hp2.i\021011-2.b\008F0801.D
Injection Date: 11-OCT-2002 18:13
Instrument: a2hp2.i
Client Sample ID: NYPA-RES-SED08



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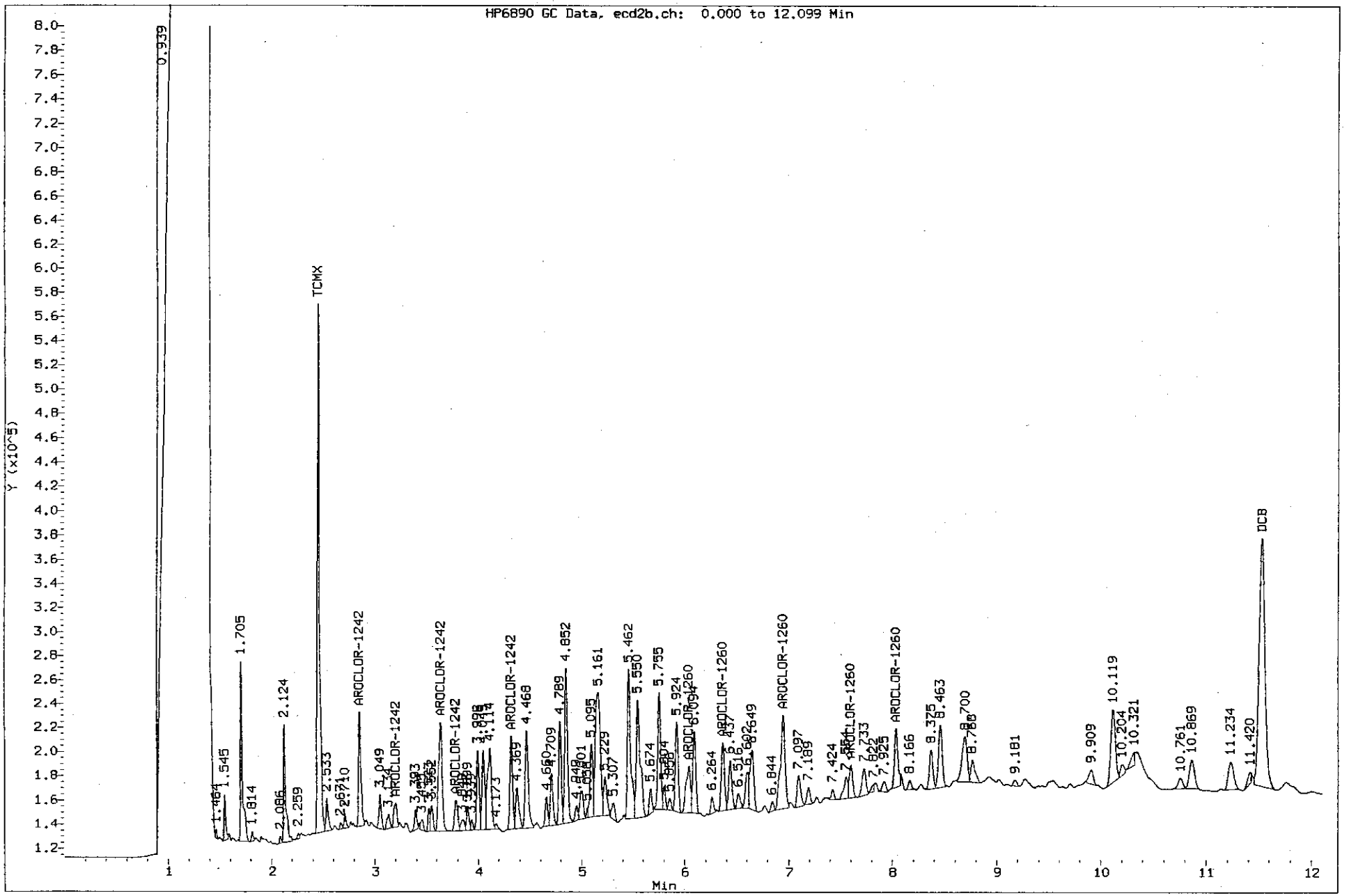
Data File: \\qcanoh04\dd\chem\GCS\a2hp2.i\021010A-2.b\054F5401.D
Injection Date: 11-OCT-2002 14:05
Instrument: a2hp2.i
Client Sample ID: NYPA-RES-SED09



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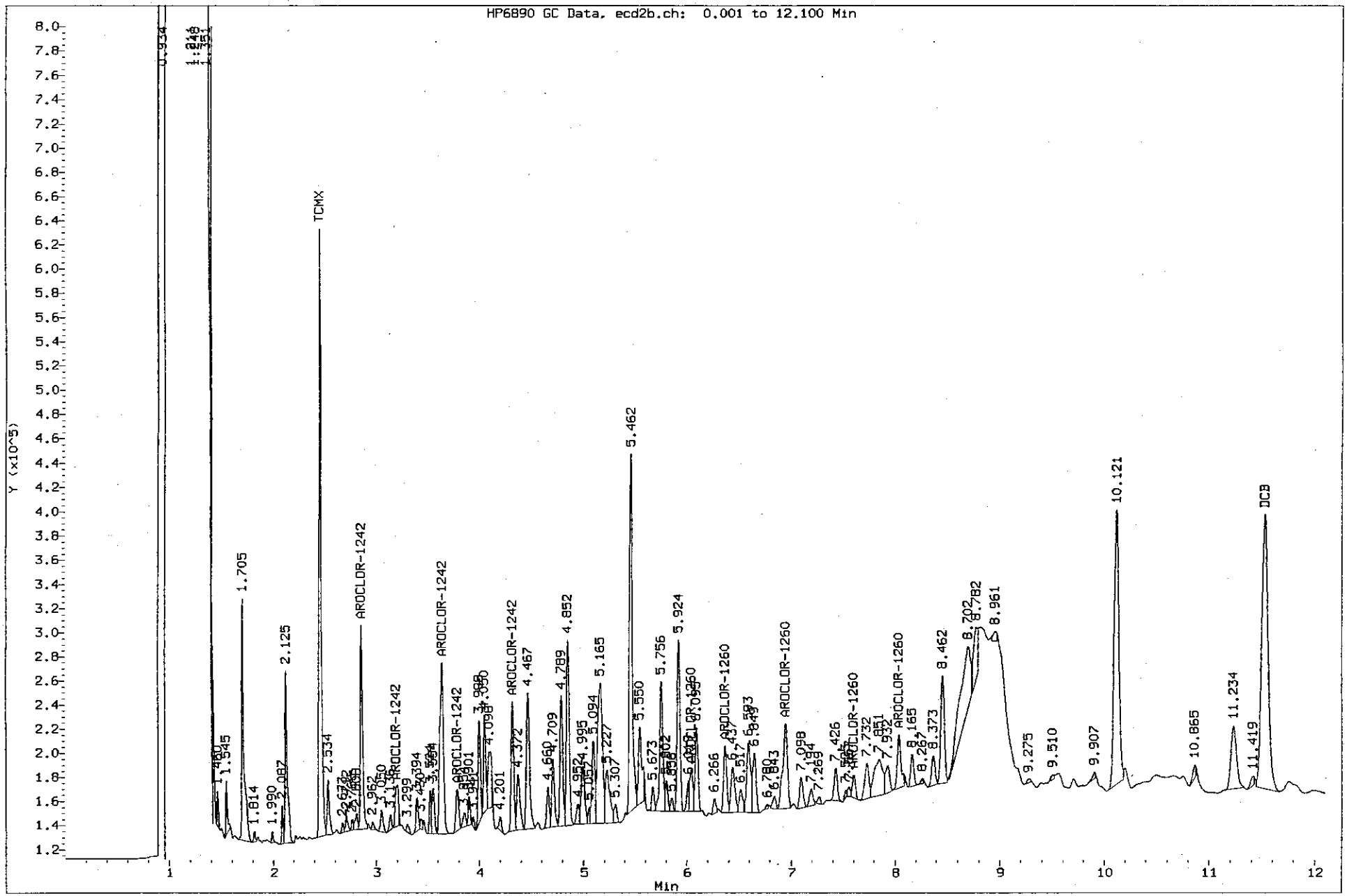
Data File: \\qcanoh04\dd\chem\GC5\a2hp2.i\021010A-2.b\055F5501.D
Injection Date: 11-OCT-2002 14:22
Instrument: a2hp2.i
Client Sample ID: NYPA-RES-SED12



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Environmental Client Services Fax Cover Page

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If received in error, please notify sender at once.

Facsimile Communication
Fax Number: 717-656-6766

TO: Konstadina Ulahogiani

COMPANY: Environmental Standards

FROM: Jennifer Good Ext.: 1693

DATE: November 12, 2002

Number of pages 3 (including this coversheet)

Comments:

Dina,

Here are the COCs you requested. Please let me know if there is anything else you need

Thanks!!

Jen

If you have problems with this transmission, please call me at 717-656-2300 as soon as possible.

Department #: 40 Fax #: 610-935-5583

3661.01

Lancaster Laboratories, Inc. • 2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681

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Glenn Esler

From: Konstadina Vlahogiani
Sent: Friday, November 15, 2002 1:55 PM
To: Glenn Esler
Subject: FW: NYPA

-----Original Message-----
From: FCalovini@stl-inc.com [SMTP:FCalovini@stl-inc.com]
Sent: Friday, November 15, 2002 1:45 PM
To: kvlahogiani@envstd.com
Subject: RE: NYPA

Dina, Here is the answer to the Hg missing sheet question.

Frank

Hi Frank,

Please note that there was no page 2 to the Total Mercury Digestion Worksheet. There is only page 1 where the sample in question was cut off by the copier since it was on the very bottom of the sheet. I made a copy, which I'm faxing now, where you can definitively see the sample raw data.

-----Original Message-----
From: Konstadina Vlahogiani [mailto:kvlahogiani@envstd.com]
Sent: Friday, November 08, 2002 2:24 PM
To: Calovini, Frank
Subject: RE: NYPA

[Calovini, Frank]

OK.

For the mercury data analyzed by Battelle, sample NYPA-ERB-01 (Battelle # 1899*11) was not listed on the Total Mercury Digestion Worksheet. It appears there might be a page 2 to this worksheet. Could you have the laboratory provide this form.

Thanks.

-----Original Message-----
From: FCalovini@stl-inc.com [SMTP:FCalovini@stl-inc.com]
Sent: Friday, November 08, 2002 2:22 PM
To: kvlahogiani@envstd.com
Subject: RE: NYPA

You can write me with the Battelle data but we were not involved with the Lancaster data.

-----Original Message-----
From: Konstadina Vlahogiani [<mailto:kvlahogiani@envstd.com>]
Sent: Friday, November 08, 2002 2:20 PM
To: Calovini, Frank
Subject: NYPA

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Frank,

I have a few requests concerning the Lancaster and Battelle data. Should I send my requests to you or should I contact Lancaster and Battelle directly?

Hgsheet.pdf

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Total Mercury Digestion Worksheet

PROJECT ID: 1892, 1769, 1899
DIGESTION DATE: 10/17/02
ANALYST: Dwight
BALANCE ID: #5

	MS/MSD	OPR
SPIKING STANDARD NUMBER:	Std #214	Std #217
SPIKE CONCENTRATION:	7.95 ng/ml	16.0 ng/ml
SPIKE VOLUME:	200 µl	50 µl
SRM/LCS STANDARD:	1641d # 270	25 µl 159 ng/ml

BrCl Volume: 500 µl

NH2OH-HCl Volume: 250 µl

	SAMPLE ID	BOTTLE WT grams	BOTTLE+SAMPLE grams	SAMPLE WT grams	SAMPLE VOL ml	TOTAL VOL ml	[SPIKE] ng/l
1	Method Blank	Method Blank is made up of 5 aliquots each of the BrCl and NH2OH-HCl listed above					
2	OPR Blank 101702				96.775		
3	OPR 101702				100.646	101.446	4.929
4	1641d 101702	40.35	142.477		102.127	102.902	386.290
5	1892 # 26				100.953		
6	# 27				100.825		
7	# 28 r-1				94.447		
8	# 28 r-2				99.320		
9	# 29				98.859		
10	# 30				101.844		
11	# 30 MS				96.900	97.850	16.249
12	# 30 MSD				100.964	101.914	15.601
13	# 31				100.627		
14	# 32				99.476		
15	1769 # 13				93.448		
16	# 13 MS				98.089	99.039	16.054
17	# 13 MSD				101.369	102.319	15.540
18	# 14				96.941		
19	# 15 r-1	37.076	136.454		99.378		
20	# 15 r-2	36.030	132.578		96.548		
	# 16				104.508		
	1899 # 11				97.053		

01 H2O

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Glenn Esler

From: Konstadina Vlahogiani
Sent: Tuesday, November 19, 2002 9:11 AM
To: Glenn Esler
Subject: FW: NYPA/Niagara Project/TOC question

-----Original Message-----
From: FCalovini@stl-inc.com [SMTP:FCalovini@stl-inc.com]
Sent: Monday, November 18, 2002 2:19 PM
To: kvlahogiani@envstd.com
Subject: RE: NYPA/Niagara Project/TOC question

Dina, the response from Burlington.

Frank,

The lab was in error for that sample.. The result is actually 272 mg/kg TOC. I am having the forms revised and will send to ou as soon as they are available. Sorry for any inconvenience this may have caused you.

Ron

-----Original Message-----
From: Konstadina Vlahogiani [mailto:kvlahogiani@envstd.com]
Sent: Wednesday, November 13, 2002 1:26 PM
To: Calovini, Frank
Subject: NYPA/Niagara Project/TOC question

Frank,

Could you pass the TOC question below to STL Burlington (ETR 90131):

Why was sample NYPA-UNR-SED02 (503802) reported as not-detected? The average of the three replicates is above the reporting limit.

Thanks

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WET CHEMISTRY

Sample Report Summary

Client Sample No.

NYPA-UNR-SED02

Lab Name: STL BURLINGTON

Contract:

SDG No.: 90131

Lab Code: STLVT

Case No.: 22022

Lab Sample ID: 503802

Matrix: SOLID

Client: STLOHN

Date Received: 10/05/02

% Solids: 69.5

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	10/08/02	16:00	N/A	%	1.0		69.5	
IN847	TOC by Lloyd Kahn	10/11/02	14:00	BLKLK1011A	mg/Kg	1	144	272	

REVISED

NOV 19 2002

By KAD

000005

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Glenn Esler

From: Glenn Esler
Sent: Wednesday, December 04, 2002 9:04 AM
To: 'FCalovini@stl-inc.com'
Subject: NYPA Niagara Deliverables Request

Frank,

Dina is out for a few days. I'm looking over the TCDD data from STL Knoxville (SDG A2J040301). I need the Specialty Organics Instrument MAT 95 Run Log for the analyses conducted on 11/21/02 instrument M1A. Fax is acceptable. Let me know if you need any more information. Thanks.

Sincerely,

Glenn S. Esler
Quality Assurance Chemist/
Project Manager
Environmental Standards, Inc.
610-935-5577
FAX 610-935-5583

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Glenn Esler

From: Glenn Esler
Sent: Wednesday, December 04, 2002 9:36 AM
To: 'FCalovini@stl-inc.com'
Subject: NYPA Niagara Deliverables Request

Frank,

Here is another request for the TCDD data from STL Knoxville (SDG A2J040301). I need all summary forms and associated raw data for the continuing calibration standard analyzed on 11/7/02 at 09:30 (data file t021107s1) on instrument MAT 95S. Fax is acceptable. Let me know if you need any more information. Thanks.

Sincerely,

Glenn S. Esler
Quality Assurance Chemist/
Project Manager
Environmental Standards, Inc.
610-935-5577
FAX 610-935-5583

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STL KNOXVILLE
SPECIALTY ORGANICS INSTRUMENT MAT 95 RUN LOG

Date	Time	Opr	Sample ID	Filename	Code	Matrix	Type	Tape	Lot#/Comments
11-20-02	02:43	PMP	E870A1AA	te870a	IF/BS	SOLID			C2J010331-013
11-20-02	03:45	PMP	E870C1AA	te870c	OK	SOLID			014
11-20-02	04:47	PMP	E870D1AA	te870d	OK	SOLID			015
11-20-02	05:49	PMP	E870E1AA	te870e	OK	SOLID			016
11-20-02	06:50	PMP	E870F1AA	te870f	OK	SOLID			017
11-20-02	07:51	PMP	Nonane	r	OK	—	QC		flush
11-20-02	08:08	PMP	2553:08	t02112051	OK	—	win ver		Ver/Win
11-20-02	09:08	JMN	PFK	—	OK	—	RES		mass res chk
11-20-02	09:17	JMN	E91XA1AC	te91xac	OK	SOLID	QC		H2J150000-190C
11-20-02	10:20	JMN	nonane	r	OK	—	QC		flush
11-20-02	10:36	JMN	nonane	r	OK	—	QC		flush
11-20-02	10:51	JMN	E91XA1AA	te91xab	OK	SOLID	QC		H2J150000-190B method blank
11-20-02	12:55	JMN	E870A1AA	te870a2	OK	SOLID	SAM		C2J010331-013
11-20-02	13:56	JMN	E870G1AA	te870g	OK	SOLID	SAM		C2J010331-018
11-20-02	14:58	JMN	E870H1AA	te870h	OK	SOLID	SAM		C2J010331-019
11-20-02	16:00	JMN	E870J1AA	te870j	OK	SOLID	SAM		C2J010331-020
11-20-02	17:02	JMN	E9PMV1CA	te9pmv	OK	SOLID	SAM		H2J100140-002
11-20-02	18:03	JMN	E90E11AC	te90e1	~~BS~~ BT ~~OK~~	SOLID	SAM		H2J140113-001
11-20-02	19:05	JMN	nonane	r	OK	—	QC		flush
11-20-02	20:04	JMN	2553:08	t02112052	OK to clean	—	win ver		win ver
11-20-02	11:53	JMN	E9RWD1AA	te9rwd	OK	H_2O	SIM		A2J110103-003
11-20-02	21:04	PMP	PFK	—	OK	—	Res		Mass Res Chk
11-21-02	01:37	PMP	PFK	—	OK	—	Res		Mass Res Chk
11-21-02	01:40	PMP	2553:08	t02112151	OK	—	win ver		Ver/Win
11-21-02	02:42	PMP	FCV841AC	tfcv84ca	OK	SOLID	QC		H2K120000-125C
11-21-02	03:44	PMP	Nonane	r	OK	—	QC		flush
11-21-02	03:59	PMP	Nonane	r	OK	—	QC		flush
11-21-02	04:15	PMP	E91XA1AA	te91xaba	OK	SOLID	QC		System Blank
11-21-02	05:17	PMP	E90E11AC (1.0g)	te90e1a	DV	SOLID	SAM		H2J140113-001
11-21-02	06:19	PMP	E90QA1AA	te90qa	OK	SOLID	SAM		H2J140138-001
11-21-02	07:20	PMP	E90QD1AA	te90qd	OK	SOLID	SAM		002
11-21-02	08:22	PMP	E90QE1AA	te90qe	OK	SOLID	SAM		003

daily ck

Read and Understood by:

TCS Date: 11-21-02

ID016R1.doc, 4/23/01

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STL KNOXVILLE
SPECIALTY ORGANICS INSTRUMENT MAT 95 RUN LOG

Date	Time	Opr	Sample ID	Filename	Code	Matrix	Type	Tape	Lot#/Comments
11-21-02	09:24	PMP	E90QG1AA	te90qg	OK	SOLID	SAM		HZJ140138-004
11-21-02	10:26	PMP	E90QF1AF	te90qf	OK	SOLID	SAM		005
11-21-02	11:27	PMP	Noname	r	OK	—	QC		flush
11-21-02	11:39	PMP	2553:08	t02112152	OK to close		Win ver		Ver/Win
11-21-02	12:42	MSD	PFK	—	OK	—	RES		Mass ResChK
11-21-02	12:58	MSD	PFK	—	OK	—	RES		⊥
11-21-02	13:02	DCG	2553:08	t02112153	Smap C.S comp/offcal.		VER WIN		Ver Win
11-21-02	14:03	MSD	PFK	—	OK	—	RES		Mass ResChK
11-21-02	14:07	DCG	2553:08	t02112153	OK	—	VER		Ver/Win
11-21-02	15:08	DCG	E90QP1AG	te90qps	DS	Solid	QC		HZJ140138-0075
11-21-02	16:10	DCG	E90QP1AH	te90qpd	DS	Solid	QC		⊥ -007D
11-21-02	17:12	DCG	noname	r	DS	—	QC		Flush
11-21-02	17:28	DCG	noname	r	DS	—	QC		flush
11-21-02	17:43	DCG	E91XA1AA	te91xabb	DS	Solid	QC		System Blk
11-21-02	18:43	DCG	E90E1AC	te90e1b	DS	Solid	SAM		HZJ140113-001
11-21-02	19:47	DCG	E90QL1AD	te90ql	DS	Solid	SAM		HZJ140138-006
11-21-02	20:49	DCG	E90QP1AF	te90qp	DS	Solid	SAM		-007
11-21-02	21:50	DCG	E90QT1AC	te90qt	DS	Solid	SAM		-008
11-21-02	22:52	DCG	E90QV1AC	te90qv	DS	Solid	SAM		009
11-22-02	00:26	DCG	noname	r	DS	—	QC		Flush
11-22-02	00:42	DCG	2553:08	t02112154	DS	—	Ver Win		Ver/Win
11-22-02	07:33	MSD	PFK	—	OK	—	Res		Mass ResChK
11-22-02	09:37	MSD	2553:08	t02112252	OK	—	Ver		Ver (tetra's only)
11-22-02	09:08	MSD	noname	r	OK	—	QC		flush
11-22-02	09:24	MSD	noname	r	OK	—	QC		flush
11-22-02	09:40	VMK	FCGGE1AA	tfcggeb	OK	H2O	QC		Sup blk
11-22-02	10:29	VMK	FB6KW1AA	tfabkw	OK		SAM		HZJ310284-001
11-22-02	11:11	VMK	FA9NG1AA	tfa9ng	OK				HZK010307-001
11-22-02	12:00	VMK	FCE10 1AA	tfce10	OK				HZK050171-004
11-22-02	12:42	VMK	FCE11 1AA	tfce11	OK				-005
11-22-02	13:30	VMK	FCE12 1AA	tfce12	OK				-006
11-22-02	14:16	VMK	FCE14 1AA	tfce14	OK				-008

Daily RF

RZWSP11/22/02

Read and Understood by:

WWSDavidson Date: 11/22/02

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STL Knoxville Specialty Organics GC/MS Continuing Calibration Review / Narrative Checklist
Methods: 8290/23 - KNOX-ID-0003, Rev. 5

Start PFK:	10:37	CS3 Filename:	t021107s1	Win Filename:	t021107s1	Inst:	HT95
End PFK:	22:02	CS3 Filename:	t021107s2	Col Perf Filename:	⊥	ICAL Date:	9-12-02

Review Items	N/A	Yes	No	If No, why is data reportable?	2nd Level
1. Was the mass resolution documented at both the beginning and end of the 12 hour shift?		✓			✓
2. Was the instrument resolution >10,000 (<100 ppm) on PFK m/z 304.9824 and m/z 380.9760 (at reduced voltage)?		✓			✓
3. Was the measured exact mass of m/z 380.9760 (PFK) within 5 ppm at reduced accelerating voltage?		✓			✓
4. Was date/time of analysis verified between analysis header and logbook as correct?		✓			✓
5. Was the Window Defining Mixture analyzed and the MID switchpoints set to encompass the retention time windows of each congener group?		✓			✓
6. Was the Column Performance solution analyzed and the %Valley ≤25 for separation between 2378-TCDD/F and the closest eluting non-2378 isomer?		✓			✓
7. Was the continuing calibration performed at the beginning of the 12 hour period after successful mass resolution and GC resolution performance check?		✓			✓
8. Was the continuing calibration performed at the end of the 12 hour period?		✓			✓
9. Were the response factors calculated for each labeled standard and unlabeled native analyte using the SOP specified reference compound, quantitation ions, and formula.		✓			✓
10. Are %D ≤20 for all unlabeled native analytes in the beginning and ending calibration?			✓	Ending %D ≤25 and mean RRF from two continuing calibrations used to calculate samples. Ending %D >25 corrective action performed ~~and all positive sample extracts reanalyzed.~~ PMP 11-7-02	✓
11. Are %D ≤30 for all labeled standards in the beginning and ending calibration?		✓		Ending %D ≤35 and mean RRF from two continuing calibrations used to calculate samples. Ending %D >35 and corrective action performed and all positive sample extracts reanalyzed.	✓
12. Are all S/N ratios ≥10 for the GC signals in each EICP (extracted ion chromatographic profile) including internal standards?		✓			✓
13. Are the ion abundance ratios for all labeled and unlabeled analytes within the specified control limits?		✓			✓
14. If manual integrations were performed, are they clearly identified, initialed and dated?	✓				✓
15. If criteria were not met, was a NCM generated, approved by supervisor, and copy included in folder?	✓	✓		08-02958	✓
16. Does the CCAL folder contain **complete** data in the following order? Data review checklist, a **complete** runlog, CCAL summary, Ratio summary, Calculation summary, PFK resolution/peak match documentation, and Total RIC, EICP's and manual integration - for window and both standards.	PMP 11-7-02	✓			✓

Analyst: WMSDavidson	Date: 11/7/02	2nd Level Reviewer : PMP	Date: 11-7-02
Comments:		Comments:	

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STL KNOXVILLE
SPECIALTY ORGANICS INSTRUMENT MAT 95S RUN LOG

Date	Time	Opr	Sample ID	Filename	Code	Matrix	Type	Tape	Lot#/Comments
11-6-02	18:27	WSD	E9FQ31AA	te9fq3	OK	solid	SAM		A2J040301-007
11-6-02	19:15	WSD	E9FQ41AA	te9fq4	OK	solid	SAM		-008
11-6-02	20:05	WSD	E9FQ51AA	te9fq5	OK	solid	SAM		-009
11-6-02	20:52	WSD	E9FQ61AA	te9fq6	OK	solid	SAM		-010
11-6-02	22:02	WSD	Noname	r	OK	—	QC		flush
~~11-6-02~~		~~WSD~~	~~2427.85~~	~~t02110631~~	PMP 11-6-02		~~VER WIN~~		~~Ver/Win~~
11-6-02	22:28	PMP	PFK	—	OK	—	Res		To Open 1613 MASS Res Chk
11-6-02	22:31	PMP	2427.85	t02110654	OK	—	win ver		Ver/Win
11-6-02	23:31	PMP	PFK	—	OK	—	Res		To Open/Close 8290 Mass Res Chk
11-6-02	23:38	PMP	FA159IAC	tfa159c	OK	H_2O	QC		H2J290000-435C
11-7-02	00:40	PMP	Noname	tsb1107	OK	—	QC		flush
11-7-02	01:29	PMP	Noname	tsb1107	OK	—	QC		↓
11-7-02	02:17	PMP	FA159IAA	tfa159b	OK	H_2O	QC		H2J290000-435B
11-7-02	03:19	PMP	E88EHIAA	te88eh	OK	H_2O	SAM		H2J020124-001
11-7-02	04:21	PMP	E9FQMIAA	te9fqm	OK	SOLID	SAM		A2J040301-002
11-7-02	05:08	PMP	E9A75IDA	te9a75	DL	SOLID	SAM		C2J030160-001
11-7-02	06:09	PMP	E9A76IAA	te9a76	DL	SOLID	SAM		-002
11-7-02	07:11	PMP	E9A771AA	te9a77	DL	SOLID	SAM		-003
11-7-02	08:13	PMP	E9A781AA	te9a78	DL	SOLID	SAM		-004
11-7-02	09:14	PMP	Noname	r	OK	—	QC		flush
11-7-02	09:30	PMP	2427.85	t02110751	OK	—	win ver		Ver/Win
11-7-02	09:13	WSD	PFK	—	OK	—	RES		to close 1613 only
11-7-02	10:37	WSD	PFK	—	OK	—	RES		to open/close 8290
11-7-02	~~10:56~~	WSD	E9C2RIAC	te9c2rc	IP ~~OK~~	solid	QC		H2J030000-358C
11-7-02	11:58	WSD	Noname	tsb1107	OK	—	QC		flushes
11-7-02	12:45	WSD	Noname	tsb1107	OK	—	QC		↓
11-7-02	13:31	WSD	E9C2RIAA	te9c2rb	OK	solid	QC		H2J030000-358B
11-7-02	14:32	WSD	E9A75IAA 1/10	te9a75a	OK	solid	SAM		C2J030160-001
11-7-02	15:34	WSD	E9A76IAA 1/10	te9a76a	OK	solid	SAM		-002
11-7-02	16:36	WSD	E9A771AA 1/10	te9a77a	OK	solid	SAM		-003
11-7-02	17:37	WSD	E9A781AA 1/10	te9a78a	OK	solid	SAM		-004
11-7-02	18:39	WSD	E9A791AA 1/10	te9a79	OK	solid	SAM		-005

Cardcage lockup

Read and Understood by: WS Davidson Date: 11-8-02

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STL KNOXVILLE
SPECIALTY ORGANICS INSTRUMENT MAT 95S RUN LOG

Date	Time	Opr	Sample ID	Filename	Code	Matrix	Type	Tape	Lot#/Comments
11-7-02	19:41	MSD	E9E3N1AC	te9e3n	DIL	solid	SAM		C2J040213-001
11-7-02	20:43	MSD	Noname	r	OK	—	QC		flush
11-7-02	20:58	MSD	2427:85	t0211073	OK to close	—	VER WIN		Ver Win
11-7-02	22:02	PMP	PFK	—	OK	—	Res		Mass Res Chk
11-7-02	23:08	PMP	PFK	—	OK	—	Res		Mass Res Chk
11-7-02 ~~17-18~~	23:11	PMP	~~NOT~~ 2427:85 PMP 11-8-02	t0211073	OK	—	Win ver		Ver/Win
11-8-02	00:13	PMP	Noname	r	OK	—	QC		flush
11-8-02	00:29	PMP	Noname	r	OK	—	QC		+
11-8-02	00:45	PMP	E9C2R1AA	te9c2rba	OK	SOLID	QC		System Blank
11-8-02	01:46	PMP	E81ME1AC	te81me	OK	SOLID	SAM		H2I270144-001
11-8-02	02:48	PMP	E81M11AC	te81m1	OK	SOLID	SAM		-002
11-8-02	03:50	PMP	E81M31AC	te81m3	OK	SOLID	SAM		-003
11-8-02	04:52	PMP	E81M51AC	te81m5	OK	SOLID	SAM		-004
11-8-02	05:54	PMP	E81PF1AC	te81pf	OK	SOLID	SAM		-005
11-8-02	06:55	PMP	E81PH1AC	te81ph	OK	SOLID	SAM		+ -006
11-8-02	07:57	PMP	E9E3N1AC 1/10	te9e3na	OK	SOLID	SAM		C2J040213-001
11-8-02	09:00	PMP	Noname	r	OK	—	QC		flush
11-8-02	09:15	PMP	Noname	r	OK	—	QC		+
11-8-02	09:51	PMP	2427185	t0211081	OK	—	Win ver		Ver/Win
11-8-02	10:52	JMW	PFK	—	OK	—	RES		mass res check
11-8-02	10:58	JMW	E81PK1AD	te81pk5	DS	SOLID	QC		H2I270144-008S
11-8-02	12:00	JMW	E81PK1AE	te81pkd	DS	SOLID	QC		H2I270144-008D
11-8-02	13:01	JMW	noname	r	DS	—	QC		flush
11-8-02	13:18	JMW	noname	r	DS	—	QC		+
11-8-02	—	JMW	E92CR1AA	te92crbb	DS	SOLID	QC		System blank
11-8-02	15:48	JMW	E8FN41AA	te8fn4a	DS	H2O	SAM		C2I180263-010
11-8-02	16:50	JMW	E81PJ1AC	te81pj	DS	SOLID	SAM		H2I270144-007
11-8-02	17:51	JMW	E81PK1AC	te81pk	DS	SOLID	SAM		H2I270144-008
11-8-02	18:53	JMW	E81PH1AC	te81p1	DS	SOLID	SAM		H2I270144-009
11-9-02	19:55	JMW	E81PX1AC	te81px	DS	SOLID	SAM		H2I270144-010
11-9-02	—	JMW	E81QC1AC	te81qc	DR	SOLID	SAM		H2I270144-011
11-9-02	20:57	JMW	noname	r	DS	—	QC		flush

Read and Understood by: MJSDavidson Date: 11-11-02

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Clouseau Nonconformance Memo

STL

NCM #: **08-02958**
NCM Initiated By: Patricia (Trish) Parsly
Date Opened: 11/07/2002
Date Closed:

Classification: **Deficiency**
Status: **GLREVIEW**
Production Area: Dioxin
Tests: 8290
Lot #'s (Sample #'s): C2J030160 (1,2,3,4,5), H2J030000 (358),
QC Batches: 2276358, 2281130,

Nonconformance: QC data out of control
Subcategory: Other (explanation required)

Problem Description / Root Cause

Name	Date	Description
Patricia (Trish) Pars	11/07/2002	The closing standard (t021107s2) did not meet the %D criteria of +/- 25% for OCDD. The %D was 31.4% for OCDD. The cause was carryover from the last sample analyzed during the shift. The chromatography of the standard and all other analyte and internal standard criteria were met indicating that the instrument was functioning properly. Since the OCDD result was attributed to carryover, the response factor from the initial calibration will be used to calculate the OCDD result for all exctracts analyzed during this shift.

Corrective Action

Name	Date	Corrective Action
Patricia (Trish) Pars	11/07/2002	The injection port liner and septum were changed

Client Notification Summary

Client	Project Manager	Notified	Response	How Notified	Note	Response	Response Note

Quality Assurance Verification

Verified By	Due Date	Status	Notes
		This section not yet completed by QA.	

Approval History

Date Approved	Approved By	Position
11/07/2002	Patricia (Trish) Parsly	Chemist

Date Printed: 11/7/02

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IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290

SEVERN TRENT SERVICES

CCAL ID: 1,164 - 021107S1

WIN Filename: t021107s1

Method: IN - DX8290

WIN Sample ID: 2427:85

Instrument: M2A

WIN Result Dir: /20021107s1/021107s1.d

Column SN: 334061

WIN Date/Time: 11/07/02 09:30

Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Window Defining First/Last Eluter Retention Times

Analyte	Reference	M/Z	Ref RT	First Eluter RT	First Eluter RRT	Last Eluter RT	Last Eluter RRT
Total TCDD	13C-2,3,7,8-TCDD	320	35:03	28:29	0.8126	37:34	1.0718
Total TCDF	13C-2,3,7,8-TCDF	304	32:52	25:45	0.7835	37:28	1.1400
Total PeCDD	13C-1,2,3,7,8-PeCDD	356	42:55	40:20	0.9398	43:32	1.0144
Total PeCDF	13C-1,2,3,7,8-PeCDF	340	41:20	38:01	0.9198	43:40	1.0565
Total HxCDD	13C-1,2,3,6,7,8-HxCDD	390	47:13	45:27	0.9626	47:39	1.0092
Total HxCDF	13C-1,2,3,4,7,8-HxCDF	374	46:01	44:46	0.9728	48:05	1.0449
Total HpCDD	13C-1,2,3,4,6,7,8-HpCDD	424	52:11	51:01	0.9776	52:12	1.0003
Total HpCDF	13C-1,2,3,4,6,7,8-HpCDF	408	50:28	50:29	1.0003	52:49	1.0466
OCDD	13C-OCDD	458	56:16	56:17	1.0003	56:17	1.0003
OCDF	13C-OCDD	442	56:16	56:25	1.0027	56:25	1.0027

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IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B

SEVERN TRENT SERVICES

Workorder	2427:85	**Prep Batch**		**Lot No**	
Data File	/20021107s1/021107s1.d	**Prep Date**		**SDG No**	
IDB ID	65708	**Prep Exp Date**		**Date Received**	
Analysis Date	11/07/02 09:30	**Matrix**	UNKNOWN	**Date Sampled**	
Anal Exp Date		**Initial Wt/Vol**		**Lims Test Code**	
Instrument	M2A	**Extract Vol**		**Method**	DX1613B
Analyst	PMP	**Diluton Factor**	1.00	**Code**	F8

View Small Peaks? False **View deleted peaks?** False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					**303.9020**	**305.8990**	**303.9020**	**305.8990**	**0.65-0.89**		
	Noise	00:00	00:00	0	120	155	48	62	0.77	/	
	Unidentified	25:45	00:00	0	140763	179343	17074	24710	0.78	ABV/ABV	
	2,3,7,8-TCDF	32:54	33:01	-7	136848	175823	13299	17339	0.78	ABV/ABV	M
	Unidentified	37:28	00:00	0	138901	170275	19400	24733	0.82	AVB/AVB	
316					**315.9420**	**317.9390**	**315.9420**	**317.9390**	**0.65-0.89**		
	Noise	00:00	00:00	0	155	148	62	59	1.05 *	/	
	13C-2,3,7,8-TCDF	32:52	32:57	-5	1320383	1671333	133014	172340	0.79	ABV/ABV	
320					**319.8970**	**321.8940**	**319.8970**	**321.8940**	**0.65-0.89**		
	Noise	00:00	00:00	0	150	165	60	66	0.91 *	/	
	Unidentified	28:29	00:00	0	94527	119953	11448	14061	0.79	ABV/ABV	
	Unidentified	34:31	00:00	0	80224	103283	7821	10413	0.78	ABV/ABV	
	Unidentified	34:49	00:00	0	84513	105565	8690	11751	0.80	AVV/AVV	
	2,3,7,8-TCDD	35:06	35:06	0	99809	126007	10867	12924	0.79	AVV/AVV	
	Unidentified	35:33	00:00	0	94362	121678	10538	14196	0.78	AVV/AVV	
	Unidentified	37:34	00:00	0	86524	114286	12971	16429	0.76	AVB/AVB	
328					**327.8850**		**327.8850**				
	Noise	00:00	00:00	0	133		53				
	37Cl4-2,3,7,8-TCDD	35:06	35:06	0	210338		22294			AVV	
332					**331.9370**	**333.9340**	**331.9370**	**333.9340**	**0.65-0.89**		
	Noise	00:00	00:00	0	168	130	67	52	1.29 *	/	
	13C-1,2,3,4-TCDD	34:28	34:34	-6	852173	1061933	85867	106296	0.80	ABV/ABV	
	13C-2,3,7,8-TCDD	35:03	35:04	-1	907716	1159449	97526	122652	0.78	AVV/AVV	
340					**339.8600**	**341.8570**	**339.8600**	**341.8570**	**1.32-1.78**		
	Noise	00:00	00:00	0	190	170	76	68	1.12 *	/	
	Unidentified	38:01	00:00	0	620238	388348	122399	75431	1.60	ABB/ABB	
	1,2,3,7,8-PeCDF	41:21	41:08	13	944129	599475	218484	138015	1.57	ABV/ABV	M
	2,3,4,7,8-PeCDF	42:27	42:15	12	978260	614504	248685	157161	1.59	ABV/ABV	M
	Unidentified	43:40	00:00	0	872283	559370	221072	146732	1.56	ABV/ABV	
352					**351.9000**	**353.8970**	**351.9000**	**353.8970**	**1.32-1.78**		
	Noise	00:00	00:00	0	183	135	73	54	1.35	/	
	13C-1,2,3,7,8-PeCDF	41:20	41:07	13	1855619	1168549	428157	266538	1.59	ABV/ABV	
	13C-2,3,4,7,8-PeCDF	42:26	42:14	12	1864926	1178931	491465	309104	1.58	ABV/ABV	
356					**355.8550**	**357.8520**	**355.8550**	**357.8520**	**1.32-1.78**		
	Noise	00:00	00:00	0	185	145	74	58	1.28 *	/	
	Unidentified	40:20	00:00	0	576645	364810	107188	67808	1.58	ABV/ABV	
	1,2,3,7,8-PeCDD	42:56	42:43	13	664850	416781	186054	115994	1.60	ABV/ABV	M
	Unidentified	43:32	00:00	0	675448	429196	189356	122176	1.57	AVV/AVV	
368					**367.8950**	**369.8920**	**367.8950**	**369.8920**	**1.32-1.78**		
	Noise	00:00	00:00	0	125	103	50	41	1.22 *	/	
	13C-1,2,3,7,8-PeCDD	42:55	42:42	13	1341317	839763	378381	237185	1.60	ABV/ABV	
374					**373.8210**	**375.8180**	**373.8210**	**375.8180**	**1.05-1.43**		
	Noise	00:00	00:00	0	195	188	78	75	1.04 *	/	
	Unidentified	44:46	00:00	0	922243	721188	274287	221155	1.28	ABV/ABV	

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

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STL - Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B

SEVERN TRENT SERVICES

Workorder	2427:85	**Prep Batch**		**Lot No**	
Data File	/20021107s1/021107s1.d	**Prep Date**		**SDG No**	
IDB ID	65708	**Prep Exp Date**		**Date Received**	
Analysis Date	11/07/02 09:30	**Matrix**	UNKNOWN	**Date Sampled**	
Anal Exp Date		**Initial Wt/Vol**		**Lims Test Code**	
Instrument	M2A	**Extract Vol**		**Method**	DX1613B
Analyst	PMP	**Diluton Factor**	1.00	**Code**	F8

View Small Peaks? False **View deleted peaks?** False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
374					**373.8210**	**375.8180**	**373.8210**	**375.8180**	**1.05-1.43**		
	1,2,3,4,7,8-HxCDF	46:02	46:01	1	942533	747833	263898	205561	1.26	ABV/ABV	
	1,2,3,6,7,8-HxCDF	46:10	46:09	1	939538	744122	252188	203306	1.26	AVV/AVV	
	2,3,4,6,7,8-HxCDF	46:57	46:59	-2	865401	685672	227881	170995	1.26	AVV/AVV	
	1,2,3,7,8,9-HxCDF	47:57	48:05	-8	787197	633847	190429	152823	1.24	ABV/ABV	M
	Unidentified	48:05	00:00	0	729004	575171	180175	141187	1.27	AVV/AVV	DM
384					**383.8640**	**385.8610**	**383.8640**	**385.8610**	**0.43-0.59**		
	Noise	00:00	00:00	0	133	190	53	76	0.70 *	/	
	13C-1,2,3,4,7,8-HxCDF	46:01	45:59	2	928658	1743299	270419	493557	0.53	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDF	46:09	46:08	1	944258	1793939	257827	495213	0.53	AVV/AVV	
	13C-2,3,4,6,7,8-HxCDF	46:56	46:58	-2	925039	1738549	242311	448552	0.53	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDF	47:56	48:03	-7	805199	1522640	200738	375558	0.53	ABV/ABV	
390					**389.8160**	**391.8130**	**389.8160**	**391.8130**	**1.05-1.43**		
	Noise	00:00	00:00	0	160	195	64	78	0.82 *	/	
	Unidentified	45:27	00:00	0	651249	522483	194147	155447	1.25	ABV/ABV	
	1,2,3,4,7,8-HxCDD	47:06	47:10	-4	592571	472637	161879	129041	1.25	ABV/ABV	M
	1,2,3,6,7,8-HxCDD	47:14	47:18	-4	593931	473147	152253	125590	1.26	AVV/AVV	M
	1,2,3,7,8,9-HxCDD	47:39	47:44	-5	637232	510824	163820	132786	1.25	AVV/AVV	M
402					**401.8560**	**403.8530**	**401.8560**	**403.8530**	**1.05-1.43**		
	Noise	00:00	00:00	0	160	143	64	57	1.12	/	
	13C-1,2,3,4,7,8-HxCDD	47:05	47:09	-4	1064178	842321	289635	235158	1.26	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDD	47:13	47:17	-4	1147035	899047	302990	239600	1.28	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDD	47:38	47:43	-5	1116311	890310	301389	238731	1.25	AVV/AVV	
408					**407.7820**	**409.7790**	**407.7820**	**409.7790**	**0.88-1.20**		
	Noise	00:00	00:00	0	138	190	55	76	0.72 *	/	
	1,2,3,4,6,7,8-HpCDF	50:29	50:44	-15	858966	814109	182205	176504	1.06	ABV/ABV	M
	1,2,3,4,7,8,9-HpCDF	52:49	52:53	-4	651857	621688	142466	139116	1.05	ABV/ABV	M
418					**417.8250**	**419.8220**	**417.8250**	**419.8220**	**0.37-0.51**		
	Noise	00:00	00:00	0	140	138	56	55	1.02 *	/	
	13C-1,2,3,4,6,7,8-HpCDF	50:28	50:43	-15	619795	1367110	136938	305565	0.45	ABV/ABV	
	13C-1,2,3,4,7,8,9-HpCDF	52:48	52:51	-3	544374	1217453	122439	274029	0.45	ABV/ABV	
424					**423.7770**	**425.7740**	**423.7770**	**425.7740**	**0.88-1.20**		
	Noise	00:00	00:00	0	140	188	56	75	0.75 *	/	
	Unidentified	51:01	00:00	0	545959	522189	117522	113885	1.05	ABV/ABV	
	1,2,3,4,6,7,8-HpCDD	52:12	52:18	-6	525310	497491	120264	113223	1.06	ABV/ABV	M
436					**435.8170**	**437.8140**	**435.8170**	**437.8140**	**0.88-1.20**		
	Noise	00:00	00:00	0	123	135	49	54	0.91	/	
	13C-1,2,3,4,6,7,8-HpCDD	52:11	52:17	-6	1040445	990599	241170	236533	1.05	ABV/ABV	
442					**441.7430**	**443.7400**	**441.7430**	**443.7400**	**0.76-1.02**		
	Noise	00:00	00:00	0	110	138	44	55	0.80	/	
	OCDF	56:25	56:07	18	956329	1037178	259923	285325	0.92	ABV/ABV	M
458					**457.7380**	**459.7350**	**457.7380**	**459.7350**	**0.76-1.02**		
	Noise	00:00	00:00	0	170	273	68	109	0.62 *	/	
	OCDD	56:17	56:00	17	913908	1021732	254932	280603	0.89	ABV/ABV	M

Notes:
R = ratio is oustide limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

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STL - Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B

SEVERN TRENT SERVICES

Workorder	2427:85	Prep Batch		Lot No	
Data File	/20021107s1/021107s1.d	Prep Date		SDG No	
IDB ID	65708	Prep Exp Date		Date Received	
Analysis Date	11/07/02 09:30	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	M2A	Extract Vol		Method	DX1613B
Analyst	PMP	Diluton Factor	1.00	Code	F8

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration Flags
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02	
	Noise	00:00	00:00	0	153	180	61	72	0.85	/
	13C-OCDD	56:16	55:59	17	1686390	1860442	493646	540610	0.91	ABV/ABV

Notes:
R = ratio is oustide limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

Printed: 11/07/02 11:00

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USEPA Method 1613B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs)
By High-Resolution Gas Chromatography/High-Resolution Mass Spectroscopy (HRGC/HRMS)

PCDD/PCDF Daily Calibration Verification

Laboratory ID: STL Knoxville
Init. Calibration Date: 12-Sep-02
Instrument ID: MAT-95S
GC Column ID: Rtx-5

VER Data Filename: t021107s1
Analysis Date: 07-Nov-02
Analysis Time: 09:30

Analytes	m/z's Forming Ratio	Ion Abund. Ratio	QC Limits	Conc. Found	ICAL RF	VER RF	%D	QC LIMIT	Flag
13C-2,3,7,8-TCDD	M/M+2	0.78	0.65-0.89	93.7	1.152	1.080	6.3%	30%	TRUE
37Cl-2,3,7,8-TCDD	M/M+2		NA	9.3	1.184	1.099	7.2%	30%	TRUE
2,3,7,8-TCDD	M/M+2	0.79	0.65-0.89	10.2	1.070	1.092	-2.1%	20%	TRUE
13C-2,3,7,8-TCDF	M/M+2	0.79	0.65-0.89	94.0	1.662	1.563	6.0%	30%	TRUE
2,3,7,8-TCDF	M/M+2	0.78	0.65-0.89	10.2	1.026	1.045	-1.9%	20%	TRUE
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.60	1.32-1.78	97.5	1.169	1.139	2.5%	30%	TRUE
1,2,3,7,8-PeCDD	M+2/M+4	1.60	1.32-1.78	49.8	0.995	0.992	0.3%	20%	TRUE
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.59	1.32-1.78	87.9	1.798	1.580	12.1%	30%	TRUE
1,2,3,7,8-PeCDF	M+2/M+4	1.57	1.32-1.78	51.7	0.987	1.021	-3.4%	20%	TRUE
2,3,4,7,8-PeCDF	M+2/M+4	1.59	1.32-1.78	50.9	1.035	1.053	-1.8%	20%	TRUE
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.28	1.05-1.43	89.3	1.142	1.020	10.7%	30%	TRUE
1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05-1.43	54.3	0.958	1.041	-8.7%	20%	TRUE
1,2,3,6,7,8-HxCDD	M+2/M+4	1.26	1.05-1.43	51.1	1.020	1.043	-2.3%	20%	TRUE
1,2,3,7,8,9-HxCDD	M+2/M+4	1.25	1.05-1.43	57.0	0.984	1.122	-14.0%	20%	TRUE
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.53	0.43-0.59	93.6	1.422	1.332	6.4%	30%	TRUE
1,2,3,4,7,8-HxCDF	M+2/M+4	1.26	1.05-1.43	51.0	1.241	1.265	-2.0%	20%	TRUE
1,2,3,6,7,8-HxCDF	M+2/M+4	1.26	1.05-1.43	47.1	1.339	1.260	5.9%	20%	TRUE
2,3,4,6,7,8-HxCDF	M+2/M+4	1.26	1.05-1.43	49.7	1.167	1.161	0.5%	20%	TRUE
1,2,3,7,8,9-HxCDF	M+2/M+4	1.24	1.05-1.43	50.5	1.054	1.064	-0.9%	20%	TRUE
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88-1.20	99.5	1.017	1.012	0.5%	30%	TRUE
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.06	0.88-1.20	52.1	0.967	1.007	-4.2%	20%	TRUE
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.45	0.37-0.51	88.2	1.123	0.990	11.8%	30%	TRUE
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.06	0.88-1.20	56.4	1.492	1.684	-12.9%	20%	TRUE
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.05	0.88-1.20	53.4	1.201	1.282	-6.7%	20%	TRUE
13C-OCDD	M+2/M+4	0.91	0.76-1.02	170.0	1.040	0.884	15.0%	30%	TRUE
OCDD	M+2/M+4	0.89	0.76-1.02	106.9	1.021	1.091	-6.9%	20%	TRUE
OCDF	M+2/M+4	0.92	0.76-1.02	95.1	1.182	1.124	4.9%	20%	TRUE

(1) SW-846 Method 8290, Revision 0 September 1994, Section 7.7.4, Page 29

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USEPA Method 1613/8290
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs)
By High-Resolution Gas Chromatography/High-Resolution Mass Spectroscopy (HRGC/HRMS)

PCDD/PCDF Daily Calibration Verification

Laboratory ID: STL Knoxville
Init. Calibration Date: 12-Sep-02

Instrument ID: MAT-95S
GC Column ID: Rtx-5

CS3 Data Filename: t021107s1
Analysis Date: 07-Nov-02
Analysis Time: 09:30

Analytes	m/z Mass 1	m/z Mass 2	Area Mass 1	Area Mass 2	RT	RRT	Ratio	Ratio Limits	Std Conc	1613 ICAL RF	1613 Calc RF	1613 Conc. (ng/mL)
13C-1,2,3,4-TCDD	331.9368	333.9339	852173	1061933	34:28	1.000	0.80	0.65-0.89	100.0	1.000	1.000	100.0
13C-2,3,7,8-TCDD	331.9368	333.9339	907716	1159449	35:03	1.017	0.78	0.65-0.89	100.0	1.152	1.080	93.7
37Cl-2,3,7,8-TCDD	327.8847		210338		35:06	1.018		NA	10.0	1.184	1.099	9.3
2,3,7,8-TCDD	319.8965	321.8936	99809	126007	35:06	1.001	0.79	0.65-0.89	10.0	1.070	1.092	10.2
13C-2,3,7,8-TCDF	315.9419	317.9389	1320383	1671333	32:52	0.954	0.79	0.65-0.89	100.0	1.662	1.563	94.0
2,3,7,8-TCDF	303.9016	305.8987	136848	175823	32:54	1.001	0.78	0.65-0.89	10.0	1.026	1.045	10.2
13C-1,2,3,7,8-PeCDD	367.8949	369.8919	1341317	839763	42:55	1.245	1.60	1.32-1.78	100.0	1.169	1.139	97.5
2,3,7,8-PeCDD	355.8546	357.8516	664850	416782	42:56	1.000	1.60	1.32-1.78	50.0	0.995	0.992	49.8
13C-1,2,3,7,8-PeCDF	351.9000	353.8970	1855619	1168549	41:20	1.199	1.59	1.32-1.78	100.0	1.798	1.580	87.9
13C-2,3,4,7,8-PeCDF	351.9000	353.8970	1864926	1178931	42:26	1.231	1.58	1.32-1.78	100.0	1.790	1.590	88.8
1,2,3,7,8-PeCDF	339.8597	341.8567	944129	599476	41:21	1.000	1.57	1.32-1.78	50.0	0.987	1.021	51.7
2,3,4,7,8-PeCDF	339.8597	341.8567	978260	614504	42:27	1.000	1.59	1.32-1.78	50.0	1.038	1.047	50.4
13C-1,2,3,4,7,8-HxCDD	401.8559	403.8529	1064178	842321	47:05	0.988	1.26	1.05-1.43	100.0	0.985	0.950	96.5
13C-1,2,3,6,7,8-HxCDD	401.8559	403.8529	1147035	899047	47:13	0.991	1.28	1.05-1.43	100.0	1.142	1.020	89.3
13C-1,2,3,7,8,9-HxCDD	401.8559	403.8529	1116311	890310	47:38	1.000	1.25	1.05-1.43	100.0	1.000	1.000	100.0
1,2,3,4,7,8-HxCDD	389.8157	391.8127	592571	472637	47:06	1.000	1.25	1.05-1.43	50.0	1.110	1.117	50.3
1,2,3,6,7,8-HxCDD	389.8157	391.8127	593931	473147	47:14	1.000	1.26	1.05-1.43	50.0	1.020	1.043	51.1
1,2,3,7,8,9-HxCDD	389.8157	391.8127	637232	510824	47:39	1.009	1.25	1.05-1.43	50.0	1.056	1.162	55.0
13C-1,2,3,4,7,8-HxCDF	383.8639	385.8610	928658	1743299	46:01	0.966	0.53	0.43-0.59	100.0	1.422	1.332	93.6
13C-1,2,3,6,7,8-HxCDF	383.8639	385.8610	944258	1793939	46:09	0.969	0.53	0.43-0.59	100.0	1.594	1.365	85.6
13C-2,3,4,6,7,8-HxCDF	383.8639	385.8610	925039	1738549	46:56	0.985	0.53	0.43-0.59	100.0	1.419	1.327	93.5
13C-1,2,3,7,8,9-HxCDF	383.8639	385.8610	805199	1522640	47:56	1.006	0.53	0.43-0.59	100.0	1.208	1.160	96.0
1,2,3,4,7,8-HxCDF	373.8208	375.8178	942533	747833	46:02	1.000	1.26	1.05-1.43	50.0	1.241	1.265	51.0
1,2,3,6,7,8-HxCDF	373.8208	375.8178	939538	744122	46:10	1.000	1.26	1.05-1.43	50.0	1.195	1.230	51.5
2,3,4,6,7,8-HxCDF	373.8208	375.8178	865401	685672	46:57	1.000	1.26	1.05-1.43	50.0	1.169	1.165	49.8
1,2,3,7,8,9-HxCDF	373.8208	375.8178	787197	633847	47:57	1.000	1.24	1.05-1.43	50.0	1.240	1.221	49.2
13C-1,2,3,4,6,7,8-HpCDD	435.8169	437.8140	1040445	990599	52:11	1.096	1.05	0.88-1.20	100.0	1.017	1.012	99.5
1,2,3,4,6,7,8-HpCDD	423.7766	425.7737	525310	497491	52:12	1.000	1.06	0.88-1.20	50.0	0.967	1.007	52.1
13C-1,2,3,4,6,7,8-HpCDF	417.8253	419.8220	619795	1367110	50:28	1.059	0.45	0.37-0.51	100.0	1.123	0.990	88.2
13C-1,2,3,4,7,8,9-HpCDF	417.8253	419.8220	544374	1217453	52:48	1.108	0.45	0.37-0.51	100.0	0.928	0.878	94.6
1,2,3,4,6,7,8-HpCDF	407.7818	409.7789	858966	814109	50:29	1.000	1.06	0.88-1.20	50.0	1.492	1.684	56.4
1,2,3,4,7,8,9-HpCDF	407.7818	409.7789	651857	621688	52:49	1.000	1.05	0.88-1.20	50.0	1.450	1.446	49.9
13C-OCDD	469.7779	471.7750	1686390	1860442	56:16	1.181	0.91	0.76-1.02	200.0	1.040	0.884	170.0
OCDD	457.7377	459.7348	913908	1021732	56:17	1.000	0.89	0.76-1.02	100.0	1.021	1.091	106.9
OCDF	441.7428	443.7399	956329	1037178	56:25	1.003	0.92	0.76-1.02	100.0	1.182	1.124	95.1

VER Quan Data

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USEPA Method 8290
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs)
By High-Resolution Gas Chromatography/High-Resolution Mass Spectroscopy (HRGC/HRMS)

PCDD/PCDF Initial Calibration Response Factors

Laboratory ID: STL Knoxville
Init. Calibration Date: 12-Sep-02
Instrument ID: MAT-95S
GC Column ID: Rtx-5

CS1 Data Filename: t020913i1
CS2 Data Filename: t020912ia2
CS3 Data Filename: t020912ia3
CS4 Data Filename: t020912ia4
CS5 Data Filename: t020912ia5

Response Factors (RF)

Analytes	CS1	CS2	CS3	CS4	CS5	Mean RF	Cv (%RSD)
13C-2378-TCDD	1.093	1.118	1.118	1.181	1.248	1.152	5.5%
37Cl4-2378-TCDD	1.211	1.144	1.171	1.141	1.254	1.184	4.1%
2378-TCDD	1.158	1.011	1.073	1.029	1.078	1.070	5.3%
13C-2378-TCDF	1.652	1.632	1.638	1.653	1.733	1.662	2.5%
2378-TCDF	1.128	0.993	1.041	0.978	0.988	1.026	6.1%
13C-12378-PeCDD	1.122	1.097	1.107	1.160	1.360	1.169	9.4%
12378-PeCDD	1.066	0.979	0.982	0.977	0.971	0.995	4.0%
13C-12378-PeCDF	1.757	1.677	1.728	1.805	2.020	1.798	7.4%
12378-PeCDF	1.063	0.991	0.976	0.947	0.958	0.987	4.6%
23478-PeCDF	1.198	1.043	0.980	0.963	0.991	1.035	9.2%
Total PeCDF						1.011	
13C-123678-HxCDD	1.089	1.173	1.188	1.153	1.106	1.142	3.7%
123478-HxCDD	1.059	0.942	0.939	0.894	0.957	0.958	6.3%
123678-HxCDD	1.102	1.053	0.993	0.975	0.976	1.020	5.5%
123789-HxCDD	1.113	0.976	0.944	0.919	0.970	0.984	7.7%
Total HxCDD						0.987	
13C-123478-HxCDF	1.349	1.451	1.490	1.416	1.404	1.422	3.7%
123478-HxCDF	1.326	1.290	1.217	1.180	1.194	1.241	5.1%
123678-HxCDF	1.405	1.409	1.338	1.303	1.239	1.339	5.4%
234678-HxCDF	1.281	1.222	1.137	1.099	1.096	1.167	7.0%
123789-HxCDF	1.203	1.094	0.980	0.986	1.009	1.054	9.0%
Total HxCDF						1.201	
13C-1234678-HpCDD	1.056	1.003	1.035	0.986	1.004	1.017	2.8%
1234678-HpCDD	1.054	0.995	0.958	0.911	0.918	0.967	6.1%
13C-1234678-HpCDF	1.102	1.136	1.168	1.110	1.100	1.123	2.6%
1234678-HpCDF	1.606	1.532	1.465	1.433	1.424	1.492	5.1%
1234789-HpCDF	1.393	1.234	1.128	1.108	1.141	1.201	9.8%
Total HpCDF						1.346	
13C--OCDD	1.106	0.996	1.021	1.020	1.056	1.040	4.1%
OCDD	1.151	1.112	0.979	0.937	0.927	1.021	10.1%
OCDF	1.292	1.222	1.130	1.123	1.146	1.182	6.2%

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QUAN: twin.q0 Entries: 27

Data file(s) used
File: t021107s1 07-Nov-02
Samp: Vial 1 WO=2427:85 Meth=F8 Dil=1 Start : 09:30:41 2745
Comm: Inst=m2a/334061 Batch=20021107s1 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file (!REF)

Entry	Compound Name	Actual Time	Specified Time	Actual Rel Time
1	13c-2378-TCDD (Standard)	35:03	35:08	1.0000
2	1368-TCDD (First)	28:28	28:32	0.8121
3	1289-TCDD (Last)	37:34	37:36	1.0716
4	13c-2378-TCDF (Standard)	32:51	32:55	1.0000
5	1368-TCDF (First)	25:45	25:49	0.7840
6	1289-TCDF (Last)	37:29	37:32	1.1412
7	13c-12378-PeCDD (Standard)	42:55	42:56	1.0000
8	12468,79-PeCDD (First)	40:20	40:22	0.9398
9	12389-PeCDD (Last)	43:32	43:34	1.0144
10	13c-12378-PeCDF (Standard)	41:20	41:21	1.0000
11	13468-PeCDF (First)	38:01	38:03	0.9195
12	12389-PeCDF (Last)	43:40	43:42	1.0565
13	13c-123678-HxCDD (Standard)	47:13	47:15	1.0000
14	124679,89-HxCDD (First)	45:27	45:30	0.9629
15	123467-HxCDD (Last)	47:39	47:41	1.0094
16	13c-123478-HxCDF (Standard)	46:01	46:03	1.0000
17	123468-HxCDF (First)	44:46	44:48	0.9727
18	123489-HxCDF (Last)	48:05	48:07	1.0446
19	13c-1234678-HpCDD (Standard)	52:11	52:13	1.0000
20	1234679-HpCDD (First)	51:01	51:03	0.9776
21	1234678-HpCDD (Last)	52:12	52:14	1.0003
22	13c-1234678-HpCDF (Standard)	50:28	50:30	1.0000
23	1234678-HpCDF (First)	50:29	50:33	1.0004
24	1234789-HpCDF (Last)	52:49	52:51	1.0466
25	13c-OCDD (Standard)	56:16	56:18	1.0000
26	OCDD	56:17	56:19	1.0003
27	OCDF	56:25	56:27	1.0025

MSD 11-7-02

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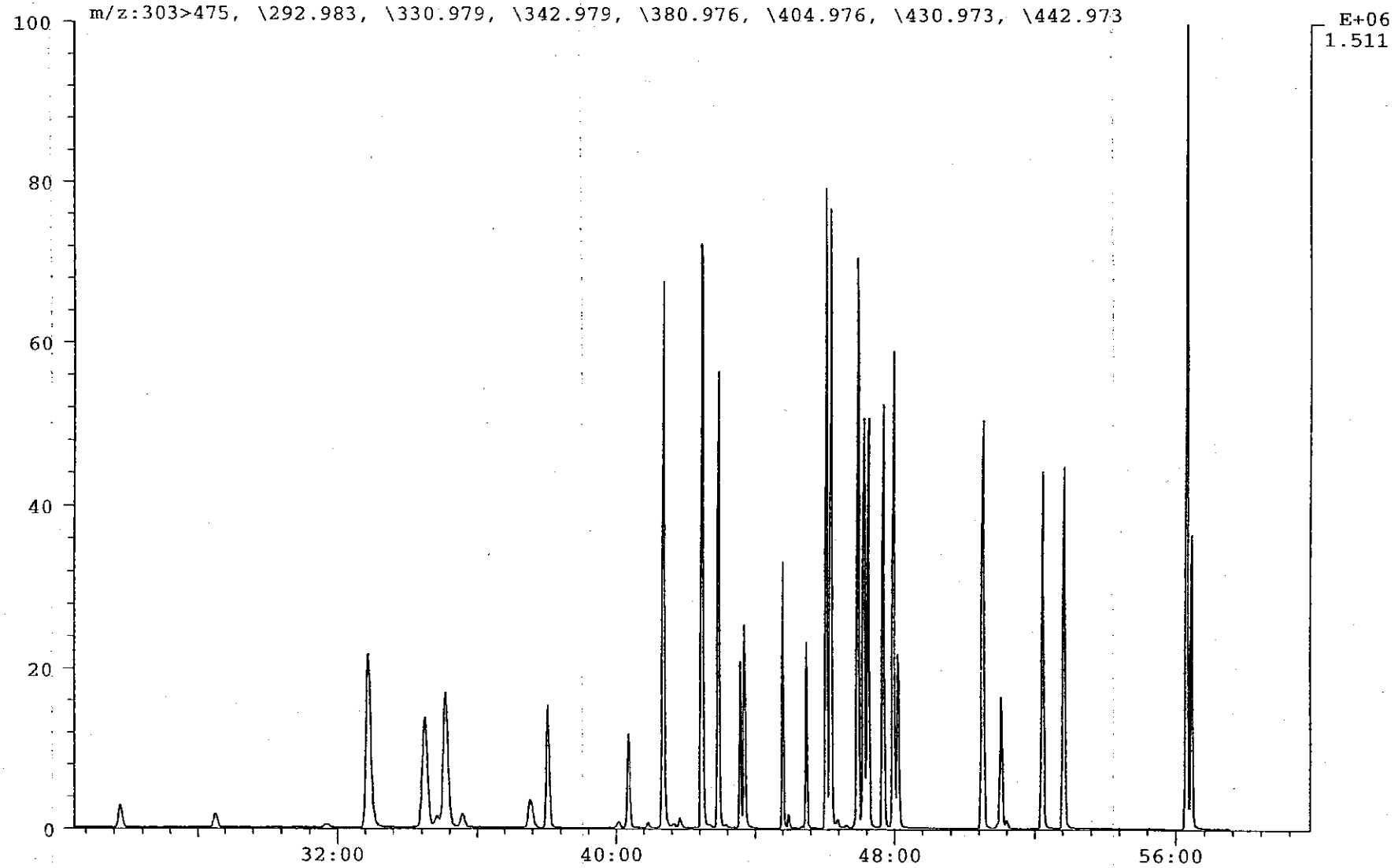
CHRO: t021107s1 07-Nov-02 Elapse: 08:00.3 1
Samp: Vial 1 WO=2427:85 Meth=F8 Dil=1 Start : 09:30:41 2745
Comm: Inst=m2a/334061 Batch=20021107s1 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 906 > 2870 Masses: 293 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area

Int, Calc MSD 11-7-02
QC Pmp 11-7-02



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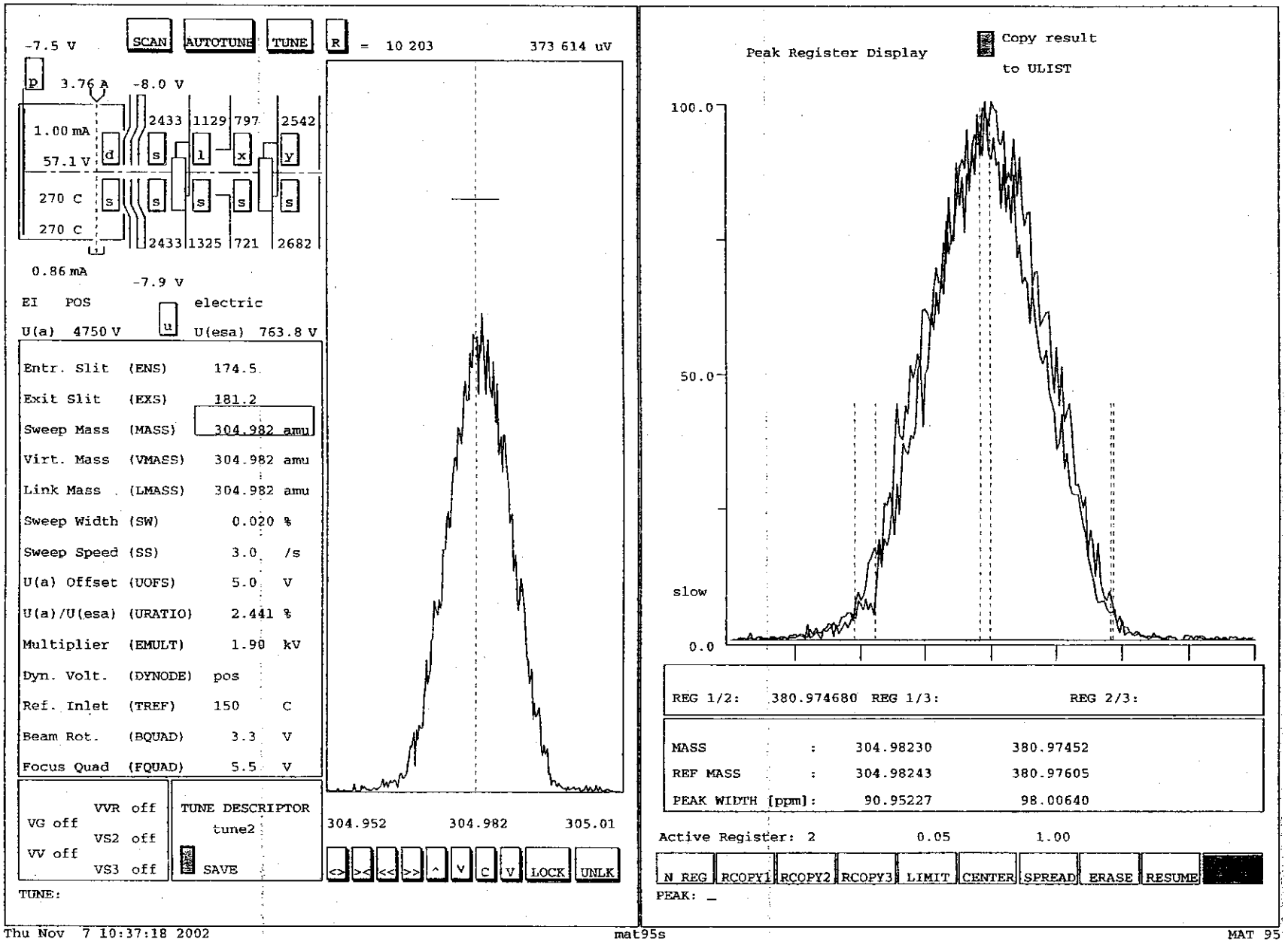

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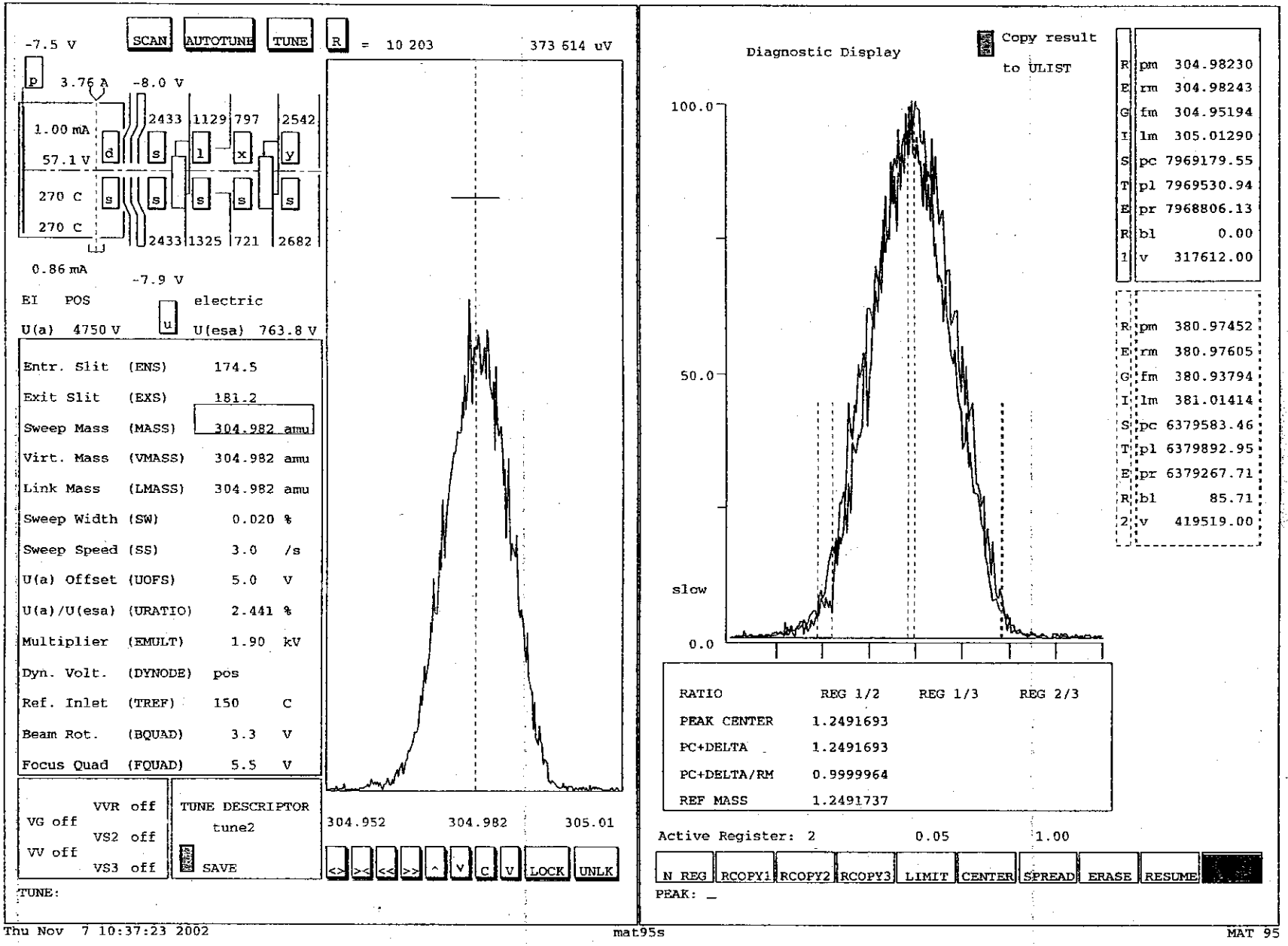

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Comm:  Inst=m2a/334061 Batch=20021107s1 Ccal=20020912i
Mode:  EI +VE +LMR  ESCAN LR NRM                            Study :  Ver/Win
Oper:  PMP            Client:  STL Knoxville                Inlet :  GC     Vial   1
Peak:  100.00  ppm      Label wndw:   1090 > 1637           Masses:  293 > 514
Area:  5, 0.50, 15      Baseline  :   100, 3                Label :  2, 50.0
Disp:  Height  Area
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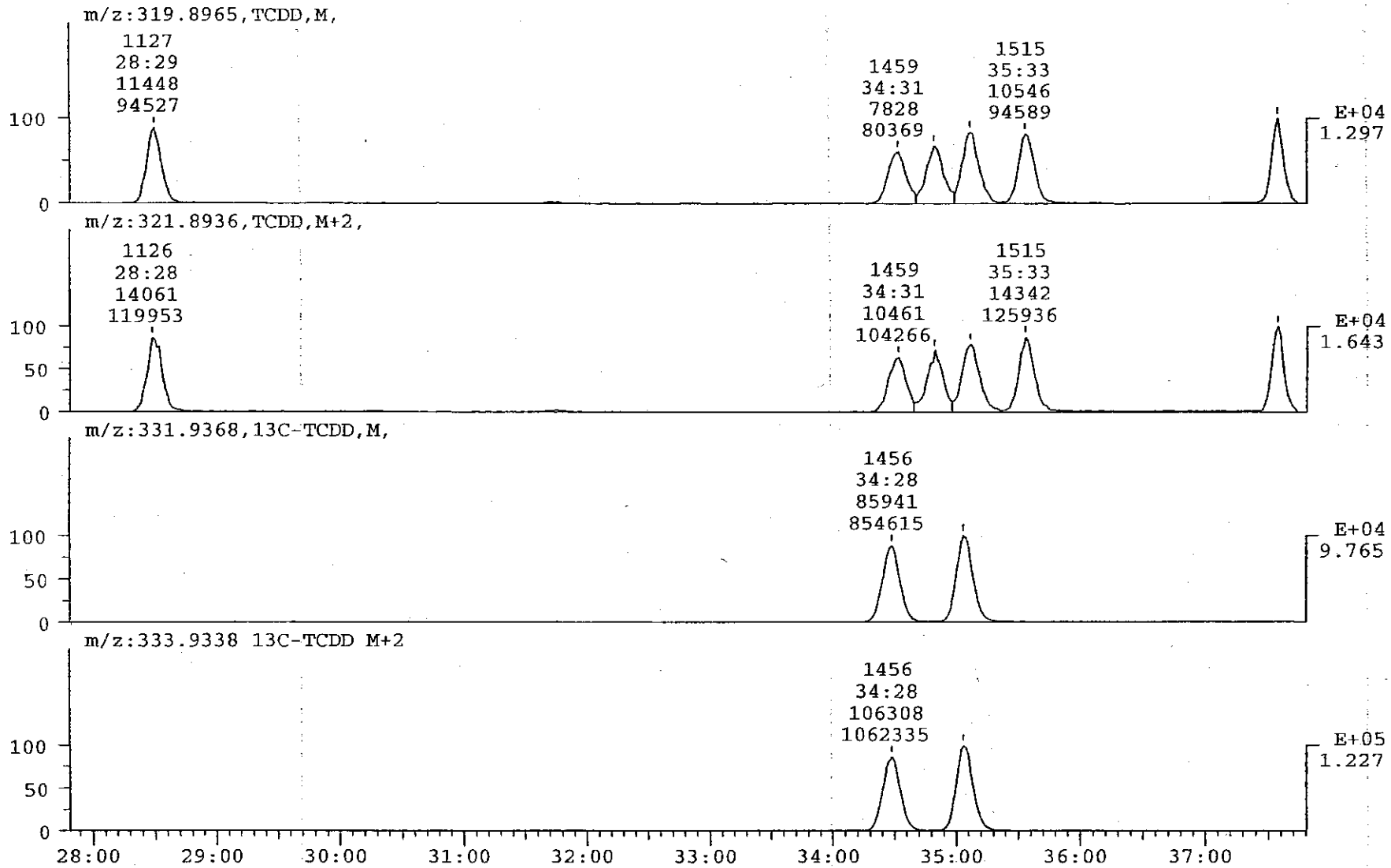

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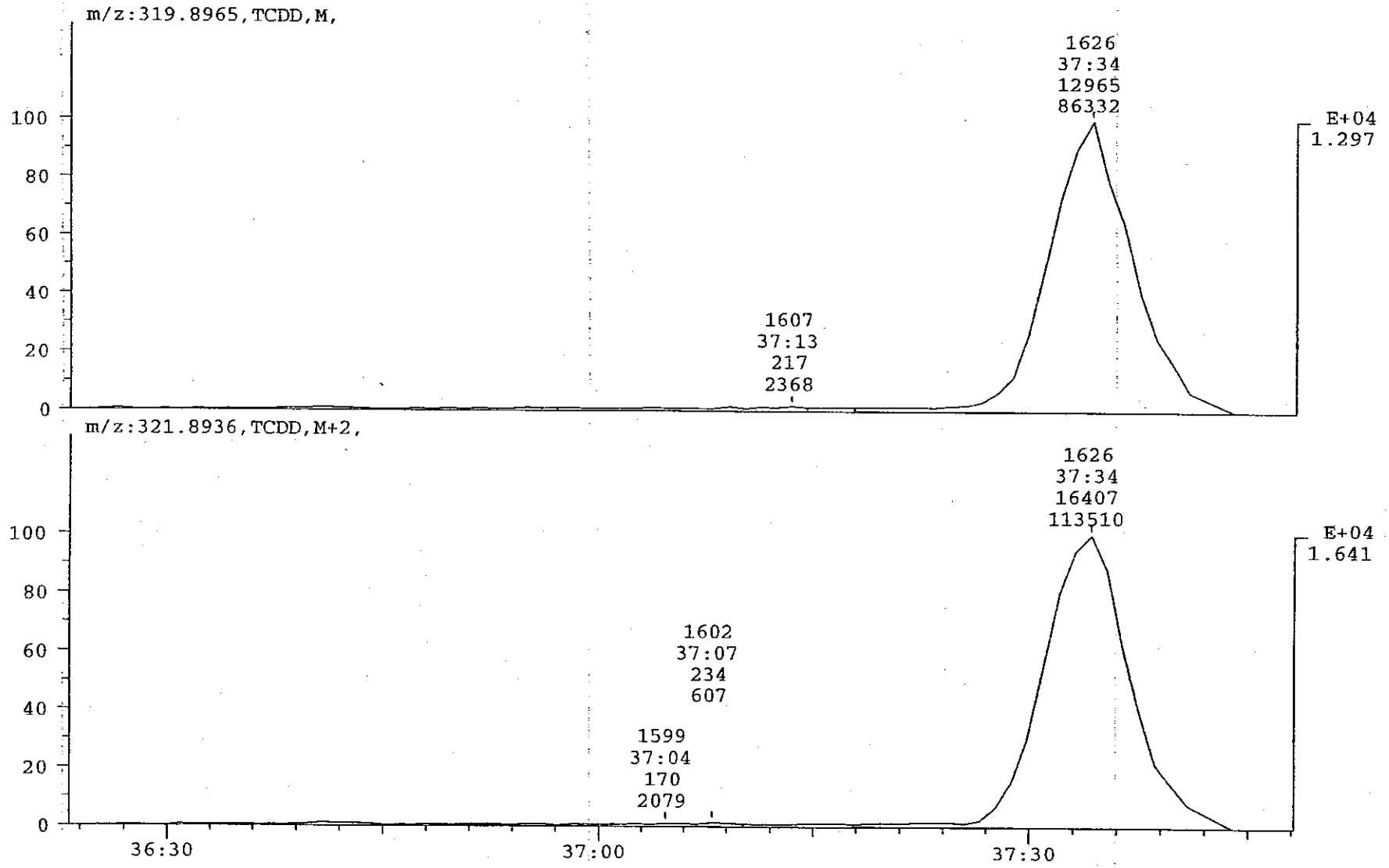
Comm: Inst=m2a/334061 Batch=20021107s1 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 1561 > 1637 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



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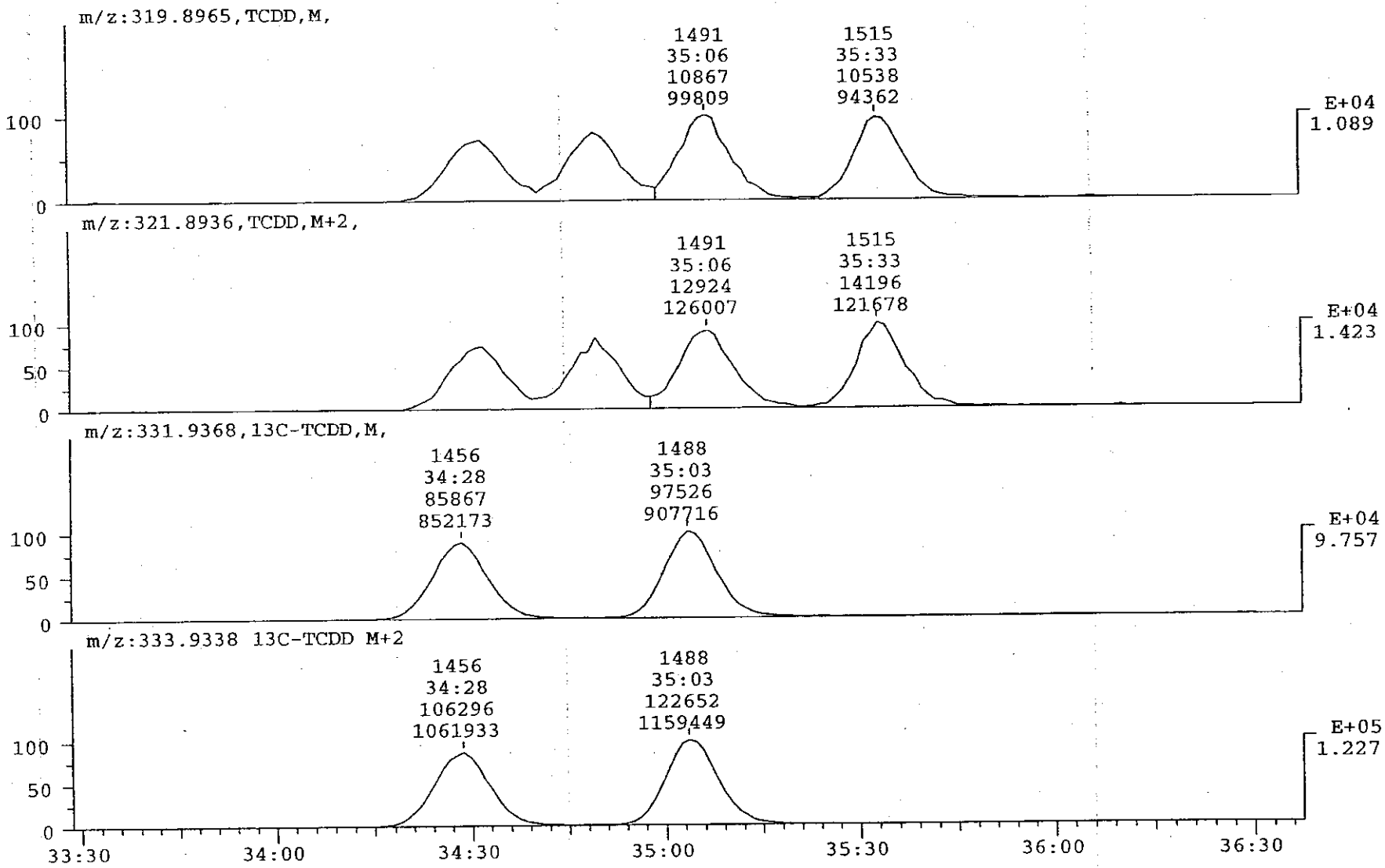
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 1401 > 1574 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



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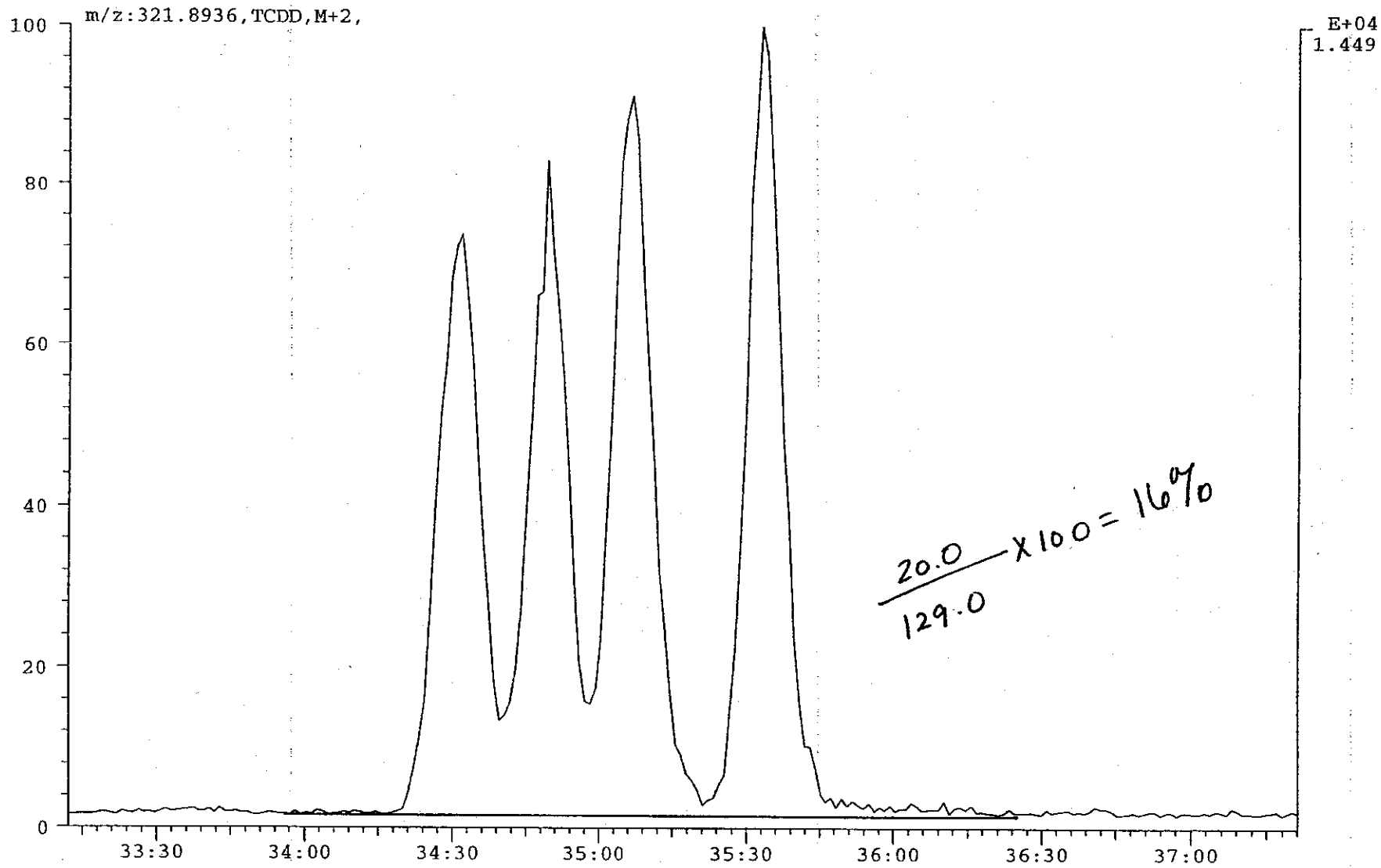
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 1386 > 1614 Masses: 293 > 514
Area: 5, 0.50, 0 Baseline : 100, 5 Label : 0, 2.5
Disp: Height Area



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Comm:  Inst=m2a/334061 Batch=20021107s1 Ccal=20020912i
Mode:  EI +VE +LMR  ESCAN LR NRM                           Study :  Ver/Win
Oper:  PMP          Client:  STL Knoxville                 Inlet :  GC     Vial   1
Peak:  100.00  ppm     Label wndw:   1396 > 1612           Masses:  293 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                Label :  2, 3.0
Disp:  Height  Area
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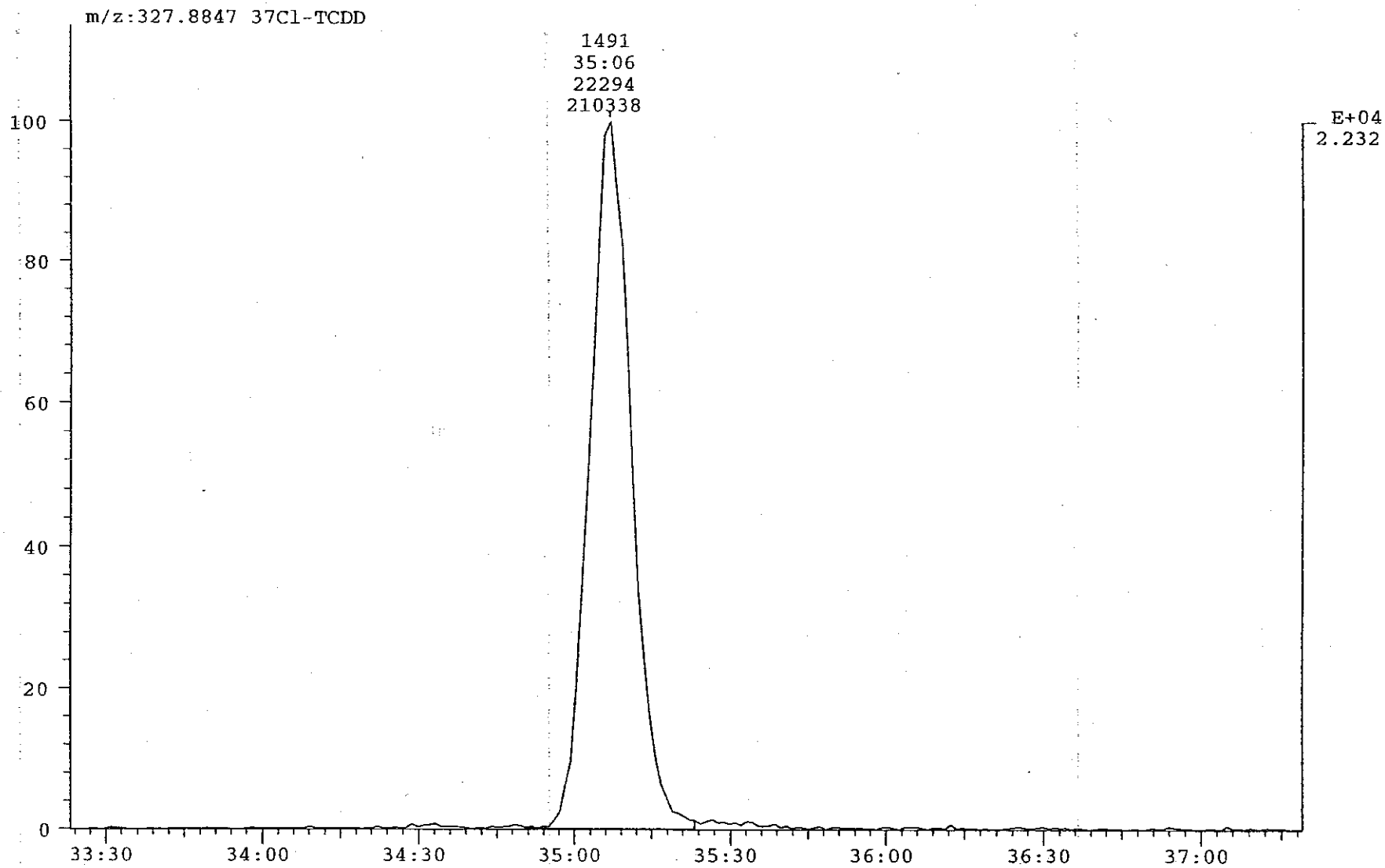

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Comm:  Inst=m2a/334061 Batch=20021107s1 Ccal=20020912i
Mode:  EI +VE +LMR  ESCAN LR NRM                              Study :  Ver/Win
Oper:  PMP            Client:  STL Knoxville                  Inlet :  GC     Vial   1
Peak:  100.00  ppm      Label wndw:   1093 > 1630             Masses:  293 > 514
Area:  5, 0.50, 15      Baseline  :   100, 5                  Label :  -3, 1.0
Disp:  Height  Area
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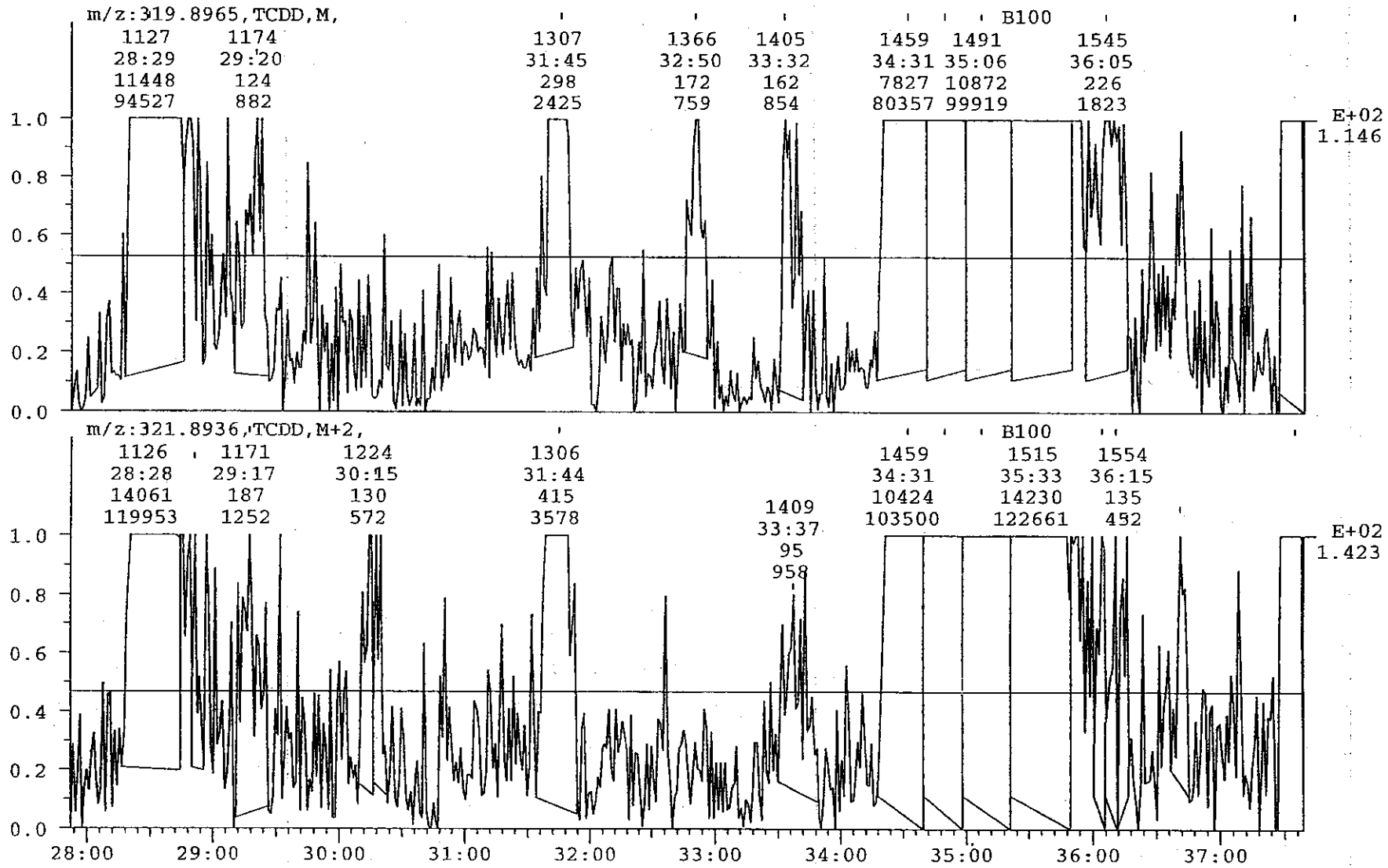

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Mode:  EI +VE +LMR  ESCAN LR NRM                           Study :  Ver/Win
Oper:  PMP            Client:  STL Knoxville               Inlet :  GC     Vial   1
Peak:  100.00  ppm      Label wndw:   922 > 1634           Masses:  293 > 514
Area:  5, 0.50, 15      Baseline  :   100, 3                Label :  -2, 50.0
Disp:  Height  Area
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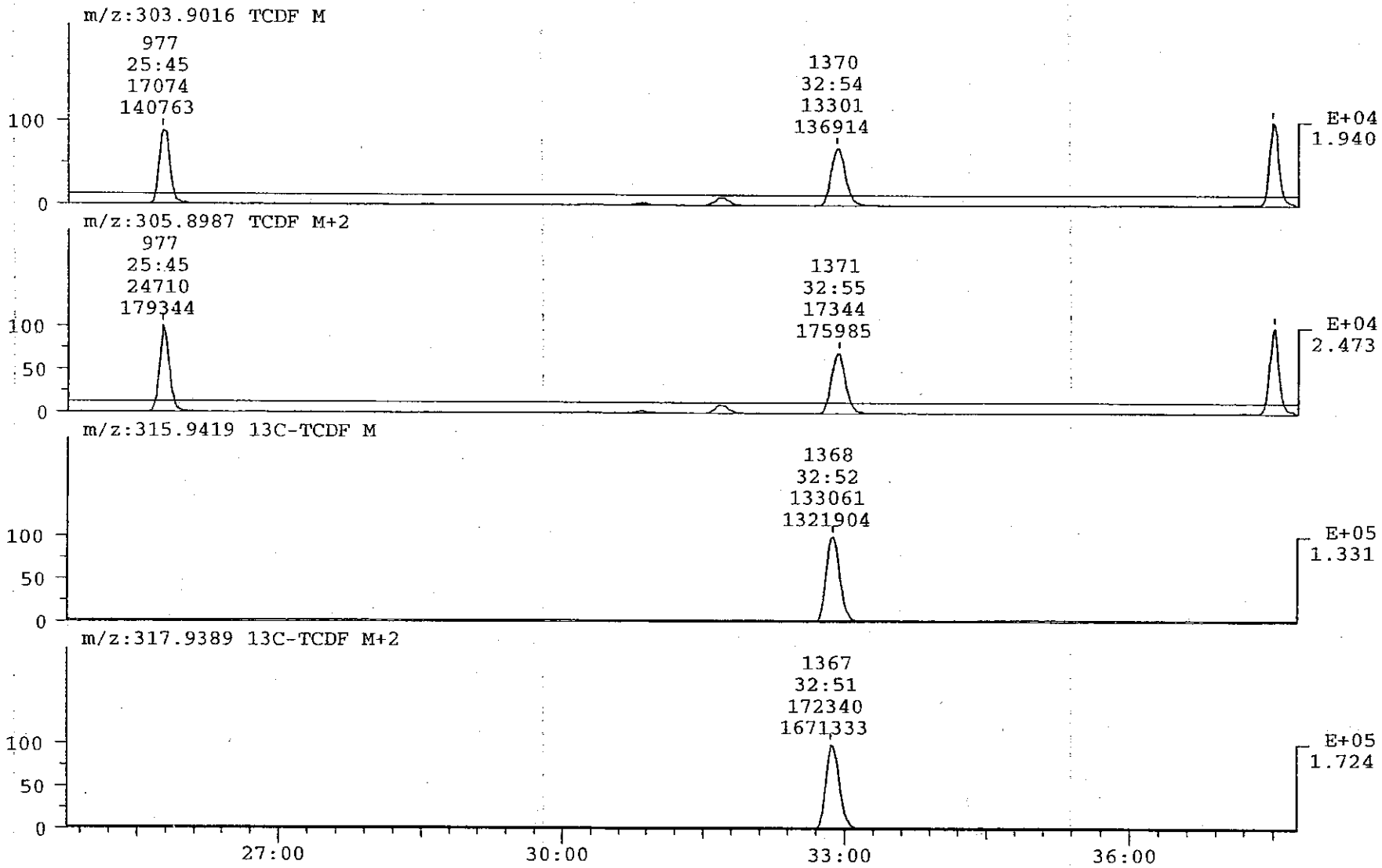

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Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
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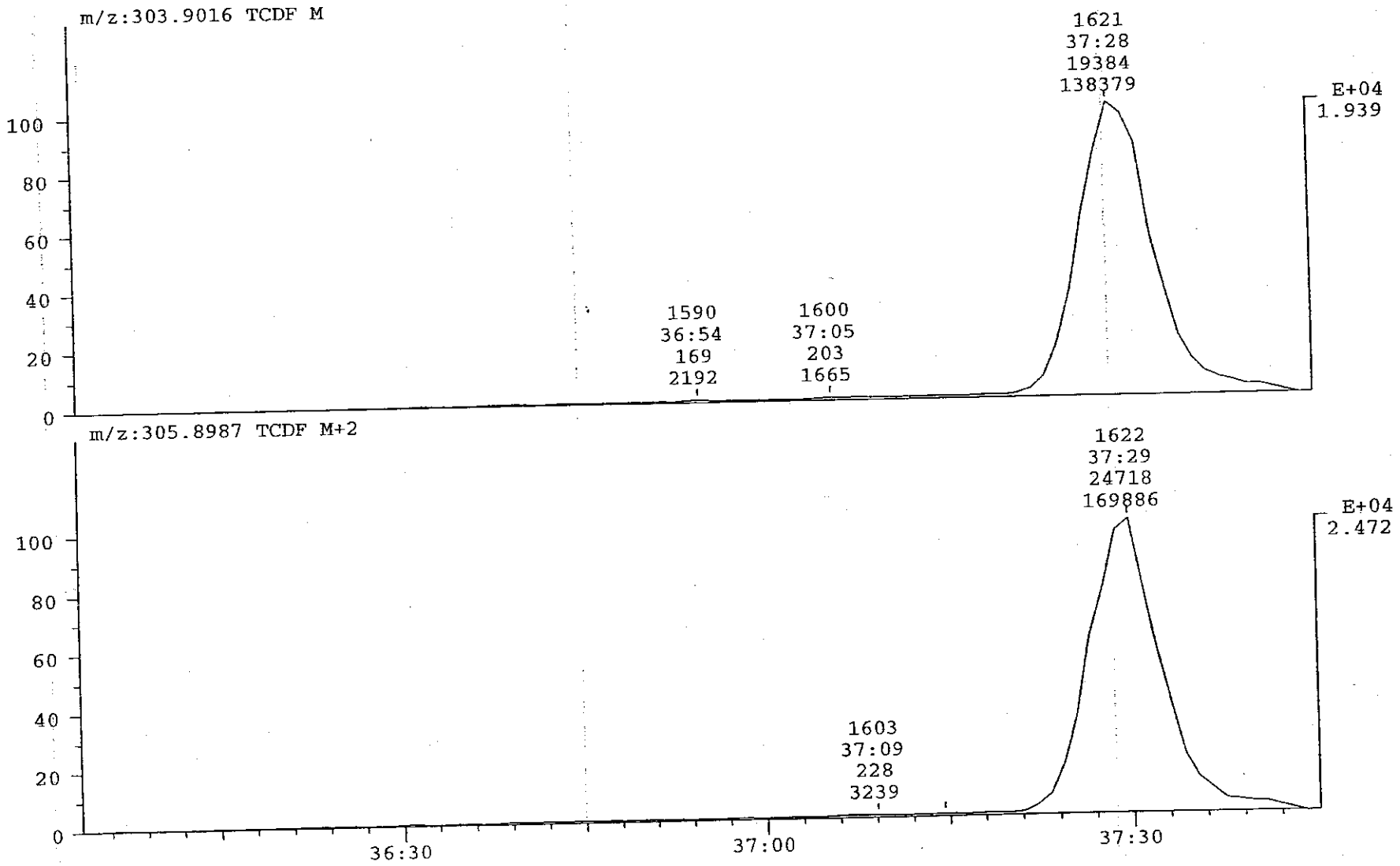
Disp: Height Area



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Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
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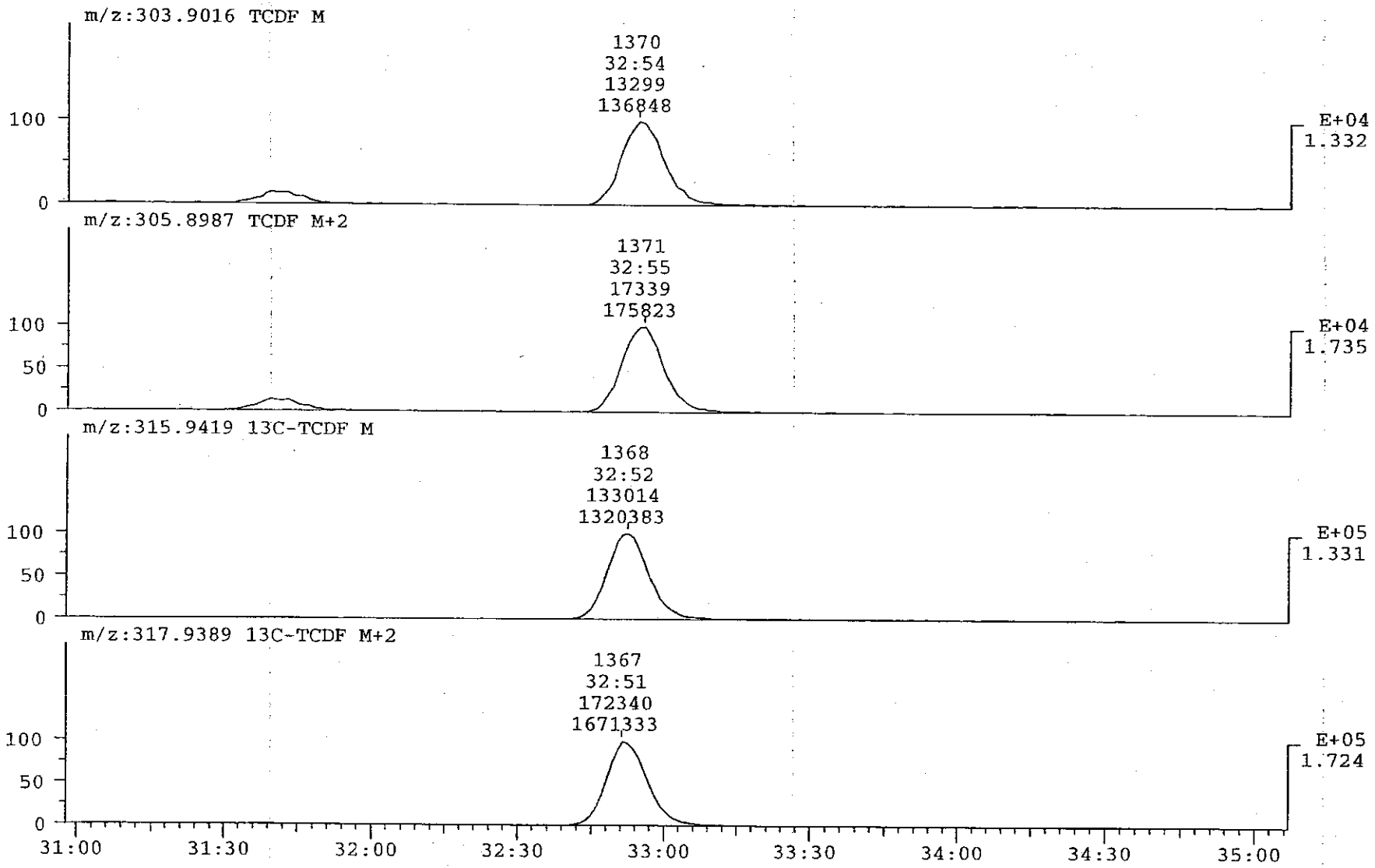
Disp: Height Area



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Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
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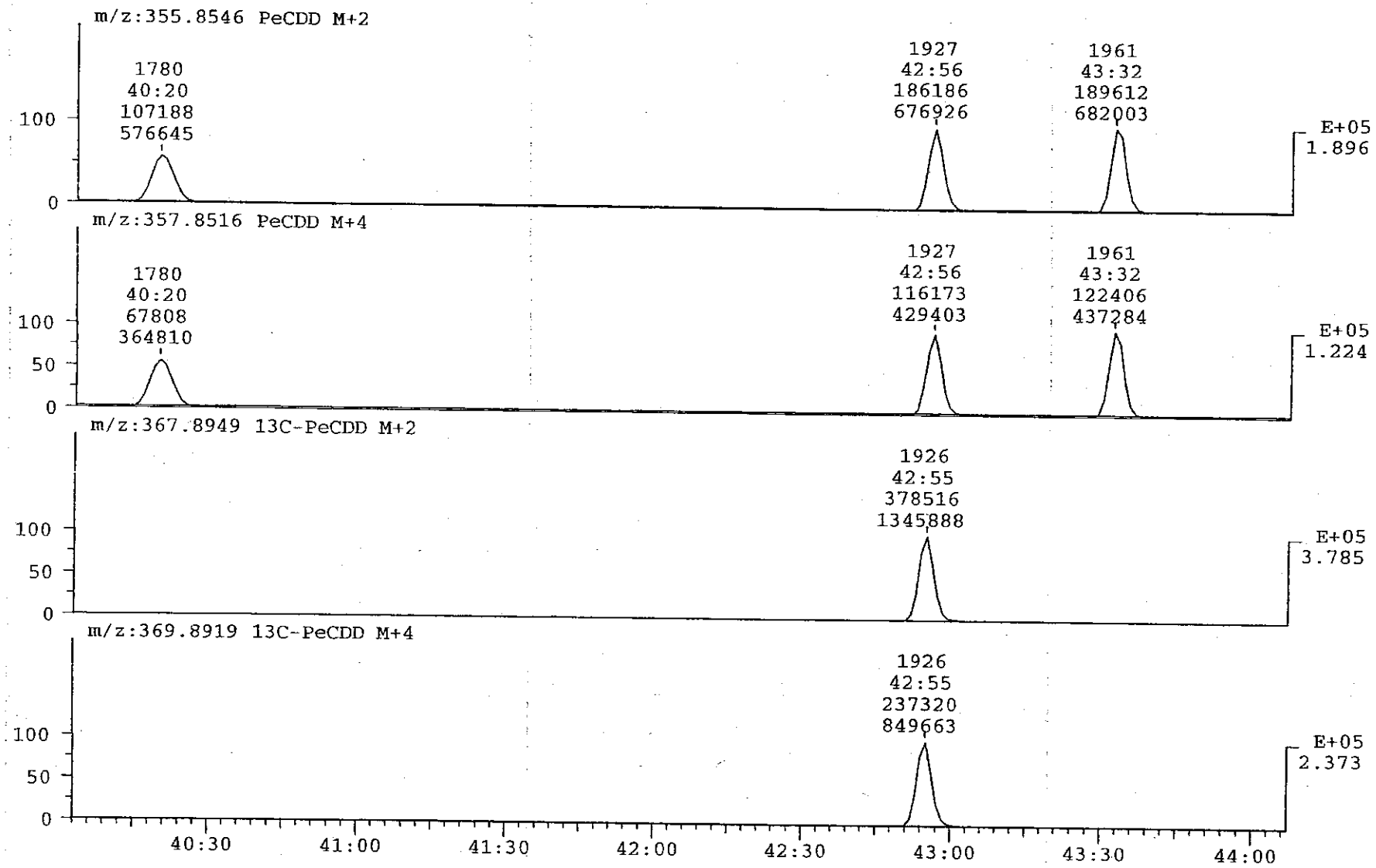
Disp: Height Area



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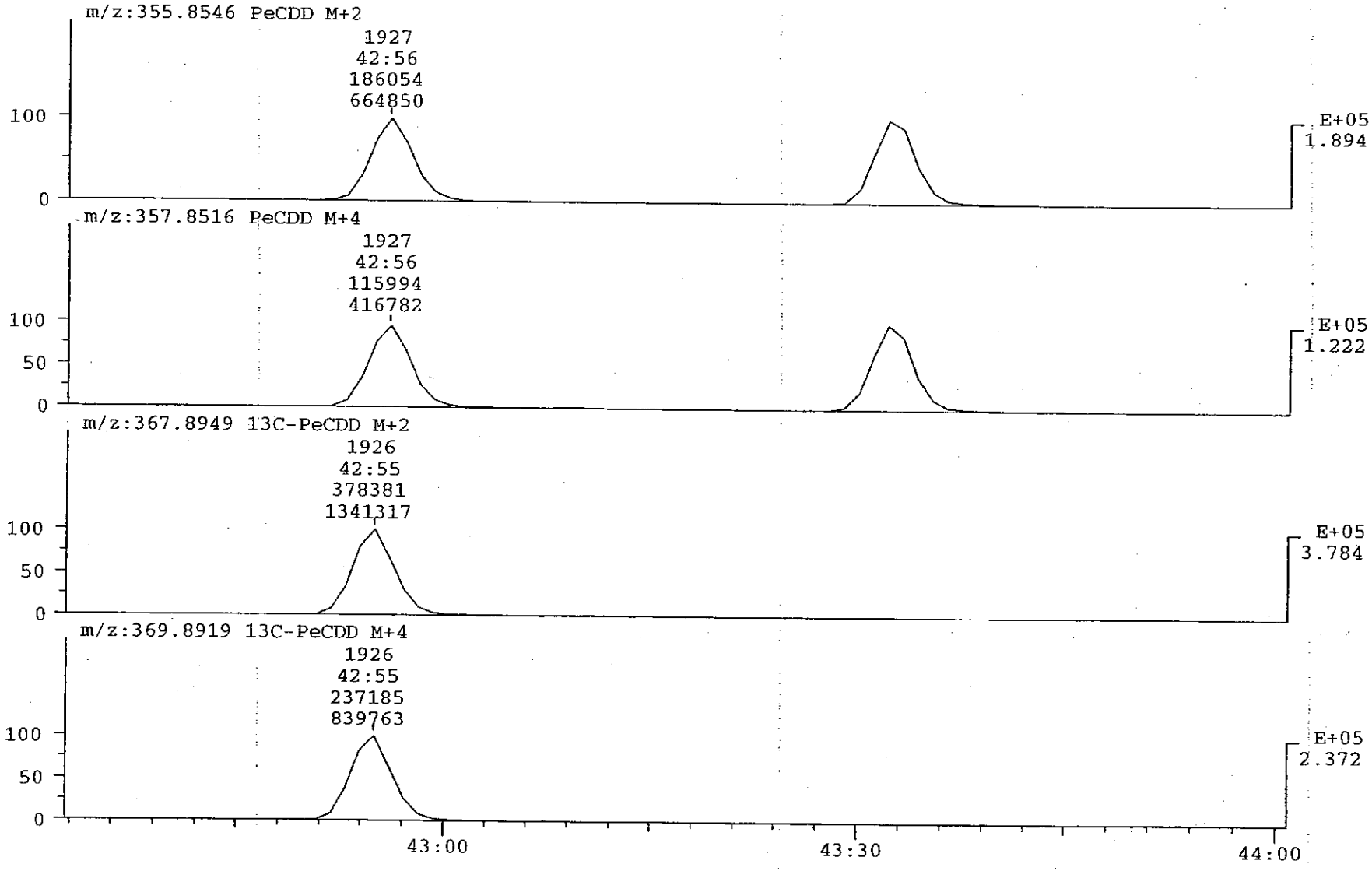
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 1899 > 1959 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



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Comm: Inst=m2a/334061 Batch=20021107s1 Ccal=20020912i
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Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
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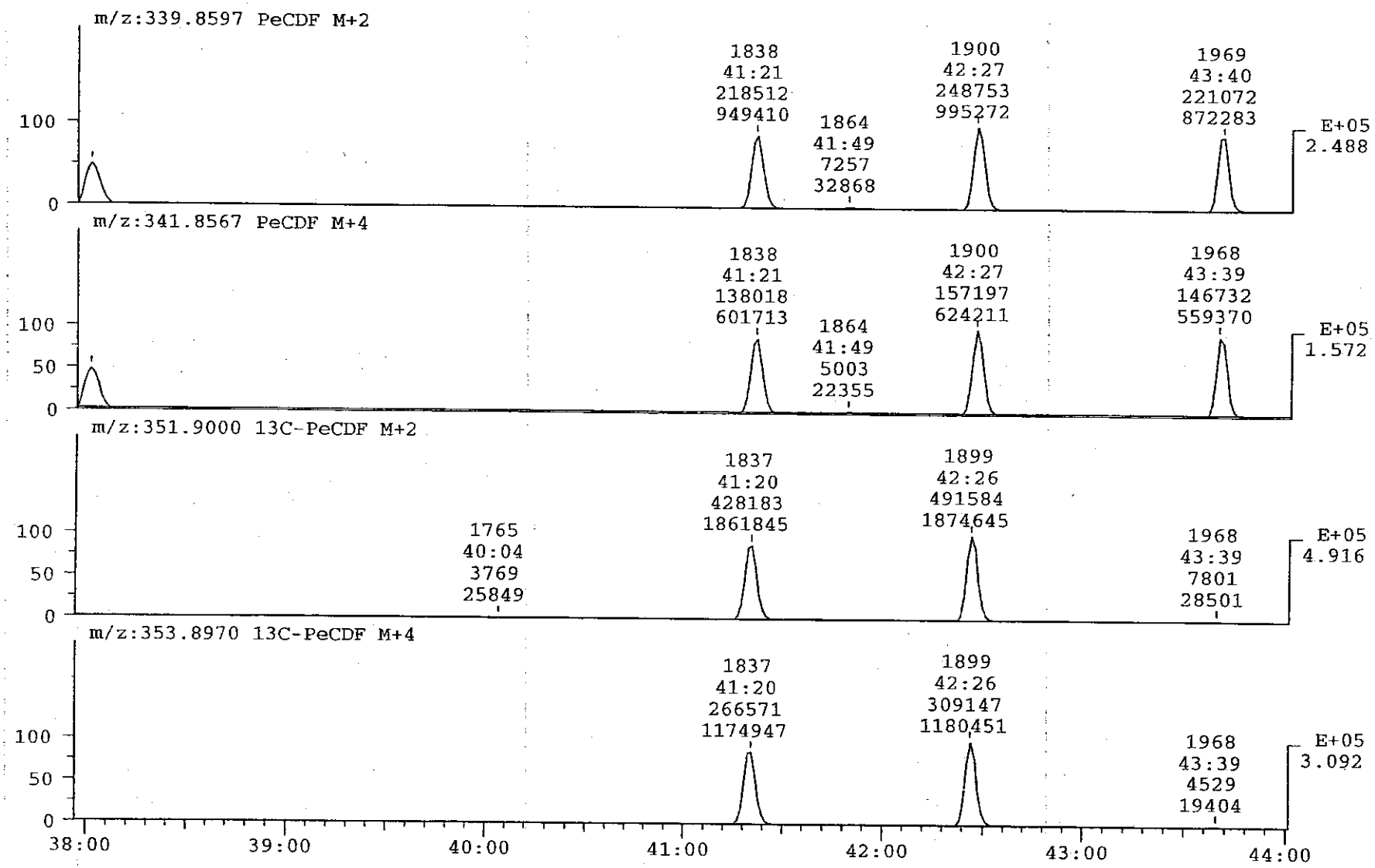
Disp: Height Area



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Mode:  EI +VE +LMR  ESCAN LR NRM                            Study :  Ver/Win
Oper:  PMP           Client:  STL Knoxville                 Inlet :  GC     Vial   1
Peak:  100.00  ppm     Label wndw:   1640 > 1706            Masses:  293 > 514
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Disp:  Height  Area
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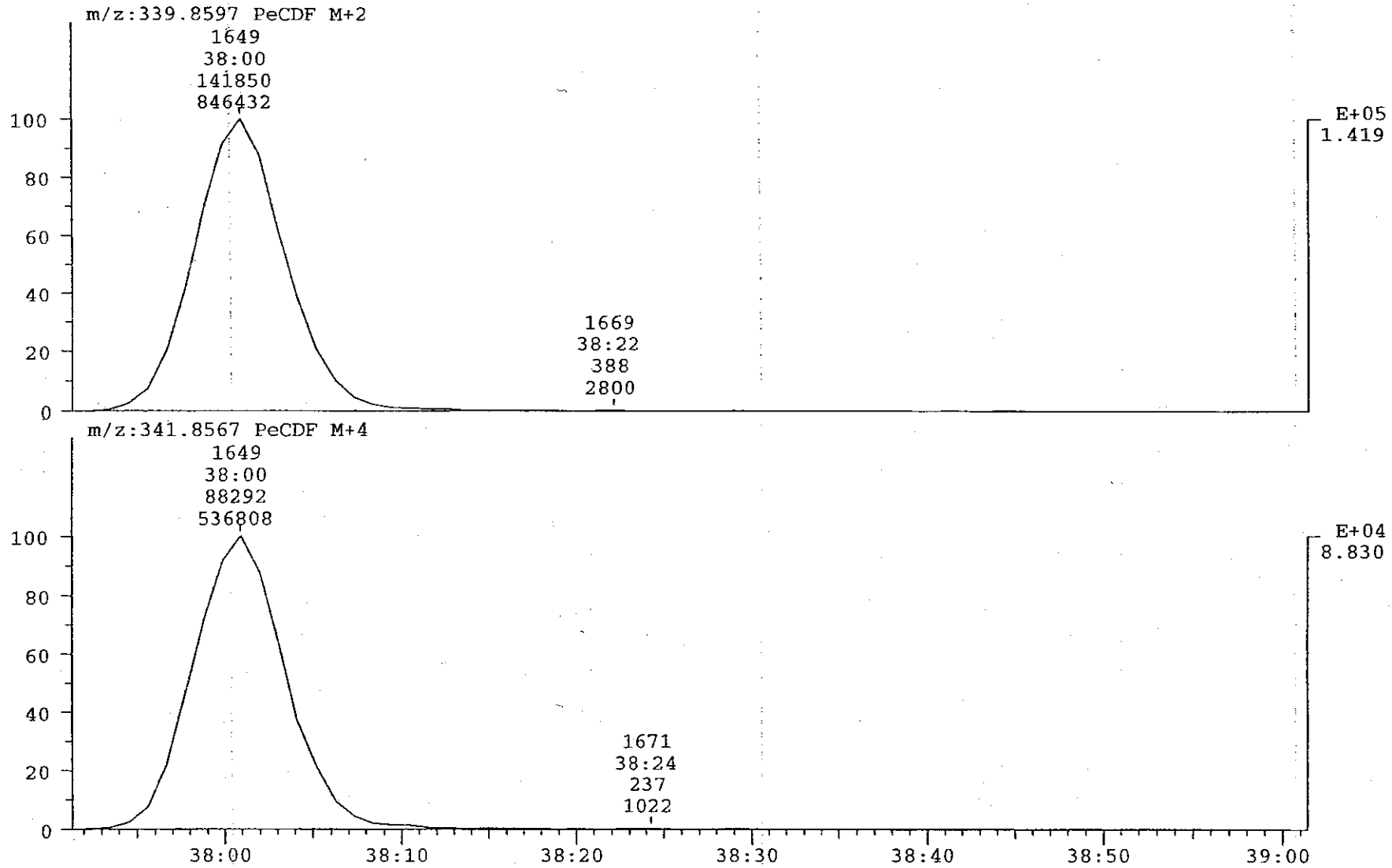

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Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 1825 > 1931 Masses: 293 > 514
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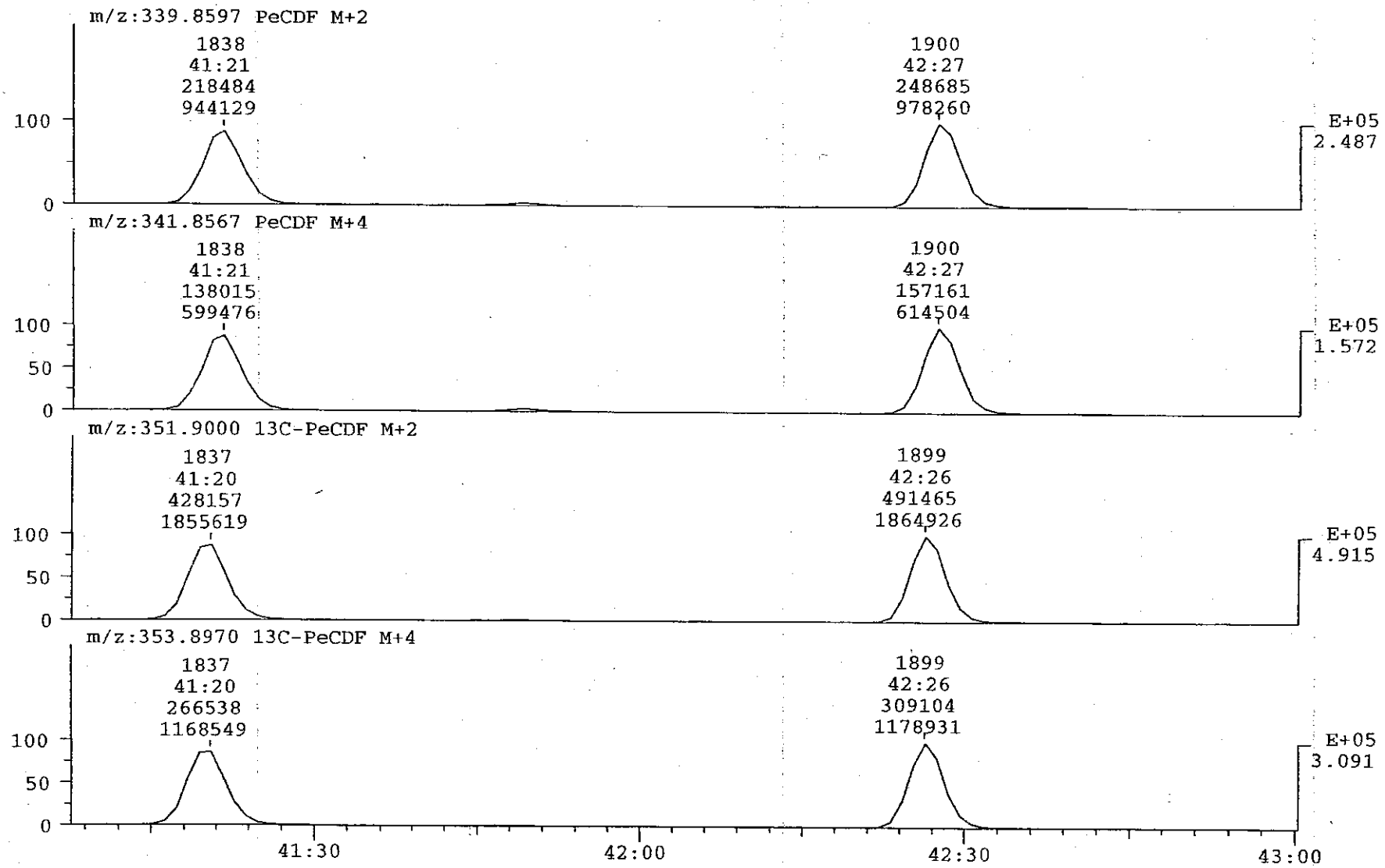
Disp: Height Area



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Mode:  EI +VE +LMR  ESCAN LR NRM                            Study :  Ver/Win
Oper:  PMP            Client:  STL Knoxville                Inlet :  GC     Vial   1
Peak:  100.00  ppm      Label wndw:   2057 > 2213           Masses:  293 > 514
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Disp:  Height  Area
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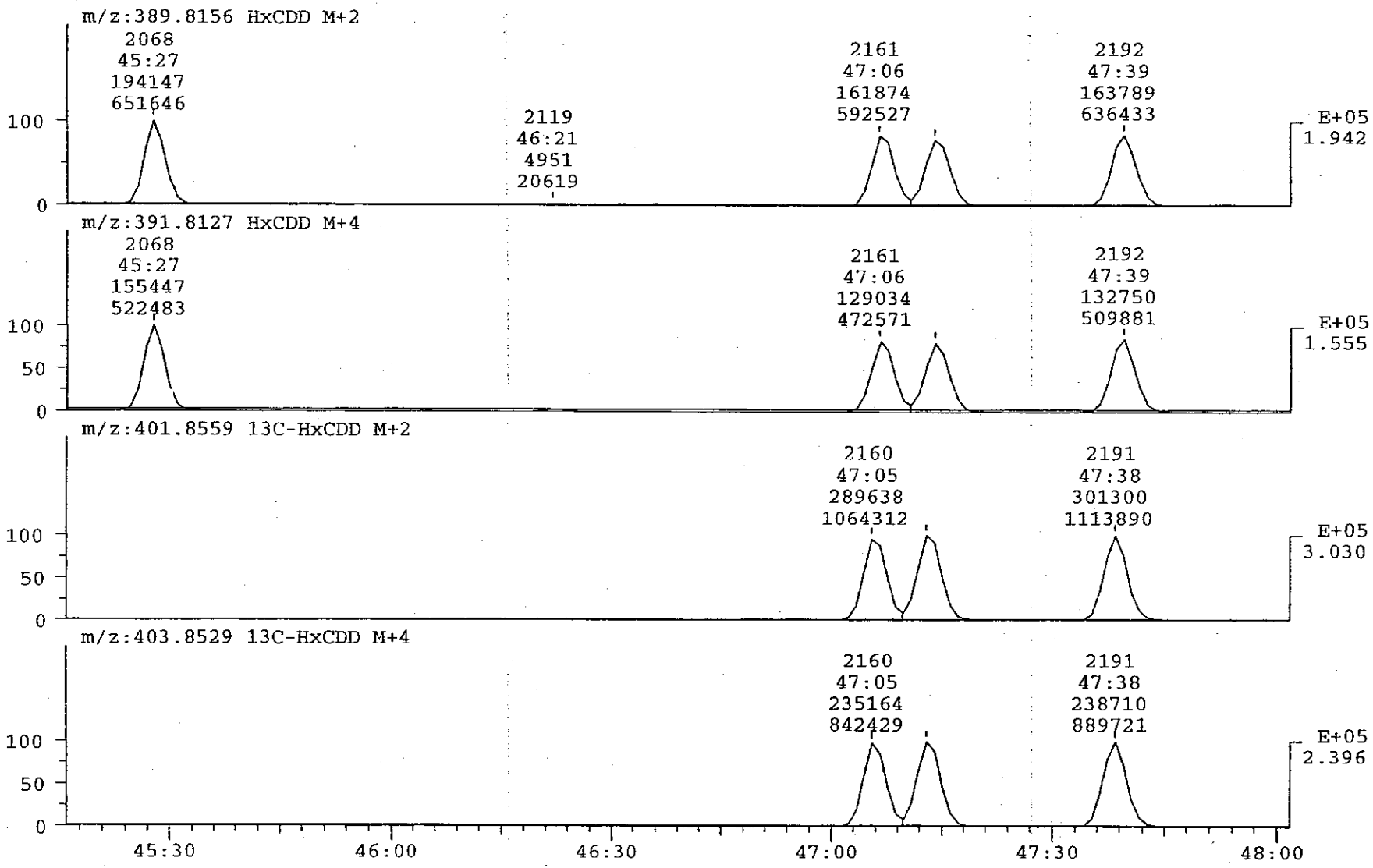

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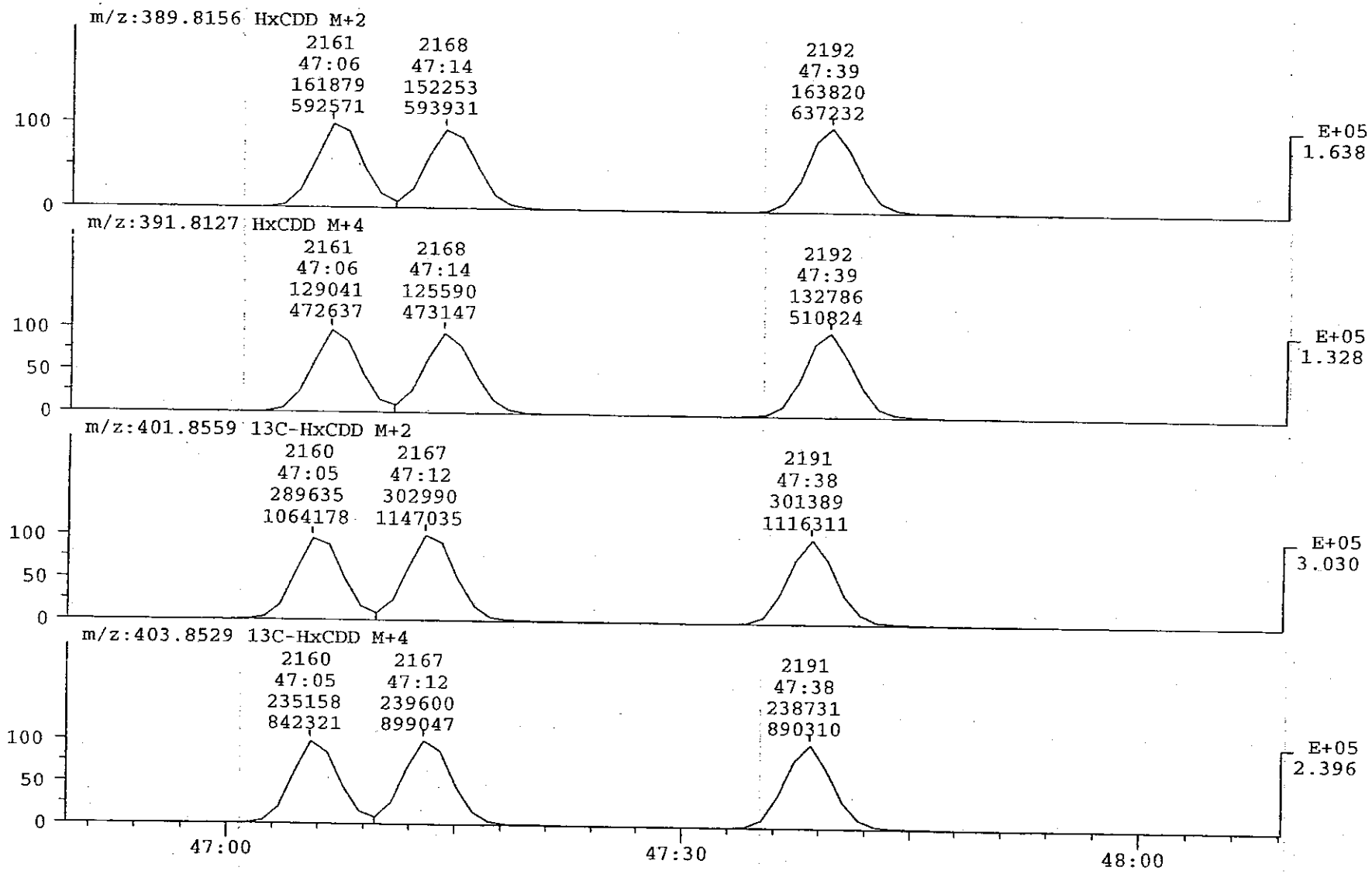
Oper: PMP Client: STL Knoxville
Peak: 100.00 ppm Label wndw: 2145 > 2220
Area: 5, 0.50, 15 Baseline : 100, 3
Disp: Height Area

Elapse: 08:00.3 1
Start : 09:30:41 2745
Study : Ver/Win
Inlet : GC Vial 1
Masses: 293 > 514
Label : 2, 3.0



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Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
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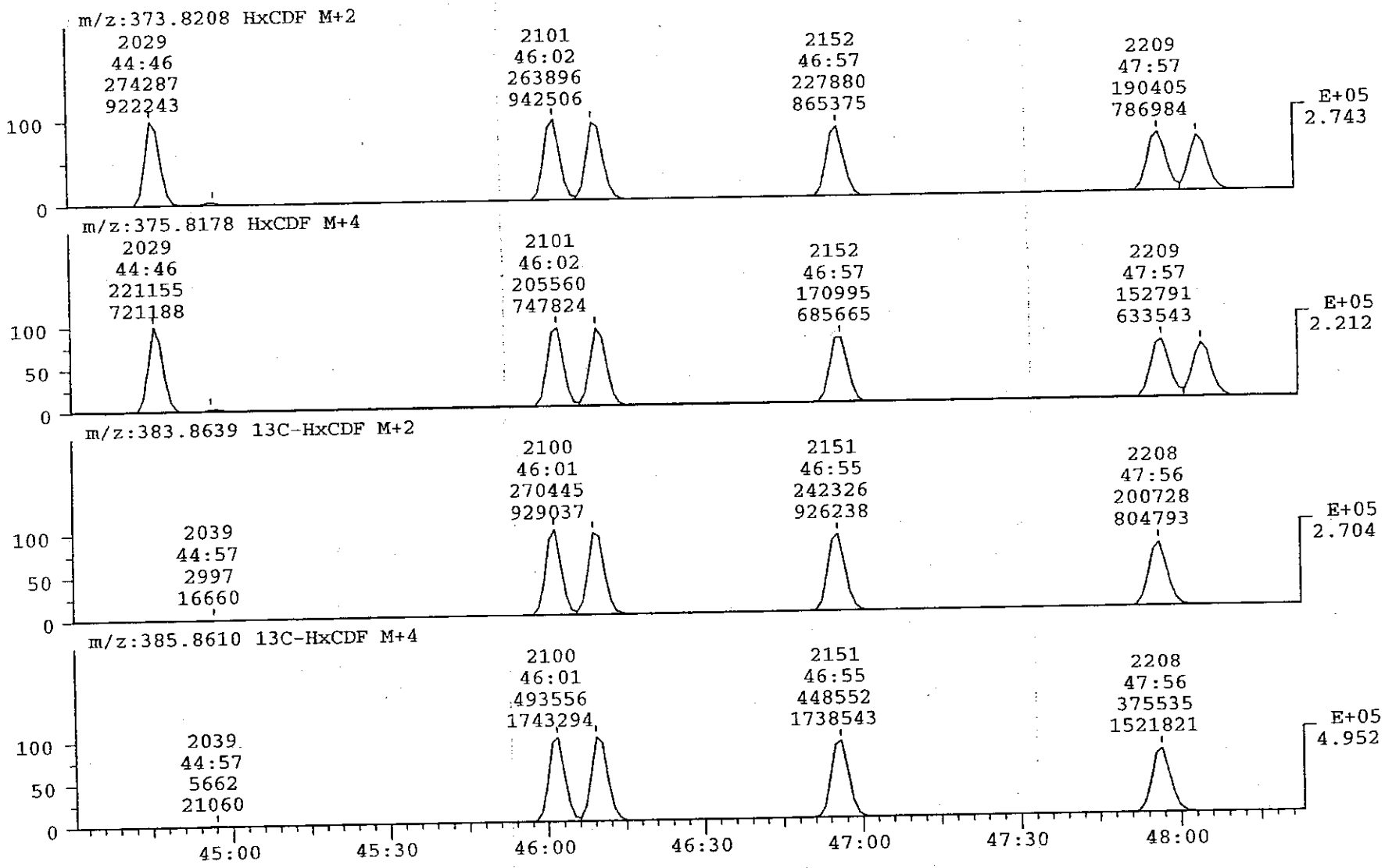
Disp: Height Area



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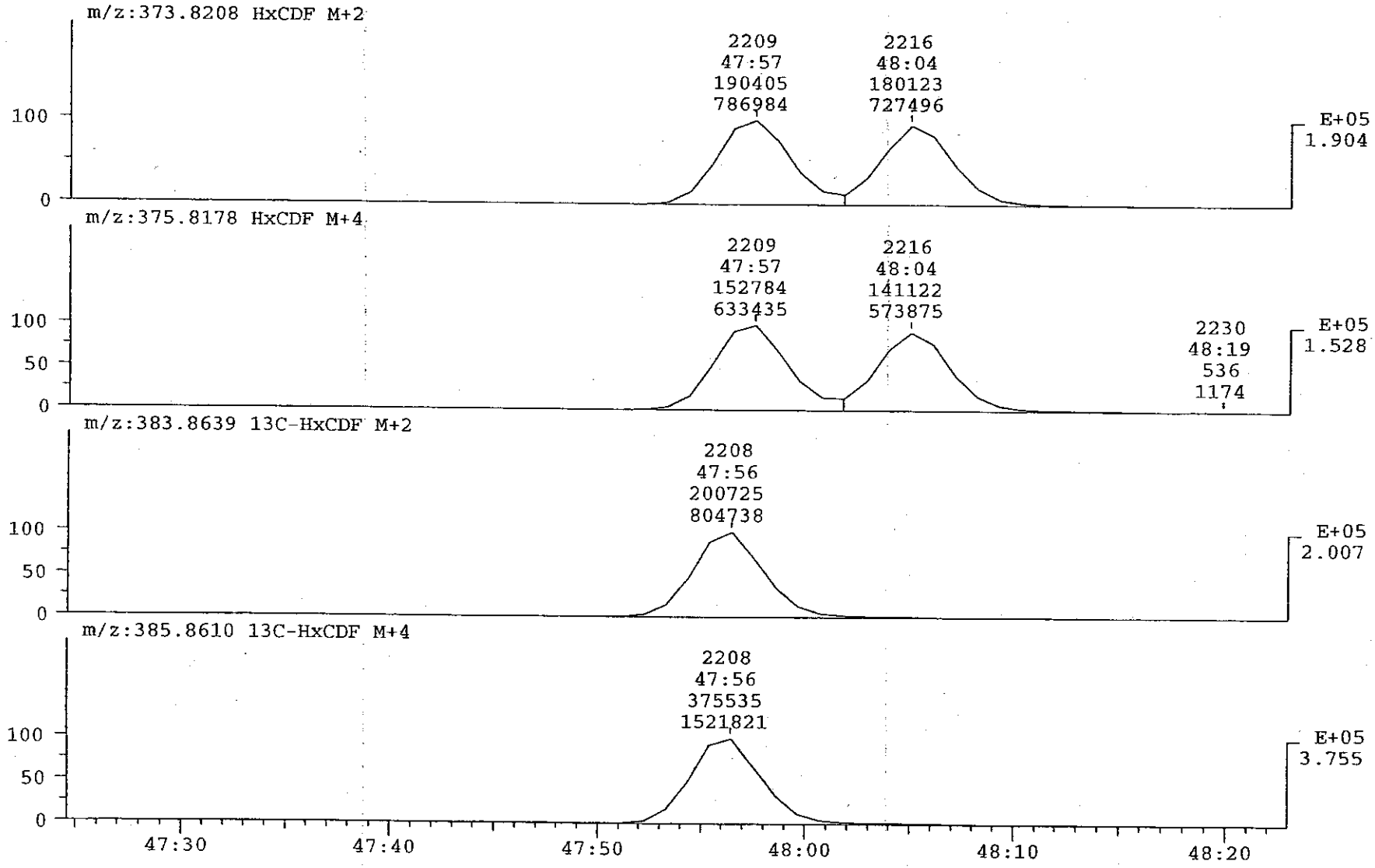
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 2178 > 2233 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



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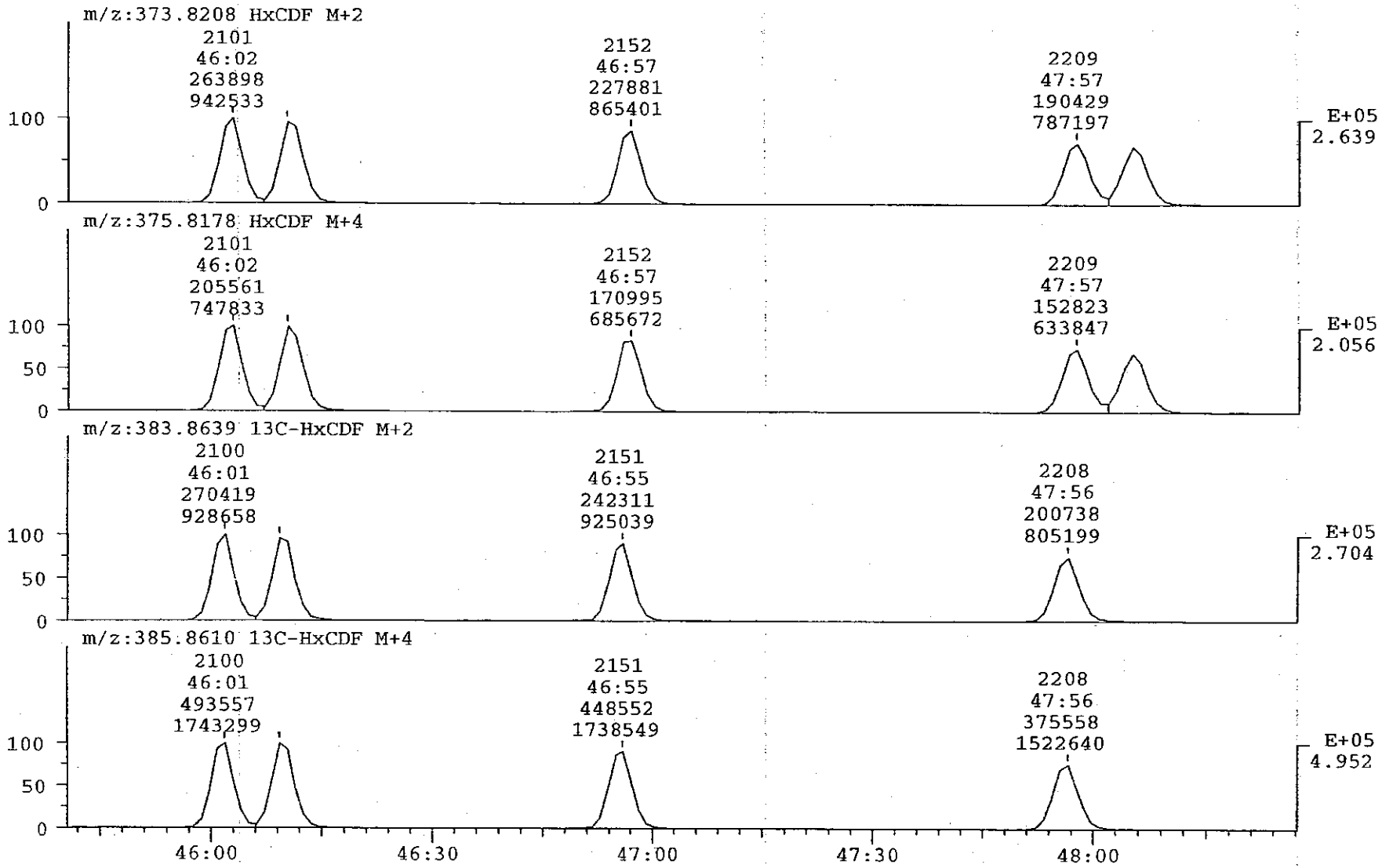
Comm: Inst=m2a/334061 Batch=20021107s1 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 2080 > 2237 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



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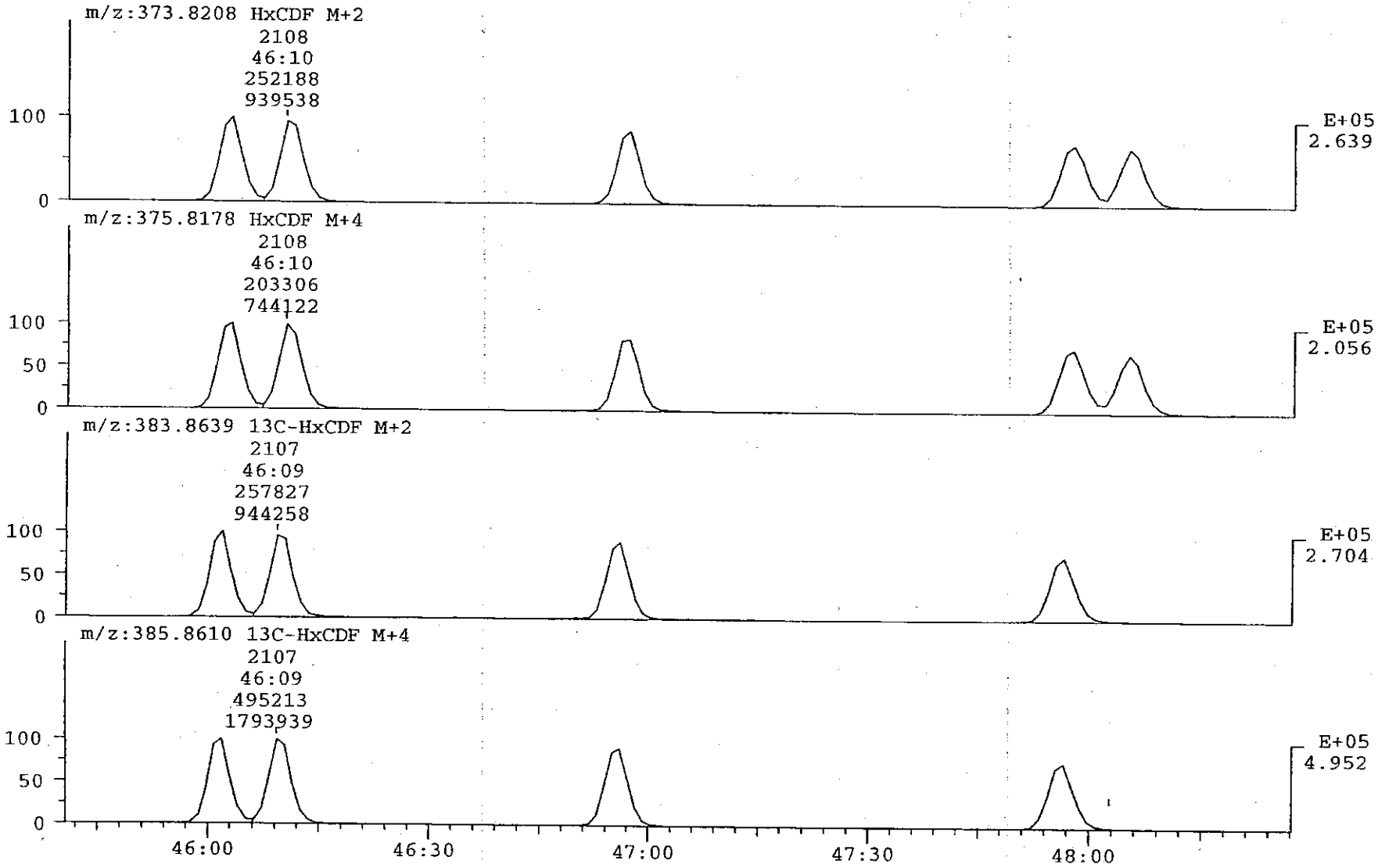
Comm: Inst=m2a/334061 Batch=20021107s1 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 2105 > 2115 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



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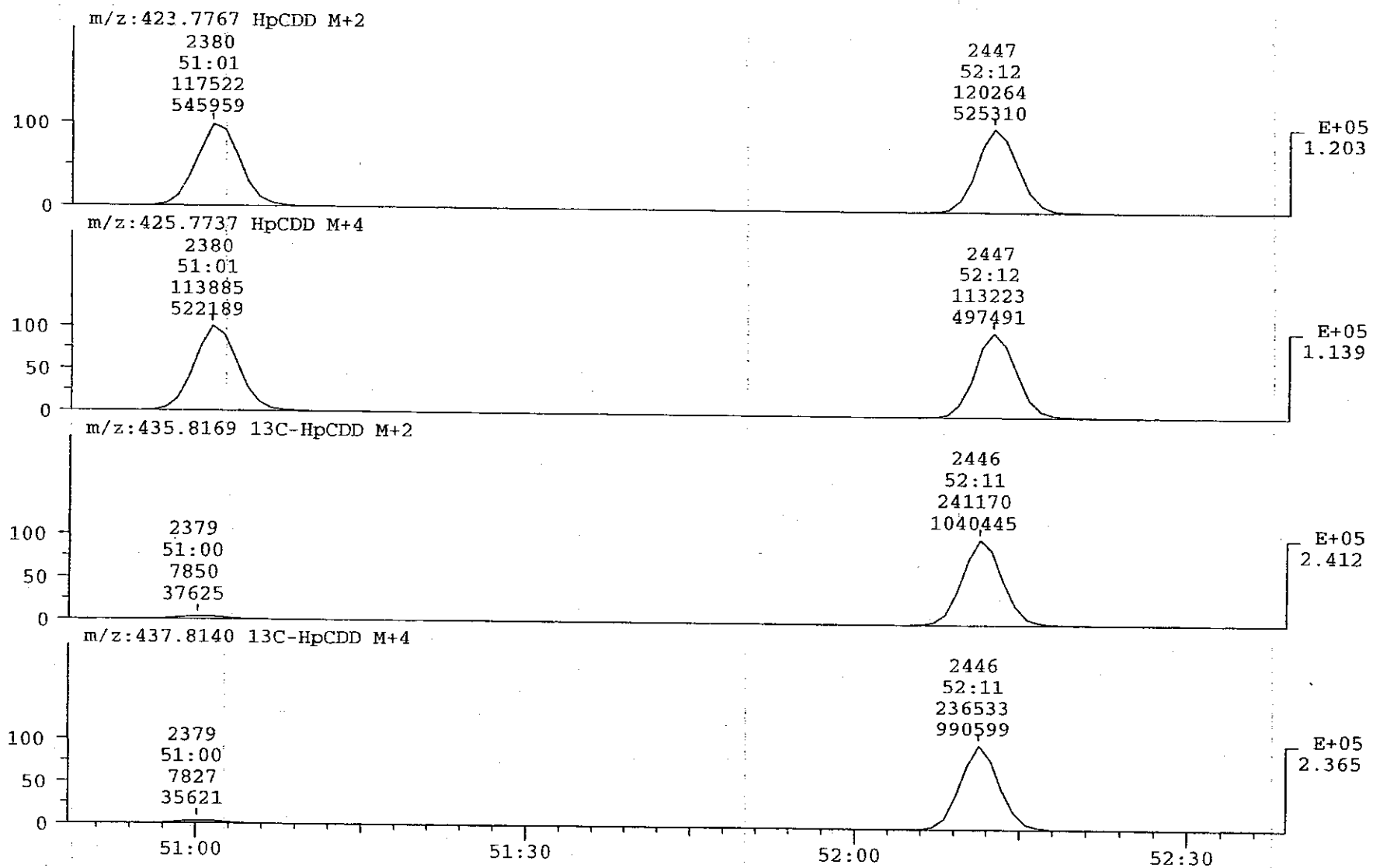
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 1 > 3000 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



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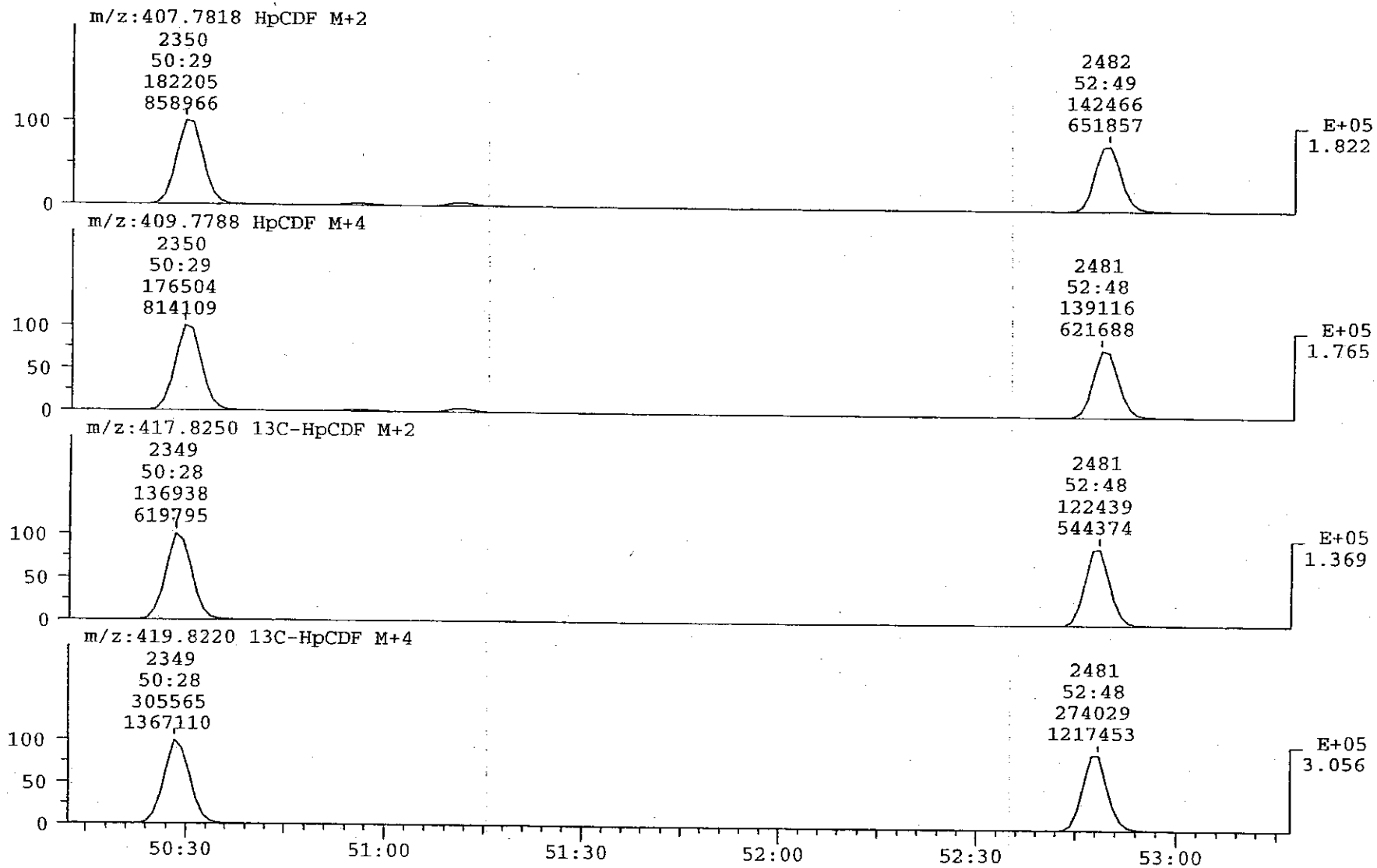
CHRO: t021107s1 07-Nov-02 Elapse: 08:00.3 1
Samp: Vial 1 WO=2427:85 Meth=F8 Dil=1 Start : 09:30:41 2745
Comm: Inst=m2a/334061 Batch=20021107s1 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 2334 > 2508 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



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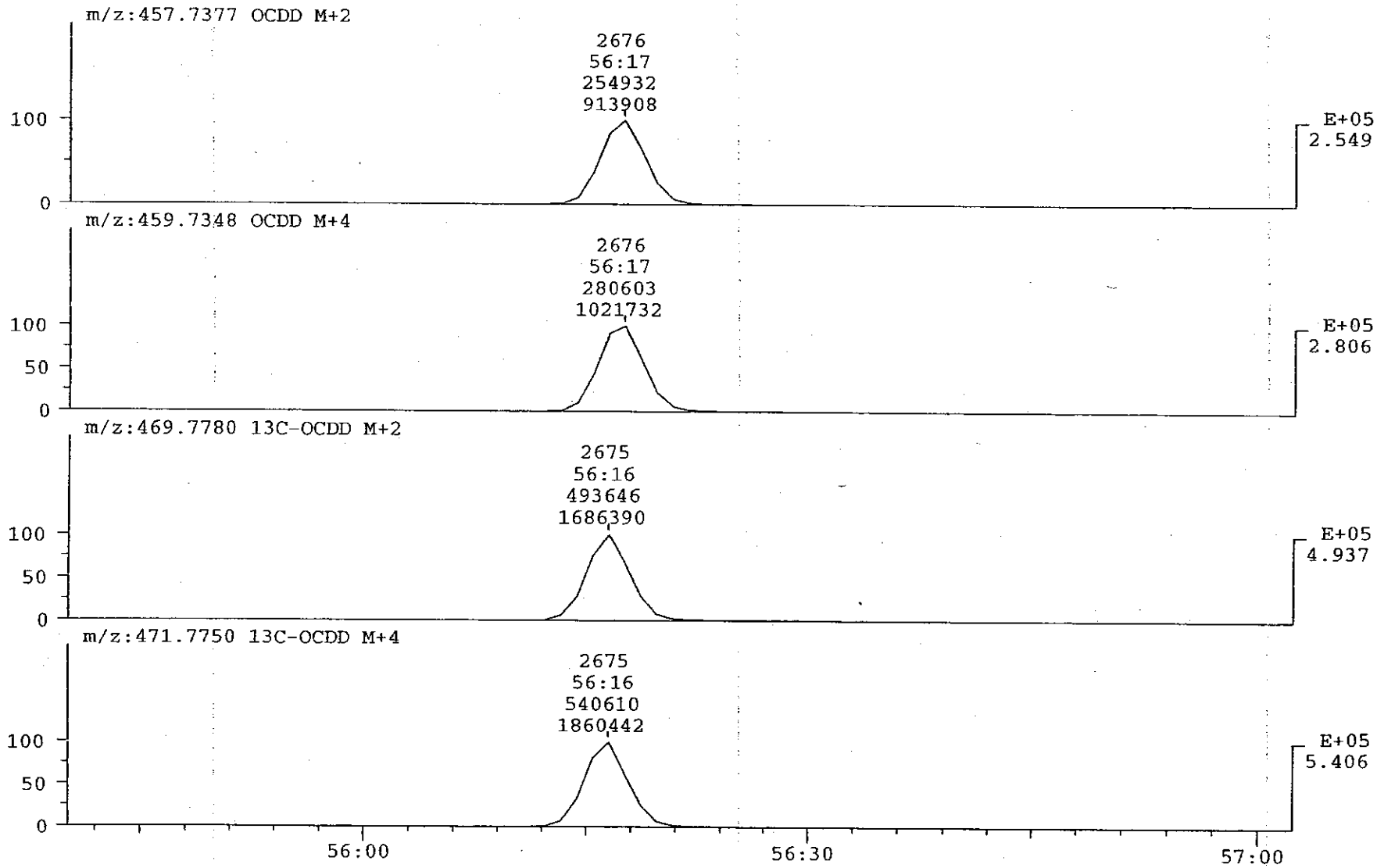
CHR: t021107s1 07-Nov-02 Elapse: 08:00.3 1
Samp: Vial 1 WO=2427:85 Meth=F8 Dil=1 Start : 09:30:41 2745
Comm: Inst=m2a/334061 Batch=20021107s1 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 2641 > 2718 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



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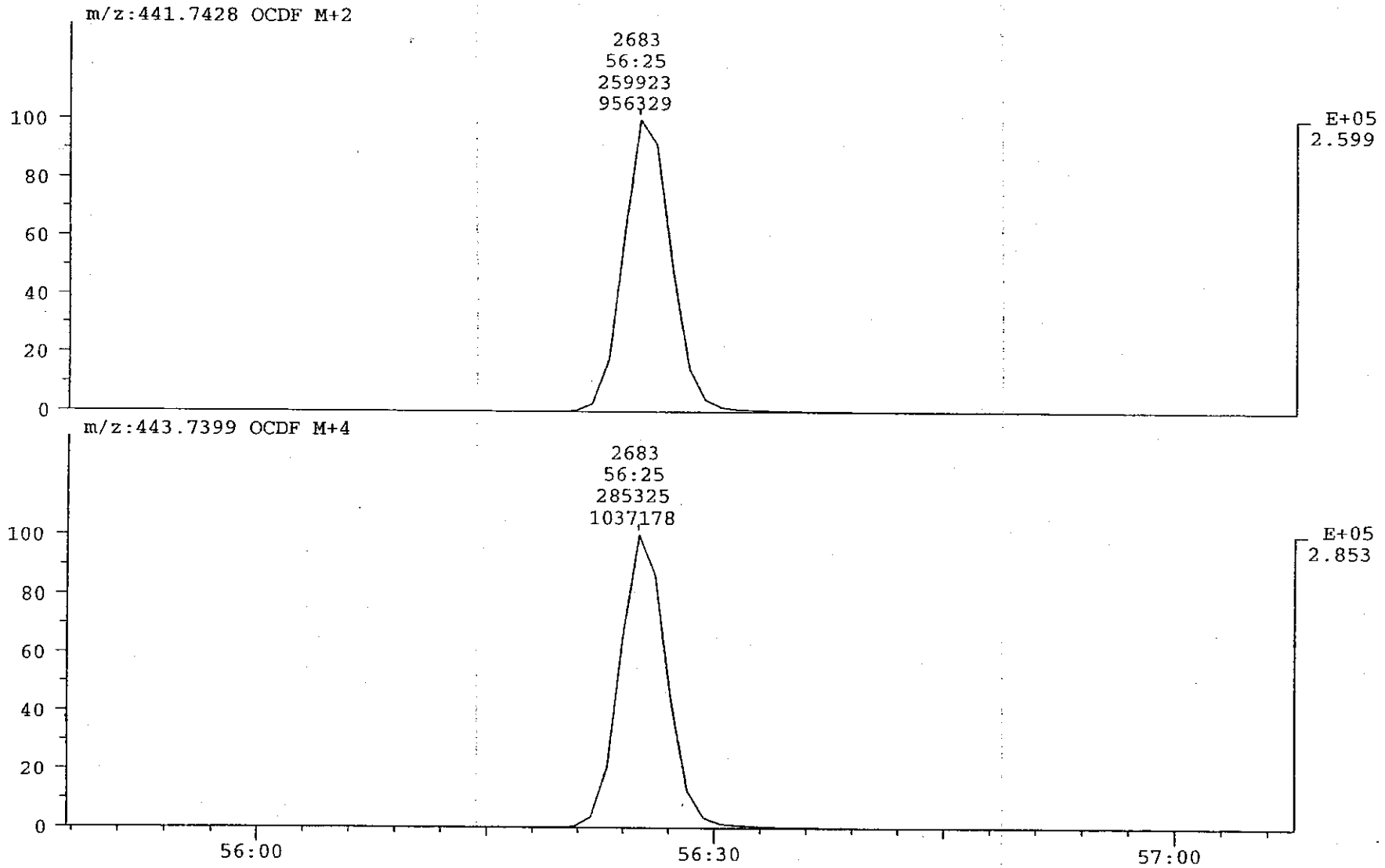
```
CHRO:  t021107s1                                07-Nov-02   Elapse:  08:00.3        1
Samp:  Vial 1 WO=2427:85 Meth=F8 Dil=1                      Start :  09:30:41    2745
Comm:  Inst=m2a/334061 Batch=20021107s1 Ccal=20020912i
Mode:  EI +VE +LMR  ESCAN LR NRM                            Study :  Ver/Win
Oper:  PMP          Client:  STL Knoxville                  Inlet :  GC     Vial   1
Peak:  100.00  ppm     Label wndw:   2648 > 2723            Masses:  293 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  2, 3.0
Disp:  Height  Area
```



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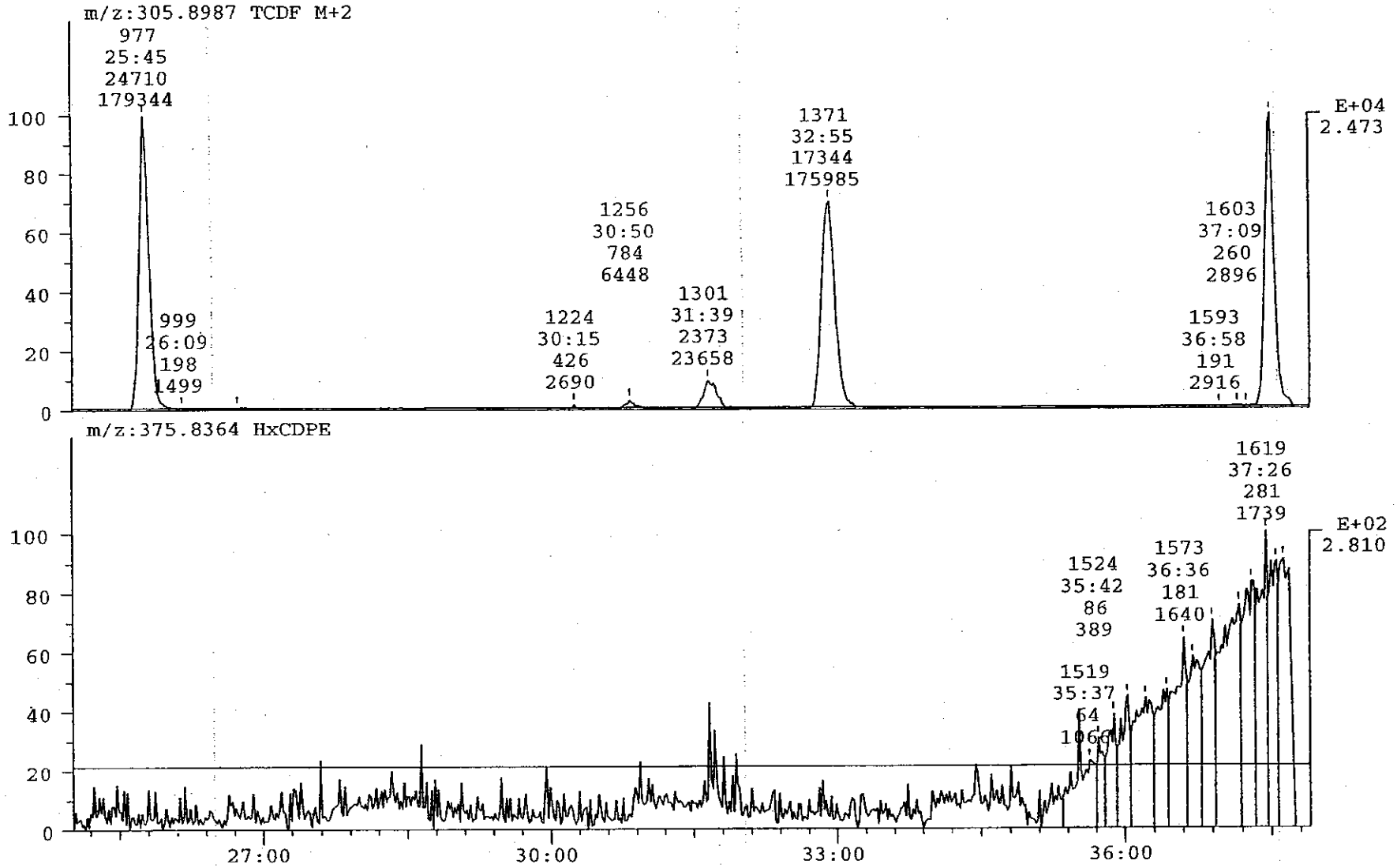
```
CHRO:  t021107s1                                07-Nov-02   Elapse:  08:00.3        1
Samp:  Vial 1 WO=2427:85 Meth=F8 Dil=1                      Start :  09:30:41    2745
Comm:  Inst=m2a/334061 Batch=20021107s1 Ccal=20020912i
Mode:  EI +VE +LMR  ESCAN LR NRM                            Study :  Ver/Win
Oper:  PMP          Client:  STL Knoxville                  Inlet :  GC     Vial   1
Peak:  100.00  ppm     Label wndw:   936 > 1642             Masses:  293 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 3.0
Disp:  Height  Area
```



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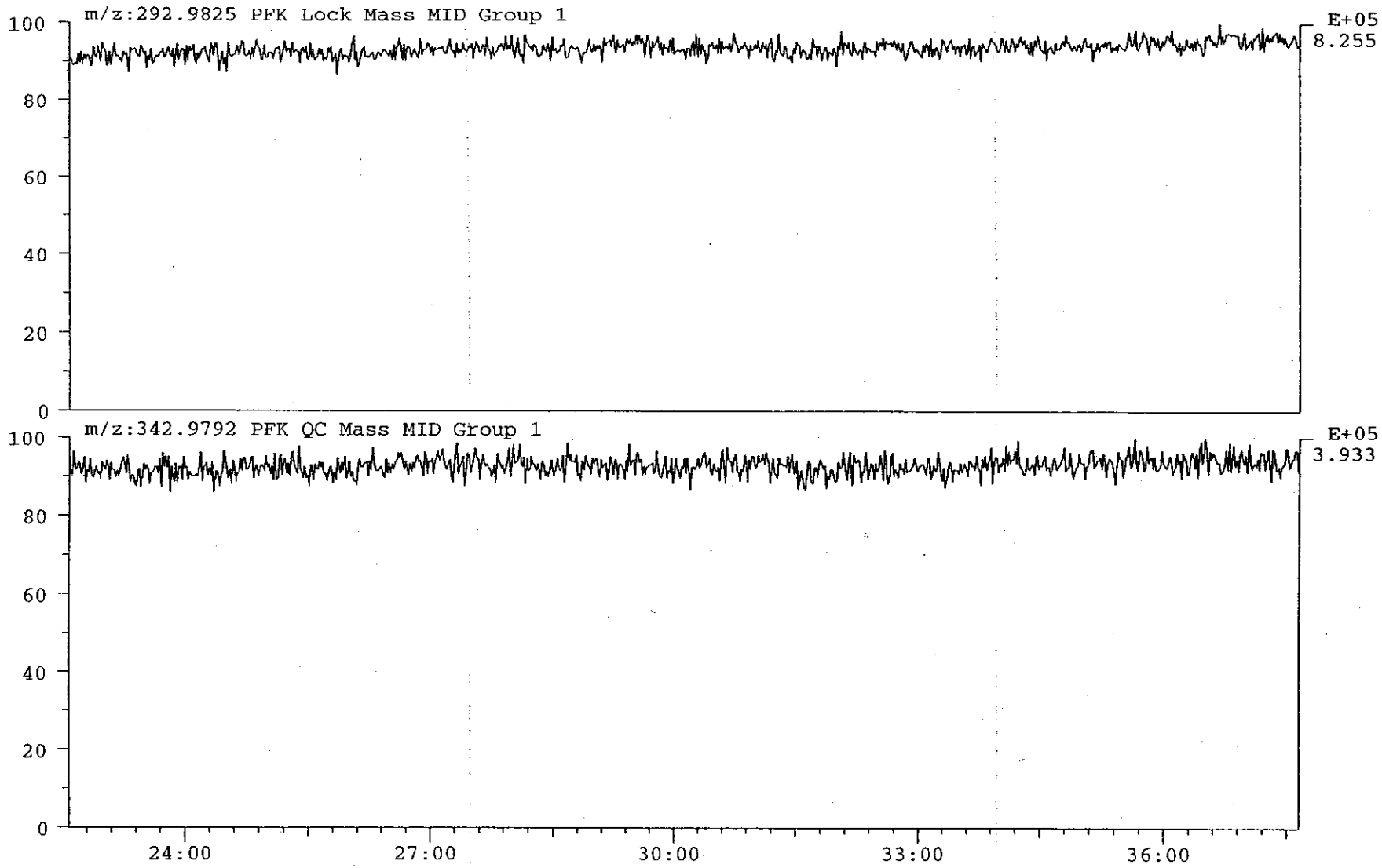
```
CHRO:  t021107s1                                07-Nov-02   Elapse:  08:00.3        1
Samp:  Vial 1 WO=2427:85 Meth=F8 Dil=1                      Start :  09:30:41    2745
Comm:  Inst=m2a/334061 Batch=20021107s1 Ccal=20020912i
Mode:  EI +VE +LMR  ESCAN LR NRM                            Study :  Ver/Win
Oper:  PMP            Client:  STL Knoxville                Inlet :  GC     Vial   1
Peak:  100.00  ppm      Label wndw:   802 > 1630            Masses:  293 > 514
Area:  0, 0.00, 0       Baseline  :   0, 3                  Label :  0, 0.0
```



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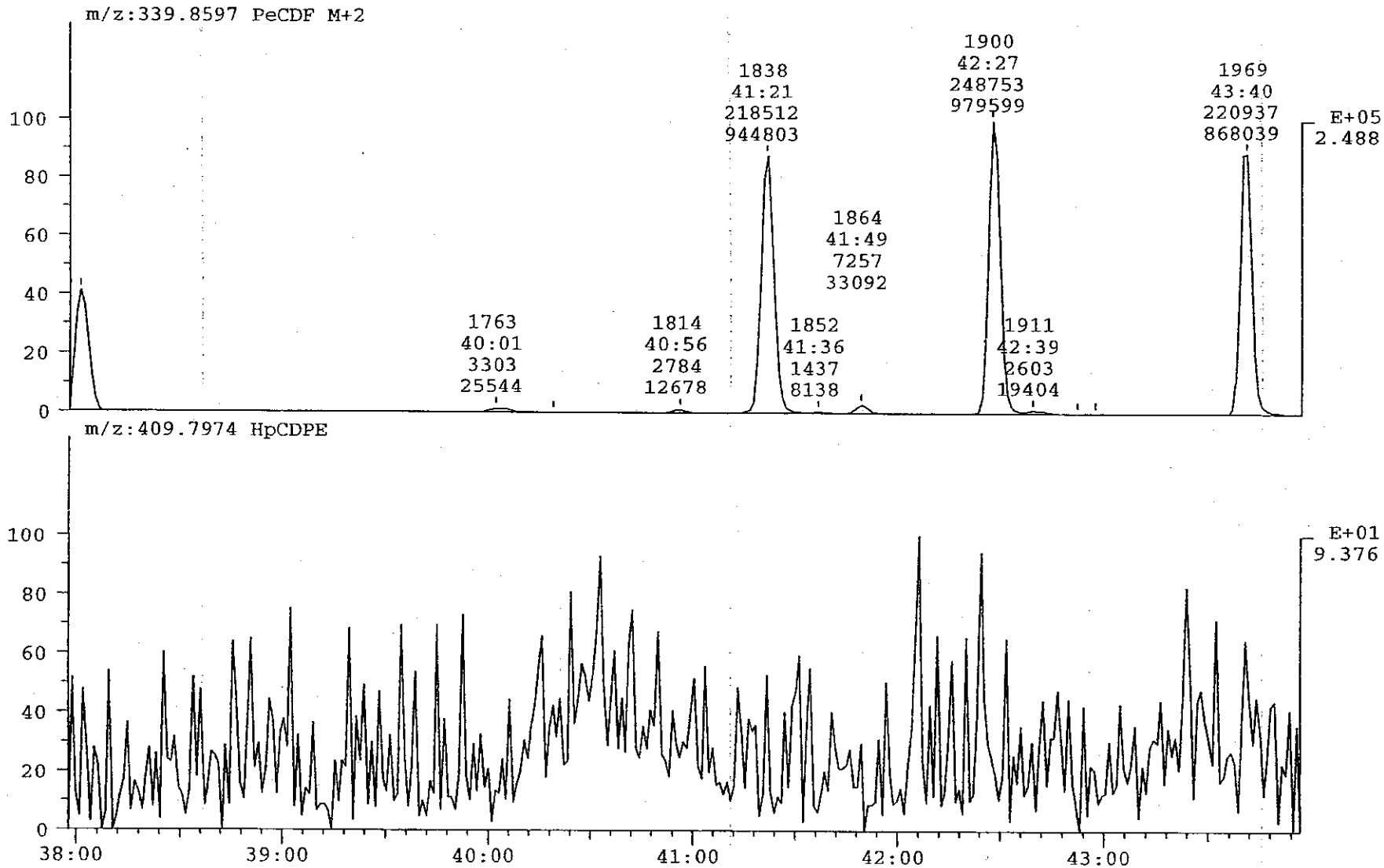
CHRO: t021107s1 07-Nov-02 Elapse: 08:00.3 1
Samp: Vial 1 WO=2427:85 Meth=F8 Dil=1 Start : 09:30:41 2745
Comm: Inst=m2a/334061 Batch=20021107s1 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 1646 > 1984 Masses: 293 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



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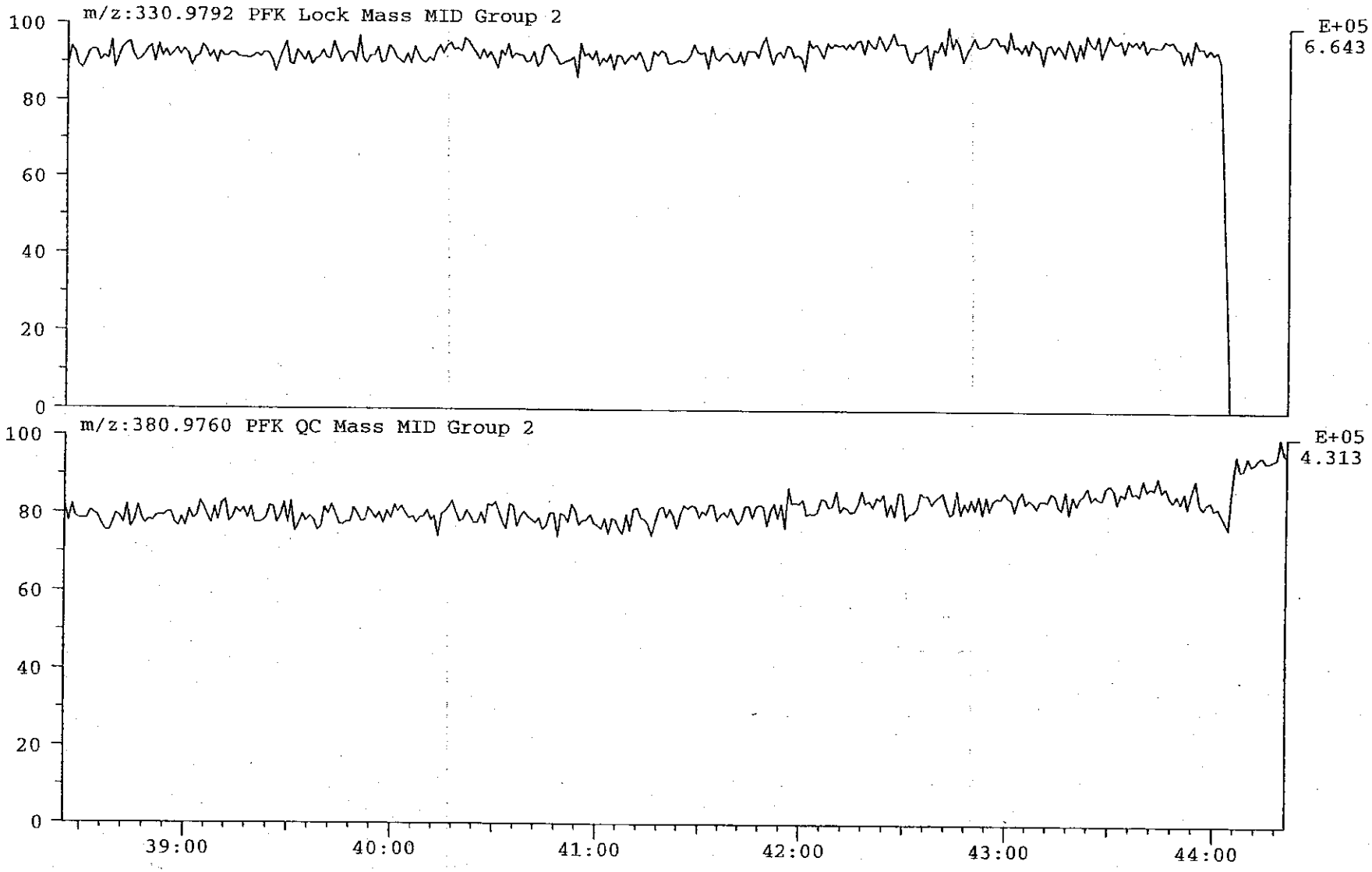
CHRO: t021107s1 07-Nov-02 Elapse: 08:00.3 1
Samp: Vial 1 WO=2427:85 Meth=F8 Dil=1 Start : 09:30:41 2745
Comm: Inst=m2a/334061 Batch=20021107s1 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 1672 > 2005 Masses: 293 > 514
Area: 0, 0.00, 0 Baseline : 0, 3 Label : 0, 0.0



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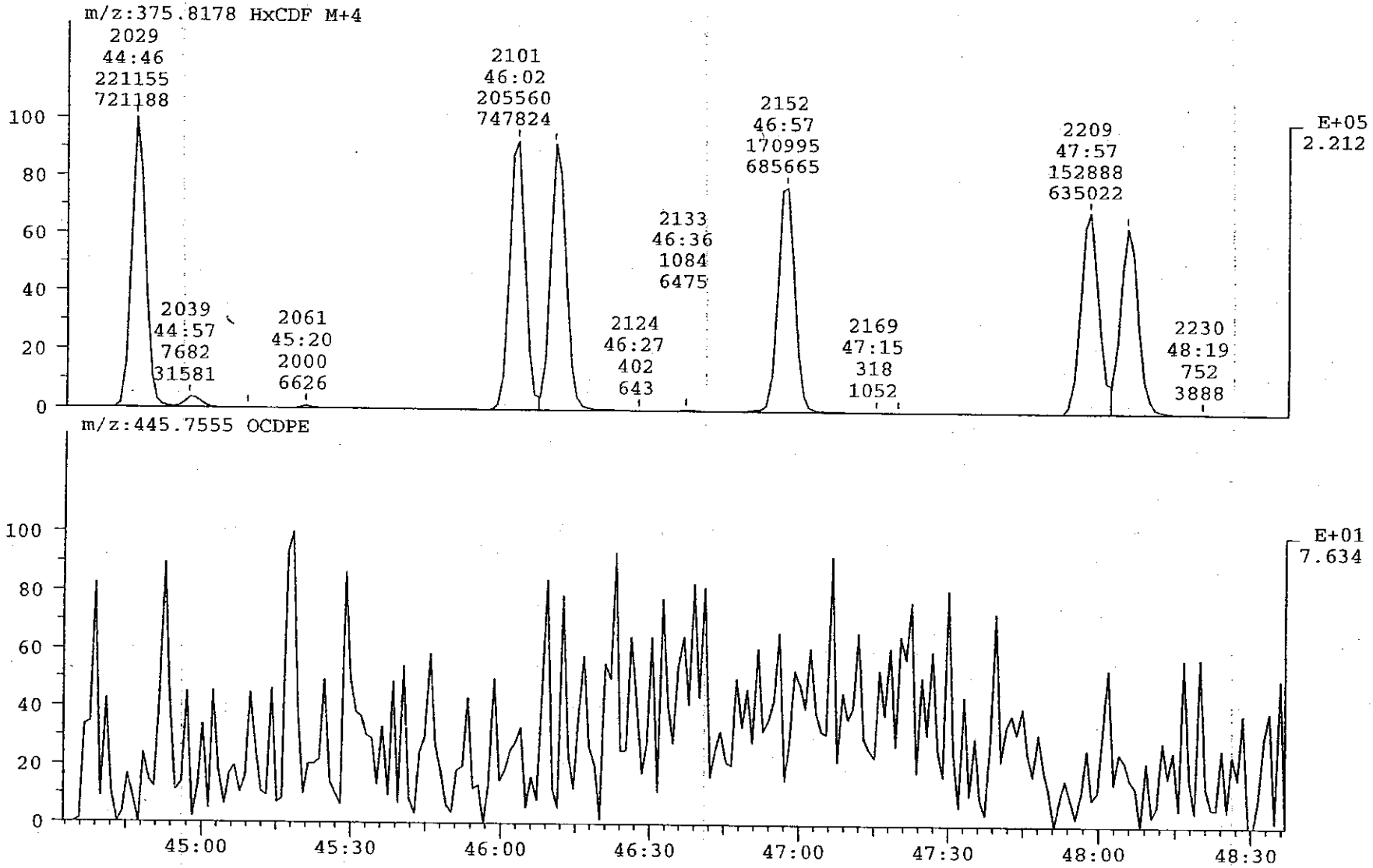
CHRO: t021107s1 07-Nov-02 Elapse: 08:00.3 1
Samp: Vial 1 WO=2427:85 Meth=F8 Dil=1 Start : 09:30:41 2745
Comm: Inst=m2a/334061 Batch=20021107s1 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 2016 > 2246 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



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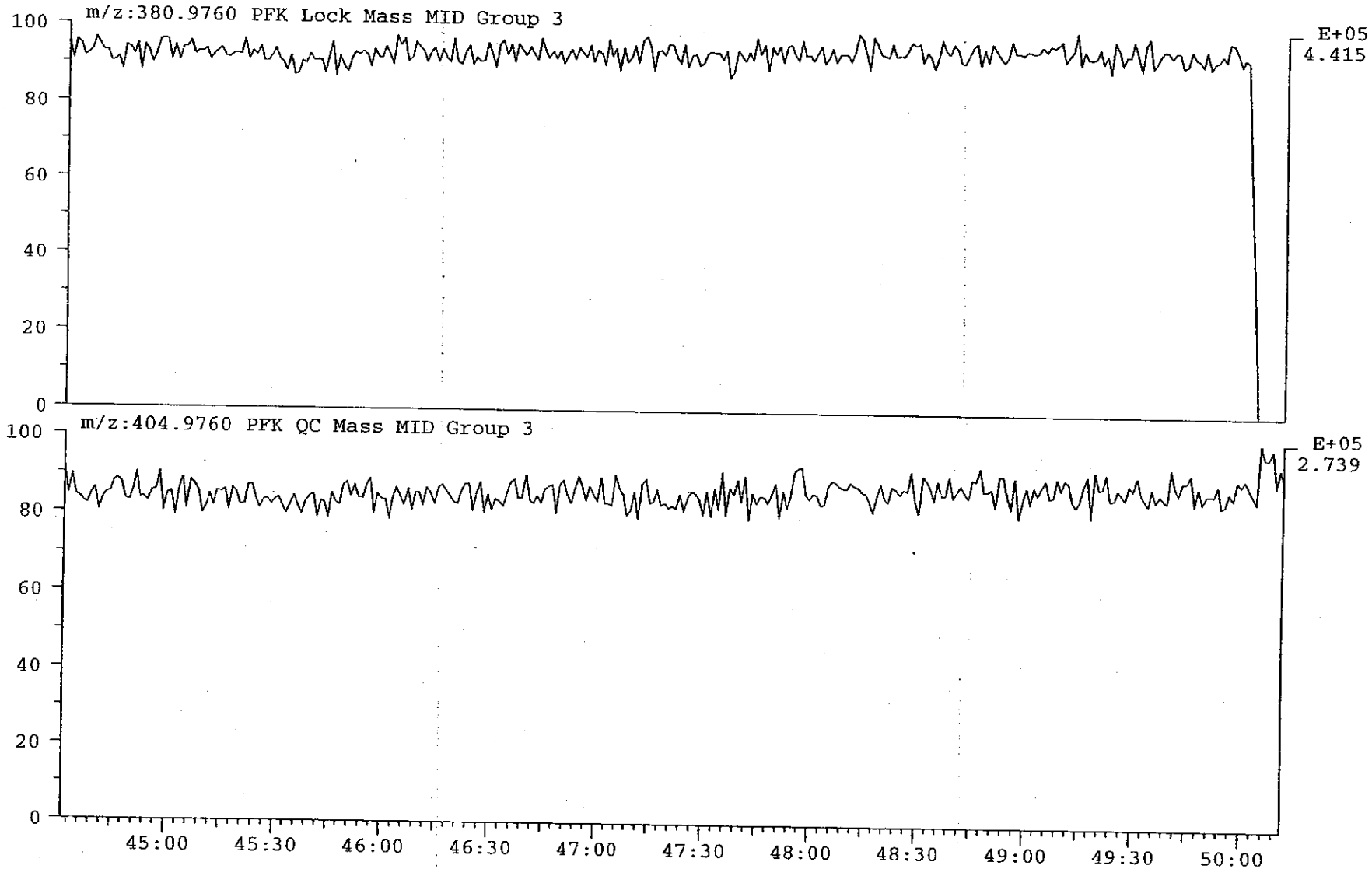
CHR: t021107s1 07-Nov-02
Samp: Vial 1 WO=2427:85 Meth=F8 Dil=1
Comm: Inst=m2a/334061 Batch=20021107s1 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM
Oper: PMP Client: STL Knoxville
Peak: 100.00 ppm Label wndw: 2015 > 2333
Area: 0, 0.00, 0 Baseline : 0, 3

Elapse: 08:00.3 1
Start : 09:30:41 2745
Study : Ver/Win
Inlet : GC Vial 1
Masses: 293 > 514
Label : 0, 0.0



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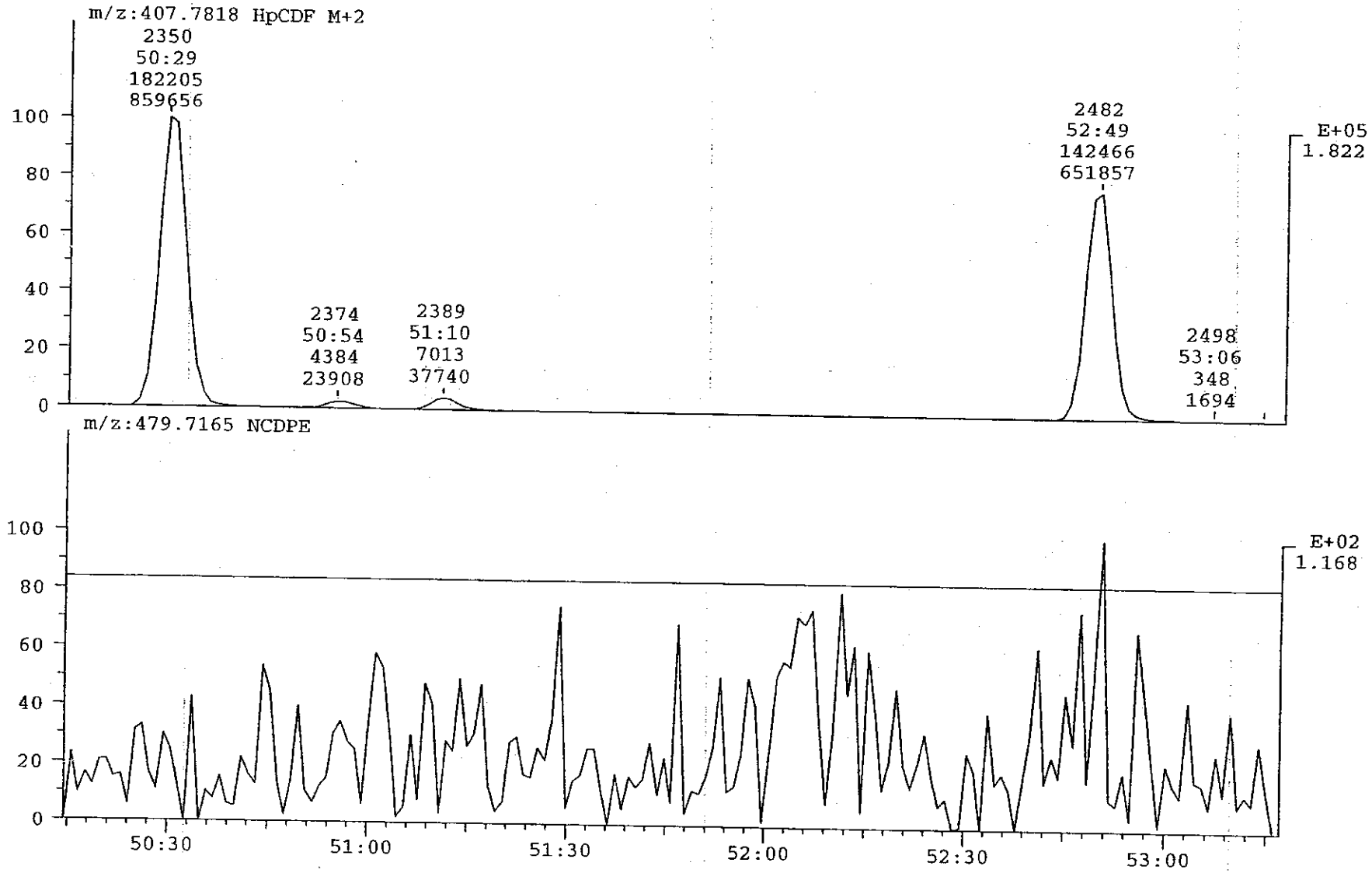
CHR: t021107s1 07-Nov-02
Samp: Vial 1 WO=2427:85 Meth=F8 Dil=1
Comm: Inst=m2a/334061 Batch=20021107s1 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM
Oper: PMP Client: STL Knoxville
Peak: 100.00 ppm Label wndw: 2336 > 2508
Area: 5, 0.50, 0 Baseline : 100, 3
Disp: Height Area

Elapse: 08:00.3 1
Start : 09:30:41 2745
Study : Ver/Win
Inlet : GC Vial 1
Masses: 293 > 514
Label : -2, 3.0



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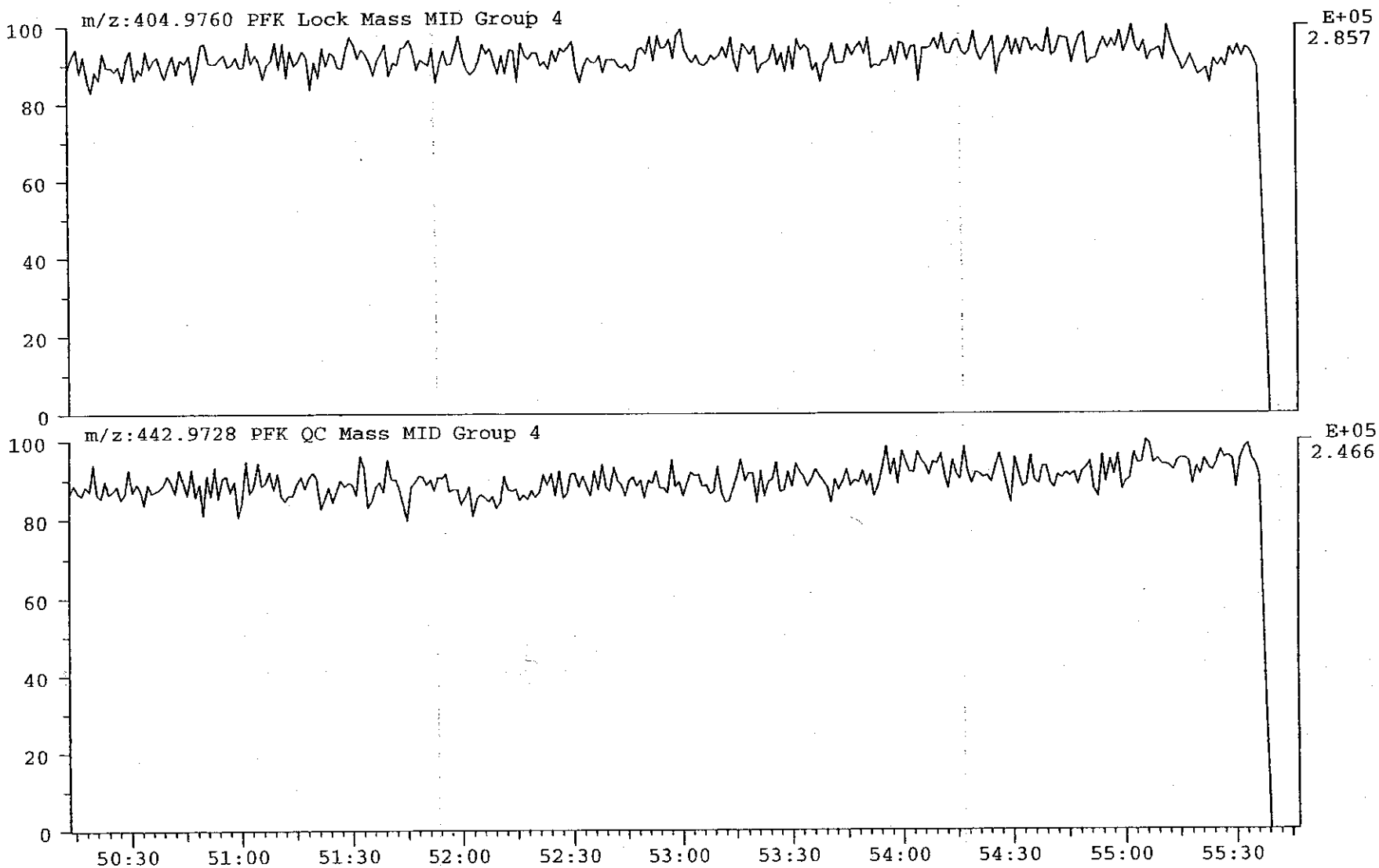
CHRO: t021107s1 07-Nov-02 Elapse: 08:00.3 1
Samp: Vial 1 WO=2427:85 Meth=F8 Dil=1 Start : 09:30:41 2745
Comm: Inst=m2a/334061 Batch=20021107s1 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 2335 > 2647 Masses: 293 > 514
Area: 0, 0.00, 0 Baseline : 0, 3 Label : 0, 2.5



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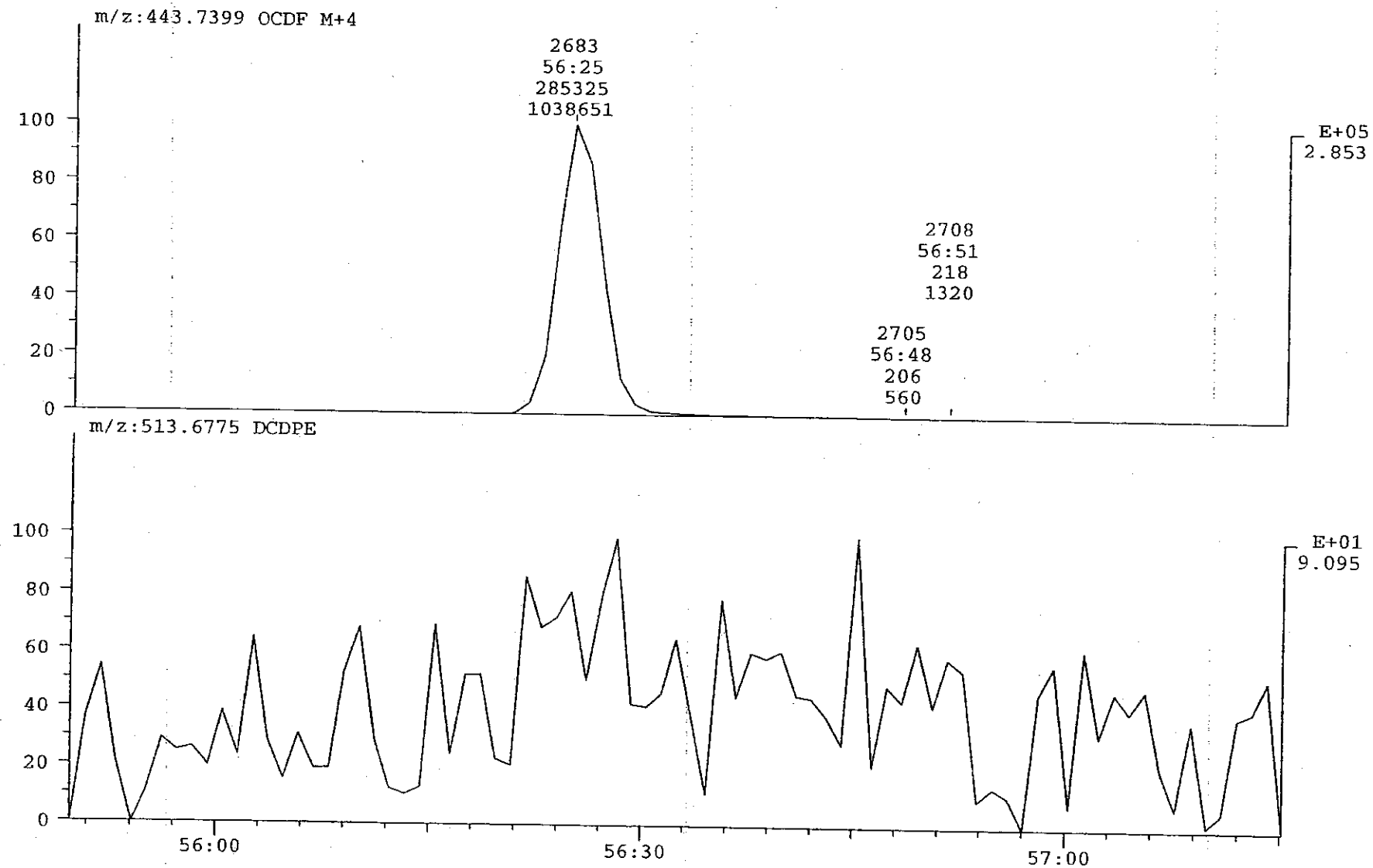
CHRO: t021107s1 07-Nov-02
Samp: Vial 1 WO=2427:85 Meth=F8 Dil=1
Comm: Inst=m2a/334061 Batch=20021107s1 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM
Oper: PMP Client: STL Knoxville
Peak: 100.00 ppm Label wndw: 2650 > 2730
Area: 5, 0.50, 0 Baseline : 100, 3
Disp: Height Area

Elapse: 08:00.3 1
Start : 09:30:41 2745
Study : Ver/Win
Inlet : GC Vial 1
Masses: 293 > 514
Label : -2, 3.0



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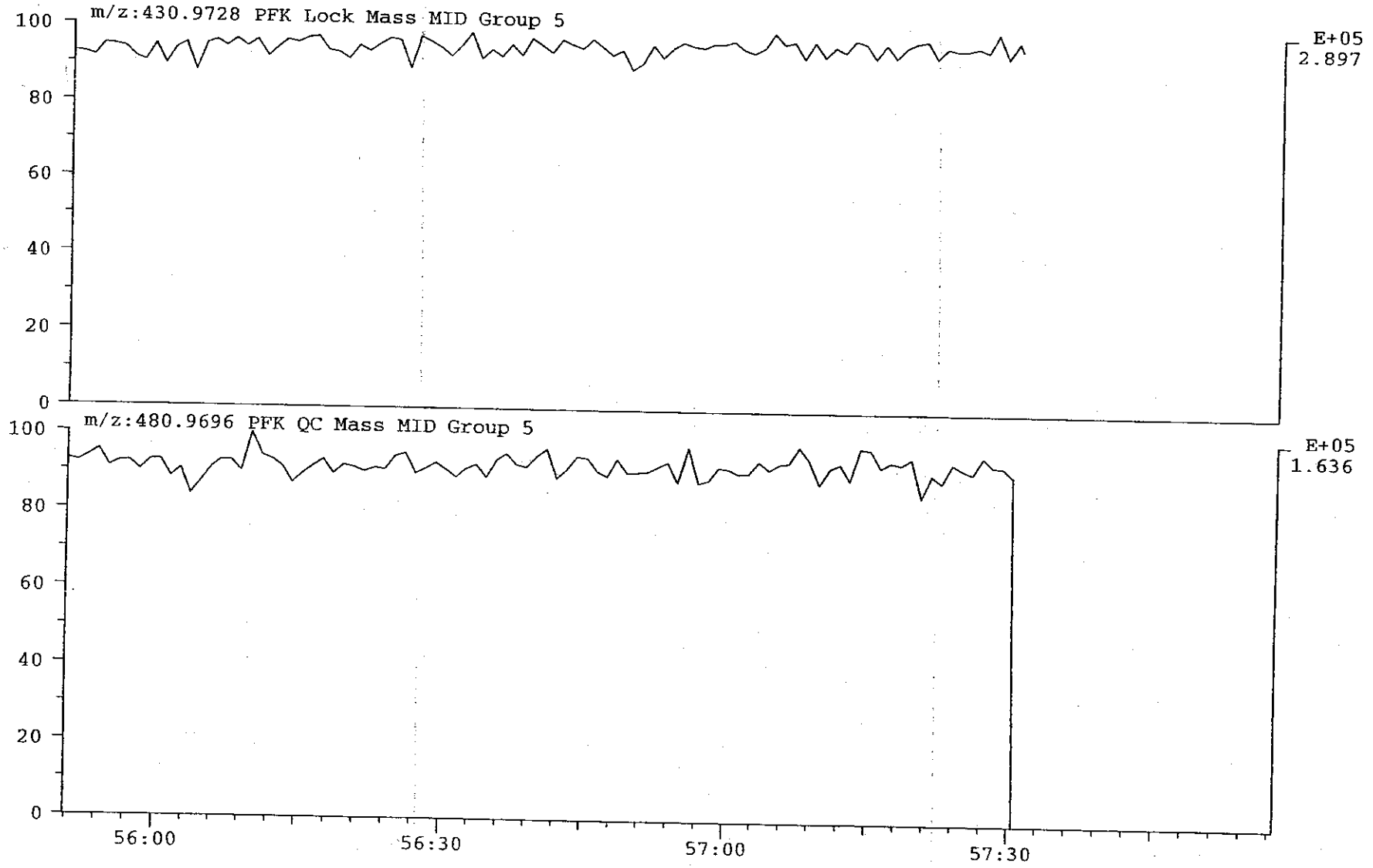
CHRO: t021107s1 07-Nov-02
Samp: Vial 1 WO=2427:85 Meth=F8 Dil=1
Comm: Inst=m2a/334061 Batch=20021107s1 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM
Oper: PMP Client: STL Knoxville
Peak: 100.00 ppm Label wndw: 2651 > 2770
Area: 0, 0.00, 0 Baseline : 0, 3

Elapse: 08:00.3 1
Start : 09:30:41 2745
Study : Ver/Win
Inlet : GC Vial 1
Masses: 293 > 514
Label : 0, 2.5



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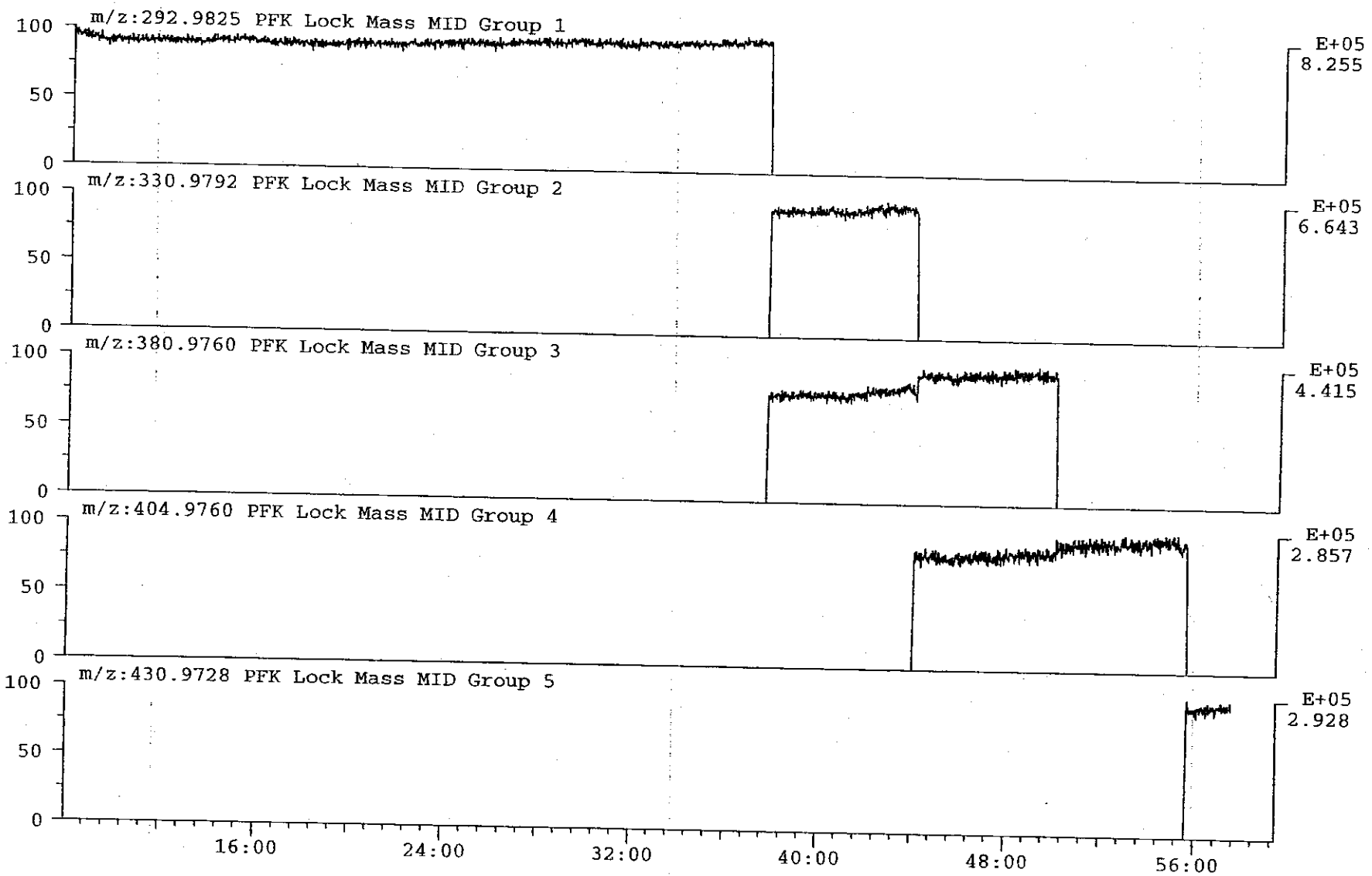
CHRO: t021107s1 07-Nov-02
Samp: Vial 1 WO=2427:85 Meth=F8 Dil=1
Comm: Inst=m2a/334061 Batch=20021107s1 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM
Oper: PMP Client: STL Knoxville
Peak: 100.00 ppm Label wndw: 2 > 2850
Area: 0, 0.00, 0 Baseline : 0, 3

Elapse: 08:00.3 1
Start : 09:30:41 2745
Study : Ver/Win
Inlet : GC Vial 1
Masses: 293 > 514
Label : 0, 0.0



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Instrument internet name - mat95s
Instrument model - MAT 95
Instrument serial number - 000000
Workstation internet name - icis2ms
ICIS Version 8.2.1

ICL Version: 10.500
File name: t021107s1
Study: Ver/Win
Sample: WO=2427:85 Meth=F8 Dil=1
Amount: 0.0
Volume: 0.0
Operator: PMP
Client: STL Knoxville
Comments: Inst=m2a/334061 Batch=20021107s1 Ccal=20020912i
Injected volume: 2.0
Sample from Vial 1
Analysis will stop when MID run finishes
Tune file name: tune2
Single File
ICL procedure: sleep6x
ICIS procedure: tstdw $
MID procedure: epa1613

MID Remarks: Tetra-Octa PCDD/F EPA Method 8290/1613B

Mid Set Up Parameter:

Measure/lock ratio	1
Damping Relay	FALSE
Width first lock	0.25 amu
Electric jump time	10 ms
Magnetic jump time	60 ms
Offset	100 cts
Electric range	300 %
Sweep peak width	3.00
MID mode	Lock mode
Acq mode	Cent mode

Mid Time Windows:

	Start	Measure	End	Cycletime
# 1	8:00 min	29:40 min	37:40 min	1.00 sec
# 2	37:40 min	6:19 min	44:00 min	1.00 sec
# 3	44:00 min	6:00 min	50:00 min	1.00 sec
# 4	50:00 min	5:35 min	55:35 min	1.00 sec
# 5	55:35 min	2:30 min	58:05 min	1.00 sec

Mid Masses:

Window # 1

mass	F	int	gr	time (ms)
292.9825	1	10	1	8.19
303.9016		1	1	81.92
305.8987		1	1	81.92
315.9419		1	1	81.92
317.9389		1	1	81.92
319.8965		1	1	81.92
321.8936		1	1	81.92
327.8847		1	1	81.92
331.9368		1	1	81.92
333.9338		1	1	81.92
342.9792	c	10	1	8.19
375.8364		1	1	81.92

Window # 2

mass	F	int	gr	time (ms)
330.9792	1	10	1	8.19
339.8597		1	1	91.48

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341.8567		1	1	91.48
351.9000		1	1	91.48
353.8970		1	1	91.48
355.8546		1	1	91.48
357.8516		1	1	91.48
367.8949		1	1	91.48
369.8919		1	1	91.48
380.9760	c	10	1	8.19
409.7974		1	1	91.48

Window # 3

mass	F	int	gr	time (ms)
373.8208		1	1	91.48
375.8178		1	1	91.48
380.9760	1	10	1	8.19
383.8639		1	1	91.48
385.8610		1	1	91.48
389.8156		1	1	91.48
391.8127		1	1	91.48
401.8559		1	1	91.48
403.8529		1	1	91.48
404.9760	c	10	1	8.19
445.7555		1	1	91.48

Window # 4

mass	F	int	gr	time (ms)
404.9760	1	10	1	8.19
407.7818		1	1	91.48
409.7788		1	1	91.48
417.8250		1	1	91.48
419.8220		1	1	91.48
423.7767		1	1	91.48
425.7737		1	1	91.48
435.8169		1	1	91.48
437.8140		1	1	91.48
442.9728	c	10	1	8.19
479.7165		1	1	91.48

Window # 5

mass	F	int	gr	time (ms)
430.9728	1	10	1	10.92
441.7428		1	1	120.15
443.7399		1	1	120.15
457.7377		1	1	120.15
459.7348		1	1	120.15
469.7780		1	1	120.15
471.7750		1	1	120.15
480.9696	c	10	1	10.92
513.6775		1	1	120.15

Auto Sampler descriptor: 2ul_v403

Injector A

Normal Injection

Slvnt A cln before inj	(K):	3	times
Slvnt B cln before inj	(L):	0	times
Sample rinse cycles	(R):	0	times
Syringe filling volume	(F):	1.0	ul
Pullup delay time	(D):	4	sec
Sample pullup speed	(E):	1.0	ul/sec
Slvnt aftr pre inj cln	(U):	0.0	ul
Air after pre inj cln	(G):	2.0	ul
Sample volume	(V):	2.0	ul
Sample air volume	(A):	2.0	ul
Sample pullup count	(P):	2	times
Injection speed	(S):	1.0	ul/sec
Injection wait time	(W):	10	sec
Injection hold time	(H):	3	sec
Solvent A clean cycles	(C):	15	times
Solvent B clean cycles	(B):	20	times

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Loop clean w slvnt A (LC): 0 times
Loop clean w slvnt B (LB): 0 times
Standard sample volume(X): 0.0 ul
Standard air volume (Y): 0.0 ul
2nd Injection volume (I): 0.0 ul
Air volume of 2nd inj (J): 0.0 ul
Time btwn 2 injections(T): 0 sec

GC descriptor : epa1613

Injector:	270 deg		300 deg max
Transfer Line:	290 deg		300 deg max
Column:	140 deg at	0.0 minutes	330 deg max
	140 deg at	3.0 minutes	
	210 deg at	6.5 minutes	
	210 deg at	34.5 minutes	
	280 deg at	44.5 minutes	
	280 deg at	51.0 minutes	
	325 deg at	58.4 minutes	

Inlet :
Pressure 18.0 psi
Splitless mode
Purge time 1.5 min
Purge flow 40.0 mL/min

Gas saver is on
Saver time 3.0 min
Saver flow 15.0 mL/min

Stabilize time 0.5 minutes

ICL Parameters

BCORRL	0.0250	BCORRS	0.0130	BCURR	8499.0000
BDEV	8279.0000	BFM	2.0000	BLM	1039.5587
BMASS	304.9824	BQUAD	3.3000	CAPIL	0.0000
CAPTEMP	359.9988	CAPTSET	200.0000	CCURR	3.8118
CORONA	100.0000	CYCLE	0.0000	DELAY	0.0000
DITEMP	1.5629	DITSET	0.0000	DRAW	-7.9500
DRAWC	1.0000	DRAWS	0.0100	ECORR	1.0000
ECURR	1.0000	EDAC	7969177.0000	EDACG	0.9998
EDACR	20.0000	EDACZ	1386.5000	ELEN	57.0500
EMULT	1.9000	ENS	173.4574	ENW	600.0000
ERATIO	1.0000	ESA	763.8000	ESICUR	10.0011
ESIPAR	0.0000	EXS	180.1856	EXW	600.0000
FDMA	18000000.0000	FLENS	1.0000	FM	20.0000
FMII	50.0000	FQUAD	5.5000	FREQ	600.9615
FSLOPE	36000000.0000	FVANAL	63.0000	FVINLET	233.0000
FVSRC	733.0000	FWIN	0.7000	GCTC	140.0000
GCTI	270.0000	GCTL	290.0000	HACCU	156.0000
HCURR	1.4412	HVANAL	941.0000	HVSRC	0.0000
ICAL0	0.0011	ICAL1	0.4030	ICAL2	0.5865
IONEN	4747.2480	IST	269.8026	ISTC	0.0000
ISTCKP	5.0000	ISTCTD	1.0000	ISTCTN	2.0000
ISTCTS	60.0000	ISTCTV	3.0000	ISTS	270.0000
LENS	1227.0000	LENSS	97.6000	LKM	304.9824
LM	800.0000	LMASS	304.9824	LMII	500.0000
MASS	304.9824	MDAC	3475588.7208	MDACR	20.0000
MRANGE	1039.5587	MSFM	2.0000	MSLM	3790.0000
NPEAK	200.0000	NSAM	200.0000	NSCAN	469.0000
NSMAX	8.0000	NSMIN	2.0000	OCT	-2.0000
PSAM	10.0000	PUSHER	-7.5500	RDRAW	0.0000
RDRAWC	0.0000	RECURR	0.0000	RELEN	0.0000
RES	11241.8159	RFAMP	799.9987	RFCUR	100.0110
RPUSHER	0.0000	RWIN	2.0000	SACCU	2.0000
SCIDLE	1.0000	SHIELD	2433.0000	SHIELDS	0.2000

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SHIGH	180.0000	SKIM	7.0000	SLOW	60.0000
SPRAY	8.0000	SS	3.0000	SW	0.0500
TANAL	360.1500	TCURR	0.8594	TD	1.0000
THRESH	5.0000	TIS	0.2000	TREF	150.2000
TS	1.6021	TSAM	200.0000	TSET	0.0000
TUBEL	0.0000	UOFS	5.0000	URATIO	2.4410
USERVAR	0.0000	VAPTEMP	599.9997	VAPTSET	400.0000
VMASS	304.9824	XLENS	759.0000	XLENSS	-38.0000
YLENS	2612.0000	YLENSS	70.4000		

Scantype is electric
Sourcemode is EI POS

Analysis started at: 07-Nov-02 09:30:41.8

Autosampler has injected sample from vial 1
Analysis stopped at: 07-Nov-02 10:28:13.3 (run time 57.52 minutes)
Analysis stopped because MID run finished

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QUAN: t021107s1.q0 Entries: 69

ta file(s) used
File: t021107s1 07-Nov-02
Samp: Vial 1 WO=2427:85 Meth=F8 Dil=1 Start : 09:30:41 2745
Comm: Inst=m2a/334061 Batch=20021107s1 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

Entry	Mass	Time	Scan	Height	Area	Noise
1	332.	34:28	1456	85866.531	852172.562	102.61
2	332.	35:03	1488	97526.296	907715.937	102.61
3	334.	34:28	1456	106295.617	1061933.125	102.59
4	334.	35:03	1488	122652.335	1159449.125	102.59
5	320.	35:06	1491	10866.652	99809.031	100.60
6	322.	35:06	1491	12923.610	126007.023	115.71
7	328.	35:06	1491	22294.289	210338.015	53.12
8	304.	32:54	1370	13298.878	136848.031	60.77
9	306.	32:55	1371	17338.738	175822.625	79.26
10	316.	32:52	1368	133014.187	1320383.000	91.07
11	318.	32:51	1367	172340.453	1671332.625	75.95
12	356.	42:56	1927	186054.171	664849.750	75.51
13	358.	42:56	1927	115994.390	416781.500	52.76
14	368.	42:55	1926	378381.343	1341316.625	58.68
15	370.	42:55	1926	237185.046	839763.250	53.44
16	340.	41:21	1838	218483.593	944129.250	108.72
17	340.	42:27	1900	248684.515	978259.875	108.72
18	342.	41:21	1838	138014.843	599475.500	96.66
19	342.	42:27	1900	157161.390	614503.812	96.66
20	352.	41:20	1837	428157.125	1855619.375	161.55
21	352.	42:26	1899	491464.937	1864926.125	161.55
22	354.	41:20	1837	266537.750	1168549.250	78.74
23	354.	42:26	1899	309104.468	1178930.625	78.74
24	390.	47:06	2161	161878.671	592570.937	66.82
25	390.	47:14	2168	152253.453	593930.812	66.82
26	390.	47:39	2192	163819.953	637232.000	66.82
27	392.	47:06	2161	129041.132	472637.437	79.75
28	392.	47:14	2168	125590.382	473147.125	79.75
29	392.	47:39	2192	132786.359	510823.812	79.75
30	402.	47:05	2160	289634.875	1064178.250	97.69
31	402.	47:13	2167	302990.218	1147034.625	97.69
32	402.	47:38	2191	301388.750	1116310.625	97.69
33	404.	47:05	2160	235157.625	842321.312	81.40
34	404.	47:13	2167	239600.234	899047.187	81.40
35	404.	47:38	2191	238731.140	890309.937	81.40
36	374.	46:02	2101	263898.343	942533.062	78.66
37	374.	46:10	2108	252187.796	939538.125	78.66
38	374.	46:57	2152	227881.265	865401.125	78.66
39	374.	47:57	2209	190428.968	787197.437	78.66
40	376.	46:02	2101	205560.718	747832.937	88.40
41	376.	46:10	2108	203306.484	744121.875	88.40
42	376.	46:57	2152	170995.312	685672.062	88.40
43	376.	47:57	2209	152823.343	633847.250	88.40
44	384.	46:01	2100	270419.468	928658.187	69.11
45	384.	46:09	2107	257827.406	944258.312	69.11
46	384.	46:56	2151	242311.109	925039.312	69.11
47	384.	47:56	2208	200738.171	805199.187	69.11
48	386.	46:01	2100	493556.593	1743299.375	94.25
49	386.	46:09	2107	495212.531	1793938.875	94.25

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50,	386.,	46:56	,	2151,	448552.000,	1738549.250,	94.25,
51,	386.,	47:56	,	2208,	375557.812,	1522640.000,	94.25,
52,	424.,	52:12	,	2447,	120263.765,	525309.937,	55.95,
53,	426.,	52:12	,	2447,	113222.742,	497490.625,	75.13,
54,	436.,	52:11	,	2446,	241170.187,	1040444.750,	48.65,
55,	438.,	52:11	,	2446,	236532.562,	990599.187,	53.55,
56,	408.,	50:29	,	2350,	182205.140,	858966.437,	55.17,
57,	408.,	52:49	,	2482,	142466.062,	651857.000,	55.17,
58,	410.,	50:29	,	2350,	176504.156,	814108.687,	76.19,
59,	410.,	52:48	,	2481,	139116.171,	621688.250,	76.19,
60,	418.,	50:28	,	2349,	136937.546,	619794.875,	56.01,
61,	418.,	52:48	,	2481,	122438.578,	544373.562,	56.01,
62,	420.,	50:28	,	2349,	305565.281,	1367110.000,	55.24,
63,	420.,	52:48	,	2481,	274028.750,	1217452.750,	55.24,
64,	458.,	56:17	,	2676,	254932.390,	913907.750,	68.15,
65,	460.,	56:17	,	2676,	280602.937,	1021731.687,	108.75,
66,	470.,	56:16	,	2675,	493645.531,	1686389.875,	61.32,
67,	472.,	56:16	,	2675,	540610.062,	1860442.250,	72.40,
68,	442.,	56:25	,	2683,	259923.484,	956329.062,	43.84,
69,	444.,	56:25	,	2683,	285324.875,	1037178.125,	55.46,

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Ret Time (min)	Peak Height	Peak Area	Peak Width	Amount ppb	Peak Name
8.227	631	2407	.059	.	
8.485	992	2954	.05	.	
8.614	1341	4285	.052	.	
8.784	2248	10921	.078	5.0361	Aroclor-1232
9.003	1663	7158	.064	.	
9.132	9719	33850	.05	.	
9.254	502	2421	.075	.	
9.539	27224	88370	.057	.	
9.637	5547	13921	.061	.	
9.979	21099	87867	.057	.	
10.259	10045	38748	.056	.	
10.43	1834	6911	.051	.	
10.527	454	1496	.06	.	
10.655	169	513	.051	.	
10.735	512	1515	.043	.	
10.841	10164	31333	.054	15.5026	Aroclor-1248
10.917	34329	126219	.05	.	
11.026	56859	249473	.061	.	
11.176	12993	56386	.058	.	
11.38	8010	30313	.053	.	
11.517	33353	156090	.072	.	
11.638	72519	277919	.053	.	
11.764	35504	143581	.057	.	
11.94	2990	10648	.046	.	
12.017	7624	29029	.052	.	
12.151	31034	113013	.055	.	
12.262	58349	221670	.052	.	
12.364	22889	87398	.052	.	
12.453	10933	25161	.028	.	
12.523	99130	412181	.056	107.6956	Aroclor-1254
12.785	16629	67061	.054	.	
12.931	14743	52406	.051	.	
13.036	16264	72887	.073	.	
13.104	13460	49277	.05	.	
13.239	108877	513233	.062	.	
13.503	12319	57793	.055	.	
13.603	6686	35690	.078	.	
13.761	16169	60864	.052	.	
13.919	87949	528264	.086	.	
14.255	23917	102983	.054	.	
14.424	11885	34352	.04	.	
14.462	12767	54125	.061	.	
14.626	95620	382274	.06	.	
14.721	26714	106905	.057	.	
14.847	12192	59284	.061	.	
14.976	3152	12338	.04	.	
15.039	2597	10332	.049	.	
15.128	1569	4217	.032	.	
15.205	7296	28219	.05	.	
15.325	28589	131347	.064	.	
15.482	7963	39913	.06	.	
15.652	1778	11088	.062	.	
15.827	7890	33029	.057	.	
15.949	5521	21723	.051	.	
16.078	21263	90041	.06	.	
16.202	5777	39581	.084	.	
16.475	2606	12661	.059	.	

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Ret Time (min)	Peak Height	Peak Area	Peak Width	Amount ppb	Peak Name
16.66	17197	75798	.057	.	
16.869	891	5038	.067	.	
17.104	1165	8439	.083	.	
17.431	12259	48152	.06	9.5401	Aroclor-1260
17.513	3643	15373	.058	.	
17.827	712	2832	.059	.	
17.995	931	3669	.057	.	
18.346	546	2108	.06	.	
18.461	269	1060	.061	.	
18.787	434	1547	.056	.	
18.881	457	1780	.061	.	
19.111	613	2284	.058	.	
19.431	746	3757	.063	.	
19.781	142	576	.075	.	
20.211	467	1907	.059	.	
20.376	348	1293	.055	.	
20.626	244	843	.062	.	
20.971	3685	34056	.064	.	
21.575	262614	1057028	.057	102.6854	DCB
22.189	303	936	.054	.	
22.816	2021	20399	.172	.	
23.128	458	2101	.075	.	
23.957	451	2017	.078	.	
24.268	318	3112	.184	.	
24.597	85	1284	.242	.	

FILES:
Area file: C:\CPWIN\DATA1\1E2288.24A
Method file: C:\CPWIN\DATA1\PESTB.MET
Calibration File: C:\CPWIN\DATA1\1E2288.CAL
Format File: C:\CPWIN\DATA1\515.FMT
Area file created on: 10/16/2002 10:05:54 AM
File reported on: 10/16/2002 at 10:05:56 AM

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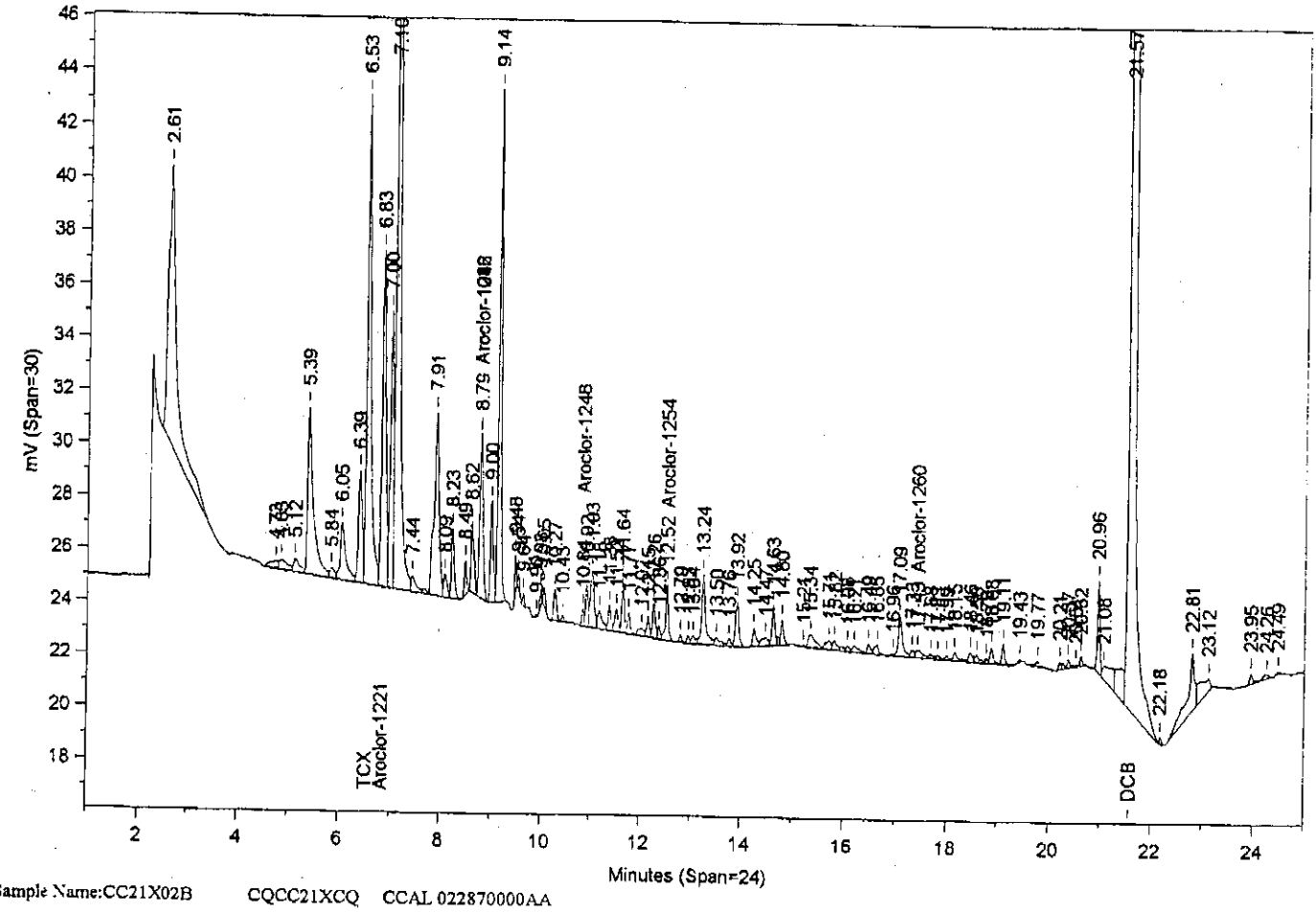
single



Sample Name:CC21X02B CQCC21XCQ CCAL 022870000AA

Instrument ID:CP02--E2601A
Volume Inj. per column: 1
Sample Amount: 1

Injected on: 10/17/2002 7:23:02 AM
GC Column ID: RTX-1 0.25MM X 30M X 0.25UM
Dilution Factor: 1

Raw File: C:\CPWIN\DATA1\1E2288.68R
GC Conditions: Injector 260C Detector 300C
Column: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MINA
Analyst: 745

Integration & Calculation Parameters:
Threshold: 3 Area Width: 0.03 Area Reject: 0
Calib. Type: External Quantitation: HEIGHT

Ret Time (min)	Peak Height	Peak Area	Peak Width	Amount ppb	Peak Name
2.606	10444	125961	.198		
4.73	293	3372	.227		
4.846	397	4644	.151		
5.124	516	4239	.096		
5.386	6321	50578	.098		
5.843	389	2649	.07		
6.045	2176	16710	.088		
6.386	4274	21713	.078		
6.526	18441	103154	.072	11.2015	TCX
6.831	12734	65378	.072	85.1616	Aroclor-1221
6.997	10477	43017	.062		

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Ret Time (min)	Peak Height	Peak Area	Peak Width	Amount ppb	Peak Name
7.099	32218	177904	.075	.	
7.438	579	4056	.094	.	
7.908	6912	46914	.087	.	
8.085	873	4304	.081	.	
8.23	2658	10641	.06	.	
8.488	1296	3904	.051	.	
8.617	2707	10984	.065	.	
8.793	6276	29108	.074	7.8504	Aroclor-1016
8.999	3841	15174	.058	.	
9.136	19336	68209	.052	.	
9.478	1483	3526	.052	.	
9.542	608	1403	.055	.	
9.638	466	1161	.046	.	
9.897	80	199	.056	.	
9.983	603	1452	.053	.	
10.052	719	2088	.07	.	
10.271	1168	4914	.065	.	
10.431	246	842	.055	.	
10.844	639	1956	.056	.9744	Aroclor-1248
10.92	1601	5503	.046	.	
11.026	2163	11563	.069	.	
11.175	696	4842	.096	.	
11.383	976	3902	.05	.	
11.519	880	4173	.064	.	
11.642	2113	7567	.05	.	
11.766	809	2937	.057	.	
12.021	280	2394	.157	.	
12.152	803	3206	.048	.	
12.264	1357	5351	.05	.	
12.364	497	1834	.059	.	
12.524	2114	8459	.055	-13.1635	Aroclor-1254
12.786	286	997	.056	.	
12.933	288	947	.051	.	
13.035	297	1315	.074	.	
13.24	2660	14611	.062	.	
13.505	304	2253	.078	.	
13.763	291	1226	.05	.	
13.921	1716	8779	.079	.	
14.254	699	3169	.068	.	
14.473	316	2969	.131	.	
14.627	1494	5909	.056	.	
14.797	960	3696	.055	.	
15.209	111	320	.043	.	
15.34	512	5211	.137	.	
15.712	353	2672	.126	.	
15.82	383	2344	.087	.	
16.078	240	1083	.048	.	
16.21	270	2037	.069	.	
16.488	374	1841	.067	.	
16.655	401	2438	.106	.	
16.962	98	314	.056	.	
17.094	1569	8704	.07	.	
17.327	277	1495	.086	.	
17.431	290	2775	.131	.2257	Aroclor-1260
17.679	170	866	.063	.	
17.826	154	840	.094	.	
17.994	164	774	.05	.	

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Ret Time (min)	Peak Height	Peak Area	Peak Width	Amount ppb	Peak Name
18.155	335	1614	.055	.	
18.459	355	1762	.067	.	
18.581	275	1713	.071	.	
18.786	177	770	.055	.	
18.88	609	2598	.054	.	
19.111	808	3102	.056	.	
19.427	92	334	.08	.	
19.768	188	821	.079	.	
20.206	280	870	.057	.	
20.369	314	1189	.055	.	
20.514	70	351	.073	.	
20.622	369	1236	.053	.	
20.961	3496	12513	.054	.	
21.076	518	9569	.12	.	
21.572	280425	1076694	.056	110.7138	DCB
22.181	256	764	.053	.	
22.813	2183	21780	.167	.	
23.125	490	9854	.214	.	
23.952	395	1664	.076	.	
24.258	165	1430	.177	.	
24.487	85	341	.079	.	

FILES:
Area file: C:\CPWIN\DATA1\1E2288.68A
Method file: C:\CPWIN\DATA1\PESTB.MET
Calibration File: C:\CPWIN\DATA1\1E2288.CAL
Format File: C:\CPWIN\DATA1\515.FMT
Area file created on: 10/17/2002 7:48:58 AM
File reported on: 10/17/2002 at 7:49:09 AM

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APPENDIX D

COMPLETENESS REPORT

Environmental Standards, Inc. evaluated the analytical data from the sediment samples collected for the Niagara Power Project "Extent of Sedimentation and Quality of Sediments in the Lewiston Reservoir and Forebay".

The analytical data generated by the project laboratories underwent an independent data review and full validation in order to compile analytical data with known quality. All data validation efforts were performed by Environmental Standards, Inc. All analytical data resulting from the analyses of the sediment samples collected from the Lewiston Reservoir and Forebay were validated in full. Full data validation was based on a rigorous review and evaluation of all tabulated quality control result forms and raw instrument data included in the sample data packages.

The validation findings for the organic analyses were based on a review of holding times, sample condition upon laboratory receipt, blank analysis results, matrix spike (MS) and matrix spike duplicate (MSD) recoveries and precision, laboratory control sample (LCS)/LCS duplicate (LCSD) results and precision, surrogate recoveries, gas chromatography/mass spectroscopy (GC/MS) tuning, calibrations, internal standard areas, 4,4′-DDT and endrin breakdown checks, ion abundance ratios, signal-to-noise ratios, analytical sequence, retention time (RT) windows, GC column agreement, analytical sequence, field duplicate precision, and instrumental raw data. The validation findings for the inorganic and wet chemistry analyses were based on a review of holding times, sample condition upon laboratory receipt, blank analysis results, LCS and LCSD recoveries and precision, MS/MSD recoveries and precision, calibrations, laboratory duplicate precision, contract-required detection limit (CRDL) standards, inductively coupled plasma/mass spectrometry (ICPMS) interference check sample results, analytical sequence, instrument detection limits (IDLs), ICPMS linear range, ICPMS serial dilution results, field duplicate precision, and sample preparation.

Data were examined to determine compliance relative to the analytical requirements specified in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846, Final Update III, June 1997), American Society of Testing and Materials, Annual Book of ASTM Standards (Vol. 04.08), "Methods for Chemical Analysis of Water and Wastes" (March 1983), and the specific laboratory analytical SOPs. Data were also examined to determine the usability of the analytical results with guidance from the following US EPA Region II data validation standard operation procedures.

- *Validation of Organic Data Acquired Using SW-846 Method 8260B,* Standard Operating Procedure (SOP) No. HW-24 Revision 1 (June 1999).
- *Validation of Organic Data Acquired Using SW-846 Method 8270C,* SOP HW-22, Revision 2 (June 2001).
- *Validation of Organochlorine Pesticides and Polychlorinated Biphenyls Data Acquired Using SW-846 Method 8080A in Conjunction with Method 8000A,* SOP HW-23 Revision 0 (April 1995).
- *US EPA Region II Data Validation SOP For SW-846 Method 8290 Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by High-*

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Resolution Gas Chromatography/High-Resolution Mass Spectrometry (HRGC/HRMS), SOP HW-19, Revision 1 (October 1994).

- *Data Validation Guidelines for Contract Laboratory Program (CLP) OLM04.2*, SOP No. HW-6 Revision #12 (March 2001).
- *Evaluation of Metals Data for the Contract Laboratory Program (CLP) based on SOW 3/90*, SOP No. HW-2 Revision XI (January 1992).

Validation qualifier codes were placed next to the results on the qualified data tables to enable the data users to quickly assess the qualitative and/or quantitative reliability of any result. The organic, inorganic, and wet chemistry data qualifier codes and definitions used for the data are as follows:

ORGANIC DATA QUALIFIERS

U The compound was not detected at or above the associated quantitation limit or this compound should be considered "not-detected" because it was detected in an associated blank at a similar level.

J Quantitation is approximate duel to limitations identified during the quality assurance review (data validation).

UJ This compound was not detected, but the quantitation limit is approximate due to limitations identified during the quality assurance review.

R Unusable result; compound may or may not be present in this sample.

INORGANIC AND WET CHEMISTRY DATA QUALIFIERS

U The analyte was not detected at or above the associated detection limit or this analyte should be considered "not-detected" because it was detected in an associated blank at a similar level.

J Quantitation is approximate due to limitations identified during the quality assurance review (data validation).

UJ This analyte was not detected, but the detection limit is approximate duel to limitations identified during the quality assurance review.

R Unusable result; analyte may or may not be present in this sample.

The laboratory data that were validated were reported in five sample delivery group (SDG) data packages for the analyses performed by Severn Trent Laboratories of North Canton, Ohio; Austin, Texas; Knoxville, Tennessee; and Burlington, Vermont; by Lancaster Laboratories, Inc. of Lancaster, Pennsylvania; and by Battelle Marine Science Laboratory of Sequim, Washington. The SDGs validated are as follows: A2J040261, 90131, NYP01, 1899, and A2J040301. The samples in these SDGs were collectively analyzed

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for polynuclear aromatic hydrocarbons (PAH) and octachlorostyrene by SW-846 Method 8270C; for PCB compounds (specifically, Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254, and Aroclor-1260) by SW-846 Method 8082; for select pesticide compounds (specifically, chlordane; 4,4´-DDD; 4,4´-DDE; 4,4´-DDT; dieldrin; hexachlorobenzene; mirex; and toxaphene) by SW-846 Method 8081A; for tetrachloroethene by SW-846 Method 8260B; for 2,3,7,8-TCDD by SW-846 Method 8290; for arsenic, cadmium and lead by SW-846 Method 6020; for particle grain size by ASTM Method D422; for total organic carbon (TOC) by Lloyd Kahn Method; for total volatile solids (TVS) by US EPA Method 160.4; and for total mercury by USEPA Method 1631B. The analytical data validation findings were reported to URS and NYPA in one data validation report. Details on the validation findings for the data sets are provided in the data validation report.

Completeness is a measure of the degree to which the amount of sample data collected meets the needs of the sampling program and is quantified as the relative number of analytical data points that meet the acceptance criteria (including accuracy, precision, and any other criteria required by the specific analytical method used). Completeness is defined as a comparison of actual numbers of usable data points and expected numbers of points expressed as a percentage. The equation used for completeness is presented below:

$$C\ (\%) = \frac{D}{P \times n} \times 100$$

Where:

D	=	number of usable results
P	=	number of analytical parameters per sample requested for analysis
n	=	number of samples requested for analysis

The number of samples does not include the equipment blank analyzed. The number of usable results (usable data) is calculated for each analysis fraction according to the following equation:

Usable Data = unqualified positive results + unqualified “not-detected” results + qualified positive results as “not-detected” due to blank contamination + qualified positive results as estimated + qualified “not-detected” results as estimated

A total of 10 results were obtained for volatile organic compounds; all results were usable. A total of 60 results were obtained for polynuclear aromatic hydrocarbon; all results were usable. A total of 80 results were obtained for pesticides; all results were usable. A total of 80 results were obtained for PCBs; all results were usable. A total of 10 results were obtained for TCDD; 9 results were usable. A total of 30 results were obtained for metals; 20 results were usable. A total of 10 results were obtained for mercury; eight results were usable. A total of 10 results were obtained for total volatile solids; all results were usable. A total of 10 results were obtained for total organic carbon; all results were usable. A summary of the data quality for the individual analytical fractions is presented below.

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Analytical Fraction	% Completeness
volatile organic compounds	100%
polynuclear aromatic hydrocarbons	100%
pesticides	100%
PCBs	100%
TCDD	90.0%
metals	66.7%
mercury	80.0%
total volatile solids	100%
total organic carbon	100%

The percent completeness for the entire data set is 95.7% and the majority of the data is usable with some qualification.

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APPENDIX E

NYSDEC MEMORANDUM

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New York State Department of Environmental Conservation

Division of Fish, Wildlife & Marine Resources

Bureau of Habitat, 5th Floor
625 Broadway, Albany, New York 12233-4756

Phone: (518) 402-8970 · **FAX:** (518) 402-8925

e-mail: txsinnot@gw.dec.state.ny.us

MEMORANDUM

February 7, 2003

SUBJECT: Sediment Screening Values and Total Organic Carbon Concentration

NYSDEC (1999) describes a methodology for deriving sediment screening values (SSVs) for nonionic organic contaminants using equilibrium partitioning (EqP). The SSVs are used to identify threshold concentrations for ecological risk assessment. If a contaminant concentration in sediment is below the SSV, then the risks to benthic aquatic organisms are considered to be acceptable. If a contaminant concentration exceeds an SSV, there is a presumption of potential risk and further evaluation is necessary.

The methodology described in NYSDEC (1999) derives SSVs in micrograms per gram organic carbon (ug/gOC). In order to use the SSV, it must be normalized to the percent total organic carbon (TOC) content of the sediment sample being evaluated, and expressed as ug/kg sediment. This is accomplished by expressing the % TOC as a concentration and multiplying it the SSV in ug/gOC (NYSDEC, 1999, page 8).

NYSDEC (1999) also states that: EP-based criteria (i.e., SSVs) should only be derived for sediments with organic carbon fractions between approximately 0.2 - 12%. This recommendation is derived from U.S. EPA (1992). A logical question, then, is how should the methodology be applied when the % TOC is below 0.2%?

There are three possible options:

1. Use the lowest recommended TOC value (0.2%) as a default;

2. Use the actual measured TOC, and annotate that it did not meet the recommended range;

3. Disregard the TOC. Convert the contaminant concentration in ug/kg sediment to ug/L pore water. An estimate of the water fraction in the sediment sample can be made by comparing the wet and dry weights of the sediment. Compare the pore water contaminant concentration to the water quality standard for the contaminant.

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EqP theory infers that nonionic organic contaminants will adsorb to organic carbon in sediment, thus reducing the bioavailability of the contaminant to biota. US EPA (1989) states that the validity of organic carbon normalization appears to be limited to a % TOC >0.5, and that at very low % TOC, other factors can influence partitioning. U.S. EPA (1992) expanded the lower limit slightly from U.S. EPA (1989) by stating that the lower boundary ranges from 0.2 - 0.5% TOC. U.S. EPA (2002) also states that for sediments with a % TOC ≥ 0.2% by weight, the organic carbon appears to be the predominant phase for chemical sorption. These references suggest the adsorption of a nonionic organic contaminant doesn't cease at a % TOC content of less than 0.2%; but degree of adsorption cannot be reliably predicted, because of the influence of other factors such as particle size and density.

The fact that sorption to the organic carbon fraction of sediment occurs at % TOC values below 0.2 was demonstrated by McFarland et.al., 1996. They exposed fish and sediment to a PCB congener, and measured the bioaccumulation factor (BAF). Eight exposures were tested using sediment with the following % TOC values: 0.0; 0.055; 0.103; 0.331; 0.480; 0.963; 2.03; and 2.68. They found that the TOC-normalized BAFs of the four highest TOC treatments did not differ significantly from one another, and were also not different from the two lowest TOC treatments. Two treatments, 0.331 and 0.48 produced the highest BAFs, indicating the lowest organic carbon sorption. These results lead them to conclude that the lower limit for reliably normalizing neutral chemical concentrations on sediment TOC may be somewhat higher than 0.2%, however, it is clear that if any TOC is present it will predominantly account for sorption of PCB-52, and presumably, for other neutral chemicals.

Option 1, above is inappropriate. It assumes that more TOC is present than really is, and that the contaminant will be less bioavailable than it really is. This option overestimates the SSV and is under protective of benthic aquatic life.

Option 3, above does not account for the TOC adsorption of the fraction of the contaminant that will occur, even if it cannot be consistently or reliably estimated. It is most likely to be overprotective.

Option 2 ignores the recommended limit of 0.2% TOC and assumes EqP will function just as it would at % TOC greater than 0.2 %. The work or McFarland et.al., (1996) suggest that this is possibly the case, but the data inconstancies noted by them also suggest that it is not a reliable assumption. However, this approach also acknowledges that some adsorption is likely to occur. Whether or not would result in a potentially overprotective or under protective SSV depends upon how big a role the "other factors" that influence sediment sorption play in the biogeochemistry of the particular sediment sample.

Finally, a weight of evidence approach can be used to estimate the potential for risk. For example, a SSV can be derived using the actual TOC content of the sediment, and then compared to the sediment concentration of the contaminant being evaluated. If the sediment contaminant concentration is close to or exceeds the SSV, then the possibility that the SSV is unreliable must be considered, and a presumption of risk should be made. Alternatively, if the concentration of contaminant in sediment is considerably smaller than the SSV derived from a low TOC value, then a presumption of acceptable risk is probably appropriate.

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Example: The SSV for carbofuran for the protection of benthic aquatic life from chronic toxicity is 0.2 ug/gOC. A particular sediment sample has a % TOC content of 0.06, which equates to 0.6 g/kg TOC. The SSV for carbofuran in this sediment would be:

0.2 ug carbofuran/g OC * 0.6 g OC/kg sediment = 0.012 ug carbofuran/kg sediment.

If bulk chemistry analysis of the sediment showed that there was 0.002 ug/kg carbofuran present, the risks are probably minimal because the contaminant concentration is very small relative to the SSV, even if it is somewhat unreliable because of the low TOC concentration. If on the other hand, the bulk chemistry analysis of the sediment showed that the carbofuran concentration was about 0.01 ug/kg, further analysis or possibly toxicity testing should be conducted to determine if the carbofuran concentration presents a significant risk.

If option 1 had been used, the SSV for carbofuran would have been 0.4 ug/kg.

-ORIGINAL SIGNED -

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