CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JHG01A.B\084_CCV.D\084_CCV.D#
Date Acquired: Jul 1 2014 05:32 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 01 2014 01:47 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	22.64	ppb	0.95	25	90.56	
11 B	24.62	ppb	1.08	25	98.48	
23 Na	4,926.	ppb	0.96	5,000	98.52	
25 Mg	5,057.	ppb	1.00	5,000	101.14	
27 Al	517.8	ppb	1.49	500	103.56	
28 Si	577.1	ppb	9.45	500	115.42	
29 Si	672.6	ppb	28.87	500	134.52	Fail
39 K	5,030.	ppb	0.65	5,000	100.6	
43 Ca	4,973.	ppb	1.40	5,000	99.46	
44 Ca	5,068.	ppb	3.01	5,000	101.36	
51 V	24.79	ppb	0.53	25	99.16	
52 Cr	25.25	ppb	0.45	25	101	
53 Cr	25.38	ppb	2.75	25	101.52	
55 Mn	24.83	ppb	0.47	25	99.32	
56 Fe	4,986.	ppb	0.70	5,000	99.72	
57 Fe	5,070.	ppb	0.18	5,000	101.4	
59 Co	25.09	ppb	1.10	25	100.36	
60 Ni	25.19	ppb	1.12	25	100.76	
63 Cu	24.85	ppb	0.64	25	99.4	
65 Cu	25.02	ppb	0.92	25	100.08	
66 Zn	25.05	ppb	1.09	25	100.2	
68 Zn	24.72	ppb	1.81	25	98.88	
75 As	24.9	ppb	1.24	25	99.6	
82 Se	25.16	ppb	1.16	25	100.64	
88 Sr	25.4	ppb	0.66	25	101.6	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	25.5	ppb	0.91	25	102	
107 Ag	25.84	ppb	0.91	25	103.36	
109 Ag	25.58	ppb	0.37	25	102.32	
111 Cd	25.79	ppb	0.53	25	103.16	
114 Cd	25.92	ppb	0.92	25	103.68	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.64	ppb	1.05	25	98.56	
120 Sn	24.77	ppb	0.79	25	99.08	
121 Sb	24.85	ppb	0.81	25	99.4	
123 Sb	24.86	ppb	0.48	25	99.44	
135 Ba	24.94	ppb	1.94	25	99.76	
137 Ba	24.82	ppb	1.08	25	99.28	
182 W	24.78	ppb	0.48	25	99.12	
203 Tl	24.93	ppb	1.03	25	99.72	
205 Tl	24.74	ppb	0.87	25	98.96	
208 Pb	24.75	ppb	0.56	25	99	
232 Th	24.19	ppb	1.66	25	96.76	
238 U	23.94	ppb	1.51	25	95.76	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3216355.50	1.02	3225547.00	99.7	80 - 120.4	
45 Sc	2758619.30	1.35	2797225.50	98.6	80 - 120.4	
72 Ge	580552.00	1.24	598801.94	97.0	80 - 120.4	
159 Tb	5384976.00	1.12	5240202.50	102.8	80 - 120.4	
209 Bi	3141189.80	1.23	3108879.00	101.0	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG01A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000539

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JHG01A.B\085_CCB.D\085_CCB.D#
Date Acquired: Jul 1 2014 05:36 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 01 2014 01:47 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0032	ppb	67.44	1.00	
11 B	0.1201	ppb	157.37	1.00	
23 Na	-3.495	ppb	4.24	1.00	
25 Mg	0.391	ppb	17.06	1.00	
27 Al	0.1117	ppb	4.44	1.00	
28 Si	51.77	ppb	41.90	1.00	
29 Si	184.	ppb	53.44	1.00	Fail
39 K	3.596	ppb	78.45	1.00	
43 Ca	0.1958	ppb	3099.10	1.00	
44 Ca	-2.359	ppb	25.09	1.00	
51 V	0.0057	ppb	660.79	1.00	
52 Cr	-0.0215	ppb	102.52	1.00	
53 Cr	-0.7591	ppb	23.46	1.00	
55 Mn	0.0185	ppb	19.09	1.00	
56 Fe	1.578	ppb	40.06	1.00	
57 Fe	-1.831	ppb	66.19	1.00	
59 Co	0.0007	ppb	304.58	1.00	
60 Ni	-0.0017	ppb	361.98	1.00	
63 Cu	-0.0078	ppb	85.55	1.00	
65 Cu	0.0078	ppb	44.07	1.00	
66 Zn	-0.0686	ppb	54.10	1.00	
68 Zn	0.1585	ppb	108.45	1.00	
75 As	-0.0812	ppb	95.53	1.00	
82 Se	-0.0766	ppb	57.01	1.00	
88 Sr	0.0074	ppb	28.40	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0527	ppb	16.07	1.00	
107 Ag	0.0027	ppb	21.32	1.00	
109 Ag	0.0013	ppb	114.86	1.00	
111 Cd	-0.0041	ppb	891.85	1.00	
114 Cd	0.0077	ppb	68.11	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0776	ppb	15.77	1.00	
120 Sn	0.0773	ppb	23.26	1.00	
121 Sb	0.0171	ppb	57.80	1.00	
123 Sb	0.0268	ppb	37.11	1.00	
135 Ba	0.0068	ppb	205.27	1.00	
137 Ba	0.0149	ppb	43.96	1.00	
182 W	0.1168	ppb	11.34	1.00	
203 Tl	0.0063	ppb	69.80	1.00	
205 Tl	0.0064	ppb	21.99	1.00	
208 Pb	0.0021	ppb	152.55	1.00	
232 Th	0.0642	ppb	15.90	1.00	
238 U	0.0031	ppb	61.46	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3292736.30	2.99	3225547.00	102.1	79.5 - 120	
45 Sc	2778429.30	0.76	2797225.50	99.3	79.5 - 120	
72 Ge	590772.00	0.27	598801.94	98.7	79.5 - 120	
159 Tb	5470100.00	0.53	5240202.50	104.4	79.5 - 120	
209 Bi	3244525.30	1.33	3108879.00	104.4	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG01A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000540

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG01A.B\086SMPL.D\086SMPL.D#
Date Acquired: Jul 1 2014 05:39 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4401-008
Misc Info: DILUTION 1.6/8
Vial Number: 2503
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 01 2014 01:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0188	0.0038	ppb	24.79	100.	
11 B	4.974	0.9948	ppb	8.14	1000.	
23 Na	3,867.	773.4	ppb	3.71	200000.	
25 Mg	1,398.	279.6	ppb	2.69	200000.	
27 Al	277.2	55.44	ppb	3.50	200000.	
28 Si	3,663.5	732.7	ppb	8.78	#VALUE!	
29 Si	4,013.	802.6	ppb	18.62	10000.	
39 K	680.5	136.1	ppb	5.37	200000.	
43 Ca	3,733.	746.6	ppb	1.66	#VALUE!	
44 Ca	3,622.5	724.5	ppb	3.25	200000.	
51 V	1.551	0.3102	ppb	42.10	1000.	
52 Cr	4.3235	0.8647	ppb	1.58	1000.	
53 Cr	34.92	6.984	ppb	6.73	#VALUE!	
55 Mn	1,480.5	296.1	ppb	1.98	1000.	
56 Fe	824.	164.8	ppb	4.37	#VALUE!	
57 Fe	790.5	158.1	ppb	5.90	100000.	
59 Co	1.4875	0.2975	ppb	2.73	1000.	
60 Ni	1.791	0.3582	ppb	5.45	1000.	
63 Cu	1.3245	0.2649	ppb	6.09	#VALUE!	
65 Cu	1.2575	0.2515	ppb	6.05	1000.	
66 Zn	5.455	1.091	ppb	6.57	1000.	
68 Zn	10.38	2.076	ppb	6.96	#VALUE!	
75 As	1.647	0.3294	ppb	81.54	1000.	
82 Se	-0.5075	-0.1015	ppb	73.26	1000.	
88 Sr	20.14	4.028	ppb	1.50	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.327	0.0654	ppb	15.02	1000.	
107 Ag	0.0114	0.0023	ppb	73.10	500.	
109 Ag	0.0124	0.0025	ppb	76.97	#VALUE!	
111 Cd	1.4315	0.2863	ppb	14.04	#VALUE!	
114 Cd	1.604	0.3208	ppb	7.97	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.3706	0.0741	ppb	27.01	1000.	
120 Sn	0.3496	0.0699	ppb	2.85	#VALUE!	
121 Sb	0.0506	0.0101	ppb	22.76	#VALUE!	
123 Sb	0.1059	0.0212	ppb	23.55	1000.	
135 Ba	8.72	1.744	ppb	3.81	1000.	
137 Ba	8.495	1.699	ppb	2.73	#VALUE!	
182 W	0.2363	0.0473	ppb	---	#VALUE!	
203 Tl	0.0242	0.0048	ppb	17.85	1000.	
205 Tl	0.0185	0.0037	ppb	94.99	#VALUE!	
208 Pb	0.633	0.1266	ppb	15.07	1000.	
232 Th	0.7545	0.1509	ppb	27.36	1000.	
238 U	0.0652	0.013	ppb	24.13	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3244830.00	2.26	3225547.00	100.6	69.5 - 130	
45 Sc	2722684.80	2.30	2797225.50	97.3	69.5 - 130	
72 Ge	572677.75	1.13	598801.94	95.6	69.5 - 130	
159 Tb	5228803.00	1.91	5240202.50	99.8	69.5 - 130	
209 Bi	3036377.80	2.01	3108879.00	97.7	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG01A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000541

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG01A.B\087SMPL.D\087SMPL.D#
Date Acquired: Jul 1 2014 05:43 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4401-009
Misc Info: DILUTION 1.6/8
Vial Number: 2504
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 01 2014 01:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0076	0.0015	ppb	82.25	100.	
11 B	4.6405	0.9281	ppb	12.35	1000.	
23 Na	4,249.	849.8	ppb	2.20	200000.	
25 Mg	1,476.	295.2	ppb	1.25	200000.	
27 Al	46.615	9.323	ppb	2.03	200000.	
28 Si	3,350.5	670.1	ppb	3.79	#VALUE!	
29 Si	2,422.5	484.5	ppb	4.32	10000.	
39 K	672.	134.4	ppb	2.11	200000.	
43 Ca	3,955.5	791.1	ppb	3.25	#VALUE!	
44 Ca	3,893.	778.6	ppb	0.17	200000.	
51 V	0.7635	0.1527	ppb	84.15	1000.	
52 Cr	4.449	0.8898	ppb	0.78	1000.	
53 Cr	45.085	9.017	ppb	0.85	#VALUE!	
55 Mn	1,549.	309.8	ppb	1.27	1000.	
56 Fe	603.5	120.7	ppb	1.46	#VALUE!	
57 Fe	569.5	113.9	ppb	3.36	100000.	
59 Co	1.472	0.2944	ppb	4.66	1000.	
60 Ni	1.7545	0.3509	ppb	3.56	1000.	
63 Cu	0.7145	0.1429	ppb	5.68	#VALUE!	
65 Cu	0.636	0.1272	ppb	23.51	1000.	
66 Zn	4.099	0.8198	ppb	3.73	1000.	
68 Zn	7.165	1.433	ppb	13.96	#VALUE!	
75 As	1.177	0.2354	ppb	50.09	1000.	
82 Se	-0.1675	-0.0335	ppb	339.21	1000.	
88 Sr	21.335	4.267	ppb	2.51	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.213	0.0426	ppb	21.62	1000.	
107 Ag	0.0079	0.0016	ppb	125.41	500.	
109 Ag	0.0035	0.0007	ppb	381.91	#VALUE!	
111 Cd	0.2347	0.0469	ppb	73.78	#VALUE!	
114 Cd	0.1733	0.0347	ppb	9.65	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.3213	0.0643	ppb	7.33	1000.	
120 Sn	0.2708	0.0542	ppb	6.35	#VALUE!	
121 Sb	0.0443	0.0089	ppb	36.85	#VALUE!	
123 Sb	0.0538	0.0108	ppb	13.20	1000.	
135 Ba	6.215	1.243	ppb	7.66	1000.	
137 Ba	5.98	1.196	ppb	2.80	#VALUE!	
182 W	0.1251	0.025	ppb	---	#VALUE!	
203 Tl	0.0014	0.0003	ppb	437.38	1000.	
205 Tl	0.0089	0.0018	ppb	57.22	#VALUE!	
208 Pb	0.1198	0.024	ppb	3.42	1000.	
232 Th	0.2695	0.0539	ppb	16.22	1000.	
238 U	0.0111	0.0022	ppb	9.88	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3320825.30	1.37	3225547.00	103.0	69.5 - 130	
45 Sc	2776093.80	0.66	2797225.50	99.2	69.5 - 130	
72 Ge	583497.06	0.17	598801.94	97.4	69.5 - 130	
159 Tb	5320418.50	0.23	5240202.50	101.5	69.5 - 130	
209 Bi	3107019.30	0.29	3108879.00	99.9	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG01A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000542

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG01A.B\088SMPL.D\088SMPL.D#
Date Acquired: Jul 1 2014 05:46 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4401-010
Misc Info: DILUTION 1.6/8
Vial Number: 2505
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 01 2014 01:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0146	0.0029	ppb	37.11	100.	
11 B	5.395	1.079	ppb	4.27	1000.	
23 Na	4,474.5	894.9	ppb	0.63	200000.	
25 Mg	1,629.5	325.9	ppb	0.99	200000.	
27 Al	103.55	20.71	ppb	0.91	200000.	
28 Si	3,867.5	773.5	ppb	6.42	#VALUE!	
29 Si	3,644.5	728.9	ppb	24.48	10000.	
39 K	724.	144.8	ppb	1.91	200000.	
43 Ca	6,355.	1,271.	ppb	2.02	#VALUE!	
44 Ca	6,250.	1,250.	ppb	0.58	200000.	
51 V	1.4965	0.2993	ppb	28.70	1000.	
52 Cr	5.15	1.03	ppb	2.10	1000.	
53 Cr	45.77	9.154	ppb	4.92	#VALUE!	
55 Mn	213.45	42.69	ppb	0.75	1000.	
56 Fe	1,600.	320.	ppb	0.86	#VALUE!	
57 Fe	1,540.	308.	ppb	2.00	100000.	
59 Co	2.0935	0.4187	ppb	4.10	1000.	
60 Ni	2.3875	0.4775	ppb	3.02	1000.	
63 Cu	1.4465	0.2893	ppb	9.14	#VALUE!	
65 Cu	1.4735	0.2947	ppb	19.14	1000.	
66 Zn	2.4425	0.4885	ppb	11.59	1000.	
68 Zn	5.785	1.157	ppb	22.57	#VALUE!	
75 As	3.927	0.7854	ppb	1.07	1000.	
82 Se	-0.65	-0.13	ppb	145.00	1000.	
88 Sr	20.42	4.084	ppb	0.22	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.3315	0.0663	ppb	8.90	1000.	
107 Ag	0.01	0.002	ppb	94.72	500.	
109 Ag	0.0083	0.0017	ppb	63.13	#VALUE!	
111 Cd	0.0107	0.0021	ppb	402.80	#VALUE!	
114 Cd	0.1274	0.0255	ppb	9.35	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.2558	0.0512	ppb	21.37	1000.	
120 Sn	0.2331	0.0466	ppb	16.85	#VALUE!	
121 Sb	0.0398	0.008	ppb	41.91	#VALUE!	
123 Sb	0.0681	0.0136	ppb	51.37	1000.	
135 Ba	4.83	0.966	ppb	9.61	1000.	
137 Ba	5.07	1.014	ppb	9.32	#VALUE!	
182 W	0.0744	0.0149	ppb ---		#VALUE!	
203 Tl	0.018	0.0036	ppb	68.07	1000.	
205 Tl	0.0211	0.0042	ppb	43.93	#VALUE!	
208 Pb	0.4966	0.0993	ppb	13.17	1000.	
232 Th	0.2028	0.0406	ppb	16.83	1000.	
238 U	0.0364	0.0073	ppb	13.35	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3348413.30	0.94	3225547.00	103.8	69.5 - 130	
45 Sc	2728354.30	1.28	2797225.50	97.5	69.5 - 130	
72 Ge	578600.69	0.69	598801.94	96.6	69.5 - 130	
159 Tb	5308559.50	0.77	5240202.50	101.3	69.5 - 130	
209 Bi	3099385.30	0.17	3108879.00	99.7	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG01A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000543

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG01A.B\089SMPL.D\089SMPL.D#
Date Acquired: Jul 1 2014 05:50 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4401-011
Misc Info: DILUTION 1.6/8
Vial Number: 2506
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 01 2014 01:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0219	0.0044	ppb	16.65	100.	
11 B	5.725	1.145	ppb	10.63	1000.	
23 Na	4,417.	883.4	ppb	1.37	200000.	
25 Mg	1,570.	314.	ppb	0.66	200000.	
27 Al	31.75	6.35	ppb	4.02	200000.	
28 Si	3,696.5	739.3	ppb	2.66	#VALUE!	
29 Si	3,435.5	687.1	ppb	3.85	10000.	
39 K	723.5	144.7	ppb	2.34	200000.	
43 Ca	6,300.	1,260.	ppb	3.31	#VALUE!	
44 Ca	6,205.	1,241.	ppb	0.66	200000.	
51 V	1.3165	0.2633	ppb	22.07	1000.	
52 Cr	2.6105	0.5221	ppb	1.58	1000.	
53 Cr	48.695	9.739	ppb	0.25	#VALUE!	
55 Mn	204.35	40.87	ppb	0.92	1000.	
56 Fe	1,479.	295.8	ppb	3.28	#VALUE!	
57 Fe	1,439.5	287.9	ppb	2.96	100000.	
59 Co	1.8615	0.3723	ppb	5.11	1000.	
60 Ni	1.6425	0.3285	ppb	8.83	1000.	
63 Cu	1.1385	0.2277	ppb	10.82	#VALUE!	
65 Cu	1.201	0.2402	ppb	4.06	1000.	
66 Zn	2.4145	0.4829	ppb	17.20	1000.	
68 Zn	5.53	1.106	ppb	30.18	#VALUE!	
75 As	4.7615	0.9523	ppb	3.55	1000.	
82 Se	-0.0375	-0.0075	ppb	891.46	1000.	
88 Sr	20.355	4.071	ppb	1.24	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.2925	0.0585	ppb	20.02	1000.	
107 Ag	0.0048	0.001	ppb	254.59	500.	
109 Ag	0.0038	0.0008	ppb	110.38	#VALUE!	
111 Cd	0.0225	0.0045	ppb	518.13	#VALUE!	
114 Cd	0.1018	0.0204	ppb	26.79	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.2709	0.0542	ppb	9.67	1000.	
120 Sn	0.2469	0.0494	ppb	8.16	#VALUE!	
121 Sb	0.0559	0.0112	ppb	25.45	#VALUE!	
123 Sb	0.0606	0.0121	ppb	29.72	1000.	
135 Ba	4.3465	0.8693	ppb	8.36	1000.	
137 Ba	4.2275	0.8455	ppb	6.72	#VALUE!	
182 W	0.0496	0.0099	ppb	---	#VALUE!	
203 Tl	0.0306	0.0061	ppb	44.13	1000.	
205 Tl	0.01	0.002	ppb	101.70	#VALUE!	
208 Pb	0.1161	0.0232	ppb	13.95	1000.	
232 Th	0.1342	0.0268	ppb	16.33	1000.	
238 U	0.0298	0.006	ppb	42.72	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3270537.50	1.67	3225547.00	101.4	69.5 - 130	
45 Sc	2721527.30	0.69	2797225.50	97.3	69.5 - 130	
72 Ge	579062.50	0.26	598801.94	96.7	69.5 - 130	
159 Tb	5278388.50	1.53	5240202.50	100.7	69.5 - 130	
209 Bi	3105833.50	0.48	3108879.00	99.9	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG01A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000544

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG01A.B\090SMPL.D\090SMPL.D#
Date Acquired: Jul 1 2014 05:53 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4401-012
Misc Info: DILUTION 1.6/8
Vial Number: 2507
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 01 2014 01:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0196	0.0039	ppb	28.44	100.	
11 B	3.8785	0.7757	ppb	12.69	1000.	
23 Na	3,029.5	605.9	ppb	0.69	200000.	
25 Mg	1,026.	205.2	ppb	1.54	200000.	
27 Al	23.405	4.681	ppb	3.70	200000.	
28 Si	3,542.5	708.5	ppb	1.52	#VALUE!	
29 Si	3,252.5	650.5	ppb	15.88	10000.	
39 K	528.5	105.7	ppb	1.51	200000.	
43 Ca	2,727.	545.4	ppb	6.64	#VALUE!	
44 Ca	2,746.	549.2	ppb	1.05	200000.	
51 V	1.3865	0.2773	ppb	19.21	1000.	
52 Cr	3.061	0.6122	ppb	3.98	1000.	
53 Cr	54.65	10.93	ppb	3.99	#VALUE!	
55 Mn	12.135	2.427	ppb	0.44	1000.	
56 Fe	31.115	6.223	ppb	20.34	#VALUE!	
57 Fe	21.635	4.327	ppb	38.39	100000.	
59 Co	0.033	0.0066	ppb	15.79	1000.	
60 Ni	0.71	0.142	ppb	4.22	1000.	
63 Cu	0.729	0.1458	ppb	2.51	#VALUE!	
65 Cu	0.7555	0.1511	ppb	7.93	1000.	
66 Zn	3.8695	0.7739	ppb	13.18	1000.	
68 Zn	6.145	1.229	ppb	26.36	#VALUE!	
75 As	0.0289	0.0058	ppb	2892.20	1000.	
82 Se	-1.107	-0.2214	ppb	102.62	1000.	
88 Sr	11.375	2.275	ppb	5.93	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0408	0.0082	ppb	13.16	1000.	
107 Ag	0.0187	0.0037	ppb	62.96	500.	
109 Ag	0.0083	0.0017	ppb	29.13	#VALUE!	
111 Cd	-0.0663	-0.0133	ppb	136.58	#VALUE!	
114 Cd	0.074	0.0148	ppb	31.40	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.2865	0.0573	ppb	14.82	1000.	
120 Sn	0.3204	0.0641	ppb	16.81	#VALUE!	
121 Sb	0.0344	0.0069	ppb	22.83	#VALUE!	
123 Sb	0.0424	0.0085	ppb	48.99	1000.	
135 Ba	1.6495	0.3299	ppb	6.81	1000.	
137 Ba	1.8115	0.3623	ppb	3.20	#VALUE!	
182 W	0.053	0.0106	ppb	---	#VALUE!	
203 Tl	0.0117	0.0023	ppb	184.98	1000.	
205 Tl	0.0017	0.0003	ppb	731.61	#VALUE!	
208 Pb	0.21	0.042	ppb	5.33	1000.	
232 Th	0.0965	0.0193	ppb	27.67	1000.	
238 U	0.0031	0.0006	ppb	70.24	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3301093.30	0.79	3225547.00	102.3	69.5 - 130	
45 Sc	2742530.50	1.06	2797225.50	98.0	69.5 - 130	
72 Ge	579923.38	1.08	598801.94	96.8	69.5 - 130	
159 Tb	5346274.50	0.64	5240202.50	102.0	69.5 - 130	
209 Bi	3101496.00	0.76	3108879.00	99.8	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG01A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000545

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG01A.B\091SMPL.D\091SMPL.D#
Date Acquired: Jul 1 2014 05:57 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4401-013
Misc Info: DILUTION 1.6/8
Vial Number: 2508
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 01 2014 01:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0191	0.0038	ppb	31.31	100.	
11 B	4.1225	0.8245	ppb	9.40	1000.	
23 Na	3,146.	629.2	ppb	0.96	200000.	
25 Mg	1,050.5	210.1	ppb	1.19	200000.	
27 Al	19.33	3.866	ppb	2.10	200000.	
28 Si	3,536.	707.2	ppb	2.99	#VALUE!	
29 Si	2,709.	541.8	ppb	6.13	10000.	
39 K	544.	108.8	ppb	4.20	200000.	
43 Ca	2,880.	576.	ppb	2.95	#VALUE!	
44 Ca	2,844.5	568.9	ppb	0.54	200000.	
51 V	1.2615	0.2523	ppb	23.20	1000.	
52 Cr	3.157	0.6314	ppb	4.57	1000.	
53 Cr	61.35	12.27	ppb	3.44	#VALUE!	
55 Mn	12.72	2.544	ppb	1.83	1000.	
56 Fe	45.08	9.016	ppb	12.98	#VALUE!	
57 Fe	11.1	2.22	ppb	89.14	100000.	
59 Co	0.0522	0.0104	ppb	91.14	1000.	
60 Ni	0.979	0.1958	ppb	8.62	1000.	
63 Cu	1.6245	0.3249	ppb	4.59	#VALUE!	
65 Cu	1.806	0.3612	ppb	7.59	1000.	
66 Zn	3.5115	0.7023	ppb	13.49	1000.	
68 Zn	7.03	1.406	ppb	21.61	#VALUE!	
75 As	0.676	0.1352	ppb	206.36	1000.	
82 Se	-0.1839	-0.0368	ppb	192.50	1000.	
88 Sr	12.265	2.453	ppb	2.41	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0516	0.0103	ppb	11.50	1000.	
107 Ag	0.0057	0.0011	ppb	28.22	500.	
109 Ag	-0.0053	-0.0011	ppb	186.83	#VALUE!	
111 Cd	-0.1208	-0.0242	ppb	81.17	#VALUE!	
114 Cd	0.0949	0.019	ppb	22.57	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.2619	0.0524	ppb	17.71	1000.	
120 Sn	0.2738	0.0548	ppb	8.73	#VALUE!	
121 Sb	0.0357	0.0071	ppb	36.31	#VALUE!	
123 Sb	0.0532	0.0106	ppb	23.06	1000.	
135 Ba	2.8495	0.5699	ppb	6.17	1000.	
137 Ba	2.75	0.55	ppb	9.15	#VALUE!	
182 W	0.0392	0.0078	ppb	---	#VALUE!	
203 Tl	-0.0011	-0.0002	ppb	520.76	1000.	
205 Tl	0.0012	0.0002	ppb	197.99	#VALUE!	
208 Pb	0.0793	0.0159	ppb	5.85	1000.	
232 Th	0.0711	0.0142	ppb	20.92	1000.	
238 U	0.0007	0.0001	ppb	291.55	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3282671.80	1.36	3225547.00	101.8	69.5 - 130	
45 Sc	2753633.30	0.61	2797225.50	98.4	69.5 - 130	
72 Ge	578045.19	0.49	598801.94	96.5	69.5 - 130	
159 Tb	5264366.00	0.47	5240202.50	100.5	69.5 - 130	
209 Bi	3092272.30	1.02	3108879.00	99.5	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG01A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000546

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG01A.B\092SMPL.D\092SMPL.D#
Date Acquired: Jul 1 2014 06:00 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4401-014
Misc Info: DILUTION 1.6/8
Vial Number: 2509
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 01 2014 01:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0185	0.0037	ppb	48.19	100.	
11 B	4.9755	0.9951	ppb	8.02	1000.	
23 Na	4,508.5	901.7	ppb	0.96	200000.	
25 Mg	1,617.5	323.5	ppb	1.86	200000.	
27 Al	101.55	20.31	ppb	2.31	200000.	
28 Si	3,871.5	774.3	ppb	0.85	#VALUE!	
29 Si	3,093.	618.6	ppb	6.15	10000.	
39 K	720.5	144.1	ppb	5.51	200000.	
43 Ca	6,540.	1,308.	ppb	3.43	#VALUE!	
44 Ca	6,360.	1,272.	ppb	1.26	200000.	
51 V	1.5315	0.3063	ppb	19.44	1000.	
52 Cr	3.3465	0.6693	ppb	4.03	1000.	
53 Cr	55.05	11.01	ppb	2.34	#VALUE!	
55 Mn	214.65	42.93	ppb	1.32	1000.	
56 Fe	1,567.5	313.5	ppb	0.43	#VALUE!	
57 Fe	1,535.	307.	ppb	2.33	100000.	
59 Co	2.054	0.4108	ppb	2.58	1000.	
60 Ni	1.729	0.3458	ppb	3.01	1000.	
63 Cu	1.2625	0.2525	ppb	5.53	#VALUE!	
65 Cu	1.2755	0.2551	ppb	17.38	1000.	
66 Zn	3.465	0.693	ppb	15.47	1000.	
68 Zn	6.615	1.323	ppb	10.98	#VALUE!	
75 As	4.916	0.9832	ppb	26.01	1000.	
82 Se	0.5485	0.1097	ppb	81.13	1000.	
88 Sr	20.58	4.116	ppb	0.57	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.2612	0.0522	ppb	2.51	1000.	
107 Ag	0.0124	0.0025	ppb	96.32	500.	
109 Ag	-0.0009	-0.0002	ppb	880.02	#VALUE!	
111 Cd	0.0899	0.018	ppb	104.90	#VALUE!	
114 Cd	0.1109	0.0222	ppb	16.92	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.2507	0.0501	ppb	15.19	1000.	
120 Sn	0.2441	0.0488	ppb	6.77	#VALUE!	
121 Sb	0.0499	0.01	ppb	22.72	#VALUE!	
123 Sb	0.0551	0.011	ppb	4.90	1000.	
135 Ba	14.45	2.89	ppb	4.80	1000.	
137 Ba	14.465	2.893	ppb	3.41	#VALUE!	
182 W	0.0576	0.0115	ppb	---	#VALUE!	
203 Tl	0.0012	0.0002	ppb	662.96	1000.	
205 Tl	0.0213	0.0043	ppb	27.90	#VALUE!	
208 Pb	0.5655	0.1131	ppb	3.71	1000.	
232 Th	0.0837	0.0167	ppb	3.66	1000.	
238 U	0.0392	0.0078	ppb	18.61	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3342394.80	1.33	3225547.00	103.6	69.5 - 130	
45 Sc	2747590.00	1.37	2797225.50	98.2	69.5 - 130	
72 Ge	582055.88	0.57	598801.94	97.2	69.5 - 130	
159 Tb	5334365.50	0.04	5240202.50	101.8	69.5 - 130	
209 Bi	3121496.00	0.57	3108879.00	100.4	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG01A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000547

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG01A.B\093SMPL.D\093SMPL.D#
Date Acquired: Jul 1 2014 06:03 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4401-015
Misc Info: DILUTION 1.6/8
Vial Number: 2510
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 01 2014 01:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0104	0.0021	ppb	50.60	100.	
11 B	5.455	1.091	ppb	2.94	1000.	
23 Na	4,382.5	876.5	ppb	1.20	200000.	
25 Mg	1,557.5	311.5	ppb	0.27	200000.	
27 Al	31.305	6.261	ppb	0.96	200000.	
28 Si	3,621.	724.2	ppb	6.71	#VALUE!	
29 Si	3,592.	718.4	ppb	16.61	10000.	
39 K	687.	137.4	ppb	3.36	200000.	
43 Ca	6,220.	1,244.	ppb	1.06	#VALUE!	
44 Ca	6,125.	1,225.	ppb	1.23	200000.	
51 V	1.6405	0.3281	ppb	41.24	1000.	
52 Cr	1.584	0.3168	ppb	12.89	1000.	
53 Cr	62.95	12.59	ppb	1.74	#VALUE!	
55 Mn	207.5	41.5	ppb	0.55	1000.	
56 Fe	1,448.5	289.7	ppb	0.82	#VALUE!	
57 Fe	1,405.5	281.1	ppb	1.62	100000.	
59 Co	1.8745	0.3749	ppb	1.43	1000.	
60 Ni	0.8845	0.1769	ppb	12.24	1000.	
63 Cu	0.5955	0.1191	ppb	19.78	#VALUE!	
65 Cu	0.682	0.1364	ppb	5.21	1000.	
66 Zn	1.946	0.3892	ppb	11.64	1000.	
68 Zn	5.71	1.142	ppb	20.93	#VALUE!	
75 As	4.6285	0.9257	ppb	5.67	1000.	
82 Se	-0.1269	-0.0254	ppb	447.99	1000.	
88 Sr	19.775	3.955	ppb	1.08	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.2205	0.0441	ppb	20.53	1000.	
107 Ag	-0.0004	-0.0001	ppb	704.05	500.	
109 Ag	0.0085	0.0017	ppb	319.21	#VALUE!	
111 Cd	0.1769	0.0354	ppb	48.71	#VALUE!	
114 Cd	0.0922	0.0184	ppb	57.62	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.4126	0.0825	ppb	101.33	1000.	
120 Sn	0.181	0.0362	ppb	14.43	#VALUE!	
121 Sb	0.0509	0.0102	ppb	14.30	#VALUE!	
123 Sb	0.0651	0.013	ppb	44.76	1000.	
135 Ba	3.94	0.788	ppb	1.26	1000.	
137 Ba	3.858	0.7716	ppb	6.31	#VALUE!	
182 W	0.0269	0.0054	ppb	---	#VALUE!	
203 Tl	0.0171	0.0034	ppb	93.10	1000.	
205 Tl	0.0167	0.0033	ppb	38.15	#VALUE!	
208 Pb	0.1229	0.0246	ppb	38.56	1000.	
232 Th	0.066	0.0132	ppb	17.05	1000.	
238 U	0.0263	0.0053	ppb	16.04	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3293239.80	1.35	3225547.00	102.1	69.5 - 130	
45 Sc	2723775.30	0.98	2797225.50	97.4	69.5 - 130	
72 Ge	576932.63	0.36	598801.94	96.3	69.5 - 130	
159 Tb	5215958.50	0.30	5240202.50	99.5	69.5 - 130	
209 Bi	3072730.30	0.33	3108879.00	98.8	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG01A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000548

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG01A.B\094SMPL.D\094SMPL.D#
Date Acquired: Jul 1 2014 06:07 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4401-016
Misc Info: DILUTION 1.6/8
Vial Number: 2511
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 01 2014 01:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0664	0.0133	ppb	16.54	100.	
11 B	4.4485	0.8897	ppb	10.77	1000.	
23 Na	6,590.	1,318.	ppb	1.70	200000.	
25 Mg	947.	189.4	ppb	1.04	200000.	
27 Al	282.05	56.41	ppb	0.32	200000.	
28 Si	3,195.5	639.1	ppb	6.55	#VALUE!	
29 Si	2,587.5	517.5	ppb	14.16	10000.	
39 K	177.9	35.58	ppb	12.45	200000.	
43 Ca	1,067.	213.4	ppb	5.02	#VALUE!	
44 Ca	1,080.	216.	ppb	1.86	200000.	
51 V	0.7035	0.1407	ppb	51.92	1000.	
52 Cr	1.8655	0.3731	ppb	7.60	1000.	
53 Cr	67.15	13.43	ppb	4.92	#VALUE!	
55 Mn	29.355	5.871	ppb	0.45	1000.	
56 Fe	179.1	35.82	ppb	4.49	#VALUE!	
57 Fe	134.	26.8	ppb	0.61	100000.	
59 Co	1.033	0.2066	ppb	9.25	1000.	
60 Ni	1.919	0.3838	ppb	11.37	1000.	
63 Cu	0.6535	0.1307	ppb	13.15	#VALUE!	
65 Cu	0.6675	0.1335	ppb	2.03	1000.	
66 Zn	3.0295	0.6059	ppb	6.73	1000.	
68 Zn	6.95	1.39	ppb	22.50	#VALUE!	
75 As	0.2182	0.0436	ppb	190.90	1000.	
82 Se	-0.3331	-0.0666	ppb	346.64	1000.	
88 Sr	10.975	2.195	ppb	0.97	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.1285	0.0257	ppb	10.08	1000.	
107 Ag	0.0057	0.0011	ppb	65.70	500.	
109 Ag	0.002	0.0004	ppb	552.57	#VALUE!	
111 Cd	-0.0429	-0.0086	ppb	396.39	#VALUE!	
114 Cd	0.0981	0.0196	ppb	33.37	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.2429	0.0486	ppb	30.90	1000.	
120 Sn	0.1697	0.0339	ppb	23.62	#VALUE!	
121 Sb	0.0402	0.008	ppb	24.21	#VALUE!	
123 Sb	0.0735	0.0147	ppb	18.58	1000.	
135 Ba	7.835	1.567	ppb	8.06	1000.	
137 Ba	7.77	1.554	ppb	7.75	#VALUE!	
182 W	0.0356	0.0071	ppb	---	#VALUE!	
203 Tl	0.0065	0.0013	ppb	325.00	1000.	
205 Tl	-0.001	-0.0002	ppb	423.32	#VALUE!	
208 Pb	0.1941	0.0388	ppb	42.98	1000.	
232 Th	0.0778	0.0156	ppb	14.39	1000.	
238 U	0.0122	0.0024	ppb	59.92	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3340492.80	0.61	3225547.00	103.6	69.5 - 130	
45 Sc	2733829.50	1.18	2797225.50	97.7	69.5 - 130	
72 Ge	577542.19	1.08	598801.94	96.4	69.5 - 130	
159 Tb	5276801.00	1.65	5240202.50	100.7	69.5 - 130	
209 Bi	3099504.80	0.80	3108879.00	99.7	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG01A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000549

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG01A.B\095SMPL.D\095SMPL.D#
Date Acquired: Jul 1 2014 06:10 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4401-017
Misc Info: DILUTION 1.6/8
Vial Number: 2512
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 01 2014 01:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0599	0.012	ppb	21.81	100.	
11 B	4.199	0.8398	ppb	7.31	1000.	
23 Na	6,665.	1,333.	ppb	0.75	200000.	
25 Mg	917.5	183.5	ppb	1.30	200000.	
27 Al	148.45	29.69	ppb	1.59	200000.	
28 Si	3,042.5	608.5	ppb	2.32	#VALUE!	
29 Si	2,372.	474.4	ppb	22.64	10000.	
39 K	160.15	32.03	ppb	3.77	200000.	
43 Ca	1,123.5	224.7	ppb	7.22	#VALUE!	
44 Ca	1,125.5	225.1	ppb	1.31	200000.	
51 V	1.099	0.2198	ppb	68.43	1000.	
52 Cr	1.6775	0.3355	ppb	5.67	1000.	
53 Cr	62.	12.4	ppb	1.94	#VALUE!	
55 Mn	25.59	5.118	ppb	1.02	1000.	
56 Fe	35.91	7.182	ppb	8.12	#VALUE!	
57 Fe	17.24	3.448	ppb	36.95	100000.	
59 Co	1.0035	0.2007	ppb	1.54	1000.	
60 Ni	2.012	0.4024	ppb	6.43	1000.	
63 Cu	0.949	0.1898	ppb	8.88	#VALUE!	
65 Cu	0.9175	0.1835	ppb	3.87	1000.	
66 Zn	8.41	1.682	ppb	10.71	1000.	
68 Zn	10.815	2.163	ppb	2.32	#VALUE!	
75 As	0.1116	0.0223	ppb	703.27	1000.	
82 Se	-0.2937	-0.0587	ppb	90.88	1000.	
88 Sr	11.195	2.239	ppb	3.24	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.1404	0.0281	ppb	14.55	1000.	
107 Ag	0.0026	0.0005	ppb	256.63	500.	
109 Ag	-0.0056	-0.0011	ppb	176.21	#VALUE!	
111 Cd	-0.0628	-0.0126	ppb	496.81	#VALUE!	
114 Cd	0.0796	0.0159	ppb	31.91	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.2063	0.0413	ppb	7.43	1000.	
120 Sn	0.1933	0.0387	ppb	13.49	#VALUE!	
121 Sb	0.0405	0.0081	ppb	27.57	#VALUE!	
123 Sb	0.0539	0.0108	ppb	26.98	1000.	
135 Ba	7.155	1.431	ppb	2.64	1000.	
137 Ba	6.805	1.361	ppb	1.21	#VALUE!	
182 W	0.0314	0.0063	ppb	---	#VALUE!	
203 Tl	0.0075	0.0015	ppb	91.83	1000.	
205 Tl	0.0051	0.001	ppb	40.61	#VALUE!	
208 Pb	0.0774	0.0155	ppb	14.92	1000.	
232 Th	0.0549	0.011	ppb	18.07	1000.	
238 U	0.0089	0.0018	ppb	42.04	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3402180.80	0.38	3225547.00	105.5	69.5 - 130	
45 Sc	2750773.00	0.46	2797225.50	98.3	69.5 - 130	
72 Ge	584791.94	0.71	598801.94	97.7	69.5 - 130	
159 Tb	5404828.50	1.40	5240202.50	103.1	69.5 - 130	
209 Bi	3125071.80	1.06	3108879.00	100.5	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG01A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000550

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JHG01A.B\096_CCV.D\096_CCV.D#
Date Acquired: Jul 1 2014 06:14 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 01 2014 01:47 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	22.08	ppb	5.55	25	88.32	Fail
11 B	22.94	ppb	2.16	25	91.76	
23 Na	4,904.	ppb	3.14	5,000	98.08	
25 Mg	5,021.	ppb	3.51	5,000	100.42	
27 Al	509.5	ppb	2.50	500	101.9	
28 Si	569.2	ppb	6.71	500	113.84	
29 Si	565.3	ppb	32.09	500	113.06	Fail
39 K	4,975.	ppb	3.48	5,000	99.5	
43 Ca	4,899.	ppb	2.40	5,000	97.98	
44 Ca	5,000.	ppb	2.94	5,000	100	
51 V	24.26	ppb	3.60	25	97.04	
52 Cr	24.61	ppb	3.64	25	98.44	
53 Cr	25.09	ppb	4.71	25	100.36	
55 Mn	24.67	ppb	3.89	25	98.68	
56 Fe	4,921.	ppb	3.29	5,000	98.42	
57 Fe	4,987.	ppb	3.84	5,000	99.74	
59 Co	24.57	ppb	4.34	25	98.28	
60 Ni	24.4	ppb	3.44	25	97.6	
63 Cu	24.53	ppb	3.36	25	98.12	
65 Cu	24.34	ppb	3.55	25	97.36	
66 Zn	24.44	ppb	3.68	25	97.76	
68 Zn	24.31	ppb	6.00	25	97.24	
75 As	24.82	ppb	4.36	25	99.28	
82 Se	24.74	ppb	2.38	25	98.96	
88 Sr	25.04	ppb	4.82	25	100.16	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.98	ppb	2.77	25	99.92	
107 Ag	25.39	ppb	3.34	25	101.56	
109 Ag	25.49	ppb	3.45	25	101.96	
111 Cd	25.52	ppb	4.62	25	102.08	
114 Cd	25.62	ppb	3.91	25	102.48	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.17	ppb	3.10	25	96.68	
120 Sn	24.13	ppb	3.71	25	96.52	
121 Sb	24.43	ppb	3.85	25	97.72	
123 Sb	24.49	ppb	3.64	25	97.96	
135 Ba	24.61	ppb	3.19	25	98.44	
137 Ba	24.49	ppb	3.84	25	97.96	
182 W	24.53	ppb	3.38	25	98.12	
203 Tl	24.55	ppb	4.05	25	98.2	
205 Tl	24.45	ppb	3.67	25	97.8	
208 Pb	24.43	ppb	4.24	25	97.72	
232 Th	23.59	ppb	3.85	25	94.36	
238 U	23.5	ppb	3.60	25	94	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3290371.50	3.32	3225547.00	102.0	80 - 120.4	
45 Sc	2815569.00	2.22	2797225.50	100.7	80 - 120.4	
72 Ge	593120.19	3.12	598801.94	99.1	80 - 120.4	
159 Tb	5543738.00	2.64	5240202.50	105.8	80 - 120.4	
209 Bi	3245092.30	3.19	3108879.00	104.4	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG01A.B\013CALB.D\013CALB.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000551

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JHG01A.B\097_CCB.D\097_CCB.D#
Date Acquired: Jul 1 2014 06:17 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 01 2014 01:47 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0011	ppb	53.92	1.00	
11 B	-0.2344	ppb	46.67	1.00	
23 Na	-3.802	ppb	5.92	1.00	
25 Mg	0.1534	ppb	57.34	1.00	
27 Al	0.0321	ppb	191.99	1.00	
28 Si	110.2	ppb	10.91	1.00	
29 Si	333.7	ppb	11.98	1.00	Fail
39 K	3.582	ppb	46.18	1.00	
43 Ca	1.7	ppb	165.18	1.00	
44 Ca	-2.706	ppb	91.87	1.00	
51 V	0.022	ppb	325.51	1.00	
52 Cr	-0.0208	ppb	35.39	1.00	
53 Cr	-0.606	ppb	16.82	1.00	
55 Mn	0.0013	ppb	475.88	1.00	
56 Fe	-0.089	ppb	2115.30	1.00	
57 Fe	-0.7303	ppb	302.48	1.00	
59 Co	-0.0008	ppb	107.94	1.00	
60 Ni	-0.0028	ppb	299.08	1.00	
63 Cu	-0.0114	ppb	94.29	1.00	
65 Cu	-0.0164	ppb	203.78	1.00	
66 Zn	-0.0879	ppb	20.93	1.00	
68 Zn	0.245	ppb	29.85	1.00	
75 As	-0.1073	ppb	115.19	1.00	
82 Se	-0.1023	ppb	156.79	1.00	
88 Sr	0.0032	ppb	48.24	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0469	ppb	40.60	1.00	
107 Ag	0.0019	ppb	144.80	1.00	
109 Ag	-0.0002	ppb	829.08	1.00	
111 Cd	0.0223	ppb	106.82	1.00	
114 Cd	0.0043	ppb	118.44	1.00	
115 In	--------	---	--------	---	
118 Sn	0.066	ppb	16.84	1.00	
120 Sn	0.054	ppb	27.76	1.00	
121 Sb	0.0121	ppb	12.60	1.00	
123 Sb	0.0146	ppb	57.89	1.00	
135 Ba	0.007	ppb	230.96	1.00	
137 Ba	-0.0101	ppb	17.17	1.00	
182 W	0.1004	ppb	7.26	1.00	
203 Tl	0.0087	ppb	25.38	1.00	
205 Tl	0.0037	ppb	4.60	1.00	
208 Pb	0.0012	ppb	834.84	1.00	
232 Th	0.0835	ppb	8.77	1.00	
238 U	0.0007	ppb	130.02	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3313517.80	0.55	3225547.00	102.7	79.5 - 120	
45 Sc	2747349.30	1.15	2797225.50	98.2	79.5 - 120	
72 Ge	586713.06	0.49	598801.94	98.0	79.5 - 120	
159 Tb	5444406.50	0.62	5240202.50	103.9	79.5 - 120	
209 Bi	3212790.00	0.11	3108879.00	103.3	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG01A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000552

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG01A.B\098SMPL.D\098SMPL.D#
Date Acquired: Jul 1 2014 06:21 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4401-018
Misc Info: DILUTION 1.6/8
Vial Number: 3101
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 01 2014 01:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0065	0.0013	ppb	111.40	100.	
11 B	8.73	1.746	ppb	7.62	1000.	
23 Na	7,410.	1,482.	ppb	2.11	200000.	
25 Mg	8,555.	1,711.	ppb	2.25	200000.	
27 Al	17.995	3.599	ppb	3.90	200000.	
28 Si	6,700.	1,340.	ppb	2.66	#VALUE!	
29 Si	6,545.	1,309.	ppb	11.40	10000.	
39 K	1,552.5	310.5	ppb	2.13	200000.	
43 Ca	40,700.	8,140.	ppb	0.86	#VALUE!	
44 Ca	40,245.	8,049.	ppb	1.22	200000.	
51 V	0.608	0.1216	ppb	92.43	1000.	
52 Cr	0.812	0.1624	ppb	15.57	1000.	
53 Cr	35.69	7.138	ppb	6.97	#VALUE!	
55 Mn	223.25	44.65	ppb	0.62	1000.	
56 Fe	40.875	8.175	ppb	1.41	#VALUE!	
57 Fe	124.05	24.81	ppb	10.91	100000.	
59 Co	1.0255	0.2051	ppb	2.78	1000.	
60 Ni	0.837	0.1674	ppb	33.68	1000.	
63 Cu	0.4126	0.0825	ppb	32.13	#VALUE!	
65 Cu	0.2518	0.0504	ppb	21.78	1000.	
66 Zn	5.8	1.16	ppb	6.20	1000.	
68 Zn	7.955	1.591	ppb	4.55	#VALUE!	
75 As	2.4775	0.4955	ppb	36.81	1000.	
82 Se	-0.4473	-0.0895	ppb	195.30	1000.	
88 Sr	107.55	21.51	ppb	0.58	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.3755	0.0751	ppb	4.21	1000.	
107 Ag	-0.0028	-0.0006	ppb	348.56	500.	
109 Ag	0.0049	0.001	ppb	207.55	#VALUE!	
111 Cd	0.1592	0.0318	ppb	7.17	#VALUE!	
114 Cd	0.0792	0.0158	ppb	9.96	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.4159	0.0832	ppb	15.10	1000.	
120 Sn	0.46	0.092	ppb	16.16	#VALUE!	
121 Sb	0.1169	0.0234	ppb	37.79	#VALUE!	
123 Sb	0.1457	0.0291	ppb	14.38	1000.	
135 Ba	7.8	1.56	ppb	3.55	1000.	
137 Ba	7.74	1.548	ppb	4.17	#VALUE!	
182 W	0.2018	0.0404	ppb	---	#VALUE!	
203 Tl	0.0212	0.0042	ppb	27.63	1000.	
205 Tl	0.0217	0.0043	ppb	44.41	#VALUE!	
208 Pb	0.1201	0.024	ppb	6.65	1000.	
232 Th	0.782	0.1564	ppb	26.66	1000.	
238 U	0.8795	0.1759	ppb	5.45	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3292915.80	0.99	3225547.00	102.1	69.5 - 130	
45 Sc	2719241.50	1.12	2797225.50	97.2	69.5 - 130	
72 Ge	574160.31	0.63	598801.94	95.9	69.5 - 130	
159 Tb	5265083.00	0.56	5240202.50	100.5	69.5 - 130	
209 Bi	3061618.00	0.16	3108879.00	98.5	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG01A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000553

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG01A.B\099SMPL.D\099SMPL.D#
Date Acquired: Jul 1 2014 06:24 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: PBWHF23IMW2
Misc Info: DILUTION 1.6/8
Vial Number: 3102
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 01 2014 01:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0022	0.0004	ppb	339.60	100.	
11 B	-0.1059	-0.0212	ppb	279.27	1000.	
23 Na	3.6935	0.7387	ppb	25.03	200000.	
25 Mg	6.885	1.377	ppb	12.48	200000.	
27 Al	6.92	1.384	ppb	4.58	200000.	
28 Si	131.6	26.32	ppb	55.85	#VALUE!	
29 Si	114.25	22.85	ppb	337.46	10000.	
39 K	22.805	4.561	ppb	27.85	200000.	
43 Ca	-1.0225	-0.2045	ppb	2364.30	#VALUE!	
44 Ca	-3.322	-0.6644	ppb	229.38	200000.	
51 V	0.6095	0.1219	ppb	28.43	1000.	
52 Cr	0.936	0.1872	ppb	13.72	1000.	
53 Cr	48.575	9.715	ppb	2.26	#VALUE!	
55 Mn	0.4116	0.0823	ppb	13.19	1000.	
56 Fe	21.225	4.245	ppb	15.24	#VALUE!	
57 Fe	2.0605	0.4121	ppb	192.77	100000.	
59 Co	-0.0127	-0.0025	ppb	202.16	1000.	
60 Ni	0.071	0.0142	ppb	28.70	1000.	
63 Cu	0.2649	0.053	ppb	23.03	#VALUE!	
65 Cu	0.2166	0.0433	ppb	28.79	1000.	
66 Zn	0.428	0.0856	ppb	14.87	1000.	
68 Zn	3.1385	0.6277	ppb	57.61	#VALUE!	
75 As	-1.1345	-0.2269	ppb	25.58	1000.	
82 Se	-0.7065	-0.1413	ppb	49.48	1000.	
88 Sr	0.0516	0.0103	ppb	41.82	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0653	0.0131	ppb	14.73	1000.	
107 Ag	0.0031	0.0006	ppb	399.13	500.	
109 Ag	0.0102	0.002	ppb	84.57	#VALUE!	
111 Cd	0.064	0.0128	ppb	10.69	#VALUE!	
114 Cd	0.0381	0.0076	ppb	33.47	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.244	0.0488	ppb	15.55	1000.	
120 Sn	0.2158	0.0432	ppb	9.25	#VALUE!	
121 Sb	0.0446	0.0089	ppb	36.00	#VALUE!	
123 Sb	0.0527	0.0105	ppb	55.13	1000.	
135 Ba	1.977	0.3954	ppb	18.12	1000.	
137 Ba	1.892	0.3784	ppb	9.17	#VALUE!	
182 W	0.1005	0.0201	ppb	---	#VALUE!	
203 Tl	0.0001	0.	ppb	6444.80	1000.	
205 Tl	0.0048	0.001	ppb	220.85	#VALUE!	
208 Pb	0.086	0.0172	ppb	108.78	1000.	
232 Th	0.1835	0.0367	ppb	12.18	1000.	
238 U	0.0007	0.0001	ppb	154.35	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3341471.50	0.81	3225547.00	103.6	69.5 - 130	
45 Sc	2755074.80	0.59	2797225.50	98.5	69.5 - 130	
72 Ge	577458.50	0.50	598801.94	96.4	69.5 - 130	
159 Tb	5305433.50	1.31	5240202.50	101.2	69.5 - 130	
209 Bi	3110152.80	0.98	3108879.00	100.0	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG01A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000554

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG01A.B\100SMPL.D\100SMPL.D#
Date Acquired: Jul 1 2014 06:28 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: LCSWHF23IMW2
Misc Info: DILUTION 1.6/8
Vial Number: 3103
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 01 2014 01:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	45.3	9.06	ppb	2.37	100.	
11 B	481.15	96.23	ppb	2.68	1000.	
23 Na	7,365.	1,473.	ppb	0.43	200000.	
25 Mg	5,305.	1,061.	ppb	1.88	200000.	
27 Al	2,145.	429.	ppb	0.48	200000.	
28 Si	5,450.	1,090.	ppb	2.98	#VALUE!	
29 Si	5,445.	1,089.	ppb	9.49	10000.	
39 K	10,410.	2,082.	ppb	1.41	200000.	
43 Ca	2,907.	581.4	ppb	2.28	#VALUE!	
44 Ca	2,207.5	441.5	ppb	1.95	200000.	
51 V	519.	103.8	ppb	0.63	1000.	
52 Cr	203.9	40.78	ppb	1.03	1000.	
53 Cr	261.45	52.29	ppb	0.38	#VALUE!	
55 Mn	527.	105.4	ppb	1.76	1000.	
56 Fe	1,086.	217.2	ppb	0.54	#VALUE!	
57 Fe	1,014.	202.8	ppb	2.41	100000.	
59 Co	529.	105.8	ppb	1.57	1000.	
60 Ni	524.	104.8	ppb	1.91	1000.	
63 Cu	256.9	51.38	ppb	0.82	#VALUE!	
65 Cu	257.85	51.57	ppb	0.56	1000.	
66 Zn	514.	102.8	ppb	1.32	1000.	
68 Zn	562.	112.4	ppb	1.70	#VALUE!	
75 As	102.15	20.43	ppb	1.62	1000.	
82 Se	103.75	20.75	ppb	1.38	1000.	
88 Sr	544.5	108.9	ppb	1.01	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	323.45	64.69	ppb	1.03	1000.	
107 Ag	52.45	10.49	ppb	0.56	500.	
109 Ag	52.55	10.51	ppb	0.96	#VALUE!	
111 Cd	260.5	52.1	ppb	0.87	#VALUE!	
114 Cd	261.05	52.21	ppb	1.14	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	525.	105.	ppb	1.78	1000.	
120 Sn	527.5	105.5	ppb	2.24	#VALUE!	
121 Sb	100.75	20.15	ppb	2.69	#VALUE!	
123 Sb	101.15	20.23	ppb	2.04	1000.	
135 Ba	2,012.	402.4	ppb	2.14	1000.	
137 Ba	2,022.5	404.5	ppb	1.63	#VALUE!	
182 W	111.65	22.33	ppb	---	#VALUE!	
203 Tl	98.05	19.61	ppb	1.75	1000.	
205 Tl	98.4	19.68	ppb	1.81	#VALUE!	
208 Pb	102.6	20.52	ppb	1.88	1000.	
232 Th	0.5045	0.1009	ppb	26.57	1000.	
238 U	95.9	19.18	ppb	3.05	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3396050.80	2.18	3225547.00	105.3	69.5 - 130	
45 Sc	2724493.00	0.67	2797225.50	97.4	69.5 - 130	
72 Ge	571518.75	0.42	598801.94	95.4	69.5 - 130	
159 Tb	5267723.50	1.27	5240202.50	100.5	69.5 - 130	
209 Bi	3063493.50	1.51	3108879.00	98.5	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG01A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000555

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG01A.B\101SMPL.D\101SMPL.D#
Date Acquired: Jul 1 2014 06:31 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4401-019
Misc Info: DILUTION 1.6/8
Vial Number: 3104
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 01 2014 01:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0083	0.0017	ppb	134.10	100.	
11 B	14.05	2.81	ppb	12.22	1000.	
23 Na	7,535.	1,507.	ppb	0.64	200000.	
25 Mg	8,390.	1,678.	ppb	1.52	200000.	
27 Al	10.605	2.121	ppb	2.96	200000.	
28 Si	6,675.	1,335.	ppb	2.75	#VALUE!	
29 Si	7,010.	1,402.	ppb	0.38	10000.	
39 K	1,547.5	309.5	ppb	2.31	200000.	
43 Ca	40,400.	8,080.	ppb	1.80	#VALUE!	
44 Ca	39,910.	7,982.	ppb	2.58	200000.	
51 V	0.4679	0.0936	ppb	93.63	1000.	
52 Cr	1.098	0.2196	ppb	16.27	1000.	
53 Cr	51.	10.2	ppb	5.52	#VALUE!	
55 Mn	222.55	44.51	ppb	1.07	1000.	
56 Fe	15.665	3.133	ppb	102.33	#VALUE!	
57 Fe	117.45	23.49	ppb	9.61	100000.	
59 Co	0.9895	0.1979	ppb	2.74	1000.	
60 Ni	0.98	0.196	ppb	8.87	1000.	
63 Cu	0.7955	0.1591	ppb	2.64	#VALUE!	
65 Cu	0.7845	0.1569	ppb	7.46	1000.	
66 Zn	1.77	0.354	ppb	11.94	1000.	
68 Zn	5.905	1.181	ppb	2.99	#VALUE!	
75 As	2.5985	0.5197	ppb	58.13	1000.	
82 Se	-0.2853	-0.0571	ppb	223.14	1000.	
88 Sr	107.	21.4	ppb	0.64	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.6285	0.1257	ppb	9.12	1000.	
107 Ag	0.0073	0.0015	ppb	75.77	500.	
109 Ag	0.0082	0.0016	ppb	174.69	#VALUE!	
111 Cd	0.2715	0.0543	ppb	82.98	#VALUE!	
114 Cd	0.09	0.018	ppb	11.38	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.6085	0.1217	ppb	20.11	1000.	
120 Sn	0.6175	0.1235	ppb	6.89	#VALUE!	
121 Sb	0.1317	0.0263	ppb	7.36	#VALUE!	
123 Sb	0.1431	0.0286	ppb	21.59	1000.	
135 Ba	8.115	1.623	ppb	7.48	1000.	
137 Ba	7.645	1.529	ppb	1.16	#VALUE!	
182 W	0.3146	0.0629	ppb	---	#VALUE!	
203 Tl	0.3813	0.0763	ppb	7.50	1000.	
205 Tl	0.4191	0.0838	ppb	2.61	#VALUE!	
208 Pb	0.0817	0.0163	ppb	79.42	1000.	
232 Th	0.0493	0.0099	ppb	19.87	1000.	
238 U	0.877	0.1754	ppb	2.55	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3297157.50	0.98	3225547.00	102.2	69.5 - 130	
45 Sc	2744212.80	1.45	2797225.50	98.1	69.5 - 130	
72 Ge	580701.88	0.63	598801.94	97.0	69.5 - 130	
159 Tb	5254704.00	0.75	5240202.50	100.3	69.5 - 130	
209 Bi	3068863.80	1.11	3108879.00	98.7	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG01A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000556

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG01A.B\102SMPL.D\102SMPL.D#
Date Acquired: Jul 1 2014 06:35 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4401-019L
Misc Info: DILUTION 0.4/10
Vial Number: 3105
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 01 2014 01:47 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0133	0.0005	ppb	113.80	100.	
11 B	13.08	0.5232	ppb	38.44	1000.	
23 Na	7,687.5	307.5	ppb	0.97	200000.	
25 Mg	8,367.5	334.7	ppb	0.61	200000.	
27 Al	28.45	1.138	ppb	8.14	200000.	
28 Si	8,132.5	325.3	ppb	2.74	#VALUE!	
29 Si	11,342.5	453.7	ppb	15.13	10000.	
39 K	1,718.25	68.73	ppb	3.65	200000.	
43 Ca	41,500.	1,660.	ppb	3.10	#VALUE!	
44 Ca	40,375.	1,615.	ppb	1.34	200000.	
51 V	1.4443	0.0578	ppb	53.40	1000.	
52 Cr	0.3483	0.0139	ppb	83.13	1000.	
53 Cr	40.125	1.605	ppb	8.64	#VALUE!	
55 Mn	230.4	9.216	ppb	0.83	1000.	
56 Fe	19.79	0.7916	ppb	61.10	#VALUE!	
57 Fe	21.6125	0.8645	ppb	102.76	100000.	
59 Co	1.0085	0.0403	ppb	24.60	1000.	
60 Ni	0.9713	0.0389	ppb	43.71	1000.	
63 Cu	0.2903	0.0116	ppb	40.03	#VALUE!	
65 Cu	0.3663	0.0147	ppb	76.25	1000.	
66 Zn	0.8728	0.0349	ppb	204.61	1000.	
68 Zn	13.3025	0.5321	ppb	18.23	#VALUE!	
75 As	-2.2808	-0.0912	ppb	173.19	1000.	
82 Se	1.0268	0.0411	ppb	302.90	1000.	
88 Sr	108.625	4.345	ppb	1.29	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.7863	0.0315	ppb	12.91	1000.	
107 Ag	0.0473	0.0019	ppb	2.61	500.	
109 Ag	-0.0283	-0.0011	ppb	141.39	#VALUE!	
111 Cd	0.3805	0.0152	ppb	55.73	#VALUE!	
114 Cd	0.1642	0.0066	ppb	25.18	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.5455	0.0218	ppb	6.55	1000.	
120 Sn	0.5518	0.0221	ppb	58.50	#VALUE!	
121 Sb	0.1103	0.0044	ppb	70.16	#VALUE!	
123 Sb	0.179	0.0072	ppb	90.73	1000.	
135 Ba	13.11	0.5244	ppb	3.67	1000.	
137 Ba	12.34	0.4936	ppb	2.34	#VALUE!	
182 W	0.448	0.0179	ppb	---	#VALUE!	
203 Tl	0.416	0.0166	ppb	41.59	1000.	
205 Tl	0.4295	0.0172	ppb	5.52	#VALUE!	
208 Pb	0.1634	0.0065	ppb	56.00	1000.	
232 Th	0.0337	0.0013	ppb	91.17	1000.	
238 U	0.9103	0.0364	ppb	17.82	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3238556.80	0.87	3225547.00	100.4	69.5 - 130	
45 Sc	2757682.00	1.14	2797225.50	98.6	69.5 - 130	
72 Ge	585617.44	0.53	598801.94	97.8	69.5 - 130	
159 Tb	5390263.50	0.27	5240202.50	102.9	69.5 - 130	
209 Bi	3165981.80	0.62	3108879.00	101.8	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG01A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000557

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG01A.B\103SMPL.D\103SMPL.D#
Date Acquired: Jul 1 2014 06:38 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4401-019A
Misc Info: DILUTION 1.6/8
Vial Number: 3106
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 01 2014 01:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	9.385	1.877	ppb	3.88	100.	
11 B	200.35	40.07	ppb	0.74	1000.	
23 Na	17,530.	3,506.	ppb	0.62	200000.	
25 Mg	9,565.	1,913.	ppb	0.65	200000.	
27 Al	3,023.5	604.7	ppb	1.02	200000.	
28 Si	11,535.	2,307.	ppb	1.24	#VALUE!	
29 Si	11,430.	2,286.	ppb	2.90	10000.	
39 K	11,595.	2,319.	ppb	0.67	200000.	
43 Ca	40,760.	8,152.	ppb	0.35	#VALUE!	
44 Ca	40,815.	8,163.	ppb	1.05	200000.	
51 V	48.205	9.641	ppb	1.69	1000.	
52 Cr	50.6	10.12	ppb	0.03	1000.	
53 Cr	101.2	20.24	ppb	1.21	#VALUE!	
55 Mn	243.5	48.7	ppb	0.05	1000.	
56 Fe	1,031.	206.2	ppb	0.40	#VALUE!	
57 Fe	1,073.	214.6	ppb	0.78	100000.	
59 Co	10.855	2.171	ppb	0.46	1000.	
60 Ni	20.365	4.073	ppb	1.26	1000.	
63 Cu	30.965	6.193	ppb	0.56	#VALUE!	
65 Cu	30.76	6.152	ppb	1.05	1000.	
66 Zn	97.2	19.44	ppb	0.56	1000.	
68 Zn	97.6	19.52	ppb	1.81	#VALUE!	
75 As	50.2	10.04	ppb	2.65	1000.	
82 Se	47.375	9.475	ppb	0.94	1000.	
88 Sr	153.85	30.77	ppb	0.64	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	48.87	9.774	ppb	0.30	1000.	
107 Ag	9.695	1.939	ppb	1.21	500.	
109 Ag	9.9	1.98	ppb	0.53	#VALUE!	
111 Cd	9.95	1.99	ppb	1.69	#VALUE!	
114 Cd	10.075	2.015	ppb	1.31	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	47.96	9.592	ppb	1.01	1000.	
120 Sn	48.015	9.603	ppb	1.42	#VALUE!	
121 Sb	9.84	1.968	ppb	0.38	#VALUE!	
123 Sb	10.025	2.005	ppb	2.50	1000.	
135 Ba	28.735	5.747	ppb	0.66	1000.	
137 Ba	28.96	5.792	ppb	3.58	#VALUE!	
182 W	49.935	9.987	ppb	---	#VALUE!	
203 Tl	9.925	1.985	ppb	1.11	1000.	
205 Tl	10.005	2.001	ppb	1.17	#VALUE!	
208 Pb	9.875	1.975	ppb	1.19	1000.	
232 Th	9.085	1.817	ppb	2.27	1000.	
238 U	10.39	2.078	ppb	0.15	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3267423.30	1.19	3225547.00	101.3	69.5 - 130	
45 Sc	2718844.00	0.57	2797225.50	97.2	69.5 - 130	
72 Ge	572030.50	0.36	598801.94	95.5	69.5 - 130	
159 Tb	5168262.50	0.33	5240202.50	98.6	69.5 - 130	
209 Bi	3025334.00	1.49	3108879.00	97.3	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG01A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000558

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG01A.B\104SMPL.D\104SMPL.D#
Date Acquired: Jul 1 2014 06:42 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4401-019S
Misc Info: DILUTION 1.6/8
Vial Number: 3107
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 01 2014 01:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	45.855	9.171	ppb	1.58	100.	
11 B	474.65	94.93	ppb	2.60	1000.	
23 Na	14,380.	2,876.	ppb	0.59	200000.	
25 Mg	13,235.	2,647.	ppb	0.66	200000.	
27 Al	2,122.	424.4	ppb	0.33	200000.	
28 Si	11,335.	2,267.	ppb	0.69	#VALUE!	
29 Si	11,440.	2,288.	ppb	3.38	10000.	
39 K	11,695.	2,339.	ppb	0.44	200000.	
43 Ca	40,565.	8,113.	ppb	1.36	#VALUE!	
44 Ca	39,950.	7,990.	ppb	0.74	200000.	
51 V	505.5	101.1	ppb	0.52	1000.	
52 Cr	199.	39.8	ppb	0.84	1000.	
53 Cr	252.8	50.56	ppb	0.24	#VALUE!	
55 Mn	718.	143.6	ppb	0.22	1000.	
56 Fe	1,060.5	212.1	ppb	0.74	#VALUE!	
57 Fe	1,133.	226.6	ppb	0.79	100000.	
59 Co	511.	102.2	ppb	1.20	1000.	
60 Ni	504.5	100.9	ppb	0.89	1000.	
63 Cu	247.55	49.51	ppb	1.15	#VALUE!	
65 Cu	250.4	50.08	ppb	1.17	1000.	
66 Zn	510.	102.	ppb	0.94	1000.	
68 Zn	546.	109.2	ppb	1.39	#VALUE!	
75 As	104.85	20.97	ppb	2.12	1000.	
82 Se	103.5	20.7	ppb	0.85	1000.	
88 Sr	612.	122.4	ppb	1.04	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	304.2	60.84	ppb	1.16	1000.	
107 Ag	50.9	10.18	ppb	1.61	500.	
109 Ag	50.85	10.17	ppb	0.30	#VALUE!	
111 Cd	255.2	51.04	ppb	0.73	#VALUE!	
114 Cd	255.45	51.09	ppb	0.33	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	502.	100.4	ppb	1.91	1000.	
120 Sn	503.5	100.7	ppb	1.81	#VALUE!	
121 Sb	101.05	20.21	ppb	1.30	#VALUE!	
123 Sb	101.	20.2	ppb	1.39	1000.	
135 Ba	1,992.	398.4	ppb	1.54	1000.	
137 Ba	1,998.	399.6	ppb	1.06	#VALUE!	
182 W	107.45	21.49	ppb	---	#VALUE!	
203 Tl	96.35	19.27	ppb	1.04	1000.	
205 Tl	96.2	19.24	ppb	0.81	#VALUE!	
208 Pb	101.1	20.22	ppb	1.07	1000.	
232 Th	0.4299	0.086	ppb	13.33	1000.	
238 U	91.6	18.32	ppb	1.35	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3312095.50	2.06	3225547.00	102.7	69.5 - 130	
45 Sc	2719379.00	0.97	2797225.50	97.2	69.5 - 130	
72 Ge	570541.56	0.83	598801.94	95.3	69.5 - 130	
159 Tb	5189641.00	1.66	5240202.50	99.0	69.5 - 130	
209 Bi	3042053.00	1.79	3108879.00	97.9	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG01A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000559

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG01A.B\105SMPL.D\105SMPL.D#
Date Acquired: Jul 1 2014 06:45 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4401-019P
Misc Info: DILUTION 1.6/8
Vial Number: 3108
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 01 2014 01:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	47.035	9.407	ppb	1.72	100.	
11 B	484.4	96.88	ppb	3.21	1000.	
23 Na	14,545.	2,909.	ppb	3.16	200000.	
25 Mg	13,445.	2,689.	ppb	2.25	200000.	
27 Al	2,171.5	434.3	ppb	3.17	200000.	
28 Si	11,145.	2,229.	ppb	3.85	#VALUE!	
29 Si	10,665.	2,133.	ppb	6.95	10000.	
39 K	11,740.	2,348.	ppb	2.90	200000.	
43 Ca	41,770.	8,354.	ppb	0.59	#VALUE!	
44 Ca	40,960.	8,192.	ppb	2.15	200000.	
51 V	510.	102.	ppb	1.46	1000.	
52 Cr	201.25	40.25	ppb	1.74	1000.	
53 Cr	245.15	49.03	ppb	1.67	#VALUE!	
55 Mn	733.	146.6	ppb	1.47	1000.	
56 Fe	1,074.5	214.9	ppb	2.42	#VALUE!	
57 Fe	1,122.	224.4	ppb	3.61	100000.	
59 Co	517.	103.4	ppb	1.04	1000.	
60 Ni	512.5	102.5	ppb	1.02	1000.	
63 Cu	250.4	50.08	ppb	1.65	#VALUE!	
65 Cu	250.35	50.07	ppb	2.20	1000.	
66 Zn	507.5	101.5	ppb	2.45	1000.	
68 Zn	550.5	110.1	ppb	1.51	#VALUE!	
75 As	103.7	20.74	ppb	1.77	1000.	
82 Se	100.55	20.11	ppb	2.75	1000.	
88 Sr	618.	123.6	ppb	1.82	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	305.3	61.06	ppb	1.80	1000.	
107 Ag	50.95	10.19	ppb	1.21	500.	
109 Ag	51.1	10.22	ppb	1.40	#VALUE!	
111 Cd	254.35	50.87	ppb	1.81	#VALUE!	
114 Cd	254.	50.8	ppb	1.89	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	506.	101.2	ppb	2.55	1000.	
120 Sn	507.5	101.5	ppb	3.20	#VALUE!	
121 Sb	101.4	20.28	ppb	2.96	#VALUE!	
123 Sb	100.95	20.19	ppb	2.35	1000.	
135 Ba	2,015.	403.	ppb	2.53	1000.	
137 Ba	2,013.	402.6	ppb	2.69	#VALUE!	
182 W	107.8	21.56	ppb	---	#VALUE!	
203 Tl	96.45	19.29	ppb	2.38	1000.	
205 Tl	95.8	19.16	ppb	1.82	#VALUE!	
208 Pb	100.85	20.17	ppb	1.51	1000.	
232 Th	0.1889	0.0378	ppb	11.53	1000.	
238 U	92.7	18.54	ppb	2.49	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3320911.80	2.90	3225547.00	103.0	69.5 - 130	
45 Sc	2722279.30	2.33	2797225.50	97.3	69.5 - 130	
72 Ge	574595.69	1.08	598801.94	96.0	69.5 - 130	
159 Tb	5212077.00	2.23	5240202.50	99.5	69.5 - 130	
209 Bi	3045364.50	1.18	3108879.00	98.0	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG01A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000560

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG01A.B\106SMPL.D\106SMPL.D#
Date Acquired: Jul 1 2014 06:49 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4401-020
Misc Info: DILUTION 1.6/8
Vial Number: 3109
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 01 2014 01:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0545	0.0109	ppb	18.81	100.	
11 B	15.905	3.181	ppb	11.04	1000.	
23 Na	6,155.	1,231.	ppb	2.70	200000.	
25 Mg	2,424.	484.8	ppb	1.90	200000.	
27 Al	303.05	60.61	ppb	1.53	200000.	
28 Si	3,687.	737.4	ppb	9.61	#VALUE!	
29 Si	3,298.5	659.7	ppb	46.51	10000.	
39 K	965.	193.	ppb	1.87	200000.	
43 Ca	7,145.	1,429.	ppb	2.22	#VALUE!	
44 Ca	6,915.	1,383.	ppb	1.88	200000.	
51 V	1.446	0.2892	ppb	42.15	1000.	
52 Cr	1.8145	0.3629	ppb	3.31	1000.	
53 Cr	45.65	9.13	ppb	4.83	#VALUE!	
55 Mn	76.8	15.36	ppb	2.83	1000.	
56 Fe	926.5	185.3	ppb	5.07	#VALUE!	
57 Fe	903.5	180.7	ppb	4.16	100000.	
59 Co	0.2749	0.055	ppb	14.93	1000.	
60 Ni	0.6155	0.1231	ppb	12.52	1000.	
63 Cu	1.0905	0.2181	ppb	5.79	#VALUE!	
65 Cu	0.977	0.1954	ppb	6.18	1000.	
66 Zn	2.1155	0.4231	ppb	12.66	1000.	
68 Zn	6.35	1.27	ppb	19.95	#VALUE!	
75 As	0.8825	0.1765	ppb	54.44	1000.	
82 Se	0.0867	0.0173	ppb	317.30	1000.	
88 Sr	36.3	7.26	ppb	2.72	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.547	0.1094	ppb	10.21	1000.	
107 Ag	0.021	0.0042	ppb	71.99	500.	
109 Ag	0.0036	0.0007	ppb	102.87	#VALUE!	
111 Cd	0.2753	0.0551	ppb	36.14	#VALUE!	
114 Cd	0.1273	0.0255	ppb	27.12	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.861	0.1722	ppb	16.56	1000.	
120 Sn	0.8075	0.1615	ppb	17.59	#VALUE!	
121 Sb	0.0823	0.0165	ppb	13.76	#VALUE!	
123 Sb	0.1258	0.0252	ppb	25.78	1000.	
135 Ba	7.135	1.427	ppb	8.72	1000.	
137 Ba	7.48	1.496	ppb	6.38	#VALUE!	
182 W	0.2886	0.0577	ppb	---	#VALUE!	
203 Tl	0.1429	0.0286	ppb	3.86	1000.	
205 Tl	0.1446	0.0289	ppb	7.57	#VALUE!	
208 Pb	0.3331	0.0666	ppb	0.29	1000.	
232 Th	0.2403	0.0481	ppb	1.46	1000.	
238 U	0.148	0.0296	ppb	14.03	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3282012.30	1.17	3225547.00	101.8	69.5 - 130	
45 Sc	2772308.00	0.88	2797225.50	99.1	69.5 - 130	
72 Ge	581944.25	2.23	598801.94	97.2	69.5 - 130	
159 Tb	5265841.00	2.12	5240202.50	100.5	69.5 - 130	
209 Bi	3098429.00	2.00	3108879.00	99.7	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG01A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000561

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG01A.B\107SMPL.D\107SMPL.D#
Date Acquired: Jul 1 2014 06:52 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4401-021
Misc Info: DILUTION 1.6/8
Vial Number: 3110
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 01 2014 01:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0457	0.0091	ppb	9.50	100.	
11 B	11.18	2.236	ppb	2.88	1000.	
23 Na	6,240.	1,248.	ppb	0.54	200000.	
25 Mg	2,421.	484.2	ppb	1.47	200000.	
27 Al	100.8	20.16	ppb	0.50	200000.	
28 Si	3,367.	673.4	ppb	4.73	#VALUE!	
29 Si	2,295.5	459.1	ppb	31.78	10000.	
39 K	956.	191.2	ppb	2.55	200000.	
43 Ca	7,275.	1,455.	ppb	3.61	#VALUE!	
44 Ca	7,020.	1,404.	ppb	1.74	200000.	
51 V	1.5505	0.3101	ppb	15.17	1000.	
52 Cr	1.6425	0.3285	ppb	5.08	1000.	
53 Cr	46.76	9.352	ppb	1.02	#VALUE!	
55 Mn	75.25	15.05	ppb	0.74	1000.	
56 Fe	820.5	164.1	ppb	0.50	#VALUE!	
57 Fe	812.5	162.5	ppb	0.91	100000.	
59 Co	0.228	0.0456	ppb	27.94	1000.	
60 Ni	0.5865	0.1173	ppb	10.86	1000.	
63 Cu	0.6465	0.1293	ppb	10.86	#VALUE!	
65 Cu	0.4478	0.0896	ppb	23.46	1000.	
66 Zn	2.8945	0.5789	ppb	13.30	1000.	
68 Zn	5.09	1.018	ppb	30.62	#VALUE!	
75 As	0.2612	0.0522	ppb	120.21	1000.	
82 Se	-0.909	-0.1818	ppb	77.94	1000.	
88 Sr	36.58	7.316	ppb	0.32	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.2545	0.0509	ppb	12.01	1000.	
107 Ag	0.013	0.0026	ppb	120.25	500.	
109 Ag	0.0071	0.0014	ppb	156.39	#VALUE!	
111 Cd	0.0303	0.0061	ppb	520.03	#VALUE!	
114 Cd	0.0505	0.0101	ppb	56.59	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.3414	0.0683	ppb	8.78	1000.	
120 Sn	0.3594	0.0719	ppb	15.60	#VALUE!	
121 Sb	0.054	0.0108	ppb	25.48	#VALUE!	
123 Sb	0.0353	0.0071	ppb	27.38	1000.	
135 Ba	5.64	1.128	ppb	11.26	1000.	
137 Ba	5.845	1.169	ppb	2.84	#VALUE!	
182 W	0.1115	0.0223	ppb	---	#VALUE!	
203 Tl	0.1133	0.0227	ppb	12.88	1000.	
205 Tl	0.1157	0.0231	ppb	12.75	#VALUE!	
208 Pb	0.1178	0.0236	ppb	21.55	1000.	
232 Th	0.0989	0.0198	ppb	29.04	1000.	
238 U	0.047	0.0094	ppb	22.60	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3289632.30	0.50	3225547.00	102.0	69.5 - 130	
45 Sc	2789751.80	0.68	2797225.50	99.7	69.5 - 130	
72 Ge	584324.81	0.59	598801.94	97.6	69.5 - 130	
159 Tb	5310815.50	0.44	5240202.50	101.3	69.5 - 130	
209 Bi	3130820.00	0.38	3108879.00	100.7	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG01A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000562

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JHG01A.B\108_CCV.D\108_CCV.D#
Date Acquired: Jul 1 2014 06:56 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 01 2014 01:47 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	22.68	ppb	2.24	25	90.72	
11 B	23.57	ppb	0.85	25	94.28	
23 Na	5,023.	ppb	0.09	5,000	100.46	
25 Mg	5,136.	ppb	0.60	5,000	102.72	
27 Al	520.1	ppb	1.27	500	104.02	
28 Si	568.6	ppb	4.80	500	113.72	
29 Si	613.6	ppb	10.70	500	122.72	Fail
39 K	5,095.	ppb	0.61	5,000	101.9	
43 Ca	5,109.	ppb	1.90	5,000	102.18	
44 Ca	5,098.	ppb	1.28	5,000	101.96	
51 V	24.94	ppb	1.41	25	99.76	
52 Cr	25.34	ppb	0.87	25	101.36	
53 Cr	25.55	ppb	0.46	25	102.2	
55 Mn	25.19	ppb	1.26	25	100.76	
56 Fe	5,034.	ppb	1.23	5,000	100.68	
57 Fe	5,096.	ppb	2.43	5,000	101.92	
59 Co	25.45	ppb	0.86	25	101.8	
60 Ni	25.26	ppb	0.67	25	101.04	
63 Cu	25.42	ppb	1.34	25	101.68	
65 Cu	25.2	ppb	0.61	25	100.8	
66 Zn	25.24	ppb	1.13	25	100.96	
68 Zn	25.22	ppb	1.54	25	100.88	
75 As	25.1	ppb	1.17	25	100.4	
82 Se	25.55	ppb	1.45	25	102.2	
88 Sr	25.68	ppb	1.19	25	102.72	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	25.64	ppb	1.53	25	102.56	
107 Ag	26.01	ppb	0.62	25	104.04	
109 Ag	26.1	ppb	2.13	25	104.4	
111 Cd	26.22	ppb	1.79	25	104.88	
114 Cd	26.2	ppb	1.37	25	104.8	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.83	ppb	0.84	25	99.32	
120 Sn	24.91	ppb	0.51	25	99.64	
121 Sb	24.87	ppb	1.40	25	99.48	
123 Sb	25.01	ppb	0.47	25	100.04	
135 Ba	25.03	ppb	2.12	25	100.12	
137 Ba	25.21	ppb	2.26	25	100.84	
182 W	24.87	ppb	0.86	25	99.48	
203 Tl	25.	ppb	1.08	25	100	
205 Tl	24.94	ppb	1.42	25	99.76	
208 Pb	24.88	ppb	0.84	25	99.52	
232 Th	24.13	ppb	1.10	25	96.52	
238 U	23.85	ppb	2.35	25	95.4	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3239717.50	1.76	3225547.00	100.4	80 - 120.4	
45 Sc	2767746.50	0.70	2797225.50	98.9	80 - 120.4	
72 Ge	580711.81	2.09	598801.94	97.0	80 - 120.4	
159 Tb	5408070.50	1.32	5240202.50	103.2	80 - 120.4	
209 Bi	3149849.50	0.48	3108879.00	101.3	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG01A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000563

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JHG01A.B\109_CCB.D\109_CCB.D#
Date Acquired: Jul 1 2014 06:59 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 01 2014 01:47 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0016	ppb	170.54	1.00	
11 B	-0.1131	ppb	141.56	1.00	
23 Na	-3.426	ppb	9.93	1.00	
25 Mg	0.1038	ppb	80.86	1.00	
27 Al	-0.007	ppb	138.67	1.00	
28 Si	87.45	ppb	25.50	1.00	
29 Si	136.2	ppb	41.48	1.00	Fail
39 K	3.109	ppb	54.71	1.00	
43 Ca	-1.284	ppb	177.57	1.00	
44 Ca	-3.471	ppb	30.40	1.00	
51 V	-0.0034	ppb	1285.30	1.00	
52 Cr	-0.0348	ppb	38.12	1.00	
53 Cr	-1.07	ppb	13.48	1.00	
55 Mn	-0.008	ppb	78.31	1.00	
56 Fe	0.7224	ppb	304.13	1.00	
57 Fe	0.5767	ppb	249.70	1.00	
59 Co	-0.004	ppb	88.14	1.00	
60 Ni	-0.0077	ppb	109.53	1.00	
63 Cu	-0.0271	ppb	66.59	1.00	
65 Cu	0.002	ppb	600.40	1.00	
66 Zn	-0.0825	ppb	38.29	1.00	
68 Zn	0.2606	ppb	82.62	1.00	
75 As	-0.1097	ppb	36.20	1.00	
82 Se	-0.031	ppb	258.25	1.00	
88 Sr	0.0019	ppb	180.32	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0557	ppb	9.03	1.00	
107 Ag	0.0025	ppb	47.21	1.00	
109 Ag	0.0008	ppb	38.81	1.00	
111 Cd	0.0101	ppb	112.96	1.00	
114 Cd	0.0061	ppb	69.68	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0705	ppb	6.05	1.00	
120 Sn	0.0634	ppb	21.94	1.00	
121 Sb	0.0186	ppb	40.64	1.00	
123 Sb	0.023	ppb	32.43	1.00	
135 Ba	-0.0065	ppb	143.00	1.00	
137 Ba	-0.0048	ppb	95.50	1.00	
182 W	0.1056	ppb	2.60	1.00	
203 Tl	0.0046	ppb	61.57	1.00	
205 Tl	0.0036	ppb	17.39	1.00	
208 Pb	-0.0005	ppb	679.67	1.00	
232 Th	0.1196	ppb	25.05	1.00	
238 U	0.0008	ppb	37.34	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3285952.30	1.31	3225547.00	101.9	79.5 - 120	
45 Sc	2757425.50	0.29	2797225.50	98.6	79.5 - 120	
72 Ge	592055.25	0.16	598801.94	98.9	79.5 - 120	
159 Tb	5448917.50	0.79	5240202.50	104.0	79.5 - 120	
209 Bi	3187669.80	0.15	3108879.00	102.5	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG01A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000564

KATAHDIN ANALYTICAL SERVICES, INC.
METALS ANALYSIS RUN INFORMATION SHEET

INSTR. ID: J Agilent 7500 **ANALYST:** EAM **ANALYSIS DATE:** 7-2-14

FILE NAME: JHG02A

REVIEWED

HAM 7-9-14

KATAHDIN ANALYTICAL METALS SECTION

METHOD:

ICP	ICP-MS	CVAA
☐ 200.7	☑ 200.8	☐ 245.__
☐ 6010B	☑ 6020	☐ 747___
☐ CLP	☐ CLP	☐ CLP
☐ _____	☐ _____	☐ _____

STANDARDS USED:

Standard Name	Standard ID	Prep Date	Expiration Date	Standard Conc.
Cal. Blank/ICB/CCB	MW14962	6-30-14	6-30-15	0 mg/L
Cal. Std. 1	MW14963	↓	8-8-14	varies by element
↓ 2	MW14964	↓	↓	↓
3	MW14965	↓	↓	↓
↓ 4	MW14966	↓	↓	↓
ICV	MW14951	6-25-14	8-2-14	↓
PQL	MW14958	6-26-14	8-8-14	↓
ICSA	MW14968	6-30-14	7-7-14	↓
ICSAB	MW14969	↓	↓	↓
CCV	MW14967	↓	8-8-14	↓
Internal Std.	MW14971	7-2-14	10-2-14	1 mg/L

Additional Comments and Notes:

PBWH F05ICW2 and PBWH F06ICW2 failed high for Ba for DOD, samples are not >10x the blank and were accepted.

HAM 7-9-14

INSTRUMENT RUNLOG

Instrument: AGILENT 7500

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
6020 Tune	1	JHG02A	7/2/2014 2:46:00	14:46	EAM
200.8 Tune	1	JHG02A	7/2/2014 2:49:00	14:49	EAM
Cal Blank	1	JHG02A	7/2/2014 3:17:00	15:17	EAM
Cal Std 1	1	JHG02A	7/2/2014 3:20:00	15:20	EAM
Cal Std 2	1	JHG02A	7/2/2014 3:23:00	15:23	EAM
Cal Std 3	1	JHG02A	7/2/2014 3:26:00	15:26	EAM
Cal Std 4	1	JHG02A	7/2/2014 3:29:00	15:29	EAM
ICV	1	JHG02A	7/2/2014 3:33:00	15:33	EAM
ICB	1	JHG02A	7/2/2014 3:36:00	15:36	EAM
PQL	1	JHG02A	7/2/2014 3:39:00	15:39	EAM
ICSA	1	JHG02A	7/2/2014 3:42:00	15:42	EAM
ICSAB	1	JHG02A	7/2/2014 3:46:00	15:46	EAM
Blank	1	JHG02A	7/2/2014 3:49:00	15:49	EAM
CCV	1	JHG02A	7/2/2014 3:52:00	15:52	EAM
CCB	1	JHG02A	7/2/2014 3:56:00	15:56	EAM
SH4797-001	1	JHG02A	7/2/2014 3:59:00	15:59	EAM
PBWHF24IMW1	5	JHG02A	7/2/2014 4:02:00	16:02	EAM
LCSWHF24IMW1	5	JHG02A	7/2/2014 4:06:00	16:06	EAM
SH4521-002	5	JHG02A	7/2/2014 4:09:00	16:09	EAM
SH4521-003	5	JHG02A	7/2/2014 4:12:00	16:12	EAM
SH4521-004	5	JHG02A	7/2/2014 4:15:00	16:15	EAM
SH4521-005	5	JHG02A	7/2/2014 4:19:00	16:19	EAM
SH4521-006	5	JHG02A	7/2/2014 4:22:00	16:22	EAM
SH4521-007	5	JHG02A	7/2/2014 4:25:00	16:25	EAM
SH4521-009	5	JHG02A	7/2/2014 4:29:00	16:29	EAM
CCV	1	JHG02A	7/2/2014 4:32:00	16:32	EAM
CCB	1	JHG02A	7/2/2014 4:35:00	16:35	EAM
SH4521-009L	25	JHG02A	7/2/2014 4:38:00	16:38	EAM
SH4521-009A	5	JHG02A	7/2/2014 4:42:00	16:42	EAM
SH4521-009S	5	JHG02A	7/2/2014 4:45:00	16:45	EAM
SH4521-009P	5	JHG02A	7/2/2014 4:48:00	16:48	EAM
SH4521-010	5	JHG02A	7/2/2014 4:52:00	16:52	EAM
SH4521-011	5	JHG02A	7/2/2014 4:55:00	16:55	EAM
SH4521-012	5	JHG02A	7/2/2014 4:58:00	16:58	EAM
SH4521-013	5	JHG02A	7/2/2014 5:01:00	17:01	EAM
SH4521-014	5	JHG02A	7/2/2014 5:05:00	17:05	EAM
SH4521-014L	25	JHG02A	7/2/2014 5:08:00	17:08	EAM
CCV	1	JHG02A	7/2/2014 5:11:00	17:11	EAM
CCB	1	JHG02A	7/2/2014 5:15:00	17:15	EAM
SH4521-014A	5	JHG02A	7/2/2014 5:18:00	17:18	EAM
SH4521-014S	5	JHG02A	7/2/2014 5:21:00	17:21	EAM
SH4521-014P	5	JHG02A	7/2/2014 5:25:00	17:25	EAM
SH4521-016	5	JHG02A	7/2/2014 5:28:00	17:28	EAM
SH4521-017	5	JHG02A	7/2/2014 5:31:00	17:31	EAM

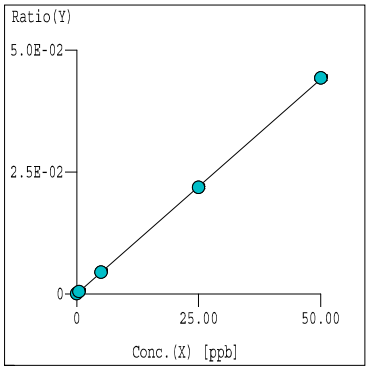
SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SH4521-018	5	JHG02A	7/2/2014 5:35:00	17:35	EAM
SH4521-019	5	JHG02A	7/2/2014 5:38:00	17:38	EAM
SH4521-020	5	JHG02A	7/2/2014 5:42:00	17:42	EAM
SH4521-024	5	JHG02A	7/2/2014 5:45:00	17:45	EAM
PBWHF24IMW2	5	JHG02A	7/2/2014 5:48:00	17:48	EAM
CCV	1	JHG02A	7/2/2014 5:52:00	17:52	EAM
CCB	1	JHG02A	7/2/2014 5:55:00	17:55	EAM
LCSWHF24IMW2	5	JHG02A	7/2/2014 5:58:00	17:58	EAM
SH4521-008	5	JHG02A	7/2/2014 6:02:00	18:02	EAM
SH4521-008L	25	JHG02A	7/2/2014 6:05:00	18:05	EAM
SH4521-008A	5	JHG02A	7/2/2014 6:09:00	18:09	EAM
SH4521-008S	5	JHG02A	7/2/2014 6:12:00	18:12	EAM
SH4521-008P	5	JHG02A	7/2/2014 6:16:00	18:16	EAM
SH4521-015	5	JHG02A	7/2/2014 6:19:00	18:19	EAM
SH4521-015L	25	JHG02A	7/2/2014 6:23:00	18:23	EAM
SH4521-015A	5	JHG02A	7/2/2014 6:26:00	18:26	EAM
SH4521-015S	5	JHG02A	7/2/2014 6:30:00	18:30	EAM
CCV	1	JHG02A	7/2/2014 6:33:00	18:33	EAM
CCB	1	JHG02A	7/2/2014 6:36:00	18:36	EAM
SH4521-015P	5	JHG02A	7/2/2014 6:40:00	18:40	EAM
SH4521-021	5	JHG02A	7/2/2014 6:43:00	18:43	EAM
SH4521-022	5	JHG02A	7/2/2014 6:47:00	18:47	EAM
SH4521-023	5	JHG02A	7/2/2014 6:50:00	18:50	EAM
PBSHF26IMS1	5	JHG02A	7/2/2014 6:54:00	18:54	EAM
LCSOHF26IMS1	5	JHG02A	7/2/2014 6:57:00	18:57	EAM
LC2OHF26IMS1	5	JHG02A	7/2/2014 7:00:00	19:00	EAM
SH4522-006	5	JHG02A	7/2/2014 7:04:00	19:04	EAM
CCV	1	JHG02A	7/2/2014 7:07:00	19:07	EAM
CCB	1	JHG02A	7/2/2014 7:11:00	19:11	EAM
CCV	1	JHG02A	7/2/2014 7:14:00	19:14	EAM
CCB	1	JHG02A	7/2/2014 7:18:00	19:18	EAM
PBWHF05IMW2	5	JHG02A	7/2/2014 7:21:00	19:21	EAM
LCSWHF05IMW2	5	JHG02A	7/2/2014 7:24:00	19:24	EAM
SH3410-002	5	JHG02A	7/2/2014 7:28:00	19:28	EAM
SH3410-002L	25	JHG02A	7/2/2014 7:31:00	19:31	EAM
SH3410-002A	5	JHG02A	7/2/2014 7:35:00	19:35	EAM
SH3410-002S	5	JHG02A	7/2/2014 7:38:00	19:38	EAM
SH3410-002P	5	JHG02A	7/2/2014 7:42:00	19:42	EAM
SH3410-003	5	JHG02A	7/2/2014 7:45:00	19:45	EAM
CCV	1	JHG02A	7/2/2014 7:49:00	19:49	EAM
CCB	1	JHG02A	7/2/2014 7:52:00	19:52	EAM
SH3410-004	5	JHG02A	7/2/2014 7:56:00	19:56	EAM
PBWHF06IMW2	5	JHG02A	7/2/2014 7:59:00	19:59	EAM
LCSWHF06IMW2	5	JHG02A	7/2/2014 8:03:00	20:03	EAM
SH3529-002	5	JHG02A	7/2/2014 8:06:00	20:06	EAM
SH3529-003	5	JHG02A	7/2/2014 8:09:00	20:09	EAM
SH3529-004	5	JHG02A	7/2/2014 8:13:00	20:13	EAM

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SH3529-005	5	JHG02A	7/2/2014 8:16:00	20:16	EAM
SH3529-006	5	JHG02A	7/2/2014 8:20:00	20:20	EAM
SH3529-007	5	JHG02A	7/2/2014 8:23:00	20:23	EAM
SH3529-008	5	JHG02A	7/2/2014 8:27:00	20:27	EAM
CCV	1	JHG02A	7/2/2014 8:30:00	20:30	EAM
CCB	1	JHG02A	7/2/2014 8:34:00	20:34	EAM
PQL	1	JHG02A	7/2/2014 8:37:00	20:37	EAM
CCV	1	JHG02A	7/2/2014 8:41:00	20:41	EAM
CCB	1	JHG02A	7/2/2014 8:44:00	20:44	EAM

=== Graph Detail ===

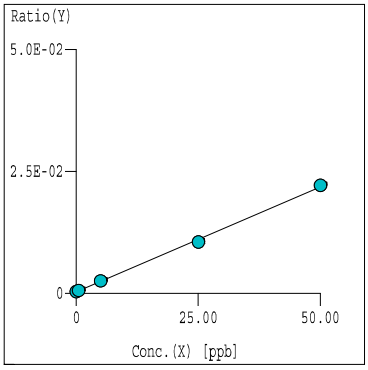
Cal. Date: 07/02/2014, 15:32

Step Mass Element ISTD Unit
(1) 9 Be 6 ppb



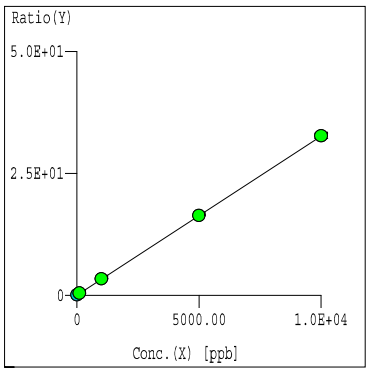
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 8.813E-004*X +1.766E-006
X = 1.135E+003*Y -2.004E-003
DL = 2.187E-03 ppb
BEC = 2.004E-03 ppb

Step Mass Element ISTD Unit
(1) 11 B 6 ppb



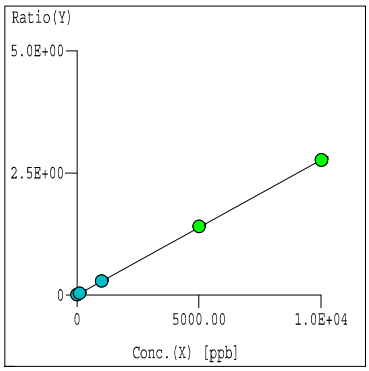
Curve Fit: Y=aX+[blank]
r = 0.9994
Y = 4.301E-004*X +2.738E-004
X = 2.325E+003*Y -6.367E-001
DL = 9.108E-02 ppb
BEC = 6.367E-01 ppb

Step Mass Element ISTD Unit
(1) 23 Na 45 ppb



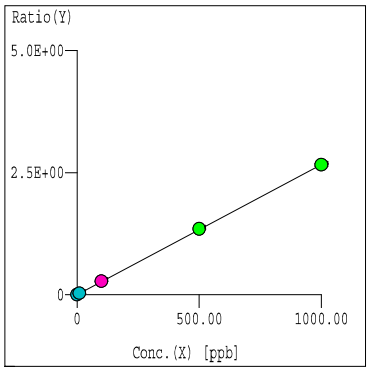
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 3.260E-003*X +3.876E-002
X = 3.068E+002*Y -1.189E+001
DL = 8.171E-01 ppb
BEC = 11.89 ppb

Step Mass Element ISTD Unit
(1) 25 Mg 45 ppb



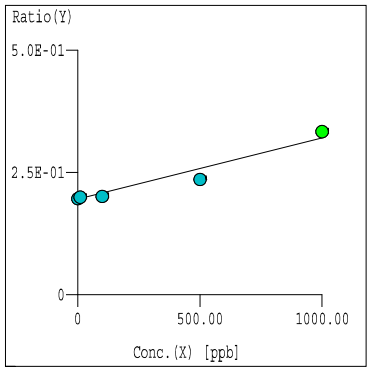
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 2.765E-004*X +5.058E-005
X = 3.616E+003*Y -1.829E-001
DL = 1.831E-01 ppb
BEC = 1.829E-01 ppb

Step Mass Element ISTD Unit
(1) 27 Al 45 ppb



Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 2.662E-003*X +1.255E-003
X = 3.756E+002*Y -4.712E-001
DL = 9.895E-02 ppb
BEC = 4.712E-01 ppb

Step Mass Element ISTD Unit
(1) 29 Si 45 ppb



Curve Fit: Y=aX+[blank]
r = 0.9761
Y = 1.247E-004*X +1.957E-001
X = 8.017E+003*Y -1.569E+003
DL = 60.11 ppb
BEC = 1569 ppb

=== Graph Detail ===

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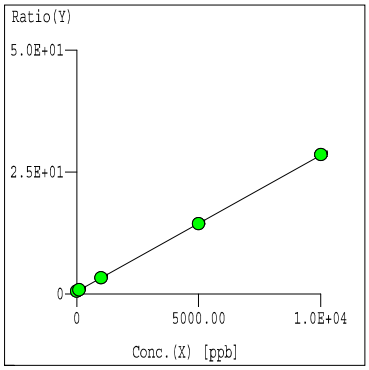
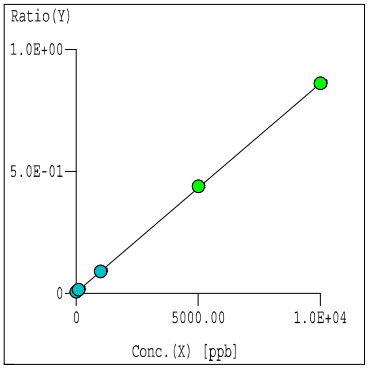
Step Mass Element ISTD Unit
(1) 39 K 45 ppb



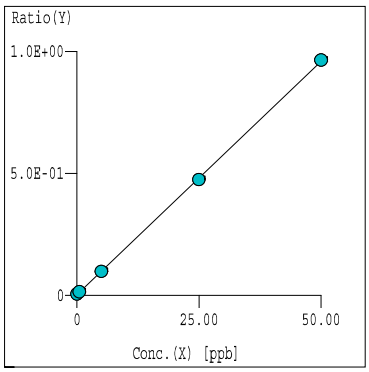
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 2.795E-003*X +4.925E-001
X = 3.578E+002*Y -1.762E+002
DL = 1.149 ppb
BEC = 176.2 ppb

Step Mass Element ISTD Unit
(1) 44 Ca 45 ppb



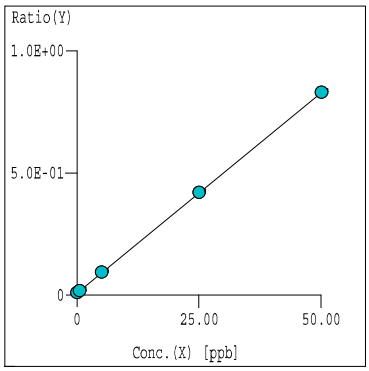
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 8.558E-005*X +4.528E-003
X = 1.169E+004*Y -5.292E+001
DL = 5.144 ppb
BEC = 52.92 ppb

Step Mass Element ISTD Unit
(1) 51 V 72 ppb



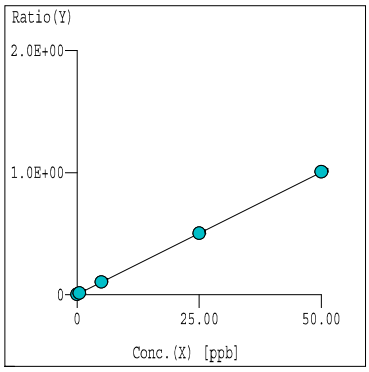
Curve Fit: Y=aX+[blank]
r = 0.9999
Y = 1.912E-002*X +2.860E-003
X = 5.229E+001*Y -1.496E-001
DL = 1.994E-01 ppb
BEC = 1.496E-01 ppb

Step Mass Element ISTD Unit
(1) 52 Cr 72 ppb



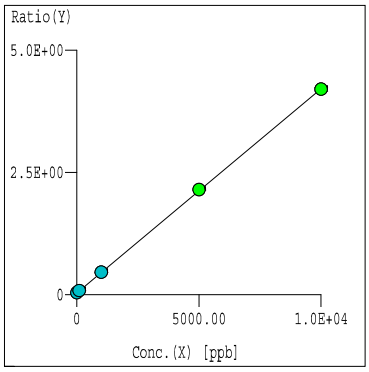
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 1.640E-002*X +8.682E-003
X = 6.096E+001*Y -5.292E-001
DL = 4.506E-02 ppb
BEC = 5.292E-01 ppb

Step Mass Element ISTD Unit
(1) 55 Mn 72 ppb



Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 2.003E-002*X +3.024E-003
X = 4.992E+001*Y -1.510E-001
DL = 2.257E-02 ppb
BEC = 1.510E-01 ppb

Step Mass Element ISTD Unit
(1) 57 Fe 72 ppb

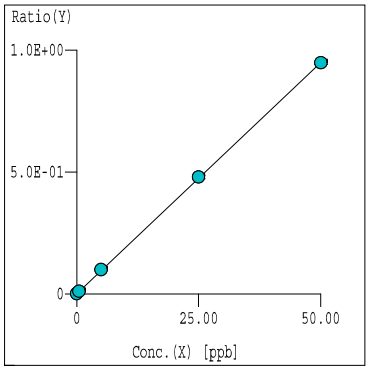


Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 4.178E-004*X +3.256E-002
X = 2.393E+003*Y -7.792E+001
DL = 7.564E-01 ppb
BEC = 77.92 ppb

=== Graph Detail ===

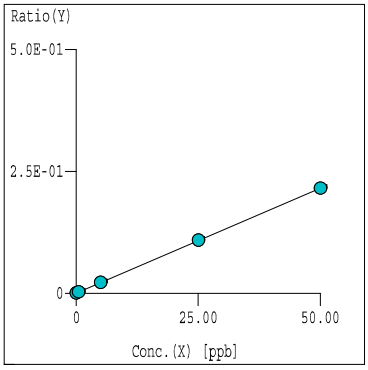
Cal. Date: 07/02/2014, 15:32

Step Mass Element (1) 59 Co | ISTD 72 | Unit ppb



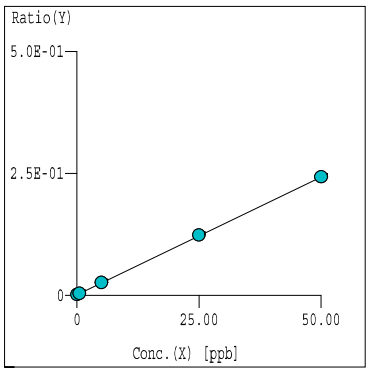
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 1.897E-002*X +2.491E-004
X = 5.271E+001*Y -1.313E-002
DL = 1.473E-02 ppb
BEC = 1.313E-02 ppb

Step Mass Element (1) 60 Ni | ISTD 72 | Unit ppb



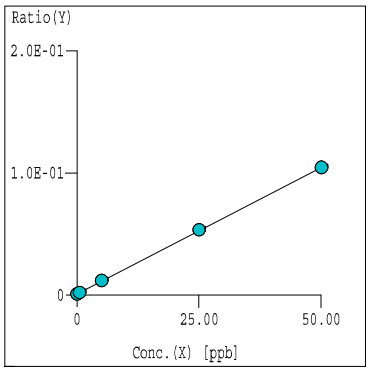
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 4.303E-003*X +9.823E-005
X = 2.324E+002*Y -2.283E-002
DL = 1.387E-02 ppb
BEC = 2.283E-02 ppb

Step Mass Element (1) 65 Cu | ISTD 72 | Unit ppb



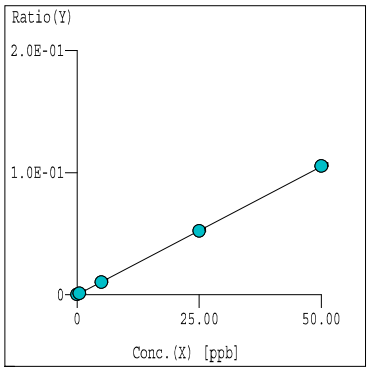
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 4.832E-003*X +1.035E-003
X = 2.069E+002*Y -2.141E-001
DL = 1.589E-02 ppb
BEC = 2.141E-01 ppb

Step Mass Element (1) 66 Zn | ISTD 72 | Unit ppb



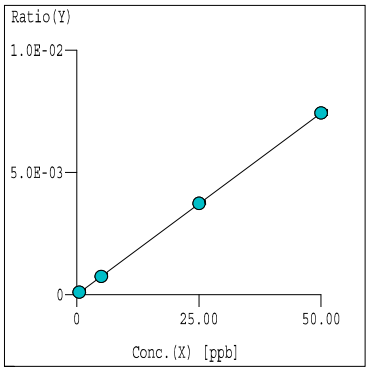
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 2.078E-003*X +6.137E-004
X = 4.812E+002*Y -2.953E-001
DL = 1.292E-01 ppb
BEC = 2.953E-01 ppb

Step Mass Element (1) 75 As | ISTD 72 | Unit ppb



Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 2.096E-003*X +1.578E-004
X = 4.771E+002*Y -7.528E-002
DL = 1.175E-01 ppb
BEC = 7.528E-02 ppb

Step Mass Element (1) 82 Se | ISTD 72 | Unit ppb

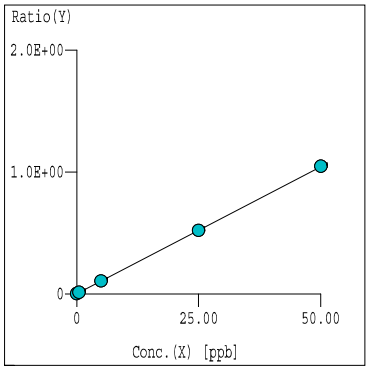


Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 1.485E-004*X -3.457E-006
X = 6.732E+003*Y +2.327E-002
DL = 2.996E-01 ppb
BEC = -2.327E-02 ppb

=== Graph Detail ===

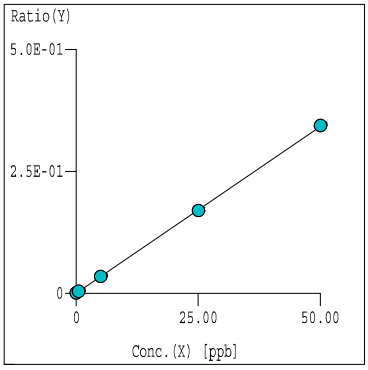
Cal. Date: 07/02/2014, 15:32

Step Mass Element ISTD Unit
(1) 88 Sr 72 ppb



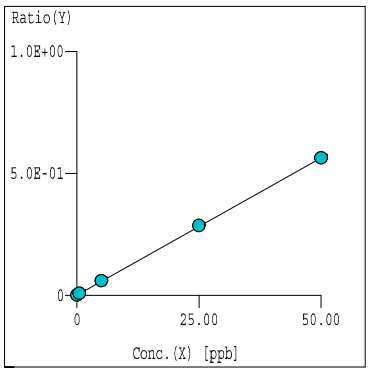
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 2.086E-002*X +1.776E-004
X = 4.794E+001*Y -8.515E-003
DL = 1.476E-02 ppb
BEC = 8.515E-03 ppb

Step Mass Element ISTD Unit
(1) 98 Mo 72 ppb



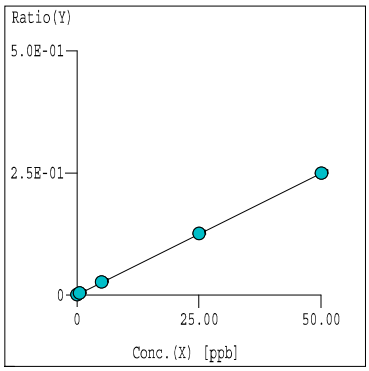
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 6.826E-003*X +8.933E-005
X = 1.465E+002*Y -1.309E-002
DL = 8.481E-03 ppb
BEC = 1.309E-02 ppb

Step Mass Element ISTD Unit
(1) 107 Ag 72 ppb



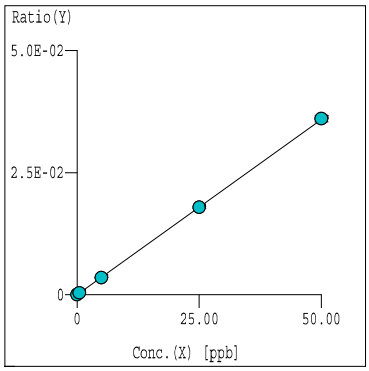
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 1.128E-002*X +7.291E-005
X = 8.867E+001*Y -6.465E-003
DL = 6.892E-03 ppb
BEC = 6.465E-03 ppb

Step Mass Element ISTD Unit
(1) 114 Cd 72 ppb



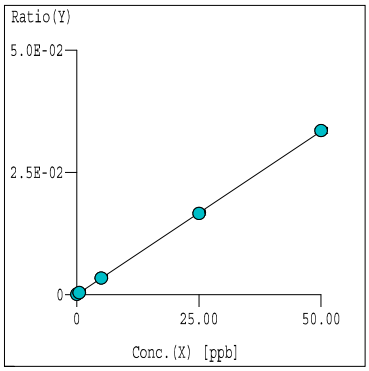
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 4.985E-003*X +1.334E-004
X = 2.006E+002*Y -2.675E-002
DL = 5.116E-03 ppb
BEC = 2.675E-02 ppb

Step Mass Element ISTD Unit
(1) 118 Sn 159 ppb



Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 7.183E-004*X +1.295E-005
X = 1.392E+003*Y -1.802E-002
DL = 1.806E-02 ppb
BEC = 1.802E-02 ppb

Step Mass Element ISTD Unit
(1) 123 Sb 159 ppb

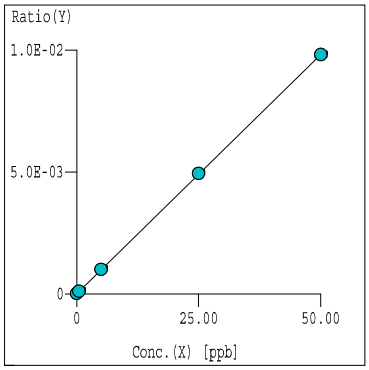


Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 6.681E-004*X +5.675E-006
X = 1.497E+003*Y -8.494E-003
DL = 3.817E-03 ppb
BEC = 8.494E-03 ppb

=== Graph Detail ===

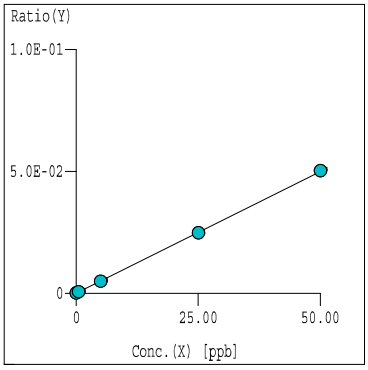
Cal. Date: 07/02/2014, 15:32

Step Mass Element (1) 135 Ba | ISTD 159 | Unit ppb



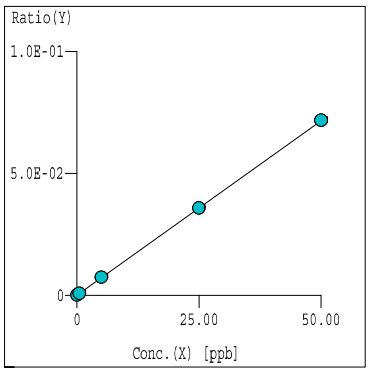
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 1.961E-004*X +5.088E-006
X = 5.099E+003*Y -2.594E-002
DL = 2.280E-02 ppb
BEC = 2.594E-02 ppb

Step Mass Element (1) 182 W | ISTD 159 | Unit ppb



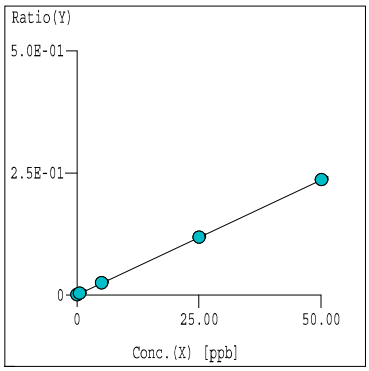
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 9.990E-004*X +1.199E-005
X = 1.001E+003*Y -1.200E-002
DL = 1.200E-02 ppb
BEC = 1.200E-02 ppb

Step Mass Element (1) 203 Tl | ISTD 209 | Unit ppb



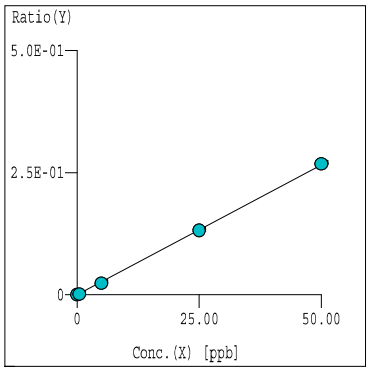
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 1.431E-003*X +5.770E-006
X = 6.986E+002*Y -4.031E-003
DL = 4.645E-03 ppb
BEC = 4.031E-03 ppb

Step Mass Element (1) 208 Pb | ISTD 209 | Unit ppb



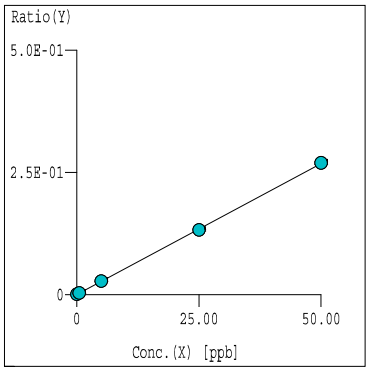
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 4.715E-003*X +9.990E-005
X = 2.121E+002*Y -2.119E-002
DL = 9.129E-03 ppb
BEC = 2.119E-02 ppb

Step Mass Element (1) 232 Th | ISTD 209 | Unit ppb



Curve Fit: Y=aX+[blank]
r = 0.9999
Y = 5.324E-003*X +1.083E-005
X = 1.878E+002*Y -2.034E-003
DL = 2.672E-03 ppb
BEC = 2.034E-03 ppb

Step Mass Element (1) 238 U | ISTD 209 | Unit ppb



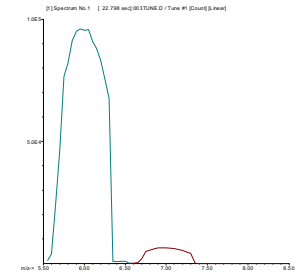
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 5.359E-003*X +5.087E-006
X = 1.866E+002*Y -9.492E-004
DL = 1.032E-03 ppb
BEC = 9.492E-04 ppb

6020 QC Tune Report

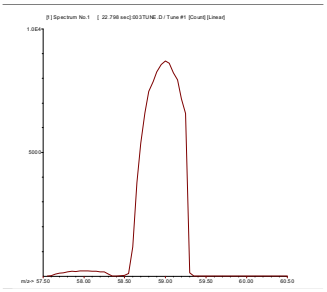
Data File: C:\ICPCHEM\1\DATA\JHG02A.B\003TUNE.D
Date Acquired: Jul 2 2014 02:46 pm
Acq. Method: TN6020E.M
Operator: EAM
Sample Name: 6020 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN6020E.M

RSD (%)

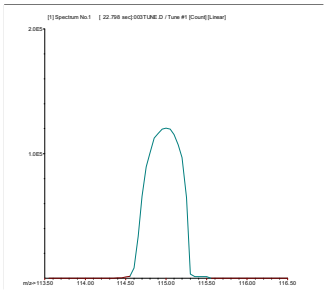
Element	Actual	Required	Flag
7 Li	0.70	5.00	
59 Co	1.67	5.00	
115 In	1.24	5.00	
205 Tl	0.82	5.00	



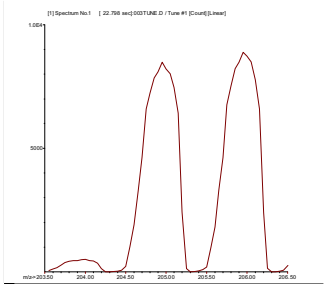
7 Li
Mass Calib.
Actual: 7.00
Required: 6.90 - 7.10
Flag:
Peak Width
Actual: 0.60
Required: 0.90
Flag:



59 Co
Mass Calib.
Actual: 59.00
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:



115 In
Mass Calib.
Actual: 115.00
Required: 114.90 - 115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.90
Flag:



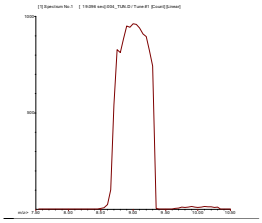
205 Tl
Mass Calib.
Actual: 204.95
Required: 204.90 - 205.10
Flag:
Peak Width
Actual: 0.60
Required: 0.90
Flag:

200.8 QC Tune Report

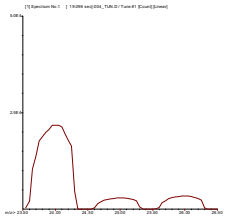
Data File: C:\ICPCHEM\1\DATA\JHG02A.B\004_TUN.D
Date Acquired: Jul 2 2014 02:49 pm
Acq. Method: TN200_8E.M
Operator: EAM
Sample Name: 200.8 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN200_8E.M

RSD (%)

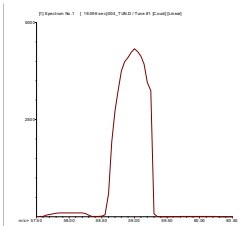
Element	Actual	Required	Flag
9 Be	3.32	5.00	
24 Mg	1.93	5.00	
59 Co	1.89	5.00	
115 In	2.87	5.00	
208 Pb	2.37	5.00	



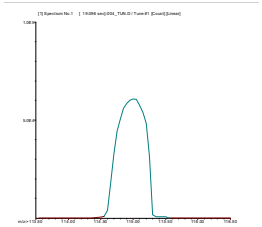
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90 - 9.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



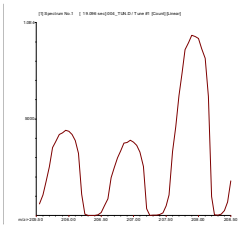
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90 - 24.10
Flag:
Peak Width
Actual: 0.70
Required: 1.00
Flag:



59 Co
Mass Calib.
Actual: 59.00
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



115 In
Mass Calib.
Actual: 115.00
Required: 114.90 - 115.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90 - 208.10
Flag:
Peak Width
Actual: 0.60
Required: 1.00
Flag:

Tune Result: Pass

Katahdin Analytical Services 4000575

Calibration Blank QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.I
Date Acquired: Jul 2 2014 03:17 pm
Operator: EAM
Sample Name: Cal Blank
Misc Info:
Vial Number: 1203
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal Update: Jul 02 2014 03:16 pm
Sample Type: CalBlk
Total Dil Factor: 1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	2927307.00	A	20600.00	0.70
9	Be	13.33	P	2.22	16.67
11	B	2213.57	P	87.64	3.96
23	Na	87677.53	P	2580.00	2.94
25	Mg	137.79	P	31.51	22.87
27	Al	3901.80	P	66.62	1.71
28	Si	7858784.00	A	16440.00	0.21
29	Si	1697312.00	A	5970.00	0.35
39	K	1490946.00	A	7597.00	0.51
43	Ca	318.56	P	16.98	5.33
44	Ca	19230.50	P	114.60	0.60
45	Sc	2674138.00	A	24300.00	0.91
51	V	1552.07	P	144.10	9.28
52	Cr	4734.23	P	26.68	0.56
53	Cr	6968.49	P	85.06	1.22
55	Mn	2175.79	P	120.60	5.54
56	Fe	1102531.00	A	17120.00	1.55
57	Fe	20877.59	P	239.60	1.15
59	Co	228.91	P	31.51	13.77
60	Ni	85.92	P	28.34	32.98
63	Cu	690.04	P	40.96	5.94
65	Cu	283.34	P	39.30	13.87
66	Zn	383.35	P	29.63	7.73
68	Zn	8054.76	P	61.97	0.77
72	Ge	574804.50	P	3593.00	0.63
75	As	-100.47	P	115.30	114.76
82	Se	-10.58	P	15.15	143.18
88	Sr	133.35	P	67.59	50.69
89	Y	3988412.00	A	39760.00	1.00
98	Mo	50.12	P	15.67	31.27
107	Ag	48.89	P	12.62	25.81
109	Ag	22.22	P	12.62	56.79
111	Cd	1139.71	P	25.80	2.26
114	Cd	99.47	P	10.68	10.74
115	In	3739275.00	A	24740.00	0.66
118	Sn	74.45	P	15.03	20.19
120	Sn	77.78	P	12.62	16.23
121	Sb	38.89	P	5.09	13.09
123	Sb	38.89	P	10.71	27.54
135	Ba	31.11	P	12.62	40.56
137	Ba	40.00	P	10.00	25.00
159	Tb	5109668.00	A	62800.00	1.23
182	W	58.89	P	13.47	22.87
203	Tl	33.33	P	8.82	26.46
205	Tl	53.34	P	3.33	6.25
208	Pb	281.12	P	33.39	11.88
209	Bi	3027142.00	A	42150.00	1.39
232	Th	56.67	P	21.86	38.58
238	U	17.78	P	5.09	28.64

Calibration Standard QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\014CALI.D\014CALI.D#
Date Acquired: Jul 2 2014 03:20 pm
Operator: EAM
Sample Name: Cal Std 1
Misc Info:
Vial Number: 1101
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal Update: Jul 02 2014 03:19 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	2922020.00	A	25110.00	0.86
9 Be	1171.91	P	13.81	1.18
11 B	2445.84	P	70.43	2.88
23 Na	984339.00	A	12300.00	1.25
25 Mg	76411.40	P	1427.00	1.87
27 Al	77632.51	P	1907.00	2.46
28 Si	7984961.00	A	77260.00	0.97
29 Si	1700864.00	A	24460.00	1.44
39 K	2277142.00	A	14250.00	0.63
43 Ca	1841.07	P	103.30	5.61
44 Ca	42662.58	P	757.10	1.77
45 Sc	2648424.00	A	26700.00	1.01
51 V	7221.23	P	343.30	4.75
52 Cr	9503.30	P	263.50	2.77
53 Cr	7475.43	P	158.90	2.13
55 Mn	7902.32	P	175.80	2.22
56 Fe	2080160.00	A	22950.00	1.10
57 Fe	45131.36	P	1111.00	2.46
59 Co	5461.34	P	109.20	2.00
60 Ni	1309.31	P	54.54	4.17
63 Cu	3678.36	P	123.60	3.36
65 Cu	1735.91	P	34.80	2.00
66 Zn	1105.63	P	116.70	10.56
68 Zn	8209.26	P	64.95	0.79
72 Ge	574902.38	P	6697.00	1.16
75 As	483.28	P	137.70	28.49
82 Se	33.86	P	15.56	45.96
88 Sr	6443.00	P	430.60	6.68
89 Y	3959505.00	A	25500.00	0.64
98 Mo	1932.04	P	82.76	4.28
107 Ag	3503.87	P	97.73	2.79
109 Ag	3390.52	P	80.09	2.36
111 Cd	1737.24	P	34.01	1.96
114 Cd	1632.46	P	21.44	1.31
115 In	3724231.00	A	15340.00	0.41
118 Sn	1934.64	P	36.88	1.91
120 Sn	2827.04	P	157.70	5.58
121 Sb	2429.17	P	80.59	3.32
123 Sb	1897.97	P	22.20	1.17
135 Ba	601.15	P	6.94	1.15
137 Ba	934.51	P	60.13	6.43
159 Tb	5109592.00	A	94110.00	1.84
182 W	2585.89	P	16.45	0.64
203 Tl	2189.14	P	13.48	0.62
205 Tl	5307.89	P	125.90	2.37
208 Pb	7664.64	P	253.80	3.31
209 Bi	3004653.00	A	46710.00	1.55
232 Th	3729.56	P	1036.00	27.78
238 U	7751.42	P	175.00	2.26

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2922020.00	0.86	2927307.30	99.8	79.5 - 120.4	
45 Sc	2648424.30	1.01	2674138.00	99.0	79.5 - 120.4	
72 Ge	574902.44	1.16	574804.50	100.0	79.5 - 120.4	
159 Tb	5109592.50	1.84	5109668.00	100.0	79.5 - 120.4	
209 Bi	3004653.50	1.55	3027142.00	99.3	79.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000577

Calibration Standard QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\015CALI.D\015CALI.D#
Date Acquired: Jul 2 2014 03:23 pm
Operator: EAM
Sample Name: Cal Std 2
Misc Info:
Vial Number: 1102
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal Update: Jul 02 2014 03:22 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	2891326.00	A	22250.00	0.77
9 Be	12123.76	P	77.57	0.64
11 B	8062.35	P	128.80	1.60
23 Na	8102151.00	A	23330.00	0.29
25 Mg	724674.50	P	8843.00	1.22
27 Al	729091.81	P	8027.00	1.10
28 Si	8243724.00	A	72370.00	0.88
29 Si	1683746.00	A	16830.00	1.00
39 K	8938924.00	A	59910.00	0.67
43 Ca	14301.10	P	330.30	2.31
44 Ca	244231.59	P	1133.00	0.46
45 Sc	2619862.00	A	33120.00	1.26
51 V	56614.84	P	209.30	0.37
52 Cr	52216.39	P	1234.00	2.36
53 Cr	12293.14	P	351.60	2.86
55 Mn	59564.58	P	493.90	0.83
56 Fe	10344690.00	A	69240.00	0.67
57 Fe	252033.09	P	3099.00	1.23
59 Co	55094.72	P	962.10	1.75
60 Ni	12420.77	P	152.90	1.23
63 Cu	30617.46	P	328.30	1.07
65 Cu	14589.92	P	161.00	1.10
66 Zn	6576.11	P	78.22	1.19
68 Zn	12107.57	P	158.60	1.31
72 Ge	569262.00	P	899.20	0.16
75 As	6354.35	P	320.90	5.05
82 Se	416.30	P	14.15	3.40
88 Sr	61381.71	P	784.60	1.28
89 Y	3959178.00	A	14460.00	0.37
98 Mo	19876.89	P	181.00	0.91
107 Ag	34611.73	P	347.30	1.00
109 Ag	32690.67	P	75.74	0.23
111 Cd	7690.22	P	91.77	1.19
114 Cd	15370.25	P	173.50	1.13
115 In	3744748.00	A	30720.00	0.82
118 Sn	18625.81	P	524.40	2.82
120 Sn	26302.39	P	263.30	1.00
121 Sb	24518.02	P	212.20	0.87
123 Sb	18917.38	P	114.40	0.60
135 Ba	5384.52	P	210.10	3.90
137 Ba	9143.22	P	113.60	1.24
159 Tb	5123072.00	A	53410.00	1.04
182 W	25257.04	P	793.30	3.14
203 Tl	22185.19	P	190.30	0.86
205 Tl	54117.86	P	773.00	1.43
208 Pb	73431.66	P	1063.00	1.45
209 Bi	3023999.00	A	42420.00	1.40
232 Th	69159.78	P	1762.00	2.55
238 U	78142.92	P	591.10	0.76

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2891326.30	0.77	2927307.30	98.8	79.5 - 120.4	
45 Sc	2619862.50	1.26	2674138.00	98.0	79.5 - 120.4	
72 Ge	569262.00	0.16	574804.50	99.0	79.5 - 120.4	
159 Tb	5123072.00	1.04	5109668.00	100.3	79.5 - 120.4	
209 Bi	3023999.00	1.40	3027142.00	99.9	79.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000578

Calibration Standard QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\016CALI.D\016CALI.D#
Date Acquired: Jul 2 2014 03:26 pm
Operator: EAM
Sample Name: Cal Std 3
Misc Info:
Vial Number: 1103
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal Update: Jul 02 2014 03:25 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	2885458.00	A	64940.00	2.25
9 Be	61482.65	P	969.30	1.58
11 B	32542.70	P	502.10	1.54
23 Na	41077912.00	A	483400.00	1.18
25 Mg	3582096.00	A	17450.00	0.49
27 Al	3531538.00	A	15630.00	0.44
28 Si	9827225.00	A	152900.00	1.56
29 Si	1771524.00	A	17140.00	0.97
39 K	38722712.00	A	231800.00	0.60
43 Ca	69922.26	P	491.10	0.70
44 Ca	1182002.00	A	8000.00	0.68
45 Sc	2671711.00	A	36820.00	1.38
51 V	265395.81	P	469.80	0.18
52 Cr	234966.00	P	2899.00	1.23
53 Cr	34699.31	P	893.40	2.57
55 Mn	283528.69	P	2967.00	1.05
56 Fe	47437220.00	A	670900.00	1.41
57 Fe	1208590.00	A	9222.00	0.76
59 Co	266700.41	P	1483.00	0.56
60 Ni	60682.28	P	356.80	0.59
63 Cu	145298.50	P	2062.00	1.42
65 Cu	68748.36	P	948.70	1.38
66 Zn	30996.02	P	221.90	0.72
68 Zn	30164.45	P	20.31	0.07
72 Ge	571293.81	P	5840.00	1.02
75 As	31772.43	P	491.10	1.55
82 Se	2077.69	P	30.95	1.49
88 Sr	303227.69	P	4957.00	1.63
89 Y	3923416.00	A	33060.00	0.84
98 Mo	99014.12	P	1175.00	1.19
107 Ag	165499.91	P	1329.00	0.80
109 Ag	158195.20	P	1476.00	0.93
111 Cd	32880.82	P	244.10	0.74
114 Cd	74438.23	P	1122.00	1.51
115 In	3698899.00	A	55280.00	1.49
118 Sn	93107.14	P	1887.00	2.03
120 Sn	128299.60	P	1910.00	1.49
121 Sb	118685.40	P	1210.00	1.02
123 Sb	89894.10	P	722.40	0.80
135 Ba	26006.50	P	615.20	2.37
137 Ba	45306.80	P	998.90	2.20
159 Tb	5055085.00	A	59220.00	1.17
182 W	125405.40	P	2566.00	2.05
203 Tl	106302.60	P	2000.00	1.88
205 Tl	257657.30	P	4650.00	1.80
208 Pb	349211.00	P	6701.00	1.92
209 Bi	2956186.00	A	26690.00	0.90
232 Th	381866.81	P	4564.00	1.20
238 U	380309.00	P	4404.00	1.16

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2885457.80	2.25	2927307.30	98.6	79.5 - 120.4	
45 Sc	2671710.80	1.38	2674138.00	99.9	79.5 - 120.4	
72 Ge	571293.75	1.02	574804.50	99.4	79.5 - 120.4	
159 Tb	5055084.50	1.17	5109668.00	98.9	79.5 - 120.4	
209 Bi	2956186.30	0.90	3027142.00	97.7	79.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000579

Calibration Standard QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\017CALI.D\017CALI.D#
Date Acquired: Jul 2 2014 03:29 pm
Operator: EAM
Sample Name: Cal Std 4
Misc Info:
Vial Number: 1104
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal Update: Jul 02 2014 03:28 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	2844644.00	A	96670.00	3.40
9 Be	124274.30	P	1191.00	0.96
11 B	62445.64	P	1092.00	1.75
23 Na	80401680.00	A	1866000.00	2.32
25 Mg	7015544.00	A	81940.00	1.17
27 Al	6856422.00	A	84420.00	1.23
28 Si	11794600.00	A	74510.00	0.63
29 Si	1886155.00	A	15590.00	0.83
39 K	75140992.00	A	1498000.00	1.99
43 Ca	139199.59	P	1666.00	1.20
44 Ca	2282903.00	A	14830.00	0.65
45 Sc	2655701.00	A	19390.00	0.73
51 V	524805.81	P	9594.00	1.83
52 Cr	457975.19	P	6556.00	1.43
53 Cr	61002.50	P	491.60	0.81
55 Mn	552087.81	P	9652.00	1.75
56 Fe	91865424.00	A	1556000.00	1.69
57 Fe	2322785.00	A	28010.00	1.21
59 Co	518652.09	P	11990.00	2.31
60 Ni	116565.70	P	1164.00	1.00
63 Cu	284053.81	P	3170.00	1.12
65 Cu	134245.30	P	2301.00	1.71
66 Zn	60461.21	P	894.80	1.48
68 Zn	51445.62	P	658.40	1.28
72 Ge	568715.50	P	7492.00	1.32
75 As	62553.40	P	762.30	1.22
82 Se	4047.56	P	44.37	1.10
88 Sr	595103.31	P	9065.00	1.52
89 Y	3929366.00	A	56620.00	1.44
98 Mo	195458.30	P	3289.00	1.68
107 Ag	319745.41	P	5617.00	1.76
109 Ag	307622.81	P	4574.00	1.49
111 Cd	63012.04	P	1079.00	1.71
114 Cd	144134.41	P	2045.00	1.42
115 In	3641968.00	A	45320.00	1.24
118 Sn	182603.20	P	2727.00	1.49
120 Sn	252591.20	P	3433.00	1.36
121 Sb	233654.59	P	4490.00	1.92
123 Sb	177882.80	P	3527.00	1.98
135 Ba	51265.78	P	998.60	1.95
137 Ba	87472.30	P	1650.00	1.89
159 Tb	4969840.00	A	54820.00	1.10
182 W	245660.09	P	5675.00	2.31
203 Tl	206403.00	P	4540.00	2.20
205 Tl	498282.59	P	8679.00	1.74
208 Pb	673335.38	P	11380.00	1.69
209 Bi	2860670.00	A	50510.00	1.77
232 Th	750240.88	P	14050.00	1.87
238 U	744572.63	P	17950.00	2.41

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2844643.80	3.40	2927307.30	97.2	79.5 - 120.4	
45 Sc	2655701.50	0.73	2674138.00	99.3	79.5 - 120.4	
72 Ge	568715.56	1.32	574804.50	98.9	79.5 - 120.4	
159 Tb	4969840.50	1.10	5109668.00	97.3	79.5 - 120.4	
209 Bi	2860669.80	1.77	3027142.00	94.5	79.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000580

ICV QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\018_ICV.D\018_ICV.D#
Date Acquired: Jul 2 2014 03:33 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: ICV
Misc Info:
Vial Number: 1202
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Dilution Factor: 1.00
QC Range (%): 89.499998 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	19.82	ppb	2.65	20	99.1	
11 B	19.3	ppb	2.90	20	96.5	
23 Na	4,109.	ppb	1.72	4,000	102.725	
25 Mg	4,166.	ppb	1.81	4,000	104.15	
27 Al	401.3	ppb	1.26	400	100.325	
28 Si	399.	ppb	4.54	400	99.75	
29 Si	370.3	ppb	26.74	400	92.575	
39 K	4,112.	ppb	2.03	4,000	102.8	
43 Ca	4,121.	ppb	1.16	4,000	103.025	
44 Ca	4,186.	ppb	0.71	4,000	104.65	
51 V	20.18	ppb	1.29	20	100.9	
52 Cr	19.69	ppb	1.90	20	98.45	
53 Cr	18.24	ppb	0.62	20	91.2	
55 Mn	20.16	ppb	1.13	20	100.8	
56 Fe	4,177.	ppb	1.02	4,000	104.425	
57 Fe	4,150.	ppb	2.37	4,000	103.75	
59 Co	20.57	ppb	0.88	20	102.85	
60 Ni	20.83	ppb	1.09	20	104.15	
63 Cu	20.15	ppb	1.51	20	100.75	
65 Cu	20.15	ppb	1.98	20	100.75	
66 Zn	20.75	ppb	1.40	20	103.75	
68 Zn	20.51	ppb	1.33	20	102.55	
75 As	20.2	ppb	0.94	20	101	
82 Se	20.5	ppb	1.09	20	102.5	
88 Sr	20.52	ppb	1.55	20	102.6	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	41.48	ppb	0.75	40	103.7	
107 Ag	20.63	ppb	1.30	20	103.15	
109 Ag	20.58	ppb	1.44	20	102.9	
111 Cd	20.09	ppb	1.59	20	100.45	
114 Cd	20.13	ppb	1.57	20	100.65	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	20.48	ppb	2.28	20	102.4	
120 Sn	20.27	ppb	1.36	20	101.35	
121 Sb	20.07	ppb	0.60	20	100.35	
123 Sb	20.14	ppb	0.47	20	100.7	
135 Ba	20.02	ppb	1.63	20	100.1	
137 Ba	20.21	ppb	1.50	20	101.05	
182 W	7.697	ppb	1.92	20	38.485	Fail
203 Tl	20.76	ppb	1.11	20	103.8	
205 Tl	20.7	ppb	1.55	20	103.5	
208 Pb	20.43	ppb	0.96	20	102.15	
232 Th	20.32	ppb	0.63	20	101.6	
238 U	20.22	ppb	0.91	20	101.1	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2840457.00	1.80	2927307.30	97.0	80 - 120.4	
45 Sc	2651201.80	0.99	2674138.00	99.1	80 - 120.4	
72 Ge	565946.75	0.98	574804.50	98.5	80 - 120.4	
159 Tb	4977810.50	0.50	5109668.00	97.4	80 - 120.4	
209 Bi	2914106.50	1.33	3027142.00	96.3	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000581

ICB QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\019_ICB.D\019_ICB.D#
Date Acquired: Jul 2 2014 03:36 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: ICB
Misc Info:
Vial Number: 1203
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: 6-ICB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.004	ppb	40.40	1.00	
11 B	0.4938	ppb	25.66	1.00	
23 Na	0.9302	ppb	27.07	1.00	
25 Mg	0.6953	ppb	25.97	1.00	
27 Al	-0.0287	ppb	48.29	1.00	
28 Si	53.38	ppb	130.05	1.00	
29 Si	68.14	ppb	422.81	1.00	
39 K	3.989	ppb	62.60	1.00	
43 Ca	-3.413	ppb	142.28	1.00	
44 Ca	-2.553	ppb	129.26	1.00	
51 V	0.0276	ppb	269.68	1.00	
52 Cr	-0.0003	ppb	3157.30	1.00	
53 Cr	-0.5639	ppb	26.21	1.00	
55 Mn	0.002	ppb	235.32	1.00	
56 Fe	0.906	ppb	320.75	1.00	
57 Fe	0.587	ppb	284.67	1.00	
59 Co	0.003	ppb	63.67	1.00	
60 Ni	-0.0001	ppb	1700.30	1.00	
63 Cu	0.0063	ppb	168.40	1.00	
65 Cu	0.0078	ppb	137.26	1.00	
66 Zn	-0.0001	ppb	22604.00	1.00	
68 Zn	-0.2827	ppb	31.19	1.00	
75 As	0.1874	ppb	53.68	1.00	
82 Se	0.372	ppb	13.01	1.00	
88 Sr	0.0022	ppb	193.01	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.1165	ppb	3.06	1.00	
107 Ag	0.0011	ppb	329.19	1.00	
109 Ag	0.0036	ppb	21.60	1.00	
111 Cd	-0.0097	ppb	329.59	1.00	
114 Cd	0.0024	ppb	212.25	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0786	ppb	30.19	1.00	
120 Sn	0.0795	ppb	24.40	1.00	
121 Sb	0.0198	ppb	44.25	1.00	
123 Sb	0.0179	ppb	10.68	1.00	
135 Ba	0.0125	ppb	56.81	1.00	
137 Ba	0.0041	ppb	150.72	1.00	
182 W	0.1086	ppb	10.27	1.00	
203 Tl	0.0096	ppb	17.60	1.00	
205 Tl	0.0111	ppb	40.95	1.00	
208 Pb	0.0146	ppb	86.00	1.00	
232 Th	0.0576	ppb	12.19	1.00	
238 U	0.0052	ppb	16.66	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2889034.80	3.11	2927307.30	98.7	79.5 - 120	
45 Sc	2641434.50	2.04	2674138.00	98.8	79.5 - 120	
72 Ge	569026.31	3.00	574804.50	99.0	79.5 - 120	
159 Tb	5013511.00	1.67	5109668.00	98.1	79.5 - 120	
209 Bi	2945491.00	1.94	3027142.00	97.3	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000582

PQL QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\020_PQL.D\020_PQL.D#
Date Acquired: Jul 2 2014 03:39 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: PQL
Misc Info:
Vial Number: 1302
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Dilution Factor: 1.00
QC Range (%): 69.599998 - 130.4

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	0.2029	ppb	7.93	0.20	101.45	
11 B	4.127	ppb	4.07	4.00	103.175	
23 Na	212.8	ppb	0.63	200.00	106.4	
25 Mg	20.54	ppb	3.16	20.00	102.7	
27 Al	62.08	ppb	1.91	60.00	103.467	
28 Si	168.3	ppb	21.88	100.00	168.3	
29 Si	170.2	ppb	87.49	100.00	170.2	Fail
39 K	210.8	ppb	1.75	200.00	105.4	
43 Ca	17.4	ppb	57.87	20.00	87	
44 Ca	20.8	ppb	3.59	20.00	104	
51 V	0.9867	ppb	3.97	1.00	98.67	
52 Cr	0.9715	ppb	3.47	1.00	97.15	
53 Cr	0.7645	ppb	17.02	---	#VALUE!	
55 Mn	0.4167	ppb	3.07	0.40	104.175	
56 Fe	23.44	ppb	11.96	20.00	117.2	
57 Fe	21.35	ppb	2.11	20.00	106.75	
59 Co	0.2112	ppb	7.59	0.20	105.6	
60 Ni	0.4325	ppb	6.65	0.40	108.125	
63 Cu	0.6102	ppb	4.53	0.60	101.7	
65 Cu	0.6348	ppb	2.15	0.60	105.8	
66 Zn	2.031	ppb	3.44	2.00	101.55	
68 Zn	2.064	ppb	12.71	2.00	103.2	
75 As	1.011	ppb	5.05	1.00	101.1	
82 Se	0.955	ppb	24.38	1.00	95.5	
88 Sr	1.01	ppb	2.07	1.00	101	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	1.04	ppb	3.35	1.00	104	
107 Ag	0.1952	ppb	3.55	0.20	97.6	
109 Ag	0.2124	ppb	6.69	0.20	106.2	
111 Cd	0.1892	ppb	15.80	0.20	94.6	
114 Cd	0.2042	ppb	3.27	0.20	102.1	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	1.013	ppb	2.53	1.00	101.3	
120 Sn	1.047	ppb	3.98	1.00	104.7	
121 Sb	0.2164	ppb	5.31	0.20	108.2	
123 Sb	0.2015	ppb	4.67	0.20	100.75	
135 Ba	0.4025	ppb	7.65	0.40	100.625	
137 Ba	0.4409	ppb	6.14	0.40	110.225	
182 W	1.1	ppb	1.61	1.00	110	
203 Tl	0.2065	ppb	8.73	0.20	103.25	
205 Tl	0.1994	ppb	6.91	0.20	99.7	
208 Pb	0.2093	ppb	4.23	0.20	104.65	
232 Th	0.1865	ppb	4.35	0.20	93.25	
238 U	0.2023	ppb	3.45	0.20	101.15	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2844870.30	1.00	2927307.30	97.2	80 - 120.4	
45 Sc	2607882.80	0.60	2674138.00	97.5	80 - 120.4	
72 Ge	563094.25	1.06	574804.50	98.0	80 - 120.4	
159 Tb	4966617.00	0.68	5109668.00	97.2	80 - 120.4	
209 Bi	2939916.30	0.84	3027142.00	97.1	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000583

ICS-A QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\021ICSA.D\021ICSA.D#
Date Acquired: Jul 2 2014 03:42 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: ICSA
Misc Info:
Vial Number: 1204
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: 6-ICSA
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0105	ppb	17.52		
11 B	0.3665	ppb	10.93		
23 Na	95,520.	ppb	0.74		
25 Mg	94,420.	ppb	1.11		
27 Al	94,360.	ppb	1.27		
28 Si	-99.15	ppb	58.92		
29 Si	-465.4	ppb	56.08		Fail
39 K	96,590.	ppb	1.89		
43 Ca	99,680.	ppb	1.93		
44 Ca	94,160.	ppb	0.81		
51 V	0.1497	ppb	17.82		
52 Cr	1.761	ppb	1.69		
53 Cr	1.435	ppb	4.15		
55 Mn	0.428	ppb	3.11		
56 Fe	93,840.	ppb	0.56		
57 Fe	89,550.	ppb	0.91		
59 Co	0.125	ppb	8.65		
60 Ni	0.0707	ppb	65.29		
63 Cu	1.542	ppb	1.41		
65 Cu	0.9765	ppb	3.86		
66 Zn	2.068	ppb	1.18		
68 Zn	0.873	ppb	28.68		
75 As	0.55	ppb	5.91		
82 Se	0.2171	ppb	99.59		
88 Sr	0.612	ppb	4.12		
89 Y	--------	---	--------		
98 Mo	1,896.	ppb	0.55		
107 Ag	0.0107	ppb	21.68		
109 Ag	0.0179	ppb	9.17		
111 Cd	0.0114	ppb	1051.60		
114 Cd	0.0765	ppb	59.06		
115 In	--------	---	--------		
118 Sn	0.0603	ppb	25.22		
120 Sn	0.0634	ppb	20.37		
121 Sb	0.0424	ppb	8.56		
123 Sb	0.0394	ppb	31.82		
135 Ba	0.0916	ppb	8.64		
137 Ba	0.1027	ppb	6.83		
182 W	0.1641	ppb	10.37		
203 Tl	0.0033	ppb	122.05		
205 Tl	0.003	ppb	68.50		
208 Pb	0.207	ppb	0.33		
232 Th	0.0848	ppb	31.30		
238 U	0.002	ppb	2.72		

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2731763.50	1.11	2927307.30	93.3	69.5 - 130.4	
45 Sc	2606786.80	1.20	2674138.00	97.5	69.5 - 130.4	
72 Ge	567669.75	0.42	574804.50	98.8	69.5 - 130.4	
159 Tb	4938066.00	0.68	5109668.00	96.6	69.5 - 130.4	
209 Bi	2690466.00	1.75	3027142.00	88.9	69.5 - 130.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000584

ICS-AB QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\022ICSB.D\022ICSB.D#
Date Acquired: Jul 2 2014 03:46 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: ICSAB
Misc Info:
Vial Number: 1205
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: 6-ICSAB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	Expected	QC Range(%)	Flag
9 Be	18.83	ppb	2.46	20.00	79.5 - 120	
11 B	17.41	ppb	1.93	20.00	79.5 - 120	
23 Na	92,460.	ppb	2.14	##########	79.5 - 120	
25 Mg	90,580.	ppb	2.36	##########	79.5 - 120	
27 Al	91,290.	ppb	1.93	##########	79.5 - 120	
28 Si	268.1	ppb	10.80	---	##### - #####	
29 Si	-312.7	ppb	34.95	---	##### - #####	
39 K	92,200.	ppb	0.83	##########	79.5 - 120	
43 Ca	95,460.	ppb	2.27	##########	79.5 - 120	
44 Ca	89,520.	ppb	2.56	##########	79.5 - 120	
51 V	19.54	ppb	1.82	20.00	79.5 - 120	
52 Cr	20.47	ppb	1.12	20.00	79.5 - 120	
53 Cr	19.57	ppb	2.53	---	##### - #####	
55 Mn	19.05	ppb	2.41	20.00	79.5 - 120	
56 Fe	92,470.	ppb	1.84	##########	79.5 - 120	
57 Fe	88,110.	ppb	2.09	##########	79.5 - 120	
59 Co	18.81	ppb	2.02	20.00	79.5 - 120	
60 Ni	18.13	ppb	2.26	20.00	79.5 - 120	
63 Cu	19.58	ppb	1.70	20.00	79.5 - 120	
65 Cu	18.97	ppb	2.52	20.00	79.5 - 120	
66 Zn	19.92	ppb	1.66	20.00	79.5 - 120	
68 Zn	17.81	ppb	3.70	20.00	79.5 - 120	
75 As	19.6	ppb	0.98	20.00	79.5 - 120	
82 Se	19.44	ppb	0.39	20.00	79.5 - 120	
88 Sr	18.79	ppb	2.28	20.00	79.5 - 120	
89 Y	--------	---	--------	---	##### - #####	
98 Mo	1,888.	ppb	3.10	2000.00	79.5 - 120	
107 Ag	18.06	ppb	3.19	20.00	79.5 - 120	
109 Ag	18.15	ppb	2.09	20.00	79.5 - 120	
111 Cd	18.69	ppb	3.05	20.00	79.5 - 120	
114 Cd	18.61	ppb	1.87	20.00	79.5 - 120	
115 In	--------	---	--------	---	##### - #####	
118 Sn	18.02	ppb	3.47	20.00	79.5 - 120	
120 Sn	17.97	ppb	2.39	20.00	79.5 - 120	
121 Sb	18.85	ppb	2.67	20.00	79.5 - 120	
123 Sb	18.84	ppb	1.96	20.00	79.5 - 120	
135 Ba	19.13	ppb	2.41	20.00	79.5 - 120	
137 Ba	19.06	ppb	2.44	20.00	79.5 - 120	
182 W	20.09	ppb	3.00	20.00	79.5 - 120	
203 Tl	19.59	ppb	2.26	20.00	79.5 - 120	
205 Tl	19.71	ppb	1.16	20.00	79.5 - 120	
208 Pb	19.99	ppb	2.17	20.00	79.5 - 120	
232 Th	20.75	ppb	1.67	20.00	79.5 - 120	
238 U	20.76	ppb	1.94	20.00	79.5 - 120	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2821159.30	2.49	2927307.30	96.4	69.5 - 130	
45 Sc	2631428.50	1.08	2674138.00	98.4	69.5 - 130	
72 Ge	569746.50	1.52	574804.50	99.1	69.5 - 130	
159 Tb	5139112.50	1.82	5109668.00	100.6	69.5 - 130	
209 Bi	2841046.80	1.63	3027142.00	93.9	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000585

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\023SMPL.D\023SMPL.D#
Date Acquired: Jul 2 2014 03:49 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: Blank
Misc Info:
Vial Number: 1301
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0023	-0.0023	ppb	20.88	100.	
11 B	0.0643	0.0643	ppb	298.07	1000.	
23 Na	8.324	8.324	ppb	8.16	200000.	
25 Mg	1.683	1.683	ppb	25.78	200000.	
27 Al	1.649	1.649	ppb	38.81	200000.	
28 Si	-208.2	-208.2	ppb	4.41	#VALUE!	
29 Si	-893.9	-893.9	ppb	6.70	10000.	LOW
39 K	-5.93	-5.93	ppb	20.30	200000.	
43 Ca	-1.848	-1.848	ppb	222.67	#VALUE!	
44 Ca	-1.767	-1.767	ppb	113.98	200000.	
51 V	-0.0031	-0.0031	ppb	776.29	1000.	
52 Cr	-0.021	-0.021	ppb	67.70	1000.	
53 Cr	0.7623	0.7623	ppb	19.87	#VALUE!	
55 Mn	-0.0134	-0.0134	ppb	58.61	1000.	
56 Fe	0.3192	0.3192	ppb	729.64	#VALUE!	
57 Fe	-7.226	-7.226	ppb	18.20	100000.	
59 Co	-0.0043	-0.0043	ppb	60.30	1000.	
60 Ni	-0.003	-0.003	ppb	120.26	1000.	
63 Cu	0.3004	0.3004	ppb	4.97	#VALUE!	
65 Cu	0.3087	0.3087	ppb	7.98	1000.	
66 Zn	0.0621	0.0621	ppb	68.64	1000.	
68 Zn	-1.183	-1.183	ppb	15.25	#VALUE!	
75 As	0.072	0.072	ppb	193.83	1000.	
82 Se	0.1707	0.1707	ppb	109.02	1000.	
88 Sr	-0.0024	-0.0024	ppb	82.07	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	1.081	1.081	ppb	9.20	1000.	
107 Ag	0.0016	0.0016	ppb	182.18	500.	
109 Ag	0.004	0.004	ppb	26.50	#VALUE!	
111 Cd	-0.0901	-0.0901	ppb	34.41	#VALUE!	
114 Cd	-0.0003	-0.0003	ppb	967.11	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0123	0.0123	ppb	60.87	1000.	
120 Sn	0.0139	0.0139	ppb	65.15	#VALUE!	
121 Sb	0.0027	0.0027	ppb	198.12	#VALUE!	
123 Sb	-0.0006	-0.0006	ppb	633.22	1000.	
135 Ba	0.0114	0.0114	ppb	18.41	1000.	
137 Ba	0.0028	0.0028	ppb	270.33	#VALUE!	
182 W	0.0285	0.0285	ppb	---	#VALUE!	
203 Tl	0.0024	0.0024	ppb	72.55	1000.	
205 Tl	0.0046	0.0046	ppb	29.67	#VALUE!	
208 Pb	0.0069	0.0069	ppb	49.90	1000.	
232 Th	0.0196	0.0196	ppb	31.24	1000.	
238 U	0.0015	0.0015	ppb	85.58	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2927994.30	1.47	2927307.30	100.0	69.5 - 130	
45 Sc	2637861.80	0.65	2674138.00	98.6	69.5 - 130	
72 Ge	570576.81	0.35	574804.50	99.3	69.5 - 130	
159 Tb	5269043.50	0.89	5109668.00	103.1	69.5 - 130	
209 Bi	3148984.80	0.63	3027142.00	104.0	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000586

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\024_CCV.D\024_CCV.D#
Date Acquired: Jul 2 2014 03:52 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	23.23	ppb	1.26	25	92.92	
11 B	23.09	ppb	1.27	25	92.36	
23 Na	5,048.	ppb	1.49	5,000	100.96	
25 Mg	5,150.	ppb	0.24	5,000	103	
27 Al	515.7	ppb	0.69	500	103.14	
28 Si	411.4	ppb	5.07	500	82.28	
29 Si	173.9	ppb	26.00	500	34.78	Fail
39 K	5,006.	ppb	0.87	5,000	100.12	
43 Ca	5,028.	ppb	2.30	5,000	100.56	
44 Ca	5,105.	ppb	0.43	5,000	102.1	
51 V	25.12	ppb	0.98	25	100.48	
52 Cr	25.34	ppb	1.52	25	101.36	
53 Cr	25.18	ppb	1.07	25	100.72	
55 Mn	25.32	ppb	1.17	25	101.28	
56 Fe	5,063.	ppb	1.37	5,000	101.26	
57 Fe	5,098.	ppb	1.68	5,000	101.96	
59 Co	25.38	ppb	1.42	25	101.52	
60 Ni	25.61	ppb	0.58	25	102.44	
63 Cu	25.4	ppb	0.87	25	101.6	
65 Cu	25.29	ppb	0.52	25	101.16	
66 Zn	25.32	ppb	0.47	25	101.28	
68 Zn	23.98	ppb	1.93	25	95.92	
75 As	25.25	ppb	1.38	25	101	
82 Se	25.53	ppb	1.44	25	102.12	
88 Sr	25.51	ppb	1.08	25	102.04	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	26.06	ppb	0.70	25	104.24	
107 Ag	25.98	ppb	0.72	25	103.92	
109 Ag	25.78	ppb	0.55	25	103.12	
111 Cd	25.8	ppb	1.25	25	103.2	
114 Cd	26.03	ppb	0.14	25	104.12	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.29	ppb	0.52	25	97.16	
120 Sn	24.58	ppb	0.76	25	98.32	
121 Sb	24.55	ppb	0.30	25	98.2	
123 Sb	24.48	ppb	0.77	25	97.92	
135 Ba	24.76	ppb	0.88	25	99.04	
137 Ba	24.85	ppb	0.67	25	99.4	
182 W	25.3	ppb	1.65	25	101.2	
203 Tl	25.09	ppb	0.84	25	100.36	
205 Tl	25.09	ppb	0.70	25	100.36	
208 Pb	25.08	ppb	0.85	25	100.32	
232 Th	25.01	ppb	0.93	25	100.04	
238 U	24.9	ppb	1.25	25	99.6	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2955689.80	1.26	2927307.30	101.0	80 - 120.4	
45 Sc	2641418.80	0.67	2674138.00	98.8	80 - 120.4	
72 Ge	568940.25	1.34	574804.50	99.0	80 - 120.4	
159 Tb	5270593.50	0.35	5109668.00	103.1	80 - 120.4	
209 Bi	3100451.80	1.16	3027142.00	102.4	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000587

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\025_CCB.D\025_CCB.D#
Date Acquired: Jul 2 2014 03:56 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	-0.0006	ppb	252.85	1.00	
11 B	0.2486	ppb	58.09	1.00	
23 Na	2.341	ppb	2.42	1.00	
25 Mg	0.6078	ppb	22.16	1.00	
27 Al	0.0438	ppb	118.00	1.00	
28 Si	-97.59	ppb	24.42	1.00	
29 Si	-553.5	ppb	9.44	1.00	Fail-DoD
39 K	-3.376	ppb	80.04	1.00	
43 Ca	-5.803	ppb	97.04	1.00	
44 Ca	-3.428	ppb	129.46	1.00	
51 V	0.058	ppb	98.83	1.00	
52 Cr	-0.0175	ppb	83.85	1.00	
53 Cr	0.3135	ppb	7.09	1.00	
55 Mn	-0.009	ppb	39.65	1.00	
56 Fe	-0.0653	ppb	893.54	1.00	
57 Fe	-7.005	ppb	43.00	1.00	
59 Co	-0.0029	ppb	119.83	1.00	
60 Ni	-0.0044	ppb	132.35	1.00	
63 Cu	0.0124	ppb	80.57	1.00	
65 Cu	0.0282	ppb	37.73	1.00	
66 Zn	0.0012	ppb	5384.50	1.00	
68 Zn	-1.257	ppb	5.39	1.00	
75 As	0.0758	ppb	126.76	1.00	
82 Se	-0.0159	ppb	637.45	1.00	
88 Sr	0.0006	ppb	102.32	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.2482	ppb	5.27	1.00	
107 Ag	0.	ppb	7048.50	1.00	
109 Ag	0.0012	ppb	131.16	1.00	
111 Cd	-0.0759	ppb	44.98	1.00	
114 Cd	-0.0029	ppb	111.95	1.00	
115 In	--------	---	--------	---	
118 Sn	0.058	ppb	27.47	1.00	
120 Sn	0.0531	ppb	35.20	1.00	
121 Sb	0.0156	ppb	46.35	1.00	
123 Sb	0.0114	ppb	28.03	1.00	
135 Ba	0.0051	ppb	139.43	1.00	
137 Ba	-0.0032	ppb	138.91	1.00	
182 W	0.1056	ppb	4.73	1.00	
203 Tl	0.0058	ppb	72.46	1.00	
205 Tl	0.0054	ppb	24.88	1.00	
208 Pb	0.0057	ppb	128.47	1.00	
232 Th	0.0387	ppb	18.64	1.00	
238 U	0.0015	ppb	61.23	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3025696.50	0.67	2927307.30	103.4	79.5 - 120	
45 Sc	2673440.30	0.94	2674138.00	100.0	79.5 - 120	
72 Ge	578007.81	0.53	574804.50	100.6	79.5 - 120	
159 Tb	5299694.00	0.09	5109668.00	103.7	79.5 - 120	
209 Bi	3150760.30	0.38	3027142.00	104.1	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000588

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\026SMPL.D\026SMPL.D#
Date Acquired: Jul 2 2014 03:59 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4797-001
Misc Info:
Vial Number: 2101
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0058	0.0058	ppb	30.00	100.	
11 B	3.134	3.134	ppb	4.42	1000.	
23 Na	4,626.	4,626.	ppb	0.34	200000.	
25 Mg	25,430.	25,430.	ppb	0.33	200000.	
27 Al	2.055	2.055	ppb	5.64	200000.	
28 Si	4,603.	4,603.	ppb	1.08	#VALUE!	
29 Si	5,018.	5,018.	ppb	3.30	10000.	
39 K	1,054.	1,054.	ppb	1.12	200000.	
43 Ca	41,330.	41,330.	ppb	0.36	#VALUE!	
44 Ca	39,410.	39,410.	ppb	0.35	200000.	
51 V	0.5347	0.5347	ppb	16.11	1000.	
52 Cr	1.562	1.562	ppb	3.33	1000.	
53 Cr	0.3529	0.3529	ppb	46.36	#VALUE!	
55 Mn	0.468	0.468	ppb	4.79	1000.	
56 Fe	72.45	72.45	ppb	6.48	#VALUE!	
57 Fe	151.5	151.5	ppb	1.83	100000.	
59 Co	0.0411	0.0411	ppb	20.93	1000.	
60 Ni	-0.0466	-0.0466	ppb	59.57	1000.	
63 Cu	10.83	10.83	ppb	1.11	#VALUE!	
65 Cu	10.88	10.88	ppb	1.07	1000.	
66 Zn	5.437	5.437	ppb	1.44	1000.	
68 Zn	5.57	5.57	ppb	6.41	#VALUE!	
75 As	0.2676	0.2676	ppb	21.62	1000.	
82 Se	0.4505	0.4505	ppb	9.40	1000.	
88 Sr	165.4	165.4	ppb	0.61	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.9343	0.9343	ppb	2.37	1000.	
107 Ag	0.0026	0.0026	ppb	119.13	500.	
109 Ag	0.0037	0.0037	ppb	42.17	#VALUE!	
111 Cd	-0.0453	-0.0453	ppb	41.78	#VALUE!	
114 Cd	-0.0006	-0.0006	ppb	300.61	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.1236	0.1236	ppb	6.63	1000.	
120 Sn	0.1165	0.1165	ppb	0.61	#VALUE!	
121 Sb	0.0363	0.0363	ppb	12.78	#VALUE!	
123 Sb	0.0375	0.0375	ppb	3.16	1000.	
135 Ba	41.73	41.73	ppb	1.22	1000.	
137 Ba	42.08	42.08	ppb	0.29	#VALUE!	
182 W	0.0432	0.0432	ppb	---	#VALUE!	
203 Tl	0.0004	0.0004	ppb	581.09	1000.	
205 Tl	0.0031	0.0031	ppb	37.57	#VALUE!	
208 Pb	0.31	0.31	ppb	2.28	1000.	
232 Th	0.0315	0.0315	ppb	14.09	1000.	
238 U	2.508	2.508	ppb	1.21	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2978516.00	0.66	2927307.30	101.7	69.5 - 130	
45 Sc	2670426.80	0.68	2674138.00	99.9	69.5 - 130	
72 Ge	580247.94	0.89	574804.50	100.9	69.5 - 130	
159 Tb	5324061.00	0.80	5109668.00	104.2	69.5 - 130	
209 Bi	3065781.00	1.28	3027142.00	101.3	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000589

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\027SMPL.D\027SMPL.D#
Date Acquired: Jul 2 2014 04:02 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: PBWHF24IMW1
Misc Info: DILUTION 1.6/8
Vial Number: 2102
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0104	-0.0021	ppb	23.71	100.	
11 B	1.051	0.2102	ppb	23.54	1000.	
23 Na	34.4	6.88	ppb	5.00	200000.	
25 Mg	7.775	1.555	ppb	11.27	200000.	
27 Al	6.275	1.255	ppb	16.01	200000.	
28 Si	-557.	-111.4	ppb	25.58	#VALUE!	
29 Si	-1,211.	-242.2	ppb	61.31	10000.	LOW
39 K	2.3875	0.4775	ppb	507.85	200000.	
43 Ca	-17.86	-3.572	ppb	84.18	#VALUE!	
44 Ca	-15.555	-3.111	ppb	111.06	200000.	
51 V	0.859	0.1718	ppb	43.96	1000.	
52 Cr	0.9635	0.1927	ppb	8.92	1000.	
53 Cr	44.575	8.915	ppb	2.81	#VALUE!	
55 Mn	0.2246	0.0449	ppb	27.08	1000.	
56 Fe	44.77	8.954	ppb	3.38	#VALUE!	
57 Fe	-30.595	-6.119	ppb	33.81	100000.	
59 Co	-0.0067	-0.0013	ppb	28.73	1000.	
60 Ni	0.0391	0.0078	ppb	37.02	1000.	
63 Cu	0.3342	0.0668	ppb	8.56	#VALUE!	
65 Cu	0.3668	0.0734	ppb	20.85	1000.	
66 Zn	0.522	0.1044	ppb	11.83	1000.	
68 Zn	-4.253	-0.8506	ppb	13.39	#VALUE!	
75 As	0.8325	0.1665	ppb	31.50	1000.	
82 Se	0.8455	0.1691	ppb	67.12	1000.	
88 Sr	0.032	0.0064	ppb	43.28	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.606	0.1212	ppb	8.50	1000.	
107 Ag	0.0033	0.0007	ppb	201.72	500.	
109 Ag	0.0008	0.0002	ppb	583.21	#VALUE!	
111 Cd	-0.1342	-0.0268	ppb	136.90	#VALUE!	
114 Cd	0.0045	0.0009	ppb	266.08	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.2341	0.0468	ppb	4.08	1000.	
120 Sn	0.2362	0.0472	ppb	8.44	#VALUE!	
121 Sb	0.0318	0.0064	ppb	91.33	#VALUE!	
123 Sb	0.0138	0.0028	ppb	106.56	1000.	
135 Ba	1.2365	0.2473	ppb	17.72	1000.	
137 Ba	1.3445	0.2689	ppb	7.39	#VALUE!	
182 W	0.1529	0.0306	ppb ---		#VALUE!	
203 Tl	0.0011	0.0002	ppb	419.03	1000.	
205 Tl	0.0093	0.0019	ppb	50.04	#VALUE!	
208 Pb	0.007	0.0014	ppb	81.39	1000.	
232 Th	0.1934	0.0387	ppb	14.22	1000.	
238 U	0.0018	0.0004	ppb	169.92	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3107361.50	0.65	2927307.30	106.2	69.5 - 130	
45 Sc	2653316.80	1.43	2674138.00	99.2	69.5 - 130	
72 Ge	576672.63	0.24	574804.50	100.3	69.5 - 130	
159 Tb	5328845.00	1.27	5109668.00	104.3	69.5 - 130	
209 Bi	3138099.00	1.37	3027142.00	103.7	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000590

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\028SMPL.D\028SMPL.D#
Date Acquired: Jul 2 2014 04:06 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: LCSWHF24IMW1
Misc Info: DILUTION 1.6/8
Vial Number: 2103
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	44.49	8.898	ppb	3.86	100.	
11 B	441.15	88.23	ppb	1.26	1000.	
23 Na	7,295.	1,459.	ppb	0.20	200000.	
25 Mg	5,170.	1,034.	ppb	1.03	200000.	
27 Al	2,122.	424.4	ppb	0.64	200000.	
28 Si	4,186.	837.2	ppb	6.62	#VALUE!	
29 Si	2,365.5	473.1	ppb	62.59	10000.	
39 K	10,005.	2,001.	ppb	1.61	200000.	
43 Ca	2,784.5	556.9	ppb	1.90	#VALUE!	
44 Ca	2,132.	426.4	ppb	0.80	200000.	
51 V	512.5	102.5	ppb	1.30	1000.	
52 Cr	202.45	40.49	ppb	1.10	1000.	
53 Cr	242.6	48.52	ppb	3.08	#VALUE!	
55 Mn	518.	103.6	ppb	1.39	1000.	
56 Fe	1,090.5	218.1	ppb	1.72	#VALUE!	
57 Fe	995.5	199.1	ppb	1.61	100000.	
59 Co	519.	103.8	ppb	2.38	1000.	
60 Ni	521.5	104.3	ppb	1.30	1000.	
63 Cu	255.2	51.04	ppb	1.41	#VALUE!	
65 Cu	253.85	50.77	ppb	1.92	1000.	
66 Zn	506.5	101.3	ppb	0.57	1000.	
68 Zn	546.5	109.3	ppb	1.40	#VALUE!	
75 As	99.8	19.96	ppb	2.22	1000.	
82 Se	101.15	20.23	ppb	2.68	1000.	
88 Sr	532.5	106.5	ppb	1.60	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	313.9	62.78	ppb	2.16	1000.	
107 Ag	51.1	10.22	ppb	1.44	500.	
109 Ag	50.85	10.17	ppb	0.73	#VALUE!	
111 Cd	254.2	50.84	ppb	1.07	#VALUE!	
114 Cd	255.25	51.05	ppb	1.15	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	495.95	99.19	ppb	0.99	1000.	
120 Sn	497.35	99.47	ppb	1.61	#VALUE!	
121 Sb	95.85	19.17	ppb	1.29	#VALUE!	
123 Sb	96.45	19.29	ppb	2.14	1000.	
135 Ba	1,926.5	385.3	ppb	1.33	1000.	
137 Ba	1,950.	390.	ppb	1.49	#VALUE!	
182 W	109.6	21.92	ppb	---	#VALUE!	
203 Tl	93.9	18.78	ppb	0.75	1000.	
205 Tl	93.95	18.79	ppb	0.76	#VALUE!	
208 Pb	101.2	20.24	ppb	0.96	1000.	
232 Th	0.4151	0.083	ppb	21.58	1000.	
238 U	103.95	20.79	ppb	0.92	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3157266.00	1.81	2927307.30	107.9	69.5 - 130	
45 Sc	2648460.50	0.10	2674138.00	99.0	69.5 - 130	
72 Ge	565780.00	1.62	574804.50	98.4	69.5 - 130	
159 Tb	5305136.50	1.68	5109668.00	103.8	69.5 - 130	
209 Bi	3122652.80	0.94	3027142.00	103.2	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000591

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\029SMPL.D\029SMPL.D#
Date Acquired: Jul 2 2014 04:09 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-002
Misc Info: DILUTION 1.6/8
Vial Number: 2104
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0197	0.0039	ppb	88.96	100.	
11 B	11.93	2.386	ppb	7.83	1000.	
23 Na	9,550.	1,910.	ppb	1.20	200000.	
25 Mg	2,178.5	435.7	ppb	1.27	200000.	
27 Al	701.5	140.3	ppb	1.49	200000.	
28 Si	7,095.	1,419.	ppb	2.32	#VALUE!	
29 Si	6,200.	1,240.	ppb	7.70	10000.	
39 K	1,067.5	213.5	ppb	2.78	200000.	
43 Ca	6,255.	1,251.	ppb	3.40	#VALUE!	
44 Ca	6,170.	1,234.	ppb	0.74	200000.	
51 V	2.056	0.4112	ppb	14.84	1000.	
52 Cr	2.551	0.5102	ppb	3.81	1000.	
53 Cr	48.73	9.746	ppb	6.67	#VALUE!	
55 Mn	52.6	10.52	ppb	0.56	1000.	
56 Fe	800.	160.	ppb	0.98	#VALUE!	
57 Fe	745.	149.	ppb	1.57	100000.	
59 Co	0.4612	0.0922	ppb	8.84	1000.	
60 Ni	1.5415	0.3083	ppb	5.18	1000.	
63 Cu	2.324	0.4648	ppb	2.78	#VALUE!	
65 Cu	2.1115	0.4223	ppb	10.14	1000.	
66 Zn	3.3255	0.6651	ppb	11.71	1000.	
68 Zn	0.8265	0.1653	ppb	176.10	#VALUE!	
75 As	1.509	0.3018	ppb	64.68	1000.	
82 Se	1.1795	0.2359	ppb	92.07	1000.	
88 Sr	27.19	5.438	ppb	1.84	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	2.6035	0.5207	ppb	2.23	1000.	
107 Ag	0.0095	0.0019	ppb	85.83	500.	
109 Ag	0.0205	0.0041	ppb	14.72	#VALUE!	
111 Cd	-0.277	-0.0554	ppb	27.98	#VALUE!	
114 Cd	0.0567	0.0113	ppb	21.23	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.605	0.121	ppb	14.08	1000.	
120 Sn	0.657	0.1314	ppb	16.43	#VALUE!	
121 Sb	0.2248	0.045	ppb	12.57	#VALUE!	
123 Sb	0.2179	0.0436	ppb	23.76	1000.	
135 Ba	8.89	1.778	ppb	2.50	1000.	
137 Ba	8.89	1.778	ppb	5.25	#VALUE!	
182 W	0.713	0.1426	ppb	---	#VALUE!	
203 Tl	0.0339	0.0068	ppb	70.31	1000.	
205 Tl	0.0371	0.0074	ppb	8.71	#VALUE!	
208 Pb	0.565	0.113	ppb	9.62	1000.	
232 Th	0.2398	0.048	ppb	12.12	1000.	
238 U	0.082	0.0164	ppb	15.20	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3112263.80	0.07	2927307.30	106.3	69.5 - 130	
45 Sc	2653191.80	0.65	2674138.00	99.2	69.5 - 130	
72 Ge	573488.94	0.20	574804.50	99.8	69.5 - 130	
159 Tb	5302014.50	0.30	5109668.00	103.8	69.5 - 130	
209 Bi	3146339.30	0.95	3027142.00	103.9	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000592

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\030SMPL.D\030SMPL.D#
Date Acquired: Jul 2 2014 04:12 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-003
Misc Info: DILUTION 1.6/8
Vial Number: 2105
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0071	-0.0014	ppb	74.84	100.	
11 B	8.805	1.761	ppb	5.12	1000.	
23 Na	9,270.	1,854.	ppb	0.44	200000.	
25 Mg	1,972.5	394.5	ppb	1.11	200000.	
27 Al	12.97	2.594	ppb	3.25	200000.	
28 Si	5,395.	1,079.	ppb	4.17	#VALUE!	
29 Si	3,771.	754.2	ppb	5.01	10000.	
39 K	915.5	183.1	ppb	1.70	200000.	
43 Ca	6,005.	1,201.	ppb	3.90	#VALUE!	
44 Ca	6,060.	1,212.	ppb	1.11	200000.	
51 V	0.684	0.1368	ppb	34.53	1000.	
52 Cr	1.2495	0.2499	ppb	8.97	1000.	
53 Cr	37.085	7.417	ppb	4.52	#VALUE!	
55 Mn	41.27	8.254	ppb	1.83	1000.	
56 Fe	26.905	5.381	ppb	34.57	#VALUE!	
57 Fe	-16.02	-3.204	ppb	57.71	100000.	
59 Co	0.0528	0.0106	ppb	44.41	1000.	
60 Ni	0.5675	0.1135	ppb	32.79	1000.	
63 Cu	1.209	0.2418	ppb	6.68	#VALUE!	
65 Cu	1.1905	0.2381	ppb	15.54	1000.	
66 Zn	1.5675	0.3135	ppb	9.61	1000.	
68 Zn	-1.325	-0.265	ppb	48.15	#VALUE!	
75 As	0.6955	0.1391	ppb	173.11	1000.	
82 Se	0.8805	0.1761	ppb	57.87	1000.	
88 Sr	25.92	5.184	ppb	2.27	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	2.25	0.45	ppb	5.56	1000.	
107 Ag	0.0015	0.0003	ppb	421.65	500.	
109 Ag	0.0104	0.0021	ppb	76.47	#VALUE!	
111 Cd	-0.2499	-0.05	ppb	42.36	#VALUE!	
114 Cd	0.0561	0.0112	ppb	31.12	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.2162	0.0432	ppb	14.97	1000.	
120 Sn	0.186	0.0372	ppb	25.58	#VALUE!	
121 Sb	0.149	0.0298	ppb	11.28	#VALUE!	
123 Sb	0.1263	0.0253	ppb	4.41	1000.	
135 Ba	5.805	1.161	ppb	1.80	1000.	
137 Ba	6.09	1.218	ppb	6.63	#VALUE!	
182 W	0.4817	0.0963	ppb	---	#VALUE!	
203 Tl	0.0033	0.0007	ppb	503.85	1000.	
205 Tl	0.0095	0.0019	ppb	118.90	#VALUE!	
208 Pb	0.0523	0.0105	ppb	25.06	1000.	
232 Th	0.0518	0.0104	ppb	20.92	1000.	
238 U	0.0364	0.0073	ppb	21.69	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3135759.30	1.14	2927307.30	107.1	69.5 - 130	
45 Sc	2688281.80	0.39	2674138.00	100.5	69.5 - 130	
72 Ge	578269.38	0.60	574804.50	100.6	69.5 - 130	
159 Tb	5366251.50	0.62	5109668.00	105.0	69.5 - 130	
209 Bi	3159856.80	1.33	3027142.00	104.4	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000593

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\031SMPL.D\031SMPL.D#
Date Acquired: Jul 2 2014 04:15 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-004
Misc Info: DILUTION 1.6/8
Vial Number: 2106
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0786	0.0157	ppb	20.00	100.	
11 B	7.005	1.401	ppb	5.94	1000.	
23 Na	5,080.	1,016.	ppb	0.97	200000.	
25 Mg	2,853.	570.6	ppb	2.24	200000.	
27 Al	1,723.5	344.7	ppb	2.36	200000.	
28 Si	5,070.	1,014.	ppb	3.60	#VALUE!	
29 Si	3,922.5	784.5	ppb	16.32	10000.	
39 K	1,271.	254.2	ppb	1.55	200000.	
43 Ca	18,890.	3,778.	ppb	2.16	#VALUE!	
44 Ca	19,245.	3,849.	ppb	1.41	200000.	
51 V	3.566	0.7132	ppb	22.10	1000.	
52 Cr	4.0755	0.8151	ppb	3.31	1000.	
53 Cr	35.915	7.183	ppb	1.53	#VALUE!	
55 Mn	34.09	6.818	ppb	0.65	1000.	
56 Fe	1,907.	381.4	ppb	0.27	#VALUE!	
57 Fe	1,884.	376.8	ppb	0.97	100000.	
59 Co	0.899	0.1798	ppb	1.35	1000.	
60 Ni	6.245	1.249	ppb	0.68	1000.	
63 Cu	3.398	0.6796	ppb	1.51	#VALUE!	
65 Cu	3.3575	0.6715	ppb	6.08	1000.	
66 Zn	9.03	1.806	ppb	3.41	1000.	
68 Zn	4.555	0.911	ppb	10.63	#VALUE!	
75 As	7.895	1.579	ppb	12.57	1000.	
82 Se	1.207	0.2414	ppb	10.58	1000.	
88 Sr	47.09	9.418	ppb	0.53	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	1.4705	0.2941	ppb	5.70	1000.	
107 Ag	0.0029	0.0006	ppb	482.62	500.	
109 Ag	0.0059	0.0012	ppb	118.91	#VALUE!	
111 Cd	-0.3347	-0.0669	ppb	40.66	#VALUE!	
114 Cd	0.0423	0.0085	ppb	43.72	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.2487	0.0497	ppb	17.46	1000.	
120 Sn	0.2478	0.0496	ppb	7.75	#VALUE!	
121 Sb	0.1657	0.0331	ppb	16.91	#VALUE!	
123 Sb	0.153	0.0306	ppb	26.35	1000.	
135 Ba	10.005	2.001	ppb	2.82	1000.	
137 Ba	10.535	2.107	ppb	3.11	#VALUE!	
182 W	2.032	0.4064	ppb	---	#VALUE!	
203 Tl	0.0091	0.0018	ppb	121.49	1000.	
205 Tl	0.0133	0.0027	ppb	38.89	#VALUE!	
208 Pb	2.4955	0.4991	ppb	0.90	1000.	
232 Th	0.6075	0.1215	ppb	8.86	1000.	
238 U	1.208	0.2416	ppb	2.65	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3131522.30	0.47	2927307.30	107.0	69.5 - 130	
45 Sc	2687258.00	1.52	2674138.00	100.5	69.5 - 130	
72 Ge	582434.13	0.22	574804.50	101.3	69.5 - 130	
159 Tb	5389929.00	0.06	5109668.00	105.5	69.5 - 130	
209 Bi	3177922.30	0.24	3027142.00	105.0	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000594

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\032SMPL.D\032SMPL.D#
Date Acquired: Jul 2 2014 04:19 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-005
Misc Info: DILUTION 1.6/8
Vial Number: 2107
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0015	-0.0003	ppb	460.52	100.	
11 B	6.33	1.266	ppb	9.04	1000.	
23 Na	5,015.	1,003.	ppb	2.21	200000.	
25 Mg	2,399.5	479.9	ppb	1.35	200000.	
27 Al	10.93	2.186	ppb	1.23	200000.	
28 Si	2,968.5	593.7	ppb	6.31	#VALUE!	
29 Si	1,587.5	317.5	ppb	31.34	10000.	
39 K	1,047.5	209.5	ppb	1.21	200000.	
43 Ca	19,370.	3,874.	ppb	2.76	#VALUE!	
44 Ca	19,180.	3,836.	ppb	2.84	200000.	
51 V	1.01	0.202	ppb	76.78	1000.	
52 Cr	1.05	0.21	ppb	7.25	1000.	
53 Cr	32.66	6.532	ppb	8.63	#VALUE!	
55 Mn	2.2705	0.4541	ppb	5.64	1000.	
56 Fe	28.91	5.782	ppb	10.52	#VALUE!	
57 Fe	11.23	2.246	ppb	188.20	100000.	
59 Co	0.0726	0.0145	ppb	20.51	1000.	
60 Ni	3.881	0.7762	ppb	7.28	1000.	
63 Cu	1.2725	0.2545	ppb	2.54	#VALUE!	
65 Cu	1.3375	0.2675	ppb	8.67	1000.	
66 Zn	4.6685	0.9337	ppb	5.86	1000.	
68 Zn	0.4392	0.0878	ppb	508.31	#VALUE!	
75 As	6.38	1.276	ppb	14.59	1000.	
82 Se	1.3285	0.2657	ppb	36.87	1000.	
88 Sr	46.37	9.274	ppb	1.62	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	1.5885	0.3177	ppb	4.17	1000.	
107 Ag	-0.0013	-0.0003	ppb	799.14	500.	
109 Ag	0.0225	0.0045	ppb	28.61	#VALUE!	
111 Cd	-0.3351	-0.067	ppb	54.33	#VALUE!	
114 Cd	0.1905	0.0381	ppb	12.95	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.4416	0.0883	ppb	19.45	1000.	
120 Sn	0.4189	0.0838	ppb	15.04	#VALUE!	
121 Sb	0.1539	0.0308	ppb	22.94	#VALUE!	
123 Sb	0.1169	0.0234	ppb	37.55	1000.	
135 Ba	3.5685	0.7137	ppb	13.53	1000.	
137 Ba	3.4615	0.6923	ppb	1.56	#VALUE!	
182 W	3.322	0.6644	ppb	---	#VALUE!	
203 Tl	0.0066	0.0013	ppb	325.70	1000.	
205 Tl	-0.0022	-0.0004	ppb	136.87	#VALUE!	
208 Pb	0.0913	0.0183	ppb	10.08	1000.	
232 Th	0.0553	0.0111	ppb	24.71	1000.	
238 U	0.956	0.1912	ppb	5.63	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3110570.50	0.11	2927307.30	106.3	69.5 - 130	
45 Sc	2675020.30	0.49	2674138.00	100.0	69.5 - 130	
72 Ge	581984.19	0.44	574804.50	101.2	69.5 - 130	
159 Tb	5385367.50	0.64	5109668.00	105.4	69.5 - 130	
209 Bi	3184941.00	0.56	3027142.00	105.2	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000595

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\033SMPL.D\033SMPL.D#
Date Acquired: Jul 2 2014 04:22 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-006
Misc Info: DILUTION 1.6/8
Vial Number: 2108
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0119	0.0024	ppb	72.47	100.	
11 B	7.645	1.529	ppb	7.31	1000.	
23 Na	9,510.	1,902.	ppb	0.41	200000.	
25 Mg	2,198.	439.6	ppb	1.10	200000.	
27 Al	657.	131.4	ppb	1.01	200000.	
28 Si	7,260.	1,452.	ppb	3.18	#VALUE!	
29 Si	6,465.	1,293.	ppb	3.41	10000.	
39 K	1,070.	214.	ppb	1.83	200000.	
43 Ca	6,270.	1,254.	ppb	1.77	#VALUE!	
44 Ca	6,215.	1,243.	ppb	1.52	200000.	
51 V	1.59	0.318	ppb	22.23	1000.	
52 Cr	2.4925	0.4985	ppb	9.75	1000.	
53 Cr	56.85	11.37	ppb	4.21	#VALUE!	
55 Mn	51.95	10.39	ppb	0.58	1000.	
56 Fe	801.	160.2	ppb	1.21	#VALUE!	
57 Fe	728.	145.6	ppb	3.23	100000.	
59 Co	0.4513	0.0903	ppb	13.14	1000.	
60 Ni	1.418	0.2836	ppb	8.37	1000.	
63 Cu	1.9915	0.3983	ppb	4.99	#VALUE!	
65 Cu	2.1835	0.4367	ppb	8.73	1000.	
66 Zn	3.647	0.7294	ppb	3.58	1000.	
68 Zn	1.71	0.342	ppb	22.19	#VALUE!	
75 As	2.4805	0.4961	ppb	20.38	1000.	
82 Se	1.588	0.3176	ppb	71.13	1000.	
88 Sr	26.87	5.374	ppb	0.82	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	2.1425	0.4285	ppb	7.61	1000.	
107 Ag	0.0055	0.0011	ppb	74.78	500.	
109 Ag	0.0086	0.0017	ppb	81.40	#VALUE!	
111 Cd	-0.352	-0.0704	ppb	23.10	#VALUE!	
114 Cd	0.0526	0.0105	ppb	44.01	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.2463	0.0493	ppb	7.66	1000.	
120 Sn	0.2509	0.0502	ppb	16.60	#VALUE!	
121 Sb	0.1749	0.035	ppb	33.62	#VALUE!	
123 Sb	0.1789	0.0358	ppb	12.21	1000.	
135 Ba	8.71	1.742	ppb	3.09	1000.	
137 Ba	9.125	1.825	ppb	4.44	#VALUE!	
182 W	0.4886	0.0977	ppb	---	#VALUE!	
203 Tl	0.0043	0.0009	ppb	374.06	1000.	
205 Tl	0.0049	0.001	ppb	78.27	#VALUE!	
208 Pb	0.6305	0.1261	ppb	25.41	1000.	
232 Th	0.2318	0.0464	ppb	2.81	1000.	
238 U	0.0677	0.0135	ppb	8.11	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3134682.80	1.62	2927307.30	107.1	69.5 - 130	
45 Sc	2672699.30	1.65	2674138.00	99.9	69.5 - 130	
72 Ge	581371.25	0.80	574804.50	101.1	69.5 - 130	
159 Tb	5357609.00	1.25	5109668.00	104.9	69.5 - 130	
209 Bi	3164772.80	0.87	3027142.00	104.5	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000596

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\034SMPL.D\034SMPL.D#
Date Acquired: Jul 2 2014 04:25 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-007
Misc Info: DILUTION 1.6/8
Vial Number: 2109
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.001	-0.0002	ppb	483.42	100.	
11 B	7.44	1.488	ppb	4.92	1000.	
23 Na	9,680.	1,936.	ppb	2.44	200000.	
25 Mg	2,070.	414.	ppb	2.25	200000.	
27 Al	12.65	2.53	ppb	8.75	200000.	
28 Si	6,675.	1,335.	ppb	4.40	#VALUE!	
29 Si	5,870.	1,174.	ppb	9.11	10000.	
39 K	952.	190.4	ppb	4.61	200000.	
43 Ca	6,350.	1,270.	ppb	2.39	#VALUE!	
44 Ca	6,335.	1,267.	ppb	2.70	200000.	
51 V	1.358	0.2716	ppb	22.11	1000.	
52 Cr	1.7155	0.3431	ppb	17.23	1000.	
53 Cr	64.8	12.96	ppb	9.85	#VALUE!	
55 Mn	43.24	8.648	ppb	1.76	1000.	
56 Fe	16.41	3.282	ppb	32.54	#VALUE!	
57 Fe	-22.915	-4.583	ppb	13.51	100000.	
59 Co	0.0493	0.0099	ppb	53.55	1000.	
60 Ni	0.6045	0.1209	ppb	0.91	1000.	
63 Cu	8.71	1.742	ppb	3.83	#VALUE!	
65 Cu	8.615	1.723	ppb	2.06	1000.	
66 Zn	5.88	1.176	ppb	5.00	1000.	
68 Zn	4.648	0.9296	ppb	37.04	#VALUE!	
75 As	0.615	0.123	ppb	104.80	1000.	
82 Se	1.1945	0.2389	ppb	41.94	1000.	
88 Sr	27.05	5.41	ppb	3.94	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	2.156	0.4312	ppb	5.20	1000.	
107 Ag	-0.0045	-0.0009	ppb	130.84	500.	
109 Ag	0.0069	0.0014	ppb	118.67	#VALUE!	
111 Cd	-0.358	-0.0716	ppb	48.21	#VALUE!	
114 Cd	0.065	0.013	ppb	37.68	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.1425	0.0285	ppb	16.16	1000.	
120 Sn	0.192	0.0384	ppb	13.16	#VALUE!	
121 Sb	0.1435	0.0287	ppb	23.36	#VALUE!	
123 Sb	0.1516	0.0303	ppb	10.16	1000.	
135 Ba	5.445	1.089	ppb	3.41	1000.	
137 Ba	5.495	1.099	ppb	5.70	#VALUE!	
182 W	0.4302	0.086	ppb	---	#VALUE!	
203 Tl	-0.0052	-0.001	ppb	195.16	1000.	
205 Tl	0.	0.	ppb	9883.20	#VALUE!	
208 Pb	0.2743	0.0549	ppb	3.71	1000.	
232 Th	0.0568	0.0114	ppb	19.83	1000.	
238 U	0.0391	0.0078	ppb	23.24	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3117766.80	1.86	2927307.30	106.5	69.5 - 130	
45 Sc	2675129.50	2.62	2674138.00	100.0	69.5 - 130	
72 Ge	578098.44	2.73	574804.50	100.6	69.5 - 130	
159 Tb	5312514.00	3.20	5109668.00	104.0	69.5 - 130	
209 Bi	3154594.00	2.25	3027142.00	104.2	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000597

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\035SMPL.D\035SMPL.D#
Date Acquired: Jul 2 2014 04:29 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-009
Misc Info: DILUTION 1.6/8
Vial Number: 2110
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0264	0.0053	ppb	220.98	100.	
11 B	7.845	1.569	ppb	9.22	1000.	
23 Na	8,070.	1,614.	ppb	4.20	200000.	
25 Mg	6,570.	1,314.	ppb	3.72	200000.	
27 Al	158.1	31.62	ppb	162.75	200000.	
28 Si	5,815.	1,163.	ppb	2.34	#VALUE!	
29 Si	5,415.	1,083.	ppb	6.16	10000.	
39 K	1,628.5	325.7	ppb	14.85	200000.	
43 Ca	33,265.	6,653.	ppb	1.17	#VALUE!	
44 Ca	33,255.	6,651.	ppb	1.05	200000.	
51 V	1.202	0.2404	ppb	17.68	1000.	
52 Cr	0.7765	0.1553	ppb	26.62	1000.	
53 Cr	40.055	8.011	ppb	4.90	#VALUE!	
55 Mn	46.655	9.331	ppb	1.11	1000.	
56 Fe	144.85	28.97	ppb	171.07	#VALUE!	
57 Fe	167.6	33.52	ppb	139.08	100000.	
59 Co	0.2642	0.0528	ppb	75.02	1000.	
60 Ni	2.136	0.4272	ppb	15.19	1000.	
63 Cu	1.247	0.2494	ppb	14.75	#VALUE!	
65 Cu	1.167	0.2334	ppb	23.15	1000.	
66 Zn	2.101	0.4202	ppb	20.31	1000.	
68 Zn	-3.228	-0.6456	ppb	16.08	#VALUE!	
75 As	1.977	0.3954	ppb	33.54	1000.	
82 Se	1.443	0.2886	ppb	81.64	1000.	
88 Sr	86.7	17.34	ppb	1.27	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	3.4225	0.6845	ppb	143.18	1000.	
107 Ag	0.0471	0.0094	ppb	187.65	500.	
109 Ag	0.0523	0.0105	ppb	146.46	#VALUE!	
111 Cd	-0.3065	-0.0613	ppb	34.29	#VALUE!	
114 Cd	0.1366	0.0273	ppb	113.47	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.3804	0.0761	ppb	63.43	1000.	
120 Sn	0.3575	0.0715	ppb	83.82	#VALUE!	
121 Sb	0.1427	0.0285	ppb	91.63	#VALUE!	
123 Sb	0.1387	0.0277	ppb	64.67	1000.	
135 Ba	6.97	1.394	ppb	6.80	1000.	
137 Ba	7.265	1.453	ppb	10.23	#VALUE!	
182 W	0.1219	0.0244	ppb	---	#VALUE!	
203 Tl	0.0584	0.0117	ppb	197.60	1000.	
205 Tl	0.0538	0.0108	ppb	156.84	#VALUE!	
208 Pb	0.1277	0.0255	ppb	55.52	1000.	
232 Th	0.0738	0.0148	ppb	92.48	1000.	
238 U	0.596	0.1192	ppb	11.65	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3206339.50	0.99	2927307.30	109.5	69.5 - 130	
45 Sc	2743326.50	0.34	2674138.00	102.6	69.5 - 130	
72 Ge	593952.19	1.07	574804.50	103.3	69.5 - 130	
159 Tb	5541594.50	0.67	5109668.00	108.5	69.5 - 130	
209 Bi	3244397.00	1.17	3027142.00	107.2	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000598

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\036_CCV.D\036_CCV.D#
Date Acquired: Jul 2 2014 04:32 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	22.61	ppb	0.82	25	90.44	
11 B	23.45	ppb	1.68	25	93.8	
23 Na	5,082.	ppb	0.92	5,000	101.64	
25 Mg	5,144.	ppb	1.69	5,000	102.88	
27 Al	520.1	ppb	1.39	500	104.02	
28 Si	376.3	ppb	3.76	500	75.26	
29 Si	151.9	ppb	53.50	500	30.38	Fail
39 K	5,065.	ppb	2.95	5,000	101.3	
43 Ca	5,045.	ppb	1.59	5,000	100.9	
44 Ca	5,100.	ppb	1.38	5,000	102	
51 V	25.38	ppb	0.50	25	101.52	
52 Cr	25.57	ppb	1.44	25	102.28	
53 Cr	26.08	ppb	2.49	25	104.32	
55 Mn	25.66	ppb	1.21	25	102.64	
56 Fe	5,129.	ppb	0.33	5,000	102.58	
57 Fe	5,115.	ppb	1.20	5,000	102.3	
59 Co	25.52	ppb	1.50	25	102.08	
60 Ni	25.29	ppb	1.96	25	101.16	
63 Cu	25.38	ppb	1.81	25	101.52	
65 Cu	25.5	ppb	0.89	25	102	
66 Zn	25.06	ppb	1.17	25	100.24	
68 Zn	24.63	ppb	6.13	25	98.52	
75 As	24.92	ppb	0.45	25	99.68	
82 Se	25.67	ppb	1.57	25	102.68	
88 Sr	25.64	ppb	1.91	25	102.56	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	25.57	ppb	1.31	25	102.28	
107 Ag	25.96	ppb	1.24	25	103.84	
109 Ag	25.91	ppb	0.82	25	103.64	
111 Cd	25.91	ppb	1.37	25	103.64	
114 Cd	26.03	ppb	0.89	25	104.12	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.36	ppb	0.72	25	97.44	
120 Sn	24.35	ppb	1.71	25	97.4	
121 Sb	24.39	ppb	0.78	25	97.56	
123 Sb	24.37	ppb	1.28	25	97.48	
135 Ba	24.37	ppb	2.57	25	97.48	
137 Ba	24.79	ppb	0.62	25	99.16	
182 W	25.09	ppb	0.63	25	100.36	
203 Tl	24.95	ppb	1.13	25	99.8	
205 Tl	24.87	ppb	1.56	25	99.48	
208 Pb	24.92	ppb	1.33	25	99.68	
232 Th	24.63	ppb	1.12	25	98.52	
238 U	24.67	ppb	1.05	25	98.68	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3051173.30	0.42	2927307.30	104.2	80 - 120.4	
45 Sc	2683251.50	0.56	2674138.00	100.3	80 - 120.4	
72 Ge	578744.81	0.75	574804.50	100.7	80 - 120.4	
159 Tb	5411392.50	0.46	5109668.00	105.9	80 - 120.4	
209 Bi	3207735.30	1.36	3027142.00	106.0	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000599

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\037_CCB.D\037_CCB.D#
Date Acquired: Jul 2 2014 04:35 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0003	ppb	594.35	1.00	
11 B	0.2571	ppb	74.72	1.00	
23 Na	-0.1955	ppb	62.61	1.00	
25 Mg	0.0842	ppb	79.22	1.00	
27 Al	0.0023	ppb	3260.10	1.00	
28 Si	-41.89	ppb	100.50	1.00	
29 Si	-97.5	ppb	219.49	1.00	
39 K	-4.502	ppb	68.57	1.00	
43 Ca	-1.029	ppb	613.70	1.00	
44 Ca	-8.581	ppb	31.20	1.00	
51 V	0.0591	ppb	72.50	1.00	
52 Cr	-0.017	ppb	122.63	1.00	
53 Cr	0.2058	ppb	75.66	1.00	
55 Mn	-0.0027	ppb	277.53	1.00	
56 Fe	0.0285	ppb	6362.00	1.00	
57 Fe	-8.288	ppb	5.30	1.00	
59 Co	-0.0056	ppb	38.68	1.00	
60 Ni	0.0038	ppb	38.44	1.00	
63 Cu	0.0006	ppb	2900.40	1.00	
65 Cu	0.0128	ppb	89.00	1.00	
66 Zn	0.004	ppb	575.98	1.00	
68 Zn	-1.044	ppb	18.65	1.00	
75 As	-0.1275	ppb	61.06	1.00	
82 Se	0.2271	ppb	48.66	1.00	
88 Sr	-0.0009	ppb	395.11	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0813	ppb	8.11	1.00	
107 Ag	0.0004	ppb	534.52	1.00	
109 Ag	0.0026	ppb	70.31	1.00	
111 Cd	-0.0691	ppb	42.00	1.00	
114 Cd	0.0016	ppb	504.91	1.00	
115 In	--------	---	--------	---	
118 Sn	0.054	ppb	19.96	1.00	
120 Sn	0.0595	ppb	33.29	1.00	
121 Sb	0.0172	ppb	50.25	1.00	
123 Sb	0.0081	ppb	86.83	1.00	
135 Ba	-0.0015	ppb	408.52	1.00	
137 Ba	-0.0041	ppb	102.47	1.00	
182 W	0.1091	ppb	10.89	1.00	
203 Tl	0.0031	ppb	25.24	1.00	
205 Tl	0.0053	ppb	31.79	1.00	
208 Pb	0.0035	ppb	43.83	1.00	
232 Th	0.0682	ppb	29.21	1.00	
238 U	0.0016	ppb	11.65	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3099813.50	2.75	2927307.30	105.9	79.5 - 120	
45 Sc	2741652.80	1.03	2674138.00	102.5	79.5 - 120	
72 Ge	593997.94	0.27	574804.50	103.3	79.5 - 120	
159 Tb	5568866.00	0.52	5109668.00	109.0	79.5 - 120	
209 Bi	3286340.30	0.34	3027142.00	108.6	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000600

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\038SMPL.D\038SMPL.D#
Date Acquired: Jul 2 2014 04:38 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-009L
Misc Info: DILUTION 0.4/10
Vial Number: 2111
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0407	-0.0016	ppb	130.69	100.	
11 B	9.7475	0.3899	ppb	17.79	1000.	
23 Na	8,122.5	324.9	ppb	0.31	200000.	
25 Mg	6,205.	248.2	ppb	3.18	200000.	
27 Al	21.6475	0.8659	ppb	7.24	200000.	
28 Si	5,097.5	203.9	ppb	22.53	#VALUE!	
29 Si	2,155.5	86.22	ppb	162.96	10000.	
39 K	1,457.75	58.31	ppb	2.88	200000.	
43 Ca	33,825.	1,353.	ppb	1.76	#VALUE!	
44 Ca	33,025.	1,321.	ppb	1.94	200000.	
51 V	1.8303	0.0732	ppb	120.84	1000.	
52 Cr	0.572	0.0229	ppb	126.66	1000.	
53 Cr	43.1	1.724	ppb	8.79	#VALUE!	
55 Mn	46.625	1.865	ppb	2.16	1000.	
56 Fe	-58.675	-2.347	ppb	63.40	#VALUE!	
57 Fe	-214.425	-8.577	ppb	12.08	100000.	
59 Co	-0.0218	-0.0009	ppb	213.37	1000.	
60 Ni	1.7365	0.0695	ppb	13.08	1000.	
63 Cu	2.1368	0.0855	ppb	21.88	#VALUE!	
65 Cu	2.79	0.1116	ppb	11.83	1000.	
66 Zn	2.4163	0.0967	ppb	34.84	1000.	
68 Zn	-27.1	-1.084	ppb	16.26	#VALUE!	
75 As	3.2175	0.1287	ppb	43.54	1000.	
82 Se	4.52	0.1808	ppb	90.93	1000.	
88 Sr	86.15	3.446	ppb	0.59	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	1.1558	0.0462	ppb	25.05	1000.	
107 Ag	-0.0279	-0.0011	ppb	82.99	500.	
109 Ag	0.09	0.0036	ppb	36.58	#VALUE!	
111 Cd	-1.4973	-0.0599	ppb	27.83	#VALUE!	
114 Cd	0.0647	0.0026	ppb	64.36	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.9325	0.0373	ppb	20.22	1000.	
120 Sn	0.8375	0.0335	ppb	21.83	#VALUE!	
121 Sb	0.104	0.0042	ppb	28.46	#VALUE!	
123 Sb	0.1082	0.0043	ppb	62.45	1000.	
135 Ba	14.12	0.5648	ppb	18.36	1000.	
137 Ba	12.895	0.5158	ppb	5.08	#VALUE!	
182 W	0.9035	0.0361	ppb	---	#VALUE!	
203 Tl	-0.0136	-0.0005	ppb	22.97	1000.	
205 Tl	0.0209	0.0008	ppb	139.81	#VALUE!	
208 Pb	1.223	0.0489	ppb	170.79	1000.	
232 Th	0.836	0.0334	ppb	8.57	1000.	
238 U	0.4768	0.0191	ppb	12.91	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3183670.80	0.38	2927307.30	108.8	69.5 - 130	
45 Sc	2734156.80	0.58	2674138.00	102.2	69.5 - 130	
72 Ge	598737.94	0.95	574804.50	104.2	69.5 - 130	
159 Tb	5502112.00	0.62	5109668.00	107.7	69.5 - 130	
209 Bi	3255532.50	1.74	3027142.00	107.5	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000601

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\039SMPL.D\039SMPL.D#
Date Acquired: Jul 2 2014 04:42 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-009A
Misc Info: DILUTION 1.6/8
Vial Number: 2112
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	8.59	1.718	ppb	2.95	100.	
11 B	185.95	37.19	ppb	0.45	1000.	
23 Na	17,740.	3,548.	ppb	1.12	200000.	
25 Mg	7,365.	1,473.	ppb	1.43	200000.	
27 Al	2,999.	599.8	ppb	1.14	200000.	
28 Si	11,005.	2,201.	ppb	0.63	#VALUE!	
29 Si	11,225.	2,245.	ppb	1.70	10000.	
39 K	11,220.	2,244.	ppb	1.13	200000.	
43 Ca	33,890.	6,778.	ppb	0.49	#VALUE!	
44 Ca	33,990.	6,798.	ppb	0.27	200000.	
51 V	48.76	9.752	ppb	2.13	1000.	
52 Cr	50.35	10.07	ppb	0.51	1000.	
53 Cr	82.95	16.59	ppb	3.01	#VALUE!	
55 Mn	67.25	13.45	ppb	1.50	1000.	
56 Fe	993.5	198.7	ppb	0.57	#VALUE!	
57 Fe	989.5	197.9	ppb	2.30	100000.	
59 Co	9.855	1.971	ppb	1.78	1000.	
60 Ni	21.235	4.247	ppb	3.19	1000.	
63 Cu	31.105	6.221	ppb	0.50	#VALUE!	
65 Cu	31.01	6.202	ppb	1.53	1000.	
66 Zn	96.75	19.35	ppb	2.07	1000.	
68 Zn	88.8	17.76	ppb	3.06	#VALUE!	
75 As	49.395	9.879	ppb	1.59	1000.	
82 Se	48.655	9.731	ppb	2.01	1000.	
88 Sr	134.85	26.97	ppb	0.90	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	49.53	9.906	ppb	0.92	1000.	
107 Ag	10.195	2.039	ppb	0.38	500.	
109 Ag	10.13	2.026	ppb	1.34	#VALUE!	
111 Cd	9.625	1.925	ppb	5.05	#VALUE!	
114 Cd	10.015	2.003	ppb	0.94	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	46.32	9.264	ppb	1.22	1000.	
120 Sn	46.52	9.304	ppb	0.52	#VALUE!	
121 Sb	9.53	1.906	ppb	1.78	#VALUE!	
123 Sb	9.47	1.894	ppb	2.99	1000.	
135 Ba	27.71	5.542	ppb	1.70	1000.	
137 Ba	28.08	5.616	ppb	1.84	#VALUE!	
182 W	50.25	10.05	ppb ---		#VALUE!	
203 Tl	9.715	1.943	ppb	2.66	1000.	
205 Tl	9.67	1.934	ppb	1.58	#VALUE!	
208 Pb	10.465	2.093	ppb	7.21	1000.	
232 Th	9.92	1.984	ppb	5.63	1000.	
238 U	10.21	2.042	ppb	0.91	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3181146.30	1.21	2927307.30	108.7	69.5 - 130	
45 Sc	2720861.00	0.31	2674138.00	101.7	69.5 - 130	
72 Ge	589252.94	0.73	574804.50	102.5	69.5 - 130	
159 Tb	5541296.00	0.81	5109668.00	108.4	69.5 - 130	
209 Bi	3237145.00	0.51	3027142.00	106.9	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000602

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\040SMPL.D\040SMPL.D#
Date Acquired: Jul 2 2014 04:45 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-009S
Misc Info: DILUTION 1.6/8
Vial Number: 2201
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	43.84	8.768	ppb	0.40	100.	
11 B	445.95	89.19	ppb	0.85	1000.	
23 Na	15,085.	3,017.	ppb	1.89	200000.	
25 Mg	11,455.	2,291.	ppb	1.07	200000.	
27 Al	2,151.	430.2	ppb	1.29	200000.	
28 Si	10,540.	2,108.	ppb	1.21	#VALUE!	
29 Si	9,880.	1,976.	ppb	6.84	10000.	
39 K	11,630.	2,326.	ppb	1.12	200000.	
43 Ca	35,115.	7,023.	ppb	2.89	#VALUE!	
44 Ca	34,270.	6,854.	ppb	0.31	200000.	
51 V	518.	103.6	ppb	0.88	1000.	
52 Cr	204.1	40.82	ppb	0.08	1000.	
53 Cr	244.75	48.95	ppb	1.05	#VALUE!	
55 Mn	564.5	112.9	ppb	0.90	1000.	
56 Fe	1,059.5	211.9	ppb	0.89	#VALUE!	
57 Fe	1,048.	209.6	ppb	2.03	100000.	
59 Co	524.5	104.9	ppb	0.38	1000.	
60 Ni	524.	104.8	ppb	0.28	1000.	
63 Cu	253.15	50.63	ppb	0.26	#VALUE!	
65 Cu	254.2	50.84	ppb	0.41	1000.	
66 Zn	513.	102.6	ppb	0.61	1000.	
68 Zn	554.	110.8	ppb	0.66	#VALUE!	
75 As	102.2	20.44	ppb	0.31	1000.	
82 Se	103.25	20.65	ppb	0.40	1000.	
88 Sr	604.5	120.9	ppb	0.54	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	307.85	61.57	ppb	0.72	1000.	
107 Ag	52.6	10.52	ppb	1.21	500.	
109 Ag	52.3	10.46	ppb	0.17	#VALUE!	
111 Cd	259.	51.8	ppb	0.37	#VALUE!	
114 Cd	260.65	52.13	ppb	0.37	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	483.25	96.65	ppb	0.78	1000.	
120 Sn	484.95	96.99	ppb	1.18	#VALUE!	
121 Sb	97.3	19.46	ppb	1.05	#VALUE!	
123 Sb	98.1	19.62	ppb	1.23	1000.	
135 Ba	1,962.	392.4	ppb	1.29	1000.	
137 Ba	1,979.	395.8	ppb	0.86	#VALUE!	
182 W	107.85	21.57	ppb ---		#VALUE!	
203 Tl	96.55	19.31	ppb	0.52	1000.	
205 Tl	96.85	19.37	ppb	0.66	#VALUE!	
208 Pb	103.35	20.67	ppb	0.50	1000.	
232 Th	0.62	0.124	ppb	21.99	1000.	
238 U	102.05	20.41	ppb	0.19	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3226621.80	1.74	2927307.30	110.2	69.5 - 130	
45 Sc	2700321.30	0.69	2674138.00	101.0	69.5 - 130	
72 Ge	579582.75	0.14	574804.50	100.8	69.5 - 130	
159 Tb	5485111.00	0.74	5109668.00	107.3	69.5 - 130	
209 Bi	3194694.80	0.55	3027142.00	105.5	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000603

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\041SMPL.D\041SMPL.D#
Date Acquired: Jul 2 2014 04:48 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-009P
Misc Info: DILUTION 1.6/8
Vial Number: 2202
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	44.495	8.899	ppb	0.82	100.	
11 B	443.4	88.68	ppb	2.34	1000.	
23 Na	14,960.	2,992.	ppb	1.01	200000.	
25 Mg	11,415.	2,283.	ppb	0.29	200000.	
27 Al	2,148.5	429.7	ppb	0.79	200000.	
28 Si	9,865.	1,973.	ppb	5.58	#VALUE!	
29 Si	8,690.	1,738.	ppb	9.21	10000.	
39 K	11,415.	2,283.	ppb	0.92	200000.	
43 Ca	35,235.	7,047.	ppb	0.91	#VALUE!	
44 Ca	34,610.	6,922.	ppb	2.09	200000.	
51 V	518.	103.6	ppb	0.82	1000.	
52 Cr	204.	40.8	ppb	1.33	1000.	
53 Cr	237.5	47.5	ppb	1.45	#VALUE!	
55 Mn	565.	113.	ppb	1.84	1000.	
56 Fe	1,070.	214.	ppb	0.23	#VALUE!	
57 Fe	1,077.5	215.5	ppb	3.52	100000.	
59 Co	526.	105.2	ppb	1.02	1000.	
60 Ni	518.	103.6	ppb	0.76	1000.	
63 Cu	253.7	50.74	ppb	0.57	#VALUE!	
65 Cu	254.2	50.84	ppb	0.78	1000.	
66 Zn	508.5	101.7	ppb	0.32	1000.	
68 Zn	545.5	109.1	ppb	1.09	#VALUE!	
75 As	101.8	20.36	ppb	1.57	1000.	
82 Se	101.9	20.38	ppb	0.83	1000.	
88 Sr	604.5	120.9	ppb	1.47	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	307.3	61.46	ppb	0.92	1000.	
107 Ag	51.85	10.37	ppb	1.16	500.	
109 Ag	51.95	10.39	ppb	0.65	#VALUE!	
111 Cd	252.9	50.58	ppb	1.74	#VALUE!	
114 Cd	254.2	50.84	ppb	0.84	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	488.1	97.62	ppb	1.20	1000.	
120 Sn	490.35	98.07	ppb	2.10	#VALUE!	
121 Sb	96.5	19.3	ppb	1.96	#VALUE!	
123 Sb	96.35	19.27	ppb	1.31	1000.	
135 Ba	1,972.	394.4	ppb	1.71	1000.	
137 Ba	1,999.5	399.9	ppb	1.19	#VALUE!	
182 W	109.45	21.89	ppb	---	#VALUE!	
203 Tl	94.8	18.96	ppb	1.01	1000.	
205 Tl	95.85	19.17	ppb	1.11	#VALUE!	
208 Pb	102.15	20.43	ppb	0.88	1000.	
232 Th	0.2181	0.0436	ppb	12.35	1000.	
238 U	102.5	20.5	ppb	0.99	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3248022.80	0.91	2927307.30	111.0	69.5 - 130	
45 Sc	2739090.00	1.15	2674138.00	102.4	69.5 - 130	
72 Ge	585047.00	0.76	574804.50	101.8	69.5 - 130	
159 Tb	5465220.50	1.02	5109668.00	107.0	69.5 - 130	
209 Bi	3192079.30	1.03	3027142.00	105.4	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000604

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\042SMPL.D\042SMPL.D#
Date Acquired: Jul 2 2014 04:52 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-010
Misc Info: DILUTION 1.6/8
Vial Number: 2203
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0017	0.0003	ppb	410.48	100.	
11 B	14.115	2.823	ppb	15.41	1000.	
23 Na	3,793.	758.6	ppb	1.16	200000.	
25 Mg	1,980.	396.	ppb	1.18	200000.	
27 Al	89.2	17.84	ppb	2.24	200000.	
28 Si	2,555.5	511.1	ppb	12.99	#VALUE!	
29 Si	787.5	157.5	ppb	105.97	10000.	
39 K	888.	177.6	ppb	1.78	200000.	
43 Ca	7,910.	1,582.	ppb	1.12	#VALUE!	
44 Ca	7,915.	1,583.	ppb	0.38	200000.	
51 V	0.7675	0.1535	ppb	61.13	1000.	
52 Cr	0.9905	0.1981	ppb	5.49	1000.	
53 Cr	44.165	8.833	ppb	3.36	#VALUE!	
55 Mn	56.7	11.34	ppb	0.59	1000.	
56 Fe	357.8	71.56	ppb	3.80	#VALUE!	
57 Fe	301.05	60.21	ppb	3.55	100000.	
59 Co	0.851	0.1702	ppb	5.63	1000.	
60 Ni	0.9325	0.1865	ppb	5.72	1000.	
63 Cu	2.754	0.5508	ppb	3.71	#VALUE!	
65 Cu	2.741	0.5482	ppb	3.96	1000.	
66 Zn	4.3115	0.8623	ppb	5.56	1000.	
68 Zn	1.2895	0.2579	ppb	56.38	#VALUE!	
75 As	1.3925	0.2785	ppb	40.07	1000.	
82 Se	0.3428	0.0686	ppb	19.72	1000.	
88 Sr	31.605	6.321	ppb	1.53	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.5545	0.1109	ppb	2.38	1000.	
107 Ag	0.0149	0.003	ppb	14.16	500.	
109 Ag	0.0212	0.0042	ppb	54.56	#VALUE!	
111 Cd	-0.3272	-0.0654	ppb	49.90	#VALUE!	
114 Cd	0.066	0.0132	ppb	36.94	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.927	0.1854	ppb	15.57	1000.	
120 Sn	0.85	0.17	ppb	21.41	#VALUE!	
121 Sb	0.1682	0.0336	ppb	27.71	#VALUE!	
123 Sb	0.1458	0.0292	ppb	34.08	1000.	
135 Ba	5.425	1.085	ppb	8.49	1000.	
137 Ba	5.47	1.094	ppb	7.57	#VALUE!	
182 W	0.398	0.0796	ppb ---		#VALUE!	
203 Tl	0.0296	0.0059	ppb	72.38	1000.	
205 Tl	0.0384	0.0077	ppb	14.01	#VALUE!	
208 Pb	0.2588	0.0518	ppb	32.96	1000.	
232 Th	0.0469	0.0094	ppb	8.87	1000.	
238 U	0.0367	0.0073	ppb	5.00	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3200611.80	0.67	2927307.30	109.3	69.5 - 130	
45 Sc	2708816.80	0.27	2674138.00	101.3	69.5 - 130	
72 Ge	590003.25	0.76	574804.50	102.6	69.5 - 130	
159 Tb	5467316.50	0.28	5109668.00	107.0	69.5 - 130	
209 Bi	3182752.30	0.90	3027142.00	105.1	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000605

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\043SMPL.D\043SMPL.D#
Date Acquired: Jul 2 2014 04:55 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-011
Misc Info: DILUTION 1.6/8
Vial Number: 2204
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0008	0.0002	ppb	1136.50	100.	
11 B	10.13	2.026	ppb	9.59	1000.	
23 Na	3,734.5	746.9	ppb	0.57	200000.	
25 Mg	1,954.5	390.9	ppb	0.24	200000.	
27 Al	32.175	6.435	ppb	1.27	200000.	
28 Si	2,848.5	569.7	ppb	6.59	#VALUE!	
29 Si	2,327.5	465.5	ppb	35.19	10000.	
39 K	876.5	175.3	ppb	1.39	200000.	
43 Ca	7,660.	1,532.	ppb	2.56	#VALUE!	
44 Ca	7,745.	1,549.	ppb	1.15	200000.	
51 V	1.1855	0.2371	ppb	35.90	1000.	
52 Cr	0.71	0.142	ppb	6.73	1000.	
53 Cr	37.94	7.588	ppb	1.92	#VALUE!	
55 Mn	53.85	10.77	ppb	1.07	1000.	
56 Fe	172.6	34.52	ppb	6.77	#VALUE!	
57 Fe	119.4	23.88	ppb	15.73	100000.	
59 Co	0.732	0.1464	ppb	11.28	1000.	
60 Ni	1.008	0.2016	ppb	8.09	1000.	
63 Cu	2.886	0.5772	ppb	2.78	#VALUE!	
65 Cu	2.681	0.5362	ppb	2.87	1000.	
66 Zn	4.4135	0.8827	ppb	4.68	1000.	
68 Zn	-1.297	-0.2594	ppb	89.05	#VALUE!	
75 As	1.5995	0.3199	ppb	64.55	1000.	
82 Se	1.048	0.2096	ppb	35.82	1000.	
88 Sr	31.995	6.399	ppb	1.84	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.3716	0.0743	ppb	12.37	1000.	
107 Ag	-0.0054	-0.0011	ppb	76.00	500.	
109 Ag	0.013	0.0026	ppb	78.29	#VALUE!	
111 Cd	-0.3895	-0.0779	ppb	29.84	#VALUE!	
114 Cd	0.0623	0.0125	ppb	33.49	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.4365	0.0873	ppb	1.27	1000.	
120 Sn	0.4519	0.0904	ppb	10.95	#VALUE!	
121 Sb	0.1104	0.0221	ppb	4.48	#VALUE!	
123 Sb	0.0936	0.0187	ppb	34.28	1000.	
135 Ba	4.74	0.948	ppb	0.72	1000.	
137 Ba	5.06	1.012	ppb	4.86	#VALUE!	
182 W	0.1915	0.0383	ppb	---	#VALUE!	
203 Tl	0.0252	0.005	ppb	40.13	1000.	
205 Tl	0.0291	0.0058	ppb	8.03	#VALUE!	
208 Pb	0.1191	0.0238	ppb	6.26	1000.	
232 Th	0.0272	0.0054	ppb	5.31	1000.	
238 U	0.0266	0.0053	ppb	14.88	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3231178.00	1.44	2927307.30	110.4	69.5 - 130	
45 Sc	2739687.50	0.16	2674138.00	102.5	69.5 - 130	
72 Ge	596295.63	0.52	574804.50	103.7	69.5 - 130	
159 Tb	5602855.50	1.67	5109668.00	109.7	69.5 - 130	
209 Bi	3283662.80	1.41	3027142.00	108.5	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000606

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\044SMPL.D\044SMPL.D#
Date Acquired: Jul 2 2014 04:58 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-012
Misc Info: DILUTION 1.6/8
Vial Number: 2205
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0417	0.0083	ppb	135.84	100.	
11 B	3.5555	0.7111	ppb	273.52	1000.	
23 Na	3,886.	777.2	ppb	0.92	200000.	
25 Mg	1,889.5	377.9	ppb	1.85	200000.	
27 Al	1,709.5	341.9	ppb	0.40	200000.	
28 Si	3,273.5	654.7	ppb	1.55	#VALUE!	
29 Si	3,018.5	603.7	ppb	8.32	10000.	
39 K	1,316.	263.2	ppb	2.38	200000.	
43 Ca	8,870.	1,774.	ppb	1.58	#VALUE!	
44 Ca	8,735.	1,747.	ppb	0.86	200000.	
51 V	3.8905	0.7781	ppb	10.88	1000.	
52 Cr	2.818	0.5636	ppb	2.13	1000.	
53 Cr	51.4	10.28	ppb	3.26	#VALUE!	
55 Mn	31.905	6.381	ppb	1.86	1000.	
56 Fe	1,678.5	335.7	ppb	1.57	#VALUE!	
57 Fe	1,610.5	322.1	ppb	0.79	100000.	
59 Co	1.005	0.201	ppb	30.65	1000.	
60 Ni	8.095	1.619	ppb	100.25	1000.	
63 Cu	9.3	1.86	ppb	2.47	#VALUE!	
65 Cu	9.425	1.885	ppb	2.47	1000.	
66 Zn	30.655	6.131	ppb	2.99	1000.	
68 Zn	24.27	4.854	ppb	11.10	#VALUE!	
75 As	-13.	-2.6	ppb	225.04	1000.	LOW
82 Se	0.769	0.1538	ppb	127.50	1000.	
88 Sr	26.01	5.202	ppb	2.64	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.6785	0.1357	ppb	10.53	1000.	
107 Ag	0.0192	0.0038	ppb	57.89	500.	
109 Ag	0.2224	0.0445	ppb	164.18	#VALUE!	
111 Cd	-0.2192	-0.0438	ppb	259.87	#VALUE!	
114 Cd	2.137	0.4274	ppb	167.50	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.3869	0.0774	ppb	2.54	1000.	
120 Sn	0.3361	0.0672	ppb	21.47	#VALUE!	
121 Sb	0.1772	0.0354	ppb	17.34	#VALUE!	
123 Sb	0.1627	0.0325	ppb	6.07	1000.	
135 Ba	12.61	2.522	ppb	2.33	1000.	
137 Ba	13.15	2.63	ppb	1.56	#VALUE!	
182 W	0.1438	0.0288	ppb	---	#VALUE!	
203 Tl	0.3188	0.0638	ppb	167.35	1000.	
205 Tl	0.2824	0.0565	ppb	164.27	#VALUE!	
208 Pb	2.023	0.4046	ppb	87.22	1000.	
232 Th	0.287	0.0574	ppb	6.83	1000.	
238 U	0.078	0.0156	ppb	15.30	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	17369718.00	140.42	2927307.30	593.4	69.5 - 130	IS Fai
45 Sc	2750489.30	1.13	2674138.00	102.9	69.5 - 130	
72 Ge	597260.75	0.67	574804.50	103.9	69.5 - 130	
159 Tb	5615465.50	1.15	5109668.00	109.9	69.5 - 130	
209 Bi	3278553.00	1.21	3027142.00	108.3	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Fail

Katahdin Analytical Services 4000607

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\045SMPL.D\045SMPL.D#
Date Acquired: Jul 2 2014 05:01 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-013
Misc Info: DILUTION 1.6/8
Vial Number: 2206
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0012	-0.0002	ppb	350.24	100.	
11 B	8.27	1.654	ppb	8.19	1000.	
23 Na	3,813.	762.6	ppb	1.12	200000.	
25 Mg	1,592.	318.4	ppb	0.36	200000.	
27 Al	92.15	18.43	ppb	2.28	200000.	
28 Si	1,088.	217.6	ppb	16.75	#VALUE!	
29 Si	-102.05	-20.41	ppb	776.09	10000.	
39 K	1,001.	200.2	ppb	1.30	200000.	
43 Ca	8,700.	1,740.	ppb	0.58	#VALUE!	
44 Ca	8,550.	1,710.	ppb	0.55	200000.	
51 V	1.4335	0.2867	ppb	27.80	1000.	
52 Cr	1.0965	0.2193	ppb	8.47	1000.	
53 Cr	48.55	9.71	ppb	2.04	#VALUE!	
55 Mn	14.975	2.995	ppb	1.31	1000.	
56 Fe	132.6	26.52	ppb	2.77	#VALUE!	
57 Fe	105.25	21.05	ppb	12.55	100000.	
59 Co	0.1638	0.0328	ppb	11.41	1000.	
60 Ni	1.428	0.2856	ppb	1.29	1000.	
63 Cu	6.645	1.329	ppb	0.80	#VALUE!	
65 Cu	6.6	1.32	ppb	2.27	1000.	
66 Zn	2.213	0.4426	ppb	6.50	1000.	
68 Zn	-4.4425	-0.8885	ppb	20.11	#VALUE!	
75 As	3.338	0.6676	ppb	15.55	1000.	
82 Se	0.805	0.161	ppb	5.84	1000.	
88 Sr	24.4	4.88	ppb	1.22	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.5615	0.1123	ppb	6.87	1000.	
107 Ag	0.0074	0.0015	ppb	157.12	500.	
109 Ag	0.006	0.0012	ppb	106.84	#VALUE!	
111 Cd	-0.4075	-0.0815	ppb	11.05	#VALUE!	
114 Cd	0.0591	0.0118	ppb	20.12	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.2498	0.05	ppb	28.05	1000.	
120 Sn	0.2102	0.042	ppb	16.25	#VALUE!	
121 Sb	0.1479	0.0296	ppb	24.54	#VALUE!	
123 Sb	0.1124	0.0225	ppb	10.98	1000.	
135 Ba	4.126	0.8252	ppb	4.44	1000.	
137 Ba	4.2035	0.8407	ppb	1.82	#VALUE!	
182 W	0.104	0.0208	ppb	---	#VALUE!	
203 Tl	0.012	0.0024	ppb	121.75	1000.	
205 Tl	0.0071	0.0014	ppb	63.30	#VALUE!	
208 Pb	0.1155	0.0231	ppb	28.80	1000.	
232 Th	0.0818	0.0164	ppb	13.46	1000.	
238 U	0.0216	0.0043	ppb	13.82	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3237541.00	2.32	2927307.30	110.6	69.5 - 130	
45 Sc	2764208.30	0.57	2674138.00	103.4	69.5 - 130	
72 Ge	600828.13	0.16	574804.50	104.5	69.5 - 130	
159 Tb	5677088.50	0.35	5109668.00	111.1	69.5 - 130	
209 Bi	3298914.00	0.24	3027142.00	109.0	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000608

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\046SMPL.D\046SMPL.D#
Date Acquired: Jul 2 2014 05:05 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-014
Misc Info: DILUTION 1.6/8
Vial Number: 2207
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0115	0.0023	ppb	43.91	100.	
11 B	6.13	1.226	ppb	7.18	1000.	
23 Na	3,744.	748.8	ppb	1.84	200000.	
25 Mg	1,544.5	308.9	ppb	1.35	200000.	
27 Al	150.6	30.12	ppb	0.23	200000.	
28 Si	2,510.	502.	ppb	4.03	#VALUE!	
29 Si	1,934.	386.8	ppb	18.97	10000.	
39 K	1,483.5	296.7	ppb	0.97	200000.	
43 Ca	7,195.	1,439.	ppb	1.66	#VALUE!	
44 Ca	7,015.	1,403.	ppb	1.14	200000.	
51 V	1.662	0.3324	ppb	9.37	1000.	
52 Cr	1.1925	0.2385	ppb	12.44	1000.	
53 Cr	43.77	8.754	ppb	0.99	#VALUE!	
55 Mn	46.37	9.274	ppb	1.19	1000.	
56 Fe	463.45	92.69	ppb	2.58	#VALUE!	
57 Fe	396.05	79.21	ppb	3.05	100000.	
59 Co	1.2415	0.2483	ppb	9.75	1000.	
60 Ni	2.2405	0.4481	ppb	1.74	1000.	
63 Cu	8.62	1.724	ppb	2.64	#VALUE!	
65 Cu	8.545	1.709	ppb	4.34	1000.	
66 Zn	16.57	3.314	ppb	1.93	1000.	
68 Zn	8.465	1.693	ppb	28.29	#VALUE!	
75 As	2.1855	0.4371	ppb	26.61	1000.	
82 Se	0.9775	0.1955	ppb	49.01	1000.	
88 Sr	21.97	4.394	ppb	1.98	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.3556	0.0711	ppb	9.60	1000.	
107 Ag	0.0704	0.0141	ppb	36.82	500.	
109 Ag	0.1319	0.0264	ppb	10.97	#VALUE!	
111 Cd	-0.1291	-0.0258	ppb	89.70	#VALUE!	
114 Cd	0.1799	0.036	ppb	11.85	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.3085	0.0617	ppb	13.97	1000.	
120 Sn	0.2992	0.0598	ppb	23.28	#VALUE!	
121 Sb	0.0923	0.0185	ppb	29.05	#VALUE!	
123 Sb	0.0965	0.0193	ppb	41.60	1000.	
135 Ba	14.595	2.919	ppb	2.50	1000.	
137 Ba	15.36	3.072	ppb	0.38	#VALUE!	
182 W	0.1861	0.0372	ppb ---		#VALUE!	
203 Tl	0.0771	0.0154	ppb	47.94	1000.	
205 Tl	0.0494	0.0099	ppb	23.89	#VALUE!	
208 Pb	1.5885	0.3177	ppb	4.51	1000.	
232 Th	0.0666	0.0133	ppb	21.09	1000.	
238 U	0.0929	0.0186	ppb	12.27	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3222711.50	0.95	2927307.30	110.1	69.5 - 130	
45 Sc	2765138.00	0.91	2674138.00	103.4	69.5 - 130	
72 Ge	600821.19	0.36	574804.50	104.5	69.5 - 130	
159 Tb	5657874.50	0.56	5109668.00	110.7	69.5 - 130	
209 Bi	3309047.80	0.30	3027142.00	109.3	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000609

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\047SMPL.D\047SMPL.D#
Date Acquired: Jul 2 2014 05:08 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-014L
Misc Info: DILUTION 0.4/10
Vial Number: 2208
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0248	-0.001	ppb	196.42	100.	
11 B	5.685	0.2274	ppb	15.47	1000.	
23 Na	3,887.5	155.5	ppb	0.69	200000.	
25 Mg	1,562.75	62.51	ppb	1.42	200000.	
27 Al	171.025	6.841	ppb	4.50	200000.	
28 Si	199.525	7.981	ppb	362.61	#VALUE!	
29 Si	-6,437.5	-257.5	ppb	50.18	10000.	LOW
39 K	1,416.25	56.65	ppb	1.71	200000.	
43 Ca	6,947.5	277.9	ppb	3.00	#VALUE!	
44 Ca	6,972.5	278.9	ppb	2.69	200000.	
51 V	4.79	0.1916	ppb	42.23	1000.	
52 Cr	1.2768	0.0511	ppb	19.04	1000.	
53 Cr	70.35	2.814	ppb	13.93	#VALUE!	
55 Mn	46.525	1.861	ppb	2.27	1000.	
56 Fe	447.	17.88	ppb	6.45	#VALUE!	
57 Fe	218.85	8.754	ppb	17.47	100000.	
59 Co	1.3653	0.0546	ppb	8.07	1000.	
60 Ni	2.4808	0.0992	ppb	30.72	1000.	
63 Cu	8.8075	0.3523	ppb	5.68	#VALUE!	
65 Cu	9.205	0.3682	ppb	4.75	1000.	
66 Zn	17.315	0.6926	ppb	6.00	1000.	
68 Zn	-14.87	-0.5948	ppb	26.23	#VALUE!	
75 As	3.9925	0.1597	ppb	74.64	1000.	
82 Se	5.93	0.2372	ppb	8.00	1000.	
88 Sr	21.7225	0.8689	ppb	1.93	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.722	0.0289	ppb	16.44	1000.	
107 Ag	0.0923	0.0037	ppb	84.82	500.	
109 Ag	0.185	0.0074	ppb	57.53	#VALUE!	
111 Cd	-2.0075	-0.0803	ppb	26.53	#VALUE!	
114 Cd	0.3105	0.0124	ppb	39.98	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.5618	0.0225	ppb	8.40	1000.	
120 Sn	0.2484	0.0099	ppb	37.06	#VALUE!	
121 Sb	0.0839	0.0034	ppb	16.94	#VALUE!	
123 Sb	0.1455	0.0058	ppb	68.01	1000.	
135 Ba	19.57	0.7828	ppb	0.91	1000.	
137 Ba	20.385	0.8154	ppb	11.63	#VALUE!	
182 W	0.2988	0.012	ppb	---	#VALUE!	
203 Tl	0.0871	0.0035	ppb	78.26	1000.	
205 Tl	0.0474	0.0019	ppb	20.88	#VALUE!	
208 Pb	1.7005	0.068	ppb	13.00	1000.	
232 Th	0.0377	0.0015	ppb	92.36	1000.	
238 U	0.0951	0.0038	ppb	20.71	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3206882.80	0.51	2927307.30	109.6	69.5 - 130	
45 Sc	2741129.50	0.79	2674138.00	102.5	69.5 - 130	
72 Ge	595775.63	0.61	574804.50	103.6	69.5 - 130	
159 Tb	5575041.00	0.79	5109668.00	109.1	69.5 - 130	
209 Bi	3256811.00	1.66	3027142.00	107.6	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000610

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\048_CCV.D\048_CCV.D#
Date Acquired: Jul 2 2014 05:11 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	22.08	ppb	0.79	25	88.32	Fail
11 B	22.69	ppb	0.72	25	90.76	
23 Na	4,960.	ppb	2.04	5,000	99.2	
25 Mg	5,107.	ppb	1.42	5,000	102.14	
27 Al	517.3	ppb	0.65	500	103.46	
28 Si	383.	ppb	2.81	500	76.6	
29 Si	196.1	ppb	51.20	500	39.22	Fail
39 K	4,991.	ppb	0.63	5,000	99.82	
43 Ca	5,043.	ppb	2.82	5,000	100.86	
44 Ca	5,047.	ppb	0.75	5,000	100.94	
51 V	25.13	ppb	1.39	25	100.52	
52 Cr	25.33	ppb	0.99	25	101.32	
53 Cr	25.16	ppb	2.07	25	100.64	
55 Mn	25.38	ppb	0.98	25	101.52	
56 Fe	5,047.	ppb	1.43	5,000	100.94	
57 Fe	5,030.	ppb	1.75	5,000	100.6	
59 Co	25.36	ppb	1.24	25	101.44	
60 Ni	25.5	ppb	0.63	25	102	
63 Cu	25.06	ppb	0.75	25	100.24	
65 Cu	25.19	ppb	1.01	25	100.76	
66 Zn	25.1	ppb	1.13	25	100.4	
68 Zn	24.3	ppb	1.23	25	97.2	
75 As	24.9	ppb	0.76	25	99.6	
82 Se	25.45	ppb	0.77	25	101.8	
88 Sr	25.63	ppb	0.79	25	102.52	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	25.52	ppb	0.35	25	102.08	
107 Ag	25.92	ppb	1.22	25	103.68	
109 Ag	25.77	ppb	1.02	25	103.08	
111 Cd	26.01	ppb	0.10	25	104.04	
114 Cd	26.01	ppb	0.50	25	104.04	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.08	ppb	0.83	25	96.32	
120 Sn	24.12	ppb	0.90	25	96.48	
121 Sb	24.19	ppb	1.19	25	96.76	
123 Sb	24.35	ppb	1.02	25	97.4	
135 Ba	24.35	ppb	1.13	25	97.4	
137 Ba	24.87	ppb	0.59	25	99.48	
182 W	25.16	ppb	1.08	25	100.64	
203 Tl	24.94	ppb	0.56	25	99.76	
205 Tl	24.91	ppb	0.62	25	99.64	
208 Pb	24.95	ppb	0.77	25	99.8	
232 Th	24.26	ppb	2.51	25	97.04	
238 U	24.23	ppb	1.46	25	96.92	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3118517.50	0.05	2927307.30	106.5	80 - 120.4	
45 Sc	2751034.00	0.75	2674138.00	102.9	80 - 120.4	
72 Ge	590824.50	1.32	574804.50	102.8	80 - 120.4	
159 Tb	5556578.50	1.46	5109668.00	108.7	80 - 120.4	
209 Bi	3246854.00	0.75	3027142.00	107.3	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000611

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\049_CCB.D\049_CCB.D#
Date Acquired: Jul 2 2014 05:15 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	-0.0011	ppb	151.32	1.00	
11 B	0.2849	ppb	33.68	1.00	
23 Na	-0.9233	ppb	3.78	1.00	
25 Mg	0.0743	ppb	67.06	1.00	
27 Al	-0.066	ppb	74.93	1.00	
28 Si	-6.938	ppb	1061.00	1.00	
29 Si	-169.9	ppb	169.28	1.00	
39 K	-4.948	ppb	24.62	1.00	
43 Ca	-8.067	ppb	10.35	1.00	
44 Ca	-9.142	ppb	14.72	1.00	
51 V	0.0666	ppb	43.36	1.00	
52 Cr	-0.0117	ppb	73.25	1.00	
53 Cr	0.2833	ppb	44.09	1.00	
55 Mn	-0.0016	ppb	647.20	1.00	
56 Fe	0.6266	ppb	289.34	1.00	
57 Fe	-8.99	ppb	16.04	1.00	
59 Co	-0.0043	ppb	159.96	1.00	
60 Ni	-0.0115	ppb	90.92	1.00	
63 Cu	-0.0168	ppb	33.88	1.00	
65 Cu	-0.006	ppb	165.23	1.00	
66 Zn	-0.0195	ppb	58.49	1.00	
68 Zn	-1.19	ppb	27.77	1.00	
75 As	0.0473	ppb	75.58	1.00	
82 Se	0.1765	ppb	121.36	1.00	
88 Sr	-0.003	ppb	88.13	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0687	ppb	14.89	1.00	
107 Ag	-0.0009	ppb	217.34	1.00	
109 Ag	0.0008	ppb	165.65	1.00	
111 Cd	-0.0432	ppb	44.68	1.00	
114 Cd	0.006	ppb	18.99	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0581	ppb	23.24	1.00	
120 Sn	0.0582	ppb	21.17	1.00	
121 Sb	0.0163	ppb	10.19	1.00	
123 Sb	0.0161	ppb	36.17	1.00	
135 Ba	0.0027	ppb	306.38	1.00	
137 Ba	-0.0058	ppb	87.87	1.00	
182 W	0.11	ppb	11.35	1.00	
203 Tl	0.0023	ppb	49.98	1.00	
205 Tl	0.0044	ppb	41.08	1.00	
208 Pb	0.0028	ppb	93.00	1.00	
232 Th	0.118	ppb	25.03	1.00	
238 U	0.0012	ppb	32.90	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3160183.50	1.70	2927307.30	108.0	79.5 - 120	
45 Sc	2745081.80	0.74	2674138.00	102.7	79.5 - 120	
72 Ge	593128.50	1.43	574804.50	103.2	79.5 - 120	
159 Tb	5536087.50	1.48	5109668.00	108.3	79.5 - 120	
209 Bi	3262939.00	1.48	3027142.00	107.8	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000612

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\050SMPL.D\050SMPL.D#
Date Acquired: Jul 2 2014 05:18 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-014A
Misc Info: DILUTION 1.6/8
Vial Number: 2209
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	10.405	2.081	ppb	22.76	100.	
11 B	188.15	37.63	ppb	2.14	1000.	
23 Na	13,505.	2,701.	ppb	0.71	200000.	
25 Mg	2,552.	510.4	ppb	1.56	200000.	
27 Al	3,179.	635.8	ppb	0.20	200000.	
28 Si	7,270.	1,454.	ppb	2.86	#VALUE!	
29 Si	6,585.	1,317.	ppb	13.29	10000.	
39 K	11,310.	2,262.	ppb	0.31	200000.	
43 Ca	8,300.	1,660.	ppb	1.61	#VALUE!	
44 Ca	8,030.	1,606.	ppb	0.93	200000.	
51 V	49.33	9.866	ppb	1.58	1000.	
52 Cr	52.05	10.41	ppb	0.64	1000.	
53 Cr	96.35	19.27	ppb	3.47	#VALUE!	
55 Mn	68.2	13.64	ppb	0.73	1000.	
56 Fe	1,465.5	293.1	ppb	2.50	#VALUE!	
57 Fe	1,380.5	276.1	ppb	2.45	100000.	
59 Co	11.135	2.227	ppb	1.53	1000.	
60 Ni	22.26	4.452	ppb	1.03	1000.	
63 Cu	39.825	7.965	ppb	0.36	#VALUE!	
65 Cu	44.29	8.858	ppb	19.69	1000.	
66 Zn	114.3	22.86	ppb	1.82	1000.	
68 Zn	106.8	21.36	ppb	2.76	#VALUE!	
75 As	29.31	5.862	ppb	120.62	1000.	
82 Se	50.85	10.17	ppb	1.36	1000.	
88 Sr	70.6	14.12	ppb	0.92	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	49.77	9.954	ppb	1.88	1000.	
107 Ag	10.495	2.099	ppb	0.43	500.	
109 Ag	10.345	2.069	ppb	0.36	#VALUE!	
111 Cd	9.83	1.966	ppb	3.24	#VALUE!	
114 Cd	11.145	2.229	ppb	11.07	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	47.115	9.423	ppb	1.06	1000.	
120 Sn	47.59	9.518	ppb	1.14	#VALUE!	
121 Sb	9.6	1.92	ppb	2.08	#VALUE!	
123 Sb	9.655	1.931	ppb	1.16	1000.	
135 Ba	36.795	7.359	ppb	3.29	1000.	
137 Ba	37.065	7.413	ppb	1.48	#VALUE!	
182 W	50.9	10.18	ppb	---	#VALUE!	
203 Tl	9.94	1.988	ppb	0.64	1000.	
205 Tl	10.06	2.012	ppb	4.04	#VALUE!	
208 Pb	11.67	2.334	ppb	0.56	1000.	
232 Th	10.6	2.12	ppb	5.93	1000.	
238 U	9.725	1.945	ppb	2.99	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3168762.30	1.33	2927307.30	108.2	69.5 - 130	
45 Sc	2743926.50	0.94	2674138.00	102.6	69.5 - 130	
72 Ge	590804.81	0.25	574804.50	102.8	69.5 - 130	
159 Tb	5459745.50	0.59	5109668.00	106.9	69.5 - 130	
209 Bi	3210258.80	1.14	3027142.00	106.0	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000613

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\051SMPL.D\051SMPL.D#
Date Acquired: Jul 2 2014 05:21 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-014S
Misc Info: DILUTION 1.6/8
Vial Number: 2210
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	43.87	8.774	ppb	1.14	100.	
11 B	440.95	88.19	ppb	1.43	1000.	
23 Na	10,915.	2,183.	ppb	1.28	200000.	
25 Mg	6,930.	1,386.	ppb	1.25	200000.	
27 Al	2,283.5	456.7	ppb	0.57	200000.	
28 Si	6,830.	1,366.	ppb	1.14	#VALUE!	
29 Si	5,760.	1,152.	ppb	9.64	10000.	
39 K	11,475.	2,295.	ppb	1.87	200000.	
43 Ca	9,535.	1,907.	ppb	1.40	#VALUE!	
44 Ca	8,755.	1,751.	ppb	1.91	200000.	
51 V	511.	102.2	ppb	1.27	1000.	
52 Cr	203.95	40.79	ppb	0.50	1000.	
53 Cr	304.2	60.84	ppb	1.94	#VALUE!	
55 Mn	561.	112.2	ppb	1.30	1000.	
56 Fe	1,466.	293.2	ppb	1.99	#VALUE!	
57 Fe	1,384.5	276.9	ppb	1.34	100000.	
59 Co	518.5	103.7	ppb	0.50	1000.	
60 Ni	518.	103.6	ppb	0.82	1000.	
63 Cu	261.7	52.34	ppb	1.75	#VALUE!	
65 Cu	263.4	52.68	ppb	0.94	1000.	
66 Zn	522.5	104.5	ppb	1.23	1000.	
68 Zn	560.5	112.1	ppb	0.88	#VALUE!	
75 As	100.3	20.06	ppb	1.65	1000.	
82 Se	99.3	19.86	ppb	2.33	1000.	
88 Sr	526.5	105.3	ppb	0.42	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	301.1	60.22	ppb	0.27	1000.	
107 Ag	52.	10.4	ppb	0.72	500.	
109 Ag	51.65	10.33	ppb	0.86	#VALUE!	
111 Cd	252.85	50.57	ppb	0.23	#VALUE!	
114 Cd	255.	51.	ppb	0.10	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	479.25	95.85	ppb	0.23	1000.	
120 Sn	481.45	96.29	ppb	0.61	#VALUE!	
121 Sb	97.15	19.43	ppb	0.13	#VALUE!	
123 Sb	97.2	19.44	ppb	0.54	1000.	
135 Ba	1,977.5	395.5	ppb	0.37	1000.	
137 Ba	2,001.	400.2	ppb	0.45	#VALUE!	
182 W	107.65	21.53	ppb	---	#VALUE!	
203 Tl	95.45	19.09	ppb	0.13	1000.	
205 Tl	95.3	19.06	ppb	0.29	#VALUE!	
208 Pb	103.9	20.78	ppb	0.19	1000.	
232 Th	0.668	0.1336	ppb	15.99	1000.	
238 U	100.15	20.03	ppb	0.36	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3293331.50	0.77	2927307.30	112.5	69.5 - 130	
45 Sc	2716874.30	0.56	2674138.00	101.6	69.5 - 130	
72 Ge	581227.75	0.76	574804.50	101.1	69.5 - 130	
159 Tb	5358500.50	0.35	5109668.00	104.9	69.5 - 130	
209 Bi	3129269.80	0.50	3027142.00	103.4	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000614

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\052SMPL.D\052SMPL.D#
Date Acquired: Jul 2 2014 05:25 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-014P
Misc Info: DILUTION 1.6/8
Vial Number: 2211
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	44.965	8.993	ppb	2.83	100.	
11 B	452.4	90.48	ppb	0.65	1000.	
23 Na	11,315.	2,263.	ppb	2.17	200000.	
25 Mg	7,165.	1,433.	ppb	0.76	200000.	
27 Al	2,366.	473.2	ppb	0.89	200000.	
28 Si	7,375.	1,475.	ppb	3.74	#VALUE!	
29 Si	6,775.	1,355.	ppb	11.85	10000.	
39 K	12,020.	2,404.	ppb	1.61	200000.	
43 Ca	9,955.	1,991.	ppb	0.91	#VALUE!	
44 Ca	9,330.	1,866.	ppb	1.30	200000.	
51 V	519.5	103.9	ppb	2.68	1000.	
52 Cr	207.65	41.53	ppb	2.35	1000.	
53 Cr	314.1	62.82	ppb	1.45	#VALUE!	
55 Mn	572.	114.4	ppb	2.25	1000.	
56 Fe	1,531.	306.2	ppb	2.55	#VALUE!	
57 Fe	1,447.	289.4	ppb	2.19	100000.	
59 Co	526.5	105.3	ppb	2.22	1000.	
60 Ni	527.	105.4	ppb	2.43	1000.	
63 Cu	267.6	53.52	ppb	2.07	#VALUE!	
65 Cu	266.15	53.23	ppb	2.06	1000.	
66 Zn	528.	105.6	ppb	2.25	1000.	
68 Zn	576.5	115.3	ppb	1.62	#VALUE!	
75 As	102.05	20.41	ppb	2.23	1000.	
82 Se	101.45	20.29	ppb	1.05	1000.	
88 Sr	545.	109.	ppb	2.97	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	310.05	62.01	ppb	2.28	1000.	
107 Ag	52.75	10.55	ppb	3.19	500.	
109 Ag	53.05	10.61	ppb	2.01	#VALUE!	
111 Cd	260.05	52.01	ppb	2.41	#VALUE!	
114 Cd	261.55	52.31	ppb	2.13	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	495.8	99.16	ppb	1.96	1000.	
120 Sn	495.7	99.14	ppb	2.47	#VALUE!	
121 Sb	100.45	20.09	ppb	2.58	#VALUE!	
123 Sb	100.35	20.07	ppb	2.30	1000.	
135 Ba	2,032.	406.4	ppb	2.15	1000.	
137 Ba	2,054.5	410.9	ppb	2.21	#VALUE!	
182 W	110.	22.	ppb	---	#VALUE!	
203 Tl	98.7	19.74	ppb	2.07	1000.	
205 Tl	99.45	19.89	ppb	2.35	#VALUE!	
208 Pb	107.65	21.53	ppb	2.40	1000.	
232 Th	0.3477	0.0695	ppb	10.11	1000.	
238 U	103.85	20.77	ppb	3.14	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3248293.30	2.00	2927307.30	111.0	69.5 - 130	
45 Sc	2672308.30	0.98	2674138.00	99.9	69.5 - 130	
72 Ge	576518.25	1.55	574804.50	100.3	69.5 - 130	
159 Tb	5324829.50	1.56	5109668.00	104.2	69.5 - 130	
209 Bi	3084244.50	2.01	3027142.00	101.9	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000615

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\053SMPL.D\053SMPL.D#
Date Acquired: Jul 2 2014 05:28 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-016
Misc Info: DILUTION 1.6/8
Vial Number: 2212
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0004	0.0001	ppb	3342.00	100.	
11 B	18.74	3.748	ppb	12.29	1000.	
23 Na	3,776.5	755.3	ppb	2.46	200000.	
25 Mg	4,602.	920.4	ppb	1.33	200000.	
27 Al	62.55	12.51	ppb	0.19	200000.	
28 Si	3,305.	661.	ppb	8.46	#VALUE!	
29 Si	2,994.5	598.9	ppb	22.02	10000.	
39 K	1,260.	252.	ppb	0.92	200000.	
43 Ca	52,650.	10,530.	ppb	1.13	#VALUE!	
44 Ca	52,050.	10,410.	ppb	1.85	200000.	
51 V	1.6565	0.3313	ppb	16.00	1000.	
52 Cr	1.2575	0.2515	ppb	4.78	1000.	
53 Cr	47.02	9.404	ppb	6.96	#VALUE!	
55 Mn	1,196.5	239.3	ppb	0.79	1000.	
56 Fe	6,915.	1,383.	ppb	0.68	#VALUE!	
57 Fe	6,860.	1,372.	ppb	1.08	100000.	
59 Co	5.055	1.011	ppb	1.39	1000.	
60 Ni	1.8725	0.3745	ppb	7.02	1000.	
63 Cu	3.1305	0.6261	ppb	0.98	#VALUE!	
65 Cu	3.2115	0.6423	ppb	1.39	1000.	
66 Zn	5.56	1.112	ppb	3.73	1000.	
68 Zn	2.2415	0.4483	ppb	45.37	#VALUE!	
75 As	7.87	1.574	ppb	3.28	1000.	
82 Se	0.8795	0.1759	ppb	27.31	1000.	
88 Sr	84.85	16.97	ppb	0.48	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	1.2185	0.2437	ppb	7.22	1000.	
107 Ag	0.0429	0.0086	ppb	53.94	500.	
109 Ag	0.0522	0.0104	ppb	42.73	#VALUE!	
111 Cd	-0.4553	-0.0911	ppb	4.81	#VALUE!	
114 Cd	0.1102	0.022	ppb	23.85	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.5485	0.1097	ppb	10.49	1000.	
120 Sn	0.544	0.1088	ppb	7.59	#VALUE!	
121 Sb	0.1754	0.0351	ppb	16.44	#VALUE!	
123 Sb	0.1476	0.0295	ppb	25.39	1000.	
135 Ba	19.615	3.923	ppb	2.10	1000.	
137 Ba	20.305	4.061	ppb	0.33	#VALUE!	
182 W	0.5055	0.1011	ppb	---	#VALUE!	
203 Tl	0.0333	0.0067	ppb	31.63	1000.	
205 Tl	0.029	0.0058	ppb	17.69	#VALUE!	
208 Pb	0.4083	0.0817	ppb	14.01	1000.	
232 Th	0.0756	0.0151	ppb	1.51	1000.	
238 U	0.0721	0.0144	ppb	12.89	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3203350.30	0.63	2927307.30	109.4	69.5 - 130	
45 Sc	2726527.30	0.52	2674138.00	102.0	69.5 - 130	
72 Ge	591723.38	0.52	574804.50	102.9	69.5 - 130	
159 Tb	5532103.50	0.35	5109668.00	108.3	69.5 - 130	
209 Bi	3230437.30	0.47	3027142.00	106.7	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000616

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\054SMPL.D\054SMPL.D#
Date Acquired: Jul 2 2014 05:31 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-017
Misc Info: DILUTION 1.6/8
Vial Number: 2301
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0003	0.0001	ppb	1252.30	100.	
11 B	14.82	2.964	ppb	0.83	1000.	
23 Na	3,908.5	781.7	ppb	0.51	200000.	
25 Mg	4,480.5	896.1	ppb	0.29	200000.	
27 Al	18.81	3.762	ppb	1.79	200000.	
28 Si	3,161.	632.2	ppb	4.39	#VALUE!	
29 Si	3,632.	726.4	ppb	6.85	10000.	
39 K	1,263.5	252.7	ppb	0.84	200000.	
43 Ca	49,250.	9,850.	ppb	1.74	#VALUE!	
44 Ca	49,690.	9,938.	ppb	1.19	200000.	
51 V	1.32	0.264	ppb	12.90	1000.	
52 Cr	1.0585	0.2117	ppb	8.41	1000.	
53 Cr	43.08	8.616	ppb	1.56	#VALUE!	
55 Mn	989.5	197.9	ppb	1.71	1000.	
56 Fe	704.5	140.9	ppb	1.92	#VALUE!	
57 Fe	721.5	144.3	ppb	3.52	100000.	
59 Co	4.2505	0.8501	ppb	2.15	1000.	
60 Ni	1.83	0.366	ppb	8.03	1000.	
63 Cu	1.5735	0.3147	ppb	6.24	#VALUE!	
65 Cu	1.4225	0.2845	ppb	4.97	1000.	
66 Zn	3.076	0.6152	ppb	10.06	1000.	
68 Zn	-1.0035	-0.2007	ppb	81.47	#VALUE!	
75 As	6.48	1.296	ppb	5.86	1000.	
82 Se	1.4155	0.2831	ppb	36.21	1000.	
88 Sr	71.8	14.36	ppb	1.01	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	1.0265	0.2053	ppb	13.83	1000.	
107 Ag	0.0137	0.0027	ppb	88.94	500.	
109 Ag	0.0119	0.0024	ppb	129.75	#VALUE!	
111 Cd	-0.2746	-0.0549	ppb	83.05	#VALUE!	
114 Cd	0.0687	0.0137	ppb	8.58	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.3043	0.0609	ppb	20.79	1000.	
120 Sn	0.2682	0.0536	ppb	15.95	#VALUE!	
121 Sb	0.1233	0.0247	ppb	34.94	#VALUE!	
123 Sb	0.0993	0.0199	ppb	22.13	1000.	
135 Ba	4.282	0.8564	ppb	9.45	1000.	
137 Ba	4.1275	0.8255	ppb	8.50	#VALUE!	
182 W	0.357	0.0714	ppb	---	#VALUE!	
203 Tl	0.0061	0.0012	ppb	190.50	1000.	
205 Tl	0.0208	0.0042	ppb	32.67	#VALUE!	
208 Pb	0.108	0.0216	ppb	30.32	1000.	
232 Th	0.0483	0.0097	ppb	3.75	1000.	
238 U	0.0266	0.0053	ppb	22.56	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3131997.80	0.57	2927307.30	107.0	69.5 - 130	
45 Sc	2715421.80	0.96	2674138.00	101.5	69.5 - 130	
72 Ge	585007.13	0.70	574804.50	101.8	69.5 - 130	
159 Tb	5452167.00	0.11	5109668.00	106.7	69.5 - 130	
209 Bi	3216713.30	0.55	3027142.00	106.3	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000617

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\055SMPL.D\055SMPL.D#
Date Acquired: Jul 2 2014 05:35 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-018
Misc Info: DILUTION 1.6/8
Vial Number: 2302
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0027	-0.0005	ppb	170.29	100.	
11 B	6.115	1.223	ppb	7.02	1000.	
23 Na	3,888.	777.6	ppb	0.81	200000.	
25 Mg	6,140.	1,228.	ppb	1.42	200000.	
27 Al	97.3	19.46	ppb	0.57	200000.	
28 Si	2,331.	466.2	ppb	3.69	#VALUE!	
29 Si	1,815.	363.	ppb	36.86	10000.	
39 K	3,152.	630.4	ppb	1.13	200000.	
43 Ca	59,250.	11,850.	ppb	1.53	#VALUE!	
44 Ca	58,050.	11,610.	ppb	1.39	200000.	
51 V	0.9335	0.1867	ppb	22.16	1000.	
52 Cr	1.0545	0.2109	ppb	11.15	1000.	
53 Cr	42.64	8.528	ppb	1.95	#VALUE!	
55 Mn	466.2	93.24	ppb	0.82	1000.	
56 Fe	2,666.5	533.3	ppb	0.87	#VALUE!	
57 Fe	2,709.5	541.9	ppb	0.86	100000.	
59 Co	1.3795	0.2759	ppb	1.99	1000.	
60 Ni	1.6605	0.3321	ppb	6.84	1000.	
63 Cu	2.2525	0.4505	ppb	2.27	#VALUE!	
65 Cu	2.2985	0.4597	ppb	10.20	1000.	
66 Zn	6.34	1.268	ppb	8.42	1000.	
68 Zn	3.0625	0.6125	ppb	72.75	#VALUE!	
75 As	7.915	1.583	ppb	6.62	1000.	
82 Se	1.429	0.2858	ppb	16.60	1000.	
88 Sr	86.85	17.37	ppb	2.06	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1.03	0.206	ppb	8.85	1000.	
107 Ag	0.0153	0.0031	ppb	84.85	500.	
109 Ag	0.0293	0.0059	ppb	38.48	#VALUE!	
111 Cd	-0.225	-0.045	ppb	19.52	#VALUE!	
114 Cd	0.0695	0.0139	ppb	38.81	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.2243	0.0449	ppb	7.81	1000.	
120 Sn	0.2339	0.0468	ppb	2.31	#VALUE!	
121 Sb	0.2156	0.0431	ppb	10.17	#VALUE!	
123 Sb	0.1946	0.0389	ppb	26.57	1000.	
135 Ba	5.99	1.198	ppb	2.75	1000.	
137 Ba	5.86	1.172	ppb	2.76	#VALUE!	
182 W	0.2495	0.0499	ppb ---		#VALUE!	
203 Tl	0.0028	0.0006	ppb	78.75	1000.	
205 Tl	0.0036	0.0007	ppb	302.31	#VALUE!	
208 Pb	0.2718	0.0544	ppb	20.84	1000.	
232 Th	0.0564	0.0113	ppb	12.24	1000.	
238 U	0.0584	0.0117	ppb	1.96	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3183111.30	1.83	2927307.30	108.7	69.5 - 130	
45 Sc	2707308.00	0.32	2674138.00	101.2	69.5 - 130	
72 Ge	585526.94	0.51	574804.50	101.9	69.5 - 130	
159 Tb	5491518.00	0.47	5109668.00	107.5	69.5 - 130	
209 Bi	3192187.30	0.77	3027142.00	105.5	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000618

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\056SMPL.D\056SMPL.D#
Date Acquired: Jul 2 2014 05:38 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-019
Misc Info: DILUTION 1.6/8
Vial Number: 2303
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0115	-0.0023	ppb	50.93	100.	
11 B	6.31	1.262	ppb	9.53	1000.	
23 Na	4,032.5	806.5	ppb	1.63	200000.	
25 Mg	6,130.	1,226.	ppb	1.23	200000.	
27 Al	26.54	5.308	ppb	2.07	200000.	
28 Si	2,225.	445.	ppb	5.06	#VALUE!	
29 Si	2,105.5	421.1	ppb	9.68	10000.	
39 K	2,871.5	574.3	ppb	1.21	200000.	
43 Ca	57,700.	11,540.	ppb	2.04	#VALUE!	
44 Ca	57,200.	11,440.	ppb	0.31	200000.	
51 V	1.4455	0.2891	ppb	26.93	1000.	
52 Cr	1.2475	0.2495	ppb	4.69	1000.	
53 Cr	48.095	9.619	ppb	1.50	#VALUE!	
55 Mn	376.05	75.21	ppb	0.17	1000.	
56 Fe	883.	176.6	ppb	2.24	#VALUE!	
57 Fe	910.	182.	ppb	3.56	100000.	
59 Co	1.3505	0.2701	ppb	2.08	1000.	
60 Ni	1.7555	0.3511	ppb	11.42	1000.	
63 Cu	1.685	0.337	ppb	7.14	#VALUE!	
65 Cu	1.8495	0.3699	ppb	10.73	1000.	
66 Zn	6.755	1.351	ppb	4.65	1000.	
68 Zn	2.6905	0.5381	ppb	7.53	#VALUE!	
75 As	6.21	1.242	ppb	4.12	1000.	
82 Se	0.863	0.1726	ppb	74.97	1000.	
88 Sr	81.25	16.25	ppb	0.52	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.993	0.1986	ppb	3.42	1000.	
107 Ag	0.003	0.0006	ppb	341.46	500.	
109 Ag	0.0164	0.0033	ppb	42.04	#VALUE!	
111 Cd	-0.2404	-0.0481	ppb	67.51	#VALUE!	
114 Cd	0.0526	0.0105	ppb	28.40	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.2674	0.0535	ppb	11.15	1000.	
120 Sn	0.2203	0.0441	ppb	12.44	#VALUE!	
121 Sb	0.2083	0.0417	ppb	6.14	#VALUE!	
123 Sb	0.2113	0.0423	ppb	5.46	1000.	
135 Ba	3.2465	0.6493	ppb	3.34	1000.	
137 Ba	3.5535	0.7107	ppb	6.25	#VALUE!	
182 W	0.1876	0.0375	ppb	---	#VALUE!	
203 Tl	-0.014	-0.0028	ppb	40.00	1000.	
205 Tl	0.0068	0.0014	ppb	57.88	#VALUE!	
208 Pb	0.1222	0.0244	ppb	20.38	1000.	
232 Th	0.0406	0.0081	ppb	11.31	1000.	
238 U	0.0407	0.0081	ppb	10.23	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3201125.80	1.20	2927307.30	109.4	69.5 - 130	
45 Sc	2710472.80	1.53	2674138.00	101.4	69.5 - 130	
72 Ge	581730.44	0.49	574804.50	101.2	69.5 - 130	
159 Tb	5464075.50	0.40	5109668.00	106.9	69.5 - 130	
209 Bi	3182704.80	0.96	3027142.00	105.1	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000619

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\057SMPL.D\057SMPL.D#
Date Acquired: Jul 2 2014 05:42 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-020
Misc Info: DILUTION 1.6/8
Vial Number: 2304
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.008	-0.0016	ppb	4.02	100.	
11 B	3.767	0.7534	ppb	11.33	1000.	
23 Na	2,818.	563.6	ppb	0.10	200000.	
25 Mg	2,618.	523.6	ppb	0.34	200000.	
27 Al	39.62	7.924	ppb	0.86	200000.	
28 Si	1,247.5	249.5	ppb	2.46	#VALUE!	
29 Si	903.5	180.7	ppb	35.05	10000.	
39 K	808.	161.6	ppb	1.04	200000.	
43 Ca	28,135.	5,627.	ppb	0.38	#VALUE!	
44 Ca	28,285.	5,657.	ppb	1.05	200000.	
51 V	1.639	0.3278	ppb	33.62	1000.	
52 Cr	0.8775	0.1755	ppb	11.30	1000.	
53 Cr	36.09	7.218	ppb	3.93	#VALUE!	
55 Mn	27.47	5.494	ppb	0.56	1000.	
56 Fe	1,304.5	260.9	ppb	0.75	#VALUE!	
57 Fe	1,272.	254.4	ppb	1.89	100000.	
59 Co	0.532	0.1064	ppb	7.85	1000.	
60 Ni	1.1315	0.2263	ppb	18.99	1000.	
63 Cu	2.105	0.421	ppb	2.47	#VALUE!	
65 Cu	2.274	0.4548	ppb	6.58	1000.	
66 Zn	2.548	0.5096	ppb	4.39	1000.	
68 Zn	-0.1548	-0.031	ppb	223.68	#VALUE!	
75 As	5.12	1.024	ppb	13.72	1000.	
82 Se	1.052	0.2104	ppb	41.50	1000.	
88 Sr	43.52	8.704	ppb	1.16	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.858	0.1716	ppb	12.87	1000.	
107 Ag	0.0175	0.0035	ppb	19.21	500.	
109 Ag	0.021	0.0042	ppb	29.40	#VALUE!	
111 Cd	-0.1899	-0.038	ppb	26.14	#VALUE!	
114 Cd	0.0326	0.0065	ppb	41.65	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.1697	0.0339	ppb	11.25	1000.	
120 Sn	0.1472	0.0294	ppb	45.41	#VALUE!	
121 Sb	0.1065	0.0213	ppb	18.07	#VALUE!	
123 Sb	0.09	0.018	ppb	6.50	1000.	
135 Ba	3.233	0.6466	ppb	12.47	1000.	
137 Ba	3.0275	0.6055	ppb	4.19	#VALUE!	
182 W	0.1707	0.0341	ppb ---		#VALUE!	
203 Tl	0.0031	0.0006	ppb	233.98	1000.	
205 Tl	0.0004	0.0001	ppb	365.85	#VALUE!	
208 Pb	0.1832	0.0366	ppb	5.85	1000.	
232 Th	0.0225	0.0045	ppb	25.83	1000.	
238 U	0.0238	0.0048	ppb	33.48	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3169932.80	1.78	2927307.30	108.3	69.5 - 130	
45 Sc	2674942.00	0.32	2674138.00	100.0	69.5 - 130	
72 Ge	579952.88	0.79	574804.50	100.9	69.5 - 130	
159 Tb	5427090.50	0.85	5109668.00	106.2	69.5 - 130	
209 Bi	3166987.50	1.10	3027142.00	104.6	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000620

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\058SMPL.D\058SMPL.D#
Date Acquired: Jul 2 2014 05:45 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-024
Misc Info: DILUTION 1.6/8
Vial Number: 2305
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0029	-0.0006	ppb	288.52	100.	
11 B	0.5295	0.1059	ppb	33.28	1000.	
23 Na	22.13	4.426	ppb	6.28	200000.	
25 Mg	8.385	1.677	ppb	8.94	200000.	
27 Al	6.86	1.372	ppb	11.84	200000.	
28 Si	-399.45	-79.89	ppb	7.61	#VALUE!	
29 Si	-963.	-192.6	ppb	28.31	10000.	LOW
39 K	-16.44	-3.288	ppb	56.36	200000.	
43 Ca	13.55	2.71	ppb	219.11	#VALUE!	
44 Ca	6.055	1.211	ppb	210.57	200000.	
51 V	0.4458	0.0892	ppb	84.31	1000.	
52 Cr	0.8575	0.1715	ppb	18.29	1000.	
53 Cr	43.995	8.799	ppb	1.73	#VALUE!	
55 Mn	0.672	0.1344	ppb	10.79	1000.	
56 Fe	7.675	1.535	ppb	130.42	#VALUE!	
57 Fe	-26.57	-5.314	ppb	39.69	100000.	
59 Co	0.0083	0.0017	ppb	477.15	1000.	
60 Ni	0.1488	0.0298	ppb	3.97	1000.	
63 Cu	0.0691	0.0138	ppb	40.37	#VALUE!	
65 Cu	0.2582	0.0516	ppb	20.78	1000.	
66 Zn	1.169	0.2338	ppb	28.24	1000.	
68 Zn	-2.1005	-0.4201	ppb	26.57	#VALUE!	
75 As	1.0355	0.2071	ppb	5.94	1000.	
82 Se	0.725	0.145	ppb	49.67	1000.	
88 Sr	0.0527	0.0105	ppb	18.00	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0715	0.0143	ppb	23.26	1000.	
107 Ag	0.0039	0.0008	ppb	206.08	500.	
109 Ag	0.0095	0.0019	ppb	70.15	#VALUE!	
111 Cd	-0.1705	-0.0341	ppb	45.56	#VALUE!	
114 Cd	0.0587	0.0117	ppb	35.72	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.1093	0.0219	ppb	23.11	1000.	
120 Sn	0.1271	0.0254	ppb	24.00	#VALUE!	
121 Sb	0.0157	0.0031	ppb	93.45	#VALUE!	
123 Sb	0.015	0.003	ppb	129.23	1000.	
135 Ba	1.212	0.2424	ppb	8.00	1000.	
137 Ba	1.045	0.209	ppb	7.52	#VALUE!	
182 W	0.0403	0.0081	ppb	---	#VALUE!	
203 Tl	-0.0105	-0.0021	ppb	105.51	1000.	
205 Tl	-0.0014	-0.0003	ppb	462.34	#VALUE!	
208 Pb	0.0321	0.0064	ppb	30.14	1000.	
232 Th	0.02	0.004	ppb	39.81	1000.	
238 U	0.0017	0.0003	ppb	92.17	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3203109.00	0.86	2927307.30	109.4	69.5 - 130	
45 Sc	2697090.30	0.84	2674138.00	100.9	69.5 - 130	
72 Ge	580285.50	0.35	574804.50	101.0	69.5 - 130	
159 Tb	5471377.50	0.72	5109668.00	107.1	69.5 - 130	
209 Bi	3203598.50	0.56	3027142.00	105.8	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000621

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\059SMPL.D\059SMPL.D#
Date Acquired: Jul 2 2014 05:48 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: PBWHF24IMW2
Misc Info: DILUTION 1.6/8
Vial Number: 2306
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0062	-0.0012	ppb	30.68	100.	
11 B	0.6945	0.1389	ppb	50.54	1000.	
23 Na	37.875	7.575	ppb	1.02	200000.	
25 Mg	4.626	0.9252	ppb	10.08	200000.	
27 Al	5.695	1.139	ppb	4.89	200000.	
28 Si	-535.	-107.	ppb	41.13	#VALUE!	
29 Si	-1,136.5	-227.3	ppb	107.57	10000.	LOW
39 K	-10.02	-2.004	ppb	41.65	200000.	
43 Ca	19.055	3.811	ppb	196.14	#VALUE!	
44 Ca	-13.32	-2.664	ppb	44.14	200000.	
51 V	0.7265	0.1453	ppb	15.62	1000.	
52 Cr	0.7375	0.1475	ppb	16.01	1000.	
53 Cr	40.035	8.007	ppb	2.02	#VALUE!	
55 Mn	0.2044	0.0409	ppb	28.19	1000.	
56 Fe	5.825	1.165	ppb	88.58	#VALUE!	
57 Fe	-47.285	-9.457	ppb	11.81	100000.	
59 Co	-0.0102	-0.002	ppb	259.40	1000.	
60 Ni	0.0102	0.002	ppb	310.81	1000.	
63 Cu	0.0525	0.0105	ppb	26.58	#VALUE!	
65 Cu	0.1357	0.0271	ppb	43.42	1000.	
66 Zn	0.479	0.0958	ppb	25.54	1000.	
68 Zn	-2.74	-0.548	ppb	27.32	#VALUE!	
75 As	1.1335	0.2267	ppb	29.21	1000.	
82 Se	1.2185	0.2437	ppb	72.14	1000.	
88 Sr	0.0285	0.0057	ppb	81.59	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.032	0.0064	ppb	94.85	1000.	
107 Ag	-0.0045	-0.0009	ppb	189.40	500.	
109 Ag	0.0131	0.0026	ppb	66.85	#VALUE!	
111 Cd	-0.3053	-0.0611	ppb	30.48	#VALUE!	
114 Cd	0.0672	0.0134	ppb	13.78	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.1256	0.0251	ppb	9.04	1000.	
120 Sn	0.1048	0.021	ppb	32.98	#VALUE!	
121 Sb	0.0203	0.0041	ppb	63.74	#VALUE!	
123 Sb	0.0067	0.0013	ppb	219.37	1000.	
135 Ba	1.5095	0.3019	ppb	3.86	1000.	
137 Ba	1.39	0.278	ppb	14.56	#VALUE!	
182 W	0.0305	0.0061	ppb	---	#VALUE!	
203 Tl	-0.0165	-0.0033	ppb	37.95	1000.	
205 Tl	0.0012	0.0002	ppb	370.83	#VALUE!	
208 Pb	0.0284	0.0057	ppb	50.69	1000.	
232 Th	0.0154	0.0031	ppb	28.04	1000.	
238 U	0.003	0.0006	ppb	17.57	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3188240.30	0.71	2927307.30	108.9	69.5 - 130	
45 Sc	2665411.80	0.71	2674138.00	99.7	69.5 - 130	
72 Ge	579613.13	0.95	574804.50	100.8	69.5 - 130	
159 Tb	5447801.00	0.57	5109668.00	106.6	69.5 - 130	
209 Bi	3196586.80	0.60	3027142.00	105.6	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000622

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\060_CCV.D\060_CCV.D#
Date Acquired: Jul 2 2014 05:52 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	21.73	ppb	0.67	25	86.92	Fail
11 B	22.76	ppb	3.44	25	91.04	
23 Na	4,990.	ppb	0.71	5,000	99.8	
25 Mg	5,153.	ppb	0.62	5,000	103.06	
27 Al	526.7	ppb	0.95	500	105.34	
28 Si	519.1	ppb	11.07	500	103.82	
29 Si	732.3	ppb	15.39	500	146.46	Fail
39 K	5,071.	ppb	0.42	5,000	101.42	
43 Ca	5,036.	ppb	0.93	5,000	100.72	
44 Ca	5,119.	ppb	0.69	5,000	102.38	
51 V	25.33	ppb	1.32	25	101.32	
52 Cr	25.51	ppb	0.28	25	102.04	
53 Cr	24.89	ppb	0.91	25	99.56	
55 Mn	25.47	ppb	1.38	25	101.88	
56 Fe	5,055.	ppb	2.04	5,000	101.1	
57 Fe	5,093.	ppb	1.48	5,000	101.86	
59 Co	25.27	ppb	1.31	25	101.08	
60 Ni	25.44	ppb	1.48	25	101.76	
63 Cu	25.53	ppb	0.37	25	102.12	
65 Cu	25.47	ppb	0.10	25	101.88	
66 Zn	25.54	ppb	0.49	25	102.16	
68 Zn	24.09	ppb	1.46	25	96.36	
75 As	25.09	ppb	0.59	25	100.36	
82 Se	25.19	ppb	0.79	25	100.76	
88 Sr	25.99	ppb	0.60	25	103.96	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	25.87	ppb	0.69	25	103.48	
107 Ag	26.24	ppb	0.38	25	104.96	
109 Ag	26.15	ppb	0.85	25	104.6	
111 Cd	26.23	ppb	0.24	25	104.92	
114 Cd	26.24	ppb	0.17	25	104.96	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.54	ppb	1.24	25	98.16	
120 Sn	24.51	ppb	1.45	25	98.04	
121 Sb	24.52	ppb	1.42	25	98.08	
123 Sb	24.58	ppb	1.93	25	98.32	
135 Ba	24.96	ppb	0.93	25	99.84	
137 Ba	25.01	ppb	1.57	25	100.04	
182 W	25.37	ppb	1.73	25	101.48	
203 Tl	25.23	ppb	0.65	25	100.92	
205 Tl	25.21	ppb	0.20	25	100.84	
208 Pb	25.21	ppb	0.18	25	100.84	
232 Th	24.37	ppb	0.71	25	97.48	
238 U	24.36	ppb	1.37	25	97.44	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3068789.50	0.58	2927307.30	104.8	80 - 120.4	
45 Sc	2660212.00	0.69	2674138.00	99.5	80 - 120.4	
72 Ge	574098.00	0.46	574804.50	99.9	80 - 120.4	
159 Tb	5440319.00	1.41	5109668.00	106.5	80 - 120.4	
209 Bi	3188168.00	0.66	3027142.00	105.3	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000623

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\061_CCB.D\061_CCB.D#
Date Acquired: Jul 2 2014 05:55 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0014	ppb	120.13	1.00	
11 B	0.353	ppb	52.55	1.00	
23 Na	-0.6616	ppb	13.55	1.00	
25 Mg	0.2664	ppb	27.85	1.00	
27 Al	-0.0867	ppb	30.36	1.00	
28 Si	-107.3	ppb	51.65	1.00	
29 Si	-80.71	ppb	130.96	1.00	
39 K	-2.111	ppb	45.34	1.00	
43 Ca	0.5256	ppb	431.70	1.00	
44 Ca	-8.095	ppb	41.36	1.00	
51 V	0.0105	ppb	681.47	1.00	
52 Cr	-0.0205	ppb	108.93	1.00	
53 Cr	-0.0027	ppb	3147.30	1.00	
55 Mn	-0.0011	ppb	345.45	1.00	
56 Fe	-0.2921	ppb	661.42	1.00	
57 Fe	-7.236	ppb	22.60	1.00	
59 Co	-0.0017	ppb	174.91	1.00	
60 Ni	-0.0001	ppb	12873.00	1.00	
63 Cu	-0.0138	ppb	32.90	1.00	
65 Cu	-0.0031	ppb	359.48	1.00	
66 Zn	-0.0045	ppb	80.40	1.00	
68 Zn	-0.6093	ppb	28.07	1.00	
75 As	-0.0127	ppb	840.03	1.00	
82 Se	0.2456	ppb	30.68	1.00	
88 Sr	-0.0055	ppb	44.61	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0679	ppb	18.75	1.00	
107 Ag	0.001	ppb	51.74	1.00	
109 Ag	0.0034	ppb	17.39	1.00	
111 Cd	-0.0648	ppb	51.81	1.00	
114 Cd	0.0025	ppb	315.05	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0583	ppb	28.83	1.00	
120 Sn	0.0661	ppb	21.38	1.00	
121 Sb	0.0174	ppb	41.30	1.00	
123 Sb	0.0108	ppb	73.48	1.00	
135 Ba	0.0025	ppb	537.51	1.00	
137 Ba	-0.007	ppb	61.85	1.00	
182 W	0.1086	ppb	11.09	1.00	
203 Tl	0.0044	ppb	54.36	1.00	
205 Tl	0.0064	ppb	37.72	1.00	
208 Pb	0.0099	ppb	114.84	1.00	
232 Th	0.0981	ppb	28.15	1.00	
238 U	0.0022	ppb	9.92	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3027914.50	1.79	2927307.30	103.4	79.5 - 120	
45 Sc	2674134.80	0.71	2674138.00	100.0	79.5 - 120	
72 Ge	576255.44	0.79	574804.50	100.3	79.5 - 120	
159 Tb	5382415.00	0.49	5109668.00	105.3	79.5 - 120	
209 Bi	3193589.80	0.76	3027142.00	105.5	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000624

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\062SMPL.D\062SMPL.D#
Date Acquired: Jul 2 2014 05:58 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: LCSWHF24IMW2
Misc Info: DILUTION 1.6/8
Vial Number: 2307
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	43.02	8.604	ppb	3.03	100.	
11 B	431.85	86.37	ppb	2.43	1000.	
23 Na	7,155.	1,431.	ppb	1.63	200000.	
25 Mg	5,160.	1,032.	ppb	1.25	200000.	
27 Al	2,142.	428.4	ppb	0.66	200000.	
28 Si	4,286.	857.2	ppb	2.94	#VALUE!	
29 Si	3,878.5	775.7	ppb	15.66	10000.	
39 K	9,805.	1,961.	ppb	1.14	200000.	
43 Ca	2,840.5	568.1	ppb	3.61	#VALUE!	
44 Ca	2,106.5	421.3	ppb	2.11	200000.	
51 V	512.5	102.5	ppb	1.17	1000.	
52 Cr	203.	40.6	ppb	0.97	1000.	
53 Cr	240.05	48.01	ppb	1.08	#VALUE!	
55 Mn	521.	104.2	ppb	0.27	1000.	
56 Fe	1,086.5	217.3	ppb	1.33	#VALUE!	
57 Fe	992.5	198.5	ppb	1.43	100000.	
59 Co	513.5	102.7	ppb	0.90	1000.	
60 Ni	519.5	103.9	ppb	0.40	1000.	
63 Cu	254.35	50.87	ppb	0.88	#VALUE!	
65 Cu	255.3	51.06	ppb	0.60	1000.	
66 Zn	510.5	102.1	ppb	0.67	1000.	
68 Zn	551.	110.2	ppb	0.61	#VALUE!	
75 As	99.25	19.85	ppb	0.53	1000.	
82 Se	99.55	19.91	ppb	1.46	1000.	
88 Sr	518.5	103.7	ppb	0.65	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	306.95	61.39	ppb	1.60	1000.	
107 Ag	52.25	10.45	ppb	0.84	500.	
109 Ag	52.	10.4	ppb	1.11	#VALUE!	
111 Cd	257.	51.4	ppb	1.18	#VALUE!	
114 Cd	256.55	51.31	ppb	0.93	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	479.75	95.95	ppb	1.52	1000.	
120 Sn	481.5	96.3	ppb	1.42	#VALUE!	
121 Sb	94.5	18.9	ppb	1.10	#VALUE!	
123 Sb	95.8	19.16	ppb	1.07	1000.	
135 Ba	1,942.5	388.5	ppb	1.15	1000.	
137 Ba	1,970.	394.	ppb	0.97	#VALUE!	
182 W	107.3	21.46	ppb ---		#VALUE!	
203 Tl	94.05	18.81	ppb	1.68	1000.	
205 Tl	93.75	18.75	ppb	0.49	#VALUE!	
208 Pb	101.	20.2	ppb	0.69	1000.	
232 Th	1.135	0.227	ppb	38.57	1000.	
238 U	98.75	19.75	ppb	0.83	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3192682.30	2.06	2927307.30	109.1	69.5 - 130	
45 Sc	2686808.00	0.65	2674138.00	100.5	69.5 - 130	
72 Ge	570721.88	1.24	574804.50	99.3	69.5 - 130	
159 Tb	5425353.50	0.75	5109668.00	106.2	69.5 - 130	
209 Bi	3180583.30	0.83	3027142.00	105.1	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

0 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000625

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\063SMPL.D\063SMPL.D#
Date Acquired: Jul 2 2014 06:02 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-008
Misc Info: DILUTION 1.6/8
Vial Number: 2308
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0024	-0.0005	ppb	90.40	100.	
11 B	13.22	2.644	ppb	6.11	1000.	
23 Na	7,975.	1,595.	ppb	2.53	200000.	
25 Mg	6,335.	1,267.	ppb	2.28	200000.	
27 Al	13.385	2.677	ppb	12.83	200000.	
28 Si	6,190.	1,238.	ppb	5.92	#VALUE!	
29 Si	5,320.	1,064.	ppb	21.06	10000.	
39 K	1,489.5	297.9	ppb	3.78	200000.	
43 Ca	33,220.	6,644.	ppb	2.89	#VALUE!	
44 Ca	33,280.	6,656.	ppb	2.30	200000.	
51 V	1.106	0.2212	ppb	26.74	1000.	
52 Cr	0.728	0.1456	ppb	4.06	1000.	
53 Cr	36.98	7.396	ppb	7.22	#VALUE!	
55 Mn	48.565	9.713	ppb	4.07	1000.	
56 Fe	-0.2526	-0.0505	ppb	4927.70	#VALUE!	
57 Fe	33.915	6.783	ppb	24.61	100000.	
59 Co	0.1472	0.0294	ppb	15.22	1000.	
60 Ni	1.864	0.3728	ppb	6.07	1000.	
63 Cu	4.448	0.8896	ppb	1.33	#VALUE!	
65 Cu	4.2585	0.8517	ppb	1.06	1000.	
66 Zn	5.57	1.114	ppb	3.35	1000.	
68 Zn	2.8245	0.5649	ppb	102.21	#VALUE!	
75 As	1.789	0.3578	ppb	34.21	1000.	
82 Se	0.2879	0.0576	ppb	225.60	1000.	
88 Sr	88.3	17.66	ppb	2.69	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.7945	0.1589	ppb	6.18	1000.	
107 Ag	0.0017	0.0003	ppb	222.29	500.	
109 Ag	0.0031	0.0006	ppb	235.03	#VALUE!	
111 Cd	-0.2542	-0.0508	ppb	92.07	#VALUE!	
114 Cd	0.0594	0.0119	ppb	43.31	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.6275	0.1255	ppb	34.81	1000.	
120 Sn	0.6125	0.1225	ppb	21.40	#VALUE!	
121 Sb	0.1539	0.0308	ppb	27.43	#VALUE!	
123 Sb	0.1291	0.0258	ppb	23.22	1000.	
135 Ba	7.07	1.414	ppb	2.79	1000.	
137 Ba	6.995	1.399	ppb	8.34	#VALUE!	
182 W	0.3403	0.0681	ppb	---	#VALUE!	
203 Tl	0.0092	0.0018	ppb	101.24	1000.	
205 Tl	0.0286	0.0057	ppb	33.06	#VALUE!	
208 Pb	0.2065	0.0413	ppb	7.11	1000.	
232 Th	0.1081	0.0216	ppb	8.24	1000.	
238 U	0.518	0.1036	ppb	2.19	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3229597.00	1.76	2927307.30	110.3	69.5 - 130	
45 Sc	2746284.50	2.42	2674138.00	102.7	69.5 - 130	
72 Ge	588443.81	2.71	574804.50	102.4	69.5 - 130	
159 Tb	5558438.00	3.10	5109668.00	108.8	69.5 - 130	
209 Bi	3249549.50	2.59	3027142.00	107.3	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000626

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\064SMPL.D\064SMPL.D#
Date Acquired: Jul 2 2014 06:05 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-008L
Misc Info: DILUTION 0.4/10
Vial Number: 2309
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0519	-0.0021	ppb	76.35	100.	
11 B	17.5125	0.7005	ppb	11.17	1000.	
23 Na	8,487.5	339.5	ppb	1.55	200000.	
25 Mg	6,492.5	259.7	ppb	1.84	200000.	
27 Al	25.5	1.02	ppb	7.11	200000.	
28 Si	4,795.	191.8	ppb	12.16	#VALUE!	
29 Si	3,565.	142.6	ppb	39.26	10000.	
39 K	1,562.25	62.49	ppb	2.41	200000.	
43 Ca	34,500.	1,380.	ppb	1.92	#VALUE!	
44 Ca	34,075.	1,363.	ppb	1.80	200000.	
51 V	2.174	0.087	ppb	78.85	1000.	
52 Cr	0.373	0.0149	ppb	107.37	1000.	
53 Cr	50.325	2.013	ppb	17.47	#VALUE!	
55 Mn	50.075	2.003	ppb	1.84	1000.	
56 Fe	-43.275	-1.731	ppb	118.20	#VALUE!	
57 Fe	-178.6	-7.144	ppb	49.93	100000.	
59 Co	0.0447	0.0018	ppb	175.92	1000.	
60 Ni	2.0503	0.082	ppb	4.93	1000.	
63 Cu	4.1475	0.1659	ppb	11.12	#VALUE!	
65 Cu	4.6175	0.1847	ppb	3.72	1000.	
66 Zn	6.2375	0.2495	ppb	6.03	1000.	
68 Zn	-3.9525	-0.1581	ppb	146.93	#VALUE!	
75 As	1.235	0.0494	ppb	258.50	1000.	
82 Se	6.235	0.2494	ppb	23.86	1000.	
88 Sr	91.45	3.658	ppb	0.03	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	1.1395	0.0456	ppb	30.87	1000.	
107 Ag	-0.0133	-0.0005	ppb	321.68	500.	
109 Ag	0.0704	0.0028	ppb	59.79	#VALUE!	
111 Cd	-1.5695	-0.0628	ppb	11.41	#VALUE!	
114 Cd	0.0747	0.003	ppb	39.48	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.6115	0.0245	ppb	63.90	1000.	
120 Sn	0.688	0.0275	ppb	31.00	#VALUE!	
121 Sb	0.1232	0.0049	ppb	21.86	#VALUE!	
123 Sb	0.0915	0.0037	ppb	158.02	1000.	
135 Ba	12.29	0.4916	ppb	3.90	1000.	
137 Ba	12.7275	0.5091	ppb	4.23	#VALUE!	
182 W	0.7398	0.0296	ppb	---	#VALUE!	
203 Tl	-0.0116	-0.0005	ppb	23.12	1000.	
205 Tl	0.0471	0.0019	ppb	103.29	#VALUE!	
208 Pb	0.2625	0.0105	ppb	24.13	1000.	
232 Th	0.0726	0.0029	ppb	6.91	1000.	
238 U	0.5268	0.0211	ppb	10.54	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3105882.80	0.86	2927307.30	106.1	69.5 - 130	
45 Sc	2666250.30	1.68	2674138.00	99.7	69.5 - 130	
72 Ge	578121.13	1.45	574804.50	100.6	69.5 - 130	
159 Tb	5442562.00	1.80	5109668.00	106.5	69.5 - 130	
209 Bi	3220436.50	1.50	3027142.00	106.4	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000627

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\065SMPL.D\065SMPL.D#
Date Acquired: Jul 2 2014 06:09 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-008A
Misc Info: DILUTION 1.6/8
Vial Number: 2310
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	8.815	1.763	ppb	1.74	100.	
11 B	191.25	38.25	ppb	2.06	1000.	
23 Na	18,025.	3,605.	ppb	1.77	200000.	
25 Mg	7,560.	1,512.	ppb	2.30	200000.	
27 Al	3,065.5	613.1	ppb	1.29	200000.	
28 Si	11,385.	2,277.	ppb	2.11	#VALUE!	
29 Si	12,280.	2,456.	ppb	9.10	10000.	
39 K	11,410.	2,282.	ppb	0.21	200000.	
43 Ca	34,665.	6,933.	ppb	1.87	#VALUE!	
44 Ca	35,070.	7,014.	ppb	1.59	200000.	
51 V	49.005	9.801	ppb	2.61	1000.	
52 Cr	50.95	10.19	ppb	2.49	1000.	
53 Cr	94.75	18.95	ppb	2.36	#VALUE!	
55 Mn	70.8	14.16	ppb	1.66	1000.	
56 Fe	1,002.	200.4	ppb	2.91	#VALUE!	
57 Fe	1,006.5	201.3	ppb	2.37	100000.	
59 Co	10.09	2.018	ppb	1.56	1000.	
60 Ni	21.885	4.377	ppb	1.30	1000.	
63 Cu	35.215	7.043	ppb	1.53	#VALUE!	
65 Cu	34.645	6.929	ppb	0.91	1000.	
66 Zn	102.8	20.56	ppb	1.68	1000.	
68 Zn	97.9	19.58	ppb	2.10	#VALUE!	
75 As	49.88	9.976	ppb	2.24	1000.	
82 Se	48.5	9.7	ppb	4.91	1000.	
88 Sr	138.85	27.77	ppb	0.49	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	50.7	10.14	ppb	0.98	1000.	
107 Ag	10.415	2.083	ppb	0.58	500.	
109 Ag	10.055	2.011	ppb	2.54	#VALUE!	
111 Cd	10.055	2.011	ppb	4.27	#VALUE!	
114 Cd	10.275	2.055	ppb	1.26	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	47.09	9.418	ppb	0.70	1000.	
120 Sn	46.555	9.311	ppb	0.88	#VALUE!	
121 Sb	9.48	1.896	ppb	1.83	#VALUE!	
123 Sb	9.585	1.917	ppb	1.55	1000.	
135 Ba	27.945	5.589	ppb	3.72	1000.	
137 Ba	27.95	5.59	ppb	2.51	#VALUE!	
182 W	51.05	10.21	ppb ---		#VALUE!	
203 Tl	10.115	2.023	ppb	1.75	1000.	
205 Tl	10.07	2.014	ppb	2.18	#VALUE!	
208 Pb	10.425	2.085	ppb	1.40	1000.	
232 Th	9.48	1.896	ppb	1.29	1000.	
238 U	10.46	2.092	ppb	2.09	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3149736.80	0.36	2927307.30	107.6	69.5 - 130	
45 Sc	2672093.50	0.74	2674138.00	99.9	69.5 - 130	
72 Ge	574398.81	0.75	574804.50	99.9	69.5 - 130	
159 Tb	5416589.00	1.05	5109668.00	106.0	69.5 - 130	
209 Bi	3153230.80	0.93	3027142.00	104.2	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000628

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\066SMPL.D\066SMPL.D#
Date Acquired: Jul 2 2014 06:12 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-008S
Misc Info: DILUTION 1.6/8
Vial Number: 2311
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	42.71	8.542	ppb	0.39	100.	
11 B	451.15	90.23	ppb	3.06	1000.	
23 Na	15,820.	3,164.	ppb	1.20	200000.	
25 Mg	12,175.	2,435.	ppb	1.79	200000.	
27 Al	2,123.	424.6	ppb	2.13	200000.	
28 Si	11,290.	2,258.	ppb	3.11	#VALUE!	
29 Si	10,975.	2,195.	ppb	7.01	10000.	
39 K	11,865.	2,373.	ppb	0.77	200000.	
43 Ca	37,830.	7,566.	ppb	1.96	#VALUE!	
44 Ca	37,250.	7,450.	ppb	0.96	200000.	
51 V	509.5	101.9	ppb	0.47	1000.	
52 Cr	201.5	40.3	ppb	0.35	1000.	
53 Cr	248.8	49.76	ppb	0.71	#VALUE!	
55 Mn	565.5	113.1	ppb	1.02	1000.	
56 Fe	1,076.	215.2	ppb	1.20	#VALUE!	
57 Fe	1,072.5	214.5	ppb	2.68	100000.	
59 Co	516.	103.2	ppb	0.37	1000.	
60 Ni	511.5	102.3	ppb	0.28	1000.	
63 Cu	248.5	49.7	ppb	1.15	#VALUE!	
65 Cu	247.45	49.49	ppb	0.26	1000.	
66 Zn	498.45	99.69	ppb	0.32	1000.	
68 Zn	541.5	108.3	ppb	0.27	#VALUE!	
75 As	104.55	20.91	ppb	1.16	1000.	
82 Se	104.95	20.99	ppb	1.67	1000.	
88 Sr	623.5	124.7	ppb	1.45	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	312.75	62.55	ppb	0.59	1000.	
107 Ag	51.45	10.29	ppb	0.76	500.	
109 Ag	50.95	10.19	ppb	0.58	#VALUE!	
111 Cd	262.6	52.52	ppb	0.56	#VALUE!	
114 Cd	262.95	52.59	ppb	0.28	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	496.	99.2	ppb	1.17	1000.	
120 Sn	496.2	99.24	ppb	1.53	#VALUE!	
121 Sb	99.1	19.82	ppb	0.93	#VALUE!	
123 Sb	99.55	19.91	ppb	1.25	1000.	
135 Ba	1,930.5	386.1	ppb	1.38	1000.	
137 Ba	1,948.5	389.7	ppb	1.27	#VALUE!	
182 W	110.5	22.1	ppb	---	#VALUE!	
203 Tl	98.3	19.66	ppb	1.21	1000.	
205 Tl	98.9	19.78	ppb	0.50	#VALUE!	
208 Pb	105.	21.	ppb	0.28	1000.	
232 Th	0.5	0.1	ppb	22.05	1000.	
238 U	103.45	20.69	ppb	0.17	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3258516.00	0.35	2927307.30	111.3	69.5 - 130	
45 Sc	2694605.50	1.50	2674138.00	100.8	69.5 - 130	
72 Ge	571205.25	1.02	574804.50	99.4	69.5 - 130	
159 Tb	5388091.00	1.43	5109668.00	105.4	69.5 - 130	
209 Bi	3130464.00	0.61	3027142.00	103.4	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000629

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\067SMPL.D\067SMPL.D#
Date Acquired: Jul 2 2014 06:16 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-008P
Misc Info: DILUTION 1.6/8
Vial Number: 2312
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	39.745	7.949	ppb	3.86	100.	
11 B	432.65	86.53	ppb	0.79	1000.	
23 Na	14,845.	2,969.	ppb	0.93	200000.	
25 Mg	10,800.	2,160.	ppb	0.95	200000.	
27 Al	1,910.	382.	ppb	2.95	200000.	
28 Si	9,785.	1,957.	ppb	2.19	#VALUE!	
29 Si	9,775.	1,955.	ppb	2.47	10000.	
39 K	11,550.	2,310.	ppb	0.59	200000.	
43 Ca	32,700.	6,540.	ppb	1.46	#VALUE!	
44 Ca	33,020.	6,604.	ppb	0.85	200000.	
51 V	463.75	92.75	ppb	1.14	1000.	
52 Cr	180.3	36.06	ppb	0.54	1000.	
53 Cr	224.4	44.88	ppb	0.59	#VALUE!	
55 Mn	516.5	103.3	ppb	1.65	1000.	
56 Fe	963.5	192.7	ppb	2.88	#VALUE!	
57 Fe	943.	188.6	ppb	1.77	100000.	
59 Co	464.4	92.88	ppb	0.80	1000.	
60 Ni	468.8	93.76	ppb	0.47	1000.	
63 Cu	229.85	45.97	ppb	1.19	#VALUE!	
65 Cu	229.75	45.95	ppb	0.22	1000.	
66 Zn	468.75	93.75	ppb	1.31	1000.	
68 Zn	508.5	101.7	ppb	0.97	#VALUE!	
75 As	98.4	19.68	ppb	1.57	1000.	
82 Se	99.6	19.92	ppb	1.67	1000.	
88 Sr	559.	111.8	ppb	0.76	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	286.	57.2	ppb	0.86	1000.	
107 Ag	51.2	10.24	ppb	1.02	500.	
109 Ag	50.75	10.15	ppb	0.74	#VALUE!	
111 Cd	248.7	49.74	ppb	0.60	#VALUE!	
114 Cd	249.25	49.85	ppb	0.30	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	451.95	90.39	ppb	0.88	1000.	
120 Sn	453.6	90.72	ppb	1.08	#VALUE!	
121 Sb	92.75	18.55	ppb	1.29	#VALUE!	
123 Sb	92.7	18.54	ppb	0.96	1000.	
135 Ba	1,814.5	362.9	ppb	1.00	1000.	
137 Ba	1,836.5	367.3	ppb	0.95	#VALUE!	
182 W	101.8	20.36	ppb ---		#VALUE!	
203 Tl	95.1	19.02	ppb	1.65	1000.	
205 Tl	95.3	19.06	ppb	0.72	#VALUE!	
208 Pb	99.65	19.93	ppb	0.66	1000.	
232 Th	0.2117	0.0423	ppb	7.57	1000.	
238 U	91.55	18.31	ppb	1.20	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3206027.80	2.00	2927307.30	109.5	69.5 - 130	
45 Sc	2696459.00	1.56	2674138.00	100.8	69.5 - 130	
72 Ge	574532.69	0.43	574804.50	100.0	69.5 - 130	
159 Tb	5409298.50	0.52	5109668.00	105.9	69.5 - 130	
209 Bi	3163964.80	0.63	3027142.00	104.5	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000630

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\068SMPL.D\068SMPL.D#
Date Acquired: Jul 2 2014 06:19 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-015
Misc Info: DILUTION 1.6/8
Vial Number: 2401
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.011	0.0022	ppb	95.06	100.	
11 B	12.28	2.456	ppb	13.23	1000.	
23 Na	3,810.	762.	ppb	0.34	200000.	
25 Mg	1,495.5	299.1	ppb	1.40	200000.	
27 Al	50.7	10.14	ppb	3.87	200000.	
28 Si	1,983.	396.6	ppb	11.51	#VALUE!	
29 Si	1,363.5	272.7	ppb	80.97	10000.	
39 K	1,515.5	303.1	ppb	2.81	200000.	
43 Ca	6,760.	1,352.	ppb	2.60	#VALUE!	
44 Ca	6,785.	1,357.	ppb	0.55	200000.	
51 V	1.267	0.2534	ppb	40.10	1000.	
52 Cr	1.0855	0.2171	ppb	4.98	1000.	
53 Cr	43.675	8.735	ppb	4.19	#VALUE!	
55 Mn	39.79	7.958	ppb	0.92	1000.	
56 Fe	247.75	49.55	ppb	7.14	#VALUE!	
57 Fe	203.55	40.71	ppb	8.24	100000.	
59 Co	1.117	0.2234	ppb	2.13	1000.	
60 Ni	2.042	0.4084	ppb	4.45	1000.	
63 Cu	3.9355	0.7871	ppb	2.51	#VALUE!	
65 Cu	4.015	0.803	ppb	4.43	1000.	
66 Zn	11.73	2.346	ppb	1.85	1000.	
68 Zn	9.585	1.917	ppb	24.05	#VALUE!	
75 As	1.928	0.3856	ppb	36.93	1000.	
82 Se	0.8025	0.1605	ppb	65.79	1000.	
88 Sr	20.905	4.181	ppb	1.22	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.4637	0.0927	ppb	11.66	1000.	
107 Ag	0.028	0.0056	ppb	35.65	500.	
109 Ag	0.0372	0.0074	ppb	48.27	#VALUE!	
111 Cd	-0.1975	-0.0395	ppb	90.83	#VALUE!	
114 Cd	0.1241	0.0248	ppb	20.06	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.693	0.1386	ppb	22.67	1000.	
120 Sn	0.742	0.1484	ppb	16.46	#VALUE!	
121 Sb	0.1679	0.0336	ppb	47.26	#VALUE!	
123 Sb	0.1457	0.0291	ppb	18.26	1000.	
135 Ba	12.78	2.556	ppb	4.32	1000.	
137 Ba	12.725	2.545	ppb	1.24	#VALUE!	
182 W	0.3178	0.0636	ppb	---	#VALUE!	
203 Tl	0.0673	0.0135	ppb	40.75	1000.	
205 Tl	0.0681	0.0136	ppb	5.82	#VALUE!	
208 Pb	0.4624	0.0925	ppb	8.54	1000.	
232 Th	0.0382	0.0076	ppb	17.06	1000.	
238 U	0.0427	0.0085	ppb	7.43	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3147891.00	0.78	2927307.30	107.5	69.5 - 130	
45 Sc	2678856.80	0.78	2674138.00	100.2	69.5 - 130	
72 Ge	584108.06	0.60	574804.50	101.6	69.5 - 130	
159 Tb	5467494.50	0.64	5109668.00	107.0	69.5 - 130	
209 Bi	3209274.00	0.81	3027142.00	106.0	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000631

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\069SMPL.D\069SMPL.D#
Date Acquired: Jul 2 2014 06:23 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-015L
Misc Info: DILUTION 0.4/10
Vial Number: 2402
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0254	-0.001	ppb	90.06	100.	
11 B	16.47	0.6588	ppb	11.16	1000.	
23 Na	4,015.	160.6	ppb	2.59	200000.	
25 Mg	1,513.25	60.53	ppb	3.10	200000.	
27 Al	65.175	2.607	ppb	5.62	200000.	
28 Si	1,435.	57.4	ppb	157.11	#VALUE!	
29 Si	822.25	32.89	ppb	782.61	10000.	
39 K	1,473.	58.92	ppb	9.53	200000.	
43 Ca	6,977.5	279.1	ppb	12.56	#VALUE!	
44 Ca	6,662.5	266.5	ppb	2.35	200000.	
51 V	3.55	0.142	ppb	50.68	1000.	
52 Cr	1.174	0.047	ppb	38.82	1000.	
53 Cr	62.975	2.519	ppb	5.83	#VALUE!	
55 Mn	41.075	1.643	ppb	1.78	1000.	
56 Fe	288.25	11.53	ppb	10.14	#VALUE!	
57 Fe	67.875	2.715	ppb	102.03	100000.	
59 Co	1.1075	0.0443	ppb	10.16	1000.	
60 Ni	1.946	0.0778	ppb	15.78	1000.	
63 Cu	3.425	0.137	ppb	6.18	#VALUE!	
65 Cu	3.92	0.1568	ppb	15.11	1000.	
66 Zn	11.85	0.474	ppb	9.80	1000.	
68 Zn	-3.3775	-0.1351	ppb	297.26	#VALUE!	
75 As	3.75	0.15	ppb	121.67	1000.	
82 Se	5.7525	0.2301	ppb	35.26	1000.	
88 Sr	22.1825	0.8873	ppb	1.62	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.89	0.0356	ppb	25.96	1000.	
107 Ag	0.0404	0.0016	ppb	126.39	500.	
109 Ag	0.0878	0.0035	ppb	53.03	#VALUE!	
111 Cd	-1.1863	-0.0475	ppb	110.68	#VALUE!	
114 Cd	0.2618	0.0105	ppb	19.27	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.854	0.0342	ppb	26.89	1000.	
120 Sn	0.9533	0.0381	ppb	22.31	#VALUE!	
121 Sb	0.1624	0.0065	ppb	86.26	#VALUE!	
123 Sb	0.1408	0.0056	ppb	94.36	1000.	
135 Ba	17.8675	0.7147	ppb	5.70	1000.	
137 Ba	17.655	0.7062	ppb	4.17	#VALUE!	
182 W	0.593	0.0237	ppb	---	#VALUE!	
203 Tl	0.0876	0.0035	ppb	15.84	1000.	
205 Tl	0.0621	0.0025	ppb	35.71	#VALUE!	
208 Pb	0.6665	0.0267	ppb	27.28	1000.	
232 Th	0.0246	0.001	ppb	81.43	1000.	
238 U	0.061	0.0024	ppb	24.77	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3125681.30	0.62	2927307.30	106.8	69.5 - 130	
45 Sc	2678001.80	2.84	2674138.00	100.1	69.5 - 130	
72 Ge	579820.56	2.17	574804.50	100.9	69.5 - 130	
159 Tb	5439946.50	1.43	5109668.00	106.5	69.5 - 130	
209 Bi	3176149.30	2.65	3027142.00	104.9	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000632

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\070SMPL.D\070SMPL.D#
Date Acquired: Jul 2 2014 06:26 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-015A
Misc Info: DILUTION 1.6/8
Vial Number: 2403
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	8.78	1.756	ppb	0.82	100.	
11 B	183.5	36.7	ppb	1.62	1000.	
23 Na	13,680.	2,736.	ppb	1.60	200000.	
25 Mg	2,482.	496.4	ppb	2.58	200000.	
27 Al	3,094.5	618.9	ppb	0.93	200000.	
28 Si	6,660.	1,332.	ppb	4.98	#VALUE!	
29 Si	5,935.	1,187.	ppb	24.80	10000.	
39 K	11,080.	2,216.	ppb	2.42	200000.	
43 Ca	7,760.	1,552.	ppb	2.29	#VALUE!	
44 Ca	7,510.	1,502.	ppb	1.53	200000.	
51 V	49.82	9.964	ppb	1.63	1000.	
52 Cr	51.95	10.39	ppb	0.99	1000.	
53 Cr	99.45	19.89	ppb	0.91	#VALUE!	
55 Mn	60.85	12.17	ppb	1.71	1000.	
56 Fe	1,233.	246.6	ppb	3.30	#VALUE!	
57 Fe	1,182.5	236.5	ppb	3.47	100000.	
59 Co	11.03	2.206	ppb	1.90	1000.	
60 Ni	21.805	4.361	ppb	2.02	1000.	
63 Cu	33.68	6.736	ppb	1.11	#VALUE!	
65 Cu	33.555	6.711	ppb	1.49	1000.	
66 Zn	108.7	21.74	ppb	0.64	1000.	
68 Zn	103.5	20.7	ppb	0.74	#VALUE!	
75 As	49.205	9.841	ppb	1.60	1000.	
82 Se	47.7	9.54	ppb	1.63	1000.	
88 Sr	70.45	14.09	ppb	2.00	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	49.79	9.958	ppb	2.19	1000.	
107 Ag	10.195	2.039	ppb	1.92	500.	
109 Ag	10.225	2.045	ppb	2.24	#VALUE!	
111 Cd	9.91	1.982	ppb	4.04	#VALUE!	
114 Cd	10.22	2.044	ppb	0.97	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	46.33	9.266	ppb	1.04	1000.	
120 Sn	46.39	9.278	ppb	1.50	#VALUE!	
121 Sb	9.51	1.902	ppb	3.34	#VALUE!	
123 Sb	9.545	1.909	ppb	1.72	1000.	
135 Ba	33.27	6.654	ppb	3.58	1000.	
137 Ba	33.575	6.715	ppb	1.23	#VALUE!	
182 W	50.3	10.06	ppb ---		#VALUE!	
203 Tl	9.88	1.976	ppb	2.73	1000.	
205 Tl	9.81	1.962	ppb	2.17	#VALUE!	
208 Pb	10.44	2.088	ppb	2.67	1000.	
232 Th	9.16	1.832	ppb	1.98	1000.	
238 U	9.58	1.916	ppb	2.06	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3172208.30	0.22	2927307.30	108.4	69.5 - 130	
45 Sc	2711555.80	2.13	2674138.00	101.4	69.5 - 130	
72 Ge	576437.63	0.94	574804.50	100.3	69.5 - 130	
159 Tb	5424351.00	0.98	5109668.00	106.2	69.5 - 130	
209 Bi	3193163.30	1.47	3027142.00	105.5	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000633

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\071SMPL.D\071SMPL.D#
Date Acquired: Jul 2 2014 06:30 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-015S
Misc Info: DILUTION 1.6/8
Vial Number: 2404
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	41.245	8.249	ppb	2.37	100.	
11 B	432.05	86.41	ppb	1.11	1000.	
23 Na	10,985.	2,197.	ppb	1.34	200000.	
25 Mg	6,685.	1,337.	ppb	0.80	200000.	
27 Al	2,088.	417.6	ppb	0.82	200000.	
28 Si	6,840.	1,368.	ppb	2.83	#VALUE!	
29 Si	6,820.	1,364.	ppb	13.92	10000.	
39 K	11,585.	2,317.	ppb	0.83	200000.	
43 Ca	9,070.	1,814.	ppb	2.86	#VALUE!	
44 Ca	8,450.	1,690.	ppb	1.12	200000.	
51 V	490.95	98.19	ppb	1.47	1000.	
52 Cr	193.	38.6	ppb	1.32	1000.	
53 Cr	243.4	48.68	ppb	1.43	#VALUE!	
55 Mn	541.	108.2	ppb	0.34	1000.	
56 Fe	1,230.5	246.1	ppb	0.54	#VALUE!	
57 Fe	1,137.5	227.5	ppb	2.60	100000.	
59 Co	499.6	99.92	ppb	1.34	1000.	
60 Ni	500.5	100.1	ppb	0.79	1000.	
63 Cu	249.9	49.98	ppb	1.72	#VALUE!	
65 Cu	247.7	49.54	ppb	0.54	1000.	
66 Zn	499.1	99.82	ppb	0.81	1000.	
68 Zn	536.5	107.3	ppb	0.77	#VALUE!	
75 As	98.5	19.7	ppb	1.08	1000.	
82 Se	99.7	19.94	ppb	2.02	1000.	
88 Sr	514.5	102.9	ppb	1.35	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	294.8	58.96	ppb	0.67	1000.	
107 Ag	52.45	10.49	ppb	0.73	500.	
109 Ag	52.2	10.44	ppb	0.89	#VALUE!	
111 Cd	254.9	50.98	ppb	0.82	#VALUE!	
114 Cd	255.85	51.17	ppb	0.73	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	464.5	92.9	ppb	0.49	1000.	
120 Sn	463.75	92.75	ppb	0.70	#VALUE!	
121 Sb	94.15	18.83	ppb	0.42	#VALUE!	
123 Sb	94.85	18.97	ppb	0.88	1000.	
135 Ba	1,903.	380.6	ppb	0.59	1000.	
137 Ba	1,921.5	384.3	ppb	0.66	#VALUE!	
182 W	104.	20.8	ppb ---		#VALUE!	
203 Tl	94.75	18.95	ppb	0.68	1000.	
205 Tl	95.75	19.15	ppb	0.42	#VALUE!	
208 Pb	101.5	20.3	ppb	0.41	1000.	
232 Th	0.4126	0.0825	ppb	21.51	1000.	
238 U	94.7	18.94	ppb	1.13	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3235971.00	1.45	2927307.30	110.5	69.5 - 130	
45 Sc	2663564.30	0.62	2674138.00	99.6	69.5 - 130	
72 Ge	572523.50	0.14	574804.50	99.6	69.5 - 130	
159 Tb	5409666.00	0.32	5109668.00	105.9	69.5 - 130	
209 Bi	3164060.80	0.85	3027142.00	104.5	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

0 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000634

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\072_CCV.D\072_CCV.D#
Date Acquired: Jul 2 2014 06:33 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	21.79	ppb	0.64	25	87.16	Fail
11 B	23.89	ppb	2.86	25	95.56	
23 Na	5,042.	ppb	0.14	5,000	100.84	
25 Mg	5,118.	ppb	0.46	5,000	102.36	
27 Al	521.3	ppb	2.21	500	104.26	
28 Si	412.	ppb	28.25	500	82.4	
29 Si	278.1	ppb	102.12	500	55.62	Fail
39 K	4,982.	ppb	2.00	5,000	99.64	
43 Ca	5,124.	ppb	2.81	5,000	102.48	
44 Ca	5,106.	ppb	2.44	5,000	102.12	
51 V	25.48	ppb	0.68	25	101.92	
52 Cr	25.63	ppb	0.96	25	102.52	
53 Cr	25.35	ppb	1.70	25	101.4	
55 Mn	25.64	ppb	0.94	25	102.56	
56 Fe	5,157.	ppb	0.92	5,000	103.14	
57 Fe	5,128.	ppb	1.40	5,000	102.56	
59 Co	25.41	ppb	0.50	25	101.64	
60 Ni	25.38	ppb	0.12	25	101.52	
63 Cu	25.38	ppb	1.07	25	101.52	
65 Cu	25.21	ppb	1.79	25	100.84	
66 Zn	25.34	ppb	2.02	25	101.36	
68 Zn	24.38	ppb	2.02	25	97.52	
75 As	24.95	ppb	1.09	25	99.8	
82 Se	25.44	ppb	0.96	25	101.76	
88 Sr	26.01	ppb	1.38	25	104.04	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	25.79	ppb	0.84	25	103.16	
107 Ag	25.97	ppb	0.91	25	103.88	
109 Ag	25.97	ppb	0.97	25	103.88	
111 Cd	26.11	ppb	0.72	25	104.44	
114 Cd	26.18	ppb	0.82	25	104.72	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.28	ppb	1.13	25	97.12	
120 Sn	24.48	ppb	0.85	25	97.92	
121 Sb	24.45	ppb	0.42	25	97.8	
123 Sb	24.36	ppb	0.48	25	97.44	
135 Ba	24.78	ppb	1.09	25	99.12	
137 Ba	25.03	ppb	2.09	25	100.12	
182 W	25.46	ppb	0.40	25	101.84	
203 Tl	25.34	ppb	1.37	25	101.36	
205 Tl	25.31	ppb	1.01	25	101.24	
208 Pb	25.25	ppb	1.16	25	101	
232 Th	24.58	ppb	1.95	25	98.32	
238 U	24.54	ppb	1.04	25	98.16	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3117146.80	1.26	2927307.30	106.5	80 - 120.4	
45 Sc	2691433.00	1.50	2674138.00	100.6	80 - 120.4	
72 Ge	576017.13	0.57	574804.50	100.2	80 - 120.4	
159 Tb	5422716.50	0.76	5109668.00	106.1	80 - 120.4	
209 Bi	3174392.80	1.06	3027142.00	104.9	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000635

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\073_CCB.D\073_CCB.D#
Date Acquired: Jul 2 2014 06:36 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	-0.0006	ppb	124.92	1.00	
11 B	0.6516	ppb	29.59	1.00	
23 Na	-0.8794	ppb	73.49	1.00	
25 Mg	0.1074	ppb	46.87	1.00	
27 Al	-0.0631	ppb	32.07	1.00	
28 Si	-57.44	ppb	29.81	1.00	
29 Si	-104.5	ppb	172.44	1.00	
39 K	-0.9515	ppb	345.98	1.00	
43 Ca	-0.3073	ppb	1729.60	1.00	
44 Ca	-7.229	ppb	44.28	1.00	
51 V	0.0638	ppb	51.47	1.00	
52 Cr	-0.0024	ppb	977.54	1.00	
53 Cr	0.2542	ppb	58.38	1.00	
55 Mn	-0.0067	ppb	202.84	1.00	
56 Fe	-0.3772	ppb	569.46	1.00	
57 Fe	-8.686	ppb	24.26	1.00	
59 Co	-0.0051	ppb	87.82	1.00	
60 Ni	-0.0047	ppb	234.68	1.00	
63 Cu	-0.0229	ppb	37.14	1.00	
65 Cu	-0.0063	ppb	199.52	1.00	
66 Zn	0.0068	ppb	254.11	1.00	
68 Zn	-0.6904	ppb	22.23	1.00	
75 As	0.0331	ppb	177.03	1.00	
82 Se	0.2201	ppb	61.29	1.00	
88 Sr	-0.0006	ppb	385.16	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.067	ppb	18.10	1.00	
107 Ag	0.0017	ppb	80.82	1.00	
109 Ag	0.0023	ppb	108.06	1.00	
111 Cd	-0.0599	ppb	26.97	1.00	
114 Cd	0.0028	ppb	141.35	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0843	ppb	24.63	1.00	
120 Sn	0.0792	ppb	32.87	1.00	
121 Sb	0.0182	ppb	51.32	1.00	
123 Sb	0.0059	ppb	85.21	1.00	
135 Ba	0.0032	ppb	522.23	1.00	
137 Ba	0.0015	ppb	354.14	1.00	
182 W	0.1142	ppb	4.51	1.00	
203 Tl	-0.0002	ppb	858.84	1.00	
205 Tl	0.0073	ppb	60.53	1.00	
208 Pb	0.0002	ppb	710.87	1.00	
232 Th	0.0724	ppb	36.72	1.00	
238 U	0.0023	ppb	38.52	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3097027.80	1.57	2927307.30	105.8	79.5 - 120	
45 Sc	2643239.30	1.35	2674138.00	98.8	79.5 - 120	
72 Ge	577398.13	1.44	574804.50	100.5	79.5 - 120	
159 Tb	5438413.00	0.94	5109668.00	106.4	79.5 - 120	
209 Bi	3199533.50	1.13	3027142.00	105.7	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000636

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\074SMPL.D\074SMPL.D#
Date Acquired: Jul 2 2014 06:40 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-015P
Misc Info: DILUTION 1.6/8
Vial Number: 2405
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	43.505	8.701	ppb	4.39	100.	
11 B	439.1	87.82	ppb	3.73	1000.	
23 Na	11,115.	2,223.	ppb	1.98	200000.	
25 Mg	7,000.	1,400.	ppb	2.50	200000.	
27 Al	2,197.5	439.5	ppb	2.02	200000.	
28 Si	6,965.	1,393.	ppb	4.88	#VALUE!	
29 Si	6,755.	1,351.	ppb	10.54	10000.	
39 K	11,775.	2,355.	ppb	1.57	200000.	
43 Ca	9,810.	1,962.	ppb	3.37	#VALUE!	
44 Ca	8,785.	1,757.	ppb	1.99	200000.	
51 V	520.	104.	ppb	2.00	1000.	
52 Cr	204.8	40.96	ppb	2.07	1000.	
53 Cr	248.8	49.76	ppb	2.11	#VALUE!	
55 Mn	562.5	112.5	ppb	2.97	1000.	
56 Fe	1,309.	261.8	ppb	4.14	#VALUE!	
57 Fe	1,242.5	248.5	ppb	1.33	100000.	
59 Co	531.5	106.3	ppb	2.49	1000.	
60 Ni	522.	104.4	ppb	2.20	1000.	
63 Cu	260.2	52.04	ppb	0.91	#VALUE!	
65 Cu	260.25	52.05	ppb	1.81	1000.	
66 Zn	520.5	104.1	ppb	2.03	1000.	
68 Zn	566.	113.2	ppb	1.84	#VALUE!	
75 As	101.6	20.32	ppb	2.03	1000.	
82 Se	102.75	20.55	ppb	3.72	1000.	
88 Sr	545.5	109.1	ppb	2.48	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	310.05	62.01	ppb	1.91	1000.	
107 Ag	53.	10.6	ppb	2.10	500.	
109 Ag	52.95	10.59	ppb	0.87	#VALUE!	
111 Cd	260.95	52.19	ppb	2.31	#VALUE!	
114 Cd	261.2	52.24	ppb	1.10	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	487.6	97.52	ppb	1.75	1000.	
120 Sn	489.7	97.94	ppb	1.90	#VALUE!	
121 Sb	97.7	19.54	ppb	2.84	#VALUE!	
123 Sb	99.	19.8	ppb	2.44	1000.	
135 Ba	1,982.	396.4	ppb	2.04	1000.	
137 Ba	2,007.	401.4	ppb	2.00	#VALUE!	
182 W	108.5	21.7	ppb ---		#VALUE!	
203 Tl	97.55	19.51	ppb	1.98	1000.	
205 Tl	97.7	19.54	ppb	1.49	#VALUE!	
208 Pb	104.5	20.9	ppb	2.11	1000.	
232 Th	1.1445	0.2289	ppb	40.94	1000.	
238 U	100.25	20.05	ppb	1.96	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3206809.80	4.11	2927307.30	109.5	69.5 - 130	
45 Sc	2666144.00	1.47	2674138.00	99.7	69.5 - 130	
72 Ge	569633.56	1.66	574804.50	99.1	69.5 - 130	
159 Tb	5375676.50	1.77	5109668.00	105.2	69.5 - 130	
209 Bi	3125205.30	1.77	3027142.00	103.2	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000637

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\075SMPL.D\075SMPL.D#
Date Acquired: Jul 2 2014 06:43 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-021
Misc Info: DILUTION 1.6/8
Vial Number: 2406
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0074	-0.0015	ppb	95.28	100.	
11 B	9.32	1.864	ppb	11.32	1000.	
23 Na	2,917.	583.4	ppb	1.83	200000.	
25 Mg	2,577.5	515.5	ppb	1.48	200000.	
27 Al	25.18	5.036	ppb	5.45	200000.	
28 Si	1,142.5	228.5	ppb	22.88	#VALUE!	
29 Si	1,024.5	204.9	ppb	46.60	10000.	
39 K	808.	161.6	ppb	2.93	200000.	
43 Ca	27,275.	5,455.	ppb	3.16	#VALUE!	
44 Ca	27,785.	5,557.	ppb	2.10	200000.	
51 V	1.6065	0.3213	ppb	7.96	1000.	
52 Cr	0.9935	0.1987	ppb	10.04	1000.	
53 Cr	49.045	9.809	ppb	2.24	#VALUE!	
55 Mn	11.73	2.346	ppb	1.55	1000.	
56 Fe	876.5	175.3	ppb	5.38	#VALUE!	
57 Fe	841.5	168.3	ppb	3.89	100000.	
59 Co	0.6075	0.1215	ppb	7.15	1000.	
60 Ni	1.6105	0.3221	ppb	1.70	1000.	
63 Cu	2.4115	0.4823	ppb	4.24	#VALUE!	
65 Cu	2.4485	0.4897	ppb	2.41	1000.	
66 Zn	4.427	0.8854	ppb	7.37	1000.	
68 Zn	1.7125	0.3425	ppb	27.22	#VALUE!	
75 As	5.095	1.019	ppb	9.67	1000.	
82 Se	0.846	0.1692	ppb	40.35	1000.	
88 Sr	42.525	8.505	ppb	2.27	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	1.117	0.2234	ppb	6.93	1000.	
107 Ag	-0.0042	-0.0008	ppb	231.58	500.	
109 Ag	0.0224	0.0045	ppb	103.74	#VALUE!	
111 Cd	-0.251	-0.0502	ppb	89.02	#VALUE!	
114 Cd	0.0614	0.0123	ppb	58.20	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.728	0.1456	ppb	10.58	1000.	
120 Sn	0.775	0.155	ppb	18.77	#VALUE!	
121 Sb	0.1628	0.0326	ppb	12.38	#VALUE!	
123 Sb	0.1506	0.0301	ppb	34.83	1000.	
135 Ba	2.9935	0.5987	ppb	16.66	1000.	
137 Ba	3.279	0.6558	ppb	6.21	#VALUE!	
182 W	0.4485	0.0897	ppb	---	#VALUE!	
203 Tl	0.0214	0.0043	ppb	81.74	1000.	
205 Tl	0.0165	0.0033	ppb	55.76	#VALUE!	
208 Pb	0.1609	0.0322	ppb	8.33	1000.	
232 Th	0.122	0.0244	ppb	18.67	1000.	
238 U	0.028	0.0056	ppb	22.22	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3178686.80	0.50	2927307.30	108.6	69.5 - 130	
45 Sc	2673084.30	1.42	2674138.00	100.0	69.5 - 130	
72 Ge	575542.13	1.64	574804.50	100.1	69.5 - 130	
159 Tb	5414444.50	1.66	5109668.00	106.0	69.5 - 130	
209 Bi	3156308.00	2.03	3027142.00	104.3	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000638

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\076SMPL.D\076SMPL.D#
Date Acquired: Jul 2 2014 06:47 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-022
Misc Info: DILUTION 1.6/8
Vial Number: 2407
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0024	0.0005	ppb	352.46	100.	
11 B	14.97	2.994	ppb	4.30	1000.	
23 Na	4,088.	817.6	ppb	1.71	200000.	
25 Mg	5,015.	1,003.	ppb	1.27	200000.	
27 Al	66.1	13.22	ppb	3.46	200000.	
28 Si	3,429.	685.8	ppb	5.74	#VALUE!	
29 Si	3,726.	745.2	ppb	19.40	10000.	
39 K	1,392.	278.4	ppb	0.41	200000.	
43 Ca	57,150.	11,430.	ppb	1.34	#VALUE!	
44 Ca	55,850.	11,170.	ppb	1.07	200000.	
51 V	1.57	0.314	ppb	21.18	1000.	
52 Cr	1.1165	0.2233	ppb	9.00	1000.	
53 Cr	43.385	8.677	ppb	5.15	#VALUE!	
55 Mn	1,293.5	258.7	ppb	0.37	1000.	
56 Fe	7,455.	1,491.	ppb	1.10	#VALUE!	
57 Fe	7,400.	1,480.	ppb	1.46	100000.	
59 Co	5.515	1.103	ppb	3.94	1000.	
60 Ni	2.094	0.4188	ppb	6.53	1000.	
63 Cu	3.696	0.7392	ppb	2.97	#VALUE!	
65 Cu	3.8485	0.7697	ppb	7.11	1000.	
66 Zn	6.93	1.386	ppb	10.39	1000.	
68 Zn	4.4595	0.8919	ppb	18.94	#VALUE!	
75 As	7.875	1.575	ppb	7.32	1000.	
82 Se	1.3885	0.2777	ppb	52.00	1000.	
88 Sr	93.3	18.66	ppb	1.94	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	1.211	0.2422	ppb	2.36	1000.	
107 Ag	0.0404	0.0081	ppb	47.78	500.	
109 Ag	0.0528	0.0106	ppb	31.00	#VALUE!	
111 Cd	-0.1236	-0.0247	ppb	30.15	#VALUE!	
114 Cd	0.0743	0.0149	ppb	26.61	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.4871	0.0974	ppb	21.78	1000.	
120 Sn	0.4215	0.0843	ppb	11.58	#VALUE!	
121 Sb	0.1242	0.0248	ppb	3.88	#VALUE!	
123 Sb	0.1106	0.0221	ppb	10.01	1000.	
135 Ba	21.55	4.31	ppb	3.37	1000.	
137 Ba	22.03	4.406	ppb	2.00	#VALUE!	
182 W	0.4164	0.0833	ppb	---	#VALUE!	
203 Tl	0.0291	0.0058	ppb	57.31	1000.	
205 Tl	0.006	0.0012	ppb	210.92	#VALUE!	
208 Pb	0.4093	0.0819	ppb	13.20	1000.	
232 Th	0.1422	0.0284	ppb	3.73	1000.	
238 U	0.0664	0.0133	ppb	9.52	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3134802.50	0.95	2927307.30	107.1	69.5 - 130	
45 Sc	2680828.80	0.68	2674138.00	100.3	69.5 - 130	
72 Ge	579311.88	0.37	574804.50	100.8	69.5 - 130	
159 Tb	5455177.50	0.73	5109668.00	106.8	69.5 - 130	
209 Bi	3208984.00	0.64	3027142.00	106.0	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000639

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\077SMPL.D\077SMPL.D#
Date Acquired: Jul 2 2014 06:50 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-023
Misc Info: DILUTION 1.6/8
Vial Number: 2408
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0074	-0.0015	ppb	41.42	100.	
11 B	14.545	2.909	ppb	5.82	1000.	
23 Na	4,072.	814.4	ppb	1.81	200000.	
25 Mg	4,535.	907.	ppb	1.57	200000.	
27 Al	20.885	4.177	ppb	1.06	200000.	
28 Si	3,149.5	629.9	ppb	4.44	#VALUE!	
29 Si	3,507.	701.4	ppb	21.97	10000.	
39 K	1,337.5	267.5	ppb	0.30	200000.	
43 Ca	49,690.	9,938.	ppb	1.45	#VALUE!	
44 Ca	49,780.	9,956.	ppb	0.04	200000.	
51 V	1.0535	0.2107	ppb	15.28	1000.	
52 Cr	0.991	0.1982	ppb	2.75	1000.	
53 Cr	43.82	8.764	ppb	2.40	#VALUE!	
55 Mn	972.5	194.5	ppb	0.38	1000.	
56 Fe	563.	112.6	ppb	1.56	#VALUE!	
57 Fe	615.5	123.1	ppb	2.34	100000.	
59 Co	4.1415	0.8283	ppb	3.18	1000.	
60 Ni	2.457	0.4914	ppb	0.56	1000.	
63 Cu	2.015	0.403	ppb	4.71	#VALUE!	
65 Cu	1.994	0.3988	ppb	4.55	1000.	
66 Zn	4.4925	0.8985	ppb	4.73	1000.	
68 Zn	1.2205	0.2441	ppb	24.65	#VALUE!	
75 As	7.535	1.507	ppb	13.28	1000.	
82 Se	1.445	0.289	ppb	47.72	1000.	
88 Sr	73.7	14.74	ppb	1.54	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	1.0975	0.2195	ppb	8.96	1000.	
107 Ag	0.0037	0.0007	ppb	222.18	500.	
109 Ag	0.0102	0.002	ppb	61.73	#VALUE!	
111 Cd	-0.2558	-0.0512	ppb	51.98	#VALUE!	
114 Cd	0.0494	0.0099	ppb	23.07	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.4708	0.0942	ppb	20.33	1000.	
120 Sn	0.3403	0.0681	ppb	9.95	#VALUE!	
121 Sb	0.0991	0.0198	ppb	15.46	#VALUE!	
123 Sb	0.1133	0.0227	ppb	17.42	1000.	
135 Ba	4.2245	0.8449	ppb	2.44	1000.	
137 Ba	4.175	0.835	ppb	1.56	#VALUE!	
182 W	0.3173	0.0635	ppb	---	#VALUE!	
203 Tl	-0.001	-0.0002	ppb	1127.20	1000.	
205 Tl	0.01	0.002	ppb	48.47	#VALUE!	
208 Pb	0.1013	0.0203	ppb	66.98	1000.	
232 Th	0.0969	0.0194	ppb	5.14	1000.	
238 U	0.0294	0.0059	ppb	15.58	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3165832.30	1.50	2927307.30	108.1	69.5 - 130	
45 Sc	2692984.50	1.10	2674138.00	100.7	69.5 - 130	
72 Ge	584659.31	1.14	574804.50	101.7	69.5 - 130	
159 Tb	5505489.50	0.17	5109668.00	107.7	69.5 - 130	
209 Bi	3206812.30	0.61	3027142.00	105.9	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000640

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\078SMPL.D\078SMPL.D#
Date Acquired: Jul 2 2014 06:54 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: PBSHF26IMS1
Misc Info: DILUTION 1.6/8
Vial Number: 2409
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0056	-0.0011	ppb	133.81	100.	
11 B	1.3265	0.2653	ppb	12.48	1000.	
23 Na	20.08	4.016	ppb	1.66	200000.	
25 Mg	15.56	3.112	ppb	5.58	200000.	
27 Al	10.22	2.044	ppb	4.73	200000.	
28 Si	-444.5	-88.9	ppb	61.95	#VALUE!	
29 Si	-371.65	-74.33	ppb	426.75	10000.	
39 K	18.895	3.779	ppb	59.25	200000.	
43 Ca	57.45	11.49	ppb	60.88	#VALUE!	
44 Ca	24.25	4.85	ppb	20.48	200000.	
51 V	1.028	0.2056	ppb	48.58	1000.	
52 Cr	1.3365	0.2673	ppb	3.51	1000.	
53 Cr	54.5	10.9	ppb	1.46	#VALUE!	
55 Mn	0.5615	0.1123	ppb	2.40	1000.	
56 Fe	21.41	4.282	ppb	22.14	#VALUE!	
57 Fe	-22.19	-4.438	ppb	36.08	100000.	
59 Co	0.0011	0.0002	ppb	1672.20	1000.	
60 Ni	0.3306	0.0661	ppb	7.46	1000.	
63 Cu	0.575	0.115	ppb	14.58	#VALUE!	
65 Cu	0.624	0.1248	ppb	22.04	1000.	
66 Zn	1.2235	0.2447	ppb	14.26	1000.	
68 Zn	-1.069	-0.2138	ppb	71.38	#VALUE!	
75 As	0.345	0.069	ppb	274.78	1000.	
82 Se	0.0518	0.0104	ppb	1230.00	1000.	
88 Sr	0.1708	0.0342	ppb	2.54	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.1461	0.0292	ppb	21.76	1000.	
107 Ag	-0.0058	-0.0012	ppb	221.99	500.	
109 Ag	0.0089	0.0018	ppb	50.26	#VALUE!	
111 Cd	-0.2225	-0.0445	ppb	36.28	#VALUE!	
114 Cd	0.0459	0.0092	ppb	114.79	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	26.62	5.324	ppb	1.48	1000.	
120 Sn	27.02	5.404	ppb	1.80	#VALUE!	
121 Sb	0.038	0.0076	ppb	28.67	#VALUE!	
123 Sb	0.0214	0.0043	ppb	119.60	1000.	
135 Ba	1.8655	0.3731	ppb	16.42	1000.	
137 Ba	1.7435	0.3487	ppb	5.82	#VALUE!	
182 W	0.1068	0.0214	ppb	---	#VALUE!	
203 Tl	0.0032	0.0006	ppb	480.01	1000.	
205 Tl	-0.0042	-0.0008	ppb	43.14	#VALUE!	
208 Pb	0.1327	0.0265	ppb	3.61	1000.	
232 Th	0.0615	0.0123	ppb	11.14	1000.	
238 U	0.0055	0.0011	ppb	50.04	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3194863.30	1.27	2927307.30	109.1	69.5 - 130	
45 Sc	2666594.30	0.97	2674138.00	99.7	69.5 - 130	
72 Ge	573720.44	0.89	574804.50	99.8	69.5 - 130	
159 Tb	5419602.00	1.52	5109668.00	106.1	69.5 - 130	
209 Bi	3176389.30	1.76	3027142.00	104.9	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000641

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\079SMPL.D\079SMPL.D#
Date Acquired: Jul 2 2014 06:57 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: LCSOHF26IMS1
Misc Info: DILUTION 1.6/8
Vial Number: 2410
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	43.995	8.799	ppb	5.17	100.	
11 B	438.65	87.73	ppb	3.44	1000.	
23 Na	7,780.	1,556.	ppb	0.72	200000.	
25 Mg	5,395.	1,079.	ppb	2.30	200000.	
27 Al	2,180.	436.	ppb	1.04	200000.	
28 Si	2,786.	557.2	ppb	0.59	#VALUE!	
29 Si	3,680.	736.	ppb	15.86	10000.	
39 K	10,390.	2,078.	ppb	0.50	200000.	
43 Ca	2,914.5	582.9	ppb	3.17	#VALUE!	
44 Ca	2,265.5	453.1	ppb	3.25	200000.	
51 V	516.	103.2	ppb	1.69	1000.	
52 Cr	205.4	41.08	ppb	1.81	1000.	
53 Cr	265.3	53.06	ppb	1.67	#VALUE!	
55 Mn	529.5	105.9	ppb	1.33	1000.	
56 Fe	1,100.5	220.1	ppb	2.19	#VALUE!	
57 Fe	998.	199.6	ppb	0.82	100000.	
59 Co	530.	106.	ppb	2.22	1000.	
60 Ni	525.5	105.1	ppb	1.55	1000.	
63 Cu	258.9	51.78	ppb	1.53	#VALUE!	
65 Cu	260.25	52.05	ppb	1.20	1000.	
66 Zn	515.5	103.1	ppb	1.10	1000.	
68 Zn	555.	111.	ppb	2.23	#VALUE!	
75 As	103.3	20.66	ppb	2.13	1000.	
82 Se	103.3	20.66	ppb	0.62	1000.	
88 Sr	531.	106.2	ppb	1.04	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	312.65	62.53	ppb	1.18	1000.	
107 Ag	53.35	10.67	ppb	2.79	500.	
109 Ag	52.7	10.54	ppb	2.80	#VALUE!	
111 Cd	268.9	53.78	ppb	2.09	#VALUE!	
114 Cd	269.85	53.97	ppb	1.87	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	512.	102.4	ppb	1.97	1000.	
120 Sn	514.5	102.9	ppb	2.48	#VALUE!	
121 Sb	99.9	19.98	ppb	2.71	#VALUE!	
123 Sb	100.55	20.11	ppb	3.32	1000.	
135 Ba	1,979.	395.8	ppb	2.16	1000.	
137 Ba	2,006.	401.2	ppb	2.46	#VALUE!	
182 W	110.5	22.1	ppb ---		#VALUE!	
203 Tl	104.35	20.87	ppb	1.69	1000.	
205 Tl	105.05	21.01	ppb	1.30	#VALUE!	
208 Pb	106.05	21.21	ppb	1.82	1000.	
232 Th	0.1262	0.0252	ppb	6.11	1000.	
238 U	101.3	20.26	ppb	2.59	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3151516.50	3.54	2927307.30	107.7	69.5 - 130	
45 Sc	2635725.30	0.91	2674138.00	98.6	69.5 - 130	
72 Ge	562212.00	1.29	574804.50	97.8	69.5 - 130	
159 Tb	5367601.50	2.14	5109668.00	105.0	69.5 - 130	
209 Bi	3130592.80	1.33	3027142.00	103.4	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000642

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\080SMPL.D\080SMPL.D#
Date Acquired: Jul 2 2014 07:00 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: LC2OHF26IMS1
Misc Info: DILUTION 1.6/8
Vial Number: 2411
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	41.73	8.346	ppb	0.67	100.	
11 B	418.8	83.76	ppb	2.36	1000.	
23 Na	7,500.	1,500.	ppb	3.62	200000.	
25 Mg	5,150.	1,030.	ppb	2.91	200000.	
27 Al	2,097.	419.4	ppb	2.59	200000.	
28 Si	3,232.5	646.5	ppb	14.91	#VALUE!	
29 Si	2,869.5	573.9	ppb	70.90	10000.	
39 K	9,940.	1,988.	ppb	4.04	200000.	
43 Ca	2,816.5	563.3	ppb	1.07	#VALUE!	
44 Ca	2,130.5	426.1	ppb	1.71	200000.	
51 V	493.65	98.73	ppb	1.23	1000.	
52 Cr	197.8	39.56	ppb	1.81	1000.	
53 Cr	253.25	50.65	ppb	2.09	#VALUE!	
55 Mn	510.	102.	ppb	1.88	1000.	
56 Fe	1,046.5	209.3	ppb	1.69	#VALUE!	
57 Fe	954.5	190.9	ppb	1.21	100000.	
59 Co	506.	101.2	ppb	2.85	1000.	
60 Ni	508.5	101.7	ppb	1.61	1000.	
63 Cu	249.2	49.84	ppb	1.76	#VALUE!	
65 Cu	247.65	49.53	ppb	1.91	1000.	
66 Zn	494.45	98.89	ppb	2.17	1000.	
68 Zn	533.5	106.7	ppb	1.90	#VALUE!	
75 As	97.05	19.41	ppb	2.17	1000.	
82 Se	97.	19.4	ppb	1.78	1000.	
88 Sr	506.5	101.3	ppb	2.34	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	298.55	59.71	ppb	2.56	1000.	
107 Ag	50.8	10.16	ppb	1.71	500.	
109 Ag	50.9	10.18	ppb	1.72	#VALUE!	
111 Cd	253.35	50.67	ppb	1.50	#VALUE!	
114 Cd	253.25	50.65	ppb	1.89	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	494.8	98.96	ppb	1.12	1000.	
120 Sn	492.2	98.44	ppb	0.95	#VALUE!	
121 Sb	94.2	18.84	ppb	1.58	#VALUE!	
123 Sb	94.85	18.97	ppb	1.38	1000.	
135 Ba	1,893.	378.6	ppb	1.38	1000.	
137 Ba	1,918.5	383.7	ppb	1.36	#VALUE!	
182 W	105.55	21.11	ppb ---		#VALUE!	
203 Tl	98.6	19.72	ppb	1.52	1000.	
205 Tl	99.5	19.9	ppb	1.60	#VALUE!	
208 Pb	100.85	20.17	ppb	1.54	1000.	
232 Th	0.1389	0.0278	ppb	14.72	1000.	
238 U	96.4	19.28	ppb	0.82	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3287645.50	1.12	2927307.30	112.3	69.5 - 130	
45 Sc	2685348.80	2.77	2674138.00	100.4	69.5 - 130	
72 Ge	575559.50	1.69	574804.50	100.1	69.5 - 130	
159 Tb	5456626.00	1.19	5109668.00	106.8	69.5 - 130	
209 Bi	3185202.50	1.41	3027142.00	105.2	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000643

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\081SMPL.D\081SMPL.D#
Date Acquired: Jul 2 2014 07:04 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4522-006
Misc Info: DILUTION 1.6/8
Vial Number: 2412
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	2.622	0.5244	ppb	5.19	100.	
11 B	27.13	5.426	ppb	4.02	1000.	
23 Na	353.	70.6	ppb	3.10	200000.	
25 Mg	8,950.	1,790.	ppb	1.41	200000.	
27 Al	20,195.	4,039.	ppb	0.84	200000.	
28 Si	1,721.	344.2	ppb	8.85	#VALUE!	
29 Si	2,048.5	409.7	ppb	25.24	10000.	
39 K	1,477.	295.4	ppb	1.20	200000.	
43 Ca	46,595.	9,319.	ppb	1.86	#VALUE!	
44 Ca	45,860.	9,172.	ppb	0.59	200000.	
51 V	56.95	11.39	ppb	1.55	1000.	
52 Cr	81.9	16.38	ppb	0.31	1000.	
53 Cr	130.75	26.15	ppb	1.12	#VALUE!	
55 Mn	1,299.5	259.9	ppb	1.16	1000.	
56 Fe	33,285.	6,657.	ppb	1.25	#VALUE!	
57 Fe	33,315.	6,663.	ppb	0.65	100000.	
59 Co	12.215	2.443	ppb	2.43	1000.	
60 Ni	25.935	5.187	ppb	1.77	1000.	
63 Cu	63.4	12.68	ppb	1.53	#VALUE!	
65 Cu	64.05	12.81	ppb	1.68	1000.	
66 Zn	120.4	24.08	ppb	1.52	1000.	
68 Zn	117.65	23.53	ppb	3.16	#VALUE!	
75 As	14.86	2.972	ppb	11.36	1000.	
82 Se	18.875	3.775	ppb	3.58	1000.	
88 Sr	203.3	40.66	ppb	0.37	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	6.705	1.341	ppb	2.71	1000.	
107 Ag	0.628	0.1256	ppb	6.13	500.	
109 Ag	0.625	0.125	ppb	10.29	#VALUE!	
111 Cd	2.463	0.4926	ppb	5.45	#VALUE!	
114 Cd	2.3125	0.4625	ppb	4.26	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	27.81	5.562	ppb	0.33	1000.	
120 Sn	27.665	5.533	ppb	1.85	#VALUE!	
121 Sb	0.9895	0.1979	ppb	3.52	#VALUE!	
123 Sb	1.079	0.2158	ppb	12.35	1000.	
135 Ba	108.95	21.79	ppb	2.28	1000.	
137 Ba	111.25	22.25	ppb	1.47	#VALUE!	
182 W	1.0715	0.2143	ppb ---		#VALUE!	
203 Tl	0.2634	0.0527	ppb	8.29	1000.	
205 Tl	0.2229	0.0446	ppb	7.80	#VALUE!	
208 Pb	19.065	3.813	ppb	0.91	1000.	
232 Th	5.71	1.142	ppb	0.37	1000.	
238 U	3.1065	0.6213	ppb	2.86	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3180675.80	0.84	2927307.30	108.7	69.5 - 130	
45 Sc	2677675.30	0.65	2674138.00	100.1	69.5 - 130	
72 Ge	572291.88	0.30	574804.50	99.6	69.5 - 130	
159 Tb	5399163.00	0.57	5109668.00	105.7	69.5 - 130	
209 Bi	3205747.30	0.40	3027142.00	105.9	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000644

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\082_CCV.D\082_CCV.D#
Date Acquired: Jul 2 2014 07:07 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	22.45	ppb	1.32	25	89.8	
11 B	23.49	ppb	2.98	25	93.96	
23 Na	4,987.	ppb	1.69	5,000	99.74	
25 Mg	5,192.	ppb	1.12	5,000	103.84	
27 Al	527.6	ppb	0.75	500	105.52	
28 Si	488.8	ppb	2.55	500	97.76	
29 Si	662.8	ppb	19.34	500	132.56	Fail
39 K	5,000.	ppb	1.10	5,000	100	
43 Ca	5,125.	ppb	0.40	5,000	102.5	
44 Ca	5,151.	ppb	0.85	5,000	103.02	
51 V	25.36	ppb	1.16	25	101.44	
52 Cr	25.55	ppb	1.58	25	102.2	
53 Cr	25.32	ppb	1.14	25	101.28	
55 Mn	25.84	ppb	1.48	25	103.36	
56 Fe	5,157.	ppb	2.16	5,000	103.14	
57 Fe	5,163.	ppb	1.31	5,000	103.26	
59 Co	25.73	ppb	1.64	25	102.92	
60 Ni	25.45	ppb	0.48	25	101.8	
63 Cu	25.58	ppb	1.48	25	102.32	
65 Cu	25.42	ppb	0.76	25	101.68	
66 Zn	25.81	ppb	1.60	25	103.24	
68 Zn	24.56	ppb	1.31	25	98.24	
75 As	25.28	ppb	1.32	25	101.12	
82 Se	25.57	ppb	1.26	25	102.28	
88 Sr	26.18	ppb	1.05	25	104.72	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	26.13	ppb	1.61	25	104.52	
107 Ag	26.57	ppb	1.82	25	106.28	
109 Ag	26.49	ppb	1.43	25	105.96	
111 Cd	26.31	ppb	1.01	25	105.24	
114 Cd	26.58	ppb	0.75	25	106.32	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.45	ppb	0.72	25	97.8	
120 Sn	24.63	ppb	1.40	25	98.52	
121 Sb	24.7	ppb	0.76	25	98.8	
123 Sb	24.79	ppb	0.91	25	99.16	
135 Ba	25.03	ppb	1.13	25	100.12	
137 Ba	25.3	ppb	0.17	25	101.2	
182 W	25.68	ppb	1.32	25	102.72	
203 Tl	25.35	ppb	0.85	25	101.4	
205 Tl	25.42	ppb	0.69	25	101.68	
208 Pb	25.41	ppb	1.47	25	101.64	
232 Th	24.7	ppb	1.89	25	98.8	
238 U	24.48	ppb	1.36	25	97.92	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2995779.00	1.05	2927307.30	102.3	80 - 120.4	
45 Sc	2640543.00	0.48	2674138.00	98.7	80 - 120.4	
72 Ge	564544.63	1.39	574804.50	98.2	80 - 120.4	
159 Tb	5351005.50	0.84	5109668.00	104.7	80 - 120.4	
209 Bi	3142980.80	1.02	3027142.00	103.8	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000645

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JHG02A.B\083_CCB.D\083_CCB.D#
Date Acquired: Jul 2 2014 07:11 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 02 2014 03:32 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0005	ppb	299.25	1.00	
11 B	0.4433	ppb	14.83	1.00	
23 Na	-1.345	ppb	21.40	1.00	
25 Mg	0.0581	ppb	103.67	1.00	
27 Al	0.0056	ppb	247.25	1.00	
28 Si	-65.86	ppb	89.46	1.00	
29 Si	-88.92	ppb	339.97	1.00	
39 K	-2.346	ppb	32.54	1.00	
43 Ca	-3.825	ppb	74.88	1.00	
44 Ca	-10.72	ppb	14.76	1.00	
51 V	0.0095	ppb	500.74	1.00	
52 Cr	-0.0135	ppb	68.99	1.00	
53 Cr	-0.0896	ppb	284.81	1.00	
55 Mn	0.0015	ppb	367.37	1.00	
56 Fe	-3.424	ppb	95.04	1.00	
57 Fe	-9.835	ppb	16.04	1.00	
59 Co	-0.0013	ppb	158.55	1.00	
60 Ni	0.0019	ppb	227.09	1.00	
63 Cu	-0.0188	ppb	37.41	1.00	
65 Cu	-0.0078	ppb	10.56	1.00	
66 Zn	0.0164	ppb	168.95	1.00	
68 Zn	-0.9179	ppb	4.62	1.00	
75 As	-0.0511	ppb	134.46	1.00	
82 Se	0.0638	ppb	61.69	1.00	
88 Sr	-0.0008	ppb	278.28	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0668	ppb	11.25	1.00	
107 Ag	0.0014	ppb	65.40	1.00	
109 Ag	0.004	ppb	33.89	1.00	
111 Cd	-0.0644	ppb	9.25	1.00	
114 Cd	0.0047	ppb	27.94	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0632	ppb	34.41	1.00	
120 Sn	0.0654	ppb	9.28	1.00	
121 Sb	0.0161	ppb	45.17	1.00	
123 Sb	0.0163	ppb	48.23	1.00	
135 Ba	-0.0057	ppb	139.34	1.00	
137 Ba	-0.0025	ppb	384.70	1.00	
182 W	0.1101	ppb	17.75	1.00	
203 Tl	0.0074	ppb	52.81	1.00	
205 Tl	0.0039	ppb	8.44	1.00	
208 Pb	0.0019	ppb	96.14	1.00	
232 Th	0.0478	ppb	25.27	1.00	
238 U	0.0013	ppb	135.56	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3089652.30	2.04	2927307.30	105.5	79.5 - 120	
45 Sc	2692907.80	0.73	2674138.00	100.7	79.5 - 120	
72 Ge	582296.19	1.47	574804.50	101.3	79.5 - 120	
159 Tb	5444708.00	1.86	5109668.00	106.6	79.5 - 120	
209 Bi	3218434.80	0.96	3027142.00	106.3	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG02A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000646

KATAHDIN ANALYTICAL SERVICES, INC.
METALS ANALYSIS RUN INFORMATION SHEET

INSTR. ID: ~~JHG03A~~ Agilent 7500 **ANALYST:** EAM **ANALYSIS DATE:** 7-3-14

FILE NAME: ~~JHG03A~~

REVIEWED

HMM 7-14-14

KATAHDIN ANALYTICAL METALS SECTION

METHOD:

ICP	ICP-MS	CVAA
☐ 200.7	☒ 200.8	☐ 245.__
☐ 6010B	☒ ~~6020~~	☐ 747__
☐ CLP	☐ CLP	☐ CLP
☐ _____	☐ _____	☐ _____

STANDARDS USED:

Standard Name	Standard ID	Prep Date	Expiration Date	Standard Conc.
Cal Blank/ICB/CCB	MW14962	06-30-14	06-30-15	0 ug/L
Cal. Std 1	MW14963		08-08-14	varies by element
2	MW14964			
3	MW14965			
4	MW14966			
ICV	MW14951	06-25-14	08-02-14	
PQL	MW14958	06-26-14	08-08-14	
ICSA	MW14968	06-30-14	07-07-14	
ICSAB	MW14969			
CCV	MW14967		08-08-14	
Internal Std	MW14971	07-02-14	10-02-14	1 ug/L

Additional Comments and Notes:

HMM 7-14-14

INSTRUMENT RUNLOG

Instrument: AGILENT 7500

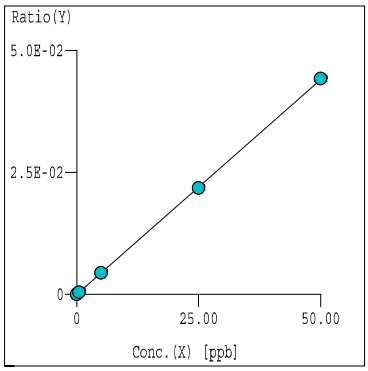
SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
6020 Tune	1	JHG03A	7/3/2014 5:02:00	17:02	EAM
200.8 Tune	1	JHG03A	7/3/2014 5:04:00	17:04	EAM
Cal Blank	1	JHG03A	7/3/2014 5:33:00	17:33	EAM
Cal Std 1	1	JHG03A	7/3/2014 5:36:00	17:36	EAM
Cal Std 2	1	JHG03A	7/3/2014 5:39:00	17:39	EAM
Cal Std 3	1	JHG03A	7/3/2014 5:42:00	17:42	EAM
Cal Std 4	1	JHG03A	7/3/2014 5:45:00	17:45	EAM
ICV	1	JHG03A	7/3/2014 5:48:00	17:48	EAM
ICB	1	JHG03A	7/3/2014 5:51:00	17:51	EAM
PQL	1	JHG03A	7/3/2014 5:54:00	17:54	EAM
ICSA	1	JHG03A	7/3/2014 5:58:00	17:58	EAM
ICSAB	1	JHG03A	7/3/2014 6:01:00	18:01	EAM
Blank	1	JHG03A	7/3/2014 6:05:00	18:05	EAM
CCV	1	JHG03A	7/3/2014 6:08:00	18:08	EAM
CCB	1	JHG03A	7/3/2014 6:11:00	18:11	EAM
SH4846-003	1	JHG03A	7/3/2014 6:14:00	18:14	EAM
SH4401-008	5	JHG03A	7/3/2014 6:17:00	18:17	EAM
SH4401-009	5	JHG03A	7/3/2014 6:21:00	18:21	EAM
SH4401-010	5	JHG03A	7/3/2014 6:24:00	18:24	EAM
SH4401-011	5	JHG03A	7/3/2014 6:27:00	18:27	EAM
SH4401-012	5	JHG03A	7/3/2014 6:30:00	18:30	EAM
SH4401-013	5	JHG03A	7/3/2014 6:34:00	18:34	EAM
SH4401-014	5	JHG03A	7/3/2014 6:37:00	18:37	EAM
SH4401-015	5	JHG03A	7/3/2014 6:40:00	18:40	EAM
SH4401-016	5	JHG03A	7/3/2014 6:43:00	18:43	EAM
CCV	1	JHG03A	7/3/2014 6:47:00	18:47	EAM
CCB	1	JHG03A	7/3/2014 6:50:00	18:50	EAM
SH4401-017	5	JHG03A	7/3/2014 6:53:00	18:53	EAM
SH4401-018	5	JHG03A	7/3/2014 6:57:00	18:57	EAM
PBWHF23IMW2	5	JHG03A	7/3/2014 7:00:00	19:00	EAM
LCSWHF23IMW2	5	JHG03A	7/3/2014 7:03:00	19:03	EAM
SH4401-019	5	JHG03A	7/3/2014 7:06:00	19:06	EAM
SH4401-019L	25	JHG03A	7/3/2014 7:10:00	19:10	EAM
SH4401-019A	5	JHG03A	7/3/2014 7:13:00	19:13	EAM
SH4401-019S	5	JHG03A	7/3/2014 7:16:00	19:16	EAM
SH4401-019P	5	JHG03A	7/3/2014 7:20:00	19:20	EAM
SH4401-020	5	JHG03A	7/3/2014 7:23:00	19:23	EAM
CCV	1	JHG03A	7/3/2014 7:26:00	19:26	EAM
CCB	1	JHG03A	7/3/2014 7:30:00	19:30	EAM
SH4401-021	5	JHG03A	7/3/2014 7:33:00	19:33	EAM
SH4521-009L	25	JHG03A	7/3/2014 7:36:00	19:36	EAM
SH4521-009A	5	JHG03A	7/3/2014 7:40:00	19:40	EAM
SH4521-009S	5	JHG03A	7/3/2014 7:43:00	19:43	EAM
SH4521-009P	5	JHG03A	7/3/2014 7:46:00	19:46	EAM

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SH4521-010	5	JHG03A	7/3/2014 7:50:00	19:50	EAM
SH4521-011	5	JHG03A	7/3/2014 7:53:00	19:53	EAM
SH4521-012	5	JHG03A	7/3/2014 7:57:00	19:57	EAM
SH4521-013	5	JHG03A	7/3/2014 8:00:00	20:00	EAM
SH4521-014	5	JHG03A	7/3/2014 8:04:00	20:04	EAM
CCV	1	JHG03A	7/3/2014 8:07:00	20:07	EAM
CCB	1	JHG03A	7/3/2014 8:10:00	20:10	EAM
SH4521-014L	25	JHG03A	7/3/2014 8:14:00	20:14	EAM
SH4521-014A	5	JHG03A	7/3/2014 8:17:00	20:17	EAM
SH4521-014S	5	JHG03A	7/3/2014 8:20:00	20:20	EAM
SH4521-014P	5	JHG03A	7/3/2014 8:24:00	20:24	EAM
SH4521-016	5	JHG03A	7/3/2014 8:27:00	20:27	EAM
SH4521-017	5	JHG03A	7/3/2014 8:31:00	20:31	EAM
SH4521-018	5	JHG03A	7/3/2014 8:34:00	20:34	EAM
SH4521-019	5	JHG03A	7/3/2014 8:38:00	20:38	EAM
SH4521-020	5	JHG03A	7/3/2014 8:41:00	20:41	EAM
SH4521-024	5	JHG03A	7/3/2014 8:45:00	20:45	EAM
CCV	1	JHG03A	7/3/2014 8:48:00	20:48	EAM
CCB	1	JHG03A	7/3/2014 8:52:00	20:52	EAM
CCV	1	JHG03A	7/3/2014 8:55:00	20:55	EAM
CCB	1	JHG03A	7/3/2014 8:59:00	20:59	EAM
PQL	1	JHG03A	7/3/2014 9:02:00	21:02	EAM
CCV	1	JHG03A	7/3/2014 9:06:00	21:06	EAM
CCB	1	JHG03A	7/3/2014 9:09:00	21:09	EAM

=== Graph Detail ===

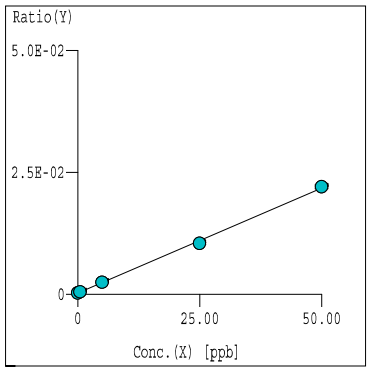
Cal. Date: 07/03/2014, 17:47

Step Mass Element ISTD Unit
(1) 9 Be 6 ppb



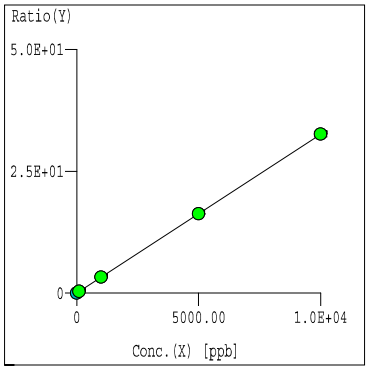
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 8.813E-004*X +1.766E-006
X = 1.135E+003*Y -2.004E-003
DL = 2.187E-03 ppb
BEC = 2.004E-03 ppb

Step Mass Element ISTD Unit
(1) 11 B 6 ppb



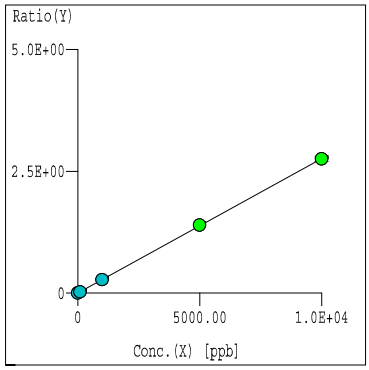
Curve Fit: Y=aX+[blank]
r = 0.9994
Y = 4.301E-004*X +2.738E-004
X = 2.325E+003*Y -6.367E-001
DL = 9.108E-02 ppb
BEC = 6.367E-01 ppb

Step Mass Element ISTD Unit
(1) 23 Na 45 ppb



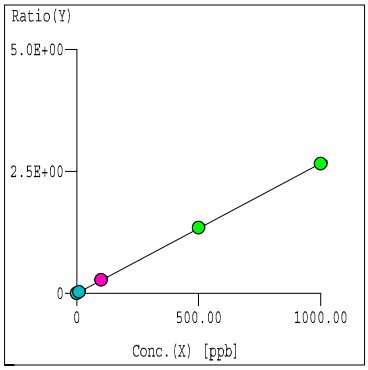
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 3.260E-003*X +3.876E-002
X = 3.068E+002*Y -1.189E+001
DL = 8.171E-01 ppb
BEC = 11.89 ppb

Step Mass Element ISTD Unit
(1) 25 Mg 45 ppb



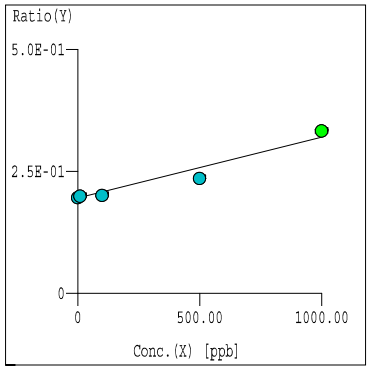
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 2.765E-004*X +5.058E-005
X = 3.616E+003*Y -1.829E-001
DL = 1.831E-01 ppb
BEC = 1.829E-01 ppb

Step Mass Element ISTD Unit
(1) 27 Al 45 ppb



Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 2.662E-003*X +1.255E-003
X = 3.756E+002*Y -4.712E-001
DL = 9.895E-02 ppb
BEC = 4.712E-01 ppb

Step Mass Element ISTD Unit
(1) 29 Si 45 ppb

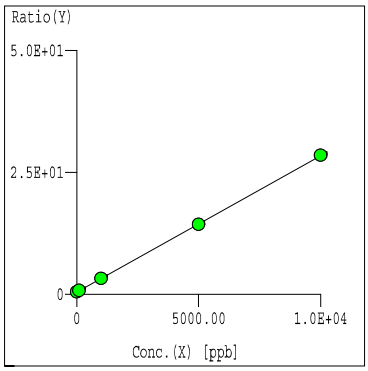


Curve Fit: Y=aX+[blank]
r = 0.9761
Y = 1.247E-004*X +1.957E-001
X = 8.017E+003*Y -1.569E+003
DL = 60.11 ppb
BEC = 1569 ppb

=== Graph Detail ===

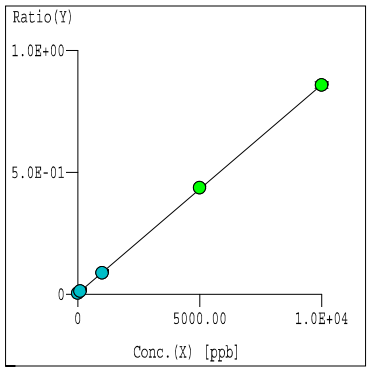
Cal. Date: 07/03/2014, 17:47

Step Mass Element ISTD Unit
(1) 39 K 45 ppb



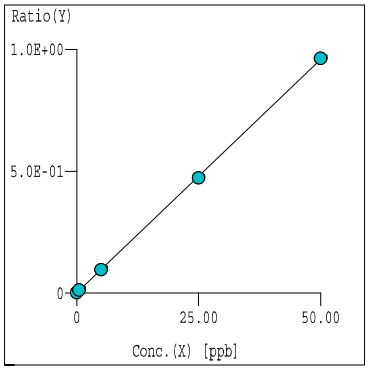
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 2.795E-003*X +4.925E-001
X = 3.578E+002*Y -1.762E+002
DL = 1.149 ppb
BEC = 176.2 ppb

Step Mass Element ISTD Unit
(1) 44 Ca 45 ppb



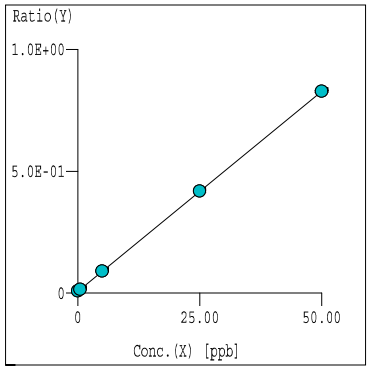
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 8.558E-005*X +4.528E-003
X = 1.169E+004*Y -5.292E+001
DL = 5.144 ppb
BEC = 52.92 ppb

Step Mass Element ISTD Unit
(1) 51 V 72 ppb



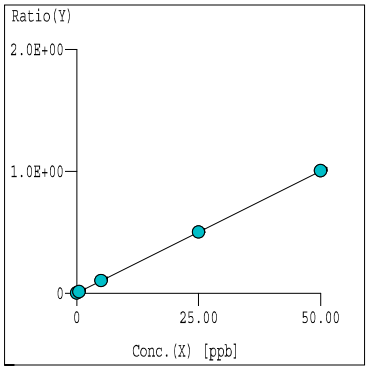
Curve Fit: Y=aX+[blank]
r = 0.9999
Y = 1.912E-002*X +2.860E-003
X = 5.229E+001*Y -1.496E-001
DL = 1.994E-01 ppb
BEC = 1.496E-01 ppb

Step Mass Element ISTD Unit
(1) 52 Cr 72 ppb



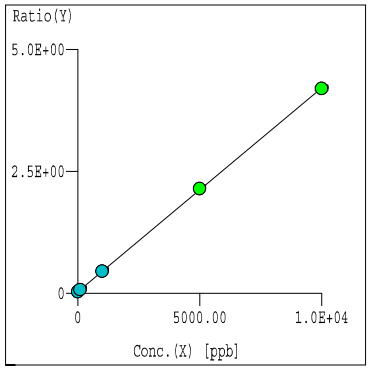
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 1.640E-002*X +8.682E-003
X = 6.096E+001*Y -5.292E-001
DL = 4.506E-02 ppb
BEC = 5.292E-01 ppb

Step Mass Element ISTD Unit
(1) 55 Mn 72 ppb



Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 2.003E-002*X +3.024E-003
X = 4.992E+001*Y -1.510E-001
DL = 2.257E-02 ppb
BEC = 1.510E-01 ppb

Step Mass Element ISTD Unit
(1) 57 Fe 72 ppb

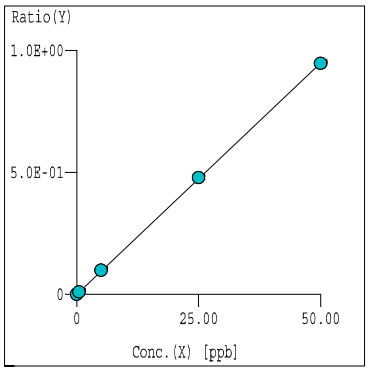


Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 4.178E-004*X +3.256E-002
X = 2.393E+003*Y -7.792E+001
DL = 7.564E-01 ppb
BEC = 77.92 ppb

=== Graph Detail ===

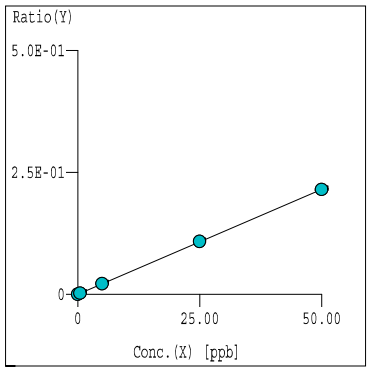
Cal. Date: 07/03/2014, 17:47

Step Mass Element (1) 59 Co | ISTD 72 | Unit ppb



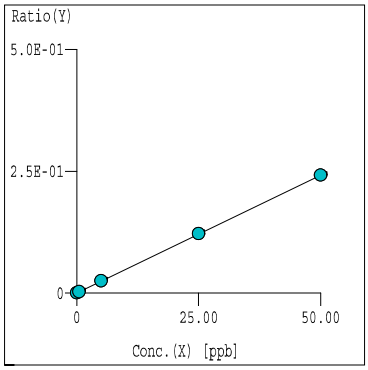
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 1.897E-002*X +2.491E-004
X = 5.271E+001*Y -1.313E-002
DL = 1.473E-02 ppb
BEC = 1.313E-02 ppb

Step Mass Element (1) 60 Ni | ISTD 72 | Unit ppb



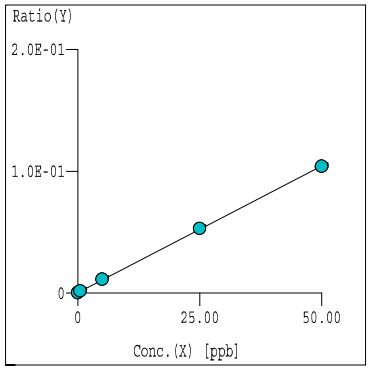
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 4.303E-003*X +9.823E-005
X = 2.324E+002*Y -2.283E-002
DL = 1.387E-02 ppb
BEC = 2.283E-02 ppb

Step Mass Element (1) 65 Cu | ISTD 72 | Unit ppb



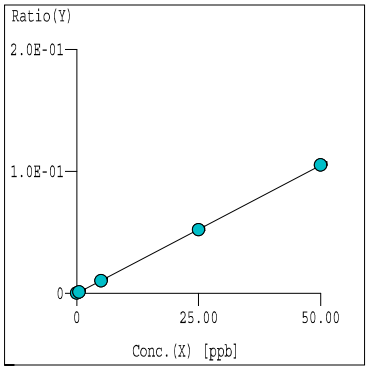
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 4.832E-003*X +1.035E-003
X = 2.069E+002*Y -2.141E-001
DL = 1.589E-02 ppb
BEC = 2.141E-01 ppb

Step Mass Element (1) 66 Zn | ISTD 72 | Unit ppb



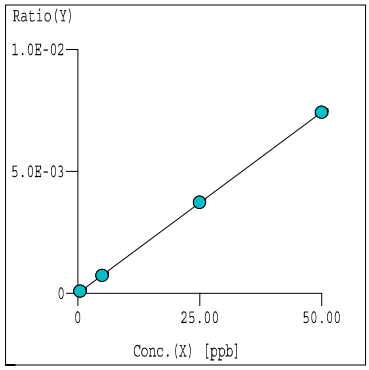
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 2.078E-003*X +6.137E-004
X = 4.812E+002*Y -2.953E-001
DL = 1.292E-01 ppb
BEC = 2.953E-01 ppb

Step Mass Element (1) 75 As | ISTD 72 | Unit ppb



Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 2.096E-003*X +1.578E-004
X = 4.771E+002*Y -7.528E-002
DL = 1.175E-01 ppb
BEC = 7.528E-02 ppb

Step Mass Element (1) 82 Se | ISTD 72 | Unit ppb

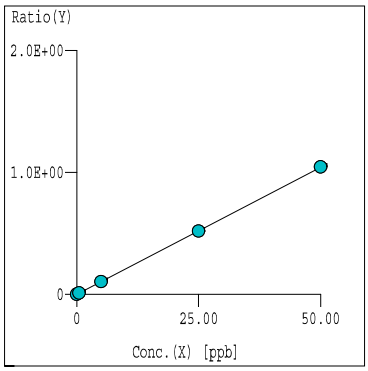


Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 1.485E-004*X -3.457E-006
X = 6.732E+003*Y +2.327E-002
DL = 2.996E-01 ppb
BEC = -2.327E-02 ppb

=== Graph Detail ===

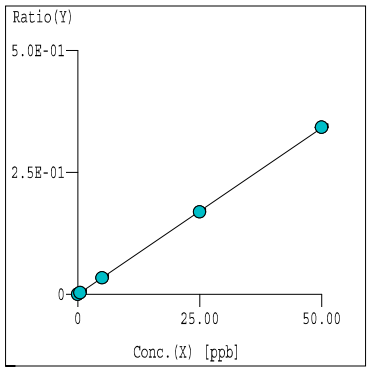
Cal. Date: 07/03/2014, 17:47

Step Mass Element ISTD Unit
(1) 88 Sr 72 ppb



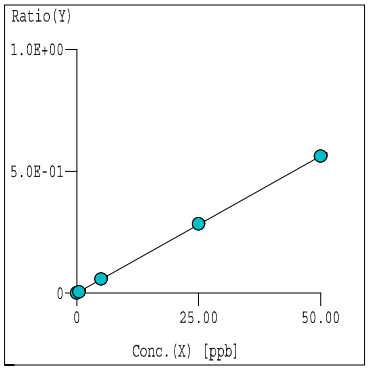
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 2.086E-002*X +1.776E-004
X = 4.794E+001*Y -8.515E-003
DL = 1.476E-02 ppb
BEC = 8.515E-03 ppb

Step Mass Element ISTD Unit
(1) 98 Mo 72 ppb



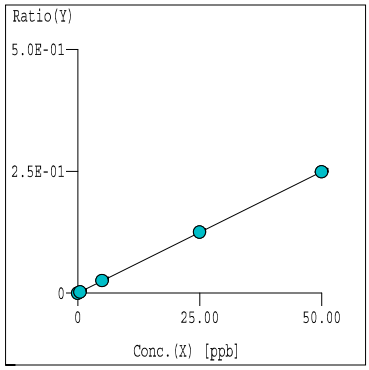
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 6.826E-003*X +8.933E-005
X = 1.465E+002*Y -1.309E-002
DL = 8.481E-03 ppb
BEC = 1.309E-02 ppb

Step Mass Element ISTD Unit
(1) 107 Ag 72 ppb



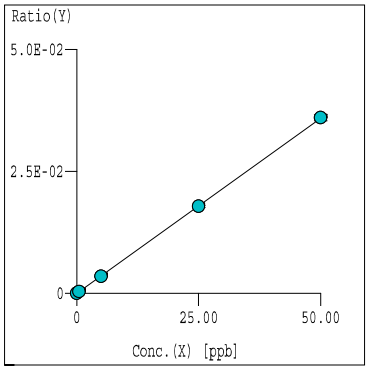
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 1.128E-002*X +7.291E-005
X = 8.867E+001*Y -6.465E-003
DL = 6.892E-03 ppb
BEC = 6.465E-03 ppb

Step Mass Element ISTD Unit
(1) 114 Cd 72 ppb



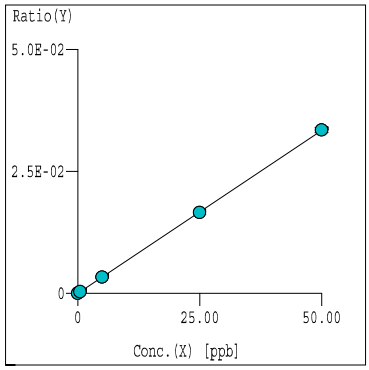
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 4.985E-003*X +1.334E-004
X = 2.006E+002*Y -2.675E-002
DL = 5.116E-03 ppb
BEC = 2.675E-02 ppb

Step Mass Element ISTD Unit
(1) 118 Sn 159 ppb



Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 7.183E-004*X +1.295E-005
X = 1.392E+003*Y -1.802E-002
DL = 1.806E-02 ppb
BEC = 1.802E-02 ppb

Step Mass Element ISTD Unit
(1) 123 Sb 159 ppb

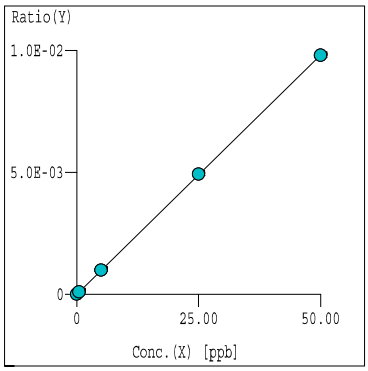


Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 6.681E-004*X +5.675E-006
X = 1.497E+003*Y -8.494E-003
DL = 3.817E-03 ppb
BEC = 8.494E-03 ppb

=== Graph Detail ===

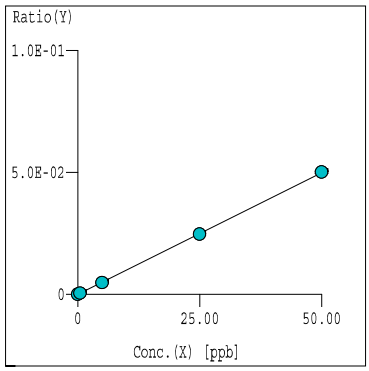
Cal. Date: 07/03/2014, 17:47

Step Mass Element (1) 135 Ba | ISTD 159 | Unit ppb



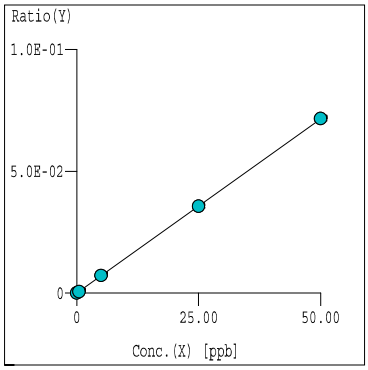
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 1.961E-004*X +5.088E-006
X = 5.099E+003*Y -2.594E-002
DL = 2.280E-02 ppb
BEC = 2.594E-02 ppb

Step Mass Element (1) 182 W | ISTD 159 | Unit ppb



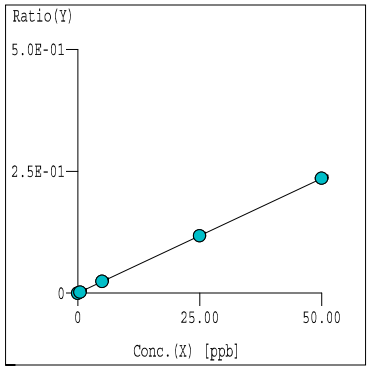
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 9.990E-004*X +1.199E-005
X = 1.001E+003*Y -1.200E-002
DL = 1.200E-02 ppb
BEC = 1.200E-02 ppb

Step Mass Element (1) 203 Tl | ISTD 209 | Unit ppb



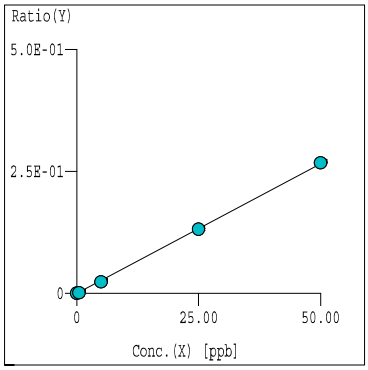
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 1.431E-003*X +5.770E-006
X = 6.986E+002*Y -4.031E-003
DL = 4.645E-03 ppb
BEC = 4.031E-03 ppb

Step Mass Element (1) 208 Pb | ISTD 209 | Unit ppb



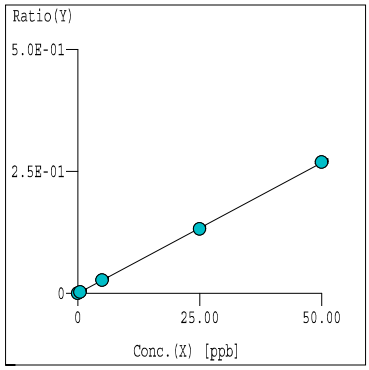
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 4.715E-003*X +9.990E-005
X = 2.121E+002*Y -2.119E-002
DL = 9.129E-03 ppb
BEC = 2.119E-02 ppb

Step Mass Element (1) 232 Th | ISTD 209 | Unit ppb



Curve Fit: Y=aX+[blank]
r = 0.9999
Y = 5.324E-003*X +1.083E-005
X = 1.878E+002*Y -2.034E-003
DL = 2.672E-03 ppb
BEC = 2.034E-03 ppb

Step Mass Element (1) 238 U | ISTD 209 | Unit ppb



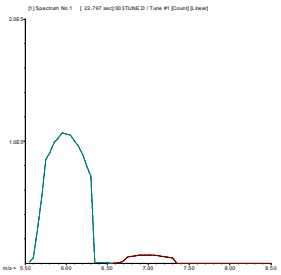
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 5.359E-003*X +5.087E-006
X = 1.866E+002*Y -9.492E-004
DL = 1.032E-03 ppb
BEC = 9.492E-04 ppb

6020 QC Tune Report

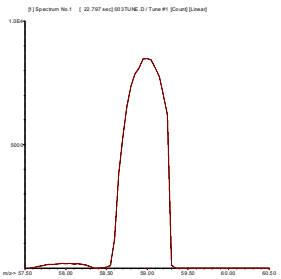
Data File: C:\ICPCHEM\1\DATA\JHG03A.B\003TUNE.D
Date Acquired: Jul 3 2014 05:02 pm
Acq. Method: TN6020E.M
Operator: EAM
Sample Name: 6020 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN6020E.M

RSD (%)

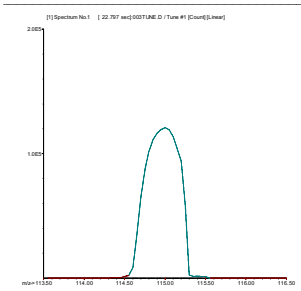
Element	Actual	Required	Flag
7 Li	1.81	5.00	
59 Co	2.10	5.00	
115 In	0.44	5.00	
205 Tl	1.42	5.00	



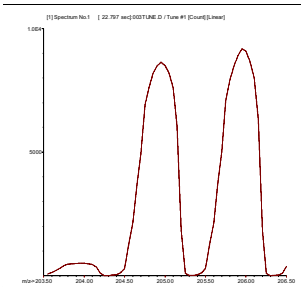
7 Li
Mass Calib.
Actual: 7.00
Required: 6.90 - 7.10
Flag:
Peak Width
Actual: 0.60
Required: 0.90
Flag:



59 Co
Mass Calib.
Actual: 59.00
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:



115 In
Mass Calib.
Actual: 115.00
Required: 114.90 - 115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.90
Flag:



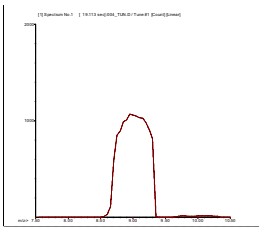
205 Tl
Mass Calib.
Actual: 204.95
Required: 204.90 - 205.10
Flag:
Peak Width
Actual: 0.60
Required: 0.90
Flag:

200.8 QC Tune Report

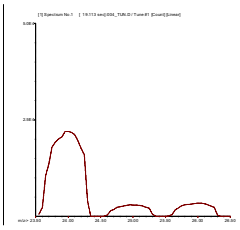
Data File: C:\ICPCHEM\1\DATA\JHG03A.B\004_TUN.D
Date Acquired: Jul 3 2014 05:04 pm
Acq. Method: TN200_8E.M
Operator: EAM
Sample Name: 200.8 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN200_8E.M

RSD (%)

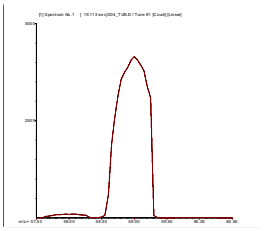
Element	Actual	Required	Flag
9 Be	2.87	5.00	
24 Mg	2.62	5.00	
59 Co	1.14	5.00	
115 In	2.82	5.00	
208 Pb	1.80	5.00	



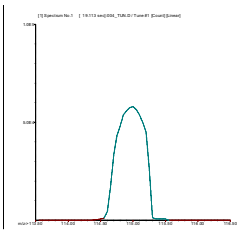
9 Be
Mass Calib.
Actual: 9.05
Required: 8.90 - 9.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



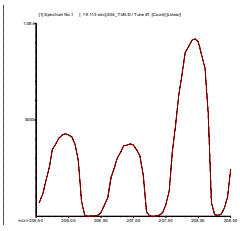
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90 - 24.10
Flag:
Peak Width
Actual: 0.70
Required: 1.00
Flag:



59 Co
Mass Calib.
Actual: 59.00
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



115 In
Mass Calib.
Actual: 115.00
Required: 114.90 - 115.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



208 Pb
Mass Calib.
Actual: 207.90
Required: 207.90 - 208.10
Flag:
Peak Width
Actual: 0.60
Required: 1.00
Flag:

Tune Result: Pass

Katahdin Analytical Services 4000656

Calibration Blank QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.I
Date Acquired: Jul 3 2014 05:33 pm
Operator: EAM
Sample Name: Cal Blank
Misc Info:
Vial Number: 1203
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal Update: Jul 03 2014 05:32 pm
Sample Type: CalBlk
Total Dil Factor: 1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	3052151.00	A	15500.00	0.51
9	Be	5.56	P	2.94	52.92
11	B	2254.69	P	46.24	2.05
23	Na	69232.22	P	1064.00	1.54
25	Mg	100.01	P	30.55	30.55
27	Al	4313.32	P	245.70	5.70
28	Si	7677364.00	A	114500.00	1.49
29	Si	1876534.00	A	24900.00	1.33
39	K	1426675.00	A	7413.00	0.52
43	Ca	270.41	P	80.39	29.73
44	Ca	16616.28	P	318.10	1.91
45	Sc	2505808.00	A	7188.00	0.29
51	V	1963.02	P	477.20	24.31
52	Cr	4384.12	P	99.41	2.27
53	Cr	7081.88	P	172.50	2.44
55	Mn	1596.81	P	74.25	4.65
56	Fe	1007358.00	A	8267.00	0.82
57	Fe	19654.97	P	339.70	1.73
59	Co	168.90	P	23.42	13.87
60	Ni	76.16	P	17.08	22.43
63	Cu	635.59	P	39.07	6.15
65	Cu	284.46	P	15.03	5.28
66	Zn	393.35	P	12.02	3.06
68	Zn	10938.85	P	66.84	0.61
72	Ge	528327.81	P	3995.00	0.76
75	As	104.04	P	118.30	113.71
82	Se	6.87	P	6.46	93.93
88	Sr	122.24	P	33.34	27.28
89	Y	3664904.00	A	4450.00	0.12
98	Mo	50.76	P	17.66	34.79
107	Ag	33.33	P	12.02	36.06
109	Ag	32.22	P	9.62	29.86
111	Cd	1130.21	P	21.03	1.86
114	Cd	91.69	P	13.07	14.25
115	In	3464599.00	A	13400.00	0.39
118	Sn	74.45	P	12.62	16.95
120	Sn	81.11	P	35.64	43.94
121	Sb	31.11	P	8.39	26.96
123	Sb	34.45	P	5.09	14.78
135	Ba	28.89	P	5.09	17.63
137	Ba	35.56	P	8.39	23.59
159	Tb	4805871.00	A	39630.00	0.82
182	W	58.89	P	10.18	17.29
203	Tl	21.11	P	8.39	39.74
205	Tl	46.67	P	8.82	18.90
208	Pb	290.01	P	40.96	14.12
209	Bi	2881081.00	A	18070.00	0.63
232	Th	35.56	P	5.09	14.32
238	U	31.11	P	3.85	12.37

Calibration Standard QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\014CALI.D\014CALI.D#
Date Acquired: Jul 3 2014 05:36 pm
Operator: EAM
Sample Name: Cal Std 1
Misc Info:
Vial Number: 1101
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal Update: Jul 03 2014 05:35 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	3128033.00	A	107200.00	3.43
9 Be	1250.43	P	44.96	3.60
11 B	2351.37	P	70.44	3.00
23 Na	963074.63	A	2585.00	0.27
25 Mg	74737.52	P	964.30	1.29
27 Al	74748.56	P	1441.00	1.93
28 Si	7638745.00	A	177800.00	2.33
29 Si	1858017.00	A	8963.00	0.48
39 K	2177522.00	A	22130.00	1.02
43 Ca	1548.42	P	75.66	4.89
44 Ca	39026.54	P	212.70	0.55
45 Sc	2533520.00	A	88280.00	3.48
51 V	6820.35	P	315.40	4.62
52 Cr	9225.33	P	83.36	0.90
53 Cr	7545.47	P	168.30	2.23
55 Mn	7139.70	P	80.07	1.12
56 Fe	1958423.00	A	31860.00	1.63
57 Fe	42109.20	P	762.80	1.81
59 Co	5403.57	P	73.16	1.35
60 Ni	1244.09	P	75.77	6.09
63 Cu	3483.86	P	220.40	6.33
65 Cu	1594.80	P	23.42	1.47
66 Zn	1100.08	P	113.60	10.33
68 Zn	11330.21	P	55.08	0.49
72 Ge	534051.69	P	11050.00	2.07
75 As	592.86	P	127.40	21.49
82 Se	36.31	P	9.91	27.29
88 Sr	6213.12	P	334.80	5.39
89 Y	3709805.00	A	91500.00	2.47
98 Mo	1826.33	P	60.77	3.33
107 Ag	3140.45	P	212.80	6.78
109 Ag	3061.54	P	201.30	6.58
111 Cd	1734.20	P	26.18	1.51
114 Cd	1482.87	P	28.93	1.95
115 In	3485269.00	A	108000.00	3.10
118 Sn	1864.63	P	158.90	8.52
120 Sn	2481.41	P	71.30	2.87
121 Sb	2126.90	P	107.30	5.04
123 Sb	1637.93	P	47.42	2.90
135 Ba	454.47	P	17.11	3.76
137 Ba	915.62	P	86.95	9.50
159 Tb	4840845.00	A	137300.00	2.84
182 W	2496.98	P	123.30	4.94
203 Tl	2166.91	P	66.59	3.07
205 Tl	4966.64	P	75.17	1.51
208 Pb	7231.03	P	153.30	2.12
209 Bi	2915403.00	A	69410.00	2.38
232 Th	3256.08	P	605.70	18.60
238 U	7357.84	P	228.50	3.11

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3128032.80	3.43	3052150.50	102.5	79.5 - 120.4	
45 Sc	2533520.50	3.48	2505808.30	101.1	79.5 - 120.4	
72 Ge	534051.75	2.07	528327.81	101.1	79.5 - 120.4	
159 Tb	4840845.50	2.84	4805871.00	100.7	79.5 - 120.4	
209 Bi	2915402.80	2.38	2881081.50	101.2	79.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000658

Calibration Standard QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\015CALI.D\015CALI.D#
Date Acquired: Jul 3 2014 05:39 pm
Operator: EAM
Sample Name: Cal Std 2
Misc Info:
Vial Number: 1102
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal Update: Jul 03 2014 05:38 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	3120887.00	A	51160.00	1.64
9 Be	12756.10	P	200.20	1.57
11 B	8355.87	P	191.60	2.29
23 Na	8360007.00	A	105800.00	1.27
25 Mg	722254.31	P	11530.00	1.60
27 Al	714441.63	P	20550.00	2.88
28 Si	8283378.00	A	112000.00	1.35
29 Si	1886719.00	A	9162.00	0.49
39 K	8623635.00	A	36500.00	0.42
43 Ca	13589.25	P	56.98	0.42
44 Ca	235080.59	P	1488.00	0.63
45 Sc	2523264.00	A	27630.00	1.10
51 V	52610.91	P	1110.00	2.11
52 Cr	49916.14	P	730.80	1.46
53 Cr	12379.90	P	168.80	1.36
55 Mn	56959.09	P	291.60	0.51
56 Fe	9917011.00	A	52420.00	0.53
57 Fe	242566.09	P	2052.00	0.85
59 Co	51943.43	P	1448.00	2.79
60 Ni	11880.14	P	247.10	2.08
63 Cu	28946.36	P	346.20	1.20
65 Cu	13570.08	P	304.40	2.24
66 Zn	6182.58	P	102.50	1.66
68 Zn	14883.39	P	453.00	3.04
72 Ge	526984.00	P	5832.00	1.11
75 As	5850.05	P	134.50	2.30
82 Se	400.07	P	17.46	4.36
88 Sr	57066.70	P	507.70	0.89
89 Y	3689760.00	A	49200.00	1.33
98 Mo	18576.14	P	296.40	1.60
107 Ag	31974.58	P	408.50	1.28
109 Ag	30601.71	P	360.00	1.18
111 Cd	7194.67	P	128.00	1.78
114 Cd	14308.51	P	127.10	0.89
115 In	3459051.00	A	35360.00	1.02
118 Sn	17848.13	P	242.30	1.36
120 Sn	24569.26	P	268.10	1.09
121 Sb	22647.23	P	582.60	2.57
123 Sb	17174.09	P	172.40	1.00
135 Ba	5037.71	P	46.69	0.93
137 Ba	8607.30	P	142.50	1.66
159 Tb	4811856.00	A	57450.00	1.19
182 W	23678.61	P	490.70	2.07
203 Tl	21529.71	P	205.10	0.95
205 Tl	51910.37	P	690.30	1.33
208 Pb	70537.58	P	803.90	1.14
209 Bi	2891900.00	A	15610.00	0.54
232 Th	64465.08	P	2401.00	3.72
238 U	76306.48	P	1214.00	1.59

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3120886.50	1.64	3052150.50	102.3	79.5 - 120.4	
45 Sc	2523263.80	1.10	2505808.30	100.7	79.5 - 120.4	
72 Ge	526984.00	1.11	528327.81	99.7	79.5 - 120.4	
159 Tb	4811856.00	1.19	4805871.00	100.1	79.5 - 120.4	
209 Bi	2891899.50	0.54	2881081.50	100.4	79.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000659

Calibration Standard QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\016CALI.D\016CALI.D#
Date Acquired: Jul 3 2014 05:42 pm
Operator: EAM
Sample Name: Cal Std 3
Misc Info:
Vial Number: 1103
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal Update: Jul 03 2014 05:41 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	3074983.00	A	32700.00	1.06
9 Be	63739.28	P	524.80	0.82
11 B	32289.92	P	866.30	2.68
23 Na	40943408.00	A	348100.00	0.85
25 Mg	3603305.00	A	33440.00	0.93
27 Al	3543982.00	A	30920.00	0.87
28 Si	9973924.00	A	159400.00	1.60
29 Si	2007205.00	A	38440.00	1.92
39 K	37653280.00	A	150400.00	0.40
43 Ca	67682.41	P	284.30	0.42
44 Ca	1140080.00	A	26580.00	2.33
45 Sc	2525202.00	A	33280.00	1.32
51 V	257398.30	P	3642.00	1.41
52 Cr	227496.50	P	2071.00	0.91
53 Cr	33081.25	P	175.30	0.53
55 Mn	272953.09	P	1736.00	0.64
56 Fe	45754120.00	A	390200.00	0.85
57 Fe	1164585.00	A	18460.00	1.59
59 Co	256262.41	P	2835.00	1.11
60 Ni	57718.12	P	185.50	0.32
63 Cu	138417.80	P	897.70	0.65
65 Cu	65373.79	P	265.90	0.41
66 Zn	29633.28	P	415.50	1.40
68 Zn	31313.54	P	300.90	0.96
72 Ge	529963.69	P	3236.00	0.61
75 As	29787.41	P	453.20	1.52
82 Se	2014.03	P	13.45	0.67
88 Sr	289343.59	P	3078.00	1.06
89 Y	3712942.00	A	40740.00	1.10
98 Mo	94374.18	P	262.90	0.28
107 Ag	156706.30	P	870.60	0.56
109 Ag	150441.70	P	1969.00	1.31
111 Cd	31399.87	P	154.70	0.49
114 Cd	70904.04	P	464.80	0.66
115 In	3491505.00	A	25970.00	0.74
118 Sn	89263.92	P	1099.00	1.23
120 Sn	124494.70	P	1914.00	1.54
121 Sb	113870.50	P	403.90	0.35
123 Sb	87109.70	P	913.00	1.05
135 Ba	25187.21	P	271.30	1.08
137 Ba	43295.12	P	295.80	0.68
159 Tb	4892146.00	A	54180.00	1.11
182 W	123465.40	P	684.00	0.55
203 Tl	105115.50	P	1308.00	1.24
205 Tl	256579.70	P	2813.00	1.10
208 Pb	347620.69	P	3009.00	0.87
209 Bi	2875135.00	A	33140.00	1.15
232 Th	384261.19	P	2344.00	0.61
238 U	380779.59	P	5424.00	1.42

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3074983.50	1.06	3052150.50	100.7	79.5 - 120.4	
45 Sc	2525202.30	1.32	2505808.30	100.8	79.5 - 120.4	
72 Ge	529963.75	0.61	528327.81	100.3	79.5 - 120.4	
159 Tb	4892146.00	1.11	4805871.00	101.8	79.5 - 120.4	
209 Bi	2875134.80	1.15	2881081.50	99.8	79.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000660

Calibration Standard QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\017CALI.D\017CALI.D#
Date Acquired: Jul 3 2014 05:45 pm
Operator: EAM
Sample Name: Cal Std 4
Misc Info:
Vial Number: 1104
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal Update: Jul 03 2014 05:44 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	2974930.00	A	38700.00	1.30
9 Be	126902.70	P	541.40	0.43
11 B	62352.95	P	1421.00	2.28
23 Na	80585592.00	A	965300.00	1.20
25 Mg	6958982.00	A	37160.00	0.53
27 Al	6894240.00	A	118200.00	1.71
28 Si	11983640.00	A	91020.00	0.76
29 Si	2078127.00	A	21900.00	1.05
39 K	74631720.00	A	1006000.00	1.35
43 Ca	135479.70	P	3134.00	2.31
44 Ca	2229151.00	A	40100.00	1.80
45 Sc	2494989.00	A	31280.00	1.25
51 V	506856.91	P	5255.00	1.04
52 Cr	447097.41	P	1813.00	0.41
53 Cr	58921.91	P	1208.00	2.05
55 Mn	535501.19	P	4601.00	0.86
56 Fe	89391856.00	A	587200.00	0.66
57 Fe	2244796.00	A	14570.00	0.65
59 Co	504738.81	P	3183.00	0.63
60 Ni	113072.70	P	895.50	0.79
63 Cu	272104.09	P	1836.00	0.67
65 Cu	129243.20	P	1726.00	1.34
66 Zn	57159.11	P	396.10	0.69
68 Zn	51510.18	P	809.80	1.57
72 Ge	523207.91	P	8153.00	1.56
75 As	59004.77	P	799.70	1.36
82 Se	3826.96	P	56.49	1.48
88 Sr	568907.63	P	2680.00	0.47
89 Y	3654379.00	A	39390.00	1.08
98 Mo	188021.09	P	164.40	0.09
107 Ag	306831.31	P	3155.00	1.03
109 Ag	294821.00	P	491.20	0.17
111 Cd	60455.31	P	229.10	0.38
114 Cd	138671.70	P	580.80	0.42
115 In	3420082.00	A	49450.00	1.45
118 Sn	176998.91	P	1027.00	0.58
120 Sn	245971.59	P	3262.00	1.33
121 Sb	225816.20	P	1772.00	0.78
123 Sb	171305.50	P	2287.00	1.34
135 Ba	49972.36	P	696.30	1.39
137 Ba	85567.19	P	490.50	0.57
159 Tb	4802852.00	A	107000.00	2.23
182 W	247054.59	P	1792.00	0.73
203 Tl	206894.30	P	2816.00	1.36
205 Tl	502239.31	P	6958.00	1.39
208 Pb	679263.81	P	8011.00	1.18
209 Bi	2805298.00	A	49370.00	1.76
232 Th	760790.31	P	7208.00	0.95
238 U	752968.69	P	7746.00	1.03

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2974929.50	1.30	3052150.50	97.5	79.5 - 120.4	
45 Sc	2494989.00	1.25	2505808.30	99.6	79.5 - 120.4	
72 Ge	523207.94	1.56	528327.81	99.0	79.5 - 120.4	
159 Tb	4802851.50	2.23	4805871.00	99.9	79.5 - 120.4	
209 Bi	2805298.50	1.76	2881081.50	97.4	79.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000661

ICV QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\018_ICV.D\018_ICV.D#
Date Acquired: Jul 3 2014 05:48 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: ICV
Misc Info:
Vial Number: 1202
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Dilution Factor: 1.00
QC Range (%): 89.499998 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	19.71	ppb	3.84	20	98.55	
11 B	19.04	ppb	1.80	20	95.2	
23 Na	4,065.	ppb	1.99	4,000	101.625	
25 Mg	4,164.	ppb	1.58	4,000	104.1	
27 Al	395.	ppb	1.40	400	98.75	
28 Si	405.5	ppb	5.07	400	101.375	
29 Si	303.7	ppb	23.74	400	75.925	Fail
39 K	4,059.	ppb	2.56	4,000	101.475	
43 Ca	4,059.	ppb	3.38	4,000	101.475	
44 Ca	4,129.	ppb	1.95	4,000	103.225	
51 V	20.02	ppb	0.89	20	100.1	
52 Cr	19.39	ppb	0.81	20	96.95	
53 Cr	17.97	ppb	1.01	20	89.85	
55 Mn	19.88	ppb	0.96	20	99.4	
56 Fe	4,135.	ppb	1.01	4,000	103.375	
57 Fe	4,099.	ppb	2.11	4,000	102.475	
59 Co	19.96	ppb	1.31	20	99.8	
60 Ni	20.57	ppb	1.43	20	102.85	
63 Cu	19.8	ppb	1.07	20	99	
65 Cu	19.64	ppb	0.66	20	98.2	
66 Zn	20.36	ppb	0.55	20	101.8	
68 Zn	20.14	ppb	2.24	20	100.7	
75 As	19.87	ppb	0.31	20	99.35	
82 Se	20.41	ppb	1.19	20	102.05	
88 Sr	20.46	ppb	1.15	20	102.3	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	40.92	ppb	0.88	40	102.3	
107 Ag	20.19	ppb	0.44	20	100.95	
109 Ag	20.14	ppb	1.29	20	100.7	
111 Cd	19.55	ppb	1.90	20	97.75	
114 Cd	19.73	ppb	0.61	20	98.65	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	20.32	ppb	1.56	20	101.6	
120 Sn	20.06	ppb	1.48	20	100.3	
121 Sb	19.9	ppb	0.76	20	99.5	
123 Sb	19.96	ppb	1.78	20	99.8	
135 Ba	19.82	ppb	1.62	20	99.1	
137 Ba	19.93	ppb	0.16	20	99.65	
182 W	7.71	ppb	2.21	20	38.55	Fail
203 Tl	20.78	ppb	1.53	20	103.9	
205 Tl	20.52	ppb	1.32	20	102.6	
208 Pb	20.17	ppb	1.03	20	100.85	
232 Th	20.23	ppb	1.57	20	101.15	
238 U	20.14	ppb	1.59	20	100.7	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3032467.80	2.42	3052150.50	99.4	80 - 120.4	
45 Sc	2520614.80	1.24	2505808.30	100.6	80 - 120.4	
72 Ge	531388.25	0.70	528327.81	100.6	80 - 120.4	
159 Tb	4823303.50	1.55	4805871.00	100.4	80 - 120.4	
209 Bi	2863904.00	0.89	2881081.50	99.4	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000662

ICB QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\019_ICB.D\019_ICB.D#
Date Acquired: Jul 3 2014 05:51 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: ICB
Misc Info:
Vial Number: 1203
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Sample Type: 6-ICB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0055	ppb	41.76	1.00	
11 B	0.5277	ppb	14.67	1.00	
23 Na	0.7579	ppb	49.61	1.00	
25 Mg	0.3579	ppb	67.45	1.00	
27 Al	-0.0498	ppb	116.60	1.00	
28 Si	74.23	ppb	11.38	1.00	
29 Si	3.308	ppb	1996.40	1.00	
39 K	-0.5556	ppb	317.13	1.00	
43 Ca	-3.937	ppb	31.62	1.00	
44 Ca	2.414	ppb	65.62	1.00	
51 V	-0.0582	ppb	135.96	1.00	
52 Cr	-0.0122	ppb	136.94	1.00	
53 Cr	-0.6958	ppb	18.73	1.00	
55 Mn	0.0097	ppb	51.61	1.00	
56 Fe	0.3401	ppb	144.40	1.00	
57 Fe	-2.098	ppb	50.91	1.00	
59 Co	0.0002	ppb	2812.20	1.00	
60 Ni	0.0036	ppb	255.47	1.00	
63 Cu	0.0006	ppb	1210.70	1.00	
65 Cu	-0.0018	ppb	236.72	1.00	
66 Zn	-0.0136	ppb	80.21	1.00	
68 Zn	-0.0733	ppb	437.15	1.00	
75 As	-0.1787	ppb	17.25	1.00	
82 Se	-0.1249	ppb	168.61	1.00	
88 Sr	0.0005	ppb	448.78	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.1144	ppb	15.28	1.00	
107 Ag	0.0044	ppb	8.83	1.00	
109 Ag	0.0023	ppb	101.32	1.00	
111 Cd	-0.0158	ppb	183.83	1.00	
114 Cd	0.0074	ppb	75.73	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0801	ppb	39.83	1.00	
120 Sn	0.0833	ppb	25.68	1.00	
121 Sb	0.0211	ppb	14.71	1.00	
123 Sb	0.0198	ppb	48.64	1.00	
135 Ba	0.0122	ppb	84.13	1.00	
137 Ba	0.0006	ppb	1237.50	1.00	
182 W	0.1127	ppb	13.11	1.00	
203 Tl	0.0098	ppb	24.22	1.00	
205 Tl	0.0079	ppb	10.64	1.00	
208 Pb	0.0011	ppb	254.70	1.00	
232 Th	0.0423	ppb	13.06	1.00	
238 U	0.0025	ppb	36.74	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3022865.80	1.30	3052150.50	99.0	79.5 - 120	
45 Sc	2520691.50	0.09	2505808.30	100.6	79.5 - 120	
72 Ge	533181.75	0.79	528327.81	100.9	79.5 - 120	
159 Tb	4815097.00	0.86	4805871.00	100.2	79.5 - 120	
209 Bi	2864260.30	1.01	2881081.50	99.4	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000663

PQL QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\020_PQL.D\020_PQL.D#
Date Acquired: Jul 3 2014 05:54 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: PQL
Misc Info:
Vial Number: 1302
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Dilution Factor: 1.00
QC Range (%): 69.599998 - 130.4

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	0.2005	ppb	10.04	0.20	100.25	
11 B	4.037	ppb	8.34	4.00	100.925	
23 Na	211.	ppb	1.80	200.00	105.5	
25 Mg	20.28	ppb	1.68	20.00	101.4	
27 Al	60.03	ppb	1.49	60.00	100.05	
28 Si	170.8	ppb	25.39	100.00	170.8	
29 Si	9.571	ppb	1835.80	100.00	9.571	Fail
39 K	197.1	ppb	2.09	200.00	98.55	
43 Ca	9.779	ppb	15.95	20.00	48.895	
44 Ca	19.14	ppb	5.05	20.00	95.7	
51 V	0.938	ppb	11.55	1.00	93.8	
52 Cr	0.9533	ppb	2.40	1.00	95.33	
53 Cr	0.318	ppb	53.84	---	#VALUE!	
55 Mn	0.4152	ppb	3.22	0.40	103.8	
56 Fe	20.79	ppb	11.11	20.00	103.95	
57 Fe	15.98	ppb	17.73	20.00	79.9	
59 Co	0.2023	ppb	5.29	0.20	101.15	
60 Ni	0.4155	ppb	5.81	0.40	103.875	
63 Cu	0.6001	ppb	6.26	0.60	100.017	
65 Cu	0.5806	ppb	9.53	0.60	96.7667	
66 Zn	2.026	ppb	6.84	2.00	101.3	
68 Zn	1.647	ppb	15.29	2.00	82.35	
75 As	0.8203	ppb	5.09	1.00	82.03	
82 Se	1.023	ppb	17.41	1.00	102.3	
88 Sr	0.9701	ppb	1.32	1.00	97.01	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	0.9888	ppb	2.47	1.00	98.88	
107 Ag	0.2182	ppb	4.58	0.20	109.1	
109 Ag	0.2142	ppb	7.15	0.20	107.1	
111 Cd	0.1833	ppb	22.37	0.20	91.65	
114 Cd	0.2143	ppb	1.29	0.20	107.15	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	0.988	ppb	4.61	1.00	98.8	
120 Sn	1.042	ppb	2.02	1.00	104.2	
121 Sb	0.2026	ppb	0.65	0.20	101.3	
123 Sb	0.1954	ppb	5.64	0.20	97.7	
135 Ba	0.4133	ppb	12.21	0.40	103.325	
137 Ba	0.4002	ppb	6.77	0.40	100.05	
182 W	1.07	ppb	1.15	1.00	107	
203 Tl	0.2059	ppb	1.47	0.20	102.95	
205 Tl	0.1972	ppb	3.16	0.20	98.6	
208 Pb	0.1931	ppb	1.21	0.20	96.55	
232 Th	0.1813	ppb	0.51	0.20	90.65	
238 U	0.197	ppb	3.34	0.20	98.5	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3079452.50	2.46	3052150.50	100.9	80 - 120.4	
45 Sc	2533705.50	1.21	2505808.30	101.1	80 - 120.4	
72 Ge	533843.13	1.39	528327.81	101.0	80 - 120.4	
159 Tb	4808012.50	0.71	4805871.00	100.0	80 - 120.4	
209 Bi	2919861.50	1.37	2881081.50	101.3	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000664

ICS-A QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\021ICSA.D\021ICSA.D#
Date Acquired: Jul 3 2014 05:58 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: ICSA
Misc Info:
Vial Number: 1204
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Sample Type: 6-ICSA
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0177	ppb	22.42		
11 B	0.3618	ppb	22.14		
23 Na	95,290.	ppb	0.55		
25 Mg	93,830.	ppb	0.59		
27 Al	92,180.	ppb	0.82		
28 Si	-18.4	ppb	166.47		
29 Si	-426.9	ppb	50.64		Fail
39 K	94,290.	ppb	0.16		
43 Ca	98,420.	ppb	0.37		
44 Ca	92,610.	ppb	0.49		
51 V	0.1425	ppb	38.46		
52 Cr	1.749	ppb	2.31		
53 Cr	1.189	ppb	26.28		
55 Mn	0.4276	ppb	4.20		
56 Fe	92,340.	ppb	1.30		
57 Fe	88,960.	ppb	1.45		
59 Co	0.1197	ppb	9.53		
60 Ni	0.0815	ppb	68.67		
63 Cu	1.536	ppb	1.46		
65 Cu	1.037	ppb	11.08		
66 Zn	2.196	ppb	0.31		
68 Zn	-0.4073	ppb	100.59		
75 As	0.1461	ppb	178.92		
82 Se	-0.0172	ppb	140.59		
88 Sr	0.6304	ppb	3.88		
89 Y	--------	---	--------		
98 Mo	1,866.	ppb	0.12		
107 Ag	0.0244	ppb	13.51		
109 Ag	0.022	ppb	18.20		
111 Cd	-0.0101	ppb	166.24		
114 Cd	0.2006	ppb	7.79		Fail-D
115 In	--------	---	--------		
118 Sn	0.0633	ppb	29.61		
120 Sn	0.0636	ppb	17.88		
121 Sb	0.0435	ppb	20.16		
123 Sb	0.0462	ppb	19.47		
135 Ba	0.1077	ppb	16.83		
137 Ba	0.0945	ppb	18.26		
182 W	0.1674	ppb	7.55		
203 Tl	0.007	ppb	98.86		
205 Tl	0.006	ppb	30.32		
208 Pb	0.207	ppb	2.73		
232 Th	0.0852	ppb	28.11		
238 U	0.0025	ppb	24.40		

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2824954.00	1.40	3052150.50	92.6	69.5 - 130.4	
45 Sc	2511629.80	0.31	2505808.30	100.2	69.5 - 130.4	
72 Ge	542341.25	0.27	528327.81	102.7	69.5 - 130.4	
159 Tb	4820049.00	0.50	4805871.00	100.3	69.5 - 130.4	
209 Bi	2656844.30	1.15	2881081.50	92.2	69.5 - 130.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000665

ICS-AB QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\022ICSB.D\022ICSB.D#
Date Acquired: Jul 3 2014 06:01 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: ICSAB
Misc Info:
Vial Number: 1205
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Sample Type: 6-ICSAB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	Expected	QC Range(%)	Flag
9 Be	19.68	ppb	0.72	20.00	79.5 - 120	
11 B	18.42	ppb	1.69	20.00	79.5 - 120	
23 Na	93,540.	ppb	2.24	#########	79.5 - 120	
25 Mg	91,610.	ppb	1.19	#########	79.5 - 120	
27 Al	90,000.	ppb	1.21	#########	79.5 - 120	
28 Si	346.5	ppb	13.83	---	##### - #####	
29 Si	-179.2	ppb	91.41	---	##### - #####	
39 K	92,080.	ppb	2.43	#########	79.5 - 120	
43 Ca	96,710.	ppb	2.22	#########	79.5 - 120	
44 Ca	89,810.	ppb	1.06	#########	79.5 - 120	
51 V	19.2	ppb	0.20	20.00	79.5 - 120	
52 Cr	20.13	ppb	0.44	20.00	79.5 - 120	
53 Cr	20.01	ppb	2.34	---	##### - #####	
55 Mn	18.69	ppb	1.30	20.00	79.5 - 120	
56 Fe	91,520.	ppb	1.64	#########	79.5 - 120	
57 Fe	87,300.	ppb	1.30	#########	79.5 - 120	
59 Co	18.64	ppb	0.92	20.00	79.5 - 120	
60 Ni	18.21	ppb	1.47	20.00	79.5 - 120	
63 Cu	19.36	ppb	0.46	20.00	79.5 - 120	
65 Cu	18.85	ppb	0.70	20.00	79.5 - 120	
66 Zn	19.62	ppb	2.52	20.00	79.5 - 120	
68 Zn	16.46	ppb	2.70	20.00	79.5 - 120	
75 As	19.2	ppb	1.93	20.00	79.5 - 120	
82 Se	19.5	ppb	1.90	20.00	79.5 - 120	
88 Sr	18.6	ppb	0.29	20.00	79.5 - 120	
89 Y	--------	---	--------	---	##### - #####	
98 Mo	1,858.	ppb	1.35	2000.00	79.5 - 120	
107 Ag	17.75	ppb	0.63	20.00	79.5 - 120	
109 Ag	17.59	ppb	0.54	20.00	79.5 - 120	
111 Cd	17.99	ppb	1.17	20.00	79.5 - 120	
114 Cd	18.15	ppb	1.29	20.00	79.5 - 120	
115 In	--------	---	--------	---	##### - #####	
118 Sn	18.45	ppb	1.40	20.00	79.5 - 120	
120 Sn	18.38	ppb	1.81	20.00	79.5 - 120	
121 Sb	19.09	ppb	1.80	20.00	79.5 - 120	
123 Sb	19.27	ppb	0.49	20.00	79.5 - 120	
135 Ba	19.05	ppb	1.23	20.00	79.5 - 120	
137 Ba	19.49	ppb	0.82	20.00	79.5 - 120	
182 W	20.01	ppb	0.64	20.00	79.5 - 120	
203 Tl	20.	ppb	1.73	20.00	79.5 - 120	
205 Tl	19.93	ppb	0.87	20.00	79.5 - 120	
208 Pb	20.06	ppb	0.53	20.00	79.5 - 120	
232 Th	20.98	ppb	0.64	20.00	79.5 - 120	
238 U	20.83	ppb	0.44	20.00	79.5 - 120	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2847931.00	1.72	3052150.50	93.3	69.5 - 130	
45 Sc	2458699.80	1.70	2505808.30	98.1	69.5 - 130	
72 Ge	528140.31	1.35	528327.81	100.0	69.5 - 130	
159 Tb	4747468.00	1.01	4805871.00	98.8	69.5 - 130	
209 Bi	2626850.00	0.73	2881081.50	91.2	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000666

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\023SMPL.D\023SMPL.D#
Date Acquired: Jul 3 2014 06:05 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: Blank
Misc Info:
Vial Number: 1301
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0029	0.0029	ppb	75.74	100.	
11 B	0.1919	0.1919	ppb	48.80	1000.	
23 Na	10.19	10.19	ppb	53.09	200000.	
25 Mg	6.175	6.175	ppb	91.01	200000.	
27 Al	6.121	6.121	ppb	93.01	200000.	
28 Si	-52.32	-52.32	ppb	49.12	#VALUE!	
29 Si	-592.6	-592.6	ppb	20.06	10000.	LOW
39 K	2.965	2.965	ppb	216.49	200000.	
43 Ca	2.026	2.026	ppb	291.51	#VALUE!	
44 Ca	7.296	7.296	ppb	13.27	200000.	
51 V	-0.0262	-0.0262	ppb	88.62	1000.	
52 Cr	0.0066	0.0066	ppb	131.91	1000.	
53 Cr	0.5345	0.5345	ppb	24.32	#VALUE!	
55 Mn	0.0118	0.0118	ppb	66.80	1000.	
56 Fe	10.52	10.52	ppb	50.98	#VALUE!	
57 Fe	0.275	0.275	ppb	2103.30	100000.	
59 Co	0.0001	0.0001	ppb	4700.50	1000.	
60 Ni	0.0101	0.0101	ppb	123.12	1000.	
63 Cu	0.1804	0.1804	ppb	3.03	#VALUE!	
65 Cu	0.167	0.167	ppb	15.53	1000.	
66 Zn	0.0369	0.0369	ppb	79.96	1000.	
68 Zn	-2.636	-2.636	ppb	14.46	#VALUE!	
75 As	-0.067	-0.067	ppb	58.86	1000.	
82 Se	-0.0112	-0.0112	ppb	906.42	1000.	
88 Sr	-0.0024	-0.0024	ppb	99.10	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	1.176	1.176	ppb	16.21	1000.	
107 Ag	0.0014	0.0014	ppb	85.73	500.	
109 Ag	0.0001	0.0001	ppb	1016.20	#VALUE!	
111 Cd	-0.0749	-0.0749	ppb	25.33	#VALUE!	
114 Cd	0.0044	0.0044	ppb	86.61	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0114	0.0114	ppb	44.83	1000.	
120 Sn	0.0135	0.0135	ppb	74.00	#VALUE!	
121 Sb	0.006	0.006	ppb	16.38	#VALUE!	
123 Sb	0.0066	0.0066	ppb	49.98	1000.	
135 Ba	0.0138	0.0138	ppb	35.17	1000.	
137 Ba	0.0161	0.0161	ppb	42.42	#VALUE!	
182 W	0.0274	0.0274	ppb	---	#VALUE!	
203 Tl	0.0059	0.0059	ppb	42.72	1000.	
205 Tl	0.0044	0.0044	ppb	78.40	#VALUE!	
208 Pb	0.0011	0.0011	ppb	162.32	1000.	
232 Th	0.0199	0.0199	ppb	12.67	1000.	
238 U	0.0006	0.0006	ppb	154.19	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2945815.30	0.79	3052150.50	96.5	69.5 - 130	
45 Sc	2429380.80	0.11	2505808.30	96.9	69.5 - 130	
72 Ge	517248.59	1.73	528327.81	97.9	69.5 - 130	
159 Tb	4751653.00	1.46	4805871.00	98.9	69.5 - 130	
209 Bi	2850010.00	1.11	2881081.50	98.9	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000667

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\024_CCV.D\024_CCV.D#
Date Acquired: Jul 3 2014 06:08 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.82	ppb	1.93	25	99.28	
11 B	24.5	ppb	3.27	25	98	
23 Na	5,019.	ppb	1.95	5,000	100.38	
25 Mg	4,997.	ppb	2.45	5,000	99.94	
27 Al	499.1	ppb	2.78	500	99.82	
28 Si	445.3	ppb	12.53	500	89.06	
29 Si	-87.61	ppb	167.90	500	-17.522	Fail
39 K	4,926.	ppb	3.26	5,000	98.52	
43 Ca	4,944.	ppb	2.81	5,000	98.88	
44 Ca	5,055.	ppb	2.26	5,000	101.1	
51 V	24.54	ppb	3.35	25	98.16	
52 Cr	24.71	ppb	2.40	25	98.84	
53 Cr	25.54	ppb	0.97	25	102.16	
55 Mn	25.03	ppb	2.05	25	100.12	
56 Fe	5,042.	ppb	2.32	5,000	100.84	
57 Fe	5,083.	ppb	2.34	5,000	101.66	
59 Co	25.05	ppb	2.63	25	100.2	
60 Ni	25.04	ppb	1.73	25	100.16	
63 Cu	25.28	ppb	1.98	25	101.12	
65 Cu	25.05	ppb	2.23	25	100.2	
66 Zn	24.84	ppb	2.83	25	99.36	
68 Zn	22.36	ppb	4.38	25	89.44	
75 As	24.73	ppb	1.94	25	98.92	
82 Se	24.83	ppb	2.25	25	99.32	
88 Sr	24.98	ppb	3.17	25	99.92	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	25.08	ppb	3.18	25	100.32	
107 Ag	25.25	ppb	2.95	25	101	
109 Ag	25.1	ppb	2.37	25	100.4	
111 Cd	24.95	ppb	2.03	25	99.8	
114 Cd	24.98	ppb	1.90	25	99.92	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.85	ppb	1.80	25	99.4	
120 Sn	24.98	ppb	2.36	25	99.92	
121 Sb	24.88	ppb	2.30	25	99.52	
123 Sb	24.73	ppb	2.24	25	98.92	
135 Ba	25.14	ppb	3.00	25	100.56	
137 Ba	25.18	ppb	1.96	25	100.72	
182 W	24.89	ppb	2.24	25	99.56	
203 Tl	24.79	ppb	2.34	25	99.16	
205 Tl	24.76	ppb	2.73	25	99.04	
208 Pb	24.86	ppb	2.52	25	99.44	
232 Th	24.68	ppb	2.12	25	98.72	
238 U	24.74	ppb	2.10	25	98.96	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2976367.80	1.51	3052150.50	97.5	80 - 120.4	
45 Sc	2476704.30	2.34	2505808.30	98.8	80 - 120.4	
72 Ge	523592.56	2.22	528327.81	99.1	80 - 120.4	
159 Tb	4800503.50	2.21	4805871.00	99.9	80 - 120.4	
209 Bi	2853088.80	2.62	2881081.50	99.0	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000668

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\025_CCB.D\025_CCB.D#
Date Acquired: Jul 3 2014 06:11 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0038	ppb	55.46	1.00	
11 B	0.3257	ppb	45.41	1.00	
23 Na	4.73	ppb	44.21	1.00	
25 Mg	3.153	ppb	68.95	1.00	
27 Al	2.551	ppb	72.72	1.00	
28 Si	-39.03	ppb	76.71	1.00	
29 Si	-636.2	ppb	14.57	1.00	Fail-DoD
39 K	-3.683	ppb	53.41	1.00	
43 Ca	-7.182	ppb	18.59	1.00	
44 Ca	4.032	ppb	143.20	1.00	
51 V	0.0158	ppb	286.81	1.00	
52 Cr	0.0153	ppb	96.15	1.00	
53 Cr	0.2426	ppb	97.86	1.00	
55 Mn	0.0061	ppb	148.99	1.00	
56 Fe	5.984	ppb	7.37	1.00	
57 Fe	-4.46	ppb	78.39	1.00	
59 Co	0.	ppb	13250.00	1.00	
60 Ni	-0.0064	ppb	22.32	1.00	
63 Cu	0.0278	ppb	28.94	1.00	
65 Cu	0.0235	ppb	37.53	1.00	
66 Zn	0.0426	ppb	95.05	1.00	
68 Zn	-2.914	ppb	6.30	1.00	
75 As	-0.1189	ppb	103.53	1.00	
82 Se	-0.0595	ppb	195.66	1.00	
88 Sr	-0.0023	ppb	64.39	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.2834	ppb	12.74	1.00	
107 Ag	0.0036	ppb	31.61	1.00	
109 Ag	0.0021	ppb	16.23	1.00	
111 Cd	-0.0878	ppb	40.28	1.00	
114 Cd	0.0013	ppb	84.19	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0607	ppb	17.93	1.00	
120 Sn	0.0594	ppb	20.17	1.00	
121 Sb	0.0139	ppb	50.99	1.00	
123 Sb	0.0132	ppb	59.45	1.00	
135 Ba	-0.0069	ppb	28.76	1.00	
137 Ba	-0.004	ppb	25.64	1.00	
182 W	0.0999	ppb	8.97	1.00	
203 Tl	0.0111	ppb	17.51	1.00	
205 Tl	0.0069	ppb	5.99	1.00	
208 Pb	0.0017	ppb	231.17	1.00	
232 Th	0.0403	ppb	32.05	1.00	
238 U	0.0011	ppb	109.73	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3039139.00	1.37	3052150.50	99.6	79.5 - 120	
45 Sc	2518139.30	0.70	2505808.30	100.5	79.5 - 120	
72 Ge	528292.88	0.29	528327.81	100.0	79.5 - 120	
159 Tb	4840426.00	0.56	4805871.00	100.7	79.5 - 120	
209 Bi	2906346.50	1.08	2881081.50	100.9	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000669

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\026SMPL.D\026SMPL.D#
Date Acquired: Jul 3 2014 06:14 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4846-003
Misc Info:
Vial Number: 2101
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0211	0.0211	ppb	4.18	100.	
11 B	32.53	32.53	ppb	1.33	1000.	
23 Na	47,200.	47,200.	ppb	4.39	200000.	
25 Mg	3,368.	3,368.	ppb	3.91	200000.	
27 Al	5.192	5.192	ppb	22.15	200000.	
28 Si	7,151.	7,151.	ppb	4.90	#VALUE!	
29 Si	7,373.	7,373.	ppb	7.35	10000.	
39 K	1,176.	1,176.	ppb	3.87	200000.	
43 Ca	47,380.	47,380.	ppb	4.61	#VALUE!	
44 Ca	45,380.	45,380.	ppb	4.77	200000.	
51 V	0.401	0.401	ppb	26.33	1000.	
52 Cr	0.9607	0.9607	ppb	11.86	1000.	
53 Cr	-0.6763	-0.6763	ppb	3.24	#VALUE!	
55 Mn	2.499	2.499	ppb	3.43	1000.	
56 Fe	13.43	13.43	ppb	30.28	#VALUE!	
57 Fe	115.1	115.1	ppb	5.90	100000.	
59 Co	0.1471	0.1471	ppb	14.45	1000.	
60 Ni	0.218	0.218	ppb	15.03	1000.	
63 Cu	123.	123.	ppb	3.87	#VALUE!	
65 Cu	121.1	121.1	ppb	3.05	1000.	
66 Zn	10.64	10.64	ppb	4.98	1000.	
68 Zn	7.501	7.501	ppb	7.05	#VALUE!	
75 As	0.9226	0.9226	ppb	11.12	1000.	
82 Se	0.7275	0.7275	ppb	40.34	1000.	
88 Sr	158.1	158.1	ppb	1.76	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1.003	1.003	ppb	5.50	1000.	
107 Ag	0.0078	0.0078	ppb	49.53	500.	
109 Ag	0.0075	0.0075	ppb	12.02	#VALUE!	
111 Cd	-0.0329	-0.0329	ppb	17.00	#VALUE!	
114 Cd	0.0882	0.0882	ppb	2.30	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0363	0.0363	ppb	22.42	1000.	
120 Sn	0.0324	0.0324	ppb	30.10	#VALUE!	
121 Sb	0.0267	0.0267	ppb	43.04	#VALUE!	
123 Sb	0.0169	0.0169	ppb	43.36	1000.	
135 Ba	3.816	3.816	ppb	5.05	1000.	
137 Ba	3.783	3.783	ppb	3.65	#VALUE!	
182 W	0.043	0.043	ppb ---		#VALUE!	
203 Tl	0.0086	0.0086	ppb	19.35	1000.	
205 Tl	0.0102	0.0102	ppb	60.81	#VALUE!	
208 Pb	0.3276	0.3276	ppb	3.93	1000.	
232 Th	0.0603	0.0603	ppb	28.52	1000.	
238 U	89.62	89.62	ppb	2.00	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3022542.50	1.36	3052150.50	99.0	69.5 - 130	
45 Sc	2483763.80	3.32	2505808.30	99.1	69.5 - 130	
72 Ge	525708.06	2.09	528327.81	99.5	69.5 - 130	
159 Tb	4887296.00	2.65	4805871.00	101.7	69.5 - 130	
209 Bi	2830641.30	2.38	2881081.50	98.2	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000670

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\027SMPL.D\027SMPL.D#
Date Acquired: Jul 3 2014 06:17 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4401-008
Misc Info: DILUTION 1.6/8
Vial Number: 2102
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0237	0.0047	ppb	35.91	100.	
11 B	6.5	1.3	ppb	10.94	1000.	
23 Na	3,842.5	768.5	ppb	1.97	200000.	
25 Mg	1,382.5	276.5	ppb	1.72	200000.	
27 Al	271.	54.2	ppb	1.86	200000.	
28 Si	2,609.5	521.9	ppb	2.46	#VALUE!	
29 Si	400.6	80.12	ppb	293.81	10000.	
39 K	609.	121.8	ppb	3.87	200000.	
43 Ca	3,497.5	699.5	ppb	4.61	#VALUE!	
44 Ca	3,578.5	715.7	ppb	2.88	200000.	
51 V	1.169	0.2338	ppb	68.48	1000.	
52 Cr	4.2715	0.8543	ppb	1.62	1000.	
53 Cr	35.535	7.107	ppb	3.41	#VALUE!	
55 Mn	1,456.5	291.3	ppb	2.17	1000.	
56 Fe	812.	162.4	ppb	2.63	#VALUE!	
57 Fe	722.5	144.5	ppb	3.90	100000.	
59 Co	1.465	0.293	ppb	2.70	1000.	
60 Ni	1.6975	0.3395	ppb	7.96	1000.	
63 Cu	1.503	0.3006	ppb	9.53	#VALUE!	
65 Cu	1.407	0.2814	ppb	8.91	1000.	
66 Zn	4.5415	0.9083	ppb	4.05	1000.	
68 Zn	-10.795	-2.159	ppb	22.51	#VALUE!	
75 As	0.855	0.171	ppb	90.12	1000.	
82 Se	-0.3354	-0.0671	ppb	242.99	1000.	
88 Sr	19.825	3.965	ppb	3.52	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.8995	0.1799	ppb	5.91	1000.	
107 Ag	0.0141	0.0028	ppb	24.22	500.	
109 Ag	0.006	0.0012	ppb	134.02	#VALUE!	
111 Cd	0.917	0.1834	ppb	19.93	#VALUE!	
114 Cd	1.459	0.2918	ppb	2.69	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.1973	0.0395	ppb	15.07	1000.	
120 Sn	0.2355	0.0471	ppb	28.81	#VALUE!	
121 Sb	0.0553	0.0111	ppb	33.51	#VALUE!	
123 Sb	0.069	0.0138	ppb	47.83	1000.	
135 Ba	7.86	1.572	ppb	2.75	1000.	
137 Ba	7.565	1.513	ppb	1.84	#VALUE!	
182 W	0.1501	0.03	ppb	---	#VALUE!	
203 Tl	0.036	0.0072	ppb	27.76	1000.	
205 Tl	0.0114	0.0023	ppb	81.35	#VALUE!	
208 Pb	0.569	0.1138	ppb	4.81	1000.	
232 Th	0.3231	0.0646	ppb	8.74	1000.	
238 U	0.1161	0.0232	ppb	16.27	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3108847.80	2.46	3052150.50	101.9	69.5 - 130	
45 Sc	2455401.80	1.48	2505808.30	98.0	69.5 - 130	
72 Ge	519748.59	1.98	528327.81	98.4	69.5 - 130	
159 Tb	4887371.50	1.38	4805871.00	101.7	69.5 - 130	
209 Bi	2918176.00	2.02	2881081.50	101.3	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000671

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\028SMPL.D\028SMPL.D#
Date Acquired: Jul 3 2014 06:21 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4401-009
Misc Info: DILUTION 1.6/8
Vial Number: 2103
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.009	0.0018	ppb	26.92	100.	
11 B	5.585	1.117	ppb	17.12	1000.	
23 Na	4,249.5	849.9	ppb	1.70	200000.	
25 Mg	1,427.	285.4	ppb	4.11	200000.	
27 Al	46.13	9.226	ppb	6.84	200000.	
28 Si	2,115.	423.	ppb	8.12	#VALUE!	
29 Si	-2,123.	-424.6	ppb	73.20	10000.	LOW
39 K	584.	116.8	ppb	10.74	200000.	
43 Ca	3,877.	775.4	ppb	9.48	#VALUE!	
44 Ca	3,775.	755.	ppb	3.81	200000.	
51 V	0.6015	0.1203	ppb	49.65	1000.	
52 Cr	4.0625	0.8125	ppb	5.02	1000.	
53 Cr	39.515	7.903	ppb	5.15	#VALUE!	
55 Mn	1,528.	305.6	ppb	2.62	1000.	
56 Fe	613.5	122.7	ppb	3.40	#VALUE!	
57 Fe	502.	100.4	ppb	9.45	100000.	
59 Co	1.37	0.274	ppb	4.23	1000.	
60 Ni	1.812	0.3624	ppb	17.16	1000.	
63 Cu	1.763	0.3526	ppb	7.50	#VALUE!	
65 Cu	1.599	0.3198	ppb	16.02	1000.	
66 Zn	5.685	1.137	ppb	2.74	1000.	
68 Zn	-9.555	-1.911	ppb	21.41	#VALUE!	
75 As	0.7605	0.1521	ppb	94.48	1000.	
82 Se	0.1975	0.0395	ppb	71.82	1000.	
88 Sr	20.31	4.062	ppb	2.78	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.5935	0.1187	ppb	4.13	1000.	
107 Ag	0.0099	0.002	ppb	73.98	500.	
109 Ag	0.003	0.0006	ppb	49.49	#VALUE!	
111 Cd	-0.3352	-0.067	ppb	23.14	#VALUE!	
114 Cd	0.1932	0.0386	ppb	9.98	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.3393	0.0679	ppb	15.92	1000.	
120 Sn	0.2544	0.0509	ppb	14.62	#VALUE!	
121 Sb	0.0433	0.0087	ppb	48.04	#VALUE!	
123 Sb	0.029	0.0058	ppb	103.00	1000.	
135 Ba	4.9655	0.9931	ppb	11.71	1000.	
137 Ba	5.41	1.082	ppb	8.83	#VALUE!	
182 W	0.1062	0.0212	ppb	---	#VALUE!	
203 Tl	0.0227	0.0045	ppb	103.13	1000.	
205 Tl	0.0031	0.0006	ppb	107.20	#VALUE!	
208 Pb	0.2115	0.0423	ppb	7.69	1000.	
232 Th	0.1549	0.031	ppb	10.17	1000.	
238 U	0.0152	0.003	ppb	14.83	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3210715.50	3.88	3052150.50	105.2	69.5 - 130	
45 Sc	2516328.00	3.48	2505808.30	100.4	69.5 - 130	
72 Ge	525380.88	2.52	528327.81	99.4	69.5 - 130	
159 Tb	4957855.00	3.51	4805871.00	103.2	69.5 - 130	
209 Bi	2953514.00	3.33	2881081.50	102.5	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000672

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\029SMPL.D\029SMPL.D#
Date Acquired: Jul 3 2014 06:24 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4401-010
Misc Info: DILUTION 1.6/8
Vial Number: 2104
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0223	0.0045	ppb	20.59	100.	
11 B	5.635	1.127	ppb	10.87	1000.	
23 Na	4,461.	892.2	ppb	1.01	200000.	
25 Mg	1,574.	314.8	ppb	0.20	200000.	
27 Al	95.25	19.05	ppb	1.31	200000.	
28 Si	2,622.5	524.5	ppb	9.93	#VALUE!	
29 Si	-951.5	-190.3	ppb	53.71	10000.	LOW
39 K	631.5	126.3	ppb	2.94	200000.	
43 Ca	6,170.	1,234.	ppb	1.03	#VALUE!	
44 Ca	6,115.	1,223.	ppb	1.48	200000.	
51 V	1.3655	0.2731	ppb	10.40	1000.	
52 Cr	4.877	0.9754	ppb	2.77	1000.	
53 Cr	39.13	7.826	ppb	1.19	#VALUE!	
55 Mn	209.1	41.82	ppb	0.84	1000.	
56 Fe	1,591.5	318.3	ppb	0.70	#VALUE!	
57 Fe	1,513.	302.6	ppb	1.56	100000.	
59 Co	1.967	0.3934	ppb	3.62	1000.	
60 Ni	2.4395	0.4879	ppb	1.63	1000.	
63 Cu	1.6635	0.3327	ppb	2.87	#VALUE!	
65 Cu	1.5635	0.3127	ppb	6.98	1000.	
66 Zn	2.8575	0.5715	ppb	4.73	1000.	
68 Zn	-11.67	-2.334	ppb	7.94	#VALUE!	
75 As	3.5235	0.7047	ppb	16.86	1000.	
82 Se	-0.0384	-0.0077	ppb	2606.70	1000.	
88 Sr	20.01	4.002	ppb	1.88	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.5795	0.1159	ppb	3.54	1000.	
107 Ag	0.0136	0.0027	ppb	51.88	500.	
109 Ag	0.0085	0.0017	ppb	135.11	#VALUE!	
111 Cd	-0.4608	-0.0922	ppb	10.25	#VALUE!	
114 Cd	0.142	0.0284	ppb	11.39	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.2677	0.0535	ppb	8.73	1000.	
120 Sn	0.2	0.04	ppb	2.25	#VALUE!	
121 Sb	0.0436	0.0087	ppb	23.97	#VALUE!	
123 Sb	0.0701	0.014	ppb	27.58	1000.	
135 Ba	3.9935	0.7987	ppb	8.16	1000.	
137 Ba	4.2925	0.8585	ppb	1.21	#VALUE!	
182 W	0.0957	0.0191	ppb	---	#VALUE!	
203 Tl	0.017	0.0034	ppb	58.75	1000.	
205 Tl	0.0124	0.0025	ppb	41.93	#VALUE!	
208 Pb	0.8805	0.1761	ppb	5.87	1000.	
232 Th	0.138	0.0276	ppb	4.90	1000.	
238 U	0.0378	0.0076	ppb	11.39	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3178285.00	1.73	3052150.50	104.1	69.5 - 130	
45 Sc	2488575.30	1.03	2505808.30	99.3	69.5 - 130	
72 Ge	525572.63	0.77	528327.81	99.5	69.5 - 130	
159 Tb	4922725.00	0.95	4805871.00	102.4	69.5 - 130	
209 Bi	2968265.50	1.01	2881081.50	103.0	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000673

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\030SMPL.D\030SMPL.D#
Date Acquired: Jul 3 2014 06:27 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4401-011
Misc Info: DILUTION 1.6/8
Vial Number: 2105
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.025	0.005	ppb	6.29	100.	
11 B	6.115	1.223	ppb	11.76	1000.	
23 Na	4,348.5	869.7	ppb	0.26	200000.	
25 Mg	1,543.	308.6	ppb	1.81	200000.	
27 Al	31.975	6.395	ppb	0.74	200000.	
28 Si	2,571.	514.2	ppb	5.72	#VALUE!	
29 Si	-796.5	-159.3	ppb	77.84	10000.	LOW
39 K	615.	123.	ppb	0.80	200000.	
43 Ca	6,170.	1,234.	ppb	1.88	#VALUE!	
44 Ca	6,005.	1,201.	ppb	0.83	200000.	
51 V	1.2835	0.2567	ppb	50.88	1000.	
52 Cr	2.527	0.5054	ppb	2.32	1000.	
53 Cr	41.395	8.279	ppb	3.55	#VALUE!	
55 Mn	200.75	40.15	ppb	0.47	1000.	
56 Fe	1,473.	294.6	ppb	0.83	#VALUE!	
57 Fe	1,377.5	275.5	ppb	1.60	100000.	
59 Co	1.908	0.3816	ppb	4.19	1000.	
60 Ni	1.7705	0.3541	ppb	10.79	1000.	
63 Cu	1.351	0.2702	ppb	6.83	#VALUE!	
65 Cu	1.2475	0.2495	ppb	8.38	1000.	
66 Zn	2.656	0.5312	ppb	2.37	1000.	
68 Zn	-10.865	-2.173	ppb	8.62	#VALUE!	
75 As	3.4975	0.6995	ppb	19.41	1000.	
82 Se	0.0908	0.0182	ppb	37.03	1000.	
88 Sr	19.645	3.929	ppb	1.34	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.503	0.1006	ppb	11.23	1000.	
107 Ag	0.0072	0.0014	ppb	87.86	500.	
109 Ag	-0.0009	-0.0002	ppb	1058.80	#VALUE!	
111 Cd	-0.4559	-0.0912	ppb	16.99	#VALUE!	
114 Cd	0.0999	0.02	ppb	38.25	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.2273	0.0455	ppb	16.05	1000.	
120 Sn	0.2315	0.0463	ppb	29.44	#VALUE!	
121 Sb	0.0504	0.0101	ppb	30.87	#VALUE!	
123 Sb	0.0488	0.0098	ppb	35.40	1000.	
135 Ba	3.735	0.747	ppb	3.81	1000.	
137 Ba	3.9355	0.7871	ppb	6.11	#VALUE!	
182 W	0.0598	0.012	ppb	---	#VALUE!	
203 Tl	0.0236	0.0047	ppb	122.00	1000.	
205 Tl	0.0021	0.0004	ppb	159.57	#VALUE!	
208 Pb	0.2058	0.0412	ppb	22.28	1000.	
232 Th	0.1132	0.0226	ppb	3.41	1000.	
238 U	0.0266	0.0053	ppb	13.86	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3181787.80	2.39	3052150.50	104.2	69.5 - 130	
45 Sc	2497187.30	1.50	2505808.30	99.7	69.5 - 130	
72 Ge	527757.56	0.36	528327.81	99.9	69.5 - 130	
159 Tb	4955771.00	1.46	4805871.00	103.1	69.5 - 130	
209 Bi	2947695.30	1.45	2881081.50	102.3	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000674

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\031SMPL.D\031SMPL.D#
Date Acquired: Jul 3 2014 06:30 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4401-012
Misc Info: DILUTION 1.6/8
Vial Number: 2106
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0237	0.0047	ppb	51.38	100.	
11 B	4.365	0.873	ppb	15.75	1000.	
23 Na	3,025.5	605.1	ppb	2.12	200000.	
25 Mg	999.	199.8	ppb	2.11	200000.	
27 Al	21.14	4.228	ppb	2.55	200000.	
28 Si	2,557.	511.4	ppb	7.25	#VALUE!	
29 Si	-947.5	-189.5	ppb	93.83	10000.	LOW
39 K	451.7	90.34	ppb	4.77	200000.	
43 Ca	2,711.5	542.3	ppb	1.30	#VALUE!	
44 Ca	2,693.5	538.7	ppb	1.37	200000.	
51 V	0.4733	0.0947	ppb	97.33	1000.	
52 Cr	2.7685	0.5537	ppb	8.26	1000.	
53 Cr	50.75	10.15	ppb	6.09	#VALUE!	
55 Mn	11.9	2.38	ppb	1.16	1000.	
56 Fe	38.945	7.789	ppb	6.23	#VALUE!	
57 Fe	-30.145	-6.029	ppb	13.21	100000.	
59 Co	0.0562	0.0112	ppb	33.04	1000.	
60 Ni	0.698	0.1396	ppb	6.79	1000.	
63 Cu	0.8495	0.1699	ppb	12.63	#VALUE!	
65 Cu	0.769	0.1538	ppb	6.79	1000.	
66 Zn	3.5535	0.7107	ppb	12.21	1000.	
68 Zn	-7.475	-1.495	ppb	11.93	#VALUE!	
75 As	0.0491	0.0098	ppb	330.08	1000.	
82 Se	0.0844	0.0169	ppb	780.21	1000.	
88 Sr	11.285	2.257	ppb	2.40	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.2884	0.0577	ppb	13.21	1000.	
107 Ag	0.0081	0.0016	ppb	84.87	500.	
109 Ag	-0.0139	-0.0028	ppb	31.66	#VALUE!	
111 Cd	-0.6895	-0.1379	ppb	14.21	#VALUE!	
114 Cd	0.0628	0.0126	ppb	54.40	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.3079	0.0616	ppb	10.47	1000.	
120 Sn	0.296	0.0592	ppb	7.84	#VALUE!	
121 Sb	0.0639	0.0128	ppb	41.07	#VALUE!	
123 Sb	0.0359	0.0072	ppb	12.53	1000.	
135 Ba	1.373	0.2746	ppb	11.36	1000.	
137 Ba	1.451	0.2902	ppb	1.08	#VALUE!	
182 W	0.0636	0.0127	ppb ---		#VALUE!	
203 Tl	0.0217	0.0043	ppb	71.94	1000.	
205 Tl	0.0061	0.0012	ppb	26.35	#VALUE!	
208 Pb	0.1868	0.0374	ppb	15.17	1000.	
232 Th	0.0798	0.016	ppb	15.55	1000.	
238 U	0.0027	0.0005	ppb	65.32	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3174649.80	1.18	3052150.50	104.0	69.5 - 130	
45 Sc	2489558.30	1.32	2505808.30	99.4	69.5 - 130	
72 Ge	525995.19	0.91	528327.81	99.6	69.5 - 130	
159 Tb	4881609.50	1.10	4805871.00	101.6	69.5 - 130	
209 Bi	2913234.00	1.12	2881081.50	101.1	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000675

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\032SMPL.D\032SMPL.D#
Date Acquired: Jul 3 2014 06:34 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4401-013
Misc Info: DILUTION 1.6/8
Vial Number: 2107
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0172	0.0034	ppb	46.25	100.	
11 B	4.572	0.9144	ppb	8.64	1000.	
23 Na	3,189.	637.8	ppb	1.80	200000.	
25 Mg	1,042.	208.4	ppb	1.75	200000.	
27 Al	19.765	3.953	ppb	6.14	200000.	
28 Si	2,747.	549.4	ppb	4.68	#VALUE!	
29 Si	-75.5	-15.1	ppb	807.95	10000.	
39 K	486.3	97.26	ppb	3.38	200000.	
43 Ca	2,838.5	567.7	ppb	2.86	#VALUE!	
44 Ca	2,814.	562.8	ppb	3.40	200000.	
51 V	0.5145	0.1029	ppb	113.90	1000.	
52 Cr	3.0735	0.6147	ppb	11.19	1000.	
53 Cr	57.05	11.41	ppb	7.06	#VALUE!	
55 Mn	12.725	2.545	ppb	1.46	1000.	
56 Fe	50.3	10.06	ppb	25.90	#VALUE!	
57 Fe	-11.01	-2.202	ppb	223.84	100000.	
59 Co	0.068	0.0136	ppb	11.22	1000.	
60 Ni	0.9765	0.1953	ppb	10.99	1000.	
63 Cu	1.8185	0.3637	ppb	4.56	#VALUE!	
65 Cu	1.5745	0.3149	ppb	16.74	1000.	
66 Zn	3.772	0.7544	ppb	8.79	1000.	
68 Zn	-6.4	-1.28	ppb	20.17	#VALUE!	
75 As	0.1148	0.023	ppb	806.62	1000.	
82 Se	0.0885	0.0177	ppb	289.66	1000.	
88 Sr	11.805	2.361	ppb	2.69	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.2364	0.0473	ppb	5.32	1000.	
107 Ag	0.0051	0.001	ppb	163.74	500.	
109 Ag	-0.0069	-0.0014	ppb	77.29	#VALUE!	
111 Cd	-0.587	-0.1174	ppb	18.96	#VALUE!	
114 Cd	0.0634	0.0127	ppb	57.68	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.3138	0.0628	ppb	18.02	1000.	
120 Sn	0.2423	0.0485	ppb	4.99	#VALUE!	
121 Sb	0.0545	0.0109	ppb	51.16	#VALUE!	
123 Sb	0.0459	0.0092	ppb	85.30	1000.	
135 Ba	1.927	0.3854	ppb	12.96	1000.	
137 Ba	1.9435	0.3887	ppb	8.93	#VALUE!	
182 W	0.0476	0.0095	ppb	---	#VALUE!	
203 Tl	0.0108	0.0022	ppb	193.33	1000.	
205 Tl	0.0035	0.0007	ppb	229.85	#VALUE!	
208 Pb	0.1508	0.0302	ppb	60.56	1000.	
232 Th	0.0728	0.0146	ppb	16.46	1000.	
238 U	-0.0009	-0.0002	ppb	590.07	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3126194.00	0.40	3052150.50	102.4	69.5 - 130	
45 Sc	2452244.30	1.83	2505808.30	97.9	69.5 - 130	
72 Ge	515312.94	1.62	528327.81	97.5	69.5 - 130	
159 Tb	4800418.50	1.84	4805871.00	99.9	69.5 - 130	
209 Bi	2847237.00	0.97	2881081.50	98.8	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000676

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\033SMPL.D\033SMPL.D#
Date Acquired: Jul 3 2014 06:37 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4401-014
Misc Info: DILUTION 1.6/8
Vial Number: 2108
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0245	0.0049	ppb	17.10	100.	
11 B	5.645	1.129	ppb	3.28	1000.	
23 Na	4,520.	904.	ppb	0.74	200000.	
25 Mg	1,608.	321.6	ppb	1.78	200000.	
27 Al	95.45	19.09	ppb	0.50	200000.	
28 Si	2,523.5	504.7	ppb	4.50	#VALUE!	
29 Si	-1,110.	-222.	ppb	80.05	10000.	LOW
39 K	643.	128.6	ppb	3.34	200000.	
43 Ca	6,155.	1,231.	ppb	2.71	#VALUE!	
44 Ca	6,185.	1,237.	ppb	0.67	200000.	
51 V	1.7795	0.3559	ppb	24.06	1000.	
52 Cr	3.149	0.6298	ppb	6.93	1000.	
53 Cr	49.55	9.91	ppb	4.61	#VALUE!	
55 Mn	213.8	42.76	ppb	1.18	1000.	
56 Fe	1,592.5	318.5	ppb	0.99	#VALUE!	
57 Fe	1,509.5	301.9	ppb	0.54	100000.	
59 Co	2.037	0.4074	ppb	3.46	1000.	
60 Ni	1.671	0.3342	ppb	6.60	1000.	
63 Cu	1.3535	0.2707	ppb	3.38	#VALUE!	
65 Cu	1.472	0.2944	ppb	8.12	1000.	
66 Zn	2.417	0.4834	ppb	13.23	1000.	
68 Zn	-7.29	-1.458	ppb	16.54	#VALUE!	
75 As	4.233	0.8466	ppb	22.28	1000.	
82 Se	-0.2858	-0.0572	ppb	275.94	1000.	
88 Sr	20.41	4.082	ppb	1.77	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.4235	0.0847	ppb	7.90	1000.	
107 Ag	0.0152	0.003	ppb	74.67	500.	
109 Ag	0.0091	0.0018	ppb	46.52	#VALUE!	
111 Cd	-0.4812	-0.0962	ppb	21.39	#VALUE!	
114 Cd	0.1013	0.0203	ppb	26.11	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.2717	0.0543	ppb	13.52	1000.	
120 Sn	0.2735	0.0547	ppb	11.75	#VALUE!	
121 Sb	0.0537	0.0107	ppb	13.54	#VALUE!	
123 Sb	0.0464	0.0093	ppb	56.66	1000.	
135 Ba	5.595	1.119	ppb	4.86	1000.	
137 Ba	5.525	1.105	ppb	7.26	#VALUE!	
182 W	0.0506	0.0101	ppb	---	#VALUE!	
203 Tl	0.03	0.006	ppb	50.46	1000.	
205 Tl	0.011	0.0022	ppb	50.09	#VALUE!	
208 Pb	0.5	0.1	ppb	7.22	1000.	
232 Th	0.0835	0.0167	ppb	20.60	1000.	
238 U	0.0397	0.0079	ppb	16.44	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3164904.00	2.26	3052150.50	103.7	69.5 - 130	
45 Sc	2468730.50	0.39	2505808.30	98.5	69.5 - 130	
72 Ge	517644.75	0.60	528327.81	98.0	69.5 - 130	
159 Tb	4764285.50	1.40	4805871.00	99.1	69.5 - 130	
209 Bi	2815686.80	0.56	2881081.50	97.7	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000677

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\034SMPL.D\034SMPL.D#
Date Acquired: Jul 3 2014 06:40 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4401-015
Misc Info: DILUTION 1.6/8
Vial Number: 2109
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0128	0.0026	ppb	114.27	100.	
11 B	5.89	1.178	ppb	9.34	1000.	
23 Na	4,360.5	872.1	ppb	1.82	200000.	
25 Mg	1,534.5	306.9	ppb	1.11	200000.	
27 Al	30.88	6.176	ppb	0.83	200000.	
28 Si	2,366.5	473.3	ppb	7.18	#VALUE!	
29 Si	-1,048.	-209.6	ppb	41.67	10000.	LOW
39 K	603.	120.6	ppb	4.11	200000.	
43 Ca	5,905.	1,181.	ppb	0.63	#VALUE!	
44 Ca	5,970.	1,194.	ppb	1.49	200000.	
51 V	1.9365	0.3873	ppb	15.63	1000.	
52 Cr	1.3685	0.2737	ppb	4.45	1000.	
53 Cr	54.25	10.85	ppb	2.07	#VALUE!	
55 Mn	205.4	41.08	ppb	1.08	1000.	
56 Fe	1,460.	292.	ppb	0.92	#VALUE!	
57 Fe	1,381.5	276.3	ppb	2.45	100000.	
59 Co	1.948	0.3896	ppb	1.62	1000.	
60 Ni	0.84	0.168	ppb	8.45	1000.	
63 Cu	0.803	0.1606	ppb	4.98	#VALUE!	
65 Cu	0.795	0.159	ppb	4.65	1000.	
66 Zn	2.2895	0.4579	ppb	21.62	1000.	
68 Zn	-4.5855	-0.9171	ppb	33.66	#VALUE!	
75 As	3.597	0.7194	ppb	8.16	1000.	
82 Se	-0.3522	-0.0704	ppb	17.96	1000.	
88 Sr	19.375	3.875	ppb	2.98	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.3224	0.0645	ppb	10.59	1000.	
107 Ag	0.0119	0.0024	ppb	127.64	500.	
109 Ag	0.0038	0.0008	ppb	184.03	#VALUE!	
111 Cd	-0.3144	-0.0629	ppb	23.86	#VALUE!	
114 Cd	0.0692	0.0138	ppb	37.61	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.194	0.0388	ppb	25.37	1000.	
120 Sn	0.1571	0.0314	ppb	12.13	#VALUE!	
121 Sb	0.0482	0.0096	ppb	27.24	#VALUE!	
123 Sb	0.0423	0.0085	ppb	42.30	1000.	
135 Ba	3.8725	0.7745	ppb	7.04	1000.	
137 Ba	4.1035	0.8207	ppb	0.54	#VALUE!	
182 W	0.0357	0.0071	ppb	---	#VALUE!	
203 Tl	0.0421	0.0084	ppb	47.58	1000.	
205 Tl	0.0088	0.0018	ppb	70.40	#VALUE!	
208 Pb	0.0982	0.0196	ppb	8.83	1000.	
232 Th	0.0748	0.015	ppb	5.15	1000.	
238 U	0.0279	0.0056	ppb	34.62	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3137270.30	2.00	3052150.50	102.8	69.5 - 130	
45 Sc	2454840.50	1.55	2505808.30	98.0	69.5 - 130	
72 Ge	510872.63	1.14	528327.81	96.7	69.5 - 130	
159 Tb	4717076.50	0.57	4805871.00	98.2	69.5 - 130	
209 Bi	2816613.00	0.68	2881081.50	97.8	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000678

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\035SMPL.D\035SMPL.D#
Date Acquired: Jul 3 2014 06:43 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4401-016
Misc Info: DILUTION 1.6/8
Vial Number: 2110
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.059	0.0118	ppb	24.03	100.	
11 B	4.9095	0.9819	ppb	22.77	1000.	
23 Na	6,615.	1,323.	ppb	0.38	200000.	
25 Mg	935.5	187.1	ppb	0.77	200000.	
27 Al	273.5	54.7	ppb	0.85	200000.	
28 Si	2,152.5	430.5	ppb	13.07	#VALUE!	
29 Si	-932.	-186.4	ppb	83.53	10000.	LOW
39 K	129.55	25.91	ppb	5.23	200000.	
43 Ca	1,081.5	216.3	ppb	10.71	#VALUE!	
44 Ca	1,089.	217.8	ppb	2.90	200000.	
51 V	1.137	0.2274	ppb	30.63	1000.	
52 Cr	1.4835	0.2967	ppb	4.85	1000.	
53 Cr	55.3	11.06	ppb	2.36	#VALUE!	
55 Mn	28.69	5.738	ppb	1.13	1000.	
56 Fe	180.5	36.1	ppb	3.20	#VALUE!	
57 Fe	113.4	22.68	ppb	10.39	100000.	
59 Co	0.9705	0.1941	ppb	3.53	1000.	
60 Ni	2.0195	0.4039	ppb	8.21	1000.	
63 Cu	0.8825	0.1765	ppb	6.57	#VALUE!	
65 Cu	0.946	0.1892	ppb	10.63	1000.	
66 Zn	3.5795	0.7159	ppb	4.49	1000.	
68 Zn	-3.603	-0.7206	ppb	72.86	#VALUE!	
75 As	0.0057	0.0011	ppb	12480.00	1000.	
82 Se	0.3075	0.0615	ppb	108.75	1000.	
88 Sr	11.035	2.207	ppb	2.89	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.2301	0.046	ppb	14.48	1000.	
107 Ag	0.0095	0.0019	ppb	44.84	500.	
109 Ag	-0.0025	-0.0005	ppb	647.54	#VALUE!	
111 Cd	-0.4045	-0.0809	ppb	17.81	#VALUE!	
114 Cd	0.0764	0.0153	ppb	52.67	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.2314	0.0463	ppb	32.26	1000.	
120 Sn	0.224	0.0448	ppb	10.35	#VALUE!	
121 Sb	0.0611	0.0122	ppb	56.30	#VALUE!	
123 Sb	0.0403	0.0081	ppb	32.05	1000.	
135 Ba	7.39	1.478	ppb	2.31	1000.	
137 Ba	7.345	1.469	ppb	6.74	#VALUE!	
182 W	0.0279	0.0056	ppb	---	#VALUE!	
203 Tl	0.016	0.0032	ppb	77.15	1000.	
205 Tl	0.0056	0.0011	ppb	142.60	#VALUE!	
208 Pb	0.1863	0.0373	ppb	20.60	1000.	
232 Th	0.0754	0.0151	ppb	11.48	1000.	
238 U	0.0182	0.0036	ppb	39.98	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3168935.30	1.39	3052150.50	103.8	69.5 - 130	
45 Sc	2475035.50	0.25	2505808.30	98.8	69.5 - 130	
72 Ge	520412.28	0.60	528327.81	98.5	69.5 - 130	
159 Tb	4821566.00	0.81	4805871.00	100.3	69.5 - 130	
209 Bi	2866102.80	1.09	2881081.50	99.5	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000679

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\036_CCV.D\036_CCV.D#
Date Acquired: Jul 3 2014 06:47 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	23.12	ppb	2.92	25	92.48	
11 B	23.24	ppb	2.51	25	92.96	
23 Na	4,912.	ppb	1.91	5,000	98.24	
25 Mg	4,998.	ppb	0.16	5,000	99.96	
27 Al	499.9	ppb	0.33	500	99.98	
28 Si	441.7	ppb	5.51	500	88.34	
29 Si	136.2	ppb	47.22	500	27.24	Fail
39 K	4,867.	ppb	0.28	5,000	97.34	
43 Ca	4,890.	ppb	1.14	5,000	97.8	
44 Ca	4,980.	ppb	0.78	5,000	99.6	
51 V	24.56	ppb	0.10	25	98.24	
52 Cr	24.71	ppb	0.71	25	98.84	
53 Cr	24.94	ppb	0.70	25	99.76	
55 Mn	24.9	ppb	1.49	25	99.6	
56 Fe	4,950.	ppb	0.93	5,000	99	
57 Fe	5,058.	ppb	1.11	5,000	101.16	
59 Co	24.74	ppb	0.16	25	98.96	
60 Ni	24.99	ppb	0.84	25	99.96	
63 Cu	24.93	ppb	1.17	25	99.72	
65 Cu	24.76	ppb	0.54	25	99.04	
66 Zn	24.47	ppb	0.78	25	97.88	
68 Zn	23.04	ppb	1.44	25	92.16	
75 As	24.15	ppb	0.97	25	96.6	
82 Se	24.55	ppb	1.10	25	98.2	
88 Sr	24.89	ppb	1.35	25	99.56	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.71	ppb	0.78	25	98.84	
107 Ag	25.1	ppb	0.85	25	100.4	
109 Ag	24.91	ppb	1.55	25	99.64	
111 Cd	24.74	ppb	1.28	25	98.96	
114 Cd	24.81	ppb	0.18	25	99.24	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.32	ppb	0.18	25	97.28	
120 Sn	24.24	ppb	1.67	25	96.96	
121 Sb	24.13	ppb	1.25	25	96.52	
123 Sb	24.16	ppb	1.26	25	96.64	
135 Ba	24.36	ppb	2.29	25	97.44	
137 Ba	24.68	ppb	0.21	25	98.72	
182 W	24.57	ppb	1.05	25	98.28	
203 Tl	24.59	ppb	1.35	25	98.36	
205 Tl	24.62	ppb	0.89	25	98.48	
208 Pb	24.55	ppb	0.54	25	98.2	
232 Th	24.25	ppb	1.12	25	97	
238 U	24.25	ppb	1.93	25	97	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3121360.80	1.69	3052150.50	102.3	80 - 120.4	
45 Sc	2517885.30	0.26	2505808.30	100.5	80 - 120.4	
72 Ge	528007.00	1.15	528327.81	99.9	80 - 120.4	
159 Tb	4967790.50	0.14	4805871.00	103.4	80 - 120.4	
209 Bi	2949362.30	0.77	2881081.50	102.4	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000680

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\037_CCB.D\037_CCB.D#
Date Acquired: Jul 3 2014 06:50 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0027	ppb	17.16	1.00	
11 B	0.2598	ppb	36.89	1.00	
23 Na	0.6226	ppb	30.34	1.00	
25 Mg	0.3473	ppb	36.48	1.00	
27 Al	0.108	ppb	45.66	1.00	
28 Si	-15.16	ppb	148.02	1.00	
29 Si	-496.2	ppb	34.08	1.00	Fail-DoD
39 K	-6.192	ppb	39.07	1.00	
43 Ca	-5.946	ppb	101.98	1.00	
44 Ca	-3.583	ppb	35.45	1.00	
51 V	-0.0202	ppb	274.62	1.00	
52 Cr	0.0136	ppb	102.65	1.00	
53 Cr	0.2522	ppb	104.56	1.00	
55 Mn	0.0166	ppb	55.04	1.00	
56 Fe	5.054	ppb	17.07	1.00	
57 Fe	-6.626	ppb	10.15	1.00	
59 Co	0.002	ppb	233.35	1.00	
60 Ni	-0.0008	ppb	704.44	1.00	
63 Cu	0.0009	ppb	336.44	1.00	
65 Cu	0.0048	ppb	317.17	1.00	
66 Zn	-0.0169	ppb	126.83	1.00	
68 Zn	-1.514	ppb	15.79	1.00	
75 As	-0.1131	ppb	107.25	1.00	
82 Se	-0.0483	ppb	316.06	1.00	
88 Sr	-0.0006	ppb	87.68	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.074	ppb	4.65	1.00	
107 Ag	0.0025	ppb	65.27	1.00	
109 Ag	0.	ppb	12587.00	1.00	
111 Cd	-0.1035	ppb	14.14	1.00	
114 Cd	0.0004	ppb	2147.20	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0741	ppb	25.93	1.00	
120 Sn	0.0668	ppb	12.09	1.00	
121 Sb	0.0176	ppb	34.18	1.00	
123 Sb	0.012	ppb	72.48	1.00	
135 Ba	-0.0061	ppb	144.53	1.00	
137 Ba	0.0007	ppb	1038.80	1.00	
182 W	0.1051	ppb	2.10	1.00	
203 Tl	0.0037	ppb	31.03	1.00	
205 Tl	0.0072	ppb	17.94	1.00	
208 Pb	0.0023	ppb	273.61	1.00	
232 Th	0.0663	ppb	30.28	1.00	
238 U	0.0025	ppb	39.69	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3136180.30	0.33	3052150.50	102.8	79.5 - 120	
45 Sc	2497878.80	1.05	2505808.30	99.7	79.5 - 120	
72 Ge	526036.25	0.23	528327.81	99.6	79.5 - 120	
159 Tb	4929803.00	1.13	4805871.00	102.6	79.5 - 120	
209 Bi	2954819.30	0.35	2881081.50	102.6	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000681

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\038SMPL.D\038SMPL.D#
Date Acquired: Jul 3 2014 06:53 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4401-017
Misc Info: DILUTION 1.6/8
Vial Number: 2111
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0778	0.0156	ppb	10.23	100.	
11 B	6.12	1.224	ppb	9.24	1000.	
23 Na	6,735.	1,347.	ppb	0.88	200000.	
25 Mg	915.	183.	ppb	0.96	200000.	
27 Al	142.8	28.56	ppb	1.59	200000.	
28 Si	2,069.	413.8	ppb	7.80	#VALUE!	
29 Si	-922.5	-184.5	ppb	109.49	10000.	LOW
39 K	135.05	27.01	ppb	7.32	200000.	
43 Ca	1,136.	227.2	ppb	3.07	#VALUE!	
44 Ca	1,104.	220.8	ppb	1.38	200000.	
51 V	0.7755	0.1551	ppb	47.96	1000.	
52 Cr	1.3845	0.2769	ppb	4.34	1000.	
53 Cr	38.665	7.733	ppb	3.67	#VALUE!	
55 Mn	25.97	5.194	ppb	0.89	1000.	
56 Fe	68.55	13.71	ppb	14.46	#VALUE!	
57 Fe	15.635	3.127	ppb	15.70	100000.	
59 Co	0.9615	0.1923	ppb	5.76	1000.	
60 Ni	2.04	0.408	ppb	4.58	1000.	
63 Cu	1.2225	0.2445	ppb	4.52	#VALUE!	
65 Cu	1.012	0.2024	ppb	15.78	1000.	
66 Zn	5.02	1.004	ppb	5.79	1000.	
68 Zn	-1.2645	-0.2529	ppb	88.53	#VALUE!	
75 As	-0.1137	-0.0227	ppb	279.50	1000.	
82 Se	-0.8305	-0.1661	ppb	100.84	1000.	
88 Sr	10.945	2.189	ppb	2.25	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.2728	0.0546	ppb	2.23	1000.	
107 Ag	0.0136	0.0027	ppb	42.24	500.	
109 Ag	-0.006	-0.0012	ppb	73.61	#VALUE!	
111 Cd	-0.4376	-0.0875	ppb	19.89	#VALUE!	
114 Cd	0.089	0.0178	ppb	38.20	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.3897	0.0779	ppb	8.34	1000.	
120 Sn	0.3894	0.0779	ppb	15.49	#VALUE!	
121 Sb	0.0881	0.0176	ppb	14.42	#VALUE!	
123 Sb	0.0778	0.0156	ppb	46.07	1000.	
135 Ba	7.425	1.485	ppb	6.78	1000.	
137 Ba	7.11	1.422	ppb	1.46	#VALUE!	
182 W	0.2308	0.0462	ppb	---	#VALUE!	
203 Tl	0.0276	0.0055	ppb	28.80	1000.	
205 Tl	0.019	0.0038	ppb	89.81	#VALUE!	
208 Pb	0.0526	0.0105	ppb	15.30	1000.	
232 Th	0.6965	0.1393	ppb	32.36	1000.	
238 U	0.0203	0.0041	ppb	49.99	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3105428.50	0.77	3052150.50	101.7	69.5 - 130	
45 Sc	2438806.00	0.72	2505808.30	97.3	69.5 - 130	
72 Ge	514291.53	0.34	528327.81	97.3	69.5 - 130	
159 Tb	4683210.50	0.55	4805871.00	97.4	69.5 - 130	
209 Bi	2799081.50	0.44	2881081.50	97.2	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000682

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\039SMPL.D\039SMPL.D#
Date Acquired: Jul 3 2014 06:57 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4401-018
Misc Info: DILUTION 1.6/8
Vial Number: 2112
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0045	0.0009	ppb	22.68	100.	
11 B	9.16	1.832	ppb	1.45	1000.	
23 Na	7,465.	1,493.	ppb	2.28	200000.	
25 Mg	8,405.	1,681.	ppb	4.07	200000.	
27 Al	16.605	3.321	ppb	4.32	200000.	
28 Si	4,928.5	985.7	ppb	6.32	#VALUE!	
29 Si	1,793.5	358.7	ppb	69.47	10000.	
39 K	1,431.	286.2	ppb	3.51	200000.	
43 Ca	38,470.	7,694.	ppb	3.21	#VALUE!	
44 Ca	38,855.	7,771.	ppb	2.17	200000.	
51 V	0.729	0.1458	ppb	19.07	1000.	
52 Cr	0.8825	0.1765	ppb	4.65	1000.	
53 Cr	38.445	7.689	ppb	3.00	#VALUE!	
55 Mn	219.35	43.87	ppb	1.64	1000.	
56 Fe	49.975	9.995	ppb	21.62	#VALUE!	
57 Fe	95.45	19.09	ppb	14.65	100000.	
59 Co	0.9965	0.1993	ppb	4.88	1000.	
60 Ni	0.8485	0.1697	ppb	2.05	1000.	
63 Cu	0.6565	0.1313	ppb	4.43	#VALUE!	
65 Cu	0.61	0.122	ppb	18.84	1000.	
66 Zn	6.235	1.247	ppb	7.55	1000.	
68 Zn	0.042	0.0084	ppb	7624.80	#VALUE!	
75 As	2.6245	0.5249	ppb	35.15	1000.	
82 Se	-0.0011	-0.0002	ppb	26712.00	1000.	
88 Sr	104.5	20.9	ppb	1.85	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.3821	0.0764	ppb	7.58	1000.	
107 Ag	0.0162	0.0032	ppb	65.39	500.	
109 Ag	0.0006	0.0001	ppb	237.59	#VALUE!	
111 Cd	-0.3584	-0.0717	ppb	22.89	#VALUE!	
114 Cd	0.0519	0.0104	ppb	45.93	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.3509	0.0702	ppb	11.07	1000.	
120 Sn	0.3335	0.0667	ppb	23.87	#VALUE!	
121 Sb	0.1113	0.0223	ppb	14.72	#VALUE!	
123 Sb	0.1029	0.0206	ppb	21.28	1000.	
135 Ba	7.19	1.438	ppb	2.69	1000.	
137 Ba	7.755	1.551	ppb	3.36	#VALUE!	
182 W	0.1613	0.0323	ppb	---	#VALUE!	
203 Tl	0.0247	0.0049	ppb	67.79	1000.	
205 Tl	0.0088	0.0018	ppb	34.09	#VALUE!	
208 Pb	0.1031	0.0206	ppb	33.46	1000.	
232 Th	0.2759	0.0552	ppb	4.61	1000.	
238 U	0.8895	0.1779	ppb	3.06	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3150440.80	1.34	3052150.50	103.2	69.5 - 130	
45 Sc	2465931.00	1.76	2505808.30	98.4	69.5 - 130	
72 Ge	516043.53	0.94	528327.81	97.7	69.5 - 130	
159 Tb	4785583.50	1.24	4805871.00	99.6	69.5 - 130	
209 Bi	2818483.30	0.88	2881081.50	97.8	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000683

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\040SMPL.D\040SMPL.D#
Date Acquired: Jul 3 2014 07:00 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: PBWHF23IMW2
Misc Info: DILUTION 1.6/8
Vial Number: 2201
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0088	0.0018	ppb	46.24	100.	
11 B	0.7115	0.1423	ppb	63.57	1000.	
23 Na	30.495	6.099	ppb	4.76	200000.	
25 Mg	6.65	1.33	ppb	1.50	200000.	
27 Al	6.645	1.329	ppb	12.30	200000.	
28 Si	-346.3	-69.26	ppb	20.33	#VALUE!	
29 Si	-2,625.5	-525.1	ppb	35.35	10000.	LOW
39 K	-24.455	-4.891	ppb	59.37	200000.	
43 Ca	10.395	2.079	ppb	399.90	#VALUE!	
44 Ca	16.915	3.383	ppb	52.00	200000.	
51 V	0.872	0.1744	ppb	63.19	1000.	
52 Cr	1.3275	0.2655	ppb	3.94	1000.	
53 Cr	54.8	10.96	ppb	1.69	#VALUE!	
55 Mn	0.4271	0.0854	ppb	5.16	1000.	
56 Fe	35.985	7.197	ppb	15.33	#VALUE!	
57 Fe	-20.13	-4.026	ppb	37.13	100000.	
59 Co	-0.0038	-0.0008	ppb	389.64	1000.	
60 Ni	0.0741	0.0148	ppb	21.48	1000.	
63 Cu	0.3594	0.0719	ppb	10.12	#VALUE!	
65 Cu	0.385	0.077	ppb	16.95	1000.	
66 Zn	1.2705	0.2541	ppb	16.12	1000.	
68 Zn	-5.045	-1.009	ppb	5.55	#VALUE!	
75 As	0.0742	0.0148	ppb	1225.70	1000.	
82 Se	-0.3608	-0.0722	ppb	118.30	1000.	
88 Sr	0.0419	0.0084	ppb	30.30	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.1015	0.0203	ppb	37.61	1000.	
107 Ag	0.0018	0.0004	ppb	429.62	500.	
109 Ag	0.0038	0.0008	ppb	409.99	#VALUE!	
111 Cd	-0.5685	-0.1137	ppb	27.39	#VALUE!	
114 Cd	0.0351	0.007	ppb	60.91	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.2307	0.0461	ppb	13.05	1000.	
120 Sn	0.1916	0.0383	ppb	21.87	#VALUE!	
121 Sb	0.0336	0.0067	ppb	41.39	#VALUE!	
123 Sb	0.0178	0.0036	ppb	71.63	1000.	
135 Ba	1.5435	0.3087	ppb	32.19	1000.	
137 Ba	1.7445	0.3489	ppb	12.24	#VALUE!	
182 W	0.0776	0.0155	ppb ---		#VALUE!	
203 Tl	0.0045	0.0009	ppb	185.33	1000.	
205 Tl	-0.0078	-0.0016	ppb	63.21	#VALUE!	
208 Pb	0.0263	0.0053	ppb	49.16	1000.	
232 Th	0.078	0.0156	ppb	9.35	1000.	
238 U	-0.0024	-0.0005	ppb	48.67	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3128051.80	1.92	3052150.50	102.5	69.5 - 130	
45 Sc	2428112.00	1.07	2505808.30	96.9	69.5 - 130	
72 Ge	509600.69	0.60	528327.81	96.5	69.5 - 130	
159 Tb	4696368.00	0.74	4805871.00	97.7	69.5 - 130	
209 Bi	2818833.50	0.67	2881081.50	97.8	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000684

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\041SMPL.D\041SMPL.D#
Date Acquired: Jul 3 2014 07:03 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: LCSWHF23IMW2
Misc Info: DILUTION 1.6/8
Vial Number: 2202
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	46.74	9.348	ppb	1.83	100.	
11 B	492.4	98.48	ppb	1.16	1000.	
23 Na	7,480.	1,496.	ppb	1.35	200000.	
25 Mg	5,235.	1,047.	ppb	0.55	200000.	
27 Al	2,084.5	416.9	ppb	0.57	200000.	
28 Si	4,326.	865.2	ppb	4.85	#VALUE!	
29 Si	2,073.	414.6	ppb	43.71	10000.	
39 K	10,075.	2,015.	ppb	1.10	200000.	
43 Ca	2,859.5	571.9	ppb	2.65	#VALUE!	
44 Ca	2,167.5	433.5	ppb	0.13	200000.	
51 V	516.	103.2	ppb	0.54	1000.	
52 Cr	201.55	40.31	ppb	0.84	1000.	
53 Cr	258.65	51.73	ppb	1.84	#VALUE!	
55 Mn	526.5	105.3	ppb	0.83	1000.	
56 Fe	1,104.5	220.9	ppb	1.15	#VALUE!	
57 Fe	988.	197.6	ppb	2.73	100000.	
59 Co	515.	103.	ppb	0.79	1000.	
60 Ni	522.	104.4	ppb	0.57	1000.	
63 Cu	258.25	51.65	ppb	0.88	#VALUE!	
65 Cu	256.3	51.26	ppb	0.69	1000.	
66 Zn	505.5	101.1	ppb	1.05	1000.	
68 Zn	552.	110.4	ppb	0.69	#VALUE!	
75 As	100.25	20.05	ppb	1.02	1000.	
82 Se	102.2	20.44	ppb	1.77	1000.	
88 Sr	539.5	107.9	ppb	1.07	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	314.7	62.94	ppb	0.77	1000.	
107 Ag	50.95	10.19	ppb	0.45	500.	
109 Ag	50.55	10.11	ppb	1.02	#VALUE!	
111 Cd	251.3	50.26	ppb	0.50	#VALUE!	
114 Cd	251.75	50.35	ppb	0.37	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	522.	104.4	ppb	1.00	1000.	
120 Sn	520.5	104.1	ppb	0.64	#VALUE!	
121 Sb	98.5	19.7	ppb	1.51	#VALUE!	
123 Sb	98.8	19.76	ppb	1.40	1000.	
135 Ba	1,982.5	396.5	ppb	1.16	1000.	
137 Ba	2,008.5	401.7	ppb	1.31	#VALUE!	
182 W	110.6	22.12	ppb ---		#VALUE!	
203 Tl	98.8	19.76	ppb	0.76	1000.	
205 Tl	97.6	19.52	ppb	0.26	#VALUE!	
208 Pb	102.45	20.49	ppb	0.24	1000.	
232 Th	0.3767	0.0753	ppb	16.03	1000.	
238 U	98.45	19.69	ppb	1.00	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3173221.50	0.34	3052150.50	104.0	69.5 - 130	
45 Sc	2435710.80	0.38	2505808.30	97.2	69.5 - 130	
72 Ge	506309.03	0.54	528327.81	95.8	69.5 - 130	
159 Tb	4732506.00	0.94	4805871.00	98.5	69.5 - 130	
209 Bi	2791160.00	0.86	2881081.50	96.9	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000685

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\042SMPL.D\042SMPL.D#
Date Acquired: Jul 3 2014 07:06 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4401-019
Misc Info: DILUTION 1.6/8
Vial Number: 2203
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0054	0.0011	ppb	149.91	100.	
11 B	15.49	3.098	ppb	5.13	1000.	
23 Na	7,665.	1,533.	ppb	2.37	200000.	
25 Mg	8,630.	1,726.	ppb	1.39	200000.	
27 Al	10.58	2.116	ppb	1.80	200000.	
28 Si	5,390.	1,078.	ppb	2.82	#VALUE!	
29 Si	3,372.	674.4	ppb	18.24	10000.	
39 K	1,519.5	303.9	ppb	1.69	200000.	
43 Ca	39,735.	7,947.	ppb	0.97	#VALUE!	
44 Ca	39,790.	7,958.	ppb	1.83	200000.	
51 V	0.9915	0.1983	ppb	4.28	1000.	
52 Cr	2.0835	0.4167	ppb	5.42	1000.	
53 Cr	54.4	10.88	ppb	1.90	#VALUE!	
55 Mn	226.35	45.27	ppb	1.59	1000.	
56 Fe	50.75	10.15	ppb	7.46	#VALUE!	
57 Fe	101.9	20.38	ppb	2.18	100000.	
59 Co	1.0655	0.2131	ppb	7.28	1000.	
60 Ni	1.8965	0.3793	ppb	9.74	1000.	
63 Cu	1.0335	0.2067	ppb	5.72	#VALUE!	
65 Cu	1.021	0.2042	ppb	1.09	1000.	
66 Zn	1.3825	0.2765	ppb	16.76	1000.	
68 Zn	-2.6325	-0.5265	ppb	59.66	#VALUE!	
75 As	1.872	0.3744	ppb	18.62	1000.	
82 Se	-0.4026	-0.0805	ppb	130.92	1000.	
88 Sr	106.45	21.29	ppb	2.36	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.731	0.1462	ppb	6.87	1000.	
107 Ag	0.0073	0.0015	ppb	50.21	500.	
109 Ag	0.	0.	ppb	4125.50	#VALUE!	
111 Cd	-0.4332	-0.0866	ppb	20.28	#VALUE!	
114 Cd	0.0422	0.0084	ppb	47.14	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.6705	0.1341	ppb	17.55	1000.	
120 Sn	0.584	0.1168	ppb	19.91	#VALUE!	
121 Sb	0.1465	0.0293	ppb	13.50	#VALUE!	
123 Sb	0.1524	0.0305	ppb	14.80	1000.	
135 Ba	7.535	1.507	ppb	3.07	1000.	
137 Ba	7.315	1.463	ppb	1.94	#VALUE!	
182 W	0.3215	0.0643	ppb	---	#VALUE!	
203 Tl	0.4276	0.0855	ppb	4.55	1000.	
205 Tl	0.3836	0.0767	ppb	1.21	#VALUE!	
208 Pb	0.0869	0.0174	ppb	19.62	1000.	
232 Th	0.042	0.0084	ppb	23.12	1000.	
238 U	0.93	0.186	ppb	5.51	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3123652.30	2.38	3052150.50	102.3	69.5 - 130	
45 Sc	2427718.00	1.29	2505808.30	96.9	69.5 - 130	
72 Ge	511123.69	1.68	528327.81	96.7	69.5 - 130	
159 Tb	4683305.50	2.35	4805871.00	97.4	69.5 - 130	
209 Bi	2794407.00	1.29	2881081.50	97.0	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000686

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\043SMPL.D\043SMPL.D#
Date Acquired: Jul 3 2014 07:10 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4401-019L
Misc Info: DILUTION 0.4/10
Vial Number: 2204
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0165	0.0007	ppb	37.27	100.	
11 B	16.455	0.6582	ppb	21.62	1000.	
23 Na	7,967.5	318.7	ppb	5.37	200000.	
25 Mg	8,335.	333.4	ppb	1.24	200000.	
27 Al	26.35	1.054	ppb	11.76	200000.	
28 Si	4,775.	191.	ppb	12.35	#VALUE!	
29 Si	-6,595.	-263.8	ppb	89.61	10000.	LOW
39 K	1,399.	55.96	ppb	4.74	200000.	
43 Ca	39,650.	1,586.	ppb	3.16	#VALUE!	
44 Ca	39,000.	1,560.	ppb	1.56	200000.	
51 V	1.0425	0.0417	ppb	117.27	1000.	
52 Cr	2.9675	0.1187	ppb	5.74	1000.	
53 Cr	72.	2.88	ppb	1.73	#VALUE!	
55 Mn	226.35	9.054	ppb	0.87	1000.	
56 Fe	94.6	3.784	ppb	33.54	#VALUE!	
57 Fe	-94.625	-3.785	ppb	146.18	100000.	
59 Co	1.094	0.0438	ppb	5.94	1000.	
60 Ni	1.9608	0.0784	ppb	15.63	1000.	
63 Cu	1.239	0.0496	ppb	37.55	#VALUE!	
65 Cu	1.3418	0.0537	ppb	25.79	1000.	
66 Zn	2.81	0.1124	ppb	49.18	1000.	
68 Zn	-30.25	-1.21	ppb	14.62	#VALUE!	
75 As	3.3475	0.1339	ppb	39.48	1000.	
82 Se	-0.8133	-0.0325	ppb	547.19	1000.	
88 Sr	107.6	4.304	ppb	1.47	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	1.09	0.0436	ppb	14.49	1000.	
107 Ag	0.0452	0.0018	ppb	98.67	500.	
109 Ag	-0.0269	-0.0011	ppb	251.44	#VALUE!	
111 Cd	-1.9428	-0.0777	ppb	72.36	#VALUE!	
114 Cd	0.0933	0.0037	ppb	20.66	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.6278	0.0251	ppb	26.40	1000.	
120 Sn	0.6293	0.0252	ppb	8.68	#VALUE!	
121 Sb	0.2007	0.008	ppb	45.47	#VALUE!	
123 Sb	0.0793	0.0032	ppb	177.64	1000.	
135 Ba	15.12	0.6048	ppb	5.51	1000.	
137 Ba	13.915	0.5566	ppb	0.43	#VALUE!	
182 W	0.669	0.0268	ppb	---	#VALUE!	
203 Tl	0.3793	0.0152	ppb	20.36	1000.	
205 Tl	0.4043	0.0162	ppb	4.77	#VALUE!	
208 Pb	0.1826	0.0073	ppb	41.15	1000.	
232 Th	0.0412	0.0016	ppb	35.16	1000.	
238 U	0.9553	0.0382	ppb	3.24	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3111110.80	0.45	3052150.50	101.9	69.5 - 130	
45 Sc	2490131.30	1.87	2505808.30	99.4	69.5 - 130	
72 Ge	525016.19	1.65	528327.81	99.4	69.5 - 130	
159 Tb	4846621.50	1.50	4805871.00	100.8	69.5 - 130	
209 Bi	2924986.30	1.60	2881081.50	101.5	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000687

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\044SMPL.D\044SMPL.D#
Date Acquired: Jul 3 2014 07:13 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4401-019A
Misc Info: DILUTION 1.6/8
Vial Number: 2205
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	9.7	1.94	ppb	1.17	100.	
11 B	203.7	40.74	ppb	1.17	1000.	
23 Na	17,595.	3,519.	ppb	1.01	200000.	
25 Mg	9,390.	1,878.	ppb	0.80	200000.	
27 Al	2,910.5	582.1	ppb	1.31	200000.	
28 Si	9,500.	1,900.	ppb	0.47	#VALUE!	
29 Si	7,725.	1,545.	ppb	6.69	10000.	
39 K	11,205.	2,241.	ppb	0.81	200000.	
43 Ca	40,225.	8,045.	ppb	0.85	#VALUE!	
44 Ca	39,875.	7,975.	ppb	0.50	200000.	
51 V	48.335	9.667	ppb	2.10	1000.	
52 Cr	51.2	10.24	ppb	0.73	1000.	
53 Cr	107.7	21.54	ppb	1.20	#VALUE!	
55 Mn	243.05	48.61	ppb	0.32	1000.	
56 Fe	1,027.	205.4	ppb	0.87	#VALUE!	
57 Fe	1,071.5	214.3	ppb	0.96	100000.	
59 Co	10.895	2.179	ppb	1.42	1000.	
60 Ni	20.72	4.144	ppb	0.51	1000.	
63 Cu	31.195	6.239	ppb	0.45	#VALUE!	
65 Cu	30.725	6.145	ppb	0.75	1000.	
66 Zn	94.75	18.95	ppb	0.40	1000.	
68 Zn	92.3	18.46	ppb	1.70	#VALUE!	
75 As	49.495	9.899	ppb	1.47	1000.	
82 Se	48.07	9.614	ppb	2.21	1000.	
88 Sr	151.25	30.25	ppb	0.61	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	48.105	9.621	ppb	0.83	1000.	
107 Ag	9.69	1.938	ppb	3.68	500.	
109 Ag	9.665	1.933	ppb	0.22	#VALUE!	
111 Cd	9.015	1.803	ppb	2.99	#VALUE!	
114 Cd	9.51	1.902	ppb	0.99	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	48.	9.6	ppb	1.44	1000.	
120 Sn	47.445	9.489	ppb	1.23	#VALUE!	
121 Sb	9.865	1.973	ppb	5.28	#VALUE!	
123 Sb	9.92	1.984	ppb	1.09	1000.	
135 Ba	28.6	5.72	ppb	0.47	1000.	
137 Ba	28.985	5.797	ppb	1.64	#VALUE!	
182 W	49.79	9.958	ppb ---		#VALUE!	
203 Tl	10.09	2.018	ppb	1.51	1000.	
205 Tl	10.055	2.011	ppb	0.56	#VALUE!	
208 Pb	9.675	1.935	ppb	2.19	1000.	
232 Th	9.035	1.807	ppb	3.95	1000.	
238 U	10.48	2.096	ppb	0.96	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3070689.80	1.53	3052150.50	100.6	69.5 - 130	
45 Sc	2433236.80	0.52	2505808.30	97.1	69.5 - 130	
72 Ge	508228.09	0.51	528327.81	96.2	69.5 - 130	
159 Tb	4650670.00	0.71	4805871.00	96.8	69.5 - 130	
209 Bi	2779150.30	0.54	2881081.50	96.5	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000688

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\045SMPL.D\045SMPL.D#
Date Acquired: Jul 3 2014 07:16 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4401-019S
Misc Info: DILUTION 1.6/8
Vial Number: 2206
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	47.11	9.422	ppb	1.22	100.	
11 B	475.1	95.02	ppb	1.25	1000.	
23 Na	14,450.	2,890.	ppb	1.47	200000.	
25 Mg	13,130.	2,626.	ppb	0.91	200000.	
27 Al	2,018.5	403.7	ppb	0.98	200000.	
28 Si	9,055.	1,811.	ppb	1.64	#VALUE!	
29 Si	6,925.	1,385.	ppb	12.53	10000.	
39 K	11,300.	2,260.	ppb	0.48	200000.	
43 Ca	38,760.	7,752.	ppb	0.14	#VALUE!	
44 Ca	38,535.	7,707.	ppb	0.48	200000.	
51 V	506.	101.2	ppb	1.93	1000.	
52 Cr	196.35	39.27	ppb	0.98	1000.	
53 Cr	250.	50.	ppb	1.46	#VALUE!	
55 Mn	708.	141.6	ppb	0.51	1000.	
56 Fe	1,080.5	216.1	ppb	2.02	#VALUE!	
57 Fe	1,086.5	217.3	ppb	0.75	100000.	
59 Co	495.95	99.19	ppb	0.79	1000.	
60 Ni	501.	100.2	ppb	1.21	1000.	
63 Cu	246.7	49.34	ppb	0.85	#VALUE!	
65 Cu	246.7	49.34	ppb	0.38	1000.	
66 Zn	487.55	97.51	ppb	0.57	1000.	
68 Zn	534.5	106.9	ppb	1.74	#VALUE!	
75 As	99.1	19.82	ppb	0.75	1000.	
82 Se	99.4	19.88	ppb	1.19	1000.	
88 Sr	601.	120.2	ppb	1.26	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	295.25	59.05	ppb	0.79	1000.	
107 Ag	49.04	9.808	ppb	1.88	500.	
109 Ag	48.82	9.764	ppb	0.96	#VALUE!	
111 Cd	242.4	48.48	ppb	0.60	#VALUE!	
114 Cd	242.55	48.51	ppb	0.30	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	489.5	97.9	ppb	0.96	1000.	
120 Sn	489.15	97.83	ppb	0.99	#VALUE!	
121 Sb	97.1	19.42	ppb	0.95	#VALUE!	
123 Sb	98.1	19.62	ppb	0.33	1000.	
135 Ba	1,927.5	385.5	ppb	0.84	1000.	
137 Ba	1,954.	390.8	ppb	0.80	#VALUE!	
182 W	103.4	20.68	ppb	---	#VALUE!	
203 Tl	94.9	18.98	ppb	0.62	1000.	
205 Tl	94.1	18.82	ppb	0.43	#VALUE!	
208 Pb	98.8	19.76	ppb	0.93	1000.	
232 Th	0.4394	0.0879	ppb	18.15	1000.	
238 U	91.3	18.26	ppb	0.50	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3162489.50	1.17	3052150.50	103.6	69.5 - 130	
45 Sc	2435060.00	0.37	2505808.30	97.2	69.5 - 130	
72 Ge	505852.56	0.84	528327.81	95.7	69.5 - 130	
159 Tb	4686882.00	0.88	4805871.00	97.5	69.5 - 130	
209 Bi	2796081.80	0.21	2881081.50	97.0	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000689

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\046SMPL.D\046SMPL.D#
Date Acquired: Jul 3 2014 07:20 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4401-019P
Misc Info: DILUTION 1.6/8
Vial Number: 2207
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	48.075	9.615	ppb	0.25	100.	
11 B	487.1	97.42	ppb	2.95	1000.	
23 Na	14,560.	2,912.	ppb	1.45	200000.	
25 Mg	13,355.	2,671.	ppb	1.10	200000.	
27 Al	2,068.	413.6	ppb	1.51	200000.	
28 Si	9,390.	1,878.	ppb	0.72	#VALUE!	
29 Si	7,765.	1,553.	ppb	3.69	10000.	
39 K	11,315.	2,263.	ppb	0.72	200000.	
43 Ca	40,510.	8,102.	ppb	0.42	#VALUE!	
44 Ca	39,905.	7,981.	ppb	0.28	200000.	
51 V	511.	102.2	ppb	0.43	1000.	
52 Cr	198.25	39.65	ppb	0.98	1000.	
53 Cr	244.05	48.81	ppb	0.86	#VALUE!	
55 Mn	730.5	146.1	ppb	0.46	1000.	
56 Fe	1,086.	217.2	ppb	1.27	#VALUE!	
57 Fe	1,095.	219.	ppb	2.02	100000.	
59 Co	501.5	100.3	ppb	0.60	1000.	
60 Ni	509.	101.8	ppb	0.67	1000.	
63 Cu	250.	50.	ppb	1.17	#VALUE!	
65 Cu	251.35	50.27	ppb	0.78	1000.	
66 Zn	501.5	100.3	ppb	0.31	1000.	
68 Zn	550.5	110.1	ppb	0.98	#VALUE!	
75 As	101.5	20.3	ppb	2.29	1000.	
82 Se	102.4	20.48	ppb	1.35	1000.	
88 Sr	609.5	121.9	ppb	0.98	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	300.05	60.01	ppb	0.54	1000.	
107 Ag	49.72	9.944	ppb	0.56	500.	
109 Ag	49.92	9.984	ppb	1.49	#VALUE!	
111 Cd	245.5	49.1	ppb	0.53	#VALUE!	
114 Cd	245.6	49.12	ppb	0.83	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	497.25	99.45	ppb	0.62	1000.	
120 Sn	497.85	99.57	ppb	1.14	#VALUE!	
121 Sb	98.3	19.66	ppb	0.89	#VALUE!	
123 Sb	98.35	19.67	ppb	2.20	1000.	
135 Ba	1,968.5	393.7	ppb	0.52	1000.	
137 Ba	1,983.	396.6	ppb	0.76	#VALUE!	
182 W	105.7	21.14	ppb ---		#VALUE!	
203 Tl	96.15	19.23	ppb	0.70	1000.	
205 Tl	96.15	19.23	ppb	0.86	#VALUE!	
208 Pb	100.5	20.1	ppb	0.66	1000.	
232 Th	0.1941	0.0388	ppb	10.20	1000.	
238 U	93.75	18.75	ppb	0.44	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3127173.50	0.90	3052150.50	102.5	69.5 - 130	
45 Sc	2439609.30	0.29	2505808.30	97.4	69.5 - 130	
72 Ge	507236.34	0.54	528327.81	96.0	69.5 - 130	
159 Tb	4702261.50	0.42	4805871.00	97.8	69.5 - 130	
209 Bi	2787036.80	0.77	2881081.50	96.7	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000690

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\047SMPL.D\047SMPL.D#
Date Acquired: Jul 3 2014 07:23 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4401-020
Misc Info: DILUTION 1.6/8
Vial Number: 2208
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0645	0.0129	ppb	21.86	100.	
11 B	17.215	3.443	ppb	12.10	1000.	
23 Na	6,235.	1,247.	ppb	1.00	200000.	
25 Mg	2,412.5	482.5	ppb	0.62	200000.	
27 Al	290.05	58.01	ppb	0.62	200000.	
28 Si	2,939.5	587.9	ppb	1.70	#VALUE!	
29 Si	527.5	105.5	ppb	80.18	10000.	
39 K	914.5	182.9	ppb	0.92	200000.	
43 Ca	7,100.	1,420.	ppb	1.23	#VALUE!	
44 Ca	6,880.	1,376.	ppb	1.14	200000.	
51 V	1.386	0.2772	ppb	40.84	1000.	
52 Cr	2.177	0.4354	ppb	3.37	1000.	
53 Cr	52.75	10.55	ppb	4.09	#VALUE!	
55 Mn	76.75	15.35	ppb	1.19	1000.	
56 Fe	948.5	189.7	ppb	0.80	#VALUE!	
57 Fe	887.5	177.5	ppb	1.64	100000.	
59 Co	0.2802	0.056	ppb	6.90	1000.	
60 Ni	0.708	0.1416	ppb	1.92	1000.	
63 Cu	1.2275	0.2455	ppb	2.97	#VALUE!	
65 Cu	1.08	0.216	ppb	9.89	1000.	
66 Zn	2.873	0.5746	ppb	8.58	1000.	
68 Zn	-1.661	-0.3322	ppb	58.34	#VALUE!	
75 As	-0.2337	-0.0467	ppb	382.76	1000.	
82 Se	-0.4301	-0.086	ppb	75.22	1000.	
88 Sr	35.915	7.183	ppb	2.69	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.642	0.1284	ppb	6.15	1000.	
107 Ag	0.0157	0.0031	ppb	70.22	500.	
109 Ag	0.0038	0.0008	ppb	154.44	#VALUE!	
111 Cd	-0.3937	-0.0787	ppb	23.81	#VALUE!	
114 Cd	0.0635	0.0127	ppb	31.31	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.7825	0.1565	ppb	12.15	1000.	
120 Sn	0.7655	0.1531	ppb	17.48	#VALUE!	
121 Sb	0.1258	0.0252	ppb	22.59	#VALUE!	
123 Sb	0.0963	0.0193	ppb	14.46	1000.	
135 Ba	6.44	1.288	ppb	6.23	1000.	
137 Ba	6.565	1.313	ppb	2.02	#VALUE!	
182 W	0.3114	0.0623	ppb	---	#VALUE!	
203 Tl	0.1311	0.0262	ppb	15.28	1000.	
205 Tl	0.1261	0.0252	ppb	15.47	#VALUE!	
208 Pb	0.3639	0.0728	ppb	23.14	1000.	
232 Th	0.2435	0.0487	ppb	12.85	1000.	
238 U	0.1331	0.0266	ppb	9.02	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3108297.80	0.51	3052150.50	101.8	69.5 - 130	
45 Sc	2448108.30	0.60	2505808.30	97.7	69.5 - 130	
72 Ge	510476.13	0.97	528327.81	96.6	69.5 - 130	
159 Tb	4733620.00	1.23	4805871.00	98.5	69.5 - 130	
209 Bi	2828412.50	0.57	2881081.50	98.2	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000691

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\048_CCV.D\048_CCV.D#
Date Acquired: Jul 3 2014 07:26 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	23.89	ppb	3.16	25	95.56	
11 B	24.34	ppb	2.01	25	97.36	
23 Na	5,033.	ppb	0.37	5,000	100.66	
25 Mg	5,166.	ppb	0.94	5,000	103.32	
27 Al	513.5	ppb	0.79	500	102.7	
28 Si	469.6	ppb	1.15	500	93.92	
29 Si	400.8	ppb	29.82	500	80.16	Fail
39 K	4,978.	ppb	0.34	5,000	99.56	
43 Ca	5,004.	ppb	1.23	5,000	100.08	
44 Ca	5,051.	ppb	0.65	5,000	101.02	
51 V	25.34	ppb	0.74	25	101.36	
52 Cr	25.2	ppb	1.37	25	100.8	
53 Cr	25.39	ppb	4.75	25	101.56	
55 Mn	25.27	ppb	2.16	25	101.08	
56 Fe	5,067.	ppb	1.77	5,000	101.34	
57 Fe	5,102.	ppb	1.65	5,000	102.04	
59 Co	25.17	ppb	0.97	25	100.68	
60 Ni	25.14	ppb	1.19	25	100.56	
63 Cu	25.44	ppb	1.62	25	101.76	
65 Cu	25.12	ppb	1.90	25	100.48	
66 Zn	25.13	ppb	1.46	25	100.52	
68 Zn	24.67	ppb	1.78	25	98.68	
75 As	24.72	ppb	1.97	25	98.88	
82 Se	25.27	ppb	2.07	25	101.08	
88 Sr	25.04	ppb	1.76	25	100.16	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	25.09	ppb	1.00	25	100.36	
107 Ag	25.37	ppb	1.63	25	101.48	
109 Ag	25.36	ppb	1.33	25	101.44	
111 Cd	25.01	ppb	1.93	25	100.04	
114 Cd	25.14	ppb	1.41	25	100.56	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.04	ppb	1.51	25	100.16	
120 Sn	24.83	ppb	1.99	25	99.32	
121 Sb	24.87	ppb	1.25	25	99.48	
123 Sb	24.92	ppb	2.06	25	99.68	
135 Ba	25.15	ppb	3.19	25	100.6	
137 Ba	25.37	ppb	2.64	25	101.48	
182 W	25.17	ppb	2.28	25	100.68	
203 Tl	24.76	ppb	2.74	25	99.04	
205 Tl	24.78	ppb	1.38	25	99.12	
208 Pb	24.81	ppb	1.86	25	99.24	
232 Th	24.38	ppb	1.12	25	97.52	
238 U	24.32	ppb	2.67	25	97.28	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3024369.00	1.85	3052150.50	99.1	80 - 120.4	
45 Sc	2431380.50	0.78	2505808.30	97.0	80 - 120.4	
72 Ge	511415.88	0.70	528327.81	96.8	80 - 120.4	
159 Tb	4750327.50	1.16	4805871.00	98.8	80 - 120.4	
209 Bi	2846995.50	0.49	2881081.50	98.8	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000692

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\049_CCB.D\049_CCB.D#
Date Acquired: Jul 3 2014 07:30 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0017	ppb	44.32	1.00	
11 B	0.4213	ppb	38.26	1.00	
23 Na	0.2653	ppb	93.10	1.00	
25 Mg	0.1263	ppb	35.27	1.00	
27 Al	-0.0519	ppb	109.34	1.00	
28 Si	-12.28	ppb	492.26	1.00	
29 Si	-282.1	ppb	43.39	1.00	
39 K	-1.164	ppb	117.61	1.00	
43 Ca	-2.481	ppb	160.10	1.00	
44 Ca	-1.126	ppb	153.37	1.00	
51 V	-0.0431	ppb	101.37	1.00	
52 Cr	0.019	ppb	89.12	1.00	
53 Cr	0.5887	ppb	35.57	1.00	
55 Mn	0.0107	ppb	101.69	1.00	
56 Fe	5.027	ppb	21.19	1.00	
57 Fe	-2.837	ppb	82.69	1.00	
59 Co	0.0035	ppb	95.94	1.00	
60 Ni	-0.0046	ppb	96.22	1.00	
63 Cu	0.0054	ppb	163.12	1.00	
65 Cu	0.0049	ppb	342.73	1.00	
66 Zn	-0.0211	ppb	137.59	1.00	
68 Zn	-0.4627	ppb	31.27	1.00	
75 As	-0.1462	ppb	122.57	1.00	
82 Se	-0.0404	ppb	219.92	1.00	
88 Sr	0.0039	ppb	105.46	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0615	ppb	3.79	1.00	
107 Ag	0.0034	ppb	88.78	1.00	
109 Ag	-0.0002	ppb	611.76	1.00	
111 Cd	-0.0436	ppb	68.28	1.00	
114 Cd	0.0052	ppb	191.83	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0733	ppb	32.78	1.00	
120 Sn	0.0762	ppb	18.94	1.00	
121 Sb	0.0222	ppb	39.19	1.00	
123 Sb	0.0168	ppb	45.15	1.00	
135 Ba	0.0081	ppb	219.41	1.00	
137 Ba	-0.0004	ppb	1902.40	1.00	
182 W	0.1068	ppb	4.01	1.00	
203 Tl	0.0072	ppb	32.98	1.00	
205 Tl	0.006	ppb	34.51	1.00	
208 Pb	0.0004	ppb	1454.00	1.00	
232 Th	0.0618	ppb	14.47	1.00	
238 U	0.002	ppb	39.01	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3058384.00	0.46	3052150.50	100.2	79.5 - 120	
45 Sc	2423454.30	1.43	2505808.30	96.7	79.5 - 120	
72 Ge	515429.38	0.52	528327.81	97.6	79.5 - 120	
159 Tb	4758276.50	0.37	4805871.00	99.0	79.5 - 120	
209 Bi	2860932.80	1.08	2881081.50	99.3	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000693

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\050SMPL.D\050SMPL.D#
Date Acquired: Jul 3 2014 07:33 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4401-021
Misc Info: DILUTION 1.6/8
Vial Number: 2209
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0446	0.0089	ppb	12.24	100.	
11 B	10.16	2.032	ppb	6.98	1000.	
23 Na	6,475.	1,295.	ppb	1.31	200000.	
25 Mg	2,441.5	488.3	ppb	0.51	200000.	
27 Al	96.95	19.39	ppb	1.08	200000.	
28 Si	2,860.	572.	ppb	5.42	#VALUE!	
29 Si	1,026.	205.2	ppb	11.63	10000.	
39 K	936.5	187.3	ppb	2.05	200000.	
43 Ca	7,250.	1,450.	ppb	1.30	#VALUE!	
44 Ca	7,010.	1,402.	ppb	1.48	200000.	
51 V	1.3055	0.2611	ppb	27.24	1000.	
52 Cr	1.836	0.3672	ppb	7.37	1000.	
53 Cr	46.34	9.268	ppb	5.14	#VALUE!	
55 Mn	76.75	15.35	ppb	1.18	1000.	
56 Fe	874.	174.8	ppb	1.72	#VALUE!	
57 Fe	807.5	161.5	ppb	1.36	100000.	
59 Co	0.2515	0.0503	ppb	8.72	1000.	
60 Ni	0.7015	0.1403	ppb	12.87	1000.	
63 Cu	0.878	0.1756	ppb	1.88	#VALUE!	
65 Cu	0.7905	0.1581	ppb	18.69	1000.	
66 Zn	3.106	0.6212	ppb	8.01	1000.	
68 Zn	2.5265	0.5053	ppb	27.37	#VALUE!	
75 As	0.0691	0.0138	ppb	1236.60	1000.	
82 Se	0.639	0.1278	ppb	125.67	1000.	
88 Sr	36.105	7.221	ppb	2.60	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.2344	0.0469	ppb	20.69	1000.	
107 Ag	0.0112	0.0022	ppb	59.68	500.	
109 Ag	0.0021	0.0004	ppb	144.98	#VALUE!	
111 Cd	-0.367	-0.0734	ppb	32.47	#VALUE!	
114 Cd	0.0426	0.0085	ppb	52.37	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.3387	0.0677	ppb	17.95	1000.	
120 Sn	0.3683	0.0737	ppb	12.86	#VALUE!	
121 Sb	0.0772	0.0154	ppb	20.10	#VALUE!	
123 Sb	0.0577	0.0115	ppb	43.78	1000.	
135 Ba	5.305	1.061	ppb	9.59	1000.	
137 Ba	5.915	1.183	ppb	3.64	#VALUE!	
182 W	0.2215	0.0443	ppb	---	#VALUE!	
203 Tl	0.1315	0.0263	ppb	27.81	1000.	
205 Tl	0.093	0.0186	ppb	2.82	#VALUE!	
208 Pb	0.1407	0.0281	ppb	8.99	1000.	
232 Th	0.58	0.116	ppb	24.29	1000.	
238 U	0.0526	0.0105	ppb	24.90	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3077517.30	0.31	3052150.50	100.8	69.5 - 130	
45 Sc	2439706.50	1.01	2505808.30	97.4	69.5 - 130	
72 Ge	508171.38	1.22	528327.81	96.2	69.5 - 130	
159 Tb	4616128.50	1.46	4805871.00	96.1	69.5 - 130	
209 Bi	2754096.80	0.96	2881081.50	95.6	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000694

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\051SMPL.D\051SMPL.D#
Date Acquired: Jul 3 2014 07:36 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-009L
Misc Info: DILUTION 0.4/10
Vial Number: 2210
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0015	-0.0001	ppb	1826.30	100.	
11 B	7.145	0.2858	ppb	34.67	1000.	
23 Na	8,330.	333.2	ppb	0.94	200000.	
25 Mg	6,132.5	245.3	ppb	0.57	200000.	
27 Al	26.5	1.06	ppb	19.61	200000.	
28 Si	5,395.	215.8	ppb	5.47	#VALUE!	
29 Si	-2,692.5	-107.7	ppb	100.84	10000.	LOW
39 K	1,440.	57.6	ppb	2.56	200000.	
43 Ca	33,125.	1,325.	ppb	2.24	#VALUE!	
44 Ca	32,725.	1,309.	ppb	0.40	200000.	
51 V	-0.2878	-0.0115	ppb	232.58	1000.	
52 Cr	1.1378	0.0455	ppb	25.67	1000.	
53 Cr	48.8	1.952	ppb	3.14	#VALUE!	
55 Mn	47.05	1.882	ppb	0.81	1000.	
56 Fe	106.4	4.256	ppb	20.36	#VALUE!	
57 Fe	5.8325	0.2333	ppb	1525.90	100000.	
59 Co	0.1691	0.0068	ppb	62.94	1000.	
60 Ni	1.7743	0.071	ppb	7.63	1000.	
63 Cu	1.2238	0.049	ppb	37.77	#VALUE!	
65 Cu	1.1528	0.0461	ppb	44.16	1000.	
66 Zn	2.935	0.1174	ppb	40.09	1000.	
68 Zn	-20.365	-0.8146	ppb	18.08	#VALUE!	
75 As	-3.695	-0.1478	ppb	167.59	1000.	
82 Se	-0.5805	-0.0232	ppb	812.66	1000.	
88 Sr	85.575	3.423	ppb	1.90	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.7905	0.0316	ppb	24.07	1000.	
107 Ag	0.0376	0.0015	ppb	58.63	500.	
109 Ag	0.0013	0.0001	ppb	3220.10	#VALUE!	
111 Cd	-1.8423	-0.0737	ppb	72.30	#VALUE!	
114 Cd	0.1212	0.0048	ppb	69.36	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.6283	0.0251	ppb	16.16	1000.	
120 Sn	0.5933	0.0237	ppb	51.45	#VALUE!	
121 Sb	0.1606	0.0064	ppb	110.54	#VALUE!	
123 Sb	0.049	0.002	ppb	148.85	1000.	
135 Ba	11.7475	0.4699	ppb	1.12	1000.	
137 Ba	12.2125	0.4885	ppb	6.23	#VALUE!	
182 W	0.598	0.0239	ppb	---	#VALUE!	
203 Tl	-0.0247	-0.001	ppb	164.98	1000.	
205 Tl	-0.0172	-0.0007	ppb	387.66	#VALUE!	
208 Pb	0.2793	0.0112	ppb	117.28	1000.	
232 Th	0.2795	0.0112	ppb	3.25	1000.	
238 U	0.5538	0.0222	ppb	1.43	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3124478.80	1.01	3052150.50	102.4	69.5 - 130	
45 Sc	2459534.30	0.44	2505808.30	98.2	69.5 - 130	
72 Ge	522424.22	0.97	528327.81	98.9	69.5 - 130	
159 Tb	4807682.50	1.16	4805871.00	100.0	69.5 - 130	
209 Bi	2842457.50	1.16	2881081.50	98.7	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000695

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\052SMPL.D\052SMPL.D#
Date Acquired: Jul 3 2014 07:40 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-009A
Misc Info: DILUTION 1.6/8
Vial Number: 2211
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	9.71	1.942	ppb	3.19	100.	
11 B	196.3	39.26	ppb	0.82	1000.	
23 Na	18,185.	3,637.	ppb	0.80	200000.	
25 Mg	7,345.	1,469.	ppb	0.88	200000.	
27 Al	2,902.	580.4	ppb	0.34	200000.	
28 Si	9,655.	1,931.	ppb	0.39	#VALUE!	
29 Si	8,090.	1,618.	ppb	3.47	10000.	
39 K	11,120.	2,224.	ppb	0.80	200000.	
43 Ca	33,260.	6,652.	ppb	0.38	#VALUE!	
44 Ca	33,715.	6,743.	ppb	0.70	200000.	
51 V	47.895	9.579	ppb	2.32	1000.	
52 Cr	49.27	9.854	ppb	2.47	1000.	
53 Cr	89.1	17.82	ppb	1.48	#VALUE!	
55 Mn	67.3	13.46	ppb	1.58	1000.	
56 Fe	1,005.5	201.1	ppb	2.17	#VALUE!	
57 Fe	1,025.	205.	ppb	2.36	100000.	
59 Co	9.95	1.99	ppb	1.88	1000.	
60 Ni	21.405	4.281	ppb	2.43	1000.	
63 Cu	31.33	6.266	ppb	1.75	#VALUE!	
65 Cu	31.255	6.251	ppb	2.56	1000.	
66 Zn	97.2	19.44	ppb	1.42	1000.	
68 Zn	92.	18.4	ppb	1.22	#VALUE!	
75 As	49.025	9.805	ppb	1.53	1000.	
82 Se	47.04	9.408	ppb	1.73	1000.	
88 Sr	131.	26.2	ppb	1.41	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	48.015	9.603	ppb	1.44	1000.	
107 Ag	9.655	1.931	ppb	2.08	500.	
109 Ag	9.73	1.946	ppb	1.53	#VALUE!	
111 Cd	9.05	1.81	ppb	6.29	#VALUE!	
114 Cd	9.5	1.9	ppb	1.94	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	47.41	9.482	ppb	1.30	1000.	
120 Sn	47.59	9.518	ppb	0.72	#VALUE!	
121 Sb	9.52	1.904	ppb	4.18	#VALUE!	
123 Sb	9.58	1.916	ppb	3.13	1000.	
135 Ba	27.585	5.517	ppb	5.12	1000.	
137 Ba	27.39	5.478	ppb	1.64	#VALUE!	
182 W	49.46	9.892	ppb	---	#VALUE!	
203 Tl	9.82	1.964	ppb	2.38	1000.	
205 Tl	9.59	1.918	ppb	1.16	#VALUE!	
208 Pb	9.8	1.96	ppb	0.99	1000.	
232 Th	9.735	1.947	ppb	1.96	1000.	
238 U	10.255	2.051	ppb	0.50	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3104338.00	1.10	3052150.50	101.7	69.5 - 130	
45 Sc	2448696.00	0.17	2505808.30	97.7	69.5 - 130	
72 Ge	510034.84	0.80	528327.81	96.5	69.5 - 130	
159 Tb	4664457.00	0.94	4805871.00	97.1	69.5 - 130	
209 Bi	2746418.00	0.71	2881081.50	95.3	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000696

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\053SMPL.D\053SMPL.D#
Date Acquired: Jul 3 2014 07:43 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-009S
Misc Info: DILUTION 1.6/8
Vial Number: 2212
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	47.88	9.576	ppb	2.22	100.	
11 B	453.1	90.62	ppb	2.52	1000.	
23 Na	15,120.	3,024.	ppb	1.13	200000.	
25 Mg	11,355.	2,271.	ppb	0.49	200000.	
27 Al	2,075.5	415.1	ppb	1.13	200000.	
28 Si	9,630.	1,926.	ppb	3.49	#VALUE!	
29 Si	7,980.	1,596.	ppb	16.16	10000.	
39 K	11,425.	2,285.	ppb	0.41	200000.	
43 Ca	34,060.	6,812.	ppb	1.19	#VALUE!	
44 Ca	33,970.	6,794.	ppb	0.74	200000.	
51 V	512.5	102.5	ppb	2.37	1000.	
52 Cr	199.25	39.85	ppb	1.23	1000.	
53 Cr	248.15	49.63	ppb	0.93	#VALUE!	
55 Mn	562.	112.4	ppb	0.54	1000.	
56 Fe	1,078.	215.6	ppb	1.76	#VALUE!	
57 Fe	1,063.5	212.7	ppb	3.45	100000.	
59 Co	508.	101.6	ppb	0.71	1000.	
60 Ni	513.	102.6	ppb	0.60	1000.	
63 Cu	252.4	50.48	ppb	0.66	#VALUE!	
65 Cu	250.85	50.17	ppb	0.29	1000.	
66 Zn	497.75	99.55	ppb	0.42	1000.	
68 Zn	545.5	109.1	ppb	1.58	#VALUE!	
75 As	99.	19.8	ppb	2.05	1000.	
82 Se	101.	20.2	ppb	1.30	1000.	
88 Sr	584.	116.8	ppb	0.66	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	294.7	58.94	ppb	0.65	1000.	
107 Ag	50.05	10.01	ppb	0.81	500.	
109 Ag	50.	10.	ppb	0.58	#VALUE!	
111 Cd	247.9	49.58	ppb	0.11	#VALUE!	
114 Cd	248.9	49.78	ppb	0.50	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	493.15	98.63	ppb	0.95	1000.	
120 Sn	488.8	97.76	ppb	0.22	#VALUE!	
121 Sb	98.55	19.71	ppb	0.57	#VALUE!	
123 Sb	99.	19.8	ppb	0.99	1000.	
135 Ba	1,961.	392.2	ppb	1.01	1000.	
137 Ba	1,978.5	395.7	ppb	0.92	#VALUE!	
182 W	105.1	21.02	ppb ---		#VALUE!	
203 Tl	94.85	18.97	ppb	0.76	1000.	
205 Tl	95.2	19.04	ppb	0.79	#VALUE!	
208 Pb	101.45	20.29	ppb	1.02	1000.	
232 Th	0.4898	0.098	ppb	19.56	1000.	
238 U	99.6	19.92	ppb	0.81	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3155888.50	0.61	3052150.50	103.4	69.5 - 130	
45 Sc	2430293.80	0.20	2505808.30	97.0	69.5 - 130	
72 Ge	505243.69	0.41	528327.81	95.6	69.5 - 130	
159 Tb	4716366.50	0.73	4805871.00	98.1	69.5 - 130	
209 Bi	2781561.50	1.10	2881081.50	96.5	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000697

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\054SMPL.D\054SMPL.D#
Date Acquired: Jul 3 2014 07:46 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-009P
Misc Info: DILUTION 1.6/8
Vial Number: 2301
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	47.82	9.564	ppb	0.86	100.	
11 B	464.	92.8	ppb	2.38	1000.	
23 Na	15,360.	3,072.	ppb	1.01	200000.	
25 Mg	11,440.	2,288.	ppb	0.67	200000.	
27 Al	2,072.5	414.5	ppb	0.50	200000.	
28 Si	9,335.	1,867.	ppb	1.47	#VALUE!	
29 Si	8,430.	1,686.	ppb	9.72	10000.	
39 K	11,285.	2,257.	ppb	0.34	200000.	
43 Ca	34,705.	6,941.	ppb	0.55	#VALUE!	
44 Ca	34,350.	6,870.	ppb	0.57	200000.	
51 V	512.	102.4	ppb	1.70	1000.	
52 Cr	199.55	39.91	ppb	1.20	1000.	
53 Cr	244.25	48.85	ppb	0.11	#VALUE!	
55 Mn	561.	112.2	ppb	1.12	1000.	
56 Fe	1,101.5	220.3	ppb	2.20	#VALUE!	
57 Fe	1,091.5	218.3	ppb	0.69	100000.	
59 Co	510.5	102.1	ppb	1.27	1000.	
60 Ni	515.	103.	ppb	1.08	1000.	
63 Cu	252.65	50.53	ppb	0.64	#VALUE!	
65 Cu	252.25	50.45	ppb	1.42	1000.	
66 Zn	504.5	100.9	ppb	1.05	1000.	
68 Zn	552.5	110.5	ppb	1.83	#VALUE!	
75 As	101.05	20.21	ppb	2.14	1000.	
82 Se	100.9	20.18	ppb	2.80	1000.	
88 Sr	589.5	117.9	ppb	1.94	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	296.55	59.31	ppb	1.14	1000.	
107 Ag	50.4	10.08	ppb	0.95	500.	
109 Ag	50.25	10.05	ppb	1.14	#VALUE!	
111 Cd	243.75	48.75	ppb	1.49	#VALUE!	
114 Cd	245.2	49.04	ppb	1.08	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	496.95	99.39	ppb	0.60	1000.	
120 Sn	494.8	98.96	ppb	0.41	#VALUE!	
121 Sb	97.45	19.49	ppb	1.12	#VALUE!	
123 Sb	98.	19.6	ppb	0.91	1000.	
135 Ba	1,979.5	395.9	ppb	0.33	1000.	
137 Ba	1,998.5	399.7	ppb	0.38	#VALUE!	
182 W	106.5	21.3	ppb	---	#VALUE!	
203 Tl	94.75	18.95	ppb	1.72	1000.	
205 Tl	95.	19.	ppb	1.35	#VALUE!	
208 Pb	100.7	20.14	ppb	1.15	1000.	
232 Th	0.2179	0.0436	ppb	7.79	1000.	
238 U	100.45	20.09	ppb	1.41	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3176196.80	0.44	3052150.50	104.1	69.5 - 130	
45 Sc	2440782.00	0.42	2505808.30	97.4	69.5 - 130	
72 Ge	506412.19	1.24	528327.81	95.9	69.5 - 130	
159 Tb	4693438.50	0.46	4805871.00	97.7	69.5 - 130	
209 Bi	2751634.00	1.35	2881081.50	95.5	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000698

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\055SMPL.D\055SMPL.D#
Date Acquired: Jul 3 2014 07:50 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-010
Misc Info: DILUTION 1.6/8
Vial Number: 2302
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0147	0.0029	ppb	18.84	100.	
11 B	14.385	2.877	ppb	7.44	1000.	
23 Na	3,777.	755.4	ppb	4.00	200000.	
25 Mg	1,943.5	388.7	ppb	3.54	200000.	
27 Al	85.65	17.13	ppb	5.54	200000.	
28 Si	2,520.5	504.1	ppb	13.66	#VALUE!	
29 Si	785.5	157.1	ppb	262.83	10000.	
39 K	876.	175.2	ppb	6.68	200000.	
43 Ca	7,735.	1,547.	ppb	4.53	#VALUE!	
44 Ca	7,715.	1,543.	ppb	3.44	200000.	
51 V	1.0345	0.2069	ppb	47.78	1000.	
52 Cr	1.118	0.2236	ppb	11.90	1000.	
53 Cr	46.755	9.351	ppb	8.07	#VALUE!	
55 Mn	55.45	11.09	ppb	4.53	1000.	
56 Fe	377.3	75.46	ppb	9.29	#VALUE!	
57 Fe	341.3	68.26	ppb	4.47	100000.	
59 Co	0.757	0.1514	ppb	6.13	1000.	
60 Ni	0.8995	0.1799	ppb	4.07	1000.	
63 Cu	2.5525	0.5105	ppb	5.63	#VALUE!	
65 Cu	2.453	0.4906	ppb	3.50	1000.	
66 Zn	3.9975	0.7995	ppb	9.15	1000.	
68 Zn	0.74	0.148	ppb	314.46	#VALUE!	
75 As	0.1596	0.0319	ppb	288.53	1000.	
82 Se	-0.3054	-0.0611	ppb	140.35	1000.	
88 Sr	30.61	6.122	ppb	3.05	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.4852	0.097	ppb	17.40	1000.	
107 Ag	0.0251	0.005	ppb	35.78	500.	
109 Ag	0.0098	0.002	ppb	88.51	#VALUE!	
111 Cd	-0.1901	-0.038	ppb	65.61	#VALUE!	
114 Cd	0.0577	0.0115	ppb	32.78	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.874	0.1748	ppb	24.46	1000.	
120 Sn	0.8405	0.1681	ppb	21.87	#VALUE!	
121 Sb	0.1804	0.0361	ppb	29.96	#VALUE!	
123 Sb	0.1377	0.0275	ppb	32.71	1000.	
135 Ba	5.275	1.055	ppb	4.90	1000.	
137 Ba	5.255	1.051	ppb	3.48	#VALUE!	
182 W	0.3952	0.079	ppb ---		#VALUE!	
203 Tl	0.0439	0.0088	ppb	23.20	1000.	
205 Tl	0.0352	0.007	ppb	37.84	#VALUE!	
208 Pb	0.1885	0.0377	ppb	4.94	1000.	
232 Th	0.0486	0.0097	ppb	12.02	1000.	
238 U	0.0209	0.0042	ppb	46.77	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3084141.00	3.63	3052150.50	101.0	69.5 - 130	
45 Sc	2438128.50	3.49	2505808.30	97.3	69.5 - 130	
72 Ge	511470.06	4.02	528327.81	96.8	69.5 - 130	
159 Tb	4684838.50	4.13	4805871.00	97.5	69.5 - 130	
209 Bi	2793594.30	2.73	2881081.50	97.0	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000699

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\056SMPL.D\056SMPL.D#
Date Acquired: Jul 3 2014 07:53 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-011
Misc Info: DILUTION 1.6/8
Vial Number: 2303
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0069	0.0014	ppb	78.25	100.	
11 B	9.52	1.904	ppb	2.46	1000.	
23 Na	3,821.5	764.3	ppb	3.88	200000.	
25 Mg	1,903.5	380.7	ppb	3.59	200000.	
27 Al	30.47	6.094	ppb	4.30	200000.	
28 Si	2,420.	484.	ppb	17.59	#VALUE!	
29 Si	634.	126.8	ppb	251.97	10000.	
39 K	893.	178.6	ppb	6.58	200000.	
43 Ca	7,720.	1,544.	ppb	3.97	#VALUE!	
44 Ca	7,575.	1,515.	ppb	4.42	200000.	
51 V	1.226	0.2452	ppb	5.69	1000.	
52 Cr	1.0855	0.2171	ppb	3.68	1000.	
53 Cr	41.63	8.326	ppb	7.59	#VALUE!	
55 Mn	53.5	10.7	ppb	4.51	1000.	
56 Fe	198.3	39.66	ppb	11.07	#VALUE!	
57 Fe	174.5	34.9	ppb	12.34	100000.	
59 Co	0.724	0.1448	ppb	10.28	1000.	
60 Ni	1.036	0.2072	ppb	18.31	1000.	
63 Cu	3.106	0.6212	ppb	4.28	#VALUE!	
65 Cu	3.109	0.6218	ppb	3.24	1000.	
66 Zn	4.2175	0.8435	ppb	5.75	1000.	
68 Zn	2.2145	0.4429	ppb	141.84	#VALUE!	
75 As	-0.68	-0.136	ppb	178.90	1000.	
82 Se	-0.908	-0.1816	ppb	74.28	1000.	
88 Sr	30.3	6.06	ppb	4.21	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.2918	0.0584	ppb	11.85	1000.	
107 Ag	0.0117	0.0023	ppb	137.46	500.	
109 Ag	0.0066	0.0013	ppb	100.76	#VALUE!	
111 Cd	-0.2674	-0.0535	ppb	108.53	#VALUE!	
114 Cd	0.0403	0.0081	ppb	50.22	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.4996	0.0999	ppb	9.94	1000.	
120 Sn	0.4219	0.0844	ppb	17.98	#VALUE!	
121 Sb	0.1066	0.0213	ppb	13.95	#VALUE!	
123 Sb	0.1147	0.0229	ppb	30.33	1000.	
135 Ba	5.1	1.02	ppb	6.86	1000.	
137 Ba	5.045	1.009	ppb	2.98	#VALUE!	
182 W	0.1825	0.0365	ppb	---	#VALUE!	
203 Tl	0.036	0.0072	ppb	47.65	1000.	
205 Tl	0.018	0.0036	ppb	20.34	#VALUE!	
208 Pb	0.1027	0.0205	ppb	24.27	1000.	
232 Th	0.0334	0.0067	ppb	39.63	1000.	
238 U	0.0108	0.0022	ppb	31.92	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3101386.50	2.78	3052150.50	101.6	69.5 - 130	
45 Sc	2422898.50	3.09	2505808.30	96.7	69.5 - 130	
72 Ge	511255.28	3.61	528327.81	96.8	69.5 - 130	
159 Tb	4654675.50	3.89	4805871.00	96.9	69.5 - 130	
209 Bi	2784753.50	3.74	2881081.50	96.7	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000700

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\057SMPL.D\057SMPL.D#
Date Acquired: Jul 3 2014 07:57 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-012
Misc Info: DILUTION 1.6/8
Vial Number: 2304
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0699	0.014	ppb	17.21	100.	
11 B	9.995	1.999	ppb	2.76	1000.	
23 Na	4,039.5	807.9	ppb	1.60	200000.	
25 Mg	1,859.	371.8	ppb	2.35	200000.	
27 Al	1,646.5	329.3	ppb	0.33	200000.	
28 Si	2,823.	564.6	ppb	2.65	#VALUE!	
29 Si	851.	170.2	ppb	135.14	10000.	
39 K	1,329.	265.8	ppb	3.50	200000.	
43 Ca	8,770.	1,754.	ppb	4.68	#VALUE!	
44 Ca	8,560.	1,712.	ppb	2.29	200000.	
51 V	3.402	0.6804	ppb	8.55	1000.	
52 Cr	3.007	0.6014	ppb	1.31	1000.	
53 Cr	59.3	11.86	ppb	2.44	#VALUE!	
55 Mn	31.405	6.281	ppb	0.52	1000.	
56 Fe	1,718.	343.6	ppb	1.24	#VALUE!	
57 Fe	1,691.5	338.3	ppb	1.72	100000.	
59 Co	0.873	0.1746	ppb	0.61	1000.	
60 Ni	3.307	0.6614	ppb	6.68	1000.	
63 Cu	9.34	1.868	ppb	2.13	#VALUE!	
65 Cu	9.09	1.818	ppb	3.17	1000.	
66 Zn	8.81	1.762	ppb	2.96	1000.	
68 Zn	8.23	1.646	ppb	29.14	#VALUE!	
75 As	3.6225	0.7245	ppb	13.09	1000.	
82 Se	-0.2993	-0.0599	ppb	222.85	1000.	
88 Sr	24.93	4.986	ppb	0.42	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.6545	0.1309	ppb	8.24	1000.	
107 Ag	0.01	0.002	ppb	56.60	500.	
109 Ag	0.0104	0.0021	ppb	85.96	#VALUE!	
111 Cd	-0.2475	-0.0495	ppb	2.38	#VALUE!	
114 Cd	0.0806	0.0161	ppb	33.84	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.4522	0.0904	ppb	13.10	1000.	
120 Sn	0.3903	0.0781	ppb	7.66	#VALUE!	
121 Sb	0.2011	0.0402	ppb	11.00	#VALUE!	
123 Sb	0.2102	0.042	ppb	14.98	1000.	
135 Ba	13.485	2.697	ppb	1.90	1000.	
137 Ba	13.585	2.717	ppb	1.56	#VALUE!	
182 W	0.164	0.0328	ppb	---	#VALUE!	
203 Tl	0.0421	0.0084	ppb	79.13	1000.	
205 Tl	0.0113	0.0023	ppb	115.19	#VALUE!	
208 Pb	1.0325	0.2065	ppb	4.13	1000.	
232 Th	0.2729	0.0546	ppb	8.01	1000.	
238 U	0.0788	0.0158	ppb	11.59	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3055309.00	1.45	3052150.50	100.1	69.5 - 130	
45 Sc	2409076.30	1.12	2505808.30	96.1	69.5 - 130	
72 Ge	499841.81	0.34	528327.81	94.6	69.5 - 130	
159 Tb	4551414.00	1.20	4805871.00	94.7	69.5 - 130	
209 Bi	2700364.00	0.95	2881081.50	93.7	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000701

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\058SMPL.D\058SMPL.D#
Date Acquired: Jul 3 2014 08:00 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-013
Misc Info: DILUTION 1.6/8
Vial Number: 2305
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0262	0.0052	ppb	7.58	100.	
11 B	9.29	1.858	ppb	8.83	1000.	
23 Na	3,931.	786.2	ppb	1.54	200000.	
25 Mg	1,570.	314.	ppb	1.26	200000.	
27 Al	89.55	17.91	ppb	2.14	200000.	
28 Si	966.5	193.3	ppb	13.12	#VALUE!	
29 Si	-837.5	-167.5	ppb	67.82	10000.	LOW
39 K	1,049.	209.8	ppb	1.56	200000.	
43 Ca	8,620.	1,724.	ppb	1.66	#VALUE!	
44 Ca	8,420.	1,684.	ppb	1.49	200000.	
51 V	1.3095	0.2619	ppb	43.03	1000.	
52 Cr	1.559	0.3118	ppb	3.90	1000.	
53 Cr	56.5	11.3	ppb	0.77	#VALUE!	
55 Mn	14.985	2.997	ppb	1.57	1000.	
56 Fe	179.45	35.89	ppb	3.10	#VALUE!	
57 Fe	164.85	32.97	ppb	9.91	100000.	
59 Co	0.2281	0.0456	ppb	21.08	1000.	
60 Ni	1.18	0.236	ppb	3.20	1000.	
63 Cu	6.615	1.323	ppb	1.22	#VALUE!	
65 Cu	6.53	1.306	ppb	0.52	1000.	
66 Zn	1.985	0.397	ppb	7.34	1000.	
68 Zn	0.4727	0.0945	ppb	609.12	#VALUE!	
75 As	1.9895	0.3979	ppb	34.41	1000.	
82 Se	-0.4127	-0.0825	ppb	139.22	1000.	
88 Sr	23.465	4.693	ppb	2.39	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.551	0.1102	ppb	10.21	1000.	
107 Ag	0.0174	0.0035	ppb	78.24	500.	
109 Ag	-0.0045	-0.0009	ppb	353.09	#VALUE!	
111 Cd	-0.2588	-0.0518	ppb	57.13	#VALUE!	
114 Cd	0.0552	0.011	ppb	30.76	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.308	0.0616	ppb	2.70	1000.	
120 Sn	0.2305	0.0461	ppb	20.64	#VALUE!	
121 Sb	0.1737	0.0347	ppb	20.37	#VALUE!	
123 Sb	0.1639	0.0328	ppb	8.93	1000.	
135 Ba	4.608	0.9216	ppb	9.71	1000.	
137 Ba	4.648	0.9296	ppb	3.35	#VALUE!	
182 W	0.0975	0.0195	ppb	---	#VALUE!	
203 Tl	0.0113	0.0023	ppb	118.00	1000.	
205 Tl	0.0072	0.0014	ppb	86.03	#VALUE!	
208 Pb	0.1186	0.0237	ppb	16.20	1000.	
232 Th	0.071	0.0142	ppb	19.60	1000.	
238 U	0.0221	0.0044	ppb	8.60	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3011370.50	0.61	3052150.50	98.7	69.5 - 130	
45 Sc	2390663.00	1.19	2505808.30	95.4	69.5 - 130	
72 Ge	502083.63	0.66	528327.81	95.0	69.5 - 130	
159 Tb	4550662.00	0.82	4805871.00	94.7	69.5 - 130	
209 Bi	2707137.00	0.62	2881081.50	94.0	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000702

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\059SMPL.D\059SMPL.D#
Date Acquired: Jul 3 2014 08:04 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-014
Misc Info: DILUTION 1.6/8
Vial Number: 2306
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0329	0.0066	ppb	19.56	100.	
11 B	7.025	1.405	ppb	1.19	1000.	
23 Na	3,921.5	784.3	ppb	2.24	200000.	
25 Mg	1,579.5	315.9	ppb	1.62	200000.	
27 Al	148.75	29.75	ppb	3.85	200000.	
28 Si	2,441.	488.2	ppb	8.33	#VALUE!	
29 Si	1,882.	376.4	ppb	39.51	10000.	
39 K	1,568.5	313.7	ppb	3.13	200000.	
43 Ca	7,240.	1,448.	ppb	4.43	#VALUE!	
44 Ca	7,130.	1,426.	ppb	0.95	200000.	
51 V	1.2355	0.2471	ppb	22.84	1000.	
52 Cr	1.567	0.3134	ppb	8.86	1000.	
53 Cr	50.75	10.15	ppb	4.39	#VALUE!	
55 Mn	47.265	9.453	ppb	1.31	1000.	
56 Fe	522.	104.4	ppb	2.64	#VALUE!	
57 Fe	480.8	96.16	ppb	2.28	100000.	
59 Co	1.2715	0.2543	ppb	6.23	1000.	
60 Ni	2.2405	0.4481	ppb	5.20	1000.	
63 Cu	8.71	1.742	ppb	2.56	#VALUE!	
65 Cu	8.77	1.754	ppb	2.25	1000.	
66 Zn	16.995	3.399	ppb	1.73	1000.	
68 Zn	15.235	3.047	ppb	7.95	#VALUE!	
75 As	0.735	0.147	ppb	97.28	1000.	
82 Se	0.1002	0.02	ppb	139.99	1000.	
88 Sr	21.81	4.362	ppb	0.15	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.3507	0.0701	ppb	23.61	1000.	
107 Ag	0.1166	0.0233	ppb	21.75	500.	
109 Ag	0.1008	0.0202	ppb	43.31	#VALUE!	
111 Cd	-0.2199	-0.044	ppb	35.27	#VALUE!	
114 Cd	0.1634	0.0327	ppb	10.20	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.3648	0.073	ppb	8.27	1000.	
120 Sn	0.3559	0.0712	ppb	8.05	#VALUE!	
121 Sb	0.1113	0.0223	ppb	29.78	#VALUE!	
123 Sb	0.1125	0.0225	ppb	13.36	1000.	
135 Ba	15.5	3.1	ppb	3.21	1000.	
137 Ba	15.9	3.18	ppb	0.63	#VALUE!	
182 W	0.1707	0.0341	ppb	---	#VALUE!	
203 Tl	0.0589	0.0118	ppb	30.18	1000.	
205 Tl	0.0522	0.0104	ppb	16.03	#VALUE!	
208 Pb	1.5255	0.3051	ppb	1.27	1000.	
232 Th	0.0713	0.0143	ppb	18.69	1000.	
238 U	0.0907	0.0181	ppb	14.79	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2998307.30	1.00	3052150.50	98.2	69.5 - 130	
45 Sc	2369024.00	1.20	2505808.30	94.5	69.5 - 130	
72 Ge	500827.88	0.87	528327.81	94.8	69.5 - 130	
159 Tb	4546955.50	0.61	4805871.00	94.6	69.5 - 130	
209 Bi	2697957.00	0.69	2881081.50	93.6	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000703

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\060_CCV.D\060_CCV.D#
Date Acquired: Jul 3 2014 08:07 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.77	ppb	2.24	25	99.08	
11 B	24.2	ppb	0.90	25	96.8	
23 Na	5,015.	ppb	2.27	5,000	100.3	
25 Mg	5,078.	ppb	1.04	5,000	101.56	
27 Al	502.8	ppb	1.02	500	100.56	
28 Si	431.7	ppb	3.75	500	86.34	
29 Si	338.6	ppb	12.79	500	67.72	Fail
39 K	4,948.	ppb	1.07	5,000	98.96	
43 Ca	4,975.	ppb	2.28	5,000	99.5	
44 Ca	5,033.	ppb	0.62	5,000	100.66	
51 V	25.14	ppb	0.98	25	100.56	
52 Cr	24.82	ppb	1.14	25	99.28	
53 Cr	25.39	ppb	1.91	25	101.56	
55 Mn	24.97	ppb	1.06	25	99.88	
56 Fe	4,994.	ppb	0.41	5,000	99.88	
57 Fe	5,061.	ppb	1.11	5,000	101.22	
59 Co	24.98	ppb	0.48	25	99.92	
60 Ni	25.27	ppb	1.59	25	101.08	
63 Cu	25.03	ppb	0.92	25	100.12	
65 Cu	25.12	ppb	1.36	25	100.48	
66 Zn	24.73	ppb	1.07	25	98.92	
68 Zn	25.25	ppb	1.28	25	101	
75 As	24.56	ppb	1.09	25	98.24	
82 Se	25.03	ppb	0.88	25	100.12	
88 Sr	24.69	ppb	1.25	25	98.76	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.52	ppb	0.61	25	98.08	
107 Ag	25.11	ppb	1.69	25	100.44	
109 Ag	24.84	ppb	0.79	25	99.36	
111 Cd	24.81	ppb	1.02	25	99.24	
114 Cd	25.03	ppb	0.54	25	100.12	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.69	ppb	0.48	25	98.76	
120 Sn	24.71	ppb	0.55	25	98.84	
121 Sb	24.81	ppb	0.62	25	99.24	
123 Sb	24.87	ppb	0.94	25	99.48	
135 Ba	25.13	ppb	1.45	25	100.52	
137 Ba	25.11	ppb	1.56	25	100.44	
182 W	24.52	ppb	1.02	25	98.08	
203 Tl	24.68	ppb	1.80	25	98.72	
205 Tl	24.54	ppb	0.75	25	98.16	
208 Pb	24.53	ppb	1.15	25	98.12	
232 Th	24.06	ppb	1.07	25	96.24	
238 U	23.88	ppb	0.92	25	95.52	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2958593.30	0.31	3052150.50	96.9	80 - 120.4	
45 Sc	2404123.50	0.48	2505808.30	95.9	80 - 120.4	
72 Ge	503329.97	0.46	528327.81	95.3	80 - 120.4	
159 Tb	4613455.50	0.96	4805871.00	96.0	80 - 120.4	
209 Bi	2759845.80	1.05	2881081.50	95.8	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000704

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\061_CCB.D\061_CCB.D#
Date Acquired: Jul 3 2014 08:10 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0015	ppb	211.82	1.00	
11 B	0.3735	ppb	37.06	1.00	
23 Na	0.1918	ppb	101.62	1.00	
25 Mg	0.0866	ppb	53.95	1.00	
27 Al	-0.0625	ppb	126.43	1.00	
28 Si	18.79	ppb	197.39	1.00	
29 Si	-65.64	ppb	214.96	1.00	
39 K	7.379	ppb	28.97	1.00	
43 Ca	0.6385	ppb	361.94	1.00	
44 Ca	-1.464	ppb	348.43	1.00	
51 V	-0.0226	ppb	409.56	1.00	
52 Cr	0.0307	ppb	54.07	1.00	
53 Cr	0.7894	ppb	30.82	1.00	
55 Mn	0.0156	ppb	14.90	1.00	
56 Fe	6.637	ppb	9.30	1.00	
57 Fe	0.1755	ppb	964.67	1.00	
59 Co	-0.0006	ppb	151.83	1.00	
60 Ni	-0.0005	ppb	1231.30	1.00	
63 Cu	-0.0054	ppb	248.14	1.00	
65 Cu	-0.0036	ppb	168.10	1.00	
66 Zn	-0.0019	ppb	1323.70	1.00	
68 Zn	0.4655	ppb	38.00	1.00	
75 As	-0.0719	ppb	39.33	1.00	
82 Se	0.0051	ppb	1852.10	1.00	
88 Sr	0.0045	ppb	120.31	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0639	ppb	12.46	1.00	
107 Ag	0.0038	ppb	43.91	1.00	
109 Ag	-0.0015	ppb	24.12	1.00	
111 Cd	0.	ppb	417790.00	1.00	
114 Cd	0.0076	ppb	75.37	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0759	ppb	20.41	1.00	
120 Sn	0.0684	ppb	29.44	1.00	
121 Sb	0.0186	ppb	21.09	1.00	
123 Sb	0.0148	ppb	21.77	1.00	
135 Ba	0.012	ppb	65.98	1.00	
137 Ba	0.0051	ppb	167.26	1.00	
182 W	0.1123	ppb	12.43	1.00	
203 Tl	0.0059	ppb	67.73	1.00	
205 Tl	0.0055	ppb	21.17	1.00	
208 Pb	0.0152	ppb	139.60	1.00	
232 Th	0.0612	ppb	22.75	1.00	
238 U	0.001	ppb	162.87	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2984171.80	1.80	3052150.50	97.8	79.5 - 120	
45 Sc	2394228.50	1.35	2505808.30	95.5	79.5 - 120	
72 Ge	505830.44	0.91	528327.81	95.7	79.5 - 120	
159 Tb	4584275.50	1.34	4805871.00	95.4	79.5 - 120	
209 Bi	2753440.50	1.63	2881081.50	95.6	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000705

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\062SMPL.D\062SMPL.D#
Date Acquired: Jul 3 2014 08:14 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-014L
Misc Info: DILUTION 0.4/10
Vial Number: 2307
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0355	0.0014	ppb	127.46	100.	
11 B	10.77	0.4308	ppb	12.02	1000.	
23 Na	4,125.	165.	ppb	1.89	200000.	
25 Mg	1,580.25	63.21	ppb	1.85	200000.	
27 Al	164.375	6.575	ppb	5.13	200000.	
28 Si	2,209.	88.36	ppb	33.19	#VALUE!	
29 Si	4,577.5	183.1	ppb	67.83	10000.	
39 K	1,770.25	70.81	ppb	5.06	200000.	
43 Ca	7,455.	298.2	ppb	0.64	#VALUE!	
44 Ca	7,012.5	280.5	ppb	1.89	200000.	
51 V	-0.0008	0.	ppb	247250.00	1000.	
52 Cr	1.9303	0.0772	ppb	4.01	1000.	
53 Cr	64.2	2.568	ppb	12.87	#VALUE!	
55 Mn	48.15	1.926	ppb	1.44	1000.	
56 Fe	667.	26.68	ppb	6.43	#VALUE!	
57 Fe	497.	19.88	ppb	14.01	100000.	
59 Co	1.2483	0.0499	ppb	18.13	1000.	
60 Ni	2.4228	0.0969	ppb	9.96	1000.	
63 Cu	8.6775	0.3471	ppb	7.76	#VALUE!	
65 Cu	9.215	0.3686	ppb	5.26	1000.	
66 Zn	17.2075	0.6883	ppb	4.98	1000.	
68 Zn	17.835	0.7134	ppb	59.64	#VALUE!	
75 As	-5.82	-0.2328	ppb	50.90	1000.	
82 Se	1.9143	0.0766	ppb	265.77	1000.	
88 Sr	21.3175	0.8527	ppb	1.94	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.8668	0.0347	ppb	8.66	1000.	
107 Ag	0.1824	0.0073	ppb	27.17	500.	
109 Ag	0.0588	0.0024	ppb	99.28	#VALUE!	
111 Cd	-0.89	-0.0356	ppb	145.14	#VALUE!	
114 Cd	0.1723	0.0069	ppb	24.16	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	1.0815	0.0433	ppb	14.88	1000.	
120 Sn	0.947	0.0379	ppb	24.07	#VALUE!	
121 Sb	0.1939	0.0078	ppb	75.66	#VALUE!	
123 Sb	0.2645	0.0106	ppb	58.55	1000.	
135 Ba	21.8825	0.8753	ppb	3.22	1000.	
137 Ba	22.845	0.9138	ppb	4.60	#VALUE!	
182 W	1.1445	0.0458	ppb	---	#VALUE!	
203 Tl	0.2147	0.0086	ppb	10.28	1000.	
205 Tl	0.0435	0.0017	ppb	107.93	#VALUE!	
208 Pb	1.5993	0.064	ppb	13.21	1000.	
232 Th	1.0923	0.0437	ppb	9.96	1000.	
238 U	0.0828	0.0033	ppb	28.12	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2944676.50	0.80	3052150.50	96.5	69.5 - 130	
45 Sc	2392533.80	0.90	2505808.30	95.5	69.5 - 130	
72 Ge	506810.56	1.05	528327.81	95.9	69.5 - 130	
159 Tb	4529385.50	1.16	4805871.00	94.2	69.5 - 130	
209 Bi	2724085.50	0.59	2881081.50	94.6	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000706

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\063SMPL.D\063SMPL.D#
Date Acquired: Jul 3 2014 08:17 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-014A
Misc Info: DILUTION 1.6/8
Vial Number: 2308
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	10.05	2.01	ppb	2.14	100.	
11 B	200.05	40.01	ppb	1.63	1000.	
23 Na	13,815.	2,763.	ppb	1.31	200000.	
25 Mg	2,534.5	506.9	ppb	1.71	200000.	
27 Al	3,033.	606.6	ppb	1.80	200000.	
28 Si	6,475.	1,295.	ppb	3.05	#VALUE!	
29 Si	5,905.	1,181.	ppb	15.39	10000.	
39 K	11,310.	2,262.	ppb	0.69	200000.	
43 Ca	8,200.	1,640.	ppb	3.07	#VALUE!	
44 Ca	7,875.	1,575.	ppb	1.01	200000.	
51 V	48.115	9.623	ppb	0.53	1000.	
52 Cr	50.3	10.06	ppb	0.67	1000.	
53 Cr	103.25	20.65	ppb	2.18	#VALUE!	
55 Mn	67.6	13.52	ppb	0.16	1000.	
56 Fe	1,480.5	296.1	ppb	1.83	#VALUE!	
57 Fe	1,417.	283.4	ppb	1.13	100000.	
59 Co	10.975	2.195	ppb	1.24	1000.	
60 Ni	21.93	4.386	ppb	3.59	1000.	
63 Cu	39.03	7.806	ppb	0.77	#VALUE!	
65 Cu	39.195	7.839	ppb	0.60	1000.	
66 Zn	113.15	22.63	ppb	1.54	1000.	
68 Zn	113.3	22.66	ppb	0.73	#VALUE!	
75 As	48.615	9.723	ppb	2.38	1000.	
82 Se	48.59	9.718	ppb	3.95	1000.	
88 Sr	68.25	13.65	ppb	0.43	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	46.96	9.392	ppb	1.15	1000.	
107 Ag	9.69	1.938	ppb	2.27	500.	
109 Ag	9.795	1.959	ppb	1.12	#VALUE!	
111 Cd	9.515	1.903	ppb	2.92	#VALUE!	
114 Cd	9.625	1.925	ppb	1.85	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	47.95	9.59	ppb	0.90	1000.	
120 Sn	47.545	9.509	ppb	1.91	#VALUE!	
121 Sb	9.675	1.935	ppb	2.84	#VALUE!	
123 Sb	10.085	2.017	ppb	2.55	1000.	
135 Ba	35.535	7.107	ppb	1.78	1000.	
137 Ba	37.4	7.48	ppb	1.42	#VALUE!	
182 W	48.89	9.778	ppb ---		#VALUE!	
203 Tl	9.79	1.958	ppb	4.20	1000.	
205 Tl	9.64	1.928	ppb	1.58	#VALUE!	
208 Pb	11.3	2.26	ppb	3.07	1000.	
232 Th	10.105	2.021	ppb	7.62	1000.	
238 U	9.48	1.896	ppb	3.04	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2963809.00	0.83	3052150.50	97.1	69.5 - 130	
45 Sc	2352847.30	0.63	2505808.30	93.9	69.5 - 130	
72 Ge	491445.91	0.07	528327.81	93.0	69.5 - 130	
159 Tb	4431701.50	0.70	4805871.00	92.2	69.5 - 130	
209 Bi	2636358.80	1.39	2881081.50	91.5	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000707

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\064SMPL.D\064SMPL.D#
Date Acquired: Jul 3 2014 08:20 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-014S
Misc Info: DILUTION 1.6/8
Vial Number: 2309
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	50.5	10.1	ppb	3.55	100.	
11 B	478.15	95.63	ppb	0.31	1000.	
23 Na	11,205.	2,241.	ppb	1.92	200000.	
25 Mg	6,600.	1,320.	ppb	2.53	200000.	
27 Al	2,200.5	440.1	ppb	2.03	200000.	
28 Si	6,270.	1,254.	ppb	6.21	#VALUE!	
29 Si	5,525.	1,105.	ppb	19.86	10000.	
39 K	11,535.	2,307.	ppb	2.30	200000.	
43 Ca	9,360.	1,872.	ppb	1.77	#VALUE!	
44 Ca	8,600.	1,720.	ppb	1.58	200000.	
51 V	502.5	100.5	ppb	1.45	1000.	
52 Cr	198.5	39.7	ppb	1.27	1000.	
53 Cr	318.05	63.61	ppb	1.55	#VALUE!	
55 Mn	553.5	110.7	ppb	1.24	1000.	
56 Fe	1,508.5	301.7	ppb	1.50	#VALUE!	
57 Fe	1,465.	293.	ppb	0.67	100000.	
59 Co	501.5	100.3	ppb	1.32	1000.	
60 Ni	512.5	102.5	ppb	1.62	1000.	
63 Cu	259.7	51.94	ppb	1.48	#VALUE!	
65 Cu	259.4	51.88	ppb	1.77	1000.	
66 Zn	511.	102.2	ppb	1.41	1000.	
68 Zn	564.5	112.9	ppb	1.87	#VALUE!	
75 As	98.75	19.75	ppb	1.54	1000.	
82 Se	100.	20.	ppb	1.55	1000.	
88 Sr	506.	101.2	ppb	0.64	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	285.3	57.06	ppb	1.51	1000.	
107 Ag	48.885	9.777	ppb	1.61	500.	
109 Ag	48.735	9.747	ppb	1.45	#VALUE!	
111 Cd	239.35	47.87	ppb	1.33	#VALUE!	
114 Cd	240.85	48.17	ppb	0.91	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	492.	98.4	ppb	1.90	1000.	
120 Sn	490.7	98.14	ppb	1.61	#VALUE!	
121 Sb	99.35	19.87	ppb	2.10	#VALUE!	
123 Sb	100.	20.	ppb	1.60	1000.	
135 Ba	1,997.	399.4	ppb	1.58	1000.	
137 Ba	2,015.5	403.1	ppb	1.67	#VALUE!	
182 W	103.	20.6	ppb ---		#VALUE!	
203 Tl	93.55	18.71	ppb	1.80	1000.	
205 Tl	92.85	18.57	ppb	1.79	#VALUE!	
208 Pb	100.6	20.12	ppb	1.39	1000.	
232 Th	0.6085	0.1217	ppb	26.22	1000.	
238 U	96.9	19.38	ppb	2.41	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3015467.50	3.26	3052150.50	98.8	69.5 - 130	
45 Sc	2297187.00	2.10	2505808.30	91.7	69.5 - 130	
72 Ge	478626.66	1.32	528327.81	90.6	69.5 - 130	
159 Tb	4236564.00	1.66	4805871.00	88.2	69.5 - 130	
209 Bi	2526306.80	1.61	2881081.50	87.7	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000708

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\065SMPL.D\065SMPL.D#
Date Acquired: Jul 3 2014 08:24 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-014P
Misc Info: DILUTION 1.6/8
Vial Number: 2310
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	51.75	10.35	ppb	0.62	100.	
11 B	486.85	97.37	ppb	2.31	1000.	
23 Na	11,500.	2,300.	ppb	2.16	200000.	
25 Mg	7,075.	1,415.	ppb	1.04	200000.	
27 Al	2,264.5	452.9	ppb	2.38	200000.	
28 Si	6,355.	1,271.	ppb	6.24	#VALUE!	
29 Si	5,125.	1,025.	ppb	12.64	10000.	
39 K	11,805.	2,361.	ppb	1.88	200000.	
43 Ca	9,705.	1,941.	ppb	3.08	#VALUE!	
44 Ca	8,990.	1,798.	ppb	2.30	200000.	
51 V	520.	104.	ppb	2.19	1000.	
52 Cr	202.5	40.5	ppb	2.58	1000.	
53 Cr	323.35	64.67	ppb	1.29	#VALUE!	
55 Mn	560.5	112.1	ppb	2.27	1000.	
56 Fe	1,549.	309.8	ppb	3.17	#VALUE!	
57 Fe	1,528.	305.6	ppb	3.42	100000.	
59 Co	516.	103.2	ppb	2.81	1000.	
60 Ni	522.5	104.5	ppb	2.55	1000.	
63 Cu	266.5	53.3	ppb	2.66	#VALUE!	
65 Cu	264.7	52.94	ppb	2.22	1000.	
66 Zn	521.	104.2	ppb	2.21	1000.	
68 Zn	575.5	115.1	ppb	2.29	#VALUE!	
75 As	100.45	20.09	ppb	2.12	1000.	
82 Se	101.55	20.31	ppb	2.33	1000.	
88 Sr	522.5	104.5	ppb	2.49	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	293.	58.6	ppb	2.37	1000.	
107 Ag	50.2	10.04	ppb	1.09	500.	
109 Ag	49.91	9.982	ppb	2.20	#VALUE!	
111 Cd	243.1	48.62	ppb	1.81	#VALUE!	
114 Cd	245.75	49.15	ppb	2.34	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	506.5	101.3	ppb	2.12	1000.	
120 Sn	508.5	101.7	ppb	2.19	#VALUE!	
121 Sb	102.	20.4	ppb	2.57	#VALUE!	
123 Sb	101.8	20.36	ppb	2.30	1000.	
135 Ba	2,050.	410.	ppb	2.48	1000.	
137 Ba	2,058.5	411.7	ppb	2.16	#VALUE!	
182 W	107.	21.4	ppb ---		#VALUE!	
203 Tl	97.35	19.47	ppb	1.53	1000.	
205 Tl	96.4	19.28	ppb	2.26	#VALUE!	
208 Pb	103.9	20.78	ppb	3.09	1000.	
232 Th	0.3024	0.0605	ppb	14.03	1000.	
238 U	101.15	20.23	ppb	2.76	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3021973.00	1.00	3052150.50	99.0	69.5 - 130	
45 Sc	2294558.00	1.38	2505808.30	91.6	69.5 - 130	
72 Ge	477273.56	1.39	528327.81	90.3	69.5 - 130	
159 Tb	4212992.00	1.73	4805871.00	87.7	69.5 - 130	
209 Bi	2476015.80	2.01	2881081.50	85.9	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000709

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\066SMPL.D\066SMPL.D#
Date Acquired: Jul 3 2014 08:27 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-016
Misc Info: DILUTION 1.6/8
Vial Number: 2311
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0085	0.0017	ppb	41.75	100.	
11 B	19.585	3.917	ppb	10.14	1000.	
23 Na	3,871.5	774.3	ppb	1.28	200000.	
25 Mg	4,623.	924.6	ppb	0.87	200000.	
27 Al	59.4	11.88	ppb	1.68	200000.	
28 Si	2,732.	546.4	ppb	8.55	#VALUE!	
29 Si	1,793.5	358.7	ppb	50.60	10000.	
39 K	1,330.5	266.1	ppb	0.29	200000.	
43 Ca	52,250.	10,450.	ppb	1.48	#VALUE!	
44 Ca	52,050.	10,410.	ppb	0.63	200000.	
51 V	1.475	0.295	ppb	29.95	1000.	
52 Cr	1.768	0.3536	ppb	5.25	1000.	
53 Cr	56.55	11.31	ppb	2.42	#VALUE!	
55 Mn	1,198.5	239.7	ppb	0.92	1000.	
56 Fe	6,935.	1,387.	ppb	0.83	#VALUE!	
57 Fe	6,975.	1,395.	ppb	1.21	100000.	
59 Co	4.965	0.993	ppb	1.26	1000.	
60 Ni	1.9665	0.3933	ppb	7.50	1000.	
63 Cu	3.163	0.6326	ppb	2.64	#VALUE!	
65 Cu	3.1555	0.6311	ppb	5.85	1000.	
66 Zn	5.38	1.076	ppb	4.26	1000.	
68 Zn	8.6	1.72	ppb	22.37	#VALUE!	
75 As	7.125	1.425	ppb	10.95	1000.	
82 Se	0.0033	0.0007	ppb	16607.00	1000.	
88 Sr	82.25	16.45	ppb	1.04	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	1.1655	0.2331	ppb	7.94	1000.	
107 Ag	0.0416	0.0083	ppb	42.25	500.	
109 Ag	0.0312	0.0062	ppb	93.29	#VALUE!	
111 Cd	0.0014	0.0003	ppb	13432.00	#VALUE!	
114 Cd	0.1026	0.0205	ppb	15.63	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.5075	0.1015	ppb	3.06	1000.	
120 Sn	0.4756	0.0951	ppb	7.63	#VALUE!	
121 Sb	0.1745	0.0349	ppb	7.45	#VALUE!	
123 Sb	0.1644	0.0329	ppb	19.49	1000.	
135 Ba	20.715	4.143	ppb	4.61	1000.	
137 Ba	20.99	4.198	ppb	1.98	#VALUE!	
182 W	0.435	0.087	ppb	---	#VALUE!	
203 Tl	0.0347	0.0069	ppb	21.19	1000.	
205 Tl	0.0241	0.0048	ppb	29.13	#VALUE!	
208 Pb	0.3297	0.0659	ppb	11.01	1000.	
232 Th	0.0658	0.0132	ppb	14.38	1000.	
238 U	0.0499	0.01	ppb	9.63	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2955239.30	1.40	3052150.50	96.8	69.5 - 130	
45 Sc	2314941.50	0.75	2505808.30	92.4	69.5 - 130	
72 Ge	490234.97	0.29	528327.81	92.8	69.5 - 130	
159 Tb	4388176.00	1.01	4805871.00	91.3	69.5 - 130	
209 Bi	2595628.00	1.22	2881081.50	90.1	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000710

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\067SMPL.D\067SMPL.D#
Date Acquired: Jul 3 2014 08:31 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-017
Misc Info: DILUTION 1.6/8
Vial Number: 2312
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0077	0.0015	ppb	84.22	100.	
11 B	16.11	3.222	ppb	11.25	1000.	
23 Na	3,953.5	790.7	ppb	0.32	200000.	
25 Mg	4,410.	882.	ppb	1.97	200000.	
27 Al	17.17	3.434	ppb	3.63	200000.	
28 Si	2,528.5	505.7	ppb	4.11	#VALUE!	
29 Si	1,372.	274.4	ppb	11.47	10000.	
39 K	1,325.	265.	ppb	0.66	200000.	
43 Ca	48,595.	9,719.	ppb	0.19	#VALUE!	
44 Ca	48,300.	9,660.	ppb	0.58	200000.	
51 V	1.094	0.2188	ppb	10.33	1000.	
52 Cr	1.458	0.2916	ppb	2.05	1000.	
53 Cr	51.15	10.23	ppb	1.65	#VALUE!	
55 Mn	976.	195.2	ppb	1.74	1000.	
56 Fe	709.	141.8	ppb	2.23	#VALUE!	
57 Fe	827.5	165.5	ppb	1.16	100000.	
59 Co	4.0405	0.8081	ppb	4.37	1000.	
60 Ni	1.7555	0.3511	ppb	5.07	1000.	
63 Cu	3.051	0.6102	ppb	1.54	#VALUE!	
65 Cu	2.8285	0.5657	ppb	2.36	1000.	
66 Zn	3.3525	0.6705	ppb	13.64	1000.	
68 Zn	4.9125	0.9825	ppb	38.57	#VALUE!	
75 As	6.85	1.37	ppb	18.54	1000.	
82 Se	-0.3617	-0.0723	ppb	82.00	1000.	
88 Sr	68.8	13.76	ppb	1.02	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.9555	0.1911	ppb	8.01	1000.	
107 Ag	0.0162	0.0032	ppb	62.21	500.	
109 Ag	0.0119	0.0024	ppb	42.01	#VALUE!	
111 Cd	0.0181	0.0036	ppb	241.80	#VALUE!	
114 Cd	0.0751	0.015	ppb	29.68	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.4275	0.0855	ppb	18.42	1000.	
120 Sn	0.4353	0.0871	ppb	2.59	#VALUE!	
121 Sb	0.1568	0.0314	ppb	9.80	#VALUE!	
123 Sb	0.1129	0.0226	ppb	27.69	1000.	
135 Ba	4.16	0.832	ppb	2.93	1000.	
137 Ba	4.116	0.8232	ppb	3.89	#VALUE!	
182 W	0.3694	0.0739	ppb	---	#VALUE!	
203 Tl	0.0209	0.0042	ppb	49.53	1000.	
205 Tl	0.0069	0.0014	ppb	100.00	#VALUE!	
208 Pb	0.0705	0.0141	ppb	36.13	1000.	
232 Th	0.0473	0.0095	ppb	10.53	1000.	
238 U	0.0242	0.0048	ppb	40.07	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2952022.00	2.01	3052150.50	96.7	69.5 - 130	
45 Sc	2348636.80	0.65	2505808.30	93.7	69.5 - 130	
72 Ge	493439.75	0.66	528327.81	93.4	69.5 - 130	
159 Tb	4395791.00	0.60	4805871.00	91.5	69.5 - 130	
209 Bi	2628959.50	1.17	2881081.50	91.2	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000711

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\068SMPL.D\068SMPL.D#
Date Acquired: Jul 3 2014 08:34 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-018
Misc Info: DILUTION 1.6/8
Vial Number: 2401
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0115	0.0023	ppb	68.86	100.	
11 B	6.975	1.395	ppb	1.21	1000.	
23 Na	4,068.5	813.7	ppb	0.16	200000.	
25 Mg	6,100.	1,220.	ppb	0.72	200000.	
27 Al	93.	18.6	ppb	1.52	200000.	
28 Si	2,009.5	401.9	ppb	3.80	#VALUE!	
29 Si	1,468.	293.6	ppb	16.90	10000.	
39 K	3,156.	631.2	ppb	0.52	200000.	
43 Ca	58,250.	11,650.	ppb	0.43	#VALUE!	
44 Ca	57,900.	11,580.	ppb	0.48	200000.	
51 V	1.0245	0.2049	ppb	53.29	1000.	
52 Cr	1.505	0.301	ppb	1.13	1000.	
53 Cr	50.25	10.05	ppb	1.67	#VALUE!	
55 Mn	466.15	93.23	ppb	1.52	1000.	
56 Fe	2,738.5	547.7	ppb	2.76	#VALUE!	
57 Fe	2,899.5	579.9	ppb	2.54	100000.	
59 Co	1.4285	0.2857	ppb	8.50	1000.	
60 Ni	1.9205	0.3841	ppb	6.47	1000.	
63 Cu	2.4525	0.4905	ppb	1.86	#VALUE!	
65 Cu	2.3915	0.4783	ppb	9.87	1000.	
66 Zn	7.05	1.41	ppb	2.69	1000.	
68 Zn	11.11	2.222	ppb	24.49	#VALUE!	
75 As	7.27	1.454	ppb	11.50	1000.	
82 Se	0.2622	0.0524	ppb	546.72	1000.	
88 Sr	83.45	16.69	ppb	0.68	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	1.0805	0.2161	ppb	12.90	1000.	
107 Ag	0.0225	0.0045	ppb	20.04	500.	
109 Ag	0.0193	0.0039	ppb	51.77	#VALUE!	
111 Cd	0.0132	0.0026	ppb	1058.30	#VALUE!	
114 Cd	0.0894	0.0179	ppb	12.83	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.254	0.0508	ppb	24.02	1000.	
120 Sn	0.2668	0.0534	ppb	11.10	#VALUE!	
121 Sb	0.2054	0.0411	ppb	16.33	#VALUE!	
123 Sb	0.1896	0.0379	ppb	11.89	1000.	
135 Ba	6.325	1.265	ppb	6.80	1000.	
137 Ba	6.02	1.204	ppb	7.23	#VALUE!	
182 W	0.2864	0.0573	ppb	---	#VALUE!	
203 Tl	0.0083	0.0017	ppb	167.63	1000.	
205 Tl	0.0112	0.0022	ppb	53.33	#VALUE!	
208 Pb	0.2882	0.0576	ppb	1.09	1000.	
232 Th	0.05	0.01	ppb	14.88	1000.	
238 U	0.0439	0.0088	ppb	19.64	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2942796.80	1.11	3052150.50	96.4	69.5 - 130	
45 Sc	2341502.50	0.94	2505808.30	93.4	69.5 - 130	
72 Ge	488012.72	1.66	528327.81	92.4	69.5 - 130	
159 Tb	4419562.00	1.04	4805871.00	92.0	69.5 - 130	
209 Bi	2613836.00	0.59	2881081.50	90.7	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000712

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\069SMPL.D\069SMPL.D#
Date Acquired: Jul 3 2014 08:38 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-019
Misc Info: DILUTION 1.6/8
Vial Number: 2402
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0055	0.0011	ppb	58.34	100.	
11 B	6.645	1.329	ppb	5.36	1000.	
23 Na	4,156.	831.2	ppb	1.26	200000.	
25 Mg	5,945.	1,189.	ppb	1.78	200000.	
27 Al	25.49	5.098	ppb	3.79	200000.	
28 Si	2,036.5	407.3	ppb	13.10	#VALUE!	
29 Si	1,747.	349.4	ppb	59.22	10000.	
39 K	2,941.	588.2	ppb	1.40	200000.	
43 Ca	57,250.	11,450.	ppb	1.86	#VALUE!	
44 Ca	56,650.	11,330.	ppb	1.58	200000.	
51 V	1.1435	0.2287	ppb	28.17	1000.	
52 Cr	1.7475	0.3495	ppb	5.62	1000.	
53 Cr	57.65	11.53	ppb	5.14	#VALUE!	
55 Mn	368.85	73.77	ppb	1.64	1000.	
56 Fe	900.5	180.1	ppb	1.51	#VALUE!	
57 Fe	1,040.	208.	ppb	3.05	100000.	
59 Co	1.3115	0.2623	ppb	5.90	1000.	
60 Ni	1.537	0.3074	ppb	1.87	1000.	
63 Cu	1.6505	0.3301	ppb	5.04	#VALUE!	
65 Cu	1.8425	0.3685	ppb	17.09	1000.	
66 Zn	6.315	1.263	ppb	7.10	1000.	
68 Zn	11.54	2.308	ppb	14.60	#VALUE!	
75 As	4.544	0.9088	ppb	9.48	1000.	
82 Se	0.1025	0.0205	ppb	927.28	1000.	
88 Sr	77.9	15.58	ppb	1.16	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.9165	0.1833	ppb	5.46	1000.	
107 Ag	0.0113	0.0023	ppb	112.88	500.	
109 Ag	0.0098	0.002	ppb	192.01	#VALUE!	
111 Cd	0.0482	0.0096	ppb	240.80	#VALUE!	
114 Cd	0.0676	0.0135	ppb	44.89	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.2517	0.0503	ppb	18.79	1000.	
120 Sn	0.2378	0.0476	ppb	20.93	#VALUE!	
121 Sb	0.2042	0.0408	ppb	19.27	#VALUE!	
123 Sb	0.2261	0.0452	ppb	13.58	1000.	
135 Ba	3.074	0.6148	ppb	4.05	1000.	
137 Ba	3.387	0.6774	ppb	6.76	#VALUE!	
182 W	0.2037	0.0407	ppb	---	#VALUE!	
203 Tl	0.0174	0.0035	ppb	98.80	1000.	
205 Tl	0.0094	0.0019	ppb	81.51	#VALUE!	
208 Pb	0.0963	0.0193	ppb	35.31	1000.	
232 Th	0.0297	0.0059	ppb	25.79	1000.	
238 U	0.0342	0.0068	ppb	11.10	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2960846.30	2.08	3052150.50	97.0	69.5 - 130	
45 Sc	2322435.30	0.78	2505808.30	92.7	69.5 - 130	
72 Ge	483252.78	1.21	528327.81	91.5	69.5 - 130	
159 Tb	4340229.00	0.94	4805871.00	90.3	69.5 - 130	
209 Bi	2575349.80	1.13	2881081.50	89.4	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000713

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\070SMPL.D\070SMPL.D#
Date Acquired: Jul 3 2014 08:41 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-020
Misc Info: DILUTION 1.6/8
Vial Number: 2403
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0144	0.0029	ppb	46.87	100.	
11 B	4.252	0.8504	ppb	5.81	1000.	
23 Na	2,889.5	577.9	ppb	1.40	200000.	
25 Mg	2,558.	511.6	ppb	1.42	200000.	
27 Al	38.465	7.693	ppb	1.07	200000.	
28 Si	995.5	199.1	ppb	18.34	#VALUE!	
29 Si	401.65	80.33	ppb	125.48	10000.	
39 K	864.5	172.9	ppb	2.32	200000.	
43 Ca	27,160.	5,432.	ppb	0.85	#VALUE!	
44 Ca	27,520.	5,504.	ppb	1.15	200000.	
51 V	1.3645	0.2729	ppb	6.70	1000.	
52 Cr	1.36	0.272	ppb	4.90	1000.	
53 Cr	44.285	8.857	ppb	0.27	#VALUE!	
55 Mn	27.455	5.491	ppb	0.63	1000.	
56 Fe	1,313.5	262.7	ppb	1.44	#VALUE!	
57 Fe	1,370.	274.	ppb	0.23	100000.	
59 Co	0.565	0.113	ppb	11.74	1000.	
60 Ni	1.1015	0.2203	ppb	9.16	1000.	
63 Cu	2.3175	0.4635	ppb	5.69	#VALUE!	
65 Cu	2.339	0.4678	ppb	10.14	1000.	
66 Zn	3.0955	0.6191	ppb	4.49	1000.	
68 Zn	6.955	1.391	ppb	22.96	#VALUE!	
75 As	3.449	0.6898	ppb	10.53	1000.	
82 Se	-0.2127	-0.0425	ppb	212.16	1000.	
88 Sr	41.38	8.276	ppb	1.16	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.7735	0.1547	ppb	2.15	1000.	
107 Ag	0.0178	0.0036	ppb	125.12	500.	
109 Ag	0.0154	0.0031	ppb	70.23	#VALUE!	
111 Cd	0.0994	0.0199	ppb	94.06	#VALUE!	
114 Cd	0.0813	0.0163	ppb	16.20	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.2147	0.0429	ppb	44.03	1000.	
120 Sn	0.1627	0.0325	ppb	5.17	#VALUE!	
121 Sb	0.1003	0.0201	ppb	29.70	#VALUE!	
123 Sb	0.1435	0.0287	ppb	21.41	1000.	
135 Ba	2.876	0.5752	ppb	1.87	1000.	
137 Ba	2.919	0.5838	ppb	1.59	#VALUE!	
182 W	0.1366	0.0273	ppb	---	#VALUE!	
203 Tl	0.013	0.0026	ppb	111.06	1000.	
205 Tl	-0.0011	-0.0002	ppb	454.79	#VALUE!	
208 Pb	0.18	0.036	ppb	20.76	1000.	
232 Th	0.0409	0.0082	ppb	11.46	1000.	
238 U	0.0191	0.0038	ppb	26.25	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2956735.30	0.59	3052150.50	96.9	69.5 - 130	
45 Sc	2329484.30	0.36	2505808.30	93.0	69.5 - 130	
72 Ge	486908.41	0.64	528327.81	92.2	69.5 - 130	
159 Tb	4386078.50	0.95	4805871.00	91.3	69.5 - 130	
209 Bi	2594725.50	1.45	2881081.50	90.1	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000714

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\071SMPL.D\071SMPL.D#
Date Acquired: Jul 3 2014 08:45 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-024
Misc Info: DILUTION 1.6/8
Vial Number: 2404
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0091	0.0018	ppb	167.41	100.	
11 B	0.8385	0.1677	ppb	48.93	1000.	
23 Na	50.85	10.17	ppb	1.73	200000.	
25 Mg	5.915	1.183	ppb	8.08	200000.	
27 Al	6.89	1.378	ppb	8.07	200000.	
28 Si	-480.4	-96.08	ppb	21.28	#VALUE!	
29 Si	-1,043.5	-208.7	ppb	56.16	10000.	LOW
39 K	78.9	15.78	ppb	9.28	200000.	
43 Ca	38.01	7.602	ppb	73.40	#VALUE!	
44 Ca	31.92	6.384	ppb	30.26	200000.	
51 V	0.8005	0.1601	ppb	90.76	1000.	
52 Cr	1.438	0.2876	ppb	3.88	1000.	
53 Cr	53.05	10.61	ppb	0.23	#VALUE!	
55 Mn	0.7225	0.1445	ppb	9.33	1000.	
56 Fe	60.05	12.01	ppb	17.29	#VALUE!	
57 Fe	48.16	9.632	ppb	19.24	100000.	
59 Co	0.022	0.0044	ppb	83.76	1000.	
60 Ni	0.1037	0.0207	ppb	22.88	1000.	
63 Cu	0.4548	0.091	ppb	20.55	#VALUE!	
65 Cu	0.3882	0.0776	ppb	5.13	1000.	
66 Zn	2.5955	0.5191	ppb	12.81	1000.	
68 Zn	8.96	1.792	ppb	16.35	#VALUE!	
75 As	-1.0875	-0.2175	ppb	23.85	1000.	
82 Se	-0.2577	-0.0515	ppb	214.24	1000.	
88 Sr	0.0556	0.0111	ppb	49.17	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.084	0.0168	ppb	44.90	1000.	
107 Ag	0.0118	0.0024	ppb	90.56	500.	
109 Ag	-0.0043	-0.0009	ppb	114.27	#VALUE!	
111 Cd	0.1654	0.0331	ppb	137.86	#VALUE!	
114 Cd	0.0918	0.0184	ppb	19.48	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.127	0.0254	ppb	26.22	1000.	
120 Sn	0.1202	0.024	ppb	24.03	#VALUE!	
121 Sb	0.0364	0.0073	ppb	11.76	#VALUE!	
123 Sb	0.0285	0.0057	ppb	100.70	1000.	
135 Ba	1.207	0.2414	ppb	18.95	1000.	
137 Ba	1.2715	0.2543	ppb	4.97	#VALUE!	
182 W	0.028	0.0056	ppb	---	#VALUE!	
203 Tl	0.0108	0.0022	ppb	38.62	1000.	
205 Tl	0.0043	0.0009	ppb	157.70	#VALUE!	
208 Pb	0.0267	0.0053	ppb	62.40	1000.	
232 Th	0.019	0.0038	ppb	45.21	1000.	
238 U	-0.0023	-0.0005	ppb	128.53	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2949968.80	1.39	3052150.50	96.7	69.5 - 130	
45 Sc	2284446.80	0.71	2505808.30	91.2	69.5 - 130	
72 Ge	477856.53	0.91	528327.81	90.4	69.5 - 130	
159 Tb	4257992.50	0.66	4805871.00	88.6	69.5 - 130	
209 Bi	2535804.30	1.17	2881081.50	88.0	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000715

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\072_CCV.D\072_CCV.D#
Date Acquired: Jul 3 2014 08:48 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	25.21	ppb	1.38	25	100.84	
11 B	24.18	ppb	2.15	25	96.72	
23 Na	5,065.	ppb	0.08	5,000	101.3	
25 Mg	5,089.	ppb	0.45	5,000	101.78	
27 Al	497.3	ppb	0.63	500	99.46	
28 Si	389.3	ppb	1.95	500	77.86	
29 Si	453.3	ppb	13.34	500	90.66	
39 K	4,962.	ppb	0.38	5,000	99.24	
43 Ca	4,920.	ppb	0.72	5,000	98.4	
44 Ca	4,989.	ppb	1.03	5,000	99.78	
51 V	24.71	ppb	0.71	25	98.84	
52 Cr	24.71	ppb	0.46	25	98.84	
53 Cr	25.36	ppb	0.44	25	101.44	
55 Mn	24.74	ppb	0.23	25	98.96	
56 Fe	4,961.	ppb	1.25	5,000	99.22	
57 Fe	5,042.	ppb	1.16	5,000	100.84	
59 Co	24.95	ppb	0.46	25	99.8	
60 Ni	25.17	ppb	0.33	25	100.68	
63 Cu	24.74	ppb	0.63	25	98.96	
65 Cu	24.95	ppb	0.60	25	99.8	
66 Zn	25.22	ppb	0.91	25	100.88	
68 Zn	25.72	ppb	1.99	25	102.88	
75 As	24.57	ppb	1.22	25	98.28	
82 Se	25.13	ppb	1.27	25	100.52	
88 Sr	24.48	ppb	0.18	25	97.92	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.39	ppb	0.63	25	97.56	
107 Ag	24.75	ppb	0.32	25	99	
109 Ag	24.63	ppb	0.67	25	98.52	
111 Cd	24.65	ppb	0.05	25	98.6	
114 Cd	24.64	ppb	0.21	25	98.56	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.72	ppb	0.50	25	98.88	
120 Sn	24.54	ppb	1.06	25	98.16	
121 Sb	24.7	ppb	0.72	25	98.8	
123 Sb	24.8	ppb	1.27	25	99.2	
135 Ba	24.66	ppb	1.67	25	98.64	
137 Ba	24.91	ppb	0.81	25	99.64	
182 W	24.3	ppb	0.60	25	97.2	
203 Tl	24.62	ppb	0.93	25	98.48	
205 Tl	24.71	ppb	0.62	25	98.84	
208 Pb	24.62	ppb	0.93	25	98.48	
232 Th	24.2	ppb	2.42	25	96.8	
238 U	24.16	ppb	0.63	25	96.64	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2940865.00	1.07	3052150.50	96.4	80 - 120.4	
45 Sc	2359039.30	0.71	2505808.30	94.1	80 - 120.4	
72 Ge	489889.25	1.41	528327.81	92.7	80 - 120.4	
159 Tb	4460358.50	1.32	4805871.00	92.8	80 - 120.4	
209 Bi	2634263.30	2.32	2881081.50	91.4	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000716

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JHG03A.B\073_CCB.D\073_CCB.D#
Date Acquired: Jul 3 2014 08:52 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 03 2014 05:47 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0012	ppb	132.92	1.00	
11 B	0.4608	ppb	29.54	1.00	
23 Na	-0.0055	ppb	3935.00	1.00	
25 Mg	0.0267	ppb	134.00	1.00	
27 Al	-0.0674	ppb	68.42	1.00	
28 Si	-5.162	ppb	215.03	1.00	
29 Si	192.8	ppb	61.72	1.00	Fail
39 K	14.57	ppb	23.86	1.00	
43 Ca	-3.293	ppb	95.57	1.00	
44 Ca	-0.5566	ppb	482.39	1.00	
51 V	0.0274	ppb	122.59	1.00	
52 Cr	0.0358	ppb	66.94	1.00	
53 Cr	0.2564	ppb	24.43	1.00	
55 Mn	0.0144	ppb	54.05	1.00	
56 Fe	2.078	ppb	412.18	1.00	
57 Fe	6.268	ppb	72.16	1.00	
59 Co	0.	ppb	14284.00	1.00	
60 Ni	0.0064	ppb	189.78	1.00	
63 Cu	0.0033	ppb	83.05	1.00	
65 Cu	0.0106	ppb	121.90	1.00	
66 Zn	0.0255	ppb	59.44	1.00	
68 Zn	1.026	ppb	12.72	1.00	
75 As	-0.1781	ppb	54.60	1.00	
82 Se	0.1482	ppb	25.16	1.00	
88 Sr	-0.0009	ppb	130.68	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0585	ppb	21.07	1.00	
107 Ag	0.0024	ppb	163.29	1.00	
109 Ag	-0.0016	ppb	55.90	1.00	
111 Cd	0.0424	ppb	29.84	1.00	
114 Cd	0.0066	ppb	97.77	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0724	ppb	33.16	1.00	
120 Sn	0.0686	ppb	22.98	1.00	
121 Sb	0.0213	ppb	50.40	1.00	
123 Sb	0.0178	ppb	32.18	1.00	
135 Ba	0.0028	ppb	416.37	1.00	
137 Ba	0.0049	ppb	79.64	1.00	
182 W	0.1041	ppb	8.80	1.00	
203 Tl	0.0046	ppb	37.90	1.00	
205 Tl	0.0048	ppb	45.67	1.00	
208 Pb	0.0019	ppb	313.94	1.00	
232 Th	0.07	ppb	21.34	1.00	
238 U	0.0016	ppb	20.02	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2866842.80	0.35	3052150.50	93.9	79.5 - 120	
45 Sc	2340624.80	1.45	2505808.30	93.4	79.5 - 120	
72 Ge	487612.16	1.24	528327.81	92.3	79.5 - 120	
159 Tb	4375784.50	2.14	4805871.00	91.1	79.5 - 120	
209 Bi	2663496.30	1.16	2881081.50	92.4	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG03A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000717

KATAHDIN ANALYTICAL SERVICES, INC.
METALS ANALYSIS RUN INFORMATION SHEET

INSTR. ID: Agilent 7500 **ANALYST:** BAM **ANALYSIS DATE:** 7-5-14

FILE NAME: HG705A

REVIEWED
HMM 7-7-14
KATAHDIN ANALYTICAL
METALS SECTION

METHOD:

ICP	ICP-MS	CVAA
☐ 200.7	☒ 200.8	☐ 245.__
☐ 6010B	☒ 6020	☐ 747__
☐ CLP	☐ CLP	☐ CLP
☐ _____	☐ _____	☐ _____

STANDARDS USED:

Standard Name	Standard ID	Prep Date	Expiration Date	Standard Conc.
Cal Blank/ICB/CCB	MW14962	6-30-14	6-30-15	0 ug/L
Cal. Std. 1	MW14963	6-30-14	8-8-14	varies by element
2	MW14964	↓	↓	↓
3	MW14965			
4	MW14966			
ICV	MW14951	6-25-14	8-2-14	
PQL	MW14958	6-26-14	8-5-14	
ICSA	MW14968	6-30-14	7-7-14	
ICSAB	MW14969	↓	↓	
CCV	MW14976	7-1-14	8-8-14	↓
Internal Std.	MW14971	7-2-14	10-2-14	0 1mg/L

HMM 7-7-14

Additional Comments and Notes:

HMM 7-7-14

INSTRUMENT RUNLOG

Instrument: AGILENT 7500

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
6020 Tune	1	JHG05A	7/5/2014 1:49:00	13:49	EAM
200.8 Tune	1	JHG05A	7/5/2014 1:52:00	13:52	EAM
Cal Blank	1	JHG05A	7/5/2014 2:20:00	14:20	EAM
Cal Std 1	1	JHG05A	7/5/2014 2:24:00	14:24	EAM
Cal Std 2	1	JHG05A	7/5/2014 2:27:00	14:27	EAM
Cal Std 3	1	JHG05A	7/5/2014 2:30:00	14:30	EAM
Cal Std 4	1	JHG05A	7/5/2014 2:33:00	14:33	EAM
ICV	1	JHG05A	7/5/2014 2:36:00	14:36	EAM
ICB	1	JHG05A	7/5/2014 2:39:00	14:39	EAM
PQL	1	JHG05A	7/5/2014 2:42:00	14:42	EAM
ICSA	1	JHG05A	7/5/2014 2:45:00	14:45	EAM
ICSAB	1	JHG05A	7/5/2014 2:49:00	14:49	EAM
Blank	1	JHG05A	7/5/2014 2:53:00	14:53	EAM
CCV	1	JHG05A	7/5/2014 2:56:00	14:56	EAM
CCB	1	JHG05A	7/5/2014 2:59:00	14:59	EAM
PBWHF24IMW2	5	JHG05A	7/5/2014 3:02:00	15:02	EAM
LCSWHF24IMW2	5	JHG05A	7/5/2014 3:05:00	15:05	EAM
SH4521-008	5	JHG05A	7/5/2014 3:09:00	15:09	EAM
SH4521-008L	25	JHG05A	7/5/2014 3:12:00	15:12	EAM
SH4521-008A	5	JHG05A	7/5/2014 3:15:00	15:15	EAM
SH4521-008S	5	JHG05A	7/5/2014 3:18:00	15:18	EAM
SH4521-008P	5	JHG05A	7/5/2014 3:22:00	15:22	EAM
SH4521-015	5	JHG05A	7/5/2014 3:25:00	15:25	EAM
SH4521-015L	25	JHG05A	7/5/2014 3:28:00	15:28	EAM
SH4521-015A	5	JHG05A	7/5/2014 3:32:00	15:32	EAM
CCV	1	JHG05A	7/5/2014 3:35:00	15:35	EAM
CCB	1	JHG05A	7/5/2014 3:38:00	15:38	EAM
SH4521-015S	5	JHG05A	7/5/2014 3:41:00	15:41	EAM
SH4521-015P	5	JHG05A	7/5/2014 3:45:00	15:45	EAM
SH4521-021	5	JHG05A	7/5/2014 3:48:00	15:48	EAM
SH4521-022	5	JHG05A	7/5/2014 3:51:00	15:51	EAM
SH4521-023	5	JHG05A	7/5/2014 3:54:00	15:54	EAM
PBSHF25IMS1	5	JHG05A	7/5/2014 3:58:00	15:58	EAM
LCSOHF25IMS1	5	JHG05A	7/5/2014 4:01:00	16:01	EAM
LC2OHF25IMS1	5	JHG05A	7/5/2014 4:04:00	16:04	EAM
SH4400-012	5	JHG05A	7/5/2014 4:08:00	16:08	EAM
PBSHF26IMS1	5	JHG05A	7/5/2014 4:11:00	16:11	EAM
CCV	1	JHG05A	7/5/2014 4:14:00	16:14	EAM
CCB	1	JHG05A	7/5/2014 4:18:00	16:18	EAM
LCSOHF26IMS1	5	JHG05A	7/5/2014 4:21:00	16:21	EAM
LC2OHF26IMS1	5	JHG05A	7/5/2014 4:24:00	16:24	EAM
SH4522-006	5	JHG05A	7/5/2014 4:28:00	16:28	EAM
SH4661-001	1	JHG05A	7/5/2014 4:31:00	16:31	EAM
PBSHF30IMS1	5	JHG05A	7/5/2014 4:35:00	16:35	EAM

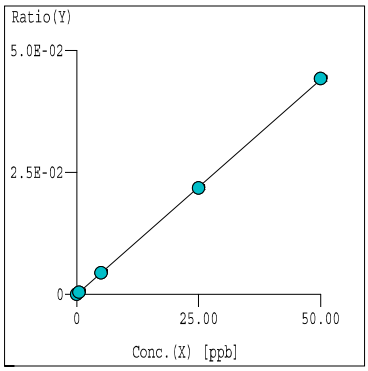
SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
LCSOHF30IMS1	5	JHG05A	7/5/2014 4:38:00	16:38	EAM
SH4740-001	5	JHG05A	7/5/2014 4:41:00	16:41	EAM
SH4740-001L	25	JHG05A	7/5/2014 4:45:00	16:45	EAM
SH4740-001A	5	JHG05A	7/5/2014 4:48:00	16:48	EAM
SH4740-001S	5	JHG05A	7/5/2014 4:52:00	16:52	EAM
CCV	1	JHG05A	7/5/2014 4:55:00	16:55	EAM
CCB	1	JHG05A	7/5/2014 4:58:00	16:58	EAM
SH4740-001P	5	JHG05A	7/5/2014 5:02:00	17:02	EAM
SH4740-002	5	JHG05A	7/5/2014 5:05:00	17:05	EAM
SH4740-003	5	JHG05A	7/5/2014 5:09:00	17:09	EAM
SH4740-004	5	JHG05A	7/5/2014 5:12:00	17:12	EAM
SH4740-005	5	JHG05A	7/5/2014 5:16:00	17:16	EAM
SH4740-006	5	JHG05A	7/5/2014 5:19:00	17:19	EAM
SH4740-007	5	JHG05A	7/5/2014 5:23:00	17:23	EAM
PBWHF30IMW2	5	JHG05A	7/5/2014 5:26:00	17:26	EAM
LCSWHF30IMW2	5	JHG05A	7/5/2014 5:30:00	17:30	EAM
SH4739-001	5	JHG05A	7/5/2014 5:33:00	17:33	EAM
CCV	1	JHG05A	7/5/2014 5:37:00	17:37	EAM
CCB	1	JHG05A	7/5/2014 5:40:00	17:40	EAM
SH4739-002	5	JHG05A	7/5/2014 5:43:00	17:43	EAM
SH4739-003	5	JHG05A	7/5/2014 5:47:00	17:47	EAM
SH4739-004	5	JHG05A	7/5/2014 5:50:00	17:50	EAM
SH4739-005	5	JHG05A	7/5/2014 5:54:00	17:54	EAM
SH4739-005L	25	JHG05A	7/5/2014 5:57:00	17:57	EAM
SH4739-005A	5	JHG05A	7/5/2014 6:01:00	18:01	EAM
SH4739-005S	5	JHG05A	7/5/2014 6:04:00	18:04	EAM
SH4739-005P	5	JHG05A	7/5/2014 6:07:00	18:07	EAM
SH4739-006	5	JHG05A	7/5/2014 6:11:00	18:11	EAM
SH4739-006L	25	JHG05A	7/5/2014 6:14:00	18:14	EAM
CCV	1	JHG05A	7/5/2014 6:18:00	18:18	EAM
CCB	1	JHG05A	7/5/2014 6:21:00	18:21	EAM
SH4739-006A	5	JHG05A	7/5/2014 6:24:00	18:24	EAM
SH4739-007	5	JHG05A	7/5/2014 6:28:00	18:28	EAM
SH4739-008	5	JHG05A	7/5/2014 6:31:00	18:31	EAM
SH4739-009	5	JHG05A	7/5/2014 6:35:00	18:35	EAM
SH4739-010	5	JHG05A	7/5/2014 6:38:00	18:38	EAM
SH4739-011	5	JHG05A	7/5/2014 6:42:00	18:42	EAM
SH4739-012	5	JHG05A	7/5/2014 6:45:00	18:45	EAM
SH4739-013	5	JHG05A	7/5/2014 6:49:00	18:49	EAM
SH4740-008	5	JHG05A	7/5/2014 6:52:00	18:52	EAM
PBWHG01IMW1	5	JHG05A	7/5/2014 6:56:00	18:56	EAM
CCV	1	JHG05A	7/5/2014 6:59:00	18:59	EAM
CCB	1	JHG05A	7/5/2014 7:02:00	19:02	EAM
LCSWHG01IMW1	5	JHG05A	7/5/2014 7:06:00	19:06	EAM
SH4739-006S	5	JHG05A	7/5/2014 7:09:00	19:09	EAM
SH4739-006P	5	JHG05A	7/5/2014 7:13:00	19:13	EAM
PBSHF25IMS1	5	JHG05A	7/5/2014 7:16:00	19:16	EAM

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
PBWHG04IMW1	1	JHG05A	7/5/2014 7:20:00	19:20	EAM
LCSWHG04IMW1	5	JHG05A	7/5/2014 7:23:00	19:23	EAM
SH4770-001	1	JHG05A	7/5/2014 7:27:00	19:27	EAM
PBWHG04IMW2	5	JHG05A	7/5/2014 7:30:00	19:30	EAM
LCSWHG04IMW2	5	JHG05A	7/5/2014 7:34:00	19:34	EAM
SH4940-010	5	JHG05A	7/5/2014 7:37:00	19:37	EAM
CCV	1	JHG05A	7/5/2014 7:41:00	19:41	EAM
CCB	1	JHG05A	7/5/2014 7:44:00	19:44	EAM
CCV	1	JHG05A	7/5/2014 7:48:00	19:48	EAM
CCB	1	JHG05A	7/5/2014 7:51:00	19:51	EAM
PQL	1	JHG05A	7/5/2014 7:55:00	19:55	EAM
CCV	1	JHG05A	7/5/2014 7:58:00	19:58	EAM
CCB	1	JHG05A	7/5/2014 8:02:00	20:02	EAM

=== Graph Detail ===

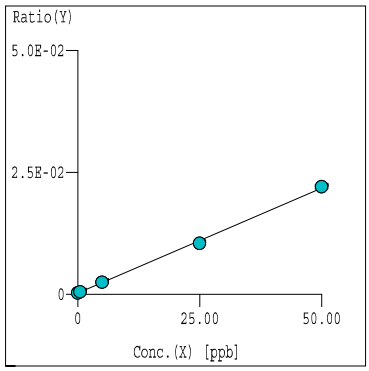
Cal. Date: 07/05/2013, 14:35

Step Mass Element ISTD Unit
(1) 9 Be 6 ppb



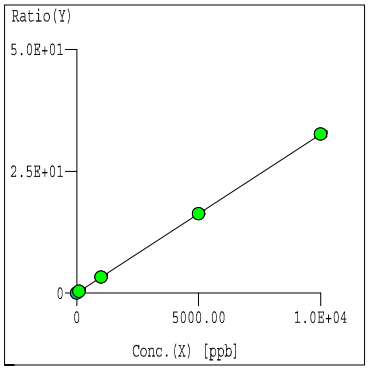
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 8.813E-004*X +1.766E-006
X = 1.135E+003*Y -2.004E-003
DL = 2.187E-03 ppb
BEC = 2.004E-03 ppb

Step Mass Element ISTD Unit
(1) 11 B 6 ppb



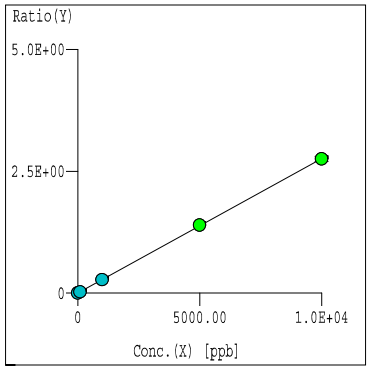
Curve Fit: Y=aX+[blank]
r = 0.9994
Y = 4.301E-004*X +2.738E-004
X = 2.325E+003*Y -6.367E-001
DL = 9.108E-02 ppb
BEC = 6.367E-01 ppb

Step Mass Element ISTD Unit
(1) 23 Na 45 ppb



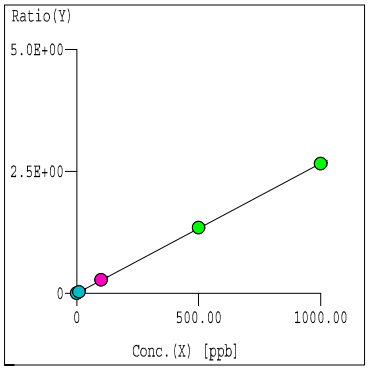
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 3.260E-003*X +3.876E-002
X = 3.068E+002*Y -1.189E+001
DL = 8.171E-01 ppb
BEC = 11.89 ppb

Step Mass Element ISTD Unit
(1) 25 Mg 45 ppb



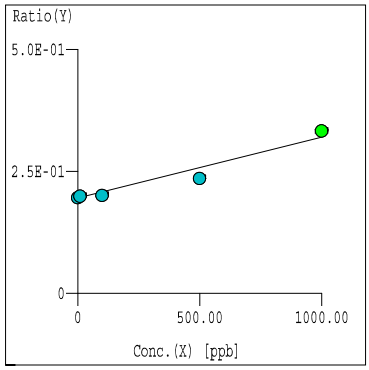
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 2.765E-004*X +5.058E-005
X = 3.616E+003*Y -1.829E-001
DL = 1.831E-01 ppb
BEC = 1.829E-01 ppb

Step Mass Element ISTD Unit
(1) 27 Al 45 ppb



Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 2.662E-003*X +1.255E-003
X = 3.756E+002*Y -4.712E-001
DL = 9.895E-02 ppb
BEC = 4.712E-01 ppb

Step Mass Element ISTD Unit
(1) 29 Si 45 ppb

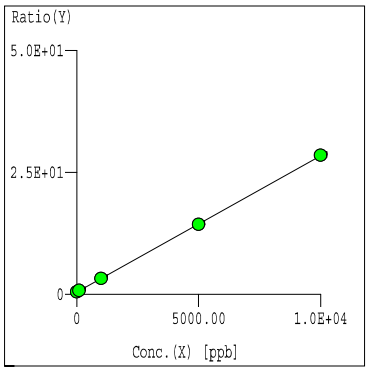


Curve Fit: Y=aX+[blank]
r = 0.9761
Y = 1.247E-004*X +1.957E-001
X = 8.017E+003*Y -1.569E+003
DL = 60.11 ppb
BEC = 1569 ppb

=== Graph Detail ===

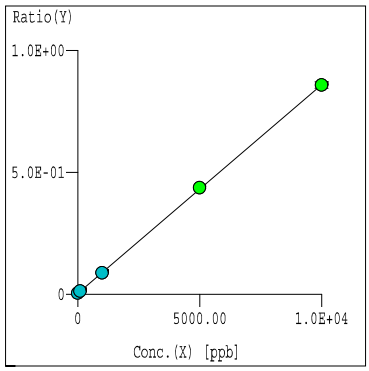
Cal. Date: 07/05/2013, 14:35

Step Mass Element ISTD Unit
(1) 39 K 45 ppb



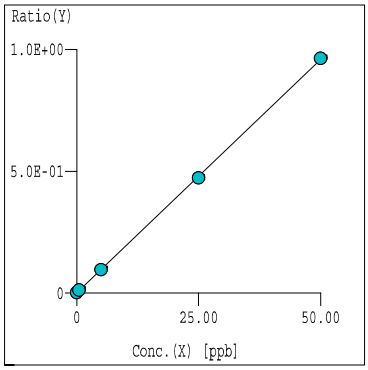
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 2.795E-003*X +4.925E-001
X = 3.578E+002*Y -1.762E+002
DL = 1.149 ppb
BEC = 176.2 ppb

Step Mass Element ISTD Unit
(1) 44 Ca 45 ppb



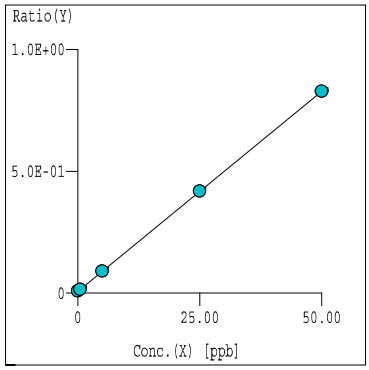
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 8.558E-005*X +4.528E-003
X = 1.169E+004*Y -5.292E+001
DL = 5.144 ppb
BEC = 52.92 ppb

Step Mass Element ISTD Unit
(1) 51 V 72 ppb



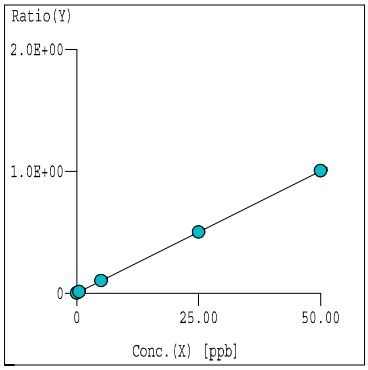
Curve Fit: Y=aX+[blank]
r = 0.9999
Y = 1.912E-002*X +2.860E-003
X = 5.229E+001*Y -1.496E-001
DL = 1.994E-01 ppb
BEC = 1.496E-01 ppb

Step Mass Element ISTD Unit
(1) 52 Cr 72 ppb



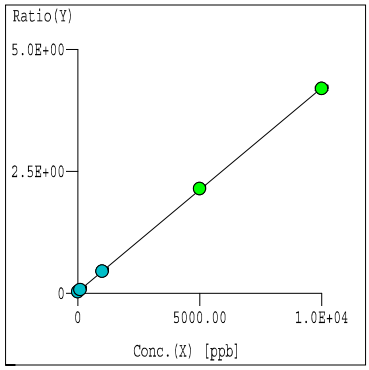
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 1.640E-002*X +8.682E-003
X = 6.096E+001*Y -5.292E-001
DL = 4.506E-02 ppb
BEC = 5.292E-01 ppb

Step Mass Element ISTD Unit
(1) 55 Mn 72 ppb



Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 2.003E-002*X +3.024E-003
X = 4.992E+001*Y -1.510E-001
DL = 2.257E-02 ppb
BEC = 1.510E-01 ppb

Step Mass Element ISTD Unit
(1) 57 Fe 72 ppb

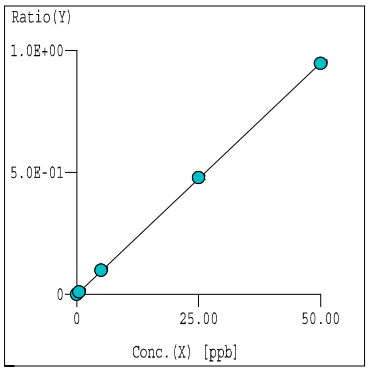


Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 4.178E-004*X +3.256E-002
X = 2.393E+003*Y -7.792E+001
DL = 7.564E-01 ppb
BEC = 77.92 ppb

=== Graph Detail ===

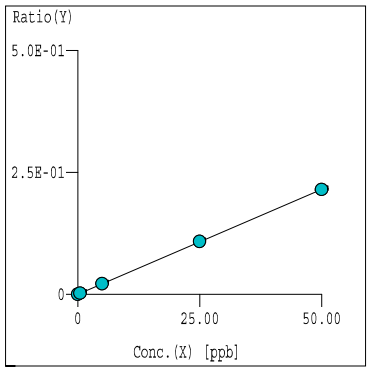
Cal. Date: 07/05/2013, 14:35

Step Mass Element ISTD Unit
(1) 59 Co 72 ppb



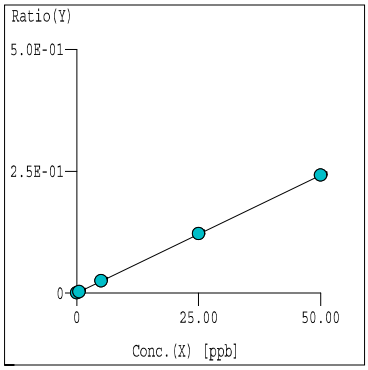
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 1.897E-002*X +2.491E-004
X = 5.271E+001*Y -1.313E-002
DL = 1.473E-02 ppb
BEC = 1.313E-02 ppb

Step Mass Element ISTD Unit
(1) 60 Ni 72 ppb



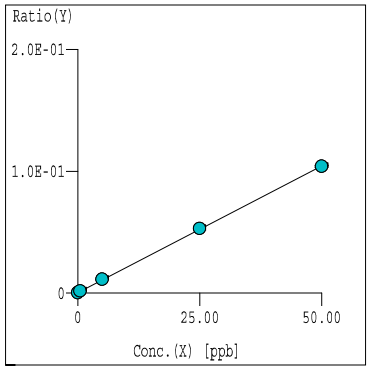
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 4.303E-003*X +9.823E-005
X = 2.324E+002*Y -2.283E-002
DL = 1.387E-02 ppb
BEC = 2.283E-02 ppb

Step Mass Element ISTD Unit
(1) 65 Cu 72 ppb



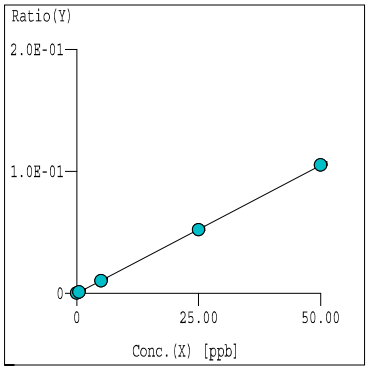
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 4.832E-003*X +1.035E-003
X = 2.069E+002*Y -2.141E-001
DL = 1.589E-02 ppb
BEC = 2.141E-01 ppb

Step Mass Element ISTD Unit
(1) 66 Zn 72 ppb



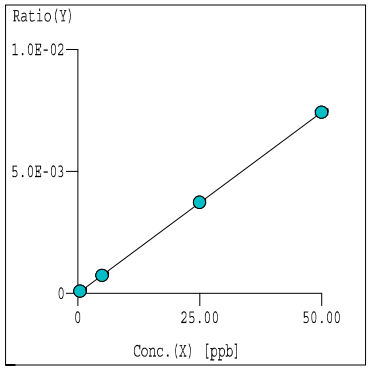
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 2.078E-003*X +6.137E-004
X = 4.812E+002*Y -2.953E-001
DL = 1.292E-01 ppb
BEC = 2.953E-01 ppb

Step Mass Element ISTD Unit
(1) 75 As 72 ppb



Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 2.096E-003*X +1.578E-004
X = 4.771E+002*Y -7.528E-002
DL = 1.175E-01 ppb
BEC = 7.528E-02 ppb

Step Mass Element ISTD Unit
(1) 82 Se 72 ppb

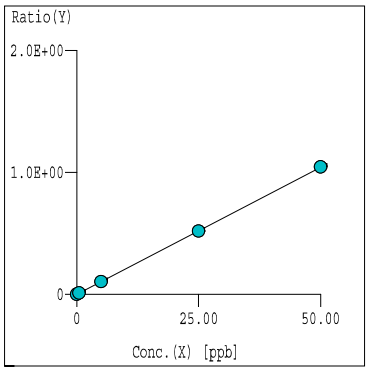


Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 1.485E-004*X -3.457E-006
X = 6.732E+003*Y +2.327E-002
DL = 2.996E-01 ppb
BEC = -2.327E-02 ppb

=== Graph Detail ===

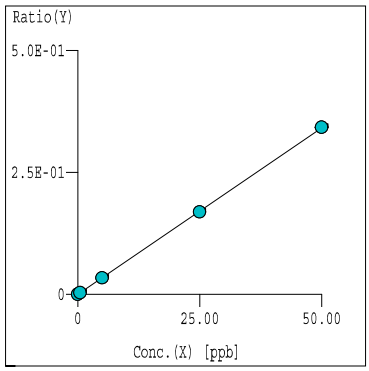
Cal. Date: 07/05/2013, 14:35

Step Mass Element ISTD Unit
(1) 88 Sr 72 ppb



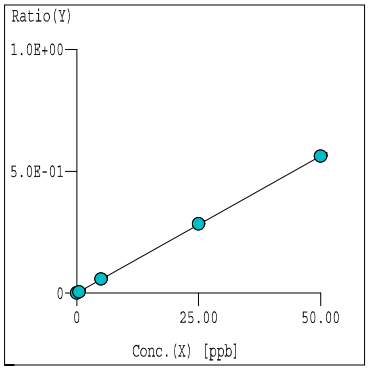
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 2.086E-002*X +1.776E-004
X = 4.794E+001*Y -8.515E-003
DL = 1.476E-02 ppb
BEC = 8.515E-03 ppb

Step Mass Element ISTD Unit
(1) 98 Mo 72 ppb



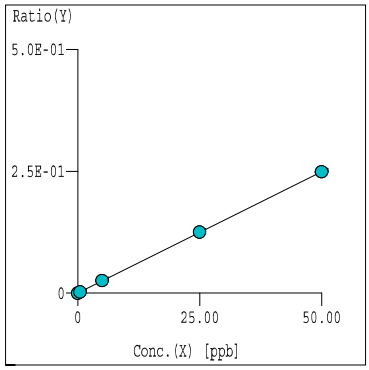
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 6.826E-003*X +8.933E-005
X = 1.465E+002*Y -1.309E-002
DL = 8.481E-03 ppb
BEC = 1.309E-02 ppb

Step Mass Element ISTD Unit
(1) 107 Ag 72 ppb



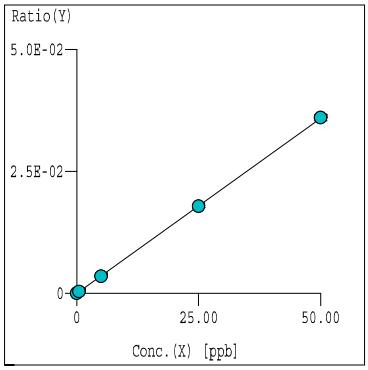
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 1.128E-002*X +7.291E-005
X = 8.867E+001*Y -6.465E-003
DL = 6.892E-03 ppb
BEC = 6.465E-03 ppb

Step Mass Element ISTD Unit
(1) 114 Cd 72 ppb



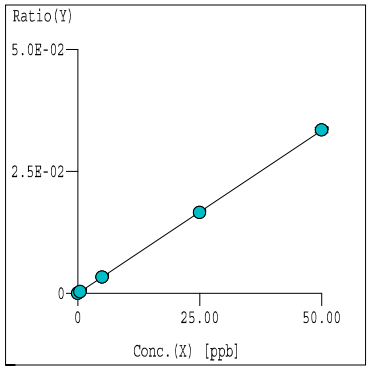
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 4.985E-003*X +1.334E-004
X = 2.006E+002*Y -2.675E-002
DL = 5.116E-03 ppb
BEC = 2.675E-02 ppb

Step Mass Element ISTD Unit
(1) 118 Sn 159 ppb



Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 7.183E-004*X +1.295E-005
X = 1.392E+003*Y -1.802E-002
DL = 1.806E-02 ppb
BEC = 1.802E-02 ppb

Step Mass Element ISTD Unit
(1) 123 Sb 159 ppb

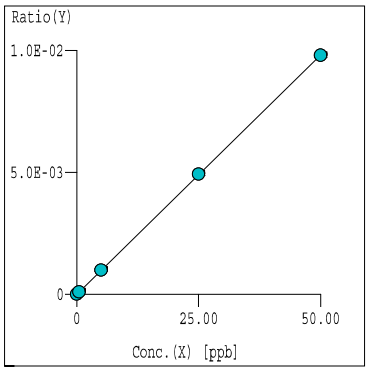


Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 6.681E-004*X +5.675E-006
X = 1.497E+003*Y -8.494E-003
DL = 3.817E-03 ppb
BEC = 8.494E-03 ppb

=== Graph Detail ===

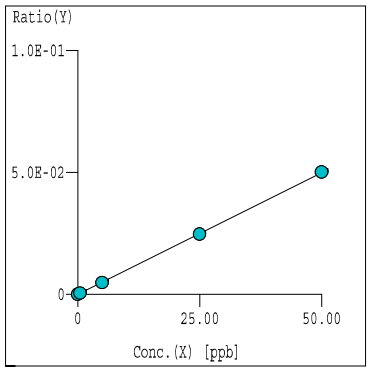
Cal. Date: 07/05/2013, 14:35

Step Mass Element (1) 135 Ba | ISTD 159 | Unit ppb



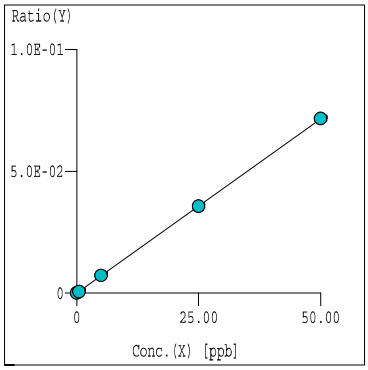
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 1.961E-004*X +5.088E-006
X = 5.099E+003*Y -2.594E-002
DL = 2.280E-02 ppb
BEC = 2.594E-02 ppb

Step Mass Element (1) 182 W | ISTD 159 | Unit ppb



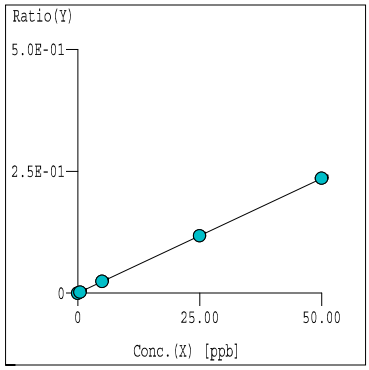
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 9.990E-004*X +1.199E-005
X = 1.001E+003*Y -1.200E-002
DL = 1.200E-02 ppb
BEC = 1.200E-02 ppb

Step Mass Element (1) 203 Tl | ISTD 209 | Unit ppb



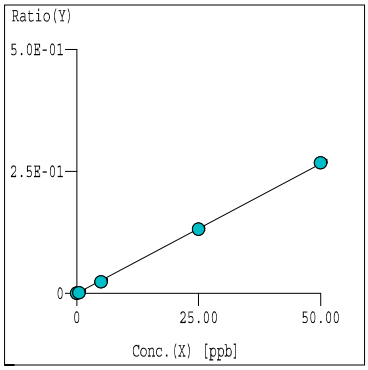
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 1.431E-003*X +5.770E-006
X = 6.986E+002*Y -4.031E-003
DL = 4.645E-03 ppb
BEC = 4.031E-03 ppb

Step Mass Element (1) 208 Pb | ISTD 209 | Unit ppb



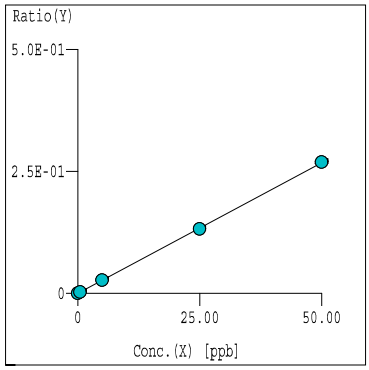
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 4.715E-003*X +9.990E-005
X = 2.121E+002*Y -2.119E-002
DL = 9.129E-03 ppb
BEC = 2.119E-02 ppb

Step Mass Element (1) 232 Th | ISTD 209 | Unit ppb



Curve Fit: Y=aX+[blank]
r = 0.9999
Y = 5.324E-003*X +1.083E-005
X = 1.878E+002*Y -2.034E-003
DL = 2.672E-03 ppb
BEC = 2.034E-03 ppb

Step Mass Element (1) 238 U | ISTD 209 | Unit ppb



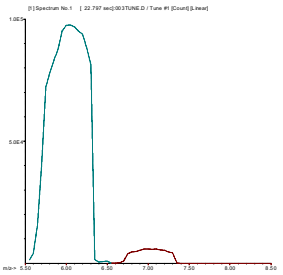
Curve Fit: Y=aX+[blank]
r = 1.0000
Y = 5.359E-003*X +5.087E-006
X = 1.866E+002*Y -9.492E-004
DL = 1.032E-03 ppb
BEC = 9.492E-04 ppb

6020 QC Tune Report

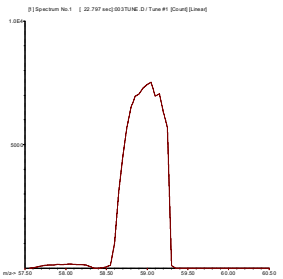
Data File: C:\ICPCHEM\1\DATA\JHG05A.B\003TUNE.D
Date Acquired: Jul 5 2014 01:49 pm
Acq. Method: TN6020E.M
Operator: EAM
Sample Name: 6020 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN6020E.M

RSD (%)

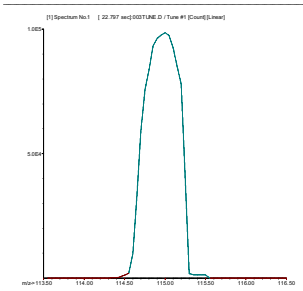
Element	Actual	Required	Flag
7 Li	0.84	5.00	
59 Co	0.85	5.00	
115 In	1.46	5.00	
205 Tl	1.02	5.00	



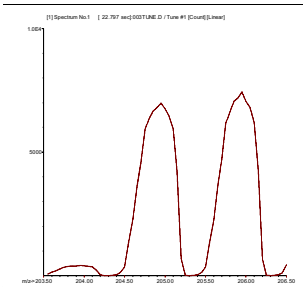
7 Li
Mass Calib.
Actual: 7.05
Required: 6.90 - 7.10
Flag:
Peak Width
Actual: 0.60
Required: 0.90
Flag:



59 Co
Mass Calib.
Actual: 59.05
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:



115 In
Mass Calib.
Actual: 114.95
Required: 114.90 - 115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.90
Flag:



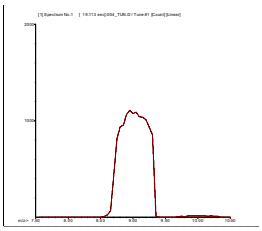
205 Tl
Mass Calib.
Actual: 204.95
Required: 204.90 - 205.10
Flag:
Peak Width
Actual: 0.60
Required: 0.90
Flag:

200.8 QC Tune Report

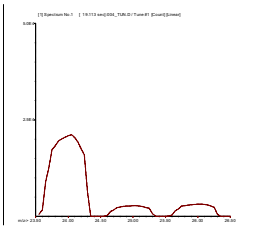
Data File: C:\ICPCHEM\1\DATA\JHG05A.B\004_TUN.D
Date Acquired: Jul 5 2014 01:52 pm
Acq. Method: TN200_8E.M
Operator: EAM
Sample Name: 200.8 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN200_8E.M

RSD (%)

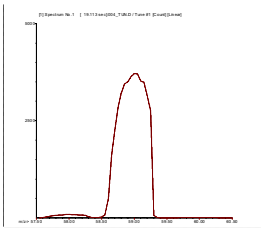
Element	Actual	Required	Flag
9 Be	1.53	5.00	
24 Mg	2.44	5.00	
59 Co	2.08	5.00	
115 In	1.88	5.00	
208 Pb	1.49	5.00	



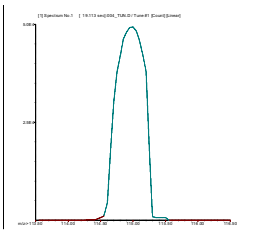
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90 - 9.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



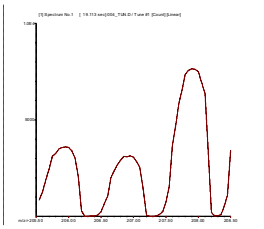
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90 - 24.10
Flag:
Peak Width
Actual: 0.70
Required: 1.00
Flag:



59 Co
Mass Calib.
Actual: 59.00
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



115 In
Mass Calib.
Actual: 114.95
Required: 114.90 - 115.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



208 Pb
Mass Calib.
Actual: 207.90
Required: 207.90 - 208.10
Flag:
Peak Width
Actual: 0.60
Required: 1.00
Flag:

Tune Result: Pass

Katahdin Analytical Services 4000728

Calibration Blank QC Report

Data File: C:\ICPCHEM\1\DATA\JHG05A.B\013CALB.I
Date Acquired: Jul 5 2014 02:20 pm
Operator: EAM
Sample Name: Cal Blank
Misc Info:
Vial Number: 1203
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal Update: Jul 05 2014 02:19 pm
Sample Type: CalBlk
Total Dil Factor: 1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	2966696.00	A	87240.00	2.94
9	Be	4.44	P	1.93	43.31
11	B	2229.12	P	33.55	1.51
23	Na	83727.82	P	1686.00	2.01
25	Mg	86.67	P	6.67	7.69
27	Al	3534.98	P	200.00	5.66
28	Si	8131210.00	A	43990.00	0.54
29	Si	1945814.00	A	22710.00	1.17
39	K	1293436.00	A	10790.00	0.83
43	Ca	188.91	P	29.40	15.56
44	Ca	15886.24	P	109.80	0.69
45	Sc	2360052.00	A	62450.00	2.65
51	V	2116.17	P	130.90	6.19
52	Cr	4208.50	P	117.10	2.78
53	Cr	6429.36	P	65.22	1.01
55	Mn	1741.27	P	47.66	2.74
56	Fe	817021.50	P	2264.00	0.28
57	Fe	18948.94	P	169.60	0.90
59	Co	166.68	P	40.55	24.33
60	Ni	79.56	P	13.47	16.93
63	Cu	545.58	P	50.15	9.19
65	Cu	212.23	P	19.53	9.20
66	Zn	710.04	P	3.33	0.47
68	Zn	14070.41	P	242.50	1.72
72	Ge	485077.50	P	15500.00	3.20
75	As	-40.08	P	208.30	519.67
82	Se	-11.29	P	6.97	61.72
88	Sr	92.60	P	6.42	6.93
89	Y	3325743.00	A	112900.00	3.39
98	Mo	46.32	P	3.16	6.82
107	Ag	33.33	P	8.82	26.46
109	Ag	28.89	P	5.09	17.63
111	Cd	1068.48	P	49.53	4.64
114	Cd	84.15	P	12.06	14.33
115	In	3095840.00	A	114300.00	3.69
118	Sn	65.56	P	6.94	10.59
120	Sn	54.45	P	8.39	15.41
121	Sb	34.45	P	15.75	45.72
123	Sb	21.11	P	5.09	24.12
135	Ba	20.00	P	5.77	28.87
137	Ba	34.45	P	20.37	59.14
159	Tb	4195300.00	A	114600.00	2.73
182	W	45.56	P	22.20	48.73
203	Tl	11.11	P	1.93	17.32
205	Tl	40.00	P	5.77	14.43
208	Pb	253.34	P	23.33	9.21
209	Bi	2529622.00	A	53100.00	2.10
232	Th	61.11	P	18.95	31.01
238	U	27.78	P	1.93	6.93

Calibration Standard QC Report

Data File: C:\ICPCHEM\1\DATA\JHG05A.B\014CALI.D\014CALI.D#
Date Acquired: Jul 5 2014 02:24 pm
Operator: EAM
Sample Name: Cal Std 1
Misc Info:
Vial Number: 1101
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal Update: Jul 05 2014 02:23 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	3004764.00	A	21230.00	0.71
9 Be	1272.66	P	36.86	2.90
11 B	2293.58	P	98.40	4.29
23 Na	947972.88	A	16740.00	1.77
25 Mg	70232.10	P	1114.00	1.59
27 Al	69179.75	P	852.10	1.23
28 Si	7824359.00	A	47170.00	0.60
29 Si	1914657.00	A	24170.00	1.26
39 K	1979631.00	A	13990.00	0.71
43 Ca	1433.57	P	90.98	6.35
44 Ca	35971.54	P	628.00	1.75
45 Sc	2332807.00	A	4536.00	0.19
51 V	5972.61	P	1084.00	18.15
52 Cr	8706.10	P	125.10	1.44
53 Cr	7104.10	P	402.80	5.67
55 Mn	6500.49	P	70.44	1.08
56 Fe	1790192.00	A	17960.00	1.00
57 Fe	40370.63	P	443.70	1.10
59 Co	4789.96	P	122.30	2.55
60 Ni	1135.47	P	45.49	4.01
63 Cu	3178.23	P	71.84	2.26
65 Cu	1454.84	P	33.37	2.29
66 Zn	976.73	P	56.08	5.74
68 Zn	14438.54	P	328.00	2.27
72 Ge	483795.69	P	2591.00	0.54
75 As	475.79	P	164.00	34.47
82 Se	31.39	P	12.59	40.11
88 Sr	5316.43	P	296.70	5.58
89 Y	3313769.00	A	49660.00	1.50
98 Mo	1559.14	P	69.29	4.44
107 Ag	2837.04	P	98.40	3.47
109 Ag	2630.33	P	92.64	3.52
111 Cd	1569.78	P	62.25	3.97
114 Cd	1291.76	P	40.57	3.14
115 In	3061338.00	A	33000.00	1.08
118 Sn	1632.37	P	54.81	3.36
120 Sn	2204.69	P	56.70	2.57
121 Sb	2021.32	P	47.89	2.37
123 Sb	1433.45	P	80.91	5.64
135 Ba	412.24	P	19.53	4.74
137 Ba	764.49	P	36.57	4.78
159 Tb	4132065.00	A	25640.00	0.62
182 W	2085.79	P	58.35	2.80
203 Tl	1792.40	P	164.10	9.16
205 Tl	4513.13	P	57.41	1.27
208 Pb	6198.56	P	226.50	3.65
209 Bi	2508735.00	A	13160.00	0.52
232 Th	2731.49	P	673.50	24.66
238 U	6516.23	P	181.00	2.78

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3004764.30	0.71	2966696.50	101.3	79.5 - 120.4	
45 Sc	2332806.80	0.19	2360051.80	98.8	79.5 - 120.4	
72 Ge	483795.75	0.54	485077.47	99.7	79.5 - 120.4	
159 Tb	4132064.50	0.62	4195300.50	98.5	79.5 - 120.4	
209 Bi	2508735.50	0.52	2529621.80	99.2	79.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG05A.B\013CALB.D\013CALB.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000730

Calibration Standard QC Report

Data File: C:\ICPCHEM\1\DATA\JHG05A.B\015CALI.D\015CALI.D#
Date Acquired: Jul 5 2014 02:27 pm
Operator: EAM
Sample Name: Cal Std 2
Misc Info:
Vial Number: 1102
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal Update: Jul 05 2014 02:26 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	2989595.00	A	40400.00	1.35
9 Be	13232.39	P	163.80	1.24
11 B	8120.17	P	82.33	1.01
23 Na	7914674.00	A	87710.00	1.11
25 Mg	679348.81	P	7188.00	1.06
27 Al	653376.69	P	7524.00	1.15
28 Si	8270178.00	A	125500.00	1.52
29 Si	1931289.00	A	35390.00	1.83
39 K	8002709.00	A	62300.00	0.78
43 Ca	12777.19	P	405.40	3.17
44 Ca	214005.00	P	1059.00	0.49
45 Sc	2361638.00	A	20450.00	0.87
51 V	48748.85	P	840.50	1.72
52 Cr	45716.07	P	527.60	1.15
53 Cr	11472.45	P	223.70	1.95
55 Mn	51660.82	P	99.87	0.19
56 Fe	9060411.00	A	15180.00	0.17
57 Fe	222055.70	P	369.50	0.17
59 Co	47909.40	P	966.60	2.02
60 Ni	10790.18	P	173.70	1.61
63 Cu	26578.51	P	230.50	0.87
65 Cu	12450.71	P	145.20	1.17
66 Zn	5725.73	P	90.11	1.57
68 Zn	17543.02	P	282.80	1.61
72 Ge	488413.31	P	6579.00	1.35
75 As	5043.99	P	137.90	2.73
82 Se	356.77	P	25.41	7.12
88 Sr	51881.79	P	501.90	0.97
89 Y	3339289.00	A	32060.00	0.96
98 Mo	16391.03	P	208.20	1.27
107 Ag	28069.92	P	332.10	1.18
109 Ag	26775.11	P	217.40	0.81
111 Cd	6390.59	P	55.06	0.86
114 Cd	12601.15	P	39.54	0.31
115 In	3145521.00	A	27590.00	0.88
118 Sn	15446.47	P	410.10	2.66
120 Sn	21223.91	P	175.00	0.82
121 Sb	20041.12	P	280.10	1.40
123 Sb	14714.62	P	197.00	1.34
135 Ba	4516.42	P	129.70	2.87
137 Ba	7646.74	P	73.84	0.97
159 Tb	4209260.00	A	59000.00	1.40
182 W	20629.29	P	161.60	0.78
203 Tl	18384.06	P	225.70	1.23
205 Tl	44981.27	P	110.40	0.25
208 Pb	61022.90	P	591.00	0.97
209 Bi	2569168.00	A	11960.00	0.47
232 Th	57659.34	P	2777.00	4.82
238 U	67422.66	P	417.30	0.62

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2989595.30	1.35	2966696.50	100.8	79.5 - 120.4	
45 Sc	2361638.00	0.87	2360051.80	100.1	79.5 - 120.4	
72 Ge	488413.31	1.35	485077.47	100.7	79.5 - 120.4	
159 Tb	4209260.00	1.40	4195300.50	100.3	79.5 - 120.4	
209 Bi	2569168.30	0.47	2529621.80	101.6	79.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG05A.B\013CALB.D\013CALB.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000731

Calibration Standard QC Report

Data File: C:\ICPCHEM\1\DATA\JHG05A.B\016CALI.D\016CALI.D#
Date Acquired: Jul 5 2014 02:30 pm
Operator: EAM
Sample Name: Cal Std 3
Misc Info:
Vial Number: 1103
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal Update: Jul 05 2014 02:29 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	2965046.00	A	70550.00	2.38
9 Be	65286.56	P	501.30	0.77
11 B	32330.27	P	224.10	0.69
23 Na	39647792.00	A	483200.00	1.22
25 Mg	3384793.00	A	21690.00	0.64
27 Al	3238779.00	A	6034.00	0.19
28 Si	9610841.00	A	11430.00	0.12
29 Si	2024628.00	A	5164.00	0.26
39 K	34472080.00	A	575000.00	1.67
43 Ca	62254.34	P	1385.00	2.22
44 Ca	1044374.00	A	2029.00	0.19
45 Sc	2325264.00	A	37620.00	1.62
51 V	232248.20	P	1223.00	0.53
52 Cr	205358.59	P	1618.00	0.79
53 Cr	29934.65	P	526.30	1.76
55 Mn	245459.30	P	174.00	0.07
56 Fe	40950340.00	A	137800.00	0.34
57 Fe	1047802.00	A	12340.00	1.18
59 Co	229477.20	P	3500.00	1.53
60 Ni	52226.31	P	414.90	0.79
63 Cu	125200.00	P	853.90	0.68
65 Cu	58993.44	P	54.30	0.09
66 Zn	26260.28	P	517.30	1.97
68 Zn	32950.16	P	379.00	1.15
72 Ge	476674.09	P	6845.00	1.44
75 As	26122.15	P	415.00	1.59
82 Se	1757.90	P	34.92	1.99
88 Sr	250766.00	P	2734.00	1.09
89 Y	3237706.00	A	54310.00	1.68
98 Mo	81358.71	P	546.50	0.67
107 Ag	135303.59	P	1023.00	0.76
109 Ag	129781.50	P	786.70	0.61
111 Cd	27146.80	P	277.10	1.02
114 Cd	60429.90	P	88.02	0.15
115 In	3027991.00	A	46090.00	1.52
118 Sn	76467.43	P	976.10	1.28
120 Sn	106147.30	P	875.50	0.82
121 Sb	95647.84	P	1004.00	1.05
123 Sb	73497.22	P	524.30	0.71
135 Ba	21638.05	P	307.20	1.42
137 Ba	37173.46	P	199.30	0.54
159 Tb	4148844.00	A	88780.00	2.14
182 W	102425.20	P	979.10	0.96
203 Tl	89081.43	P	863.90	0.97
205 Tl	214914.70	P	2491.00	1.16
208 Pb	291490.09	P	2689.00	0.92
209 Bi	2470327.00	A	27740.00	1.12
232 Th	329694.09	P	2151.00	0.65
238 U	329018.91	P	2484.00	0.75

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2965045.80	2.38	2966696.50	99.9	79.5 - 120.4	
45 Sc	2325263.50	1.62	2360051.80	98.5	79.5 - 120.4	
72 Ge	476674.16	1.44	485077.47	98.3	79.5 - 120.4	
159 Tb	4148844.00	2.14	4195300.50	98.9	79.5 - 120.4	
209 Bi	2470326.80	1.12	2529621.80	97.7	79.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG05A.B\013CALB.D\013CALB.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000732

Calibration Standard QC Report

Data File: C:\ICPCHEM\1\DATA\JHG05A.B\017CALI.D\017CALI.D#
Date Acquired: Jul 5 2014 02:33 pm
Operator: EAM
Sample Name: Cal Std 4
Misc Info:
Vial Number: 1104
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal Update: Jul 05 2014 02:32 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	2920885.00	A	16470.00	0.56
9 Be	129716.30	P	617.80	0.48
11 B	62995.19	P	558.00	0.89
23 Na	78043280.00	A	757900.00	0.97
25 Mg	6585684.00	A	66810.00	1.01
27 Al	6324009.00	A	53680.00	0.85
28 Si	11588500.00	A	143200.00	1.24
29 Si	2095641.00	A	14160.00	0.68
39 K	67374688.00	A	578100.00	0.86
43 Ca	122391.70	P	1532.00	1.25
44 Ca	2025471.00	A	23610.00	1.17
45 Sc	2337995.00	A	18500.00	0.79
51 V	460979.91	P	7560.00	1.64
52 Cr	401717.50	P	4529.00	1.13
53 Cr	53151.58	P	155.60	0.29
55 Mn	483628.91	P	4188.00	0.87
56 Fe	80922760.00	A	810700.00	1.00
57 Fe	2042389.00	A	25690.00	1.26
59 Co	455167.19	P	7400.00	1.63
60 Ni	101900.70	P	664.70	0.65
63 Cu	247185.70	P	3613.00	1.46
65 Cu	116636.80	P	1049.00	0.90
66 Zn	50919.02	P	1263.00	2.48
68 Zn	50330.50	P	408.00	0.81
72 Ge	478897.59	P	4076.00	0.85
75 As	52076.17	P	537.00	1.03
82 Se	3430.21	P	44.75	1.30
88 Sr	495957.81	P	7091.00	1.43
89 Y	3292097.00	A	41020.00	1.25
98 Mo	162666.41	P	1336.00	0.82
107 Ag	265238.81	P	2300.00	0.87
109 Ag	254314.30	P	2170.00	0.85
111 Cd	51811.99	P	742.00	1.43
114 Cd	119257.20	P	1121.00	0.94
115 In	3037343.00	A	23600.00	0.78
118 Sn	153108.80	P	1181.00	0.77
120 Sn	210817.20	P	3250.00	1.54
121 Sb	192073.50	P	1572.00	0.82
123 Sb	147143.20	P	1166.00	0.79
135 Ba	42844.65	P	705.20	1.65
137 Ba	73568.44	P	692.30	0.94
159 Tb	4157287.00	A	36770.00	0.88
182 W	207692.70	P	2078.00	1.00
203 Tl	174417.50	P	2355.00	1.35
205 Tl	423156.50	P	6591.00	1.56
208 Pb	574030.31	P	6042.00	1.05
209 Bi	2444564.00	A	31030.00	1.27
232 Th	655485.31	P	9570.00	1.46
238 U	655576.50	P	7827.00	1.19

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2920884.80	0.56	2966696.50	98.5	79.5 - 120.4	
45 Sc	2337995.30	0.79	2360051.80	99.1	79.5 - 120.4	
72 Ge	478897.63	0.85	485077.47	98.7	79.5 - 120.4	
159 Tb	4157287.00	0.88	4195300.50	99.1	79.5 - 120.4	
209 Bi	2444563.80	1.27	2529621.80	96.6	79.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG05A.B\013CALB.D\013CALB.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000733

ICV QC Report

Data File: C:\ICPCHEM\1\DATA\JHG05A.B\018_ICV.D\018_ICV.D#
Date Acquired: Jul 5 2014 02:36 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: ICV
Misc Info:
Vial Number: 1202
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 05 2014 02:35 pm
Dilution Factor: 1.00
QC Range (%): 89.499998 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	19.92	ppb	0.23	20	99.6	
11 B	18.77	ppb	1.61	20	93.85	
23 Na	4,074.	ppb	0.93	4,000	101.85	
25 Mg	4,202.	ppb	1.20	4,000	105.05	
27 Al	399.	ppb	0.14	400	99.75	
28 Si	401.3	ppb	15.08	400	100.325	
29 Si	435.5	ppb	26.27	400	108.875	
39 K	4,122.	ppb	0.94	4,000	103.05	
43 Ca	4,094.	ppb	1.02	4,000	102.35	
44 Ca	4,047.	ppb	0.86	4,000	101.175	
51 V	19.99	ppb	0.73	20	99.95	
52 Cr	19.52	ppb	0.46	20	97.6	
53 Cr	18.51	ppb	1.50	20	92.55	
55 Mn	19.93	ppb	0.17	20	99.65	
56 Fe	4,116.	ppb	0.57	4,000	102.9	
57 Fe	4,061.	ppb	0.46	4,000	101.525	
59 Co	20.31	ppb	0.27	20	101.55	
60 Ni	20.61	ppb	0.88	20	103.05	
63 Cu	19.76	ppb	1.24	20	98.8	
65 Cu	20.	ppb	1.52	20	100	
66 Zn	20.2	ppb	1.55	20	101	
68 Zn	20.06	ppb	0.28	20	100.3	
75 As	20.23	ppb	0.77	20	101.15	
82 Se	20.33	ppb	2.09	20	101.65	
88 Sr	20.43	ppb	0.40	20	102.15	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	40.91	ppb	0.41	40	102.275	
107 Ag	20.28	ppb	0.56	20	101.4	
109 Ag	20.33	ppb	0.25	20	101.65	
111 Cd	19.92	ppb	0.86	20	99.6	
114 Cd	19.95	ppb	0.89	20	99.75	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	20.28	ppb	1.65	20	101.4	
120 Sn	20.52	ppb	1.11	20	102.6	
121 Sb	20.14	ppb	1.00	20	100.7	
123 Sb	19.71	ppb	1.64	20	98.55	
135 Ba	19.93	ppb	1.57	20	99.65	
137 Ba	20.34	ppb	2.11	20	101.7	
182 W	7.717	ppb	0.28	20	38.585	Fail
203 Tl	20.51	ppb	0.57	20	102.55	
205 Tl	20.63	ppb	0.09	20	103.15	
208 Pb	20.36	ppb	0.29	20	101.8	
232 Th	20.29	ppb	0.53	20	101.45	
238 U	20.29	ppb	1.44	20	101.45	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2930986.00	0.30	2966696.50	98.8	80 - 120.4	
45 Sc	2348081.50	0.29	2360051.80	99.5	80 - 120.4	
72 Ge	482963.09	0.54	485077.47	99.6	80 - 120.4	
159 Tb	4164627.80	0.28	4195300.50	99.3	80 - 120.4	
209 Bi	2504904.30	0.89	2529621.80	99.0	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG05A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000734

ICB QC Report

Data File: C:\ICPCHEM\1\DATA\JHG05A.B\019_ICB.D\019_ICB.D#
Date Acquired: Jul 5 2014 02:39 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: ICB
Misc Info:
Vial Number: 1203
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 05 2014 02:35 pm
Sample Type: 6-ICB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0028	ppb	85.54	1.00	
11 B	0.4261	ppb	23.14	1.00	
23 Na	-0.5511	ppb	34.80	1.00	
25 Mg	0.1011	ppb	32.37	1.00	
27 Al	-0.0066	ppb	136.36	1.00	
28 Si	-96.83	ppb	21.73	1.00	
29 Si	-226.3	ppb	66.15	1.00	Fail
39 K	-2.594	ppb	109.29	1.00	
43 Ca	1.647	ppb	129.51	1.00	
44 Ca	-2.375	ppb	86.40	1.00	
51 V	-0.0795	ppb	34.48	1.00	
52 Cr	-0.0218	ppb	141.91	1.00	
53 Cr	-0.4838	ppb	41.84	1.00	
55 Mn	-0.0024	ppb	466.69	1.00	
56 Fe	-0.8836	ppb	148.03	1.00	
57 Fe	3.811	ppb	48.26	1.00	
59 Co	-0.0022	ppb	23.40	1.00	
60 Ni	-0.006	ppb	191.79	1.00	
63 Cu	0.0031	ppb	108.26	1.00	
65 Cu	0.0157	ppb	78.29	1.00	
66 Zn	0.071	ppb	81.26	1.00	
68 Zn	0.0504	ppb	1052.80	1.00	
75 As	0.0896	ppb	104.12	1.00	
82 Se	0.0858	ppb	102.17	1.00	
88 Sr	0.0017	ppb	221.68	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.1162	ppb	14.49	1.00	
107 Ag	0.003	ppb	72.29	1.00	
109 Ag	0.0016	ppb	143.39	1.00	
111 Cd	0.0084	ppb	603.44	1.00	
114 Cd	-0.0029	ppb	203.81	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0764	ppb	48.22	1.00	
120 Sn	0.0839	ppb	17.81	1.00	
121 Sb	0.0167	ppb	17.42	1.00	
123 Sb	0.0152	ppb	47.17	1.00	
135 Ba	0.0088	ppb	51.30	1.00	
137 Ba	-0.0006	ppb	332.52	1.00	
182 W	0.1044	ppb	1.90	1.00	
203 Tl	0.0116	ppb	14.19	1.00	
205 Tl	0.007	ppb	54.21	1.00	
208 Pb	-0.001	ppb	150.29	1.00	
232 Th	0.0399	ppb	24.68	1.00	
238 U	0.0025	ppb	19.24	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2981147.00	1.11	2966696.50	100.5	79.5 - 120	
45 Sc	2373727.80	2.26	2360051.80	100.6	79.5 - 120	
72 Ge	488408.75	1.30	485077.47	100.7	79.5 - 120	
159 Tb	4212463.00	1.51	4195300.50	100.4	79.5 - 120	
209 Bi	2538994.00	1.58	2529621.80	100.4	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG05A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000735

PQL QC Report

Data File: C:\ICPCHEM\1\DATA\JHG05A.B\020_PQL.D\020_PQL.D#
Date Acquired: Jul 5 2014 02:42 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: PQL
Misc Info:
Vial Number: 1302
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 05 2014 02:35 pm
Dilution Factor: 1.00
QC Range (%): 69.599998 - 130.4

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	0.1968	ppb	5.46	0.20	98.4	
11 B	3.94	ppb	5.48	4.00	98.5	
23 Na	208.6	ppb	2.08	200.00	104.3	
25 Mg	20.45	ppb	3.20	20.00	102.25	
27 Al	61.19	ppb	0.57	60.00	101.983	
28 Si	34.54	ppb	215.11	100.00	34.54	
29 Si	-204.4	ppb	131.80	100.00	-204.4	Fail
39 K	200.4	ppb	3.22	200.00	100.2	
43 Ca	26.53	ppb	7.09	20.00	132.65	
44 Ca	19.74	ppb	5.75	20.00	98.7	
51 V	0.923	ppb	2.49	1.00	92.3	
52 Cr	0.9916	ppb	0.66	1.00	99.16	
53 Cr	0.5923	ppb	7.10	---	#VALUE!	
55 Mn	0.3692	ppb	4.84	0.40	92.3	
56 Fe	34.57	ppb	3.53	20.00	172.85	
57 Fe	18.66	ppb	13.93	20.00	93.3	
59 Co	0.2105	ppb	6.70	0.20	105.25	
60 Ni	0.3987	ppb	3.57	0.40	99.675	
63 Cu	0.6221	ppb	1.61	0.60	103.683	
65 Cu	0.6173	ppb	4.39	0.60	102.883	
66 Zn	1.756	ppb	5.96	2.00	87.8	
68 Zn	1.122	ppb	30.94	2.00	56.1	
75 As	1.051	ppb	10.11	1.00	105.1	
82 Se	1.165	ppb	6.49	1.00	116.5	
88 Sr	0.9581	ppb	1.87	1.00	95.81	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	0.9891	ppb	1.31	1.00	98.91	
107 Ag	0.1981	ppb	5.74	0.20	99.05	
109 Ag	0.201	ppb	3.57	0.20	100.5	
111 Cd	0.1944	ppb	12.91	0.20	97.2	
114 Cd	0.1992	ppb	9.06	0.20	99.6	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	1.027	ppb	1.90	1.00	102.7	
120 Sn	1.009	ppb	2.44	1.00	100.9	
121 Sb	0.2172	ppb	5.14	0.20	108.6	
123 Sb	0.2028	ppb	3.11	0.20	101.4	
135 Ba	0.4131	ppb	1.03	0.40	103.275	
137 Ba	0.4558	ppb	9.53	0.40	113.95	
182 W	1.048	ppb	5.55	1.00	104.8	
203 Tl	0.2057	ppb	8.16	0.20	102.85	
205 Tl	0.2122	ppb	2.56	0.20	106.1	
208 Pb	0.2089	ppb	2.24	0.20	104.45	
232 Th	0.1736	ppb	6.57	0.20	86.8	
238 U	0.1986	ppb	2.78	0.20	99.3	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3030574.00	1.38	2966696.50	102.2	80 - 120.4	
45 Sc	2379537.00	1.55	2360051.80	100.8	80 - 120.4	
72 Ge	492820.75	1.02	485077.47	101.6	80 - 120.4	
159 Tb	4218288.50	0.98	4195300.50	100.5	80 - 120.4	
209 Bi	2555183.50	1.46	2529621.80	101.0	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG05A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000736

ICS-A QC Report

Data File: C:\ICPCHEM\1\DATA\JHG05A.B\021ICSA.D\021ICSA.D#
Date Acquired: Jul 5 2014 02:45 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: ICSA
Misc Info:
Vial Number: 1204
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 05 2014 02:35 pm
Sample Type: 6-ICSA
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0126	ppb	22.95		
11 B	0.2734	ppb	32.74		
23 Na	95,290.	ppb	2.60		
25 Mg	93,790.	ppb	2.35		
27 Al	92,610.	ppb	1.74		
28 Si	-116.9	ppb	54.88		
29 Si	-659.8	ppb	58.37		Fail
39 K	95,760.	ppb	2.19		
43 Ca	100,700.	ppb	2.27		
44 Ca	92,810.	ppb	2.39		
51 V	0.1018	ppb	36.01		
52 Cr	1.689	ppb	3.07		
53 Cr	1.077	ppb	4.09		
55 Mn	0.4044	ppb	3.22		
56 Fe	90,230.	ppb	0.76		
57 Fe	86,370.	ppb	1.16		
59 Co	0.1267	ppb	8.17		
60 Ni	0.1321	ppb	28.07		
63 Cu	1.432	ppb	1.38		
65 Cu	1.014	ppb	7.78		
66 Zn	1.843	ppb	2.57		
68 Zn	-1.801	ppb	34.28		
75 As	0.3879	ppb	54.50		
82 Se	0.0765	ppb	100.67		
88 Sr	0.6597	ppb	3.39		
89 Y	--------	---	--------		
98 Mo	1,842.	ppb	1.30		
107 Ag	0.0165	ppb	43.64		
109 Ag	0.0203	ppb	21.98		
111 Cd	0.0487	ppb	154.33		
114 Cd	0.4273	ppb	7.15		Fail-D
115 In	--------	---	--------		
118 Sn	0.0688	ppb	11.32		
120 Sn	0.0683	ppb	6.02		
121 Sb	0.0432	ppb	19.37		
123 Sb	0.0428	ppb	10.61		
135 Ba	0.1239	ppb	5.46		
137 Ba	0.1085	ppb	10.65		
182 W	0.161	ppb	5.37		
203 Tl	0.0064	ppb	58.64		
205 Tl	0.0065	ppb	50.91		
208 Pb	0.2023	ppb	2.31		
232 Th	0.0789	ppb	29.45		
238 U	0.0043	ppb	21.53		

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2801633.00	1.14	2966696.50	94.4	69.5 - 130.4	
45 Sc	2345739.30	1.11	2360051.80	99.4	69.5 - 130.4	
72 Ge	506495.06	0.77	485077.47	104.4	69.5 - 130.4	
159 Tb	4318578.50	1.66	4195300.50	102.9	69.5 - 130.4	
209 Bi	2387042.30	0.73	2529621.80	94.4	69.5 - 130.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG05A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000737

ICS-AB QC Report

Data File: C:\ICPCHEM\1\DATA\JHG05A.B\022ICSB.D\022ICSB.D#
Date Acquired: Jul 5 2014 02:49 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: ICSAB
Misc Info:
Vial Number: 1205
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 05 2014 02:35 pm
Sample Type: 6-ICSAB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	Expected	QC Range(%)	Flag
9 Be	19.63	ppb	1.20	20.00	79.5 - 120	
11 B	17.84	ppb	3.51	20.00	79.5 - 120	
23 Na	91,650.	ppb	0.32	##########	79.5 - 120	
25 Mg	90,320.	ppb	0.17	##########	79.5 - 120	
27 Al	90,640.	ppb	0.96	##########	79.5 - 120	
28 Si	460.5	ppb	7.52	---	##### - #####	
29 Si	-2.466	ppb	2962.70	---	##### - #####	
39 K	93,730.	ppb	1.74	##########	79.5 - 120	
43 Ca	98,190.	ppb	2.13	##########	79.5 - 120	
44 Ca	90,660.	ppb	0.95	##########	79.5 - 120	
51 V	18.96	ppb	1.38	20.00	79.5 - 120	
52 Cr	20.06	ppb	1.00	20.00	79.5 - 120	
53 Cr	19.92	ppb	1.37	---	##### - #####	
55 Mn	18.71	ppb	0.18	20.00	79.5 - 120	
56 Fe	90,230.	ppb	0.36	##########	79.5 - 120	
57 Fe	86,370.	ppb	1.08	##########	79.5 - 120	
59 Co	18.55	ppb	0.97	20.00	79.5 - 120	
60 Ni	17.92	ppb	2.66	20.00	79.5 - 120	
63 Cu	19.16	ppb	0.79	20.00	79.5 - 120	
65 Cu	18.84	ppb	2.41	20.00	79.5 - 120	
66 Zn	19.57	ppb	2.28	20.00	79.5 - 120	
68 Zn	13.84	ppb	6.25	20.00	79.5 - 120	
75 As	19.43	ppb	1.05	20.00	79.5 - 120	
82 Se	19.52	ppb	1.56	20.00	79.5 - 120	
88 Sr	18.75	ppb	0.97	20.00	79.5 - 120	
89 Y	--------	---	--------	---	##### - #####	
98 Mo	1,878.	ppb	0.61	2000.00	79.5 - 120	
107 Ag	17.9	ppb	0.76	20.00	79.5 - 120	
109 Ag	17.89	ppb	0.85	20.00	79.5 - 120	
111 Cd	18.51	ppb	0.56	20.00	79.5 - 120	
114 Cd	18.7	ppb	0.51	20.00	79.5 - 120	
115 In	--------	---	--------	---	##### - #####	
118 Sn	18.49	ppb	1.19	20.00	79.5 - 120	
120 Sn	18.41	ppb	1.36	20.00	79.5 - 120	
121 Sb	19.22	ppb	0.43	20.00	79.5 - 120	
123 Sb	19.21	ppb	1.03	20.00	79.5 - 120	
135 Ba	19.16	ppb	3.19	20.00	79.5 - 120	
137 Ba	19.09	ppb	0.67	20.00	79.5 - 120	
182 W	20.53	ppb	1.52	20.00	79.5 - 120	
203 Tl	20.48	ppb	0.62	20.00	79.5 - 120	
205 Tl	20.3	ppb	1.34	20.00	79.5 - 120	
208 Pb	20.45	ppb	0.46	20.00	79.5 - 120	
232 Th	21.24	ppb	1.10	20.00	79.5 - 120	
238 U	21.22	ppb	1.43	20.00	79.5 - 120	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2734294.30	0.95	2966696.50	92.2	69.5 - 130	
45 Sc	2293629.80	0.95	2360051.80	97.2	69.5 - 130	
72 Ge	492084.31	0.51	485077.47	101.4	69.5 - 130	
159 Tb	4284229.50	0.92	4195300.50	102.1	69.5 - 130	
209 Bi	2377225.50	0.70	2529621.80	94.0	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG05A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000738

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG05A.B\023SMPL.D\023SMPL.D#
Date Acquired: Jul 5 2014 02:53 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: Blank
Misc Info:
Vial Number: 1301
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 05 2014 02:35 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0017	0.0017	ppb	107.59	100.	
11 B	0.2158	0.2158	ppb	20.77	1000.	
23 Na	4.091	4.091	ppb	23.22	200000.	
25 Mg	1.8	1.8	ppb	22.67	200000.	
27 Al	1.629	1.629	ppb	14.91	200000.	
28 Si	-122.7	-122.7	ppb	23.59	#VALUE!	
29 Si	-687.2	-687.2	ppb	19.25	10000.	LOW
39 K	-5.47	-5.47	ppb	67.57	200000.	
43 Ca	2.889	2.889	ppb	194.74	#VALUE!	
44 Ca	-1.318	-1.318	ppb	139.30	200000.	
51 V	-0.0605	-0.0605	ppb	30.92	1000.	
52 Cr	-0.0119	-0.0119	ppb	50.99	1000.	
53 Cr	0.6149	0.6149	ppb	11.00	#VALUE!	
55 Mn	-0.015	-0.015	ppb	38.36	1000.	
56 Fe	6.36	6.36	ppb	152.64	#VALUE!	
57 Fe	-8.863	-8.863	ppb	36.22	100000.	
59 Co	-0.0035	-0.0035	ppb	73.15	1000.	
60 Ni	-0.0127	-0.0127	ppb	61.27	1000.	
63 Cu	0.1652	0.1652	ppb	9.43	#VALUE!	
65 Cu	0.1954	0.1954	ppb	5.61	1000.	
66 Zn	-0.2643	-0.2643	ppb	11.87	1000.	
68 Zn	-5.635	-5.635	ppb	3.73	#VALUE!	
75 As	-0.0003	-0.0003	ppb	33978.00	1000.	
82 Se	0.288	0.288	ppb	29.46	1000.	
88 Sr	0.0044	0.0044	ppb	50.29	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	1.038	1.038	ppb	8.59	1000.	
107 Ag	0.0041	0.0041	ppb	52.41	500.	
109 Ag	0.0023	0.0023	ppb	30.09	#VALUE!	
111 Cd	-0.1377	-0.1377	ppb	5.79	#VALUE!	
114 Cd	0.0003	0.0003	ppb	453.97	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0176	0.0176	ppb	37.29	1000.	
120 Sn	0.0217	0.0217	ppb	24.14	#VALUE!	
121 Sb	0.0005	0.0005	ppb	589.44	#VALUE!	
123 Sb	0.0044	0.0044	ppb	215.83	1000.	
135 Ba	0.0226	0.0226	ppb	91.53	1000.	
137 Ba	0.0059	0.0059	ppb	51.04	#VALUE!	
182 W	0.0242	0.0242	ppb	---	#VALUE!	
203 Tl	0.0049	0.0049	ppb	33.37	1000.	
205 Tl	0.0035	0.0035	ppb	83.97	#VALUE!	
208 Pb	0.0014	0.0014	ppb	286.22	1000.	
232 Th	0.0185	0.0185	ppb	32.62	1000.	
238 U	0.	0.	ppb	6042.80	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2915902.30	2.91	2966696.50	98.3	69.5 - 130	
45 Sc	2332603.50	1.17	2360051.80	98.8	69.5 - 130	
72 Ge	485592.16	0.84	485077.47	100.1	69.5 - 130	
159 Tb	4343721.00	1.27	4195300.50	103.5	69.5 - 130	
209 Bi	2631076.50	1.55	2529621.80	104.0	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG05A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000739

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JHG05A.B\024_CCV.D\024_CCV.D#
Date Acquired: Jul 5 2014 02:56 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 05 2014 02:35 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	23.99	ppb	2.84	25	95.96	
11 B	23.76	ppb	2.71	25	95.04	
23 Na	4,853.	ppb	2.45	5,000	97.06	
25 Mg	4,945.	ppb	2.73	5,000	98.9	
27 Al	499.4	ppb	0.79	500	99.88	
28 Si	427.3	ppb	6.43	500	85.46	
29 Si	-122.	ppb	184.51	500	-24.4	Fail
39 K	4,944.	ppb	1.05	5,000	98.88	
43 Ca	4,968.	ppb	2.19	5,000	99.36	
44 Ca	4,963.	ppb	0.67	5,000	99.26	
51 V	24.1	ppb	0.81	25	96.4	
52 Cr	24.25	ppb	1.10	25	97	
53 Cr	24.53	ppb	4.11	25	98.12	
55 Mn	24.33	ppb	1.47	25	97.32	
56 Fe	4,914.	ppb	0.51	5,000	98.28	
57 Fe	4,947.	ppb	1.27	5,000	98.94	
59 Co	24.38	ppb	1.43	25	97.52	
60 Ni	24.5	ppb	1.19	25	98	
63 Cu	24.42	ppb	1.12	25	97.68	
65 Cu	24.43	ppb	1.87	25	97.72	
66 Zn	24.09	ppb	2.93	25	96.36	
68 Zn	18.6	ppb	1.61	25	74.4	
75 As	24.48	ppb	0.68	25	97.92	
82 Se	24.75	ppb	2.19	25	99	
88 Sr	24.72	ppb	1.61	25	98.88	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.93	ppb	2.09	25	99.72	
107 Ag	24.73	ppb	1.17	25	98.92	
109 Ag	24.75	ppb	0.77	25	99	
111 Cd	24.38	ppb	0.94	25	97.52	
114 Cd	24.78	ppb	1.31	25	99.12	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.04	ppb	1.40	25	96.16	
120 Sn	24.18	ppb	1.74	25	96.72	
121 Sb	24.03	ppb	1.24	25	96.12	
123 Sb	23.93	ppb	1.69	25	95.72	
135 Ba	23.67	ppb	1.87	25	94.68	
137 Ba	24.22	ppb	1.27	25	96.88	
182 W	24.52	ppb	1.68	25	98.08	
203 Tl	24.37	ppb	0.90	25	97.48	
205 Tl	24.49	ppb	1.14	25	97.96	
208 Pb	24.47	ppb	0.57	25	97.88	
232 Th	24.2	ppb	0.99	25	96.8	
238 U	24.11	ppb	0.65	25	96.44	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2984067.80	2.16	2966696.50	100.6	80 - 120.4	
45 Sc	2380734.30	0.88	2360051.80	100.9	80 - 120.4	
72 Ge	496064.16	0.37	485077.47	102.3	80 - 120.4	
159 Tb	4430638.50	0.17	4195300.50	105.6	80 - 120.4	
209 Bi	2624437.30	0.88	2529621.80	103.7	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG05A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000740

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JHG05A.B\025_CCB.D\025_CCB.D#
Date Acquired: Jul 5 2014 02:59 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 05 2014 02:35 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0034	ppb	41.87	1.00	
11 B	0.2771	ppb	15.55	1.00	
23 Na	2.567	ppb	27.82	1.00	
25 Mg	2.618	ppb	16.36	1.00	
27 Al	2.079	ppb	19.41	1.00	
28 Si	-137.4	ppb	62.93	1.00	
29 Si	-752.1	ppb	47.12	1.00	Fail-DoD
39 K	-7.618	ppb	82.33	1.00	
43 Ca	2.029	ppb	317.05	1.00	
44 Ca	0.9879	ppb	270.98	1.00	
51 V	-0.0283	ppb	147.86	1.00	
52 Cr	-0.0205	ppb	128.82	1.00	
53 Cr	0.2285	ppb	153.35	1.00	
55 Mn	-0.0279	ppb	18.02	1.00	
56 Fe	10.11	ppb	104.65	1.00	
57 Fe	-8.2	ppb	31.10	1.00	
59 Co	-0.0038	ppb	108.14	1.00	
60 Ni	-0.002	ppb	192.32	1.00	
63 Cu	0.046	ppb	24.13	1.00	
65 Cu	0.0478	ppb	19.35	1.00	
66 Zn	-0.3151	ppb	8.06	1.00	
68 Zn	-5.555	ppb	1.86	1.00	
75 As	0.0396	ppb	198.26	1.00	
82 Se	0.2997	ppb	46.75	1.00	
88 Sr	0.0056	ppb	67.25	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.2815	ppb	9.56	1.00	
107 Ag	0.0035	ppb	45.51	1.00	
109 Ag	0.0016	ppb	113.15	1.00	
111 Cd	-0.0698	ppb	61.32	1.00	
114 Cd	0.0027	ppb	39.45	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0581	ppb	11.99	1.00	
120 Sn	0.0723	ppb	23.81	1.00	
121 Sb	0.0135	ppb	30.84	1.00	
123 Sb	0.0195	ppb	2.06	1.00	
135 Ba	0.006	ppb	340.37	1.00	
137 Ba	-0.0024	ppb	192.42	1.00	
182 W	0.1027	ppb	4.29	1.00	
203 Tl	0.0113	ppb	40.78	1.00	
205 Tl	0.007	ppb	31.29	1.00	
208 Pb	0.002	ppb	70.16	1.00	
232 Th	0.0384	ppb	36.97	1.00	
238 U	0.0013	ppb	32.38	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3047182.00	1.50	2966696.50	102.7	79.5 - 120	
45 Sc	2410823.30	3.01	2360051.80	102.2	79.5 - 120	
72 Ge	505237.78	1.65	485077.47	104.2	79.5 - 120	
159 Tb	4432810.00	1.52	4195300.50	105.7	79.5 - 120	
209 Bi	2667666.30	1.88	2529621.80	105.5	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG05A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000741

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG05A.B\026SMPL.D\026SMPL.D#
Date Acquired: Jul 5 2014 03:02 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: PBWHF24IMW2
Misc Info: DILUTION 1.6/8
Vial Number: 2101
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 05 2014 02:35 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.01	0.002	ppb	128.22	100.	
11 B	1.125	0.225	ppb	36.60	1000.	
23 Na	47.915	9.583	ppb	5.05	200000.	
25 Mg	8.185	1.637	ppb	15.95	200000.	
27 Al	8.51	1.702	ppb	6.42	200000.	
28 Si	-370.6	-74.12	ppb	23.39	#VALUE!	
29 Si	-2,951.5	-590.3	ppb	18.47	10000.	LOW
39 K	-23.095	-4.619	ppb	33.95	200000.	
43 Ca	18.545	3.709	ppb	56.46	#VALUE!	
44 Ca	26.255	5.251	ppb	30.89	200000.	
51 V	-0.1437	-0.0287	ppb	508.00	1000.	
52 Cr	0.99	0.198	ppb	8.17	1000.	
53 Cr	45.87	9.174	ppb	6.74	#VALUE!	
55 Mn	0.0924	0.0185	ppb	9.11	1000.	
56 Fe	60.05	12.01	ppb	69.53	#VALUE!	
57 Fe	-36.98	-7.396	ppb	41.47	100000.	
59 Co	-0.008	-0.0016	ppb	187.72	1000.	
60 Ni	-0.0448	-0.009	ppb	30.53	1000.	
63 Cu	0.222	0.0444	ppb	6.52	#VALUE!	
65 Cu	0.3516	0.0703	ppb	25.30	1000.	
66 Zn	-1.335	-0.267	ppb	17.43	1000.	
68 Zn	-25.535	-5.107	ppb	6.26	#VALUE!	
75 As	0.3029	0.0606	ppb	334.60	1000.	
82 Se	0.9555	0.1911	ppb	133.39	1000.	
88 Sr	0.0372	0.0074	ppb	21.77	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.776	0.1552	ppb	10.17	1000.	
107 Ag	0.0026	0.0005	ppb	195.23	500.	
109 Ag	0.0016	0.0003	ppb	744.37	#VALUE!	
111 Cd	-0.544	-0.1088	ppb	33.29	#VALUE!	
114 Cd	0.0325	0.0065	ppb	50.99	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.3058	0.0612	ppb	32.87	1000.	
120 Sn	0.222	0.0444	ppb	23.27	#VALUE!	
121 Sb	0.0323	0.0065	ppb	35.99	#VALUE!	
123 Sb	0.0527	0.0105	ppb	42.23	1000.	
135 Ba	0.956	0.1912	ppb	1.24	1000.	
137 Ba	0.781	0.1562	ppb	20.86	#VALUE!	
182 W	0.1798	0.036	ppb	---	#VALUE!	
203 Tl	0.0277	0.0055	ppb	63.25	1000.	
205 Tl	0.0054	0.0011	ppb	67.26	#VALUE!	
208 Pb	0.0172	0.0034	ppb	67.16	1000.	
232 Th	0.2054	0.0411	ppb	22.63	1000.	
238 U	0.0009	0.0002	ppb	212.32	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3039010.30	0.23	2966696.50	102.4	69.5 - 130	
45 Sc	2380228.80	1.42	2360051.80	100.9	69.5 - 130	
72 Ge	492797.25	1.05	485077.47	101.6	69.5 - 130	
159 Tb	4367422.50	1.12	4195300.50	104.1	69.5 - 130	
209 Bi	2612291.80	1.28	2529621.80	103.3	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG05A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000742

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG05A.B\027SMPL.D\027SMPL.D#
Date Acquired: Jul 5 2014 03:05 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: LCSWHF24IMW2
Misc Info: DILUTION 1.6/8
Vial Number: 2102
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 05 2014 02:35 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	46.	9.2	ppb	2.09	100.	
11 B	426.75	85.35	ppb	2.40	1000.	
23 Na	6,960.	1,392.	ppb	2.41	200000.	
25 Mg	4,906.5	981.3	ppb	0.97	200000.	
27 Al	2,023.5	404.7	ppb	0.97	200000.	
28 Si	5,060.	1,012.	ppb	7.13	#VALUE!	
29 Si	3,586.	717.2	ppb	47.37	10000.	
39 K	9,710.	1,942.	ppb	2.35	200000.	
43 Ca	2,726.5	545.3	ppb	8.67	#VALUE!	
44 Ca	2,158.5	431.7	ppb	0.67	200000.	
51 V	501.5	100.3	ppb	1.29	1000.	
52 Cr	194.75	38.95	ppb	1.63	1000.	
53 Cr	240.3	48.06	ppb	1.39	#VALUE!	
55 Mn	494.75	98.95	ppb	1.63	1000.	
56 Fe	1,111.	222.2	ppb	1.59	#VALUE!	
57 Fe	934.5	186.9	ppb	3.44	100000.	
59 Co	498.5	99.7	ppb	1.42	1000.	
60 Ni	509.	101.8	ppb	1.30	1000.	
63 Cu	247.75	49.55	ppb	1.10	#VALUE!	
65 Cu	248.8	49.76	ppb	1.98	1000.	
66 Zn	494.95	98.99	ppb	2.44	1000.	
68 Zn	513.5	102.7	ppb	2.09	#VALUE!	
75 As	98.2	19.64	ppb	1.73	1000.	
82 Se	100.9	20.18	ppb	3.02	1000.	
88 Sr	501.	100.2	ppb	1.50	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	298.05	59.61	ppb	2.11	1000.	
107 Ag	50.8	10.16	ppb	1.16	500.	
109 Ag	50.2	10.04	ppb	2.45	#VALUE!	
111 Cd	246.6	49.32	ppb	2.05	#VALUE!	
114 Cd	247.85	49.57	ppb	1.58	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	473.8	94.76	ppb	2.04	1000.	
120 Sn	477.8	95.56	ppb	2.54	#VALUE!	
121 Sb	94.3	18.86	ppb	1.88	#VALUE!	
123 Sb	94.85	18.97	ppb	2.15	1000.	
135 Ba	1,911.	382.2	ppb	2.11	1000.	
137 Ba	1,920.	384.	ppb	1.88	#VALUE!	
182 W	103.45	20.69	ppb	---	#VALUE!	
203 Tl	92.05	18.41	ppb	1.24	1000.	
205 Tl	91.75	18.35	ppb	2.27	#VALUE!	
208 Pb	98.9	19.78	ppb	1.91	1000.	
232 Th	0.3959	0.0792	ppb	22.09	1000.	
238 U	98.1	19.62	ppb	2.23	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3130205.30	2.05	2966696.50	105.5	69.5 - 130	
45 Sc	2412978.00	0.78	2360051.80	102.2	69.5 - 130	
72 Ge	496032.16	0.63	485077.47	102.3	69.5 - 130	
159 Tb	4520811.50	1.28	4195300.50	107.8	69.5 - 130	
209 Bi	2683437.50	0.95	2529621.80	106.1	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG05A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000743

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG05A.B\028SMPL.D\028SMPL.D#
Date Acquired: Jul 5 2014 03:09 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-008
Misc Info: DILUTION 1.6/8
Vial Number: 2103
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 05 2014 02:35 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0123	0.0025	ppb	80.49	100.	
11 B	13.5	2.7	ppb	5.19	1000.	
23 Na	7,990.	1,598.	ppb	0.61	200000.	
25 Mg	6,170.	1,234.	ppb	2.04	200000.	
27 Al	17.	3.4	ppb	14.64	200000.	
28 Si	6,395.	1,279.	ppb	2.39	#VALUE!	
29 Si	3,767.5	753.5	ppb	17.47	10000.	
39 K	1,548.5	309.7	ppb	1.18	200000.	
43 Ca	32,590.	6,518.	ppb	0.08	#VALUE!	
44 Ca	33,170.	6,634.	ppb	1.34	200000.	
51 V	1.069	0.2138	ppb	61.46	1000.	
52 Cr	0.898	0.1796	ppb	16.38	1000.	
53 Cr	47.765	9.553	ppb	3.25	#VALUE!	
55 Mn	47.385	9.477	ppb	0.87	1000.	
56 Fe	42.41	8.482	ppb	112.50	#VALUE!	
57 Fe	95.65	19.13	ppb	26.71	100000.	
59 Co	0.1573	0.0315	ppb	19.48	1000.	
60 Ni	1.725	0.345	ppb	12.70	1000.	
63 Cu	4.605	0.921	ppb	2.52	#VALUE!	
65 Cu	4.547	0.9094	ppb	2.65	1000.	
66 Zn	4.101	0.8202	ppb	11.29	1000.	
68 Zn	-17.055	-3.411	ppb	9.91	#VALUE!	
75 As	1.404	0.2808	ppb	131.70	1000.	
82 Se	1.024	0.2048	ppb	69.58	1000.	
88 Sr	85.9	17.18	ppb	1.73	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	1.2775	0.2555	ppb	5.30	1000.	
107 Ag	0.0244	0.0049	ppb	48.30	500.	
109 Ag	0.0002	0.	ppb	8613.60	#VALUE!	
111 Cd	-0.4436	-0.0887	ppb	16.86	#VALUE!	
114 Cd	0.0451	0.009	ppb	10.39	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.6515	0.1303	ppb	10.25	1000.	
120 Sn	0.6325	0.1265	ppb	24.25	#VALUE!	
121 Sb	0.1303	0.0261	ppb	30.51	#VALUE!	
123 Sb	0.1412	0.0282	ppb	13.86	1000.	
135 Ba	6.895	1.379	ppb	2.32	1000.	
137 Ba	6.885	1.377	ppb	3.15	#VALUE!	
182 W	0.2991	0.0598	ppb	---	#VALUE!	
203 Tl	0.038	0.0076	ppb	21.88	1000.	
205 Tl	0.0267	0.0053	ppb	3.88	#VALUE!	
208 Pb	0.2074	0.0415	ppb	13.48	1000.	
232 Th	0.0438	0.0088	ppb	42.27	1000.	
238 U	0.5115	0.1023	ppb	2.28	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3090783.30	1.71	2966696.50	104.2	69.5 - 130	
45 Sc	2398891.50	1.15	2360051.80	101.6	69.5 - 130	
72 Ge	496286.38	1.36	485077.47	102.3	69.5 - 130	
159 Tb	4353756.50	1.68	4195300.50	103.8	69.5 - 130	
209 Bi	2625216.80	1.72	2529621.80	103.8	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG05A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000744

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG05A.B\029SMPL.D\029SMPL.D#
Date Acquired: Jul 5 2014 03:12 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-008L
Misc Info: DILUTION 0.4/10
Vial Number: 2104
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 05 2014 02:35 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0559	0.0022	ppb	9.28	100.	
11 B	15.2325	0.6093	ppb	12.24	1000.	
23 Na	8,112.5	324.5	ppb	3.25	200000.	
25 Mg	6,125.	245.	ppb	4.27	200000.	
27 Al	30.9	1.236	ppb	7.65	200000.	
28 Si	6,275.	251.	ppb	28.77	#VALUE!	
29 Si	-1,501.	-60.04	ppb	541.14	10000.	
39 K	1,439.5	57.58	ppb	13.19	200000.	
43 Ca	33,225.	1,329.	ppb	2.52	#VALUE!	
44 Ca	32,625.	1,305.	ppb	4.66	200000.	
51 V	0.1388	0.0056	ppb	514.59	1000.	
52 Cr	1.2753	0.051	ppb	69.18	1000.	
53 Cr	75.875	3.035	ppb	12.58	#VALUE!	
55 Mn	46.675	1.867	ppb	6.45	1000.	
56 Fe	110.05	4.402	ppb	230.80	#VALUE!	
57 Fe	-124.35	-4.974	ppb	84.04	100000.	
59 Co	0.1153	0.0046	ppb	36.77	1000.	
60 Ni	1.917	0.0767	ppb	22.04	1000.	
63 Cu	5.0975	0.2039	ppb	7.32	#VALUE!	
65 Cu	5.365	0.2146	ppb	17.16	1000.	
66 Zn	-2.5925	-0.1037	ppb	24.16	1000.	
68 Zn	-89.975	-3.599	ppb	13.54	#VALUE!	
75 As	3.31	0.1324	ppb	84.29	1000.	
82 Se	-0.256	-0.0102	ppb	1507.80	1000.	
88 Sr	87.15	3.486	ppb	5.45	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	2.2993	0.092	ppb	9.76	1000.	
107 Ag	0.0379	0.0015	ppb	57.63	500.	
109 Ag	0.0764	0.0031	ppb	8.78	#VALUE!	
111 Cd	-3.2275	-0.1291	ppb	35.48	#VALUE!	
114 Cd	-0.0023	-0.0001	ppb	433.63	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.731	0.0292	ppb	31.07	1000.	
120 Sn	0.6968	0.0279	ppb	24.72	#VALUE!	
121 Sb	0.2314	0.0093	ppb	47.47	#VALUE!	
123 Sb	0.1223	0.0049	ppb	86.74	1000.	
135 Ba	10.925	0.437	ppb	12.35	1000.	
137 Ba	10.555	0.4222	ppb	13.72	#VALUE!	
182 W	0.6403	0.0256	ppb	---	#VALUE!	
203 Tl	0.125	0.005	ppb	38.47	1000.	
205 Tl	0.0358	0.0014	ppb	82.07	#VALUE!	
208 Pb	0.1831	0.0073	ppb	25.67	1000.	
232 Th	0.0395	0.0016	ppb	122.58	1000.	
238 U	0.538	0.0215	ppb	14.47	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3075495.50	2.23	2966696.50	103.7	69.5 - 130	
45 Sc	2424778.00	2.96	2360051.80	102.7	69.5 - 130	
72 Ge	505913.25	3.13	485077.47	104.3	69.5 - 130	
159 Tb	4486236.00	2.76	4195300.50	106.9	69.5 - 130	
209 Bi	2683259.00	3.11	2529621.80	106.1	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG05A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000745

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG05A.B\030SMPL.D\030SMPL.D#
Date Acquired: Jul 5 2014 03:15 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-008A
Misc Info: DILUTION 1.6/8
Vial Number: 2105
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 05 2014 02:35 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	9.525	1.905	ppb	2.44	100.	
11 B	194.	38.8	ppb	1.94	1000.	
23 Na	17,410.	3,482.	ppb	0.98	200000.	
25 Mg	7,190.	1,438.	ppb	1.79	200000.	
27 Al	2,879.	575.8	ppb	1.61	200000.	
28 Si	11,440.	2,288.	ppb	2.08	#VALUE!	
29 Si	8,965.	1,793.	ppb	2.21	10000.	
39 K	11,170.	2,234.	ppb	1.12	200000.	
43 Ca	34,100.	6,820.	ppb	1.84	#VALUE!	
44 Ca	33,825.	6,765.	ppb	1.75	200000.	
51 V	47.475	9.495	ppb	1.79	1000.	
52 Cr	49.195	9.839	ppb	0.90	1000.	
53 Cr	101.15	20.23	ppb	1.27	#VALUE!	
55 Mn	67.1	13.42	ppb	1.56	1000.	
56 Fe	1,047.5	209.5	ppb	1.00	#VALUE!	
57 Fe	991.	198.2	ppb	3.19	100000.	
59 Co	9.63	1.926	ppb	0.88	1000.	
60 Ni	21.625	4.325	ppb	3.09	1000.	
63 Cu	33.81	6.762	ppb	1.29	#VALUE!	
65 Cu	33.56	6.712	ppb	1.88	1000.	
66 Zn	96.8	19.36	ppb	2.49	1000.	
68 Zn	73.4	14.68	ppb	2.41	#VALUE!	
75 As	49.94	9.988	ppb	0.99	1000.	
82 Se	47.845	9.569	ppb	0.55	1000.	
88 Sr	131.3	26.26	ppb	1.01	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	47.83	9.566	ppb	2.45	1000.	
107 Ag	9.71	1.942	ppb	2.40	500.	
109 Ag	9.555	1.911	ppb	1.39	#VALUE!	
111 Cd	9.	1.8	ppb	2.34	#VALUE!	
114 Cd	9.7	1.94	ppb	2.34	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	46.19	9.238	ppb	0.89	1000.	
120 Sn	46.975	9.395	ppb	2.48	#VALUE!	
121 Sb	9.42	1.884	ppb	1.27	#VALUE!	
123 Sb	9.715	1.943	ppb	1.24	1000.	
135 Ba	27.075	5.415	ppb	3.75	1000.	
137 Ba	27.06	5.412	ppb	3.48	#VALUE!	
182 W	48.8	9.76	ppb	---	#VALUE!	
203 Tl	9.515	1.903	ppb	2.27	1000.	
205 Tl	9.615	1.923	ppb	2.73	#VALUE!	
208 Pb	9.785	1.957	ppb	2.73	1000.	
232 Th	9.255	1.851	ppb	1.49	1000.	
238 U	10.145	2.029	ppb	0.78	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3081773.30	1.86	2966696.50	103.9	69.5 - 130	
45 Sc	2387279.00	0.87	2360051.80	101.2	69.5 - 130	
72 Ge	494961.03	0.61	485077.47	102.0	69.5 - 130	
159 Tb	4357773.50	1.15	4195300.50	103.9	69.5 - 130	
209 Bi	2591364.50	0.75	2529621.80	102.4	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG05A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000746

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG05A.B\031SMPL.D\031SMPL.D#
Date Acquired: Jul 5 2014 03:18 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-008S
Misc Info: DILUTION 1.6/8
Vial Number: 2106
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 05 2014 02:35 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	45.46	9.092	ppb	2.07	100.	
11 B	453.	90.6	ppb	3.09	1000.	
23 Na	15,315.	3,063.	ppb	2.54	200000.	
25 Mg	11,515.	2,303.	ppb	2.28	200000.	
27 Al	1,987.	397.4	ppb	2.38	200000.	
28 Si	11,405.	2,281.	ppb	4.06	#VALUE!	
29 Si	8,625.	1,725.	ppb	6.07	10000.	
39 K	11,620.	2,324.	ppb	3.01	200000.	
43 Ca	36,240.	7,248.	ppb	2.72	#VALUE!	
44 Ca	35,695.	7,139.	ppb	2.08	200000.	
51 V	477.25	95.45	ppb	2.39	1000.	
52 Cr	189.9	37.98	ppb	2.02	1000.	
53 Cr	249.2	49.84	ppb	2.42	#VALUE!	
55 Mn	534.	106.8	ppb	1.00	1000.	
56 Fe	1,082.	216.4	ppb	2.23	#VALUE!	
57 Fe	1,010.5	202.1	ppb	2.13	100000.	
59 Co	481.2	96.24	ppb	1.39	1000.	
60 Ni	490.95	98.19	ppb	1.85	1000.	
63 Cu	237.35	47.47	ppb	1.62	#VALUE!	
65 Cu	237.9	47.58	ppb	1.31	1000.	
66 Zn	481.35	96.27	ppb	2.54	1000.	
68 Zn	497.45	99.49	ppb	2.97	#VALUE!	
75 As	100.65	20.13	ppb	2.53	1000.	
82 Se	102.	20.4	ppb	1.36	1000.	
88 Sr	582.5	116.5	ppb	1.58	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	293.6	58.72	ppb	1.66	1000.	
107 Ag	48.175	9.635	ppb	1.60	500.	
109 Ag	48.365	9.673	ppb	1.47	#VALUE!	
111 Cd	246.8	49.36	ppb	1.35	#VALUE!	
114 Cd	246.4	49.28	ppb	1.87	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	482.35	96.47	ppb	1.82	1000.	
120 Sn	483.65	96.73	ppb	1.99	#VALUE!	
121 Sb	97.35	19.47	ppb	2.11	#VALUE!	
123 Sb	96.35	19.27	ppb	1.69	1000.	
135 Ba	1,868.	373.6	ppb	1.34	1000.	
137 Ba	1,878.5	375.7	ppb	1.89	#VALUE!	
182 W	105.15	21.03	ppb	---	#VALUE!	
203 Tl	93.45	18.69	ppb	1.65	1000.	
205 Tl	93.45	18.69	ppb	2.11	#VALUE!	
208 Pb	98.9	19.78	ppb	1.75	1000.	
232 Th	0.4068	0.0814	ppb	13.59	1000.	
238 U	98.95	19.79	ppb	2.41	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3184936.50	0.91	2966696.50	107.4	69.5 - 130	
45 Sc	2405721.50	1.44	2360051.80	101.9	69.5 - 130	
72 Ge	495168.00	0.74	485077.47	102.1	69.5 - 130	
159 Tb	4404545.50	0.99	4195300.50	105.0	69.5 - 130	
209 Bi	2612288.00	1.08	2529621.80	103.3	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG05A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000747

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG05A.B\032SMPL.D\032SMPL.D#
Date Acquired: Jul 5 2014 03:22 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-008P
Misc Info: DILUTION 1.6/8
Vial Number: 2107
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 05 2014 02:35 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	47.38	9.476	ppb	2.96	100.	
11 B	453.3	90.66	ppb	4.01	1000.	
23 Na	14,905.	2,981.	ppb	4.13	200000.	
25 Mg	11,295.	2,259.	ppb	2.57	200000.	
27 Al	2,009.	401.8	ppb	3.22	200000.	
28 Si	10,890.	2,178.	ppb	7.63	#VALUE!	
29 Si	8,245.	1,649.	ppb	28.92	10000.	
39 K	11,450.	2,290.	ppb	3.26	200000.	
43 Ca	34,720.	6,944.	ppb	2.64	#VALUE!	
44 Ca	34,285.	6,857.	ppb	3.70	200000.	
51 V	478.35	95.67	ppb	4.51	1000.	
52 Cr	193.95	38.79	ppb	3.79	1000.	
53 Cr	248.25	49.65	ppb	3.60	#VALUE!	
55 Mn	544.	108.8	ppb	3.10	1000.	
56 Fe	1,104.	220.8	ppb	4.54	#VALUE!	
57 Fe	1,039.5	207.9	ppb	4.05	100000.	
59 Co	491.3	98.26	ppb	3.44	1000.	
60 Ni	498.4	99.68	ppb	3.55	1000.	
63 Cu	241.35	48.27	ppb	4.22	#VALUE!	
65 Cu	241.15	48.23	ppb	3.36	1000.	
66 Zn	488.2	97.64	ppb	3.52	1000.	
68 Zn	507.	101.4	ppb	4.57	#VALUE!	
75 As	100.4	20.08	ppb	5.01	1000.	
82 Se	101.25	20.25	ppb	4.79	1000.	
88 Sr	583.	116.6	ppb	2.98	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	294.8	58.96	ppb	4.29	1000.	
107 Ag	48.505	9.701	ppb	3.78	500.	
109 Ag	49.185	9.837	ppb	3.10	#VALUE!	
111 Cd	245.95	49.19	ppb	4.57	#VALUE!	
114 Cd	247.35	49.47	ppb	4.36	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	483.1	96.62	ppb	4.20	1000.	
120 Sn	486.95	97.39	ppb	4.47	#VALUE!	
121 Sb	97.1	19.42	ppb	3.66	#VALUE!	
123 Sb	97.	19.4	ppb	2.94	1000.	
135 Ba	1,894.5	378.9	ppb	3.80	1000.	
137 Ba	1,908.	381.6	ppb	4.31	#VALUE!	
182 W	103.9	20.78	ppb	---	#VALUE!	
203 Tl	92.8	18.56	ppb	5.70	1000.	
205 Tl	93.7	18.74	ppb	5.07	#VALUE!	
208 Pb	100.	20.	ppb	4.97	1000.	
232 Th	0.1475	0.0295	ppb	7.58	1000.	
238 U	99.2	19.84	ppb	5.00	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3125027.30	3.73	2966696.50	105.3	69.5 - 130	
45 Sc	2392932.50	2.99	2360051.80	101.4	69.5 - 130	
72 Ge	489910.09	3.05	485077.47	101.0	69.5 - 130	
159 Tb	4363429.00	3.22	4195300.50	104.0	69.5 - 130	
209 Bi	2582265.50	3.86	2529621.80	102.1	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG05A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000748

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG05A.B\033SMPL.D\033SMPL.D#
Date Acquired: Jul 5 2014 03:25 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-015
Misc Info: DILUTION 1.6/8
Vial Number: 2108
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 05 2014 02:35 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0244	0.0049	ppb	31.15	100.	
11 B	12.625	2.525	ppb	8.22	1000.	
23 Na	3,731.	746.2	ppb	1.62	200000.	
25 Mg	1,428.	285.6	ppb	3.16	200000.	
27 Al	47.175	9.435	ppb	0.88	200000.	
28 Si	2,270.	454.	ppb	8.68	#VALUE!	
29 Si	13.585	2.717	ppb	6647.00	10000.	
39 K	1,468.	293.6	ppb	2.47	200000.	
43 Ca	6,790.	1,358.	ppb	3.46	#VALUE!	
44 Ca	6,560.	1,312.	ppb	3.52	200000.	
51 V	1.116	0.2232	ppb	32.36	1000.	
52 Cr	1.3085	0.2617	ppb	14.62	1000.	
53 Cr	53.3	10.66	ppb	3.90	#VALUE!	
55 Mn	38.36	7.672	ppb	3.24	1000.	
56 Fe	320.5	64.1	ppb	8.19	#VALUE!	
57 Fe	202.4	40.48	ppb	13.14	100000.	
59 Co	1.12	0.224	ppb	6.41	1000.	
60 Ni	1.833	0.3666	ppb	5.03	1000.	
63 Cu	3.406	0.6812	ppb	2.89	#VALUE!	
65 Cu	3.678	0.7356	ppb	6.78	1000.	
66 Zn	10.215	2.043	ppb	5.76	1000.	
68 Zn	-4.2165	-0.8433	ppb	23.36	#VALUE!	
75 As	1.201	0.2402	ppb	26.87	1000.	
82 Se	0.9695	0.1939	ppb	97.22	1000.	
88 Sr	20.165	4.033	ppb	5.37	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.723	0.1446	ppb	0.28	1000.	
107 Ag	0.0367	0.0073	ppb	15.16	500.	
109 Ag	0.031	0.0062	ppb	53.46	#VALUE!	
111 Cd	-0.3255	-0.0651	ppb	49.02	#VALUE!	
114 Cd	0.0987	0.0197	ppb	27.72	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.6995	0.1399	ppb	12.29	1000.	
120 Sn	0.8025	0.1605	ppb	8.65	#VALUE!	
121 Sb	0.1462	0.0292	ppb	30.04	#VALUE!	
123 Sb	0.1824	0.0365	ppb	22.59	1000.	
135 Ba	12.065	2.413	ppb	8.09	1000.	
137 Ba	12.53	2.506	ppb	2.51	#VALUE!	
182 W	0.3492	0.0698	ppb	---	#VALUE!	
203 Tl	0.0938	0.0188	ppb	17.60	1000.	
205 Tl	0.0787	0.0157	ppb	11.29	#VALUE!	
208 Pb	0.472	0.0944	ppb	2.54	1000.	
232 Th	0.0264	0.0053	ppb	26.34	1000.	
238 U	0.0452	0.009	ppb	9.79	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3100393.00	1.59	2966696.50	104.5	69.5 - 130	
45 Sc	2375171.80	1.55	2360051.80	100.6	69.5 - 130	
72 Ge	495308.38	2.28	485077.47	102.1	69.5 - 130	
159 Tb	4319060.50	1.21	4195300.50	102.9	69.5 - 130	
209 Bi	2595374.80	1.81	2529621.80	102.6	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG05A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000749

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG05A.B\034SMPL.D\034SMPL.D#
Date Acquired: Jul 5 2014 03:28 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-015L
Misc Info: DILUTION 0.4/10
Vial Number: 2109
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 05 2014 02:35 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0503	0.002	ppb	94.03	100.	
11 B	16.475	0.659	ppb	7.70	1000.	
23 Na	3,855.	154.2	ppb	4.08	200000.	
25 Mg	1,416.75	56.67	ppb	4.58	200000.	
27 Al	62.875	2.515	ppb	1.46	200000.	
28 Si	497.	19.88	ppb	379.63	#VALUE!	
29 Si	-9,027.5	-361.1	ppb	89.84	10000.	LOW
39 K	1,333.5	53.34	ppb	13.33	200000.	
43 Ca	7,102.5	284.1	ppb	3.11	#VALUE!	
44 Ca	6,430.	257.2	ppb	5.37	200000.	
51 V	0.6753	0.027	ppb	176.56	1000.	
52 Cr	1.4005	0.056	ppb	38.36	1000.	
53 Cr	89.875	3.595	ppb	10.61	#VALUE!	
55 Mn	39.275	1.571	ppb	4.67	1000.	
56 Fe	608.25	24.33	ppb	14.67	#VALUE!	
57 Fe	-11.8875	-0.4755	ppb	733.54	100000.	
59 Co	0.969	0.0388	ppb	20.03	1000.	
60 Ni	1.9118	0.0765	ppb	29.48	1000.	
63 Cu	3.625	0.145	ppb	23.16	#VALUE!	
65 Cu	4.3825	0.1753	ppb	13.94	1000.	
66 Zn	3.9575	0.1583	ppb	36.97	1000.	
68 Zn	-70.2	-2.808	ppb	16.35	#VALUE!	
75 As	2.4268	0.0971	ppb	179.36	1000.	
82 Se	0.9895	0.0396	ppb	183.96	1000.	
88 Sr	20.32	0.8128	ppb	2.03	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	1.4035	0.0561	ppb	11.60	1000.	
107 Ag	0.0875	0.0035	ppb	50.09	500.	
109 Ag	-0.0054	-0.0002	ppb	509.50	#VALUE!	
111 Cd	-2.5925	-0.1037	ppb	18.29	#VALUE!	
114 Cd	0.0096	0.0004	ppb	1236.80	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.8183	0.0327	ppb	17.64	1000.	
120 Sn	1.0113	0.0405	ppb	13.73	#VALUE!	
121 Sb	0.2416	0.0097	ppb	35.28	#VALUE!	
123 Sb	0.2277	0.0091	ppb	61.98	1000.	
135 Ba	17.4475	0.6979	ppb	8.07	1000.	
137 Ba	16.9375	0.6775	ppb	9.04	#VALUE!	
182 W	0.721	0.0288	ppb	---	#VALUE!	
203 Tl	0.1565	0.0063	ppb	54.48	1000.	
205 Tl	0.0751	0.003	ppb	23.93	#VALUE!	
208 Pb	0.3838	0.0154	ppb	27.11	1000.	
232 Th	-0.0141	-0.0006	ppb	222.83	1000.	
238 U	0.0441	0.0018	ppb	44.46	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3082512.00	4.30	2966696.50	103.9	69.5 - 130	
45 Sc	2418482.80	3.68	2360051.80	102.5	69.5 - 130	
72 Ge	505672.38	3.70	485077.47	104.2	69.5 - 130	
159 Tb	4471431.00	3.02	4195300.50	106.6	69.5 - 130	
209 Bi	2675080.50	3.47	2529621.80	105.8	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG05A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000750

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG05A.B\035SMPL.D\035SMPL.D#
Date Acquired: Jul 5 2014 03:32 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-015A
Misc Info: DILUTION 1.6/8
Vial Number: 2110
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 05 2014 02:35 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	9.555	1.911	ppb	2.97	100.	
11 B	189.2	37.84	ppb	3.18	1000.	
23 Na	13,215.	2,643.	ppb	1.80	200000.	
25 Mg	2,370.5	474.1	ppb	1.80	200000.	
27 Al	2,916.	583.2	ppb	2.50	200000.	
28 Si	7,120.	1,424.	ppb	5.29	#VALUE!	
29 Si	4,594.	918.8	ppb	26.56	10000.	
39 K	11,130.	2,226.	ppb	2.72	200000.	
43 Ca	7,465.	1,493.	ppb	0.84	#VALUE!	
44 Ca	7,435.	1,487.	ppb	1.95	200000.	
51 V	46.525	9.305	ppb	0.87	1000.	
52 Cr	49.85	9.97	ppb	0.70	1000.	
53 Cr	107.75	21.55	ppb	2.48	#VALUE!	
55 Mn	58.25	11.65	ppb	0.79	1000.	
56 Fe	1,273.5	254.7	ppb	1.69	#VALUE!	
57 Fe	1,123.	224.6	ppb	3.07	100000.	
59 Co	10.78	2.156	ppb	3.21	1000.	
60 Ni	20.965	4.193	ppb	2.59	1000.	
63 Cu	33.365	6.673	ppb	0.91	#VALUE!	
65 Cu	32.73	6.546	ppb	2.99	1000.	
66 Zn	103.7	20.74	ppb	0.94	1000.	
68 Zn	84.6	16.92	ppb	2.97	#VALUE!	
75 As	47.665	9.533	ppb	1.27	1000.	
82 Se	47.435	9.487	ppb	0.48	1000.	
88 Sr	66.45	13.29	ppb	1.70	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	46.74	9.348	ppb	1.00	1000.	
107 Ag	9.86	1.972	ppb	4.07	500.	
109 Ag	9.77	1.954	ppb	2.36	#VALUE!	
111 Cd	8.89	1.778	ppb	2.49	#VALUE!	
114 Cd	9.645	1.929	ppb	2.27	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	46.14	9.228	ppb	2.18	1000.	
120 Sn	46.205	9.241	ppb	1.53	#VALUE!	
121 Sb	9.48	1.896	ppb	2.77	#VALUE!	
123 Sb	9.51	1.902	ppb	4.47	1000.	
135 Ba	31.995	6.399	ppb	4.49	1000.	
137 Ba	33.015	6.603	ppb	4.21	#VALUE!	
182 W	48.43	9.686	ppb ---		#VALUE!	
203 Tl	9.67	1.934	ppb	2.49	1000.	
205 Tl	9.54	1.908	ppb	1.98	#VALUE!	
208 Pb	10.085	2.017	ppb	0.92	1000.	
232 Th	9.075	1.815	ppb	4.96	1000.	
238 U	9.585	1.917	ppb	1.68	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3088778.50	2.51	2966696.50	104.1	69.5 - 130	
45 Sc	2380907.80	2.36	2360051.80	100.9	69.5 - 130	
72 Ge	493548.06	0.67	485077.47	101.7	69.5 - 130	
159 Tb	4339116.00	1.50	4195300.50	103.4	69.5 - 130	
209 Bi	2574382.30	1.50	2529621.80	101.8	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG05A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000751

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JHG05A.B\036_CCV.D\036_CCV.D#
Date Acquired: Jul 5 2014 03:35 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 05 2014 02:35 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	23.88	ppb	0.99	25	95.52	
11 B	23.88	ppb	1.14	25	95.52	
23 Na	4,836.	ppb	1.13	5,000	96.72	
25 Mg	5,008.	ppb	0.80	5,000	100.16	
27 Al	504.5	ppb	0.52	500	100.9	
28 Si	496.5	ppb	7.92	500	99.3	
29 Si	104.1	ppb	52.06	500	20.82	Fail
39 K	5,003.	ppb	1.70	5,000	100.06	
43 Ca	5,034.	ppb	1.15	5,000	100.68	
44 Ca	5,029.	ppb	1.75	5,000	100.58	
51 V	24.55	ppb	0.31	25	98.2	
52 Cr	24.65	ppb	1.17	25	98.6	
53 Cr	25.36	ppb	1.85	25	101.44	
55 Mn	24.63	ppb	1.06	25	98.52	
56 Fe	4,990.	ppb	0.53	5,000	99.8	
57 Fe	5,052.	ppb	0.95	5,000	101.04	
59 Co	24.88	ppb	0.26	25	99.52	
60 Ni	24.69	ppb	0.85	25	98.76	
63 Cu	24.69	ppb	0.85	25	98.76	
65 Cu	24.6	ppb	1.24	25	98.4	
66 Zn	24.44	ppb	2.03	25	97.76	
68 Zn	21.8	ppb	1.60	25	87.2	
75 As	24.77	ppb	0.73	25	99.08	
82 Se	24.91	ppb	0.84	25	99.64	
88 Sr	25.18	ppb	0.79	25	100.72	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.87	ppb	0.47	25	99.48	
107 Ag	25.06	ppb	0.92	25	100.24	
109 Ag	25.1	ppb	0.85	25	100.4	
111 Cd	24.9	ppb	0.21	25	99.6	
114 Cd	25.05	ppb	0.69	25	100.2	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.49	ppb	0.96	25	97.96	
120 Sn	24.76	ppb	1.34	25	99.04	
121 Sb	24.4	ppb	1.96	25	97.6	
123 Sb	24.45	ppb	1.09	25	97.8	
135 Ba	24.44	ppb	2.44	25	97.76	
137 Ba	24.78	ppb	2.41	25	99.12	
182 W	24.91	ppb	1.40	25	99.64	
203 Tl	24.75	ppb	0.93	25	99	
205 Tl	24.76	ppb	1.05	25	99.04	
208 Pb	24.68	ppb	1.05	25	98.72	
232 Th	24.3	ppb	1.06	25	97.2	
238 U	24.29	ppb	0.69	25	97.16	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3049758.50	1.17	2966696.50	102.8	80 - 120.4	
45 Sc	2426872.00	1.21	2360051.80	102.8	80 - 120.4	
72 Ge	501797.66	0.40	485077.47	103.4	80 - 120.4	
159 Tb	4442509.00	1.44	4195300.50	105.9	80 - 120.4	
209 Bi	2640128.00	1.26	2529621.80	104.4	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG05A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000752

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JHG05A.B\037_CCB.D\037_CCB.D#
Date Acquired: Jul 5 2014 03:38 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 05 2014 02:35 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0023	ppb	56.84	1.00	
11 B	0.4084	ppb	7.34	1.00	
23 Na	-0.8888	ppb	16.63	1.00	
25 Mg	0.1874	ppb	34.06	1.00	
27 Al	0.0752	ppb	81.51	1.00	
28 Si	-6.406	ppb	356.70	1.00	
29 Si	-370.9	ppb	70.83	1.00	
39 K	-7.815	ppb	52.90	1.00	
43 Ca	-0.0008	ppb	332070.00	1.00	
44 Ca	-2.115	ppb	86.38	1.00	
51 V	-0.0001	ppb	106570.00	1.00	
52 Cr	0.0064	ppb	35.25	1.00	
53 Cr	0.6474	ppb	53.45	1.00	
55 Mn	-0.0137	ppb	46.71	1.00	
56 Fe	15.45	ppb	12.78	1.00	
57 Fe	-8.131	ppb	39.11	1.00	
59 Co	0.	ppb	14923.00	1.00	
60 Ni	-0.0127	ppb	7.27	1.00	
63 Cu	0.0125	ppb	55.95	1.00	
65 Cu	0.0263	ppb	45.02	1.00	
66 Zn	-0.3204	ppb	6.07	1.00	
68 Zn	-2.839	ppb	24.72	1.00	
75 As	-0.048	ppb	292.77	1.00	
82 Se	0.1481	ppb	83.05	1.00	
88 Sr	0.0045	ppb	84.05	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0846	ppb	8.32	1.00	
107 Ag	0.002	ppb	109.17	1.00	
109 Ag	-0.0004	ppb	258.64	1.00	
111 Cd	-0.0993	ppb	37.91	1.00	
114 Cd	0.0012	ppb	585.95	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0748	ppb	25.59	1.00	
120 Sn	0.0744	ppb	22.56	1.00	
121 Sb	0.0183	ppb	31.90	1.00	
123 Sb	0.0201	ppb	40.31	1.00	
135 Ba	0.0033	ppb	224.25	1.00	
137 Ba	0.0092	ppb	84.88	1.00	
182 W	0.1109	ppb	3.28	1.00	
203 Tl	0.0112	ppb	34.45	1.00	
205 Tl	0.0046	ppb	37.16	1.00	
208 Pb	0.0061	ppb	120.08	1.00	
232 Th	0.0824	ppb	47.35	1.00	
238 U	0.0012	ppb	26.42	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3093313.50	3.38	2966696.50	104.3	79.5 - 120	
45 Sc	2444423.50	2.80	2360051.80	103.6	79.5 - 120	
72 Ge	505879.94	3.59	485077.47	104.3	79.5 - 120	
159 Tb	4472764.00	2.75	4195300.50	106.6	79.5 - 120	
209 Bi	2688555.00	2.65	2529621.80	106.3	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG05A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000753

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG05A.B\038SMPL.D\038SMPL.D#
Date Acquired: Jul 5 2014 03:41 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-015S
Misc Info: DILUTION 1.6/8
Vial Number: 2111
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 05 2014 02:35 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	47.205	9.441	ppb	0.62	100.	
11 B	444.95	88.99	ppb	3.72	1000.	
23 Na	10,765.	2,153.	ppb	1.43	200000.	
25 Mg	6,775.	1,355.	ppb	1.53	200000.	
27 Al	2,099.	419.8	ppb	0.67	200000.	
28 Si	7,445.	1,489.	ppb	4.21	#VALUE!	
29 Si	5,015.	1,003.	ppb	13.23	10000.	
39 K	11,490.	2,298.	ppb	0.12	200000.	
43 Ca	9,400.	1,880.	ppb	2.38	#VALUE!	
44 Ca	8,560.	1,712.	ppb	0.81	200000.	
51 V	506.	101.2	ppb	2.21	1000.	
52 Cr	200.25	40.05	ppb	0.85	1000.	
53 Cr	258.2	51.64	ppb	0.07	#VALUE!	
55 Mn	551.5	110.3	ppb	0.71	1000.	
56 Fe	1,368.	273.6	ppb	0.23	#VALUE!	
57 Fe	1,238.	247.6	ppb	2.29	100000.	
59 Co	512.	102.4	ppb	0.93	1000.	
60 Ni	520.5	104.1	ppb	0.87	1000.	
63 Cu	254.6	50.92	ppb	0.84	#VALUE!	
65 Cu	256.9	51.38	ppb	0.46	1000.	
66 Zn	511.	102.2	ppb	0.92	1000.	
68 Zn	536.5	107.3	ppb	0.35	#VALUE!	
75 As	100.55	20.11	ppb	1.34	1000.	
82 Se	100.5	20.1	ppb	2.07	1000.	
88 Sr	527.	105.4	ppb	1.53	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	296.3	59.26	ppb	0.82	1000.	
107 Ag	50.65	10.13	ppb	1.03	500.	
109 Ag	50.05	10.01	ppb	1.20	#VALUE!	
111 Cd	249.65	49.93	ppb	0.60	#VALUE!	
114 Cd	249.	49.8	ppb	0.56	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	488.75	97.75	ppb	1.31	1000.	
120 Sn	488.7	97.74	ppb	1.47	#VALUE!	
121 Sb	98.5	19.7	ppb	1.70	#VALUE!	
123 Sb	97.8	19.56	ppb	0.39	1000.	
135 Ba	1,966.	393.2	ppb	1.74	1000.	
137 Ba	1,974.5	394.9	ppb	1.31	#VALUE!	
182 W	105.55	21.11	ppb ---		#VALUE!	
203 Tl	95.55	19.11	ppb	0.31	1000.	
205 Tl	95.65	19.13	ppb	1.05	#VALUE!	
208 Pb	102.65	20.53	ppb	1.89	1000.	
232 Th	1.0175	0.2035	ppb	39.18	1000.	
238 U	100.55	20.11	ppb	1.47	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3177590.80	1.17	2966696.50	107.1	69.5 - 130	
45 Sc	2400596.30	0.18	2360051.80	101.7	69.5 - 130	
72 Ge	488114.44	0.23	485077.47	100.6	69.5 - 130	
159 Tb	4340111.50	1.13	4195300.50	103.5	69.5 - 130	
209 Bi	2545548.50	1.06	2529621.80	100.6	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG05A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000754

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG05A.B\039SMPL.D\039SMPL.D#
Date Acquired: Jul 5 2014 03:45 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-015P
Misc Info: DILUTION 1.6/8
Vial Number: 2112
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 05 2014 02:35 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	46.305	9.261	ppb	5.24	100.	
11 B	444.9	88.98	ppb	4.70	1000.	
23 Na	10,840.	2,168.	ppb	4.70	200000.	
25 Mg	6,730.	1,346.	ppb	4.88	200000.	
27 Al	2,120.	424.	ppb	4.44	200000.	
28 Si	7,585.	1,517.	ppb	9.82	#VALUE!	
29 Si	5,870.	1,174.	ppb	44.03	10000.	
39 K	11,620.	2,324.	ppb	4.43	200000.	
43 Ca	9,560.	1,912.	ppb	4.12	#VALUE!	
44 Ca	8,680.	1,736.	ppb	5.24	200000.	
51 V	504.5	100.9	ppb	3.23	1000.	
52 Cr	200.6	40.12	ppb	3.99	1000.	
53 Cr	258.45	51.69	ppb	2.75	#VALUE!	
55 Mn	553.5	110.7	ppb	3.84	1000.	
56 Fe	1,379.5	275.9	ppb	5.31	#VALUE!	
57 Fe	1,216.	243.2	ppb	6.70	100000.	
59 Co	507.5	101.5	ppb	3.74	1000.	
60 Ni	514.5	102.9	ppb	3.86	1000.	
63 Cu	255.35	51.07	ppb	4.20	#VALUE!	
65 Cu	256.45	51.29	ppb	4.13	1000.	
66 Zn	508.	101.6	ppb	4.77	1000.	
68 Zn	536.	107.2	ppb	4.18	#VALUE!	
75 As	99.2	19.84	ppb	5.15	1000.	
82 Se	100.75	20.15	ppb	3.35	1000.	
88 Sr	528.	105.6	ppb	4.00	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	298.8	59.76	ppb	3.95	1000.	
107 Ag	50.6	10.12	ppb	3.65	500.	
109 Ag	51.15	10.23	ppb	4.32	#VALUE!	
111 Cd	249.4	49.88	ppb	4.59	#VALUE!	
114 Cd	251.4	50.28	ppb	4.28	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	487.2	97.44	ppb	3.96	1000.	
120 Sn	488.95	97.79	ppb	4.16	#VALUE!	
121 Sb	98.	19.6	ppb	4.05	#VALUE!	
123 Sb	97.55	19.51	ppb	3.43	1000.	
135 Ba	1,968.	393.6	ppb	4.45	1000.	
137 Ba	1,977.5	395.5	ppb	4.11	#VALUE!	
182 W	106.3	21.26	ppb	---	#VALUE!	
203 Tl	95.4	19.08	ppb	4.45	1000.	
205 Tl	94.6	18.92	ppb	3.47	#VALUE!	
208 Pb	101.4	20.28	ppb	3.70	1000.	
232 Th	0.3031	0.0606	ppb	15.86	1000.	
238 U	98.85	19.77	ppb	3.63	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3189192.50	4.39	2966696.50	107.5	69.5 - 130	
45 Sc	2371939.30	3.43	2360051.80	100.5	69.5 - 130	
72 Ge	489083.84	3.28	485077.47	100.8	69.5 - 130	
159 Tb	4372527.00	3.22	4195300.50	104.2	69.5 - 130	
209 Bi	2596175.50	2.73	2529621.80	102.6	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG05A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000755

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG05A.B\040SMPL.D\040SMPL.D#
Date Acquired: Jul 5 2014 03:48 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-021
Misc Info: DILUTION 1.6/8
Vial Number: 2201
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 05 2014 02:35 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0185	0.0037	ppb	36.77	100.	
11 B	11.075	2.215	ppb	17.67	1000.	
23 Na	2,831.	566.2	ppb	4.57	200000.	
25 Mg	2,402.	480.4	ppb	4.76	200000.	
27 Al	23.49	4.698	ppb	7.42	200000.	
28 Si	1,180.	236.	ppb	42.46	#VALUE!	
29 Si	-848.5	-169.7	ppb	200.59	10000.	LOW
39 K	761.5	152.3	ppb	7.56	200000.	
43 Ca	26,315.	5,263.	ppb	6.13	#VALUE!	
44 Ca	26,705.	5,341.	ppb	5.61	200000.	
51 V	1.804	0.3608	ppb	9.36	1000.	
52 Cr	1.3235	0.2647	ppb	15.41	1000.	
53 Cr	54.8	10.96	ppb	7.58	#VALUE!	
55 Mn	11.07	2.214	ppb	5.86	1000.	
56 Fe	908.5	181.7	ppb	5.97	#VALUE!	
57 Fe	827.	165.4	ppb	4.66	100000.	
59 Co	0.5165	0.1033	ppb	10.97	1000.	
60 Ni	1.718	0.3436	ppb	11.15	1000.	
63 Cu	2.5945	0.5189	ppb	6.56	#VALUE!	
65 Cu	2.469	0.4938	ppb	6.41	1000.	
66 Zn	3.5295	0.7059	ppb	9.71	1000.	
68 Zn	-10.08	-2.016	ppb	22.24	#VALUE!	
75 As	4.6165	0.9233	ppb	9.30	1000.	
82 Se	0.734	0.1468	ppb	52.94	1000.	
88 Sr	39.695	7.939	ppb	3.62	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	1.2255	0.2451	ppb	5.47	1000.	
107 Ag	0.0148	0.003	ppb	98.38	500.	
109 Ag	0.0056	0.0011	ppb	137.73	#VALUE!	
111 Cd	-0.3952	-0.079	ppb	15.35	#VALUE!	
114 Cd	0.0329	0.0066	ppb	88.65	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.88	0.176	ppb	20.69	1000.	
120 Sn	0.837	0.1674	ppb	22.63	#VALUE!	
121 Sb	0.1844	0.0369	ppb	28.15	#VALUE!	
123 Sb	0.2045	0.0409	ppb	25.33	1000.	
135 Ba	2.9075	0.5815	ppb	11.68	1000.	
137 Ba	2.6395	0.5279	ppb	7.76	#VALUE!	
182 W	0.4477	0.0895	ppb	---	#VALUE!	
203 Tl	0.0368	0.0074	ppb	14.88	1000.	
205 Tl	0.0252	0.005	ppb	56.25	#VALUE!	
208 Pb	0.1548	0.031	ppb	12.20	1000.	
232 Th	0.0348	0.007	ppb	33.53	1000.	
238 U	0.0309	0.0062	ppb	19.57	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3096554.30	2.42	2966696.50	104.4	69.5 - 130	
45 Sc	2397782.50	3.83	2360051.80	101.6	69.5 - 130	
72 Ge	495029.44	3.92	485077.47	102.1	69.5 - 130	
159 Tb	4403612.50	3.39	4195300.50	105.0	69.5 - 130	
209 Bi	2604630.50	4.07	2529621.80	103.0	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG05A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000756

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG05A.B\041SMPL.D\041SMPL.D#
Date Acquired: Jul 5 2014 03:51 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-022
Misc Info: DILUTION 1.6/8
Vial Number: 2202
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 05 2014 02:35 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0116	0.0023	ppb	35.20	100.	
11 B	14.57	2.914	ppb	5.67	1000.	
23 Na	3,994.5	798.9	ppb	0.67	200000.	
25 Mg	4,770.	954.	ppb	0.78	200000.	
27 Al	65.75	13.15	ppb	2.54	200000.	
28 Si	3,406.	681.2	ppb	8.46	#VALUE!	
29 Si	744.5	148.9	ppb	78.38	10000.	
39 K	1,371.	274.2	ppb	2.90	200000.	
43 Ca	54,950.	10,990.	ppb	2.14	#VALUE!	
44 Ca	54,550.	10,910.	ppb	0.68	200000.	
51 V	0.9565	0.1913	ppb	38.06	1000.	
52 Cr	1.3195	0.2639	ppb	2.21	1000.	
53 Cr	49.815	9.963	ppb	0.68	#VALUE!	
55 Mn	1,245.	249.	ppb	0.34	1000.	
56 Fe	7,145.	1,429.	ppb	0.12	#VALUE!	
57 Fe	7,065.	1,413.	ppb	0.35	100000.	
59 Co	5.24	1.048	ppb	2.73	1000.	
60 Ni	2.144	0.4288	ppb	6.31	1000.	
63 Cu	3.674	0.7348	ppb	3.52	#VALUE!	
65 Cu	3.988	0.7976	ppb	1.41	1000.	
66 Zn	5.385	1.077	ppb	1.99	1000.	
68 Zn	-7.95	-1.59	ppb	15.53	#VALUE!	
75 As	7.99	1.598	ppb	7.57	1000.	
82 Se	0.7885	0.1577	ppb	108.12	1000.	
88 Sr	88.75	17.75	ppb	0.71	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1.174	0.2348	ppb	6.65	1000.	
107 Ag	0.0469	0.0094	ppb	24.72	500.	
109 Ag	0.0331	0.0066	ppb	49.20	#VALUE!	
111 Cd	-0.461	-0.0922	ppb	28.41	#VALUE!	
114 Cd	0.0694	0.0139	ppb	26.04	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.3926	0.0785	ppb	22.76	1000.	
120 Sn	0.4777	0.0955	ppb	5.75	#VALUE!	
121 Sb	0.1283	0.0257	ppb	45.36	#VALUE!	
123 Sb	0.132	0.0264	ppb	10.21	1000.	
135 Ba	21.305	4.261	ppb	0.70	1000.	
137 Ba	22.61	4.522	ppb	0.65	#VALUE!	
182 W	0.3833	0.0767	ppb ---		#VALUE!	
203 Tl	0.0248	0.005	ppb	29.26	1000.	
205 Tl	0.011	0.0022	ppb	31.60	#VALUE!	
208 Pb	0.35	0.07	ppb	17.16	1000.	
232 Th	0.0623	0.0125	ppb	12.95	1000.	
238 U	0.0574	0.0115	ppb	9.67	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3114700.80	0.34	2966696.50	105.0	69.5 - 130	
45 Sc	2367653.80	1.37	2360051.80	100.3	69.5 - 130	
72 Ge	494526.34	0.53	485077.47	101.9	69.5 - 130	
159 Tb	4314860.50	0.71	4195300.50	102.8	69.5 - 130	
209 Bi	2610556.50	1.44	2529621.80	103.2	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG05A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000757

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG05A.B\042SMPL.D\042SMPL.D#
Date Acquired: Jul 5 2014 03:54 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4521-023
Misc Info: DILUTION 1.6/8
Vial Number: 2203
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 05 2014 02:35 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0048	0.001	ppb	66.83	100.	
11 B	14.075	2.815	ppb	4.05	1000.	
23 Na	4,003.	800.6	ppb	2.48	200000.	
25 Mg	4,320.5	864.1	ppb	2.34	200000.	
27 Al	19.585	3.917	ppb	4.62	200000.	
28 Si	3,199.5	639.9	ppb	9.03	#VALUE!	
29 Si	1,414.	282.8	ppb	65.59	10000.	
39 K	1,276.	255.2	ppb	2.28	200000.	
43 Ca	49,100.	9,820.	ppb	2.02	#VALUE!	
44 Ca	48,270.	9,654.	ppb	1.06	200000.	
51 V	1.1515	0.2303	ppb	63.66	1000.	
52 Cr	1.2035	0.2407	ppb	15.16	1000.	
53 Cr	48.03	9.606	ppb	7.96	#VALUE!	
55 Mn	947.5	189.5	ppb	1.42	1000.	
56 Fe	636.5	127.3	ppb	3.31	#VALUE!	
57 Fe	616.5	123.3	ppb	7.01	100000.	
59 Co	4.134	0.8268	ppb	1.78	1000.	
60 Ni	2.54	0.508	ppb	4.16	1000.	
63 Cu	2.067	0.4134	ppb	9.64	#VALUE!	
65 Cu	2.174	0.4348	ppb	2.94	1000.	
66 Zn	2.684	0.5368	ppb	6.37	1000.	
68 Zn	-10.035	-2.007	ppb	20.66	#VALUE!	
75 As	4.9635	0.9927	ppb	4.21	1000.	
82 Se	1.1465	0.2293	ppb	13.91	1000.	
88 Sr	70.2	14.04	ppb	2.49	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	1.0265	0.2053	ppb	4.06	1000.	
107 Ag	0.0158	0.0032	ppb	32.22	500.	
109 Ag	0.0006	0.0001	ppb	1765.50	#VALUE!	
111 Cd	-0.556	-0.1112	ppb	4.81	#VALUE!	
114 Cd	0.0479	0.0096	ppb	163.73	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.2867	0.0573	ppb	18.39	1000.	
120 Sn	0.2756	0.0551	ppb	18.71	#VALUE!	
121 Sb	0.09	0.018	ppb	18.98	#VALUE!	
123 Sb	0.1335	0.0267	ppb	10.83	1000.	
135 Ba	4.079	0.8158	ppb	3.84	1000.	
137 Ba	3.7325	0.7465	ppb	8.73	#VALUE!	
182 W	0.3342	0.0668	ppb	---	#VALUE!	
203 Tl	0.0405	0.0081	ppb	15.45	1000.	
205 Tl	0.013	0.0026	ppb	52.52	#VALUE!	
208 Pb	0.0636	0.0127	ppb	19.09	1000.	
232 Th	0.0428	0.0086	ppb	48.70	1000.	
238 U	0.0223	0.0045	ppb	47.33	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3144067.30	1.43	2966696.50	106.0	69.5 - 130	
45 Sc	2384147.00	1.00	2360051.80	101.0	69.5 - 130	
72 Ge	492334.59	1.06	485077.47	101.5	69.5 - 130	
159 Tb	4413255.50	1.32	4195300.50	105.2	69.5 - 130	
209 Bi	2644077.80	1.16	2529621.80	104.5	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG05A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000758

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG05A.B\043SMPL.D\043SMPL.D#
Date Acquired: Jul 5 2014 03:58 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: PBSHF25IMS1
Misc Info: DILUTION 1.6/8
Vial Number: 2204
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 05 2014 02:35 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0027	-0.0005	ppb	11.59	100.	
11 B	-7.4	-1.48	ppb	0.91	1000.	
23 Na	-32.34	-6.468	ppb	3.42	200000.	
25 Mg	1.4315	0.2863	ppb	59.03	200000.	
27 Al	-1.022	-0.2044	ppb	23.08	200000.	
28 Si	-7,650.	-1,530.	ppb	1.75	#VALUE!	
29 Si	-39,860.	-7,972.	ppb	1.05	10000.	LOW
39 K	-753.	-150.6	ppb	0.75	200000.	
43 Ca	-39.075	-7.815	ppb	34.64	#VALUE!	
44 Ca	-283.2	-56.64	ppb	3.13	200000.	LOW
51 V	-0.884	-0.1768	ppb	4.62	1000.	
52 Cr	-1.8195	-0.3639	ppb	1.92	1000.	
53 Cr	-28.9	-5.78	ppb	0.55	#VALUE!	
55 Mn	0.085	0.017	ppb	220.88	1000.	
56 Fe	-345.9	-69.18	ppb	3.62	#VALUE!	
57 Fe	-378.85	-75.77	ppb	0.33	100000.	LOW
59 Co	-0.0191	-0.0038	ppb	65.35	1000.	
60 Ni	-0.0788	-0.0158	ppb	13.47	1000.	
63 Cu	-0.1573	-0.0315	ppb	6.92	#VALUE!	
65 Cu	-0.057	-0.0114	ppb	50.51	1000.	
66 Zn	-2.211	-0.4422	ppb	1.97	1000.	
68 Zn	-80.6	-16.12	ppb	0.44	#VALUE!	
75 As	0.0719	0.0144	ppb	224.77	1000.	
82 Se	1.0585	0.2117	ppb	16.52	1000.	
88 Sr	0.0446	0.0089	ppb	66.66	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0903	0.0181	ppb	56.57	1000.	
107 Ag	0.0019	0.0004	ppb	238.05	500.	
109 Ag	-0.0017	-0.0003	ppb	275.57	#VALUE!	
111 Cd	-2.3365	-0.4673	ppb	6.46	#VALUE!	
114 Cd	-0.0926	-0.0185	ppb	26.20	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0292	0.0058	ppb	89.71	1000.	
120 Sn	0.0635	0.0127	ppb	14.52	#VALUE!	
121 Sb	-0.005	-0.001	ppb	33.44	#VALUE!	
123 Sb	-0.0008	-0.0002	ppb	1101.80	1000.	
135 Ba	0.0728	0.0146	ppb	99.73	1000.	
137 Ba	0.0757	0.0151	ppb	96.63	#VALUE!	
182 W	0.0385	0.0077	ppb	---	#VALUE!	
203 Tl	0.0191	0.0038	ppb	33.59	1000.	
205 Tl	0.0095	0.0019	ppb	32.66	#VALUE!	
208 Pb	-0.0168	-0.0034	ppb	56.30	1000.	
232 Th	0.0855	0.0171	ppb	56.54	1000.	
238 U	0.0072	0.0014	ppb	87.59	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	11172927.00	2.68	2966696.50	376.6	69.5 - 130	IS Fai
45 Sc	7024491.50	3.28	2360051.80	297.6	69.5 - 130	IS Fai
72 Ge	1384316.30	4.20	485077.47	285.4	69.5 - 130	IS Fai
159 Tb	15085721.00	4.88	4195300.50	359.6	69.5 - 130	IS Fai
209 Bi	9342293.00	3.60	2529621.80	369.3	69.5 - 130	IS Fai

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG05A.B\013CALB.D\013CALB.D#

3 :Element Failures 0 :Max. Number of Failures Allowed
5 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Fail

Katahdin Analytical Services 4000759

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG05A.B\044SMPL.D\044SMPL.D#
Date Acquired: Jul 5 2014 04:01 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: LCSOHF25IMS1
Misc Info: DILUTION 1.6/8
Vial Number: 2205
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 05 2014 02:35 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	45.525	9.105	ppb	4.42	100.	
11 B	404.5	80.9	ppb	0.81	1000.	
23 Na	7,440.	1,488.	ppb	1.27	200000.	
25 Mg	5,045.	1,009.	ppb	1.06	200000.	
27 Al	2,030.	406.	ppb	0.32	200000.	
28 Si	3,430.	686.	ppb	2.27	#VALUE!	
29 Si	1,622.	324.4	ppb	15.31	10000.	
39 K	9,840.	1,968.	ppb	1.64	200000.	
43 Ca	2,790.	558.	ppb	4.44	#VALUE!	
44 Ca	2,221.	444.2	ppb	1.63	200000.	
51 V	488.35	97.67	ppb	0.94	1000.	
52 Cr	195.3	39.06	ppb	0.07	1000.	
53 Cr	256.7	51.34	ppb	0.35	#VALUE!	
55 Mn	494.8	98.96	ppb	0.03	1000.	
56 Fe	1,124.5	224.9	ppb	0.26	#VALUE!	
57 Fe	944.	188.8	ppb	4.06	100000.	
59 Co	499.7	99.94	ppb	0.59	1000.	
60 Ni	507.	101.4	ppb	0.85	1000.	
63 Cu	246.4	49.28	ppb	0.30	#VALUE!	
65 Cu	245.75	49.15	ppb	0.66	1000.	
66 Zn	489.2	97.84	ppb	0.46	1000.	
68 Zn	518.	103.6	ppb	0.55	#VALUE!	
75 As	98.4	19.68	ppb	0.94	1000.	
82 Se	96.55	19.31	ppb	0.36	1000.	
88 Sr	487.75	97.55	ppb	0.48	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	289.85	57.97	ppb	0.31	1000.	
107 Ag	50.3	10.06	ppb	0.47	500.	
109 Ag	49.67	9.934	ppb	0.67	#VALUE!	
111 Cd	248.	49.6	ppb	0.53	#VALUE!	
114 Cd	248.85	49.77	ppb	0.37	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	488.05	97.61	ppb	1.38	1000.	
120 Sn	490.3	98.06	ppb	1.23	#VALUE!	
121 Sb	95.95	19.19	ppb	1.43	#VALUE!	
123 Sb	95.1	19.02	ppb	1.40	1000.	
135 Ba	1,904.5	380.9	ppb	1.08	1000.	
137 Ba	1,914.5	382.9	ppb	1.18	#VALUE!	
182 W	101.95	20.39	ppb ---		#VALUE!	
203 Tl	99.4	19.88	ppb	0.75	1000.	
205 Tl	99.9	19.98	ppb	0.43	#VALUE!	
208 Pb	100.35	20.07	ppb	0.34	1000.	
232 Th	0.0994	0.0199	ppb	1.96	1000.	
238 U	96.25	19.25	ppb	1.25	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3143122.80	2.29	2966696.50	105.9	69.5 - 130	
45 Sc	2315776.50	0.75	2360051.80	98.1	69.5 - 130	
72 Ge	472501.75	0.51	485077.47	97.4	69.5 - 130	
159 Tb	4269858.50	0.99	4195300.50	101.8	69.5 - 130	
209 Bi	2530724.80	0.44	2529621.80	100.0	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG05A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000760

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG05A.B\045SMPL.D\045SMPL.D#
Date Acquired: Jul 5 2014 04:04 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: LC2OHF25IMS1
Misc Info: DILUTION 1.6/8
Vial Number: 2206
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 05 2014 02:35 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	46.74	9.348	ppb	0.35	100.	
11 B	435.3	87.06	ppb	0.62	1000.	
23 Na	7,585.	1,517.	ppb	1.59	200000.	
25 Mg	5,055.	1,011.	ppb	2.05	200000.	
27 Al	2,064.	412.8	ppb	1.51	200000.	
28 Si	3,593.5	718.7	ppb	8.93	#VALUE!	
29 Si	2,322.5	464.5	ppb	44.54	10000.	
39 K	10,190.	2,038.	ppb	2.46	200000.	
43 Ca	2,812.	562.4	ppb	1.63	#VALUE!	
44 Ca	2,268.	453.6	ppb	2.35	200000.	
51 V	490.6	98.12	ppb	0.76	1000.	
52 Cr	198.55	39.71	ppb	1.04	1000.	
53 Cr	264.45	52.89	ppb	0.60	#VALUE!	
55 Mn	500.5	100.1	ppb	1.06	1000.	
56 Fe	1,148.	229.6	ppb	1.31	#VALUE!	
57 Fe	1,001.	200.2	ppb	5.49	100000.	
59 Co	503.5	100.7	ppb	1.39	1000.	
60 Ni	512.	102.4	ppb	1.40	1000.	
63 Cu	250.2	50.04	ppb	0.95	#VALUE!	
65 Cu	250.9	50.18	ppb	1.22	1000.	
66 Zn	492.4	98.48	ppb	1.03	1000.	
68 Zn	527.5	105.5	ppb	1.76	#VALUE!	
75 As	100.55	20.11	ppb	2.38	1000.	
82 Se	98.2	19.64	ppb	1.59	1000.	
88 Sr	488.85	97.77	ppb	0.90	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	291.1	58.22	ppb	1.10	1000.	
107 Ag	49.94	9.988	ppb	1.31	500.	
109 Ag	50.05	10.01	ppb	0.25	#VALUE!	
111 Cd	247.85	49.57	ppb	1.25	#VALUE!	
114 Cd	248.95	49.79	ppb	1.10	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	496.35	99.27	ppb	0.38	1000.	
120 Sn	502.	100.4	ppb	1.16	#VALUE!	
121 Sb	98.6	19.72	ppb	0.94	#VALUE!	
123 Sb	96.55	19.31	ppb	1.37	1000.	
135 Ba	1,931.	386.2	ppb	0.42	1000.	
137 Ba	1,956.	391.2	ppb	1.04	#VALUE!	
182 W	103.15	20.63	ppb	---	#VALUE!	
203 Tl	100.6	20.12	ppb	1.69	1000.	
205 Tl	100.2	20.04	ppb	2.52	#VALUE!	
208 Pb	101.6	20.32	ppb	2.59	1000.	
232 Th	0.0867	0.0173	ppb	7.08	1000.	
238 U	98.05	19.61	ppb	1.74	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3080251.80	1.28	2966696.50	103.8	69.5 - 130	
45 Sc	2300645.80	1.86	2360051.80	97.5	69.5 - 130	
72 Ge	468828.50	0.48	485077.47	96.7	69.5 - 130	
159 Tb	4168770.80	0.36	4195300.50	99.4	69.5 - 130	
209 Bi	2462861.80	0.83	2529621.80	97.4	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG05A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000761

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG05A.B\046SMPL.D\046SMPL.D#
Date Acquired: Jul 5 2014 04:08 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: SH4400-012
Misc Info: DILUTION 1.6/8
Vial Number: 2207
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 05 2014 02:35 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	10.08	2.016	ppb	3.33	100.	
11 B	86.95	17.39	ppb	1.96	1000.	
23 Na	3,152.	630.4	ppb	0.92	200000.	
25 Mg	105,000.	21,000.	ppb	0.89	200000.	
27 Al	218,000.	43,600.	ppb	0.96	200000.	
28 Si	2,716.	543.2	ppb	15.53	#VALUE!	
29 Si	-2,058.5	-411.7	ppb	59.80	10000.	LOW
39 K	40,420.	8,084.	ppb	0.75	200000.	
43 Ca	71,500.	14,300.	ppb	2.16	#VALUE!	
44 Ca	68,700.	13,740.	ppb	1.25	200000.	
51 V	503.5	100.7	ppb	0.34	1000.	
52 Cr	393.55	78.71	ppb	0.82	1000.	
53 Cr	444.05	88.81	ppb	0.99	#VALUE!	
55 Mn	7,350.	1,470.	ppb	0.63	1000.	>LDR
56 Fe	376,050.	75,210.	ppb	0.90	#VALUE!	
57 Fe	359,750.	71,950.	ppb	0.49	100000.	
59 Co	160.35	32.07	ppb	0.75	1000.	
60 Ni	402.15	80.43	ppb	0.29	1000.	
63 Cu	266.9	53.38	ppb	0.72	#VALUE!	
65 Cu	270.55	54.11	ppb	0.52	1000.	
66 Zn	831.	166.2	ppb	0.79	1000.	
68 Zn	799.	159.8	ppb	0.57	#VALUE!	
75 As	125.35	25.07	ppb	0.48	1000.	
82 Se	5.915	1.183	ppb	2.29	1000.	
88 Sr	297.75	59.55	ppb	0.62	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	8.015	1.603	ppb	1.85	1000.	
107 Ag	0.7585	0.1517	ppb	6.82	500.	
109 Ag	0.518	0.1036	ppb	11.68	#VALUE!	
111 Cd	2.912	0.5824	ppb	9.11	#VALUE!	
114 Cd	1.014	0.2028	ppb	7.89	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	34.905	6.981	ppb	1.17	1000.	
120 Sn	35.69	7.138	ppb	0.73	#VALUE!	
121 Sb	2.3325	0.4665	ppb	3.58	#VALUE!	
123 Sb	2.3725	0.4745	ppb	4.57	1000.	
135 Ba	599.	119.8	ppb	1.17	1000.	
137 Ba	602.5	120.5	ppb	1.42	#VALUE!	
182 W	3.5975	0.7195	ppb ---		#VALUE!	
203 Tl	1.81	0.362	ppb	8.44	1000.	
205 Tl	1.882	0.3764	ppb	4.82	#VALUE!	
208 Pb	188.2	37.64	ppb	0.36	1000.	
232 Th	111.85	22.37	ppb	0.65	1000.	
238 U	16.42	3.284	ppb	0.69	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3056446.50	3.79	2966696.50	103.0	69.5 - 130	
45 Sc	2394332.30	0.88	2360051.80	101.5	69.5 - 130	
72 Ge	481211.47	0.95	485077.47	99.2	69.5 - 130	
159 Tb	4047000.30	1.31	4195300.50	96.5	69.5 - 130	
209 Bi	2314736.30	0.93	2529621.80	91.5	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG05A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000762

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JHG05A.B\047SMPL.D\047SMPL.D#
Date Acquired: Jul 5 2014 04:11 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: PBSHF26IMS1
Misc Info: DILUTION 1.6/8
Vial Number: 2208
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 05 2014 02:35 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0046	0.0009	ppb	156.29	100.	
11 B	3.2375	0.6475	ppb	21.21	1000.	
23 Na	19.33	3.866	ppb	10.46	200000.	
25 Mg	17.935	3.587	ppb	10.18	200000.	
27 Al	12.625	2.525	ppb	13.61	200000.	
28 Si	-70.85	-14.17	ppb	148.91	#VALUE!	
29 Si	-1,134.	-226.8	ppb	74.47	10000.	LOW
39 K	27.635	5.527	ppb	14.56	200000.	
43 Ca	96.1	19.22	ppb	14.57	#VALUE!	
44 Ca	75.3	15.06	ppb	12.27	200000.	
51 V	1.1705	0.2341	ppb	28.92	1000.	
52 Cr	1.67	0.334	ppb	5.53	1000.	
53 Cr	57.65	11.53	ppb	2.00	#VALUE!	
55 Mn	0.781	0.1562	ppb	8.99	1000.	
56 Fe	129.1	25.82	ppb	8.42	#VALUE!	
57 Fe	33.35	6.67	ppb	22.04	100000.	
59 Co	0.0517	0.0103	ppb	4.18	1000.	
60 Ni	0.3331	0.0666	ppb	39.03	1000.	
63 Cu	0.8115	0.1623	ppb	6.25	#VALUE!	
65 Cu	0.832	0.1664	ppb	7.88	1000.	
66 Zn	0.4119	0.0824	ppb	57.21	1000.	
68 Zn	-6.36	-1.272	ppb	1.41	#VALUE!	
75 As	0.263	0.0526	ppb	381.25	1000.	
82 Se	1.4065	0.2813	ppb	33.08	1000.	
88 Sr	0.2757	0.0551	ppb	19.77	1000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.2323	0.0465	ppb	27.34	1000.	
107 Ag	0.0081	0.0016	ppb	90.65	500.	
109 Ag	-0.0038	-0.0008	ppb	132.57	#VALUE!	
111 Cd	-0.3097	-0.0619	ppb	41.70	#VALUE!	
114 Cd	0.0773	0.0155	ppb	57.86	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	27.025	5.405	ppb	1.32	1000.	
120 Sn	27.415	5.483	ppb	1.62	#VALUE!	
121 Sb	0.0484	0.0097	ppb	15.09	#VALUE!	
123 Sb	0.0311	0.0062	ppb	42.45	1000.	
135 Ba	0.8225	0.1645	ppb	17.54	1000.	
137 Ba	0.8745	0.1749	ppb	17.24	#VALUE!	
182 W	0.1244	0.0249	ppb	---	#VALUE!	
203 Tl	0.0388	0.0078	ppb	62.84	1000.	
205 Tl	0.0029	0.0006	ppb	183.07	#VALUE!	
208 Pb	0.0908	0.0182	ppb	11.77	1000.	
232 Th	0.2879	0.0576	ppb	25.12	1000.	
238 U	0.0021	0.0004	ppb	151.96	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3023227.80	1.03	2966696.50	101.9	69.5 - 130	
45 Sc	2311521.00	0.50	2360051.80	97.9	69.5 - 130	
72 Ge	474049.75	0.21	485077.47	97.7	69.5 - 130	
159 Tb	4132238.30	0.90	4195300.50	98.5	69.5 - 130	
209 Bi	2436858.80	0.65	2529621.80	96.3	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG05A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000763

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JHG05A.B\048_CCV.D\048_CCV.D#
Date Acquired: Jul 5 2014 04:14 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 05 2014 02:35 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	23.79	ppb	2.11	25	95.16	
11 B	23.55	ppb	3.45	25	94.2	
23 Na	4,890.	ppb	0.48	5,000	97.8	
25 Mg	5,009.	ppb	0.43	5,000	100.18	
27 Al	504.8	ppb	1.43	500	100.96	
28 Si	592.1	ppb	5.29	500	118.42	
29 Si	340.4	ppb	5.45	500	68.08	Fail
39 K	5,045.	ppb	0.66	5,000	100.9	
43 Ca	4,991.	ppb	1.42	5,000	99.82	
44 Ca	5,053.	ppb	1.14	5,000	101.06	
51 V	24.61	ppb	0.51	25	98.44	
52 Cr	24.65	ppb	0.56	25	98.6	
53 Cr	24.74	ppb	1.82	25	98.96	
55 Mn	24.67	ppb	0.95	25	98.68	
56 Fe	4,958.	ppb	0.37	5,000	99.16	
57 Fe	5,022.	ppb	0.60	5,000	100.44	
59 Co	24.91	ppb	0.83	25	99.64	
60 Ni	24.7	ppb	1.11	25	98.8	
63 Cu	24.85	ppb	1.22	25	99.4	
65 Cu	24.89	ppb	0.57	25	99.56	
66 Zn	24.3	ppb	1.34	25	97.2	
68 Zn	22.74	ppb	2.75	25	90.96	
75 As	24.73	ppb	1.76	25	98.92	
82 Se	25.27	ppb	1.00	25	101.08	
88 Sr	25.21	ppb	0.42	25	100.84	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.9	ppb	0.75	25	99.6	
107 Ag	25.21	ppb	0.61	25	100.84	
109 Ag	25.12	ppb	0.98	25	100.48	
111 Cd	24.61	ppb	1.75	25	98.44	
114 Cd	24.84	ppb	0.75	25	99.36	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.39	ppb	0.46	25	97.56	
120 Sn	24.42	ppb	0.33	25	97.68	
121 Sb	24.21	ppb	0.40	25	96.84	
123 Sb	24.31	ppb	0.26	25	97.24	
135 Ba	24.2	ppb	1.40	25	96.8	
137 Ba	24.25	ppb	0.92	25	97	
182 W	24.55	ppb	0.37	25	98.2	
203 Tl	24.38	ppb	0.25	25	97.52	
205 Tl	24.61	ppb	0.88	25	98.44	
208 Pb	24.6	ppb	1.09	25	98.4	
232 Th	24.03	ppb	0.44	25	96.12	
238 U	24.09	ppb	0.48	25	96.36	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3029711.30	1.97	2966696.50	102.1	80 - 120.4	
45 Sc	2414146.80	1.16	2360051.80	102.3	80 - 120.4	
72 Ge	497131.38	1.18	485077.47	102.5	80 - 120.4	
159 Tb	4430781.50	1.32	4195300.50	105.6	80 - 120.4	
209 Bi	2608664.30	0.67	2529621.80	103.1	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG05A.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000764

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JHG05A.B\049_CCB.D\049_CCB.D#
Date Acquired: Jul 5 2014 04:18 pm
Acq. Method: K2008ES2.M
Operator: EAM
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\K2008ES2.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ES2.C
Last Cal. Update: Jul 05 2014 02:35 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.002	ppb	107.56	1.00	
11 B	0.3246	ppb	38.26	1.00	
23 Na	-1.713	ppb	9.05	1.00	
25 Mg	0.4023	ppb	16.11	1.00	
27 Al	0.4868	ppb	3.01	1.00	
28 Si	81.48	ppb	61.89	1.00	
29 Si	-341.7	ppb	28.05	1.00	
39 K	-5.54	ppb	19.31	1.00	
43 Ca	-0.4544	ppb	1021.30	1.00	
44 Ca	-0.5353	ppb	365.40	1.00	
51 V	-0.0964	ppb	23.84	1.00	
52 Cr	-0.0079	ppb	107.11	1.00	
53 Cr	0.057	ppb	338.83	1.00	
55 Mn	0.0124	ppb	63.16	1.00	
56 Fe	15.25	ppb	9.69	1.00	
57 Fe	-7.801	ppb	33.06	1.00	
59 Co	0.0001	ppb	3990.40	1.00	
60 Ni	-0.0024	ppb	537.21	1.00	
63 Cu	0.0051	ppb	133.84	1.00	
65 Cu	0.031	ppb	34.11	1.00	
66 Zn	-0.3186	ppb	6.52	1.00	
68 Zn	-2.321	ppb	1.48	1.00	
75 As	0.0891	ppb	178.94	1.00	
82 Se	0.1723	ppb	66.34	1.00	
88 Sr	0.0018	ppb	330.31	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.062	ppb	7.83	1.00	
107 Ag	0.002	ppb	151.39	1.00	
109 Ag	-0.0006	ppb	376.91	1.00	
111 Cd	-0.1033	ppb	10.62	1.00	
114 Cd	-0.0015	ppb	46.51	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0713	ppb	20.34	1.00	
120 Sn	0.0762	ppb	26.28	1.00	
121 Sb	0.0147	ppb	43.02	1.00	
123 Sb	0.0174	ppb	22.41	1.00	
135 Ba	0.0109	ppb	163.21	1.00	
137 Ba	0.0033	ppb	68.76	1.00	
182 W	0.0906	ppb	2.61	1.00	
203 Tl	0.0053	ppb	60.31	1.00	
205 Tl	0.0057	ppb	4.47	1.00	
208 Pb	-0.0005	ppb	295.41	1.00	
232 Th	0.0538	ppb	13.95	1.00	
238 U	0.0005	ppb	134.59	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3046184.00	1.13	2966696.50	102.7	79.5 - 120	
45 Sc	2430463.00	1.13	2360051.80	103.0	79.5 - 120	
72 Ge	503829.69	0.86	485077.47	103.9	79.5 - 120	
159 Tb	4423413.50	0.81	4195300.50	105.4	79.5 - 120	
209 Bi	2679469.00	1.13	2529621.80	105.9	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JHG05A.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000765

Logbooks and Supporting Documents

Katahdin Analytical Services, Inc. **Metals Preparation Benchsheet**

Reagent Information:

HNO3: 66236 HCL: 66908 H2O2: N/A **Method:** 3010

LCS / Spike **LCS/Spiking Information:**

- [x] [x] CLPP-SPK-1 (ID/Vol): MS1870 /0.05 mL
- [x] [x] CLPP-SPK-INT1 (ID/Vol): MW14928 /0.50 mL
- [x] [x] CLPP-SPK-INT2 (ID/Vol): MW14929 /0.50 mL
- [ ] [ ] Uranium Spike (ID/Vol): N/A / mL
- [ ] [ ] CLPP-SPK-4 (ID/Vol): N/A / mL

Hot Plate/Block ID : A

Start Time: 10:28 /Temp.(90-95°C) : 95

End Time: 15:27 /Temp.(90-95°C) : 94

Thermometer ID/Pos.: N/A / 4:6

Filter Paper: N/A

REVIEWED
HMM 6.23.14
KATAHDIN ANALYTICAL
METALS SECTION

DMM 6.26.14

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Initial Color	Initial Clarity	Final Color	Final Clarity	Artifacts	Bottle
~~LC2WHF20ICW2~~	HF20ICW2	~~0.05~~	L	~~0.05~~	L	AQ	IC	GEJ	06/20/2014	N/A	N/A	N/A	N/A	N/A	N/A
LCSWHF20ICW2	HF20ICW2	0.05	L	0.05	L	AQ	IC	GEJ	06/20/2014	N/A	N/A	N/A	N/A		
PBWHF20ICW2	HF20ICW2		L		L	AQ	IC	GEJ	06/20/2014	N/A	N/A	N/A	N/A		
SH4273-007	HF20ICW2		L		L	AQ	IC	GEJ	06/20/2014						A
SH4274-001T	HF20ICW2	0.01	L		L	AQ	IC	GEJ	06/20/2014						A
SH4370-001	HF20ICW2	0.05	L		L	AQ	IC	GEJ	06/20/2014						D
SH4401-002	HF20ICW2		L		L	AQ	IC	GEJ	06/20/2014						KA
SH4401-003	HF20ICW2		L		L	AQ	IC	GEJ	06/20/2014						A
SH4401-004	HF20ICW2		L		L	AQ	IC	GEJ	06/20/2014						K
SH4401-005	HF20ICW2		L		L	AQ	IC	GEJ	06/20/2014						A
SH4401-006	HF20ICW2		L		L	AQ	IC	GEJ	06/20/2014						KA
SH4401-007	HF20ICW2		L		L	AQ	IC	GEJ	06/20/2014						A
SH4401-007P	HF20ICW2		L		L	AQ	IC	GEJ	06/20/2014						A
SH4401-007S	HF20ICW2		L		L	AQ	IC	GEJ	06/20/2014						A
SH4401-008	HF20ICW2		L		L	AQ	IC	GEJ	06/20/2014						KA
SH4401-009	HF20ICW2		L		L	AQ	IC	GEJ	06/20/2014						KA
SH4401-010	HF20ICW2		L		L	AQ	IC	GEJ	06/20/2014						KA
SH4401-011	HF20ICW2		L		L	AQ	IC	GEJ	06/20/2014						K
SH4401-012	HF20ICW2		L		L	AQ	IC	GEJ	06/20/2014						A
SH4401-013	HF20ICW2		L		L	AQ	IC	GEJ	06/20/2014						KA
SH4401-014	HF20ICW2		L		L	AQ	IC	GEJ	06/20/2014						KA
SH4401-015	HF20ICW2		L		L	AQ	IC	GEJ	06/20/2014						KA
SH4401-016	HF20ICW2		L		L	AQ	IC	GEJ	06/20/2014						KA
SH4401-017	HF20ICW2		L		L	AQ	IC	GEJ	06/20/2014						A
SH4401-018	HF20ICW2		L		L	AQ	IC	GEJ	06/20/2014						K

GEJ 06.20.14

Digestion performed by: GEJ On: 06.20.14

Katahdin Analytical Services 4000767

Katahdin Analytical Services, Inc. **Metals Preparation Benchsheet**

Reagent Information:

HNO3: 66236 HCL: 66408 H2O2: N/A **Method:** 3010-MS

LCS / Spike **LCS/Spiking Information:**

- [x] [x] CLPP-SPK-1 (ID/Vol): MS1870 / 0.05 mL
- [x] [x] CLPP-SPK-INT1 (ID/Vol): MW14928 / 0.50 mL
- [x] [x] CLPP-SPK-INT2 (ID/Vol): MW14929 / 0.50 mL
- [ ] [ ] Uranium Spike (ID/Vol): N/A / mL
- [ ] [ ] CLPP-SPK-4 (ID/Vol): N/A / mL

Hot Plate/Block ID : A

Start Time: 10:28 /Temp.(90-95°C) : 95

End Time: 15:27 /Temp.(90-95°C) : 94

Thermometer ID/Pos. N/A / 4:6

Filter Paper: N/A

REVIEWED
mm 6-23-14
KATAHDIN ANALYTICAL
METALS SECTION

mm 6-26-14

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Initial Color	Initial Clarity	Final Color	Final Clarity	Artifacts	Bottle
~~LC2WHF20IMW2~~	HF20IMW2	~~0.05~~	L	~~0.05~~	L	AQ	IM	GEJ	06/20/2014	N/A	N/A	N/A	N/A	N/A	N/A
LCSWHF20IMW2	HF20IMW2	0.05	L	0.05	L	AQ	IM	GEJ	06/20/2014	N/A	N/A	N/A	N/A		
PBWHF20IMW2	HF20IMW2		L		L	AQ	IM	GEJ	06/20/2014	N/A	N/A	N/A	N/A		
SH4401-002	HF20IMW2		L		L	AQ	IM	GEJ	06/20/2014						K
SH4401-003	HF20IMW2		L		L	AQ	IM	GEJ	06/20/2014						A
SH4401-004	HF20IMW2		L		L	AQ	IM	GEJ	06/20/2014						K
SH4401-005	HF20IMW2		L		L	AQ	IM	GEJ	06/20/2014						A
SH4401-006	HF20IMW2		L		L	AQ	IM	GEJ	06/20/2014						K
SH4401-007	HF20IMW2		L		L	AQ	IM	GEJ	06/20/2014						A
SH4401-007P	HF20IMW2		L		L	AQ	IM	GEJ	06/20/2014						A
SH4401-007S	HF20IMW2		L		L	AQ	IM	GEJ	06/20/2014						A
SH4401-008	HF20IMW2		L		L	AQ	IM	GEJ	06/20/2014						K
SH4401-009	HF20IMW2		L		L	AQ	IM	GEJ	06/20/2014						A
SH4401-010	HF20IMW2		L		L	AQ	IM	GEJ	06/20/2014						K
SH4401-011	HF20IMW2		L		L	AQ	IM	GEJ	06/20/2014						A
SH4401-012	HF20IMW2		L		L	AQ	IM	GEJ	06/20/2014						K
SH4401-013	HF20IMW2		L		L	AQ	IM	GEJ	06/20/2014						A
SH4401-014	HF20IMW2		L		L	AQ	IM	GEJ	06/20/2014						K
SH4401-015	HF20IMW2		L		L	AQ	IM	GEJ	06/20/2014						A
SH4401-016	HF20IMW2		L		L	AQ	IM	GEJ	06/20/2014						K
SH4401-017	HF20IMW2		L		L	AQ	IM	GEJ	06/20/2014						A
SH4401-018	HF20IMW2		L		L	AQ	IM	GEJ	06/20/2014						K

GEJ 06.20.14

Digestion performed by: GEJ On: 06.20.14

Katahdin Analytical Services 4000768

Katahdin Analytical Services, Inc. — **Metals Preparation Benchsheet**

Reagent Information:
HNO3: 66236 HCL: 69908 H2O2: NA **Method:** 3010

LCS / Spike **LCS/Spiking Information:**

- ☑ ☑ CLPP-SPK-1 (ID/Vol): MS1870 / 0.05 mL
- ☑ ☑ CLPP-SPK-INT1 (ID/Vol): MW14928 / 0.5 mL
- ☑ ☑ CLPP-SPK-INT2 (ID/Vol): MW14929 / 0.5 mL
- ☐ ☐ Uranium Spike (ID/Vol): NA / mL
- ☐ ☐ CLPP-SPK-4 (ID/Vol): 1 / mL

Hot Plate/Block ID : A
Start Time: 10:40 /Temp.(90-95°C) : 95
End Time: 17:15 /Temp.(90-95°C) : 95
Thermometer ID/Pos.: NA / 3:4

Filter Paper: NA

REVIEWED
htm 6.25.14
KATAHDIN ANALYTICAL
METALS SECTION

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Initial Color	Initial Clarity	Final Color	Final Clarity	Artifacts	Bottle
LCSWHF23ICW2	HF23ICW2	0.050	L	0.050	L	AQ	IC	~~HHM~~ GES	06/23/2014	N/A	N/A	N/A	N/A		
PBWHF23ICW2	HF23ICW2		L		L	AQ	IC	HHM	06/23/2014	N/A	N/A	N/A	N/A		
SH4348-004	HF23ICW2		L		L	AQ	IC	HHM	06/23/2014						F
~~SH4361-001~~	HF23ICW2		L		L	AQ	IC	HHM	06/23/2014						
SH4399-001 (fa 062414)	HF23ICW2	0.050	L	0.050	L	AQ	IC	HHM	06/23/2014						G
SH4460-001	HF23ICW2		L		L	AQ	IC	HHM	06/23/2014						C
SH4460-002	HF23ICW2		L		L	AQ	IC	HHM	06/23/2014						
SH4460-003	HF23ICW2		L		L	AQ	IC	~~HHM~~	06/23/2014						
SH4460-004	HF23ICW2		L		L	AQ	IC	~~HHM~~	06/23/2014						
SH4460-005	HF23ICW2		L		L	AQ	IC	HHM	06/23/2014						
SH4460-006	HF23ICW2		L (fa 062414)		L	AQ	IC	HHM	06/23/2014						
SH4484-001	HF23ICW2	0.010			L	AQ	IC	HHM	06/23/2014						
SH4500-001	HF23ICW2	0.050	L		L	AQ	IC	HHM	06/23/2014						
SH4500-002	HF23ICW2		L		L	AQ	IC	HHM	06/23/2014						
SH4501-002	HF23ICW2		L		L	AQ	IC	HHM	06/23/2014						
SH4501-003	HF23ICW2		L		L	AQ	IC	~~HHM~~	06/23/2014						
SH4501-004	HF23ICW2		L		L	AQ	IC	~~HHM~~	06/23/2014						
SH4501-005	HF23ICW2		L		L	AQ	IC	HHM	06/23/2014						
SH4501-006	HF23ICW2		L		L	AQ	IC	HHM	06/23/2014						
~~SH4523-009~~ SH4401-19	HF23ICW2		L		L	AQ	IC	HHM	06/23/2014						A
~~SH4523-022~~ -19 (fa 062414)	HF23ICW2		L		L	AQ	IC	HHM	06/23/2014						A
-19R															A
-20															K
-21															A

htm 6-24-14

Digestion performed by: GEJ On: 06.23.14

Katahdin Analytical Services 4000769

Katahdin Analytical Services, Inc. | **Metals Preparation Benchsheet**

Reagent Information:
HNO3: 66236 HCL: 666108 H2O2: N/A **Method:** 3010-MS

LCS / Spike **LCS/Spiking Information:**

- ☑ ☑ CLPP-SPK-1 (ID/Vol): MS1870 / 0.05 mL
- ☑ ☑ CLPP-SPK-INT1 (ID/Vol): MW149Z8 / 0.5 mL
- ☑ ☑ CLPP-SPK-INT2 (ID/Vol): MW149Z9 / 0.5 mL
- ☐ ☐ Uranium Spike (ID/Vol): N/A / mL
- ☐ ☐ CLPP-SPK-4 (ID/Vol): ↓ / mL

Hot Plate/Block ID : A
Start Time: 10:40 /Temp.(90-95°C) : 95
End Time: 17:15 /Temp.(90-95°C) : 95
Thermometer ID/Pos.: NA / 3.4

Filter Paper: N/A

REVIEWED
HJM 6-25-14
KATAHDIN ANALYTICAL
METALS SECTION

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Initial Color	Initial Clarity	Final Color	Final Clarity	Artifacts	Bottle
LCSWHF23IMW2	HF23IMW2	0.050	L	0.050	L	AQ	IM	~~HHM~~ EES	06/23/2014	N/A	N/A	N/A	N/A		
PBWHF23IMW2	HF23IMW2		L		L	AQ	IM	HHM	06/23/2014	N/A	N/A	N/A	N/A		
~~SH4361-001~~ -19	HF23IMW2		L		L	AQ	IM	HHM	06/23/2014						A
~~SH4523-009~~ -19	HF23IMW2		L		L	AQ	IM	HHM	06/23/2014						A
~~SH4523-022~~ -19	HF23IMW2		L		L	AQ	IM	HHM	06/23/2014						A
-20															K
-21															A

HJM 6-24-14

Digestion performed by: GES On: 06.23.14

Katahdin Analytical Services 4000770

Katahdin Analytical Services, Inc. **Metals Preparation Benchsheet**

Reagent Information:

HNO3: 66236 HCL: 66908 H2O2: N/A **Method:** 3010

LCS / Spike **LCS/Spiking Information:**

- [x] [x] CLPP-SPK-1 (ID/Vol): MS1870 / 0.05 mL
- [x] [x] CLPP-SPK-INT1 (ID/Vol): MW14928 / 0.50 mL
- [x] [x] CLPP-SPK-INT2 (ID/Vol): MW14948 / 0.50 mL
- [ ] [ ] Uranium Spike (ID/Vol): N/A / mL
- [ ] [ ] CLPP-SPK-4 (ID/Vol): N/A / mL

Hot Plate/Block ID : A
Start Time: 11:30 /Temp.(90-95°C) : 94
End Time: 16:38 Temp.(90-95°C) : 93
Thermometer ID/Pos.: N/A / 5.4

Filter Paper: N/A

REVIEWED
6-25-14
KATAHDIN ANALYTICAL
METALS SECTION

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Initial Color	Initial Clarity	Final Color	Final Clarity	Artifacts	Bottle
LCSWHF24ICW1	HF24ICW1	0.050	L	0.050	L	AQ	IC	GEJ	06/24/2014	N/A	N/A	N/A	N/A		
PBWHF24ICW1	HF24ICW1		L		L	AQ	IC	GEJ	06/24/2014	N/A	N/A	N/A	N/A		
SH4521-002	HF24ICW1		L		L	AQ	IC	GEJ	06/24/2014						K
SH4521-003	HF24ICW1		L		L	AQ	IC	GEJ	06/24/2014						A
SH4521-004	HF24ICW1		L		L	AQ	IC	GEJ	06/24/2014						K
SH4521-005	HF24ICW1		L		L	AQ	IC	GEJ	06/24/2014						A
SH4521-006	HF24ICW1		L		L	AQ	IC	GEJ	06/24/2014						K
SH4521-007	HF24ICW1		L		L	AQ	IC	GEJ	06/24/2014						A
SH4521-009	HF24ICW1		L		L	AQ	IC	GEJ	06/24/2014						B
SH4521-009P	HF24ICW1		L		L	AQ	IC	GEJ	06/24/2014						↓
SH4521-009S	HF24ICW1		L		L	AQ	IC	GEJ	06/24/2014						
SH4521-010	HF24ICW1		L		L	AQ	IC	GEJ	06/24/2014						K
SH4521-011	HF24ICW1		L		L	AQ	IC	GEJ	06/24/2014						A
SH4521-012	HF24ICW1		L		L	AQ	IC	GEJ	06/24/2014						K
SH4521-013	HF24ICW1		L		L	AQ	IC	GEJ	06/24/2014						A
SH4521-014	HF24ICW1		L		L	AQ	IC	GEJ	06/24/2014						E1
SH4521-014P	HF24ICW1		L		L	AQ	IC	GEJ	06/24/2014						↓
SH4521-014S	HF24ICW1		L		L	AQ	IC	GEJ	06/24/2014						
SH4521-016	HF24ICW1		L		L	AQ	IC	GEJ	06/24/2014						K
SH4521-017	HF24ICW1		L		L	AQ	IC	GEJ	06/24/2014						A
SH4521-018	HF24ICW1		L		L	AQ	IC	GEJ	06/24/2014						K
SH4521-019	HF24ICW1		L		L	AQ	IC	GEJ	06/24/2014						A
SH4521-020	HF24ICW1		L		L	AQ	IC	GEJ	06/24/2014						K
SH4521-024	HF24ICW1	↓	L	↓	L	AQ	IC	GEJ	06/24/2014						K

GEJ 06.25.14

Digestion performed by: GEJ On: 06.24.14

Katahdin Analytical Services 4000771

Katahdin Analytical Services, Inc. **Metals Preparation Benchsheet**

Reagent Information:

HNO3: 66236 HCL: 66808 H2O2: N/A **Method:** 3010

LCS / Spike **LCS/Spiking Information:**

- [x] [x] CLPP-SPK-1 (ID/Vol): MS1870 / 0.05 mL
- [x] [x] CLPP-SPK-INT1 (ID/Vol): MW14928 / 0.5 mL
- [x] [x] CLPP-SPK-INT2 (ID/Vol): MW14948 / 0.5 mL
- [ ] [ ] Uranium Spike (ID/Vol): N/A / mL
- [ ] [ ] CLPP-SPK-4 (ID/Vol): N/A / mL

Hot Plate/Block ID : A

Start Time: 1230 /Temp.(90-95°C) : 94

End Time: 1638 /Temp.(90-95°C) : 93

Thermometer ID/Pos.: N/A / 5.4

Filter Paper: N/A

REVIEWED
HMM 6.25.14
KATAHDIN ANALYTICAL
METALS SECTION

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Initial Color	Initial Clarity	Final Color	Final Clarity	Artifacts	Bottle
LCSWHF24ICW2	HF24ICW2	0.050	L	0.050	L	AQ	IC	GEJ	06/24/2014	N/A	N/A	N/A	N/A		
PBWHF24ICW2	HF24ICW2		L		L	AQ	IC	GEJ	06/24/2014	N/A	N/A	N/A	N/A		
SH4016-031	HF24ICW2		L		L	AQ	IC	GEJ	06/24/2014						H
SH4256-001	HF24ICW2		L		L	AQ	IC	GEJ	06/24/2014						F
SH4256-003	HF24ICW2		L		L	AQ	IC	GEJ	06/24/2014						
SH4256-005	HF24ICW2		L		L	AQ	IC	GEJ	06/24/2014						
SH4256-009	HF24ICW2		L		L	AQ	IC	GEJ	06/24/2014						
SH4256-011	HF24ICW2		L		L	AQ	IC	GEJ	06/24/2014						
SH4256-015	HF24ICW2		L		L	AQ	IC	GEJ	06/24/2014						
SH4256-017	HF24ICW2		L		L	AQ	IC	GEJ	06/24/2014						
SH4256-037	HF24ICW2		L		L	AQ	IC	GEJ	06/24/2014						
SH4412-001	HF24ICW2		L		L	AQ	IC	GEJ	06/24/2014						
SH4412-003	HF24ICW2		L		L	AQ	IC	GEJ	06/24/2014						
SH4521-023	HF24ICW2		L		L	AQ	IC	GEJ	06/24/2014						A
SH4521-008	HF24ICW2		L		L	AQ	IC	GEJ	06/24/2014						Fi
SH4521-008P	HF24ICW2		L		L	AQ	IC	GEJ	06/24/2014						↓
SH4521-008S	HF24ICW2		L		L	AQ	IC	GEJ	06/24/2014						A
SH4521-015	HF24ICW2		L		L	AQ	IC	GEJ	06/24/2014						↓
SH4521-015P	HF24ICW2		L		L	AQ	IC	GEJ	06/24/2014						A
SH4521-015S	HF24ICW2		L		L	AQ	IC	GEJ	06/24/2014						↓
SH4521-021	HF24ICW2		L		L	AQ	IC	GEJ	06/24/2014						A
SH4521-022	HF24ICW2		L		L	AQ	IC	GEJ	06/24/2014						K
~~SH4523-022~~	HF24ICW2		L		L	AQ	IC	GEJ	06/24/2014						

GEJ 06.24.14

GEJ 06.25.14

Digestion performed by: GEJ On: 06.24.14

Katahdin Analytical Services 4000772

Katahdin Analytical Services, Inc. | **Metals Preparation Benchsheet**

Reagent Information:

HNO3: 66236 HCL: 66908 H2O2: N/A **Method:** 3010-MS

LCS / Spike **LCS/Spiking Information:**

- ☑ ☑ CLPP-SPK-1 (ID/Vol): MS1870 / 0.05 mL
- ☑ ☑ CLPP-SPK-INT1 (ID/Vol): MW14928 / 0.50 mL
- ☑ ☑ CLPP-SPK-INT2 (ID/Vol): MW14948 / 0.50 mL
- ☐ ☐ Uranium Spike (ID/Vol): N/A / mL
- ☐ ☐ CLPP-SPK-4 (ID/Vol): N/A / mL

Hot Plate/Block ID : A
Start Time: 11:30 /Temp.(90-95°C) : 94
End Time: 16:38 /Temp.(90-95°C) : 93
Thermometer ID/Pos.: N/A / 5.4

Filter Paper: N/A

REVIEWED
tmm 6.25.14
KATAHDIN ANALYTICAL
METALS SECTION

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Initial Color	Initial Clarity	Final Color	Final Clarity	Artifacts	Bottle
LCSWHF24IMW1	HF24IMW1	0.050	L	0.050	L	AQ	IM	GEJ	06/24/2014	N/A	N/A	N/A	N/A		
PBWHF24IMW1	HF24IMW1	"	L	"	L	AQ	IM	GEJ	06/24/2014	N/A	N/A	N/A	N/A		
SH4521-002	HF24IMW1	"	L	"	L	AQ	IM	GEJ	06/24/2014						K
SH4521-003	HF24IMW1	"	L	"	L	AQ	IM	GEJ	06/24/2014						A
SH4521-004	HF24IMW1	"	L	"	L	AQ	IM	GEJ	06/24/2014						K
SH4521-005	HF24IMW1	"	L	"	L	AQ	IM	GEJ	06/24/2014						A
SH4521-006	HF24IMW1	"	L	"	L	AQ	IM	GEJ	06/24/2014						K
SH4521-007	HF24IMW1	"	L	"	L	AQ	IM	GEJ	06/24/2014						A
SH4521-009	HF24IMW1	"	L	"	L	AQ	IM	GEJ	06/24/2014						B
SH4521-009P	HF24IMW1	"	L	"	L	AQ	IM	GEJ	06/24/2014						↓
SH4521-009S	HF24IMW1	"	L	"	L	AQ	IM	GEJ	06/24/2014						
SH4521-010	HF24IMW1	"	L	"	L	AQ	IM	GEJ	06/24/2014						K
SH4521-011	HF24IMW1	"	L	"	L	AQ	IM	GEJ	06/24/2014						A
SH4521-012	HF24IMW1	"	L	"	L	AQ	IM	GEJ	06/24/2014						K
SH4521-013	HF24IMW1	"	L	"	L	AQ	IM	GEJ	06/24/2014						A
SH4521-014	HF24IMW1	"	L	"	L	AQ	IM	GEJ	06/24/2014						E1
SH4521-014P	HF24IMW1	"	L	"	L	AQ	IM	GEJ	06/24/2014						↓
SH4521-014S	HF24IMW1	↓	L	↓	L	AQ	IM	GEJ	06/24/2014						
~~SH4521-015~~	~~HF24IMW1~~	—	L	—	L	AQ	IM	GEJ	06/24/2014						~~K~~
SH4521-016 tmm 062514	HF24IMW1	0.050	L	0.050	L	AQ	IM	GEJ	06/24/2014						~~A~~ K tmm 062514
SH4521-017	HF24IMW1	"	L	"	L	AQ	IM	GEJ	06/24/2014						~~K~~A
SH4521-018	HF24IMW1	"	L	"	L	AQ	IM	GEJ	06/24/2014						K
SH4521-019	HF24IMW1	"	L	"	L	AQ	IM	GEJ	06/24/2014						A
SH4521-020	HF24IMW1	"	L	"	L	AQ	IM	GEJ	06/24/2014						K
SH4521-024	HF24IMW1	↓	L	↓	L	AQ	IM	GEJ	06/24/2014						K

GEJ 06.25.14

Digestion performed by: GEJ **On:** 06.24.14 **Page:** HF136 **Revision:** 00

Katahdin Analytical Services 4000773

Katahdin Analytical Services, Inc. **Metals Preparation Benchsheet**

Reagent Information:

HNO3: 66236 HCL: 66908 H2O2: N/A **Method:** 3010-MS

LCS / Spike **LCS/Spiking Information:**

- ☑ ☑ CLPP-SPK-1 (ID/Vol): MS1870 / 0.05 mL
- ☑ ☑ CLPP-SPK-INT1 (ID/Vol): MW14928 / 0.5 mL
- ☑ ☑ CLPP-SPK-INT2 (ID/Vol): MW14948 / 0.5 mL
- ☐ ☐ Uranium Spike (ID/Vol): N/A / mL
- ☐ ☐ CLPP-SPK-4 (ID/Vol): N/A / mL

Hot Plate/Block ID : A
Start Time: 11:30 /Temp.(90-95°C) : 94
End Time: 16:38 /Temp.(90-95°C) : 93
Thermometer ID/Pos.: N/A / 5.4

Filter Paper: N/A

REVIEWED
MHM 6.25.14
KATAHDIN ANALYTICAL
METALS SECTION

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Initial Color	Initial Clarity	Final Color	Final Clarity	Artifacts	Bottle
LCSWHF24IMW2	HF24IMW2	0.050	L	0.050	L	AQ	IM	GEJ	06/24/2014	N/A	N/A	N/A	N/A		
PBWHF24IMW2	HF24IMW2		L		L	AQ	IM	GEJ	06/24/2014	N/A	N/A	N/A	N/A		
SH4016-031	HF24IMW2		L		L	AQ	IM	GEJ	06/24/2014						H
SH4256-001	HF24IMW2		L		L	AQ	IM	GEJ	06/24/2014						F
SH4256-003	HF24IMW2		L		L	AQ	IM	GEJ	06/24/2014						F
SH4256-005	HF24IMW2		L		L	AQ	IM	GEJ	06/24/2014						F
SH4256-009	HF24IMW2		L		L	AQ	IM	GEJ	06/24/2014						F
SH4256-011	HF24IMW2		L		L	AQ	IM	GEJ	06/24/2014						F
SH4256-015	HF24IMW2		L		L	AQ	IM	GEJ	06/24/2014						F
SH4256-017	HF24IMW2		L		L	AQ	IM	GEJ	06/24/2014						F
SH4256-037	HF24IMW2		L		L	AQ	IM	GEJ	06/24/2014						F
SH4412-001	HF24IMW2		L		L	AQ	IM	GEJ	06/24/2014						F
SH4412-003	HF24IMW2		L		L	AQ	IM	GEJ	06/24/2014						F
SH4521-008	HF24IMW2		L		L	AQ	IM	GEJ	06/24/2014						F1
SH4521-008P	HF24IMW2		L		L	AQ	IM	GEJ	06/24/2014						↓
SH4521-008S	HF24IMW2		L		L	AQ	IM	GEJ	06/24/2014						A
SH4521-015	HF24IMW2		L		L	AQ	IM	GEJ	06/24/2014						↓
SH4521-015P	HF24IMW2		L		L	AQ	IM	GEJ	06/24/2014						A
SH4521-015S	HF24IMW2		L		L	AQ	IM	GEJ	06/24/2014						K
SH4521-021	HF24IMW2		L		L	AQ	IM	GEJ	06/24/2014						A
SH4521-022	HF24IMW2		L		L	AQ	IM	GEJ	06/24/2014						—
SH4521-023	HF24IMW2	↓	L	↓	L	AQ	IM	GEJ	06/24/2014						
~~SH4521-024~~	HF24IMW2	—	L	—	L	AQ	IM	GEJ	06/24/2014						

GEJ 06.24.14

GEJ 06.25.14

Katahdin Analytical Services 4000774

Digestion performed by: GEJ On: 06.24.14

Katahdin Analytical Services, Inc. | **Metals Preparation Benchsheet**

Reagent Information:

HNO3: 66236 HCL: N/A H2SO4: 52429 **Method:** 7470

KMNO4: MR1353 K2S2O8: MR1354 NH2OH-HCl: MR1350

Standards/Spiking Information:

1ppm A : MW14940 ICV = 600uL of 1ppm B to 100 mL S1.0 = 100uL of 1ppm A to 100 mL

1ppm B : MW14941 S0.2 = 20uL of 1ppm A to 100 mL S5.0 = 500uL of 1ppm A to 100 mL

LCSW = 125uL of 1ppm B to 25mL S0.5 = 50uL of 1ppm A to 100 mL S10.0 = 1000uL of 1ppm A to 100 mL

Spike(S/P) = 25uL of 1ppm B to 25mL

REVIEWED
6-30-14
KATAHDIN ANALYTICAL
METALS SECTION

Water Bath ID : A Thermometer ID : DIG-55

Digestion Start Time (@ 93 °C): 1418 Digestion End Time(@ 94 °C): 1618

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Initial Color	Initial Clarity	Final Color	Final Clarity	Artifacts	Bottle
LCSWHF26HGW3	HF26HGW3	0.025	L	0.025	L	AQ	HG	HHM	06/26/2014	N/A	N/A	N/A	N/A		
PBWHF26HGW3	HF26HGW3		L		L	AQ	HG	HHM	06/26/2014	N/A	N/A	N/A	N/A		
SH4256-011	HF26HGW3		L		L	AQ	HG	HHM	06/26/2014						F
SH4256-013	HF26HGW3		L		L	AQ	HG	HHM	06/26/2014						
SH4256-015	HF26HGW3		L		L	AQ	HG	HHM	06/26/2014						
SH4256-017	HF26HGW3		L		L	AQ	HG	HHM	06/26/2014						
SH4256-037	HF26HGW3		L		L	AQ	HG	HHM	06/26/2014						F
SH4401-002	HF26HGW3		L		L	AQ	HG	HHM	06/26/2014						K
SH4401-004	HF26HGW3		L		L	AQ	HG	HHM	06/26/2014						
SH4401-006	HF26HGW3		L		L	AQ	HG	HHM	06/26/2014						
SH4401-008	HF26HGW3		L		L	AQ	HG	HHM	06/26/2014						
SH4401-010	HF26HGW3		L		L	AQ	HG	HHM	06/26/2014						
SH4401-012	HF26HGW3		L		L	AQ	HG	HHM	06/26/2014						
SH4401-014	HF26HGW3		L		L	AQ	HG	HHM	06/26/2014						
SH4401-016	HF26HGW3		L		L	AQ	HG	HHM	06/26/2014						
SH4401-018	HF26HGW3		L		L	AQ	HG	HHM	06/26/2014						
SH4401-020	HF26HGW3		L		L	AQ	HG	HHM	06/26/2014						
SH4521-002	HF26HGW3		L		L	AQ	HG	HHM	06/26/2014						M
SH4521-004	HF26HGW3		L		L	AQ	HG	HHM	06/26/2014						M
SH4521-006	HF26HGW3		L		L	AQ	HG	HHM	06/26/2014						K
SH4521-008	HF26HGW3		L		L	AQ	HG	HHM	06/26/2014						E1
SH4521-008P	HF26HGW3		L		L	AQ	HG	HHM	06/26/2014						
SH4521-008S	HF26HGW3		L		L	AQ	HG	HHM	06/26/2014						
SH4521-010	HF26HGW3		L		L	AQ	HG	HHM	06/26/2014						K

HHM 6-27-14

Digestion performed by: HHM On: 6-26-14

Katahdin Analytical Services 4000775

Katahdin Analytical Services, Inc. — **Metals Preparation Benchsheet**

Reagent Information:
HNO3: 67579 HCL: N/A H2SO4: 52429 **Method:** 7470
KMNO4: MR1355 K2S2O8: MR13521 NH2OH-HCl: MR1350

Standards/Spiking Information:
1ppm A : MW14940
1ppm B : MW14941
LCSW = 125uL of 1ppm B to 25mL
Spike(S/P) = 25uL of 1ppm B to 25mL
ICV = 600uL of 1ppm B to 100 mL
S0.2 = 20uL of 1ppm A to 100 mL
S0.5 = 50uL of 1ppm A to 100 mL
S1.0 = 100uL of 1ppm A to 100 mL
S5.0 = 500uL of 1ppm A to 100 mL
S10.0 = 1000uL of 1ppm A to 100 mL

REVIEWED
hm 07-01-14
KATAHDIN ANALYTICAL METALS SECTION

Water Bath ID : A
Digestion Start Time (@ 90 °C): 1629 1527 (HHM 6-30-14)
Thermometer ID : DIG55
Digestion End Time(@ 93 °C): 1727

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Initial Color	Initial Clarity	Final Color	Final Clarity	Artifacts	Bottle
LCSWHF29HGW2	HF29HGW2	0.025	L	0.025	L	AQ	HG	HHM	06/29/2014	N/A	N/A	N/A	N/A		
PBWHF29HGW2	HF29HGW2		L		L	AQ	HG	HHM	06/29/2014	N/A	N/A	N/A	N/A		
SH4521-008D	HF29HGW2		L		L	AQ	HG	HHM	06/29/2014						E1
SH4521-012	HF29HGW2		L		L	AQ	HG	HHM	06/29/2014						K
SH4521-014	HF29HGW2		L		L	AQ	HG	HHM	06/29/2014						E1
SH4521-014D	HF29HGW2		L		L	AQ	HG	HHM	06/29/2014						↓
SH4521-014S	HF29HGW2		L		L	AQ	HG	HHM	06/29/2014						K
SH4521-016	HF29HGW2		L		L	AQ	HG	HHM	06/29/2014						↓
SH4521-018	HF29HGW2		L		L	AQ	HG	HHM	06/29/2014						A
SH4521-020	HF29HGW2		L		L	AQ	HG	HHM	06/29/2014						—
SH4646-001T	HF29HGW2		L		L	AQ	HG	HHM	06/29/2014						0
~~SH4661-001~~	HF29HGW2		L		L	AQ	HG	HHM	06/29/2014						B
SH4679-002T	HF29HGW2	0.025	L	0.025	L	AQ	HG	HHM	06/29/2014						—
SH4681-001	HF29HGW2	↓	L	↓	L	AQ	HG	HHM	06/29/2014						A
~~SH4681-002~~	HF29HGW2		L		L	AQ	HG	HHM	06/29/2014						A
SH4695-001T	HF29HGW2	0.025	L	0.025	L	AQ	HG	HHM	06/29/2014						↓
SH4695-003T	HF29HGW2		L		L	AQ	HG	HHM	06/29/2014						B
SH4735-001T1	HF29HGW2		L		L	AQ	HG	HHM	06/29/2014						—
SH4735-001T2	HF29HGW2		L		L	AQ	HG	HHM	06/29/2014						A
~~SH4760-001~~	HF29HGW2		L		L	AQ	HG	HHM	06/29/2014						A
SH4761-001	HF29HGW2		L		L	AQ	HG	HHM	06/29/2014						↓
SH4761-002	HF29HGW2		L		L	AQ	HG	HHM	06/29/2014						B
SH4761-003	HF29HGW2		L		L	AQ	HG	HHM	06/29/2014						—
~~SH4761-004~~	HF29HGW2		L		L	AQ	HG	HHM	06/29/2014						↓
SH4521-021A	↓	0.025	L	0.025	L	↓	↓	↓	↓						A
SH4521-023		↓	L	↓	L										—
PBT1169A		↓	L	↓	L										A
PBT1170A	↓	↓	L	↓	L	↓	↓	↓	↓						—

HHM 6-30-14

HHM 6-30-14

Digestion performed by: HHM **On:** 6-29-14

Katahdin Analytical Services 4000776

Katahdin Analytical Services, Inc. | **Metals Preparation Benchsheet**

Reagent Information:
HNO3: 67379 HCL: N/A H2SO4: 52429 **Method:** 7470
KMNO4: MR21355 K2S2O8: MR21354 NH2OH-HCl: MR21350

Standards/Spiking Information:
1ppm A : MW149410
1ppm B : MW149411
LCSW = 125uL of 1ppm B to 25mL
Spike(S/P) = 25uL of 1ppm B to 25mL

ICV = 600uL of 1ppm B to 100 mL
S0.2 = 20uL of 1ppm A to 100 mL
S0.5 = 50uL of 1ppm A to 100 mL

S1.0 = 100uL of 1ppm A to 100 mL
S5.0 = 500uL of 1ppm A to 100 mL
S10.0 = 1000uL of 1ppm A to 100 mL

REVIEWED
7-01-14
KATAHDIN ANALYTICAL
METALS SECTION

Water Bath ID : A
Digestion Start Time (@ 90 °C): 1527

Thermometer ID : DIG85
Digestion End Time(@ 93 °C): 1727

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Initial Color	Initial Clarity	Final Color	Final Clarity	Artifacts	Bottle
LCSWHF29HGW3	HF29HGW3	0.025	L	0.025	L	AQ	HG	HHM	06/29/2014	N/A	N/A	N/A	N/A		
PBWHF29HGW3	HF29HGW3		L		L	AQ	HG	HHM	06/29/2014	N/A	N/A	N/A	N/A		
SH4401-003	HF29HGW3		L		L	AQ	HG	HHM	06/29/2014						A
SH4401-005	HF29HGW3		L		L	AQ	HG	HHM	06/29/2014						
SH4401-007	HF29HGW3		L		L	AQ	HG	HHM	06/29/2014						
SH4401-009	HF29HGW3		L		L	AQ	HG	HHM	06/29/2014						
SH4401-011	HF29HGW3		L		L	AQ	HG	HHM	06/29/2014						
SH4401-013	HF29HGW3		L		L	AQ	HG	HHM	06/29/2014						
SH4401-015	HF29HGW3		L		L	AQ	HG	HHM	06/29/2014						
SH4401-017	HF29HGW3		L		L	AQ	HG	HHM	06/29/2014						
SH4401-019	HF29HGW3		L		L	AQ	HG	HHM	06/29/2014						
SH4401-021	HF29HGW3		L		L	AQ	HG	HHM	06/29/2014						
SH4521-003	HF29HGW3		L		L	AQ	HG	HHM	06/29/2014						
SH4521-005	HF29HGW3		L		L	AQ	HG	HHM	06/29/2014						
SH4521-007	HF29HGW3		L		L	AQ	HG	HHM	06/29/2014						
SH4521-009	HF29HGW3		L		L	AQ	HG	HHM	06/29/2014						B
SH4521-009D	HF29HGW3		L		L	AQ	HG	HHM	06/29/2014						
SH4521-009S	HF29HGW3		L		L	AQ	HG	HHM	06/29/2014						A
SH4521-011	HF29HGW3		L		L	AQ	HG	HHM	06/29/2014						
SH4521-013	HF29HGW3		L		L	AQ	HG	HHM	06/29/2014						
SH4521-015	HF29HGW3		L		L	AQ	HG	HHM	06/29/2014						
SH4521-015D	HF29HGW3		L		L	AQ	HG	HHM	06/29/2014						
SH4521-015S	HF29HGW3		L		L	AQ	HG	HHM	06/29/2014						
SH4521-017	HF29HGW3		L		L	AQ	HG	HHM	06/29/2014						
SH4521-022	HF29HGW3		L		L	AQ	HG	HHM	06/29/2014						K
SH4521-024	HF29HGW3		L		L	AQ	HG	HHM	06/29/2014						K

hhm 6-30-14

Digestion performed by: hhm On: 6-29-14

Katahdin Analytical Services 4000777

Katahdin Analytical Services, Inc.

Metals Preparation Benchsheet

Reagent Information:

HNO3: 67379 HCL: 66908 H2SO4: S2429 Method: 7470

KMNO4: MR1358 K2S2O8: MR1354 NH2OH-HCl: MR1356

Standards/Spiking Information:

1ppm A : MW14940

1ppm B : MW14941

LCSW = 125uL of 1ppm B to 25mL

Spike(S/P) = 25uL of 1ppm B to 25mL

ICV = 600uL of 1ppm B to 100 mL

S0.2 = 20uL of 1ppm A to 100 mL

S0.5 = 50uL of 1ppm A to 100 mL

S1.0 = 100uL of 1ppm A to 100 mL

S5.0 = 500uL of 1ppm A to 100 mL

S10.0 = 1000uL of 1ppm A to 100 mL

REVIEWED

[signature] 07.05.14

KATAHDIN ANALYTICAL METALS SECTION

Water Bath ID : B

Thermometer ID : DIG55

Digestion Start Time (@ 92 °C): 1351

Digestion End Time(@ 91 °C): 15:51

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Initial Color	Initial Clarity	Final Color	Final Clarity	Artifacts	Bottle
LCSWHG03HGW2	HG03HGW2	0.025	L	0.025	L	AQ	HG	HHM	07/03/2014	N/A	N/A	N/A	N/A		
PBT1170A	HG03HGW2		L		L	AQ	HG	HHM	07/03/2014						
PBWHG03HGW2	HG03HGW2		L		L	AQ	HG	HHM	07/03/2014	N/A	N/A	N/A	N/A		
SH4016-031	HG03HGW2		L		L	AQ	HG	HHM	07/03/2014						H
SH4016-033	HG03HGW2		L		L	AQ	HG	HHM	07/03/2014						H
SH4412-001	HG03HGW2		L		L	AQ	HG	HHM	07/03/2014						F
SH4412-003	HG03HGW2		L		L	AQ	HG	HHM	07/03/2014						F
SH4412-005	HG03HGW2		L		L	AQ	HG	HHM	07/03/2014						F
SH4412-007	HG03HGW2		L		L	AQ	HG	HHM	07/03/2014						M
SH4412-007P	HG03HGW2		L		L	AQ	HG	HHM	07/03/2014						↓
SH4412-007S	HG03HGW2		L		L	AQ	HG	HHM	07/03/2014						↓
SH4412-009	HG03HGW2		L		L	AQ	HG	HHM	07/03/2014						F
SH4412-013	HG03HGW2		L		L	AQ	HG	HHM	07/03/2014						F
SH4487-001	HG03HGW2		L		L	AQ	HG	HHM	07/03/2014						F
SH4521-019	HG03HGW2		L		L	AQ	HG	HHM	07/03/2014						A
SH4611-001	HG03HGW2		L		L	AQ	HG	HHM	07/03/2014						K
SH4611-002	HG03HGW2		L		L	AQ	HG	HHM	07/03/2014						K
SH4643-001T	HG03HGW2		L		L	AQ	HG	HHM	07/03/2014						~~K~~A HHM 7-3-14
SH4662-001	HG03HGW2		L		L	AQ	HG	HHM	07/03/2014						K
SH4671-001T	HG03HGW2		L		L	AQ	HG	HHM	07/03/2014						A
SH4672-001T	HG03HGW2		L		L	AQ	HG	HHM	07/03/2014						A
SH4711-001T	HG03HGW2		L		L	AQ	HG	HHM	07/03/2014						A
SH4828-006T	HG03HGW2		L		L	AQ	HG	HHM	07/03/2014						B
SH4830-002	HG03HGW2		L		L	AQ	HG	HHM	07/03/2014						A
SH4849-001T	HG03HGW2	0.025	L		L	AQ	HG	HHM	07/03/2014						A

[signature] 07-05-14

QA-066-Revision 1 - 09/23/2010 Digestion performed by: HHM On: 7-3-14 Page: HG010 Revision: 01

Katahdin Analytical Services 4000778

SIM DATA

QC Summary Section

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NCTAMSLANT Cutler CTO WE53 **Matrix:** AQ
Lab Code: KAS **SDG:** WE53-7

Client Sample ID	Lab Sample ID	Col. ID	2MN	#	DBP	#	FLO	#	PYR	#
FTA-MW-5-061814	SH4401-10		63.6		55.9		68.5		97.1	
FTA-MW-203-061814	SH4401-12		57.7		51.2		61.8		86.9	
FTA-GW-DUP01-061814	SH4401-14		64.4		62.4		67.3		94.8	
FTA-MW-218-061814	SH4401-16		55.8		52.3		55.2		91.2	
FTA-MW-206-061814	SH4401-18		55.5		51.6		57.4		93.9	
FTA-MW-9-061714	SH4401-2		63.5		11.8		70.7		84.9	
FTA-MW-14-061714	SH4401-20		53.4		61.6		64.6		88.0	
FTA-MW-10-061714	SH4401-4		58.1		48.8		61.6		86.2	
FTA-MW-11-061714	SH4401-6		56.1		34.9		52.9		59.5	
FTA-MW-12-061714	SH4401-8		62.4		29.4		60.9		88.0	
FTA-SW-01-061914	SH4521-10		64.5		66.8		64.3		108.	
FTA-SW-02-061914	SH4521-12		55.2		57.0		54.8		89.2	
FTA-SW-03-061914	SH4521-14		58.5		63.3		62.4		90.4	
FTA-SW-06-061914	SH4521-16		54.8		56.6		62.3		73.8	
FTA-SW-07-061914	SH4521-18		61.3		69.8		68.2		101.	
FTA-MW-208-061814	SH4521-2		56.6		52.1		53.5		100.	
FTA-SW-08-061914	SH4521-20		55.9		63.0		61.8		90.6	
FTA-SW-DUP01-061914	SH4521-22		51.6		61.4		61.0		78.7	
FTA-SD-RB01-062014	SH4521-24		71.5		67.5		69.7		105.	
FTA-MW-1-061814	SH4521-4		61.5		57.0		56.5		100.	
FTA-GW-DUP02-061814	SH4521-6		69.0		61.4		59.1		95.0	
FTA-MW-210-061814	SH4521-8		57.5		67.1		68.2		99.6	
Method Blank Sample	WG145278-1		72.2		72.8		70.2		97.4	
Laboratory Control S	WG145278-2		67.4		71.5		70.6		80.4	
Laboratory Control S	WG145278-3		64.4		72.3		72.1		85.7	
Method Blank Sample	WG145381-1		61.6		60.0		62.0		78.5	
Laboratory Control S	WG145381-2		69.6		73.0		71.9		84.0	
Laboratory Control S	WG145381-3		73.7		71.1		75.0		89.0	
Matrix Spike	WG145381-4		65.0		68.4		72.3		88.7	
Matrix Spike Duplica	WG145381-5		64.6		68.5		72.1		90.6	
Matrix Spike	WG145381-6		57.9		66.5		67.9		69.7	
Matrix Spike Duplica	WG145381-7		50.3		62.4		61.5		81.4	

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NCTAMSLANT Cutler CTO WE53 **Matrix:** AQ
Lab Code: KAS **SDG:** WE53-7

		QC Limits
DBP	2,4-DIBROMOPHENOL	10-130
2MN	2-METHYLNAPHTHALENE-D10	43-92
FLO	FLUORENE-D10	29-101
PYR	PYRENE-D10	53-166

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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Tel:(207) 874-2400 Fax:(207) 775-4029

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Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : NCTAMSLANT Cutler CTO WE53
Lab File ID : N2929.D
Instrument ID : GCMS-N
Matrix : AQ

SDG : WE53-7
Lab Sample ID : WG145278-1
Date Extracted : 23-JUN-14
Date Analyzed : 26-JUN-14
Time Analyzed : 15:33

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG145278-2	N2944.D	06/27/14	15:01
Laboratory Control S	WG145278-3	N2945.D	06/27/14	15:45
FTA-MW-9-061714	SH4401-2	N2947.D	06/27/14	17:12
FTA-MW-10-061714	SH4401-4	N2948.D	06/27/14	17:55
FTA-MW-11-061714	SH4401-6	N2949.D	06/27/14	18:39
FTA-MW-12-061714	SH4401-8	N2950.D	06/27/14	19:22
FTA-MW-5-061814	SH4401-10	N2951.D	06/27/14	20:05
FTA-MW-203-061814	SH4401-12	N2952.D	06/27/14	20:48
FTA-GW-DUP01-061814	SH4401-14	N2953.D	06/27/14	21:31
FTA-MW-218-061814	SH4401-16	N2954.D	06/27/14	22:15
FTA-MW-206-061814	SH4401-18	N2955.D	06/27/14	22:58
FTA-MW-14-061714	SH4401-20	N2956.D	06/27/14	23:40

Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : NCTAMSLANT Cutler CTO WE53
Lab File ID : N2941.D
Instrument ID : GCMS-N
Matrix : AQ

SDG : WE53-7
Lab Sample ID : WG145381-1
Date Extracted : 25-JUN-14
Date Analyzed : 27-JUN-14
Time Analyzed : 12:51

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG145381-2	N2942.D	06/27/14	13:34
Laboratory Control S	WG145381-3	N2943.D	06/27/14	14:18
FTA-MW-208-061814	SH4521-2	N2958.D	06/28/14	09:18
FTA-MW-1-061814	SH4521-4	N2959.D	06/28/14	10:01
FTA-GW-DUP02-061814	SH4521-6	N2960.D	06/28/14	10:44
FTA-MW-210-061814	SH4521-8	N2961.D	06/28/14	11:27
Matrix Spike	WG145381-4	N2962.D	06/28/14	12:11
Matrix Spike Duplica	WG145381-5	N2963.D	06/28/14	12:54
FTA-SW-01-061914	SH4521-10	N2964.D	06/28/14	13:38
FTA-SW-02-061914	SH4521-12	N2965.D	06/28/14	14:21
FTA-SW-03-061914	SH4521-14	N2966.D	06/28/14	15:04
Matrix Spike	WG145381-6	N2967.D	06/28/14	15:47
Matrix Spike Duplica	WG145381-7	N2968.D	06/28/14	16:31
FTA-SW-06-061914	SH4521-16	N2969.D	06/28/14	17:14
FTA-SW-07-061914	SH4521-18	N2970.D	06/28/14	17:57
FTA-SW-08-061914	SH4521-20	N2971.D	06/28/14	18:40
FTA-SW-DUP01-061914	SH4521-22	N2972.D	06/28/14	19:23
FTA-SD-RB01-062014	SH4521-24	N2973.D	06/28/14	20:06

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NCTAMSLANT Cutler CTO WE53
Lab File ID : ND762.D
Instrument ID : GCMS-N

SDG : WE53-7
Date Analyzed : 26-JUN-14
Time Analyzed : 10:10

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	44.3		
68	Less than 2.0% of mass 69	0.5	1.28	1
69	Less than 100.0% of mass 198	40.1		
70	Less than 2.0% of mass 69	0.2	0.57	1
127	40.0 - 60.0% of mass 198	59.9		
197	Less than 1.0% of mass 198	0.3		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.9		
275	10.0 - 30.0% of mass 198	21.8		
365	1.0 - 100.0% of mass 198	2.4		
441	0.0 - 100.0% of mass 443	10.0	66.82	2
442	40.0 - 100.0% of mass 198	72.2		
443	17.0 - 23.0% of mass 442	14.9	20.71	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG145455-4	N2922.D	06/26/14	10:28
Initial Calibration	WG145455-2	N2923.D	06/26/14	11:12
Initial Calibration	WG145455-3	N2924.D	06/26/14	11:55
Initial Calibration	WG145455-5	N2925.D	06/26/14	12:39
Initial Calibration	WG145455-6	N2926.D	06/26/14	13:22
Initial Calibration	WG145455-7	N2927.D	06/26/14	14:06
Independent Source	WG145455-8	N2928.D	06/26/14	14:50
Method Blank Sample	WG145278-1	N2929.D	06/26/14	15:33

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NCTAMSLANT Cutler CTO WE53
Lab File ID : ND763.D
Instrument ID : GCMS-N

SDG : WE53-7
Date Analyzed : 27-JUN-14
Time Analyzed : 11:49

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	38.8		
68	Less than 2.0% of mass 69	0.6	1.65	1
69	Less than 100.0% of mass 198	35.9		
70	Less than 2.0% of mass 69	0.1	0.39	1
127	40.0 - 60.0% of mass 198	56.6		
197	Less than 1.0% of mass 198	0.3		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.9		
275	10.0 - 30.0% of mass 198	22.8		
365	1.0 - 100.0% of mass 198	2.7		
441	0.0 - 100.0% of mass 443	12.0	67.02	2
442	40.0 - 100.0% of mass 198	88.3		
443	17.0 - 23.0% of mass 442	18.0	20.33	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG145527-2	N2940.D	06/27/14	12:07
Method Blank Sample	WG145381-1	N2941.D	06/27/14	12:51
Laboratory Control S	WG145381-2	N2942.D	06/27/14	13:34
Laboratory Control S	WG145381-3	N2943.D	06/27/14	14:18
Laboratory Control S	WG145278-2	N2944.D	06/27/14	15:01
Laboratory Control S	WG145278-3	N2945.D	06/27/14	15:45
FTA-MW-9-061714	SH4401-2	N2947.D	06/27/14	17:12
FTA-MW-10-061714	SH4401-4	N2948.D	06/27/14	17:55
FTA-MW-11-061714	SH4401-6	N2949.D	06/27/14	18:39
FTA-MW-12-061714	SH4401-8	N2950.D	06/27/14	19:22
FTA-MW-5-061814	SH4401-10	N2951.D	06/27/14	20:05
FTA-MW-203-061814	SH4401-12	N2952.D	06/27/14	20:48
FTA-GW-DUP01-061814	SH4401-14	N2953.D	06/27/14	21:31
FTA-MW-218-061814	SH4401-16	N2954.D	06/27/14	22:15
FTA-MW-206-061814	SH4401-18	N2955.D	06/27/14	22:58
FTA-MW-14-061714	SH4401-20	N2956.D	06/27/14	23:40

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NCTAMSLANT Cutler CTO WE53
Lab File ID : ND764.D
Instrument ID : GCMS-N

SDG : WE53-7
Date Analyzed : 28-JUN-14
Time Analyzed : 08:17

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	42.1		
68	Less than 2.0% of mass 69	0.7	1.75	1
69	Less than 100.0% of mass 198	38.2		
70	Less than 2.0% of mass 69	0.2	0.42	1
127	40.0 - 60.0% of mass 198	59.0		
197	Less than 1.0% of mass 198	0.6		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.5		
275	10.0 - 30.0% of mass 198	23.1		
365	1.0 - 100.0% of mass 198	2.8		
441	0.0 - 100.0% of mass 443	11.6	67.44	2
442	40.0 - 100.0% of mass 198	84.9		
443	17.0 - 23.0% of mass 442	17.2	20.30	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG145582-2	N2957.D	06/28/14	08:36
FTA-MW-208-061814	SH4521-2	N2958.D	06/28/14	09:18
FTA-MW-1-061814	SH4521-4	N2959.D	06/28/14	10:01
FTA-GW-DUP02-061814	SH4521-6	N2960.D	06/28/14	10:44
FTA-MW-210-061814	SH4521-8	N2961.D	06/28/14	11:27
Matrix Spike	WG145381-4	N2962.D	06/28/14	12:11
Matrix Spike Duplica	WG145381-5	N2963.D	06/28/14	12:54
FTA-SW-01-061914	SH4521-10	N2964.D	06/28/14	13:38
FTA-SW-02-061914	SH4521-12	N2965.D	06/28/14	14:21
FTA-SW-03-061914	SH4521-14	N2966.D	06/28/14	15:04
Matrix Spike	WG145381-6	N2967.D	06/28/14	15:47
Matrix Spike Duplica	WG145381-7	N2968.D	06/28/14	16:31
FTA-SW-06-061914	SH4521-16	N2969.D	06/28/14	17:14
FTA-SW-07-061914	SH4521-18	N2970.D	06/28/14	17:57
FTA-SW-08-061914	SH4521-20	N2971.D	06/28/14	18:40
FTA-SW-DUP01-061914	SH4521-22	N2972.D	06/28/14	19:23
FTA-SD-RB01-062014	SH4521-24	N2973.D	06/28/14	20:06

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NCTAMSLANT Cutler CTO WI
Lab ID : WG145455-4
Lab File ID : N2922.D

SDG: WE53-7
Analytical Date: 06/26/14 10:28
Instrument ID: GCMS-N

		1,4-DICHLOROBENZENE-D4		NAPHTHALENE-D8		ACENAPHTHENE-D10	
		Area #	RT #	Area #	RT #	Area #	RT #
	Std .	52680	8.97	182742	11.76	70740	15.86
	Upper Limit	105360	9.47	365484	12.26	141480	16.36
	Lower Limit	26340	8.47	91371	11.26	35370	15.36
Client Sample ID	Lab Sample ID						
Method Blank Sample	WG145278-1	56007	8.99	198171	11.78	72706	15.86
Continuing Calibrati	WG145527-2	72851	8.97	249902	11.76	96984	15.84
Method Blank Sample	WG145381-1	73278	8.99	263061	11.78	104443	15.86
Laboratory Control S	WG145381-2	70817	8.97	251519	11.76	99497	15.84
Laboratory Control S	WG145381-3	72795	8.97	267586	11.76	103784	15.84
Laboratory Control S	WG145278-2	72055	8.97	263479	11.76	104025	15.84
Laboratory Control S	WG145278-3	69569	8.97	251929	11.76	100192	15.84
FTA-MW-9-061714	SH4401-2	65946	8.99	242100	11.76	94026	15.84
FTA-MW-10-061714	SH4401-4	68636	8.99	243562	11.76	96225	15.84
FTA-MW-11-061714	SH4401-6	73070	8.97	262791	11.78	100405	15.86
FTA-MW-12-061714	SH4401-8	72170	8.99	261952	11.76	100676	15.84
FTA-MW-5-061814	SH4401-10	69849	8.99	243932	11.76	95289	15.84
FTA-MW-203-061814	SH4401-12	73755	8.97	260101	11.78	106650	15.86
FTA-GW-DUP01-0618	SH4401-14	74940	8.97	271674	11.76	103638	15.84
FTA-MW-218-061814	SH4401-16	70681	8.99	252431	11.78	95199	15.86
FTA-MW-206-061814	SH4401-18	66550	8.99	240173	11.78	91537	15.86
FTA-MW-14-061714	SH4401-20	70196	8.97	251792	11.76	99708	15.84
Continuing Calibrati	WG145582-2	64150	8.97	210776	11.75	74517	15.84
FTA-MW-208-061814	SH4521-2	65873	8.97	222227	11.78	81968	15.86
FTA-MW-1-061814	SH4521-4	68023	8.97	230991	11.78	80924	15.86
FTA-GW-DUP02-0618	SH4521-6	73579	8.97	256562	11.76	92524	15.84
FTA-MW-210-061814	SH4521-8	64751	8.97	222388	11.76	89191	15.84
Matrix Spike	WG145381-4	65502	8.97	222143	11.76	87248	15.84
Matrix Spike Duplica	WG145381-5	71925	8.97	235558	11.76	94468	15.84
FTA-SW-01-061914	SH4521-10	61818	8.97	217507	11.76	80825	15.84
FTA-SW-02-061914	SH4521-12	68500	8.97	248292	11.76	95780	15.84
FTA-SW-03-061914	SH4521-14	61040	8.97	211882	11.76	85326	15.84
Matrix Spike	WG145381-6	69183	8.97	234842	11.75	97025	15.84
Matrix Spike Duplica	WG145381-7	66934	8.97	224140	11.75	95726	15.84
FTA-SW-06-061914	SH4521-16	65105	8.97	219547	11.76	89120	15.84
FTA-SW-07-061914	SH4521-18	68803	8.97	242361	11.76	100175	15.84
FTA-SW-08-061914	SH4521-20	66223	8.97	238406	11.76	93664	15.84
FTA-SW-DUP01-0619	SH4521-22	64245	8.97	225481	11.76	91236	15.84
FTA-SD-RB01-062014	SH4521-24	65638	8.97	232517	11.76	92665	15.84

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NCTAMSLANT Cutler CTO WI
Lab ID : WG145455-4
Lab File ID : N2922.D

SDG: WE53-7
Analytical Date: 06/26/14 10:28
Instrument ID: GCMS-N

		PHENANTHRENE-D10		CHRYSENE-D12		PERYLENE-D12	
		Area #	RT #	Area #	RT #	Area #	RT #
	Std .	100886	19.34	46639	25.59	36836	28.71
	Upper Limit	201772	19.84	93278	26.09	73672	29.21
	Lower Limit	50443	18.84	23319.5	25.09	18418	28.21
Client Sample ID	Lab Sample ID						
Method Blank Sample	WG145278-1	103359	19.34	40617	25.60	26730	28.72
Continuing Calibrati	WG145527-2	138115	19.32	59403	25.59	44571	28.71
Method Blank Sample	WG145381-1	152284	19.34	68028	25.60	45431	28.72
Laboratory Control S	WG145381-2	141621	19.32	68963	25.58	50085	28.71
Laboratory Control S	WG145381-3	150420	19.32	75270	25.58	53501	28.71
Laboratory Control S	WG145278-2	144410	19.32	69751	25.59	48087	28.71
Laboratory Control S	WG145278-3	141642	19.32	65239	25.59	46234	28.71
FTA-MW-9-061714	SH4401-2	121176	19.32	52031	25.58	37635	28.71
FTA-MW-10-061714	SH4401-4	135805	19.32	60672	25.59	41652	28.71
FTA-MW-11-061714	SH4401-6	146935	19.34	60471	25.59	40039	28.71
FTA-MW-12-061714	SH4401-8	142810	19.32	63348	25.59	40608	28.71
FTA-MW-5-061814	SH4401-10	130542	19.32	56432	25.59	40056	28.71
FTA-MW-203-061814	SH4401-12	159915	19.32	69406	25.59	45814	28.71
FTA-GW-DUP01-0618	SH4401-14	145139	19.32	63903	25.59	43511	28.71
FTA-MW-218-061814	SH4401-16	133861	19.34	50036	25.60	34068	28.72
FTA-MW-206-061814	SH4401-18	131925	19.34	48602	25.60	32375	28.72
FTA-MW-14-061714	SH4401-20	151433	19.32	68866	25.58	44772	28.71
Continuing Calibrati	WG145582-2	94873	19.32	38058	25.59	28163	28.72
FTA-MW-208-061814	SH4521-2	102417	19.34	29774	25.60	23267	28.72
FTA-MW-1-061814	SH4521-4	97942	19.34	32303	25.60	22986	28.72
FTA-GW-DUP02-0618	SH4521-6	109259	19.34	37850	25.60	26047	28.72
FTA-MW-210-061814	SH4521-8	127731	19.32	50357	25.58	32561	28.71
Matrix Spike	WG145381-4	124787	19.32	58141	25.58	38012	28.69
Matrix Spike Duplica	WG145381-5	126936	19.32	58089	25.58	37465	28.69
FTA-SW-01-061914	SH4521-10	116283	19.32	44364	25.58	28536	28.71
FTA-SW-02-061914	SH4521-12	140936	19.32	55478	25.59	33821	28.71
FTA-SW-03-061914	SH4521-14	123242	19.32	47461	25.58	32886	28.71
Matrix Spike	WG145381-6	144640	19.32	64703	25.58	43592	28.71
Matrix Spike Duplica	WG145381-7	144205	19.32	63913	25.58	40331	28.69
FTA-SW-06-061914	SH4521-16	127282	19.32	54971	25.58	32777	28.71
FTA-SW-07-061914	SH4521-18	146623	19.32	59561	25.58	34680	28.69
FTA-SW-08-061914	SH4521-20	131997	19.32	54721	25.58	35371	28.71
FTA-SW-DUP01-0619	SH4521-22	133994	19.32	57839	25.58	36322	28.69
FTA-SD-RB01-062014	SH4521-24	138805	19.32	51837	25.58	30485	28.71

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NCTAMSLANT Cutler CTO WI
Lab ID : WG145455-4
Lab File ID : N2922.D

SDG: WE53-7
Analytical Date: 06/26/14 10:28
Instrument ID: GCMS-N

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 values outside QC limits with an asterisk.
* Values outside of QC limits.

Sample Data Section

KATAHDIN ANALYTICAL SERVICES - ORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

* Compound recovery outside of quality control limits.

D Indicates the result was obtained from analysis of a diluted sample. Surrogate recoveries may not be calculable.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

or

J Used for Pesticides, PCBs, Herbicides, Formaldehyde, Explosives and Method 504.1 analytes when there is a greater than 40% difference for detected concentrations between the two GC columns.

B Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.

C Indicates that the flagged compound did not meet DoD criteria in the corresponding daily calibration verification (CV).

L Indicates that the flagged compound did not meet DoD criteria in the corresponding Laboratory Control Sample (LCS) and/or Laboratory Control Sample Duplicate (LCSD) prepared and/or analyzed concurrently with the sample.

M Indicates that the flagged compound did not meet DoD criteria in the Matrix Spike and/or Matrix Spike Duplicate prepared and/or analyzed concurrently with the native sample.

N Presumptive evidence of a compound based on a mass spectral library search.

A Indicates that a tentatively identified compound is a suspected aldol-condensation product.

P Used for Pesticide/Aroclor analyte when there is a greater than 25% difference for detected concentrations between the two GC columns. (for CLP methods only).

Katahdin Analytical Services, Inc.

Manual Integration Codes For GC/MS, GC, HPLC and/or IC

M1	Peak splitting.
M2	Well defined peaks on the shoulders of the other peaks.
M3	There is additional area due to a coeluting interferant.
M4	There are negative spikes in the baseline.
M5	There are rising or falling baselines.
M6	The software has failed to detect a peak or misidentified a peak.
M7	Excessive peak tailing.
M8	Analysis such as GRO, DRO and TPH require a baseline hold.
M9	Peak was not completely integrated as in GC/MS.
M10	Primary ion was correctly integrated, but secondary or tertiary ion needed manual integration as in GC/MS.
M11	For GC analysis, when a sample is diluted by 1:10 or more, the surrogate is set to undetected and then the area under the surrogate is manually integrated.
M12	Manual integration saved in method due to TurboChrom floating point error.

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SH4401-2
Client ID: FTA-MW-9-061714
Project: NCTAMSLANT Cutler CTO
SDG: WE53-7
Lab File ID: N2947.D

Sample Date: 17-JUN-14
Received Date: 19-JUN-14
Extract Date: 23-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145278

Analysis Date: 27-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 11-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,4-Dioxane	U	0.47	ug/L	1	1	0.94	0.027	0.47
2-Chlorophenol	U	0.47	ug/L	1	1	0.94	0.26	0.47
Naphthalene	J	0.081	ug/L	1	.2	0.19	0.060	0.094
Hexachlorobutadiene	U	0.094	ug/L	1	.2	0.19	0.082	0.094
2-Methylnaphthalene	U	0.094	ug/L	1	.2	0.19	0.073	0.094
Hexachlorobenzene	U	0.094	ug/L	1	.2	0.19	0.052	0.094
Pentachlorophenol	ULL	0.47	ug/L	1	1	0.94	0.31	0.47
Phenanthrene	U	0.094	ug/L	1	.2	0.19	0.048	0.094
Pyrene	U	0.094	ug/L	1	.2	0.19	0.056	0.094
Benzo(a)anthracene	U	0.094	ug/L	1	.2	0.19	0.043	0.094
Chrysene	ULL	0.094	ug/L	1	.2	0.19	0.034	0.094
Benzo(b)fluoranthene	U	0.094	ug/L	1	.2	0.19	0.084	0.094
Benzo(a)pyrene	U	0.094	ug/L	1	.2	0.19	0.062	0.094
Indeno(1,2,3-cd)pyrene	U	0.094	ug/L	1	.2	0.19	0.049	0.094
Dibenzo(a,h)anthracene	ULL	0.094	ug/L	1	.2	0.19	0.066	0.094
1,1'-Biphenyl	JLL	0.12	ug/L	1	.2	0.19	0.061	0.094
1,2,4,5-Tetrachlorobenzene	U	0.094	ug/L	1	.2	0.19	0.094	0.094
2,2'-Oxybis(1-Chloropropane)	ULL	0.14	ug/L	1	.2	0.19	0.11	0.14
2,4,6-Trichlorophenol	U	0.47	ug/L	1	1	0.94	0.11	0.47
2,4-Dichlorophenol	U	0.47	ug/L	1	1	0.94	0.47	0.47
2,4-Dinitrophenol	U	0.47	ug/L	1	1	0.94	0.23	0.47
2,4-Dinitrotoluene	U	0.094	ug/L	1	.2	0.19	0.033	0.094
2,6-Dinitrotoluene	U	0.094	ug/L	1	.2	0.19	0.066	0.094
2-Nitroaniline	U	0.14	ug/L	1	.2	0.19	0.11	0.14
3,3'-Dichlorobenzidine	U	0.094	ug/L	1	.2	0.19	0.053	0.094
4,6-Dinitro-2-Methylphenol	U	0.71	ug/L	1	1	0.94	0.47	0.71
4-Chloroaniline	U	0.47	ug/L	1	1	0.94	0.47	0.47
3&4-Methylphenol	U	0.47	ug/L	1	1	0.94	0.42	0.47
4-Nitroaniline	U	0.094	ug/L	1	.2	0.19	0.061	0.094
Atrazine	U	0.094	ug/L	1	.2	0.19	0.036	0.094
Bis(2-Chloroethyl)Ether	UL	0.094	ug/L	1	.2	0.19	0.039	0.094
Bis(2-Ethylhexyl)Phthalate	ULL	0.47	ug/L	1	1	0.94	0.47	0.47
Dibenzofuran	U	0.094	ug/L	1	.2	0.19	0.064	0.094
Hexachlorocyclopentadiene	U	0.094	ug/L	1	.2	0.19	0.063	0.094
Hexachloroethane	U	0.094	ug/L	1	.2	0.19	0.069	0.094

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://www.katahdinlab.com

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SH4401-2
Client ID: FTA-MW-9-061714
Project: NCTAMSLANT Cutler CTO
SDG: WE53-7
Lab File ID: N2947.D

Sample Date: 17-JUN-14
Received Date: 19-JUN-14
Extract Date: 23-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145278

Analysis Date: 27-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 11-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Nitrobenzene	U	0.14	ug/L	1	.2	0.19	0.12	0.14
N-Nitroso-Di-N-Propylamine	U	0.094	ug/L	1	.2	0.19	0.068	0.094
3-Nitroaniline	U	0.094	ug/L	1	.2	0.19	0.072	0.094
2-Methylnaphthalene-D10		63.5	%					
Fluorene-D10		70.7	%					
Pyrene-D10		84.9	%					
2,4-Dibromophenol		11.8	%					

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://www.katahdinlab.com

Data File: \\target_server\gg\chem\gcms-n.i\N062714.b\N2947.D
Report Date: 11-Jul-2014 13:30

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N062714.b\N2947.D
Lab Smp Id: SH4401-2 Client Smp ID: FTA-MW-9-061714
Inj Date : 27-JUN-2014 17:12 MS Autotune Date: 12-NOV-2013 09:32
Operator : JCG Inst ID: gcms-n.i
Smp Info : SH4401-2
Misc Info : WG145527,WG145278,WG145455-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N062714.b\NSPSIM09.m
Meth Date : 27-Jun-2014 12:41 cgomez Quant Type: ISTD
Cal Date : 26-JUN-2014 13:22 Cal File: N2926.D
Als bottle: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ttcutler53ocs.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

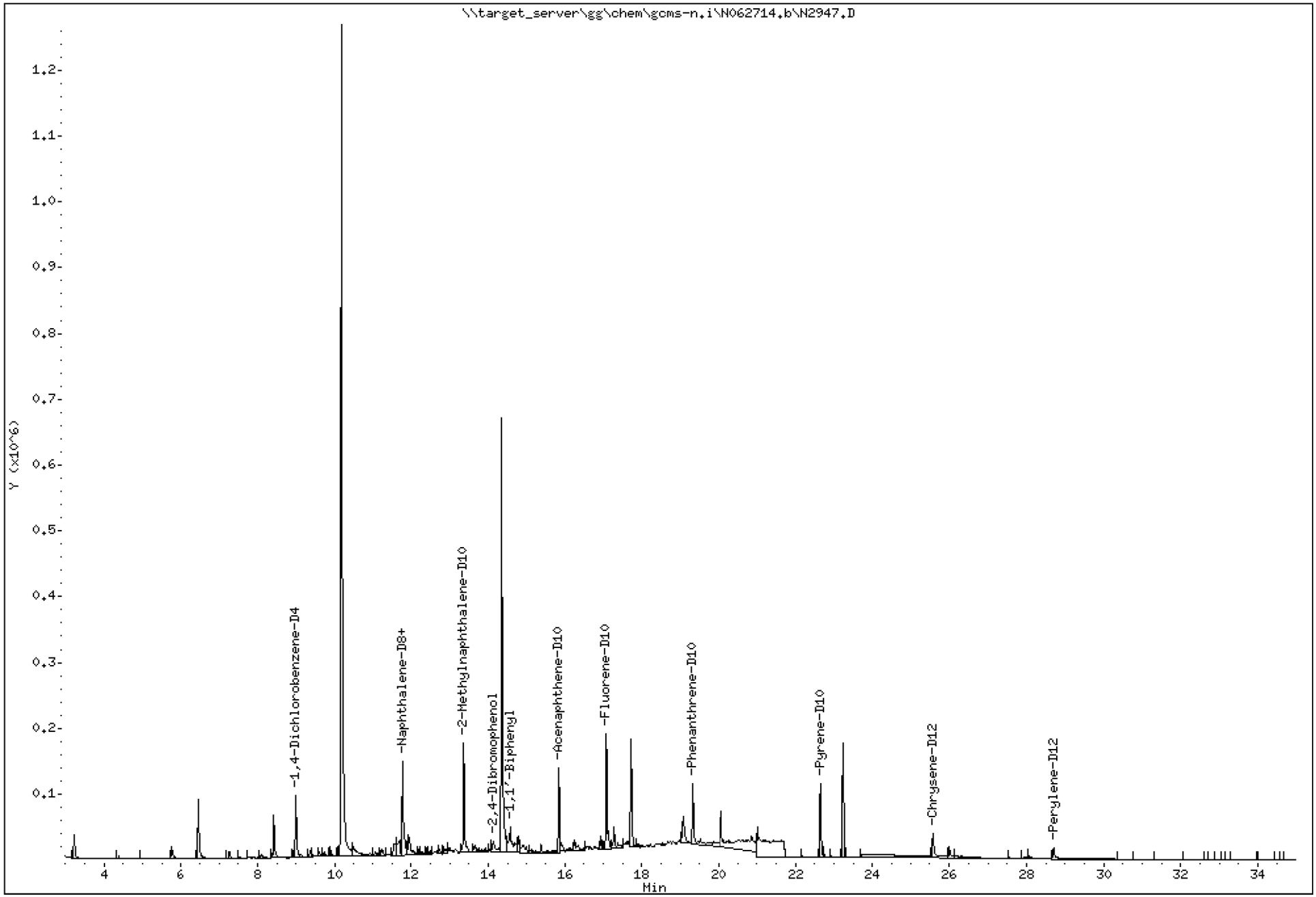
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.060	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
*	8 1,4-Dichlorobenzene-D4	152	8.987	8.971	(1.000)	65946	0.80000	(a)	
*	24 Naphthalene-D8	136	11.763	11.763	(1.000)	242100	0.80000	(a)	
	25 Naphthalene	128	11.814	11.797	(1.004)	25846	0.08625	0.0814(aQ)	
$	30 2-Methylnaphthalene-D10	152	13.354	13.353	(0.843)	180219	1.26988	1.20	
$	35 2,4-Dibromophenol	252	14.126	14.107	(0.892)	21792	0.47102	0.444(a)	
	39 1,1'-Biphenyl	154	14.559	14.559	(0.919)	27112	0.13087	0.123(aQ)	
*	45 Acenaphthene-D10	164	15.842	15.842	(1.000)	94026	0.80000	(a)	
$	52 Fluorene-D10	174	17.069	17.068	(1.077)	153179	1.41458	1.33(Q)	
*	63 Phenanthrene-D10	188	19.323	19.323	(1.000)	121176	0.80000	(a)	
$	69 Pyrene-D10	212	22.646	22.646	(0.885)	154143	1.69846	1.60	
*	73 Chrysene-D12	240	25.576	25.589	(1.000)	52031	0.80000	(a)	
*	81 Perylene-D12	264	28.706	28.706	(1.000)	37635	0.80000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N062714.b\N2947.D
Date : 27-JUN-2014 17:12
Client ID: FTA-MW-9-061714 Instrument: gcms-n.i
Sample Info: SH4401-2



Katahdin Analytical Services 6000019

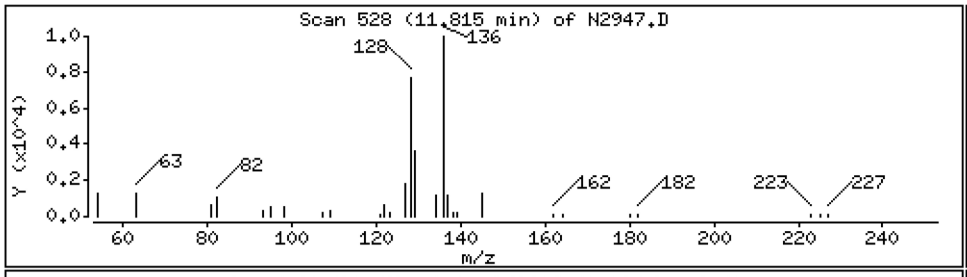
Data File: \\target_server\gg\chem\gcms-n.i\N062714.b\N2947.D

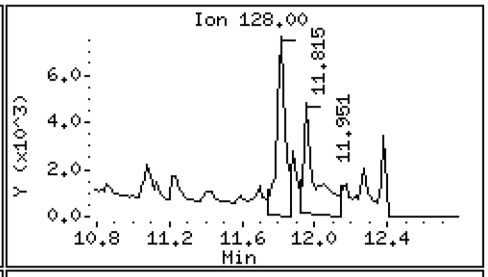
Date : 27-JUN-2014 17:12

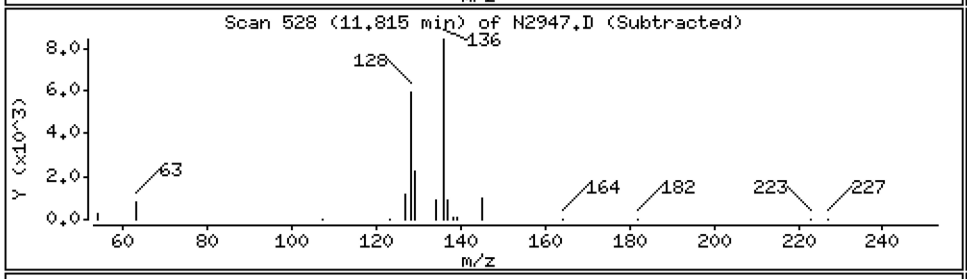
Client ID: FTA-MW-9-061714 Instrument: gcms-n.i

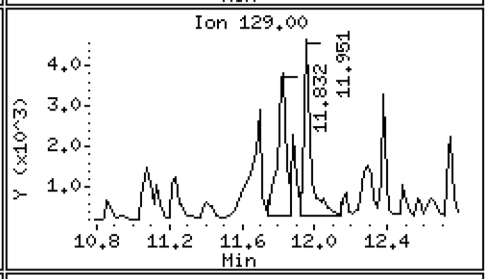
Sample Info: SH4401-2

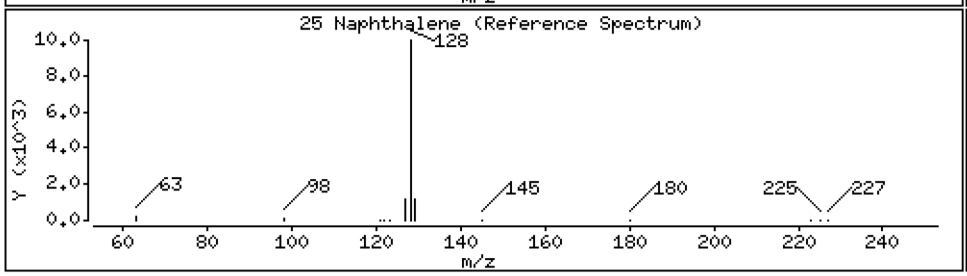
25 Naphthalene Concentration: 0.0814 ug/L

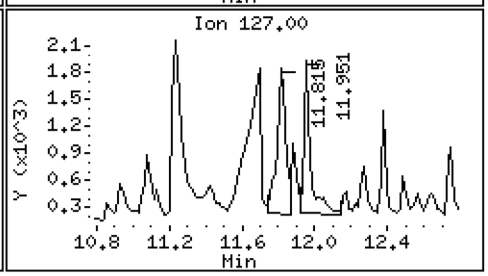




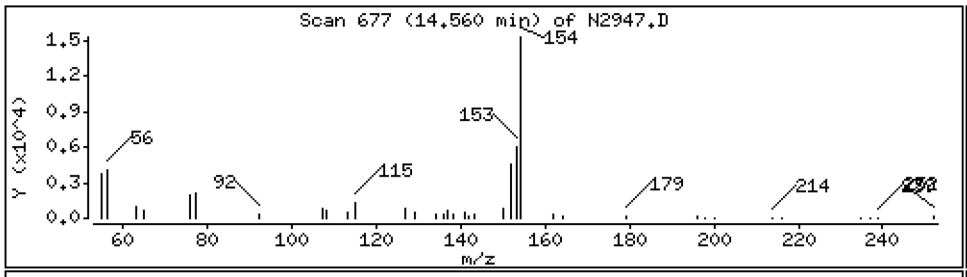


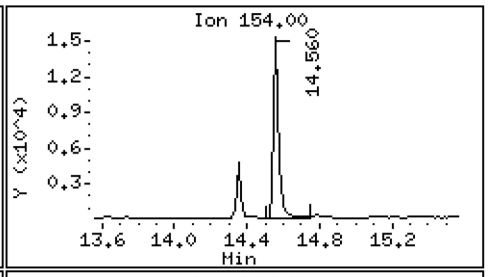


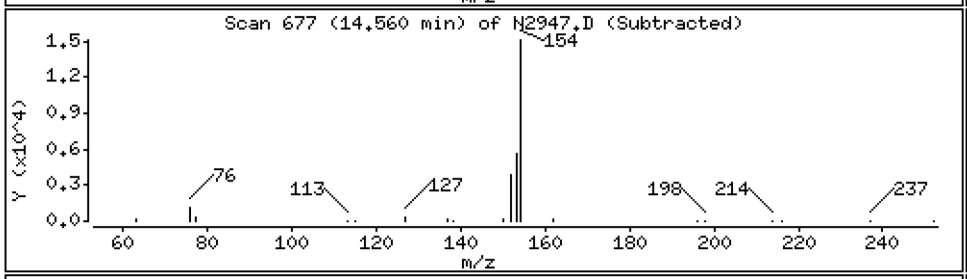


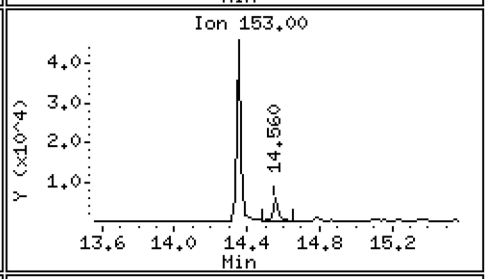


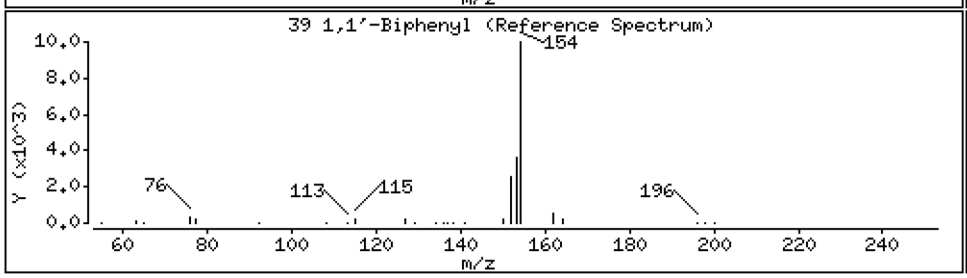
39 1,1'-Biphenyl Concentration: 0.123 ug/L

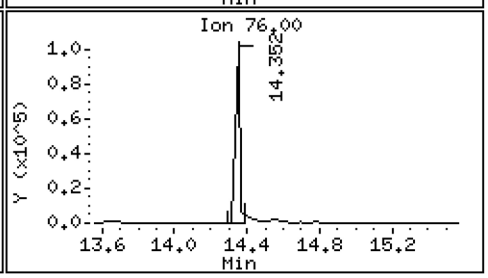












Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SH4401-4
Client ID: FTA-MW-10-061714
Project: NCTAMSLANT Cutler CTO
SDG: WE53-7
Lab File ID: N2948.D

Sample Date: 17-JUN-14
Received Date: 19-JUN-14
Extract Date: 23-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145278

Analysis Date: 27-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 11-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,4-Dioxane	U	0.48	ug/L	1	1	0.96	0.028	0.48
2-Chlorophenol	U	0.48	ug/L	1	1	0.96	0.27	0.48
Naphthalene	U	0.096	ug/L	1	.2	0.19	0.062	0.096
Hexachlorobutadiene	U	0.096	ug/L	1	.2	0.19	0.084	0.096
2-Methylnaphthalene	U	0.096	ug/L	1	.2	0.19	0.074	0.096
Hexachlorobenzene	U	0.096	ug/L	1	.2	0.19	0.053	0.096
Pentachlorophenol	ULL	0.48	ug/L	1	1	0.96	0.32	0.48
Phenanthrene	U	0.096	ug/L	1	.2	0.19	0.049	0.096
Pyrene	U	0.096	ug/L	1	.2	0.19	0.057	0.096
Benzo(a)anthracene	U	0.096	ug/L	1	.2	0.19	0.044	0.096
Chrysene	ULL	0.096	ug/L	1	.2	0.19	0.035	0.096
Benzo(b)fluoranthene	U	0.096	ug/L	1	.2	0.19	0.086	0.096
Benzo(a)pyrene	U	0.096	ug/L	1	.2	0.19	0.063	0.096
Indeno(1,2,3-cd)pyrene	U	0.096	ug/L	1	.2	0.19	0.050	0.096
Dibenzo(a,h)anthracene	ULL	0.096	ug/L	1	.2	0.19	0.067	0.096
1,1'-Biphenyl	JLL	0.11	ug/L	1	.2	0.19	0.062	0.096
1,2,4,5-Tetrachlorobenzene	U	0.096	ug/L	1	.2	0.19	0.096	0.096
2,2'-Oxybis(1-Chloropropane)	ULL	0.14	ug/L	1	.2	0.19	0.12	0.14
2,4,6-Trichlorophenol	U	0.48	ug/L	1	1	0.96	0.12	0.48
2,4-Dichlorophenol	U	0.48	ug/L	1	1	0.96	0.48	0.48
2,4-Dinitrophenol	U	0.48	ug/L	1	1	0.96	0.23	0.48
2,4-Dinitrotoluene	U	0.096	ug/L	1	.2	0.19	0.034	0.096
2,6-Dinitrotoluene	U	0.096	ug/L	1	.2	0.19	0.067	0.096
2-Nitroaniline	U	0.14	ug/L	1	.2	0.19	0.12	0.14
3,3'-Dichlorobenzidine	U	0.096	ug/L	1	.2	0.19	0.054	0.096
4,6-Dinitro-2-Methylphenol	U	0.72	ug/L	1	1	0.96	0.48	0.72
4-Chloroaniline	U	0.48	ug/L	1	1	0.96	0.48	0.48
3&4-Methylphenol	U	0.48	ug/L	1	1	0.96	0.42	0.48
4-Nitroaniline	U	0.096	ug/L	1	.2	0.19	0.062	0.096
Atrazine	U	0.096	ug/L	1	.2	0.19	0.036	0.096
Bis(2-Chloroethyl)Ether	UL	0.096	ug/L	1	.2	0.19	0.039	0.096
Bis(2-Ethylhexyl)Phthalate	ULL	0.48	ug/L	1	1	0.96	0.48	0.48
Dibenzofuran	U	0.096	ug/L	1	.2	0.19	0.065	0.096
Hexachlorocyclopentadiene	U	0.096	ug/L	1	.2	0.19	0.064	0.096
Hexachloroethane	U	0.096	ug/L	1	.2	0.19	0.070	0.096

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://www.katahdinlab.com

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SH4401-4
Client ID: FTA-MW-10-061714
Project: NCTAMSLANT Cutler CTO
SDG: WE53-7
Lab File ID: N2948.D

Sample Date: 17-JUN-14
Received Date: 19-JUN-14
Extract Date: 23-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145278

Analysis Date: 27-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 11-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Nitrobenzene	U	0.14	ug/L	1	.2	0.19	0.12	0.14
N-Nitroso-Di-N-Propylamine	U	0.096	ug/L	1	.2	0.19	0.069	0.096
3-Nitroaniline	U	0.096	ug/L	1	.2	0.19	0.073	0.096
2-Methylnaphthalene-D10		58.1	%					
Fluorene-D10		61.6	%					
Pyrene-D10		86.2	%					
2,4-Dibromophenol		48.8	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N062714.b\N2948.D
Report Date: 11-Jul-2014 13:30

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N062714.b\N2948.D
Lab Smp Id: SH4401-4 Client Smp ID: FTA-MW-10-061714
Inj Date : 27-JUN-2014 17:55 MS Autotune Date: 12-NOV-2013 09:32
Operator : JCG Inst ID: gcms-n.i
Smp Info : SH4401-4
Misc Info : WG145527,WG145278,WG145455-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N062714.b\NSPSIM09.m
Meth Date : 27-Jun-2014 12:41 cgomez Quant Type: ISTD
Cal Date : 26-JUN-2014 13:22 Cal File: N2926.D
Als bottle: 10
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ttcutler53ocs.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

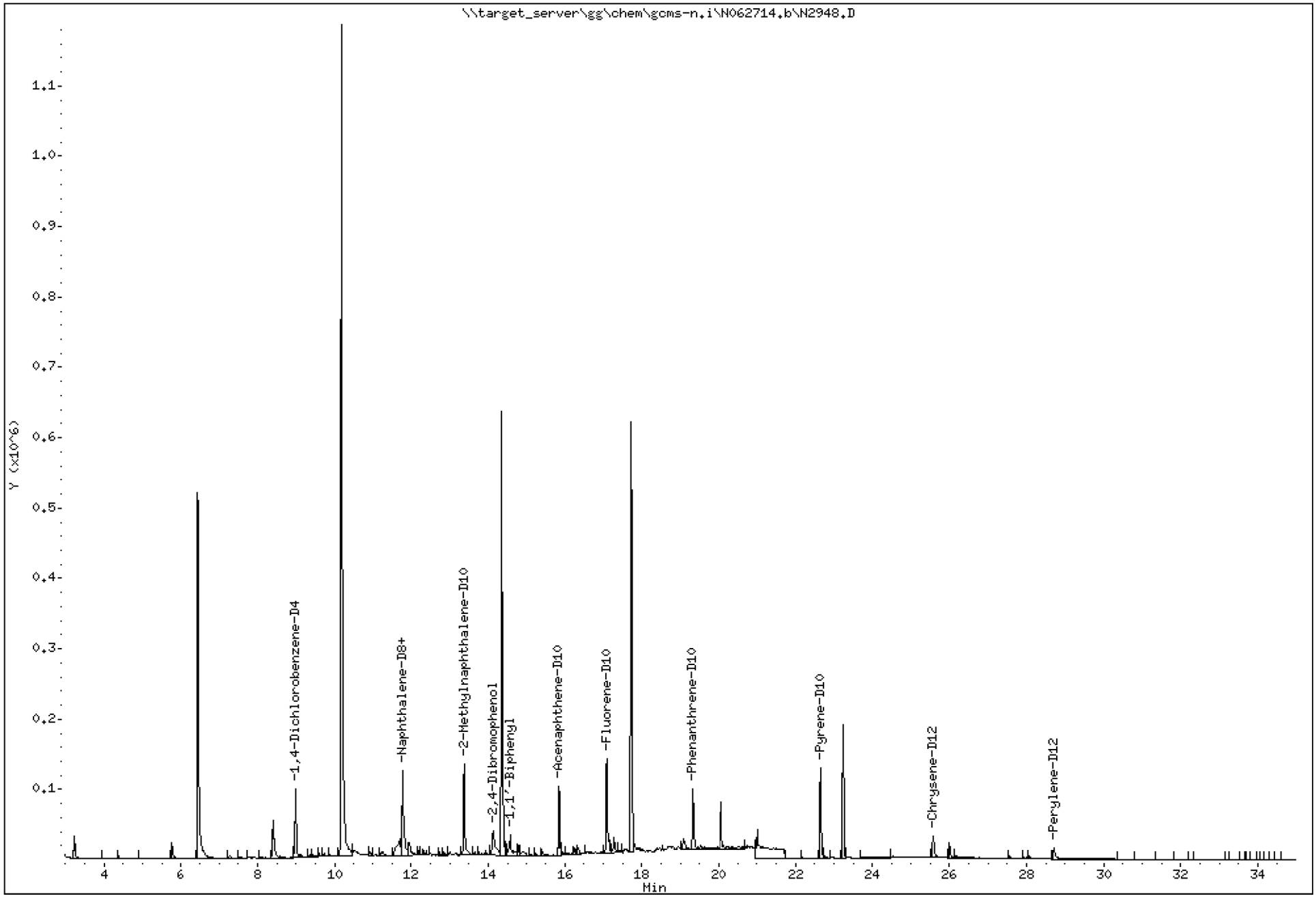
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.040	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
*	8 1,4-Dichlorobenzene-D4	152	8.987	8.971	(1.000)	68636	0.80000	(a)	
*	24 Naphthalene-D8	136	11.763	11.763	(1.000)	243562	0.80000	(a)	
$	30 2-Methylnaphthalene-D10	152	13.372	13.353	(0.844)	168686	1.16145	1.12	
$	35 2,4-Dibromophenol	252	14.126	14.107	(0.892)	92347	1.95042	1.88	
	39 1,1'-Biphenyl	154	14.559	14.559	(0.919)	24510	0.11561	0.111	(aQ)
*	45 Acenaphthene-D10	164	15.842	15.842	(1.000)	96225	0.80000	(a)	
$	52 Fluorene-D10	174	17.084	17.068	(1.078)	136572	1.23239	1.18	(Q)
*	63 Phenanthrene-D10	188	19.323	19.323	(1.000)	135805	0.80000	(a)	
$	69 Pyrene-D10	212	22.646	22.646	(0.885)	182357	1.72317	1.66	
*	73 Chrysene-D12	240	25.589	25.589	(1.000)	60672	0.80000	(a)	
*	81 Perylene-D12	264	28.706	28.706	(1.000)	41652	0.80000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N062714.b\N2948.D
Date : 27-JUN-2014 17:55
Client ID: FTA-MW-10-061714 Instrument: gcms-n.i
Sample Info: SH4401-4



Katahdin Analytical Services 6000024

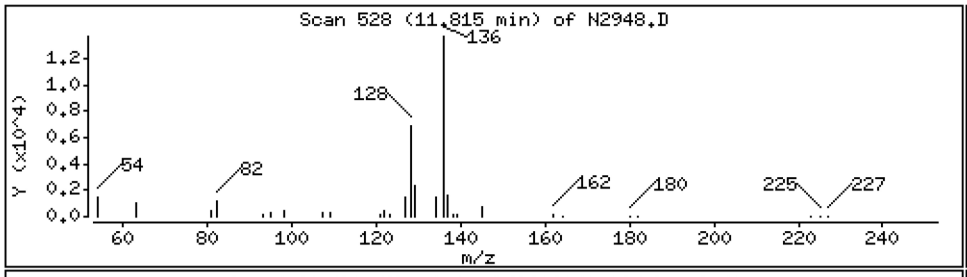
Data File: \\target_server\gg\chem\gcms-n.i\N062714.b\N2948.D

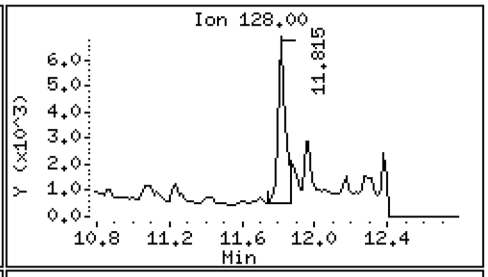
Date : 27-JUN-2014 17:55

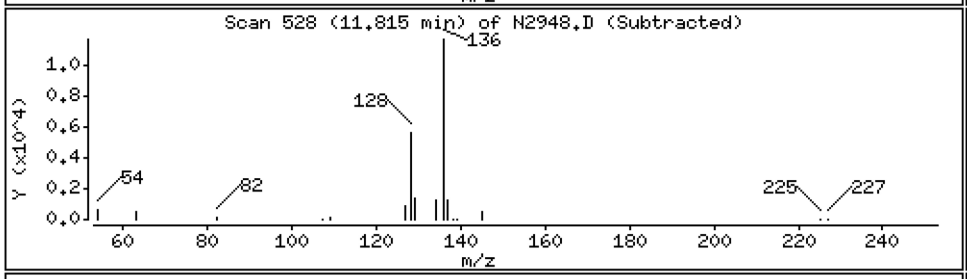
Client ID: FTA-MW-10-061714 Instrument: gcms-n.i

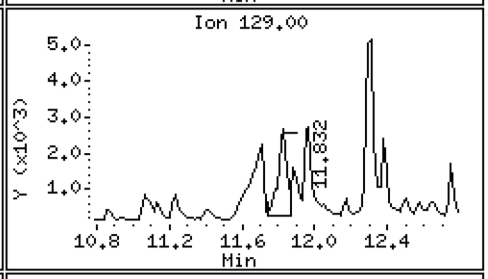
Sample Info: SH4401-4

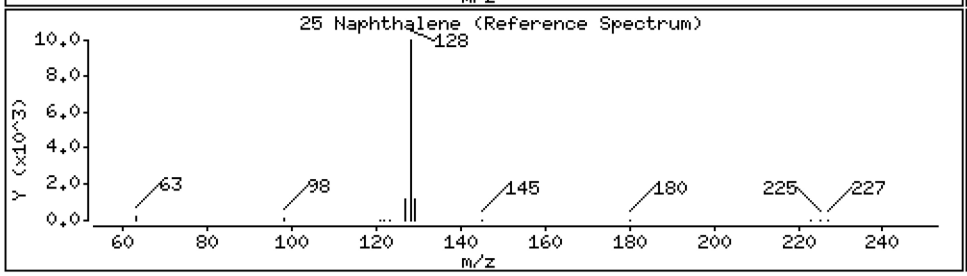
25 Naphthalene Concentration: 0.0584 ug/L

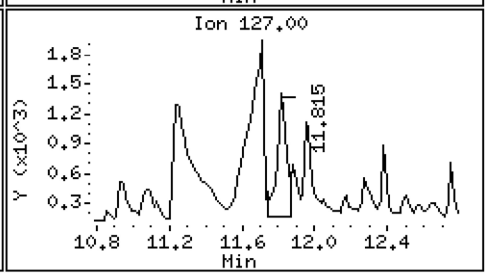




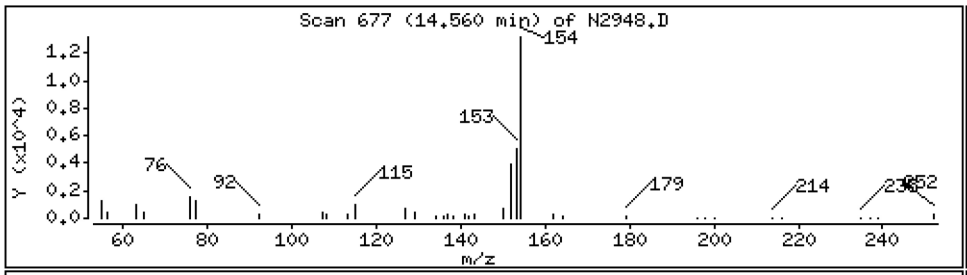


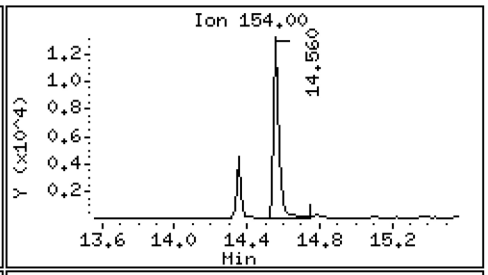


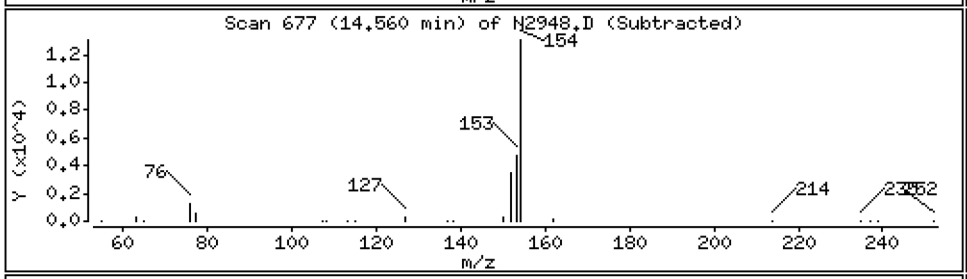


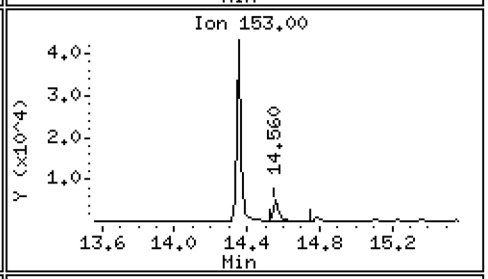


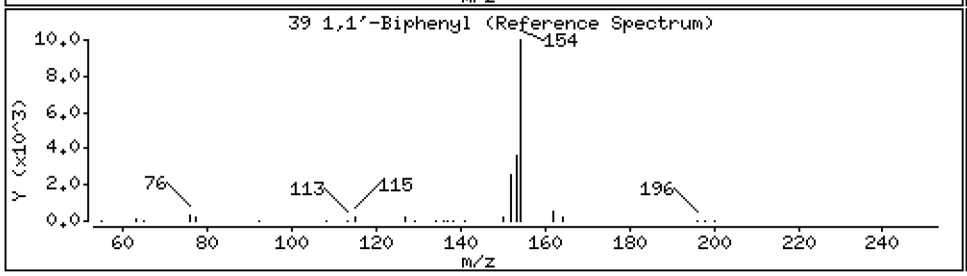
39 1,1'-Biphenyl Concentration: 0.111 ug/L

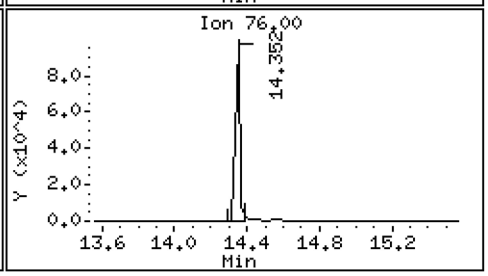












Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SH4401-6
Client ID: FTA-MW-11-061714
Project: NCTAMSLANT Cutler CTO
SDG: WE53-7
Lab File ID: N2949.D

Sample Date: 17-JUN-14
Received Date: 19-JUN-14
Extract Date: 23-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145278

Analysis Date: 27-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 11-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,4-Dioxane	U	0.48	ug/L	1	1	0.95	0.028	0.48
2-Chlorophenol	U	0.48	ug/L	1	1	0.95	0.27	0.48
Naphthalene	U	0.095	ug/L	1	.2	0.19	0.061	0.095
Hexachlorobutadiene	U	0.095	ug/L	1	.2	0.19	0.083	0.095
2-Methylnaphthalene	U	0.095	ug/L	1	.2	0.19	0.073	0.095
Hexachlorobenzene	U	0.095	ug/L	1	.2	0.19	0.052	0.095
Pentachlorophenol	ULL	0.48	ug/L	1	1	0.95	0.31	0.48
Phenanthrene	U	0.095	ug/L	1	.2	0.19	0.048	0.095
Pyrene	U	0.095	ug/L	1	.2	0.19	0.056	0.095
Benzo(a)anthracene	U	0.095	ug/L	1	.2	0.19	0.044	0.095
Chrysene	ULL	0.095	ug/L	1	.2	0.19	0.034	0.095
Benzo(b)fluoranthene	U	0.095	ug/L	1	.2	0.19	0.085	0.095
Benzo(a)pyrene	U	0.095	ug/L	1	.2	0.19	0.063	0.095
Indeno(1,2,3-cd)pyrene	U	0.095	ug/L	1	.2	0.19	0.050	0.095
Dibenzo(a,h)anthracene	ULL	0.095	ug/L	1	.2	0.19	0.067	0.095
1,1'-Biphenyl	ULL	0.095	ug/L	1	.2	0.19	0.062	0.095
1,2,4,5-Tetrachlorobenzene	U	0.095	ug/L	1	.2	0.19	0.095	0.095
2,2'-Oxybis(1-Chloropropane)	ULL	0.14	ug/L	1	.2	0.19	0.11	0.14
2,4,6-Trichlorophenol	U	0.48	ug/L	1	1	0.95	0.11	0.48
2,4-Dichlorophenol	U	0.48	ug/L	1	1	0.95	0.48	0.48
2,4-Dinitrophenol	U	0.48	ug/L	1	1	0.95	0.23	0.48
2,4-Dinitrotoluene	U	0.095	ug/L	1	.2	0.19	0.033	0.095
2,6-Dinitrotoluene	U	0.095	ug/L	1	.2	0.19	0.067	0.095
2-Nitroaniline	U	0.14	ug/L	1	.2	0.19	0.11	0.14
3,3'-Dichlorobenzidine	U	0.095	ug/L	1	.2	0.19	0.053	0.095
4,6-Dinitro-2-Methylphenol	U	0.71	ug/L	1	1	0.95	0.48	0.71
4-Chloroaniline	U	0.48	ug/L	1	1	0.95	0.48	0.48
3&4-Methylphenol	U	0.48	ug/L	1	1	0.95	0.42	0.48
4-Nitroaniline	U	0.095	ug/L	1	.2	0.19	0.062	0.095
Atrazine	U	0.095	ug/L	1	.2	0.19	0.036	0.095
Bis(2-Chloroethyl)Ether	UL	0.095	ug/L	1	.2	0.19	0.039	0.095
Bis(2-Ethylhexyl)Phthalate	ULL	0.48	ug/L	1	1	0.95	0.48	0.48
Dibenzofuran	U	0.095	ug/L	1	.2	0.19	0.065	0.095
Hexachlorocyclopentadiene	U	0.095	ug/L	1	.2	0.19	0.064	0.095
Hexachloroethane	U	0.095	ug/L	1	.2	0.19	0.070	0.095

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SH4401-6
Client ID: FTA-MW-11-061714
Project: NCTAMSLANT Cutler CTO
SDG: WE53-7
Lab File ID: N2949.D

Sample Date: 17-JUN-14
Received Date: 19-JUN-14
Extract Date: 23-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145278

Analysis Date: 27-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 11-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Nitrobenzene	U	0.14	ug/L	1	.2	0.19	0.12	0.14
N-Nitroso-Di-N-Propylamine	U	0.095	ug/L	1	.2	0.19	0.068	0.095
3-Nitroaniline	U	0.095	ug/L	1	.2	0.19	0.072	0.095
2-Methylnaphthalene-D10		56.1	%					
Fluorene-D10		52.9	%					
Pyrene-D10		59.5	%					
2,4-Dibromophenol		34.9	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N062714.b\N2949.D
Report Date: 11-Jul-2014 13:30

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N062714.b\N2949.D
Lab Smp Id: SH4401-6 Client Smp ID: FTA-MW-11-061714
Inj Date : 27-JUN-2014 18:39 MS Autotune Date: 12-NOV-2013 09:32
Operator : JCG Inst ID: gcms-n.i
Smp Info : SH4401-6
Misc Info : WG145527,WG145278,WG145455-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N062714.b\NSPSIM09.m
Meth Date : 27-Jun-2014 12:41 cgomez Quant Type: ISTD
Cal Date : 26-JUN-2014 13:22 Cal File: N2926.D
Als bottle: 11
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ttcutler53ocs.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

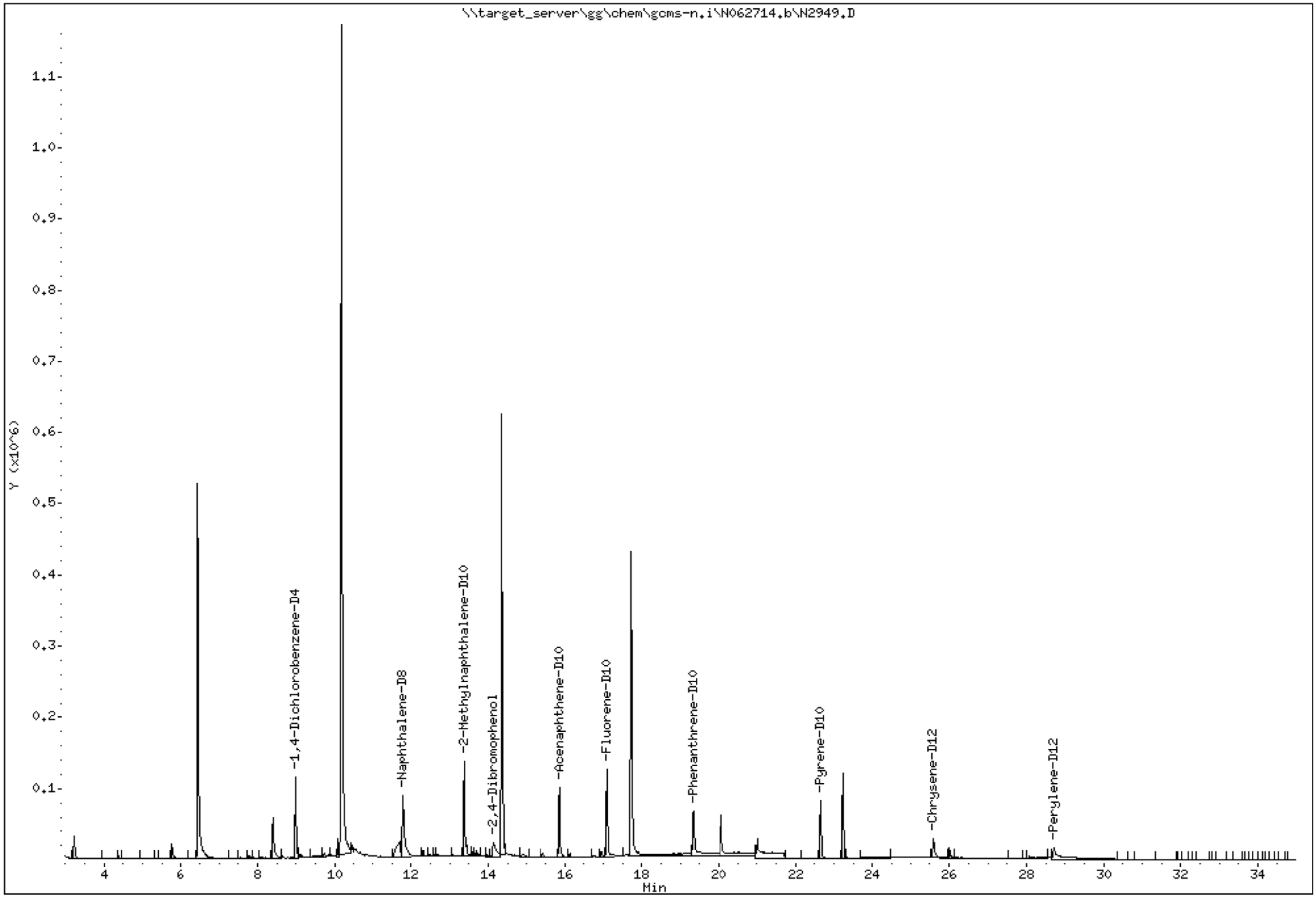
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.050	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
*	8 1,4-Dichlorobenzene-D4	152	8.971	8.971	(1.000)	73070	0.80000	(a)	
*	24 Naphthalene-D8	136	11.780	11.763	(1.000)	262791	0.80000	(a)	
$	30 2-Methylnaphthalene-D10	152	13.372	13.353	(0.843)	169946	1.12141	1.07	
$	35 2,4-Dibromophenol	252	14.145	14.107	(0.892)	69060	1.39786	1.33	
*	45 Acenaphthene-D10	164	15.855	15.842	(1.000)	100405	0.80000	(a)	
$	52 Fluorene-D10	174	17.084	17.068	(1.078)	122250	1.05723	1.01	(Q)
*	63 Phenanthrene-D10	188	19.338	19.323	(1.000)	146935	0.80000	(a)	
$	69 Pyrene-D10	212	22.646	22.646	(0.885)	125471	1.18957	1.13	
*	73 Chrysene-D12	240	25.589	25.589	(1.000)	60471	0.80000	(a)	
*	81 Perylene-D12	264	28.706	28.706	(1.000)	40039	0.80000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N062714.b\N2949.D
Date : 27-JUN-2014 18:39
Client ID: FTA-MW-11-061714 Instrument: gcms-n.i
Sample Info: SH4401-6



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Cert No E87604

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SH4401-8
Client ID: FTA-MW-12-061714
Project: NCTAMSLANT Cutler CTO
SDG: WE53-7
Lab File ID: N2950.D

Sample Date: 17-JUN-14
Received Date: 19-JUN-14
Extract Date: 23-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145278

Analysis Date: 27-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 11-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,4-Dioxane	U	0.53	ug/L	1	1	1.1	0.031	0.53
2-Chlorophenol	U	0.53	ug/L	1	1	1.1	0.30	0.53
Naphthalene	U	0.11	ug/L	1	.2	0.21	0.068	0.11
Hexachlorobutadiene	U	0.11	ug/L	1	.2	0.21	0.092	0.11
2-Methylnaphthalene	U	0.11	ug/L	1	.2	0.21	0.082	0.11
Hexachlorobenzene	U	0.11	ug/L	1	.2	0.21	0.058	0.11
Pentachlorophenol	ULL	0.53	ug/L	1	1	1.1	0.35	0.53
Phenanthrene	U	0.11	ug/L	1	.2	0.21	0.054	0.11
Pyrene	U	0.11	ug/L	1	.2	0.21	0.063	0.11
Benzo(a)anthracene	U	0.11	ug/L	1	.2	0.21	0.049	0.11
Chrysene	ULL	0.11	ug/L	1	.2	0.21	0.038	0.11
Benzo(b)fluoranthene	U	0.11	ug/L	1	.2	0.21	0.095	0.11
Benzo(a)pyrene	U	0.11	ug/L	1	.2	0.21	0.070	0.11
Indeno(1,2,3-cd)pyrene	U	0.11	ug/L	1	.2	0.21	0.055	0.11
Dibenzo(a,h)anthracene	ULL	0.11	ug/L	1	.2	0.21	0.074	0.11
1,1'-Biphenyl	ULL	0.11	ug/L	1	.2	0.21	0.069	0.11
1,2,4,5-Tetrachlorobenzene	U	0.11	ug/L	1	.2	0.21	0.11	0.11
2,2'-Oxybis(1-Chloropropane)	ULL	0.16	ug/L	1	.2	0.21	0.13	0.16
2,4,6-Trichlorophenol	U	0.53	ug/L	1	1	1.1	0.13	0.53
2,4-Dichlorophenol	U	0.53	ug/L	1	1	1.1	0.53	0.53
2,4-Dinitrophenol	U	0.53	ug/L	1	1	1.1	0.26	0.53
2,4-Dinitrotoluene	U	0.11	ug/L	1	.2	0.21	0.037	0.11
2,6-Dinitrotoluene	U	0.11	ug/L	1	.2	0.21	0.074	0.11
2-Nitroaniline	U	0.16	ug/L	1	.2	0.21	0.13	0.16
3,3'-Dichlorobenzidine	U	0.11	ug/L	1	.2	0.21	0.060	0.11
4,6-Dinitro-2-Methylphenol	U	0.80	ug/L	1	1	1.1	0.53	0.80
4-Chloroaniline	U	0.53	ug/L	1	1	1.1	0.53	0.53
3&4-Methylphenol	U	0.53	ug/L	1	1	1.1	0.47	0.53
4-Nitroaniline	U	0.11	ug/L	1	.2	0.21	0.069	0.11
Atrazine	U	0.11	ug/L	1	.2	0.21	0.040	0.11
Bis(2-Chloroethyl)Ether	UL	0.11	ug/L	1	.2	0.21	0.044	0.11
Bis(2-Ethylhexyl)Phthalate	ULL	0.53	ug/L	1	1	1.1	0.53	0.53
Dibenzofuran	U	0.11	ug/L	1	.2	0.21	0.072	0.11
Hexachlorocyclopentadiene	U	0.11	ug/L	1	.2	0.21	0.071	0.11
Hexachloroethane	U	0.11	ug/L	1	.2	0.21	0.078	0.11

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SH4401-8
Client ID: FTA-MW-12-061714
Project: NCTAMSLANT Cutler CTO
SDG: WE53-7
Lab File ID: N2950.D

Sample Date: 17-JUN-14
Received Date: 19-JUN-14
Extract Date: 23-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145278

Analysis Date: 27-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 11-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Nitrobenzene	U	0.16	ug/L	1	.2	0.21	0.14	0.16
N-Nitroso-Di-N-Propylamine	U	0.11	ug/L	1	.2	0.21	0.076	0.11
3-Nitroaniline	U	0.11	ug/L	1	.2	0.21	0.081	0.11
2-Methylnaphthalene-D10		62.4	%					
Fluorene-D10		60.9	%					
Pyrene-D10		88.0	%					
2,4-Dibromophenol		29.4	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N062714.b\N2950.D
Report Date: 11-Jul-2014 13:30

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Data file : \\target_server\gg\chem\gcms-n.i\N062714.b\N2950.D
Lab Smp Id: SH4401-8 Client Smp ID: FTA-MW-12-061714
Inj Date : 27-JUN-2014 19:22 MS Autotune Date: 12-NOV-2013 09:32
Operator : JCG Inst ID: gcms-n.i
Smp Info : SH4401-8
Misc Info : WG145527,WG145278,WG145455-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N062714.b\NSPSIM09.m
Meth Date : 27-Jun-2014 12:41 cgomez Quant Type: ISTD
Cal Date : 26-JUN-2014 13:22 Cal File: N2926.D
Als bottle: 12
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ttcutler53ocs.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

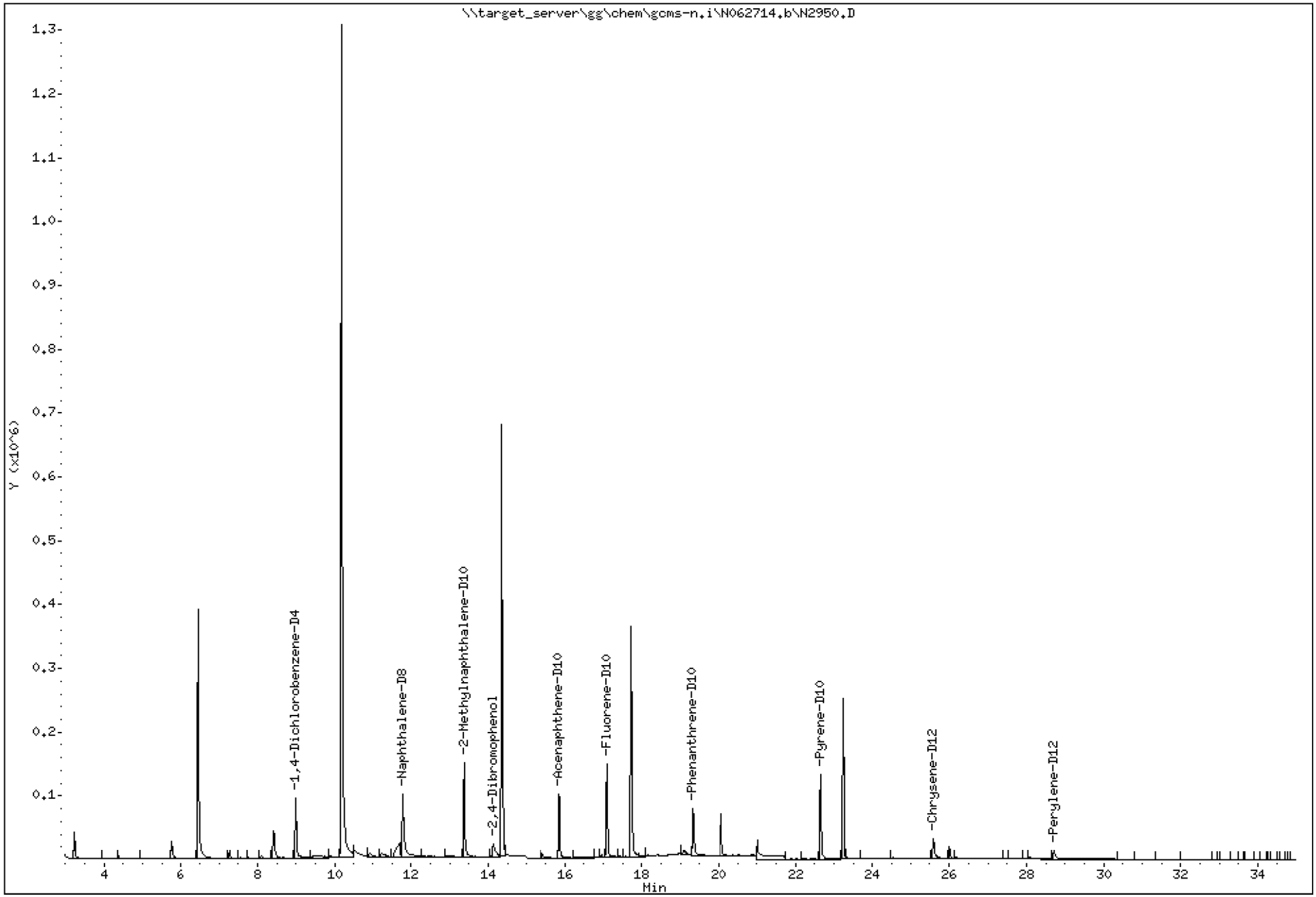
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	0.94000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
*	8 1,4-Dichlorobenzene-D4	152	8.987	8.971	(1.000)	72170	0.80000	(a)	
*	24 Naphthalene-D8	136	11.763	11.763	(1.000)	261952	0.80000	(a)	
$	30 2-Methylnaphthalene-D10	152	13.372	13.353	(0.844)	189788	1.24897	1.33	
$	35 2,4-Dibromophenol	252	14.145	14.107	(0.893)	58253	1.17594	1.25	
*	45 Acenaphthene-D10	164	15.842	15.842	(1.000)	100676	0.80000	(a)	
$	52 Fluorene-D10	174	17.085	17.068	(1.078)	141152	1.21741	1.30	(Q)
*	63 Phenanthrene-D10	188	19.323	19.323	(1.000)	142810	0.80000	(a)	
$	69 Pyrene-D10	212	22.646	22.646	(0.885)	194404	1.75940	1.87	
*	73 Chrysene-D12	240	25.589	25.589	(1.000)	63348	0.80000	(a)	
*	81 Perylene-D12	264	28.706	28.706	(1.000)	40608	0.80000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N062714.b\N2950.D
Date : 27-JUN-2014 19:22
Client ID: FTA-MW-12-061714 Instrument: gcms-n.i
Sample Info: SH4401-8



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ANALYTICAL SERVICES

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Cert No E87604

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SH4401-10
Client ID: FTA-MW-5-061814
Project: NCTAMSLANT Cutler CTO
SDG: WE53-7
Lab File ID: N2951.D

Sample Date: 18-JUN-14
Received Date: 19-JUN-14
Extract Date: 23-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145278

Analysis Date: 27-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 11-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,4-Dioxane	U	0.47	ug/L	1	1	0.94	0.027	0.47
2-Chlorophenol	U	0.47	ug/L	1	1	0.94	0.26	0.47
Naphthalene	U	0.094	ug/L	1	.2	0.19	0.060	0.094
Hexachlorobutadiene	U	0.094	ug/L	1	.2	0.19	0.082	0.094
2-Methylnaphthalene	U	0.094	ug/L	1	.2	0.19	0.073	0.094
Hexachlorobenzene	U	0.094	ug/L	1	.2	0.19	0.052	0.094
Pentachlorophenol	ULL	0.47	ug/L	1	1	0.94	0.31	0.47
Phenanthrene	U	0.094	ug/L	1	.2	0.19	0.048	0.094
Pyrene	U	0.094	ug/L	1	.2	0.19	0.056	0.094
Benzo(a)anthracene	U	0.094	ug/L	1	.2	0.19	0.043	0.094
Chrysene	ULL	0.094	ug/L	1	.2	0.19	0.034	0.094
Benzo(b)fluoranthene	U	0.094	ug/L	1	.2	0.19	0.084	0.094
Benzo(a)pyrene	U	0.094	ug/L	1	.2	0.19	0.062	0.094
Indeno(1,2,3-cd)pyrene	U	0.094	ug/L	1	.2	0.19	0.049	0.094
Dibenzo(a,h)anthracene	ULL	0.094	ug/L	1	.2	0.19	0.066	0.094
1,1'-Biphenyl	ULL	0.094	ug/L	1	.2	0.19	0.061	0.094
1,2,4,5-Tetrachlorobenzene	U	0.094	ug/L	1	.2	0.19	0.094	0.094
2,2'-Oxybis(1-Chloropropane)	ULL	0.14	ug/L	1	.2	0.19	0.11	0.14
2,4,6-Trichlorophenol	U	0.47	ug/L	1	1	0.94	0.11	0.47
2,4-Dichlorophenol	U	0.47	ug/L	1	1	0.94	0.47	0.47
2,4-Dinitrophenol	U	0.47	ug/L	1	1	0.94	0.23	0.47
2,4-Dinitrotoluene	U	0.094	ug/L	1	.2	0.19	0.033	0.094
2,6-Dinitrotoluene	U	0.094	ug/L	1	.2	0.19	0.066	0.094
2-Nitroaniline	U	0.14	ug/L	1	.2	0.19	0.11	0.14
3,3'-Dichlorobenzidine	U	0.094	ug/L	1	.2	0.19	0.053	0.094
4,6-Dinitro-2-Methylphenol	U	0.71	ug/L	1	1	0.94	0.47	0.71
4-Chloroaniline	U	0.47	ug/L	1	1	0.94	0.47	0.47
3&4-Methylphenol	U	0.47	ug/L	1	1	0.94	0.42	0.47
4-Nitroaniline	U	0.094	ug/L	1	.2	0.19	0.061	0.094
Atrazine	U	0.094	ug/L	1	.2	0.19	0.036	0.094
Bis(2-Chloroethyl)Ether	UL	0.094	ug/L	1	.2	0.19	0.039	0.094
Bis(2-Ethylhexyl)Phthalate	ULL	0.47	ug/L	1	1	0.94	0.47	0.47
Dibenzofuran	U	0.094	ug/L	1	.2	0.19	0.064	0.094
Hexachlorocyclopentadiene	U	0.094	ug/L	1	.2	0.19	0.063	0.094
Hexachloroethane	U	0.094	ug/L	1	.2	0.19	0.069	0.094

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SH4401-10
Client ID: FTA-MW-5-061814
Project: NCTAMSLANT Cutler CTO
SDG: WE53-7
Lab File ID: N2951.D

Sample Date: 18-JUN-14
Received Date: 19-JUN-14
Extract Date: 23-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145278

Analysis Date: 27-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 11-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Nitrobenzene	U	0.14	ug/L	1	.2	0.19	0.12	0.14
N-Nitroso-Di-N-Propylamine	U	0.094	ug/L	1	.2	0.19	0.068	0.094
3-Nitroaniline	U	0.094	ug/L	1	.2	0.19	0.072	0.094
2-Methylnaphthalene-D10		63.6	%					
Fluorene-D10		68.5	%					
Pyrene-D10		97.1	%					
2,4-Dibromophenol		55.9	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N062714.b\N2951.D
Report Date: 11-Jul-2014 13:30

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N062714.b\N2951.D
Lab Smp Id: SH4401-10 Client Smp ID: FTA-MW-5-061814
Inj Date : 27-JUN-2014 20:05 MS Autotune Date: 12-NOV-2013 09:32
Operator : JCG Inst ID: gcms-n.i
Smp Info : SH4401-10
Misc Info : WG145527,WG145278,WG145455-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N062714.b\NSPSIM09.m
Meth Date : 27-Jun-2014 12:41 cgomez Quant Type: ISTD
Cal Date : 26-JUN-2014 13:22 Cal File: N2926.D
Als bottle: 13
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ttcutler53ocs.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

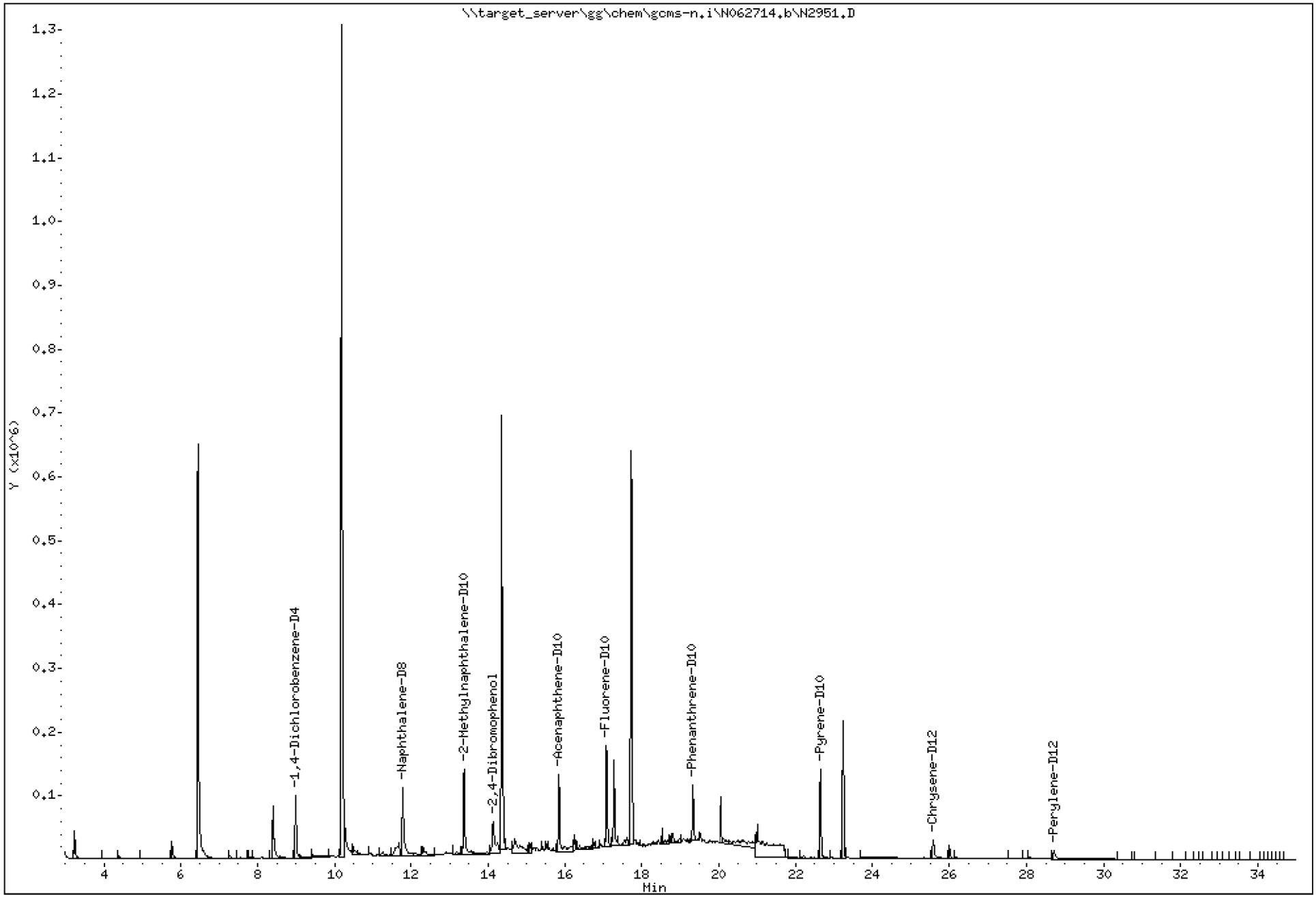
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.060	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
*	8 1,4-Dichlorobenzene-D4	152	8.987	8.971	(1.000)	69849	0.80000	(a)	
*	24 Naphthalene-D8	136	11.763	11.763	(1.000)	243932	0.80000	(a)	
$	30 2-Methylnaphthalene-D10	152	13.372	13.353	(0.844)	182942	1.27198	1.20	
$	35 2,4-Dibromophenol	252	14.126	14.107	(0.892)	104764	2.23440	2.11	
*	45 Acenaphthene-D10	164	15.842	15.842	(1.000)	95289	0.80000	(a)	
$	52 Fluorene-D10	174	17.068	17.068	(1.077)	150410	1.37060	1.29	(Q)
*	63 Phenanthrene-D10	188	19.323	19.323	(1.000)	130542	0.80000	(a)	
$	69 Pyrene-D10	212	22.646	22.646	(0.885)	191120	1.94166	1.83	
*	73 Chrysene-D12	240	25.589	25.589	(1.000)	56432	0.80000	(a)	
*	81 Perylene-D12	264	28.706	28.706	(1.000)	40056	0.80000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N062714.b\N2951.D
Date : 27-JUN-2014 20:05
Client ID: FTA-MW-5-061814 Instrument: gcms-n.i
Sample Info: SH4401-10



Katahdin Analytical Services 6000037

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SH4401-12
Client ID: FTA-MW-203-061814
Project: NCTAMSLANT Cutler CTO
SDG: WE53-7
Lab File ID: N2952.D

Sample Date: 18-JUN-14
Received Date: 19-JUN-14
Extract Date: 23-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145278

Analysis Date: 27-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 11-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,4-Dioxane	U	0.47	ug/L	1	1	0.94	0.027	0.47
2-Chlorophenol	U	0.47	ug/L	1	1	0.94	0.26	0.47
Naphthalene	U	0.094	ug/L	1	.2	0.19	0.060	0.094
Hexachlorobutadiene	U	0.094	ug/L	1	.2	0.19	0.082	0.094
2-Methylnaphthalene	U	0.094	ug/L	1	.2	0.19	0.073	0.094
Hexachlorobenzene	U	0.094	ug/L	1	.2	0.19	0.052	0.094
Pentachlorophenol	ULL	0.47	ug/L	1	1	0.94	0.31	0.47
Phenanthrene	U	0.094	ug/L	1	.2	0.19	0.048	0.094
Pyrene	U	0.094	ug/L	1	.2	0.19	0.056	0.094
Benzo(a)anthracene	U	0.094	ug/L	1	.2	0.19	0.043	0.094
Chrysene	ULL	0.094	ug/L	1	.2	0.19	0.034	0.094
Benzo(b)fluoranthene	U	0.094	ug/L	1	.2	0.19	0.084	0.094
Benzo(a)pyrene	U	0.094	ug/L	1	.2	0.19	0.062	0.094
Indeno(1,2,3-cd)pyrene	U	0.094	ug/L	1	.2	0.19	0.049	0.094
Dibenzo(a,h)anthracene	ULL	0.094	ug/L	1	.2	0.19	0.066	0.094
1,1'-Biphenyl	ULL	0.094	ug/L	1	.2	0.19	0.061	0.094
1,2,4,5-Tetrachlorobenzene	U	0.094	ug/L	1	.2	0.19	0.094	0.094
2,2'-Oxybis(1-Chloropropane)	ULL	0.14	ug/L	1	.2	0.19	0.11	0.14
2,4,6-Trichlorophenol	U	0.47	ug/L	1	1	0.94	0.11	0.47
2,4-Dichlorophenol	U	0.47	ug/L	1	1	0.94	0.47	0.47
2,4-Dinitrophenol	U	0.47	ug/L	1	1	0.94	0.23	0.47
2,4-Dinitrotoluene	U	0.094	ug/L	1	.2	0.19	0.033	0.094
2,6-Dinitrotoluene	U	0.094	ug/L	1	.2	0.19	0.066	0.094
2-Nitroaniline	U	0.14	ug/L	1	.2	0.19	0.11	0.14
3,3'-Dichlorobenzidine	U	0.094	ug/L	1	.2	0.19	0.053	0.094
4,6-Dinitro-2-Methylphenol	U	0.71	ug/L	1	1	0.94	0.47	0.71
4-Chloroaniline	U	0.47	ug/L	1	1	0.94	0.47	0.47
3&4-Methylphenol	U	0.47	ug/L	1	1	0.94	0.42	0.47
4-Nitroaniline	U	0.094	ug/L	1	.2	0.19	0.061	0.094
Atrazine	U	0.094	ug/L	1	.2	0.19	0.036	0.094
Bis(2-Chloroethyl)Ether	UL	0.094	ug/L	1	.2	0.19	0.039	0.094
Bis(2-Ethylhexyl)Phthalate	ULL	0.47	ug/L	1	1	0.94	0.47	0.47
Dibenzofuran	U	0.094	ug/L	1	.2	0.19	0.064	0.094
Hexachlorocyclopentadiene	U	0.094	ug/L	1	.2	0.19	0.063	0.094
Hexachloroethane	U	0.094	ug/L	1	.2	0.19	0.069	0.094

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SH4401-12
Client ID: FTA-MW-203-061814
Project: NCTAMSLANT Cutler CTO
SDG: WE53-7
Lab File ID: N2952.D

Sample Date: 18-JUN-14
Received Date: 19-JUN-14
Extract Date: 23-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145278

Analysis Date: 27-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 11-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Nitrobenzene	U	0.14	ug/L	1	.2	0.19	0.12	0.14
N-Nitroso-Di-N-Propylamine	U	0.094	ug/L	1	.2	0.19	0.068	0.094
3-Nitroaniline	U	0.094	ug/L	1	.2	0.19	0.072	0.094
2-Methylnaphthalene-D10		57.7	%					
Fluorene-D10		61.8	%					
Pyrene-D10		86.9	%					
2,4-Dibromophenol		51.2	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N062714.b\N2952.D
Report Date: 11-Jul-2014 13:30

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N062714.b\N2952.D
Lab Smp Id: SH4401-12 Client Smp ID: FTA-MW-203-061814
Inj Date : 27-JUN-2014 20:48 MS Autotune Date: 12-NOV-2013 09:32
Operator : JCG Inst ID: gcms-n.i
Smp Info : SH4401-12
Misc Info : WG145527,WG145278,WG145455-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N062714.b\NSPSIM09.m
Meth Date : 27-Jun-2014 12:41 cgomez Quant Type: ISTD
Cal Date : 26-JUN-2014 13:22 Cal File: N2926.D
Als bottle: 14
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ttcutler53ocs.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

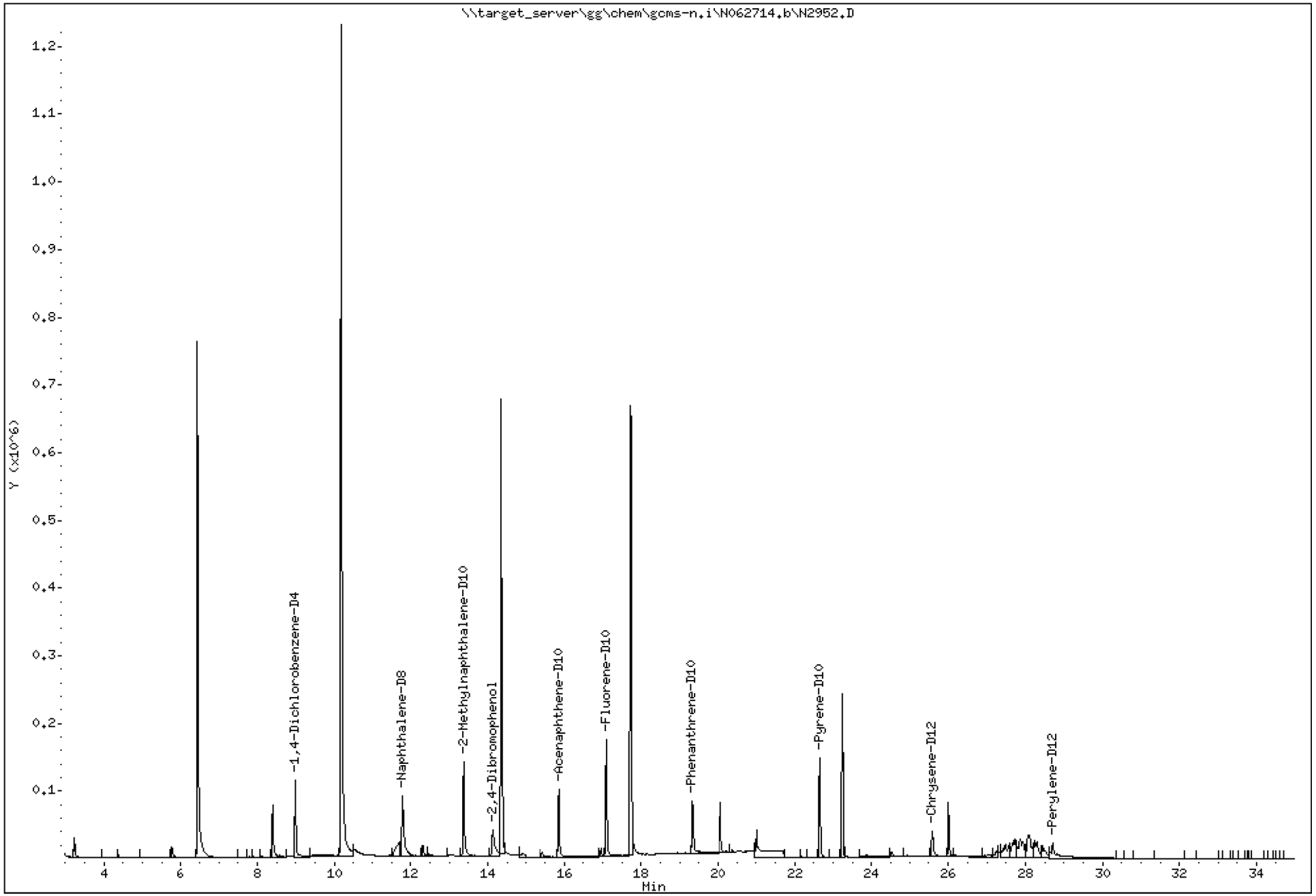
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.060	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
*	8 1,4-Dichlorobenzene-D4	152	8.971	8.971	(1.000)	73755	0.80000	(a)	
*	24 Naphthalene-D8	136	11.780	11.763	(1.000)	260101	0.80000	(a)	
$	30 2-Methylnaphthalene-D10	152	13.372	13.353	(0.843)	185666	1.15341	1.09	
$	35 2,4-Dibromophenol	252	14.126	14.107	(0.891)	107529	2.04907	1.93	
*	45 Acenaphthene-D10	164	15.855	15.842	(1.000)	106650	0.80000	(a)	
$	52 Fluorene-D10	174	17.084	17.068	(1.078)	151932	1.23699	1.17	(Q)
*	63 Phenanthrene-D10	188	19.323	19.323	(1.000)	159915	0.80000	(a)	
$	69 Pyrene-D10	212	22.646	22.646	(0.885)	210376	1.73777	1.64	
*	73 Chrysene-D12	240	25.589	25.589	(1.000)	69406	0.80000	(a)	
*	81 Perylene-D12	264	28.706	28.706	(1.000)	45814	0.80000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N062714.b\N2952.D
Date : 27-JUN-2014 20:48
Client ID: FTA-MW-203-061814 Instrument: gcms-n.i
Sample Info: SH4401-12



Katahdin Analytical Services 6000041

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SH4401-14
Client ID: FTA-GW-DUP01-061814
Project: NCTAMSLANT Cutler CTO
SDG: WE53-7
Lab File ID: N2953.D

Sample Date: 18-JUN-14
Received Date: 19-JUN-14
Extract Date: 23-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145278

Analysis Date: 27-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 11-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,4-Dioxane	U	0.47	ug/L	1	1	0.94	0.027	0.47
2-Chlorophenol	U	0.47	ug/L	1	1	0.94	0.26	0.47
Naphthalene	U	0.094	ug/L	1	.2	0.19	0.060	0.094
Hexachlorobutadiene	U	0.094	ug/L	1	.2	0.19	0.082	0.094
2-Methylnaphthalene	U	0.094	ug/L	1	.2	0.19	0.073	0.094
Hexachlorobenzene	U	0.094	ug/L	1	.2	0.19	0.052	0.094
Pentachlorophenol	ULL	0.47	ug/L	1	1	0.94	0.31	0.47
Phenanthrene	U	0.094	ug/L	1	.2	0.19	0.048	0.094
Pyrene	U	0.094	ug/L	1	.2	0.19	0.056	0.094
Benzo(a)anthracene	U	0.094	ug/L	1	.2	0.19	0.043	0.094
Chrysene	ULL	0.094	ug/L	1	.2	0.19	0.034	0.094
Benzo(b)fluoranthene	U	0.094	ug/L	1	.2	0.19	0.084	0.094
Benzo(a)pyrene	U	0.094	ug/L	1	.2	0.19	0.062	0.094
Indeno(1,2,3-cd)pyrene	U	0.094	ug/L	1	.2	0.19	0.049	0.094
Dibenzo(a,h)anthracene	ULL	0.094	ug/L	1	.2	0.19	0.066	0.094
1,1'-Biphenyl	ULL	0.094	ug/L	1	.2	0.19	0.061	0.094
1,2,4,5-Tetrachlorobenzene	U	0.094	ug/L	1	.2	0.19	0.094	0.094
2,2'-Oxybis(1-Chloropropane)	ULL	0.14	ug/L	1	.2	0.19	0.11	0.14
2,4,6-Trichlorophenol	U	0.47	ug/L	1	1	0.94	0.11	0.47
2,4-Dichlorophenol	U	0.47	ug/L	1	1	0.94	0.47	0.47
2,4-Dinitrophenol	U	0.47	ug/L	1	1	0.94	0.23	0.47
2,4-Dinitrotoluene	U	0.094	ug/L	1	.2	0.19	0.033	0.094
2,6-Dinitrotoluene	U	0.094	ug/L	1	.2	0.19	0.066	0.094
2-Nitroaniline	U	0.14	ug/L	1	.2	0.19	0.11	0.14
3,3'-Dichlorobenzidine	U	0.094	ug/L	1	.2	0.19	0.053	0.094
4,6-Dinitro-2-Methylphenol	U	0.71	ug/L	1	1	0.94	0.47	0.71
4-Chloroaniline	U	0.47	ug/L	1	1	0.94	0.47	0.47
3&4-Methylphenol	U	0.47	ug/L	1	1	0.94	0.42	0.47
4-Nitroaniline	U	0.094	ug/L	1	.2	0.19	0.061	0.094
Atrazine	U	0.094	ug/L	1	.2	0.19	0.036	0.094
Bis(2-Chloroethyl)Ether	UL	0.094	ug/L	1	.2	0.19	0.039	0.094
Bis(2-Ethylhexyl)Phthalate	ULL	0.47	ug/L	1	1	0.94	0.47	0.47
Dibenzofuran	U	0.094	ug/L	1	.2	0.19	0.064	0.094
Hexachlorocyclopentadiene	J	0.11	ug/L	1	.2	0.19	0.063	0.094
Hexachloroethane	U	0.094	ug/L	1	.2	0.19	0.069	0.094

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SH4401-14
Client ID: FTA-GW-DUP01-061814
Project: NCTAMSLANT Cutler CTO
SDG: WE53-7
Lab File ID: N2953.D

Sample Date: 18-JUN-14
Received Date: 19-JUN-14
Extract Date: 23-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145278

Analysis Date: 27-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 11-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Nitrobenzene	U	0.14	ug/L	1	.2	0.19	0.12	0.14
N-Nitroso-Di-N-Propylamine	U	0.094	ug/L	1	.2	0.19	0.068	0.094
3-Nitroaniline	U	0.094	ug/L	1	.2	0.19	0.072	0.094
2-Methylnaphthalene-D10		64.4	%					
Fluorene-D10		67.3	%					
Pyrene-D10		94.8	%					
2,4-Dibromophenol		62.4	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N062714.b\N2953.D
Report Date: 11-Jul-2014 13:30

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N062714.b\N2953.D
Lab Smp Id: SH4401-14 Client Smp ID: FTA-GW-DUP01-061814
Inj Date : 27-JUN-2014 21:31 MS Autotune Date: 12-NOV-2013 09:32
Operator : JCG Inst ID: gcms-n.i
Smp Info : SH4401-14
Misc Info : WG145527,WG145278,WG145455-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N062714.b\NSPSIM09.m
Meth Date : 27-Jun-2014 12:41 cgomez Quant Type: ISTD
Cal Date : 26-JUN-2014 13:22 Cal File: N2926.D
Als bottle: 15
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ttcutler53ocs.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.060	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

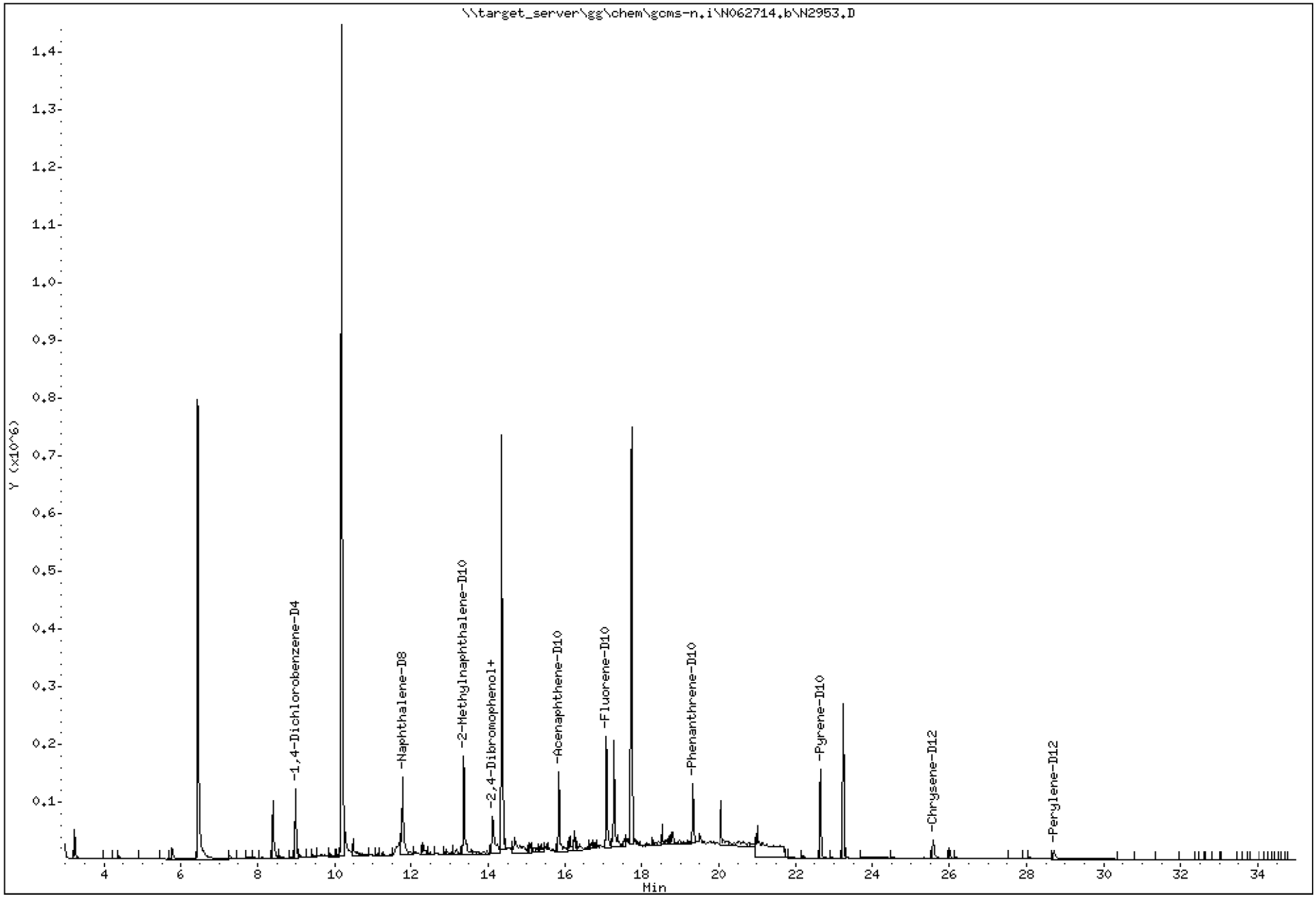
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
*	8 1,4-Dichlorobenzene-D4	152	8.971	8.971	(1.000)	74940	0.80000	(a)	
*	24 Naphthalene-D8	136	11.763	11.763	(1.000)	271674	0.80000	(a)	
$	30 2-Methylnaphthalene-D10	152	13.353	13.353	(0.843)	201599	1.28878	1.22	
	34 Hexachlorocyclopentadiene	237	13.862	13.862	(0.875)	239	0.11242	0.106(aM)	M3
$	35 2,4-Dibromophenol	252	14.126	14.107	(0.892)	127340	2.49711	2.36	
*	45 Acenaphthene-D10	164	15.842	15.842	(1.000)	103638	0.80000	(a)	
$	52 Fluorene-D10	174	17.068	17.068	(1.077)	160563	1.34525	1.27(Q)	
*	63 Phenanthrene-D10	188	19.323	19.323	(1.000)	145139	0.80000	(a)	
$	69 Pyrene-D10	212	22.646	22.646	(0.885)	211366	1.89630	1.79	
*	73 Chrysene-D12	240	25.589	25.589	(1.000)	63903	0.80000	(a)	
*	81 Perylene-D12	264	28.706	28.706	(1.000)	43511	0.80000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.

2:33 pm, Jul 11, 2014

Data File: \\target_server\gg\chem\gcms-n.i\N062714.b\N2953.D
Date : 27-JUN-2014 21:31
Client ID: FTA-GW-DUP01-061814 Instrument: gcms-n.i
Sample Info: SH4401-14



Katahdin Analytical Services 6000045

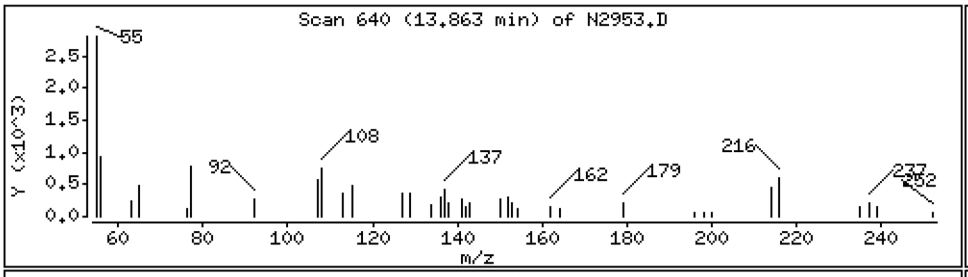
Data File: \\target_server\gg\chem\gcms-n.i\N062714.b\N2953.D

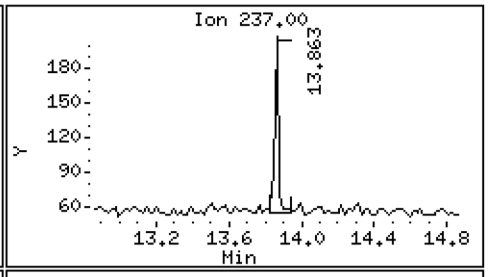
Date : 27-JUN-2014 21:31

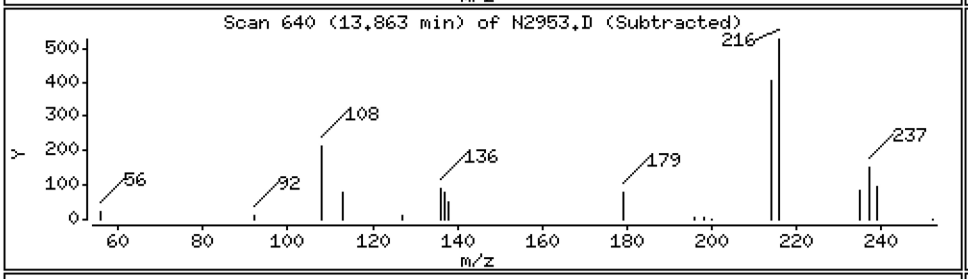
Client ID: FTA-GW-DUP01-061814 Instrument: gcms-n.i

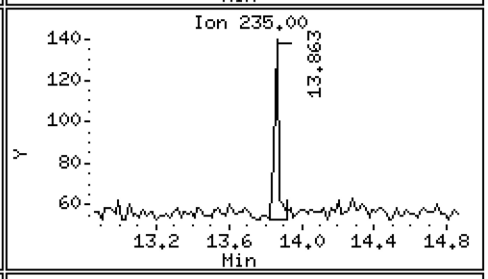
Sample Info: SH4401-14

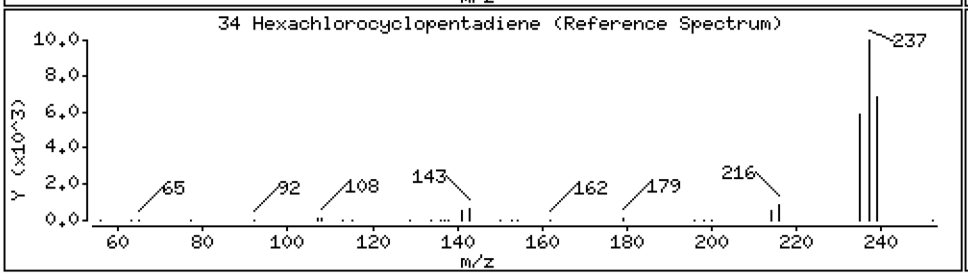
34 Hexachlorocyclopentadiene Concentration: 0.106 ug/L

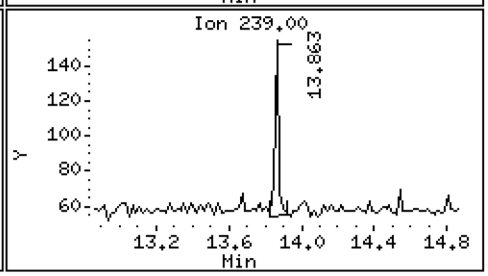












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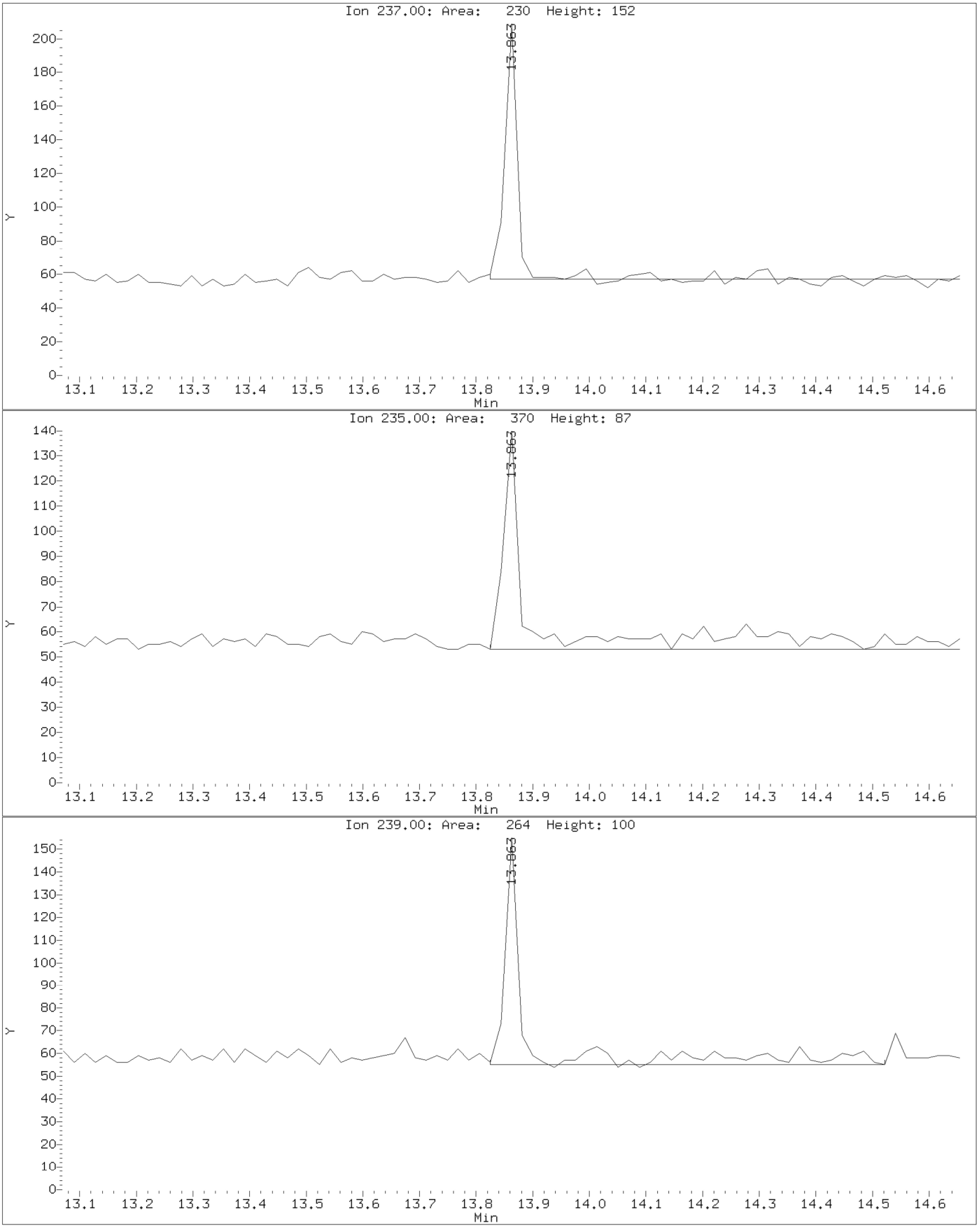
Injection Date: 27-JUN-2014 21:31
Instrument: gcms-n.i
Client Sample ID: FTA-GW-DUP01-061814

Compound: Hexachlorocyclopentadiene
CAS Number: 77-47-4

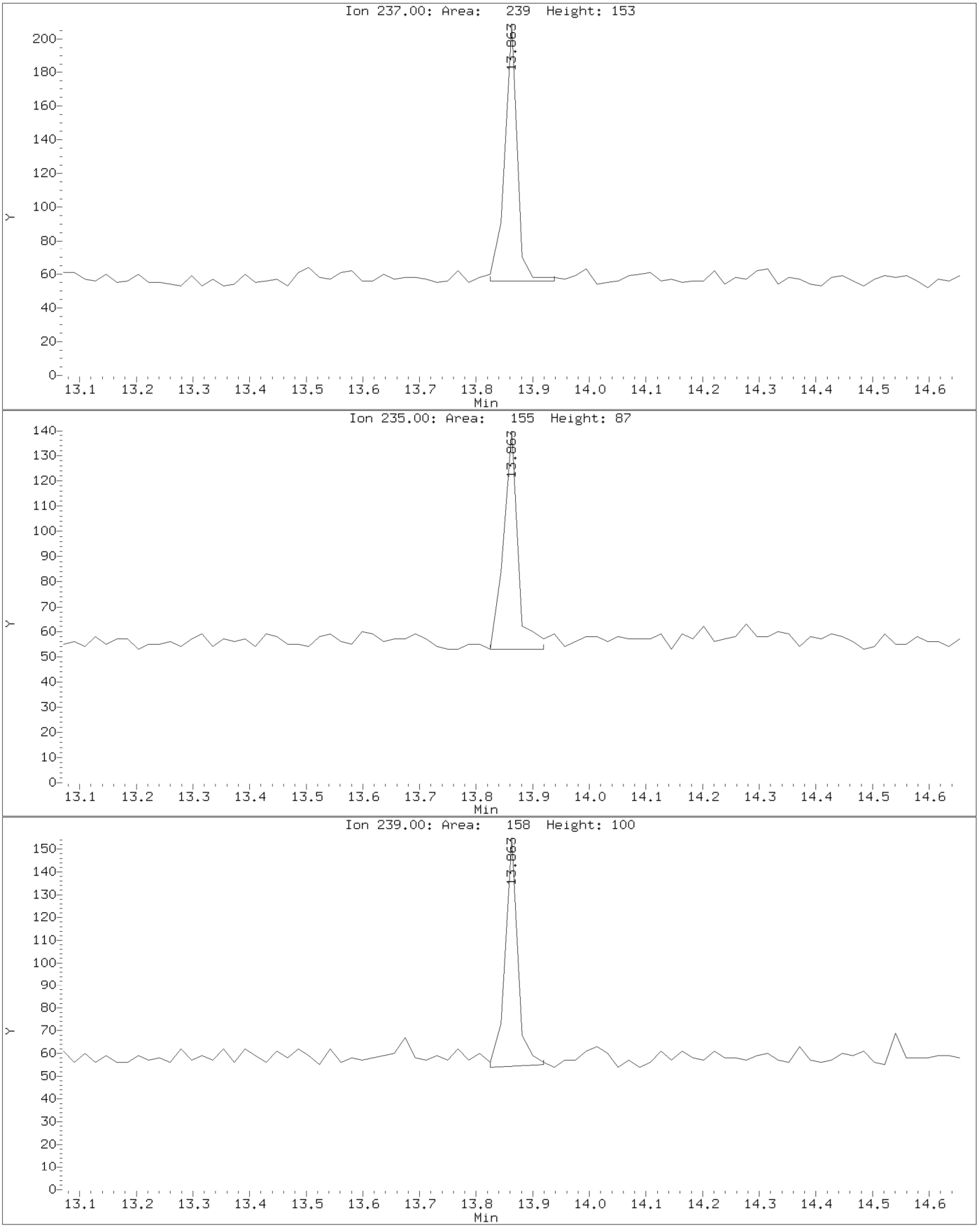
BEFORE MANUAL INTEGRATION



Data File: \\target_server\gg\chem\gcms-n.i\N062714.b\N2953.D
Injection Date: 27-JUN-2014 21:31
Instrument: gcms-n.i
Client Sample ID: FTA-GW-DUP01-061814

Compound: Hexachlorocyclopentadiene
CAS Number: 77-47-4

AFTER MANUAL INTEGRATION



Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SH4401-16
Client ID: FTA-MW-218-061814
Project: NCTAMSLANT Cutler CTO
SDG: WE53-7
Lab File ID: N2954.D

Sample Date: 18-JUN-14
Received Date: 19-JUN-14
Extract Date: 23-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145278

Analysis Date: 27-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 11-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,4-Dioxane	U	0.48	ug/L	1	1	0.97	0.028	0.48
2-Chlorophenol	U	0.48	ug/L	1	1	0.97	0.27	0.48
Naphthalene	U	0.097	ug/L	1	.2	0.19	0.062	0.097
Hexachlorobutadiene	U	0.097	ug/L	1	.2	0.19	0.084	0.097
2-Methylnaphthalene	U	0.097	ug/L	1	.2	0.19	0.075	0.097
Hexachlorobenzene	U	0.097	ug/L	1	.2	0.19	0.053	0.097
Pentachlorophenol	ULL	0.48	ug/L	1	1	0.97	0.32	0.48
Phenanthrene	U	0.097	ug/L	1	.2	0.19	0.050	0.097
Pyrene	U	0.097	ug/L	1	.2	0.19	0.057	0.097
Benzo(a)anthracene	U	0.097	ug/L	1	.2	0.19	0.045	0.097
Chrysene	ULL	0.097	ug/L	1	.2	0.19	0.035	0.097
Benzo(b)fluoranthene	U	0.097	ug/L	1	.2	0.19	0.086	0.097
Benzo(a)pyrene	U	0.097	ug/L	1	.2	0.19	0.064	0.097
Indeno(1,2,3-cd)pyrene	U	0.097	ug/L	1	.2	0.19	0.050	0.097
Dibenzo(a,h)anthracene	ULL	0.097	ug/L	1	.2	0.19	0.068	0.097
1,1'-Biphenyl	ULL	0.097	ug/L	1	.2	0.19	0.063	0.097
1,2,4,5-Tetrachlorobenzene	U	0.097	ug/L	1	.2	0.19	0.097	0.097
2,2'-Oxybis(1-Chloropropane)	ULL	0.14	ug/L	1	.2	0.19	0.12	0.14
2,4,6-Trichlorophenol	U	0.48	ug/L	1	1	0.97	0.12	0.48
2,4-Dichlorophenol	U	0.48	ug/L	1	1	0.97	0.48	0.48
2,4-Dinitrophenol	U	0.48	ug/L	1	1	0.97	0.23	0.48
2,4-Dinitrotoluene	U	0.097	ug/L	1	.2	0.19	0.034	0.097
2,6-Dinitrotoluene	U	0.097	ug/L	1	.2	0.19	0.068	0.097
2-Nitroaniline	U	0.14	ug/L	1	.2	0.19	0.12	0.14
3,3'-Dichlorobenzidine	U	0.097	ug/L	1	.2	0.19	0.054	0.097
4,6-Dinitro-2-Methylphenol	U	0.73	ug/L	1	1	0.97	0.48	0.73
4-Chloroaniline	U	0.48	ug/L	1	1	0.97	0.48	0.48
3&4-Methylphenol	U	0.48	ug/L	1	1	0.97	0.43	0.48
4-Nitroaniline	U	0.097	ug/L	1	.2	0.19	0.063	0.097
Atrazine	U	0.097	ug/L	1	.2	0.19	0.037	0.097
Bis(2-Chloroethyl)Ether	UL	0.097	ug/L	1	.2	0.19	0.040	0.097
Bis(2-Ethylhexyl)Phthalate	ULL	0.48	ug/L	1	1	0.97	0.48	0.48
Dibenzofuran	U	0.097	ug/L	1	.2	0.19	0.066	0.097
Hexachlorocyclopentadiene	U	0.097	ug/L	1	.2	0.19	0.065	0.097
Hexachloroethane	U	0.097	ug/L	1	.2	0.19	0.071	0.097

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SH4401-16
Client ID: FTA-MW-218-061814
Project: NCTAMSLANT Cutler CTO
SDG: WE53-7
Lab File ID: N2954.D

Sample Date: 18-JUN-14
Received Date: 19-JUN-14
Extract Date: 23-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145278

Analysis Date: 27-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 11-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Nitrobenzene	U	0.14	ug/L	1	.2	0.19	0.13	0.14
N-Nitroso-Di-N-Propylamine	U	0.097	ug/L	1	.2	0.19	0.070	0.097
3-Nitroaniline	U	0.097	ug/L	1	.2	0.19	0.074	0.097
2-Methylnaphthalene-D10		55.8	%					
Fluorene-D10		55.2	%					
Pyrene-D10		91.2	%					
2,4-Dibromophenol		52.3	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N062714.b\N2954.D
Report Date: 11-Jul-2014 13:30

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N062714.b\N2954.D
Lab Smp Id: SH4401-16 Client Smp ID: FTA-MW-218-061814
Inj Date : 27-JUN-2014 22:15 MS Autotune Date: 12-NOV-2013 09:32
Operator : JCG Inst ID: gcms-n.i
Smp Info : SH4401-16
Misc Info : WG145527,WG145278,WG145455-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N062714.b\NSPSIM09.m
Meth Date : 27-Jun-2014 12:41 cgomez Quant Type: ISTD
Cal Date : 26-JUN-2014 13:22 Cal File: N2926.D
Als bottle: 16
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ttcutler53ocs.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

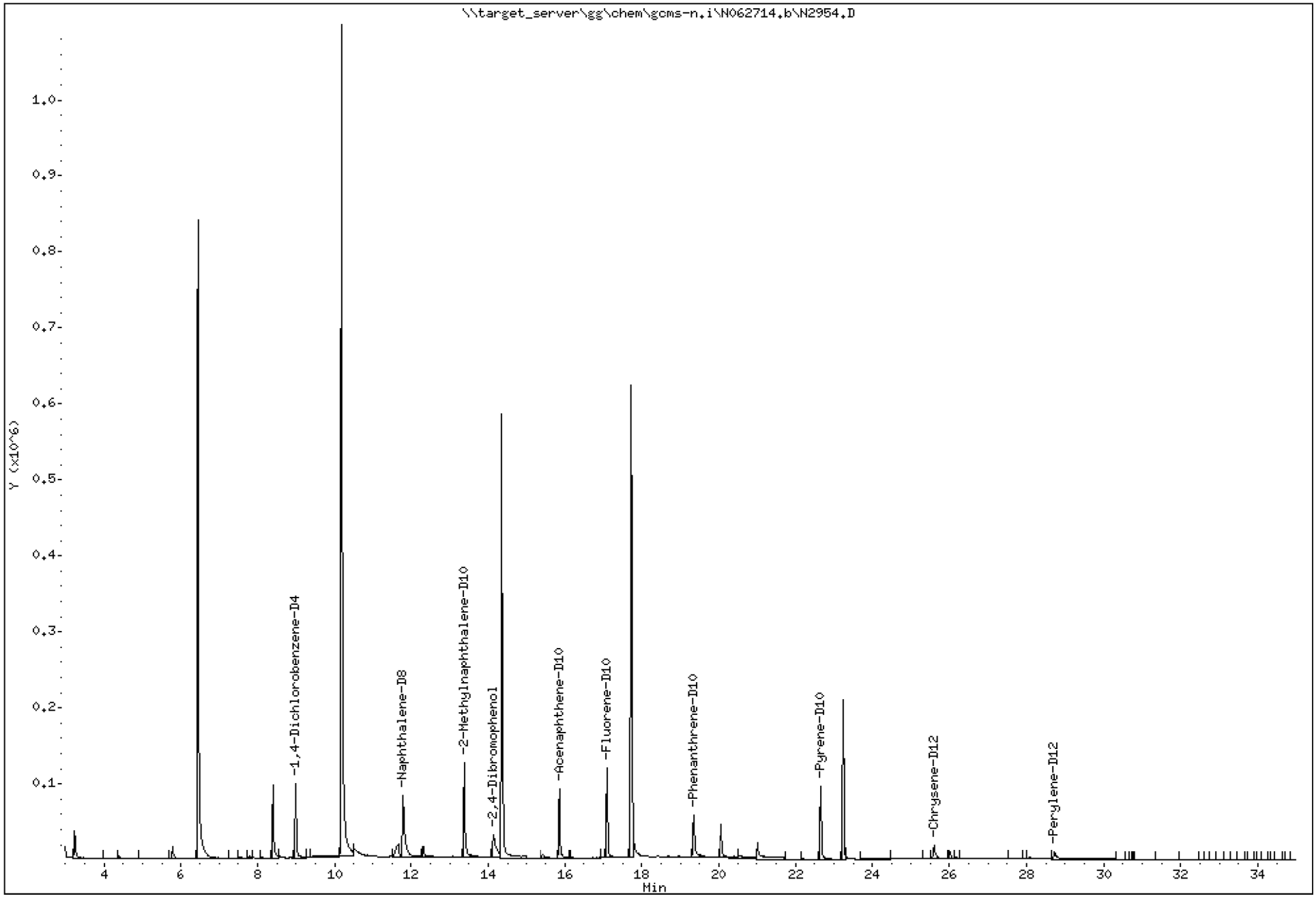
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.030	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
*	8 1,4-Dichlorobenzene-D4	152	8.987	8.971	(1.000)	70681	0.80000	(a)	
*	24 Naphthalene-D8	136	11.780	11.763	(1.000)	252431	0.80000	(a)	
$	30 2-Methylnaphthalene-D10	152	13.372	13.353	(0.843)	160381	1.11617	1.08	
$	35 2,4-Dibromophenol	252	14.145	14.107	(0.892)	98014	2.09242	2.03	
*	45 Acenaphthene-D10	164	15.855	15.842	(1.000)	95199	0.80000	(a)	
$	52 Fluorene-D10	174	17.084	17.068	(1.078)	121030	1.10392	1.07	(Q)
*	63 Phenanthrene-D10	188	19.338	19.323	(1.000)	133861	0.80000	(a)	
$	69 Pyrene-D10	212	22.646	22.646	(0.885)	159240	1.82458	1.77	
*	73 Chrysene-D12	240	25.603	25.589	(1.000)	50036	0.80000	(a)	
*	81 Perylene-D12	264	28.723	28.706	(1.000)	34068	0.80000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N062714.b\N2954.D
Date : 27-JUN-2014 22:15
Client ID: FTA-MW-218-061814 Instrument: gcms-n.i
Sample Info: SH4401-16



Katahdin Analytical Services 6000052

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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SH4401-18
Client ID: FTA-MW-206-061814
Project: NCTAMSLANT Cutler CTO
SDG: WE53-7
Lab File ID: N2955.D

Sample Date: 18-JUN-14
Received Date: 19-JUN-14
Extract Date: 23-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145278

Analysis Date: 27-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 11-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,4-Dioxane	U	0.47	ug/L	1	1	0.94	0.027	0.47
2-Chlorophenol	U	0.47	ug/L	1	1	0.94	0.26	0.47
Naphthalene	U	0.094	ug/L	1	.2	0.19	0.060	0.094
Hexachlorobutadiene	U	0.094	ug/L	1	.2	0.19	0.082	0.094
2-Methylnaphthalene	U	0.094	ug/L	1	.2	0.19	0.073	0.094
Hexachlorobenzene	U	0.094	ug/L	1	.2	0.19	0.052	0.094
Pentachlorophenol	ULL	0.47	ug/L	1	1	0.94	0.31	0.47
Phenanthrene	U	0.094	ug/L	1	.2	0.19	0.048	0.094
Pyrene	U	0.094	ug/L	1	.2	0.19	0.056	0.094
Benzo(a)anthracene	U	0.094	ug/L	1	.2	0.19	0.043	0.094
Chrysene	ULL	0.094	ug/L	1	.2	0.19	0.034	0.094
Benzo(b)fluoranthene	U	0.094	ug/L	1	.2	0.19	0.084	0.094
Benzo(a)pyrene	U	0.094	ug/L	1	.2	0.19	0.062	0.094
Indeno(1,2,3-cd)pyrene	U	0.094	ug/L	1	.2	0.19	0.049	0.094
Dibenzo(a,h)anthracene	ULL	0.094	ug/L	1	.2	0.19	0.066	0.094
1,1'-Biphenyl	ULL	0.094	ug/L	1	.2	0.19	0.061	0.094
1,2,4,5-Tetrachlorobenzene	U	0.094	ug/L	1	.2	0.19	0.094	0.094
2,2'-Oxybis(1-Chloropropane)	ULL	0.14	ug/L	1	.2	0.19	0.11	0.14
2,4,6-Trichlorophenol	U	0.47	ug/L	1	1	0.94	0.11	0.47
2,4-Dichlorophenol	U	0.47	ug/L	1	1	0.94	0.47	0.47
2,4-Dinitrophenol	U	0.47	ug/L	1	1	0.94	0.23	0.47
2,4-Dinitrotoluene	U	0.094	ug/L	1	.2	0.19	0.033	0.094
2,6-Dinitrotoluene	U	0.094	ug/L	1	.2	0.19	0.066	0.094
2-Nitroaniline	U	0.14	ug/L	1	.2	0.19	0.11	0.14
3,3'-Dichlorobenzidine	U	0.094	ug/L	1	.2	0.19	0.053	0.094
4,6-Dinitro-2-Methylphenol	U	0.71	ug/L	1	1	0.94	0.47	0.71
4-Chloroaniline	U	0.47	ug/L	1	1	0.94	0.47	0.47
3&4-Methylphenol	U	0.47	ug/L	1	1	0.94	0.42	0.47
4-Nitroaniline	U	0.094	ug/L	1	.2	0.19	0.061	0.094
Atrazine	U	0.094	ug/L	1	.2	0.19	0.036	0.094
Bis(2-Chloroethyl)Ether	UL	0.094	ug/L	1	.2	0.19	0.039	0.094
Bis(2-Ethylhexyl)Phthalate	ULL	0.47	ug/L	1	1	0.94	0.47	0.47
Dibenzofuran	U	0.094	ug/L	1	.2	0.19	0.064	0.094
Hexachlorocyclopentadiene	U	0.094	ug/L	1	.2	0.19	0.063	0.094
Hexachloroethane	U	0.094	ug/L	1	.2	0.19	0.069	0.094

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SH4401-18
Client ID: FTA-MW-206-061814
Project: NCTAMSLANT Cutler CTO
SDG: WE53-7
Lab File ID: N2955.D

Sample Date: 18-JUN-14
Received Date: 19-JUN-14
Extract Date: 23-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145278

Analysis Date: 27-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 11-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Nitrobenzene	U	0.14	ug/L	1	.2	0.19	0.12	0.14
N-Nitroso-Di-N-Propylamine	U	0.094	ug/L	1	.2	0.19	0.068	0.094
3-Nitroaniline	U	0.094	ug/L	1	.2	0.19	0.072	0.094
2-Methylnaphthalene-D10		55.5	%					
Fluorene-D10		57.4	%					
Pyrene-D10		93.9	%					
2,4-Dibromophenol		51.6	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N062714.b\N2955.D
Report Date: 11-Jul-2014 13:30

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N062714.b\N2955.D
Lab Smp Id: SH4401-18 Client Smp ID: FTA-MW-206-061814
Inj Date : 27-JUN-2014 22:58 MS Autotune Date: 12-NOV-2013 09:32
Operator : JCG Inst ID: gcms-n.i
Smp Info : SH4401-18
Misc Info : WG145527,WG145278,WG145455-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N062714.b\NSPSIM09.m
Meth Date : 27-Jun-2014 12:41 cgomez Quant Type: ISTD
Cal Date : 26-JUN-2014 13:22 Cal File: N2926.D
Als bottle: 17
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ttcutler53ocs.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

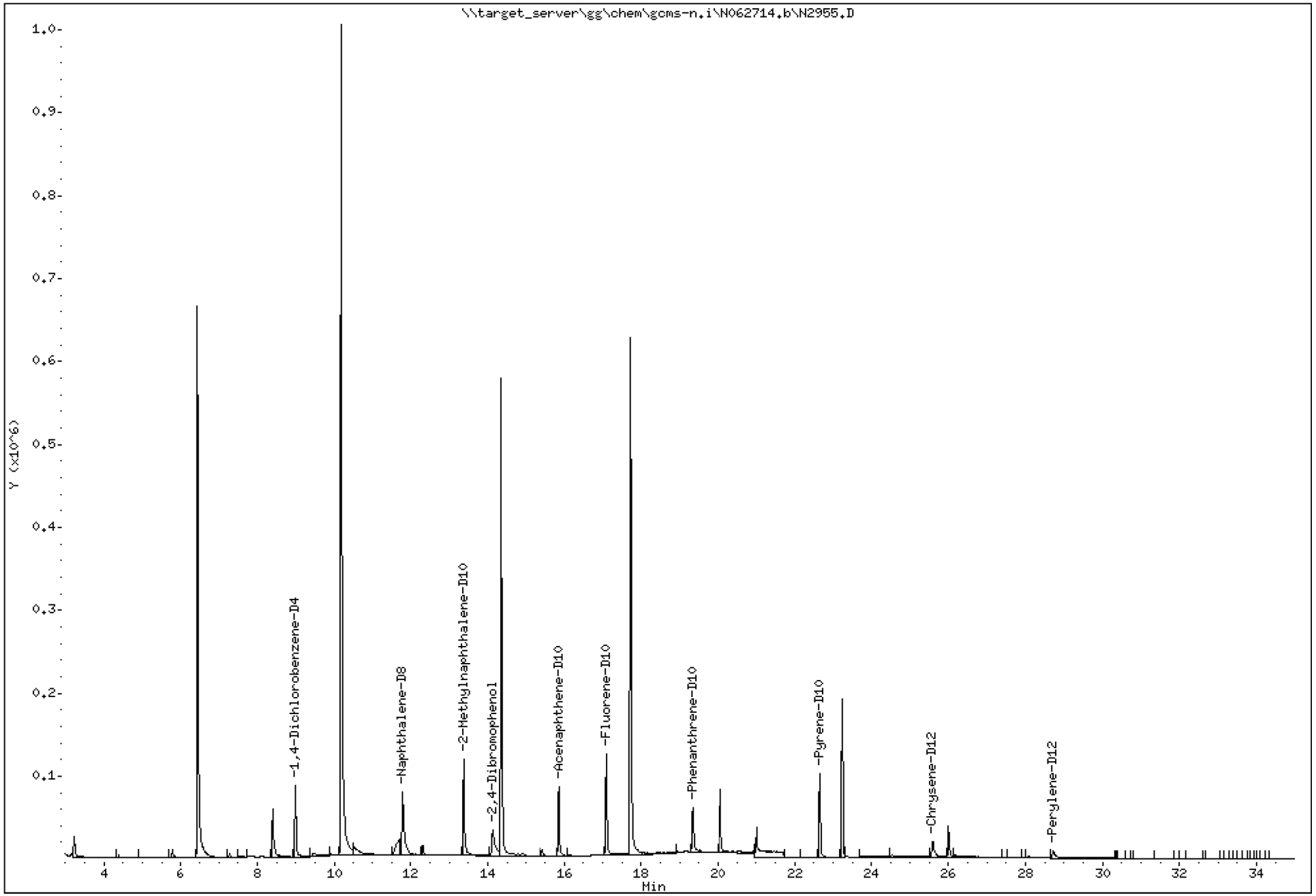
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.060	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
*	8 1,4-Dichlorobenzene-D4	152	8.987	8.971	(1.000)	66550	0.80000	(a)	
*	24 Naphthalene-D8	136	11.780	11.763	(1.000)	240173	0.80000	(a)	
$	30 2-Methylnaphthalene-D10	152	13.372	13.353	(0.843)	153412	1.11038	1.05	
$	35 2,4-Dibromophenol	252	14.126	14.107	(0.891)	92920	2.06303	1.95	
*	45 Acenaphthene-D10	164	15.855	15.842	(1.000)	91537	0.80000	(a)	
$	52 Fluorene-D10	174	17.084	17.068	(1.078)	121131	1.14904	1.08	(Q)
*	63 Phenanthrene-D10	188	19.338	19.323	(1.000)	131925	0.80000	(a)	
$	69 Pyrene-D10	212	22.646	22.646	(0.885)	159161	1.87748	1.77	
*	73 Chrysene-D12	240	25.603	25.589	(1.000)	48602	0.80000	(a)	
*	81 Perylene-D12	264	28.723	28.706	(1.000)	32375	0.80000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N062714.b\N2955.D
Date : 27-JUN-2014 22:58
Client ID: FTA-MW-206-061814 Instrument: gcms-n.i
Sample Info: SH4401-18



Katahdin Analytical Services 6000056

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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SH4401-20
Client ID: FTA-MW-14-061714
Project: NCTAMSLANT Cutler CTO
SDG: WE53-7
Lab File ID: N2956.D

Sample Date: 17-JUN-14
Received Date: 19-JUN-14
Extract Date: 23-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145278

Analysis Date: 27-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 11-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,4-Dioxane	U	0.47	ug/L	1	1	0.94	0.027	0.47
2-Chlorophenol	U	0.47	ug/L	1	1	0.94	0.26	0.47
Naphthalene	U	0.094	ug/L	1	.2	0.19	0.060	0.094
Hexachlorobutadiene	U	0.094	ug/L	1	.2	0.19	0.082	0.094
2-Methylnaphthalene	U	0.094	ug/L	1	.2	0.19	0.073	0.094
Hexachlorobenzene	U	0.094	ug/L	1	.2	0.19	0.052	0.094
Pentachlorophenol	ULL	0.47	ug/L	1	1	0.94	0.31	0.47
Phenanthrene	U	0.094	ug/L	1	.2	0.19	0.048	0.094
Pyrene	U	0.094	ug/L	1	.2	0.19	0.056	0.094
Benzo(a)anthracene	U	0.094	ug/L	1	.2	0.19	0.043	0.094
Chrysene	ULL	0.094	ug/L	1	.2	0.19	0.034	0.094
Benzo(b)fluoranthene	U	0.094	ug/L	1	.2	0.19	0.084	0.094
Benzo(a)pyrene	U	0.094	ug/L	1	.2	0.19	0.062	0.094
Indeno(1,2,3-cd)pyrene	U	0.094	ug/L	1	.2	0.19	0.049	0.094
Dibenzo(a,h)anthracene	ULL	0.094	ug/L	1	.2	0.19	0.066	0.094
1,1'-Biphenyl	ULL	0.094	ug/L	1	.2	0.19	0.061	0.094
1,2,4,5-Tetrachlorobenzene	U	0.094	ug/L	1	.2	0.19	0.094	0.094
2,2'-Oxybis(1-Chloropropane)	ULL	0.14	ug/L	1	.2	0.19	0.11	0.14
2,4,6-Trichlorophenol	U	0.47	ug/L	1	1	0.94	0.11	0.47
2,4-Dichlorophenol	U	0.47	ug/L	1	1	0.94	0.47	0.47
2,4-Dinitrophenol	U	0.47	ug/L	1	1	0.94	0.23	0.47
2,4-Dinitrotoluene	U	0.094	ug/L	1	.2	0.19	0.033	0.094
2,6-Dinitrotoluene	U	0.094	ug/L	1	.2	0.19	0.066	0.094
2-Nitroaniline	U	0.14	ug/L	1	.2	0.19	0.11	0.14
3,3'-Dichlorobenzidine	U	0.094	ug/L	1	.2	0.19	0.053	0.094
4,6-Dinitro-2-Methylphenol	U	0.71	ug/L	1	1	0.94	0.47	0.71
4-Chloroaniline	U	0.47	ug/L	1	1	0.94	0.47	0.47
3&4-Methylphenol	U	0.47	ug/L	1	1	0.94	0.42	0.47
4-Nitroaniline	U	0.094	ug/L	1	.2	0.19	0.061	0.094
Atrazine	U	0.094	ug/L	1	.2	0.19	0.036	0.094
Bis(2-Chloroethyl)Ether	UL	0.094	ug/L	1	.2	0.19	0.039	0.094
Bis(2-Ethylhexyl)Phthalate	ULL	0.47	ug/L	1	1	0.94	0.47	0.47
Dibenzofuran	U	0.094	ug/L	1	.2	0.19	0.064	0.094
Hexachlorocyclopentadiene	U	0.094	ug/L	1	.2	0.19	0.063	0.094
Hexachloroethane	U	0.094	ug/L	1	.2	0.19	0.069	0.094

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SH4401-20
Client ID: FTA-MW-14-061714
Project: NCTAMSLANT Cutler CTO
SDG: WE53-7
Lab File ID: N2956.D

Sample Date: 17-JUN-14
Received Date: 19-JUN-14
Extract Date: 23-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145278

Analysis Date: 27-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 11-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Nitrobenzene	U	0.14	ug/L	1	.2	0.19	0.12	0.14
N-Nitroso-Di-N-Propylamine	U	0.094	ug/L	1	.2	0.19	0.068	0.094
3-Nitroaniline	U	0.094	ug/L	1	.2	0.19	0.072	0.094
2-Methylnaphthalene-D10		53.4	%					
Fluorene-D10		64.6	%					
Pyrene-D10		88.0	%					
2,4-Dibromophenol		61.6	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N062714.b\N2956.D
Report Date: 11-Jul-2014 13:30

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Data file : \\target_server\gg\chem\gcms-n.i\N062714.b\N2956.D
Lab Smp Id: SH4401-20 Client Smp ID: FTA-MW-14-061714
Inj Date : 27-JUN-2014 23:40 MS Autotune Date: 12-NOV-2013 09:32
Operator : JCG Inst ID: gcms-n.i
Smp Info : SH4401-20
Misc Info : WG145527,WG145278,WG145455-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N062714.b\NSPSIM09.m
Meth Date : 27-Jun-2014 12:41 cgomez Quant Type: ISTD
Cal Date : 26-JUN-2014 13:22 Cal File: N2926.D
Als bottle: 18
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ttcutler53ocs.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

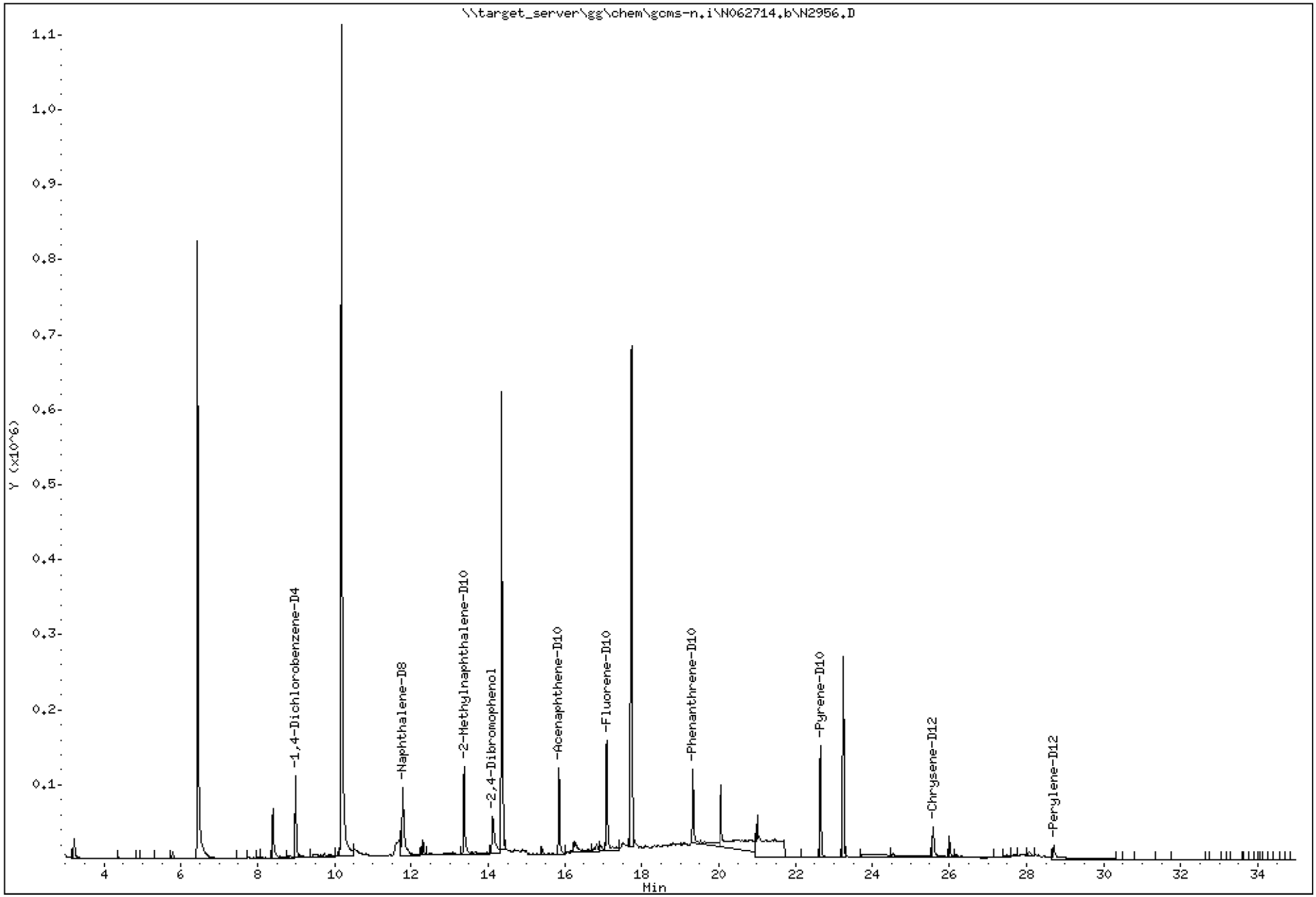
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.060	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
*	8 1,4-Dichlorobenzene-D4	152	8.971	8.971	(1.000)	70196	0.80000	(a)	
*	24 Naphthalene-D8	136	11.763	11.763	(1.000)	251792	0.80000	(a)	
$	30 2-Methylnaphthalene-D10	152	13.372	13.353	(0.844)	160625	1.06732	1.01	
$	35 2,4-Dibromophenol	252	14.126	14.107	(0.892)	120943	2.46515	2.32	
*	45 Acenaphthene-D10	164	15.842	15.842	(1.000)	99708	0.80000	(a)	
$	52 Fluorene-D10	174	17.084	17.068	(1.078)	148363	1.29203	1.22	(Q)
*	63 Phenanthrene-D10	188	19.323	19.323	(1.000)	151433	0.80000	(a)	
$	69 Pyrene-D10	212	22.646	22.646	(0.885)	211470	1.76050	1.66	
*	73 Chrysene-D12	240	25.576	25.589	(1.000)	68866	0.80000	(a)	
*	81 Perylene-D12	264	28.706	28.706	(1.000)	44772	0.80000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N062714.b\N2956.D
Date : 27-JUN-2014 23:40
Client ID: FTA-MW-14-061714 Instrument: gcms-n.i
Sample Info: SH4401-20



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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SH4521-2
Client ID: FTA-MW-208-061814
Project: NCTAMSLANT Cutler CTO
SDG: WE53-7
Lab File ID: N2958.D

Sample Date: 18-JUN-14
Received Date: 20-JUN-14
Extract Date: 25-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145381

Analysis Date: 28-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 11-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,4-Dioxane	U	0.48	ug/L	1	1	0.95	0.028	0.48
2-Chlorophenol	U	0.48	ug/L	1	1	0.95	0.27	0.48
Naphthalene	U	0.095	ug/L	1	.2	0.19	0.061	0.095
Hexachlorobutadiene	U	0.095	ug/L	1	.2	0.19	0.083	0.095
2-Methylnaphthalene	U	0.095	ug/L	1	.2	0.19	0.073	0.095
Hexachlorobenzene	U	0.095	ug/L	1	.2	0.19	0.052	0.095
Pentachlorophenol	ULL	0.48	ug/L	1	1	0.95	0.31	0.48
Phenanthrene	U	0.095	ug/L	1	.2	0.19	0.048	0.095
Pyrene	U	0.095	ug/L	1	.2	0.19	0.056	0.095
Benzo(a)anthracene	U	0.095	ug/L	1	.2	0.19	0.044	0.095
Chrysene	ULL	0.095	ug/L	1	.2	0.19	0.034	0.095
Benzo(b)fluoranthene	U	0.095	ug/L	1	.2	0.19	0.085	0.095
Benzo(a)pyrene	U	0.095	ug/L	1	.2	0.19	0.063	0.095
Indeno(1,2,3-cd)pyrene	U	0.095	ug/L	1	.2	0.19	0.050	0.095
Dibenzo(a,h)anthracene	ULL	0.095	ug/L	1	.2	0.19	0.067	0.095
1,1'-Biphenyl	ULL	0.095	ug/L	1	.2	0.19	0.062	0.095
1,2,4,5-Tetrachlorobenzene	U	0.095	ug/L	1	.2	0.19	0.095	0.095
2,2'-Oxybis(1-Chloropropane)	ULL	0.14	ug/L	1	.2	0.19	0.11	0.14
2,4,6-Trichlorophenol	U	0.48	ug/L	1	1	0.95	0.11	0.48
2,4-Dichlorophenol	U	0.48	ug/L	1	1	0.95	0.48	0.48
2,4-Dinitrophenol	U	0.48	ug/L	1	1	0.95	0.23	0.48
2,4-Dinitrotoluene	U	0.095	ug/L	1	.2	0.19	0.033	0.095
2,6-Dinitrotoluene	U	0.095	ug/L	1	.2	0.19	0.067	0.095
2-Nitroaniline	U	0.14	ug/L	1	.2	0.19	0.11	0.14
3,3'-Dichlorobenzidine	U	0.095	ug/L	1	.2	0.19	0.053	0.095
4,6-Dinitro-2-Methylphenol	U	0.71	ug/L	1	1	0.95	0.48	0.71
4-Chloroaniline	U	0.48	ug/L	1	1	0.95	0.48	0.48
3&4-Methylphenol	U	0.48	ug/L	1	1	0.95	0.42	0.48
4-Nitroaniline	U	0.095	ug/L	1	.2	0.19	0.062	0.095
Atrazine	U	0.095	ug/L	1	.2	0.19	0.036	0.095
Bis(2-Chloroethyl)Ether	UL	0.095	ug/L	1	.2	0.19	0.039	0.095
Bis(2-Ethylhexyl)Phthalate	ULL	0.48	ug/L	1	1	0.95	0.48	0.48
Dibenzofuran	U	0.095	ug/L	1	.2	0.19	0.065	0.095
Hexachlorocyclopentadiene	U	0.095	ug/L	1	.2	0.19	0.064	0.095
Hexachloroethane	U	0.095	ug/L	1	.2	0.19	0.070	0.095

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SH4521-2
Client ID: FTA-MW-208-061814
Project: NCTAMSLANT Cutler CTO
SDG: WE53-7
Lab File ID: N2958.D

Sample Date: 18-JUN-14
Received Date: 20-JUN-14
Extract Date: 25-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145381

Analysis Date: 28-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 11-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Nitrobenzene	U	0.14	ug/L	1	.2	0.19	0.12	0.14
N-Nitroso-Di-N-Propylamine	U	0.095	ug/L	1	.2	0.19	0.068	0.095
3-Nitroaniline	U	0.095	ug/L	1	.2	0.19	0.072	0.095
2-Methylnaphthalene-D10		56.6	%					
Fluorene-D10		53.5	%					
Pyrene-D10		100.	%					
2,4-Dibromophenol		52.1	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N062814.b\N2958.D
Report Date: 11-Jul-2014 13:32

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Data file : \\target_server\gg\chem\gcms-n.i\N062814.b\N2958.D
Lab Smp Id: SH4521-2 Client Smp ID: FTA-MW-208-061814
Inj Date : 28-JUN-2014 09:18 MS Autotune Date: 12-NOV-2013 09:32
Operator : JCG Inst ID: gcms-n.i
Smp Info : SH4521-2
Misc Info : WG145582,WG145381,WG145455-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N062814.b\NSPSIM09.m
Meth Date : 28-Jun-2014 09:09 cgomez Quant Type: ISTD
Cal Date : 26-JUN-2014 13:22 Cal File: N2926.D
Als bottle: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ttcutler53ocs.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

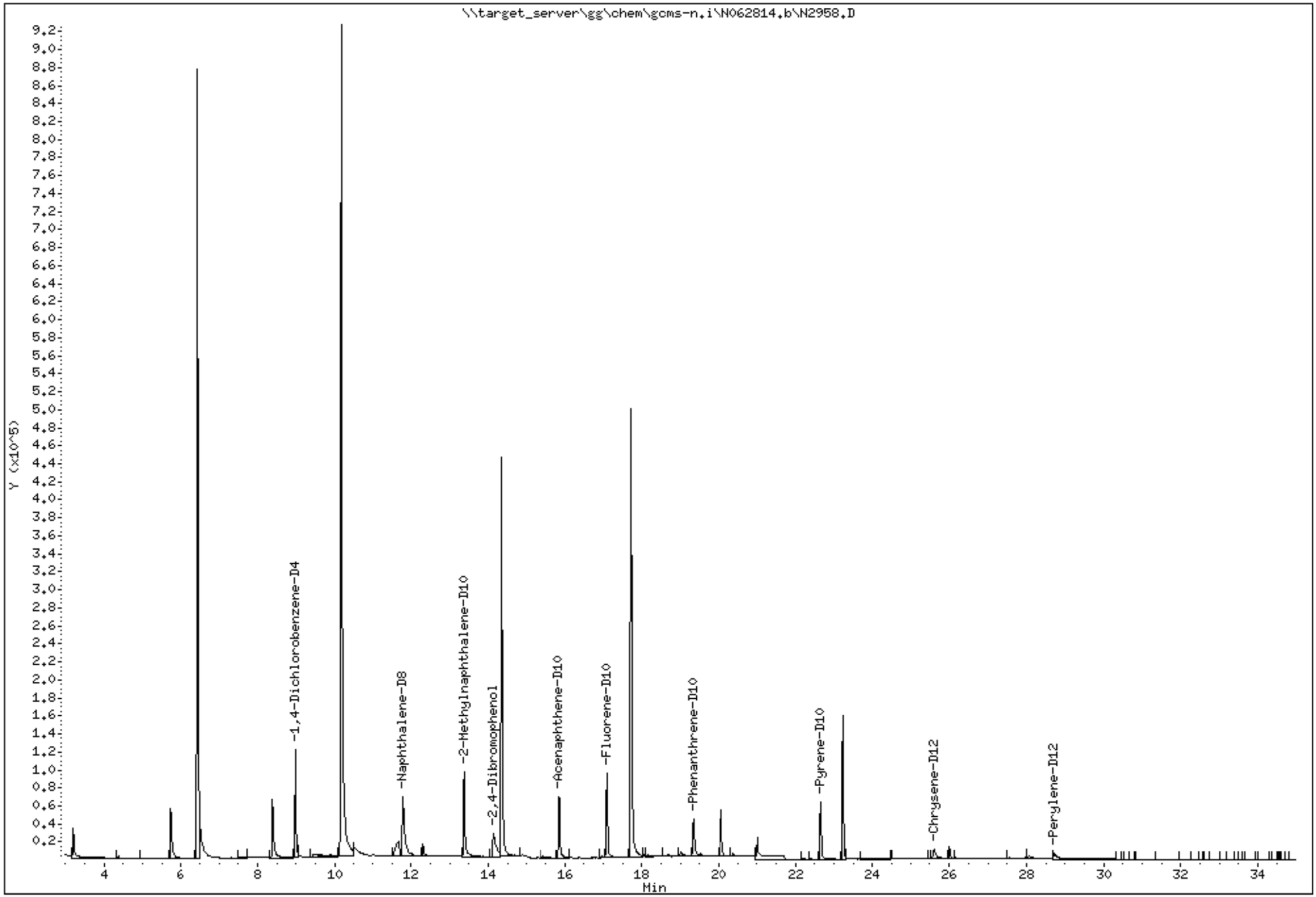
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.050	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
*	8 1,4-Dichlorobenzene-D4	152	8.971	8.970	(1.000)	65873	0.80000	(a)	
*	24 Naphthalene-D8	136	11.780	11.746	(1.000)	222227	0.80000	(a)	
$	30 2-Methylnaphthalene-D10	152	13.372	13.353	(0.843)	140037	1.13190	1.08	
$	35 2,4-Dibromophenol	252	14.145	14.107	(0.892)	84124	2.08578	1.99	
*	45 Acenaphthene-D10	164	15.855	15.842	(1.000)	81968	0.80000	(a)	
$	52 Fluorene-D10	174	17.084	17.068	(1.078)	101046	1.07041	1.02	(Q)
*	63 Phenanthrene-D10	188	19.338	19.323	(1.000)	102417	0.80000	(a)	
$	69 Pyrene-D10	212	22.646	22.646	(0.885)	103868	2.00003	1.90	
*	73 Chrysene-D12	240	25.603	25.589	(1.000)	29774	0.80000	(a)	
*	81 Perylene-D12	264	28.723	28.723	(1.000)	23267	0.80000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N062814.b\N2958.D
Date : 28-JUN-2014 09:18
Client ID: FTA-MW-208-061814 Instrument: gcms-n.i
Sample Info: SH4521-2



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ANALYTICAL SERVICES

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Cert No E87604

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SH4521-4
Client ID: FTA-MW-1-061814
Project: NCTAMSLANT Cutler CTO
SDG: WE53-7
Lab File ID: N2959.D

Sample Date: 18-JUN-14
Received Date: 20-JUN-14
Extract Date: 25-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145381

Analysis Date: 28-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 11-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,4-Dioxane	U	0.50	ug/L	1	1	1.0	0.029	0.50
2-Chlorophenol	U	0.50	ug/L	1	1	1.0	0.28	0.50
Naphthalene	U	0.10	ug/L	1	.2	0.20	0.065	0.10
Hexachlorobutadiene	U	0.10	ug/L	1	.2	0.20	0.088	0.10
2-Methylnaphthalene	U	0.10	ug/L	1	.2	0.20	0.078	0.10
Hexachlorobenzene	U	0.10	ug/L	1	.2	0.20	0.056	0.10
Pentachlorophenol	ULL	0.50	ug/L	1	1	1.0	0.33	0.50
Phenanthrene	U	0.10	ug/L	1	.2	0.20	0.052	0.10
Pyrene	U	0.10	ug/L	1	.2	0.20	0.060	0.10
Benzo(a)anthracene	U	0.10	ug/L	1	.2	0.20	0.046	0.10
Chrysene	ULL	0.10	ug/L	1	.2	0.20	0.036	0.10
Benzo(b)fluoranthene	U	0.10	ug/L	1	.2	0.20	0.090	0.10
Benzo(a)pyrene	U	0.10	ug/L	1	.2	0.20	0.067	0.10
Indeno(1,2,3-cd)pyrene	U	0.10	ug/L	1	.2	0.20	0.052	0.10
Dibenzo(a,h)anthracene	ULL	0.10	ug/L	1	.2	0.20	0.071	0.10
1,1'-Biphenyl	ULL	0.10	ug/L	1	.2	0.20	0.066	0.10
1,2,4,5-Tetrachlorobenzene	U	0.10	ug/L	1	.2	0.20	0.10	0.10
2,2'-Oxybis(1-Chloropropane)	ULL	0.15	ug/L	1	.2	0.20	0.12	0.15
2,4,6-Trichlorophenol	U	0.50	ug/L	1	1	1.0	0.12	0.50
2,4-Dichlorophenol	U	0.50	ug/L	1	1	1.0	0.50	0.50
2,4-Dinitrophenol	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,4-Dinitrotoluene	U	0.10	ug/L	1	.2	0.20	0.035	0.10
2,6-Dinitrotoluene	U	0.10	ug/L	1	.2	0.20	0.071	0.10
2-Nitroaniline	U	0.15	ug/L	1	.2	0.20	0.12	0.15
3,3'-Dichlorobenzidine	U	0.10	ug/L	1	.2	0.20	0.056	0.10
4,6-Dinitro-2-Methylphenol	U	0.76	ug/L	1	1	1.0	0.50	0.76
4-Chloroaniline	U	0.50	ug/L	1	1	1.0	0.50	0.50
3&4-Methylphenol	U	0.50	ug/L	1	1	1.0	0.45	0.50
4-Nitroaniline	U	0.10	ug/L	1	.2	0.20	0.066	0.10
Atrazine	U	0.10	ug/L	1	.2	0.20	0.038	0.10
Bis(2-Chloroethyl)Ether	UL	0.10	ug/L	1	.2	0.20	0.041	0.10
Bis(2-Ethylhexyl)Phthalate	ULL	0.50	ug/L	1	1	1.0	0.50	0.50
Dibenzofuran	U	0.10	ug/L	1	.2	0.20	0.069	0.10
Hexachlorocyclopentadiene	U	0.10	ug/L	1	.2	0.20	0.068	0.10
Hexachloroethane	U	0.10	ug/L	1	.2	0.20	0.074	0.10

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SH4521-4
Client ID: FTA-MW-1-061814
Project: NCTAMSLANT Cutler CTO
SDG: WE53-7
Lab File ID: N2959.D

Sample Date: 18-JUN-14
Received Date: 20-JUN-14
Extract Date: 25-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145381

Analysis Date: 28-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 11-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Nitrobenzene	U	0.15	ug/L	1	.2	0.20	0.13	0.15
N-Nitroso-Di-N-Propylamine	U	0.10	ug/L	1	.2	0.20	0.073	0.10
3-Nitroaniline	U	0.10	ug/L	1	.2	0.20	0.077	0.10
2-Methylnaphthalene-D10		61.5	%					
Fluorene-D10		56.5	%					
Pyrene-D10		100.	%					
2,4-Dibromophenol		57.0	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N062814.b\N2959.D
Report Date: 11-Jul-2014 13:32

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N062814.b\N2959.D
Lab Smp Id: SH4521-4 Client Smp ID: FTA-MW-1-061814
Inj Date : 28-JUN-2014 10:01 MS Autotune Date: 12-NOV-2013 09:32
Operator : JCG Inst ID: gcms-n.i
Smp Info : SH4521-4
Misc Info : WG145582,WG145381,WG145455-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N062814.b\NSPSIM09.m
Meth Date : 28-Jun-2014 09:09 cgomez Quant Type: ISTD
Cal Date : 26-JUN-2014 13:22 Cal File: N2926.D
Als bottle: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ttcutler53ocs.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

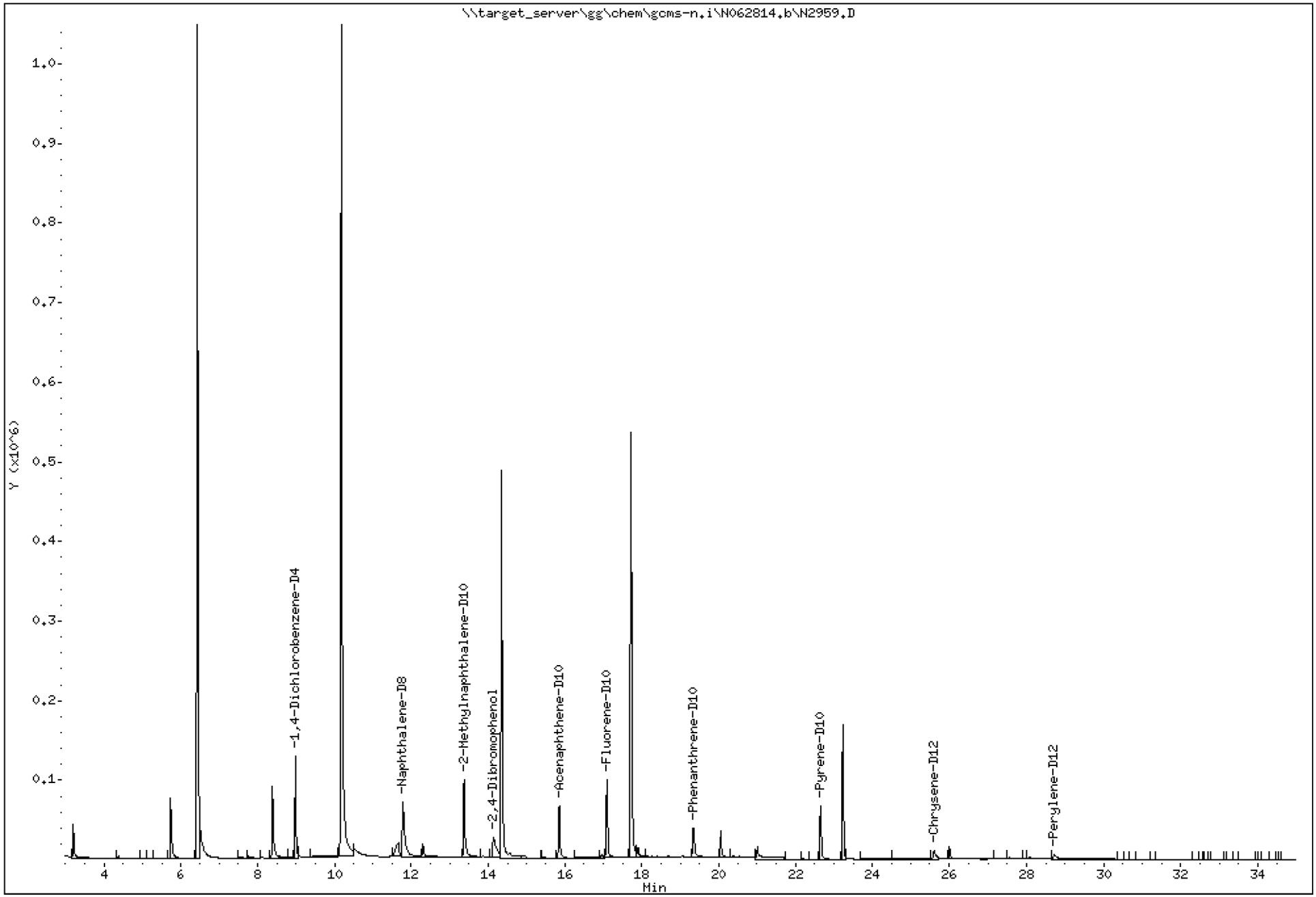
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	0.99000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
*	8 1,4-Dichlorobenzene-D4	152	8.971	8.970	(1.000)	68023	0.80000	(a)	
*	24 Naphthalene-D8	136	11.780	11.746	(1.000)	230991	0.80000	(a)	
$	30 2-Methylnaphthalene-D10	152	13.372	13.353	(0.843)	150191	1.22964	1.24	
$	35 2,4-Dibromophenol	252	14.145	14.107	(0.892)	90725	2.27846	2.30	
*	45 Acenaphthene-D10	164	15.855	15.842	(1.000)	80924	0.80000	(a)	
$	52 Fluorene-D10	174	17.084	17.068	(1.078)	105308	1.12995	1.14	(Q)
*	63 Phenanthrene-D10	188	19.338	19.323	(1.000)	97942	0.80000	(a)	
$	69 Pyrene-D10	212	22.646	22.646	(0.885)	112894	2.00365	2.02	
*	73 Chrysene-D12	240	25.603	25.589	(1.000)	32303	0.80000	(a)	
*	81 Perylene-D12	264	28.723	28.723	(1.000)	22986	0.80000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N062814.b\N2959.D
Date : 28-JUN-2014 10:01
Client ID: FTA-MW-1-061814 Instrument: gcms-n.i
Sample Info: SH4521-4



Katahdin Analytical Services 6000068

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SH4521-6
Client ID: FTA-GW-DUP02-061814
Project: NCTAMSLANT Cutler CTO
SDG: WE53-7
Lab File ID: N2960.D

Sample Date: 18-JUN-14
Received Date: 20-JUN-14
Extract Date: 25-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145381

Analysis Date: 28-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 11-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,4-Dioxane	U	0.48	ug/L	1	1	0.95	0.028	0.48
2-Chlorophenol	U	0.48	ug/L	1	1	0.95	0.27	0.48
Naphthalene	U	0.095	ug/L	1	.2	0.19	0.061	0.095
Hexachlorobutadiene	U	0.095	ug/L	1	.2	0.19	0.083	0.095
2-Methylnaphthalene	U	0.095	ug/L	1	.2	0.19	0.073	0.095
Hexachlorobenzene	U	0.095	ug/L	1	.2	0.19	0.052	0.095
Pentachlorophenol	ULL	0.48	ug/L	1	1	0.95	0.31	0.48
Phenanthrene	U	0.095	ug/L	1	.2	0.19	0.048	0.095
Pyrene	U	0.095	ug/L	1	.2	0.19	0.056	0.095
Benzo(a)anthracene	U	0.095	ug/L	1	.2	0.19	0.044	0.095
Chrysene	ULL	0.095	ug/L	1	.2	0.19	0.034	0.095
Benzo(b)fluoranthene	U	0.095	ug/L	1	.2	0.19	0.085	0.095
Benzo(a)pyrene	U	0.095	ug/L	1	.2	0.19	0.063	0.095
Indeno(1,2,3-cd)pyrene	U	0.095	ug/L	1	.2	0.19	0.050	0.095
Dibenzo(a,h)anthracene	ULL	0.095	ug/L	1	.2	0.19	0.067	0.095
1,1'-Biphenyl	ULL	0.095	ug/L	1	.2	0.19	0.062	0.095
1,2,4,5-Tetrachlorobenzene	U	0.095	ug/L	1	.2	0.19	0.095	0.095
2,2'-Oxybis(1-Chloropropane)	ULL	0.14	ug/L	1	.2	0.19	0.11	0.14
2,4,6-Trichlorophenol	U	0.48	ug/L	1	1	0.95	0.11	0.48
2,4-Dichlorophenol	U	0.48	ug/L	1	1	0.95	0.48	0.48
2,4-Dinitrophenol	U	0.48	ug/L	1	1	0.95	0.23	0.48
2,4-Dinitrotoluene	U	0.095	ug/L	1	.2	0.19	0.033	0.095
2,6-Dinitrotoluene	U	0.095	ug/L	1	.2	0.19	0.067	0.095
2-Nitroaniline	U	0.14	ug/L	1	.2	0.19	0.11	0.14
3,3'-Dichlorobenzidine	U	0.095	ug/L	1	.2	0.19	0.053	0.095
4,6-Dinitro-2-Methylphenol	U	0.71	ug/L	1	1	0.95	0.48	0.71
4-Chloroaniline	U	0.48	ug/L	1	1	0.95	0.48	0.48
3&4-Methylphenol	U	0.48	ug/L	1	1	0.95	0.42	0.48
4-Nitroaniline	U	0.095	ug/L	1	.2	0.19	0.062	0.095
Atrazine	U	0.095	ug/L	1	.2	0.19	0.036	0.095
Bis(2-Chloroethyl)Ether	UL	0.095	ug/L	1	.2	0.19	0.039	0.095
Bis(2-Ethylhexyl)Phthalate	ULL	0.48	ug/L	1	1	0.95	0.48	0.48
Dibenzofuran	U	0.095	ug/L	1	.2	0.19	0.065	0.095
Hexachlorocyclopentadiene	U	0.095	ug/L	1	.2	0.19	0.064	0.095
Hexachloroethane	U	0.095	ug/L	1	.2	0.19	0.070	0.095

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SH4521-6
Client ID: FTA-GW-DUP02-061814
Project: NCTAMSLANT Cutler CTO
SDG: WE53-7
Lab File ID: N2960.D

Sample Date: 18-JUN-14
Received Date: 20-JUN-14
Extract Date: 25-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145381

Analysis Date: 28-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 11-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Nitrobenzene	U	0.14	ug/L	1	.2	0.19	0.12	0.14
N-Nitroso-Di-N-Propylamine	U	0.095	ug/L	1	.2	0.19	0.068	0.095
3-Nitroaniline	U	0.095	ug/L	1	.2	0.19	0.072	0.095
2-Methylnaphthalene-D10		69.0	%					
Fluorene-D10		59.1	%					
Pyrene-D10		95.0	%					
2,4-Dibromophenol		61.4	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N062814.b\N2960.D
Report Date: 11-Jul-2014 13:32

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N062814.b\N2960.D
Lab Smp Id: SH4521-6 Client Smp ID: FTA-GW-DUP02-061814
Inj Date : 28-JUN-2014 10:44 MS Autotune Date: 12-NOV-2013 09:32
Operator : JCG Inst ID: gcms-n.i
Smp Info : SH4521-6
Misc Info : WG145582,WG145381,WG145455-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N062814.b\NSPSIM09.m
Meth Date : 28-Jun-2014 09:09 cgomez Quant Type: ISTD
Cal Date : 26-JUN-2014 13:22 Cal File: N2926.D
Als bottle: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ttcutler53ocs.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

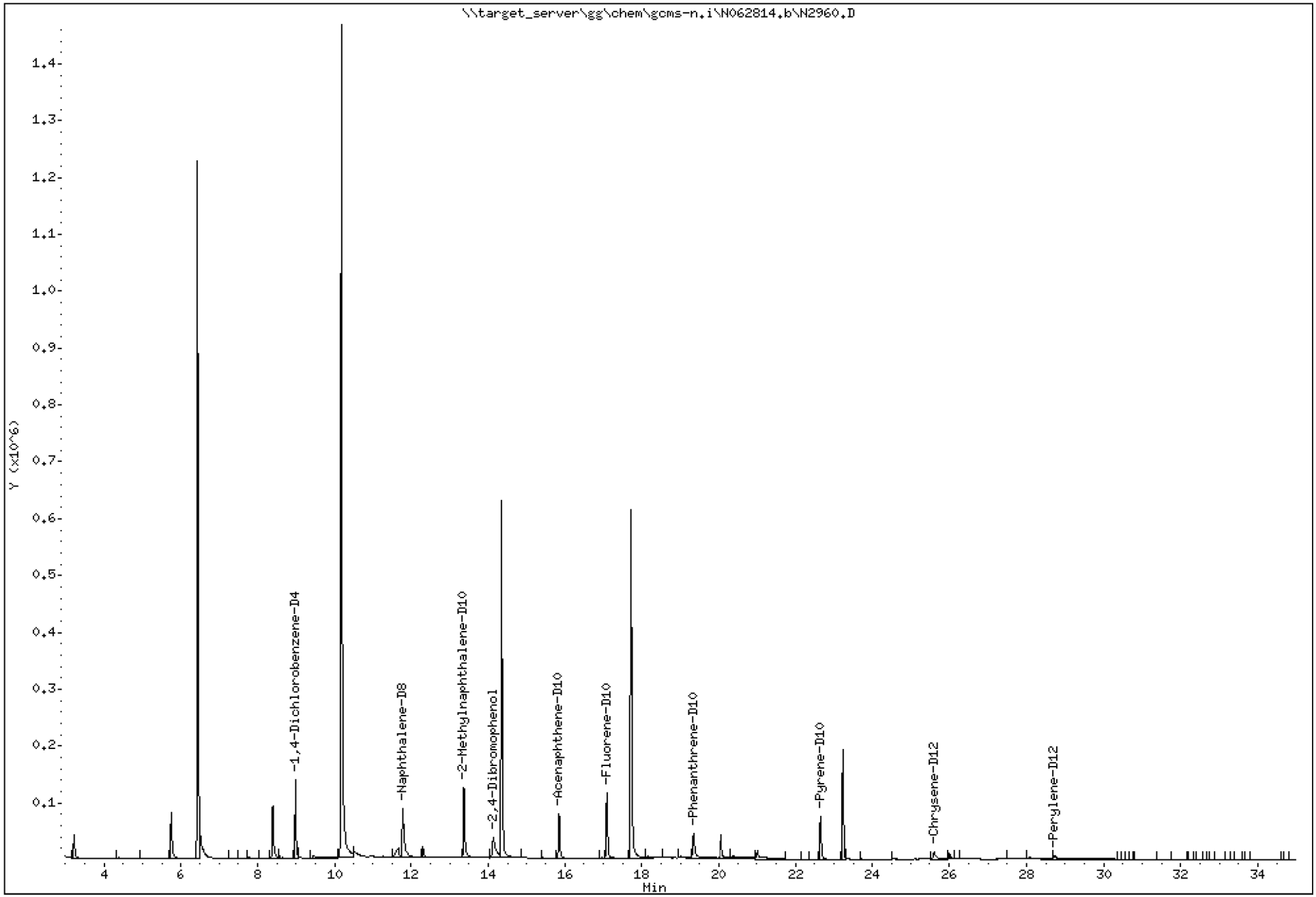
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.050	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
*	8 1,4-Dichlorobenzene-D4	152	8.971	8.970	(1.000)	73579	0.80000	(a)	
*	24 Naphthalene-D8	136	11.763	11.746	(1.000)	256562	0.80000	(a)	
$	30 2-Methylnaphthalene-D10	152	13.372	13.353	(0.844)	192767	1.38035	1.31	
$	35 2,4-Dibromophenol	252	14.126	14.107	(0.892)	111836	2.45652	2.34	
*	45 Acenaphthene-D10	164	15.842	15.842	(1.000)	92524	0.80000	(a)	
$	52 Fluorene-D10	174	17.084	17.068	(1.078)	126027	1.18273	1.13	(Q)
*	63 Phenanthrene-D10	188	19.338	19.323	(1.000)	109259	0.80000	(a)	
$	69 Pyrene-D10	212	22.646	22.646	(0.885)	125387	1.89924	1.81	
*	73 Chrysene-D12	240	25.603	25.589	(1.000)	37850	0.80000	(a)	
*	81 Perylene-D12	264	28.723	28.723	(1.000)	26047	0.80000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N062814.b\N2960.D
Date : 28-JUN-2014 10:44
Client ID: FTA-GW-DUP02-061814 Instrument: gcms-n.i
Sample Info: SH4521-6



Katahdin Analytical Services 6000072

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SH4521-8
Client ID: FTA-MW-210-061814
Project: NCTAMSLANT Cutler CTO
SDG: WE53-7
Lab File ID: N2961.D

Sample Date: 19-JUN-14
Received Date: 20-JUN-14
Extract Date: 25-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145381

Analysis Date: 28-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 11-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,4-Dioxane	U	0.47	ug/L	1	1	0.94	0.027	0.47
2-Chlorophenol	U	0.47	ug/L	1	1	0.94	0.26	0.47
Naphthalene	U	0.094	ug/L	1	.2	0.19	0.060	0.094
Hexachlorobutadiene	U	0.094	ug/L	1	.2	0.19	0.082	0.094
2-Methylnaphthalene	U	0.094	ug/L	1	.2	0.19	0.073	0.094
Hexachlorobenzene	U	0.094	ug/L	1	.2	0.19	0.052	0.094
Pentachlorophenol	ULLMM	0.47	ug/L	1	1	0.94	0.31	0.47
Phenanthrene	U	0.094	ug/L	1	.2	0.19	0.048	0.094
Pyrene	U	0.094	ug/L	1	.2	0.19	0.056	0.094
Benzo(a)anthracene	U	0.094	ug/L	1	.2	0.19	0.043	0.094
Chrysene	ULLM	0.094	ug/L	1	.2	0.19	0.034	0.094
Benzo(b)fluoranthene	U	0.094	ug/L	1	.2	0.19	0.084	0.094
Benzo(a)pyrene	UMM	0.094	ug/L	1	.2	0.19	0.062	0.094
Indeno(1,2,3-cd)pyrene	U	0.094	ug/L	1	.2	0.19	0.049	0.094
Dibenzo(a,h)anthracene	ULL	0.094	ug/L	1	.2	0.19	0.066	0.094
1,1'-Biphenyl	ULLMM	0.094	ug/L	1	.2	0.19	0.061	0.094
1,2,4,5-Tetrachlorobenzene	U	0.094	ug/L	1	.2	0.19	0.094	0.094
2,2'-Oxybis(1-Chloropropane)	ULLMM	0.14	ug/L	1	.2	0.19	0.11	0.14
2,4,6-Trichlorophenol	U	0.47	ug/L	1	1	0.94	0.11	0.47
2,4-Dichlorophenol	U	0.47	ug/L	1	1	0.94	0.47	0.47
2,4-Dinitrophenol	U	0.47	ug/L	1	1	0.94	0.23	0.47
2,4-Dinitrotoluene	U	0.094	ug/L	1	.2	0.19	0.033	0.094
2,6-Dinitrotoluene	U	0.094	ug/L	1	.2	0.19	0.066	0.094
2-Nitroaniline	U	0.14	ug/L	1	.2	0.19	0.11	0.14
3,3'-Dichlorobenzidine	UMM	0.094	ug/L	1	.2	0.19	0.053	0.094
4,6-Dinitro-2-Methylphenol	UMM	0.71	ug/L	1	1	0.94	0.47	0.71
4-Chloroaniline	UMM	0.47	ug/L	1	1	0.94	0.47	0.47
3&4-Methylphenol	U	0.47	ug/L	1	1	0.94	0.42	0.47
4-Nitroaniline	U	0.094	ug/L	1	.2	0.19	0.061	0.094
Atrazine	UM	0.094	ug/L	1	.2	0.19	0.036	0.094
Bis(2-Chloroethyl)Ether	ULM	0.094	ug/L	1	.2	0.19	0.039	0.094
Bis(2-Ethylhexyl)Phthalate	ULLMM	0.47	ug/L	1	1	0.94	0.47	0.47
Dibenzofuran	U	0.094	ug/L	1	.2	0.19	0.064	0.094
Hexachlorocyclopentadiene	U	0.094	ug/L	1	.2	0.19	0.063	0.094
Hexachloroethane	U	0.094	ug/L	1	.2	0.19	0.069	0.094

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SH4521-8
Client ID: FTA-MW-210-061814
Project: NCTAMSLANT Cutler CTO
SDG: WE53-7
Lab File ID: N2961.D

Sample Date: 19-JUN-14
Received Date: 20-JUN-14
Extract Date: 25-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145381

Analysis Date: 28-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 11-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Nitrobenzene	U	0.14	ug/L	1	.2	0.19	0.12	0.14
N-Nitroso-Di-N-Propylamine	U	0.094	ug/L	1	.2	0.19	0.068	0.094
3-Nitroaniline	UM	0.094	ug/L	1	.2	0.19	0.072	0.094
2-Methylnaphthalene-D10		57.5	%					
Fluorene-D10		68.2	%					
Pyrene-D10		99.6	%					
2,4-Dibromophenol		67.1	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N062814.b\N2961.D
Report Date: 11-Jul-2014 13:32

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N062814.b\N2961.D
Lab Smp Id: SH4521-8 Client Smp ID: FTA-MW-210-061814
Inj Date : 28-JUN-2014 11:27 MS Autotune Date: 12-NOV-2013 09:32
Operator : JCG Inst ID: gcms-n.i
Smp Info : SH4521-8
Misc Info : WG145582,WG145381,WG145455-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N062814.b\NSPSIM09.m
Meth Date : 28-Jun-2014 09:09 cgomez Quant Type: ISTD
Cal Date : 26-JUN-2014 13:22 Cal File: N2926.D
Als bottle: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ttcutler53ocs.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

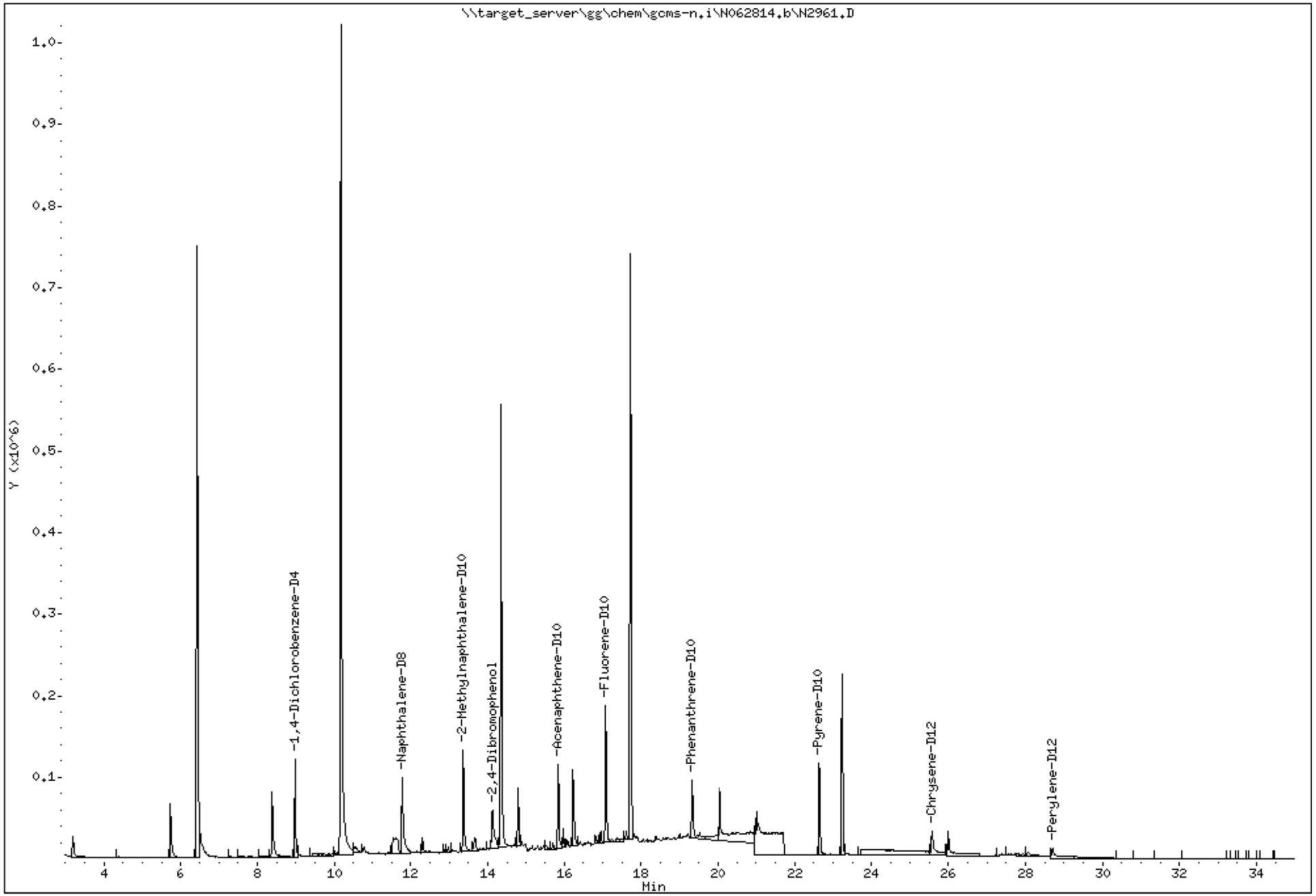
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.060	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
* 8 1,4-Dichlorobenzene-D4	152	8.970	8.970	(1.000)	64751	0.80000	(a)	
* 24 Naphthalene-D8	136	11.763	11.746	(1.000)	222388	0.80000	(a)	
$ 30 2-Methylnaphthalene-D10	152	13.353	13.353	(0.843)	154776	1.14972	1.08	
$ 35 2,4-Dibromophenol	252	14.126	14.107	(0.892)	117850	2.68535	2.53	
* 45 Acenaphthene-D10	164	15.842	15.842	(1.000)	89191	0.80000	(a)	
$ 52 Fluorene-D10	174	17.068	17.068	(1.077)	140113	1.36406	1.29	(Q)
* 63 Phenanthrene-D10	188	19.323	19.323	(1.000)	127731	0.80000	(a)	
$ 69 Pyrene-D10	212	22.646	22.646	(0.885)	175009	1.99248	1.88	
* 73 Chrysene-D12	240	25.575	25.589	(1.000)	50357	0.80000	(a)	
* 81 Perylene-D12	264	28.706	28.723	(1.000)	32561	0.80000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N062814.b\N2961.D
Date : 28-JUN-2014 11:27
Client ID: FTA-MW-210-061814 Instrument: gcms-n.i
Sample Info: SH4521-8



Katahdin Analytical Services 6000076

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SH4521-10
Client ID: FTA-SW-01-061914
Project: NCTAMSLANT Cutler CTO
SDG: WE53-7
Lab File ID: N2964.D

Sample Date: 19-JUN-14
Received Date: 20-JUN-14
Extract Date: 25-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145381

Analysis Date: 28-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 11-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,4-Dioxane	U	0.48	ug/L	1	1	0.96	0.028	0.48
2-Chlorophenol	U	0.48	ug/L	1	1	0.96	0.27	0.48
Naphthalene	U	0.096	ug/L	1	.2	0.19	0.062	0.096
Hexachlorobutadiene	U	0.096	ug/L	1	.2	0.19	0.084	0.096
2-Methylnaphthalene	U	0.096	ug/L	1	.2	0.19	0.074	0.096
Hexachlorobenzene	U	0.096	ug/L	1	.2	0.19	0.053	0.096
Pentachlorophenol	ULL	0.48	ug/L	1	1	0.96	0.32	0.48
Phenanthrene	U	0.096	ug/L	1	.2	0.19	0.049	0.096
Pyrene	U	0.096	ug/L	1	.2	0.19	0.057	0.096
Benzo(a)anthracene	U	0.096	ug/L	1	.2	0.19	0.044	0.096
Chrysene	ULL	0.096	ug/L	1	.2	0.19	0.035	0.096
Benzo(b)fluoranthene	U	0.096	ug/L	1	.2	0.19	0.086	0.096
Benzo(a)pyrene	U	0.096	ug/L	1	.2	0.19	0.063	0.096
Indeno(1,2,3-cd)pyrene	U	0.096	ug/L	1	.2	0.19	0.050	0.096
Dibenzo(a,h)anthracene	ULL	0.096	ug/L	1	.2	0.19	0.067	0.096
1,1'-Biphenyl	ULL	0.096	ug/L	1	.2	0.19	0.062	0.096
1,2,4,5-Tetrachlorobenzene	U	0.096	ug/L	1	.2	0.19	0.096	0.096
2,2'-Oxybis(1-Chloropropane)	ULL	0.14	ug/L	1	.2	0.19	0.12	0.14
2,4,6-Trichlorophenol	U	0.48	ug/L	1	1	0.96	0.12	0.48
2,4-Dichlorophenol	U	0.48	ug/L	1	1	0.96	0.48	0.48
2,4-Dinitrophenol	U	0.48	ug/L	1	1	0.96	0.23	0.48
2,4-Dinitrotoluene	U	0.096	ug/L	1	.2	0.19	0.034	0.096
2,6-Dinitrotoluene	U	0.096	ug/L	1	.2	0.19	0.067	0.096
2-Nitroaniline	U	0.14	ug/L	1	.2	0.19	0.12	0.14
3,3'-Dichlorobenzidine	U	0.096	ug/L	1	.2	0.19	0.054	0.096
4,6-Dinitro-2-Methylphenol	U	0.72	ug/L	1	1	0.96	0.48	0.72
4-Chloroaniline	U	0.48	ug/L	1	1	0.96	0.48	0.48
3&4-Methylphenol	U	0.48	ug/L	1	1	0.96	0.42	0.48
4-Nitroaniline	U	0.096	ug/L	1	.2	0.19	0.062	0.096
Atrazine	U	0.096	ug/L	1	.2	0.19	0.036	0.096
Bis(2-Chloroethyl)Ether	UL	0.096	ug/L	1	.2	0.19	0.039	0.096
Bis(2-Ethylhexyl)Phthalate	ULL	0.48	ug/L	1	1	0.96	0.48	0.48
Dibenzofuran	U	0.096	ug/L	1	.2	0.19	0.065	0.096
Hexachlorocyclopentadiene	U	0.096	ug/L	1	.2	0.19	0.064	0.096
Hexachloroethane	U	0.096	ug/L	1	.2	0.19	0.070	0.096

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SH4521-10
Client ID: FTA-SW-01-061914
Project: NCTAMSLANT Cutler CTO
SDG: WE53-7
Lab File ID: N2964.D

Sample Date: 19-JUN-14
Received Date: 20-JUN-14
Extract Date: 25-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145381

Analysis Date: 28-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 11-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Nitrobenzene	U	0.14	ug/L	1	.2	0.19	0.12	0.14
N-Nitroso-Di-N-Propylamine	U	0.096	ug/L	1	.2	0.19	0.069	0.096
3-Nitroaniline	U	0.096	ug/L	1	.2	0.19	0.073	0.096
2-Methylnaphthalene-D10		64.5	%					
Fluorene-D10		64.3	%					
Pyrene-D10		108.	%					
2,4-Dibromophenol		66.8	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N062814.b\N2964.D
Report Date: 11-Jul-2014 13:32

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N062814.b\N2964.D
Lab Smp Id: SH4521-10 Client Smp ID: FTA-SW-01-061914
Inj Date : 28-JUN-2014 13:38 MS Autotune Date: 12-NOV-2013 09:32
Operator : JCG Inst ID: gcms-n.i
Smp Info : SH4521-10
Misc Info : WG145582,WG145381,WG145455-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N062814.b\NSPSIM09.m
Meth Date : 28-Jun-2014 09:09 cgomez Quant Type: ISTD
Cal Date : 26-JUN-2014 13:22 Cal File: N2926.D
Als bottle: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ttcutler53ocs.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

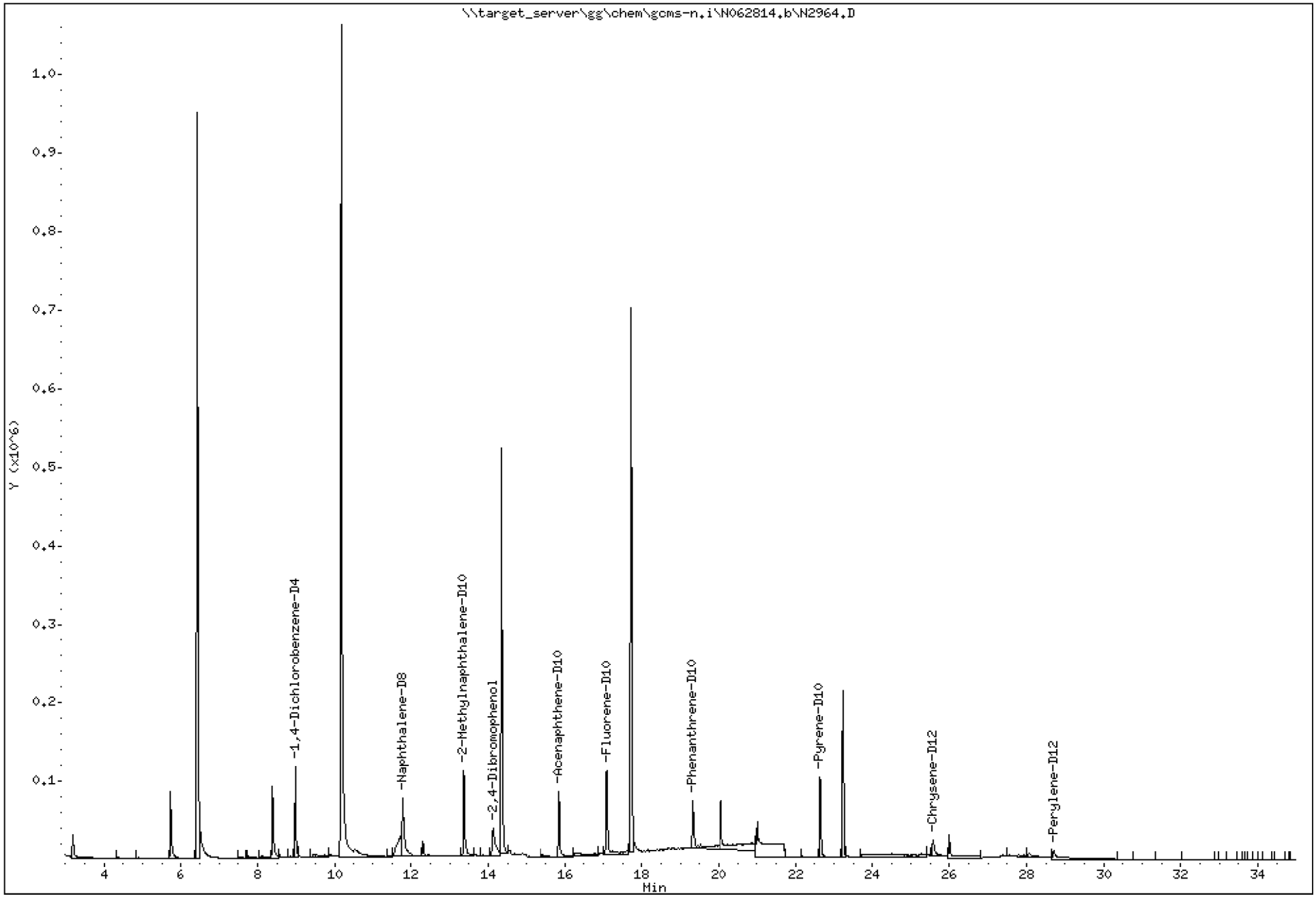
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.040	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
*	8 1,4-Dichlorobenzene-D4	152	8.971	8.970	(1.000)	61818	0.80000	(a)	
*	24 Naphthalene-D8	136	11.763	11.746	(1.000)	217507	0.80000	(a)	
$	30 2-Methylnaphthalene-D10	152	13.353	13.353	(0.843)	157285	1.28929	1.24	
$	35 2,4-Dibromophenol	252	14.126	14.107	(0.892)	106259	2.67185	2.57	
*	45 Acenaphthene-D10	164	15.842	15.842	(1.000)	80825	0.80000	(a)	
$	52 Fluorene-D10	174	17.069	17.068	(1.077)	119691	1.28585	1.24	(Q)
*	63 Phenanthrene-D10	188	19.323	19.323	(1.000)	116283	0.80000	(a)	
$	69 Pyrene-D10	212	22.646	22.646	(0.885)	166970	2.15775	2.07	
*	73 Chrysene-D12	240	25.576	25.589	(1.000)	44364	0.80000	(a)	
*	81 Perylene-D12	264	28.706	28.723	(1.000)	28536	0.80000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N062814.b\N2964.D
Date : 28-JUN-2014 13:38
Client ID: FTA-SW-01-061914 Instrument: gcms-n.i
Sample Info: SH4521-10



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Cert No E87604

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SH4521-12
Client ID: FTA-SW-02-061914
Project: NCTAMSLANT Cutler CTO
SDG: WE53-7
Lab File ID: N2965.D

Sample Date: 19-JUN-14
Received Date: 20-JUN-14
Extract Date: 25-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145381

Analysis Date: 28-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 11-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,4-Dioxane	U	0.48	ug/L	1	1	0.95	0.028	0.48
2-Chlorophenol	U	0.48	ug/L	1	1	0.95	0.27	0.48
Naphthalene	U	0.095	ug/L	1	.2	0.19	0.061	0.095
Hexachlorobutadiene	U	0.095	ug/L	1	.2	0.19	0.083	0.095
2-Methylnaphthalene	U	0.095	ug/L	1	.2	0.19	0.073	0.095
Hexachlorobenzene	U	0.095	ug/L	1	.2	0.19	0.052	0.095
Pentachlorophenol	ULL	0.48	ug/L	1	1	0.95	0.31	0.48
Phenanthrene	U	0.095	ug/L	1	.2	0.19	0.048	0.095
Pyrene	U	0.095	ug/L	1	.2	0.19	0.056	0.095
Benzo(a)anthracene	U	0.095	ug/L	1	.2	0.19	0.044	0.095
Chrysene	ULL	0.095	ug/L	1	.2	0.19	0.034	0.095
Benzo(b)fluoranthene	U	0.095	ug/L	1	.2	0.19	0.085	0.095
Benzo(a)pyrene	U	0.095	ug/L	1	.2	0.19	0.063	0.095
Indeno(1,2,3-cd)pyrene	U	0.095	ug/L	1	.2	0.19	0.050	0.095
Dibenzo(a,h)anthracene	ULL	0.095	ug/L	1	.2	0.19	0.067	0.095
1,1'-Biphenyl	ULL	0.095	ug/L	1	.2	0.19	0.062	0.095
1,2,4,5-Tetrachlorobenzene	U	0.095	ug/L	1	.2	0.19	0.095	0.095
2,2'-Oxybis(1-Chloropropane)	ULL	0.14	ug/L	1	.2	0.19	0.11	0.14
2,4,6-Trichlorophenol	U	0.48	ug/L	1	1	0.95	0.11	0.48
2,4-Dichlorophenol	U	0.48	ug/L	1	1	0.95	0.48	0.48
2,4-Dinitrophenol	U	0.48	ug/L	1	1	0.95	0.23	0.48
2,4-Dinitrotoluene	U	0.095	ug/L	1	.2	0.19	0.033	0.095
2,6-Dinitrotoluene	U	0.095	ug/L	1	.2	0.19	0.067	0.095
2-Nitroaniline	U	0.14	ug/L	1	.2	0.19	0.11	0.14
3,3'-Dichlorobenzidine	U	0.095	ug/L	1	.2	0.19	0.053	0.095
4,6-Dinitro-2-Methylphenol	U	0.71	ug/L	1	1	0.95	0.48	0.71
4-Chloroaniline	U	0.48	ug/L	1	1	0.95	0.48	0.48
3&4-Methylphenol	U	0.48	ug/L	1	1	0.95	0.42	0.48
4-Nitroaniline	U	0.095	ug/L	1	.2	0.19	0.062	0.095
Atrazine	U	0.095	ug/L	1	.2	0.19	0.036	0.095
Bis(2-Chloroethyl)Ether	UL	0.095	ug/L	1	.2	0.19	0.039	0.095
Bis(2-Ethylhexyl)Phthalate	ULL	0.48	ug/L	1	1	0.95	0.48	0.48
Dibenzofuran	U	0.095	ug/L	1	.2	0.19	0.065	0.095
Hexachlorocyclopentadiene	U	0.095	ug/L	1	.2	0.19	0.064	0.095
Hexachloroethane	U	0.095	ug/L	1	.2	0.19	0.070	0.095

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SH4521-12
Client ID: FTA-SW-02-061914
Project: NCTAMSLANT Cutler CTO
SDG: WE53-7
Lab File ID: N2965.D

Sample Date: 19-JUN-14
Received Date: 20-JUN-14
Extract Date: 25-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145381

Analysis Date: 28-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 11-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Nitrobenzene	U	0.14	ug/L	1	.2	0.19	0.12	0.14
N-Nitroso-Di-N-Propylamine	U	0.095	ug/L	1	.2	0.19	0.068	0.095
3-Nitroaniline	U	0.095	ug/L	1	.2	0.19	0.072	0.095
2-Methylnaphthalene-D10		55.2	%					
Fluorene-D10		54.8	%					
Pyrene-D10		89.2	%					
2,4-Dibromophenol		57.0	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N062814.b\N2965.D
Report Date: 11-Jul-2014 13:32

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Data file : \\target_server\gg\chem\gcms-n.i\N062814.b\N2965.D
Lab Smp Id: SH4521-12 Client Smp ID: FTA-SW-02-061914
Inj Date : 28-JUN-2014 14:21 MS Autotune Date: 12-NOV-2013 09:32
Operator : JCG Inst ID: gcms-n.i
Smp Info : SH4521-12
Misc Info : WG145582,WG145381,WG145455-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N062814.b\NSPSIM09.m
Meth Date : 28-Jun-2014 09:09 cgomez Quant Type: ISTD
Cal Date : 26-JUN-2014 13:22 Cal File: N2926.D
Als bottle: 10
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ttcutler53ocs.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

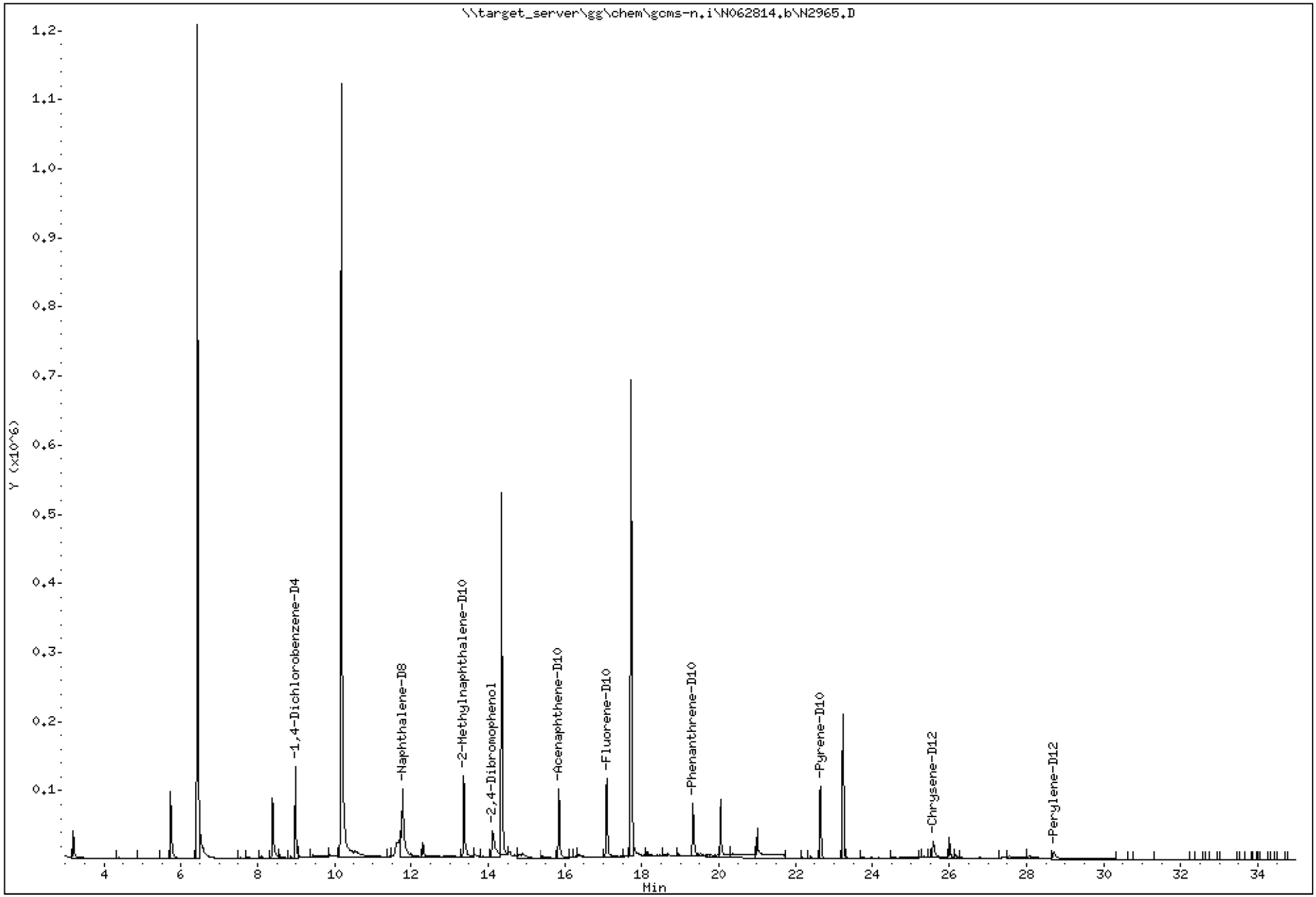
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.050	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
*	8 1,4-Dichlorobenzene-D4	152	8.971	8.970	(1.000)	68500	0.80000	(a)	
*	24 Naphthalene-D8	136	11.763	11.746	(1.000)	248292	0.80000	(a)	
$	30 2-Methylnaphthalene-D10	152	13.353	13.353	(0.843)	159740	1.10497	1.05	
$	35 2,4-Dibromophenol	252	14.107	14.107	(0.890)	107434	2.27960	2.17	
*	45 Acenaphthene-D10	164	15.842	15.842	(1.000)	95780	0.80000	(a)	
$	52 Fluorene-D10	174	17.084	17.068	(1.078)	120898	1.09602	1.04	(Q)
*	63 Phenanthrene-D10	188	19.323	19.323	(1.000)	140936	0.80000	(a)	
$	69 Pyrene-D10	212	22.646	22.646	(0.885)	172537	1.78301	1.70	
*	73 Chrysene-D12	240	25.589	25.589	(1.000)	55478	0.80000	(a)	
*	81 Perylene-D12	264	28.706	28.723	(1.000)	33821	0.80000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N062814.b\N2965.D
Date : 28-JUN-2014 14:21
Client ID: FTA-SW-02-061914 Instrument: gcms-n.i
Sample Info: SH4521-12



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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SH4521-14
Client ID: FTA-SW-03-061914
Project: NCTAMSLANT Cutler CTO
SDG: WE53-7
Lab File ID: N2966.D

Sample Date: 19-JUN-14
Received Date: 20-JUN-14
Extract Date: 25-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145381

Analysis Date: 28-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 11-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,4-Dioxane	U	0.51	ug/L	1	1	1.0	0.030	0.51
2-Chlorophenol	U	0.51	ug/L	1	1	1.0	0.28	0.51
Naphthalene	U	0.10	ug/L	1	.2	0.20	0.065	0.10
Hexachlorobutadiene	U	0.10	ug/L	1	.2	0.20	0.089	0.10
2-Methylnaphthalene	U	0.10	ug/L	1	.2	0.20	0.078	0.10
Hexachlorobenzene	UM	0.10	ug/L	1	.2	0.20	0.056	0.10
Pentachlorophenol	ULLMM	0.51	ug/L	1	1	1.0	0.34	0.51
Phenanthrene	U	0.10	ug/L	1	.2	0.20	0.052	0.10
Pyrene	U	0.10	ug/L	1	.2	0.20	0.060	0.10
Benzo(a)anthracene	UM	0.10	ug/L	1	.2	0.20	0.047	0.10
Chrysene	ULLM	0.10	ug/L	1	.2	0.20	0.037	0.10
Benzo(b)fluoranthene	UMM	0.10	ug/L	1	.2	0.20	0.091	0.10
Benzo(a)pyrene	UMM	0.10	ug/L	1	.2	0.20	0.067	0.10
Indeno(1,2,3-cd)pyrene	UMM	0.10	ug/L	1	.2	0.20	0.053	0.10
Dibenzo(a,h)anthracene	ULLMM	0.10	ug/L	1	.2	0.20	0.071	0.10
1,1'-Biphenyl	ULLMM	0.10	ug/L	1	.2	0.20	0.066	0.10
1,2,4,5-Tetrachlorobenzene	U	0.10	ug/L	1	.2	0.20	0.10	0.10
2,2'-Oxybis(1-Chloropropane)	ULLMM	0.15	ug/L	1	.2	0.20	0.12	0.15
2,4,6-Trichlorophenol	U	0.51	ug/L	1	1	1.0	0.12	0.51
2,4-Dichlorophenol	U	0.51	ug/L	1	1	1.0	0.51	0.51
2,4-Dinitrophenol	U	0.51	ug/L	1	1	1.0	0.24	0.51
2,4-Dinitrotoluene	U	0.10	ug/L	1	.2	0.20	0.036	0.10
2,6-Dinitrotoluene	U	0.10	ug/L	1	.2	0.20	0.071	0.10
2-Nitroaniline	U	0.15	ug/L	1	.2	0.20	0.12	0.15
3,3'-Dichlorobenzidine	UMM	0.10	ug/L	1	.2	0.20	0.057	0.10
4,6-Dinitro-2-Methylphenol	UM	0.76	ug/L	1	1	1.0	0.51	0.76
4-Chloroaniline	UMM	0.51	ug/L	1	1	1.0	0.51	0.51
3&4-Methylphenol	U	0.51	ug/L	1	1	1.0	0.45	0.51
4-Nitroaniline	UMM	0.10	ug/L	1	.2	0.20	0.066	0.10
Atrazine	U	0.10	ug/L	1	.2	0.20	0.039	0.10
Bis(2-Chloroethyl)Ether	ULMM	0.10	ug/L	1	.2	0.20	0.042	0.10
Bis(2-Ethylhexyl)Phthalate	ULLMM	0.51	ug/L	1	1	1.0	0.51	0.51
Dibenzofuran	U	0.10	ug/L	1	.2	0.20	0.069	0.10
Hexachlorocyclopentadiene	UMM	0.10	ug/L	1	.2	0.20	0.068	0.10
Hexachloroethane	UM	0.10	ug/L	1	.2	0.20	0.074	0.10

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SH4521-14
Client ID: FTA-SW-03-061914
Project: NCTAMSLANT Cutler CTO
SDG: WE53-7
Lab File ID: N2966.D

Sample Date: 19-JUN-14
Received Date: 20-JUN-14
Extract Date: 25-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145381

Analysis Date: 28-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 11-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Nitrobenzene	U	0.15	ug/L	1	.2	0.20	0.13	0.15
N-Nitroso-Di-N-Propylamine	U	0.10	ug/L	1	.2	0.20	0.073	0.10
3-Nitroaniline	UMM	0.10	ug/L	1	.2	0.20	0.078	0.10
2-Methylnaphthalene-D10		58.5	%					
Fluorene-D10		62.4	%					
Pyrene-D10		90.4	%					
2,4-Dibromophenol		63.3	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N062814.b\N2966.D
Report Date: 11-Jul-2014 13:32

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N062814.b\N2966.D
Lab Smp Id: SH4521-14 Client Smp ID: FTA-SW-03-061914
Inj Date : 28-JUN-2014 15:04 MS Autotune Date: 12-NOV-2013 09:32
Operator : JCG Inst ID: gcms-n.i
Smp Info : SH4521-14
Misc Info : WG145582,WG145381,WG145455-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N062814.b\NSPSIM09.m
Meth Date : 28-Jun-2014 09:09 cgomez Quant Type: ISTD
Cal Date : 26-JUN-2014 13:22 Cal File: N2926.D
Als bottle: 11
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ttcutler53ocs.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

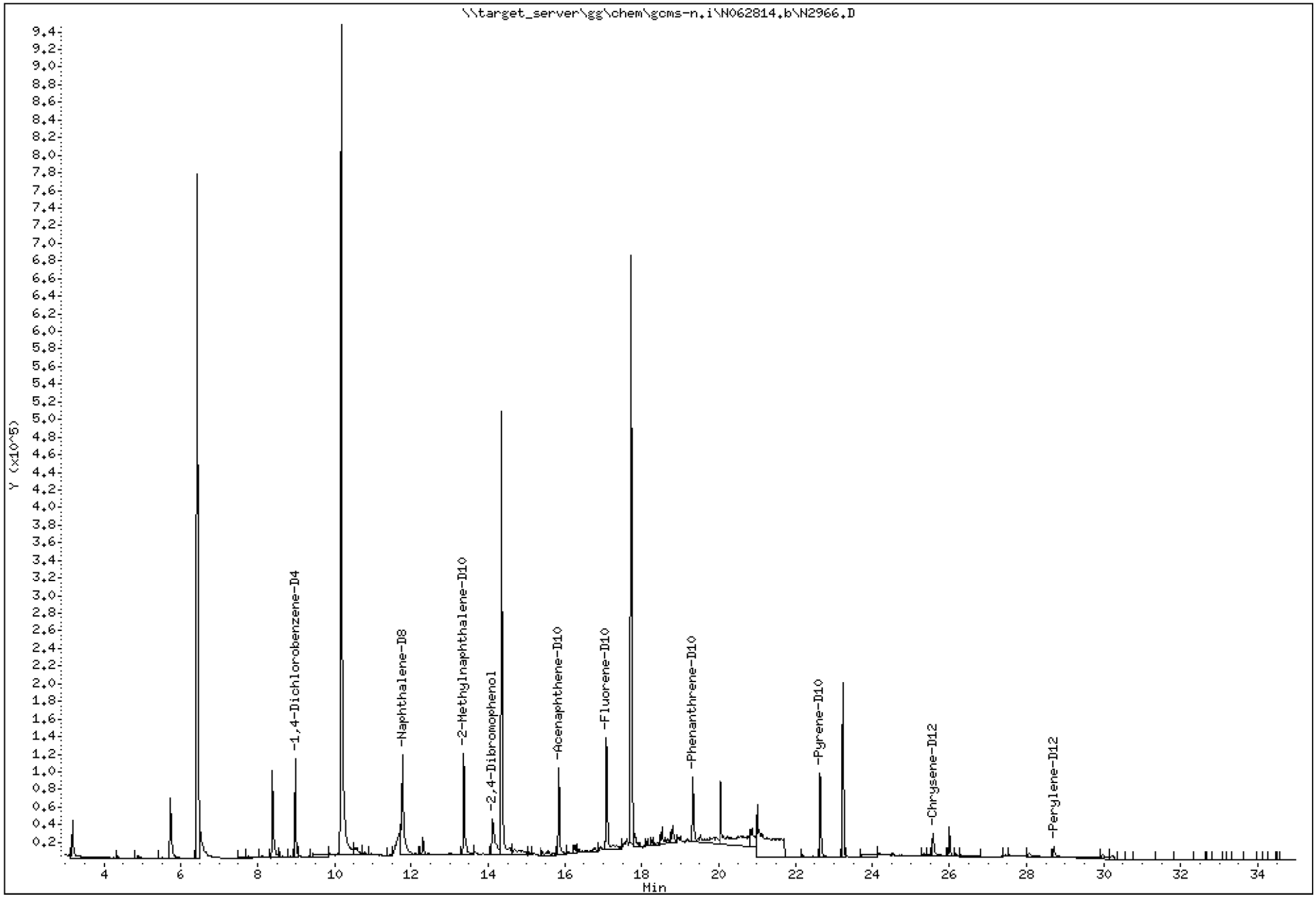
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	0.98000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
* 8 1,4-Dichlorobenzene-D4	152	8.970	8.970	(1.000)	61040	0.80000	(a)	
* 24 Naphthalene-D8	136	11.763	11.746	(1.000)	211882	0.80000	(a)	
$ 30 2-Methylnaphthalene-D10	152	13.353	13.353	(0.843)	150767	1.17067	1.19	
$ 35 2,4-Dibromophenol	252	14.107	14.107	(0.890)	106246	2.53060	2.58	
* 45 Acenaphthene-D10	164	15.842	15.842	(1.000)	85326	0.80000	(a)	
$ 52 Fluorene-D10	174	17.068	17.068	(1.077)	122731	1.24896	1.27	(Q)
* 63 Phenanthrene-D10	188	19.323	19.323	(1.000)	123242	0.80000	(a)	
$ 69 Pyrene-D10	212	22.646	22.646	(0.885)	149664	1.80790	1.84	
* 73 Chrysene-D12	240	25.575	25.589	(1.000)	47461	0.80000	(a)	
* 81 Perylene-D12	264	28.706	28.723	(1.000)	32886	0.80000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N062814.b\N2966.D
Date : 28-JUN-2014 15:04
Client ID: FTA-SW-03-061914 Instrument: gcms-n.i
Sample Info: SH4521-14



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ANALYTICAL SERVICES

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SH4521-16
Client ID: FTA-SW-06-061914
Project: NCTAMSLANT Cutler CTO
SDG: WE53-7
Lab File ID: N2969.D

Sample Date: 19-JUN-14
Received Date: 20-JUN-14
Extract Date: 25-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145381

Analysis Date: 28-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 11-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,4-Dioxane	U	0.50	ug/L	1	1	1.0	0.029	0.50
2-Chlorophenol	U	0.50	ug/L	1	1	1.0	0.28	0.50
Naphthalene	J	0.10	ug/L	1	.2	0.20	0.064	0.10
Hexachlorobutadiene	U	0.10	ug/L	1	.2	0.20	0.087	0.10
2-Methylnaphthalene	U	0.10	ug/L	1	.2	0.20	0.077	0.10
Hexachlorobenzene	U	0.10	ug/L	1	.2	0.20	0.055	0.10
Pentachlorophenol	ULL	0.50	ug/L	1	1	1.0	0.33	0.50
Phenanthrene	J	0.095	ug/L	1	.2	0.20	0.051	0.10
Pyrene	U	0.10	ug/L	1	.2	0.20	0.059	0.10
Benzo(a)anthracene	J	0.065	ug/L	1	.2	0.20	0.046	0.10
Chrysene	ULL	0.10	ug/L	1	.2	0.20	0.036	0.10
Benzo(b)fluoranthene	U	0.10	ug/L	1	.2	0.20	0.089	0.10
Benzo(a)pyrene	J	0.076	ug/L	1	.2	0.20	0.066	0.10
Indeno(1,2,3-cd)pyrene	J	0.12	ug/L	1	.2	0.20	0.052	0.10
Dibenzo(a,h)anthracene	ULL	0.10	ug/L	1	.2	0.20	0.070	0.10
1,1'-Biphenyl	JLL	0.082	ug/L	1	.2	0.20	0.065	0.10
1,2,4,5-Tetrachlorobenzene	J	0.11	ug/L	1	.2	0.20	0.10	0.10
2,2'-Oxybis(1-Chloropropane)	ULL	0.15	ug/L	1	.2	0.20	0.12	0.15
2,4,6-Trichlorophenol	J	0.22	ug/L	1	1	1.0	0.12	0.50
2,4-Dichlorophenol	U	0.50	ug/L	1	1	1.0	0.50	0.50
2,4-Dinitrophenol	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,4-Dinitrotoluene	U	0.10	ug/L	1	.2	0.20	0.035	0.10
2,6-Dinitrotoluene	U	0.10	ug/L	1	.2	0.20	0.070	0.10
2-Nitroaniline	U	0.15	ug/L	1	.2	0.20	0.12	0.15
3,3'-Dichlorobenzidine	U	0.10	ug/L	1	.2	0.20	0.056	0.10
4,6-Dinitro-2-Methylphenol	U	0.75	ug/L	1	1	1.0	0.50	0.75
4-Chloroaniline	U	0.50	ug/L	1	1	1.0	0.50	0.50
3&4-Methylphenol	U	0.50	ug/L	1	1	1.0	0.44	0.50
4-Nitroaniline	U	0.10	ug/L	1	.2	0.20	0.065	0.10
Atrazine	J	0.060	ug/L	1	.2	0.20	0.038	0.10
Bis(2-Chloroethyl)Ether	JL	0.044	ug/L	1	.2	0.20	0.041	0.10
Bis(2-Ethylhexyl)Phthalate	ULL	0.50	ug/L	1	1	1.0	0.50	0.50
Dibenzofuran	J	0.087	ug/L	1	.2	0.20	0.068	0.10
Hexachlorocyclopentadiene	U	0.10	ug/L	1	.2	0.20	0.067	0.10
Hexachloroethane	U	0.10	ug/L	1	.2	0.20	0.073	0.10

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SH4521-16
Client ID: FTA-SW-06-061914
Project: NCTAMSLANT Cutler CTO
SDG: WE53-7
Lab File ID: N2969.D

Sample Date: 19-JUN-14
Received Date: 20-JUN-14
Extract Date: 25-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145381

Analysis Date: 28-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 11-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Nitrobenzene	U	0.15	ug/L	1	.2	0.20	0.13	0.15
N-Nitroso-Di-N-Propylamine	U	0.10	ug/L	1	.2	0.20	0.072	0.10
3-Nitroaniline	U	0.10	ug/L	1	.2	0.20	0.076	0.10
2-Methylnaphthalene-D10		54.8	%					
Fluorene-D10		62.3	%					
Pyrene-D10		73.8	%					
2,4-Dibromophenol		56.6	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N062814.b\N2969.D
Report Date: 11-Jul-2014 13:33

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N062814.b\N2969.D
Lab Smp Id: SH4521-16 Client Smp ID: FTA-SW-06-061914
Inj Date : 28-JUN-2014 17:14 MS Autotune Date: 12-NOV-2013 09:32
Operator : JCG Inst ID: gcms-n.i
Smp Info : SH4521-16
Misc Info : WG145582,WG145381,WG145455-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N062814.b\NSPSIM09.m
Meth Date : 28-Jun-2014 09:09 cgomez Quant Type: ISTD
Cal Date : 26-JUN-2014 13:22 Cal File: N2926.D
Als bottle: 14
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ttcutler53ocs.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

			QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
	5	Bis(2-Chloroethyl)ether	93	8.494	8.494	(0.947)	5967	0.04356	0.0436(a)	
*	8	1,4-Dichlorobenzene-D4	152	8.971	8.970	(1.000)	65105	0.80000	(a)	
	22	2,4-Dichlorophenol	162	11.610	11.558	(0.987)	12254	0.16473	0.165(aQ)	
*	24	Naphthalene-D8	136	11.763	11.746	(1.000)	219547	0.80000	(a)	
	25	Naphthalene	128	11.797	11.797	(1.003)	27939	0.10281	0.103(aQ)	
$	30	2-Methylnaphthalene-D10	152	13.353	13.353	(0.843)	147572	1.09708	1.10	
	33	1,2,4,5-Tetrachlorobenzene	216	13.843	13.843	(0.874)	7322	0.10574	0.106(a)	
$	35	2,4-Dibromophenol	252	14.107	14.107	(0.890)	99274	2.26388	2.26	
	36	2,4,6-Trichlorophenol	196	14.182	14.182	(0.895)	10588	0.22514	0.225(a)	
	39	1,1'-Biphenyl	154	14.559	14.559	(0.919)	16089	0.08194	0.0819(aQ)	
*	45	Acenaphthene-D10	164	15.842	15.842	(1.000)	89120	0.80000	(a)	
	48	Dibenzofuran	168	16.343	16.343	(1.032)	17110	0.08693	0.0869(a)	
$	52	Fluorene-D10	174	17.069	17.068	(1.077)	127929	1.24644	1.25(Q)	
	61	Atrazine	200	18.933	18.918	(0.980)	1698	0.05983	0.0598(a)	
*	63	Phenanthrene-D10	188	19.323	19.323	(1.000)	127282	0.80000	(a)	
	64	Phenanthrene	178	19.368	19.368	(1.002)	19039	0.09499	0.0950(a)	
$	69	Pyrene-D10	212	22.632	22.646	(0.885)	141516	1.47593	1.48	
	72	Benzo(a)anthracene	228	25.562	25.562	(0.999)	5459	0.06503	0.0650(a)	
*	73	Chrysene-D12	240	25.576	25.589	(1.000)	54971	0.80000	(a)	
	80	Benzo(a)pyrene	252	28.586	28.586	(0.996)	3940	0.07586	0.0758(a)	

Data File: \\target_server\gg\chem\gcms-n.i\N062814.b\N2969.D
Report Date: 11-Jul-2014 13:33

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
* 81 Perylene-D12	264	28.706	28.723	(1.000)	32777	0.80000	(a)	
82 Indeno(1,2,3-cd)pyrene	276	30.811	30.811	(1.073)	3045	0.11820	0.118(aMH)	M3

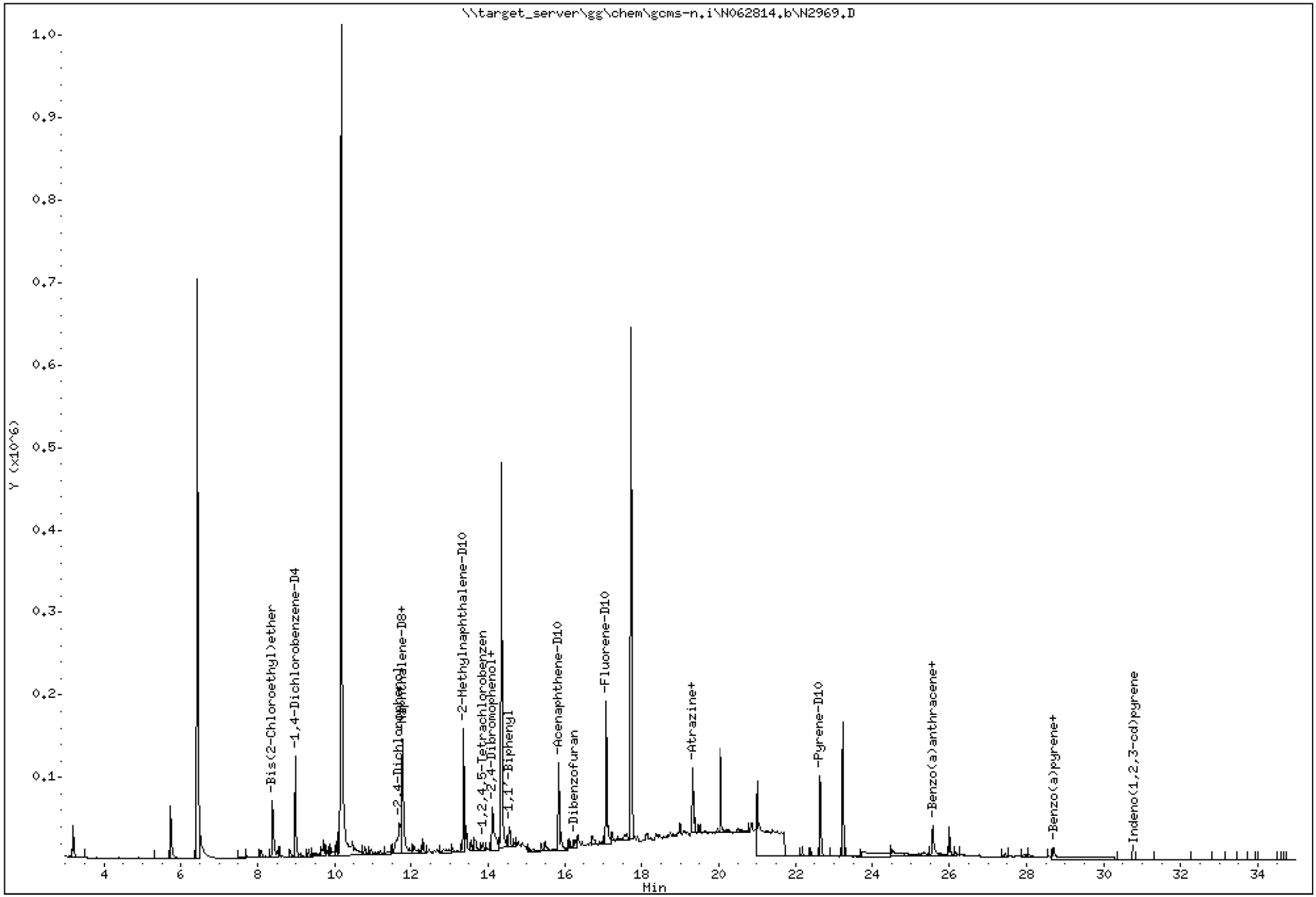
QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.



2:35 pm, Jul 11, 2014

Data File: \\target_server\gg\chem\gcms-n.i\N062814.b\N2969.D
Date : 28-JUN-2014 17:14
Client ID: FTA-SW-06-061914 Instrument: gcms-n.i
Sample Info: SH4521-16



Katahdin Analytical Services 6000093

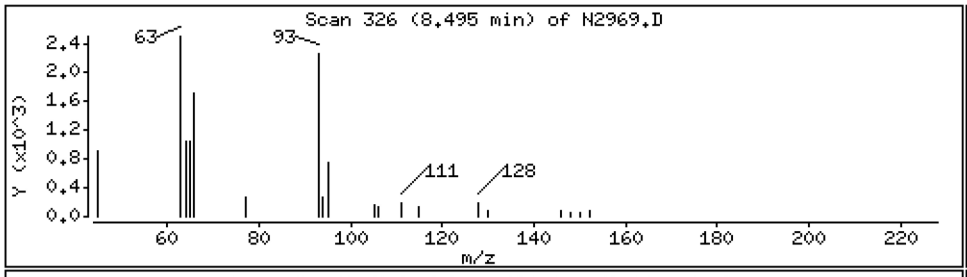
Data File: \\target_server\gg\chem\gcms-n.i\N062814.b\N2969.D

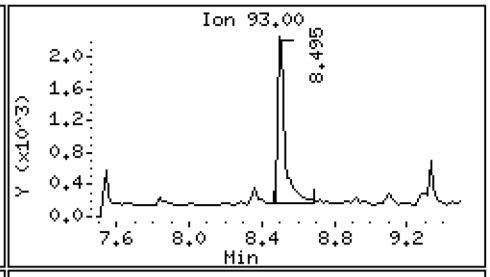
Date : 28-JUN-2014 17:14

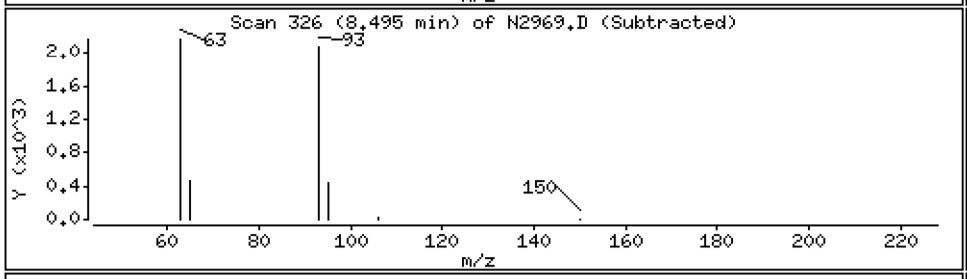
Client ID: FTA-SW-06-061914 Instrument: gcms-n.i

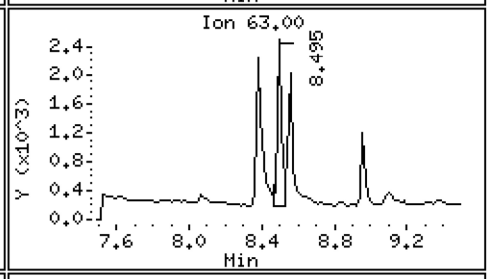
Sample Info: SH4521-16

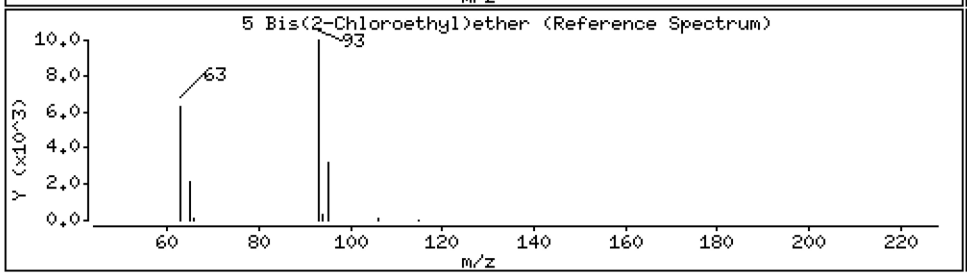
5 Bis(2-Chloroethyl)ether Concentration: 0.0436 ug/L

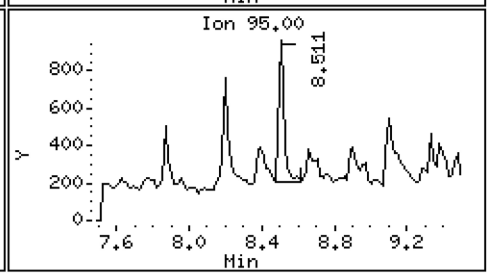




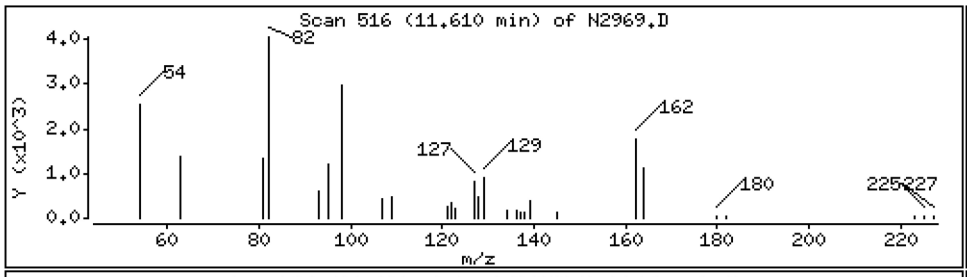


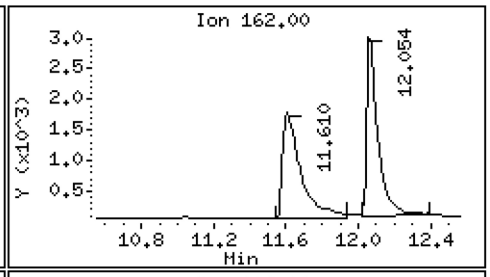


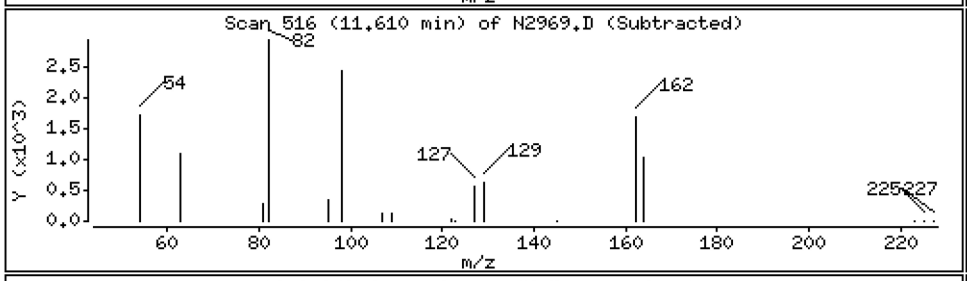


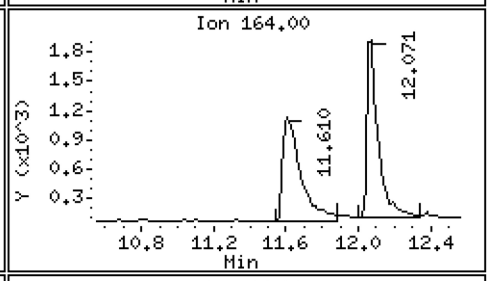


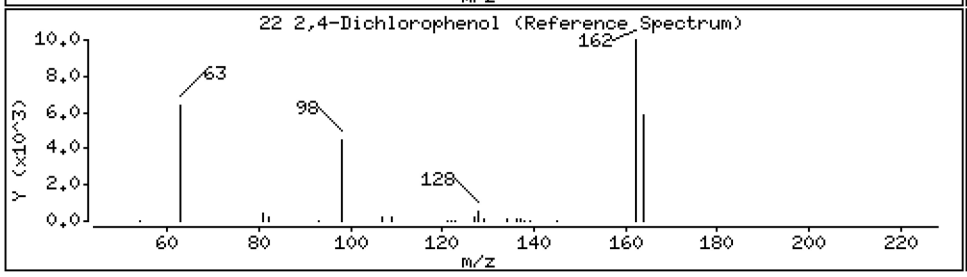
22 2,4-Dichlorophenol Concentration: 0.165 ug/L

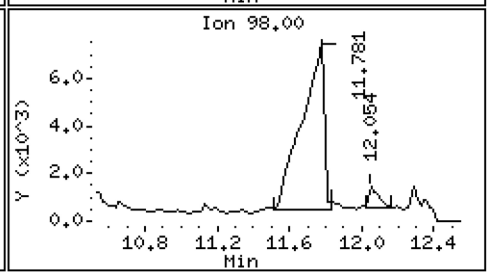












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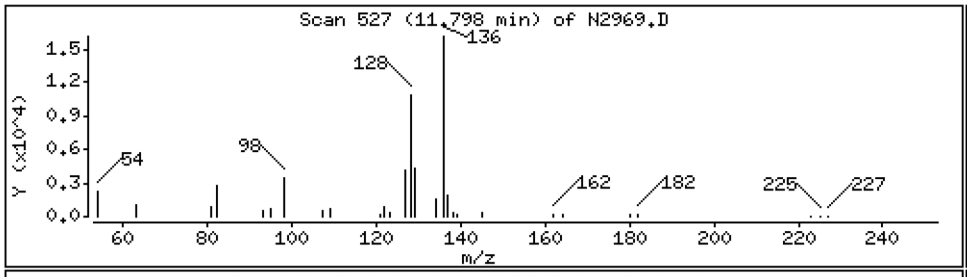
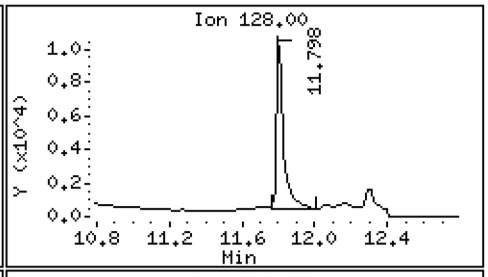
Date : 28-JUN-2014 17:14

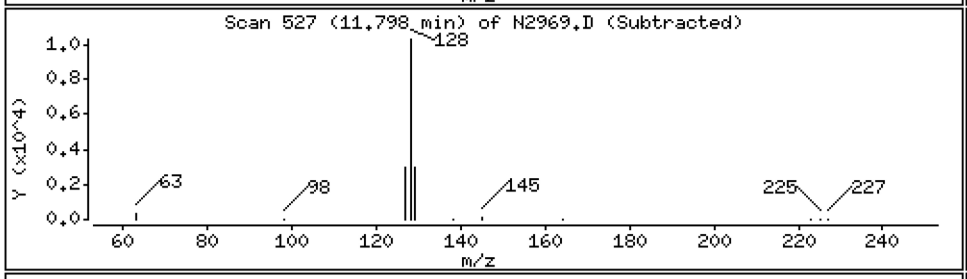
Client ID: FTA-SW-06-061914 Instrument: gcms-n.i

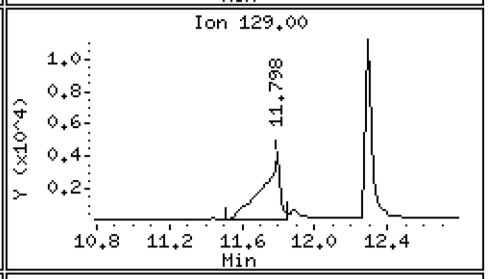
Sample Info: SH4521-16

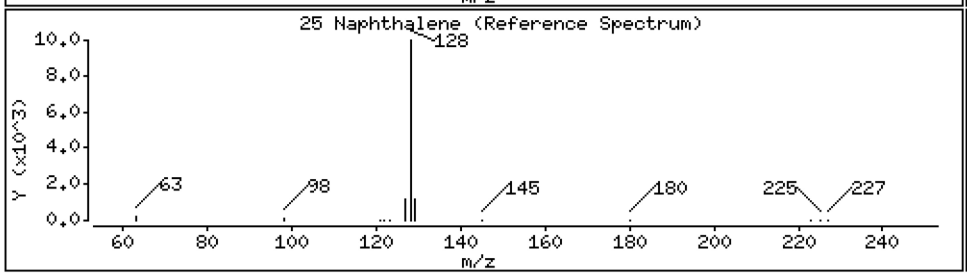
25 Naphthalene Concentration: 0.103 ug/L

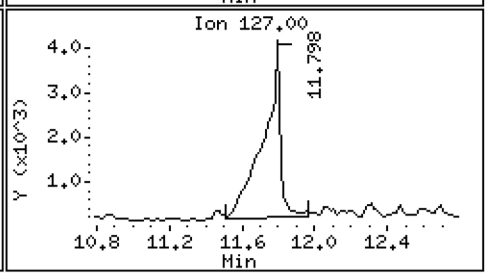




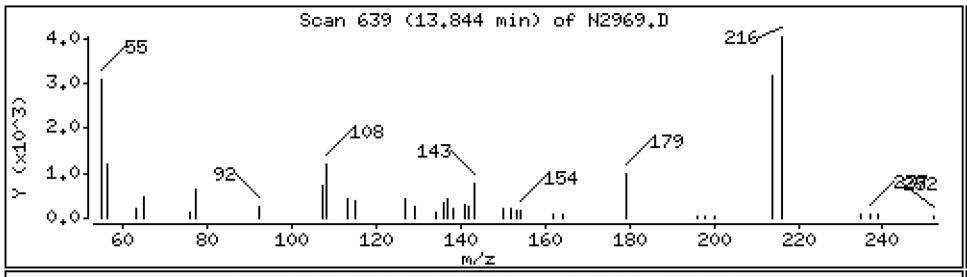


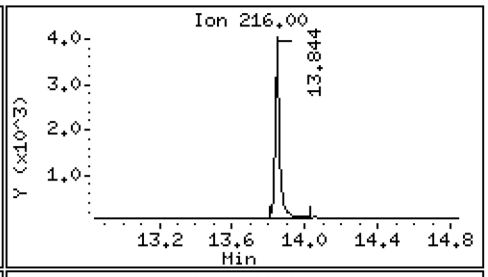


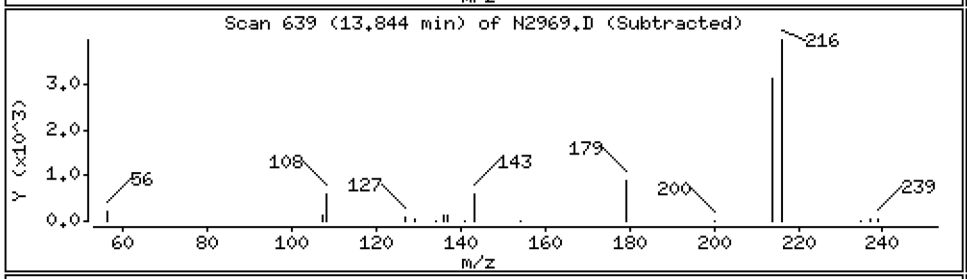


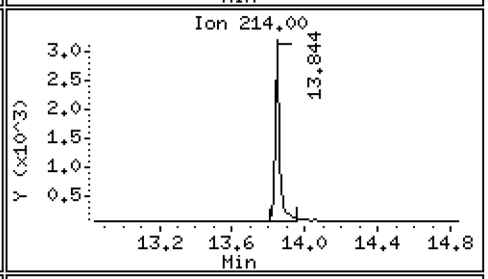


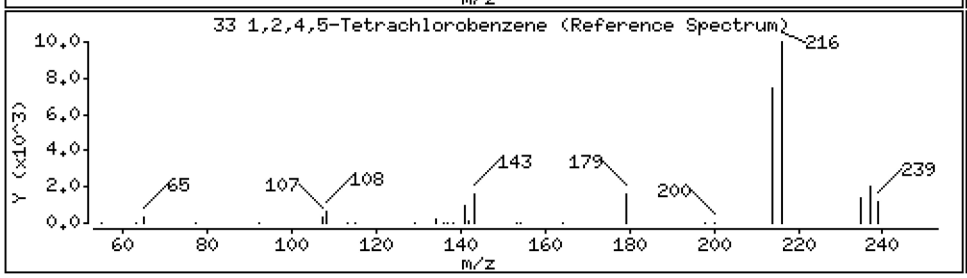
33 1,2,4,5-Tetrachlorobenzene Concentration: 0.106 ug/L

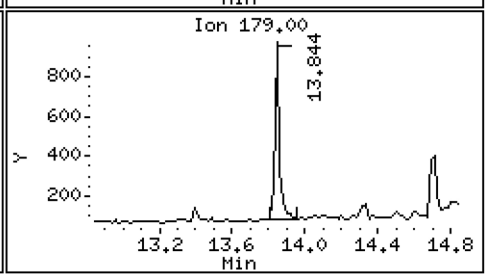












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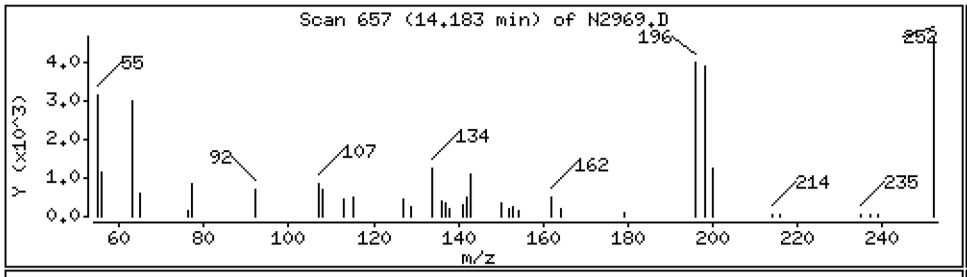
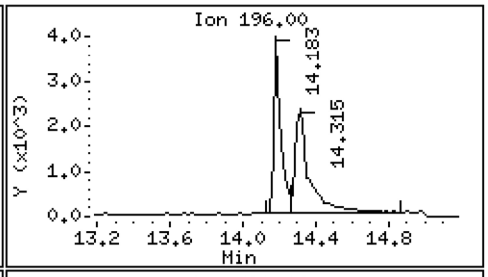
Date : 28-JUN-2014 17:14

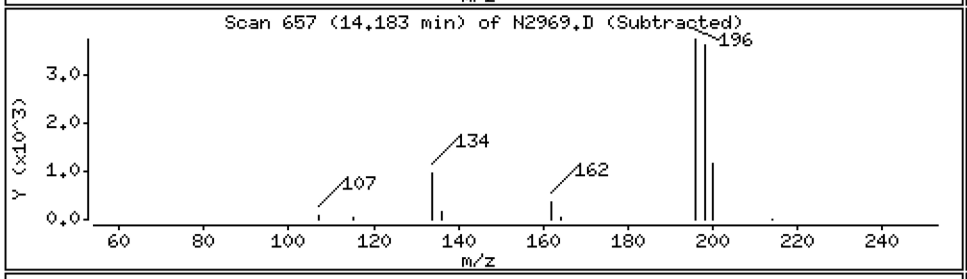
Client ID: FTA-SW-06-061914 Instrument: gcms-n.i

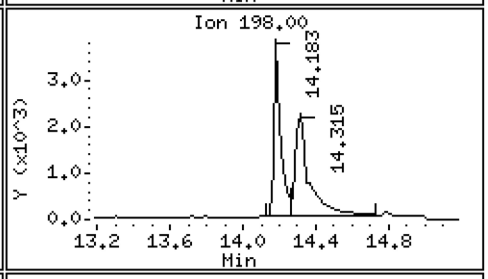
Sample Info: SH4521-16

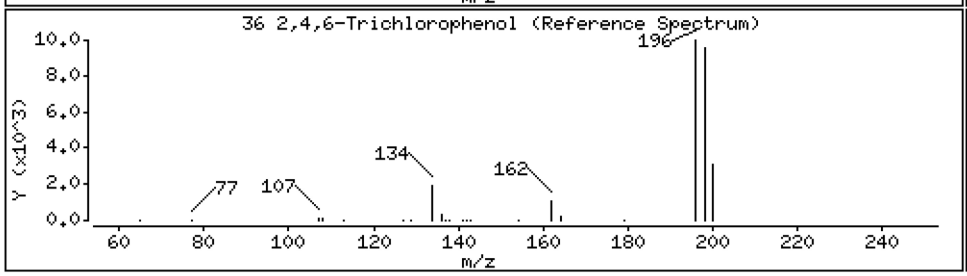
36 2,4,6-Trichlorophenol Concentration: 0.225 ug/L

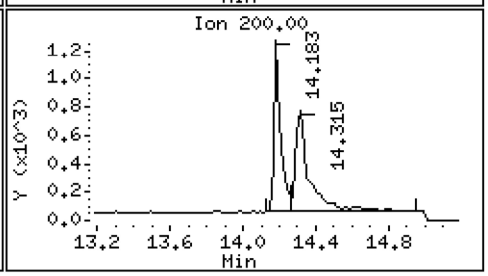




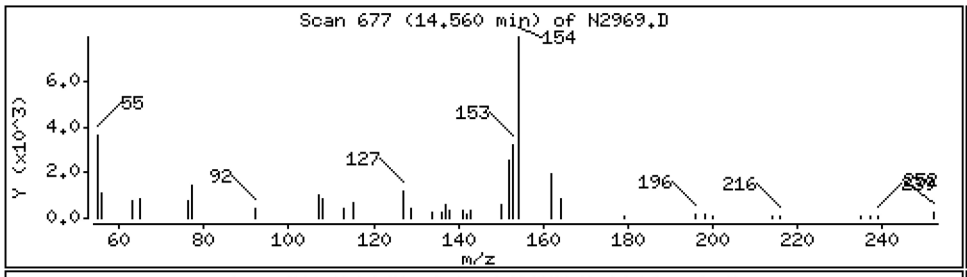


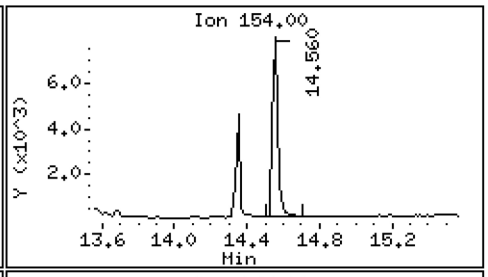


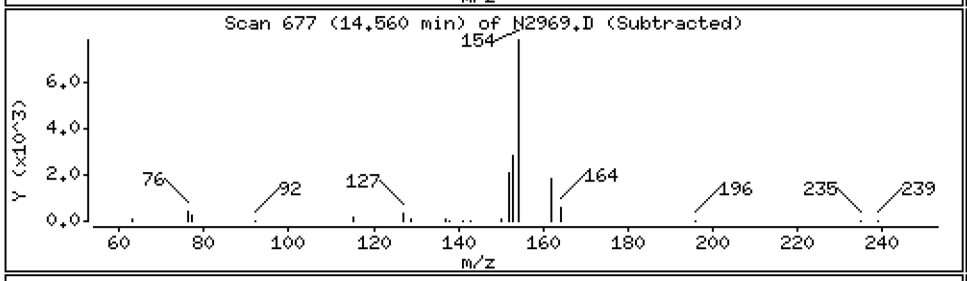


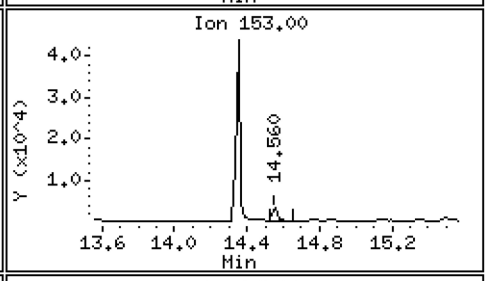


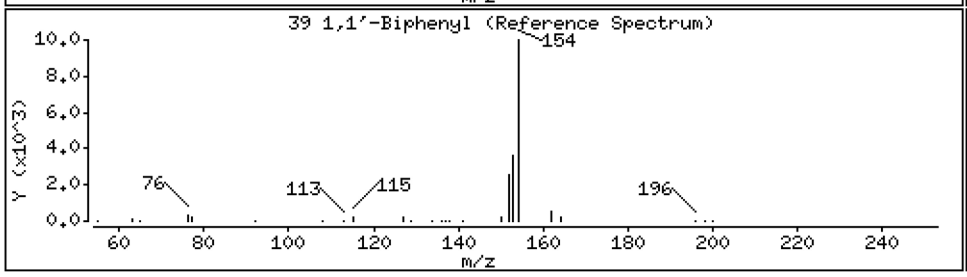
39 1,1'-Biphenyl Concentration: 0.0819 ug/L

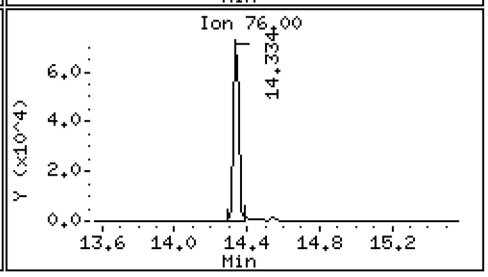












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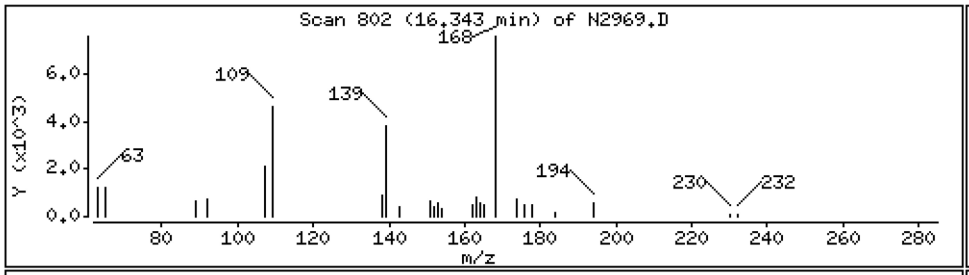
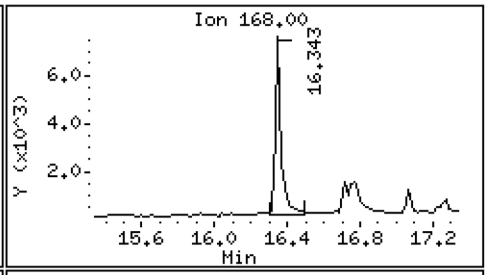
Date : 28-JUN-2014 17:14

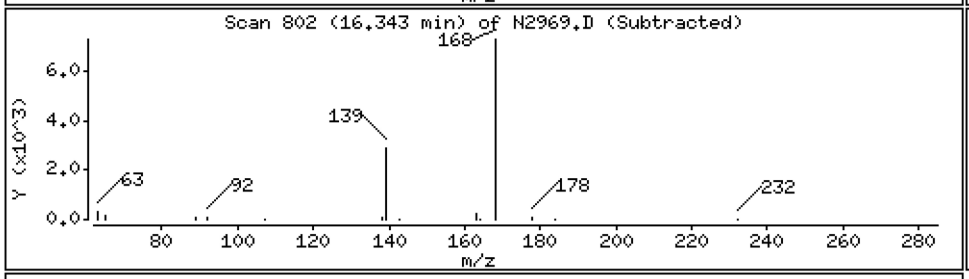
Client ID: FTA-SW-06-061914 Instrument: gcms-n.i

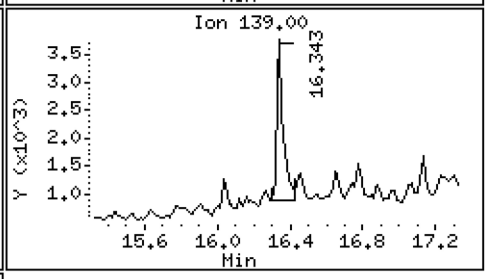
Sample Info: SH4521-16

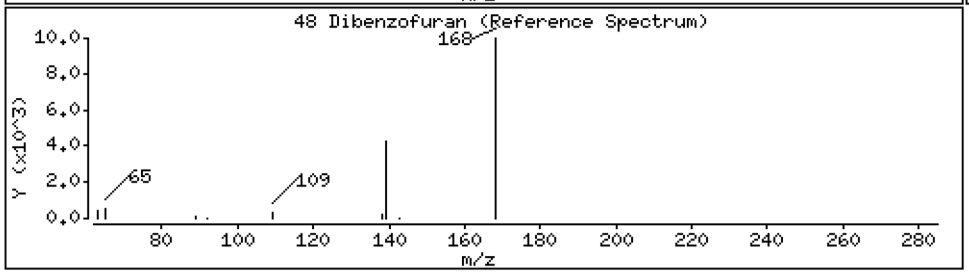
48 Dibenzofuran Concentration: 0.0869 ug/L



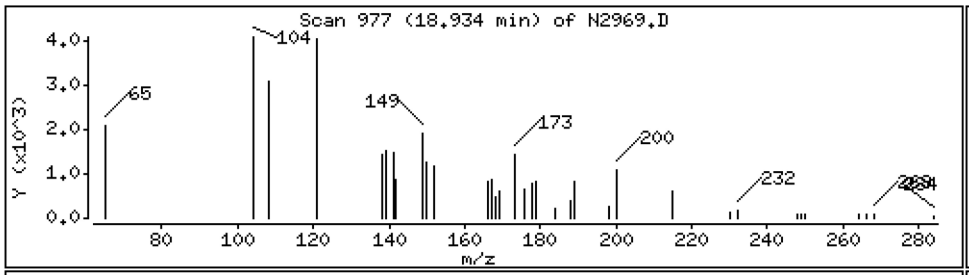


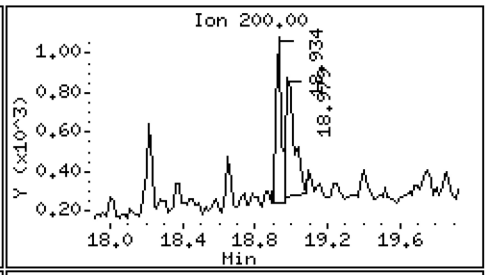


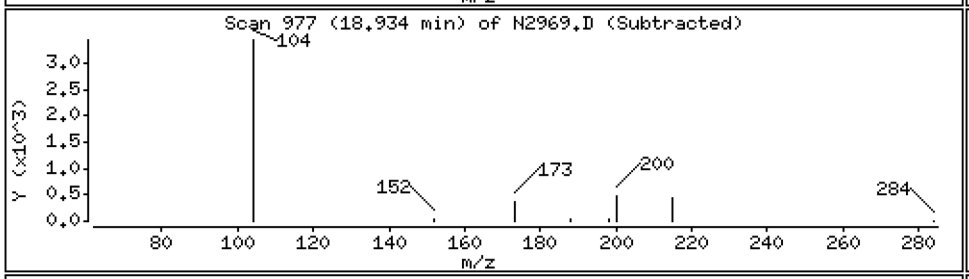


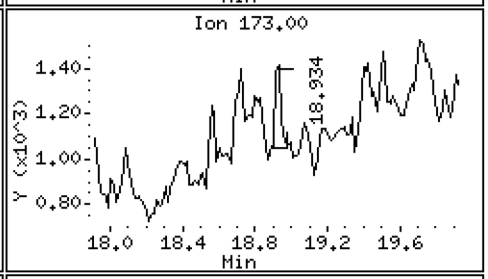


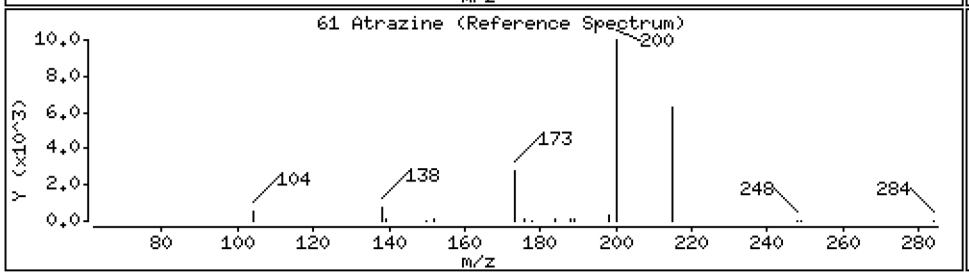
61 Atrazine Concentration: 0.0598 ug/L

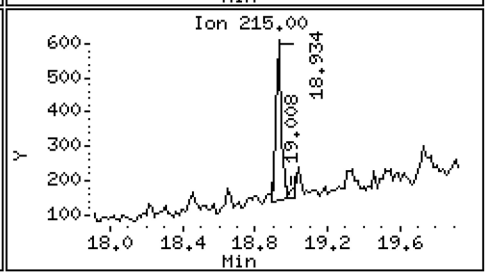












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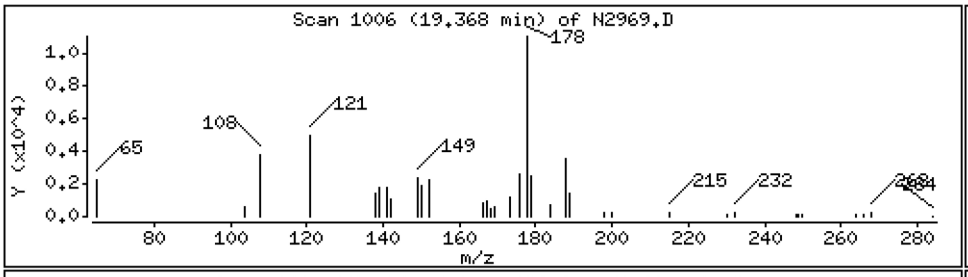
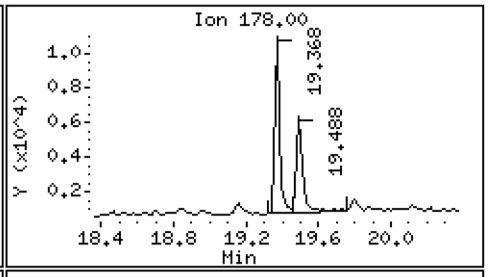
Date : 28-JUN-2014 17:14

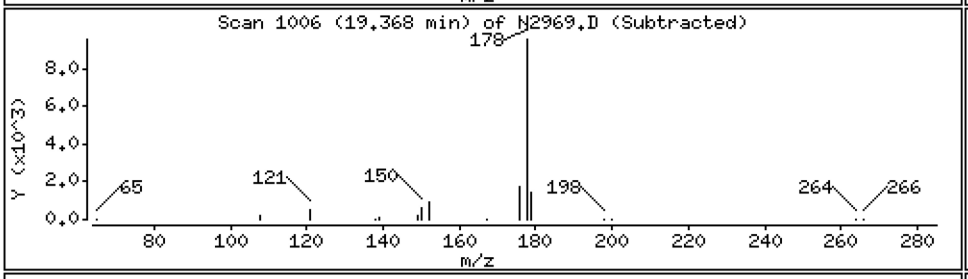
Client ID: FTA-SW-06-061914 Instrument: gcms-n.i

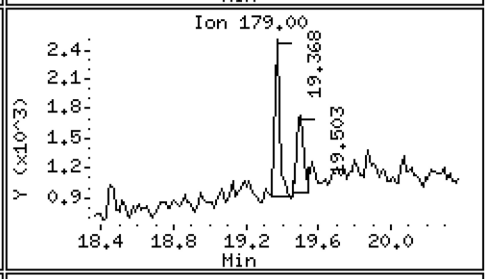
Sample Info: SH4521-16

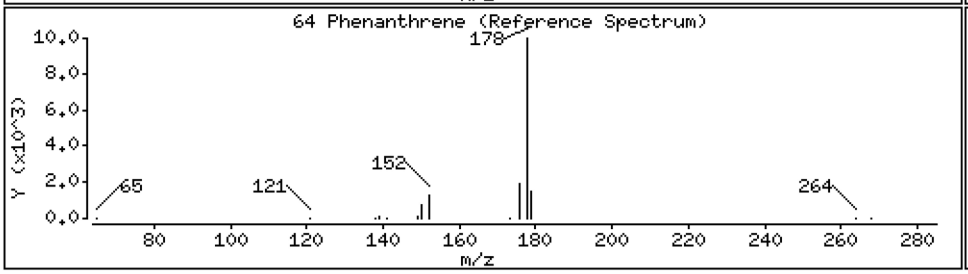
64 Phenanthrene Concentration: 0.0950 ug/L

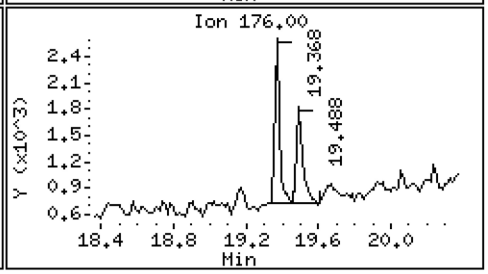




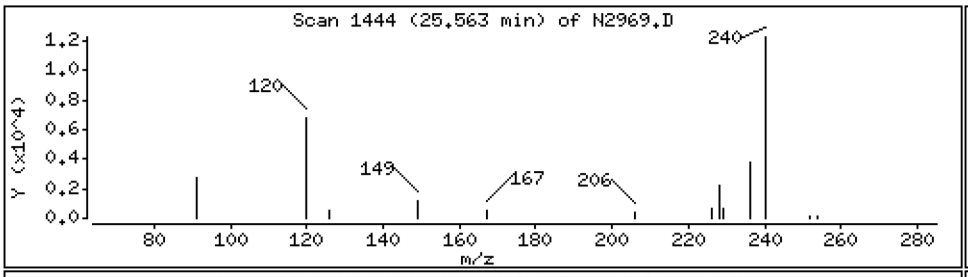


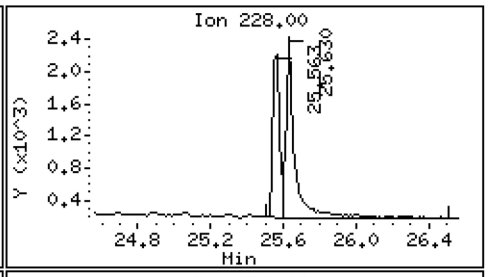


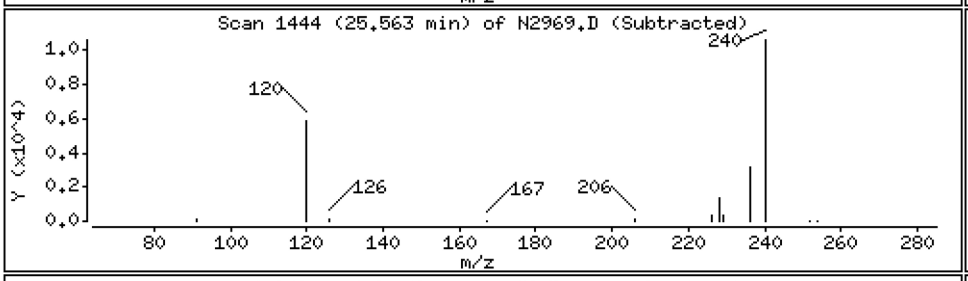


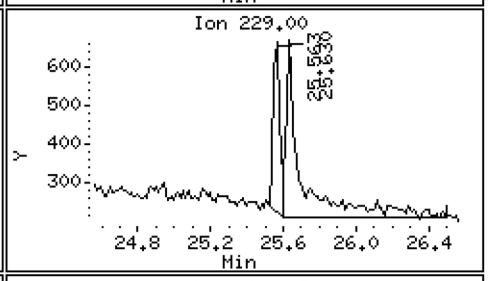


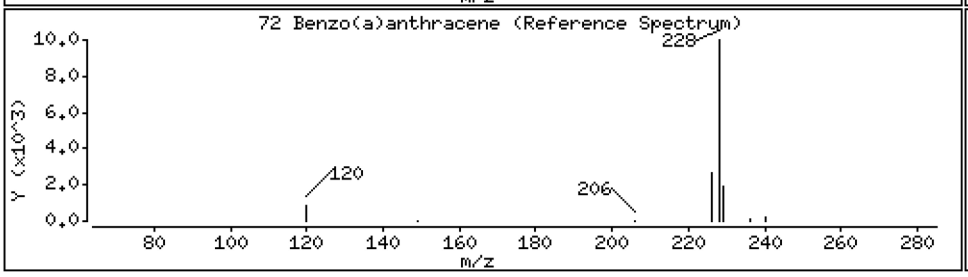
72 Benzo(a)anthracene Concentration: 0.0650 ug/L

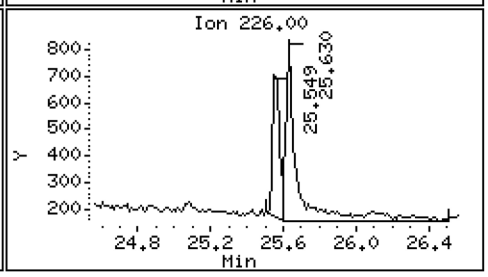












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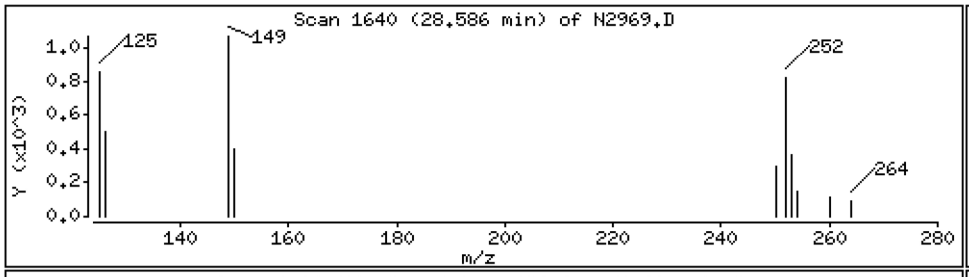
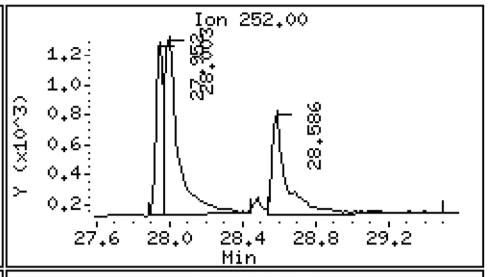
Date : 28-JUN-2014 17:14

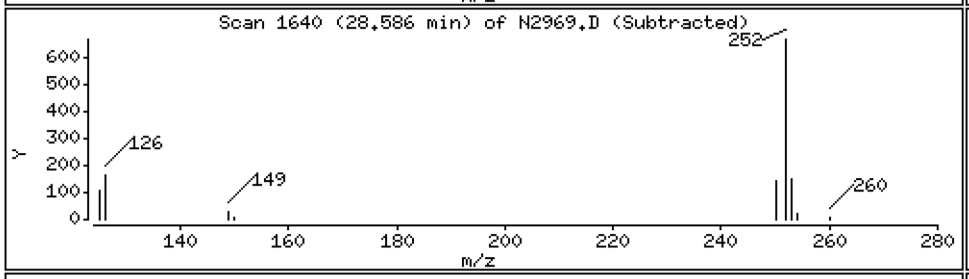
Client ID: FTA-SW-06-061914 Instrument: gcms-n.i

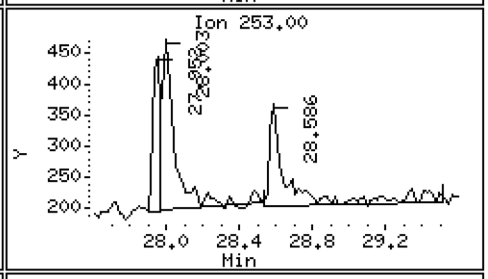
Sample Info: SH4521-16

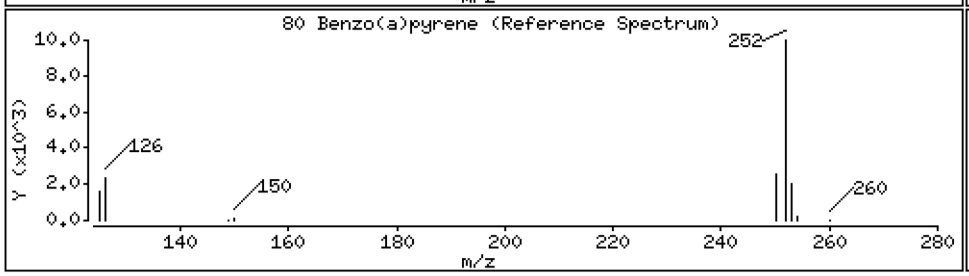
80 Benzo(a)pyrene Concentration: 0.0758 ug/L

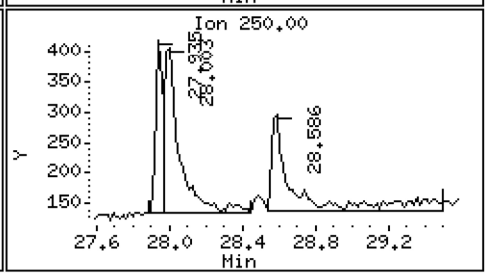




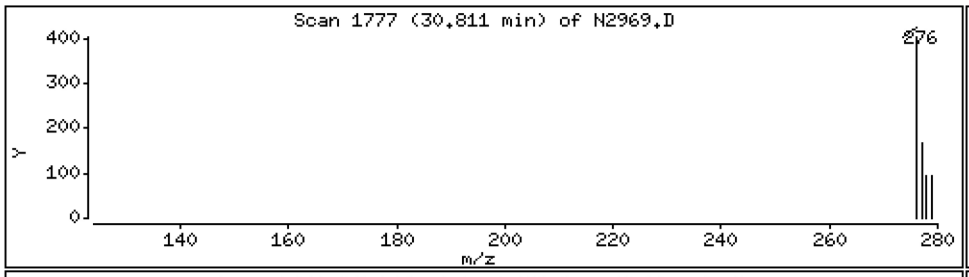


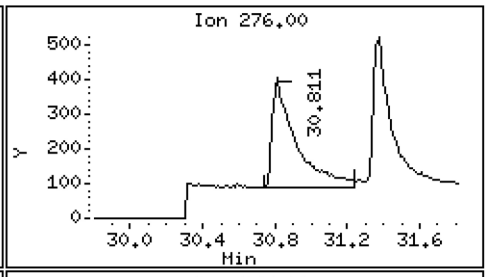


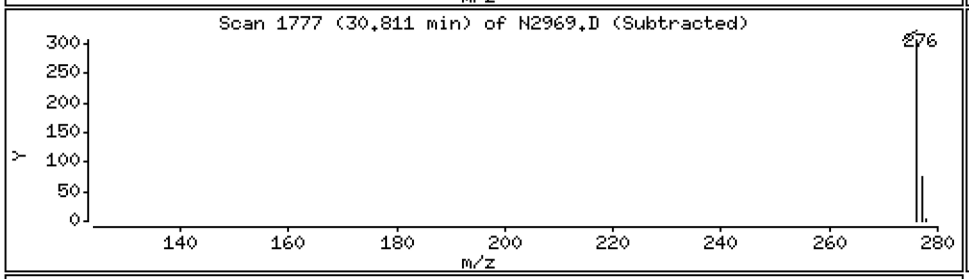


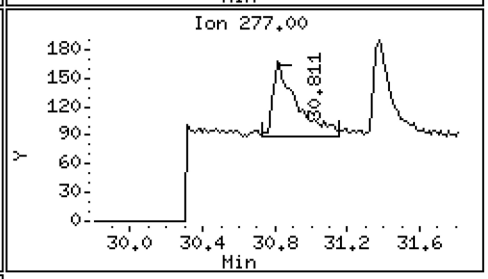


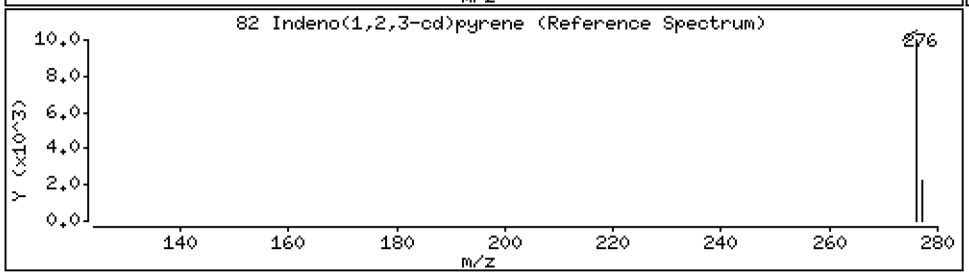
82 Indeno(1,2,3-cd)pyrene Concentration: 0.118 ug/L











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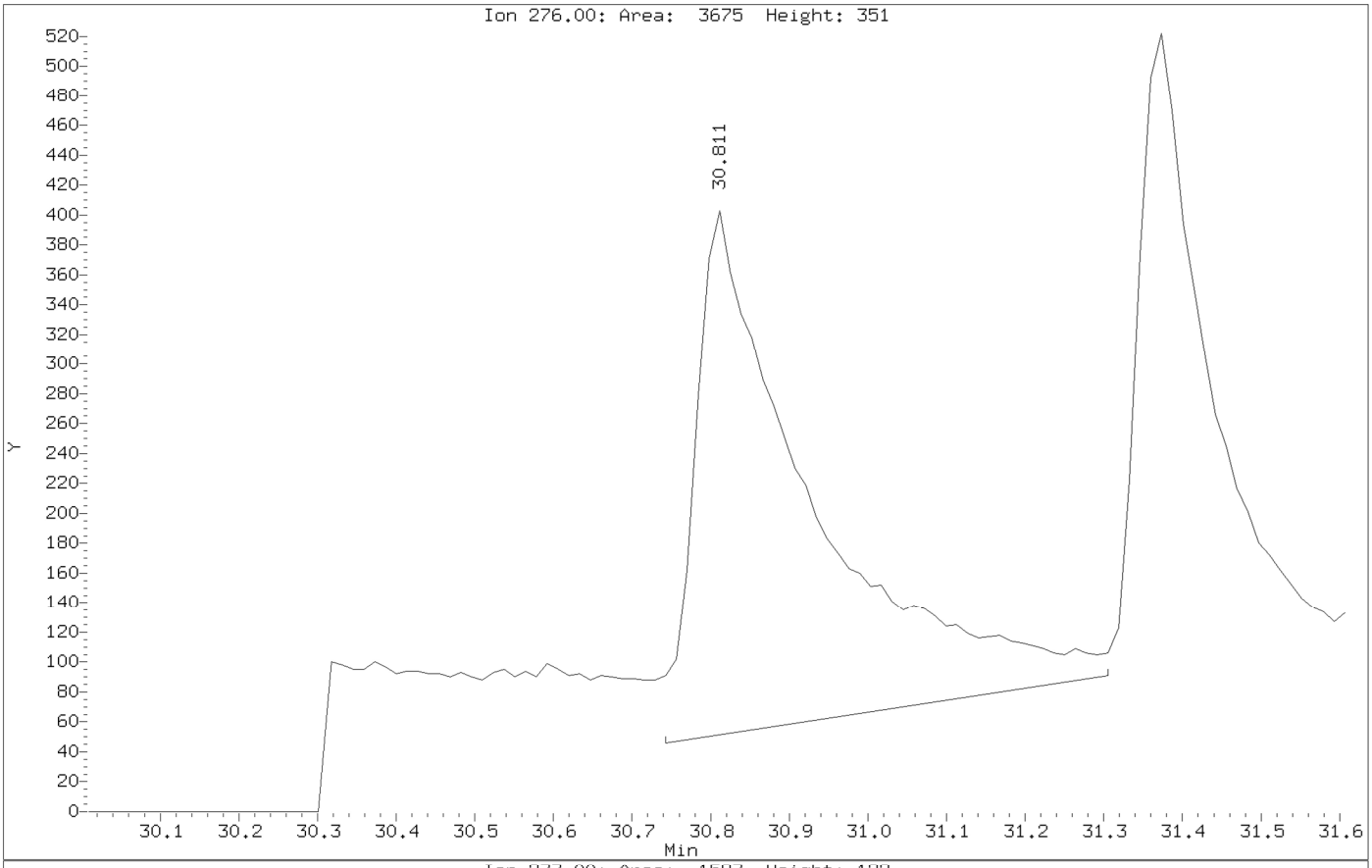
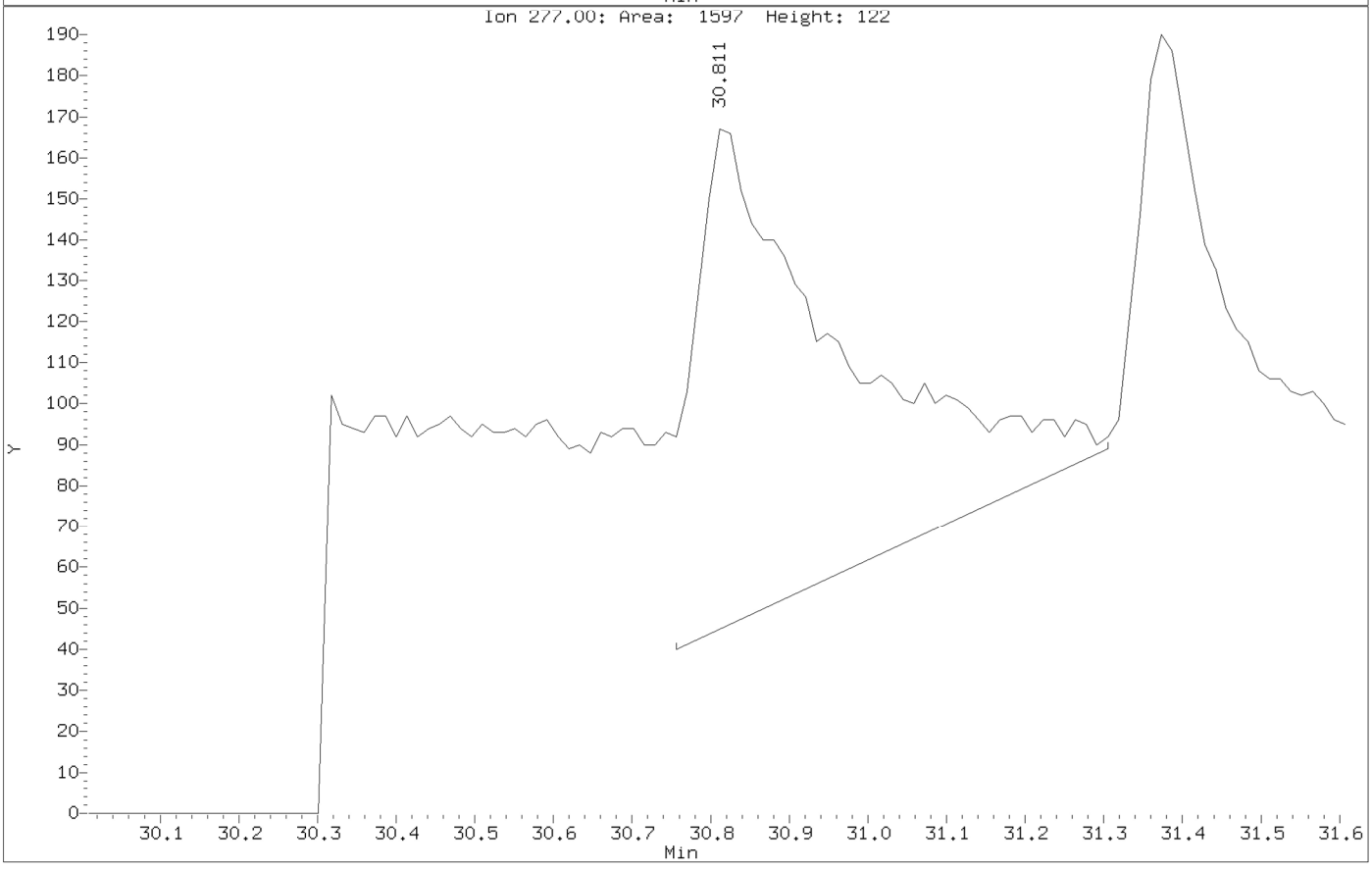
Injection Date: 28-JUN-2014 17:14
Instrument: gcms-n.i
Client Sample ID: FTA-SW-06-061914

Compound: Indeno(1,2,3-cd)pyrene
CAS Number: 193-39-5

BEFORE MANUAL INTEGRATION





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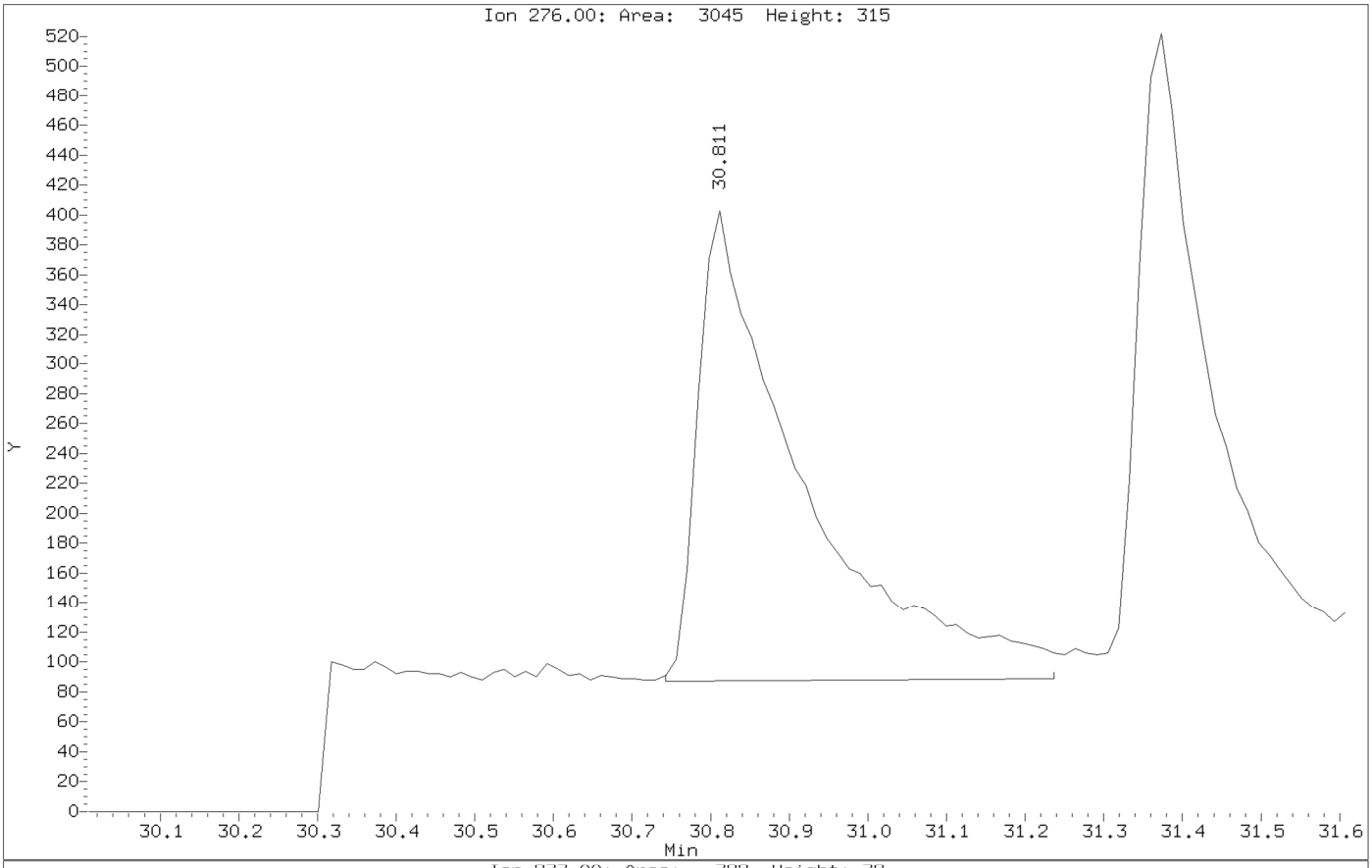
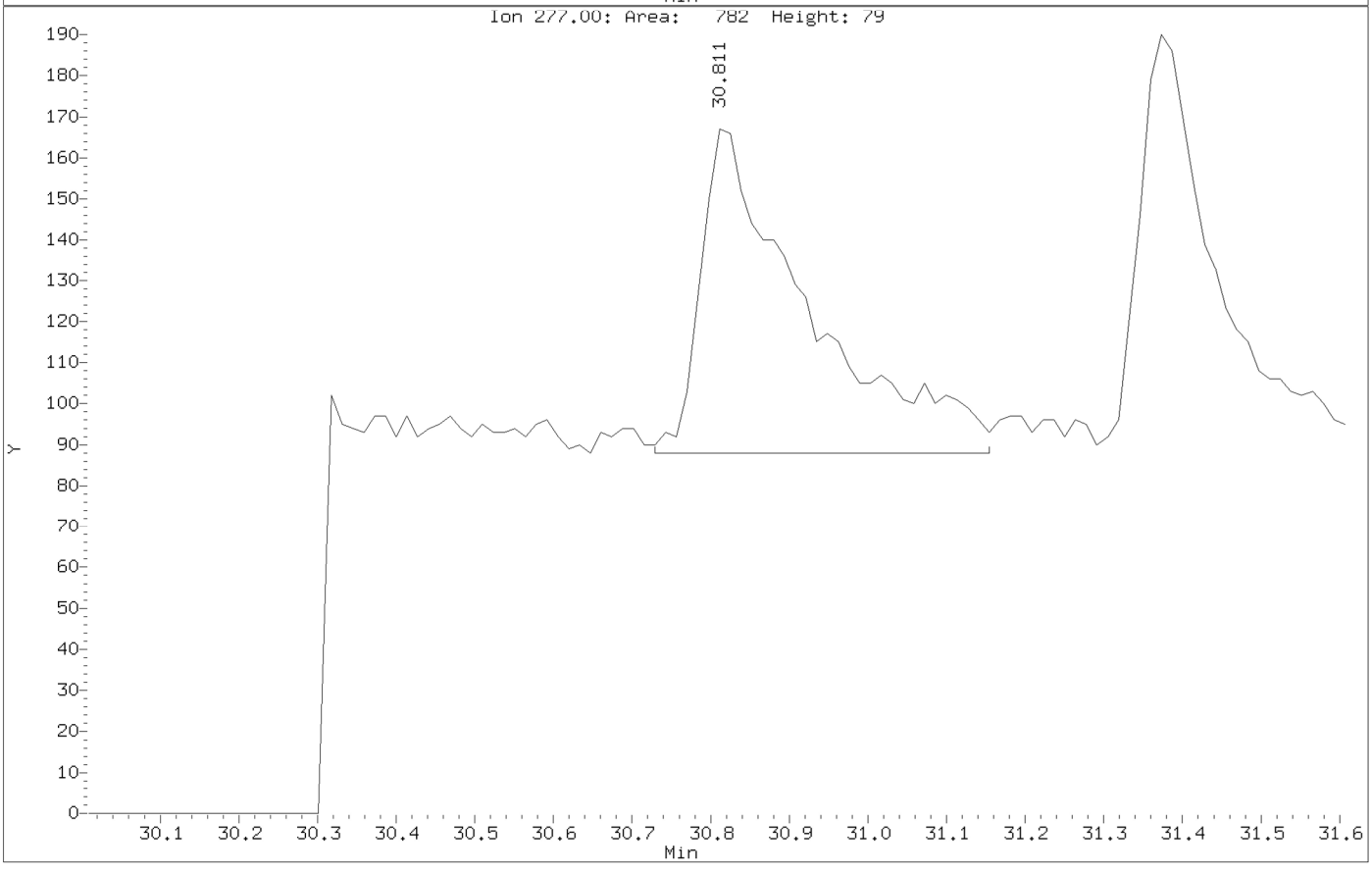
Injection Date: 28-JUN-2014 17:14
Instrument: gcms-n.i
Client Sample ID: FTA-SW-06-061914

Compound: Indeno(1,2,3-cd)pyrene
CAS Number: 193-39-5

AFTER MANUAL INTEGRATION





Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SH4521-18
Client ID: FTA-SW-07-061914
Project: NCTAMSLANT Cutler CTO
SDG: WE53-7
Lab File ID: N2970.D

Sample Date: 19-JUN-14
Received Date: 20-JUN-14
Extract Date: 25-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145381

Analysis Date: 28-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 11-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,4-Dioxane	U	0.47	ug/L	1	1	0.94	0.027	0.47
2-Chlorophenol	U	0.47	ug/L	1	1	0.94	0.26	0.47
Naphthalene	U	0.094	ug/L	1	.2	0.19	0.060	0.094
Hexachlorobutadiene	U	0.094	ug/L	1	.2	0.19	0.082	0.094
2-Methylnaphthalene	U	0.094	ug/L	1	.2	0.19	0.073	0.094
Hexachlorobenzene	U	0.094	ug/L	1	.2	0.19	0.052	0.094
Pentachlorophenol	ULL	0.47	ug/L	1	1	0.94	0.31	0.47
Phenanthrene	U	0.094	ug/L	1	.2	0.19	0.048	0.094
Pyrene	U	0.094	ug/L	1	.2	0.19	0.056	0.094
Benzo(a)anthracene	U	0.094	ug/L	1	.2	0.19	0.043	0.094
Chrysene	ULL	0.094	ug/L	1	.2	0.19	0.034	0.094
Benzo(b)fluoranthene	U	0.094	ug/L	1	.2	0.19	0.084	0.094
Benzo(a)pyrene	U	0.094	ug/L	1	.2	0.19	0.062	0.094
Indeno(1,2,3-cd)pyrene	U	0.094	ug/L	1	.2	0.19	0.049	0.094
Dibenzo(a,h)anthracene	ULL	0.094	ug/L	1	.2	0.19	0.066	0.094
1,1'-Biphenyl	ULL	0.094	ug/L	1	.2	0.19	0.061	0.094
1,2,4,5-Tetrachlorobenzene	U	0.094	ug/L	1	.2	0.19	0.094	0.094
2,2'-Oxybis(1-Chloropropane)	ULL	0.14	ug/L	1	.2	0.19	0.11	0.14
2,4,6-Trichlorophenol	U	0.47	ug/L	1	1	0.94	0.11	0.47
2,4-Dichlorophenol	U	0.47	ug/L	1	1	0.94	0.47	0.47
2,4-Dinitrophenol	U	0.47	ug/L	1	1	0.94	0.23	0.47
2,4-Dinitrotoluene	U	0.094	ug/L	1	.2	0.19	0.033	0.094
2,6-Dinitrotoluene	U	0.094	ug/L	1	.2	0.19	0.066	0.094
2-Nitroaniline	U	0.14	ug/L	1	.2	0.19	0.11	0.14
3,3'-Dichlorobenzidine	U	0.094	ug/L	1	.2	0.19	0.053	0.094
4,6-Dinitro-2-Methylphenol	U	0.71	ug/L	1	1	0.94	0.47	0.71
4-Chloroaniline	U	0.47	ug/L	1	1	0.94	0.47	0.47
3&4-Methylphenol	U	0.47	ug/L	1	1	0.94	0.42	0.47
4-Nitroaniline	U	0.094	ug/L	1	.2	0.19	0.061	0.094
Atrazine	U	0.094	ug/L	1	.2	0.19	0.036	0.094
Bis(2-Chloroethyl)Ether	UL	0.094	ug/L	1	.2	0.19	0.039	0.094
Bis(2-Ethylhexyl)Phthalate	ULL	0.47	ug/L	1	1	0.94	0.47	0.47
Dibenzofuran	U	0.094	ug/L	1	.2	0.19	0.064	0.094
Hexachlorocyclopentadiene	U	0.094	ug/L	1	.2	0.19	0.063	0.094
Hexachloroethane	U	0.094	ug/L	1	.2	0.19	0.069	0.094

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SH4521-18
Client ID: FTA-SW-07-061914
Project: NCTAMSLANT Cutler CTO
SDG: WE53-7
Lab File ID: N2970.D

Sample Date: 19-JUN-14
Received Date: 20-JUN-14
Extract Date: 25-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145381

Analysis Date: 28-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 11-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Nitrobenzene	U	0.14	ug/L	1	.2	0.19	0.12	0.14
N-Nitroso-Di-N-Propylamine	U	0.094	ug/L	1	.2	0.19	0.068	0.094
3-Nitroaniline	U	0.094	ug/L	1	.2	0.19	0.072	0.094
2-Methylnaphthalene-D10		61.3	%					
Fluorene-D10		68.2	%					
Pyrene-D10		101.	%					
2,4-Dibromophenol		69.8	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N062814.b\N2970.D
Report Date: 11-Jul-2014 13:33

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N062814.b\N2970.D
Lab Smp Id: SH4521-18 Client Smp ID: FTA-SW-07-061914
Inj Date : 28-JUN-2014 17:57 MS Autotune Date: 12-NOV-2013 09:32
Operator : JCG Inst ID: gcms-n.i
Smp Info : SH4521-18
Misc Info : WG145582,WG145381,WG145455-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N062814.b\NSPSIM09.m
Meth Date : 28-Jun-2014 09:09 cgomez Quant Type: ISTD
Cal Date : 26-JUN-2014 13:22 Cal File: N2926.D
Als bottle: 15
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ttcutler53ocs.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

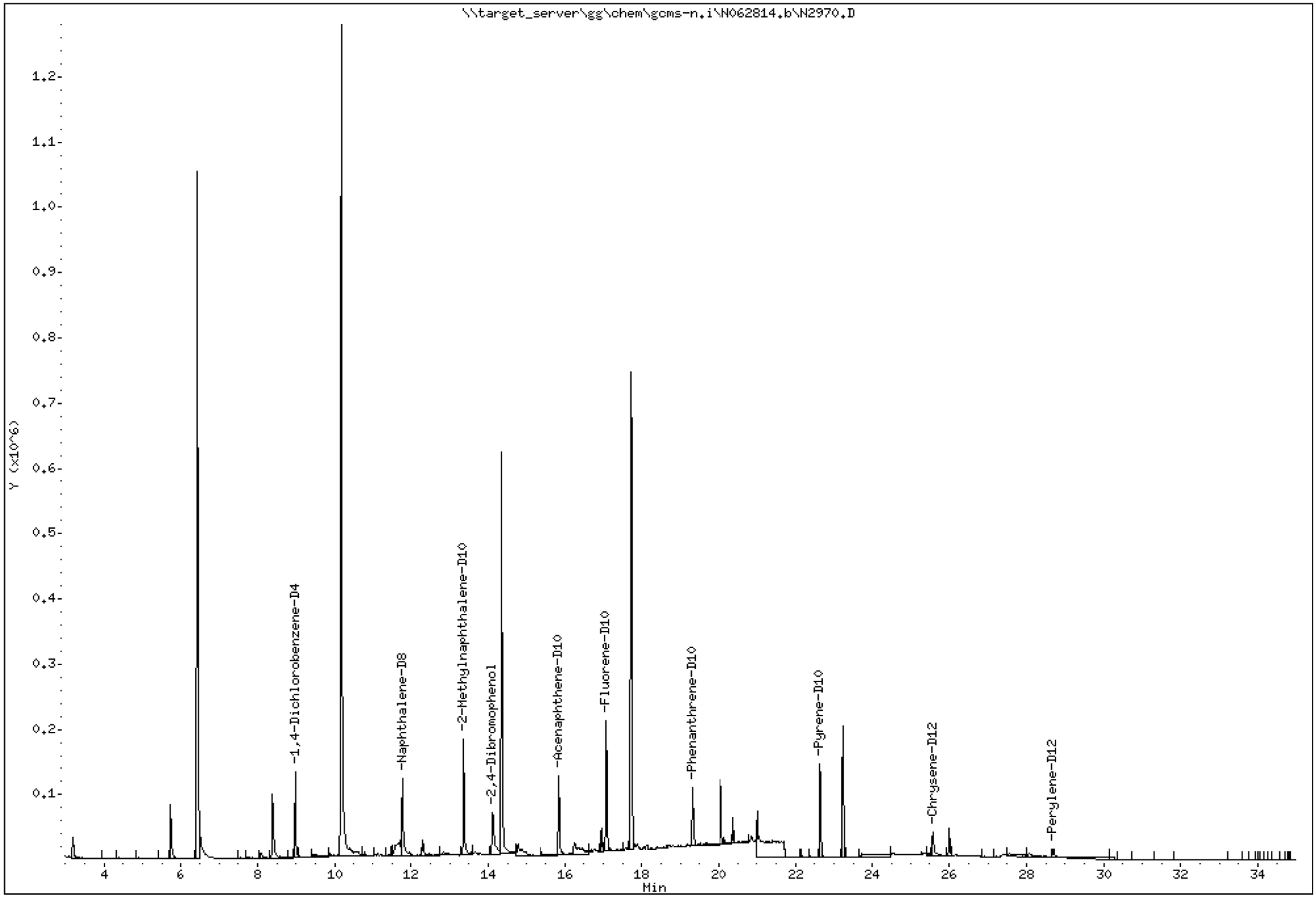
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.060	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
* 8 1,4-Dichlorobenzene-D4	152	8.971	8.970	(1.000)	68803	0.80000	(a)	
* 24 Naphthalene-D8	136	11.763	11.746	(1.000)	242361	0.80000	(a)	
$ 30 2-Methylnaphthalene-D10	152	13.354	13.353	(0.843)	185493	1.22681	1.16	
$ 35 2,4-Dibromophenol	252	14.126	14.107	(0.892)	137706	2.79374	2.64	
* 45 Acenaphthene-D10	164	15.842	15.842	(1.000)	100175	0.80000	(a)	
$ 52 Fluorene-D10	174	17.069	17.068	(1.077)	157423	1.36454	1.29	(Q)
* 63 Phenanthrene-D10	188	19.323	19.323	(1.000)	146623	0.80000	(a)	
$ 69 Pyrene-D10	212	22.646	22.646	(0.885)	209238	2.01406	1.90	
* 73 Chrysene-D12	240	25.576	25.589	(1.000)	59561	0.80000	(a)	
* 81 Perylene-D12	264	28.689	28.723	(1.000)	34680	0.80000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N062814.b\N2970.D
Date : 28-JUN-2014 17:57
Client ID: FTA-SW-07-061914 Instrument: gcms-n.i
Sample Info: SH4521-18



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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SH4521-20
Client ID: FTA-SW-08-061914
Project: NCTAMSLANT Cutler CTO
SDG: WE53-7
Lab File ID: N2971.D

Sample Date: 19-JUN-14
Received Date: 20-JUN-14
Extract Date: 25-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145381

Analysis Date: 28-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 11-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,4-Dioxane	U	0.49	ug/L	1	1	0.98	0.028	0.49
2-Chlorophenol	U	0.49	ug/L	1	1	0.98	0.27	0.49
Naphthalene	U	0.098	ug/L	1	.2	0.20	0.063	0.098
Hexachlorobutadiene	U	0.098	ug/L	1	.2	0.20	0.085	0.098
2-Methylnaphthalene	U	0.098	ug/L	1	.2	0.20	0.075	0.098
Hexachlorobenzene	U	0.098	ug/L	1	.2	0.20	0.054	0.098
Pentachlorophenol	ULL	0.49	ug/L	1	1	0.98	0.32	0.49
Phenanthrene	U	0.098	ug/L	1	.2	0.20	0.050	0.098
Pyrene	U	0.098	ug/L	1	.2	0.20	0.058	0.098
Benzo(a)anthracene	U	0.098	ug/L	1	.2	0.20	0.045	0.098
Chrysene	ULL	0.098	ug/L	1	.2	0.20	0.035	0.098
Benzo(b)fluoranthene	U	0.098	ug/L	1	.2	0.20	0.087	0.098
Benzo(a)pyrene	U	0.098	ug/L	1	.2	0.20	0.065	0.098
Indeno(1,2,3-cd)pyrene	U	0.098	ug/L	1	.2	0.20	0.051	0.098
Dibenzo(a,h)anthracene	ULL	0.098	ug/L	1	.2	0.20	0.069	0.098
1,1'-Biphenyl	ULL	0.098	ug/L	1	.2	0.20	0.064	0.098
1,2,4,5-Tetrachlorobenzene	U	0.098	ug/L	1	.2	0.20	0.098	0.098
2,2'-Oxybis(1-Chloropropane)	ULL	0.15	ug/L	1	.2	0.20	0.12	0.15
2,4,6-Trichlorophenol	U	0.49	ug/L	1	1	0.98	0.12	0.49
2,4-Dichlorophenol	U	0.49	ug/L	1	1	0.98	0.49	0.49
2,4-Dinitrophenol	U	0.49	ug/L	1	1	0.98	0.24	0.49
2,4-Dinitrotoluene	U	0.098	ug/L	1	.2	0.20	0.034	0.098
2,6-Dinitrotoluene	U	0.098	ug/L	1	.2	0.20	0.069	0.098
2-Nitroaniline	U	0.15	ug/L	1	.2	0.20	0.12	0.15
3,3'-Dichlorobenzidine	U	0.098	ug/L	1	.2	0.20	0.055	0.098
4,6-Dinitro-2-Methylphenol	U	0.74	ug/L	1	1	0.98	0.49	0.74
4-Chloroaniline	U	0.49	ug/L	1	1	0.98	0.49	0.49
3&4-Methylphenol	U	0.49	ug/L	1	1	0.98	0.43	0.49
4-Nitroaniline	U	0.098	ug/L	1	.2	0.20	0.064	0.098
Atrazine	U	0.098	ug/L	1	.2	0.20	0.037	0.098
Bis(2-Chloroethyl)Ether	UL	0.098	ug/L	1	.2	0.20	0.040	0.098
Bis(2-Ethylhexyl)Phthalate	ULL	0.49	ug/L	1	1	0.98	0.49	0.49
Dibenzofuran	U	0.098	ug/L	1	.2	0.20	0.067	0.098
Hexachlorocyclopentadiene	U	0.098	ug/L	1	.2	0.20	0.066	0.098
Hexachloroethane	U	0.098	ug/L	1	.2	0.20	0.072	0.098

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SH4521-20
Client ID: FTA-SW-08-061914
Project: NCTAMSLANT Cutler CTO
SDG: WE53-7
Lab File ID: N2971.D

Sample Date: 19-JUN-14
Received Date: 20-JUN-14
Extract Date: 25-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145381

Analysis Date: 28-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 11-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Nitrobenzene	U	0.15	ug/L	1	.2	0.20	0.13	0.15
N-Nitroso-Di-N-Propylamine	U	0.098	ug/L	1	.2	0.20	0.070	0.098
3-Nitroaniline	U	0.098	ug/L	1	.2	0.20	0.074	0.098
2-Methylnaphthalene-D10		55.9	%					
Fluorene-D10		61.8	%					
Pyrene-D10		90.6	%					
2,4-Dibromophenol		63.0	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N062814.b\N2971.D
Report Date: 11-Jul-2014 13:33

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Data file : \\target_server\gg\chem\gcms-n.i\N062814.b\N2971.D
Lab Smp Id: SH4521-20 Client Smp ID: FTA-SW-08-061914
Inj Date : 28-JUN-2014 18:40 MS Autotune Date: 12-NOV-2013 09:32
Operator : JCG Inst ID: gcms-n.i
Smp Info : SH4521-20
Misc Info : WG145582,WG145381,WG145455-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N062814.b\NSPSIM09.m
Meth Date : 28-Jun-2014 09:09 cgomez Quant Type: ISTD
Cal Date : 26-JUN-2014 13:22 Cal File: N2926.D
Als bottle: 16
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ttcutler53ocs.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

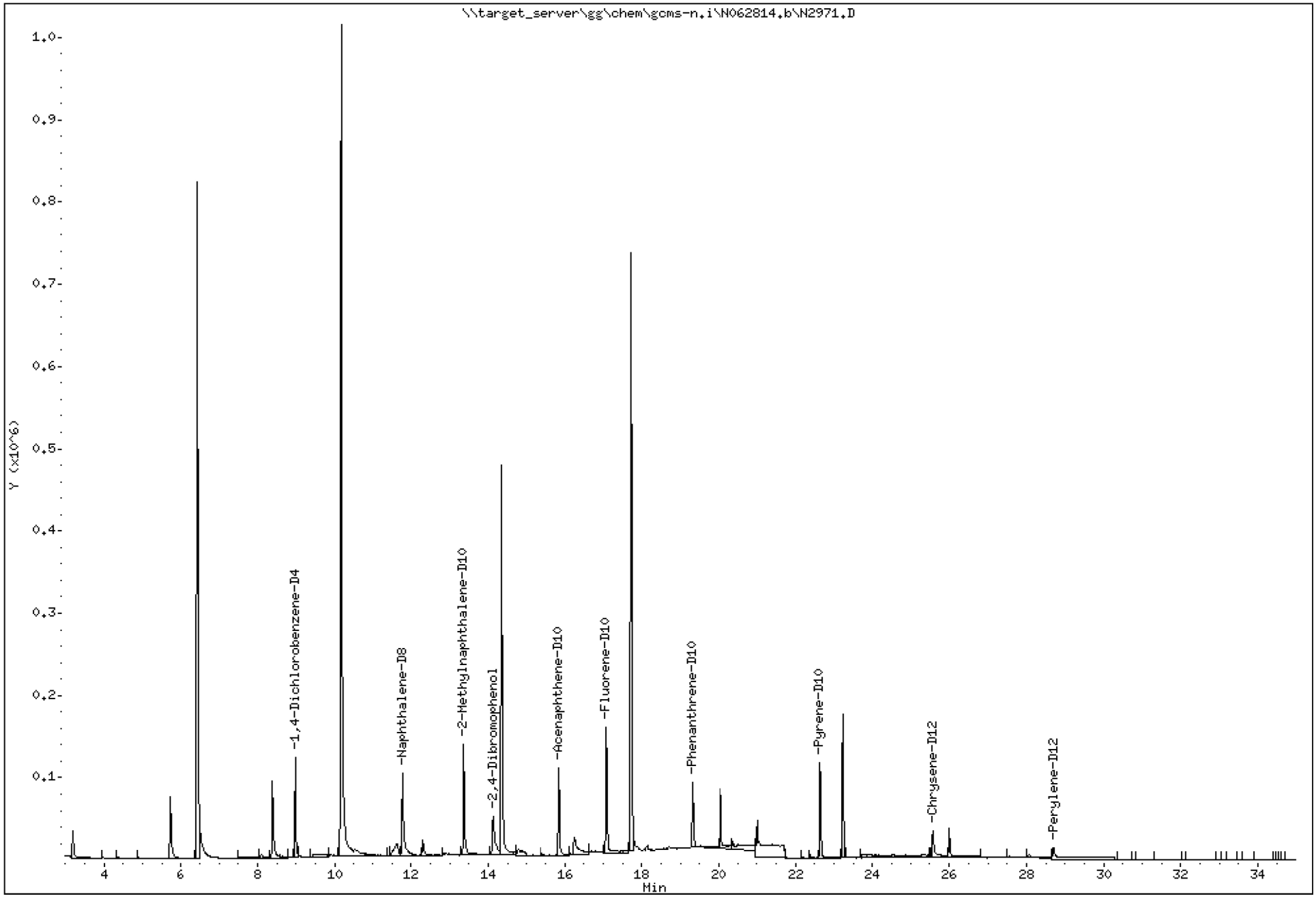
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.020	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
*	8 1,4-Dichlorobenzene-D4	152	8.971	8.970	(1.000)	66223	0.80000	(a)	
*	24 Naphthalene-D8	136	11.763	11.746	(1.000)	238406	0.80000	(a)	
$	30 2-Methylnaphthalene-D10	152	13.354	13.353	(0.843)	158176	1.11887	1.10	
$	35 2,4-Dibromophenol	252	14.126	14.107	(0.892)	116140	2.52001	2.47	
*	45 Acenaphthene-D10	164	15.842	15.842	(1.000)	93664	0.80000	(a)	
$	52 Fluorene-D10	174	17.069	17.068	(1.077)	133328	1.23602	1.21	(Q)
*	63 Phenanthrene-D10	188	19.323	19.323	(1.000)	131997	0.80000	(a)	
$	69 Pyrene-D10	212	22.632	22.646	(0.885)	173026	1.81280	1.78	
*	73 Chrysene-D12	240	25.576	25.589	(1.000)	54721	0.80000	(a)	
*	81 Perylene-D12	264	28.706	28.723	(1.000)	35371	0.80000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N062814.b\N2971.D
Date : 28-JUN-2014 18:40
Client ID: FTA-SW-08-061914 Instrument: gcms-n.i
Sample Info: SH4521-20



Katahdin Analytical Services 6000109

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ANALYTICAL SERVICES

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SH4521-22
Client ID: FTA-SW-DUP01-061914
Project: NCTAMSLANT Cutler CTO
SDG: WE53-7
Lab File ID: N2972.D

Sample Date: 19-JUN-14
Received Date: 20-JUN-14
Extract Date: 25-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145381

Analysis Date: 28-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 11-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,4-Dioxane	U	0.48	ug/L	1	1	0.97	0.028	0.48
2-Chlorophenol	U	0.48	ug/L	1	1	0.97	0.27	0.48
Naphthalene	U	0.097	ug/L	1	.2	0.19	0.062	0.097
Hexachlorobutadiene	U	0.097	ug/L	1	.2	0.19	0.084	0.097
2-Methylnaphthalene	U	0.097	ug/L	1	.2	0.19	0.075	0.097
Hexachlorobenzene	U	0.097	ug/L	1	.2	0.19	0.053	0.097
Pentachlorophenol	ULL	0.48	ug/L	1	1	0.97	0.32	0.48
Phenanthrene	U	0.097	ug/L	1	.2	0.19	0.050	0.097
Pyrene	U	0.097	ug/L	1	.2	0.19	0.057	0.097
Benzo(a)anthracene	U	0.097	ug/L	1	.2	0.19	0.045	0.097
Chrysene	ULL	0.097	ug/L	1	.2	0.19	0.035	0.097
Benzo(b)fluoranthene	U	0.097	ug/L	1	.2	0.19	0.086	0.097
Benzo(a)pyrene	U	0.097	ug/L	1	.2	0.19	0.064	0.097
Indeno(1,2,3-cd)pyrene	U	0.097	ug/L	1	.2	0.19	0.050	0.097
Dibenzo(a,h)anthracene	ULL	0.097	ug/L	1	.2	0.19	0.068	0.097
1,1'-Biphenyl	ULL	0.097	ug/L	1	.2	0.19	0.063	0.097
1,2,4,5-Tetrachlorobenzene	U	0.097	ug/L	1	.2	0.19	0.097	0.097
2,2'-Oxybis(1-Chloropropane)	ULL	0.14	ug/L	1	.2	0.19	0.12	0.14
2,4,6-Trichlorophenol	U	0.48	ug/L	1	1	0.97	0.12	0.48
2,4-Dichlorophenol	U	0.48	ug/L	1	1	0.97	0.48	0.48
2,4-Dinitrophenol	U	0.48	ug/L	1	1	0.97	0.23	0.48
2,4-Dinitrotoluene	U	0.097	ug/L	1	.2	0.19	0.034	0.097
2,6-Dinitrotoluene	U	0.097	ug/L	1	.2	0.19	0.068	0.097
2-Nitroaniline	U	0.14	ug/L	1	.2	0.19	0.12	0.14
3,3'-Dichlorobenzidine	U	0.097	ug/L	1	.2	0.19	0.054	0.097
4,6-Dinitro-2-Methylphenol	U	0.73	ug/L	1	1	0.97	0.48	0.73
4-Chloroaniline	U	0.48	ug/L	1	1	0.97	0.48	0.48
3&4-Methylphenol	U	0.48	ug/L	1	1	0.97	0.43	0.48
4-Nitroaniline	U	0.097	ug/L	1	.2	0.19	0.063	0.097
Atrazine	U	0.097	ug/L	1	.2	0.19	0.037	0.097
Bis(2-Chloroethyl)Ether	UL	0.097	ug/L	1	.2	0.19	0.040	0.097
Bis(2-Ethylhexyl)Phthalate	ULL	0.48	ug/L	1	1	0.97	0.48	0.48
Dibenzofuran	U	0.097	ug/L	1	.2	0.19	0.066	0.097
Hexachlorocyclopentadiene	U	0.097	ug/L	1	.2	0.19	0.065	0.097
Hexachloroethane	U	0.097	ug/L	1	.2	0.19	0.071	0.097

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SH4521-22
Client ID: FTA-SW-DUP01-061914
Project: NCTAMSLANT Cutler CTO
SDG: WE53-7
Lab File ID: N2972.D

Sample Date: 19-JUN-14
Received Date: 20-JUN-14
Extract Date: 25-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145381

Analysis Date: 28-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 11-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Nitrobenzene	U	0.14	ug/L	1	.2	0.19	0.13	0.14
N-Nitroso-Di-N-Propylamine	U	0.097	ug/L	1	.2	0.19	0.070	0.097
3-Nitroaniline	U	0.097	ug/L	1	.2	0.19	0.074	0.097
2-Methylnaphthalene-D10		51.6	%					
Fluorene-D10		61.0	%					
Pyrene-D10		78.7	%					
2,4-Dibromophenol		61.4	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N062814.b\N2972.D
Report Date: 11-Jul-2014 13:33

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N062814.b\N2972.D
Lab Smp Id: SH4521-22 Client Smp ID: FTA-SW-DUP01-061914
Inj Date : 28-JUN-2014 19:23 MS Autotune Date: 12-NOV-2013 09:32
Operator : JCG Inst ID: gcms-n.i
Smp Info : SH4521-22
Misc Info : WG145582,WG145381,WG145455-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N062814.b\NSPSIM09.m
Meth Date : 28-Jun-2014 09:09 cgomez Quant Type: ISTD
Cal Date : 26-JUN-2014 13:22 Cal File: N2926.D
Als bottle: 17
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ttcutler53ocs.sub
Target Version: 4.12
Processing Host: V200T4

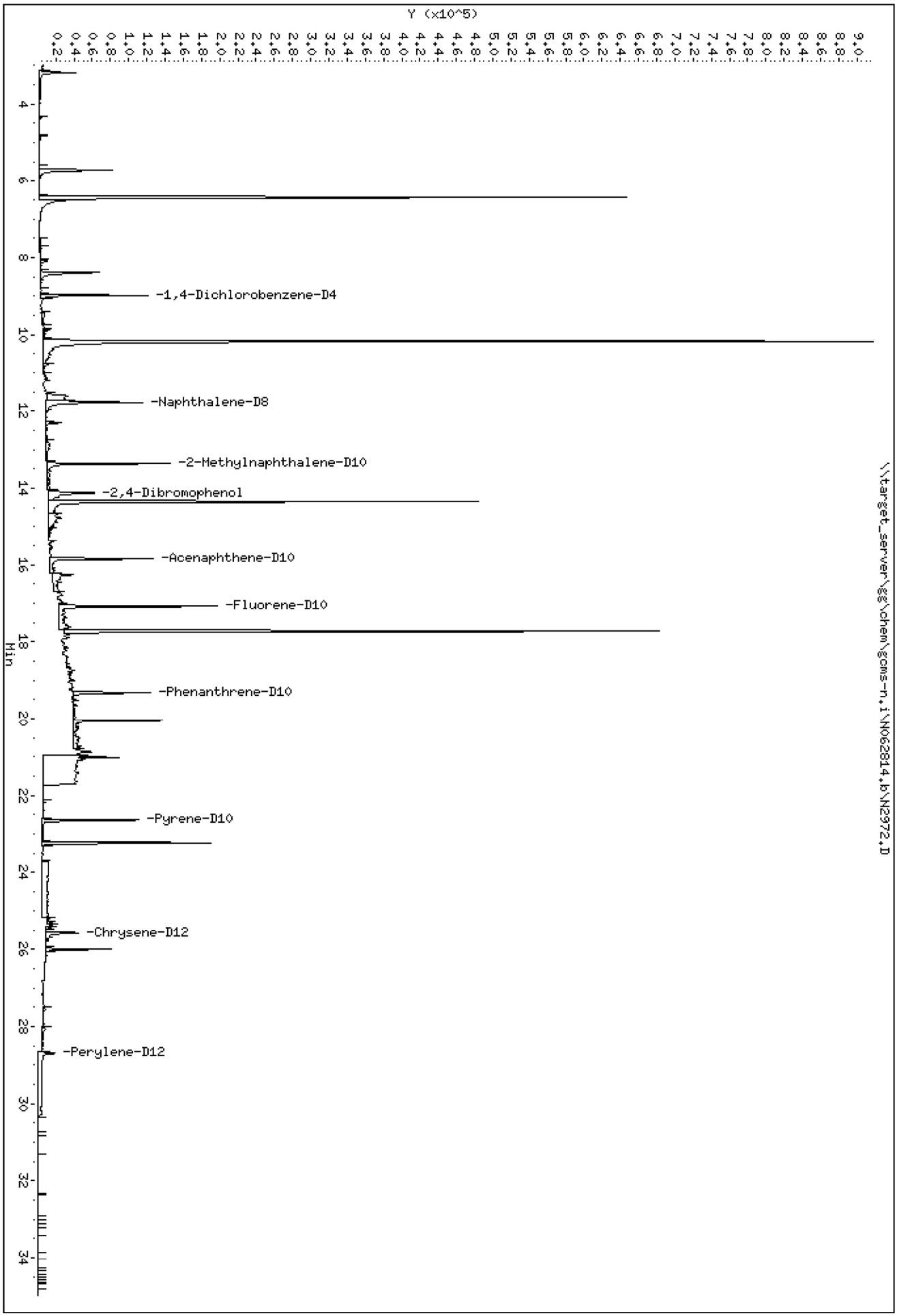
Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.030	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
*	8 1,4-Dichlorobenzene-D4	152	8.971	8.970	(1.000)	64245	0.80000	(a)	
*	24 Naphthalene-D8	136	11.763	11.746	(1.000)	225481	0.80000	(a)	
$	30 2-Methylnaphthalene-D10	152	13.353	13.353	(0.843)	142246	1.03296	1.00	
$	35 2,4-Dibromophenol	252	14.126	14.107	(0.892)	110299	2.45696	2.38	
*	45 Acenaphthene-D10	164	15.842	15.842	(1.000)	91236	0.80000	(a)	
$	52 Fluorene-D10	174	17.068	17.068	(1.077)	128231	1.22040	1.18	(Q)
*	63 Phenanthrene-D10	188	19.323	19.323	(1.000)	133994	0.80000	(a)	
$	69 Pyrene-D10	212	22.646	22.646	(0.885)	158861	1.57467	1.53	
*	73 Chrysene-D12	240	25.576	25.589	(1.000)	57839	0.80000	(a)	
*	81 Perylene-D12	264	28.689	28.723	(1.000)	36322	0.80000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.


Data File: \\target_server\gg\chem\gcms-n,i\N062814,b\N2972,D
Date : 28-JUN-2014 19:23
Client ID: FTA-SW-DUP01-061914
Sample Info: SH4521-22
Instrument: gcms-n,i
\\target_server\gg\chem\gcms-n,i\N062814,b\N2972,D
Y (x10^5)
Min
-1,4-Dichlorobenzene-D4
-Naphthalene-D8
-2-Methylnaphthalene-D10
-2,4-Dibromophenol
-Acenaphthene-D10
-Fluorene-D10
-Phenanthrene-D10
-Pyrene-D10
-Chrysene-D12
-Perylene-D12

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SH4521-24
Client ID: FTA-SD-RB01-062014
Project: NCTAMSLANT Cutler CTO
SDG: WE53-7
Lab File ID: N2973.D

Sample Date: 20-JUN-14
Received Date: 20-JUN-14
Extract Date: 25-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145381

Analysis Date: 28-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 11-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,4-Dioxane	U	0.48	ug/L	1	1	0.96	0.028	0.48
2-Chlorophenol	U	0.48	ug/L	1	1	0.96	0.27	0.48
Naphthalene	U	0.096	ug/L	1	.2	0.19	0.062	0.096
Hexachlorobutadiene	U	0.096	ug/L	1	.2	0.19	0.084	0.096
2-Methylnaphthalene	U	0.096	ug/L	1	.2	0.19	0.074	0.096
Hexachlorobenzene	U	0.096	ug/L	1	.2	0.19	0.053	0.096
Pentachlorophenol	UL	0.48	ug/L	1	1	0.96	0.32	0.48
Phenanthrene	U	0.096	ug/L	1	.2	0.19	0.049	0.096
Pyrene	U	0.096	ug/L	1	.2	0.19	0.057	0.096
Benzo(a)anthracene	U	0.096	ug/L	1	.2	0.19	0.044	0.096
Chrysene	ULL	0.096	ug/L	1	.2	0.19	0.035	0.096
Benzo(b)fluoranthene	U	0.096	ug/L	1	.2	0.19	0.086	0.096
Benzo(a)pyrene	U	0.096	ug/L	1	.2	0.19	0.063	0.096
Indeno(1,2,3-cd)pyrene	U	0.096	ug/L	1	.2	0.19	0.050	0.096
Dibenzo(a,h)anthracene	ULL	0.096	ug/L	1	.2	0.19	0.067	0.096
1,1'-Biphenyl	ULL	0.096	ug/L	1	.2	0.19	0.062	0.096
1,2,4,5-Tetrachlorobenzene	U	0.096	ug/L	1	.2	0.19	0.096	0.096
2,2'-Oxybis(1-Chloropropane)	ULL	0.14	ug/L	1	.2	0.19	0.12	0.14
2,4,6-Trichlorophenol	U	0.48	ug/L	1	1	0.96	0.12	0.48
2,4-Dichlorophenol	U	0.48	ug/L	1	1	0.96	0.48	0.48
2,4-Dinitrophenol	U	0.48	ug/L	1	1	0.96	0.23	0.48
2,4-Dinitrotoluene	U	0.096	ug/L	1	.2	0.19	0.034	0.096
2,6-Dinitrotoluene	U	0.096	ug/L	1	.2	0.19	0.067	0.096
2-Nitroaniline	U	0.14	ug/L	1	.2	0.19	0.12	0.14
3,3'-Dichlorobenzidine	U	0.096	ug/L	1	.2	0.19	0.054	0.096
4,6-Dinitro-2-Methylphenol	U	0.72	ug/L	1	1	0.96	0.48	0.72
4-Chloroaniline	U	0.48	ug/L	1	1	0.96	0.48	0.48
3&4-Methylphenol	U	0.48	ug/L	1	1	0.96	0.42	0.48
4-Nitroaniline	U	0.096	ug/L	1	.2	0.19	0.062	0.096
Atrazine	U	0.096	ug/L	1	.2	0.19	0.036	0.096
Bis(2-Chloroethyl)Ether	U	0.096	ug/L	1	.2	0.19	0.039	0.096
Bis(2-Ethylhexyl)Phthalate	ULL	0.48	ug/L	1	1	0.96	0.48	0.48
Dibenzofuran	U	0.096	ug/L	1	.2	0.19	0.065	0.096
Hexachlorocyclopentadiene	U	0.096	ug/L	1	.2	0.19	0.064	0.096
Hexachloroethane	U	0.096	ug/L	1	.2	0.19	0.070	0.096

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://www.katahdinlab.com

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SH4521-24
Client ID: FTA-SD-RB01-062014
Project: NCTAMSLANT Cutler CTO
SDG: WE53-7
Lab File ID: N2973.D

Sample Date: 20-JUN-14
Received Date: 20-JUN-14
Extract Date: 25-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145381

Analysis Date: 28-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 11-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Nitrobenzene	U	0.14	ug/L	1	.2	0.19	0.12	0.14
N-Nitroso-Di-N-Propylamine	U	0.096	ug/L	1	.2	0.19	0.069	0.096
3-Nitroaniline	U	0.096	ug/L	1	.2	0.19	0.073	0.096
2-Methylnaphthalene-D10		71.5	%					
Fluorene-D10		69.7	%					
Pyrene-D10		105.	%					
2,4-Dibromophenol		67.5	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N062814.b\N2973.D
Report Date: 11-Jul-2014 14:25

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N062814.b\N2973.D
Lab Smp Id: SH4521-24 Client Smp ID: FTA-SD-RB01-062014
Inj Date : 28-JUN-2014 20:06 MS Autotune Date: 12-NOV-2013 09:32
Operator : JCG Inst ID: gcms-n.i
Smp Info : SH4521-24
Misc Info : WG145582,WG145381,WG145455-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N062814.b\NSPSIM09.m
Meth Date : 28-Jun-2014 09:09 cgomez Quant Type: ISTD
Cal Date : 26-JUN-2014 13:22 Cal File: N2926.D
Als bottle: 18
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

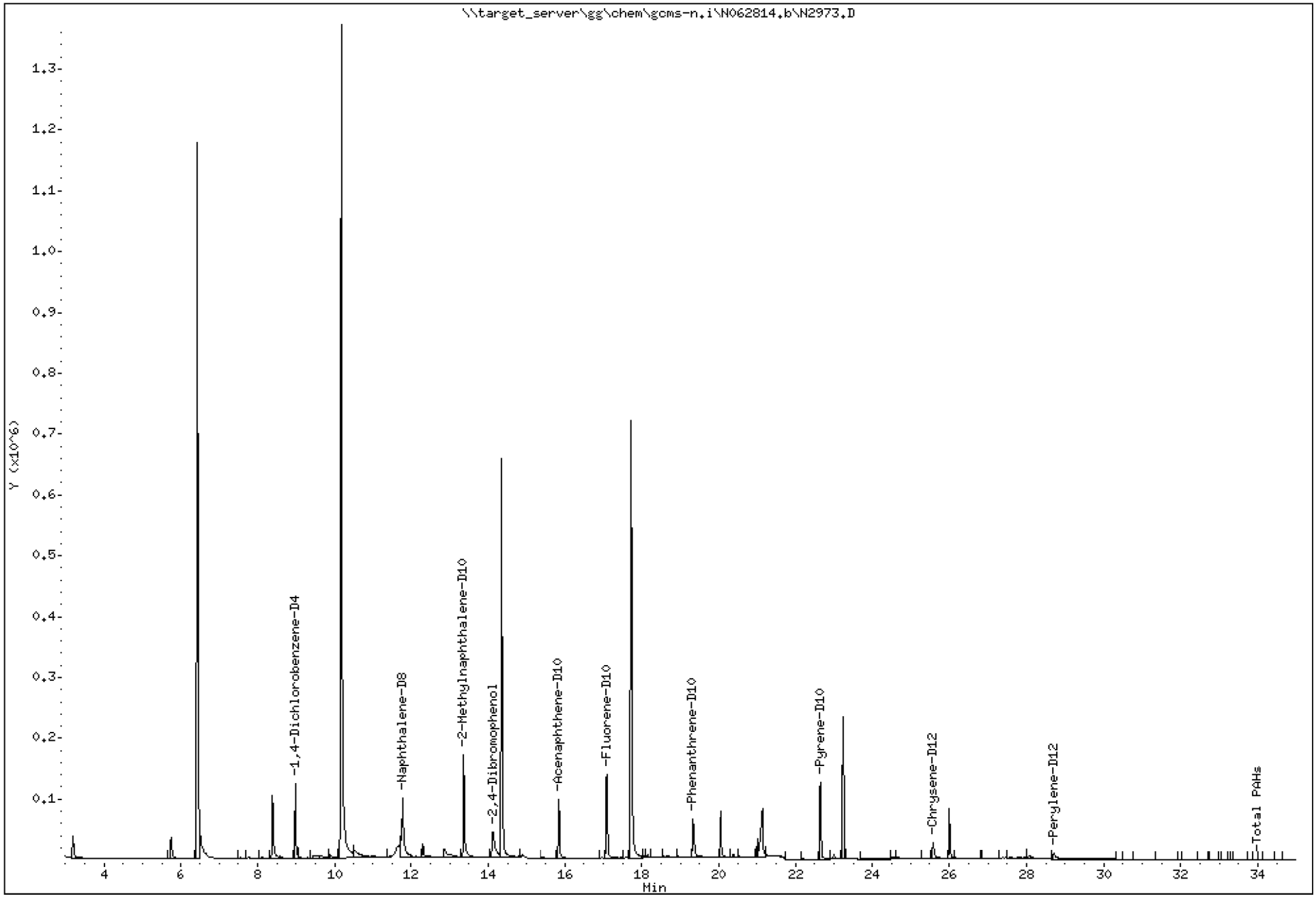
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.040	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
* 8 1,4-Dichlorobenzene-D4	152	8.971	8.970	(1.000)	65638	0.80000	(a)	
* 24 Naphthalene-D8	136	11.763	11.746	(1.000)	232517	0.80000	(a)	
$ 30 2-Methylnaphthalene-D10	152	13.354	13.353	(0.843)	200024	1.43013	1.38	
$ 35 2,4-Dibromophenol	252	14.126	14.107	(0.892)	123071	2.69918	2.60	
* 45 Acenaphthene-D10	164	15.842	15.842	(1.000)	92665	0.80000	(a)	
$ 52 Fluorene-D10	174	17.069	17.068	(1.077)	148860	1.39489	1.34	(Q)
* 63 Phenanthrene-D10	188	19.323	19.323	(1.000)	138805	0.80000	(a)	
$ 69 Pyrene-D10	212	22.646	22.646	(0.885)	190334	2.10508	2.02	
* 73 Chrysene-D12	240	25.576	25.589	(1.000)	51837	0.80000	(a)	
* 81 Perylene-D12	264	28.706	28.723	(1.000)	30485	0.80000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N062814.b\N2973.D
Date : 28-JUN-2014 20:06
Client ID: FTA-SD-RB01-062014 Instrument: gcms-n.i
Sample Info: SH4521-24



Katahdin Analytical Services 6000117

Standards Data Section

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: WE53-7
Project : NCTAMSLANT Cutler CTO WE53
Instrument ID: GCMS-N
Lab File IDs : N2923.D N2924.D N2922.D N2925.D N2926.D N2927.D
Column ID:
Calibration Date(s): 26-JUN-14 10:28, 26-JUN-14 14:06

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Crv					Max	
	0.2000000	0.5000000	1.0000	3.0000	7.0000	10.0000	New	b	m1	m2	%RSD	%RSD	
1,4-Dioxane	0.55827	0.57803	0.58349	0.59230	0.70812	0.65573	AVG		0.61266		9.34525	15.00000	O
Bis(2-Chloroethyl)ether	1.89865	1.89116	1.73654	1.60576	1.51699	1.44965	AVG		1.68312		11.29408	15.00000	O
2-Chlorophenol	1.44133	1.49377	1.48175	1.44091	1.39914	1.36682	AVG		1.43729		3.35367	15.00000	O
2,2'-Oxybis(1-chloropropane	1.99965	2.07745	1.96618	1.98134	1.87095	1.79151	AVG		1.94785		5.19981	15.00000	O
N-Nitroso-di-n-propylamine	0.81455	1.02345	0.90641	0.95609	0.90312	0.87692	AVG		0.91342		7.77050	15.00000	O
3&4-Methylphenol	1.02900	1.19481	1.25866	1.27036	1.26384	1.25990	AVG		1.21276		7.76544	15.00000	O
Hexachloroethane	0.65022	0.65505	0.62000	0.60806	0.58685	0.56366	AVG		0.61397		5.79982	15.00000	O
Nitrobenzene	27782	57804	69589	288608	619972	890652	LNR	-0.19763	0.33430		0.99654	0.99000	O
2,4-Dichlorophenol	0.25425	0.27230	0.29544	0.28481	0.26336	0.25624	AVG		0.27107		6.05380	15.00000	O
Naphthalene	1.07515	1.06328	1.07308	1.02231	0.88372	0.82390	AVG		0.99024		11.01176	15.00000	O
4-Chloroaniline	0.33709	0.35544	0.39266	0.37963	0.34118	0.30388	AVG		0.35165		9.06722	15.00000	O
Hexachlorobutadiene	0.18097	0.17052	0.15723	0.15586	0.14266	0.13465	AVG		0.15698		10.89875	15.00000	O
2-Methylnaphthalene	43282	98898	172278	508678	1083817	1522123	LNR	-0.31719	0.57099		0.99574	0.99000	O
1,2,4,5-Tetrachlorobenzene	0.64984	0.64990	0.64579	0.60482	0.60199	0.57730	AVG		0.62161		4.99119	15.00000	O
Hexachlorocyclopentadiene	4116	11589	28895	95498	229831	341637	LNR	0.13426	0.36793		0.99952	0.99000	O
2,4,6-Trichlorophenol	0.36591	0.42319	0.45007	0.42426	0.43404	0.43547	AVG		0.42216		6.92027	15.00000	O
1,1'-Biphenyl	1.86655	1.87319	1.82823	1.77185	1.61563	1.62038	AVG		1.76264		6.67704	15.00000	O
2-Nitroaniline	0.28967	0.31149	0.33575	0.34568	0.34588	0.36977	AVG		0.33304		8.52090	15.00000	O
2,6-Dinitrotoluene	0.33428	0.33049	0.34831	0.35093	0.34397	0.33862	AVG		0.34110		2.35350	15.00000	O
3-Nitroaniline	3017	8936	21617	59135	138315	263594	QUA	-0.13784	5.67585	-0.58921	0.99869	0.99000	O
2,4-Dinitrophenol	3897	9643	27173	51527	71558	134561	QUA	0.49010	10.02276	-1.85554	0.99298	0.99000	O
Dibenzofuran	1.80900	1.81740	1.85759	1.76769	1.68443	1.66504	AVG		1.76686		4.36378	15.00000	O
2,4-Dinitrotoluene	4669	13897	34269	116352	258298	406499	LNR	0.13507	0.43110		0.99863	0.99000	O
4-Nitroaniline	0.17420	0.14759	0.21937	0.17910	0.17536	0.20641	AVG		0.18367		13.92929	15.00000	O
4,6-Dinitro-2-Methylphenol	7241	18383	43552	79226	107715	184387	QUA	0.33484	9.14412	-1.12651	0.99653	0.99000	O
Hexachlorobenzene	0.38343	0.33976	0.32400	0.28642	0.28254	0.27408	AVG		0.31504		13.40850	15.00000	O
Atrazine	0.16288	0.16937	0.18227	0.17528	0.18814	0.19238	AVG		0.17839		6.32824	15.00000	O
Pentachlorophenol	0.18020	0.16711	0.20353	0.15910	0.16692	0.17064	AVG		0.17458		9.01823	15.00000	O
Phenanthrene	1.26547	1.30971	1.33168	1.24308	1.21496	1.19353	AVG		1.25974		4.25594	15.00000	O
Pyrene	30015	67181	150755	480507	961913	1516074	LNR	-0.21831	2.01138		0.99867	0.99000	O
Benzo(a)anthracene	1.18598	1.16291	1.33500	1.20094	1.22479	1.22044	AVG		1.22168		4.91294	15.00000	O
Chrysene	21123	43062	92697	305764	605788	963871	LNR	-0.21956	1.27440		0.99897	0.99000	O
3,3'-Dichlorobenzidine	0.27526	0.31377	0.34785	0.25428	0.38701	0.28466	AVG		0.31047		15.99375	15.00000	W
bis(2-Ethylhexyl)phthalate	142501	262308	468495	754793	894036	1387863	QUA	-0.09477	0.33446	0.00956	0.99588	0.99000	O
Benzo(b)fluoranthene	1.20793	1.26757	1.21151	1.29930	1.34927	1.38219	AVG		1.28630		5.54278	15.00000	O
Benzo(a)pyrene	1.44020	1.30545	1.25998	1.19165	1.19787	1.21118	AVG		1.26772		7.49130	15.00000	O
Indeno(1,2,3-cd)pyrene	0.61052	0.60825	0.68275	0.58331	0.64440	0.64346	AVG		0.62878		5.59764	15.00000	O

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: WE53-7
Project : NCTAMSLANT Cutler CTO WE53
Instrument ID: GCMS-N
Lab File IDs : N2923.D N2924.D N2922.D N2925.D N2926.D N2927.D
Column ID:
Calibration Date(s): 26-JUN-14 10:28, 26-JUN-14 14:06

Dibenzo(a,h)anthracene	0.80372	0.69946	0.75129	0.62819	0.68768	0.67961	AVG		0.70832		8.63312	15.00000	O
2-Methylnaphthalene-D10	1.27856	1.27901	1.25737	1.18018	1.17200	1.07774	AVG		1.20748		6.57291	15.00000	
2,4-Dibromophenol	0.36312	0.44322	0.41961	0.38046	0.37685	0.37858	AVG		0.39364		7.82744	15.00000	
Fluorene-D10	1.11625	0.93206	0.92630	0.88165	0.83987	0.83183	AVG		0.92133		11.31645	15.00000	
Pyrene-D10	1.63599	1.57848	1.49305	1.28362	1.21912	1.16210	AVG		1.39539		14.29468	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Data File: \\target_server\gg\chem\gcms-n.i\N062614.b\N2928.D
Report Date: 26-Jun-2014 16:30

Katahdin Analytical Services

RECOVERY REPORT

Client Name: Client SDG: 021497
Sample Matrix: LIQUID Fraction: SV
Lab Smp Id: WG145455-8
Level: LOW Operator: JCG
Data Type: MS DATA SampleType: INDCHECK
SpikeList File: SIM_IND_CHK.spk Quant Type: ISTD
Sublist File: all.sub
Method File: \\target_server\gg\chem\gcms-n.i\N062614.b\NSPSIM09.m
Misc Info: WG145455,WG145455,WG145455-4

	SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
2	1,4-Dioxane	2.00	5.49	274.74*	80-120
3	Benzaldehyde	2.00	0.000	*	80-120
4	Phenol	2.00	1.99	99.51	80-120
5	Bis(2-Chloroethyl)	2.00	1.85	92.74	80-120
6	2-Chlorophenol	2.00	2.01	100.65	80-120
7	1,3-Dichlorobenzen	2.00	1.94	96.76	80-120
9	1,4-Dichlorobenzen	2.00	1.97	98.36	80-120
10	1,2-Dichlorobenzen	2.00	1.94	96.77	80-120
12	2,2'-Oxybis(1-chlo	2.00	1.21	60.30*	80-120
11	2-Methylphenol	2.00	2.37	118.74	80-120
13	Acetophenone	2.00	2.32	116.15	80-120
14	N-Nitroso-di-n-pro	2.00	1.86	93.04	80-120
16	Hexachloroethane	2.00	1.88	93.94	80-120
15	3&4-Methylphenol	2.00	1.99	99.74	80-120
17	Nitrobenzene	2.00	2.32	116.10	80-120
18	Isophorone	2.00	2.18	108.83	80-120
19	2-Nitrophenol	2.00	2.09	104.57	80-120
20	2,4-Dimethylphenol	2.00	2.06	102.96	80-120
21	bis(2-Chloroethoxy	2.00	2.24	112.03	80-120
22	2,4-Dichlorophenol	2.00	2.07	103.31	80-120
23	1,2,4-Trichloroben	2.00	2.10	105.23	80-120
25	Naphthalene	2.00	2.08	104.03	80-120
26	4-Chloroaniline	2.00	2.35	117.69	80-120
27	Hexachlorobutadien	2.00	1.90	94.81	80-120
28	Caprolactam	2.00	2.03	101.67	80-120
29	4-Chloro-3-Methylp	2.00	2.10	104.95	80-120
31	2-Methylnaphthalen	2.00	2.35	117.34	80-120
32	1-Methylnaphthalen	2.00	2.35	117.35	80-120
33	1,2,4,5-Tetrachlor	2.00	2.14	107.21	80-120
34	Hexachlorocyclopen	2.00	1.48	73.89*	80-120
36	2,4,6-Trichlorophe	2.00	1.83	91.36	80-120
37	2,4,5-Trichlorophe	2.00	2.08	103.83	80-120
38	2-Chloronaphthalen	2.00	2.07	103.63	80-120
39	1,1'-Biphenyl	2.00	2.10	104.77	80-120
40	2-Nitroaniline	2.00	2.07	103.73	80-120
41	Dimethyl Phthalate	2.00	1.97	98.33	80-120
43	Acenaphthylene	2.00	1.78	89.13	80-120
42	2,6-Dinitrotoluene	2.00	1.84	92.26	80-120
44	3-Nitroaniline	2.00	1.95	97.47	80-120
46	Acenaphthene	2.00	1.93	96.70	80-120

Data File: \\target_server\gg\chem\gcms-n.i\N062614.b\N2928.D
Report Date: 26-Jun-2014 16:30

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
47 2,4-Dinitrophenol	2.00	1.40	70.07*	80-120
48 Dibenzofuran	2.00	2.07	103.68	80-120
50 2,4-Dinitrotoluene	2.00	1.65	82.33	80-120
49 4-Nitrophenol	2.00	2.01	100.39	80-120
51 2,3,4,6-Tetrachlor	2.00	1.78	88.90	80-120
53 Diethylphthalate	2.00	2.02	100.81	80-120
54 Fluorene	2.00	1.90	95.20	80-120
56 4-Nitroaniline	2.00	1.86	93.29	80-120
57 4,6-Dinitro-2-Meth	2.00	1.76	88.06	80-120
58 N-Nitrosodiphenyla	2.00	1.60	79.92*	80-120
59 4-Bromophenyl-phen	2.00	1.94	97.01	80-120
60 Hexachlorobenzene	2.00	1.82	90.84	80-120
61 Atrazine	2.00	2.01	100.48	80-120
62 Pentachlorophenol	2.00	1.69	84.57	80-120
64 Phenanthrene	2.00	1.92	96.21	80-120
65 Anthracene	2.00	1.97	98.48	80-120
66 Carbazole	2.00	2.08	103.85	80-120
67 Di-n-butylphthalat	2.00	1.97	98.33	80-120
68 Fluoranthene	2.00	1.94	96.90	80-120
70 Pyrene	2.00	2.20	110.01	80-120
71 Butylbenzylphthala	2.00	1.82	91.16	80-120
72 Benzo(a)anthracene	2.00	1.82	91.14	80-120
74 Chrysene	2.00	2.18	109.02	80-120
75 3,3'-Dichlorobenzi	2.00	1.79	89.48	80-120
76 bis(2-Ethylhexyl)p	2.00	1.46	73.21*	80-120
77 Di-n-octylphthalat	2.00	1.69	84.47	80-120
78 Benzo(b)fluoranthe	2.00	1.73	86.59	80-120
79 Benzo(k)fluoranthe	2.00	2.00	99.86	80-120
80 Benzo(a)pyrene	2.00	1.83	91.30	80-120
82 Indeno(1,2,3-cd)py	2.00	1.99	99.40	80-120
83 Dibenzo(a,h)anthra	2.00	1.95	97.47	80-120
84 Benzo(g,h,i)peryle	2.00	1.96	98.14	80-120

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 1 1,4-Dioxane-d8	2.00	0.000	*	10-93
$ 30 2-Methylnaphthale	2.00	0.000	*	43-92
$ 35 2,4-Dibromophenol	4.00	0.000	*	10-130
$ 52 Fluorene-D10	2.00	0.000	*	29-101
$ 69 Pyrene-D10	2.00	0.105	5.25*	53-166

Data File: \\target_server\gg\chem\gcms-n.i\N062614.b\N2922.D
Report Date: 27-Jun-2014 13:22

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N062614.b\N2922.D
Lab Smp Id: WG145455-4
Inj Date : 26-JUN-2014 10:28 MS Autotune Date: 12-NOV-2013 09:32
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG145455-4
Misc Info :
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N062614.b\NSPSIM09.m
Meth Date : 27-Jun-2014 09:17 gcms-n.i Quant Type: ISTD
Cal Date : 19-JUN-2014 18:55 Cal File: N2843.D
Als bottle: 2 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
$	1 1,4-Dioxane-d8	96	3.157	3.140	(0.352)	32509	1.00000	1.01	
	2 1,4-Dioxane	88	3.208	3.174	(0.358)	38423	1.00000	0.952(aM)	M3
	3 Benzaldehyde	77	8.067	8.050	(0.899)	43253	1.00000	1.12	
	4 Phenol	94	8.428	8.428	(0.940)	334319	3.00000	3.05	
	5 Bis(2-Chloroethyl)ether	93	8.494	8.478	(0.947)	114351	1.00000	1.03	
	6 2-Chlorophenol	128	8.560	8.560	(0.954)	292719	3.00000	3.09	
	7 1,3-Dichlorobenzene	146	8.856	8.839	(0.987)	101219	1.00000	1.03	
*	8 1,4-Dichlorobenzene-D4	152	8.971	8.971	(1.000)	52680	0.80000	(a)	
	9 1,4-Dichlorobenzene	146	9.004	9.003	(1.004)	107710	1.00000	1.02	
	10 1,2-Dichlorobenzene	146	9.332	9.316	(1.040)	98669	1.00000	1.01	
	11 2-Methylphenol	108	9.699	9.683	(1.081)	258352	3.00000	3.00	
	12 2,2'-Oxybis(1-chloropropane)	45	9.683	9.667	(1.079)	129473	1.00000	1.01(Q)	
	13 Acetophenone	105	9.888	9.872	(0.841)	108951	1.00000	1.03	
	14 N-Nitroso-di-n-propylamine	70	9.951	9.935	(1.109)	59687	1.00000	0.992	
	15 3&4-Methylphenol	108	10.061	10.061	(1.122)	248649	3.00000	3.11	
	16 Hexachloroethane	117	10.045	10.029	(1.120)	40827	1.00000	1.01	
	17 Nitrobenzene	77	10.218	10.203	(0.869)	69589	1.00000	0.753(Q)	
	18 Isophorone	82	10.808	10.791	(0.919)	139397	1.00000	0.976	
	19 2-Nitrophenol	139	10.944	10.944	(0.930)	139228	3.00000	3.29	
	20 2,4-Dimethylphenol	107	11.200	11.200	(0.952)	250043	3.00000	3.26	
	21 bis(2-Chloroethoxy)methane	93	11.371	11.354	(0.967)	101060	1.00000	1.09	

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Data File: \\target_server\gg\chem\gcms-n.i\N062614.b\N2922.D
Report Date: 27-Jun-2014 13:22

		QUANT SIG					AMOUNTS		
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	22 2,4-Dichlorophenol	162	11.559	11.541	(0.983)	202459	3.00000	3.27	
	23 1,2,4-Trichlorobenzene	180	11.678	11.678	(0.993)	73546	1.00000	1.08	
*	24 Naphthalene-D8	136	11.763	11.763	(1.000)	182742	0.80000	(a)	
	25 Naphthalene	128	11.814	11.797	(1.004)	245122	1.00000	1.08	
	26 4-Chloroaniline	127	12.053	12.019	(1.025)	89695	1.00000	1.12	
	27 Hexachlorobutadiene	225	12.207	12.190	(1.038)	35915	1.00000	1.00	
	28 Caprolactam	113	12.864	12.807	(1.094)	19869	1.00000	1.01	
	29 4-Chloro-3-Methylphenol	107	13.316	13.297	(1.132)	208852	3.00000	3.28	
$	30 2-Methylnaphthalene-D10	152	13.372	13.354	(0.843)	111183	1.00000	1.04	
	31 2-Methylnaphthalene	142	13.448	13.429	(1.143)	172278	1.00000	1.07	
	32 1-Methylnaphthalene	142	13.655	13.655	(1.161)	144031	1.00000	1.03	
	33 1,2,4,5-Tetrachlorobenzene	216	13.862	13.843	(0.874)	57104	1.00000	1.04	
	34 Hexachlorocyclopentadiene	237	13.862	13.862	(0.874)	28895	1.00000	0.996	
$	35 2,4-Dibromophenol	252	14.126	14.107	(0.891)	37104	1.00000	1.06	
	36 2,4,6-Trichlorophenol	196	14.182	14.182	(0.895)	119393	3.00000	3.20	(H)
	37 2,4,5-Trichlorophenol	196	14.295	14.277	(0.902)	157957	3.00000	3.08	
	38 2-Chloronaphthalene	164	14.559	14.540	(0.918)	38160	1.00000	0.999	(Q)
	39 1,1'-Biphenyl	154	14.578	14.559	(0.919)	161661	1.00000	1.04	
	40 2-Nitroaniline	65	14.879	14.861	(0.938)	29689	1.00000	1.01	
	41 Dimethyl Phthalate	163	15.407	15.407	(0.972)	416192	3.00000	3.10	
	42 2,6-Dinitrotoluene	165	15.486	15.473	(0.977)	30799	1.00000	1.02	
	43 Acenaphthylene	152	15.499	15.499	(0.978)	219011	1.00000	1.04	
	44 3-Nitroaniline	138	15.882	15.855	(1.002)	21617	1.00000	1.23	
*	45 Acenaphthene-D10	164	15.855	15.855	(1.000)	70740	0.80000	(a)	
	46 Acenaphthene	153	15.921	15.921	(1.004)	131130	1.00000	1.05	
	47 2,4-Dinitrophenol	184	16.145	16.119	(1.018)	27173	3.00000	3.25	
	48 Dibenzofuran	168	16.356	16.343	(1.032)	164257	1.00000	1.05	
	49 4-Nitrophenol	109	16.528	16.475	(1.042)	18769	3.00000	3.11	(Q)
	50 2,4-Dinitrotoluene	165	16.435	16.422	(1.037)	34269	1.00000	1.01	
	51 2,3,4,6-Tetrachlorophenol	232	16.725	16.712	(1.055)	108734	3.00000	3.06	
$	52 Fluorene-D10	174	17.084	17.084	(1.078)	81908	1.00000	1.00	(Q)
	53 Diethylphthalate	149	17.100	17.084	(1.079)	453523	3.00000	3.09	(Q)
	54 Fluorene	166	17.148	17.148	(1.082)	131823	1.00000	1.03	
	55 4-Chlorophenyl-phenylether	204	17.243	17.243	(1.088)	59708	1.00000	1.04	
	56 4-Nitroaniline	138	17.338	17.291	(1.094)	19398	1.00000	1.19	(Q)
	57 4,6-Dinitro-2-Methylphenol	198	17.402	17.386	(0.900)	43552	3.00000	3.26	
	58 N-Nitrosodiphenylamine	169	17.545	17.529	(0.907)	97721	1.00000	1.05	
	59 4-Bromophenyl-phenylether	248	18.379	18.379	(0.950)	34195	1.00000	1.06	
	60 Hexachlorobenzene	284	18.469	18.469	(0.955)	40859	1.00000	1.03	
	61 Atrazine	200	18.933	18.918	(0.979)	22985	1.00000	1.02	(H)
	62 Pentachlorophenol	266	18.993	18.993	(0.982)	77001	3.00000	3.50	
*	63 Phenanthrene-D10	188	19.338	19.323	(1.000)	100886	0.80000	(a)	
	64 Phenanthrene	178	19.383	19.383	(1.002)	167935	1.00000	1.06	
	65 Anthracene	178	19.503	19.503	(1.009)	173815	1.00000	1.04	
	66 Carbazole	167	19.967	19.967	(1.033)	123807	1.00000	1.01	
	67 Di-n-butylphthalate	149	21.016	21.016	(1.087)	793173	3.00000	3.14	
	68 Fluoranthene	202	22.190	22.190	(1.147)	140013	1.00000	1.04	
$	69 Pyrene-D10	212	22.660	22.660	(0.886)	87043	1.00000	1.07	
	70 Pyrene	202	22.687	22.687	(0.887)	150755	1.00000	1.11	
	71 Butylbenzylphthalate	149	24.521	24.521	(0.958)	309046	3.00000	3.30	
	72 Benzo(a)anthracene	228	25.576	25.562	(0.999)	77829	1.00000	1.09	(H)
*	73 Chrysene-D12	240	25.589	25.589	(1.000)	46639	0.80000	(a)	
	74 Chrysene	228	25.643	25.643	(1.002)	92697	1.00000	1.07	
	75 3,3'-Dichlorobenzidine	252	25.657	25.643	(1.003)	20279	1.00000	1.12	

Data File: \\target_server\gg\chem\gcms-n.i\N062614.b\N2922.D
Report Date: 27-Jun-2014 13:22

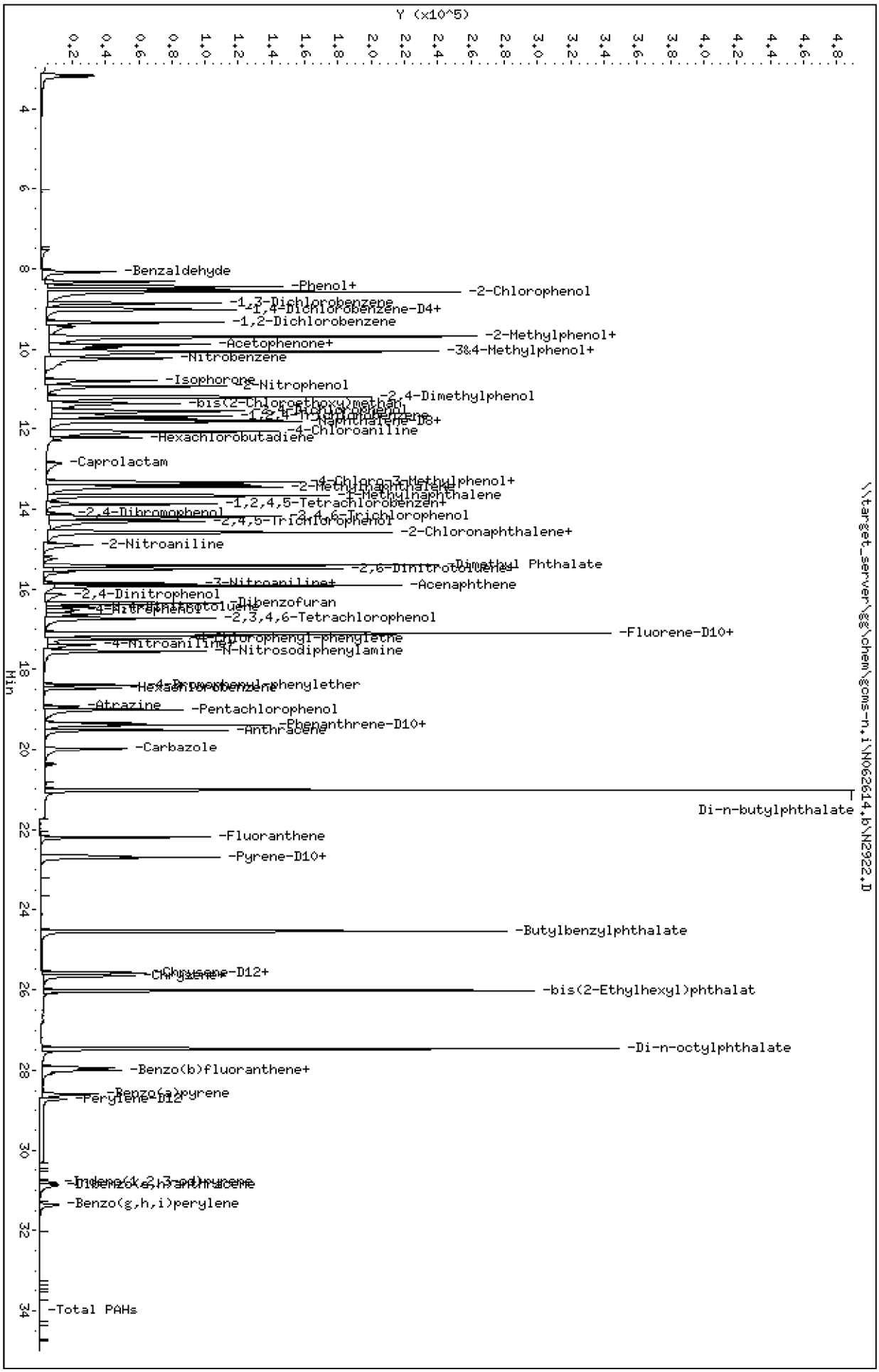
		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)		REVIEW CODE
	76	bis(2-Ethylhexyl)phthalate	149	26.022	26.022	(1.017)	468495	3.00000	3.38		
	77	Di-n-octylphthalate	149	27.471	27.471	(0.957)	681082	3.00000	3.30		
	78	Benzo(b)fluoranthene	252	27.951	27.934	(0.974)	55784	1.00000	0.942		
	79	Benzo(k)fluoranthene	252	28.003	27.986	(0.976)	87248	1.00000	1.05	(H)	
	80	Benzo(a)pyrene	252	28.586	28.586	(0.996)	58016	1.00000	0.994		
*	81	Perylene-D12	264	28.706	28.706	(1.000)	36836	0.80000		(a)	
	82	Indeno(1,2,3-cd)pyrene	276	30.797	30.784	(1.073)	31437	1.00000	1.08	(MH)	M3
	83	Dibenzo(a,h)anthracene	278	30.880	30.866	(1.076)	34593	1.00000	1.06		
	84	Benzo(g,h,i)perylene	276	31.359	31.346	(1.092)	47715	1.00000	1.02		
M	85	Total PAHs	100				2161232	17.0000		(a)	



2:37 pm, Jul 11, 2014

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.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Date : 26-JUN-2014 10:28
Client ID:
Sample Info: WG145455-4
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n.i
Operator: JCC
Column diameter: 0.25
Y (x10^5)
Min
\\target_server\gg\chem\gcms-n.i\N062614.b\N2922.D
-Benzaldehyde
-Phenol+
-2-Chlorophenol
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-2-Methylphenol+
-Acetophenone+
-3&4-Methylphenol+
-Nitrobenzene
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol
-bis(2-Chloroethoxy)methan
-Naphthalene-D8+
-4-Chloroaniline
-Hexachlorobutadiene
-Caprolactam
-4-Chloro-3-Methylphenol+
-2-Methylnaphthalene
-1-Methylnaphthalene
-1,2,4,5-Tetrachlorobenzen+
-2,4-Dibromophenol
-2,4,6-Trichlorophenol
-2,4,5-Trichlorophenol
-2-Chloronaphthalene+
-2-Nitroaniline
-Dimethyl Phthalate
-2,6-Dinitrotoluene
-3-Nitroaniline+
-Acenaphthene
-2,4-Dinitrophenol
-Dibenzofuran
-4-Nitrophenol
-2,3,4,6-Tetrachlorophenol
-Fluorene-D10+
-4-Nitroaniline
-N-Nitrosodiphenylamine
-Hexachlorobenzene
-Atrazine
-Pentachlorophenol
-Phenanthrene-D10+
-Anthracene
-Carbazole
Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-Chrysene-D12+
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene+
-Benzo(a)pyrene
-Perylene-D12
-Benzo(g,h,i)perylene
-Total PAHs

Data File: \\target_server\gg\chem\gcms-n.i\N062614.b\N2923.D
Report Date: 27-Jun-2014 13:22

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N062614.b\N2923.D
Lab Smp Id: WG145455-2
Inj Date : 26-JUN-2014 11:12 MS Autotune Date: 12-NOV-2013 09:32
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG145455-2
Misc Info :
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N062614.b\NSPSIM09.m
Meth Date : 27-Jun-2014 09:17 gcms-n.i Quant Type: ISTD
Cal Date : 26-JUN-2014 11:12 Cal File: N2923.D
Als bottle: 3 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
$	1 1,4-Dioxane-d8	96	3.174	3.140	(0.353)	6071	0.20000	0.194(a)	
	2 1,4-Dioxane	88	3.208	3.174	(0.357)	7158	0.20000	0.182(aM)	M3
	3 Benzaldehyde	77	8.100	8.050	(0.901)	7527	0.20000	0.200	
	4 Phenol	94	8.461	8.428	(0.941)	103529	1.00000	0.972(a)	
	5 Bis(2-Chloroethyl)ether	93	8.527	8.478	(0.949)	24344	0.20000	0.226	
	6 2-Chlorophenol	128	8.576	8.560	(0.954)	92402	1.00000	1.00	
	7 1,3-Dichlorobenzene	146	8.856	8.839	(0.985)	18287	0.20000	0.191(a)	
*	8 1,4-Dichlorobenzene-D4	152	8.987	8.971	(1.000)	51287	0.80000	(a)	
	9 1,4-Dichlorobenzene	146	9.020	9.003	(1.004)	21274	0.20000	0.206	
	10 1,2-Dichlorobenzene	146	9.332	9.316	(1.038)	19579	0.20000	0.206	
	11 2-Methylphenol	108	9.714	9.683	(1.081)	79281	1.00000	0.945(a)	
	12 2,2'-Oxybis(1-chloropropane)	45	9.698	9.667	(1.079)	25639	0.20000	0.205(Q)	
	13 Acetophenone	105	9.935	9.872	(0.845)	21063	0.20000	0.200	
	14 N-Nitroso-di-n-propylamine	70	9.998	9.935	(1.112)	10444	0.20000	0.178(aM)	M3
	15 3&4-Methylphenol	108	10.092	10.061	(1.123)	65968	1.00000	0.848(a)	
	16 Hexachloroethane	117	10.045	10.029	(1.118)	8337	0.20000	0.212	
	17 Nitrobenzene	77	10.250	10.203	(0.871)	27782	0.20000	0.206(Q)	
	18 Isophorone	82	10.842	10.791	(0.922)	27784	0.20000	0.195(a)	
	19 2-Nitrophenol	139	10.978	10.944	(0.933)	38190	1.00000	0.904(a)	
	20 2,4-Dimethylphenol	107	11.234	11.200	(0.955)	72900	1.00000	0.953	
	21 bis(2-Chloroethoxy)methane	93	11.422	11.354	(0.971)	15127	0.20000	0.163(a)	

Data File: \\target_server\gg\chem\gcms-n.i\N062614.b\N2923.D
Report Date: 27-Jun-2014 13:22

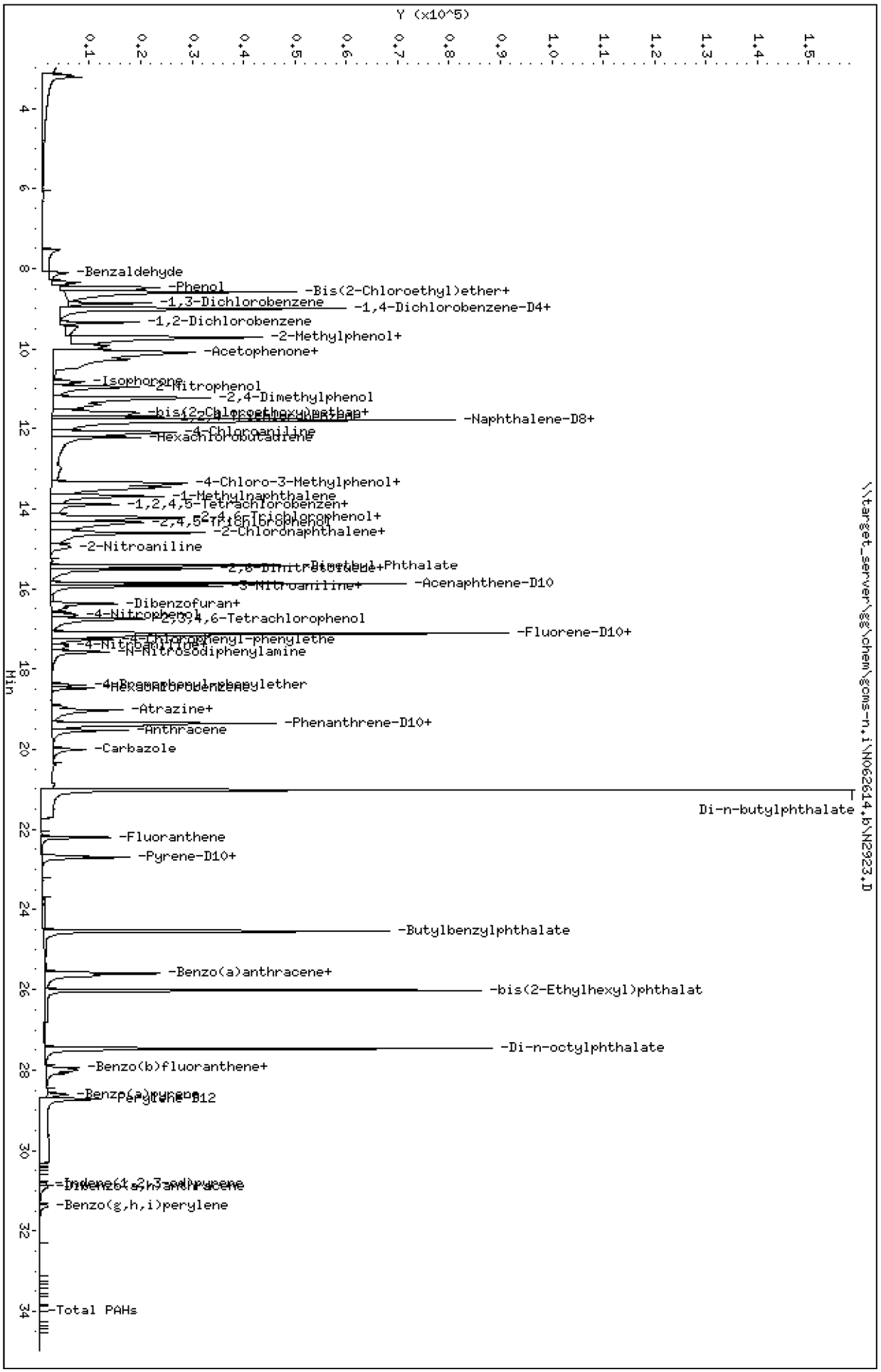
			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	22	2,4-Dichlorophenol	162	11.627	11.541	(0.988)	57976	1.00000	0.938	
	23	1,2,4-Trichlorobenzene	180	11.695	11.678	(0.994)	14398	0.20000	0.211	
*	24	Naphthalene-D8	136	11.763	11.763	(1.000)	182420	0.80000	(a)	
	25	Naphthalene	128	11.814	11.797	(1.004)	49032	0.20000	0.217	
	26	4-Chloroaniline	127	12.122	12.019	(1.030)	15373	0.20000	0.192(a)	
	27	Hexachlorobutadiene	225	12.207	12.190	(1.038)	8253	0.20000	0.230	
	28	Caprolactam	113	12.958	12.807	(1.102)	2589	0.20000	0.181(aM)	M3
	29	4-Chloro-3-Methylphenol	107	13.335	13.297	(1.134)	64122	1.00000	1.01	
$	30	2-Methylnaphthalene-D10	152	13.391	13.354	(0.845)	21725	0.20000	0.212(a)	
	31	2-Methylnaphthalene	142	13.467	13.429	(1.145)	43282	0.20000	0.0787(a)	
	32	1-Methylnaphthalene	142	13.674	13.655	(1.162)	34876	0.20000	0.250	
	33	1,2,4,5-Tetrachlorobenzene	216	13.881	13.843	(0.875)	11042	0.20000	0.209	
	34	Hexachlorocyclopentadiene	237	13.881	13.862	(0.875)	4116	0.20000	0.239	
$	35	2,4-Dibromophenol	252	14.164	14.107	(0.893)	6170	0.20000	0.184(aQM)	M3
	36	2,4,6-Trichlorophenol	196	14.220	14.182	(0.897)	31087	1.00000	0.867(a)	
	37	2,4,5-Trichlorophenol	196	14.333	14.277	(0.904)	57981	1.00000	1.18	
	38	2-Chloronaphthalene	164	14.578	14.540	(0.919)	7909	0.20000	0.216(Q)	
	39	1,1'-Biphenyl	154	14.597	14.559	(0.921)	31716	0.20000	0.212	
	40	2-Nitroaniline	65	14.936	14.861	(0.942)	4922	0.20000	0.174(a)	
	41	Dimethyl Phthalate	163	15.420	15.407	(0.973)	134789	1.00000	1.04	
	42	2,6-Dinitrotoluene	165	15.499	15.473	(0.978)	5680	0.20000	0.196(a)	
	43	Acenaphthylene	152	15.512	15.499	(0.978)	42344	0.20000	0.210	
	44	3-Nitroaniline	138	15.961	15.855	(1.007)	3017	0.20000	0.0904(aQ)	
*	45	Acenaphthene-D10	164	15.855	15.855	(1.000)	67967	0.80000	(a)	
	46	Acenaphthene	153	15.934	15.921	(1.005)	25533	0.20000	0.213	
	47	2,4-Dinitrophenol	184	16.290	16.119	(1.027)	3897	1.00000	0.847(aM)	M3
	48	Dibenzofuran	168	16.369	16.343	(1.032)	30738	0.20000	0.205	
	49	4-Nitrophenol	109	16.633	16.475	(1.049)	3678	1.00000	0.863(a)	
	50	2,4-Dinitrotoluene	165	16.475	16.422	(1.039)	4669	0.20000	0.236(Q)	
	51	2,3,4,6-Tetrachlorophenol	232	16.752	16.712	(1.057)	32925	1.00000	0.964(a)	
$	52	Fluorene-D10	174	17.100	17.084	(1.079)	18967	0.20000	0.242(a)	
	53	Diethylphthalate	149	17.100	17.084	(1.079)	149424	1.00000	1.06	
	54	Fluorene	166	17.164	17.148	(1.083)	26191	0.20000	0.213	
	55	4-Chlorophenyl-phenylether	204	17.259	17.243	(1.089)	11116	0.20000	0.202	
	56	4-Nitroaniline	138	17.434	17.291	(1.100)	2960	0.20000	0.190(aQ)	
	57	4,6-Dinitro-2-Methylphenol	198	17.434	17.386	(0.902)	7241	1.00000	0.817(aQ)	
	58	N-Nitrosodiphenylamine	169	17.561	17.529	(0.908)	17158	0.20000	0.194(a)	
	59	4-Bromophenyl-phenylether	248	18.394	18.379	(0.951)	6384	0.20000	0.210	
	60	Hexachlorobenzene	284	18.469	18.469	(0.955)	9162	0.20000	0.243	
	61	Atrazine	200	18.948	18.918	(0.980)	3892	0.20000	0.183(a)	
	62	Pentachlorophenol	266	19.023	18.993	(0.984)	21529	1.00000	1.03	
*	63	Phenanthrene-D10	188	19.338	19.323	(1.000)	95579	0.80000	(a)	
	64	Phenanthrene	178	19.398	19.383	(1.003)	30238	0.20000	0.201	
	65	Anthracene	178	19.518	19.503	(1.009)	32893	0.20000	0.208	
	66	Carbazole	167	19.997	19.967	(1.034)	24298	0.20000	0.209	
	67	Di-n-butylphthalate	149	21.016	21.016	(1.087)	263189	1.00000	1.10	
	68	Fluoranthene	202	22.204	22.190	(1.148)	27450	0.20000	0.214	
$	69	Pyrene-D10	212	22.660	22.660	(0.885)	16683	0.20000	0.234(a)	
	70	Pyrene	202	22.701	22.687	(0.887)	30015	0.20000	0.118(a)	
	71	Butylbenzylphthalate	149	24.534	24.521	(0.958)	94574	1.00000	1.16	
	72	Benzo(a)anthracene	228	25.576	25.562	(0.999)	12094	0.20000	0.194(a)	
*	73	Chrysene-D12	240	25.603	25.589	(1.000)	40790	0.80000	(a)	
	74	Chrysene	228	25.657	25.643	(1.002)	21123	0.20000	0.149(a)	
	75	3,3'-Dichlorobenzidine	252	25.697	25.643	(1.004)	2807	0.20000	0.177(a)	

Data File: \\target_server\gg\chem\gcms-n.i\N062614.b\N2923.D
Report Date: 27-Jun-2014 13:22

		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	76	bis(2-Ethylhexyl)phthalate	149	26.022	26.022	(1.016)	142501	1.00000	0.952(a)	
	77	Di-n-octylphthalate	149	27.471	27.471	(0.956)	194503	1.00000	1.10	
	78	Benzo(b)fluoranthene	252	27.951	27.934	(0.973)	9491	0.20000	0.188(a)	
	79	Benzo(k)fluoranthene	252	28.020	27.986	(0.976)	16966	0.20000	0.240(H)	
	80	Benzo(a)pyrene	252	28.603	28.586	(0.996)	11316	0.20000	0.227	
*	81	Perylene-D12	264	28.723	28.706	(1.000)	31429	0.80000	(a)	
	82	Indeno(1,2,3-cd)pyrene	276	30.825	30.784	(1.073)	4797	0.20000	0.194(aM)	M3
	83	Dibenzo(a,h)anthracene	278	30.907	30.866	(1.076)	6315	0.20000	0.227(Q)	
	84	Benzo(g,h,i)perylene	276	31.387	31.346	(1.093)	9395	0.20000	0.235	
M	85	Total PAHs	100				433351	3.40000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.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Date : 26-JUN-2014 11:12
Client ID:
Sample Info: WG145455-2
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n,i\N062614,b\N2923,D
Y (x10^5)
Min
-Benzaldehyde
-Phenol
-Bis(2-Chloroethyl)ether+
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-2-Methylphenol+
-Acetophenone+
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol
-Naphthalene-D8+
-Hexachlorobutadiene
-4-Chloro-3-Methylphenol+
-1-Methylnaphthalene
-1,2,4,5-Tetrachlorobenzen+
-2,4,5-Trichlorophenol
-2-Chloronaphthalene+
-2-Nitroaniline
-Acenaphthene-D10
-Dibenzofuran+
-4-Nitrophenol
-2,3,4,6-Tetrachlorophenol
-Fluorene-D10+
-N-Nitrosodiphenylamine
-Hexachlorobenzene
-Atrazine+
-Phenanthrene-D10+
-Anthracene
-Carbazole
Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-Benzo(a)anthracene+
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene+
-Benzo(k)fluoranthene+
-Benzo(a)pyrene
Perylene-D12
-Indeno(1,2,3-cd)pyrene
-Dibenz(a,h)anthracene
-Benzo(g,h,i)perylene
-Total PAHs

Data File: \\target_server\gg\chem\gcms-n.i\N062614.b\N2924.D
Report Date: 27-Jun-2014 13:22

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N062614.b\N2924.D
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Inj Date : 26-JUN-2014 11:55 MS Autotune Date: 12-NOV-2013 09:32
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG145455-3
Misc Info :
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N062614.b\NSPSIM09.m
Meth Date : 27-Jun-2014 09:17 gcms-n.i Quant Type: ISTD
Cal Date : 26-JUN-2014 11:55 Cal File: N2924.D
Als bottle: 4 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
$	1 1,4-Dioxane-d8	96	3.157	3.140	(0.351)	17990	0.50000	0.581(a)	
	2 1,4-Dioxane	88	3.208	3.174	(0.357)	18372	0.50000	0.472(aM)	M3
	3 Benzaldehyde	77	8.083	8.050	(0.899)	19862	0.50000	0.533	
	4 Phenol	94	8.445	8.428	(0.940)	215283	2.00000	2.04	
	5 Bis(2-Chloroethyl)ether	93	8.510	8.478	(0.947)	60108	0.50000	0.562	
	6 2-Chlorophenol	128	8.576	8.560	(0.954)	189911	2.00000	2.08	
	7 1,3-Dichlorobenzene	146	8.856	8.839	(0.985)	49454	0.50000	0.520	
*	8 1,4-Dichlorobenzene-D4	152	8.987	8.971	(1.000)	50854	0.80000	(a)	
	9 1,4-Dichlorobenzene	146	9.020	9.003	(1.004)	53335	0.50000	0.522	
	10 1,2-Dichlorobenzene	146	9.332	9.316	(1.038)	48812	0.50000	0.518	
	11 2-Methylphenol	108	9.698	9.683	(1.079)	167003	2.00000	2.01	
	12 2,2'-Oxybis(1-chloropropane)	45	9.683	9.667	(1.077)	66029	0.50000	0.533	
	13 Acetophenone	105	9.903	9.872	(0.842)	46635	0.50000	0.439	
	14 N-Nitroso-di-n-propylamine	70	9.966	9.935	(1.109)	32529	0.50000	0.560	
	15 3&4-Methylphenol	108	10.061	10.061	(1.119)	151902	2.00000	1.97	
	16 Hexachloroethane	117	10.045	10.029	(1.118)	20820	0.50000	0.533	
	17 Nitrobenzene	77	10.234	10.203	(0.870)	57804	0.50000	0.592(Q)	
	18 Isophorone	82	10.808	10.791	(0.919)	74858	0.50000	0.520	
	19 2-Nitrophenol	139	10.961	10.944	(0.932)	84610	2.00000	1.98	
	20 2,4-Dimethylphenol	107	11.217	11.200	(0.954)	157092	2.00000	2.03	
	21 bis(2-Chloroethoxy)methane	93	11.388	11.354	(0.968)	46768	0.50000	0.499	

Data File: \\target_server\gg\chem\gcms-n.i\N062614.b\N2924.D
Report Date: 27-Jun-2014 13:22

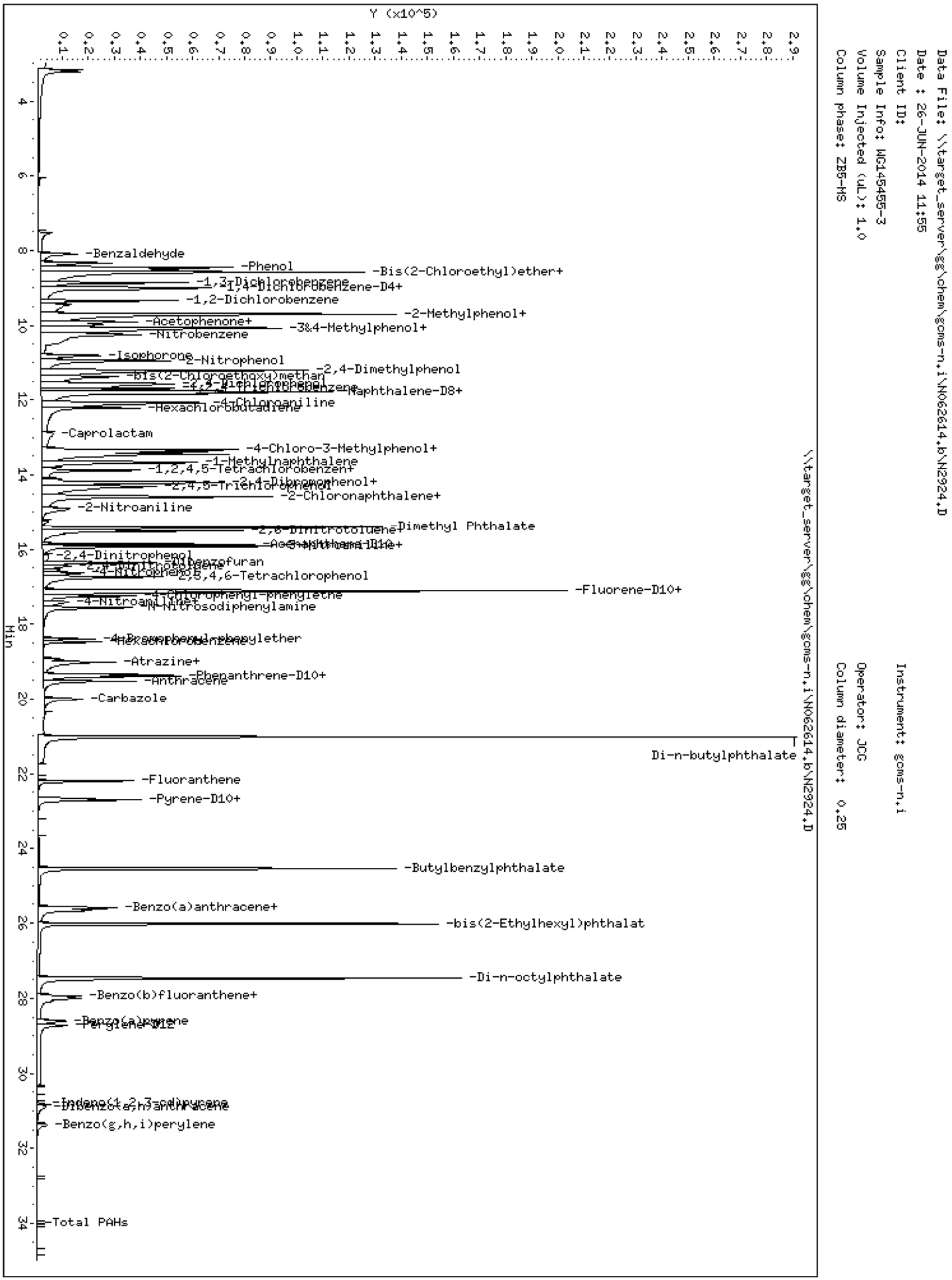
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	22 2,4-Dichlorophenol	162	11.575	11.541	(0.984)	125518	2.00000	2.01	
	23 1,2,4-Trichlorobenzene	180	11.695	11.678	(0.994)	36630	0.50000	0.532	
*	24 Naphthalene-D8	136	11.763	11.763	(1.000)	184382	0.80000	(a)	
	25 Naphthalene	128	11.814	11.797	(1.004)	122531	0.50000	0.537	
	26 4-Chloroaniline	127	12.087	12.019	(1.028)	40961	0.50000	0.505(a)	
	27 Hexachlorobutadiene	225	12.207	12.190	(1.038)	19650	0.50000	0.543	
	28 Caprolactam	113	12.901	12.807	(1.097)	8014	0.50000	0.438(Q)	
	29 4-Chloro-3-Methylphenol	107	13.316	13.297	(1.132)	131882	2.00000	2.05	
$	30 2-Methylnaphthalene-D10	152	13.372	13.354	(0.843)	54673	0.50000	0.530(a)	
	31 2-Methylnaphthalene	142	13.448	13.429	(1.143)	98898	0.50000	0.498	
	32 1-Methylnaphthalene	142	13.655	13.655	(1.161)	71708	0.50000	0.508	
	33 1,2,4,5-Tetrachlorobenzene	216	13.862	13.843	(0.874)	27781	0.50000	0.523	
	34 Hexachlorocyclopentadiene	237	13.862	13.862	(0.874)	11589	0.50000	0.476	
$	35 2,4-Dibromophenol	252	14.145	14.107	(0.892)	18946	0.50000	0.563(aQ)	
	36 2,4,6-Trichlorophenol	196	14.201	14.182	(0.896)	72359	2.00000	2.00	
	37 2,4,5-Trichlorophenol	196	14.314	14.277	(0.903)	104325	2.00000	2.10	
	38 2-Chloronaphthalene	164	14.559	14.540	(0.918)	17592	0.50000	0.476(Q)	
	39 1,1'-Biphenyl	154	14.578	14.559	(0.919)	80072	0.50000	0.531	
	40 2-Nitroaniline	65	14.898	14.861	(0.940)	13315	0.50000	0.468	
	41 Dimethyl Phthalate	163	15.407	15.407	(0.972)	266884	2.00000	2.05	
	42 2,6-Dinitrotoluene	165	15.499	15.473	(0.978)	14127	0.50000	0.484	
	43 Acenaphthylene	152	15.499	15.499	(0.978)	105875	0.50000	0.523	
	44 3-Nitroaniline	138	15.921	15.855	(1.004)	8936	0.50000	0.475(Q)	
*	45 Acenaphthene-D10	164	15.855	15.855	(1.000)	68394	0.80000	(a)	
	46 Acenaphthene	153	15.921	15.921	(1.004)	63764	0.50000	0.529	
	47 2,4-Dinitrophenol	184	16.198	16.119	(1.022)	9643	2.00000	1.49(M)	M9
	48 Dibenzofuran	168	16.356	16.343	(1.032)	77687	0.50000	0.514	
	49 4-Nitrophenol	109	16.620	16.475	(1.048)	9179	2.00000	1.75(QM)	M6
	50 2,4-Dinitrotoluene	165	16.448	16.422	(1.037)	13897	0.50000	0.485(Q)	
	51 2,3,4,6-Tetrachlorophenol	232	16.738	16.712	(1.056)	65961	2.00000	1.92	
$	52 Fluorene-D10	174	17.084	17.084	(1.078)	39842	0.50000	0.506(a)	
	53 Diethylphthalate	149	17.100	17.084	(1.079)	299438	2.00000	2.11	
	54 Fluorene	166	17.148	17.148	(1.082)	64330	0.50000	0.520	
	55 4-Chlorophenyl-phenylether	204	17.243	17.243	(1.088)	28030	0.50000	0.507	
	56 4-Nitroaniline	138	17.402	17.291	(1.098)	6309	0.50000	0.402(Q)	
	57 4,6-Dinitro-2-Methylphenol	198	17.418	17.386	(0.901)	18383	2.00000	1.70(Q)	
	58 N-Nitrosodiphenylamine	169	17.545	17.529	(0.907)	44526	0.50000	0.526	
	59 4-Bromophenyl-phenylether	248	18.394	18.379	(0.951)	15909	0.50000	0.545	
	60 Hexachlorobenzene	284	18.469	18.469	(0.955)	19466	0.50000	0.539	
	61 Atrazine	200	18.933	18.918	(0.979)	9704	0.50000	0.475	
	62 Pentachlorophenol	266	19.008	18.993	(0.983)	38297	2.00000	1.91	
*	63 Phenanthrene-D10	188	19.338	19.323	(1.000)	91670	0.80000	(a)	
	64 Phenanthrene	178	19.383	19.383	(1.002)	75038	0.50000	0.520	
	65 Anthracene	178	19.518	19.503	(1.009)	81476	0.50000	0.538	
	66 Carbazole	167	19.997	19.967	(1.034)	54003	0.50000	0.484	
	67 Di-n-butylphthalate	149	21.016	21.016	(1.087)	502737	2.00000	2.19	
	68 Fluoranthene	202	22.190	22.190	(1.148)	62368	0.50000	0.508	
$	69 Pyrene-D10	212	22.660	22.660	(0.886)	38002	0.50000	0.566(a)	
	70 Pyrene	202	22.701	22.687	(0.887)	67181	0.50000	0.519	
	71 Butylbenzylphthalate	149	24.521	24.521	(0.958)	175264	2.00000	2.27	
	72 Benzo(a)anthracene	228	25.576	25.562	(0.999)	27997	0.50000	0.476	
*	73 Chrysene-D12	240	25.589	25.589	(1.000)	38520	0.80000	(a)	
	74 Chrysene	228	25.657	25.643	(1.003)	43062	0.50000	0.526	
	75 3,3'-Dichlorobenzidine	252	25.670	25.643	(1.003)	7554	0.50000	0.505	

Data File: \\target_server\gg\chem\gcms-n.i\N062614.b\N2924.D
Report Date: 27-Jun-2014 13:22

		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)		REVIEW CODE
	76	bis(2-Ethylhexyl)phthalate	149	26.022	26.022	(1.017)	262308	2.00000	2.10		
	77	Di-n-octylphthalate	149	27.471	27.471	(0.956)	361834	2.00000	2.16		
	78	Benzo(b)fluoranthene	252	27.951	27.934	(0.973)	23626	0.50000	0.493		
	79	Benzo(k)fluoranthene	252	28.003	27.986	(0.975)	35718	0.50000	0.532	(H)	
	80	Benzo(a)pyrene	252	28.603	28.586	(0.996)	24332	0.50000	0.515		
*	81	Perylene-D12	264	28.723	28.706	(1.000)	29822	0.80000		(a)	
	82	Indeno(1,2,3-cd)pyrene	276	30.811	30.784	(1.073)	11337	0.50000	0.484	(MH)	M6
	83	Dibenzo(a,h)anthracene	278	30.907	30.866	(1.076)	13037	0.50000	0.494	(Q)	
	84	Benzo(g,h,i)perylene	276	31.373	31.346	(1.092)	20985	0.50000	0.552		
M	85	Total PAHs	100				1013263	8.50000		(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.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Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
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Y (x10^5)
Min
-Benzaldehyde
-Phenol
-Bis(2-Chloroethyl)ether+
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-2-Methylphenol+
-Acetophenone+
-3&4-Methylphenol+
-Nitrobenzene
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol
-bis(2-Chloroethoxy)methan
-Naphthalene-D8+
-4-Chloroaniline
-Hexachlorobutadiene
-Caprolactam
-4-Chloro-3-Methylphenol+
-1-Methylnaphthalene
-1,2,4,5-Tetrachlorobenzen+
-2,4,5-Trichlorophenol
-2-Chloronaphthalene+
-2-Nitroaniline
-2,6-Dinitrotoluene
-Dimethyl Phthalate
-2,4-Dinitrophenol
-Dibenzofuran
-2,4-Dinitrotoluene
-2,3,5,4,6-Tetrachlorophenol
-Fluorene-D10+
-4-Chlorophenyl-phenylethe
-4-Nitroaniline
-N-Nitrosodiphenylamine
-Hexachlorobenzene
-Atrazine+
-Phenanthrene-D10+
-Anthracene
-Carbazole
Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-Benzo(a)anthracene+
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene+
-Benzo(k)fluoranthene+
-Benzo(a)pyrene
-Perylene-D12
-Indeno(1,2,3-cd)pyrene
-Dibenz(a,h)anthracene
-Benzo(g,h,i)perylene
-Total PAHs

Data File: \\target_server\gg\chem\gcms-n.i\N062614.b\N2925.D
Report Date: 27-Jun-2014 13:22

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N062614.b\N2925.D
Lab Smp Id: WG145455-5
Inj Date : 26-JUN-2014 12:39 MS Autotune Date: 12-NOV-2013 09:32
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG145455-5
Misc Info :
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N062614.b\NSPSIM09.m
Meth Date : 27-Jun-2014 09:17 gcms-n.i Quant Type: ISTD
Cal Date : 26-JUN-2014 12:39 Cal File: N2925.D
Als bottle: 5 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
$	1 1,4-Dioxane-d8	96	3.140	3.140	(0.350)	101584	3.00000	3.06	
	2 1,4-Dioxane	88	3.191	3.174	(0.356)	121216	3.00000	2.90(M)	M3
	3 Benzaldehyde	77	8.050	8.050	(0.897)	118137	3.00000	2.95	
	4 Phenol	94	8.428	8.428	(0.940)	570433	5.00000	5.03	
	5 Bis(2-Chloroethyl)ether	93	8.494	8.478	(0.947)	328622	3.00000	2.86	
	6 2-Chlorophenol	128	8.560	8.560	(0.954)	491477	5.00000	5.01	
	7 1,3-Dichlorobenzene	146	8.839	8.839	(0.985)	320245	3.00000	3.14	
*	8 1,4-Dichlorobenzene-D4	152	8.971	8.971	(1.000)	54574	0.80000	(aQ)	
	9 1,4-Dichlorobenzene	146	9.003	9.003	(1.004)	332419	3.00000	3.03	
	10 1,2-Dichlorobenzene	146	9.316	9.316	(1.038)	308200	3.00000	3.05	
	11 2-Methylphenol	108	9.683	9.683	(1.079)	451332	5.00000	5.06	
	12 2,2'-Oxybis(1-chloropropane)	45	9.667	9.667	(1.078)	405487	3.00000	3.05(Q)	
	13 Acetophenone	105	9.872	9.872	(0.839)	361566	3.00000	3.24	
	14 N-Nitroso-di-n-propylamine	70	9.951	9.935	(1.109)	195667	3.00000	3.14	
	15 3&4-Methylphenol	108	10.045	10.061	(1.120)	433305	5.00000	5.24(Q)	
	16 Hexachloroethane	117	10.029	10.029	(1.118)	124442	3.00000	2.97	
	17 Nitrobenzene	77	10.218	10.203	(0.869)	288608	3.00000	3.40	
	18 Isophorone	82	10.791	10.791	(0.917)	502070	3.00000	3.31	
	19 2-Nitrophenol	139	10.944	10.944	(0.930)	235869	5.00000	5.26	
	20 2,4-Dimethylphenol	107	11.200	11.200	(0.952)	425136	5.00000	5.23	
	21 bis(2-Chloroethoxy)methane	93	11.371	11.354	(0.967)	328125	3.00000	3.33	

Data File: \\target_server\gg\chem\gcms-n.i\N062614.b\N2925.D
Report Date: 27-Jun-2014 13:22

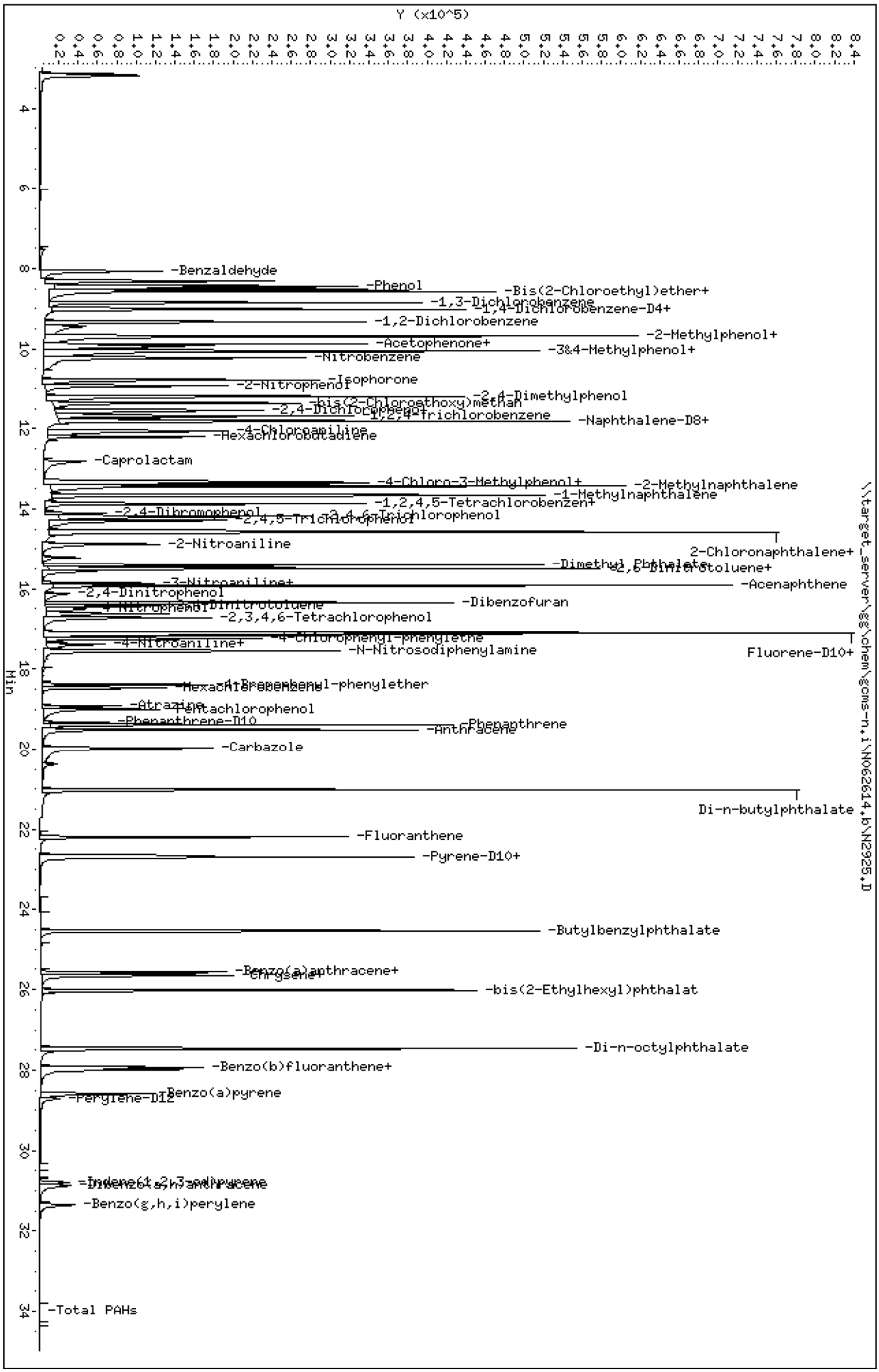
		QUANT SIG					AMOUNTS		
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	22 2,4-Dichlorophenol	162	11.541	11.541	(0.981)	345082	5.00000	5.25	
	23 1,2,4-Trichlorobenzene	180	11.678	11.678	(0.993)	223263	3.00000	3.08	
*	24 Naphthalene-D8	136	11.763	11.763	(1.000)	193859	0.80000	(a)	
	25 Naphthalene	128	11.797	11.797	(1.003)	743188	3.00000	3.10	
	26 4-Chloroaniline	127	12.036	12.019	(1.023)	275983	3.00000	3.24	
	27 Hexachlorobutadiene	225	12.190	12.190	(1.036)	113305	3.00000	2.98	
	28 Caprolactam	113	12.807	12.807	(1.089)	66845	3.00000	3.08(Q)	
	29 4-Chloro-3-Methylphenol	107	13.297	13.297	(1.130)	348351	5.00000	5.16	
$	30 2-Methylnaphthalene-D10	152	13.354	13.354	(0.842)	337370	3.00000	2.93	
	31 2-Methylnaphthalene	142	13.429	13.429	(1.142)	508678	3.00000	3.42	
	32 1-Methylnaphthalene	142	13.655	13.655	(1.161)	444605	3.00000	2.99	
	33 1,2,4,5-Tetrachlorobenzene	216	13.862	13.843	(0.874)	172896	3.00000	2.92	
	34 Hexachlorocyclopentadiene	237	13.862	13.862	(0.874)	95498	3.00000	2.83	
$	35 2,4-Dibromophenol	252	14.107	14.107	(0.890)	108758	3.00000	2.90(Q)	
	36 2,4,6-Trichlorophenol	196	14.182	14.182	(0.895)	202131	5.00000	5.02	
	37 2,4,5-Trichlorophenol	196	14.277	14.277	(0.900)	263351	5.00000	4.77	
	38 2-Chloronaphthalene	164	14.559	14.540	(0.918)	121454	3.00000	2.95(Q)	
	39 1,1'-Biphenyl	154	14.559	14.559	(0.918)	506506	3.00000	3.02	
	40 2-Nitroaniline	65	14.861	14.861	(0.937)	98817	3.00000	3.11	
	41 Dimethyl Phthalate	163	15.394	15.407	(0.971)	707176	5.00000	4.88	
	42 2,6-Dinitrotoluene	165	15.473	15.473	(0.976)	100319	3.00000	3.09	
	43 Acenaphthylene	152	15.499	15.499	(0.978)	669750	3.00000	2.97	
	44 3-Nitroaniline	138	15.868	15.855	(1.001)	59135	3.00000	3.13	
*	45 Acenaphthene-D10	164	15.855	15.855	(1.000)	76230	0.80000	(a)	
	46 Acenaphthene	153	15.921	15.921	(1.004)	397294	3.00000	2.96	
	47 2,4-Dinitrophenol	184	16.132	16.119	(1.017)	51527	5.00000	5.13	
	48 Dibenzofuran	168	16.343	16.343	(1.031)	505315	3.00000	3.00	
	49 4-Nitrophenol	109	16.501	16.475	(1.041)	36168	5.00000	5.04(Q)	
	50 2,4-Dinitrotoluene	165	16.422	16.422	(1.036)	116352	3.00000	2.94	
	51 2,3,4,6-Tetrachlorophenol	232	16.725	16.712	(1.055)	195442	5.00000	5.10	
$	52 Fluorene-D10	174	17.084	17.084	(1.078)	252032	3.00000	2.87(Q)	
	53 Diethylphthalate	149	17.084	17.084	(1.078)	778452	5.00000	4.92	
	54 Fluorene	166	17.148	17.148	(1.082)	407156	3.00000	2.95	
	55 4-Chlorophenyl-phenylether	204	17.243	17.243	(1.088)	183602	3.00000	2.98	
	56 4-Nitroaniline	138	17.338	17.291	(1.094)	51198	3.00000	2.92(Q)	
	57 4,6-Dinitro-2-Methylphenol	198	17.386	17.386	(0.900)	79226	5.00000	4.98	
	58 N-Nitrosodiphenylamine	169	17.545	17.529	(0.908)	306385	3.00000	2.95	
	59 4-Bromophenyl-phenylether	248	18.379	18.379	(0.951)	98853	3.00000	2.76	
	60 Hexachlorobenzene	284	18.469	18.469	(0.956)	120622	3.00000	2.73	
	61 Atrazine	200	18.918	18.918	(0.979)	73816	3.00000	2.95	
	62 Pentachlorophenol	266	18.993	18.993	(0.983)	111674	5.00000	4.56	
*	63 Phenanthrene-D10	188	19.323	19.323	(1.000)	112303	0.80000	(a)	
	64 Phenanthrene	178	19.383	19.383	(1.003)	523505	3.00000	2.96	
	65 Anthracene	178	19.503	19.503	(1.009)	545189	3.00000	2.94	
	66 Carbazole	167	19.967	19.967	(1.033)	410667	3.00000	3.01	
	67 Di-n-butylphthalate	149	21.016	21.016	(1.088)	1320404	5.00000	4.69	
	68 Fluoranthene	202	22.190	22.190	(1.148)	449376	3.00000	2.98	
$	69 Pyrene-D10	212	22.646	22.660	(0.885)	276593	3.00000	2.76	
	70 Pyrene	202	22.687	22.687	(0.887)	480507	3.00000	3.15	
	71 Butylbenzylphthalate	149	24.521	24.521	(0.958)	524674	5.00000	4.55	
	72 Benzo(a)anthracene	228	25.562	25.562	(0.999)	258778	3.00000	2.95	
*	73 Chrysene-D12	240	25.589	25.589	(1.000)	57461	0.80000	(a)	
	74 Chrysene	228	25.643	25.643	(1.002)	305764	3.00000	3.16	
	75 3,3'-Dichlorobenzidine	252	25.657	25.643	(1.003)	54792	3.00000	2.46	

Data File: \\target_server\gg\chem\gcms-n.i\N062614.b\N2925.D
Report Date: 27-Jun-2014 13:22

		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	76	bis(2-Ethylhexyl)phthalate	149	26.022	26.022	(1.017)	754793	5.00000	4.76	
	77	Di-n-octylphthalate	149	27.471	27.471	(0.957)	1117958	5.00000	4.80	
	78	Benzo(b)fluoranthene	252	27.934	27.934	(0.973)	202262	3.00000	3.03	
	79	Benzo(k)fluoranthene	252	28.003	27.986	(0.976)	265065	3.00000	2.84(H)	
	80	Benzo(a)pyrene	252	28.586	28.586	(0.996)	185504	3.00000	2.82	
*	81	Perylene-D12	264	28.706	28.706	(1.000)	41512	0.80000	(a)	
	82	Indeno(1,2,3-cd)pyrene	276	30.784	30.784	(1.072)	90804	3.00000	2.78(M)	M3
	83	Dibenzo(a,h)anthracene	278	30.880	30.866	(1.076)	97790	3.00000	2.66	
	84	Benzo(g,h,i)perylene	276	31.359	31.346	(1.092)	141603	3.00000	2.68	
M	85	Total PAHs	100				6716818	51.0000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.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Date : 26-JUN-2014 12:39
Client ID:
Sample Info: WG145455-5
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n,i\N062614,b\N2925,D
Y (x10^5)
Min
-Benzaldehyde
-Phenol
-Bis(2-Chloroethyl)ether+
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-2-Methylphenol+
-Acetophenone+
-3&4-Methylphenol+
-Nitrobenzene
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol
-Bis(2-Chloroethoxy)methan
-2,4-Dichlorophenol+
-1,2,4-Trichlorobenzene
-Naphthalene-D8+
-4-Chloroaniline
-Hexachlorobutadiene
-Caprolactam
-4-Chloro-3-Methylphenol+
-2-Methylnaphthalene
-1-Methylnaphthalene
-1,2,4,5-Tetrachlorobenzen+
-2,4-Dibromophenol
-2,4,6-Trichlorophenol
-2,4,5-Trichlorophenol
-2-Nitroaniline
2-Chloronaphthalene+
-Dimethyl Phthalate
-2,6-Dinitrotoluene+
-3-Nitroaniline+
-Acenaphthene
-2,4-Dinitrophenol
-4-Nitrophenol
-2,4-Dinitrotoluene
-Dibenzofuran
-2,3,4,6-Tetrachlorophenol
-4-Chlorophenyl-phenylethe
-4-Nitroaniline+
-N-Nitrosodiphenylamine
Fluorene-D10+
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Atrazine
-Pentachlorophenol
-Phenanthrene-D10
-Phenanthrene
-Anthracene
-Carbazole
Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-Benzo(a)anthracene+
-Chrysene+
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene+
-Benzo(a)pyrene
-Perylene-D12
-Indeno(1,2,3-cd)pyrene
-Dibenz(a,h)anthracene
-Benzo(g,h,i)perylene
-Total PAHs

Data File: \\target_server\gg\chem\gcms-n.i\N062614.b\N2926.D
Report Date: 27-Jun-2014 13:22

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N062614.b\N2926.D
Lab Smp Id: WG145455-6
Inj Date : 26-JUN-2014 13:22 MS Autotune Date: 12-NOV-2013 09:32
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG145455-6
Misc Info :
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N062614.b\NSPSIM09.m
Meth Date : 27-Jun-2014 09:17 gcms-n.i Quant Type: ISTD
Cal Date : 26-JUN-2014 13:22 Cal File: N2926.D
Als bottle: 6 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
$	1 1,4-Dioxane-d8	96	3.140	3.140	(0.350)	223788	7.00000	6.66	
	2 1,4-Dioxane	88	3.174	3.174	(0.354)	341836	7.00000	8.09	
	3 Benzaldehyde	77	8.050	8.050	(0.897)	238680	7.00000	5.90	
	4 Phenol	94	8.428	8.428	(0.940)	801316	7.00000	6.99	
	5 Bis(2-Chloroethyl)ether	93	8.478	8.478	(0.945)	732308	7.00000	6.31	
	6 2-Chlorophenol	128	8.560	8.560	(0.954)	675417	7.00000	6.81	
	7 1,3-Dichlorobenzene	146	8.839	8.839	(0.985)	708737	7.00000	6.87	
*	8 1,4-Dichlorobenzene-D4	152	8.971	8.971	(1.000)	55170	0.80000	(aQ)	
	9 1,4-Dichlorobenzene	146	9.004	9.003	(1.004)	753678	7.00000	6.80	
	10 1,2-Dichlorobenzene	146	9.316	9.316	(1.038)	696190	7.00000	6.81	
	11 2-Methylphenol	108	9.683	9.683	(1.079)	651297	7.00000	7.22	
	12 2,2'-Oxybis(1-chloropropane)	45	9.667	9.667	(1.078)	903177	7.00000	6.72	
	13 Acetophenone	105	9.872	9.872	(0.839)	842438	7.00000	7.17	
	14 N-Nitroso-di-n-propylamine	70	9.935	9.935	(1.107)	435972	7.00000	6.92	
	15 3&4-Methylphenol	108	10.061	10.061	(1.122)	610102	7.00000	7.29	
	16 Hexachloroethane	117	10.029	10.029	(1.118)	283295	7.00000	6.69	
	17 Nitrobenzene	77	10.203	10.203	(0.867)	619972	7.00000	7.12	
	18 Isophorone	82	10.791	10.791	(0.917)	1087693	7.00000	6.82	
	19 2-Nitrophenol	139	10.944	10.944	(0.930)	326940	7.00000	6.92	
	20 2,4-Dimethylphenol	107	11.200	11.200	(0.952)	580209	7.00000	6.78	
	21 bis(2-Chloroethoxy)methane	93	11.354	11.354	(0.965)	739800	7.00000	7.14	

Data File: \\target_server\gg\chem\gcms-n.i\N062614.b\N2926.D
Report Date: 27-Jun-2014 13:22

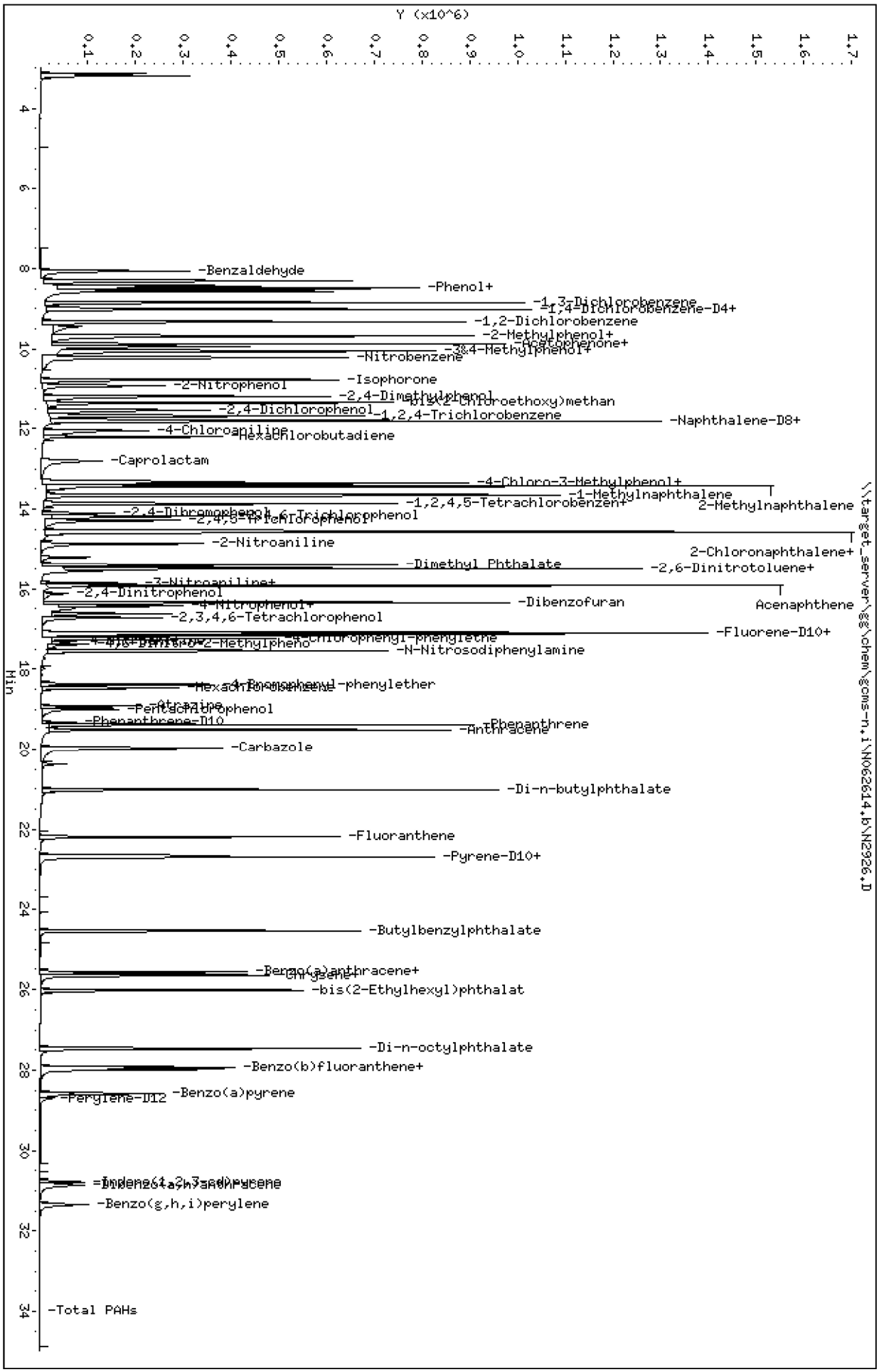
			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	22	2,4-Dichlorophenol	162	11.541	11.541	(0.981)	469912	7.00000	6.80	
	23	1,2,4-Trichlorobenzene	180	11.678	11.678	(0.993)	483152	7.00000	6.35	
*	24	Naphthalene-D8	136	11.763	11.763	(1.000)	203923	0.80000	(a)	
	25	Naphthalene	128	11.797	11.797	(1.003)	1576846	7.00000	6.25	
	26	4-Chloroaniline	127	12.036	12.019	(1.023)	608784	7.00000	6.79	
	27	Hexachlorobutadiene	225	12.190	12.190	(1.036)	254549	7.00000	6.36	
	28	Caprolactam	113	12.788	12.807	(1.087)	158597	7.00000	6.87	
	29	4-Chloro-3-Methylphenol	107	13.297	13.297	(1.130)	463953	7.00000	6.53	
$	30	2-Methylnaphthalene-D10	152	13.354	13.354	(0.842)	742208	7.00000	6.79	
	31	2-Methylnaphthalene	142	13.429	13.429	(1.142)	1083817	7.00000	7.19	
	32	1-Methylnaphthalene	142	13.655	13.655	(1.161)	974122	7.00000	6.24	
	33	1,2,4,5-Tetrachlorobenzene	216	13.862	13.843	(0.874)	381229	7.00000	6.78	
	34	Hexachlorocyclopentadiene	237	13.862	13.862	(0.874)	229831	7.00000	7.01	
$	35	2,4-Dibromophenol	252	14.107	14.107	(0.890)	238652	7.00000	6.70	
	36	2,4,6-Trichlorophenol	196	14.183	14.182	(0.895)	274871	7.00000	7.20	
	37	2,4,5-Trichlorophenol	196	14.277	14.277	(0.900)	336065	7.00000	6.41	
	38	2-Chloronaphthalene	164	14.540	14.540	(0.917)	277266	7.00000	7.10	
	39	1,1'-Biphenyl	154	14.559	14.559	(0.918)	1023147	7.00000	6.42	
	40	2-Nitroaniline	65	14.861	14.861	(0.937)	219038	7.00000	7.27	
	41	Dimethyl Phthalate	163	15.394	15.407	(0.971)	931543	7.00000	6.77	
	42	2,6-Dinitrotoluene	165	15.473	15.473	(0.976)	217828	7.00000	7.06	
	43	Acenaphthylene	152	15.499	15.499	(0.978)	1425944	7.00000	6.65	
	44	3-Nitroaniline	138	15.868	15.855	(1.001)	138315	7.00000	6.84	
*	45	Acenaphthene-D10	164	15.855	15.855	(1.000)	72375	0.80000	(a)	
	46	Acenaphthene	153	15.921	15.921	(1.004)	828011	7.00000	6.50	
	47	2,4-Dinitrophenol	184	16.119	16.119	(1.017)	71558	7.00000	6.87	
	48	Dibenzofuran	168	16.343	16.343	(1.031)	1066716	7.00000	6.67	
	49	4-Nitrophenol	109	16.488	16.475	(1.040)	52577	7.00000	7.00	(Q)
	50	2,4-Dinitrotoluene	165	16.422	16.422	(1.036)	258298	7.00000	6.73	
	51	2,3,4,6-Tetrachlorophenol	232	16.725	16.712	(1.055)	261375	7.00000	7.19	
$	52	Fluorene-D10	174	17.085	17.084	(1.078)	531874	7.00000	6.38	
	53	Diethylphthalate	149	17.085	17.084	(1.078)	986842	7.00000	6.57	(Q)
	54	Fluorene	166	17.148	17.148	(1.082)	867846	7.00000	6.62	
	55	4-Chlorophenyl-phenylether	204	17.243	17.243	(1.088)	395115	7.00000	6.76	
	56	4-Nitroaniline	138	17.307	17.291	(1.092)	111053	7.00000	6.68	(Q)
	57	4,6-Dinitro-2-Methylphenol	198	17.386	17.386	(0.900)	107715	7.00000	6.98	
	58	N-Nitrosodiphenylamine	169	17.529	17.529	(0.907)	654116	7.00000	6.93	
	59	4-Bromophenyl-phenylether	248	18.379	18.379	(0.951)	215829	7.00000	6.64	
	60	Hexachlorobenzene	284	18.469	18.469	(0.956)	252548	7.00000	6.28	
	61	Atrazine	200	18.918	18.918	(0.979)	168165	7.00000	7.38	
	62	Pentachlorophenol	266	18.993	18.993	(0.983)	149200	7.00000	6.69	
*	63	Phenanthrene-D10	188	19.323	19.323	(1.000)	102154	0.80000	(a)	
	64	Phenanthrene	178	19.383	19.383	(1.003)	1085985	7.00000	6.75	
	65	Anthracene	178	19.503	19.503	(1.009)	1108907	7.00000	6.57	
	66	Carbazole	167	19.967	19.967	(1.033)	822910	7.00000	6.63	
	67	Di-n-butylphthalate	149	21.016	21.016	(1.088)	1661724	7.00000	6.49	
	68	Fluoranthene	202	22.190	22.190	(1.148)	892454	7.00000	6.52	
$	69	Pyrene-D10	212	22.646	22.660	(0.885)	557622	7.00000	6.12	
	70	Pyrene	202	22.688	22.687	(0.887)	961913	7.00000	7.14	
	71	Butylbenzylphthalate	149	24.521	24.521	(0.958)	639745	7.00000	6.10	
	72	Benzo(a)anthracene	228	25.562	25.562	(0.999)	560217	7.00000	7.02	
*	73	Chrysene-D12	240	25.589	25.589	(1.000)	52274	0.80000	(a)	
	74	Chrysene	228	25.643	25.643	(1.002)	605788	7.00000	7.10	
	75	3,3'-Dichlorobenzidine	252	25.643	25.643	(1.002)	177016	7.00000	8.72	

Data File: \\target_server\gg\chem\gcms-n.i\N062614.b\N2926.D
Report Date: 27-Jun-2014 13:22

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	76	bis(2-Ethylhexyl)phthalate	149	26.022	26.022	(1.017)	894036	7.00000	6.74	
	77	Di-n-octylphthalate	149	27.471	27.471	(0.957)	1347174	7.00000	6.07	
	78	Benzo(b)fluoranthene	252	27.934	27.934	(0.973)	467309	7.00000	7.34	
	79	Benzo(k)fluoranthene	252	27.986	27.986	(0.975)	541524	7.00000	6.08(H)	
	80	Benzo(a)pyrene	252	28.586	28.586	(0.996)	414872	7.00000	6.61	
*	81	Perylene-D12	264	28.706	28.706	(1.000)	39582	0.80000	(a)	
	82	Indeno(1,2,3-cd)pyrene	276	30.784	30.784	(1.072)	223183	7.00000	7.17	
	83	Dibenzo(a,h)anthracene	278	30.866	30.866	(1.075)	238172	7.00000	6.80	
	84	Benzo(g,h,i)perylene	276	31.346	31.346	(1.092)	326302	7.00000	6.47	
M	85	Total PAHs	100				14183212	119.000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
H - Operator selected an alternate compound hit.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Date : 26-JUN-2014 13:22
Client ID:
Sample Info: WG145455-6
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n,i\N062614,b\N2926,D
Y (x10^6)
Min
-Benzaldehyde
-Phenol+
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-2-Methylphenol+
-Acetophenone+
-3&4-Methylphenol+
-Nitrobenzene
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol
-bis(2-Chloroethoxy)methan
-2,4-Dichlorophenol
-1,2,4-Trichlorobenzene
-Naphthalene-D8+
-4-Chloroaniline
-Hexachlorobutadiene
-Caprolactam
-4-Chloro-3-Methylphenol+
-1-Methylnaphthalene
2-Methylnaphthalene
-1,2,4,5-Tetrachlorobenzen+
-2,4-Dibromophenol,6-Trichlorophenol
-2,4,5-Trichlorophenol
-2-Nitroaniline
2-Chloronaphthalene+
-Dimethyl Phthalate
-2,6-Dinitrotoluene+
-3-Nitroaniline+
-2,4-Dinitrophenol
-4-Nitrophenol+
-Dibenzofuran
Acenaphthene
-2,3,4,6-Tetrachlorophenol
-Fluorene-D10+
-4-Chlorophenyl-phenylethe
-2-Methylpheno
-N-Nitrosodiphenylamine
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Atrazine
-Pentachlorophenol
-Phenanthrene-D10
-Phenanthrene
-Anthracene
-Carbazole
-Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-Benzo(a)anthracene+
-Chrysene
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene+
-Perylene-D12
-Benzo(a)pyrene
-Indeno(1,2,3-cd)Pyrene
-Benzo(g,h,i)perylene
-Total PAHs

Data File: \\target_server\gg\chem\gcms-n.i\N062614.b\N2927.D
Report Date: 27-Jun-2014 13:22

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N062614.b\N2927.D
Lab Smp Id: WG145455-7
Inj Date : 26-JUN-2014 14:06 MS Autotune Date: 12-NOV-2013 09:32
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG145455-7
Misc Info :
Comment :
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Meth Date : 27-Jun-2014 09:17 gcms-n.i Quant Type: ISTD
Cal Date : 26-JUN-2014 14:06 Cal File: N2927.D
Als bottle: 7 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
$ 1	1,4-Dioxane-d8	96	3.140	3.140	(0.350)	302948	10.0000	8.82	
2	1,4-Dioxane	88	3.174	3.174	(0.354)	462348	10.0000	10.7(A)	
3	Benzaldehyde	77	8.050	8.050	(0.897)	407333	10.0000	9.85	
4	Phenol	94	8.428	8.428	(0.940)	1155884	10.0000	9.86	
5	Bis(2-Chloroethyl)ether	93	8.478	8.478	(0.945)	1022130	10.0000	8.61	
6	2-Chlorophenol	128	8.560	8.560	(0.954)	963731	10.0000	9.51	
7	1,3-Dichlorobenzene	146	8.839	8.839	(0.985)	1003536	10.0000	9.51	
* 8	1,4-Dichlorobenzene-D4	152	8.971	8.971	(1.000)	56407	0.80000	(aQ)	
9	1,4-Dichlorobenzene	146	9.003	9.003	(1.004)	1044549	10.0000	9.22	
10	1,2-Dichlorobenzene	146	9.316	9.316	(1.038)	972637	10.0000	9.31	
11	2-Methylphenol	108	9.683	9.683	(1.079)	929799	10.0000	10.1(A)	
12	2,2'-Oxybis(1-chloropropane)	45	9.667	9.667	(1.078)	1263170	10.0000	9.20	
13	Acetophenone	105	9.872	9.872	(0.839)	1216564	10.0000	9.84	
14	N-Nitroso-di-n-propylamine	70	9.935	9.935	(1.107)	618305	10.0000	9.60	
15	3&4-Methylphenol	108	10.061	10.061	(1.122)	888340	10.0000	10.4(A)	
16	Hexachloroethane	117	10.029	10.029	(1.118)	397427	10.0000	9.18	
17	Nitrobenzene	77	10.203	10.203	(0.867)	890652	10.0000	9.78	
18	Isophorone	82	10.791	10.791	(0.917)	1559199	10.0000	9.31	
19	2-Nitrophenol	139	10.944	10.944	(0.930)	479764	10.0000	9.67	
20	2,4-Dimethylphenol	107	11.200	11.200	(0.952)	835125	10.0000	9.29	
21	bis(2-Chloroethoxy)methane	93	11.354	11.354	(0.965)	1052536	10.0000	9.66	

Data File: \\target_server\gg\chem\gcms-n.i\N062614.b\N2927.D
Report Date: 27-Jun-2014 13:22

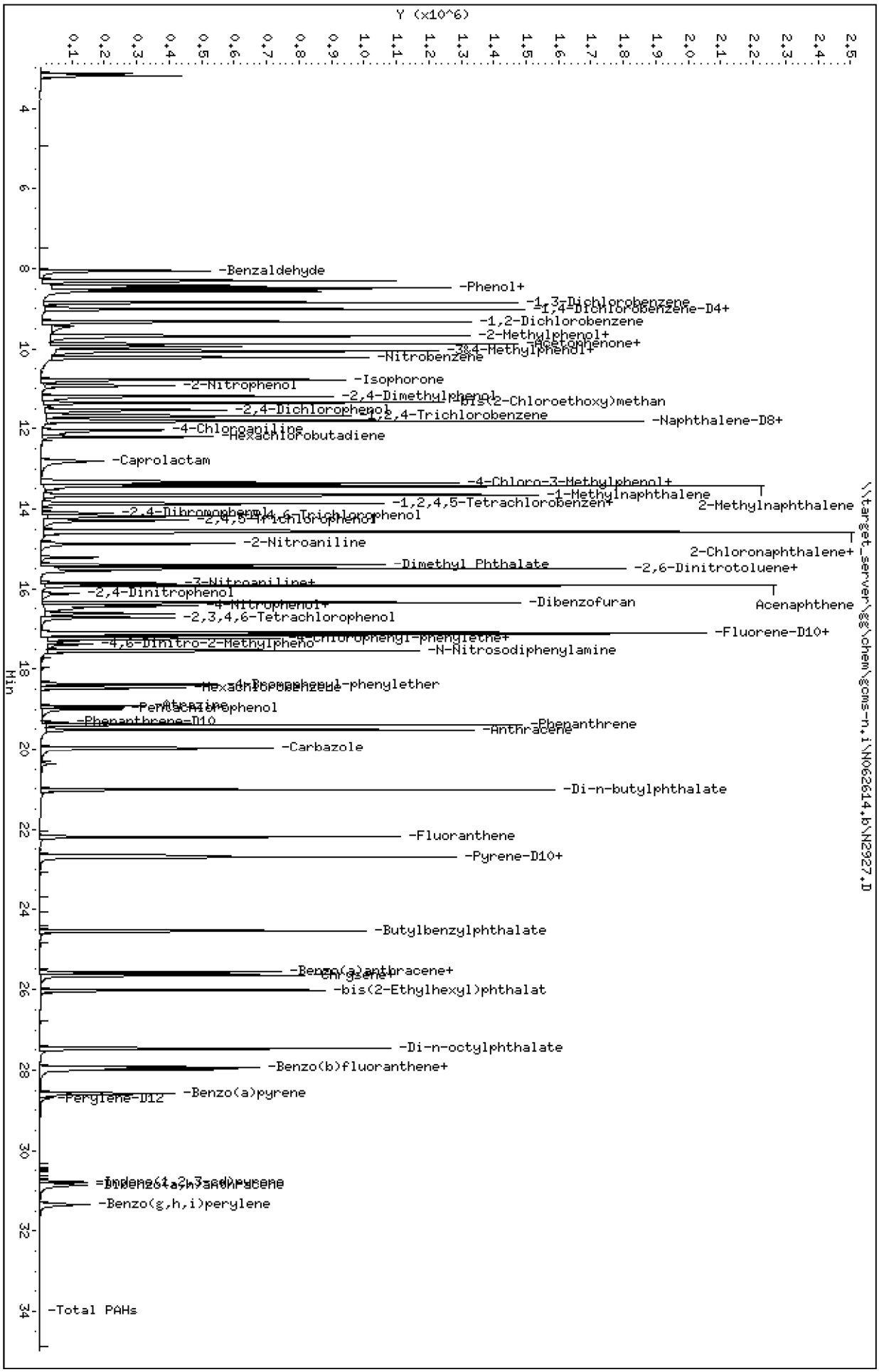
		QUANT SIG					AMOUNTS CAL-AMT	ON-COL	
Compounds		MASS	RT	EXP RT	REL RT	RESPONSE	(ug/ml)	(ug/ml)	REVIEW CODE
22	2,4-Dichlorophenol	162	11.541	11.541	(0.981)	686602	10.0000	9.45	
23	1,2,4-Trichlorobenzene	180	11.678	11.678	(0.993)	692182	10.0000	8.65	
* 24	Naphthalene-D8	136	11.763	11.763	(1.000)	214362	0.80000	(a)	
25	Naphthalene	128	11.797	11.797	(1.003)	2207652	10.0000	8.32	
26	4-Chloroaniline	127	12.019	12.019	(1.022)	814250	10.0000	8.64	
27	Hexachlorobutadiene	225	12.190	12.190	(1.036)	360803	10.0000	8.58	
28	Caprolactam	113	12.807	12.807	(1.089)	244947	10.0000	10.1(A)	
29	4-Chloro-3-Methylphenol	107	13.297	13.297	(1.130)	677375	10.0000	9.07	
$ 30	2-Methylnaphthalene-D10	152	13.354	13.354	(0.842)	1007672	10.0000	8.92	
31	2-Methylnaphthalene	142	13.429	13.429	(1.142)	1522123	10.0000	9.69	
32	1-Methylnaphthalene	142	13.655	13.655	(1.161)	1341911	10.0000	8.17	
33	1,2,4,5-Tetrachlorobenzene	216	13.843	13.843	(0.873)	539765	10.0000	9.29	
34	Hexachlorocyclopentadiene	237	13.862	13.862	(0.874)	341637	10.0000	10.0(A)	
$ 35	2,4-Dibromophenol	252	14.107	14.107	(0.890)	353966	10.0000	9.62	
36	2,4,6-Trichlorophenol	196	14.182	14.182	(0.895)	407162	10.0000	10.3(A)	
37	2,4,5-Trichlorophenol	196	14.277	14.277	(0.900)	474145	10.0000	8.75	
38	2-Chloronaphthalene	164	14.540	14.540	(0.917)	392632	10.0000	9.72	
39	1,1'-Biphenyl	154	14.559	14.559	(0.918)	1515034	10.0000	9.19	
40	2-Nitroaniline	65	14.861	14.861	(0.937)	345732	10.0000	11.1(A)	
41	Dimethyl Phthalate	163	15.407	15.407	(0.972)	1354728	10.0000	9.53	
42	2,6-Dinitrotoluene	165	15.473	15.473	(0.976)	316603	10.0000	9.93	
43	Acenaphthylene	152	15.499	15.499	(0.978)	2034946	10.0000	9.18	
44	3-Nitroaniline	138	15.855	15.855	(1.000)	263594	10.0000	10.0(A)	
* 45	Acenaphthene-D10	164	15.855	15.855	(1.000)	74799	0.80000	(a)	
46	Acenaphthene	153	15.921	15.921	(1.004)	1194082	10.0000	9.07	
47	2,4-Dinitrophenol	184	16.119	16.119	(1.017)	134561	10.0000	10.0(A)	
48	Dibenzofuran	168	16.343	16.343	(1.031)	1556794	10.0000	9.42	
49	4-Nitrophenol	109	16.475	16.475	(1.039)	98516	10.0000	9.99(Q)	
50	2,4-Dinitrotoluene	165	16.422	16.422	(1.036)	406499	10.0000	10.2(A)	
51	2,3,4,6-Tetrachlorophenol	232	16.712	16.712	(1.054)	379062	10.0000	10.1(A)	
$ 52	Fluorene-D10	174	17.084	17.084	(1.078)	777753	10.0000	9.03	
53	Diethylphthalate	149	17.084	17.084	(1.078)	1442396	10.0000	9.30	
54	Fluorene	166	17.148	17.148	(1.082)	1269924	10.0000	9.38	
55	4-Chlorophenyl-phenylether	204	17.243	17.243	(1.088)	585506	10.0000	9.69	
56	4-Nitroaniline	138	17.291	17.291	(1.091)	192987	10.0000	11.2(A)	
57	4,6-Dinitro-2-Methylphenol	198	17.386	17.386	(0.900)	184387	10.0000	10.0	
58	N-Nitrosodiphenylamine	169	17.529	17.529	(0.907)	967035	10.0000	9.52	
59	4-Bromophenyl-phenylether	248	18.379	18.379	(0.951)	324581	10.0000	9.27	
60	Hexachlorobenzene	284	18.469	18.469	(0.956)	376785	10.0000	8.70	
61	Atrazine	200	18.918	18.918	(0.979)	264468	10.0000	10.8(A)	
62	Pentachlorophenol	266	18.993	18.993	(0.983)	234580	10.0000	9.77	
* 63	Phenanthrene-D10	188	19.323	19.323	(1.000)	109979	0.80000	(a)	
64	Phenanthrene	178	19.383	19.383	(1.003)	1640790	10.0000	9.47	
65	Anthracene	178	19.503	19.503	(1.009)	1676867	10.0000	9.23	
66	Carbazole	167	19.967	19.967	(1.033)	1372770	10.0000	10.3(A)	
67	Di-n-butylphthalate	149	21.016	21.016	(1.088)	2477940	10.0000	8.98	
68	Fluoranthene	202	22.190	22.190	(1.148)	1403054	10.0000	9.52	
$ 69	Pyrene-D10	212	22.660	22.660	(0.886)	875441	10.0000	8.33	
70	Pyrene	202	22.687	22.687	(0.887)	1516074	10.0000	9.83	
71	Butylbenzylphthalate	149	24.521	24.521	(0.958)	1002410	10.0000	8.29	
72	Benzo(a)anthracene	228	25.562	25.562	(0.999)	919385	10.0000	9.99	
* 73	Chrysene-D12	240	25.589	25.589	(1.000)	60266	0.80000	(a)	
74	Chrysene	228	25.643	25.643	(1.002)	963871	10.0000	9.86	
75	3,3'-Dichlorobenzidine	252	25.643	25.643	(1.002)	214443	10.0000	9.17	

Data File: \\target_server\gg\chem\gcms-n.i\N062614.b\N2927.D
Report Date: 27-Jun-2014 13:22

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	76	bis(2-Ethylhexyl)phthalate	149	26.022	26.022	(1.017)	1387863	10.0000	10.1(A)	
	77	Di-n-octylphthalate	149	27.471	27.471	(0.957)	2110976	10.0000	8.85	
	78	Benzo(b)fluoranthene	252	27.934	27.934	(0.973)	735414	10.0000	10.7(A)	
	79	Benzo(k)fluoranthene	252	27.986	27.986	(0.975)	836409	10.0000	8.73(H)	
	80	Benzo(a)pyrene	252	28.586	28.586	(0.996)	644424	10.0000	9.55	
*	81	Perylene-D12	264	28.706	28.706	(1.000)	42565	0.80000	(a)	
	82	Indeno(1,2,3-cd)pyrene	276	30.784	30.784	(1.072)	342360	10.0000	10.2(A)	
	83	Dibenzo(a,h)anthracene	278	30.866	30.866	(1.075)	361594	10.0000	9.59	
	84	Benzo(g,h,i)perylene	276	31.346	31.346	(1.092)	480551	10.0000	8.86	
M	85	Total PAHs	100				21091431	170.000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount
exceeded maximum amount.
Q - Qualifier signal failed the ratio test.
H - Operator selected an alternate compound hit.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Date : 26-JUN-2014 14:06
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Sample Info: WG145455-7
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n,i\N062614,b\N2927,D
Y (x10^6)
Min
-Benzaldehyde
-Phenol+
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-2-Methylphenol+
-Acetophenone+
-3&4-Methylphenol+
-Nitrobenzene
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol
-bis(2-Chloroethoxy)methan
-2,4-Dichlorophenol
-1,2,4-Trichlorobenzene
-Naphthalene-D8+
-4-Chloroaniline
-Hexachlorobutadiene
-Caprolactam
-4-Chloro-3-Methylphenol+
-1-Methylnaphthalene
2-Methylnaphthalene
-1,2,4,5-Tetrachlorobenzen+
-2,4-Dibromophenol+
-2,4,6-Trichlorophenol
-2,4,5-Trichlorophenol
-2-Nitroaniline
2-Chloronaphthalene+
-Dimethyl Phthalate
-2,6-Dinitrotoluene+
-3-Nitroaniline+
-2,4-Dinitrophenol
Acenaphthene
-4-Nitrophenol+
-Dibenzofuran
-2,3,4,6-Tetrachlorophenol
-Fluorene-D10+
-4-Chlorophenyl-phenylethe+
-4,6-Dinitro-2-Methylpheno
-N-Nitrosodiphenylamine
-Hexachlorobenzene
-4-Bromophenyl-phenylether
-Atrazine
-Pentachlorophenol
-Phenanthrene-D10
-Phenanthrene
-Anthracene
-Carbazole
-Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-Benzo(a)anthracene+
-Chrysene+
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene+
-Perylene-D12
-Benzo(a)pyrene
-Indeno(1,2,3-cd)pyrene
-Dibenz(a,h)anthracene
-Benzo(g,h,i)perylene
-Total PAHs

Data File: \\target_server\gg\chem\gcms-n.i\N062614.b\N2928.D
Report Date: 26-Jun-2014 16:30

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N062614.b\N2928.D
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Operator : JCG Inst ID: gcms-n.i
Smp Info : WG145455-8
Misc Info : WG145455,WG145455,WG145455-4
Comment :
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Meth Date : 26-Jun-2014 15:15 gcms-n.i Quant Type: ISTD
Cal Date : 26-JUN-2014 14:06 Cal File: N2927.D
Als bottle: 8 QC Sample: INDCHECK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
2	1,4-Dioxane	88	3.174	3.174	(0.354)	187063	5.49487	5.49(R)	
4	Phenol	94	8.445	8.428	(0.941)	189764	1.99022	1.99	
5	Bis(2-Chloroethyl)ether	93	8.494	8.478	(0.947)	182587	1.85482	1.85	
6	2-Chlorophenol	128	8.576	8.560	(0.956)	166817	2.01296	2.01	
7	1,3-Dichlorobenzene	146	8.839	8.839	(0.985)	166651	1.93520	1.94	
* 8	1,4-Dichlorobenzene-D4	152	8.971	8.971	(1.000)	45883	0.80000	(aQ)	
9	1,4-Dichlorobenzene	146	9.003	9.003	(1.004)	182294	1.96715	1.97	
10	1,2-Dichlorobenzene	146	9.332	9.316	(1.040)	165312	1.93533	1.94	
11	2-Methylphenol	108	9.698	9.683	(1.081)	177066	2.37484	2.37	
12	2,2'-Oxybis(1-chloropropane)	45	9.667	9.667	(1.078)	135797	1.20603	1.21(R)	
13	Acetophenone	105	9.887	9.872	(0.841)	206591	2.32307	2.32	
14	N-Nitroso-di-n-propylamine	70	9.950	9.935	(1.109)	97699	1.86070	1.86	
15	3&4-Methylphenol	108	10.061	10.061	(1.122)	137581	1.99478	1.99	
16	Hexachloroethane	117	10.045	10.029	(1.120)	66741	1.87871	1.88	
17	Nitrobenzene	77	10.218	10.203	(0.869)	159444	2.32203	2.32	
18	Isophorone	82	10.791	10.791	(0.917)	264976	2.17655	2.18	
19	2-Nitrophenol	139	10.961	10.944	(0.932)	75200	2.09130	2.09	
20	2,4-Dimethylphenol	107	11.217	11.200	(0.954)	134686	2.05911	2.06	
21	bis(2-Chloroethoxy)methane	93	11.371	11.354	(0.967)	175753	2.24068	2.24	
22	2,4-Dichlorophenol	162	11.575	11.541	(0.984)	109135	2.06617	2.07	

Data File: \\target_server\gg\chem\gcms-n.i\N062614.b\N2928.D
Report Date: 26-Jun-2014 16:30

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
	23 1,2,4-Trichlorobenzene	180	11.678	11.678	(0.993)	124048	2.10465	2.10	
*	24 Naphthalene-D8	136	11.763	11.763	(1.000)	155006	0.80000	(a)	
	25 Naphthalene	128	11.814	11.797	(1.004)	407803	2.08069	2.08	
	26 4-Chloroaniline	127	12.053	12.019	(1.025)	161332	2.35383	2.35	
	27 Hexachlorobutadiene	225	12.207	12.190	(1.038)	58725	1.89613	1.90	
	28 Caprolactam	113	12.826	12.807	(1.090)	35300	2.03347	2.03	
	29 4-Chloro-3-Methylphenol	107	13.316	13.297	(1.132)	114886	2.09906	2.10	
	31 2-Methylnaphthalene	142	13.448	13.429	(1.143)	284300	2.34681	2.35	
	32 1-Methylnaphthalene	142	13.655	13.655	(1.161)	284656	2.34692	2.35	
	33 1,2,4,5-Tetrachlorobenzene	216	13.862	13.843	(0.874)	103352	2.14422	2.14	
	34 Hexachlorocyclopentadiene	237	13.862	13.862	(0.874)	38812	1.47772	1.48(R)	
	36 2,4,6-Trichlorophenol	196	14.201	14.182	(0.896)	59105	1.82727	1.83	
	37 2,4,5-Trichlorophenol	196	14.314	14.277	(0.903)	94342	2.07663	2.08	
	38 2-Chloronaphthalene	164	14.559	14.540	(0.918)	68781	2.07263	2.07(Q)	
	39 1,1'-Biphenyl	154	14.578	14.559	(0.919)	289347	2.09542	2.10	
	40 2-Nitroaniline	65	14.879	14.861	(0.938)	52827	2.07453	2.07	
	41 Dimethyl Phthalate	163	15.407	15.407	(0.972)	231826	1.96651	1.97	
	42 2,6-Dinitrotoluene	165	15.486	15.473	(0.977)	48414	1.84511	1.84	
	43 Acenaphthylene	152	15.499	15.499	(0.978)	328711	1.78267	1.78	
	44 3-Nitroaniline	138	15.895	15.855	(1.002)	31317	1.94935	1.95	
*	45 Acenaphthene-D10	164	15.855	15.855	(1.000)	61644	0.80000	(a)	
	46 Acenaphthene	153	15.921	15.921	(1.004)	212941	1.93407	1.93	
	47 2,4-Dinitrophenol	184	16.185	16.119	(1.021)	7961	1.40144	1.40(RM)	M6
	48 Dibenzofuran	168	16.356	16.343	(1.032)	284950	2.07364	2.07	
	49 4-Nitrophenol	109	16.580	16.475	(1.046)	9766	2.00788	2.01(Q)	
	50 2,4-Dinitrotoluene	165	16.435	16.422	(1.037)	52197	1.64666	1.65	
	51 2,3,4,6-Tetrachlorophenol	232	16.738	16.712	(1.056)	54770	1.77801	1.78	
	53 Diethylphthalate	149	17.100	17.084	(1.079)	260893	2.01626	2.02(Q)	
	54 Fluorene	166	17.148	17.148	(1.082)	214783	1.90405	1.90	
	55 4-Chlorophenyl-phenylether	204	17.243	17.243	(1.088)	100698	2.00825	2.01	
	56 4-Nitroaniline	138	17.354	17.291	(1.095)	28308	1.86589	1.86	
	57 4,6-Dinitro-2-Methylphenol	198	17.402	17.386	(0.900)	18793	1.76123	1.76	
	58 N-Nitrosodiphenylamine	169	17.545	17.529	(0.907)	132430	1.59833	1.60(R)	
	59 4-Bromophenyl-phenylether	248	18.379	18.379	(0.950)	55895	1.94025	1.94	
	60 Hexachlorobenzene	284	18.469	18.469	(0.955)	65391	1.81687	1.82	
	61 Atrazine	200	18.918	18.918	(0.978)	39689	2.00967	2.01(M)	M3
	62 Pentachlorophenol	266	19.008	18.993	(0.983)	33343	1.69140	1.69	
*	63 Phenanthrene-D10	188	19.338	19.323	(1.000)	89547	0.80000	(a)	
	64 Phenanthrene	178	19.383	19.383	(1.002)	273262	1.92425	1.92	
	65 Anthracene	178	19.503	19.503	(1.009)	295033	1.96956	1.97	
	66 Carbazole	167	19.967	19.967	(1.033)	228528	2.07698	2.08	
	67 Di-n-butylphthalate	149	21.016	21.016	(1.087)	448037	1.96658	1.97	
	68 Fluoranthene	202	22.190	22.190	(1.148)	235813	1.93801	1.94	
$	69 Pyrene-D10	212	22.660	22.660	(0.886)	8142	0.10503	0.105(aR)	
	70 Pyrene	202	22.687	22.687	(0.887)	256460	2.20027	2.20	
	71 Butylbenzylphthalate	149	24.521	24.521	(0.958)	162678	1.82326	1.82	
	72 Benzo(a)anthracene	228	25.562	25.562	(0.999)	120600	1.82282	1.82	
*	73 Chrysene-D12	240	25.589	25.589	(1.000)	43347	0.80000	(a)	
	74 Chrysene	228	25.643	25.643	(1.002)	161670	2.18046	2.18	
	75 3,3'-Dichlorobenzidine	252	25.657	25.643	(1.003)	28622	1.78965	1.79	
	76 bis(2-Ethylhexyl)phthalate	149	26.022	26.022	(1.017)	221202	1.46411	1.46(R)	
	77 Di-n-octylphthalate	149	27.471	27.471	(0.956)	306158	1.68938	1.69	
	78 Benzo(b)fluoranthene	252	27.951	27.934	(0.973)	86863	1.73188	1.73	
	79 Benzo(k)fluoranthene	252	28.003	27.986	(0.975)	145416	1.99718	2.00(H)	

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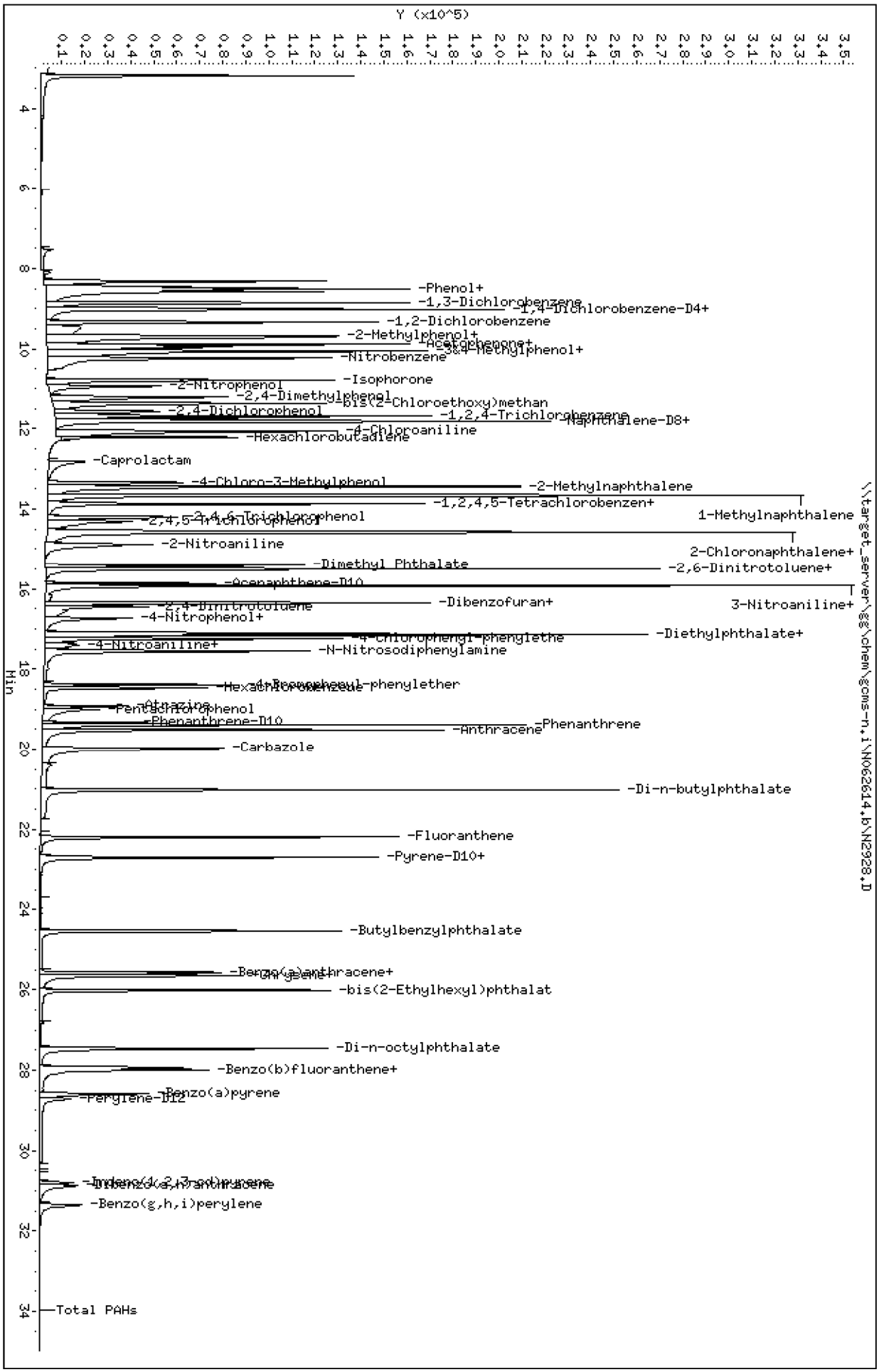
Report Date: 26-Jun-2014 16:30

			QUANT SIG					CONCENTRATIONS ON-COLUMN	FINAL	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/ml)	(ug/L)	REVIEW CODE
	80	Benzo(a)pyrene	252	28.586	28.586	(0.995)	92163	1.82610	1.83	
*	81	Perylene-D12	264	28.723	28.706	(1.000)	31502	0.80000	(a)	
	82	Indeno(1,2,3-cd)pyrene	276	30.797	30.784	(1.072)	48977	1.98796	1.99(M)	M3
	83	Dibenzo(a,h)anthracene	278	30.880	30.866	(1.075)	54689	1.94938	1.95	
	84	Benzo(g,h,i)perylene	276	31.359	31.346	(1.092)	79931	1.96286	1.96	
M	85	Total PAHs	100				3584071	35.8860	35.9	

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
R - Spike/Surrogate failed recovery limits.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.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Sample Info: WG145455-8
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n,i\N062614,b\N2928,D
Y (x10^5)
Min
-Phenol+
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-2-Methylphenol+
-Acetophenone+
-3&4-Methylphenol+
-Nitrobenzene
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol
-bis(2-Chloroethoxy)methan
-2,4-Dichlorophenol
-1,2,4-Trichlorobenzene
-Naphthalene-D8+
-4-Chloroaniline
-Hexachlorobutadiene
-Caprolactam
-4-Chloro-3-Methylphenol
-2-Methylnaphthalene
-1,2,4,5-Tetrachlorobenzen+
1-Methylnaphthalene
-2,4,6-Trichlorophenol
-2,4,5-Trichlorophenol
-2-Nitroaniline
2-Chloronaphthalene+
-Dimethyl Phthalate
-2,6-Dinitrotoluene+
-Acenaphthene-D10
-2,4-Dinitrotoluene
-Dibenzofuran+
3-Nitroaniline+
-4-Nitrophenol+
-4-Chlorophenyl-phenylethe
-Diethylphthalate+
-4-Nitroaniline+
-N-Nitrosodiphenylamine
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Atrazine
-Pentachlorophenol
-Phenanthrene-D10
-Phenanthrene
-Anthracene
-Carbazole
-Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-Benzo(a)anthracene+
-Chrysene+
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene+
-Benzo(a)pyrene
-Perylene-D12
-Indeno(1,2,3-cd)pyrene
-Dibenzo(a,h)anthracene
-Benzo(g,h,i)perylene
-Total PAHs

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Injection Date: 26-JUN-2014 10:28
Instrument: gcms-n.i
Client Sample ID:

Compound: 1,4-Dioxane
CAS Number: 367-12-4

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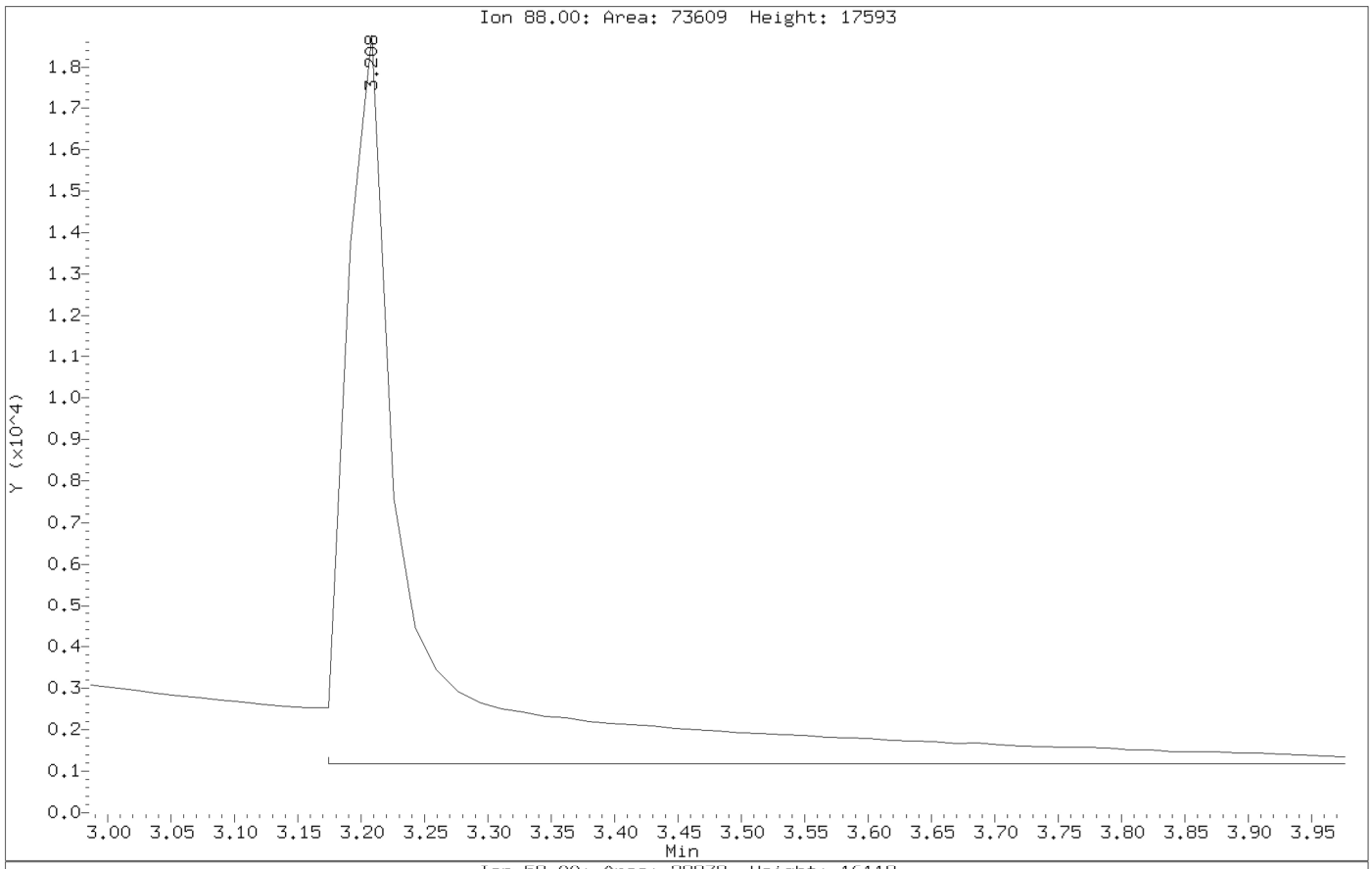

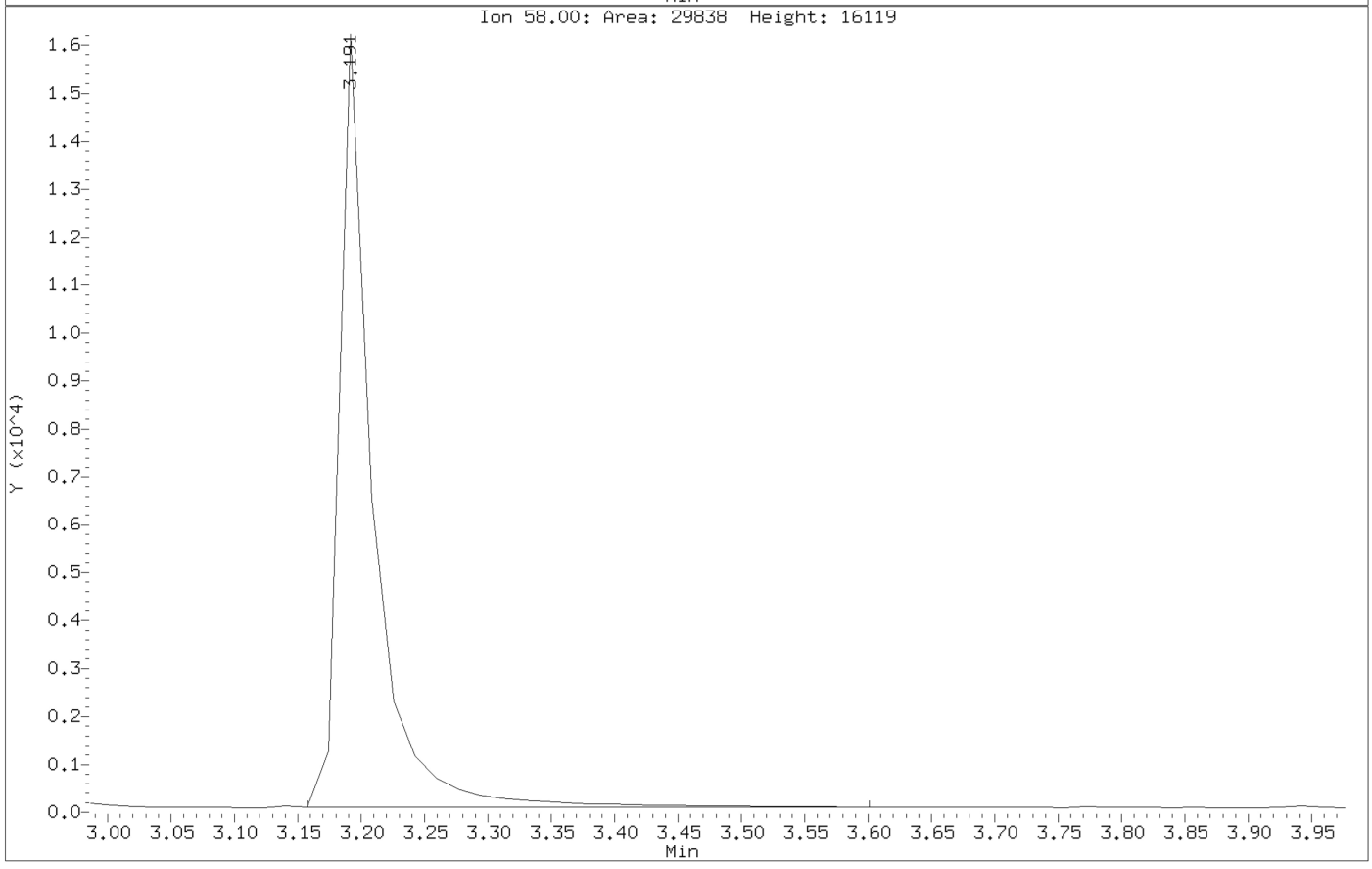

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Instrument: gcms-n.i
Client Sample ID:

Compound: 1,4-Dioxane
CAS Number: 367-12-4

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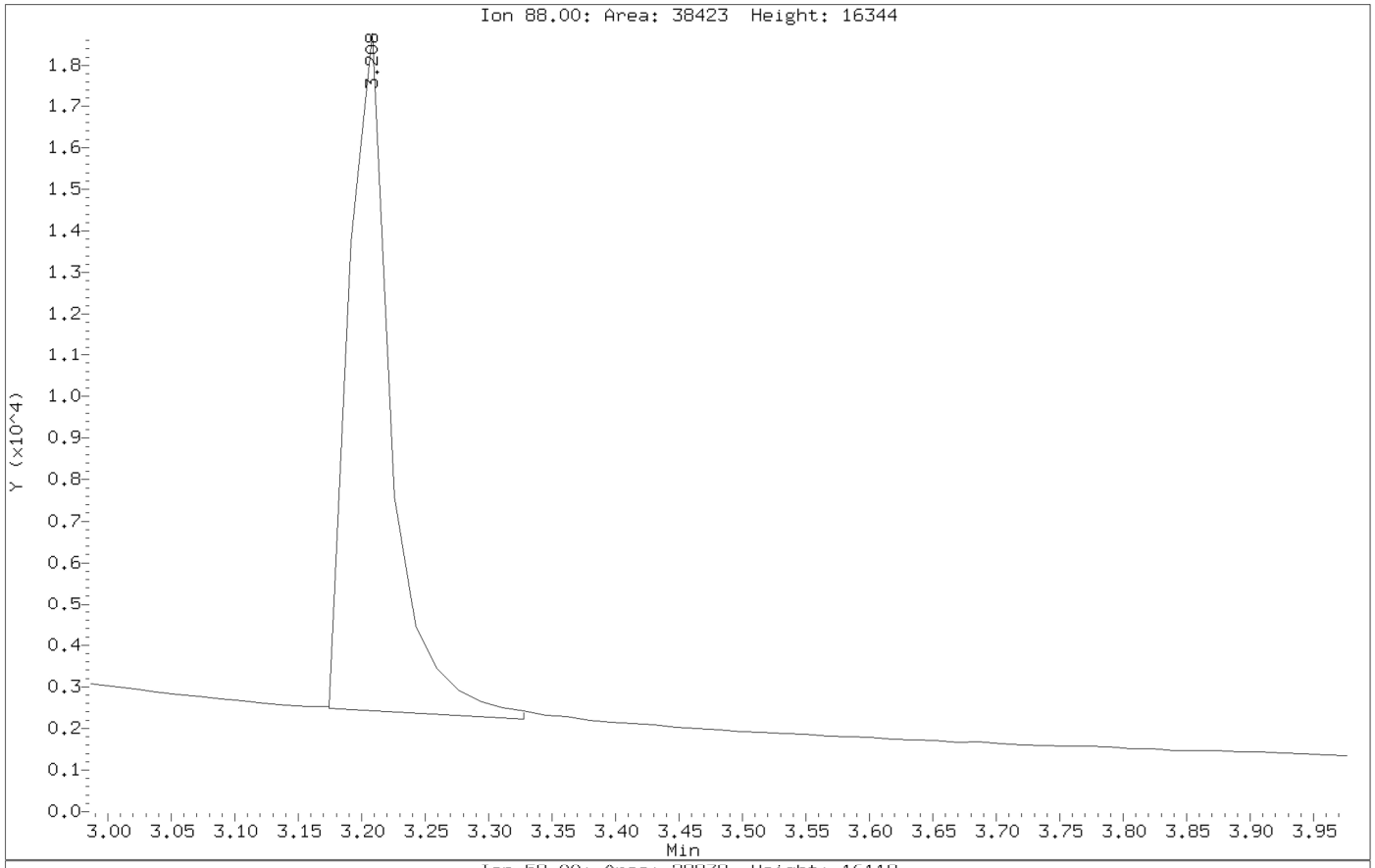

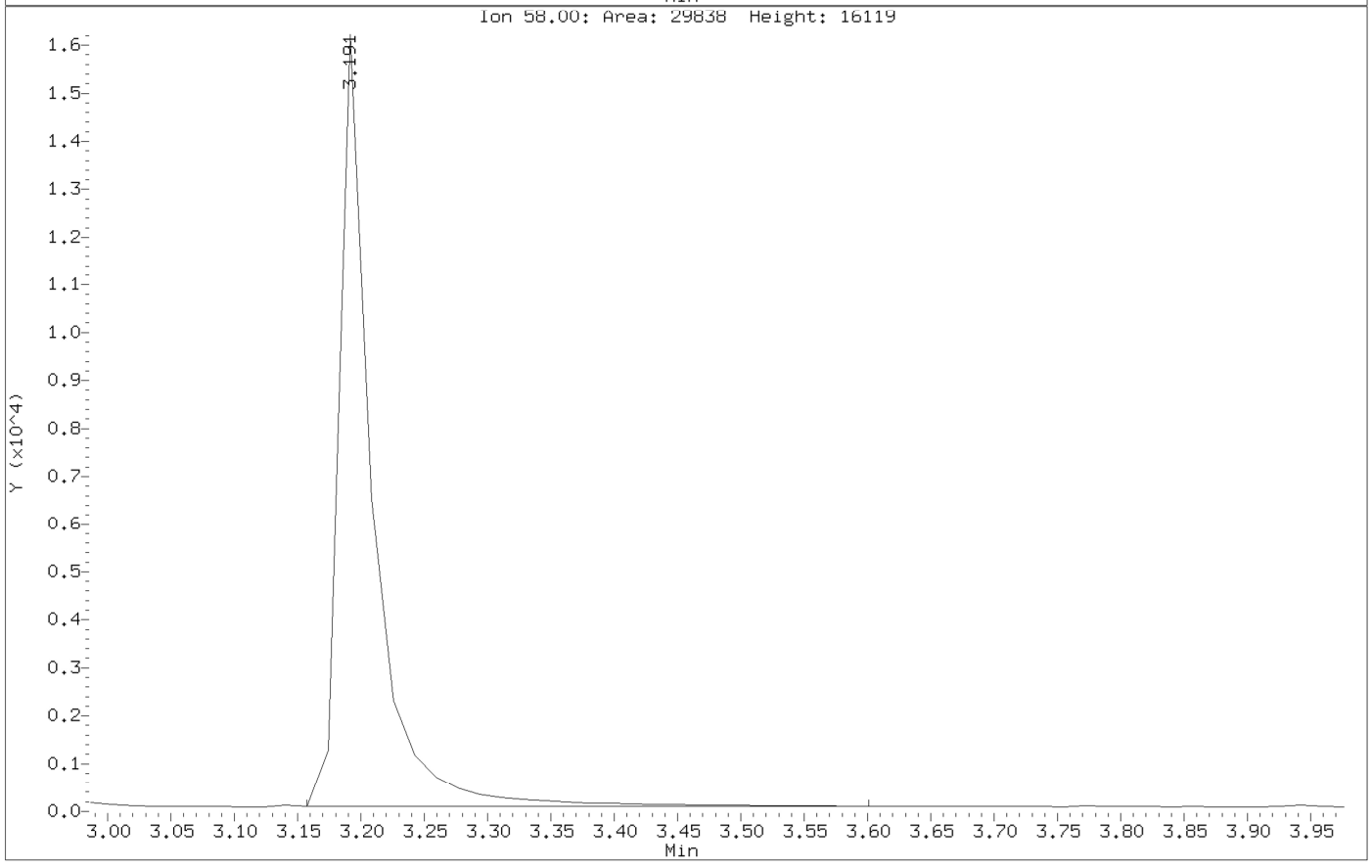

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Instrument: gcms-n.i
Client Sample ID:

Compound: Indeno(1,2,3-cd)pyrene
CAS Number: 193-39-5

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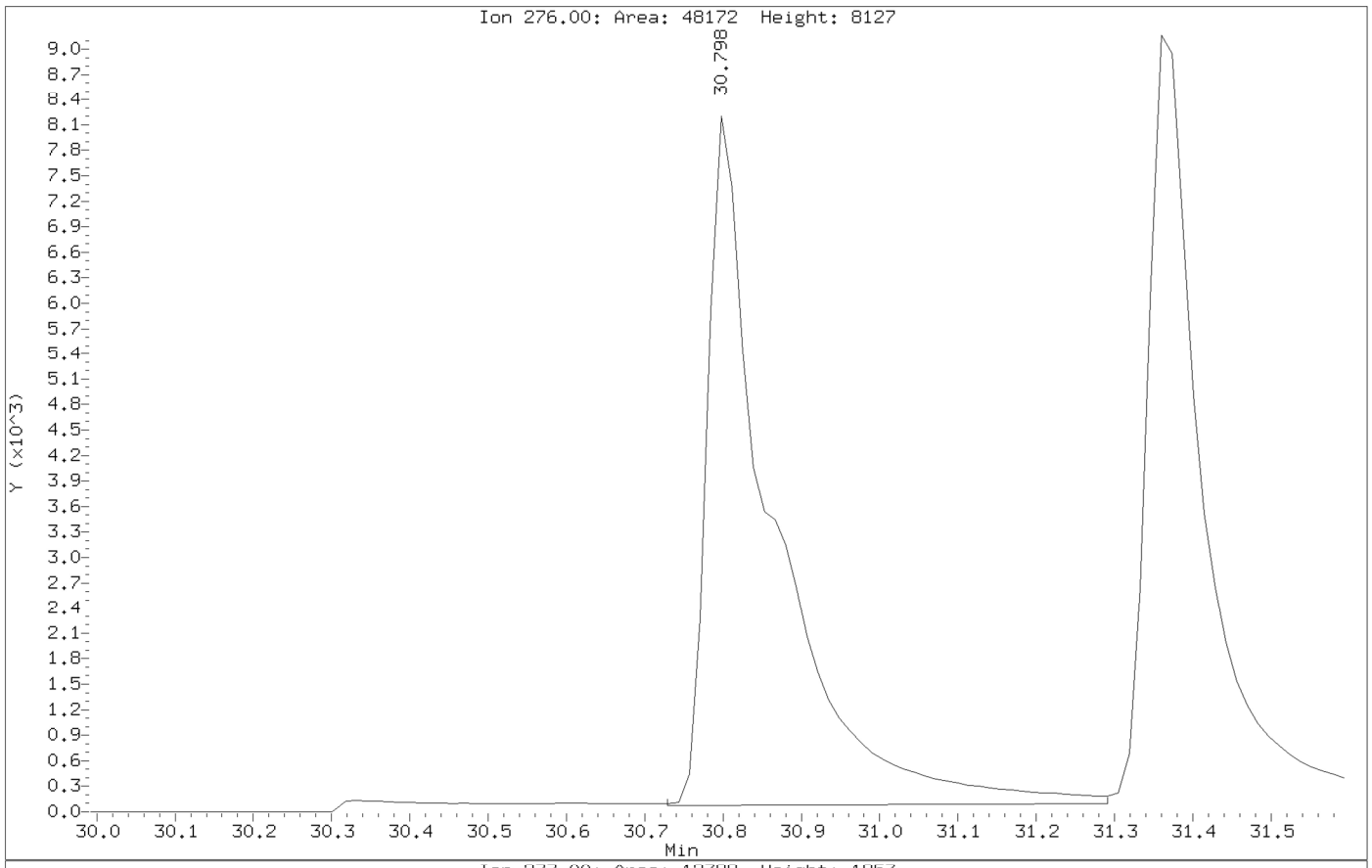

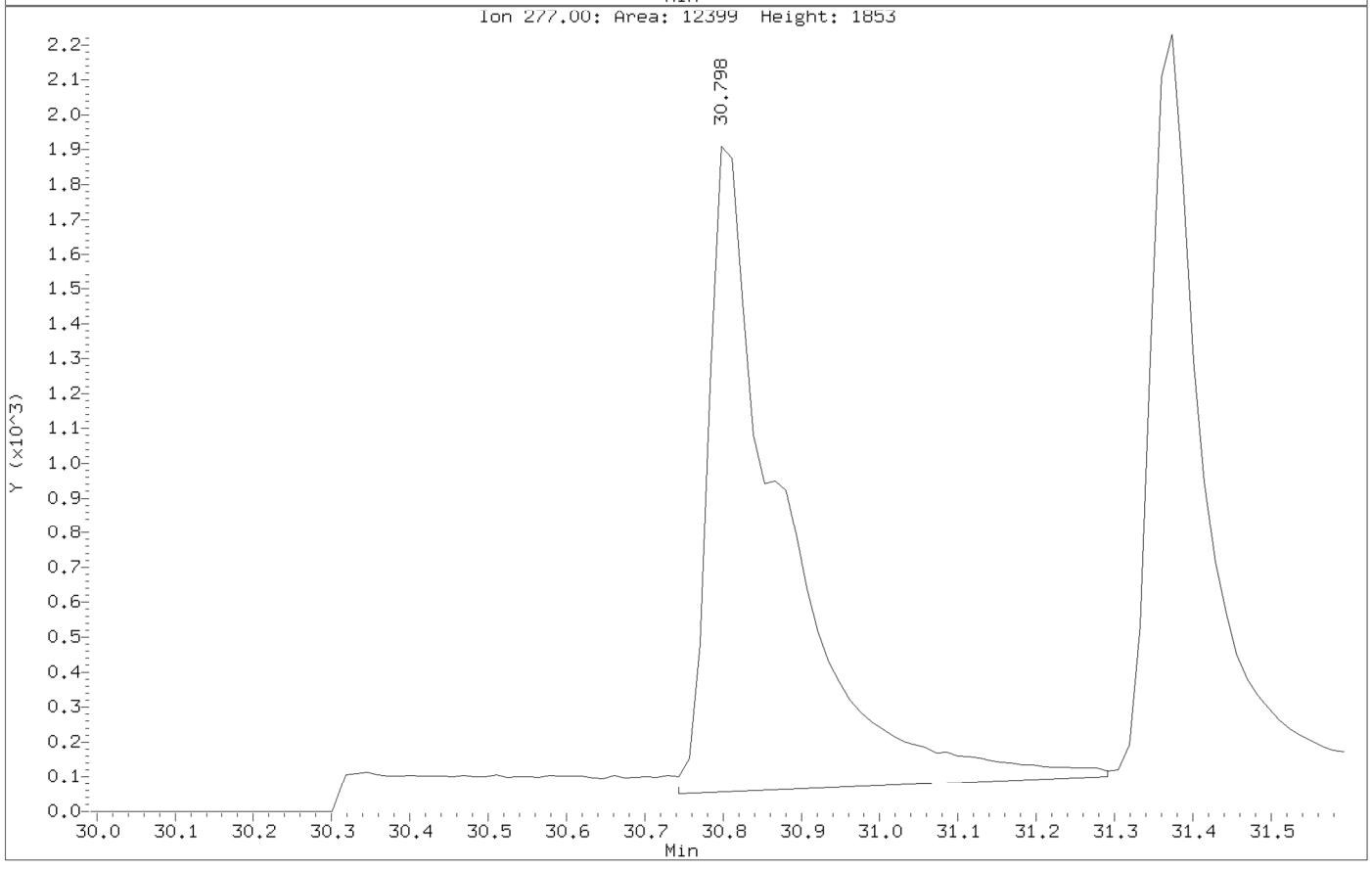

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Client Sample ID:

Compound: Indeno(1,2,3-cd)pyrene
CAS Number: 193-39-5

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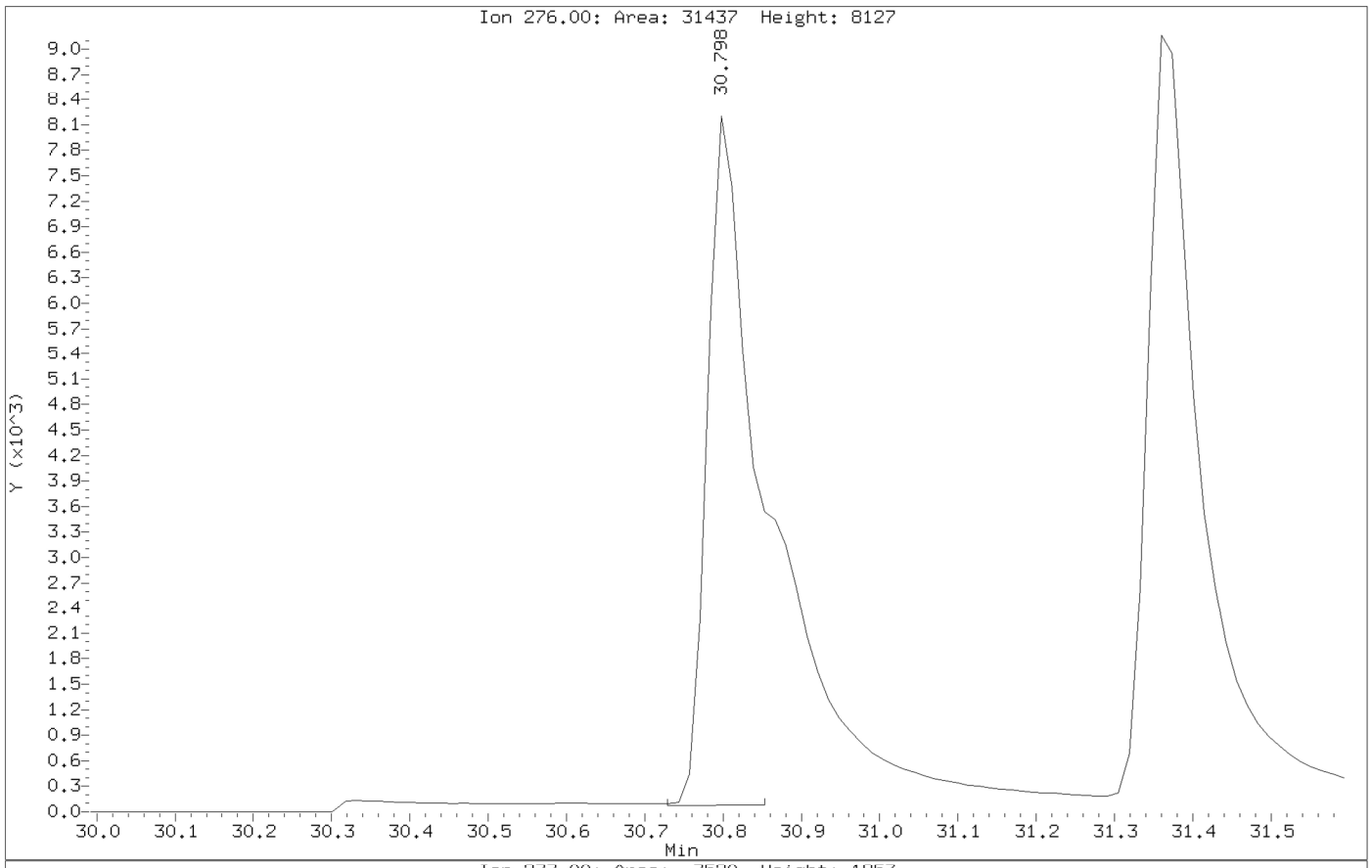

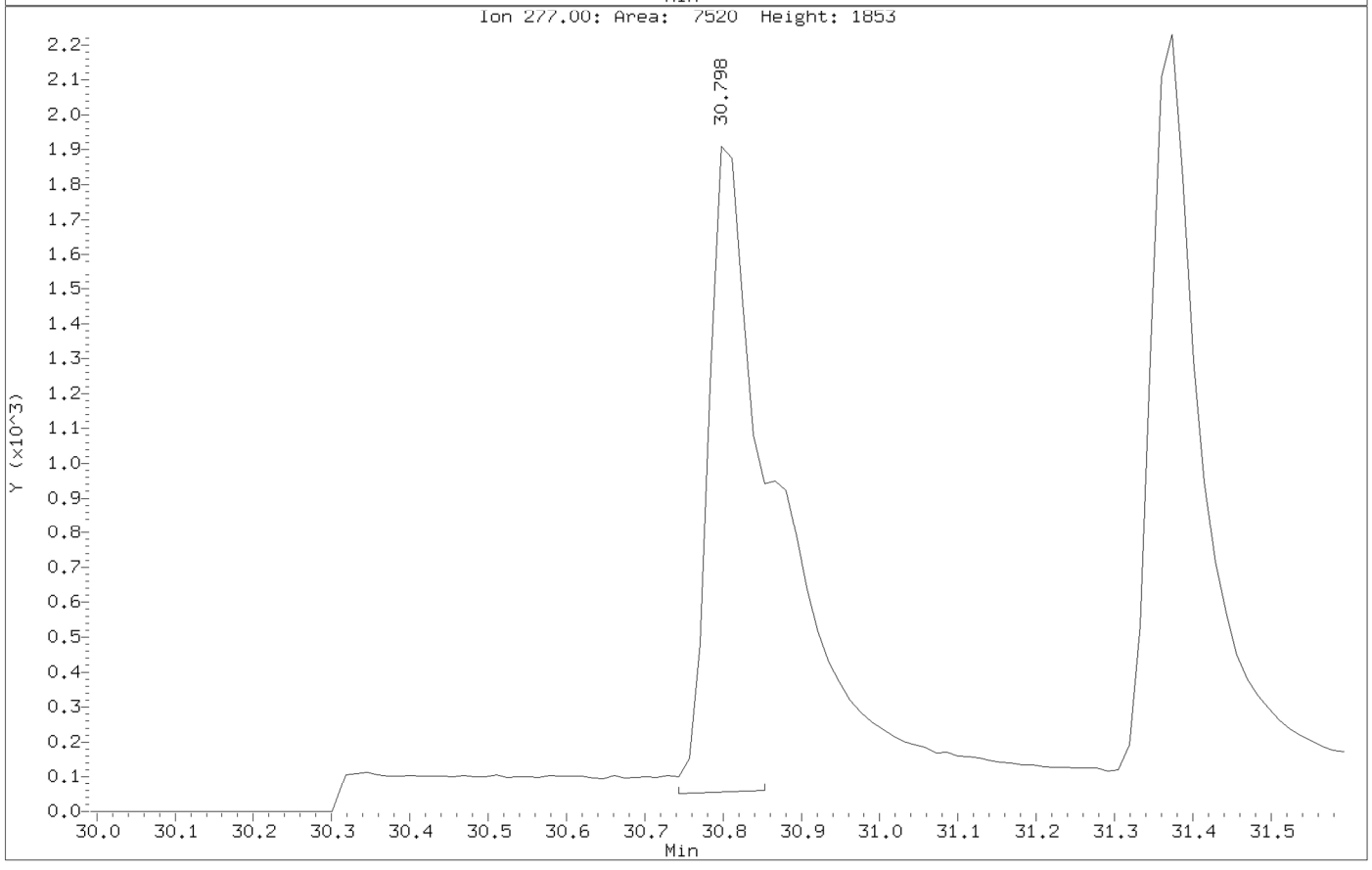

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Injection Date: 26-JUN-2014 11:12
Instrument: gcms-n.i
Client Sample ID:

Compound: 1,4-Dioxane
CAS Number: 367-12-4

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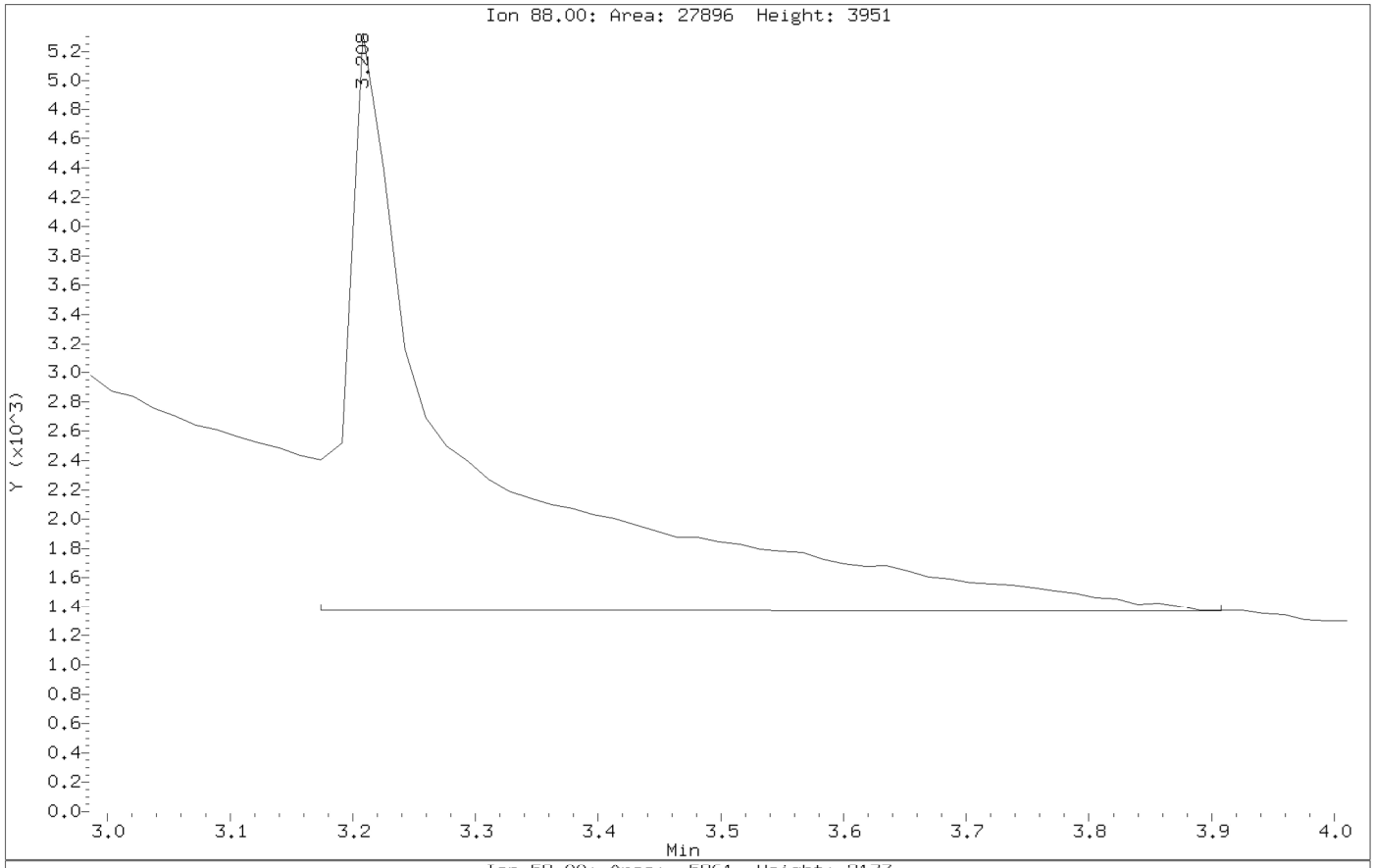

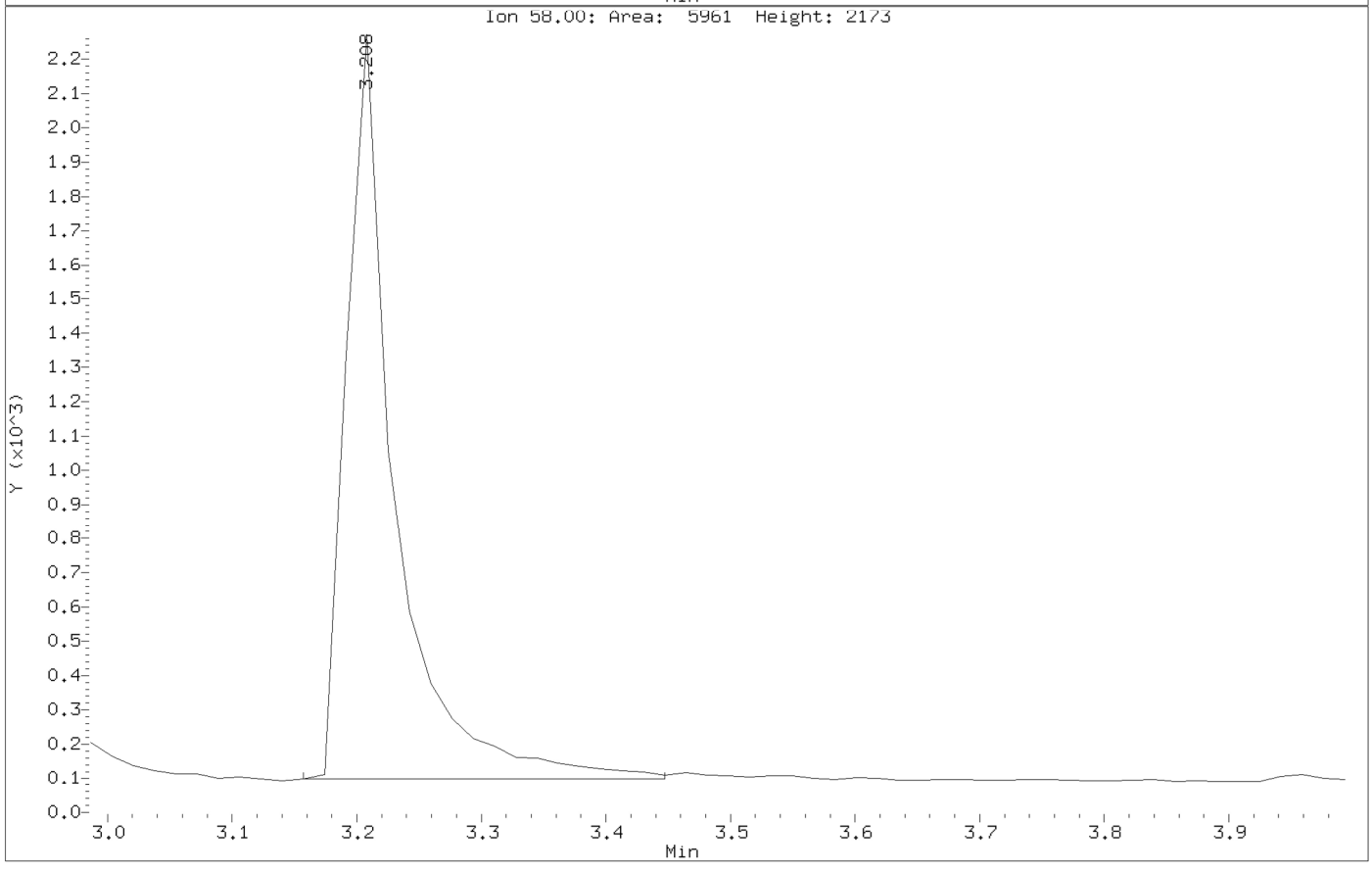

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Compound: 1,4-Dioxane
CAS Number: 367-12-4

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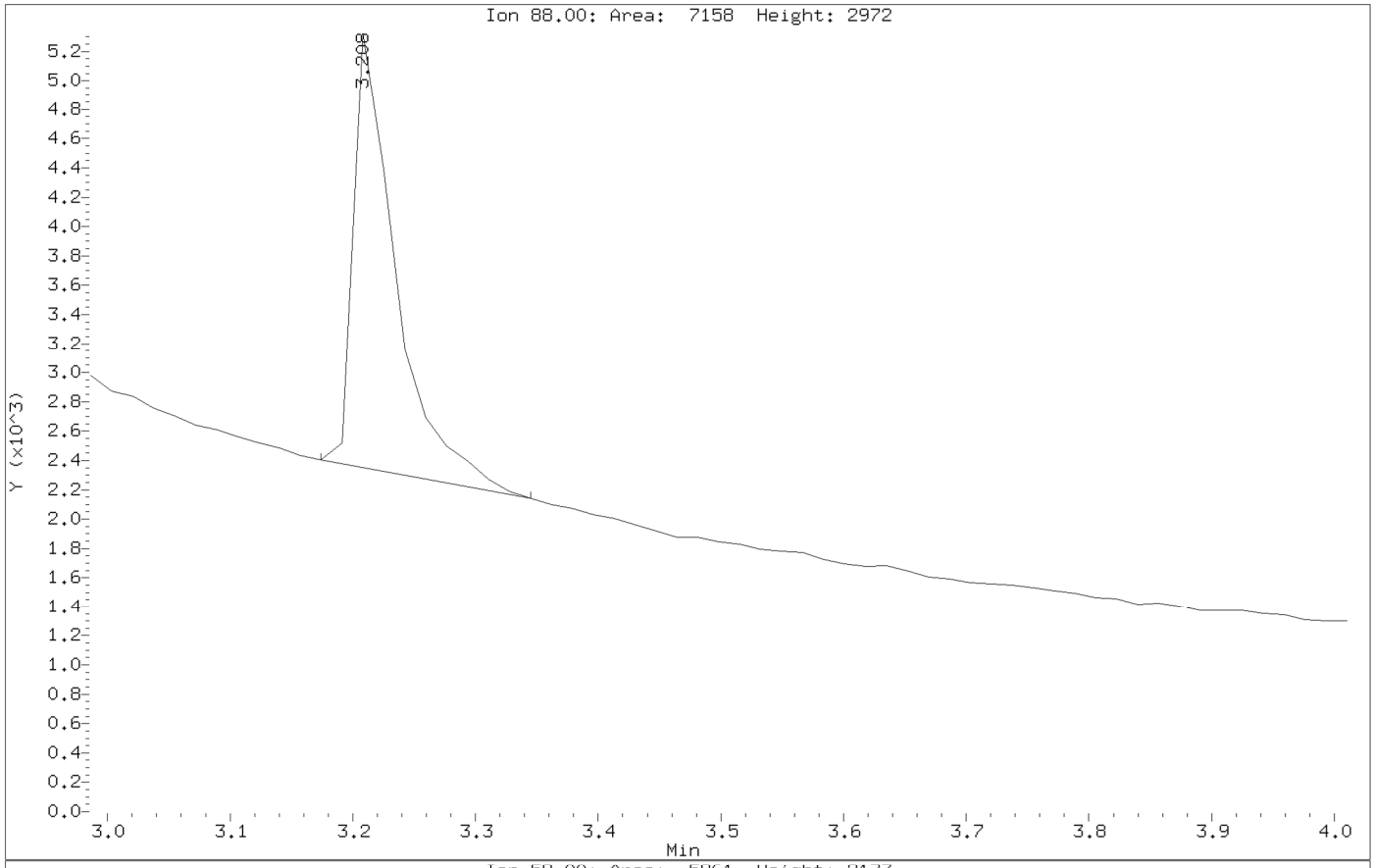

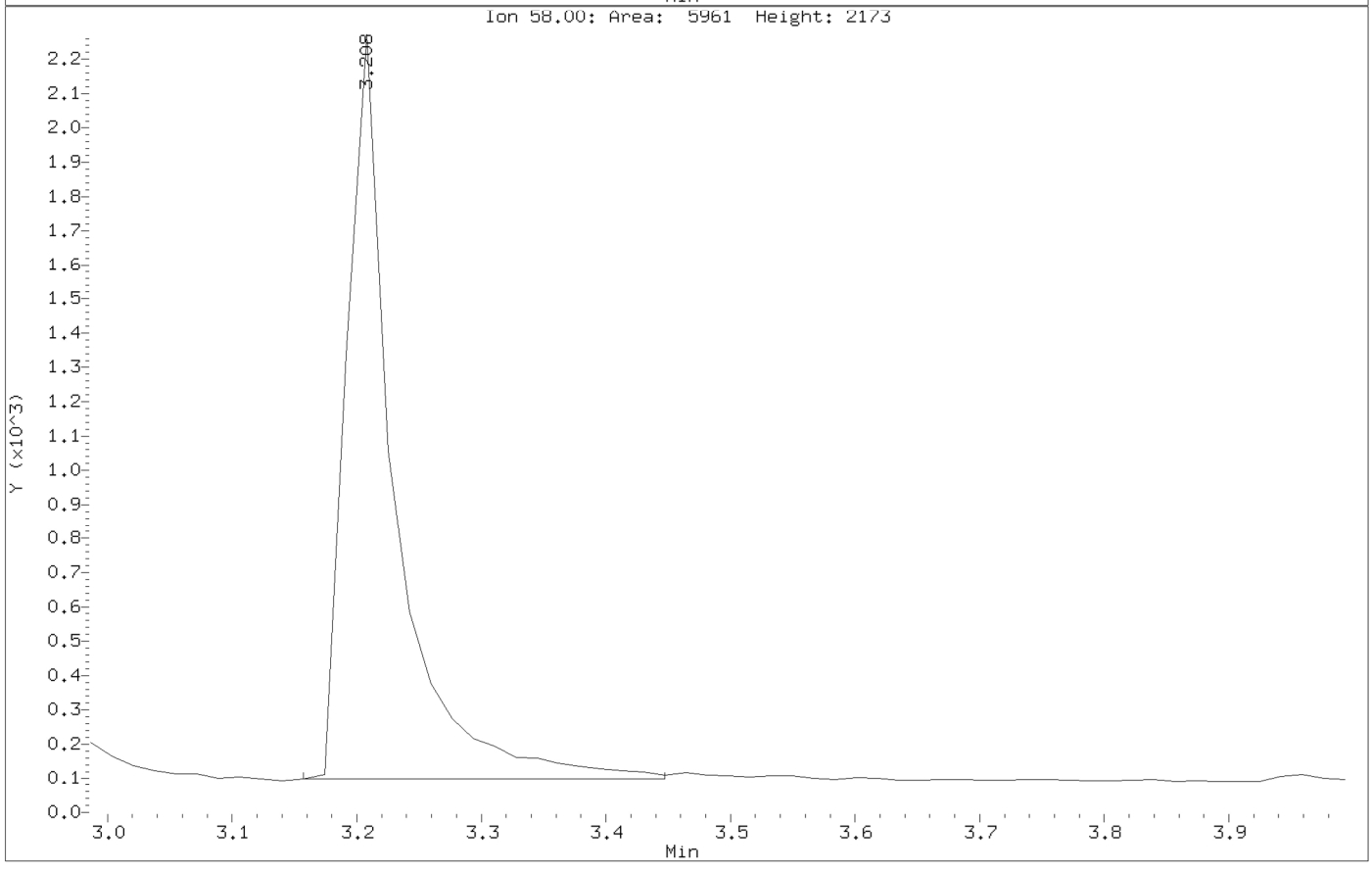

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Injection Date: 26-JUN-2014 11:12
Instrument: gcms-n.i
Client Sample ID:

Compound: N-Nitroso-di-n-propylamine
CAS Number: 621-64-7

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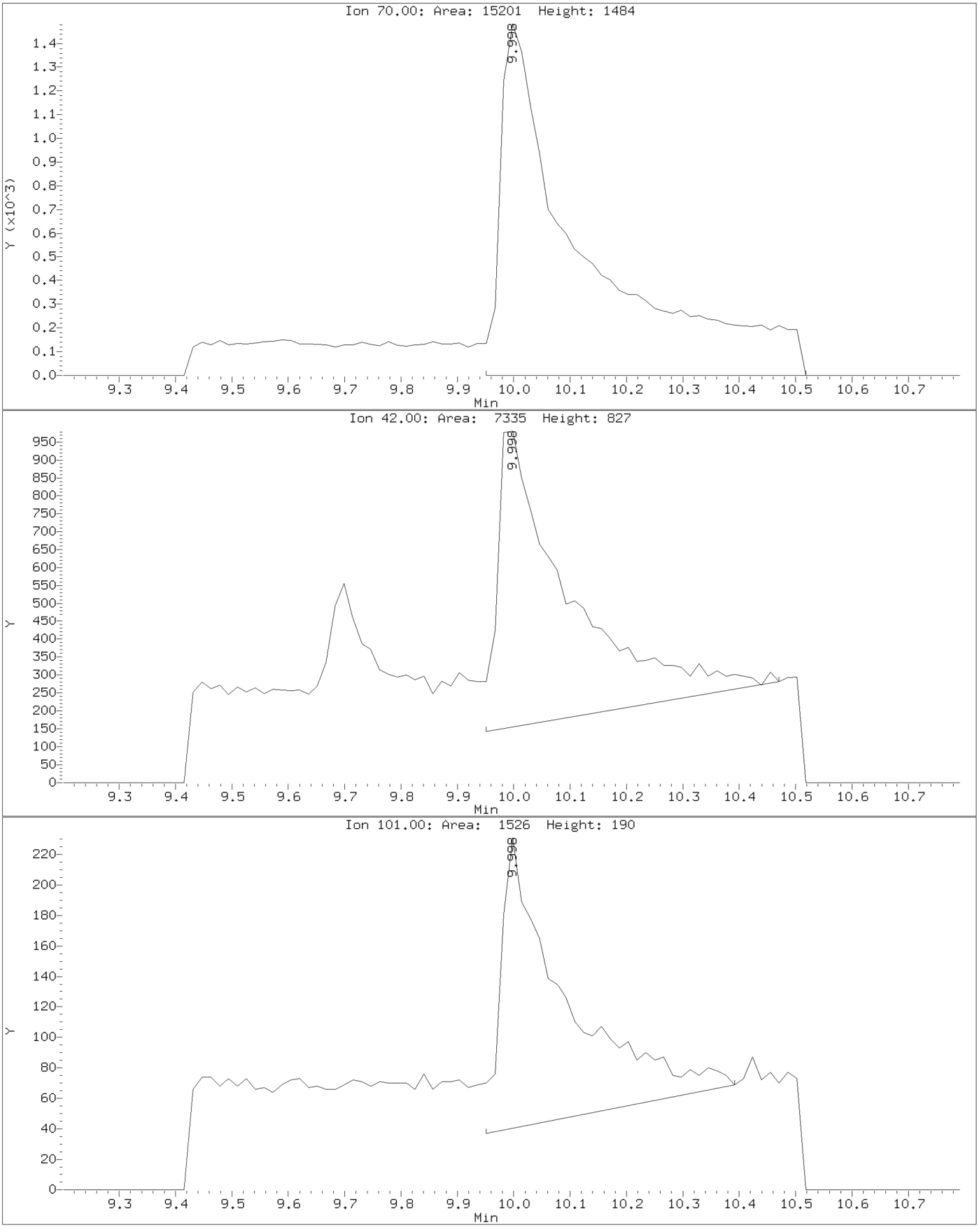

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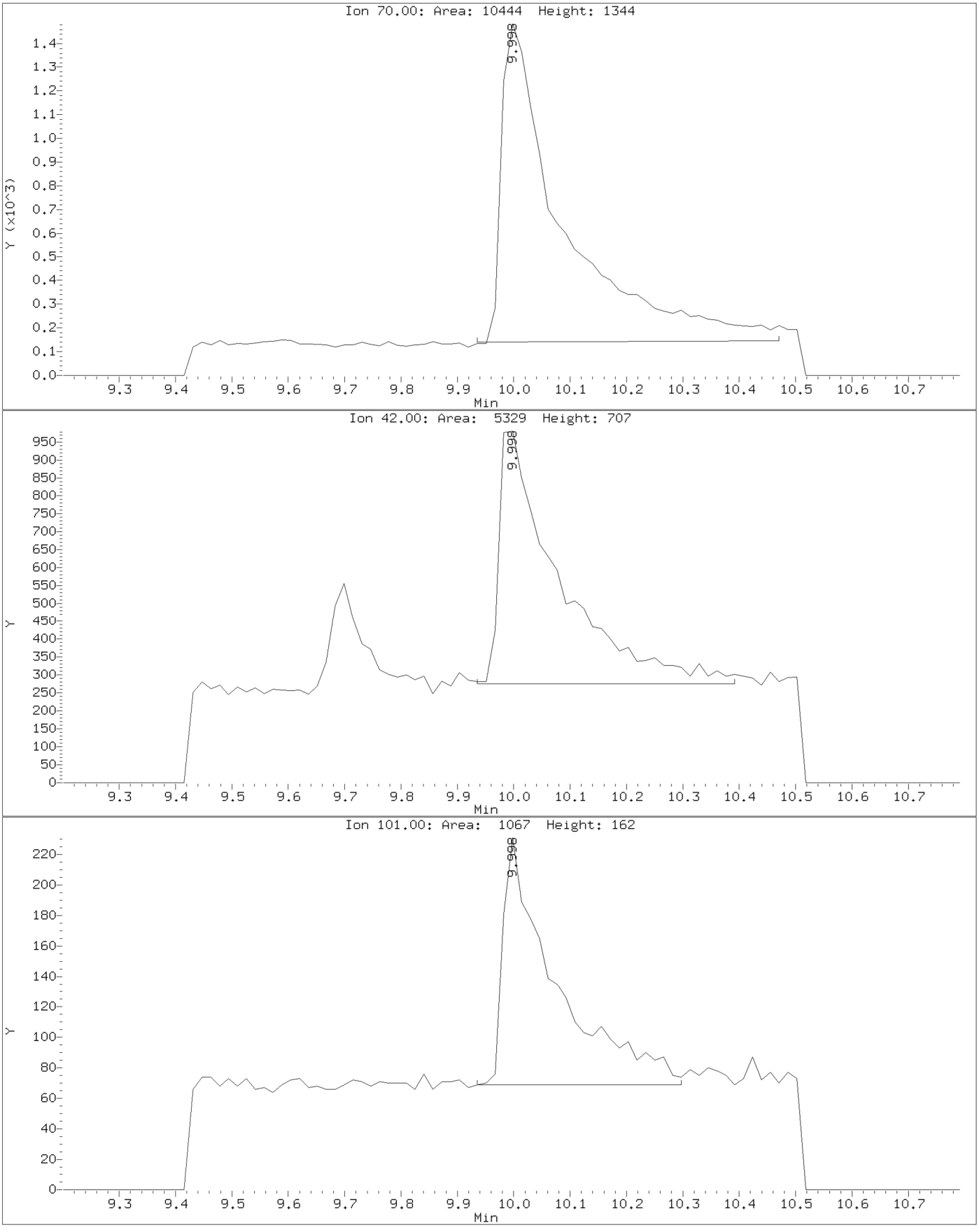
Compound: N-Nitroso-di-n-propylamine
CAS Number: 621-64-7

AFTER MANUAL INTEGRATION



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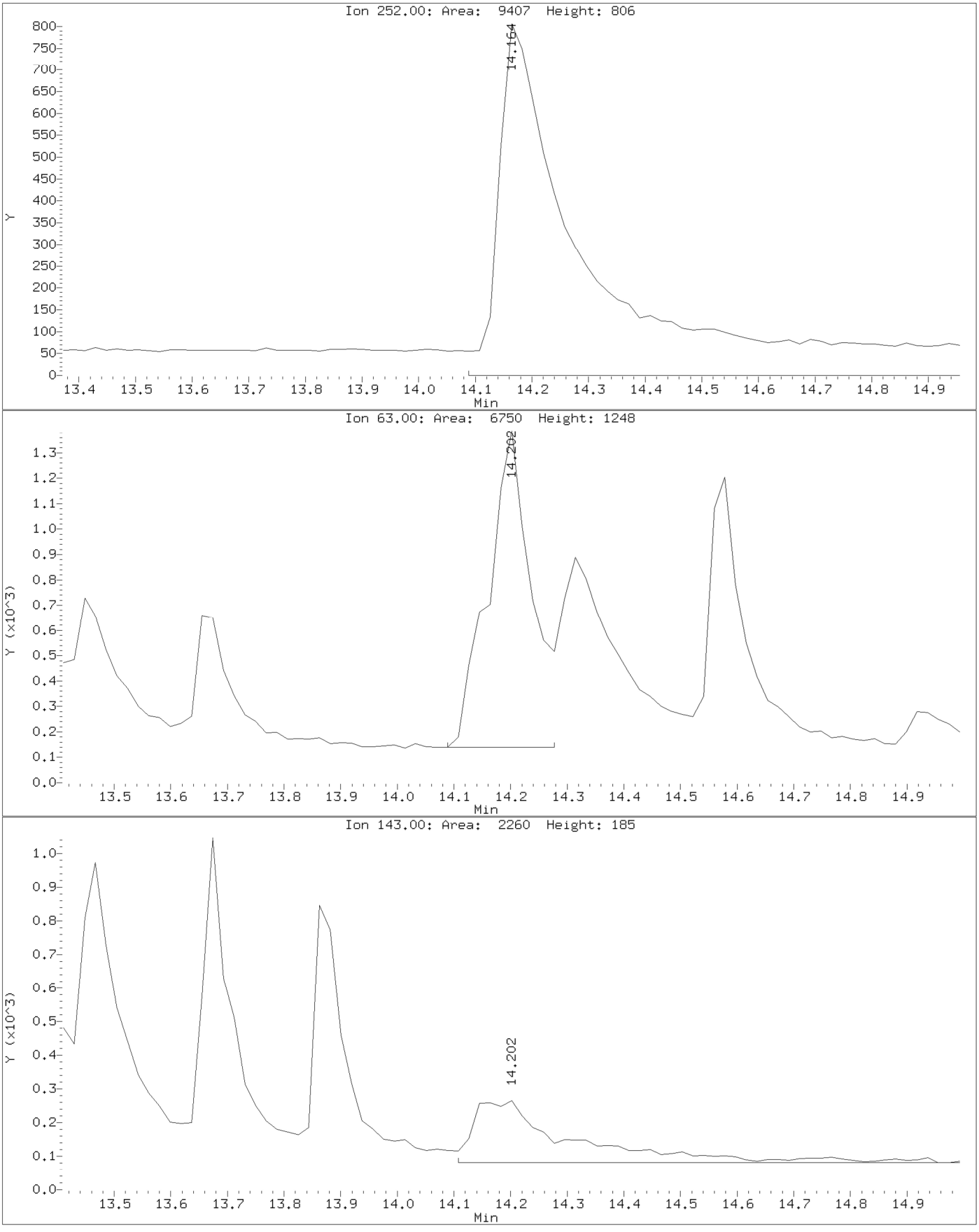
Compound: 2,4-Dibromophenol
CAS Number: 367-12-4

BEFORE MANUAL INTEGRATION



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Client Sample ID:

Compound: 2,4-Dibromophenol
CAS Number: 367-12-4

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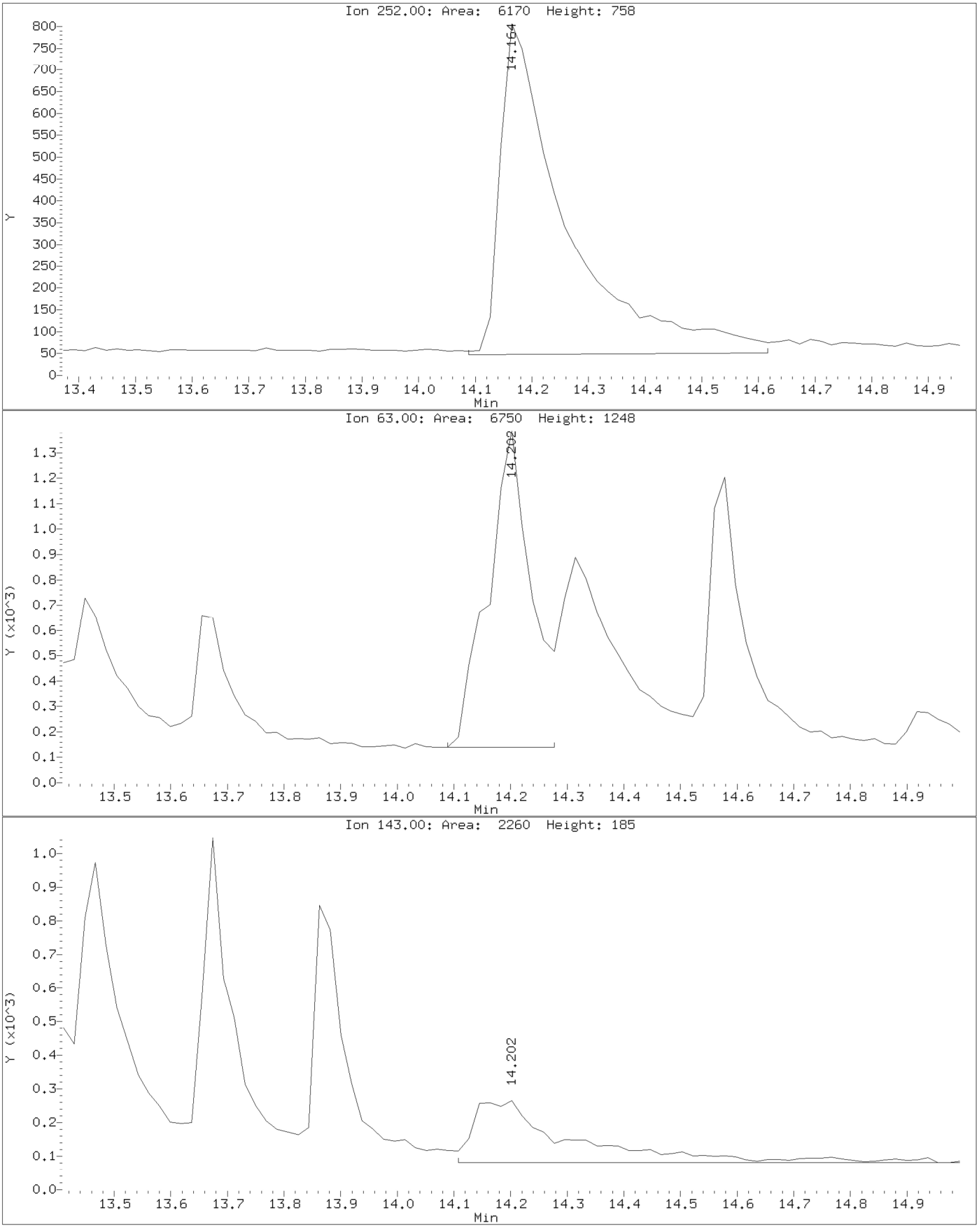

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Injection Date: 26-JUN-2014 11:12
Instrument: gcms-n.i
Client Sample ID:

Compound: 2,4-Dinitrophenol
CAS Number: 51-28-5

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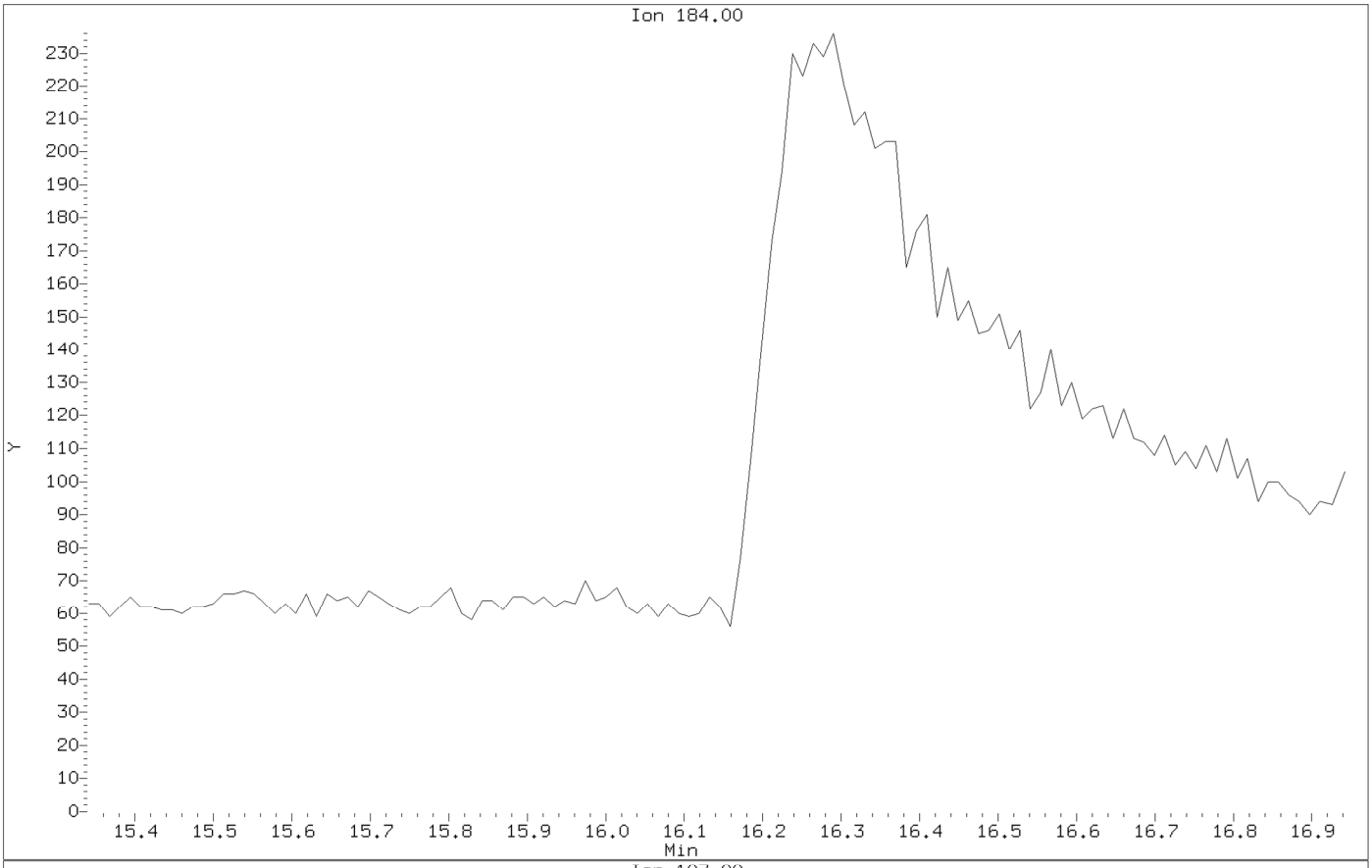

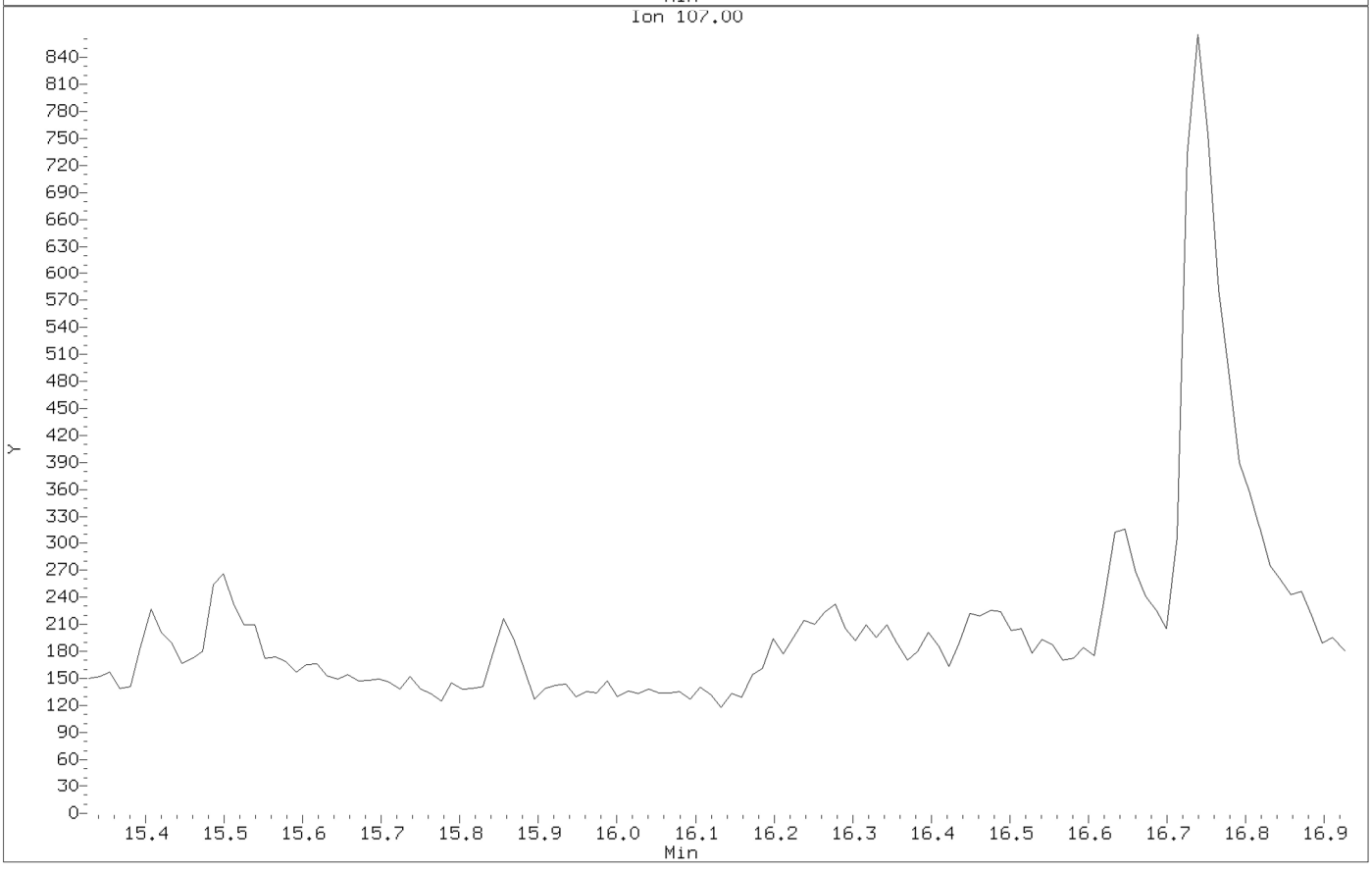

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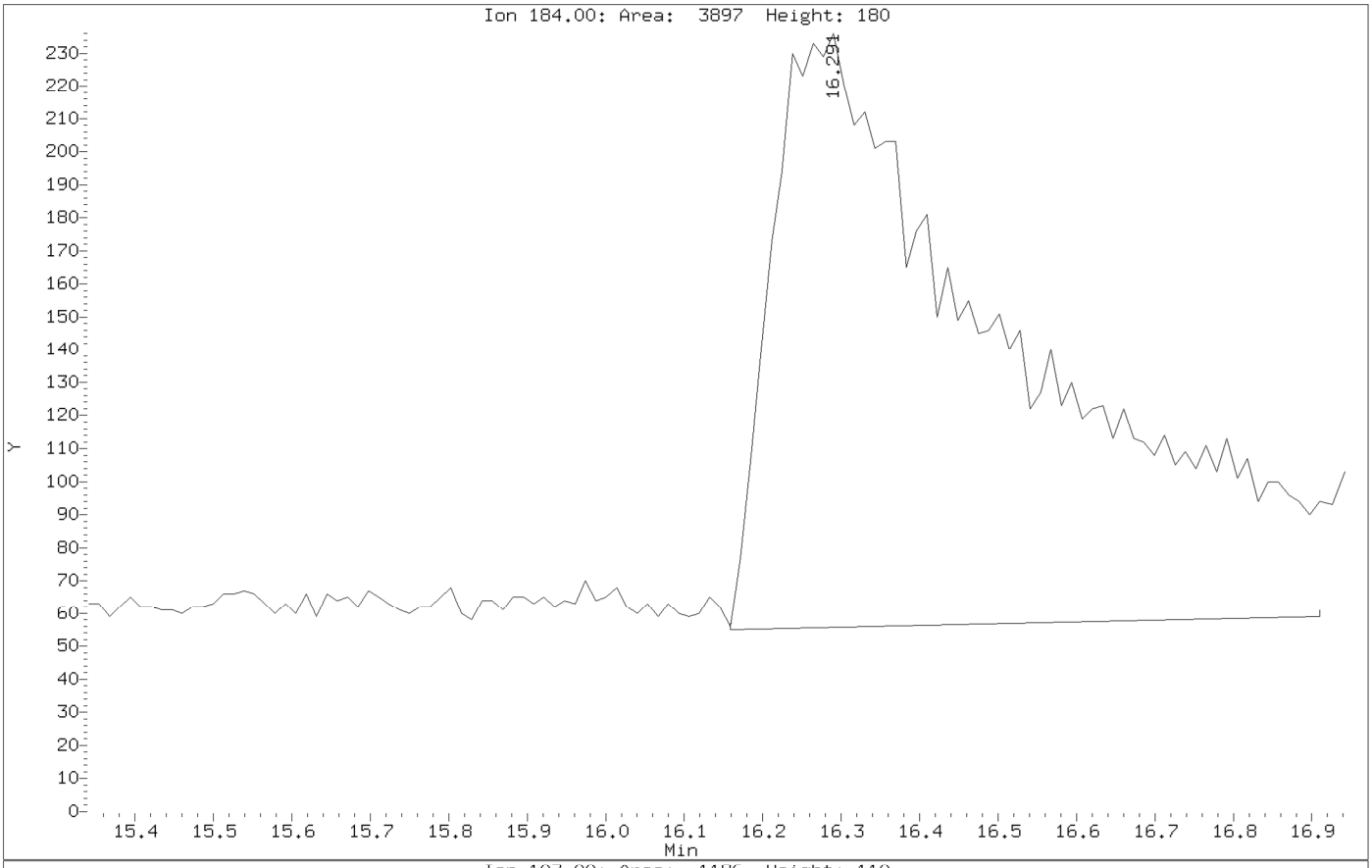
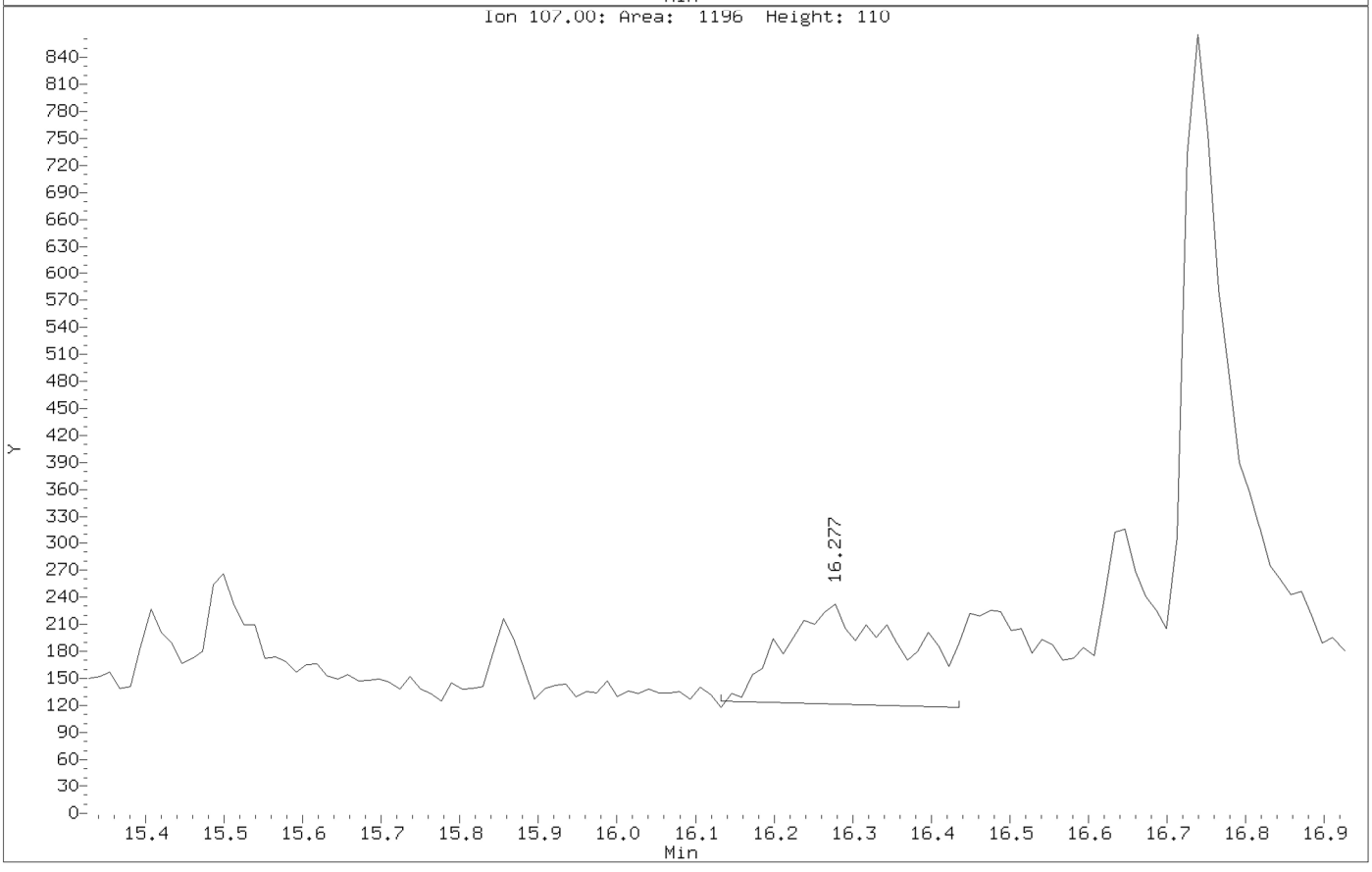
Instrument: gcms-n.i
Client Sample ID:

Compound: 2,4-Dinitrophenol
CAS Number: 51-28-5

AFTER MANUAL INTEGRATION





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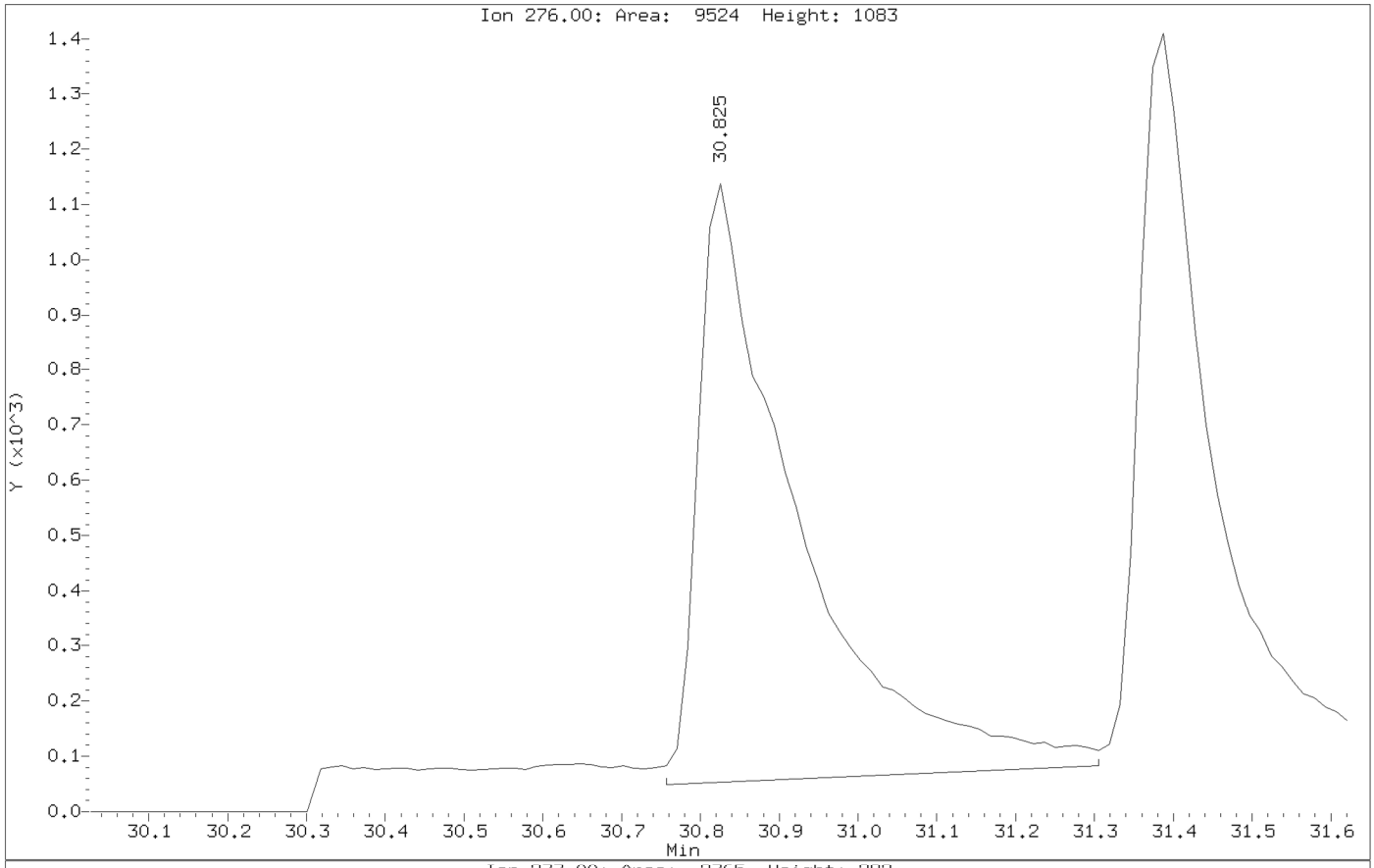
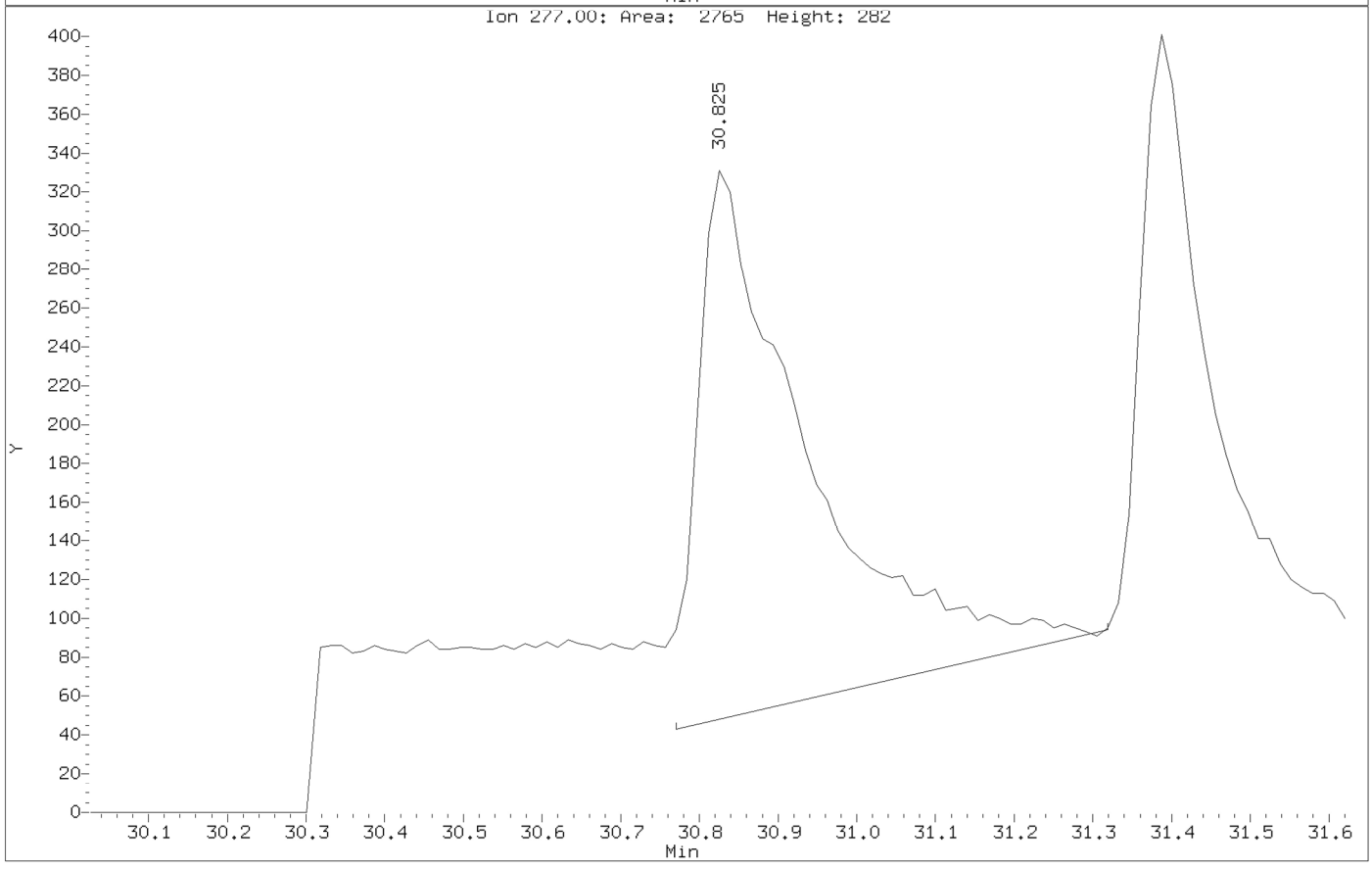
Injection Date: 26-JUN-2014 11:12
Instrument: gcms-n.i
Client Sample ID:

Compound: Indeno(1,2,3-cd)pyrene
CAS Number: 193-39-5

BEFORE MANUAL INTEGRATION





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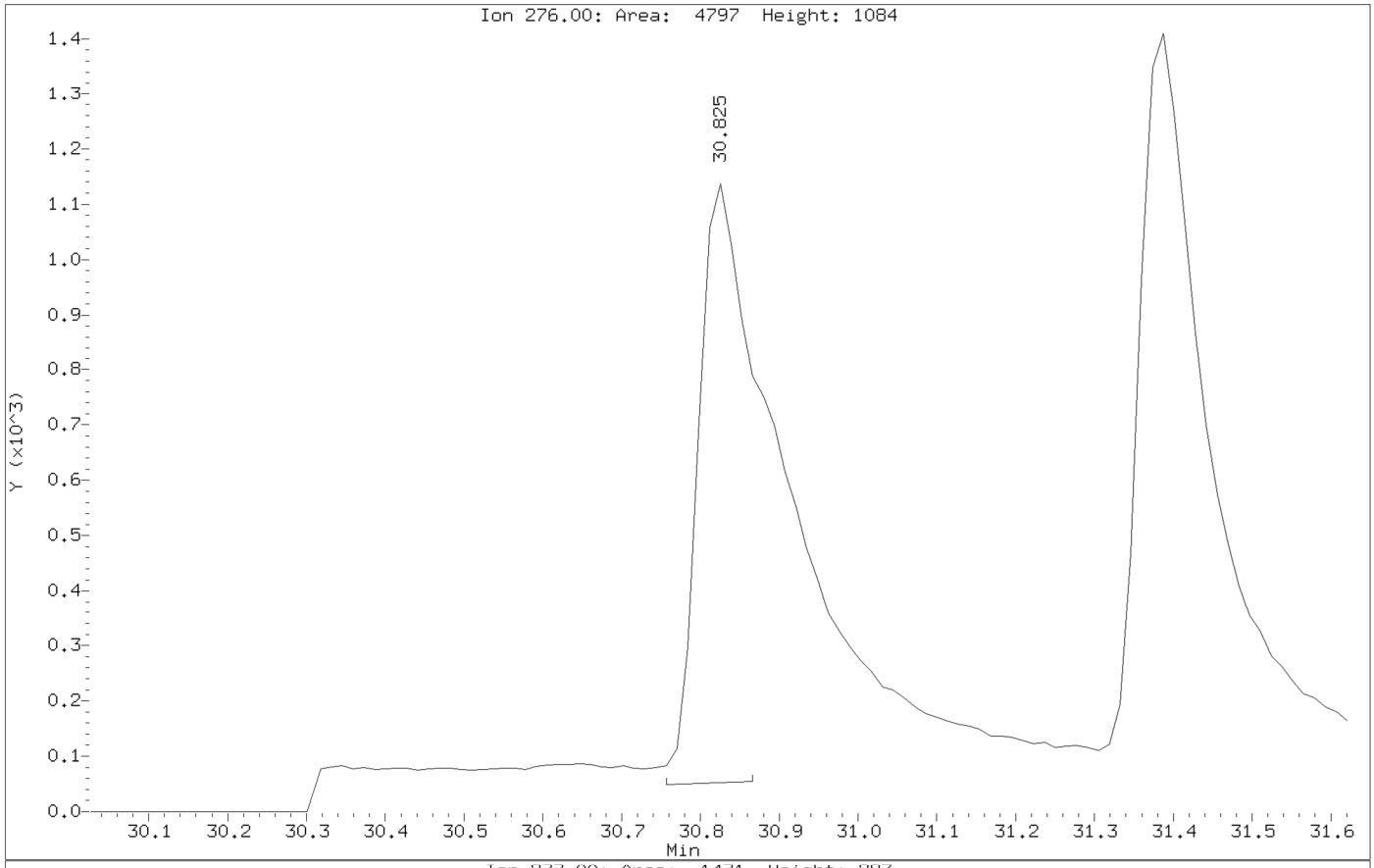
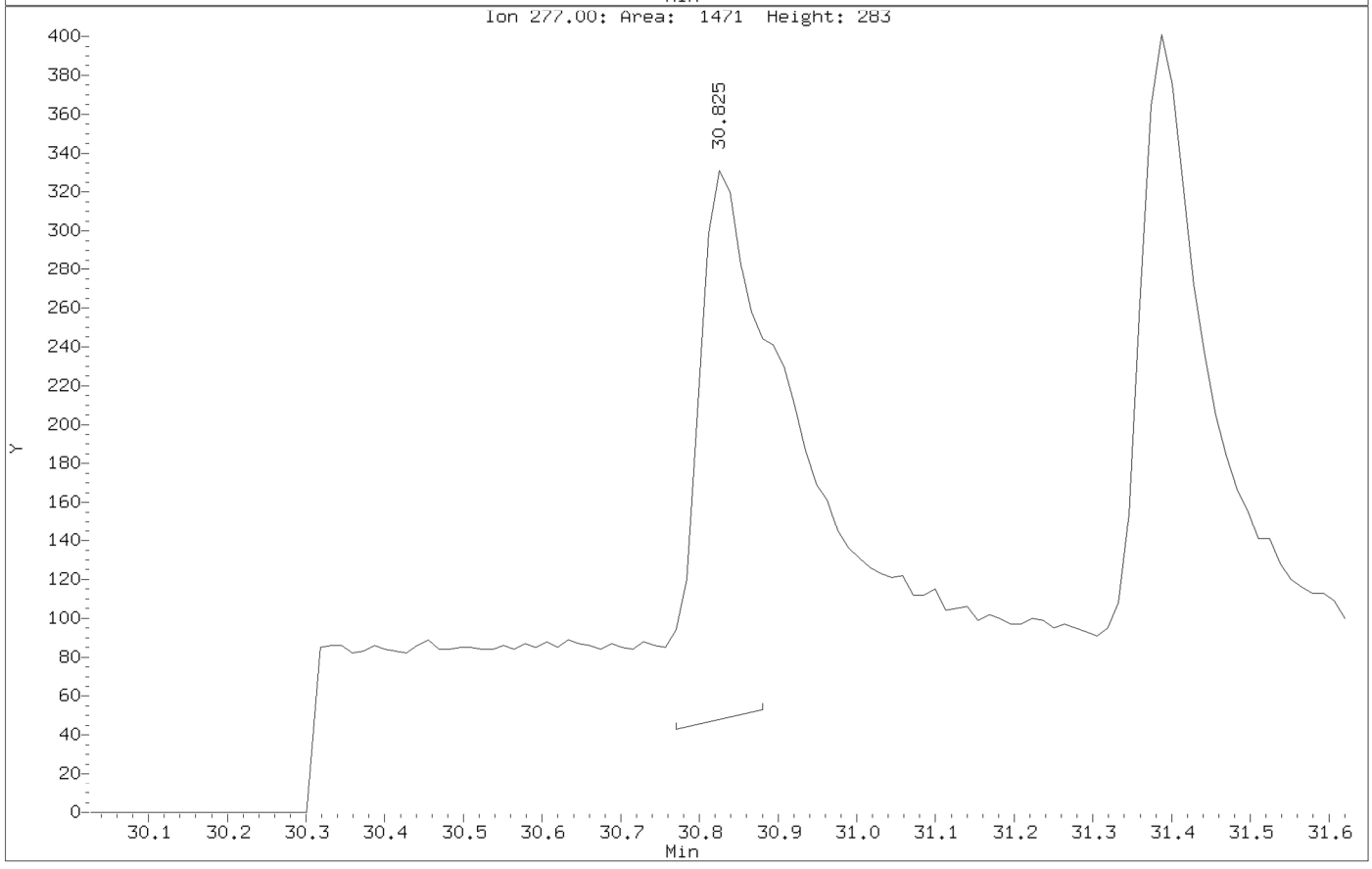
Injection Date: 26-JUN-2014 11:12
Instrument: gcms-n.i
Client Sample ID:

Compound: Indeno(1,2,3-cd)pyrene
CAS Number: 193-39-5

AFTER MANUAL INTEGRATION





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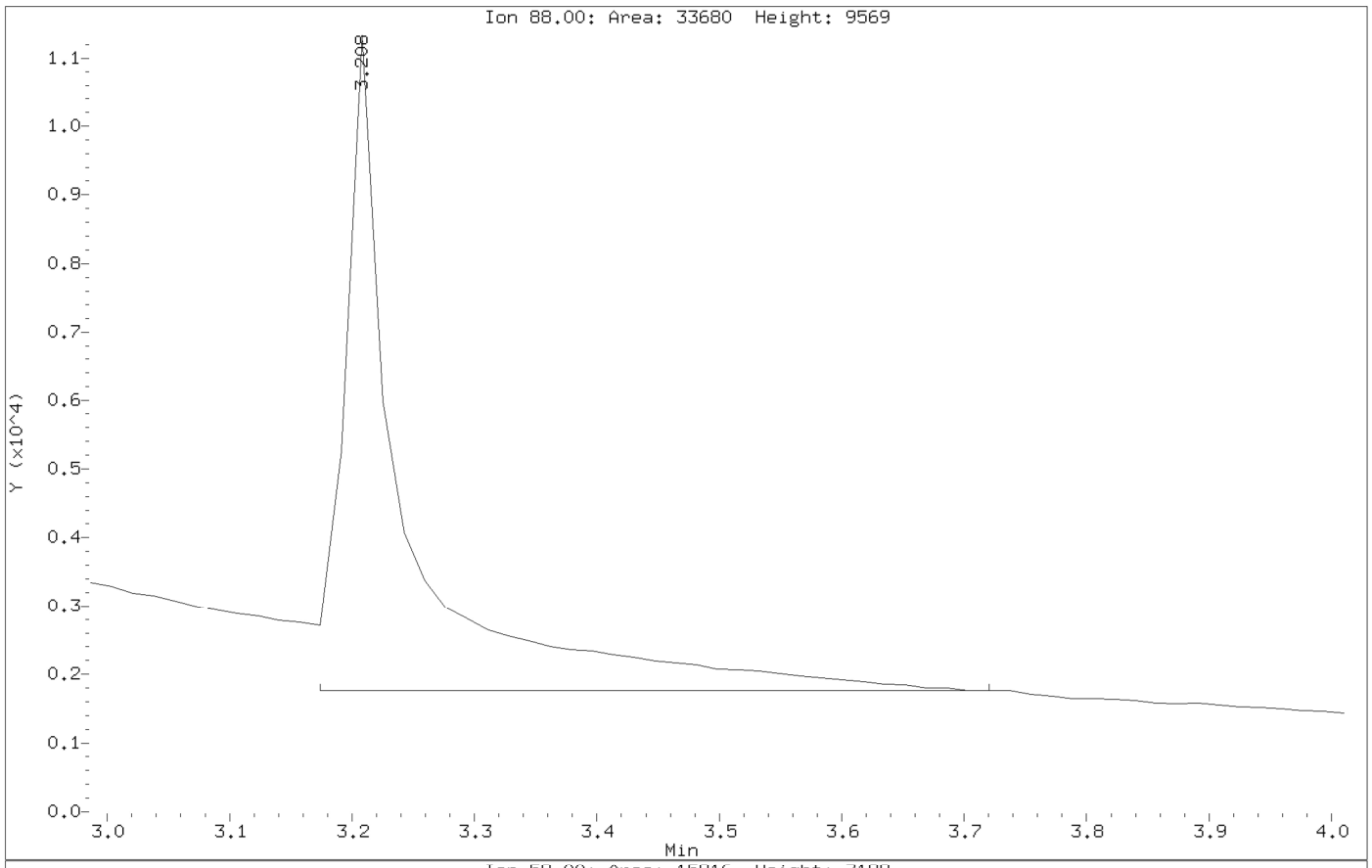
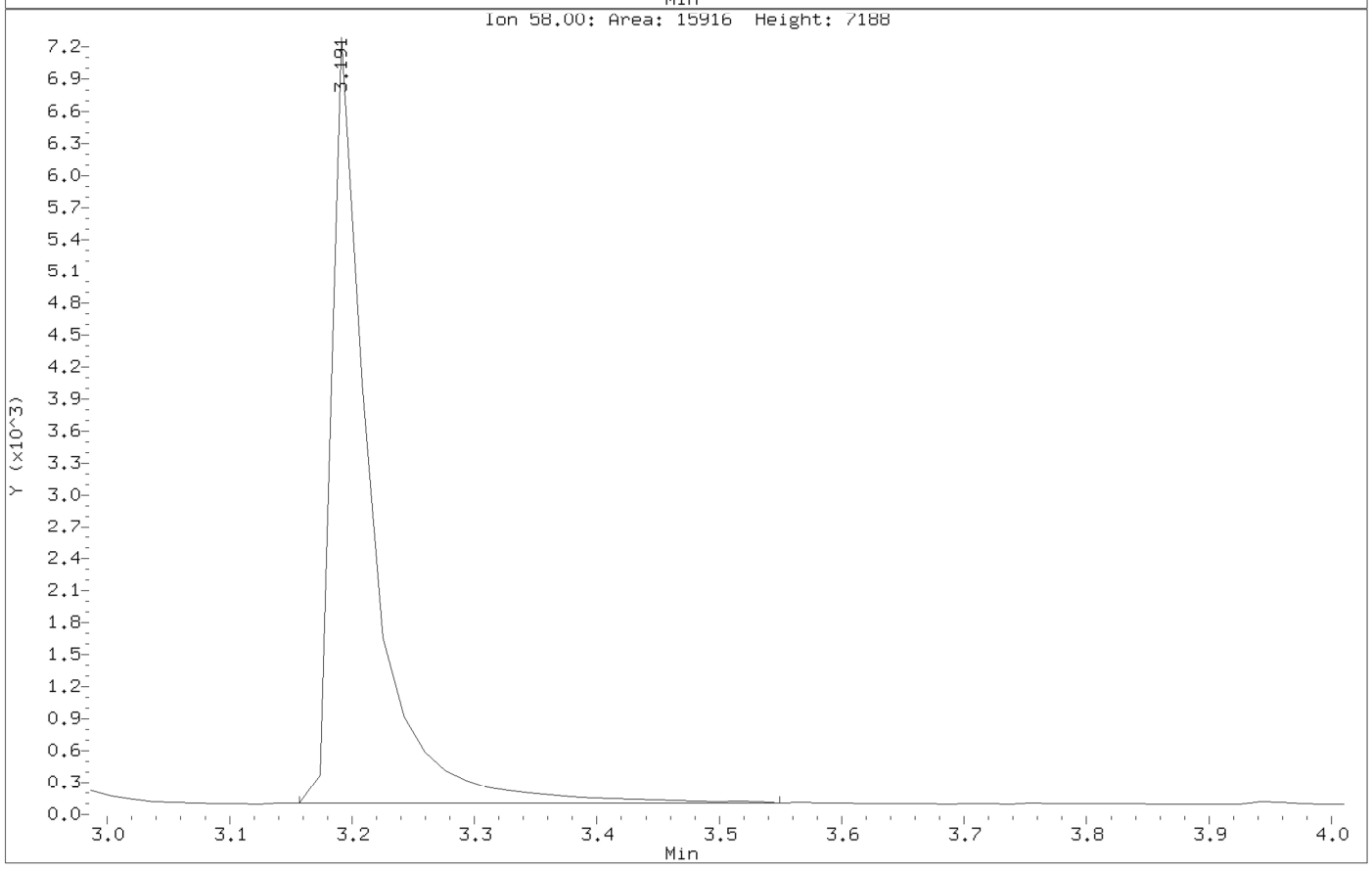
Injection Date: 26-JUN-2014 11:55
Instrument: gcms-n.i
Client Sample ID:

Compound: 1,4-Dioxane
CAS Number: 367-12-4

BEFORE MANUAL INTEGRATION





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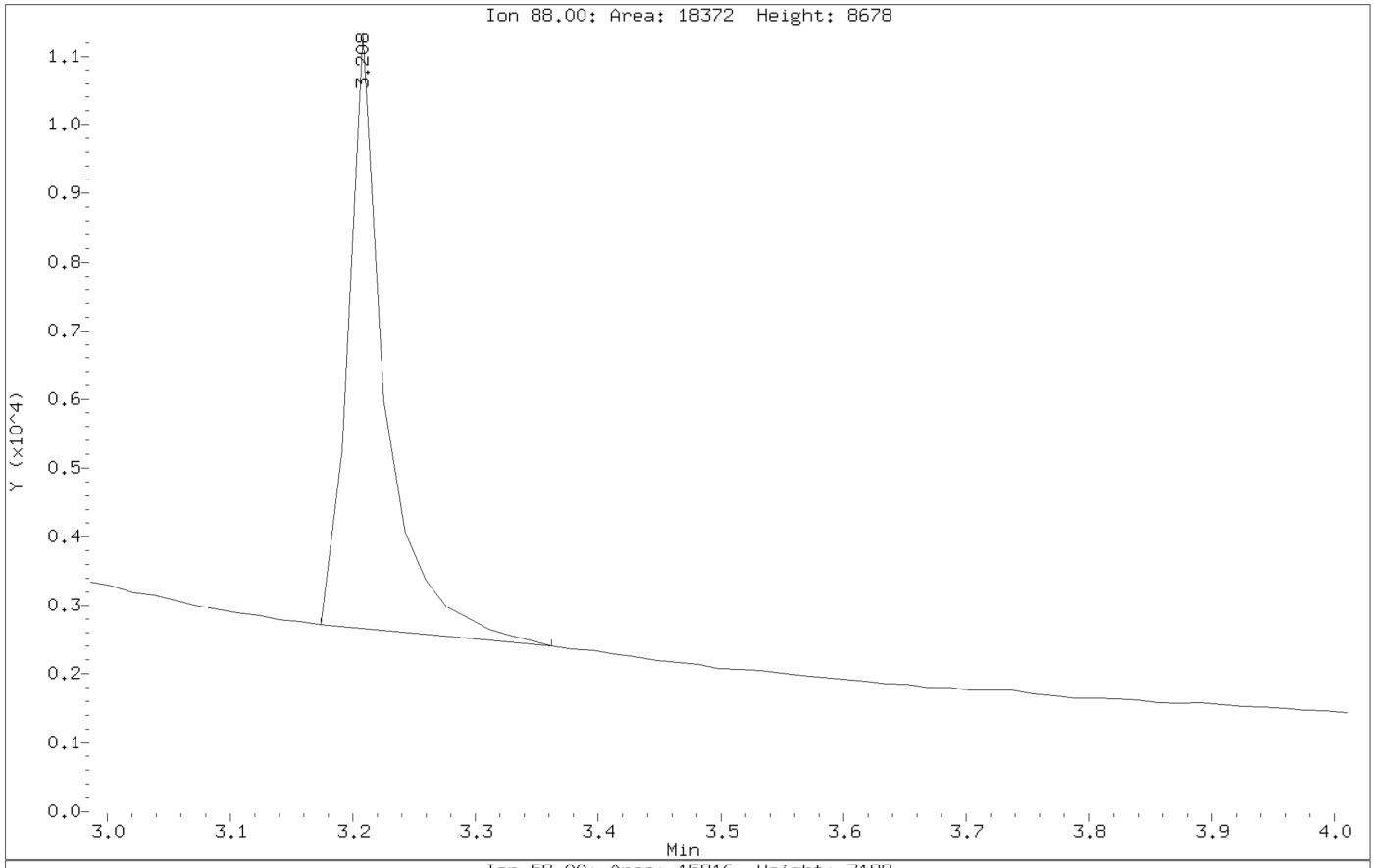
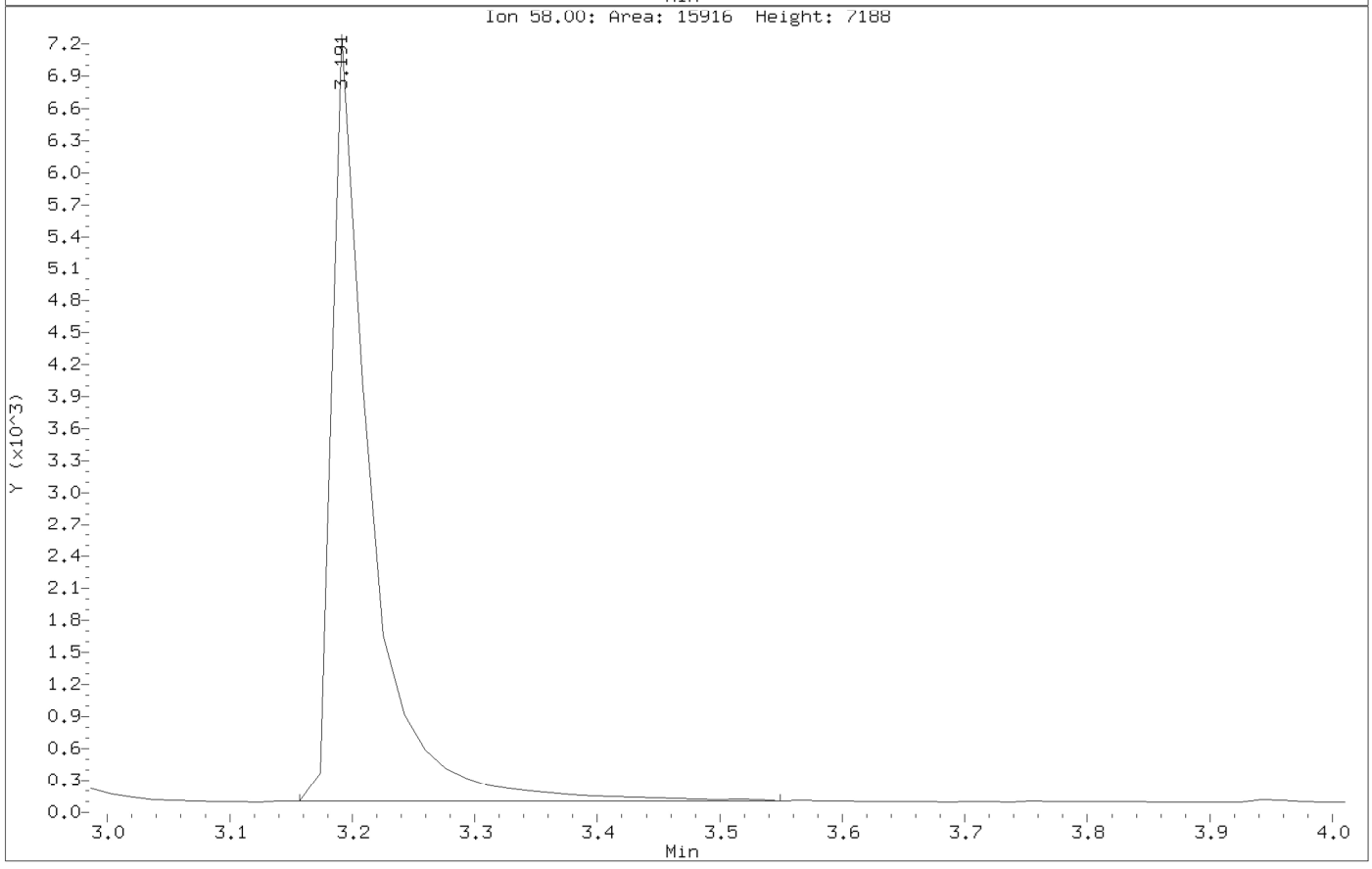
Injection Date: 26-JUN-2014 11:55
Instrument: gcms-n.i
Client Sample ID:

Compound: 1,4-Dioxane
CAS Number: 367-12-4

AFTER MANUAL INTEGRATION





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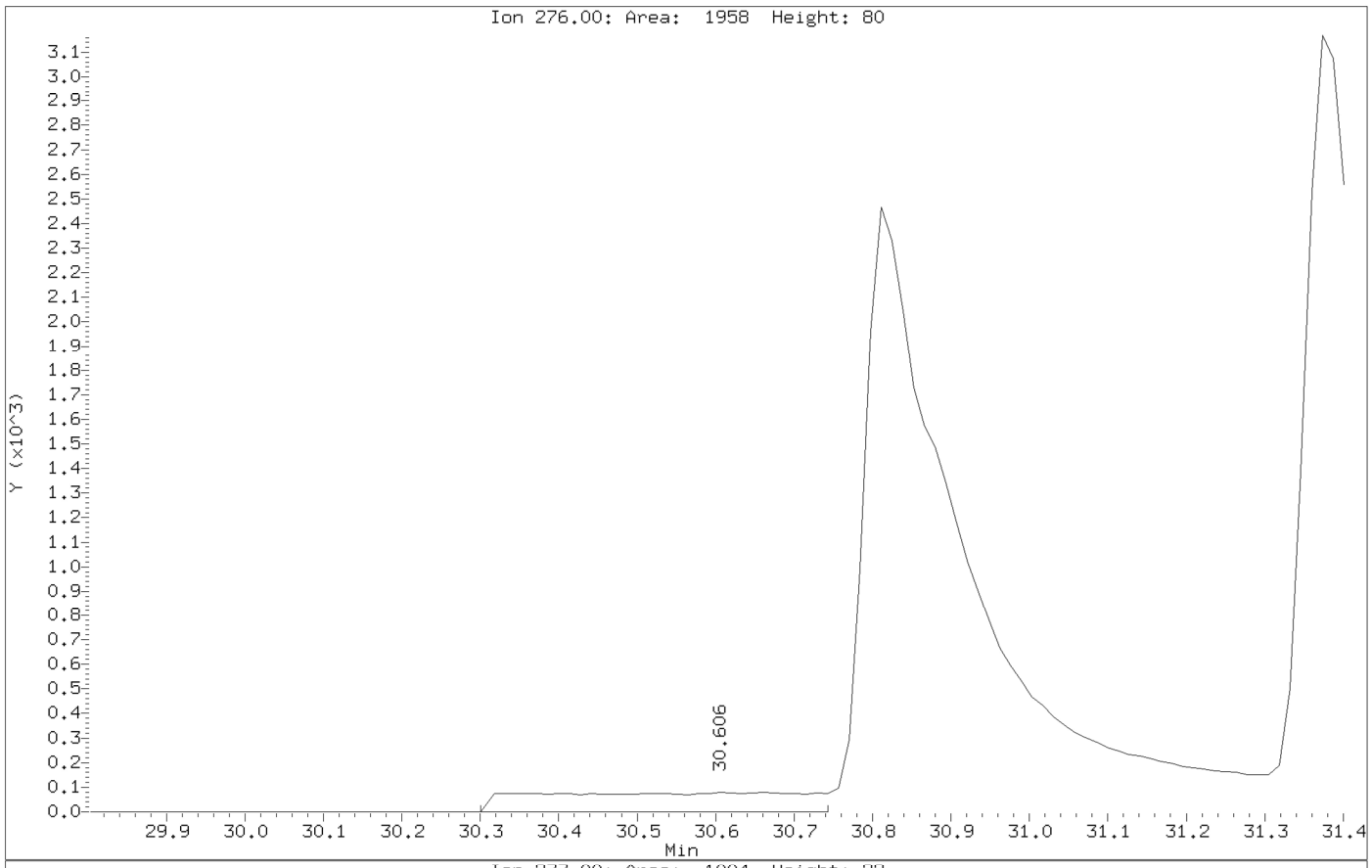
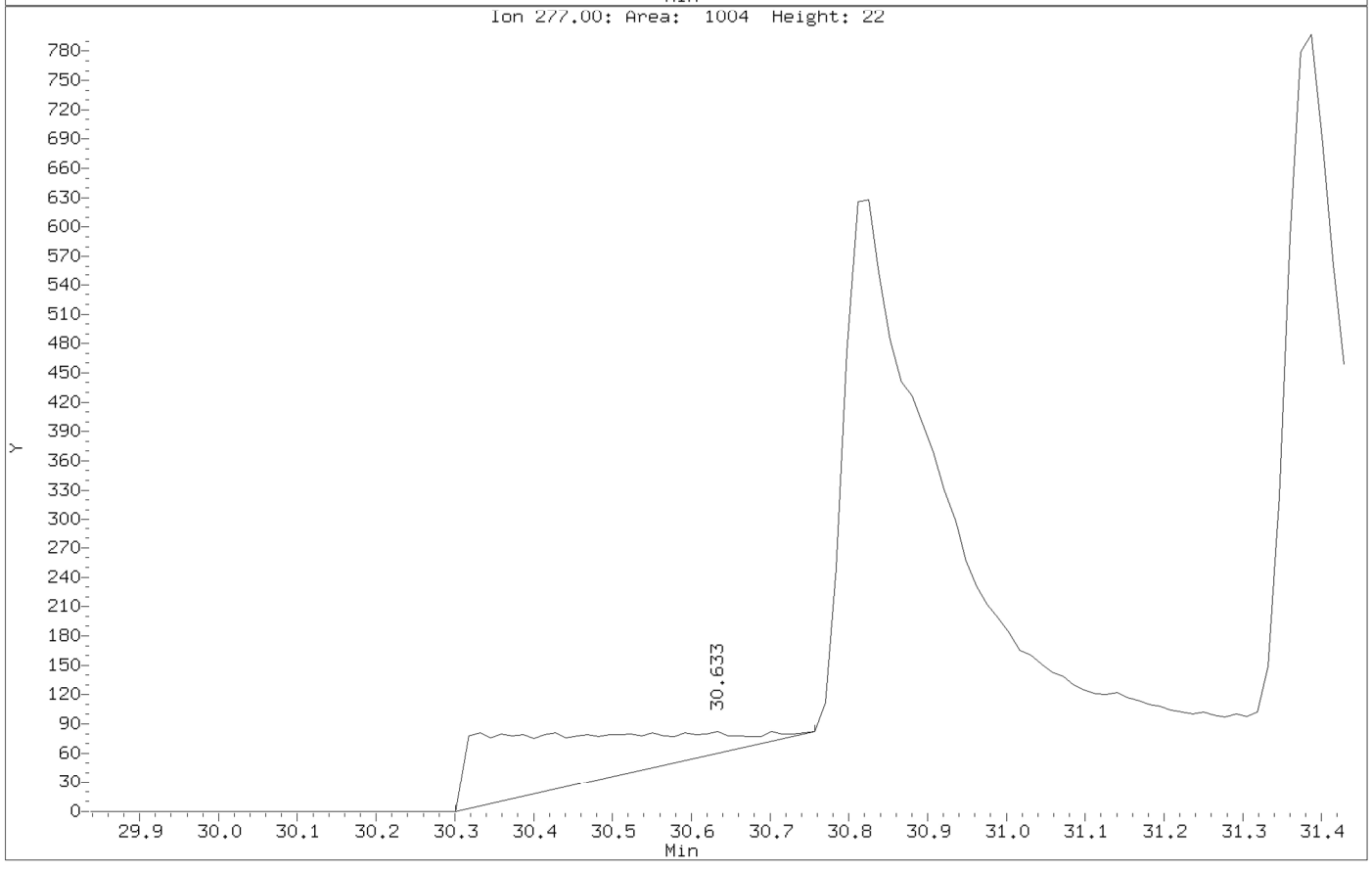
Injection Date: 26-JUN-2014 11:55
Instrument: gcms-n.i
Client Sample ID:

Compound: Indeno(1,2,3-cd)pyrene
CAS Number: 193-39-5

BEFORE MANUAL INTEGRATION





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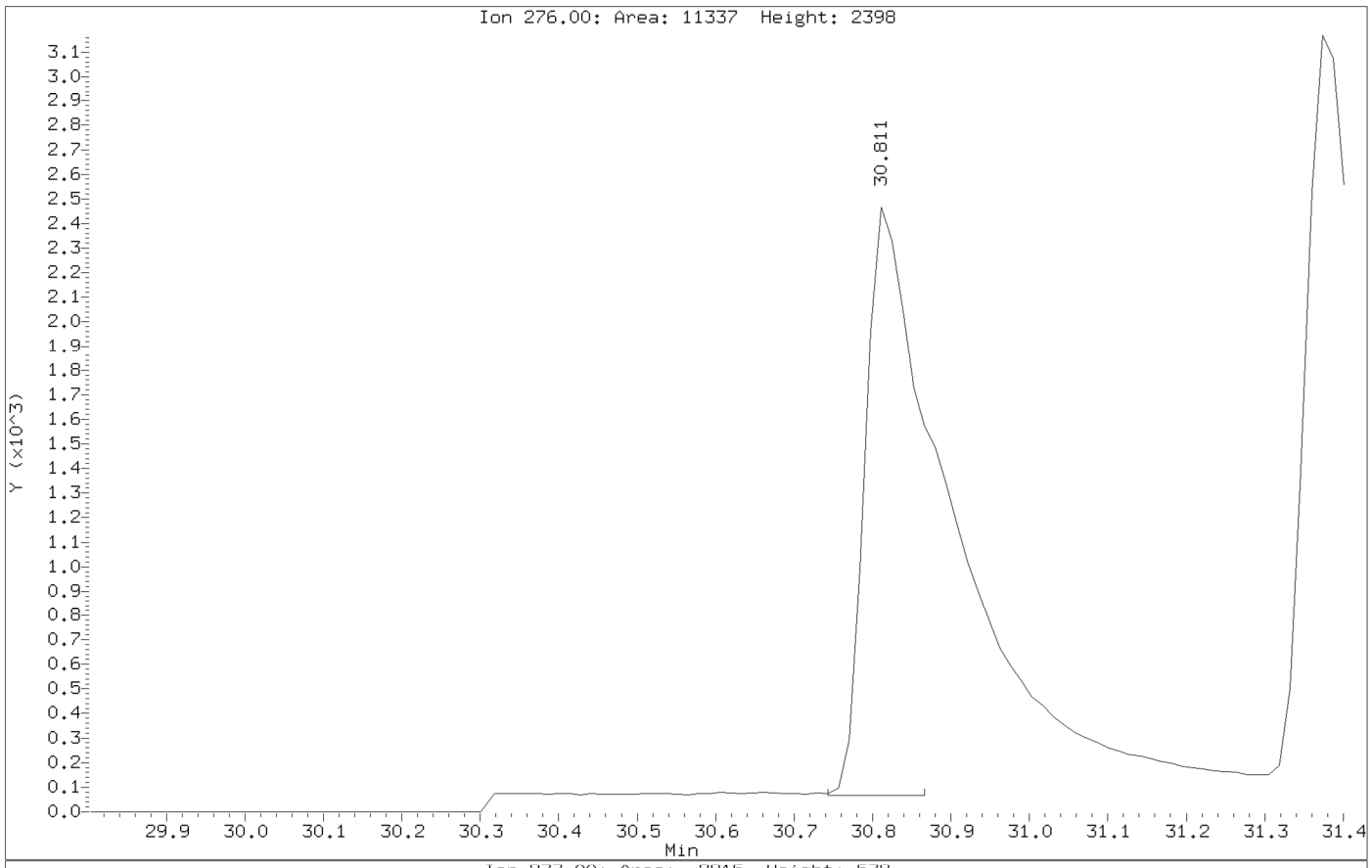
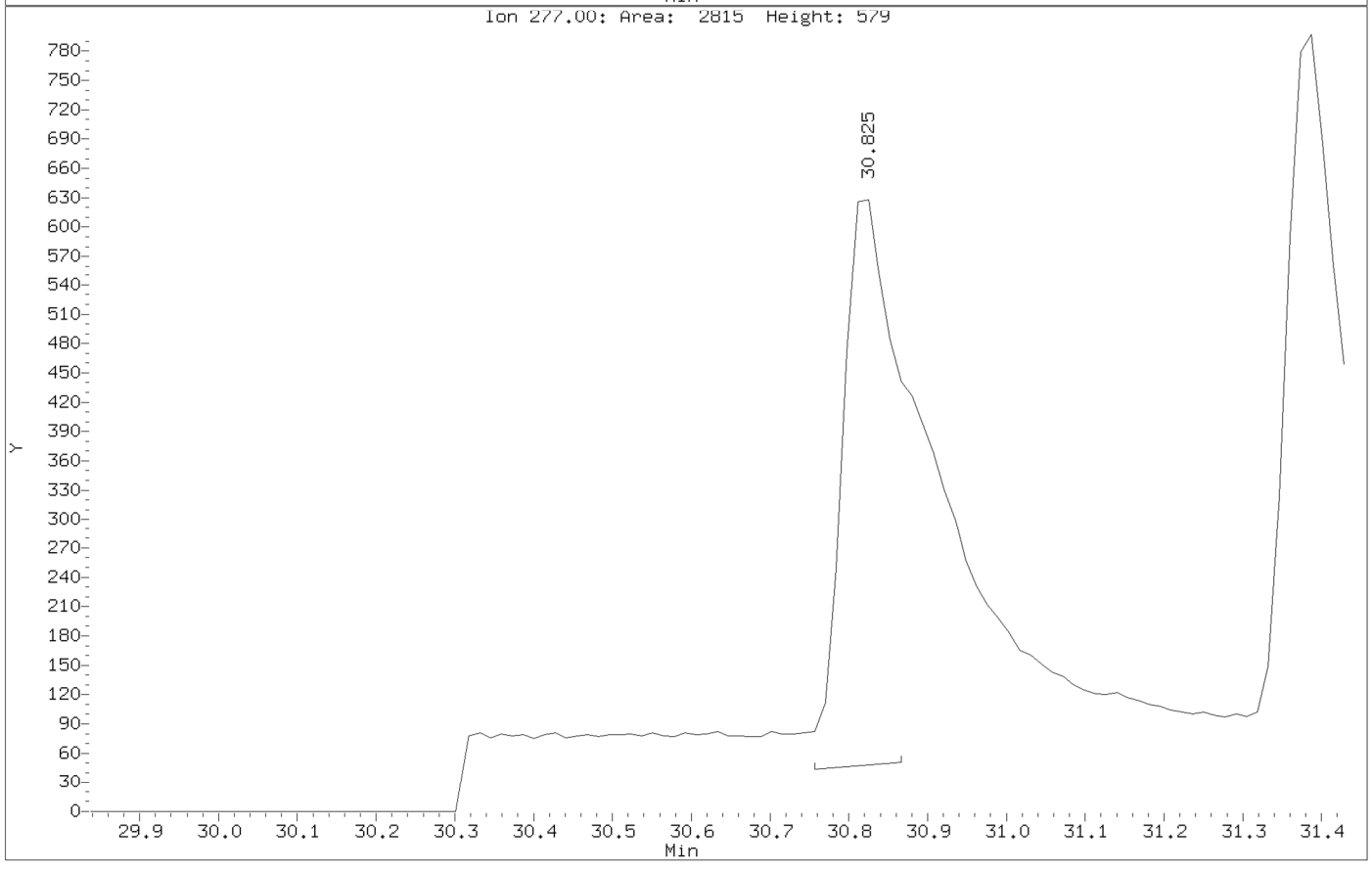
Injection Date: 26-JUN-2014 11:55
Instrument: gcms-n.i
Client Sample ID:

Compound: Indeno(1,2,3-cd)pyrene
CAS Number: 193-39-5

AFTER MANUAL INTEGRATION





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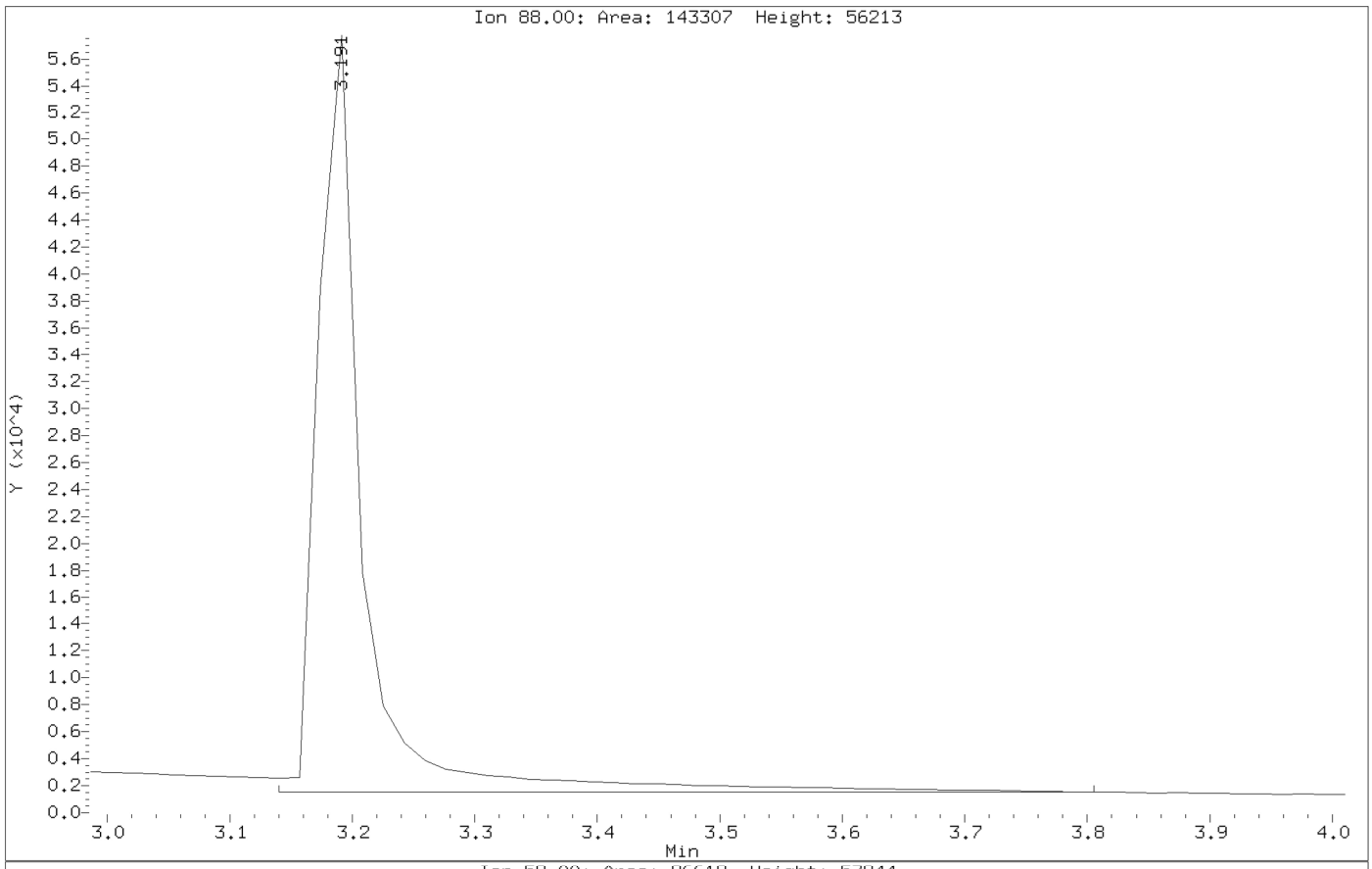
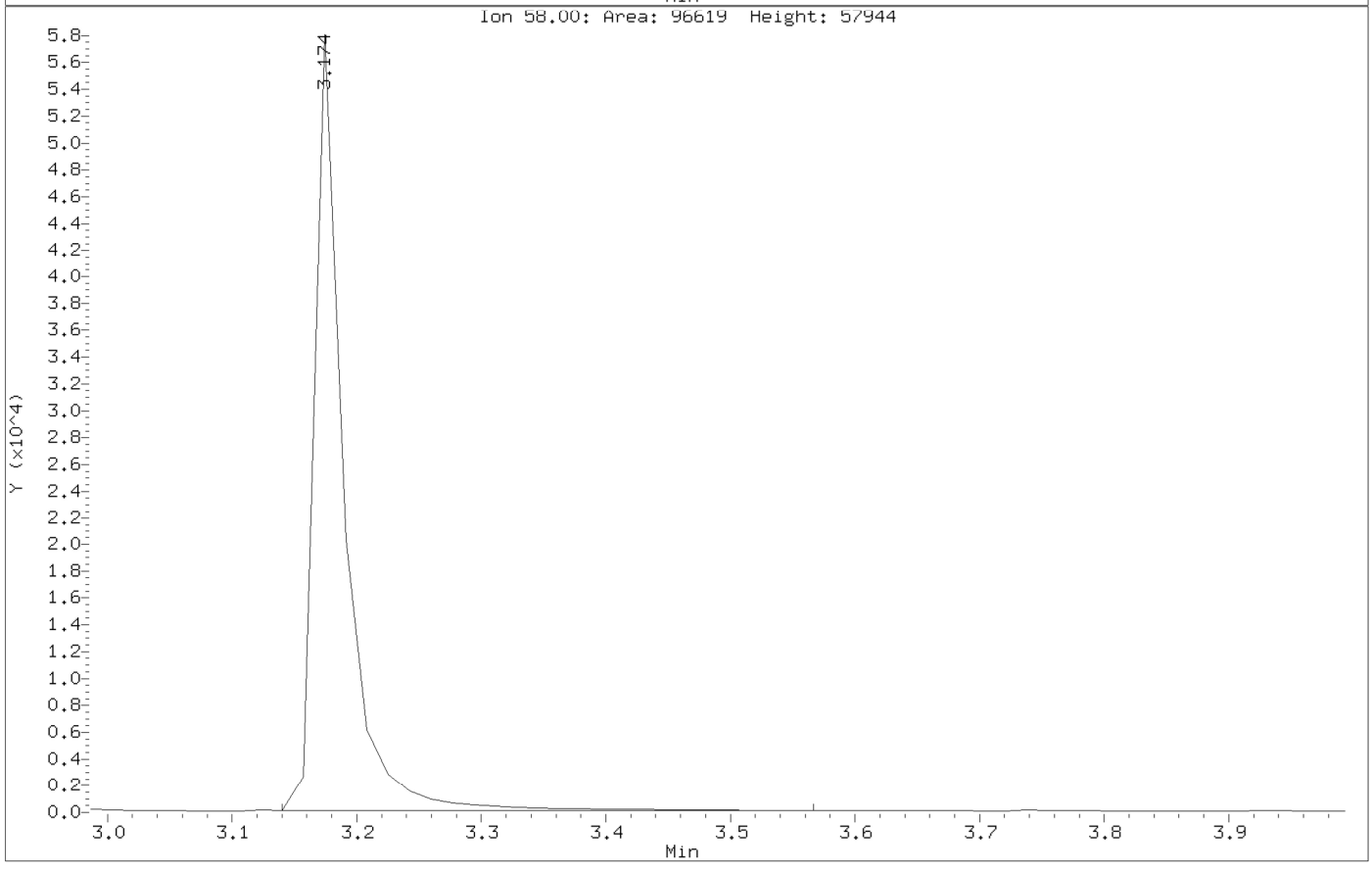
Injection Date: 26-JUN-2014 12:39
Instrument: gcms-n.i
Client Sample ID:

Compound: 1,4-Dioxane
CAS Number: 367-12-4

BEFORE MANUAL INTEGRATION





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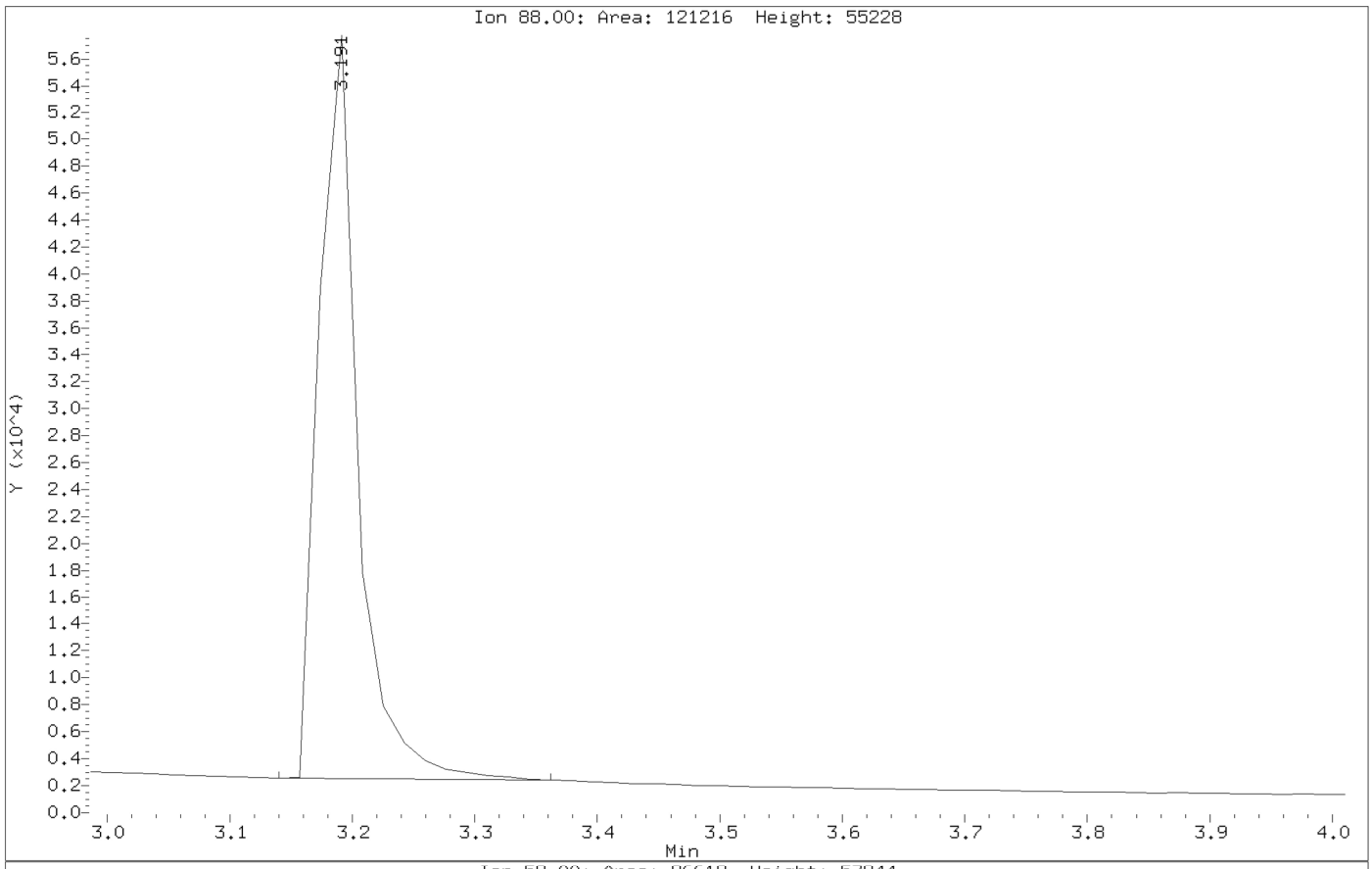
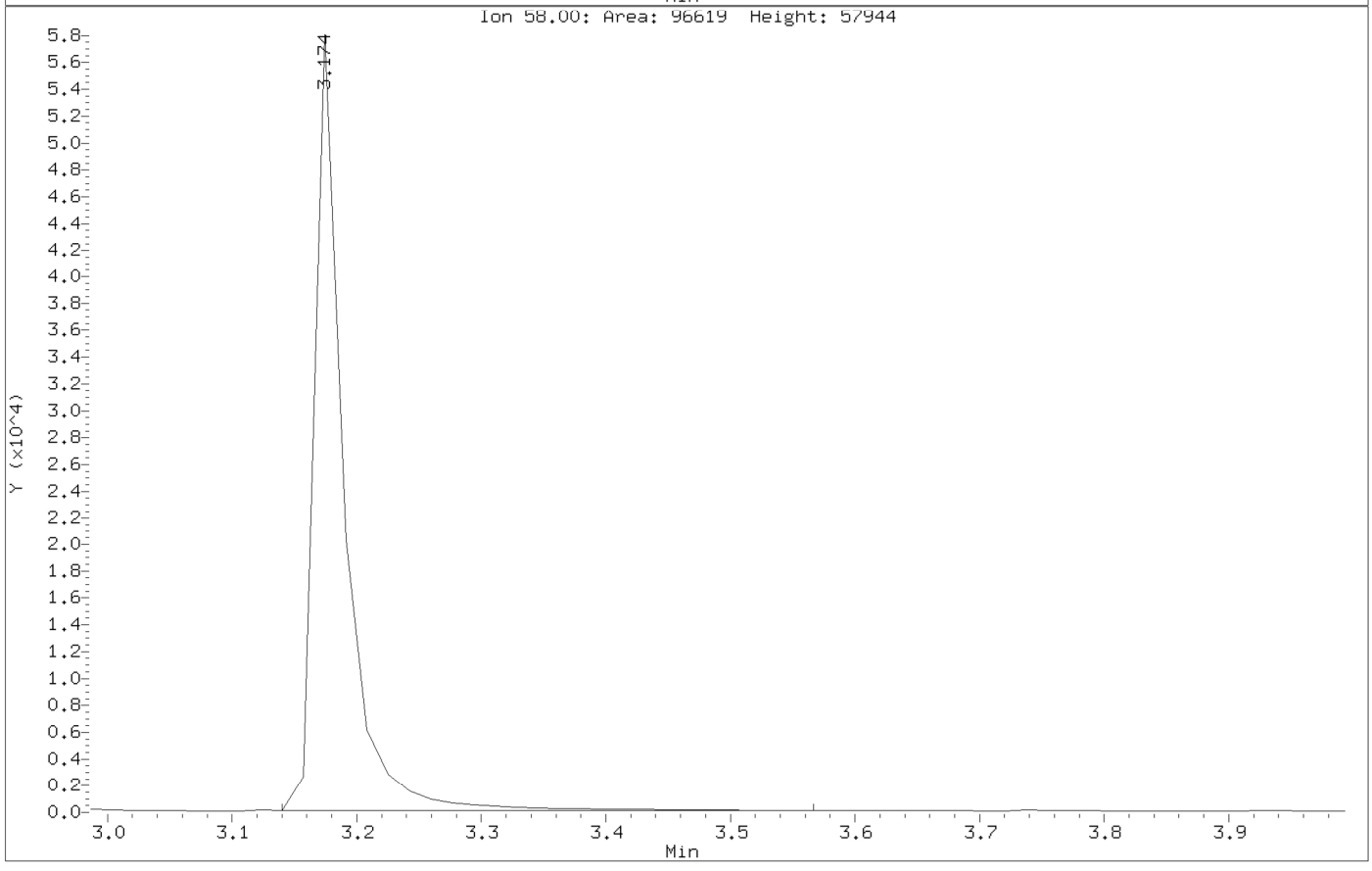
Injection Date: 26-JUN-2014 12:39
Instrument: gcms-n.i
Client Sample ID:

Compound: 1,4-Dioxane
CAS Number: 367-12-4

AFTER MANUAL INTEGRATION





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Injection Date: 26-JUN-2014 12:39
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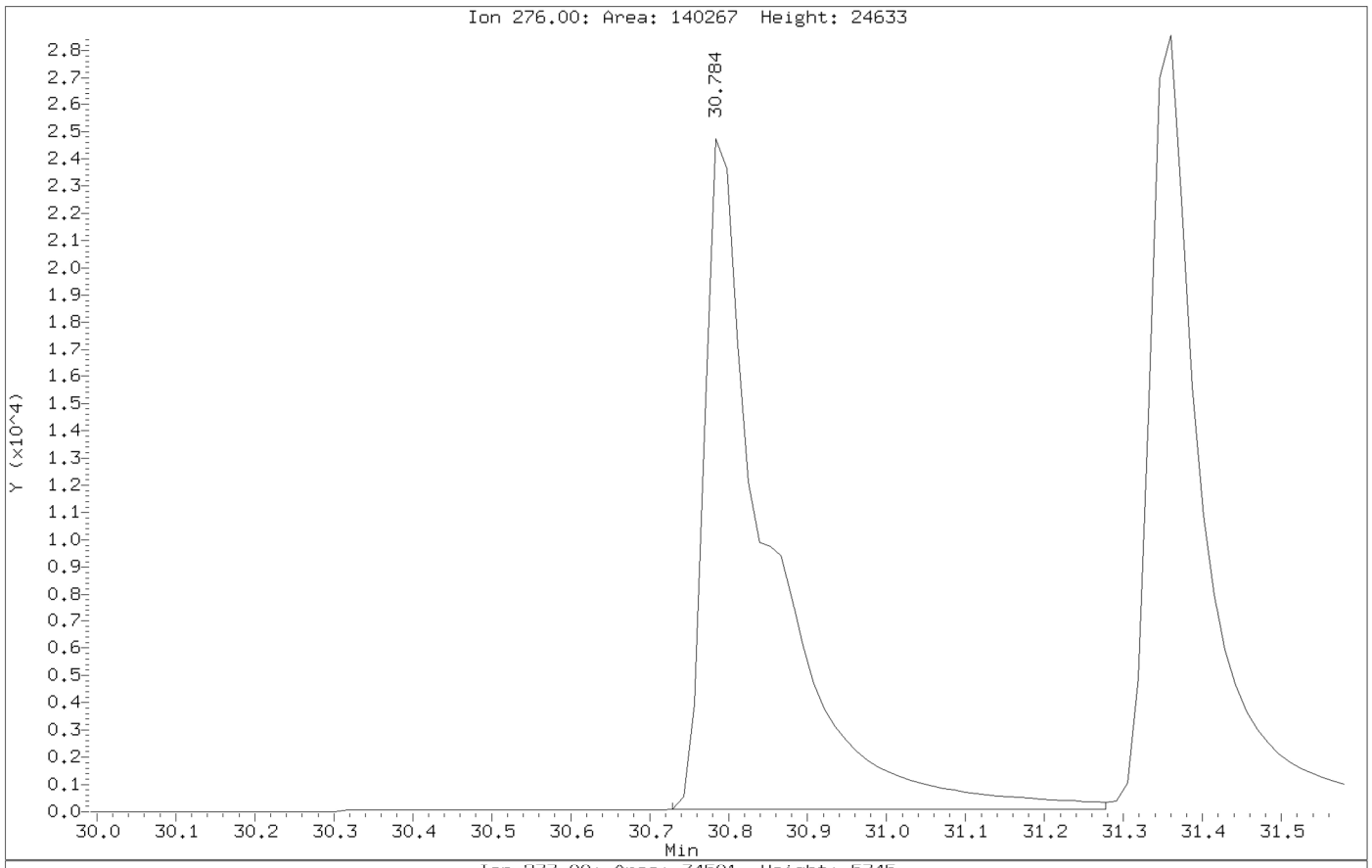
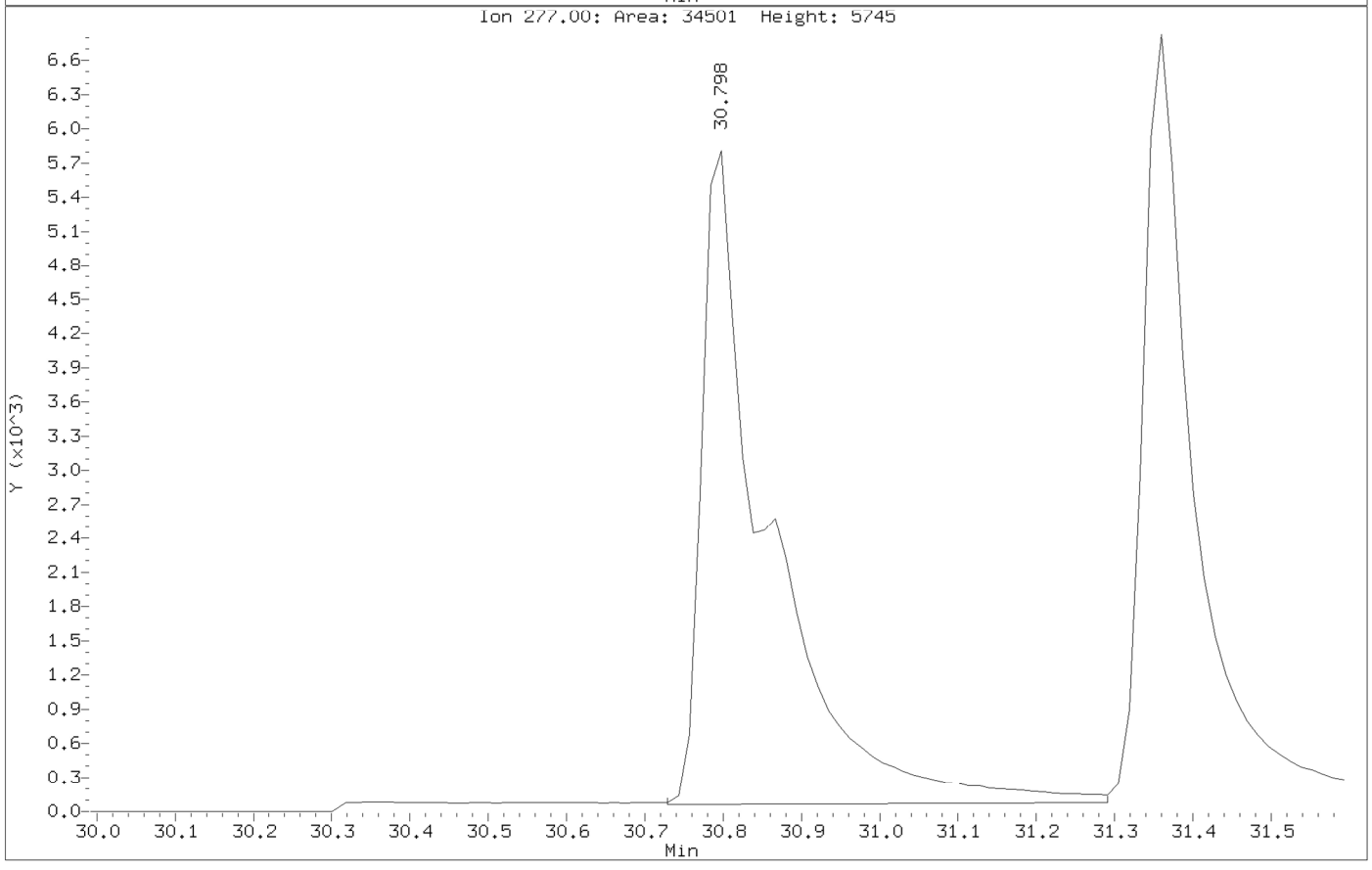
Client Sample ID:

Compound: Indeno(1,2,3-cd)pyrene
CAS Number: 193-39-5

BEFORE MANUAL INTEGRATION





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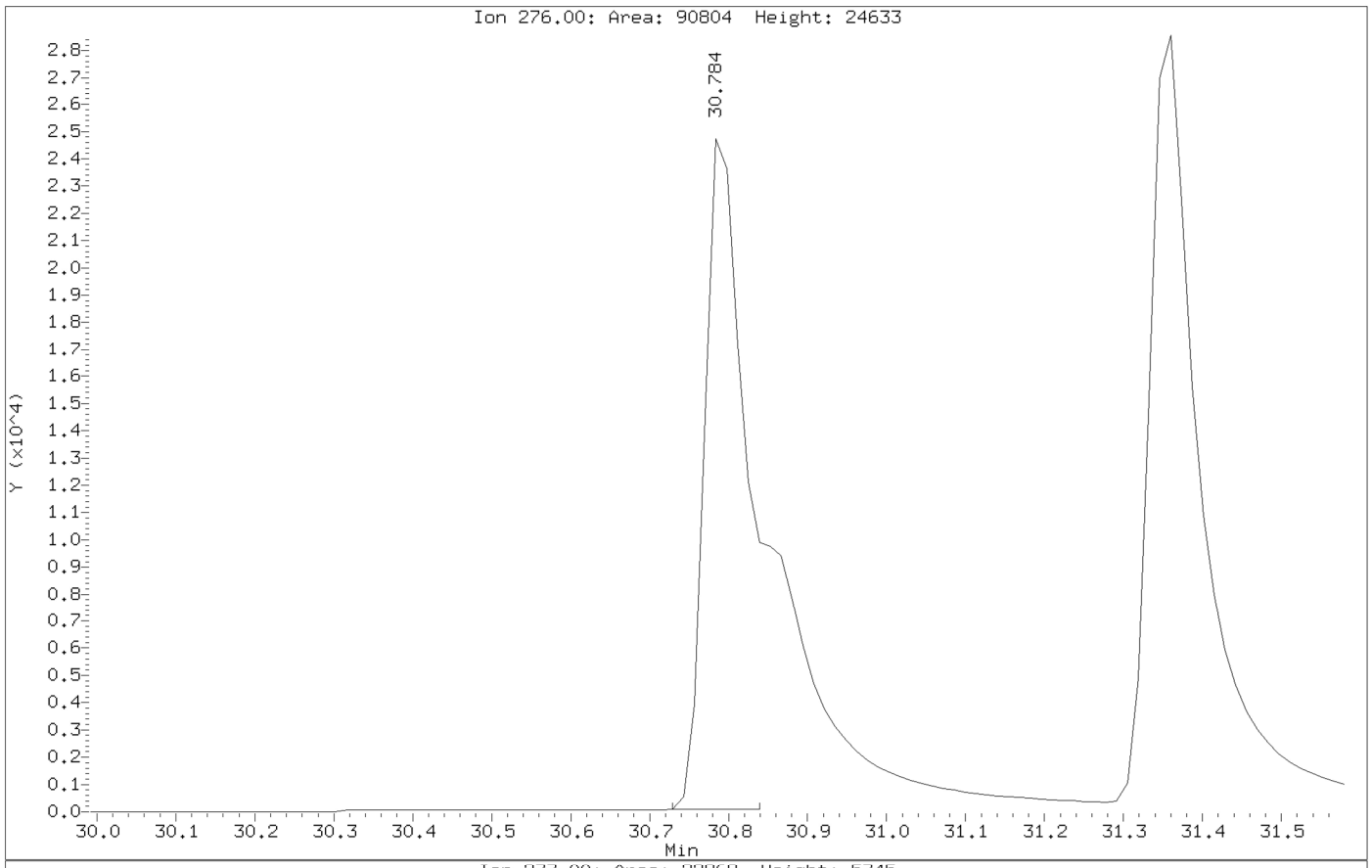
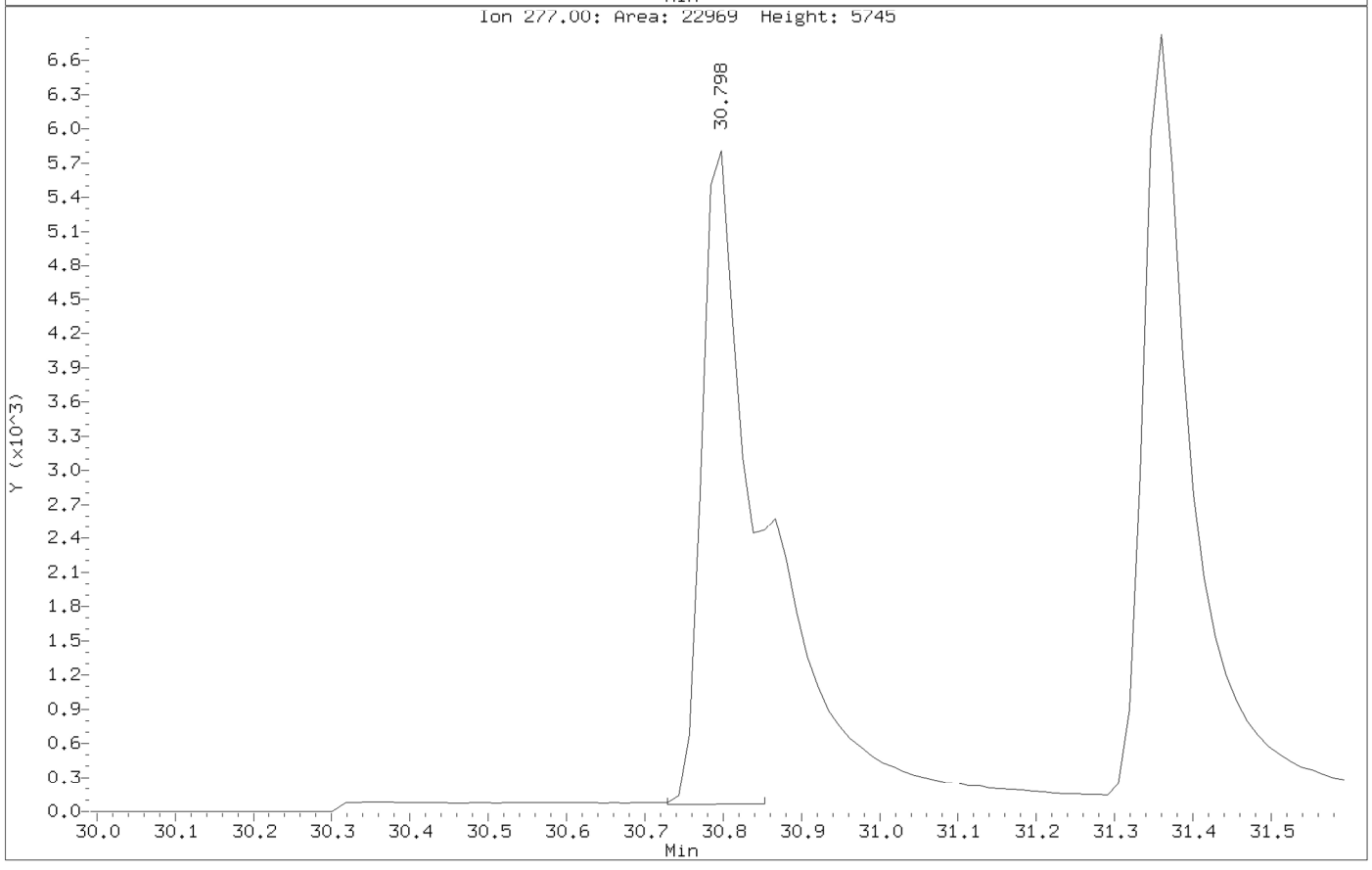
Compound: Indeno(1,2,3-cd)pyrene
CAS Number: 193-39-5

AFTER MANUAL INTEGRATION





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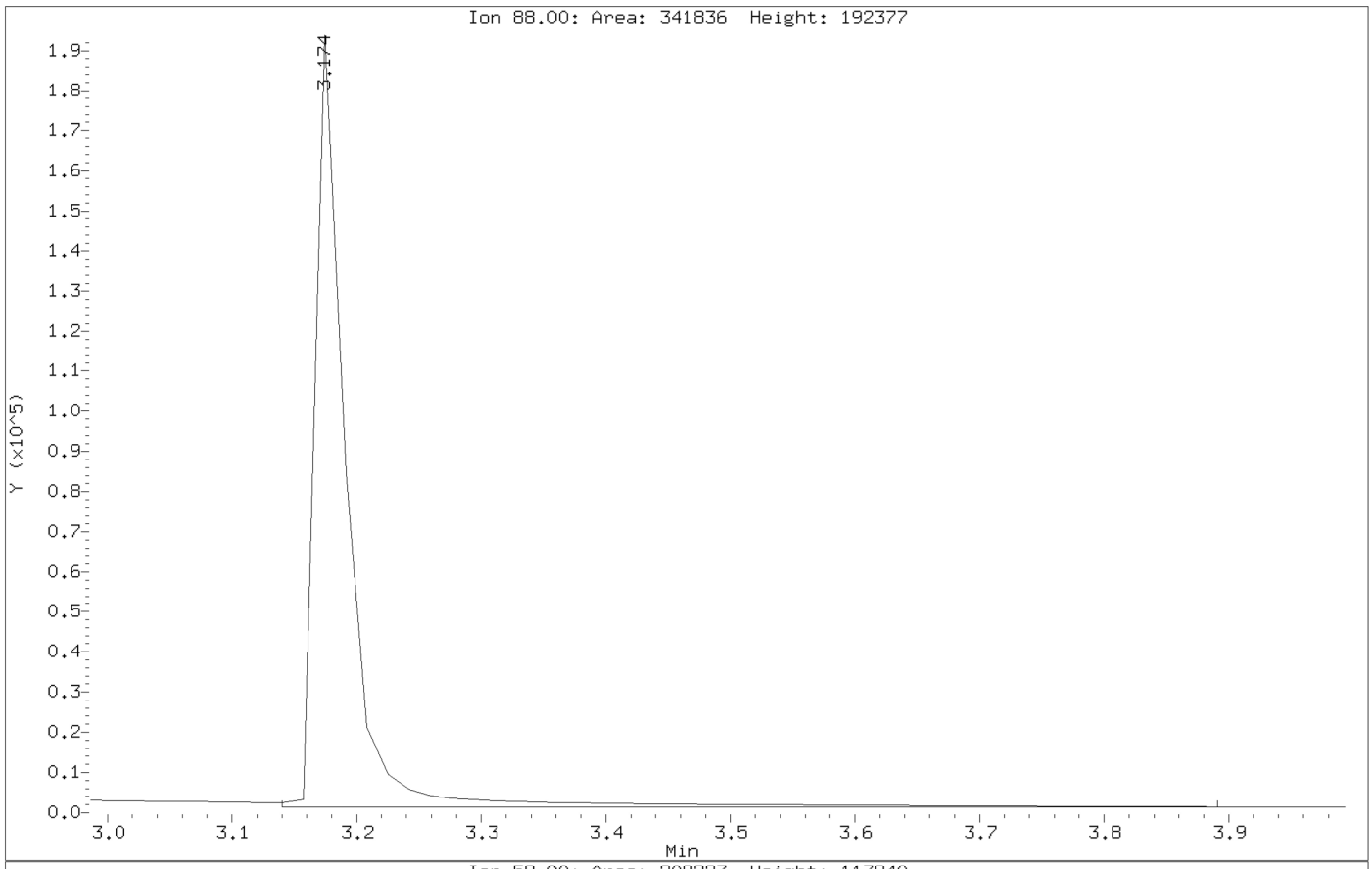
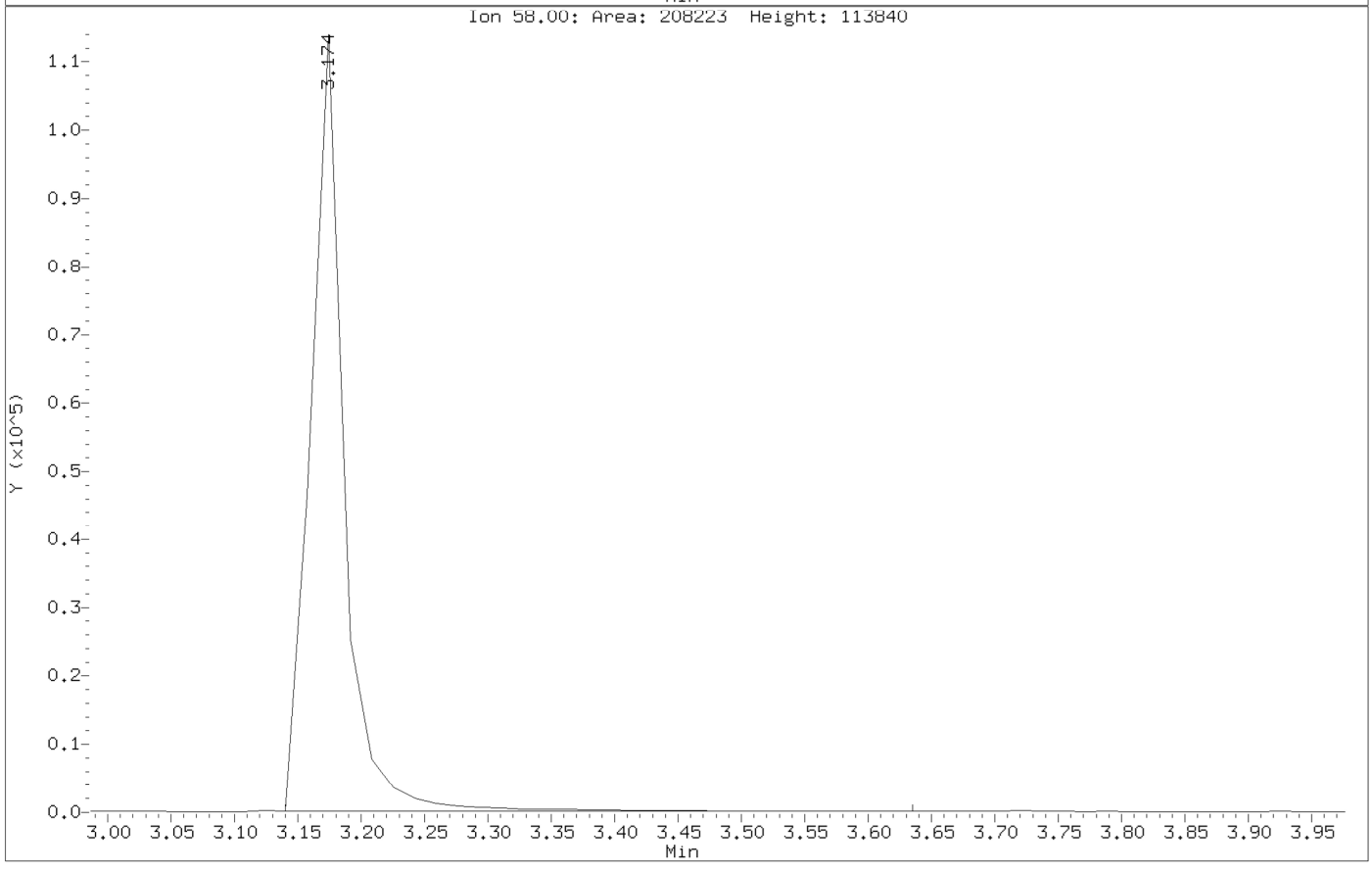
Injection Date: 26-JUN-2014 13:22
Instrument: gcms-n.i
Client Sample ID:

Compound: 1,4-Dioxane
CAS Number: 367-12-4

BEFORE MANUAL INTEGRATION





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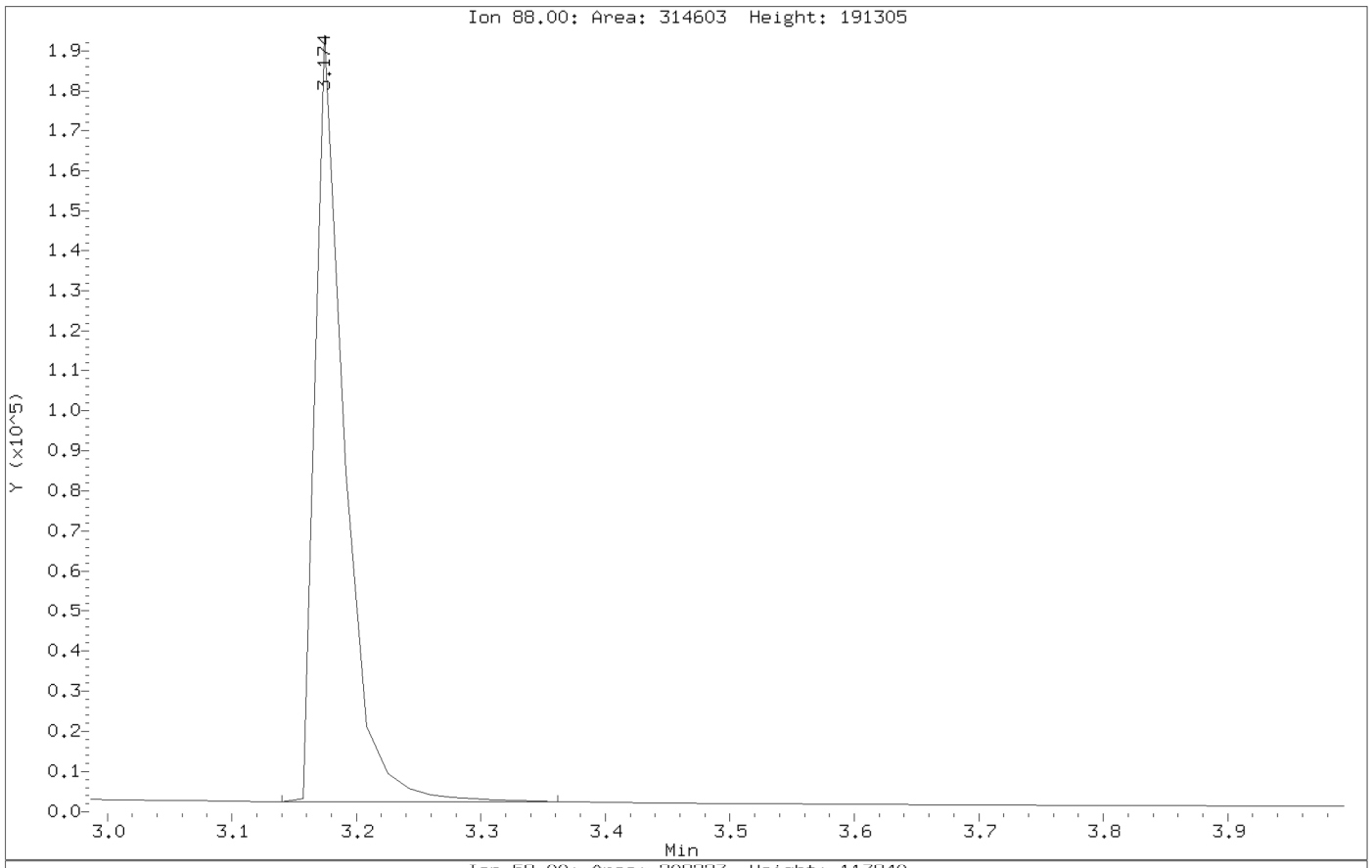
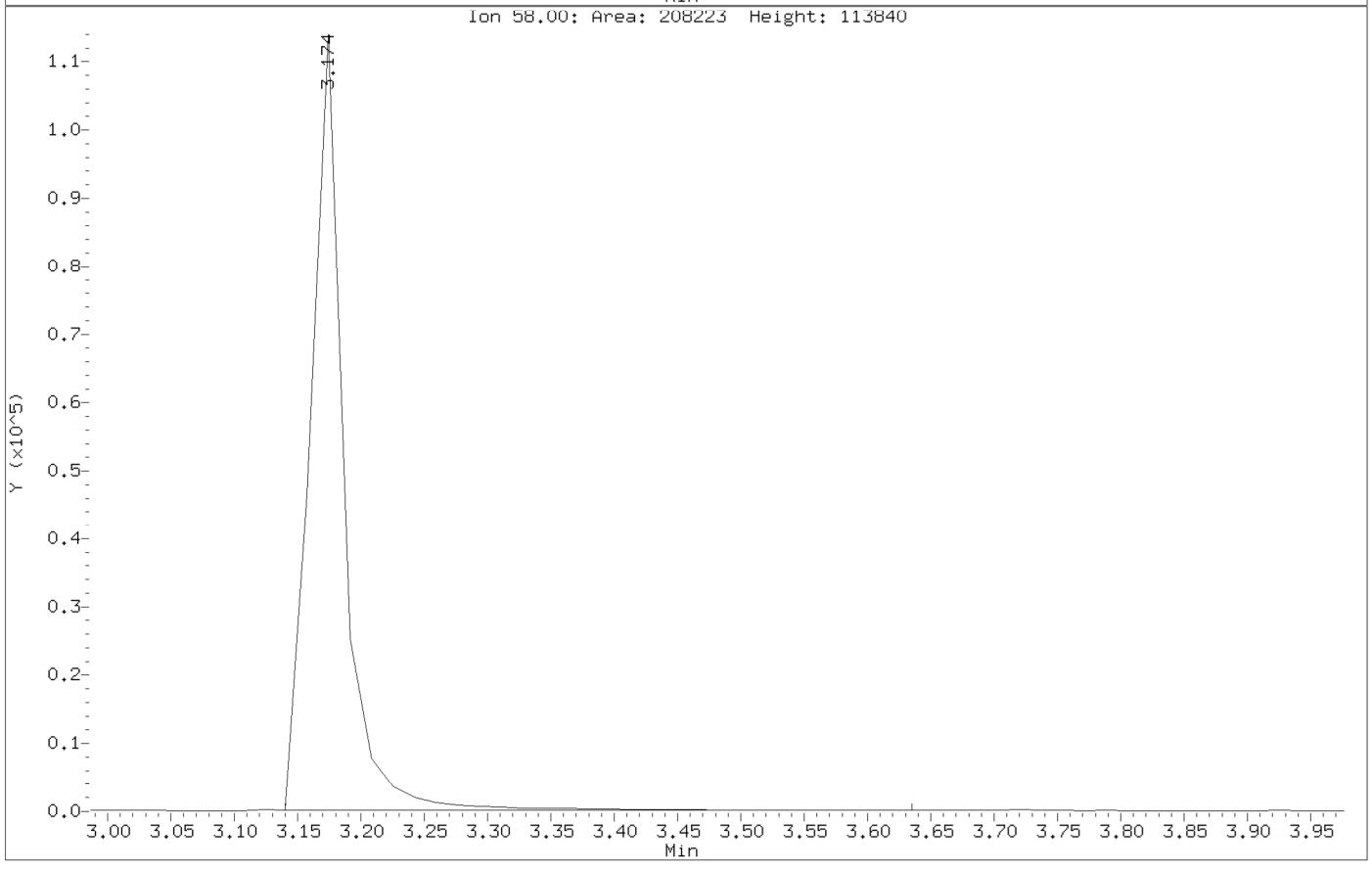
Client Sample ID:

Compound: 1,4-Dioxane
CAS Number: 367-12-4

AFTER MANUAL INTEGRATION





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Injection Date: 26-JUN-2014 11:55
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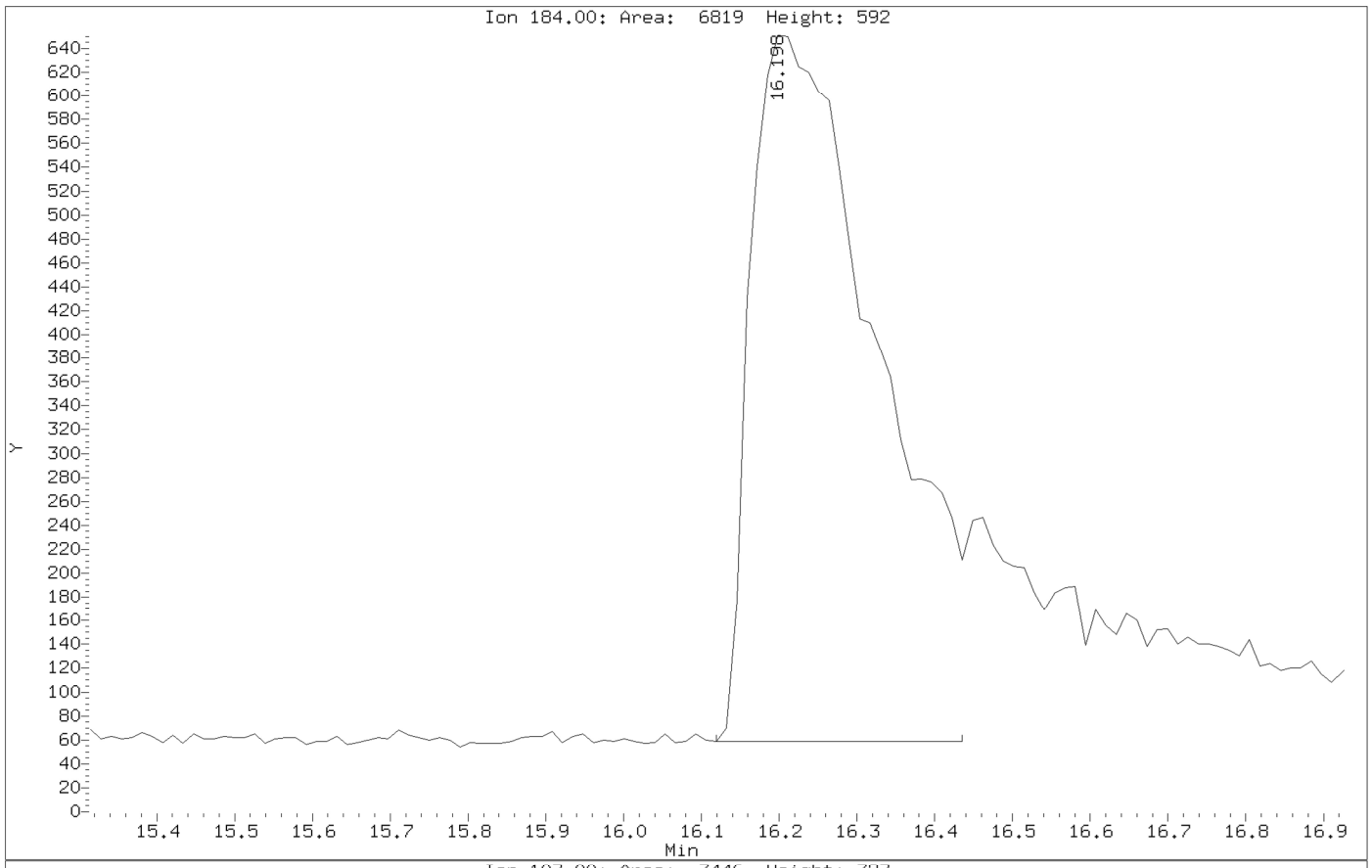
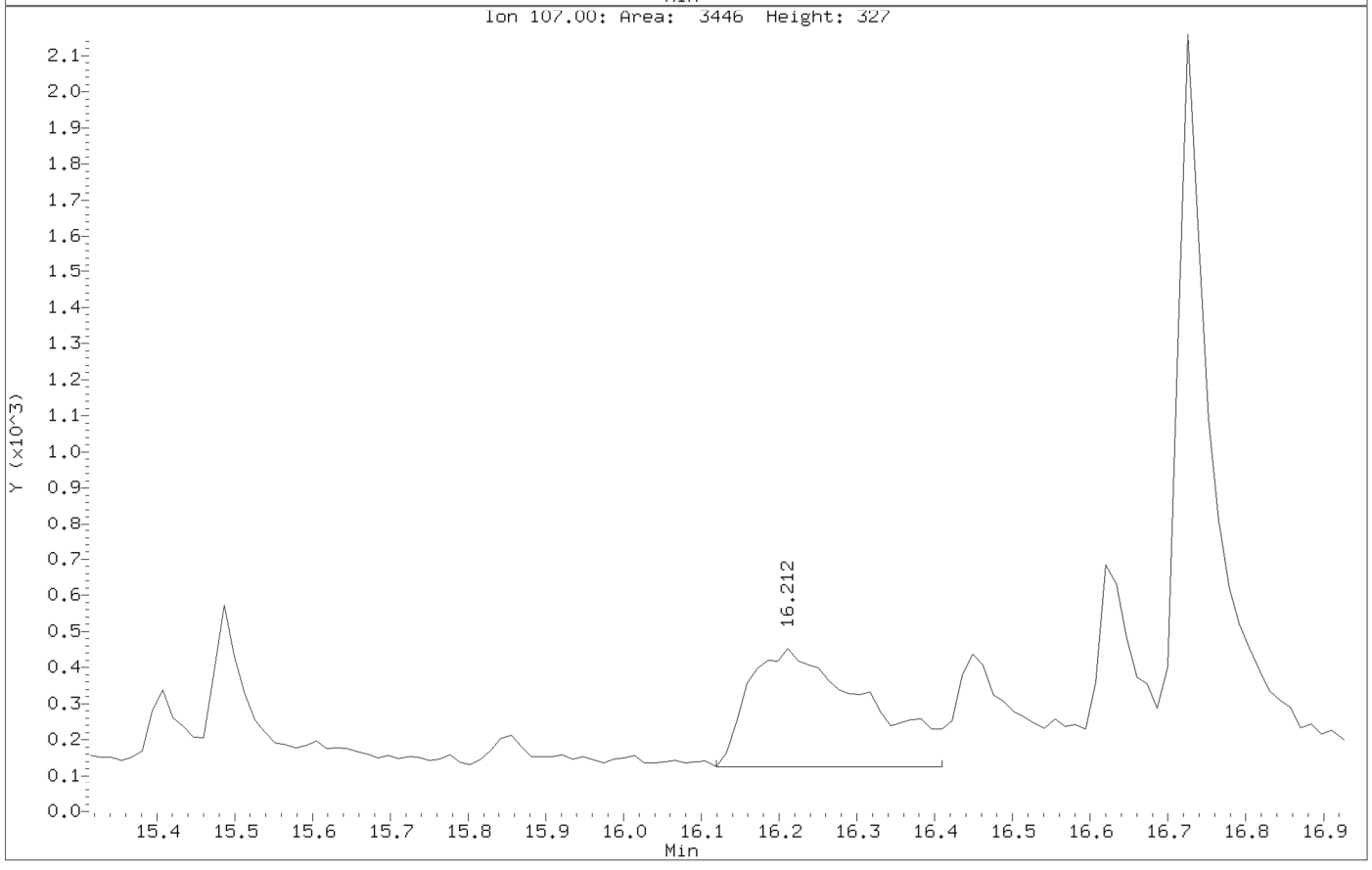
Client Sample ID:

Compound: 2,4-Dinitrophenol
CAS Number: 51-28-5

BEFORE MANUAL INTEGRATION





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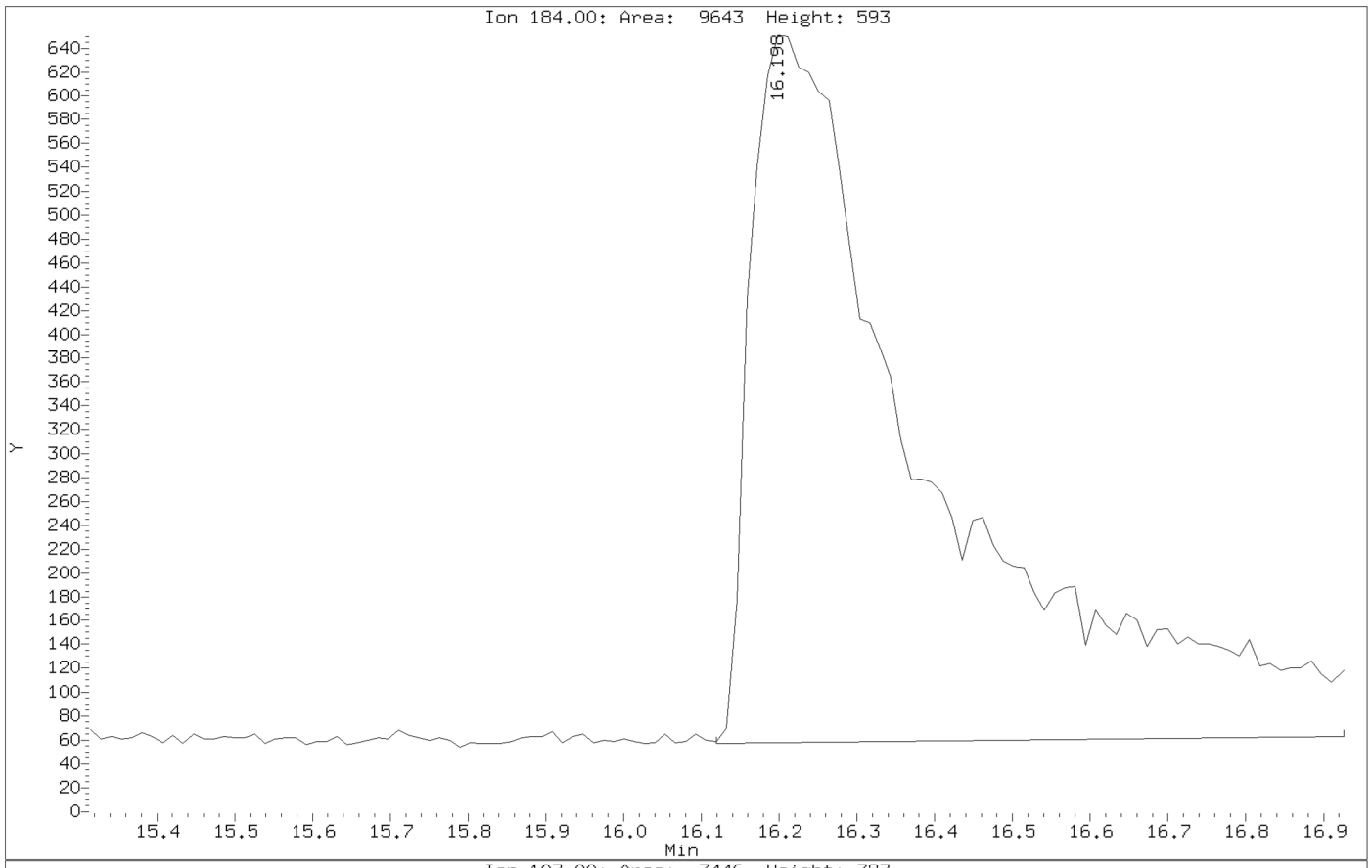
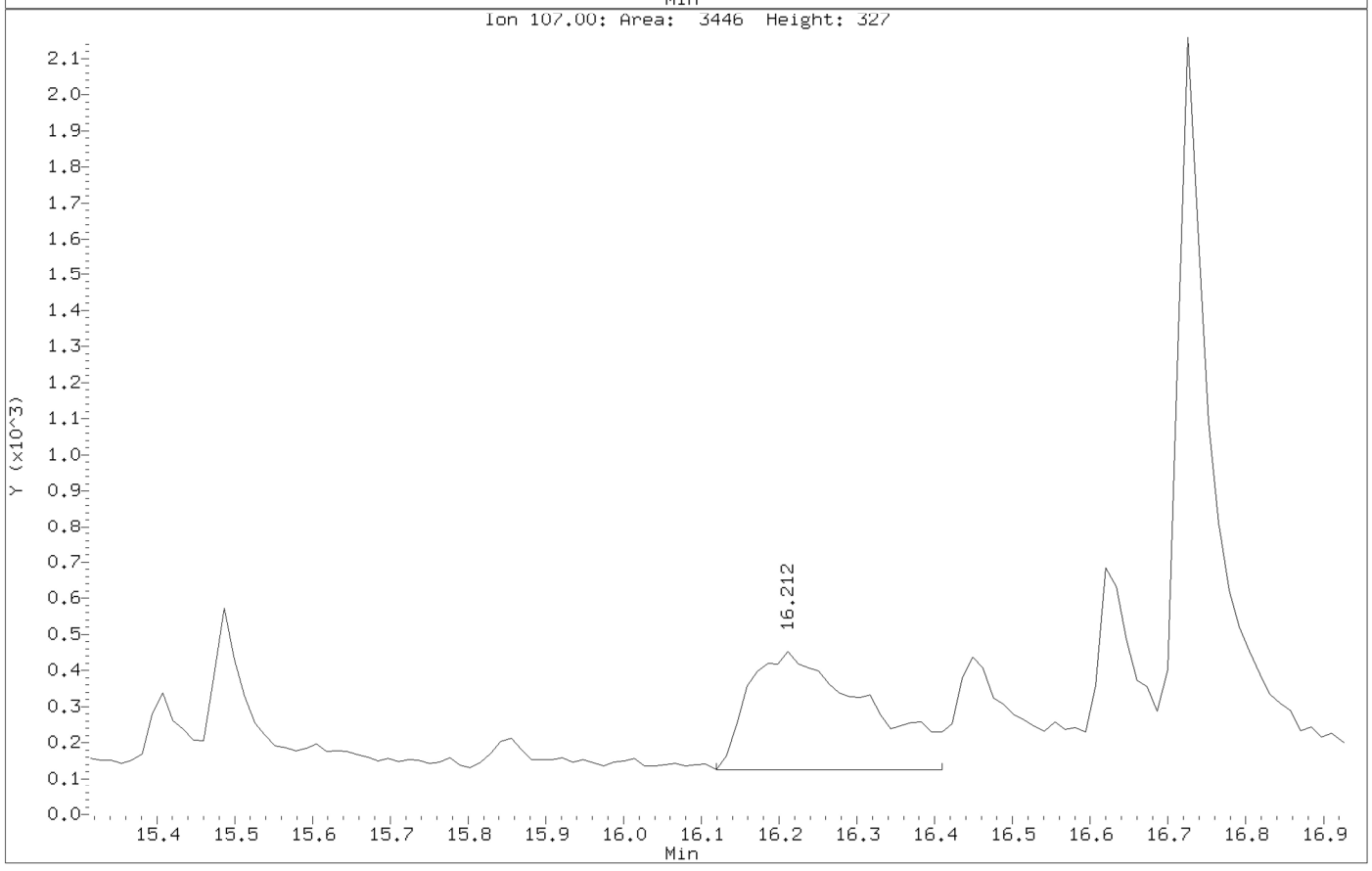
Client Sample ID:

Compound: 2,4-Dinitrophenol
CAS Number: 51-28-5

AFTER MANUAL INTEGRATION





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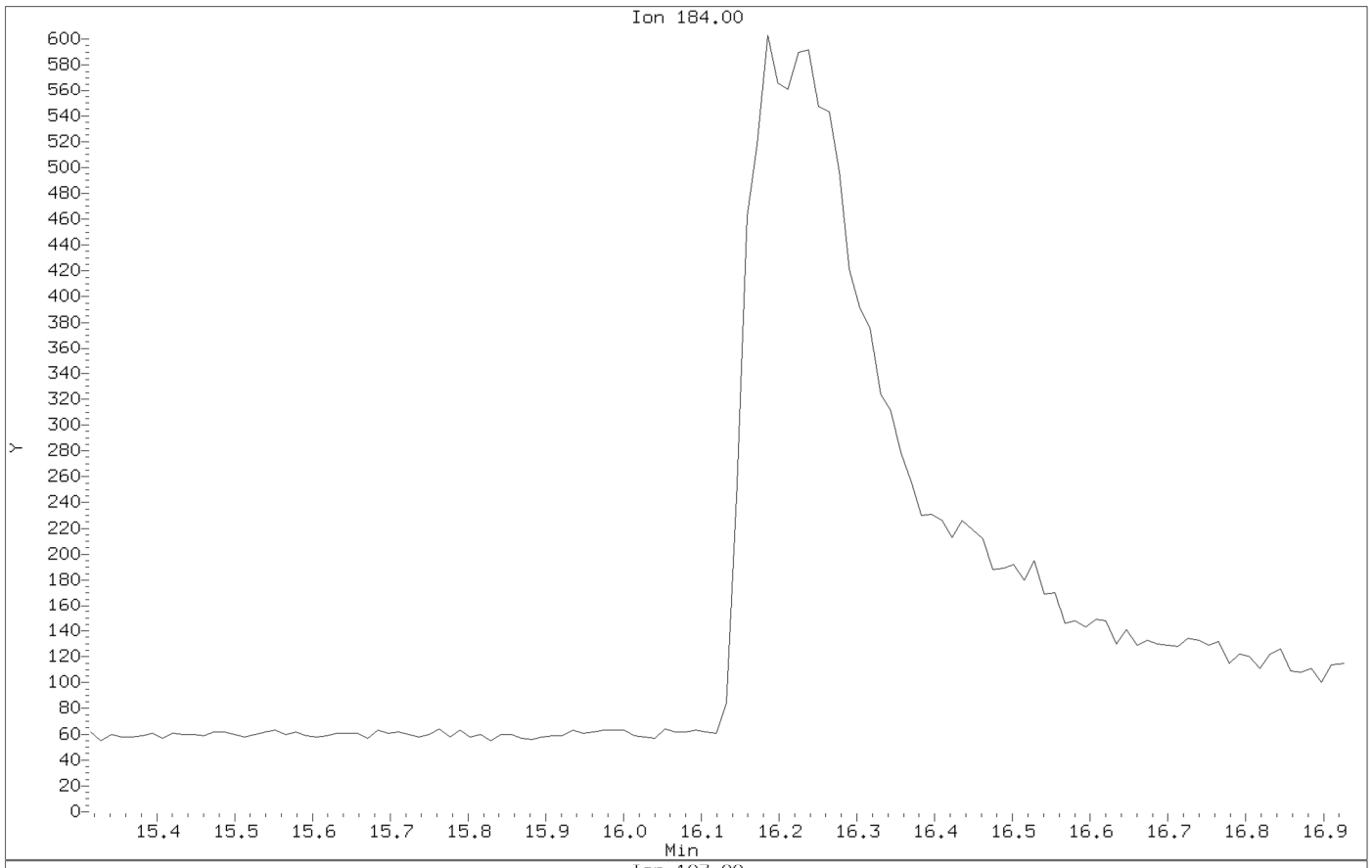
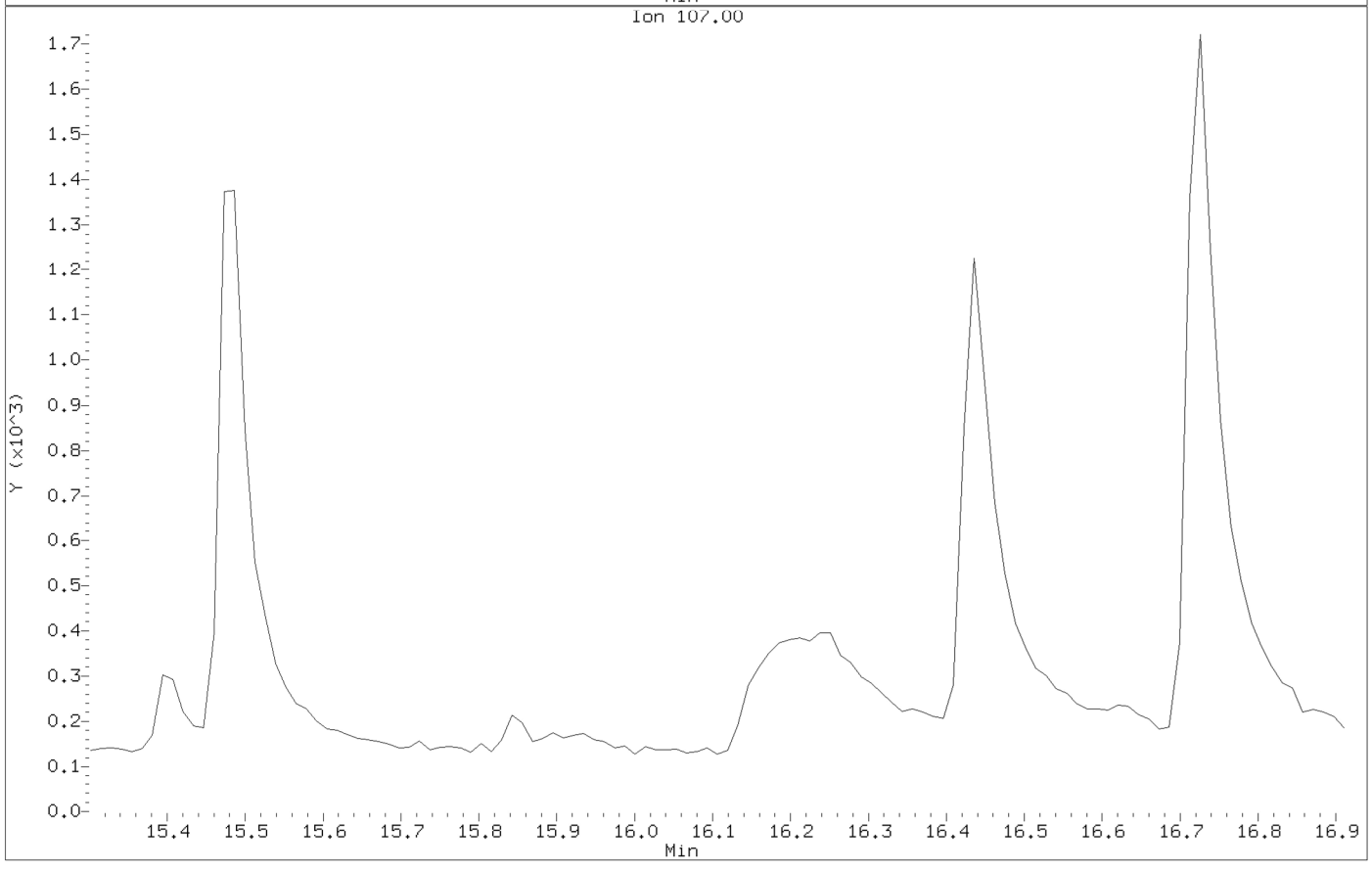
Instrument: gcms-n.i
Client Sample ID:

Compound: 2,4-Dinitrophenol
CAS Number: 51-28-5

BEFORE MANUAL INTEGRATION





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Injection Date: 26-JUN-2014 14:50
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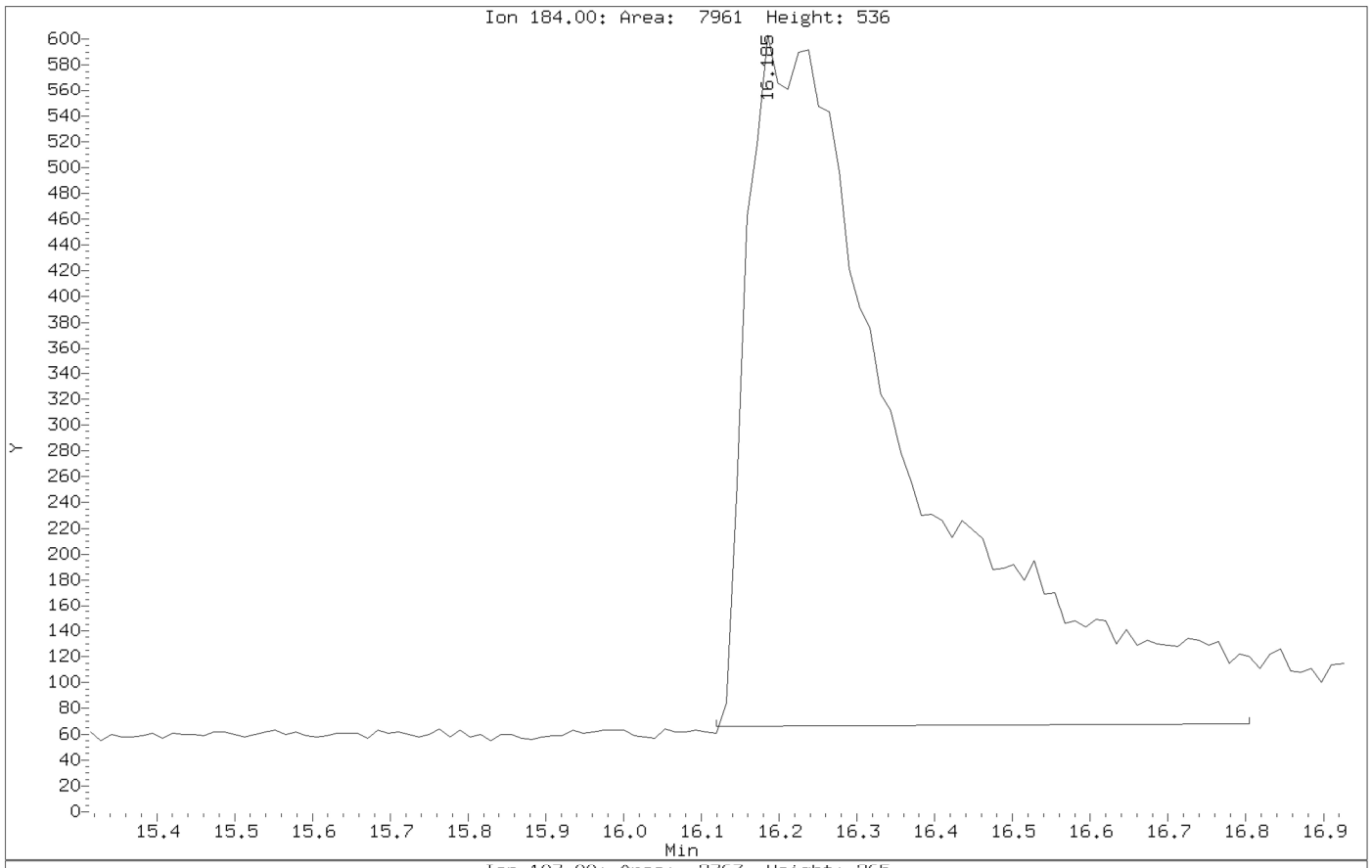
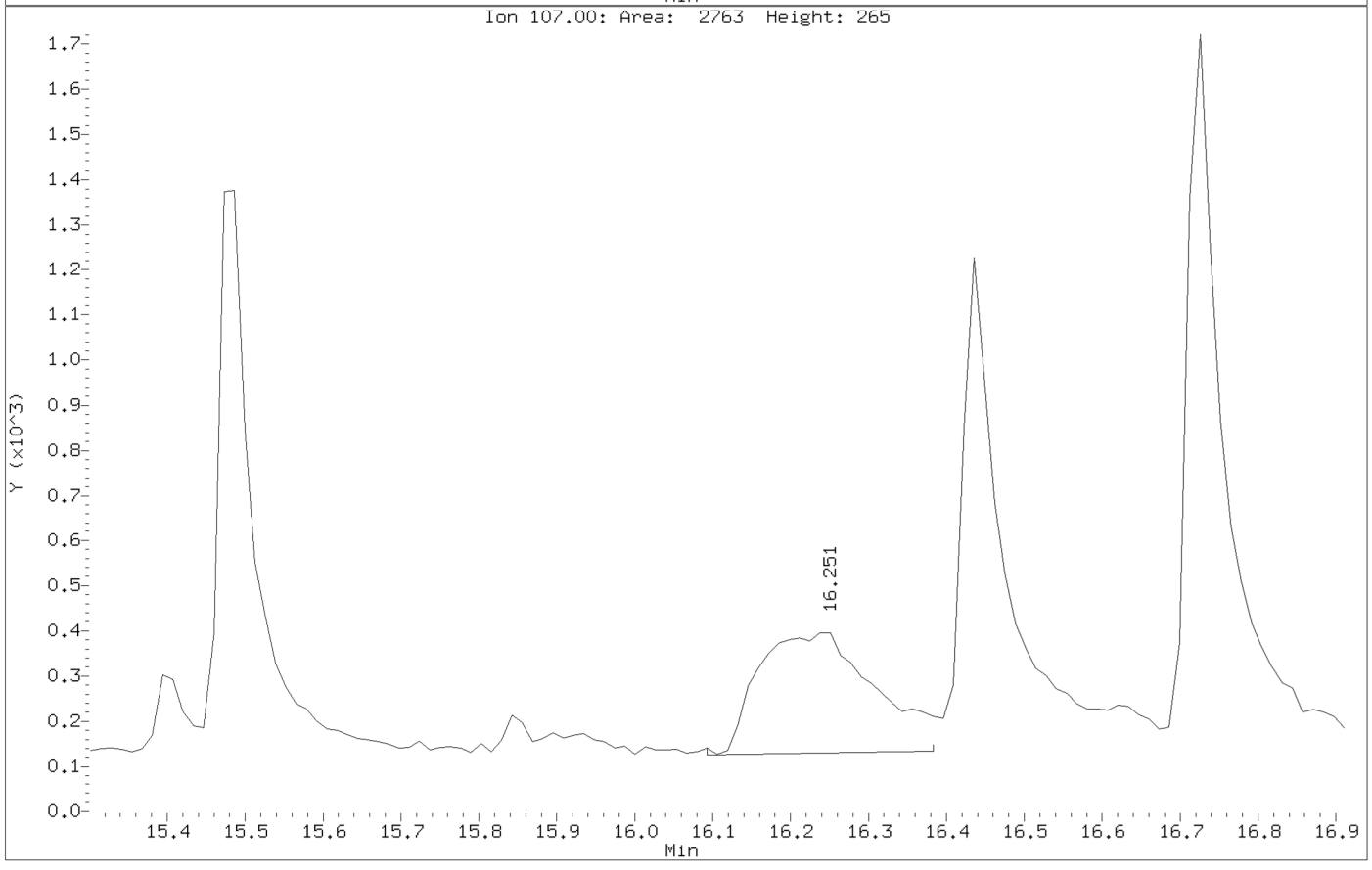
Compound: 2,4-Dinitrophenol
CAS Number: 51-28-5

AFTER MANUAL INTEGRATION





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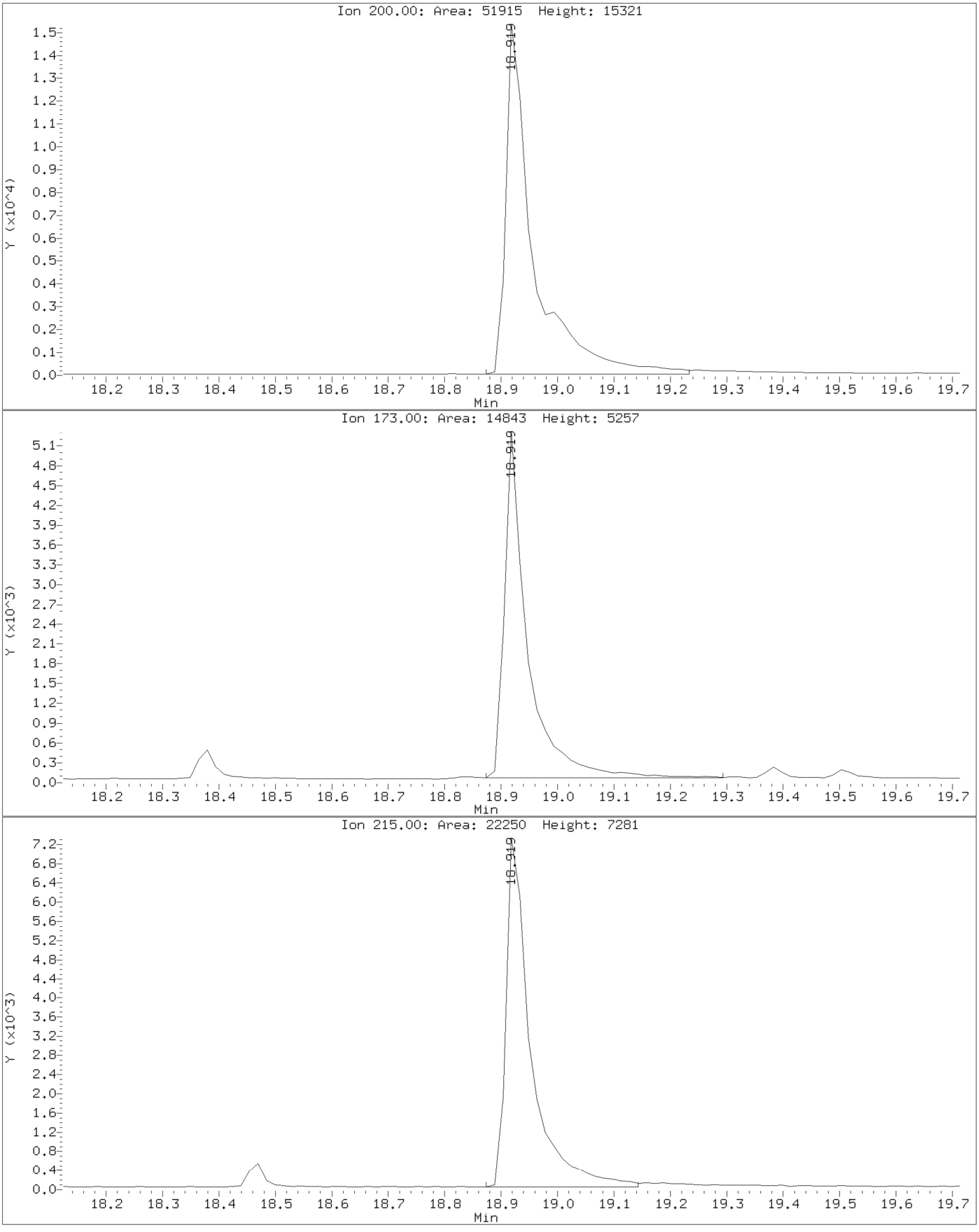
Injection Date: 26-JUN-2014 14:50
Instrument: gcms-n.i
Client Sample ID:

Compound: Atrazine
CAS Number: 1912-24-9

BEFORE MANUAL INTEGRATION



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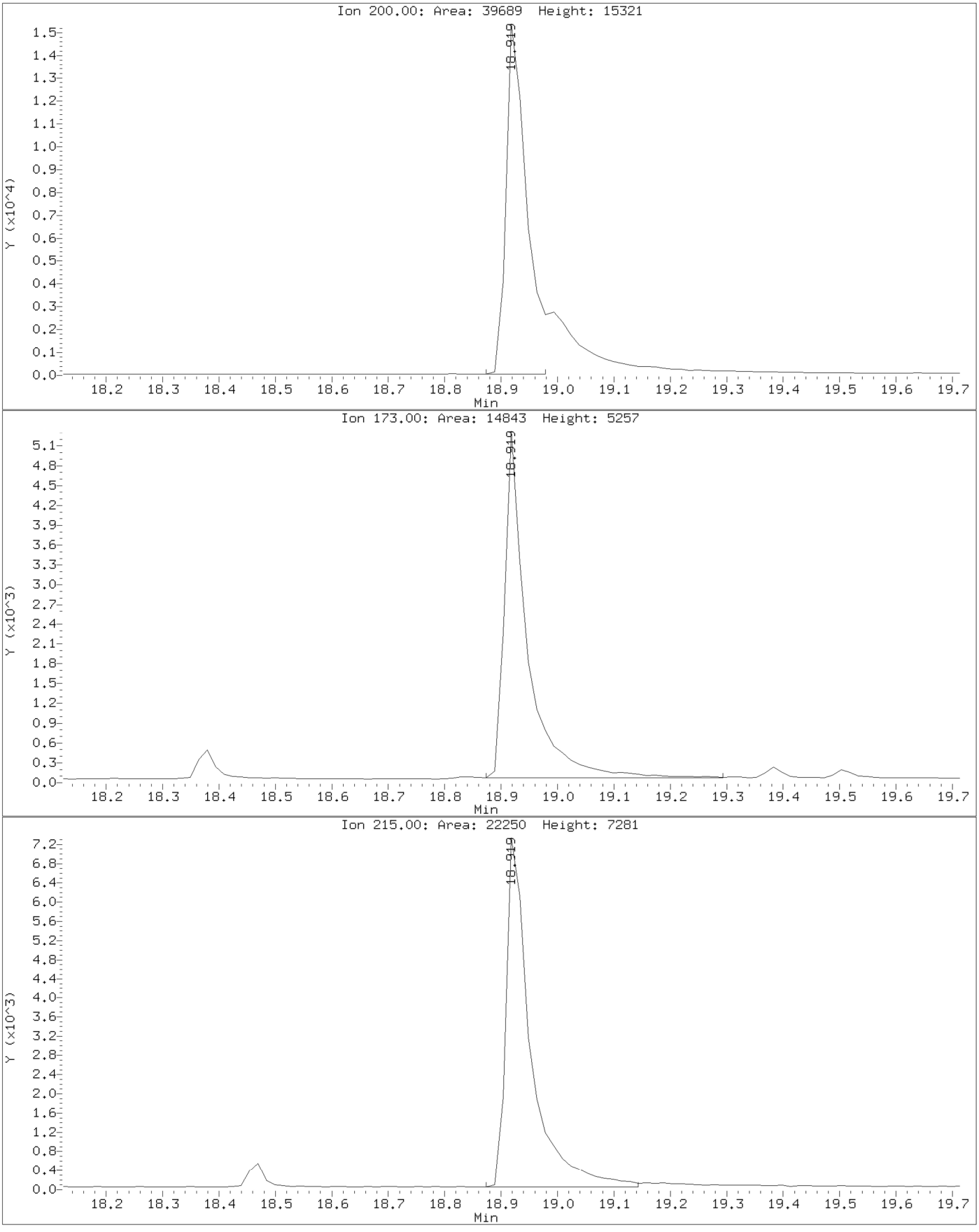
Instrument: gcms-n.i
Client Sample ID:

Compound: Atrazine
CAS Number: 1912-24-9

AFTER MANUAL INTEGRATION



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Injection Date: 26-JUN-2014 14:50
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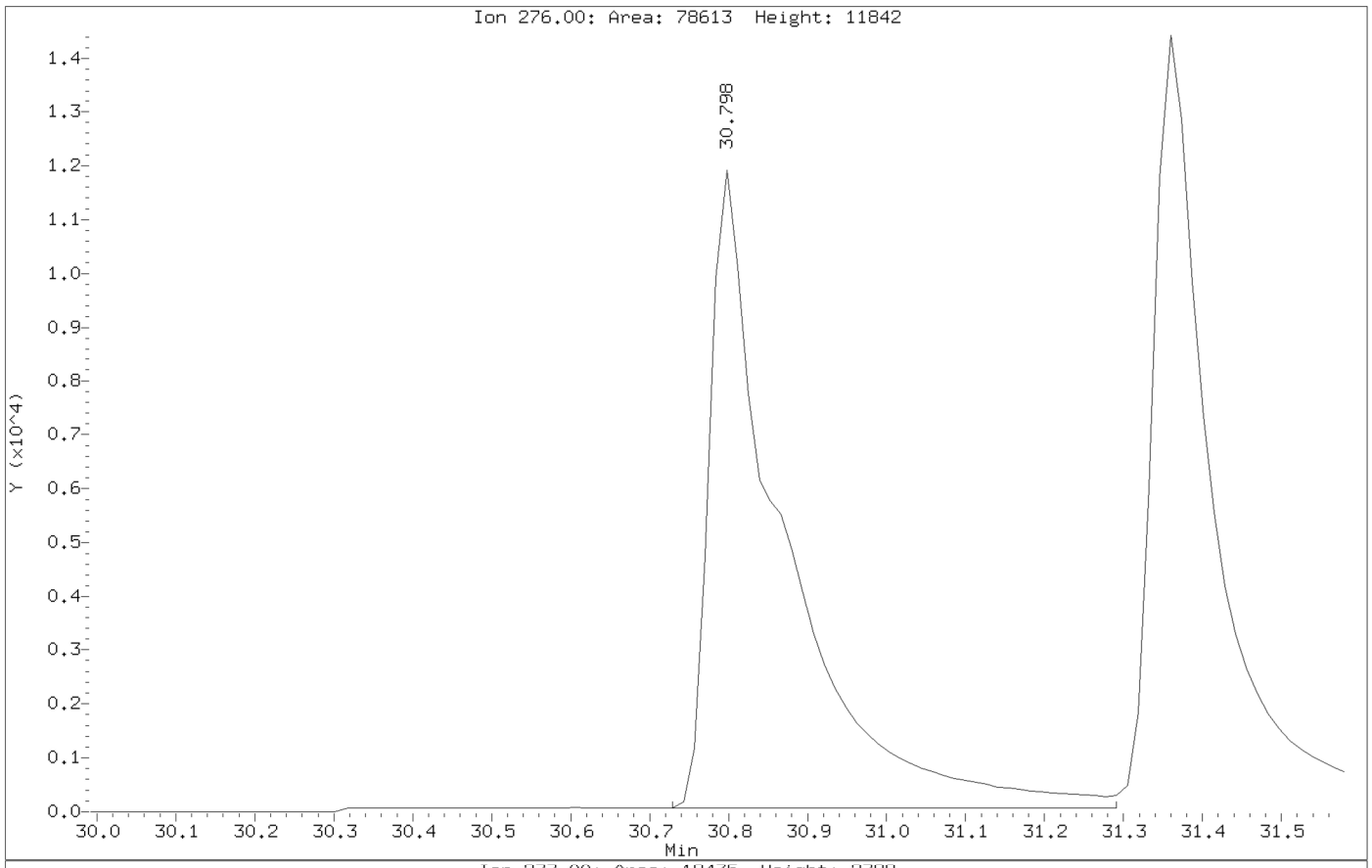
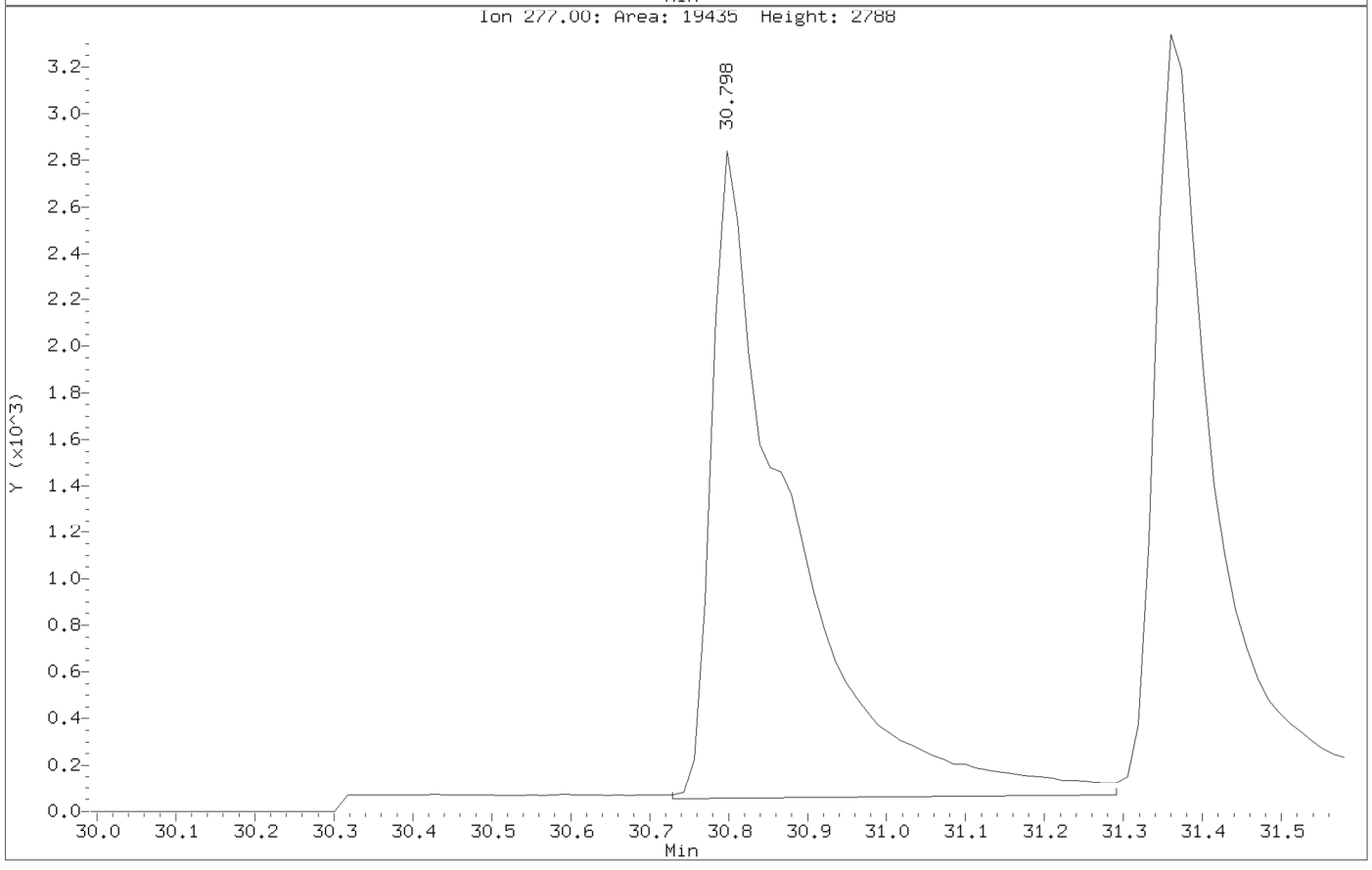
Client Sample ID:

Compound: Indeno(1,2,3-cd)pyrene
CAS Number: 193-39-5

BEFORE MANUAL INTEGRATION





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Injection Date: 26-JUN-2014 14:50
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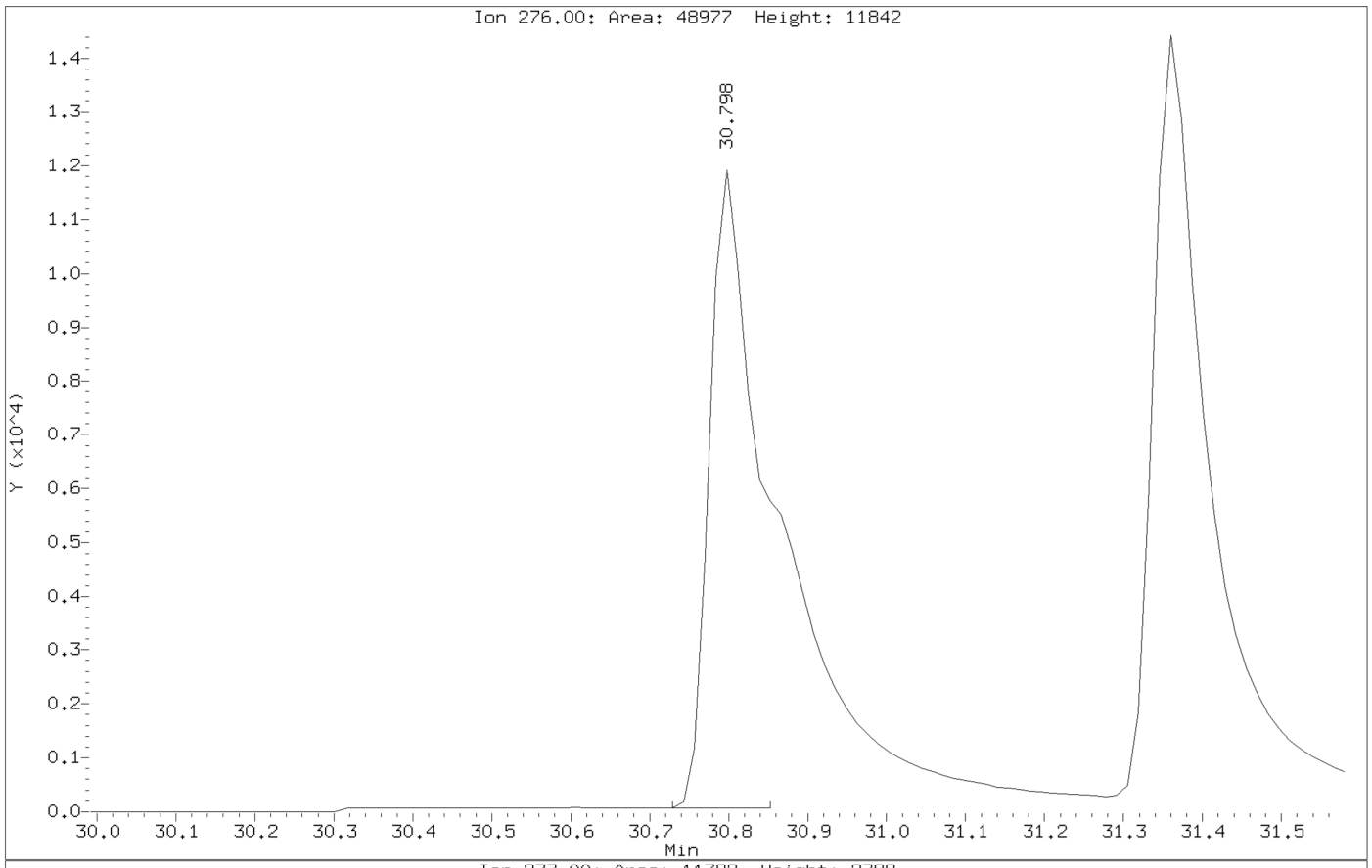
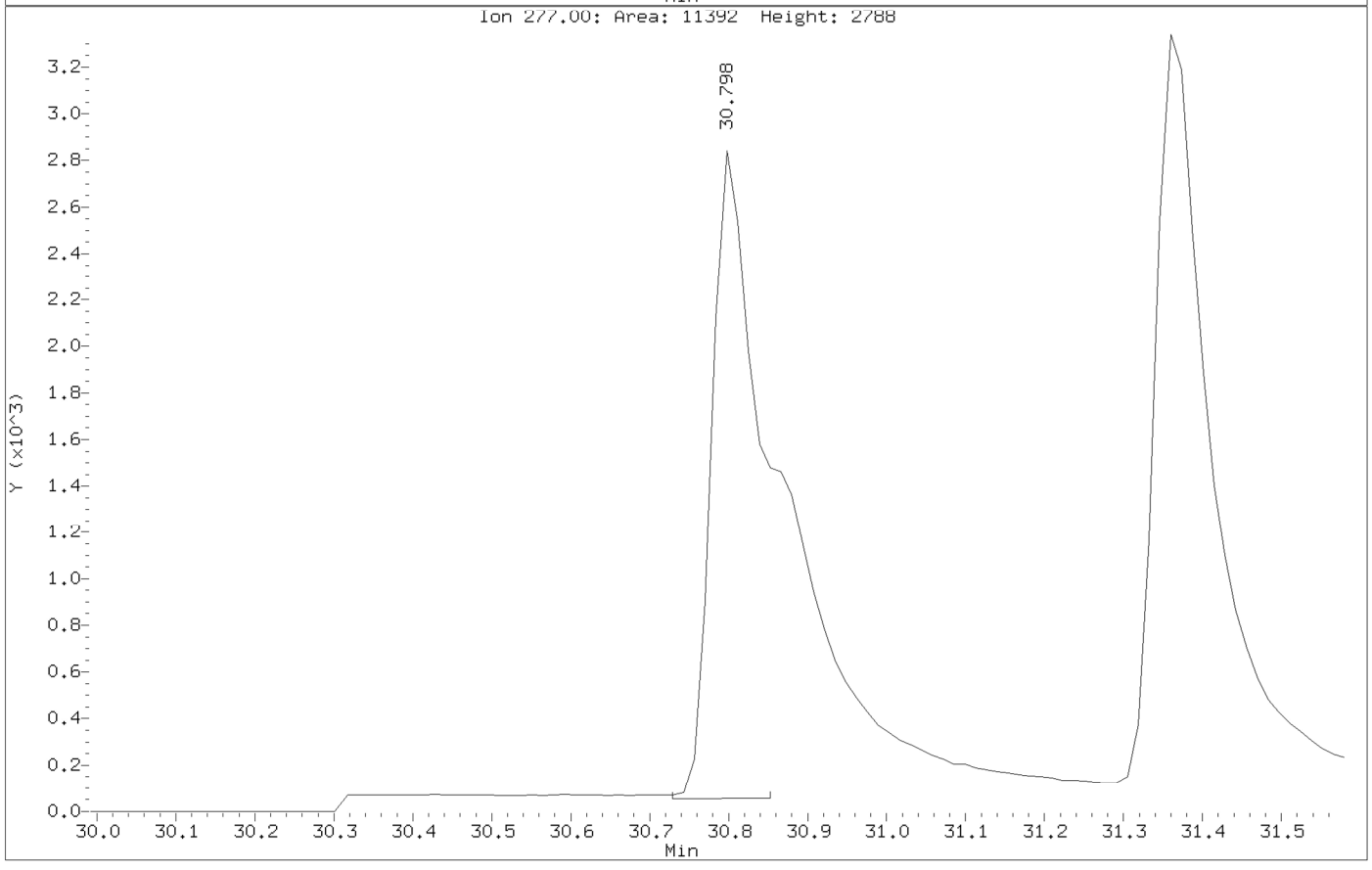
Client Sample ID:

Compound: Indeno(1,2,3-cd)pyrene
CAS Number: 193-39-5

AFTER MANUAL INTEGRATION





Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NCTAMSLANT Cutler CTO WE53 FTA **SDG:** WE53-7
Lab ID : WG145527-2 **Analytical Date:** 06/27/14 12:07
Lab File ID : N2940.D **Instrument ID:** GCMS-N
Initial Calibration Date(s): 06/26/14 10:28 06/26/14 14:06 **Column ID:**

Compound	$\overline{RRF}$/Amount	RF1	CCAL RRF1	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
2 1,4-Dioxane	0.61266	0.60381	0.60381	0.010	-1.44454	20.00000	Averaged	
5 Bis(2-Chloroethyl)ether	1.68312	1.73992	1.73992	0.010	3.37474	20.00000	Averaged	
6 2-Chlorophenol	1.43729	1.48027	1.48027	0.010	2.99053	20.00000	Averaged	
12 2,2'-Oxybis(1-chloropropane	1.94785	1.93607	1.93607	0.010	-0.60445	20.00000	Averaged	
14 N-Nitroso-di-n-propylamine	0.91342	0.96541	0.96541	0.050	5.69144	20.00000	Averaged	
15 3&4-Methylphenol	1.21276	1.25246	1.25246	0.010	3.27297	20.00000	Averaged	
16 Hexachloroethane	0.61397	0.60894	0.60894	0.010	-0.82064	20.00000	Averaged	
17 Nitrobenzene	1.00000	0.77481	0.31188	0.010	-22.51946	20.00000	Linear	*
22 2,4-Dichlorophenol	0.27107	0.29350	0.29350	0.010	8.27751	20.01000	Averaged	
25 Naphthalene	0.99024	1.09922	1.09922	0.010	11.00566	20.00000	Averaged	
26 4-Chloroaniline	0.35165	0.41629	0.41629	0.010	18.38165	20.00000	Averaged	
27 Hexachlorobutadiene	0.15698	0.16361	0.16361	0.010	4.22139	20.01000	Averaged	
31 2-Methylnaphthalene	1.00000	1.15628	0.80512	0.010	15.62823	20.00000	Linear	
33 1,2,4,5-Tetrachlorobenzene	0.62161	0.64708	0.64708	0.010	4.09706	20.00000	Averaged	
34 Hexachlorocyclopentadiene	1.00000	0.91546	0.29730	0.050	-8.45398	20.00000	Linear	
36 2,4,6-Trichlorophenol	0.42216	0.43236	0.43236	0.010	2.41632	20.01000	Averaged	
39 1,1'-Biphenyl	1.76264	1.95475	1.95475	0.010	10.89891	20.00000	Averaged	
40 2-Nitroaniline	0.33304	0.33041	0.33041	0.010	-0.78885	20.00000	Averaged	
42 2,6-Dinitrotoluene	0.34110	0.36896	0.36896	0.010	8.16814	20.00000	Averaged	
44 3-Nitroaniline	1.00000	1.19158	0.23663	0.010	19.15788	20.00000	Quadratic	
47 2,4-Dinitrophenol	3.00000	2.75013	0.08323	0.050	-8.32886	20.00000	Quadratic	
48 Dibenzofuran	1.76686	1.85341	1.85341	0.010	4.89881	20.00000	Averaged	
50 2,4-Dinitrotoluene	1.00000	1.02705	0.39618	0.010	2.70485	20.00000	Linear	
56 4-Nitroaniline	0.18367	0.19512	0.19512	0.010	6.23089	20.00000	Averaged	
57 4,6-Dinitro-2-Methylphenol	3.00000	2.94750	0.10254	0.010	-1.74989	20.00000	Quadratic	
60 Hexachlorobenzene	0.31504	0.31209	0.31209	0.010	-0.93470	20.00000	Averaged	
61 Atrazine	0.17839	0.19193	0.19193	0.010	7.59143	20.00000	Averaged	
62 Pentachlorophenol	0.17458	0.17557	0.17557	0.010	0.56290	20.01000	Averaged	
64 Phenanthrene	1.25974	1.29120	1.29120	0.010	2.49737	20.00000	Averaged	
70 Pyrene	1.00000	1.14038	2.64502	0.010	14.03848	20.00000	Linear	
72 Benzo(a)anthracene	1.22168	1.22969	1.22969	0.010	0.65582	20.00000	Averaged	
74 Chrysene	1.00000	1.10620	1.63359	0.010	10.61972	20.00000	Linear	
75 3,3'-Dichlorobenzidine	0.31047	0.32990	0.32990	0.010	6.25642	20.00000	Averaged	
76 bis(2-Ethylhexyl)phthalate	3.00000	3.75923	2.91267	0.010	25.30769	20.00000	Quadratic	*
78 Benzo(b)fluoranthene	1.28630	1.29214	1.29214	0.010	0.45437	20.00000	Averaged	
80 Benzo(a)pyrene	1.26772	1.21299	1.21299	0.010	-4.31767	20.01000	Averaged	
82 Indeno(1,2,3-cd)pyrene	0.62878	0.51984	0.51984	0.010	-17.32633	20.00000	Averaged	
83 Dibenzo(a,h)anthracene	0.70832	0.53518	0.53518	0.010	-24.44370	20.00000	Averaged	*
30 2-Methylnaphthalene-D10	1.20748	1.30249	1.30249	0.010	7.86869	20.00000	Averaged	
35 2,4-Dibromophenol	0.39364	0.40136	0.40136	0.010	1.96182	20.00000	Averaged	
52 Fluorene-D10	0.92133	0.94393	0.94393	0.010	2.45363	20.00000	Averaged	

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NCTAMSLANT Cutler CTO WE53 FTA
SDG: WE53-7
Lab ID : WG145527-2
Analytical Date: 06/27/14 12:07
Lab File ID : N2940.D
Instrument ID: GCMS-N
Initial Calibration Date(s): 06/26/14 10:28 06/26/14 14:06
Column ID:

Compound	$\overline{RRF}$/Amount	RF1	CCAL RRF1	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
69 Pyrene-D10	1.39539	1.55111	1.55111	0.010	11.15951	20.00000	Averaged

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-n.i\N062714.b\N2940.D
Report Date: 11-Jul-2014 13:29

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N062714.b\N2940.D
Lab Smp Id: WG145527-2
Inj Date : 27-JUN-2014 12:07 MS Autotune Date: 12-NOV-2013 09:32
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG145527-2,WE53-7
Misc Info : WG145527,WG145527,WG145455-4,SH4401-2
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N062714.b\NSPSIM09.m
Meth Date : 27-Jun-2014 12:41 cgomez Quant Type: ISTD
Cal Date : 26-JUN-2014 13:22 Cal File: N2926.D
Als bottle: 2 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ttcutler53ocs.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	2	1,4-Dioxane	88	3.242	3.242	(0.361)	54985	1.00000	0.986(a)	
	5	Bis(2-Chloroethyl)ether	93	8.494	8.494	(0.947)	158444	1.00000	1.03	
	6	2-Chlorophenol	128	8.560	8.560	(0.954)	404397	3.00000	3.09	
*	8	1,4-Dichlorobenzene-D4	152	8.971	8.971	(1.000)	72851	0.80000	(a)	
	12	2,2'-Oxybis(1-chloropropane)	45	9.667	9.667	(1.078)	176306	1.00000	0.994	
	14	N-Nitroso-di-n-propylamine	70	9.950	9.950	(1.109)	87914	1.00000	1.06	
	15	3&4-Methylphenol	108	10.045	10.045	(1.120)	342160	3.00000	3.10	
	16	Hexachloroethane	117	10.029	10.029	(1.118)	55452	1.00000	0.992	
	17	Nitrobenzene	77	10.218	10.218	(0.869)	97423	1.00000	0.775	
	22	2,4-Dichlorophenol	162	11.558	11.558	(0.983)	275052	3.00000	3.25	
*	24	Naphthalene-D8	136	11.763	11.763	(1.000)	249902	0.80000	(a)	
	25	Naphthalene	128	11.797	11.797	(1.003)	343372	1.00000	1.11	
	26	4-Chloroaniline	127	12.053	12.053	(1.025)	130039	1.00000	1.18	
	27	Hexachlorobutadiene	225	12.190	12.190	(1.036)	51107	1.00000	1.04	
$	30	2-Methylnaphthalene-D10	152	13.353	13.353	(0.843)	157901	1.00000	1.08	
	31	2-Methylnaphthalene	142	13.429	13.429	(1.142)	251500	1.00000	1.16	
	33	1,2,4,5-Tetrachlorobenzene	216	13.862	13.862	(0.875)	78445	1.00000	1.04	
	34	Hexachlorocyclopentadiene	237	13.862	13.862	(0.875)	36042	1.00000	0.915	
$	35	2,4-Dibromophenol	252	14.107	14.107	(0.890)	48657	1.00000	1.02	
	36	2,4,6-Trichlorophenol	196	14.182	14.182	(0.895)	157244	3.00000	3.07	

Data File: \\target_server\gg\chem\gcms-n.i\N062714.b\N2940.D
Report Date: 11-Jul-2014 13:29

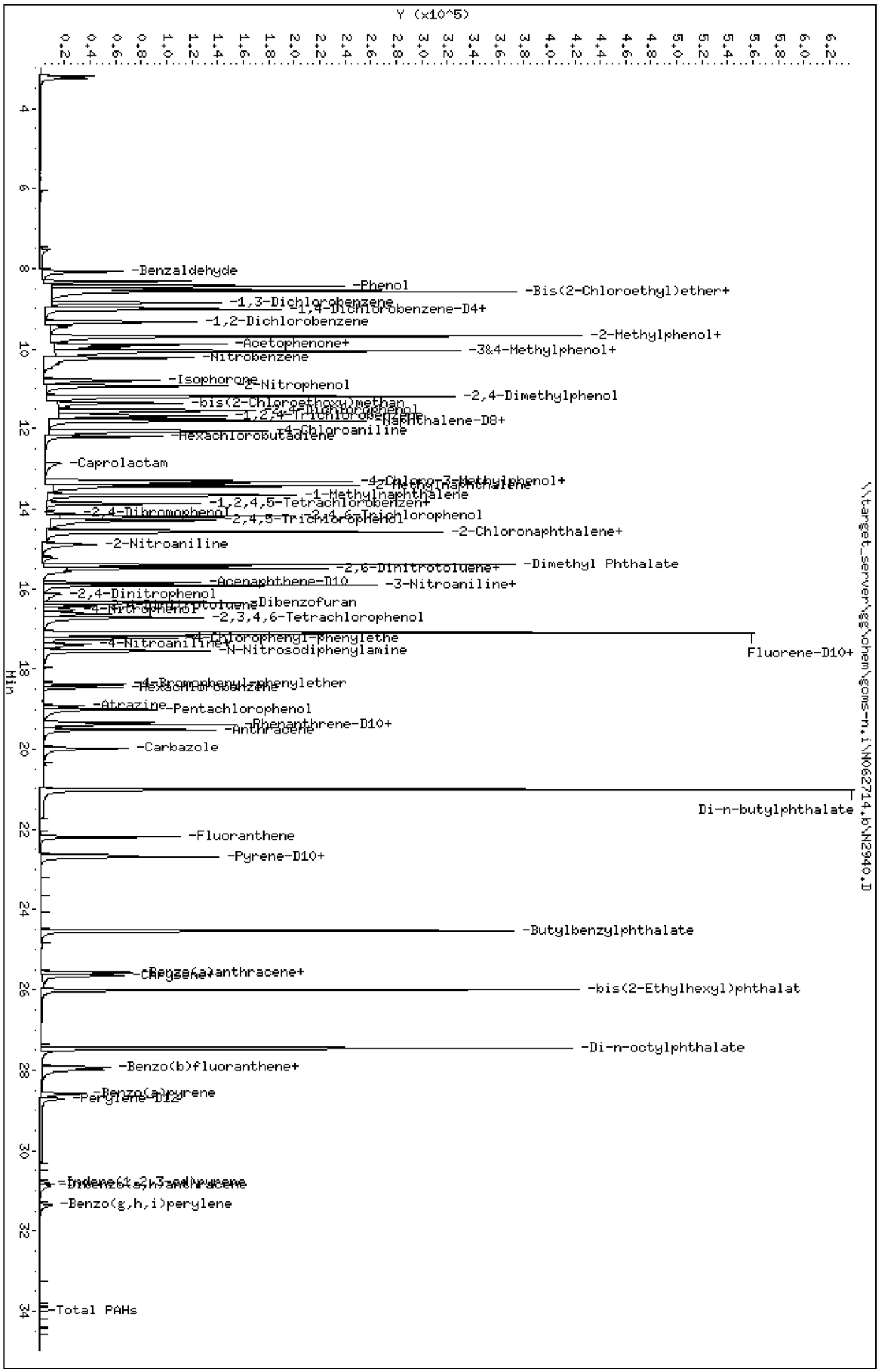
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	39 1,1'-Biphenyl	154	14.559	14.559	(0.919)	236974	1.00000	1.11	
	40 2-Nitroaniline	65	14.879	14.879	(0.939)	40056	1.00000	0.992	
	42 2,6-Dinitrotoluene	165	15.473	15.473	(0.977)	44729	1.00000	1.08	
	44 3-Nitroaniline	138	15.881	15.881	(1.002)	28687	1.00000	1.19	
*	45 Acenaphthene-D10	164	15.842	15.842	(1.000)	96984	0.80000	(a)	
	47 2,4-Dinitrophenol	184	16.132	16.132	(1.018)	30271	3.00000	2.75	
	48 Dibenzofuran	168	16.343	16.343	(1.032)	224689	1.00000	1.05	
	50 2,4-Dinitrotoluene	165	16.435	16.435	(1.037)	48029	1.00000	1.03	
$	52 Fluorene-D10	174	17.068	17.068	(1.077)	114433	1.00000	1.02	
	56 4-Nitroaniline	138	17.338	17.338	(1.094)	23654	1.00000	1.06	
	57 4,6-Dinitro-2-Methylphenol	198	17.386	17.386	(0.900)	53108	3.00000	2.95	
	60 Hexachlorobenzene	284	18.454	18.454	(0.955)	53881	1.00000	0.991	
	61 Atrazine	200	18.918	18.918	(0.979)	33135	1.00000	1.08	
	62 Pentachlorophenol	266	18.993	18.993	(0.983)	90931	3.00000	3.02	
*	63 Phenanthrene-D10	188	19.323	19.323	(1.000)	138115	0.80000	(a)	
	64 Phenanthrene	178	19.383	19.383	(1.003)	222917	1.00000	1.02	
$	69 Pyrene-D10	212	22.646	22.646	(0.885)	115176	1.00000	1.11	
	70 Pyrene	202	22.687	22.687	(0.887)	196403	1.00000	1.14	
	72 Benzo(a)anthracene	228	25.562	25.562	(0.999)	91309	1.00000	1.01	
*	73 Chrysene-D12	240	25.589	25.589	(1.000)	59403	0.80000	(a)	
	75 3,3'-Dichlorobenzidine	252	25.657	25.657	(1.003)	24496	1.00000	1.06	
	74 Chrysene	228	25.643	25.643	(1.002)	121300	1.00000	1.11	
	76 bis(2-Ethylhexyl)phthalate	149	26.008	26.008	(1.016)	648831	3.00000	3.76	
	78 Benzo(b)fluoranthene	252	27.934	27.934	(0.973)	71990	1.00000	1.00	
	80 Benzo(a)pyrene	252	28.586	28.586	(0.996)	67580	1.00000	0.957	
*	81 Perylene-D12	264	28.706	28.706	(1.000)	44571	0.80000	(a)	
	82 Indeno(1,2,3-cd)pyrene	276	30.797	30.797	(1.073)	28962	1.00000	0.827 (MH)	M3
	83 Dibenzo(a,h)anthracene	278	30.893	30.893	(1.076)	29817	1.00000	0.756 (M)	M9

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.



2:41 pm, Jul 11, 2014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Date : 27-JUN-2014 12:07
Client ID:
Sample Info: WG145527-2,WE53-7
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n,i\N062714,b\N2940,D
Y (x10^5)
Min
-Benzaldehyde
-Phenol
-Bis(2-Chloroethyl)ether+
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-2-Methylphenol+
-Acetophenone+
-3&4-Methylphenol+
-Nitrobenzene
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol
-bis(2-Chloroethoxy)methan
-2,4-Dichlorophenol
-1,2,4-Trichlorobenzene
-Naphthalene-D8+
-4-Chloroaniline
-Hexachlorobutadiene
-Caprolactam
-4-Chloro-3-Methylphenol+
-2-Methylnaphthalene
-1-Methylnaphthalene
-1,2,4,5-Tetrachlorobenzen+
-2,4-Dibromophenol
-2,4,6-Trichlorophenol
-2,4,5-Trichlorophenol
-2-Chloronaphthalene+
-2-Nitroaniline
-2,6-Dinitrotoluene+
-Dimethyl Phthalate
-Acenaphthene-D10
-3-Nitroaniline+
-2,4-Dinitrophenol
-4-Nitrophenol
-Dibenzofuran
-2,3,4,6-Tetrachlorophenol
-4-Chlorophenyl-phenylethe
-4-Nitroaniline+
-N-Nitrosodiphenylamine
Fluorene-D10+
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Atrazine
-Pentachlorophenol
-Phenanthrene-D10+
-Anthracene
-Carbazole
Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-Benzo(a)anthracene+
-Chrysene+
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene+
-Benzo(a)pyrene
-Perylene-D12
-Indeno(1,2,3-cd)pyrene
-Dibenz(a,h)anthracene
-Benzo(g,h,i)perylene
-Total PAHs

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Injection Date: 27-JUN-2014 12:07
Instrument: gcms-n.i
Client Sample ID:

Compound: Dibenzo(a,h)anthracene
CAS Number: 53-70-3

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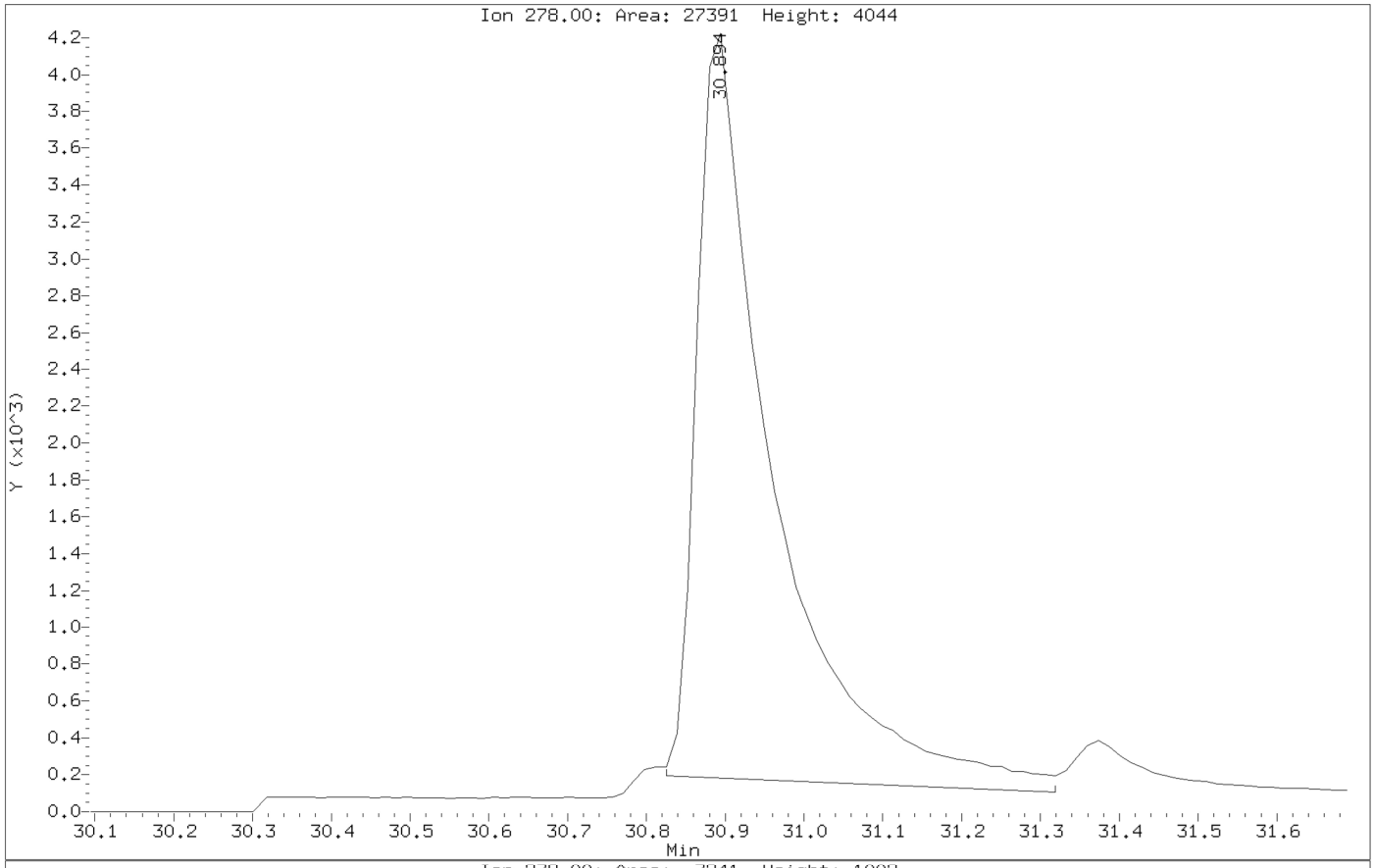

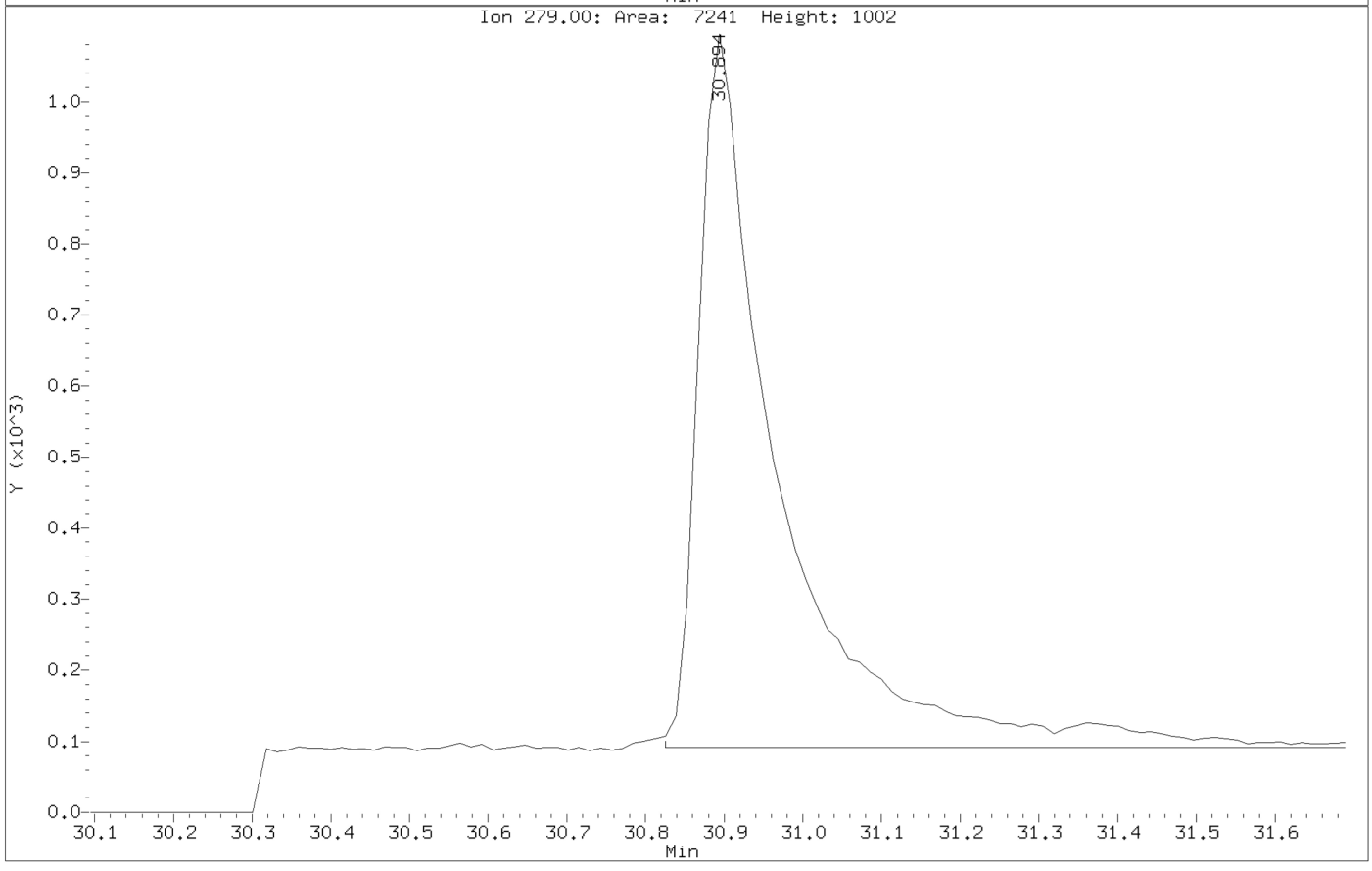

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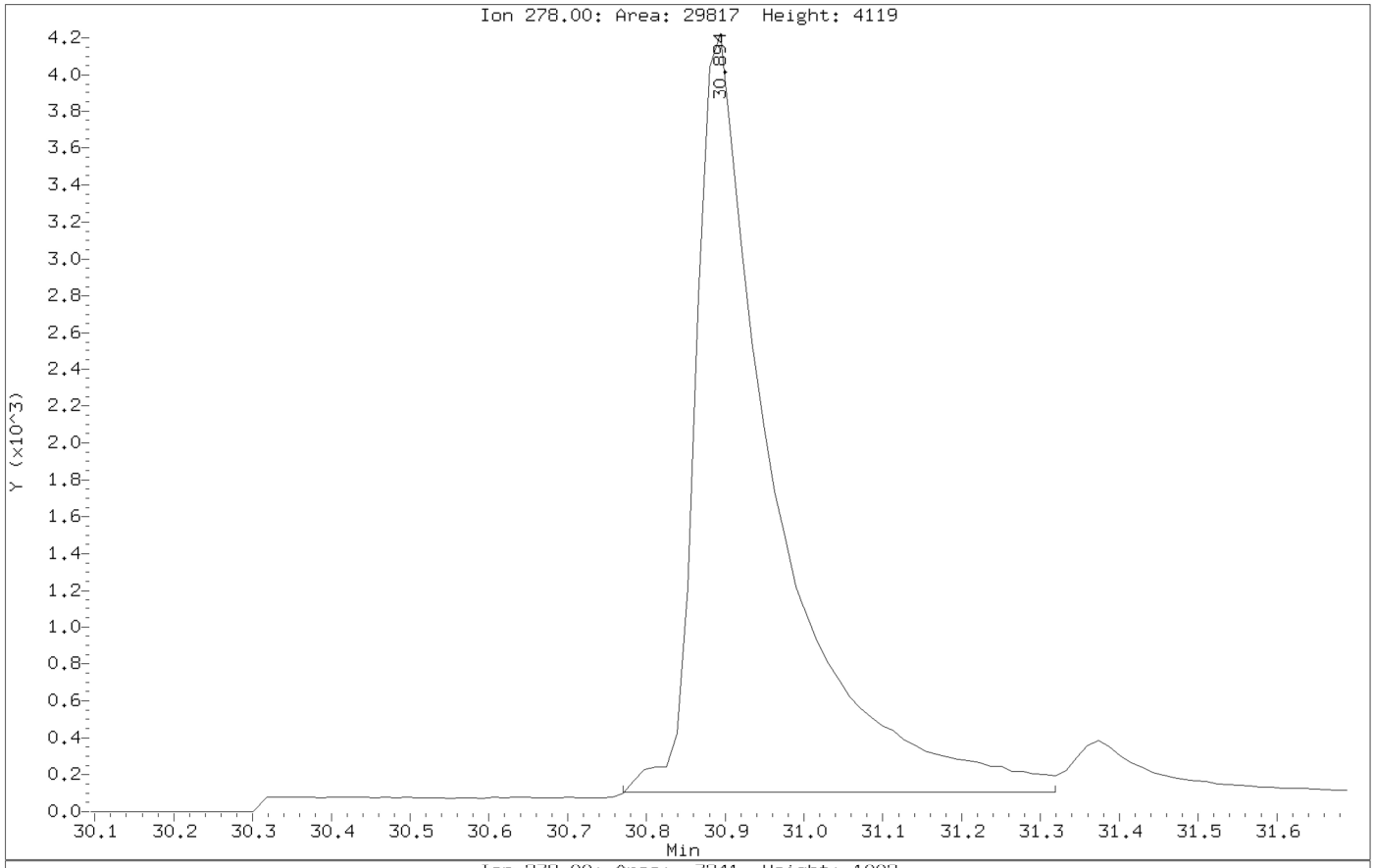
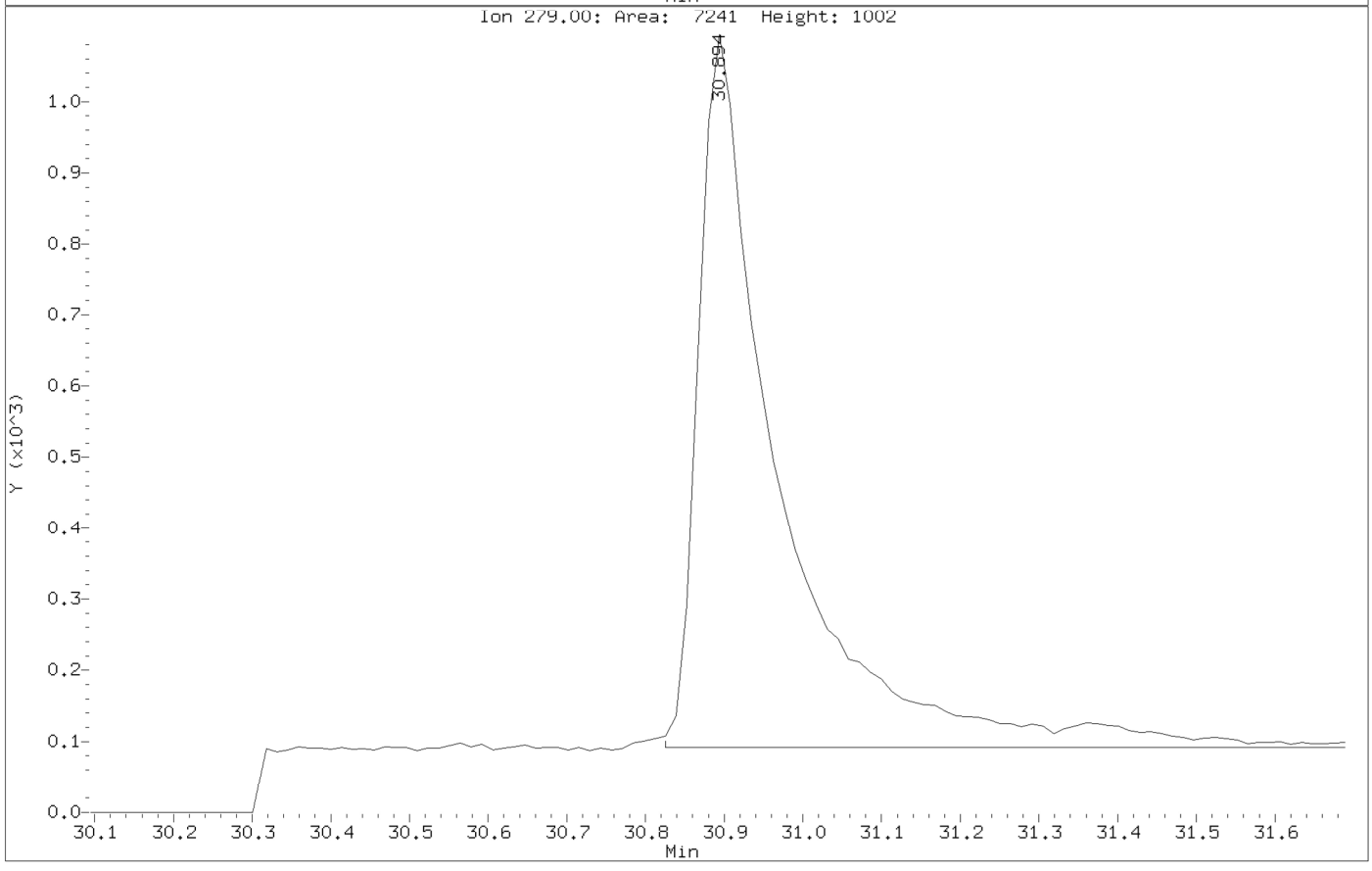
Injection Date: 27-JUN-2014 12:07
Instrument: gcms-n.i
Client Sample ID:

Compound: Dibenzo(a,h)anthracene
CAS Number: 53-70-3

AFTER MANUAL INTEGRATION





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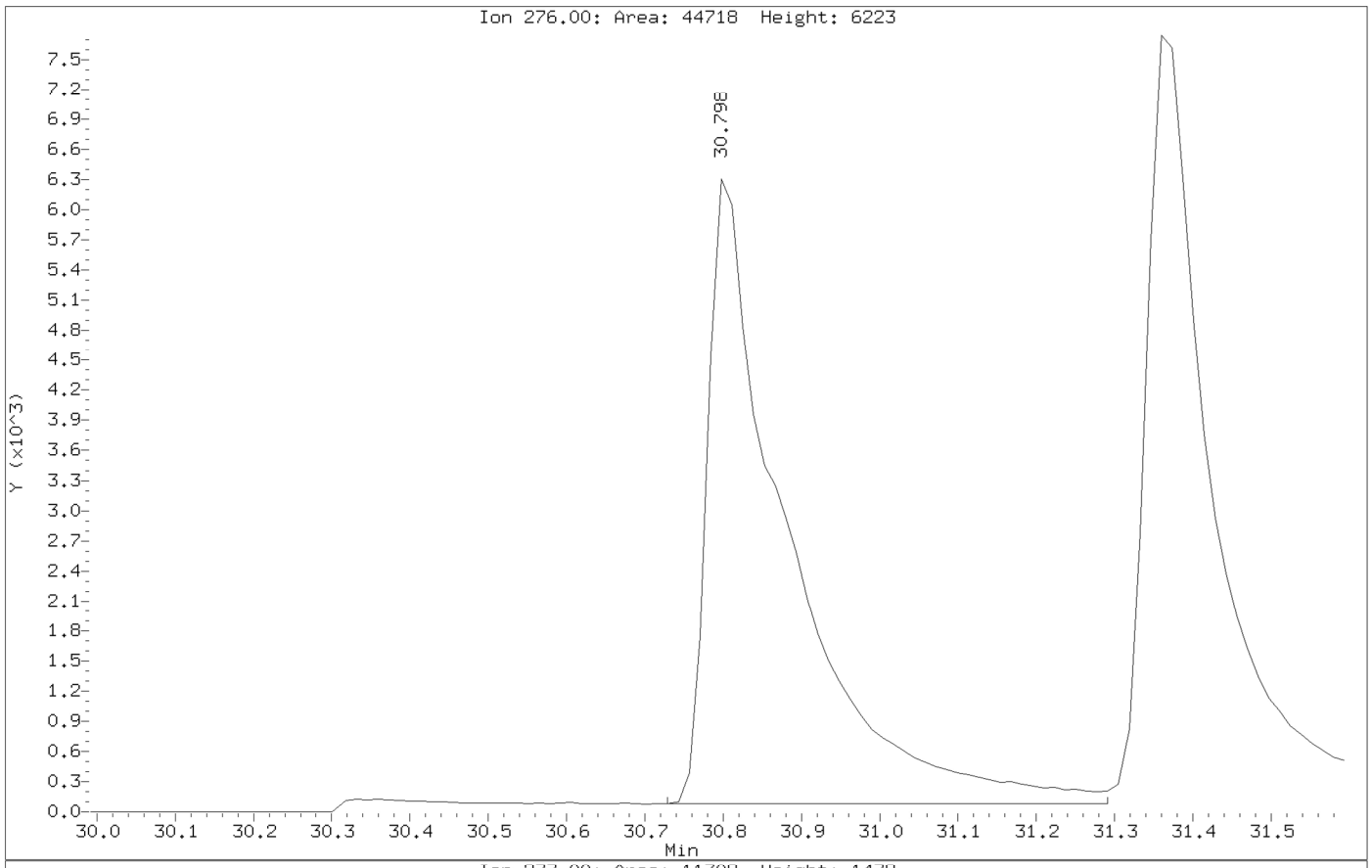
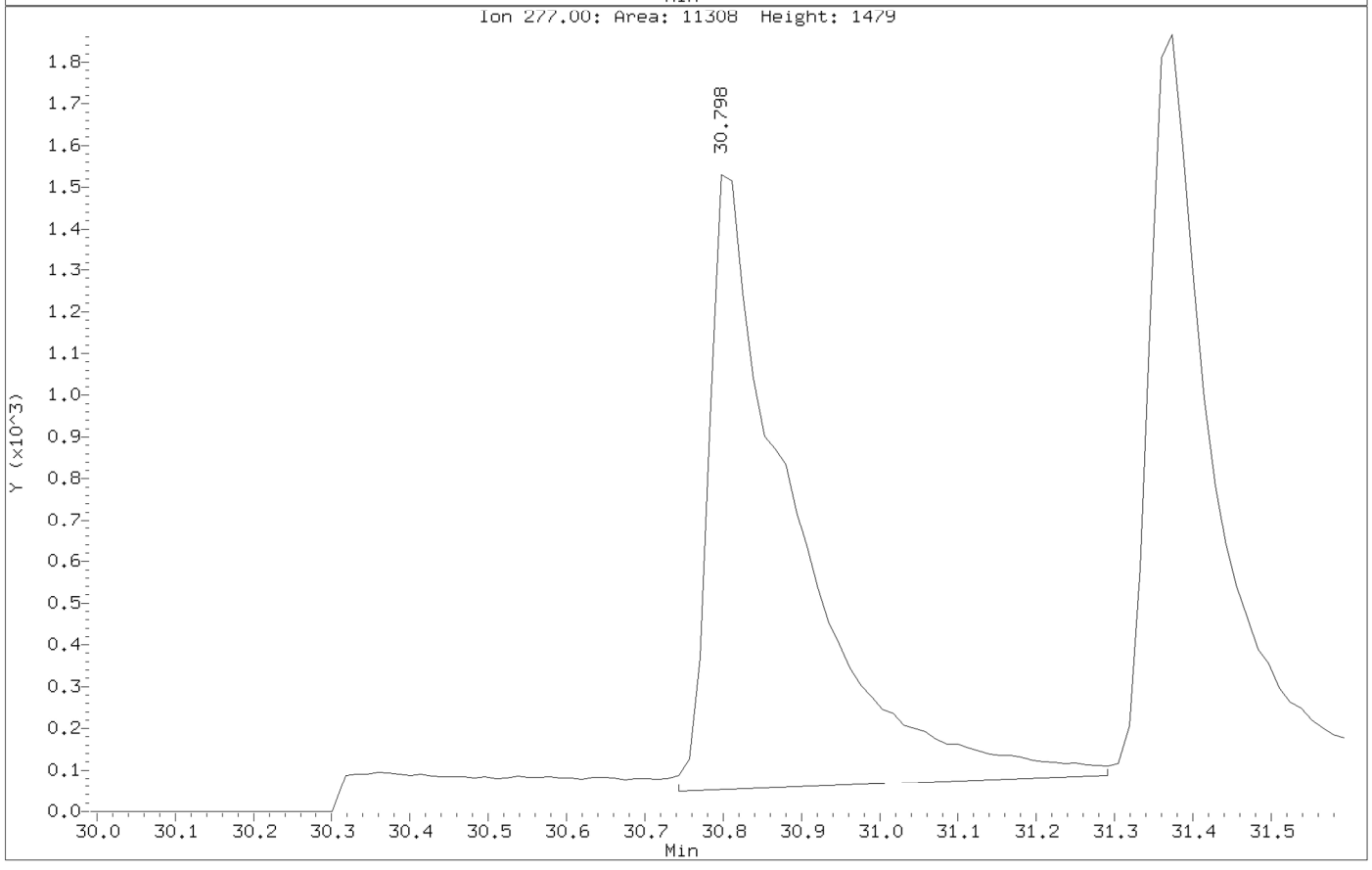
Injection Date: 27-JUN-2014 12:07
Instrument: gcms-n.i
Client Sample ID:

Compound: Indeno(1,2,3-cd)pyrene
CAS Number: 193-39-5

BEFORE MANUAL INTEGRATION





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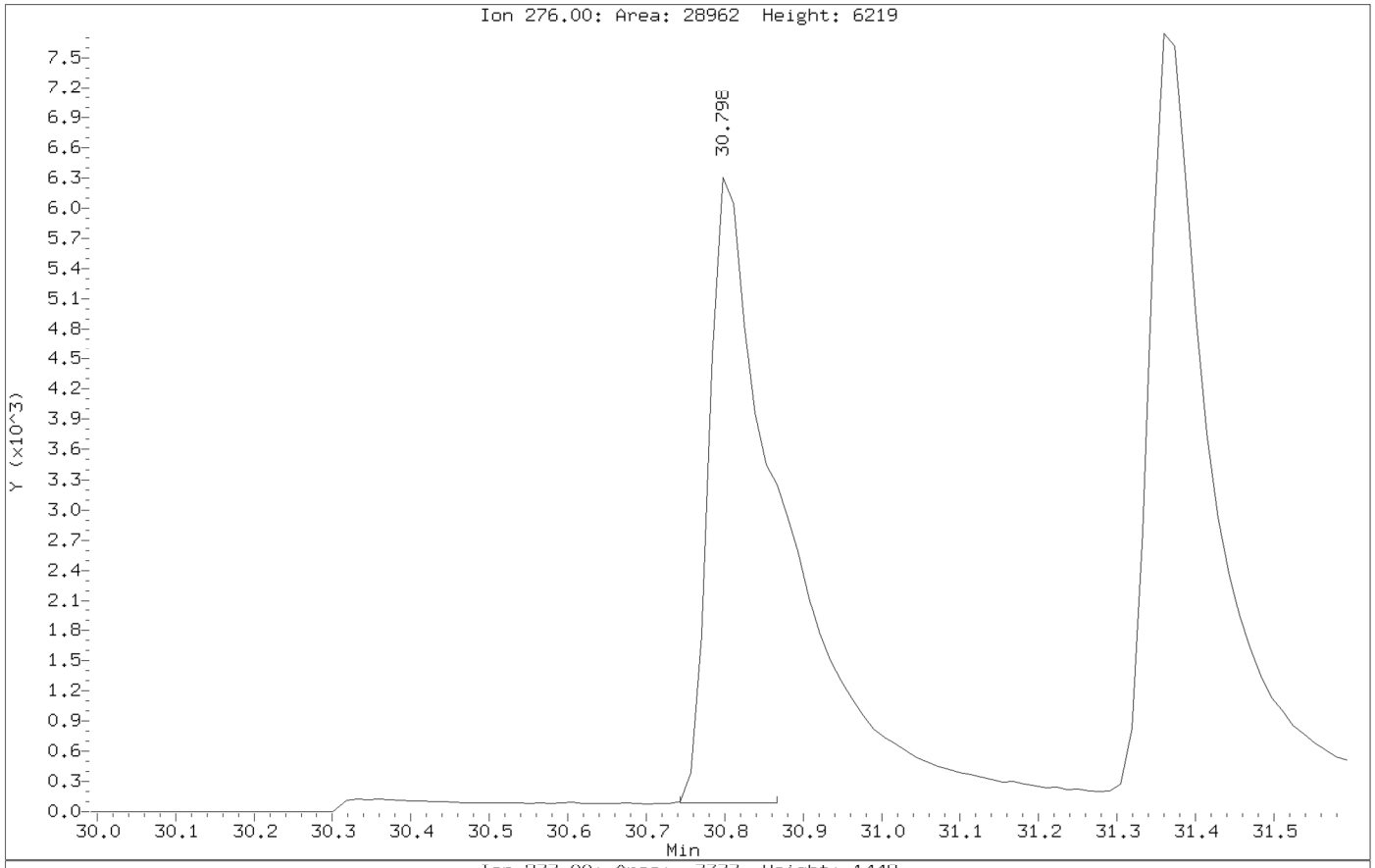
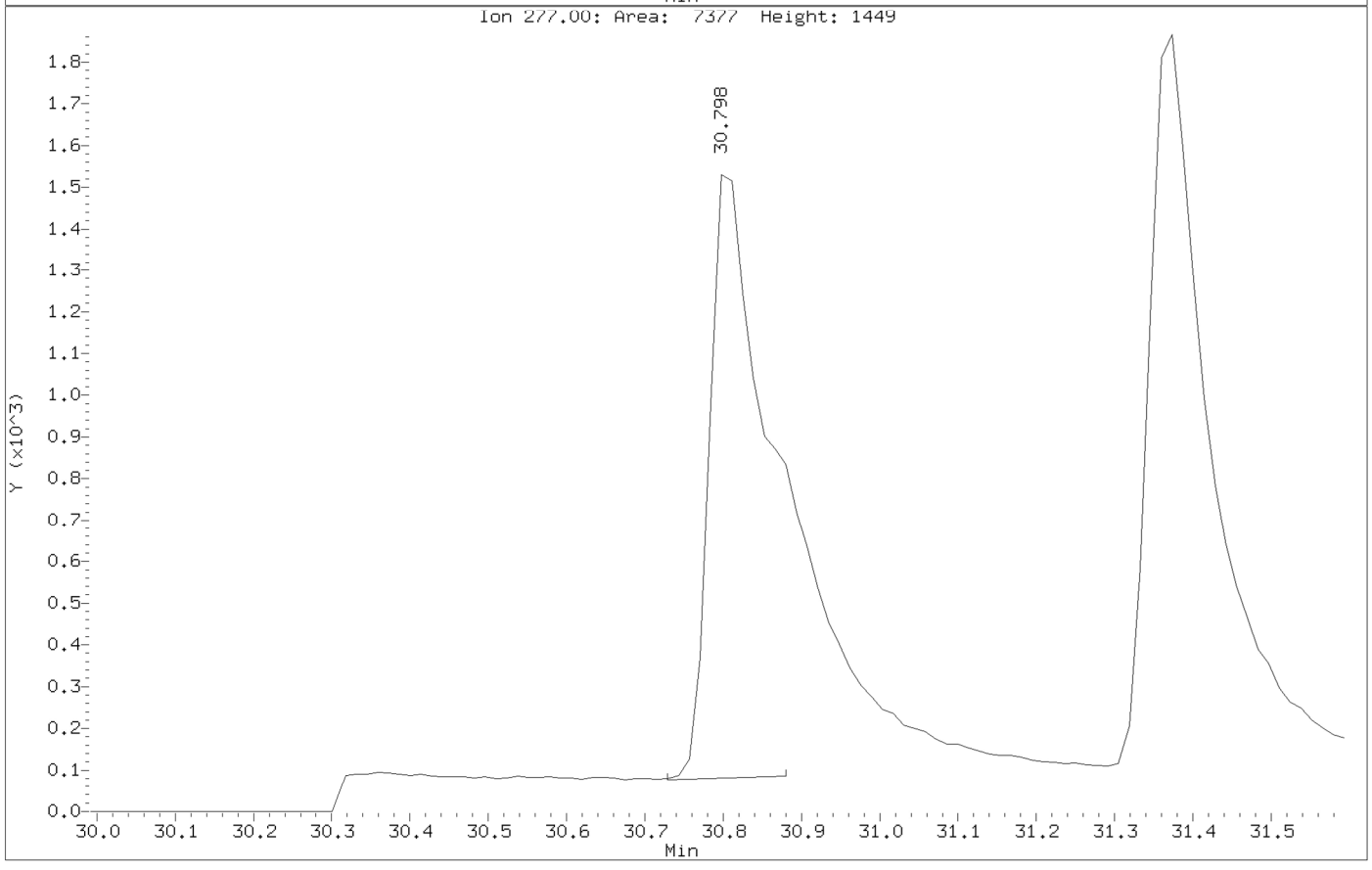
Injection Date: 27-JUN-2014 12:07
Instrument: gcms-n.i
Client Sample ID:

Compound: Indeno(1,2,3-cd)pyrene
CAS Number: 193-39-5

AFTER MANUAL INTEGRATION





Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NCTAMSLANT Cutler CTO WE53 FTA **SDG:** WE53-7
Lab ID : WG145582-2 **Analytical Date:** 06/28/14 08:36
Lab File ID : N2957.D **Instrument ID:** GCMS-N
Initial Calibration Date(s): 06/26/14 10:28 06/26/14 14:06 **Column ID:**

Compound	$\overline{RRF}$/Amount	RF1	CCAL RRF1	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
2 1,4-Dioxane	0.61266	0.66702	0.66702	0.010	8.87385	20.00000	Averaged	
5 Bis(2-Chloroethyl)ether	1.68312	1.70297	1.70297	0.010	1.17925	20.00000	Averaged	
6 2-Chlorophenol	1.43729	1.43028	1.43028	0.010	-0.48781	20.00000	Averaged	
12 2,2'-Oxybis(1-chloropropane	1.94785	1.91974	1.91974	0.010	-1.44302	20.00000	Averaged	
14 N-Nitroso-di-n-propylamine	0.91342	0.86628	0.86628	0.050	-5.16106	20.00000	Averaged	
15 3&4-Methylphenol	1.21276	1.20470	1.20470	0.010	-0.66469	20.00000	Averaged	
16 Hexachloroethane	0.61397	0.60908	0.60908	0.010	-0.79638	20.00000	Averaged	
17 Nitrobenzene	1.00000	1.19090	0.45098	0.010	19.08983	20.00000	Linear	
22 2,4-Dichlorophenol	0.27107	0.28959	0.28959	0.010	6.83232	20.01000	Averaged	
25 Naphthalene	0.99024	1.08166	1.08166	0.010	9.23185	20.00000	Averaged	
26 4-Chloroaniline	0.35165	0.37365	0.37365	0.010	6.25696	20.00000	Averaged	
27 Hexachlorobutadiene	0.15698	0.17500	0.17500	0.010	11.48112	20.01000	Averaged	
31 2-Methylnaphthalene	1.00000	1.04126	0.73944	0.010	4.12600	20.00000	Linear	
33 1,2,4,5-Tetrachlorobenzene	0.62161	0.68111	0.68111	0.010	9.57252	20.00000	Averaged	
34 Hexachlorocyclopentadiene	1.00000	0.98635	0.32338	0.050	-1.36524	20.00000	Linear	
36 2,4,6-Trichlorophenol	0.42216	0.44590	0.44590	0.010	5.62454	20.01000	Averaged	
39 1,1'-Biphenyl	1.76264	1.97638	1.97638	0.010	12.12597	20.00000	Averaged	
40 2-Nitroaniline	0.33304	0.31140	0.31140	0.010	-6.49701	20.00000	Averaged	
42 2,6-Dinitrotoluene	0.34110	0.33516	0.33516	0.010	-1.74065	20.00000	Averaged	
44 3-Nitroaniline	1.00000	0.98606	0.19826	0.010	-1.39388	20.00000	Quadratic	
47 2,4-Dinitrophenol	3.00000	2.92429	0.08982	0.050	-2.52375	20.00000	Quadratic	
48 Dibenzofuran	1.76686	1.77819	1.77819	0.010	0.64165	20.00000	Averaged	
50 2,4-Dinitrotoluene	1.00000	0.90792	0.34482	0.010	-9.20817	20.00000	Linear	
56 4-Nitroaniline	0.18367	0.17721	0.17721	0.010	-3.52100	20.00000	Averaged	
57 4,6-Dinitro-2-Methylphenol	3.00000	3.08222	0.10798	0.010	2.74075	20.00000	Quadratic	
60 Hexachlorobenzene	0.31504	0.33572	0.33572	0.010	6.56631	20.00000	Averaged	
61 Atrazine	0.17839	0.19354	0.19354	0.010	8.49493	20.00000	Averaged	
62 Pentachlorophenol	0.17458	0.19747	0.19747	0.010	13.10846	20.01000	Averaged	
64 Phenanthrene	1.25974	1.29504	1.29504	0.010	2.80287	20.00000	Averaged	
70 Pyrene	1.00000	1.15315	2.67070	0.010	15.31512	20.00000	Linear	
72 Benzo(a)anthracene	1.22168	1.11283	1.11283	0.010	-8.90980	20.00000	Averaged	
74 Chrysene	1.00000	1.14623	1.68461	0.010	14.62317	20.00000	Linear	
75 3,3'-Dichlorobenzidine	0.31047	0.29607	0.29607	0.010	-4.63714	20.00000	Averaged	
76 bis(2-Ethylhexyl)phthalate	3.00000	3.81271	2.94541	0.010	27.09030	20.00000	Quadratic	*
78 Benzo(b)fluoranthene	1.28630	1.07773	1.07773	0.010	-16.21478	20.00000	Averaged	
80 Benzo(a)pyrene	1.26772	1.26717	1.26717	0.010	-0.04385	20.01000	Averaged	
82 Indeno(1,2,3-cd)pyrene	0.62878	0.56059	0.56059	0.010	-10.84427	20.00000	Averaged	
83 Dibenzo(a,h)anthracene	0.70832	0.65962	0.65962	0.010	-6.87611	20.00000	Averaged	
30 2-Methylnaphthalene-D10	1.20748	1.35391	1.35391	0.010	12.12738	20.00000	Averaged	
35 2,4-Dibromophenol	0.39364	0.37449	0.37449	0.010	-4.86543	20.00000	Averaged	
52 Fluorene-D10	0.92133	0.90052	0.90052	0.010	-2.25845	20.00000	Averaged	

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NCTAMSLANT Cutler CTO WE53 FTA
SDG: WE53-7
Lab ID : WG145582-2
Analytical Date: 06/28/14 08:36
Lab File ID : N2957.D
Instrument ID: GCMS-N
Initial Calibration Date(s): 06/26/14 10:28 06/26/14 14:06
Column ID:

Compound	$\overline{RRF}$/Amount	RF1	CCAL RRF1	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
69 Pyrene-D10	1.39539	1.53185	1.53185	0.010	9.77909	20.00000	Averaged

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-n.i\N062814.b\N2957.D
Report Date: 11-Jul-2014 13:32

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N062814.b\N2957.D
Lab Smp Id: WG145582-2
Inj Date : 28-JUN-2014 08:36 MS Autotune Date: 12-NOV-2013 09:32
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG145582-2,WE53-7
Misc Info : WG145582,WG145582,WG145455-4,SH4521-2
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N062814.b\NSPSIM09.m
Meth Date : 28-Jun-2014 09:09 cgomez Quant Type: ISTD
Cal Date : 26-JUN-2014 13:22 Cal File: N2926.D
Als bottle: 2 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ttcutler53ocs.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	2 1,4-Dioxane	88	3.208	3.208	(0.358)	53487	1.00000	1.09	
	5 Bis(2-Chloroethyl)ether	93	8.494	8.494	(0.947)	136557	1.00000	1.01	
	6 2-Chlorophenol	128	8.560	8.560	(0.954)	344071	3.00000	2.98	
*	8 1,4-Dichlorobenzene-D4	152	8.970	8.970	(1.000)	64150	0.80000	(a)	
	12 2,2'-Oxybis(1-chloropropane)	45	9.667	9.667	(1.078)	153939	1.00000	0.986	
	14 N-Nitroso-di-n-propylamine	70	9.950	9.950	(1.109)	69465	1.00000	0.948	
	15 3&4-Methylphenol	108	10.045	10.045	(1.120)	289806	3.00000	2.98	
	16 Hexachloroethane	117	10.029	10.029	(1.118)	48841	1.00000	0.992	
	17 Nitrobenzene	77	10.218	10.218	(0.870)	118819	1.00000	1.19	
	22 2,4-Dichlorophenol	162	11.558	11.558	(0.984)	228892	3.00000	3.20	
*	24 Naphthalene-D8	136	11.746	11.746	(1.000)	210776	0.80000	(a)	
	25 Naphthalene	128	11.797	11.797	(1.004)	284984	1.00000	1.09	
	26 4-Chloroaniline	127	12.053	12.053	(1.026)	98446	1.00000	1.06	
	27 Hexachlorobutadiene	225	12.190	12.190	(1.038)	46108	1.00000	1.11	
$	30 2-Methylnaphthalene-D10	152	13.353	13.353	(0.843)	126112	1.00000	1.12	
	31 2-Methylnaphthalene	142	13.429	13.429	(1.143)	194820	1.00000	1.04	
	33 1,2,4,5-Tetrachlorobenzene	216	13.843	13.843	(0.874)	63443	1.00000	1.10	
	34 Hexachlorocyclopentadiene	237	13.862	13.862	(0.875)	30122	1.00000	0.986	
$	35 2,4-Dibromophenol	252	14.107	14.107	(0.890)	34882	1.00000	0.951(a)	
	36 2,4,6-Trichlorophenol	196	14.182	14.182	(0.895)	124602	3.00000	3.17	

Data File: \\target_server\gg\chem\gcms-n.i\N062814.b\N2957.D
Report Date: 11-Jul-2014 13:32

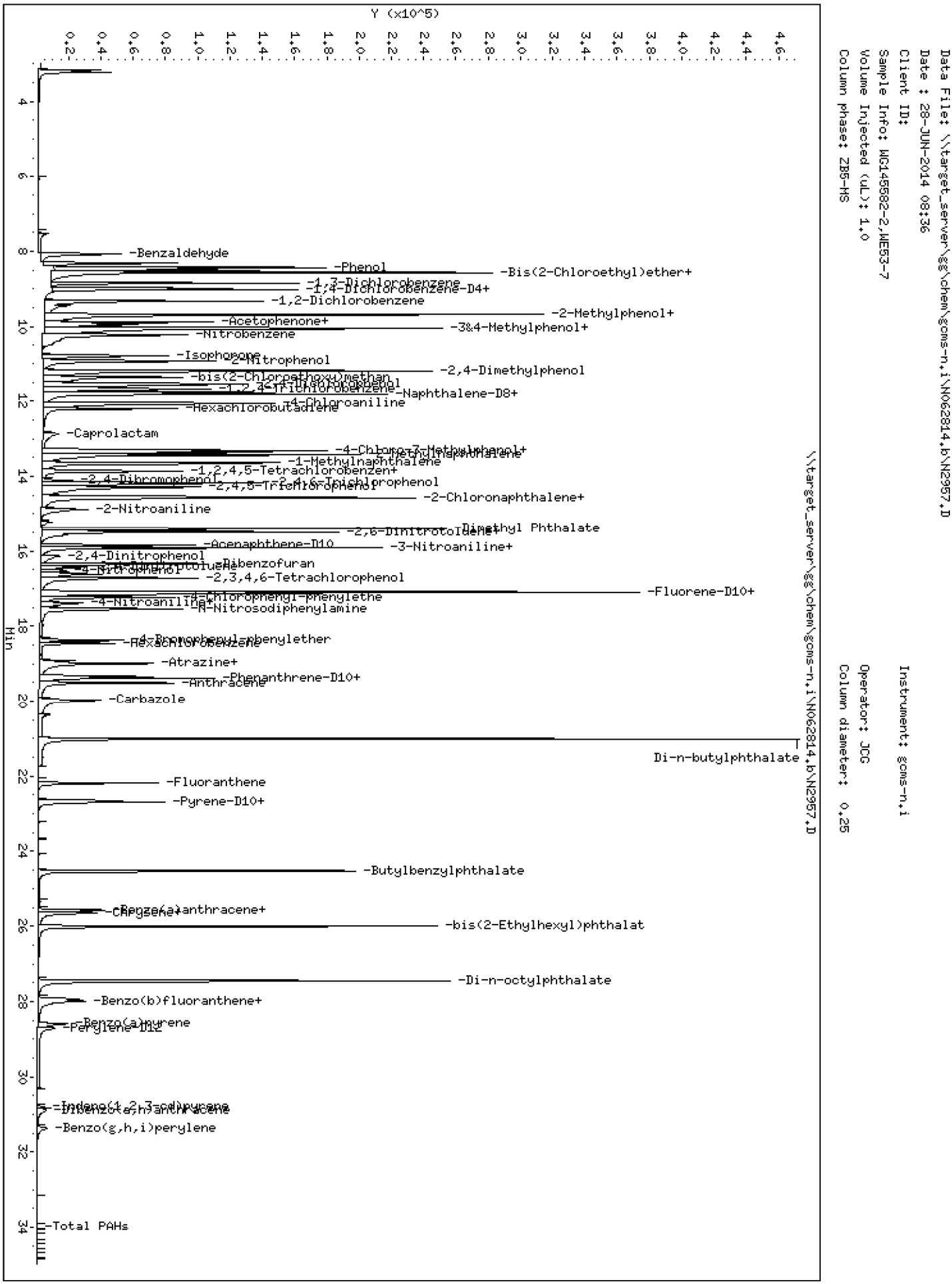
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)		REVIEW CODE
	39 1,1'-Biphenyl	154	14.559	14.559	(0.919)	184092	1.00000	1.12		
	40 2-Nitroaniline	65	14.879	14.879	(0.939)	29006	1.00000	0.935		
	42 2,6-Dinitrotoluene	165	15.473	15.473	(0.977)	31219	1.00000	0.982		
	44 3-Nitroaniline	138	15.881	15.881	(1.002)	18467	1.00000	0.986		
*	45 Acenaphthene-D10	164	15.842	15.842	(1.000)	74517	0.80000		(a)	
	47 2,4-Dinitrophenol	184	16.132	16.132	(1.018)	25098	3.00000	2.92		
	48 Dibenzofuran	168	16.343	16.343	(1.032)	165632	1.00000	1.01		
	50 2,4-Dinitrotoluene	165	16.435	16.435	(1.037)	32119	1.00000	0.908		
$	52 Fluorene-D10	174	17.068	17.068	(1.077)	83880	1.00000	0.977	(a)	
	56 4-Nitroaniline	138	17.370	17.370	(1.096)	16506	1.00000	0.965		
	57 4,6-Dinitro-2-Methylphenol	198	17.386	17.386	(0.900)	38416	3.00000	3.08		
	60 Hexachlorobenzene	284	18.453	18.453	(0.955)	39814	1.00000	1.06		
	61 Atrazine	200	18.918	18.918	(0.979)	22952	1.00000	1.08		
	62 Pentachlorophenol	266	18.993	18.993	(0.983)	70254	3.00000	3.39		
*	63 Phenanthrene-D10	188	19.323	19.323	(1.000)	94873	0.80000		(a)	
	64 Phenanthrene	178	19.368	19.368	(1.002)	153581	1.00000	1.03		
$	69 Pyrene-D10	212	22.646	22.646	(0.885)	72874	1.00000	1.10		
	70 Pyrene	202	22.687	22.687	(0.887)	127052	1.00000	1.15		
	72 Benzo(a)anthracene	228	25.562	25.562	(0.999)	52940	1.00000	0.911		
*	73 Chrysene-D12	240	25.589	25.589	(1.000)	38058	0.80000		(a)	
	75 3,3'-Dichlorobenzidine	252	25.670	25.670	(1.003)	14085	1.00000	0.954		
	74 Chrysene	228	25.643	25.643	(1.002)	80141	1.00000	1.15		
	76 bis(2-Ethylhexyl)phthalate	149	26.008	26.008	(1.016)	420362	3.00000	3.81		
	78 Benzo(b)fluoranthene	252	27.951	27.951	(0.973)	37940	1.00000	0.838		
	80 Benzo(a)pyrene	252	28.586	28.586	(0.995)	44609	1.00000	1.000		
*	81 Perylene-D12	264	28.723	28.723	(1.000)	28163	0.80000		(a)	
	82 Indeno(1,2,3-cd)pyrene	276	30.811	30.811	(1.073)	19735	1.00000	0.892	(MH)	M3
	83 Dibenzo(a,h)anthracene	278	30.893	30.893	(1.076)	23221	1.00000	0.931		

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.



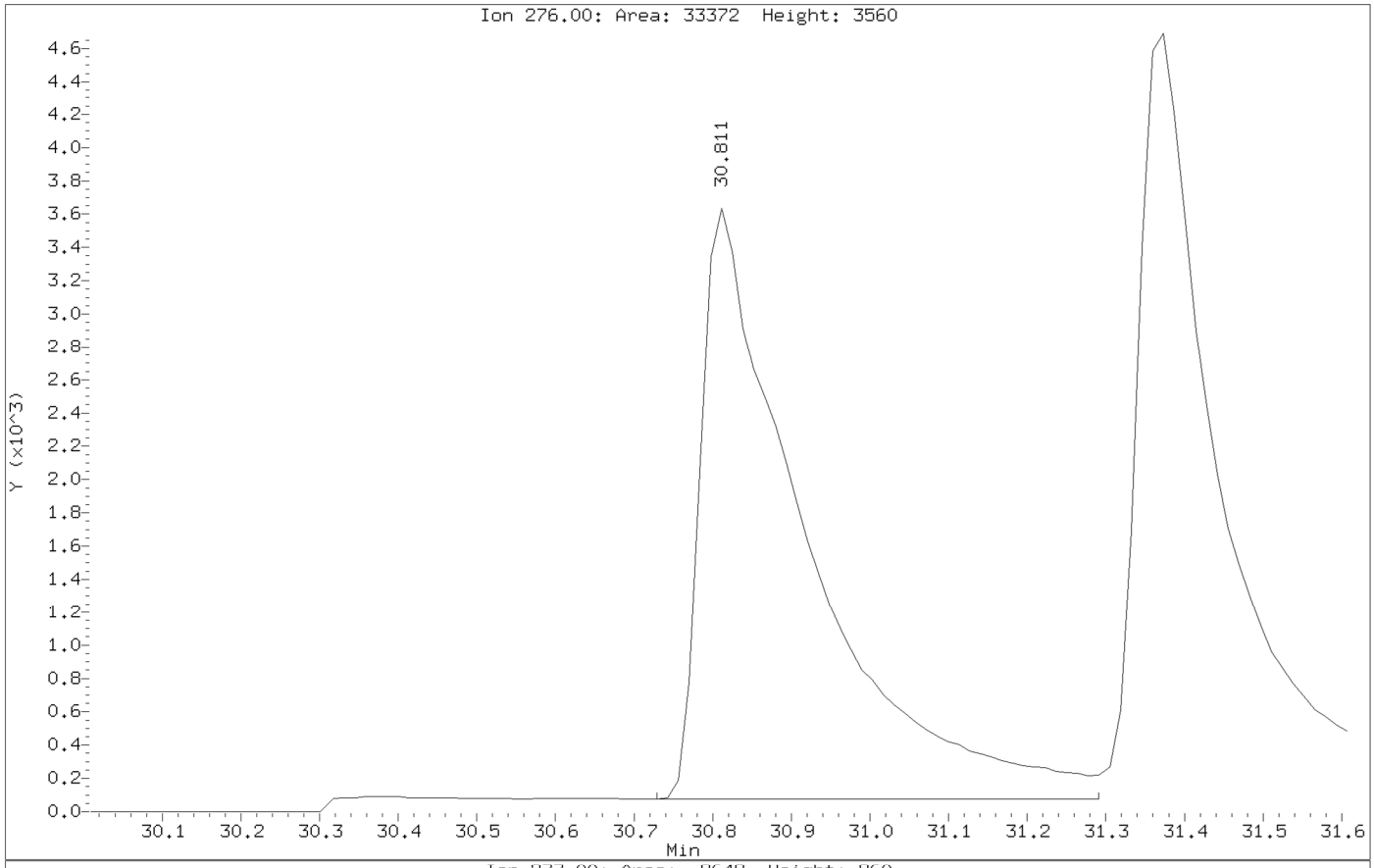
2:42 pm, Jul 11, 2014

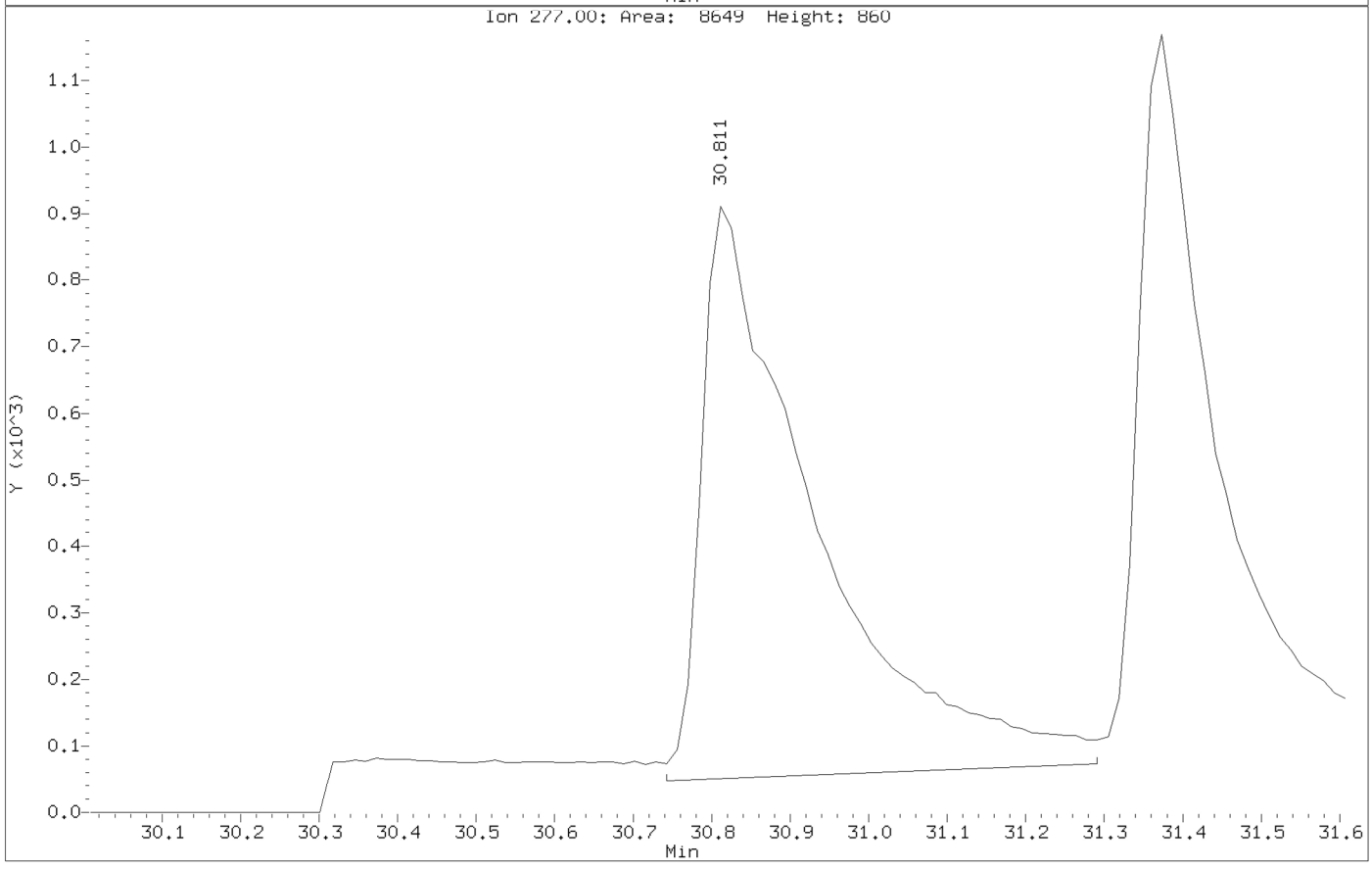

Data File: \\target_server\gg\chem\gcms-n,i\N062814,b\N2957,D
Date : 28-JUN-2014 08:36
Client ID:
Sample Info: WG145582-2,WE53-7
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n,i\N062814,b\N2957,D
Y (x10^5)
Min
-Benzaldehyde
-Phenol
-Bis(2-Chloroethyl)ether+
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-2-Methylphenol+
-Acetophenone+
-3&4-Methylphenol+
-Nitrobenzene
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol
-bis(2-Chloroethoxy)methan
-2,4-Dichlorophenol
-1,2,4-Trichlorobenzene
-Naphthalene-D8+
-4-Chloroaniline
-Hexachlorobutadiene
-Caprolactam
-4-Chloro-3-Methylphenol+
-2-Methylnaphthalene
-1-Methylnaphthalene
-1,2,4,5-Tetrachlorobenzen+
-2,4-Dibromophenol
-2,4,6-Trichlorophenol
-2,4,5-Trichlorophenol
-2-Chloronaphthalene+
-2-Nitroaniline
-Dimethyl Phthalate
-2,6-Dinitrotoluene+
-Acenaphthene-D10
-3-Nitroaniline+
-2,4-Dinitrophenol
-Dibenzofuran
-4-Nitrophenol
-2,3,4,6-Tetrachlorophenol
-Fluorene-D10+
-4-Chlorophenyl-phenylethe
-4-Nitroaniline+
-N-Nitrosodiphenylamine
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Atrazine+
-Phenanthrene-D10+
-Anthracene
-Carbazole
Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-Benzo(a)anthracene+
-Chrysene+
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene+
-Benzo(k)fluoranthene+
-Benzo(a)pyrene
-Perylene-D12
-Indeno(1,2,3-cd)pyrene
-Dibenz(a,h)anthracene
-Benzo(g,h,i)perylene
-Total PAHs

Data File: \\target_server\gg\chem\gcms-n.i\N062814.b\N2957.D
Injection Date: 28-JUN-2014 08:36
Instrument: gcms-n.i
Client Sample ID:

Compound: Indeno(1,2,3-cd)pyrene
CAS Number: 193-39-5

BEFORE MANUAL INTEGRATION





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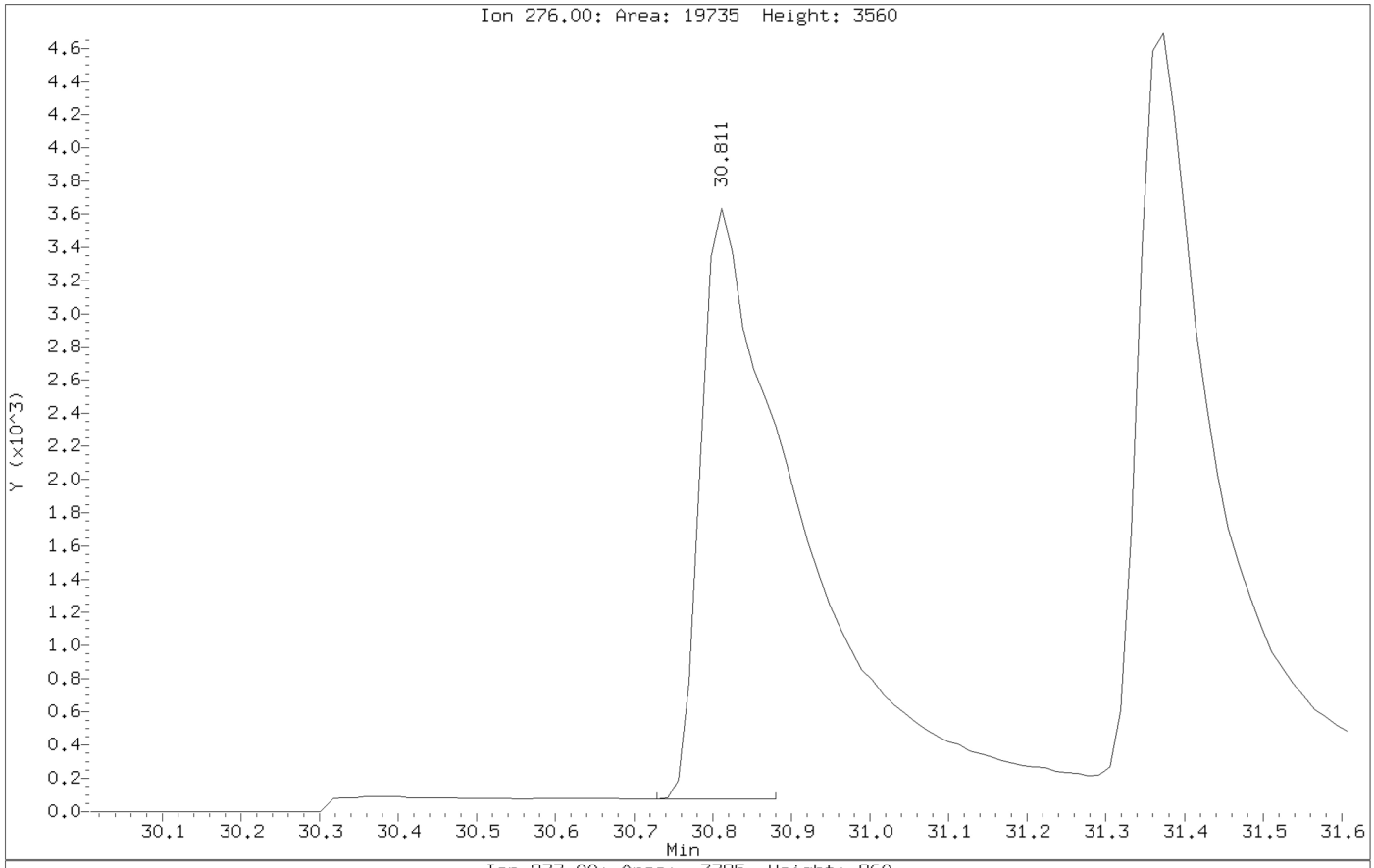
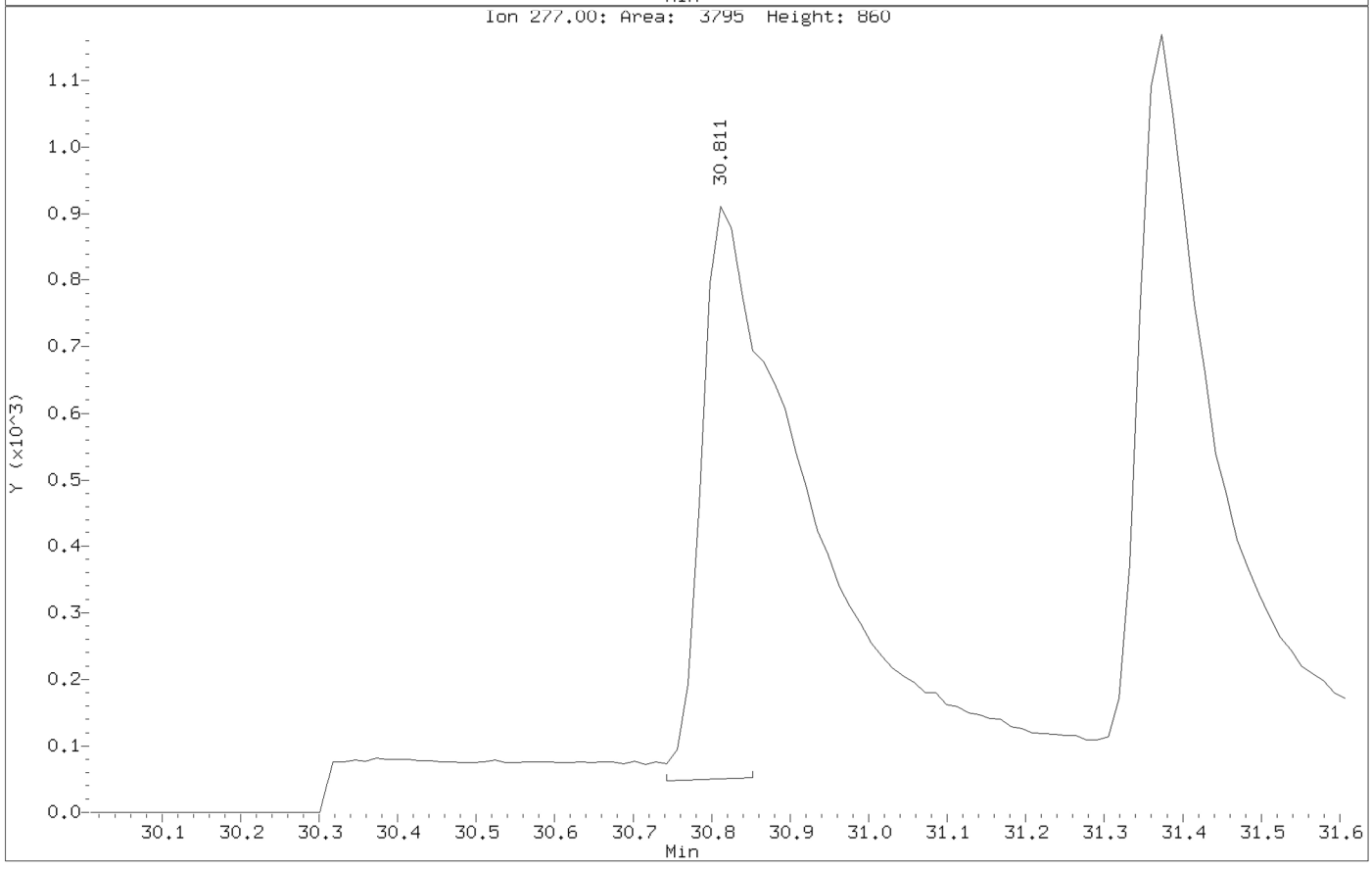
Injection Date: 28-JUN-2014 08:36
Instrument: gcms-n.i
Client Sample ID:

Compound: Indeno(1,2,3-cd)pyrene
CAS Number: 193-39-5

AFTER MANUAL INTEGRATION





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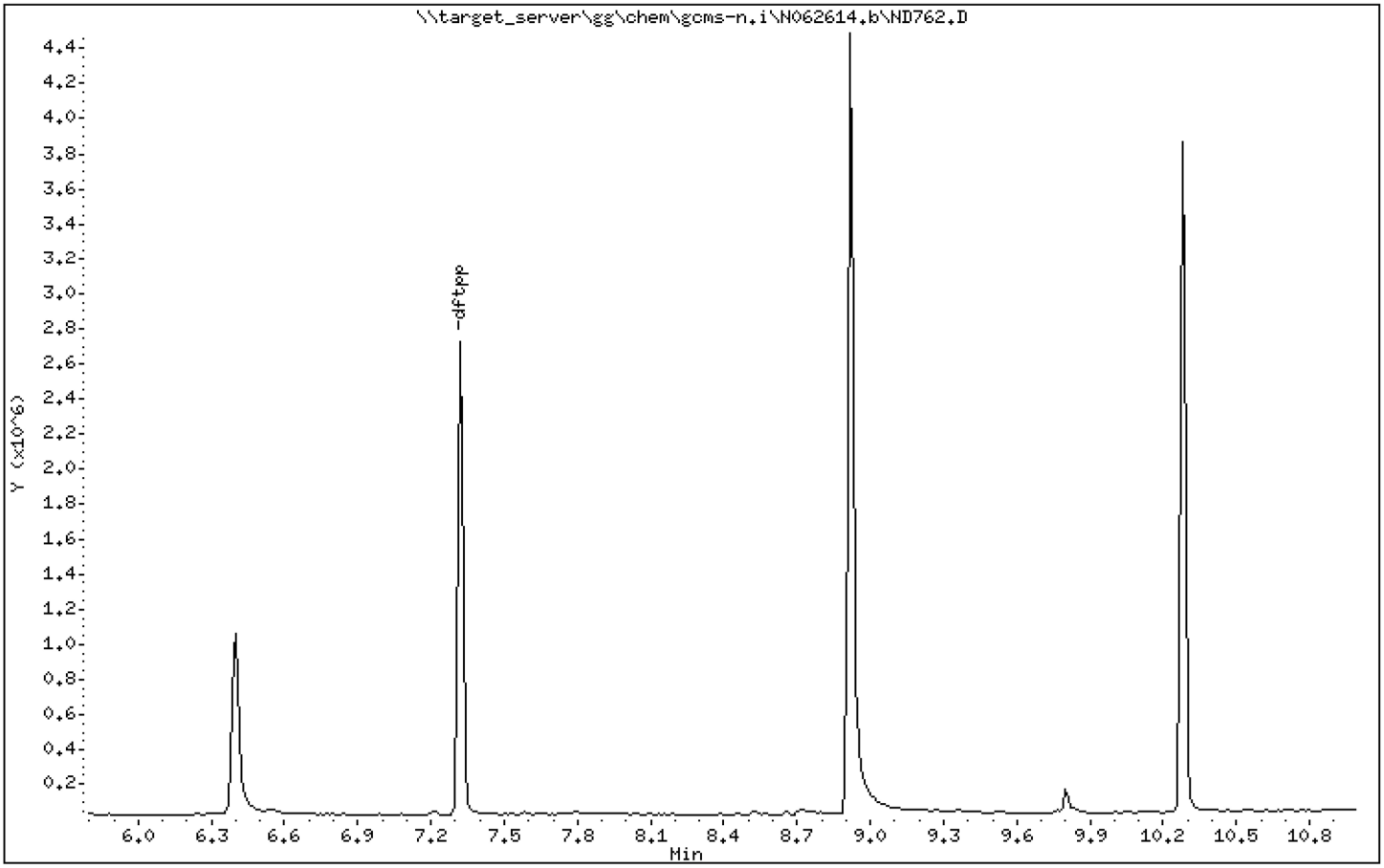
Date : 26-JUN-2014 10:10

Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG145455-1,WE53-7

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25



Data File: \\target_server\gg\chem\gcms-n.i\N062614.b\ND762.D

Date : 26-JUN-2014 10:10

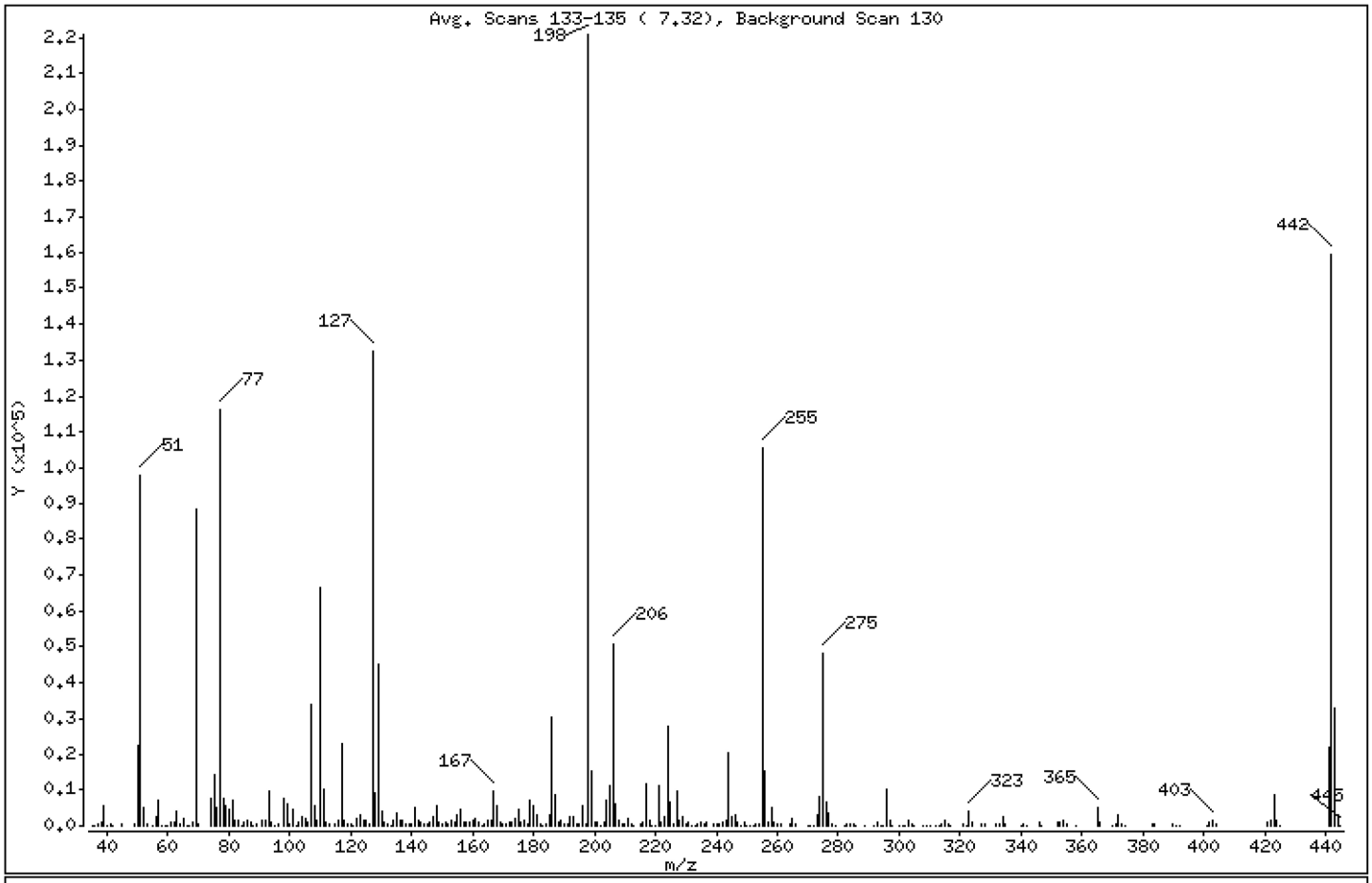
Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG145455-1,WE53-7

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

1 dftpp



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	30.00 - 60.00% of mass 198	44.31
68	Less than 2.00% of mass 69	0.51 (1.28)
69	Less than 100.00% of mass 198	40.05
70	Less than 2.00% of mass 69	0.23 (0.57)
127	40.00 - 60.00% of mass 198	59.94
197	Less than 1.00% of mass 198	0.33
199	5.00 - 9.00% of mass 198	6.93
275	10.00 - 30.00% of mass 198	21.84
365	1.00 - 100.00% of mass 198	2.39
441	0.01 - 100.00% of mass 443	9.99 (66.82)
442	40.00 - 100.00% of mass 198	72.17
443	17.00 - 23.00% of mass 442	14.95 (20.71)

Data File: \\target_server\gg\chem\gcms-n.i\N062614.b\ND762.D

Date : 26-JUN-2014 10:10

Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG145455-1,WE53-7

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

Data File: ND762.D
Spectrum: Avg. Scans 133-135 (7.32), Background Scan 130
Location of Maximum: 198.00
Number of points: 300

m/z	Y	m/z	Y	m/z	Y	m/z	Y
35.00	19	123.00	2998	199.00	15310	284.00	304
36.00	40	124.00	1398	200.00	1235	285.00	704
37.00	325	125.00	1382	201.00	1044	286.00	78
38.00	1228	126.00	716	202.00	226	289.00	104
39.00	5766	127.00	132352	203.00	1140	292.00	162
40.00	55	128.00	9302	204.00	7215	293.00	983
41.00	304	129.00	45264	205.00	11133	294.00	152
42.00	9	130.00	4079	206.00	50744	295.00	182
45.00	375	131.00	948	207.00	6208	296.00	10095
49.00	388	132.00	716	208.00	1622	297.00	1394
50.00	22408	133.00	81	209.00	523	298.00	59
51.00	97832	134.00	1391	210.00	450	300.00	55
52.00	5069	135.00	3786	211.00	1873	301.00	78
53.00	378	136.00	1544	212.00	492	302.00	167
55.00	204	137.00	1590	213.00	197	303.00	1566
56.00	2646	138.00	354	215.00	535	304.00	392
57.00	6854	139.00	383	216.00	792	305.00	50
58.00	240	140.00	449	217.00	11536	308.00	61
59.00	62	141.00	5084	218.00	1639	309.00	158
60.00	8	142.00	1757	219.00	212	310.00	72
61.00	977	143.00	1018	220.00	107	312.00	72
62.00	1164	144.00	388	221.00	10941	313.00	79
63.00	3941	145.00	431	222.00	1247	314.00	626
64.00	499	146.00	1170	223.00	2665	315.00	1373
65.00	1928	147.00	2468	224.00	27784	316.00	708
66.00	104	148.00	5414	225.00	6396	317.00	182
67.00	46	149.00	1177	226.00	556	321.00	357
68.00	1128	150.00	506	227.00	9880	322.00	239
69.00	88432	151.00	863	228.00	1412	323.00	4281
70.00	508	152.00	383	229.00	2385	324.00	864
74.00	7819	153.00	1470	230.00	318	327.00	665
75.00	14239	154.00	1076	231.00	888	328.00	316
76.00	5070	155.00	3144	232.00	123	332.00	422
77.00	116064	156.00	4703	233.00	190	333.00	325
78.00	7813	157.00	1019	234.00	571	334.00	2631

Data File: \\target_server\gg\chem\gcms-n.i\N062614.b\ND762.D

Date : 26-JUN-2014 10:10

Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG145455-1,WE53-7

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

Data File: ND762.D
Spectrum: Avg. Scans 133-135 (7.32), Background Scan 130
Location of Maximum: 198.00
Number of points: 300

m/z	Y	m/z	Y	m/z	Y	m/z	Y
79.00	5781	158.00	933	235.00	818	335.00	760
80.00	4324	159.00	903	236.00	435	340.00	61
81.00	7058	160.00	1631	237.00	892	341.00	412
82.00	1437	161.00	2230	239.00	390	342.00	54
83.00	1611	162.00	891	240.00	343	346.00	1051
84.00	127	163.00	144	241.00	306	347.00	93
85.00	1219	164.00	279	242.00	1214	352.00	1214
86.00	1463	165.00	1402	243.00	1481	353.00	1078
87.00	1006	166.00	1552	244.00	20528	354.00	1395
88.00	251	167.00	9676	245.00	2522	355.00	277
89.00	275	168.00	5354	246.00	3252	358.00	68
91.00	1513	169.00	974	247.00	821	365.00	5278
92.00	1678	170.00	389	248.00	117	366.00	864
93.00	9733	171.00	440	249.00	792	370.00	119
94.00	876	172.00	826	250.00	211	371.00	310
95.00	238	173.00	1124	251.00	141	372.00	2833
96.00	719	174.00	1890	252.00	151	373.00	622
98.00	7432	175.00	4459	253.00	318	374.00	68
99.00	6217	176.00	1259	254.00	432	383.00	654
100.00	564	177.00	1616	255.00	105600	384.00	273
101.00	4522	178.00	733	256.00	15407	390.00	419
102.00	212	179.00	7221	257.00	1131	391.00	208
103.00	1121	180.00	5428	258.00	5052	392.00	103
104.00	2411	181.00	2889	259.00	824	401.00	71
105.00	2073	182.00	370	260.00	257	402.00	955
106.00	887	183.00	226	261.00	260	403.00	1509
107.00	33920	184.00	589	264.00	262	404.00	564
108.00	5418	185.00	3192	265.00	2049	421.00	1223
109.00	1279	186.00	30632	266.00	373	422.00	1271
110.00	66736	187.00	8412	270.00	102	423.00	8477
111.00	9929	188.00	824	271.00	241	424.00	1699
112.00	1234	189.00	1662	272.00	99	425.00	101
113.00	458	190.00	412	273.00	3001	441.00	22056
115.00	267	191.00	685	274.00	8249	442.00	159360
116.00	1698	192.00	2373	275.00	48232	443.00	33008

Data File: \\target_server\gg\chem\gcms-n.i\N062614.b\ND762.D

Date : 26-JUN-2014 10:10

Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG145455-1,WE53-7

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

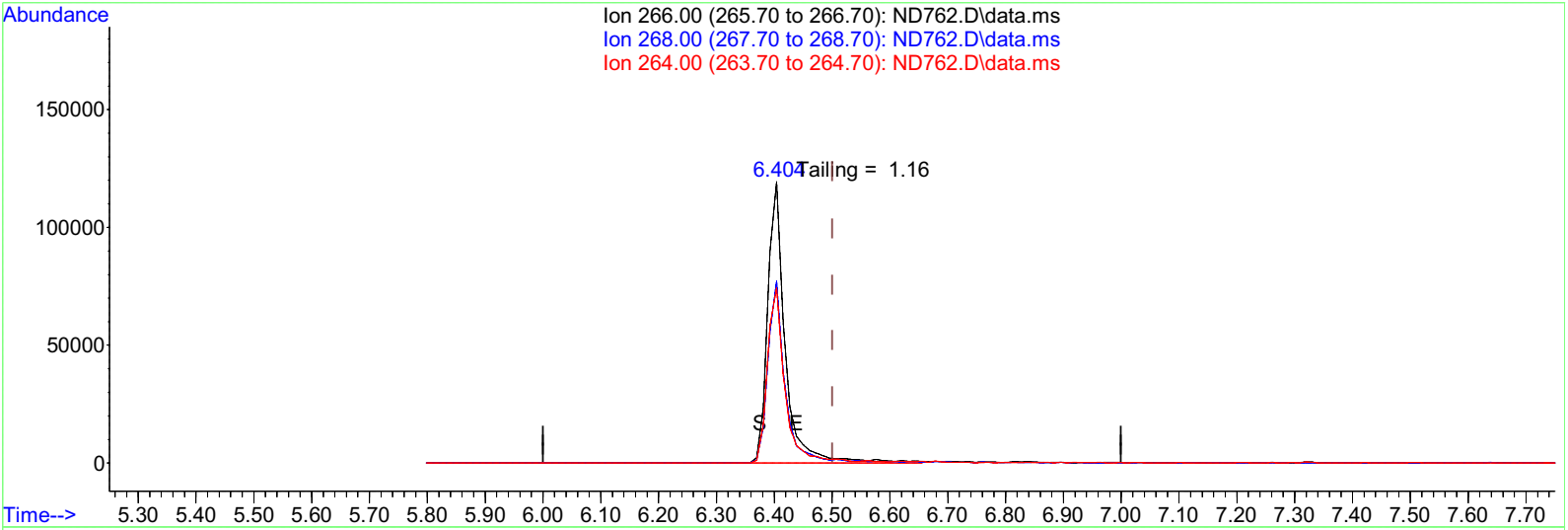
Data File: ND762.D
Spectrum: Avg. Scans 133-135 (7.32), Background Scan 130
Location of Maximum: 198.00
Number of points: 300

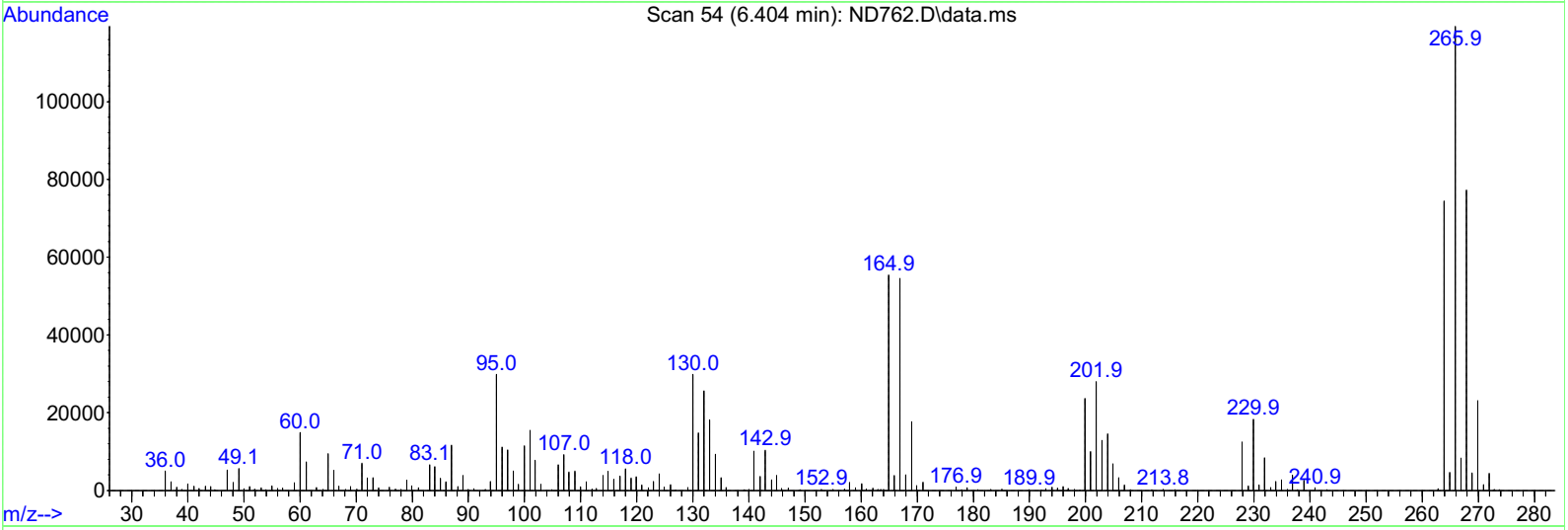
m/z	Y	m/z	Y	m/z	Y	m/z	Y
117.00	23088	193.00	2414	276.00	6376	444.00	2861
118.00	1646	194.00	484	277.00	3574	445.00	144
119.00	386	195.00	519	278.00	468		
120.00	532	196.00	5655	279.00	95		
121.00	15	197.00	736	282.00	56		
122.00	2172	198.00	220800	283.00	357		

Quantitation Report (Qedit)

Data Path : V:\chem\gcms-n.i\N062614.b\
Data File : ND762.D
Acq On : 26 Jun 2014 10:10 am
Operator : JCG
Sample : WG145455-1
Misc : WG145455,WG145455,WG145455-4
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 11 14:41:36 2014
Quant Method : C:\msdchem\1\METHODS\TUNETAIL.M
Quant Title :
QLast Update : Wed May 28 14:53:53 2014
Response via : Initial Calibration





TIC: ND762.D\data.ms

(1) Pentachlorophenol

6.407min (-0.093) 0.00

response 2449591

Ion	Exp%	Act%
266.00	100	100
268.00	0.00	64.44#
264.00	0.00	63.37#
0.00	0.00	0.00

Katahdin Analytical Services 6000204

Data File: \\target_server\gg\chem\gcms-n.i\N062714.b\ND763.D

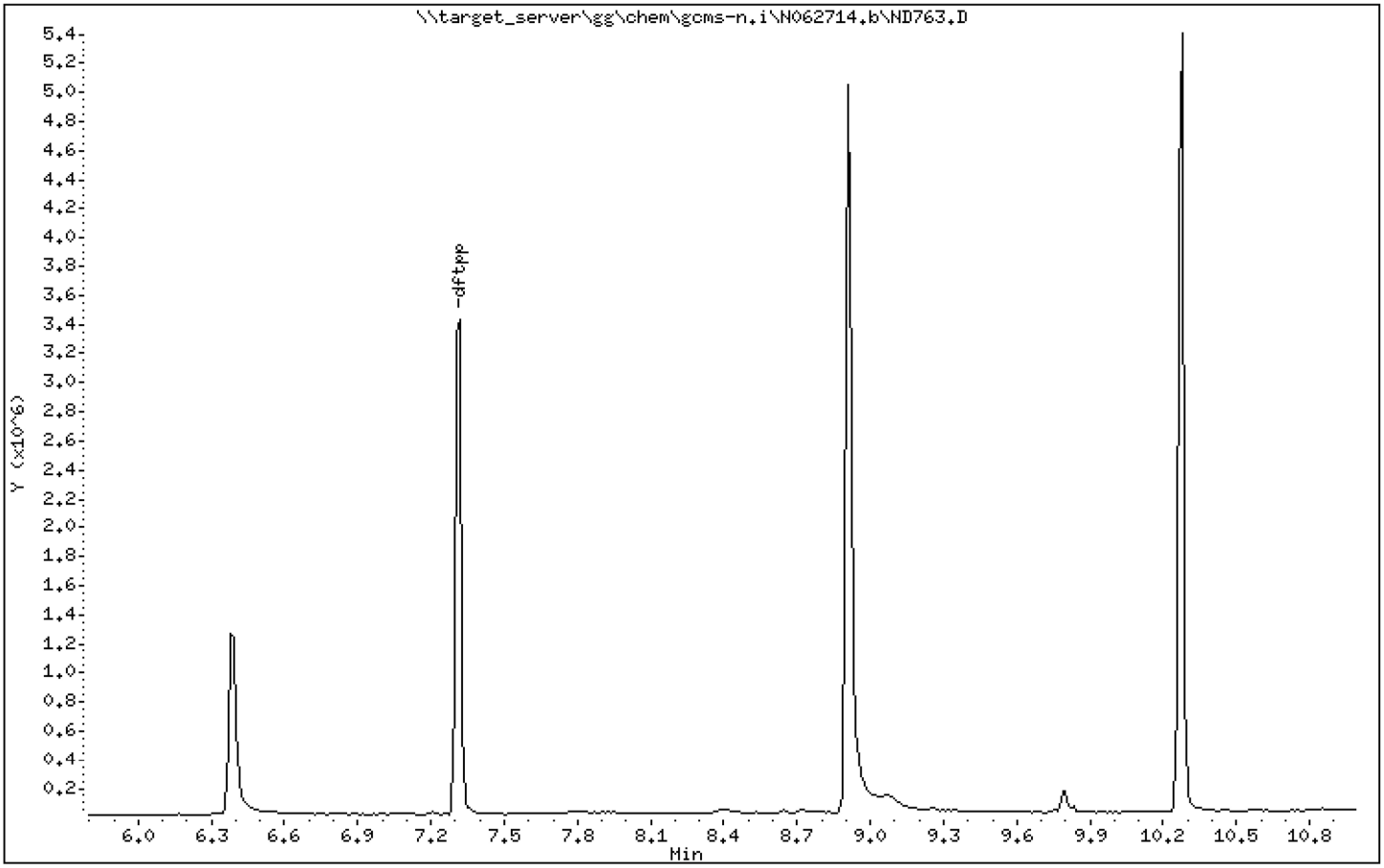
Date : 27-JUN-2014 11:49

Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG145527-1,WE53-7

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25



Data File: \\target_server\gg\chem\gcms-n.i\N062714.b\ND763.D

Date : 27-JUN-2014 11:49

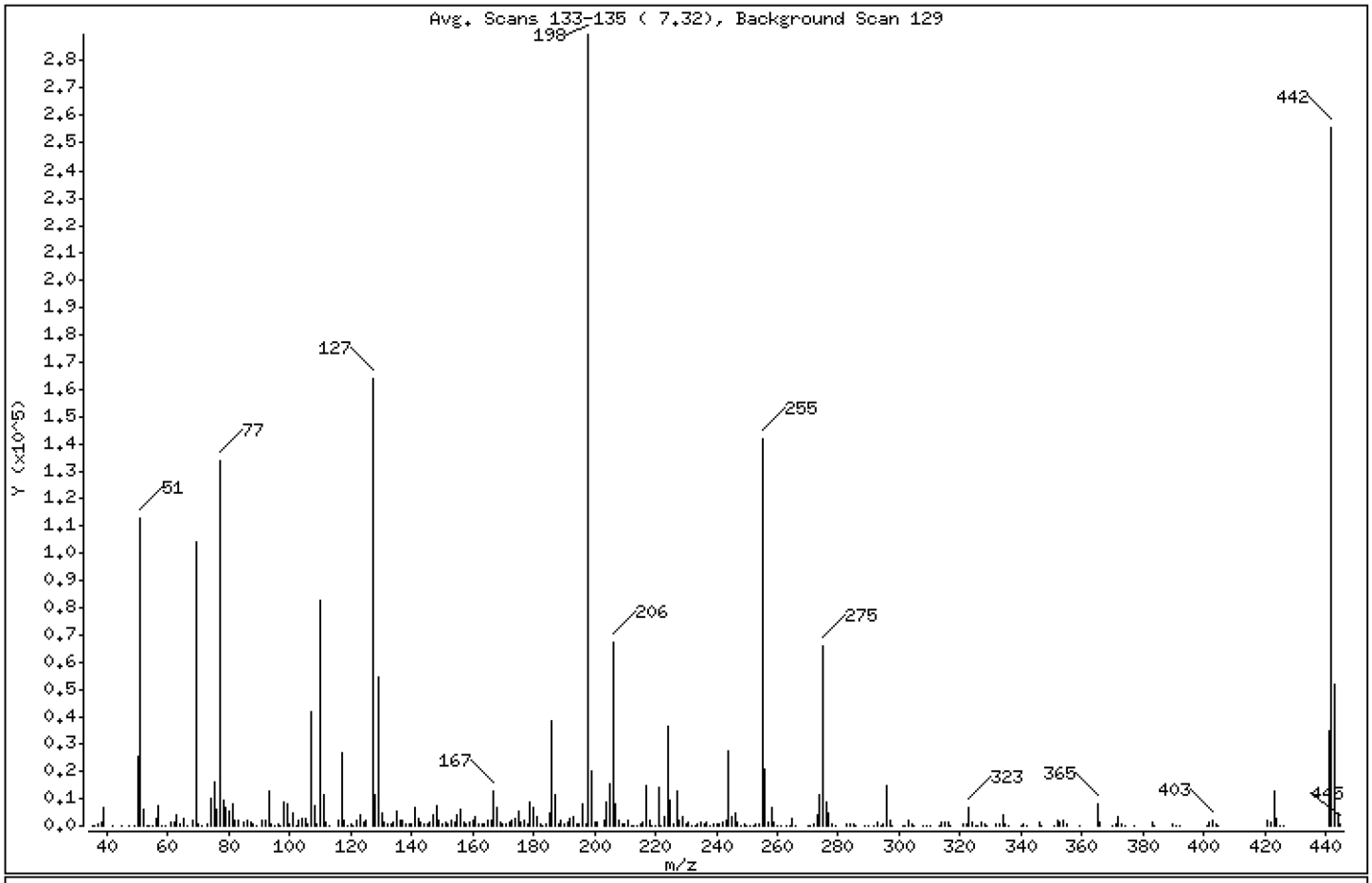
Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG145527-1,WE53-7

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

1 dftpp



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	30.00 - 60.00% of mass 198	38.80
68	Less than 2.00% of mass 69	0.59 (1.65)
69	Less than 100.00% of mass 198	35.86
70	Less than 2.00% of mass 69	0.14 (0.39)
127	40.00 - 60.00% of mass 198	56.55
197	Less than 1.00% of mass 198	0.33
199	5.00 - 9.00% of mass 198	6.91
275	10.00 - 30.00% of mass 198	22.85
365	1.00 - 100.00% of mass 198	2.73
441	0.01 - 100.00% of mass 443	12.03 (67.02)
442	40.00 - 100.00% of mass 198	88.29
443	17.00 - 23.00% of mass 442	17.95 (20.33)

Data File: \\target_server\gg\chem\gcms-n.i\N062714.b\ND763.D

Date : 27-JUN-2014 11:49

Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG145527-1,WE53-7

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

Data File: ND763.D
Spectrum: Avg. Scans 133-135 (7.32), Background Scan 129
Location of Maximum: 198.00
Number of points: 306

m/z	Y	m/z	Y	m/z	Y	m/z	Y
35.00	55	125.00	2077	204.00	8538	290.00	183
36.00	117	127.00	163776	205.00	15333	292.00	242
37.00	443	128.00	11213	206.00	67056	293.00	1092
38.00	1165	129.00	54848	207.00	8102	294.00	254
39.00	6636	130.00	4677	208.00	1885	295.00	385
42.00	211	131.00	1119	209.00	597	296.00	14877
45.00	68	132.00	565	210.00	984	297.00	1984
47.00	168	133.00	368	211.00	2159	298.00	175
49.00	223	134.00	1532	212.00	218	301.00	160
50.00	25248	135.00	5020	213.00	156	302.00	185
51.00	112352	136.00	1703	214.00	75	303.00	2287
52.00	5795	137.00	2032	215.00	498	304.00	664
53.00	167	138.00	646	216.00	1169	305.00	58
54.00	76	139.00	405	217.00	14607	308.00	289
55.00	202	140.00	642	218.00	2097	309.00	152
56.00	2783	141.00	6675	219.00	231	310.00	251
57.00	7000	142.00	2450	220.00	97	313.00	266
58.00	259	143.00	1627	221.00	13835	314.00	1175
59.00	139	144.00	604	222.00	171	315.00	1493
61.00	1099	145.00	569	223.00	3457	316.00	1015
62.00	1513	146.00	1299	224.00	36728	317.00	147
63.00	4221	147.00	3955	225.00	9166	321.00	556
64.00	457	148.00	7257	226.00	766	322.00	376
65.00	2504	149.00	1933	227.00	12766	323.00	6482
66.00	213	150.00	583	228.00	1903	324.00	1042
68.00	1714	151.00	1092	229.00	3287	325.00	67
69.00	103840	152.00	423	230.00	365	326.00	66
70.00	408	153.00	2077	231.00	1237	327.00	1006
71.00	95	154.00	1612	232.00	214	328.00	641
73.00	446	155.00	3716	233.00	217	329.00	53
74.00	10105	156.00	5712	234.00	652	332.00	645
75.00	15800	157.00	1147	235.00	1029	333.00	642
76.00	6154	158.00	950	236.00	714	334.00	3671
77.00	134016	159.00	1067	237.00	1112	335.00	953
78.00	9266	160.00	1852	238.00	245	336.00	157

Data File: \\target_server\gg\chem\gcms-n.i\N062714.b\ND763.D

Date : 27-JUN-2014 11:49

Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG145527-1,WE53-7

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

Data File: ND763.D
Spectrum: Avg. Scans 133-135 (7.32), Background Scan 129
Location of Maximum: 198.00
Number of points: 306

m/z	Y	m/z	Y	m/z	Y	m/z	Y
79.00	6647	161.00	3363	239.00	643	340.00	225
80.00	5469	162.00	953	240.00	407	341.00	762
81.00	8309	163.00	344	241.00	649	342.00	257
82.00	2213	164.00	358	242.00	1627	346.00	1034
83.00	2057	165.00	1996	243.00	1893	347.00	228
85.00	1361	166.00	1963	244.00	26968	351.00	52
86.00	1831	167.00	12923	245.00	3379	352.00	1936
87.00	1049	168.00	6636	246.00	4694	353.00	1404
88.00	385	169.00	1320	247.00	1089	354.00	1996
89.00	150	170.00	366	248.00	219	355.00	343
91.00	1758	171.00	493	249.00	915	359.00	85
92.00	2224	172.00	1141	250.00	251	365.00	7918
93.00	12349	173.00	1682	251.00	315	366.00	1070
94.00	977	174.00	2351	252.00	260	370.00	240
95.00	295	175.00	5608	253.00	833	371.00	477
96.00	490	176.00	1562	254.00	877	372.00	3314
97.00	82	177.00	2052	255.00	141824	373.00	804
98.00	8739	178.00	735	256.00	20864	374.00	87
99.00	8167	179.00	8829	257.00	1447	377.00	107
100.00	579	180.00	6739	258.00	6420	383.00	1135
101.00	4763	181.00	3203	259.00	1201	384.00	284
102.00	232	182.00	590	260.00	72	390.00	462
103.00	1799	183.00	297	261.00	234	391.00	207
104.00	2763	184.00	729	263.00	65	392.00	210
105.00	2686	185.00	4596	264.00	269	401.00	94
106.00	648	186.00	38856	265.00	2435	402.00	1573
107.00	41856	187.00	11237	266.00	266	403.00	2217
108.00	7175	188.00	995	270.00	61	404.00	924
109.00	515	189.00	2066	271.00	275	405.00	139
110.00	82856	190.00	423	272.00	420	421.00	2020
111.00	11585	191.00	1227	273.00	4143	422.00	1573
112.00	1286	192.00	2745	274.00	11110	423.00	12622
113.00	290	193.00	3020	275.00	66160	424.00	2531
116.00	2003	194.00	872	276.00	8369	425.00	300
117.00	26392	195.00	947	277.00	4819	426.00	52

Data File: \\target_server\gg\chem\gcms-n.i\N062714.b\ND763.D

Date : 27-JUN-2014 11:49

Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG145527-1,WE53-7

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

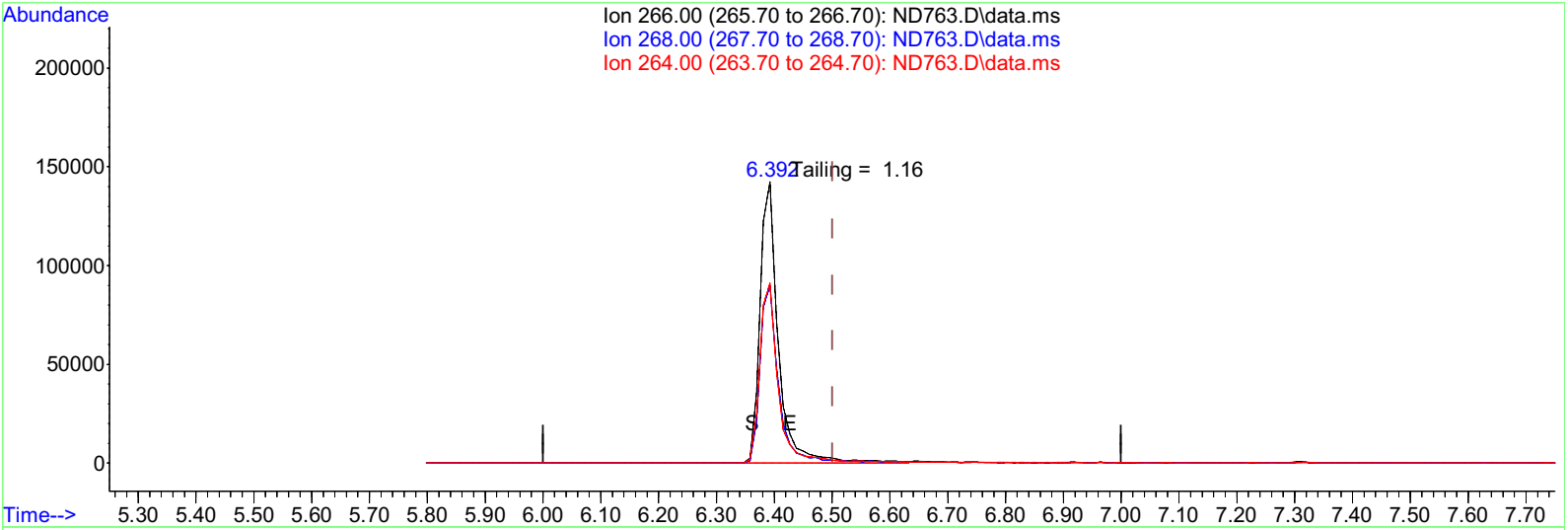
Data File: ND763.D
Spectrum: Avg. Scans 133-135 (7.32), Background Scan 129
Location of Maximum: 198.00
Number of points: 306

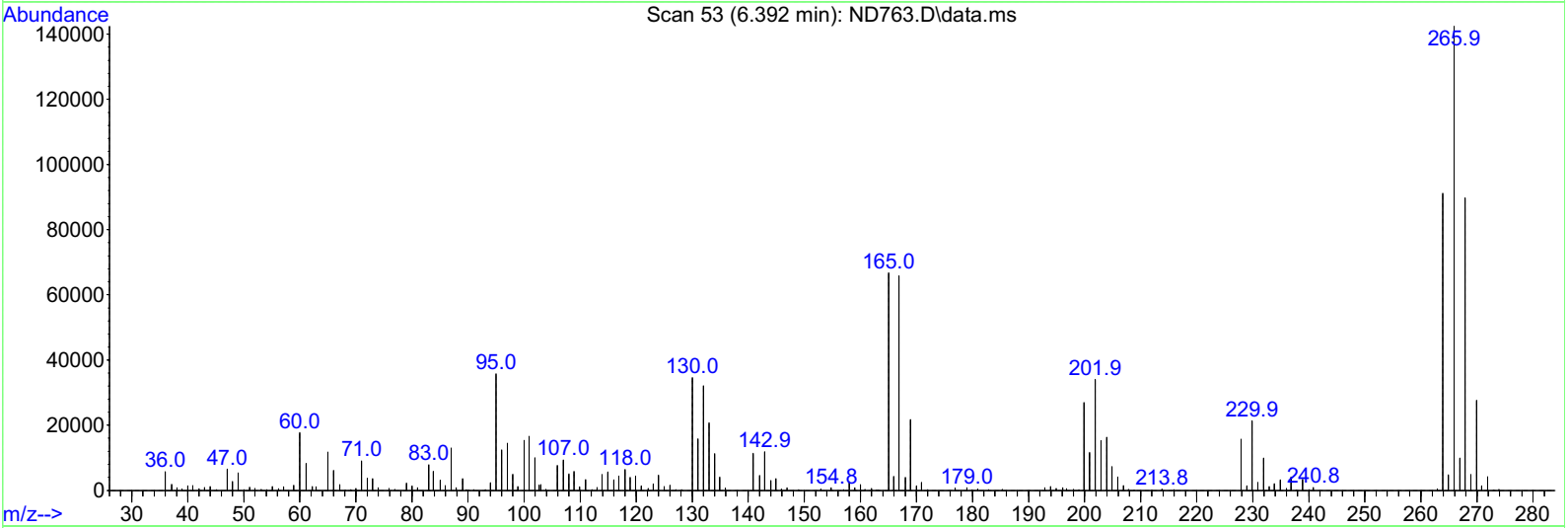
m/z	Y	m/z	Y	m/z	Y	m/z	Y
118.00	1939	196.00	8045	278.00	876	441.00	34840
119.00	280	197.00	963	279.00	221	442.00	255680
120.00	517	198.00	289600	283.00	517	443.00	51984
121.00	50	199.00	20008	284.00	419	444.00	4768
122.00	2281	200.00	1331	285.00	966	445.00	381
123.00	3672	201.00	1272	286.00	269		
124.00	1611	203.00	1813	289.00	170		

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\N062714\
Data File : ND763.D
Acq On : 27 Jun 2014 11:49 am
Operator : JCG
Sample : WG145527-1
Misc : WG145527,WG145527,WG145455-4
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 27 12:03:52 2014
Quant Method : C:\msdchem\1\METHODS\TUNETAIL.M
Quant Title :
QLast Update : Wed May 28 14:53:53 2014
Response via : Initial Calibration





TIC: ND763.D\data.ms

(1) Pentachlorophenol

6.394min (-0.106) 0.00

response 3092258

Ion	Exp%	Act%
266.00	100	100
268.00	0.00	63.81#
264.00	0.00	64.94#
0.00	0.00	0.00

Katahdin Analytical Services 6000210

Data File: \\target_server\gg\chem\gcms-n.i\N062814.b\ND764.D

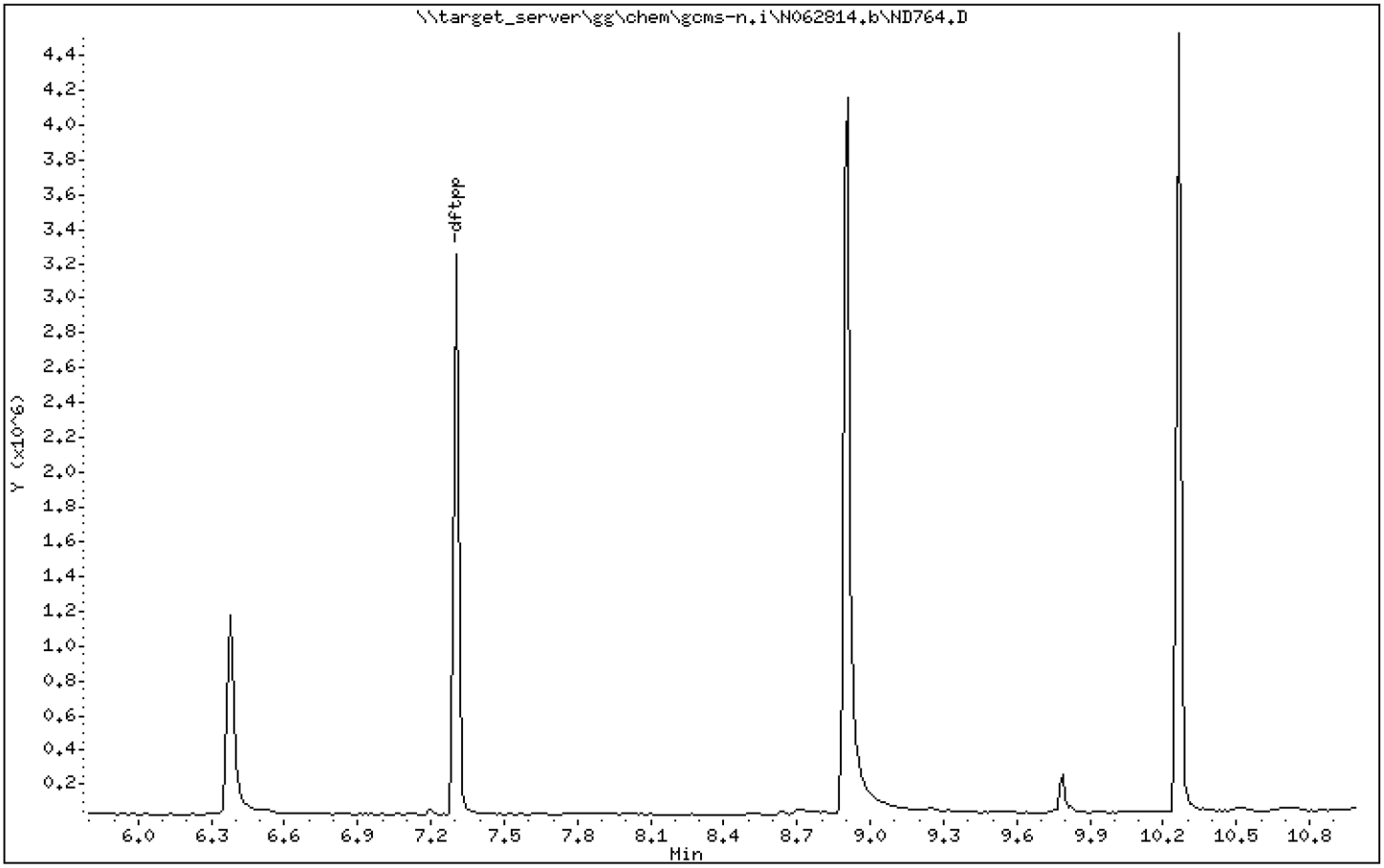
Date : 28-JUN-2014 08:17

Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG145582-1,WE53-7

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25



Data File: \\target_server\gg\chem\gcms-n.i\N062814.b\ND764.D

Date : 28-JUN-2014 08:17

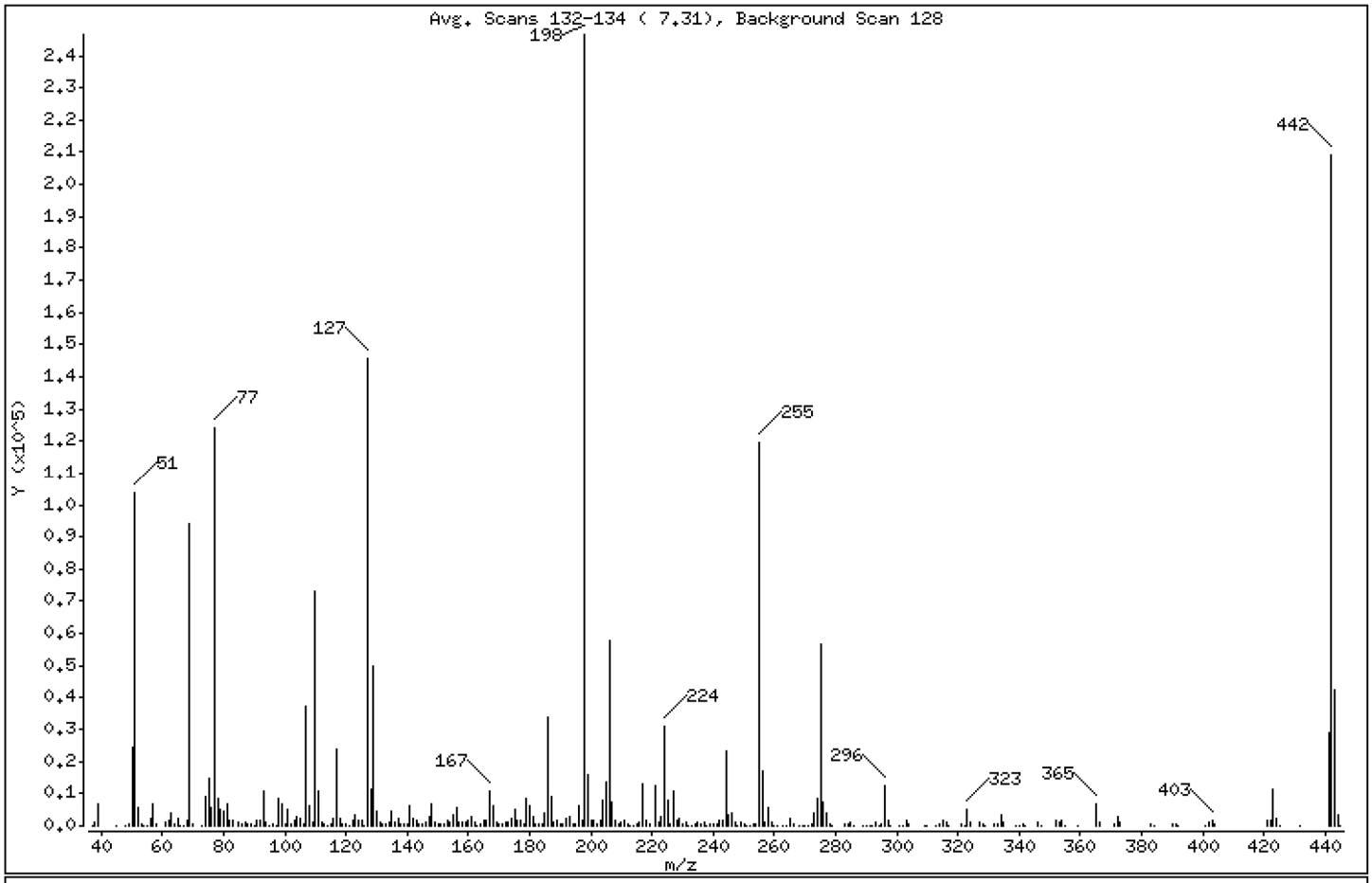
Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG145582-1,WE53-7

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

1 dftpp



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	30.00 - 60.00% of mass 198	42.11
68	Less than 2.00% of mass 69	0.67 (1.75)
69	Less than 100.00% of mass 198	38.25
70	Less than 2.00% of mass 69	0.16 (0.42)
127	40.00 - 60.00% of mass 198	59.01
197	Less than 1.00% of mass 198	0.58
199	5.00 - 9.00% of mass 198	6.54
275	10.00 - 30.00% of mass 198	23.08
365	1.00 - 100.00% of mass 198	2.77
441	0.01 - 100.00% of mass 443	11.62 (67.44)
442	40.00 - 100.00% of mass 198	84.92
443	17.00 - 23.00% of mass 442	17.23 (20.30)

Data File: \\target_server\gg\chem\gcms-n.i\N062814.b\ND764.D

Date : 28-JUN-2014 08:17

Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG145582-1,WE53-7

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

Data File: ND764.D
Spectrum: Avg. Scans 132-134 (7.31), Background Scan 128
Location of Maximum: 198.00
Number of points: 300

m/z	Y	m/z	Y	m/z	Y	m/z	Y
37.00	280	125.00	1541	201.00	1434	283.00	482
38.00	1051	126.00	99	202.00	318	284.00	375
39.00	6533	127.00	145472	203.00	1550	285.00	944
45.00	276	128.00	11240	204.00	8039	286.00	205
48.00	149	129.00	49768	205.00	13496	289.00	167
49.00	599	130.00	4547	206.00	58000	290.00	84
50.00	24520	131.00	852	207.00	7233	291.00	125
51.00	103816	132.00	544	208.00	1880	292.00	231
52.00	5694	133.00	335	209.00	551	293.00	1091
53.00	444	134.00	1333	210.00	1145	294.00	222
54.00	55	135.00	4259	211.00	1865	295.00	284
55.00	33	136.00	1333	212.00	374	296.00	12351
56.00	2410	137.00	2321	213.00	159	297.00	1590
57.00	6989	138.00	740	214.00	52	298.00	208
58.00	409	139.00	372	215.00	580	301.00	185
61.00	1308	140.00	619	216.00	985	302.00	241
62.00	1502	141.00	6076	217.00	12846	303.00	1640
63.00	3946	142.00	2167	218.00	1669	304.00	389
64.00	715	143.00	1499	219.00	327	309.00	182
65.00	2190	144.00	421	221.00	12212	310.00	153
66.00	168	145.00	478	222.00	1022	313.00	56
67.00	94	146.00	1028	223.00	3087	314.00	721
68.00	1651	147.00	2910	224.00	31336	315.00	1431
69.00	94296	148.00	6567	225.00	7668	316.00	973
70.00	399	149.00	1288	226.00	791	317.00	109
73.00	174	150.00	426	227.00	10842	321.00	493
74.00	8903	151.00	683	228.00	1555	322.00	277
75.00	14815	152.00	679	229.00	2052	323.00	5086
76.00	5549	153.00	1689	230.00	464	324.00	1031
77.00	124072	154.00	1328	231.00	1216	327.00	1019
78.00	8514	155.00	3312	232.00	161	328.00	363
79.00	5166	156.00	5580	233.00	220	329.00	71
80.00	4784	157.00	1110	234.00	612	332.00	365
81.00	6898	158.00	883	235.00	1147	333.00	402
82.00	1558	159.00	884	236.00	615	334.00	3527

Data File: \\target_server\gg\chem\gcms-n.i\N062814.b\ND764.D

Date : 28-JUN-2014 08:17

Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG145582-1,WE53-7

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

Data File: ND764.D
Spectrum: Avg. Scans 132-134 (7.31), Background Scan 128
Location of Maximum: 198.00
Number of points: 300

m/z	Y	m/z	Y	m/z	Y	m/z	Y
83.00	1812	160.00	1709	237.00	1128	335.00	1065
85.00	1347	161.00	2968	238.00	196	339.00	68
86.00	759	162.00	1105	239.00	477	340.00	137
87.00	1143	163.00	191	240.00	459	341.00	735
88.00	325	164.00	354	241.00	614	342.00	138
89.00	332	165.00	1535	242.00	1834	346.00	994
90.00	53	166.00	1830	243.00	1555	347.00	186
91.00	1420	167.00	10957	244.00	23344	352.00	1516
92.00	1665	168.00	5991	245.00	3306	353.00	1033
93.00	10988	169.00	963	246.00	3745	354.00	1561
94.00	1016	170.00	341	247.00	916	355.00	187
95.00	266	171.00	552	248.00	258	359.00	69
96.00	500	172.00	1025	249.00	940	365.00	6839
97.00	254	173.00	1340	250.00	450	366.00	1053
98.00	8395	174.00	2238	251.00	218	371.00	330
99.00	7052	175.00	4967	252.00	250	372.00	2925
100.00	707	176.00	1513	253.00	580	373.00	877
101.00	4934	177.00	1679	254.00	581	383.00	616
102.00	379	178.00	817	255.00	119784	384.00	199
103.00	1673	179.00	8289	256.00	16728	390.00	425
104.00	2854	180.00	6242	257.00	1211	391.00	343
105.00	2291	181.00	2773	258.00	5905	392.00	128
106.00	841	182.00	540	259.00	921	401.00	199
107.00	37312	183.00	463	260.00	117	402.00	1143
108.00	5962	184.00	810	261.00	183	403.00	1686
109.00	1080	185.00	3860	263.00	53	404.00	709
110.00	73048	186.00	34232	264.00	191	421.00	1621
111.00	10523	187.00	9259	265.00	2010	422.00	1593
112.00	1084	188.00	1171	266.00	441	423.00	11071
113.00	292	189.00	1683	268.00	53	424.00	2207
114.00	149	190.00	361	269.00	63	425.00	240
115.00	299	191.00	831	270.00	81	432.00	60
116.00	2290	192.00	2117	271.00	272	441.00	28656
117.00	23560	193.00	2939	272.00	312	442.00	209344
118.00	1989	194.00	742	273.00	3700	443.00	42488

Data File: \\target_server\gg\chem\gcms-n.i\N062814.b\ND764.D

Date : 28-JUN-2014 08:17

Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG145582-1,WE53-7

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

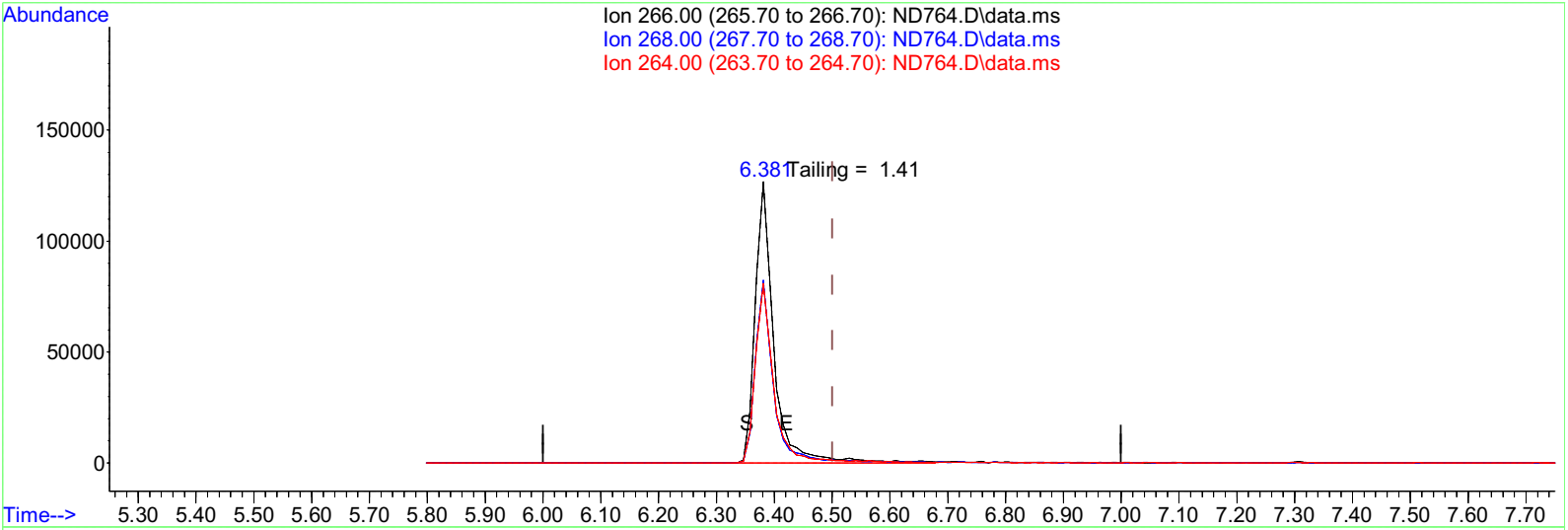
Data File: ND764.D
Spectrum: Avg. Scans 132-134 (7.31), Background Scan 128
Location of Maximum: 198.00
Number of points: 300

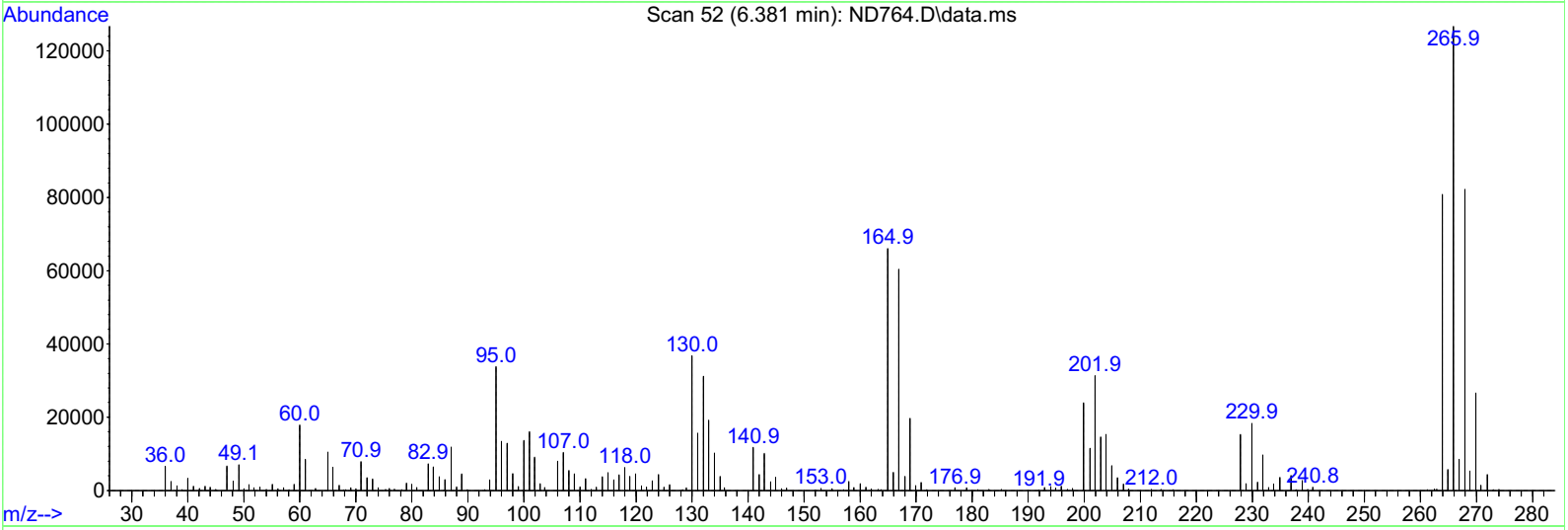
m/z	Y	m/z	Y	m/z	Y	m/z	Y
119.00	389	195.00	567	274.00	8273	444.00	3548
120.00	577	196.00	5980	275.00	56896	445.00	235
121.00	165	197.00	1441	276.00	7618		
122.00	1864	198.00	246528	277.00	3780		
123.00	3407	199.00	16134	278.00	718		
124.00	1562	200.00	1468	279.00	104		

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\N062814\
Data File : ND764.D
Acq On : 28 Jun 2014 8:17 am
Operator : JCG
Sample : WG145582-1
Misc : WG145582,WG145582,WG145455-4
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 28 08:30:59 2014
Quant Method : C:\msdchem\1\METHODS\TUNETAIL.M
Quant Title :
QLast Update : Wed May 28 14:53:53 2014
Response via : Initial Calibration





TIC: ND764.D\data.ms

(1) Pentachlorophenol

6.386min (-0.114) 0.00

response 2780463

Ion	Exp%	Act%
266.00	100	100
268.00	0.00	63.76#
264.00	0.00	63.92#
0.00	0.00	0.00

Katahdin Analytical Services 6000216

Raw QC Data Section

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client:
Lab ID: WG145278-1
Client ID: Method Blank Sample
Project:
SDG: WE53-7
Lab File ID: N2929.D

Sample Date:
Received Date:
Extract Date: 23-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145278

Analysis Date: 26-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 11-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,4-Dioxane	U	0.50	ug/L	1	1	1.0	0.029	0.50
2-Chlorophenol	U	0.50	ug/L	1	1	1.0	0.28	0.50
Naphthalene	U	0.10	ug/L	1	.2	0.20	0.064	0.10
Hexachlorobutadiene	U	0.10	ug/L	1	.2	0.20	0.087	0.10
2-Methylnaphthalene	U	0.10	ug/L	1	.2	0.20	0.077	0.10
Hexachlorobenzene	U	0.10	ug/L	1	.2	0.20	0.055	0.10
Pentachlorophenol	U	0.50	ug/L	1	1	1.0	0.33	0.50
Phenanthrene	U	0.10	ug/L	1	.2	0.20	0.051	0.10
Pyrene	U	0.10	ug/L	1	.2	0.20	0.059	0.10
Benzo(a)anthracene	J	0.052	ug/L	1	.2	0.20	0.046	0.10
Chrysene	U	0.10	ug/L	1	.2	0.20	0.036	0.10
Benzo(b)fluoranthene	U	0.10	ug/L	1	.2	0.20	0.089	0.10
Benzo(a)pyrene	U	0.10	ug/L	1	.2	0.20	0.066	0.10
Indeno(1,2,3-cd)pyrene	U	0.10	ug/L	1	.2	0.20	0.052	0.10
Dibenzo(a,h)anthracene	U	0.10	ug/L	1	.2	0.20	0.070	0.10
1,1'-Biphenyl	U	0.10	ug/L	1	.2	0.20	0.065	0.10
1,2,4,5-Tetrachlorobenzene	U	0.10	ug/L	1	.2	0.20	0.10	0.10
2,2'-Oxybis(1-Chloropropane)	U	0.15	ug/L	1	.2	0.20	0.12	0.15
2,4,6-Trichlorophenol	U	0.50	ug/L	1	1	1.0	0.12	0.50
2,4-Dichlorophenol	U	0.50	ug/L	1	1	1.0	0.50	0.50
2,4-Dinitrophenol	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,4-Dinitrotoluene	U	0.10	ug/L	1	.2	0.20	0.035	0.10
2,6-Dinitrotoluene	U	0.10	ug/L	1	.2	0.20	0.070	0.10
2-Nitroaniline	U	0.15	ug/L	1	.2	0.20	0.12	0.15
3,3'-Dichlorobenzidine	U	0.10	ug/L	1	.2	0.20	0.056	0.10
4,6-Dinitro-2-Methylphenol	U	0.75	ug/L	1	1	1.0	0.50	0.75
4-Chloroaniline	U	0.50	ug/L	1	1	1.0	0.50	0.50
3&4-Methylphenol	U	0.50	ug/L	1	1	1.0	0.44	0.50
4-Nitroaniline	U	0.10	ug/L	1	.2	0.20	0.065	0.10
Atrazine	U	0.10	ug/L	1	.2	0.20	0.038	0.10
Bis(2-Chloroethyl)Ether	U	0.10	ug/L	1	.2	0.20	0.041	0.10
Bis(2-Ethylhexyl)Phthalate	U	0.50	ug/L	1	1	1.0	0.50	0.50
Dibenzofuran	U	0.10	ug/L	1	.2	0.20	0.068	0.10
Hexachlorocyclopentadiene	U	0.10	ug/L	1	.2	0.20	0.067	0.10

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Tel:(207) 874-2400 Fax:(207) 775-4029

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Report of Analytical Results

Client:
Lab ID: WG145278-1
Client ID: Method Blank Sample
Project:
SDG: WE53-7
Lab File ID: N2929.D

Sample Date:
Received Date:
Extract Date: 23-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145278

Analysis Date: 26-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 11-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Hexachloroethane	U	0.10	ug/L	1	.2	0.20	0.073	0.10
Nitrobenzene	U	0.15	ug/L	1	.2	0.20	0.13	0.15
N-Nitroso-Di-N-Propylamine	U	0.10	ug/L	1	.2	0.20	0.072	0.10
3-Nitroaniline	U	0.10	ug/L	1	.2	0.20	0.076	0.10
2-Methylnaphthalene-D10		72.2	%					
Fluorene-D10		70.2	%					
Pyrene-D10		97.4	%					
2,4-Dibromophenol		72.8	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N062614.b\N2929.D
Report Date: 11-Jul-2014 13:26

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N062614.b\N2929.D
Lab Smp Id: WG145278-1 Client Smp ID: WG145278-Blank
Inj Date : 26-JUN-2014 15:33 MS Autotune Date: 12-NOV-2013 09:32
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG145278-1,WE53-7
Misc Info : WG145455,WG145278,WG145455-4,SH4401-2
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N062614.b\NSPSIM09.m
Meth Date : 27-Jun-2014 09:17 gcms-n.i Quant Type: ISTD
Cal Date : 26-JUN-2014 14:06 Cal File: N2927.D
Als bottle: 9 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

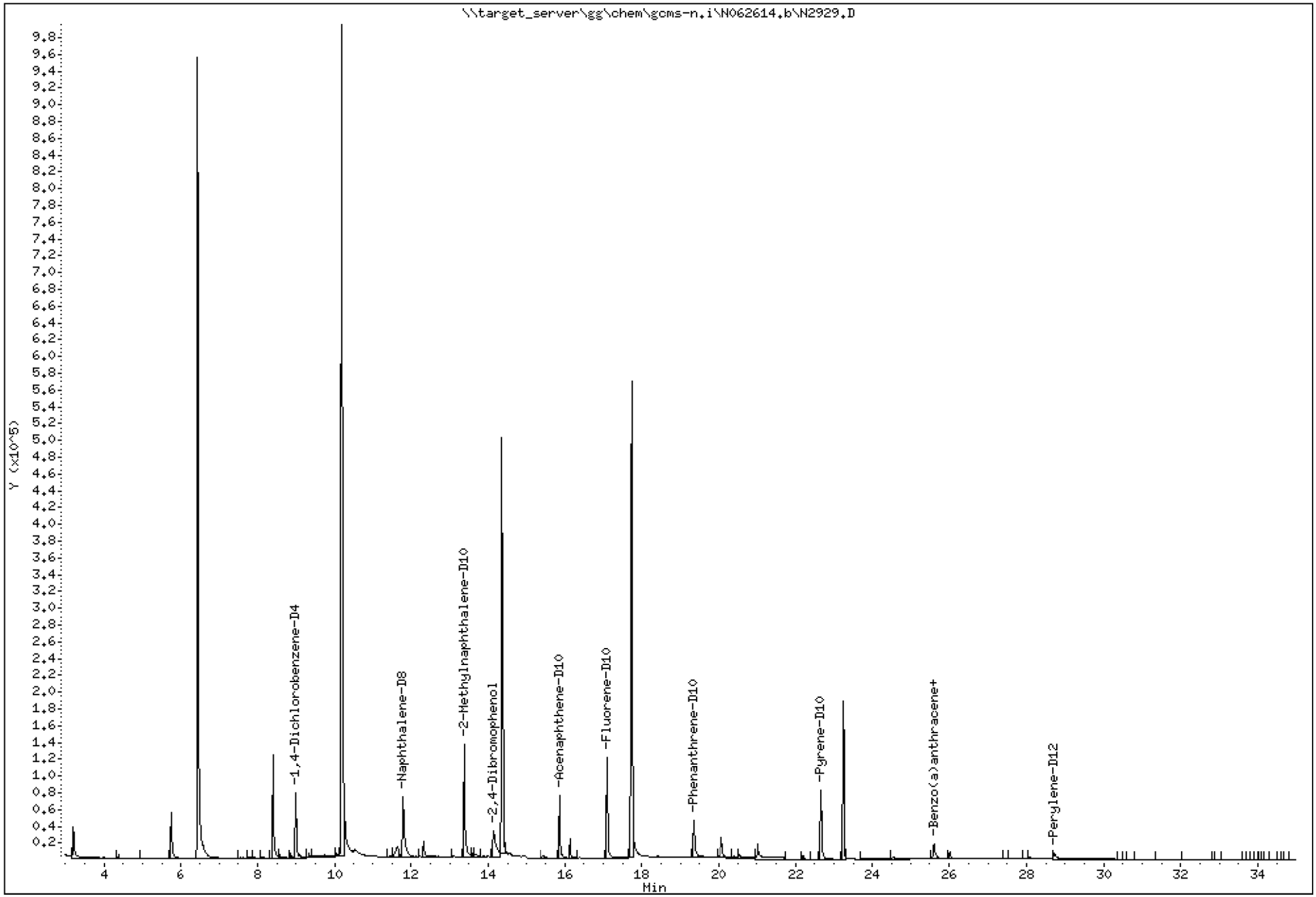
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

			QUANT SIG					CONCENTRATIONS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
$	1	1,4-Dioxane-d8	96	3.191	3.140	(0.355)	51466	1.50911	1.51	
*	8	1,4-Dichlorobenzene-D4	152	8.987	8.971	(1.000)	56007	0.80000	(aQ)	
*	24	Naphthalene-D8	136	11.780	11.763	(1.000)	198171	0.80000	(a)	
$	30	2-Methylnaphthalene-D10	152	13.372	13.354	(0.843)	158389	1.44333	1.44	
$	35	2,4-Dibromophenol	252	14.145	14.107	(0.892)	104254	2.91417	2.91	
*	45	Acenaphthene-D10	164	15.855	15.855	(1.000)	72706	0.80000	(a)	
$	52	Fluorene-D10	174	17.084	17.084	(1.078)	117634	1.40488	1.40	
*	63	Phenanthrene-D10	188	19.338	19.323	(1.000)	103359	0.80000	(a)	
$	69	Pyrene-D10	212	22.660	22.660	(0.885)	138030	1.94831	1.95	
	72	Benzo(a)anthracene	228	25.589	25.562	(0.999)	3227	0.05203	0.0520(a)	
*	73	Chrysene-D12	240	25.603	25.589	(1.000)	40617	0.80000	(a)	
*	81	Perylene-D12	264	28.723	28.706	(1.000)	26730	0.80000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N062614.b\N2929.D
Date : 26-JUN-2014 15:33
Client ID: WG145278-Blank
Instrument: gcms-n.i
Sample Info: WG145278-1,WE53-7



Katahdin Analytical Services 6000221

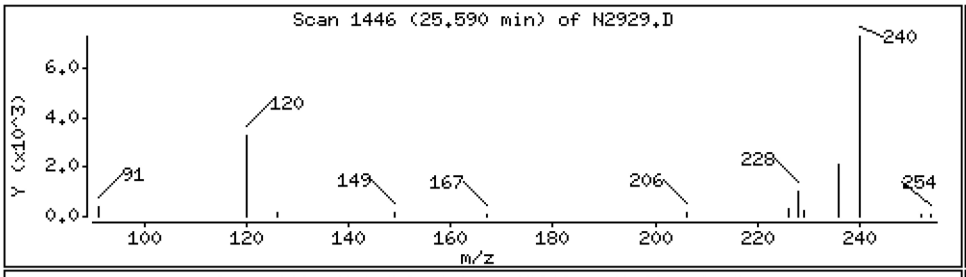
Data File: \\target_server\gg\chem\gcms-n.i\N062614.b\N2929.D

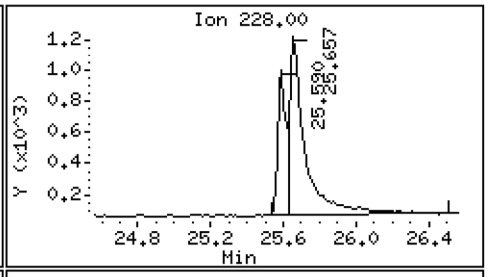
Date : 26-JUN-2014 15:33

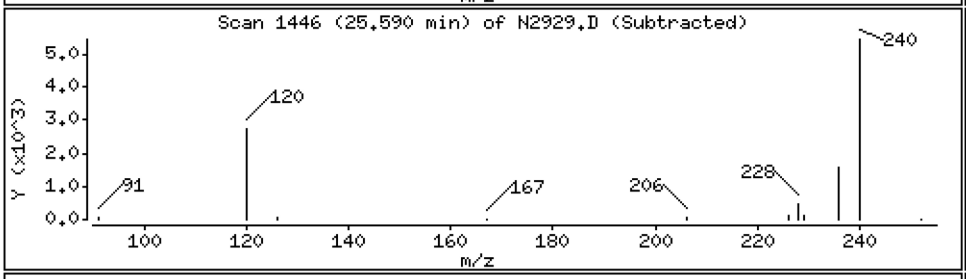
Client ID: WG145278-Blank Instrument: gcms-n.i

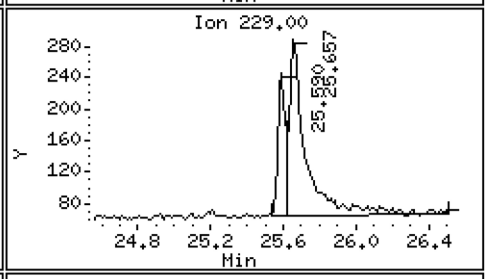
Sample Info: WG145278-1,WE53-7

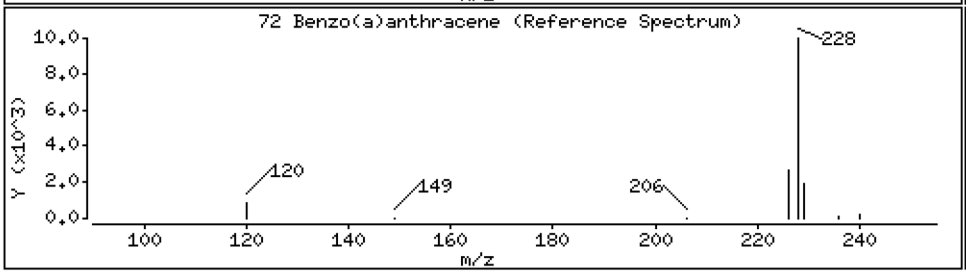
72 Benzo(a)anthracene Concentration: 0.0520 ug/L

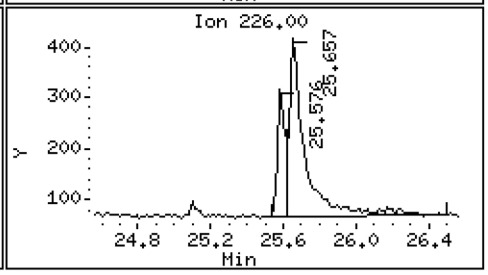












Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client:
Lab ID: WG145381-1
Client ID: Method Blank Sample
Project:
SDG: WE53-7
Lab File ID: N2941.D

Sample Date:
Received Date:
Extract Date: 25-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145381

Analysis Date: 27-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 11-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,4-Dioxane	U	0.50	ug/L	1	1	1.0	0.029	0.50
2-Chlorophenol	U	0.50	ug/L	1	1	1.0	0.28	0.50
Naphthalene	U	0.10	ug/L	1	.2	0.20	0.064	0.10
Hexachlorobutadiene	U	0.10	ug/L	1	.2	0.20	0.087	0.10
2-Methylnaphthalene	U	0.10	ug/L	1	.2	0.20	0.077	0.10
Hexachlorobenzene	U	0.10	ug/L	1	.2	0.20	0.055	0.10
Pentachlorophenol	U	0.50	ug/L	1	1	1.0	0.33	0.50
Phenanthrene	U	0.10	ug/L	1	.2	0.20	0.051	0.10
Pyrene	U	0.10	ug/L	1	.2	0.20	0.059	0.10
Benzo(a)anthracene	U	0.10	ug/L	1	.2	0.20	0.046	0.10
Chrysene	U	0.10	ug/L	1	.2	0.20	0.036	0.10
Benzo(b)fluoranthene	U	0.10	ug/L	1	.2	0.20	0.089	0.10
Benzo(a)pyrene	U	0.10	ug/L	1	.2	0.20	0.066	0.10
Indeno(1,2,3-cd)pyrene	U	0.10	ug/L	1	.2	0.20	0.052	0.10
Dibenzo(a,h)anthracene	U	0.10	ug/L	1	.2	0.20	0.070	0.10
1,1'-Biphenyl	U	0.10	ug/L	1	.2	0.20	0.065	0.10
1,2,4,5-Tetrachlorobenzene	U	0.10	ug/L	1	.2	0.20	0.10	0.10
2,2'-Oxybis(1-Chloropropane)	U	0.15	ug/L	1	.2	0.20	0.12	0.15
2,4,6-Trichlorophenol	U	0.50	ug/L	1	1	1.0	0.12	0.50
2,4-Dichlorophenol	U	0.50	ug/L	1	1	1.0	0.50	0.50
2,4-Dinitrophenol	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,4-Dinitrotoluene	U	0.10	ug/L	1	.2	0.20	0.035	0.10
2,6-Dinitrotoluene	U	0.10	ug/L	1	.2	0.20	0.070	0.10
2-Nitroaniline	U	0.15	ug/L	1	.2	0.20	0.12	0.15
3,3'-Dichlorobenzidine	U	0.10	ug/L	1	.2	0.20	0.056	0.10
4,6-Dinitro-2-Methylphenol	U	0.75	ug/L	1	1	1.0	0.50	0.75
4-Chloroaniline	U	0.50	ug/L	1	1	1.0	0.50	0.50
3&4-Methylphenol	U	0.50	ug/L	1	1	1.0	0.44	0.50
4-Nitroaniline	U	0.10	ug/L	1	.2	0.20	0.065	0.10
Atrazine	U	0.10	ug/L	1	.2	0.20	0.038	0.10
Bis(2-Chloroethyl)Ether	U	0.10	ug/L	1	.2	0.20	0.041	0.10
Bis(2-Ethylhexyl)Phthalate	U	0.50	ug/L	1	1	1.0	0.50	0.50
Dibenzofuran	U	0.10	ug/L	1	.2	0.20	0.068	0.10
Hexachlorocyclopentadiene	U	0.10	ug/L	1	.2	0.20	0.067	0.10

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Report of Analytical Results

Client:
Lab ID: WG145381-1
Client ID: Method Blank Sample
Project:
SDG: WE53-7
Lab File ID: N2941.D

Sample Date:
Received Date:
Extract Date: 25-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145381

Analysis Date: 27-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 11-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Hexachloroethane	U	0.10	ug/L	1	.2	0.20	0.073	0.10
Nitrobenzene	U	0.15	ug/L	1	.2	0.20	0.13	0.15
N-Nitroso-Di-N-Propylamine	U	0.10	ug/L	1	.2	0.20	0.072	0.10
3-Nitroaniline	U	0.10	ug/L	1	.2	0.20	0.076	0.10
2-Methylnaphthalene-D10		61.6	%					
Fluorene-D10		62.0	%					
Pyrene-D10		78.5	%					
2,4-Dibromophenol		60.0	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N062714.b\N2941.D
Report Date: 11-Jul-2014 13:29

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N062714.b\N2941.D
Lab Smp Id: WG145381-1 Client Smp ID: WG145381-Blank
Inj Date : 27-JUN-2014 12:51 MS Autotune Date: 12-NOV-2013 09:32
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG145381-1,WE53-7
Misc Info : WG145527,WG145381,WG145455-4,SH4401-2
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N062714.b\NSPSIM09.m
Meth Date : 27-Jun-2014 12:41 cgomez Quant Type: ISTD
Cal Date : 26-JUN-2014 13:22 Cal File: N2926.D
Als bottle: 3 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ttcutler53ocs.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

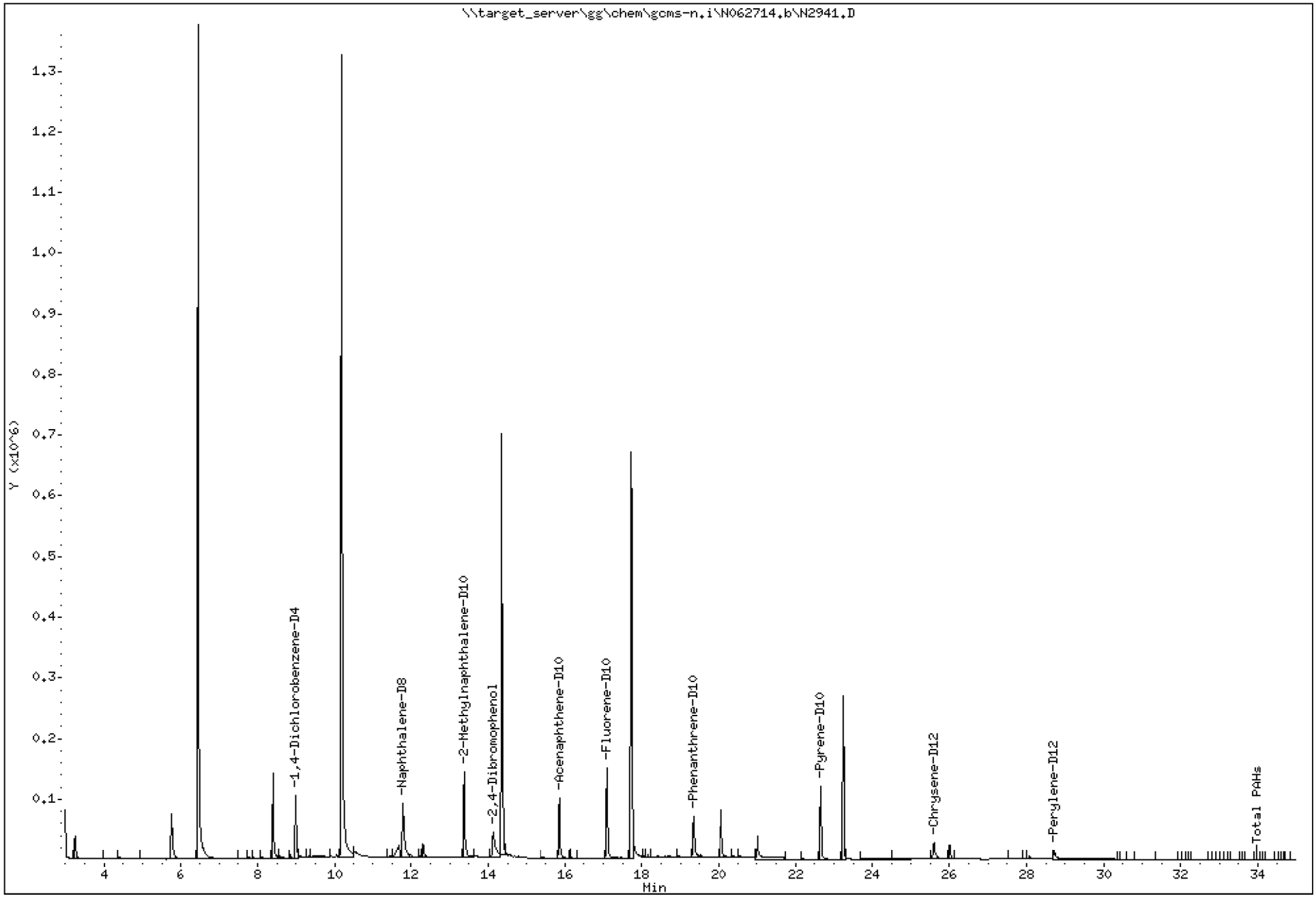
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
*	8 1,4-Dichlorobenzene-D4	152	8.987	8.971	(1.000)	73278	0.80000	(a)	
*	24 Naphthalene-D8	136	11.780	11.763	(1.000)	263061	0.80000	(a)	
$	30 2-Methylnaphthalene-D10	152	13.372	13.353	(0.843)	194076	1.23113	1.23	
$	35 2,4-Dibromophenol	252	14.126	14.107	(0.891)	123330	2.39984	2.40	
*	45 Acenaphthene-D10	164	15.855	15.842	(1.000)	104443	0.80000	(a)	
$	52 Fluorene-D10	174	17.084	17.068	(1.078)	149111	1.23967	1.24	(Q)
*	63 Phenanthrene-D10	188	19.338	19.323	(1.000)	152284	0.80000	(a)	
$	69 Pyrene-D10	212	22.646	22.646	(0.885)	186280	1.56990	1.57	
*	73 Chrysene-D12	240	25.603	25.589	(1.000)	68028	0.80000	(a)	
*	81 Perylene-D12	264	28.723	28.706	(1.000)	45431	0.80000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N062714.b\N2941.D
Date : 27-JUN-2014 12:51
Client ID: WG145381-Blank
Instrument: gcms-n.i
Sample Info: WG145381-1,WE53-7



Katahdin Analytical Services 6000226

Katahdin
ANALYTICAL SERVICES

Cert No E87604

LCS/LCSD Recovery Report

LCS ID: WG145381-2
LCSD ID: WG145381-3
Project:
SDG: WE53-7
Report Date: 11-JUL-14
LCS File ID: N2942.D

Received Date:
Extract Date: 25-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145381
LCSD File ID: N2943.D

Analysis Date: 27-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
1,4-Dioxane	2.00	0.668	33.4	0.660	33.0	ug/L	1	30	10-93
2-Chlorophenol	4.00	2.72	68.0	2.93	73.2	ug/L	7	30	30-112
Naphthalene	2.00	1.55	77.5	1.62	81.0	ug/L	4	30	46-84
Hexachlorobutadiene	2.00	1.38	69.0	1.43	71.5	ug/L	4	30	48-95
2-Methylnaphthalene	2.00	1.54	77.0	1.61	80.5	ug/L	4	30	51-114
Hexachlorobenzene	2.00	1.58	79.0	1.60	80.0	ug/L	1	30	62-90
Pentachlorophenol	4.00	2.64	66.0	3.24	81.0*	ug/L	20	30	10-66
Phenanthrene	2.00	1.76	88.0	1.90	95.0	ug/L	8	30	73-100
Pyrene	2.00	1.87	93.5	2.03	102.	ug/L	8	30	71-104
Benzo(a)anthracene	2.00	1.79	89.5	1.94	97.0	ug/L	8	30	70-110
Chrysene	2.00	2.00	100.*	2.14	107.*	ug/L	7	30	70-95
Benzo(b)fluoranthene	2.00	1.87	93.5	1.97	98.5	ug/L	5	30	67-102
Benzo(a)pyrene	2.00	1.61	80.5	1.68	84.0	ug/L	4	30	63-98
Indeno(1,2,3-cd)pyrene	2.00	2.04	102.	2.16	108.	ug/L	6	30	61-112
Dibenzo(a,h)anthracene	2.00	1.14	57.0*	1.21	60.5*	ug/L	6	30	66-108
1,1'-Biphenyl	4.00	1.54	38.5*	1.62	40.5*	ug/L	5	30	56-96
1,2,4,5-Tetrachlorobenzene	2.00	1.50	75.0	1.60	80.0	ug/L	6	30	30-150
2,2'-Oxybis(1-Chloropropane)	2.00	0.962	48.1*	1.01	50.5*	ug/L	5	30	57-90
2,4,6-Trichlorophenol	4.00	2.88	72.0	3.16	79.0	ug/L	9	30	19-139
2,4-Dichlorophenol	4.00	2.92	73.0	3.09	77.2	ug/L	6	30	31-106
2,4-Dinitrophenol	4.00	1.60	40.0	2.08	52.0	ug/L	26	30	10-95
2,4-Dinitrotoluene	2.00	1.55	77.5	1.67	83.5	ug/L	7	30	48-95
2,6-Dinitrotoluene	2.00	1.57	78.5	1.63	81.5	ug/L	4	30	47-86
2-Nitroaniline	2.00	1.49	74.5	1.59	79.5	ug/L	6	30	54-105
3,3'-Dichlorobenzidine	4.00	3.83	95.8	3.36	84.0	ug/L	13	30	10-118
4,6-Dinitro-2-Methylphenol	4.00	2.76	69.0	3.02	75.5	ug/L	9	30	10-77
4-Chloroaniline	2.00	1.20	60.0	1.24	62.0	ug/L	3	30	38-122
3&4-Methylphenol	4.00	2.18	54.5	2.36	59.0	ug/L	8	30	31-78
4-Nitroaniline	2.00	1.80	90.0	2.13	106.	ug/L	17	30	42-152
Atrazine	2.00	1.92	96.0	2.04	102.	ug/L	6	30	66-126
Bis(2-Chloroethyl)Ether	2.00	1.12	56.0	1.18	59.0	ug/L	5	30	56-87
Bis(2-Ethylhexyl)Phthalate	2.00	1.63	81.5*	1.68	84.0*	ug/L	3	30	97-188
Dibenzofuran	2.00	1.50	75.0	1.58	79.0	ug/L	5	30	56-98
Hexachlorocyclopentadiene	2.00	0.905	45.2	0.978	48.9	ug/L	8	30	10-96

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LCS/LCSD Recovery Report

LCS ID: WG145381-2
LCSD ID: WG145381-3
Project:
SDG: WE53-7
Report Date: 11-JUL-14
LCS File ID: N2942.D

Received Date:
Extract Date: 25-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145381
LCSD File ID: N2943.D

Analysis Date: 27-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Hexachloroethane	2.00	1.32	66.0	1.40	70.0	ug/L	6	30	48-80
Nitrobenzene	2.00	1.36	68.0	1.44	72.0	ug/L	6	30	43-89
N-Nitroso-Di-N-Propylamine	2.00	1.21	60.5	1.38	69.0	ug/L	13	30	43-86
3-Nitroaniline	2.00	1.88	94.0	1.99	99.5	ug/L	6	30	50-103
2-Methylnaphthalene-D10			69.6		73.7				43-92
Fluorene-D10			71.9		75.0				29-101
Pyrene-D10			84.0		89.0				53-166
2,4-Dibromophenol			73.0		71.1				10-130

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Data File: \\target_server\gg\chem\gcms-n.i\N062714.b\N2942.D
Report Date: 11-Jul-2014 13:29

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Data file : \\target_server\gg\chem\gcms-n.i\N062714.b\N2942.D
Lab Smp Id: WG145381-2 Client Smp ID: WG145381-LCS
Inj Date : 27-JUN-2014 13:34 MS Autotune Date: 12-NOV-2013 09:32
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG145381-2,WE53-7
Misc Info : WG145527,WG145381,WG145455-4,SH4401-2
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N062714.b\NSPSIM09.m
Meth Date : 27-Jun-2014 12:41 cgomez Quant Type: ISTD
Cal Date : 26-JUN-2014 13:22 Cal File: N2926.D
Als bottle: 4 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ttcutler53ocs.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

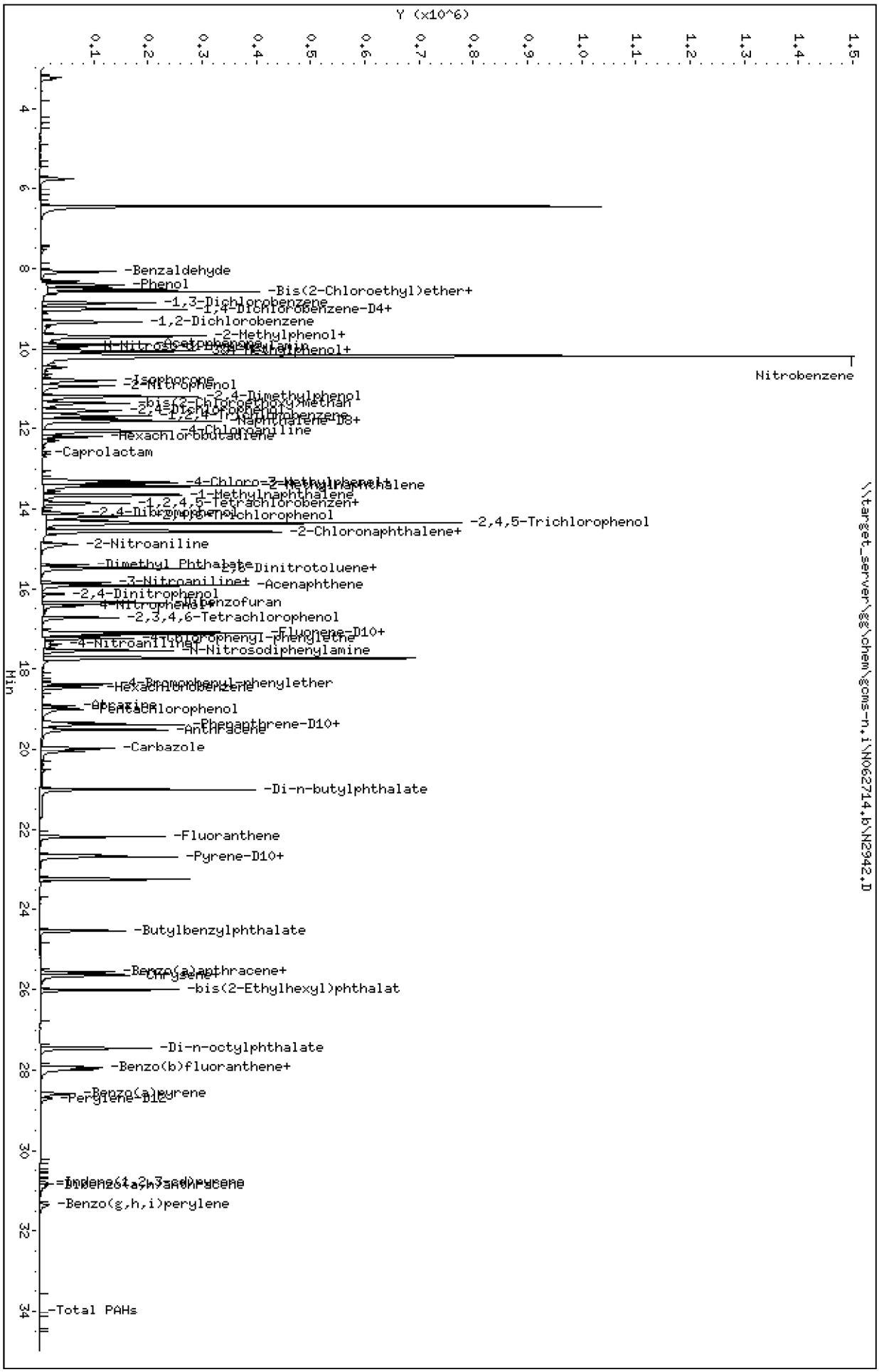
			QUANT SIG					CONCENTRATIONS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
	2	1,4-Dioxane	88	3.259	3.242	(0.363)	36247	0.66835	0.668(a)	
	5	Bis(2-Chloroethyl)ether	93	8.494	8.494	(0.947)	167004	1.12089	1.12	
	6	2-Chlorophenol	128	8.560	8.560	(0.954)	345985	2.71935	2.72	
*	8	1,4-Dichlorobenzene-D4	152	8.971	8.971	(1.000)	70817	0.80000	(a)	
	12	2,2'-Oxybis(1-chloropropane)	45	9.667	9.667	(1.078)	165806	0.96161	0.962(R)	
	14	N-Nitroso-di-n-propylamine	70	9.950	9.950	(1.109)	97861	1.21029	1.21	
	15	3&4-Methylphenol	108	10.045	10.045	(1.120)	234216	2.18169	2.18	
	16	Hexachloroethane	117	10.029	10.029	(1.118)	71675	1.31877	1.32	
	17	Nitrobenzene	77	10.202	10.218	(0.867)	160080	1.36495	1.36(Q)	
	22	2,4-Dichlorophenol	162	11.558	11.558	(0.983)	248631	2.91742	2.92	
*	24	Naphthalene-D8	136	11.763	11.763	(1.000)	251519	0.80000	(a)	
	25	Naphthalene	128	11.797	11.797	(1.003)	482078	1.54845	1.55	
	26	4-Chloroaniline	127	12.053	12.053	(1.025)	132754	1.20076	1.20	
	27	Hexachlorobutadiene	225	12.190	12.190	(1.036)	68077	1.37935	1.38	
$	30	2-Methylnaphthalene-D10	152	13.353	13.353	(0.843)	209118	1.39249	1.39	
	31	2-Methylnaphthalene	142	13.429	13.429	(1.142)	321554	1.53745	1.54	
	33	1,2,4,5-Tetrachlorobenzene	216	13.843	13.862	(0.874)	116151	1.50240	1.50	
	34	Hexachlorocyclopentadiene	237	13.862	13.862	(0.875)	36496	0.90497	0.905	
$	35	2,4-Dibromophenol	252	14.107	14.107	(0.890)	142925	2.91938	2.92	
	36	2,4,6-Trichlorophenol	196	14.182	14.182	(0.895)	151122	2.87829	2.88	

Data File: \\target_server\gg\chem\gcms-n.i\N062714.b\N2942.D
Report Date: 11-Jul-2014 13:29

			QUANT SIG					CONCENTRATIONS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
	39	1,1'-Biphenyl	154	14.559	14.559	(0.919)	338200	1.54273	1.54	
	40	2-Nitroaniline	65	14.879	14.879	(0.939)	61753	1.49087	1.49	
	42	2,6-Dinitrotoluene	165	15.473	15.473	(0.977)	66502	1.56760	1.57	
	44	3-Nitroaniline	138	15.868	15.881	(1.002)	45911	1.88457	1.88	
*	45	Acenaphthene-D10	164	15.842	15.842	(1.000)	99497	0.80000	(a)	
	47	2,4-Dinitrophenol	184	16.132	16.132	(1.018)	15411	1.59840	1.60	(Q)
	48	Dibenzofuran	168	16.343	16.343	(1.032)	330824	1.50548	1.50	
	50	2,4-Dinitrotoluene	165	16.422	16.435	(1.037)	77375	1.55116	1.55	
$	52	Fluorene-D10	174	17.068	17.068	(1.077)	164686	1.43722	1.44	(Q)
	56	4-Nitroaniline	138	17.322	17.338	(1.093)	41063	1.79758	1.80	
	57	4,6-Dinitro-2-Methylphenol	198	17.386	17.386	(0.900)	50453	2.75960	2.76	
	60	Hexachlorobenzene	284	18.453	18.454	(0.955)	88139	1.58040	1.58	
	61	Atrazine	200	18.918	18.918	(0.979)	60638	1.92021	1.92	
	62	Pentachlorophenol	266	18.993	18.993	(0.983)	81606	2.64048	2.64	(R)
*	63	Phenanthrene-D10	188	19.323	19.323	(1.000)	141621	0.80000	(a)	
	64	Phenanthrene	178	19.383	19.383	(1.003)	393555	1.76477	1.76	
$	69	Pyrene-D10	212	22.646	22.646	(0.885)	202111	1.68022	1.68	
	70	Pyrene	202	22.687	22.687	(0.887)	354781	1.87152	1.87	
	72	Benzo(a)anthracene	228	25.562	25.562	(0.999)	188608	1.79093	1.79	
*	73	Chrysene-D12	240	25.576	25.589	(1.000)	68963	0.80000	(a)	
	75	3,3'-Dichlorobenzidine	252	25.643	25.657	(1.003)	102578	3.83271	3.83	
	74	Chrysene	228	25.643	25.643	(1.003)	239410	2.00361	2.00	(R)
	76	bis(2-Ethylhexyl)phthalate	149	26.008	26.008	(1.017)	379921	1.63038	1.63	(R)
	78	Benzo(b)fluoranthene	252	27.934	27.934	(0.973)	150894	1.87376	1.87	
	80	Benzo(a)pyrene	252	28.586	28.586	(0.996)	127719	1.60921	1.61	
*	81	Perylene-D12	264	28.706	28.706	(1.000)	50085	0.80000	(a)	
	82	Indeno(1,2,3-cd)pyrene	276	30.797	30.797	(1.073)	80229	2.03805	2.04	
	83	Dibenzo(a,h)anthracene	278	30.879	30.893	(1.076)	50674	1.14271	1.14	(R)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
R - Spike/Surrogate failed recovery limits.


Data File: \\target_server\gg\chem\gcms-n,i\N062714,b\N2942,D
Date : 27-JUN-2014 13:34
Client ID: WG145381-LCS
Sample Info: WG145381-2,WE53-7
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n,i\N062714,b\N2942,D
Y (x10^6)
Min
Nitrobenzene
-Benzaldehyde
-Phenol
-Bis(2-Chloroethyl)ether+
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-2-Methylphenol+
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol
-Naphthalene-D8+
-4-Chloroaniline
-Hexachlorobutadiene
-Caprolactam
-1-Methylnaphthalene
-2,4-Dichlorophenol
-2,4,5-Trichlorophenol
-2-Chloronaphthalene+
-2-Nitroaniline
-Dimethyl Phthalate
-2,6-Dinitrotoluene+
-3-Nitroaniline+
-Acenaphthene
-2,4-Dinitrophenol
-Dibenzofuran
-2,3,4,6-Tetrachlorophenol
-Fluorene-D10+
-4-Nitroaniline+
-N-Nitrosodiphenylamine
-Hexachlorobenzene
-Pentachlorophenol
-Phenanthrene-D10+
-Anthracene
-Carbazole
-Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-Benzo(a)anthracene+
-Chrysene
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene+
-Benzo(k)fluoranthene
-Perylene-D12
-Benzo(a)pyrene
-Indeno(1,2,3-cd)pyrene
-Dibenz(a,h)anthracene
-Benzo(g,h,i)perylene
-Total PAHs

Data File: \\target_server\gg\chem\gcms-n.i\N062714.b\N2943.D
Report Date: 11-Jul-2014 13:29

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N062714.b\N2943.D
Lab Smp Id: WG145381-3 Client Smp ID: WG145381-LCSD
Inj Date : 27-JUN-2014 14:18 MS Autotune Date: 12-NOV-2013 09:32
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG145381-3,WE53-7
Misc Info : WG145527,WG145381,WG145455-4,SH4401-2
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N062714.b\NSPSIM09.m
Meth Date : 27-Jun-2014 12:41 cgomez Quant Type: ISTD
Cal Date : 26-JUN-2014 13:22 Cal File: N2926.D
Als bottle: 5 QC Sample: LCSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ttcutler53ocs.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

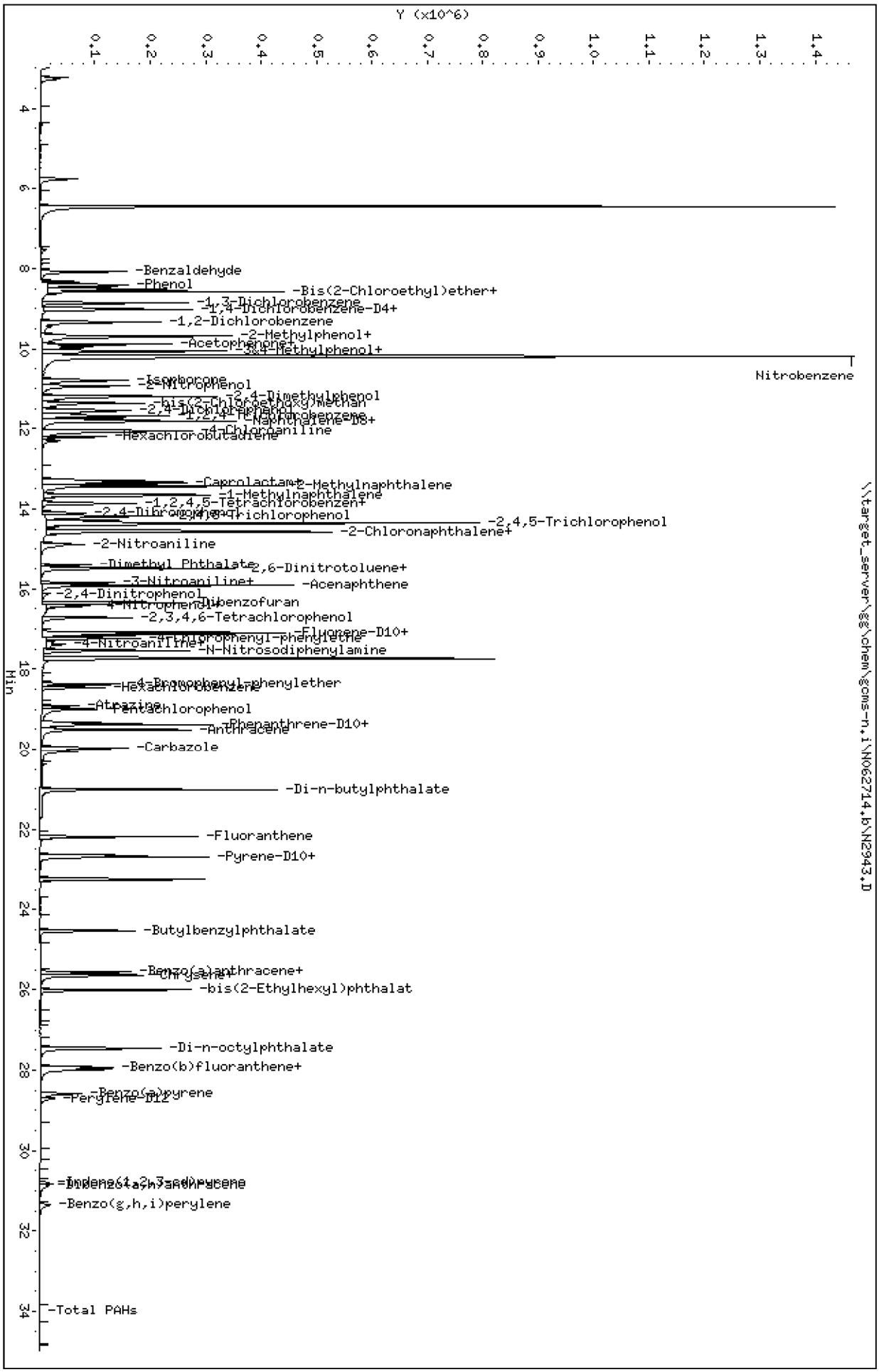
			QUANT SIG					CONCENTRATIONS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
	2	1,4-Dioxane	88	3.276	3.242	(0.365)	36792	0.65997	0.660(a)	
	5	Bis(2-Chloroethyl)ether	93	8.494	8.494	(0.947)	181166	1.18290	1.18	
	6	2-Chlorophenol	128	8.560	8.560	(0.954)	383847	2.93496	2.93	
*	8	1,4-Dichlorobenzene-D4	152	8.971	8.971	(1.000)	72795	0.80000	(a)	
	12	2,2'-Oxybis(1-chloropropane)	45	9.667	9.667	(1.078)	178474	1.00695	1.01(R)	
	14	N-Nitroso-di-n-propylamine	70	9.950	9.950	(1.109)	114330	1.37555	1.38	
	15	3&4-Methylphenol	108	10.045	10.045	(1.120)	259920	2.35533	2.36	
	16	Hexachloroethane	117	10.045	10.029	(1.120)	78460	1.40439	1.40	
	17	Nitrobenzene	77	10.218	10.218	(0.869)	178732	1.44030	1.44	
	22	2,4-Dichlorophenol	162	11.558	11.558	(0.983)	280564	3.09445	3.09	
*	24	Naphthalene-D8	136	11.763	11.763	(1.000)	267586	0.80000	(a)	
	25	Naphthalene	128	11.797	11.797	(1.003)	535562	1.61695	1.62	
	26	4-Chloroaniline	127	12.053	12.053	(1.025)	145920	1.24060	1.24	
	27	Hexachlorobutadiene	225	12.190	12.190	(1.036)	75185	1.43190	1.43	
$	30	2-Methylnaphthalene-D10	152	13.353	13.353	(0.843)	230914	1.47411	1.47	
	31	2-Methylnaphthalene	142	13.429	13.429	(1.142)	356007	1.61029	1.61	
	33	1,2,4,5-Tetrachlorobenzene	216	13.843	13.862	(0.874)	129106	1.60099	1.60	
	34	Hexachlorocyclopentadiene	237	13.862	13.862	(0.875)	41552	0.97795	0.978	
$	35	2,4-Dibromophenol	252	14.107	14.107	(0.890)	145173	2.84281	2.84	
	36	2,4,6-Trichlorophenol	196	14.182	14.182	(0.895)	173029	3.15940	3.16	

Data File: \\target_server\gg\chem\gcms-n.i\N062714.b\N2943.D
Report Date: 11-Jul-2014 13:29

			QUANT SIG					CONCENTRATIONS ON-COLUMN	FINAL	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/ml)	(ug/L)	REVIEW CODE
	39	1,1'-Biphenyl	154	14.559	14.559	(0.919)	371167	1.62318	1.62	
	40	2-Nitroaniline	65	14.879	14.879	(0.939)	68837	1.59325	1.59	
	42	2,6-Dinitrotoluene	165	15.486	15.473	(0.978)	72175	1.63105	1.63	
	44	3-Nitroaniline	138	15.868	15.881	(1.002)	50484	1.98693	1.99	
*	45	Acenaphthene-D10	164	15.842	15.842	(1.000)	103784	0.80000	(a)	
	47	2,4-Dinitrophenol	184	16.132	16.132	(1.018)	22785	2.08087	2.08	
	48	Dibenzofuran	168	16.343	16.343	(1.032)	362936	1.58339	1.58	
	50	2,4-Dinitrotoluene	165	16.422	16.435	(1.037)	87142	1.66619	1.67	
$	52	Fluorene-D10	174	17.068	17.068	(1.077)	179299	1.50011	1.50	(Q)
	56	4-Nitroaniline	138	17.322	17.338	(1.093)	50871	2.13494	2.13	
	57	4,6-Dinitro-2-Methylphenol	198	17.386	17.386	(0.900)	59578	3.02392	3.02	
	60	Hexachlorobenzene	284	18.453	18.454	(0.955)	94847	1.60120	1.60	
	61	Atrazine	200	18.918	18.918	(0.979)	68520	2.04288	2.04	
	62	Pentachlorophenol	266	18.993	18.993	(0.983)	106319	3.23887	3.24	(R)
*	63	Phenanthrene-D10	188	19.323	19.323	(1.000)	150420	0.80000	(a)	
	64	Phenanthrene	178	19.383	19.383	(1.003)	450440	1.90170	1.90	
$	69	Pyrene-D10	212	22.646	22.646	(0.885)	233741	1.78035	1.78	
	70	Pyrene	202	22.687	22.687	(0.887)	417295	2.03040	2.03	
	72	Benzo(a)anthracene	228	25.562	25.562	(0.999)	223446	1.94395	1.94	
*	73	Chrysene-D12	240	25.576	25.589	(1.000)	75270	0.80000	(a)	
	75	3,3'-Dichlorobenzidine	252	25.643	25.657	(1.003)	98070	3.35724	3.36	
	74	Chrysene	228	25.643	25.643	(1.003)	277342	2.13736	2.14	(R)
	76	bis(2-Ethylhexyl)phthalate	149	26.008	26.008	(1.017)	424851	1.67812	1.68	(R)
	78	Benzo(b)fluoranthene	252	27.934	27.934	(0.973)	169841	1.97438	1.97	
	80	Benzo(a)pyrene	252	28.586	28.586	(0.996)	142377	1.67936	1.68	
*	81	Perylene-D12	264	28.706	28.706	(1.000)	53501	0.80000	(a)	
	82	Indeno(1,2,3-cd)pyrene	276	30.797	30.797	(1.073)	90761	2.15838	2.16	
	83	Dibenzo(a,h)anthracene	278	30.879	30.893	(1.076)	57464	1.21309	1.21	(R)

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
R - Spike/Surrogate failed recovery limits.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Date : 27-JUN-2014 14:18
Client ID: WG145381-LCSD
Sample Info: WG145381-3,WE53-7
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n,i\N062714,b\N2943,D
Y (x10^6)
Min
Nitrobenzene
-Benzaldehyde
-Phenol
-Bis(2-Chloroethyl)ether+
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-2-Methylphenol+
-Acetophenone+
-3&4-Methylphenol+
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol
-bis(2-Chloroethoxy)methan
-1,2,4-Trichlorobenzene
-Naphthalene-D8+
-4-Chloroaniline
-Hexachlorobutadiene
-Caprolactam+
-2-Methylnaphthalene
-1-Methylnaphthalene
-1,2,4,5-Tetrachlorobenzen+
-2,4-Dibromophenol
-2,4,6-Trichlorophenol
-2,4,5-Trichlorophenol
-2-Chloronaphthalene+
-2-Nitroaniline
-Dimethyl Phthalate
-2,6-Dinitrotoluene+
-3-Nitroaniline+
-Acenaphthene
-2,4-Dinitrophenol
-4-Nitrophenol+
-Dibenzofuran
-2,3,4,6-Tetrachlorophenol
-Fluorene-D10+
-4-Nitroaniline+
-N-Nitrosodiphenylamine
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Atrazine
-Pentachlorophenol
-Phenanthrene-D10+
-Anthracene
-Carbazole
-Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-Benzo(a)anthracene+
-Chrysene+
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene+
-Benzo(k)fluoranthene+
-Benzo(a)pyrene
-Perylene-D12
-Indeno(1,2,3-cd)pyrene
-Dibenz(a,h)anthracene
-Benzo(g,h,i)perylene
-Total PAHs

LCS/LCSD Recovery Report

LCS ID: WG145278-2
LCSD ID: WG145278-3
Project:
SDG: WE53-7
Report Date: 11-JUL-14
LCS File ID: N2944.D

Received Date:
Extract Date: 23-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145278
LCSD File ID: N2945.D

Analysis Date: 27-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
1,4-Dioxane	2.00	0.870	43.5	0.798	39.9	ug/L	9	30	10-93
2-Chlorophenol	4.00	2.92	73.0	2.81	70.2	ug/L	4	30	30-112
Naphthalene	2.00	1.56	78.0	1.49	74.5	ug/L	4	30	46-84
Hexachlorobutadiene	2.00	1.40	70.0	1.31	65.5	ug/L	7	30	48-95
2-Methylnaphthalene	2.00	1.53	76.5	1.51	75.5	ug/L	1	30	51-114
Hexachlorobenzene	2.00	1.55	77.5	1.60	80.0	ug/L	3	30	62-90
Pentachlorophenol	4.00	3.05	76.2*	3.03	75.8*	ug/L	1	30	10-66
Phenanthrene	2.00	1.72	86.0	1.78	89.0	ug/L	3	30	73-100
Pyrene	2.00	1.78	89.0	1.93	96.5	ug/L	8	30	71-104
Benzo(a)anthracene	2.00	1.62	81.0	1.69	84.5	ug/L	4	30	70-110
Chrysene	2.00	1.90	95.0	2.02	101.*	ug/L	6	30	70-95
Benzo(b)fluoranthene	2.00	1.63	81.5	1.73	86.5	ug/L	6	30	67-102
Benzo(a)pyrene	2.00	1.50	75.0	1.60	80.0	ug/L	6	30	63-98
Indeno(1,2,3-cd)pyrene	2.00	2.00	100.	2.05	102.	ug/L	2	30	61-112
Dibenzo(a,h)anthracene	2.00	1.13	56.5*	1.14	57.0*	ug/L	1	30	66-108
1,1'-Biphenyl	4.00	1.56	39.0*	1.51	37.8*	ug/L	3	30	56-96
1,2,4,5-Tetrachlorobenzene	2.00	1.50	75.0	1.44	72.0	ug/L	4	30	30-150
2,2'-Oxybis(1-Chloropropane)	2.00	0.968	48.4*	0.929	46.4*	ug/L	4	30	57-90
2,4,6-Trichlorophenol	4.00	2.97	74.2	2.95	73.8	ug/L	1	30	19-139
2,4-Dichlorophenol	4.00	3.00	75.0	2.97	74.2	ug/L	1	30	31-106
2,4-Dinitrophenol	4.00	2.30	57.5	1.89	47.2	ug/L	20	30	10-95
2,4-Dinitrotoluene	2.00	1.52	76.0	1.56	78.0	ug/L	2	30	48-95
2,6-Dinitrotoluene	2.00	1.54	77.0	1.59	79.5	ug/L	3	30	47-86
2-Nitroaniline	2.00	1.48	74.0	1.53	76.5	ug/L	3	30	54-105
3,3'-Dichlorobenzidine	4.00	2.48	62.0	2.94	73.5	ug/L	17	30	10-118
4,6-Dinitro-2-Methylphenol	4.00	2.88	72.0	2.73	68.2	ug/L	5	30	10-77
4-Chloroaniline	2.00	1.10	55.0	1.27	63.5	ug/L	14	30	38-122
3&4-Methylphenol	4.00	2.46	61.5	2.41	60.2	ug/L	2	30	31-78
4-Nitroaniline	2.00	1.78	89.0	1.78	89.0	ug/L	0	30	42-152
Atrazine	2.00	1.80	90.0	1.88	94.0	ug/L	4	30	66-126
Bis(2-Chloroethyl)Ether	2.00	1.31	65.5	1.09	54.5*	ug/L	18	30	56-87
Bis(2-Ethylhexyl)Phthalate	2.00	1.47	73.5*	1.56	78.0*	ug/L	6	30	97-188
Dibenzofuran	2.00	1.50	75.0	1.51	75.5	ug/L	1	30	56-98
Hexachlorocyclopentadiene	2.00	0.928	46.4	0.857	42.8	ug/L	8	30	10-96

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://www.katahdinlab.com

LCS/LCSD Recovery Report

LCS ID: WG145278-2
LCSD ID: WG145278-3
Project:
SDG: WE53-7
Report Date: 11-JUL-14
LCS File ID: N2944.D

Received Date:
Extract Date: 23-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145278
LCSD File ID: N2945.D

Analysis Date: 27-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Hexachloroethane	2.00	1.38	69.0	1.28	64.0	ug/L	8	30	48-80
Nitrobenzene	2.00	1.52	76.0	1.36	68.0	ug/L	11	30	43-89
N-Nitroso-Di-N-Propylamine	2.00	1.34	67.0	1.30	65.0	ug/L	3	30	43-86
3-Nitroaniline	2.00	1.74	87.0	1.74	87.0	ug/L	0	30	50-103
2-Methylnaphthalene-D10			67.4		64.4				43-92
Fluorene-D10			70.6		72.1				29-101
Pyrene-D10			80.4		85.7				53-166
2,4-Dibromophenol			71.5		72.3				10-130

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
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Data File: \\target_server\gg\chem\gcms-n.i\N062714.b\N2944.D
Report Date: 11-Jul-2014 13:29

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N062714.b\N2944.D
Lab Smp Id: WG145278-2 Client Smp ID: WG145278-LCS
Inj Date : 27-JUN-2014 15:01 MS Autotune Date: 12-NOV-2013 09:32
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG145278-2,WE53-7
Misc Info : WG145527,WG145278,WG145455-4,SH4401-2
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N062714.b\NSPSIM09.m
Meth Date : 27-Jun-2014 12:41 cgomez Quant Type: ISTD
Cal Date : 26-JUN-2014 13:22 Cal File: N2926.D
Als bottle: 6 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ttcutler53ocs.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

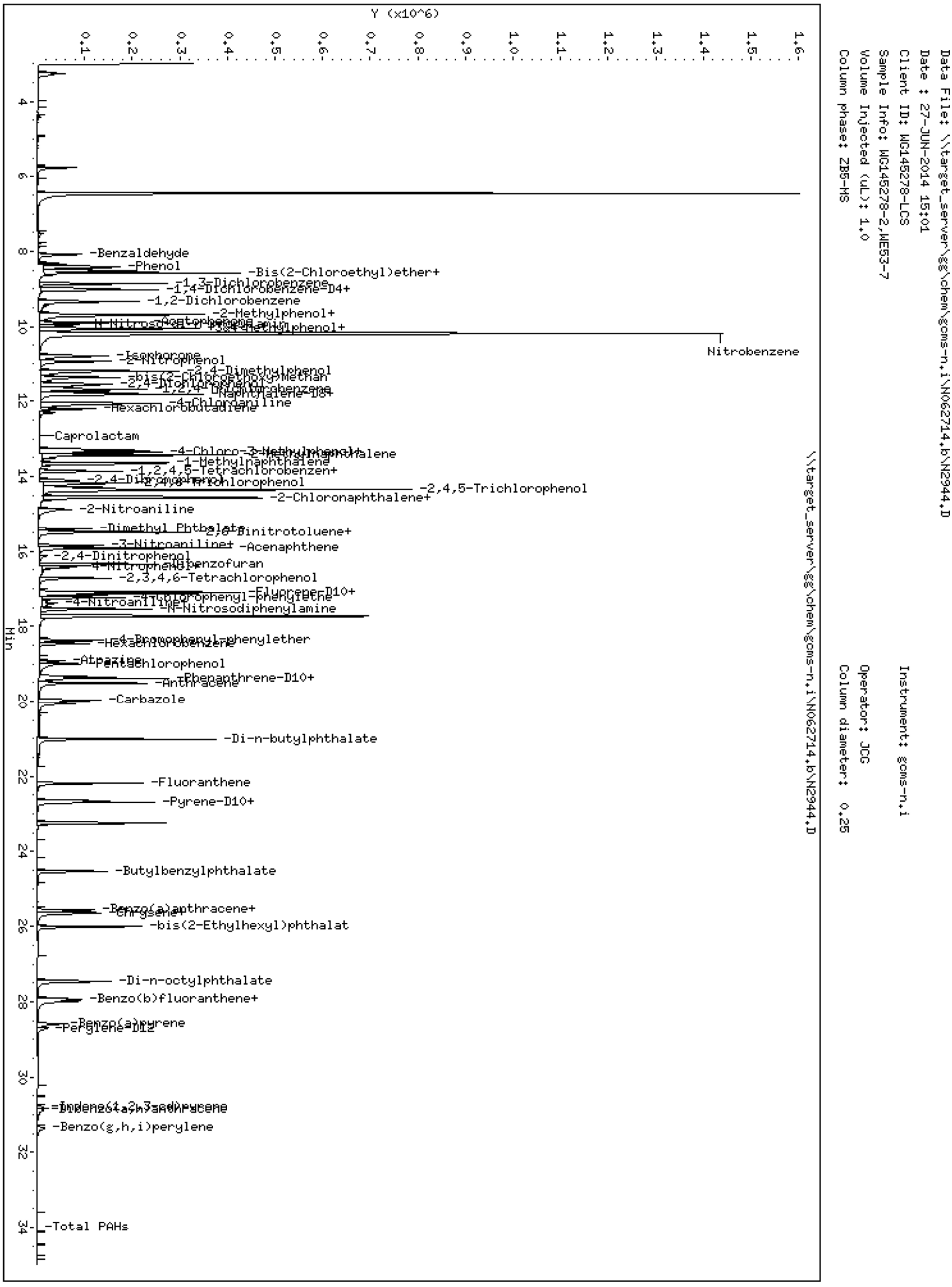
		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
	2	1,4-Dioxane	88	3.293	3.242	(0.367)	48008	0.87000	0.870(a)	
	5	Bis(2-Chloroethyl)ether	93	8.511	8.494	(0.949)	199055	1.31306	1.31	
	6	2-Chlorophenol	128	8.560	8.560	(0.954)	378362	2.92274	2.92	
*	8	1,4-Dichlorobenzene-D4	152	8.971	8.971	(1.000)	72055	0.80000	(a)	
	12	2,2'-Oxybis(1-chloropropane)	45	9.667	9.667	(1.078)	169833	0.96804	0.968(R)	
	14	N-Nitroso-di-n-propylamine	70	9.951	9.950	(1.109)	109911	1.33596	1.34	
	15	3&4-Methylphenol	108	10.045	10.045	(1.120)	268252	2.45580	2.46	
	16	Hexachloroethane	117	10.045	10.029	(1.120)	76513	1.38360	1.38	
	17	Nitrobenzene	77	10.203	10.218	(0.867)	185389	1.52568	1.52(Q)	
	22	2,4-Dichlorophenol	162	11.559	11.558	(0.983)	267463	2.99593	3.00	
*	24	Naphthalene-D8	136	11.763	11.763	(1.000)	263479	0.80000	(a)	
	25	Naphthalene	128	11.797	11.797	(1.003)	509618	1.56260	1.56	
	26	4-Chloroaniline	127	12.053	12.053	(1.025)	127789	1.10339	1.10	
	27	Hexachlorobutadiene	225	12.190	12.190	(1.036)	72426	1.40086	1.40	
$	30	2-Methylnaphthalene-D10	152	13.354	13.353	(0.843)	211618	1.34780	1.35	
	31	2-Methylnaphthalene	142	13.429	13.429	(1.142)	335654	1.53112	1.53	
	33	1,2,4,5-Tetrachlorobenzene	216	13.843	13.862	(0.874)	121658	1.50514	1.50	
	34	Hexachlorocyclopentadiene	237	13.862	13.862	(0.875)	39252	0.92786	0.928	
$	35	2,4-Dibromophenol	252	14.107	14.107	(0.890)	146404	2.86027	2.86	
	36	2,4,6-Trichlorophenol	196	14.182	14.182	(0.895)	163019	2.96973	2.97	

Data File: \\target_server\gg\chem\gcms-n.i\N062714.b\N2944.D
Report Date: 11-Jul-2014 13:29

			QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
	39	1,1'-Biphenyl	154	14.559	14.559	(0.919)	358667	1.56488	1.56	
	40	2-Nitroaniline	65	14.880	14.879	(0.939)	64297	1.48472	1.48	
	42	2,6-Dinitrotoluene	165	15.473	15.473	(0.977)	68138	1.53625	1.54	
	44	3-Nitroaniline	138	15.868	15.881	(1.002)	44485	1.74529	1.74	
*	45	Acenaphthene-D10	164	15.842	15.842	(1.000)	104025	0.80000	(a)	
	47	2,4-Dinitrophenol	184	16.132	16.132	(1.018)	25889	2.29565	2.30	
	48	Dibenzofuran	168	16.343	16.343	(1.032)	345127	1.50221	1.50	
	50	2,4-Dinitrotoluene	165	16.422	16.435	(1.037)	79079	1.51875	1.52	
$	52	Fluorene-D10	174	17.069	17.068	(1.077)	169183	1.41220	1.41	(Q)
	56	4-Nitroaniline	138	17.323	17.338	(1.093)	42499	1.77946	1.78	
	57	4,6-Dinitro-2-Methylphenol	198	17.386	17.386	(0.900)	53967	2.87579	2.88	
	60	Hexachlorobenzene	284	18.454	18.454	(0.955)	88256	1.55194	1.55	
	61	Atrazine	200	18.918	18.918	(0.979)	58080	1.80369	1.80	
	62	Pentachlorophenol	266	18.993	18.993	(0.983)	96264	3.05460	3.05	(R)
*	63	Phenanthrene-D10	188	19.323	19.323	(1.000)	144410	0.80000	(a)	
	64	Phenanthrene	178	19.368	19.383	(1.002)	390325	1.71648	1.72	
$	69	Pyrene-D10	212	22.646	22.646	(0.885)	195770	1.60912	1.61	
	70	Pyrene	202	22.688	22.687	(0.887)	342414	1.77788	1.78	
	72	Benzo(a)anthracene	228	25.562	25.562	(0.999)	172525	1.61970	1.62	
*	73	Chrysene-D12	240	25.589	25.589	(1.000)	69751	0.80000	(a)	
	75	3,3'-Dichlorobenzidine	252	25.643	25.657	(1.002)	67189	2.48208	2.48	
	74	Chrysene	228	25.643	25.643	(1.002)	230946	1.90282	1.90	(R)
	76	bis(2-Ethylhexyl)phthalate	149	26.008	26.008	(1.016)	352307	1.47079	1.47	(R)
	78	Benzo(b)fluoranthene	252	27.934	27.934	(0.973)	126294	1.63344	1.63	
	80	Benzo(a)pyrene	252	28.586	28.586	(0.996)	114122	1.49764	1.50	
*	81	Perylene-D12	264	28.706	28.706	(1.000)	48087	0.80000	(a)	
	82	Indeno(1,2,3-cd)pyrene	276	30.797	30.797	(1.073)	75672	2.00216	2.00	
	83	Dibenzo(a,h)anthracene	278	30.880	30.893	(1.076)	48257	1.13342	1.13	(R)

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
R - Spike/Surrogate failed recovery limits.


Data File: \\target_server\gg\chem\gcms-n,i\N062714,b\N2944,D
Date : 27-JUN-2014 15:01
Client ID: WG145278-LCS
Sample Info: WG145278-2,WE53-7
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n,i\N062714,b\N2944,D
Y (x10^6)
Min
-Benzaldehyde
-Phenol
-Bis(2-Chloroethyl)ether+
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-2-Methylphenol+
-3&4-Methylphenol+
Nitrobenzene
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol
-bis(2-Chloroethoxy)Methan
-2,4-Dichlorophenol+
-1,2,4-Trichlorobenzene
-Naphthalene-D8+
-4-Chloroaniline
-Hexachlorobutadiene
-Caprolactam
-4-Chloro-3-Methylphenol
-2-Methylnaphthalene
-1-Methylnaphthalene
-1,2,4,5-Tetrachlorobenzen+
-2,4-Dinitrophenol
-2,4,6-Trichlorophenol
-2,4,5-Trichlorophenol
-2-Chloronaphthalene+
-2-Nitroaniline
-Dimethyl Phthalate
-2,6-Dinitrotoluene+
-3-Nitroaniline+
-Acenaphthene
-2,4-Dinitrophenol
-4-Nitrophenol
-Dibenzofuran
-2,3,4,6-Tetrachlorophenol
-Fluorene-D10+
-4-Chlorophenyl-phenylether
-4-Nitroaniline+
-N-Nitrosodiphenylamine
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Atrazine
-Pentachlorophenol
-Phenanthrene-D10+
-Anthracene
-Carbazole
-Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-Benzo(a)anthracene+
-Chrysene+
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene+
-Benzo(k)fluoranthene+
-Perylene-D12
-Benzo(a)pyrene
-Indeno(1,2,3-cd)pyrene
-Dibenz(a,h)anthracene
-Benzo(g,h,i)perylene
-Total PAHs

Data File: \\target_server\gg\chem\gcms-n.i\N062714.b\N2945.D
Report Date: 11-Jul-2014 13:30

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N062714.b\N2945.D
Lab Smp Id: WG145278-3 Client Smp ID: WG145278-LCSD
Inj Date : 27-JUN-2014 15:45 MS Autotune Date: 12-NOV-2013 09:32
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG145278-3,WE53-7
Misc Info : WG145527,WG145278,WG145455-4,SH4401-2
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N062714.b\NSPSIM09.m
Meth Date : 27-Jun-2014 12:41 cgomez Quant Type: ISTD
Cal Date : 26-JUN-2014 13:22 Cal File: N2926.D
Als bottle: 7 QC Sample: LCSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ttcutler53ocs.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

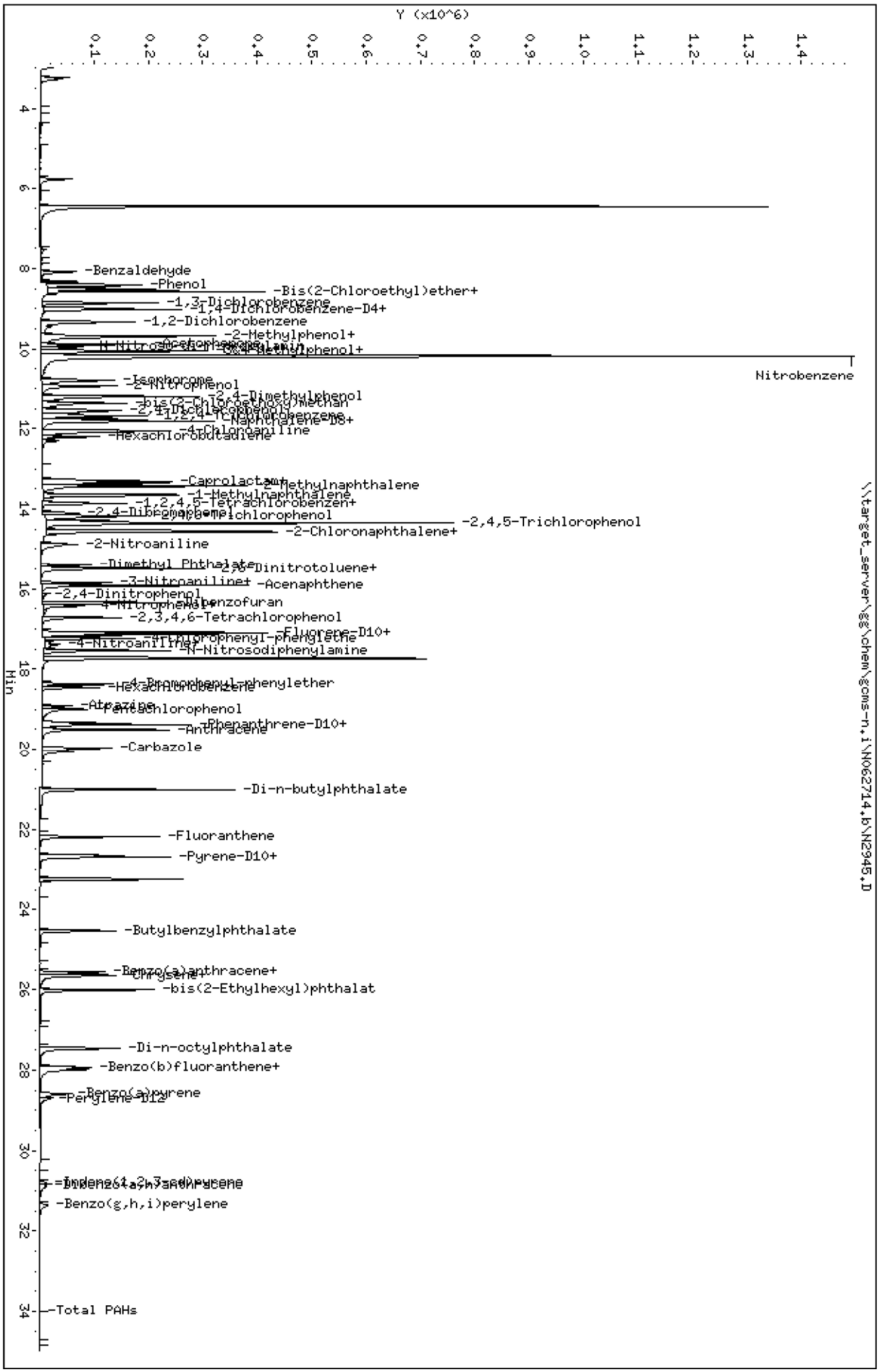
			QUANT SIG					CONCENTRATIONS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
	2	1,4-Dioxane	88	3.276	3.242	(0.365)	42505	0.79780	0.798(a)	
	5	Bis(2-Chloroethyl)ether	93	8.494	8.494	(0.947)	159070	1.08679	1.09(R)	
	6	2-Chlorophenol	128	8.560	8.560	(0.954)	351431	2.81171	2.81	
*	8	1,4-Dichlorobenzene-D4	152	8.970	8.971	(1.000)	69569	0.80000	(a)	
	12	2,2'-Oxybis(1-chloropropane)	45	9.667	9.667	(1.078)	157295	0.92861	0.929(R)	
	14	N-Nitroso-di-n-propylamine	70	9.950	9.950	(1.109)	103290	1.30035	1.30	
	15	3&4-Methylphenol	108	10.045	10.045	(1.120)	254683	2.41490	2.41	
	16	Hexachloroethane	117	10.045	10.029	(1.120)	68653	1.28583	1.28	
	17	Nitrobenzene	77	10.202	10.218	(0.867)	159588	1.35779	1.36	
	22	2,4-Dichlorophenol	162	11.558	11.558	(0.983)	253659	2.97157	2.97	
*	24	Naphthalene-D8	136	11.763	11.763	(1.000)	251929	0.80000	(a)	
	25	Naphthalene	128	11.797	11.797	(1.003)	466194	1.49499	1.49	
	26	4-Chloroaniline	127	12.053	12.053	(1.025)	140329	1.26721	1.27	
	27	Hexachlorobutadiene	225	12.190	12.190	(1.036)	64624	1.30726	1.31	
$	30	2-Methylnaphthalene-D10	152	13.353	13.353	(0.843)	194932	1.28902	1.29	
	31	2-Methylnaphthalene	142	13.429	13.429	(1.142)	317151	1.51005	1.51	
	33	1,2,4,5-Tetrachlorobenzene	216	13.843	13.862	(0.874)	112206	1.44131	1.44	
	34	Hexachlorocyclopentadiene	237	13.862	13.862	(0.875)	34537	0.85693	0.857	
$	35	2,4-Dibromophenol	252	14.107	14.107	(0.890)	142646	2.89347	2.89	
	36	2,4,6-Trichlorophenol	196	14.182	14.182	(0.895)	155914	2.94896	2.95	

Data File: \\target_server\gg\chem\gcms-n.i\N062714.b\N2945.D
Report Date: 11-Jul-2014 13:30

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
	39 1,1'-Biphenyl	154	14.559	14.559	(0.919)	333852	1.51233	1.51	
	40 2-Nitroaniline	65	14.879	14.879	(0.939)	63845	1.53069	1.53	
	42 2,6-Dinitrotoluene	165	15.473	15.473	(0.977)	67831	1.58784	1.59	
	44 3-Nitroaniline	138	15.868	15.881	(1.002)	42639	1.73675	1.74	
*	45 Acenaphthene-D10	164	15.842	15.842	(1.000)	100192	0.80000	(a)	
	47 2,4-Dinitrophenol	184	16.132	16.132	(1.018)	19413	1.88994	1.89	
	48 Dibenzofuran	168	16.343	16.343	(1.032)	334041	1.50958	1.51	
	50 2,4-Dinitrotoluene	165	16.422	16.435	(1.037)	78554	1.56299	1.56	
$	52 Fluorene-D10	174	17.068	17.068	(1.077)	166429	1.44235	1.44	(Q)
	56 4-Nitroaniline	138	17.338	17.338	(1.094)	40941	1.77980	1.78	(Q)
	57 4,6-Dinitro-2-Methylphenol	198	17.386	17.386	(0.900)	49765	2.72681	2.73	
	60 Hexachlorobenzene	284	18.453	18.454	(0.955)	88980	1.59524	1.60	
	61 Atrazine	200	18.918	18.918	(0.979)	59483	1.88336	1.88	
	62 Pentachlorophenol	266	18.993	18.993	(0.983)	93597	3.02801	3.03	(R)
*	63 Phenanthrene-D10	188	19.323	19.323	(1.000)	141642	0.80000	(a)	
	64 Phenanthrene	178	19.368	19.383	(1.002)	396119	1.77600	1.78	
$	69 Pyrene-D10	212	22.646	22.646	(0.885)	194982	1.71348	1.71	
	70 Pyrene	202	22.687	22.687	(0.887)	345910	1.93423	1.93	
	72 Benzo(a)anthracene	228	25.562	25.562	(0.999)	168264	1.68895	1.69	
*	73 Chrysene-D12	240	25.589	25.589	(1.000)	65239	0.80000	(a)	
	75 3,3'-Dichlorobenzidine	252	25.643	25.657	(1.002)	74361	2.93702	2.94	
	74 Chrysene	228	25.643	25.643	(1.002)	228613	2.02412	2.02	(R)
	76 bis(2-Ethylhexyl)phthalate	149	26.008	26.008	(1.016)	346397	1.56052	1.56	(R)
	78 Benzo(b)fluoranthene	252	27.934	27.934	(0.973)	128487	1.72841	1.73	
	80 Benzo(a)pyrene	252	28.586	28.586	(0.996)	117037	1.59745	1.60	
*	81 Perylene-D12	264	28.706	28.706	(1.000)	46234	0.80000	(a)	
	82 Indeno(1,2,3-cd)pyrene	276	30.797	30.797	(1.073)	74561	2.05183	2.05	
	83 Dibenzo(a,h)anthracene	278	30.893	30.893	(1.076)	46631	1.13913	1.14	(R)

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
R - Spike/Surrogate failed recovery limits.


Data File: \\target_server\gg\chem\gcms-n,i\N062714,b\N2945,D
Date : 27-JUN-2014 15:45
Client ID: WG145278-LCSD
Sample Info: WG145278-3,WE53-7
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n,i\N062714,b\N2945,D
Y (x10^6)
Min
-Benzaldehyde
-Phenol
-Bis(2-Chloroethyl)ether+
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-2-Methylphenol+
-Nitrobenzene
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol
-Naphthalene-D8+
-Hexachlorobutadiene
-Caprolactam
-2-Methylnaphthalene
-1-Methylnaphthalene
-1,2,4,5-Tetrachlorobenzen+
-2,4,5-Trichlorophenol
-2-Chloronaphthalene+
-2-Nitroaniline
-Dimethyl Phthalate
-2,6-Dinitrotoluene+
-3-Nitroaniline+
-Acenaphthene
-2,4-Dinitrophenol
-Dibenzofuran
-2,3,4,6-Tetrachlorophenol
-Fluorene-D10+
-4-Nitroaniline+
-N-Nitrosodiphenylamine
-Hexachlorobenzene
-Atrazine
-Pentachlorophenol
-Phenanthrene-D10+
-Anthracene
-Carbazole
-Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-Benzo(a)anthracene+
-Chrysene+
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene+
-Benzo(a)pyrene
-Perylene-D12
-Indeno(1,2,3-cd)pyrene
-Dibenz(a,h)anthracene
-Benzo(g,h,i)perylene
-Total PAHs

MS/MSD Recovery Report

MS ID: WG145381-4
MSD ID: WG145381-5
Sample ID: SH4521-8
Client ID: FTA-MW-210-061814
Project:
SDG: WE53-7
MS File ID: N2962.D

Received Date:
Extract Date: 25-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145381
Report Date: 11-JUL-14
MSD File ID: N2963.D

Analysis Date: 28-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
1,4-Dioxane	1.96	2.10	ug/L	U0.47	0.85	0.81	43.3	38.6	4	30	10-93
2-Chlorophenol	3.92	4.21	ug/L	U0.47	2.2	2.4	54.8	56.0	9	30	30-112
Naphthalene	1.96	2.10	ug/L	U0.094	1.4	1.5	74.0	73.1	6	30	46-84
Hexachlorobutadiene	1.96	2.10	ug/L	U0.094	1.3	1.4	64.8	67.4	11	30	48-95
2-Methylnaphthalene	1.96	2.10	ug/L	U0.094	1.3	1.5	67.3	70.8	12	30	51-114
Hexachlorobenzene	1.96	2.10	ug/L	U0.094	1.5	1.7	77.0	81.2	12	30	62-90
Pentachlorophenol	3.92	4.21	ug/L	ULLMM0	4.0	4.2	101.*	99.8*	5	30	10-66
Phenanthrene	1.96	2.10	ug/L	U0.094	1.7	1.9	87.7	89.3	9	30	73-100
Pyrene	1.96	2.10	ug/L	U0.094	1.9	2.1	97.4	98.8	8	30	71-104
Benzo(a)anthracene	1.96	2.10	ug/L	U0.094	1.6	1.8	82.1	83.1	8	30	70-110
Chrysene	1.96	2.10	ug/L	ULLM0.0	1.8	2.0	93.8	95.9*	9	30	70-95
Benzo(b)fluoranthene	1.96	2.10	ug/L	U0.094	1.5	1.7	77.5	78.8	9	30	67-102
Benzo(a)pyrene	1.96	2.10	ug/L	JMM0.09	1.1	1.2	57.1*	59.4*	11	30	63-98
Indeno(1,2,3-cd)pyrene	1.96	2.10	ug/L	U0.094	1.4	1.5	72.9	69.3	2	30	61-112
Dibenzo(a,h)anthracene	1.96	2.10	ug/L	ULL0.094	1.3	1.5	68.3	71.7	12	30	66-108
1,1'-Biphenyl	3.92	4.21	ug/L	ULLMM0	1.4	1.5	35.7*	34.9*	5	30	56-96
1,2,4,5-Tetrachlorobenzene	1.96	2.10	ug/L	U0.094	1.4	1.5	70.9	71.7	8	30	30-150
2,2'-Oxybis(1-Chloropropane)	1.96	2.10	ug/L	ULLMM0	0.87	0.96	44.3*	45.4*	10	30	57-90
2,4,6-Trichlorophenol	3.92	4.21	ug/L	U0.47	3.0	3.2	76.0	77.0	8	30	19-139
2,4-Dichlorophenol	3.92	4.21	ug/L	U0.47	2.6	2.8	65.0	67.4	11	30	31-106
2,4-Dinitrophenol	3.92	4.21	ug/L	U0.47	3.3	3.6	85.2	86.4	8	30	10-95
2,4-Dinitrotoluene	1.96	2.10	ug/L	U0.094	1.6	1.7	82.1	80.3	5	30	48-95
2,6-Dinitrotoluene	1.96	2.10	ug/L	U0.094	1.4	1.5	70.9	71.7	8	30	47-86
2-Nitroaniline	1.96	2.10	ug/L	U0.14	1.6	1.7	80.6	80.3	7	30	54-105
3,3'-Dichlorobenzidine	3.92	4.21	ug/L	JMM0.09	U0.098	0.10	0*	0*	0	30	10-118
4,6-Dinitro-2-Methylphenol	3.92	4.21	ug/L	JMM0.71	3.8	4.2	96.1*	98.8*	10	30	10-77
4-Chloroaniline	1.96	2.10	ug/L	JMM0.47	0.58	0.53	29.4*	24.0*	13	30	38-122
3&4-Methylphenol	3.92	4.21	ug/L	U0.47	1.4	1.6	34.9	37.5	14	30	31-78
4-Nitroaniline	1.96	2.10	ug/L	U0.094	1.5	1.6	78.5	77.9	6	30	42-152
Atrazine	1.96	2.10	ug/L	UM0.094	2.7	2.2	140.*	105.	21	30	66-126
Bis(2-Chloroethyl)Ether	1.96	2.10	ug/L	ULM0.09	1.1	1.1	56.1	50.8*	3	30	56-87
Bis(2-Ethylhexyl)Phthalate	1.96	2.10	ug/L	ULLMM0	1.7	1.9	85.7*	88.8*	11	30	97-188
Dibenzofuran	1.96	2.10	ug/L	U0.094	1.5	1.6	75.5	75.5	7	30	56-98

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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MS/MSD Recovery Report

MS ID: WG145381-4
MSD ID: WG145381-5
Sample ID: SH4521-8
Client ID: FTA-MW-210-061814
Project:
SDG: WE53-7
MS File ID: N2962.D

Received Date:
Extract Date: 25-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145381
Report Date: 11-JUL-14
MSD File ID: N2963.D

Analysis Date: 28-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
Hexachlorocyclopentadiene	1.96	2.10	ug/L	U0.094	0.90	0.92	46.0	43.6	2	30	10-96
Hexachloroethane	1.96	2.10	ug/L	U0.094	1.2	1.2	59.2	59.4	7	30	48-80
Nitrobenzene	1.96	2.10	ug/L	U0.14	1.4	1.5	68.8	72.2	12	30	43-89
N-Nitroso-Di-N-Propylamine	1.96	2.10	ug/L	U0.094	1.2	1.3	58.6	61.7	12	30	43-86
3-Nitroaniline	1.96	2.10	ug/L	UM0.094	1.0	0.99	53.6	47.1*	6	30	50-103
2-Methylnaphthalene-D10							65.0	64.6			43-92
Fluorene-D10							72.3	72.1			29-101
Pyrene-D10							88.7	90.6			53-166
2,4-Dibromophenol							68.4	68.5			10-130

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Data File: \\target_server\gg\chem\gcms-n.i\N062814.b\N2962.D
Report Date: 11-Jul-2014 13:32

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N062814.b\N2962.D
Lab Smp Id: WG145381-4 Client Smp ID: FTA-MW-210-061814MS
Inj Date : 28-JUN-2014 12:11 MS Autotune Date: 12-NOV-2013 09:32
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG145381-4,WE53-7
Misc Info : WG145582,WG145381,WG145455-4,SH4521-2
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N062814.b\NSPSIM09.m
Meth Date : 28-Jun-2014 09:09 cgomez Quant Type: ISTD
Cal Date : 26-JUN-2014 13:22 Cal File: N2926.D
Als bottle: 7 QC Sample: MS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ttcutler53ocs.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.020	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

			QUANT SIG					CONCENTRATIONS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
	2	1,4-Dioxane	88	3.242	3.208	(0.361)	43432	0.86582	0.849(a)	
	5	Bis(2-Chloroethyl)ether	93	8.494	8.494	(0.947)	154886	1.12391	1.10	
	6	2-Chlorophenol	128	8.560	8.560	(0.954)	258496	2.19657	2.15	
*	8	1,4-Dichlorobenzene-D4	152	8.971	8.970	(1.000)	65502	0.80000	(a)	
	12	2,2'-Oxybis(1-chloropropane)	45	9.667	9.667	(1.078)	141216	0.88545	0.868(R)	
	14	N-Nitroso-di-n-propylamine	70	9.951	9.950	(1.109)	87446	1.16924	1.15	
	15	3&4-Methylphenol	108	10.045	10.045	(1.120)	139216	1.40200	1.37	
	16	Hexachloroethane	117	10.029	10.029	(1.118)	59773	1.18902	1.16	
	17	Nitrobenzene	77	10.203	10.218	(0.867)	142692	1.37904	1.35	
	22	2,4-Dichlorophenol	162	11.558	11.558	(0.983)	195808	2.60143	2.55	
*	24	Naphthalene-D8	136	11.763	11.746	(1.000)	222143	0.80000	(a)	
	25	Naphthalene	128	11.797	11.797	(1.003)	406059	1.47675	1.45	
	26	4-Chloroaniline	127	12.053	12.053	(1.025)	57357	0.58740	0.576(aR)	
	27	Hexachlorobutadiene	225	12.190	12.190	(1.036)	56537	1.29702	1.27	
$	30	2-Methylnaphthalene-D10	152	13.354	13.353	(0.843)	171077	1.29911	1.27	
	31	2-Methylnaphthalene	142	13.429	13.429	(1.142)	254006	1.34829	1.32	
	33	1,2,4,5-Tetrachlorobenzene	216	13.843	13.843	(0.874)	95864	1.41408	1.39	
	34	Hexachlorocyclopentadiene	237	13.862	13.862	(0.875)	32565	0.91898	0.901	
$	35	2,4-Dibromophenol	252	14.088	14.107	(0.889)	117505	2.73712	2.68	
	36	2,4,6-Trichlorophenol	196	14.164	14.182	(0.894)	140125	3.04352	2.98	

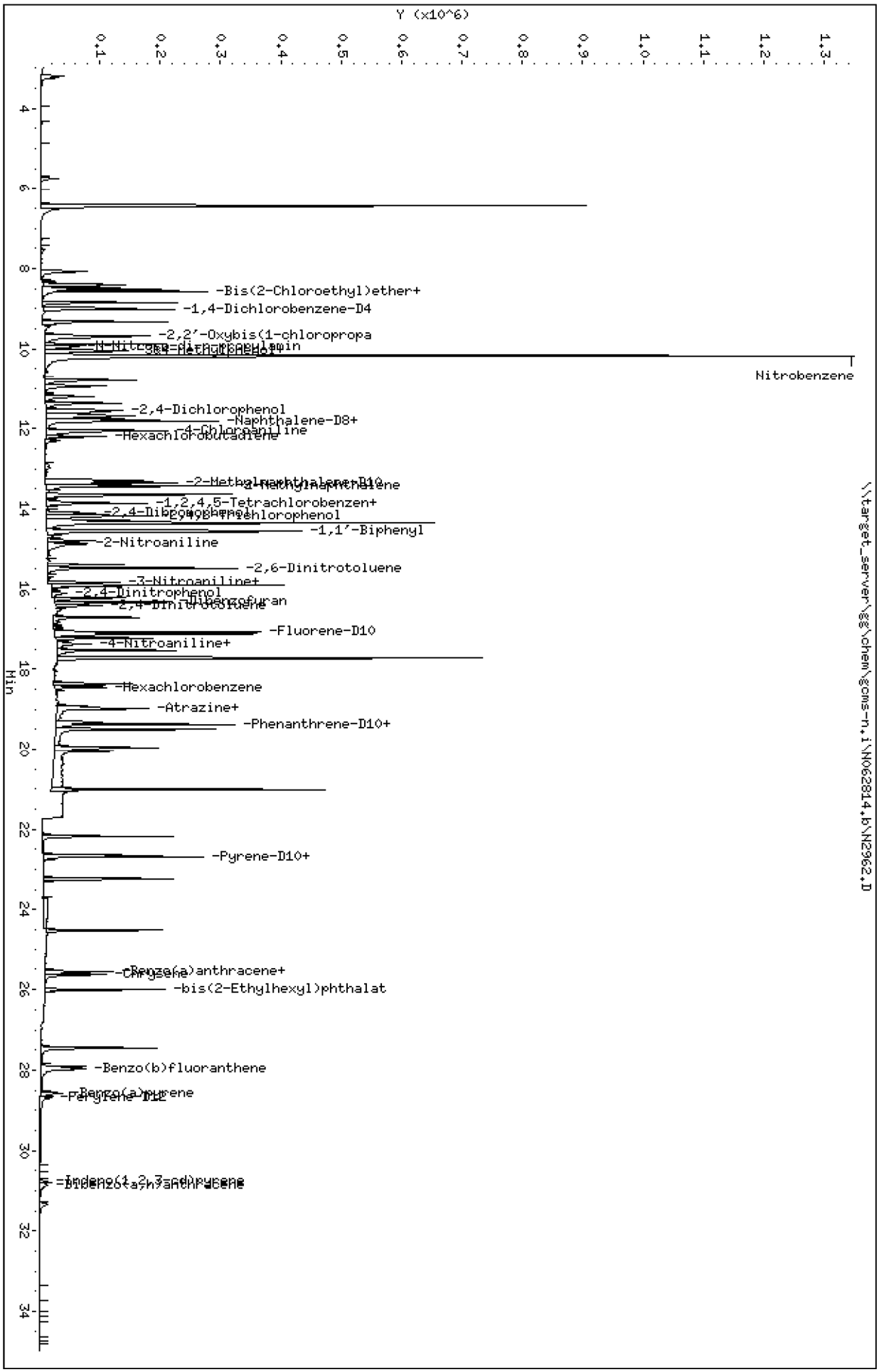
Data File: \\target_server\gg\chem\gcms-n.i\N062814.b\N2962.D
Report Date: 11-Jul-2014 13:32

			QUANT SIG					CONCENTRATIONS ON-COLUMN	FINAL		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/ml)	(ug/L)		REVIEW CODE
	39	1,1'-Biphenyl	154	14.559	14.559	(0.919)	274374	1.42730	1.40		
	40	2-Nitroaniline	65	14.861	14.879	(0.938)	58551	1.61203	1.58		
	42	2,6-Dinitrotoluene	165	15.473	15.473	(0.977)	52665	1.41572	1.39		
	44	3-Nitroaniline	138	15.868	15.881	(1.002)	23443	1.07575	1.05		
*	45	Acenaphthene-D10	164	15.842	15.842	(1.000)	87248	0.80000		(a)	
	47	2,4-Dinitrophenol	184	16.106	16.132	(1.017)	35526	3.41085	3.34		
	48	Dibenzofuran	168	16.343	16.343	(1.032)	290180	1.50592	1.48		
	50	2,4-Dinitrotoluene	165	16.422	16.435	(1.037)	72042	1.64034	1.61		
$	52	Fluorene-D10	174	17.069	17.068	(1.077)	145364	1.44670	1.42		
	56	4-Nitroaniline	138	17.307	17.370	(1.092)	31536	1.57434	1.54	(Q)	
	57	4,6-Dinitro-2-Methylphenol	198	17.370	17.386	(0.899)	65264	3.84729	3.77	(R)	
	60	Hexachlorobenzene	284	18.454	18.453	(0.955)	75504	1.53648	1.51		
	61	Atrazine	200	18.933	18.918	(0.980)	77880	2.79890	2.74	(R)	
	62	Pentachlorophenol	266	18.978	18.993	(0.982)	110698	4.06498	3.98	(R)	
*	63	Phenanthrene-D10	188	19.323	19.323	(1.000)	124787	0.80000		(a)	
	64	Phenanthrene	178	19.368	19.368	(1.002)	344414	1.75276	1.72		
$	69	Pyrene-D10	212	22.632	22.646	(0.885)	179912	1.77407	1.74		
	70	Pyrene	202	22.674	22.687	(0.887)	310848	1.95184	1.91		
	72	Benzo(a)anthracene	228	25.549	25.562	(0.999)	145712	1.64114	1.61		
*	73	Chrysene-D12	240	25.576	25.589	(1.000)	58141	0.80000		(a)	
	74	Chrysene	228	25.630	25.643	(1.002)	189946	1.87519	1.84		
	76	bis(2-Ethylhexyl)phthalate	149	26.008	26.008	(1.017)	333399	1.71002	1.68	(R)	
	78	Benzo(b)fluoranthene	252	27.934	27.951	(0.974)	95130	1.55649	1.52		
	80	Benzo(a)pyrene	252	28.569	28.586	(0.996)	68979	1.14515	1.12	(RH)	
*	81	Perylene-D12	264	28.689	28.723	(1.000)	38012	0.80000		(a)	
	82	Indeno(1,2,3-cd)pyrene	276	30.770	30.811	(1.073)	43510	1.45633	1.43	(M)	M3
	83	Dibenzo(a,h)anthracene	278	30.852	30.893	(1.075)	45956	1.36547	1.34		

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
R - Spike/Surrogate failed recovery limits.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.

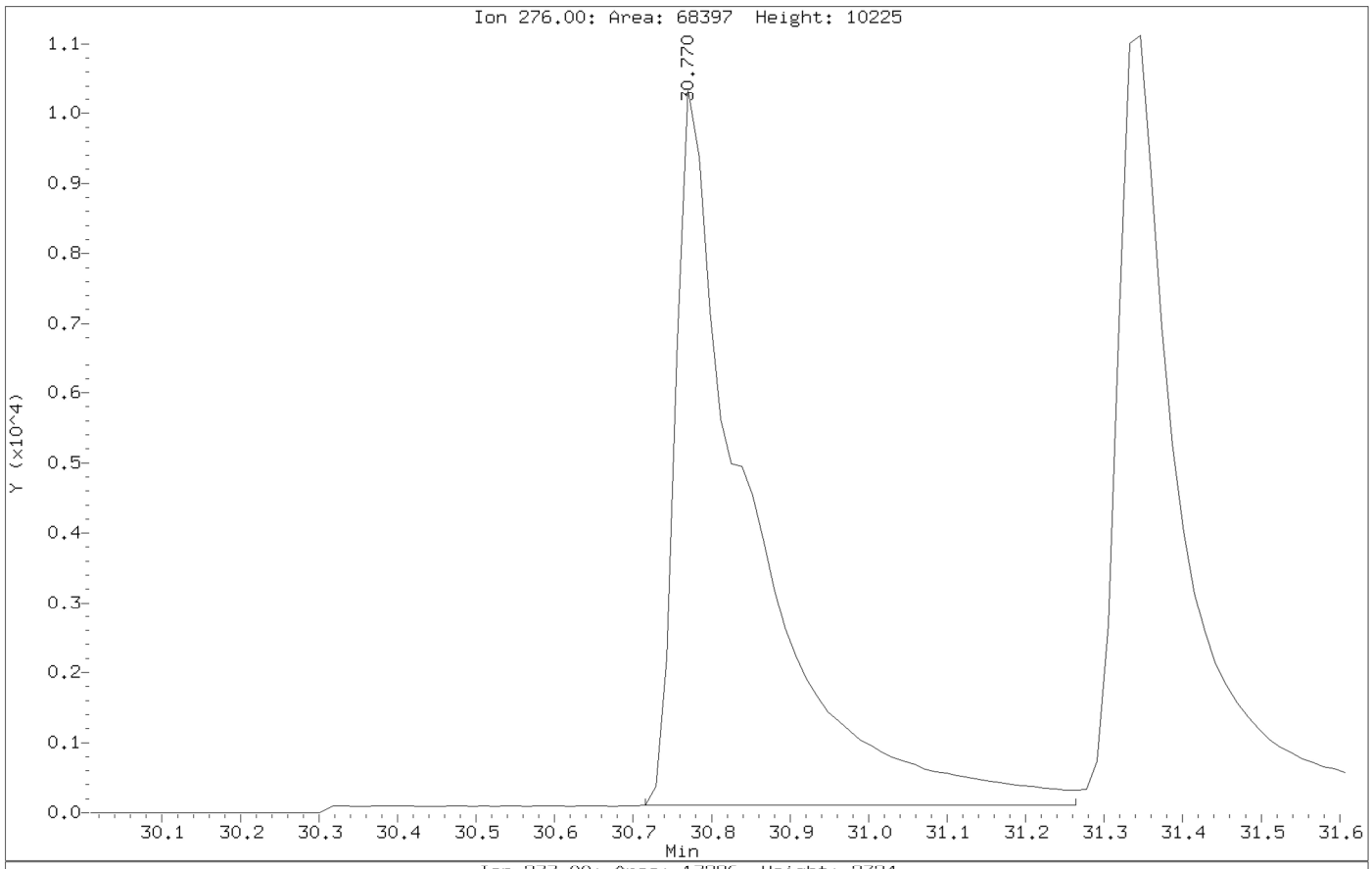
JCG
2:52 pm, Jul 11, 2014

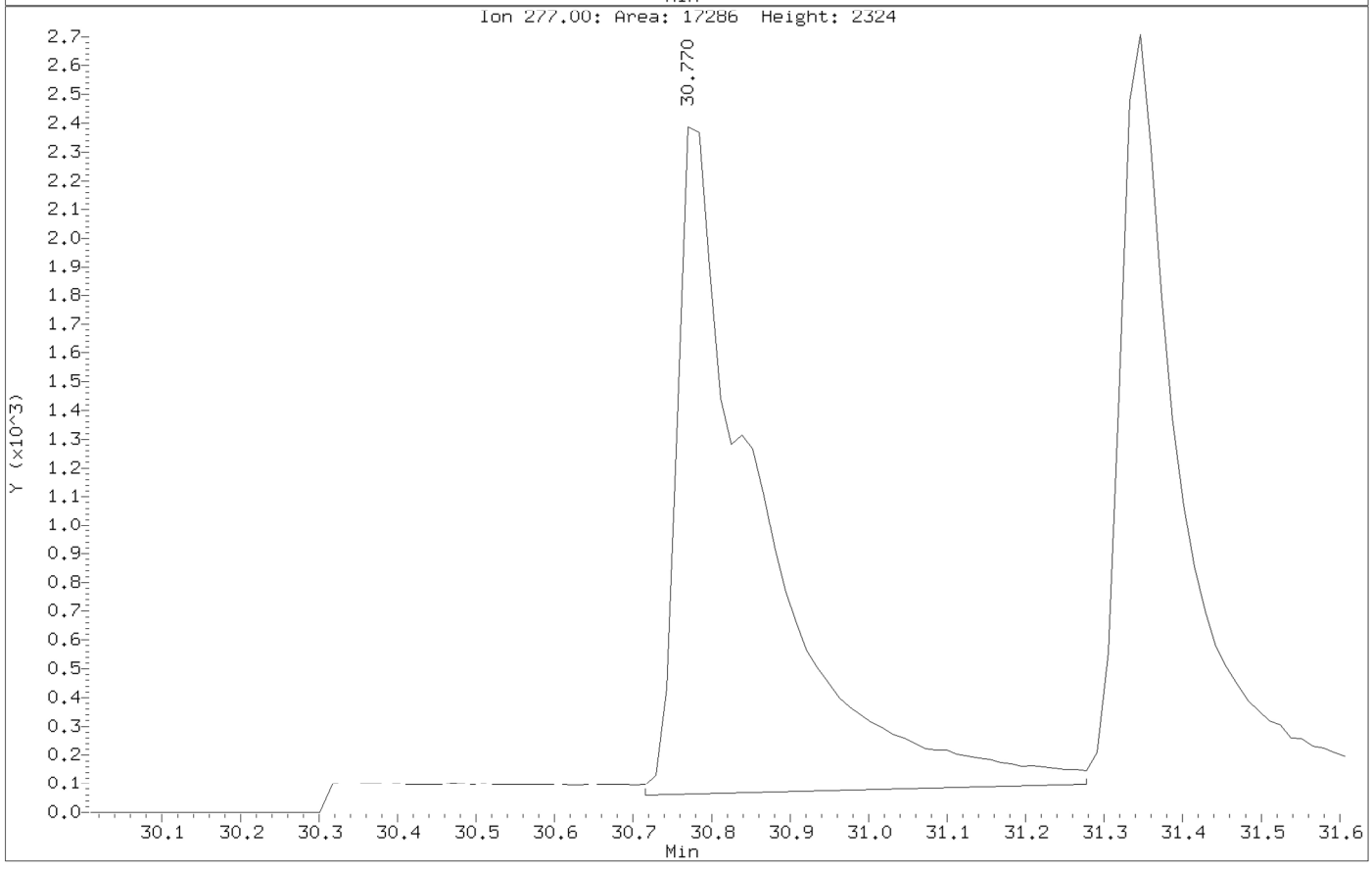

Data File: \\target_server\gg\chem\gcms-n,i\N062814,b\N2962,D
Date : 28-JUN-2014 12:11
Client ID: FTA-MW-210-061814MS
Sample Info: WG145381-4,WE53-7
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n,i\N062814,b\N2962,D
Y (x10^6)
Min
-Bis(2-Chloroethyl)ether+
-1,4-Dichlorobenzene-D4
-2,2'-Oxybis(1-chloropropa
-N-Nitrosodimethylamin
Nitrobenzene
-2,4-Dichlorophenol
-Naphthalene-D8+
-Hexachlorobutadiene
-2-Methylnaphthalene-D10
-1,2,4,5-Tetrachlorobenzen+
-1,1'-Biphenyl
-2-Nitroaniline
-2,6-Dinitrotoluene
-3-Nitroaniline+
-2,4-Dinitrophenol
-Fluorene-D10
-4-Nitroaniline+
-Hexachlorobenzene
-Atrazine+
-Phenanthrene-D10+
-Pyrene-D10+
-Benzo(a)anthracene+
-bis(2-Ethylhexyl)phthalat
-Benzo(b)fluoranthene
-Benzo(a)pyrene

Data File: \\target_server\gg\chem\gcms-n.i\N062814.b\N2962.D
Injection Date: 28-JUN-2014 12:11
Instrument: gcms-n.i
Client Sample ID: FTA-MW-210-061814MS

Compound: Indeno(1,2,3-cd)pyrene
CAS Number: 193-39-5

BEFORE MANUAL INTEGRATION

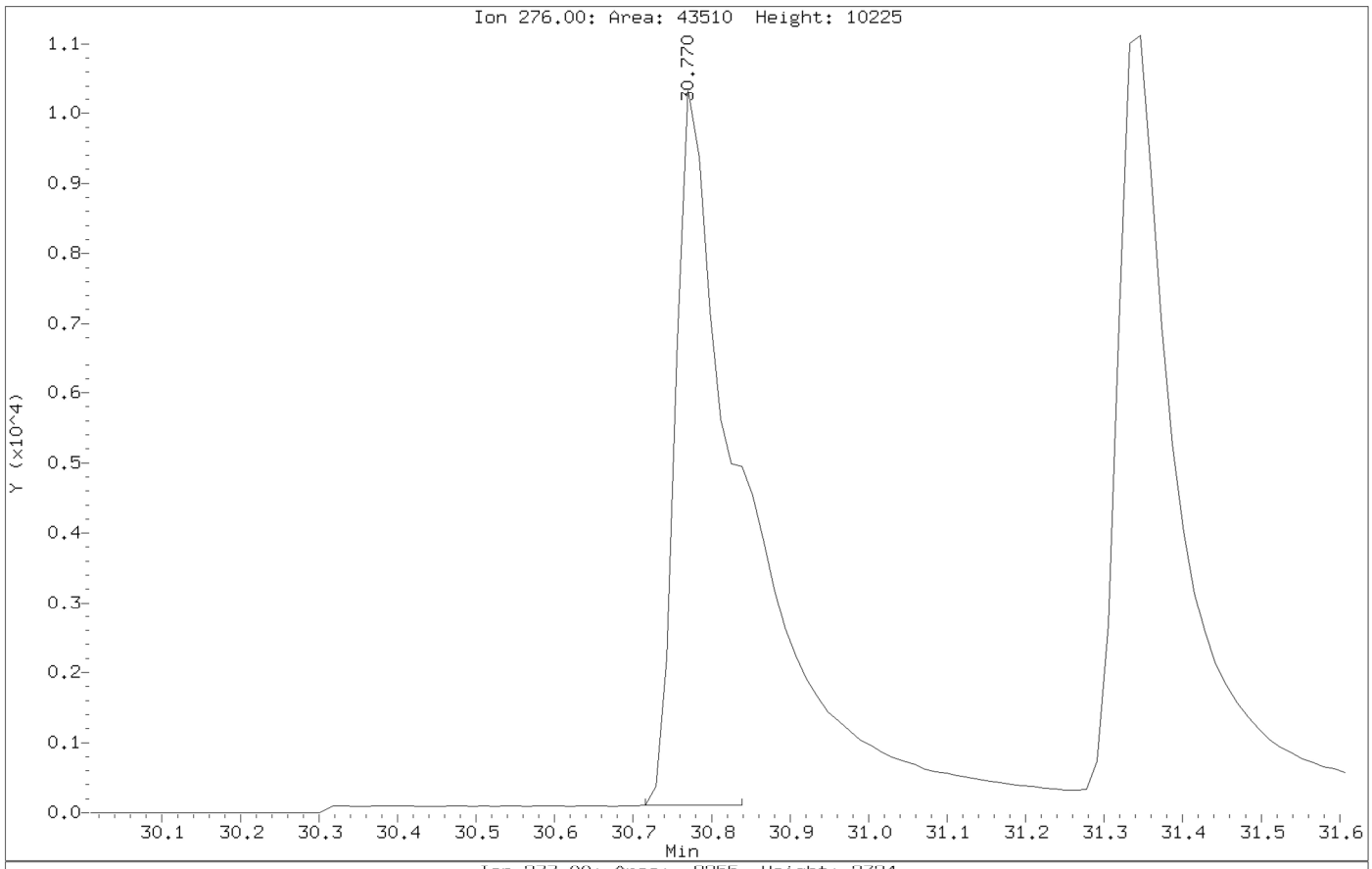


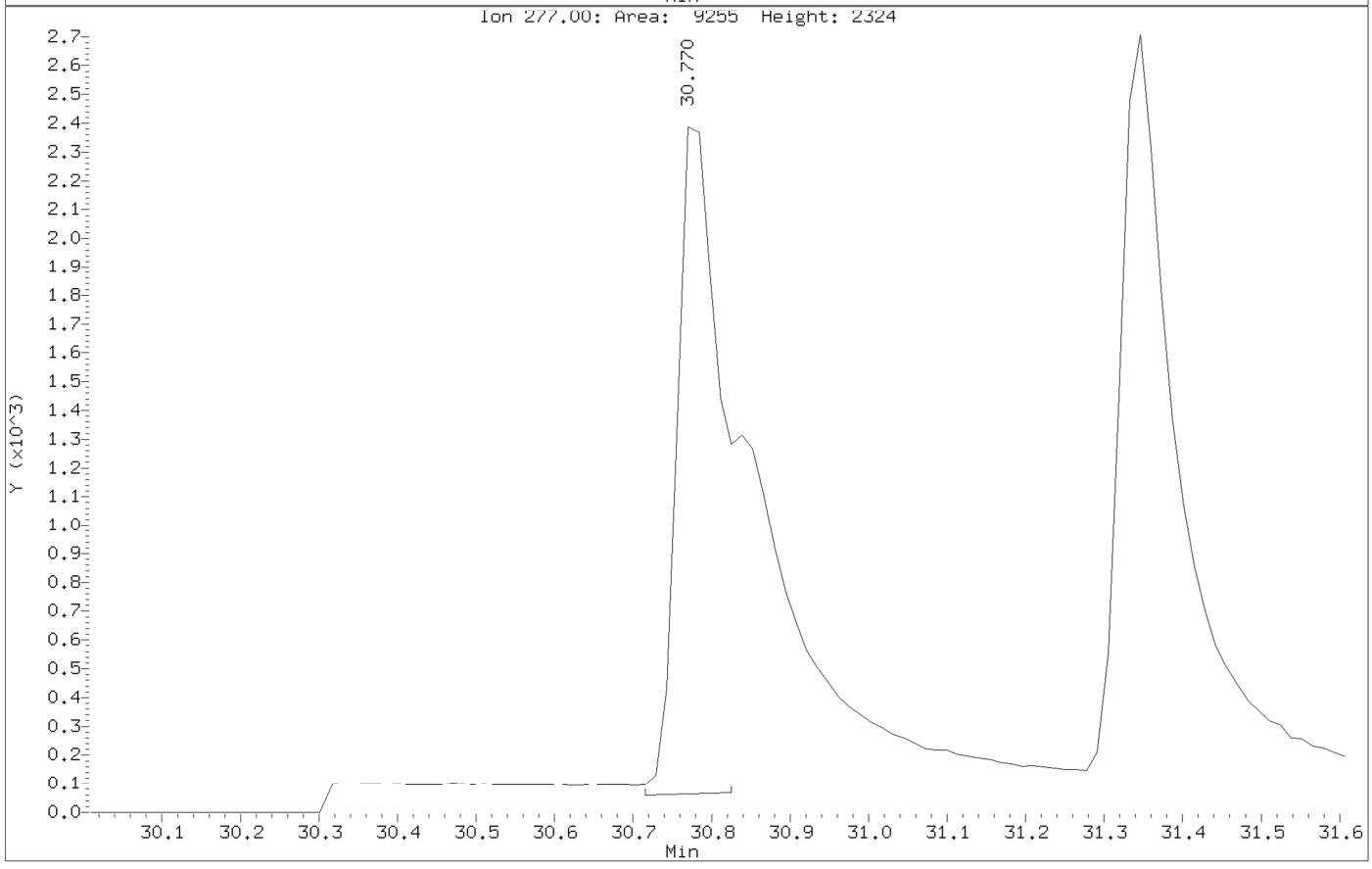


Data File: \\target_server\gg\chem\gcms-n.i\N062814.b\N2962.D
Injection Date: 28-JUN-2014 12:11
Instrument: gcms-n.i
Client Sample ID: FTA-MW-210-061814MS

Compound: Indeno(1,2,3-cd)pyrene
CAS Number: 193-39-5

AFTER MANUAL INTEGRATION





Data File: \\target_server\gg\chem\gcms-n.i\N062814.b\N2963.D
Report Date: 11-Jul-2014 13:32

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N062814.b\N2963.D
Lab Smp Id: WG145381-5 Client Smp ID: FTA-MW-210-061814MS
Inj Date : 28-JUN-2014 12:54 MS Autotune Date: 12-NOV-2013 09:32
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG145381-5,WE53-7
Misc Info : WG145582,WG145381,WG145455-4,SH4521-2
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N062814.b\NSPSIM09.m
Meth Date : 28-Jun-2014 09:09 cgomez Quant Type: ISTD
Cal Date : 26-JUN-2014 13:22 Cal File: N2926.D
Als bottle: 8 QC Sample: MSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ttcutler53ocs.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	0.95000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

			QUANT SIG					CONCENTRATIONS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
	2	1,4-Dioxane	88	3.259	3.208	(0.363)	42481	0.77124	0.812(a)	
	5	Bis(2-Chloroethyl)ether	93	8.494	8.494	(0.947)	153801	1.01637	1.07(R)	
	6	2-Chlorophenol	128	8.560	8.560	(0.954)	289619	2.24127	2.36	
*	8	1,4-Dichlorobenzene-D4	152	8.970	8.970	(1.000)	71925	0.80000	(a)	
	12	2,2'-Oxybis(1-chloropropane)	45	9.667	9.667	(1.078)	158873	0.90721	0.955(R)	
	14	N-Nitroso-di-n-propylamine	70	9.935	9.950	(1.107)	101245	1.23285	1.30	
	15	3&4-Methylphenol	108	10.045	10.045	(1.120)	163330	1.49796	1.58	
	16	Hexachloroethane	117	10.029	10.029	(1.118)	65725	1.19067	1.25	
	17	Nitrobenzene	77	10.202	10.218	(0.867)	157560	1.44255	1.52	
	22	2,4-Dichlorophenol	162	11.558	11.558	(0.983)	215782	2.70353	2.84	
*	24	Naphthalene-D8	136	11.763	11.746	(1.000)	235558	0.80000	(a)	
	25	Naphthalene	128	11.797	11.797	(1.003)	428187	1.46854	1.54	
	26	4-Chloroaniline	127	12.053	12.053	(1.025)	49667	0.47968	0.505(aR)	
	27	Hexachlorobutadiene	225	12.190	12.190	(1.036)	62341	1.34872	1.42	
$	30	2-Methylnaphthalene-D10	152	13.353	13.353	(0.843)	184161	1.29159	1.36	
	31	2-Methylnaphthalene	142	13.429	13.429	(1.142)	281278	1.41926	1.49	
	33	1,2,4,5-Tetrachlorobenzene	216	13.843	13.843	(0.874)	105408	1.43603	1.51	
	34	Hexachlorocyclopentadiene	237	13.862	13.862	(0.875)	33263	0.87302	0.919	
$	35	2,4-Dibromophenol	252	14.088	14.107	(0.889)	127386	2.74050	2.88	
	36	2,4,6-Trichlorophenol	196	14.163	14.182	(0.894)	153654	3.08230	3.24	

Data File: \\target_server\gg\chem\gcms-n.i\N062814.b\N2963.D
Report Date: 11-Jul-2014 13:32

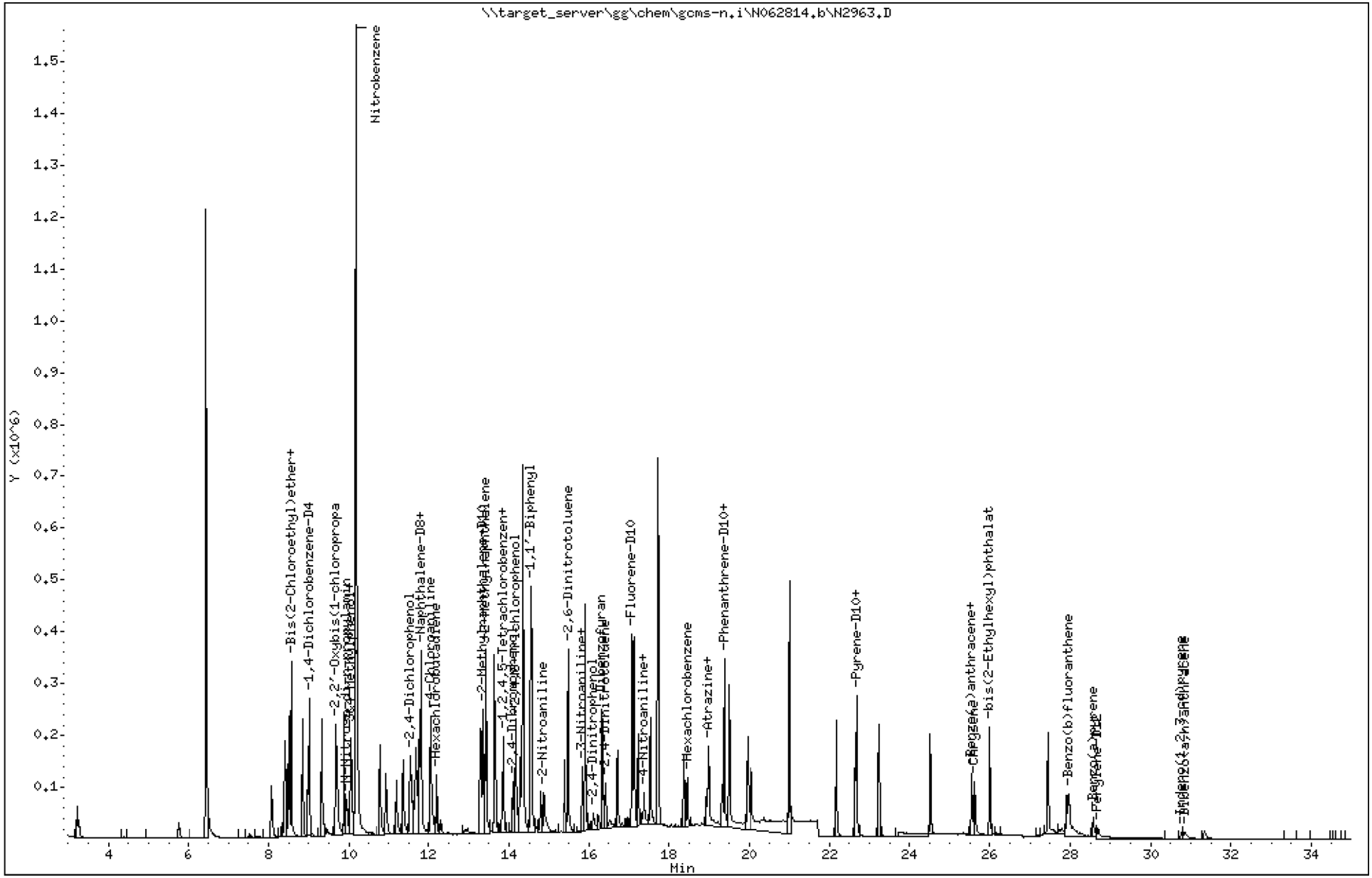
			QUANT SIG					CONCENTRATIONS ON-COLUMN	FINAL		REVIEW CODE
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/ml)	(ug/L)		
	39	1,1'-Biphenyl	154	14.559	14.559	(0.919)	291011	1.39814	1.47		
	40	2-Nitroaniline	65	14.860	14.879	(0.938)	63238	1.60800	1.69		
	42	2,6-Dinitrotoluene	165	15.473	15.473	(0.977)	57753	1.43384	1.51		
	44	3-Nitroaniline	138	15.868	15.881	(1.002)	22444	0.94191	0.991	(R)	
*	45	Acenaphthene-D10	164	15.842	15.842	(1.000)	94468	0.80000		(a)	
	47	2,4-Dinitrophenol	184	16.119	16.132	(1.017)	39117	3.45771	3.64		
	48	Dibenzofuran	168	16.343	16.343	(1.032)	315998	1.51457	1.59		
	50	2,4-Dinitrotoluene	165	16.422	16.435	(1.037)	76146	1.60385	1.69		
$	52	Fluorene-D10	174	17.068	17.068	(1.077)	156865	1.44184	1.52		
	56	4-Nitroaniline	138	17.306	17.370	(1.092)	33899	1.56296	1.64	(Q)	
	57	4,6-Dinitro-2-Methylphenol	198	17.370	17.386	(0.899)	68414	3.94877	4.16	(R)	
	60	Hexachlorobenzene	284	18.453	18.453	(0.955)	81172	1.62386	1.71		
	61	Atrazine	200	18.933	18.918	(0.980)	59607	2.10593	2.22		
	62	Pentachlorophenol	266	18.978	18.993	(0.982)	110498	3.98894	4.20	(R)	
*	63	Phenanthrene-D10	188	19.323	19.323	(1.000)	126936	0.80000		(a)	
	64	Phenanthrene	178	19.368	19.368	(1.002)	358099	1.79155	1.88		
$	69	Pyrene-D10	212	22.632	22.646	(0.885)	183554	1.81160	1.91		
	70	Pyrene	202	22.673	22.687	(0.887)	314607	1.97948	2.08		
	72	Benzo(a)anthracene	228	25.548	25.562	(0.999)	147626	1.66419	1.75		
*	73	Chrysene-D12	240	25.576	25.589	(1.000)	58089	0.80000		(a)	
	74	Chrysene	228	25.630	25.643	(1.002)	193397	1.91432	2.02	(R)	
	76	bis(2-Ethylhexyl)phthalate	149	25.995	26.008	(1.016)	344358	1.77916	1.87	(R)	
	78	Benzo(b)fluoranthene	252	27.934	27.951	(0.974)	94860	1.57473	1.66		
	80	Benzo(a)pyrene	252	28.568	28.586	(0.996)	70454	1.18671	1.25	(R)	
*	81	Perylene-D12	264	28.688	28.723	(1.000)	37465	0.80000		(a)	
	82	Indeno(1,2,3-cd)pyrene	276	30.770	30.811	(1.073)	40756	1.38407	1.46	(M)	M3
	83	Dibenzo(a,h)anthracene	278	30.852	30.893	(1.075)	47587	1.43457	1.51		

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
R - Spike/Surrogate failed recovery limits.
M - Compound response manually integrated.

2:52 pm, Jul 11, 2014

Data File: \\target_server\gg\chem\gcms-n.i\N062814.b\N2963.D
Date : 28-JUN-2014 12:54
Client ID: FTA-MW-210-061814MS
Instrument: gcms-n.i
Sample Info: WG145381-5,WE53-7
Volume Injected (uL): 1.0
Operator: JCG
Column phase: ZB5-MS
Column diameter: 0.25

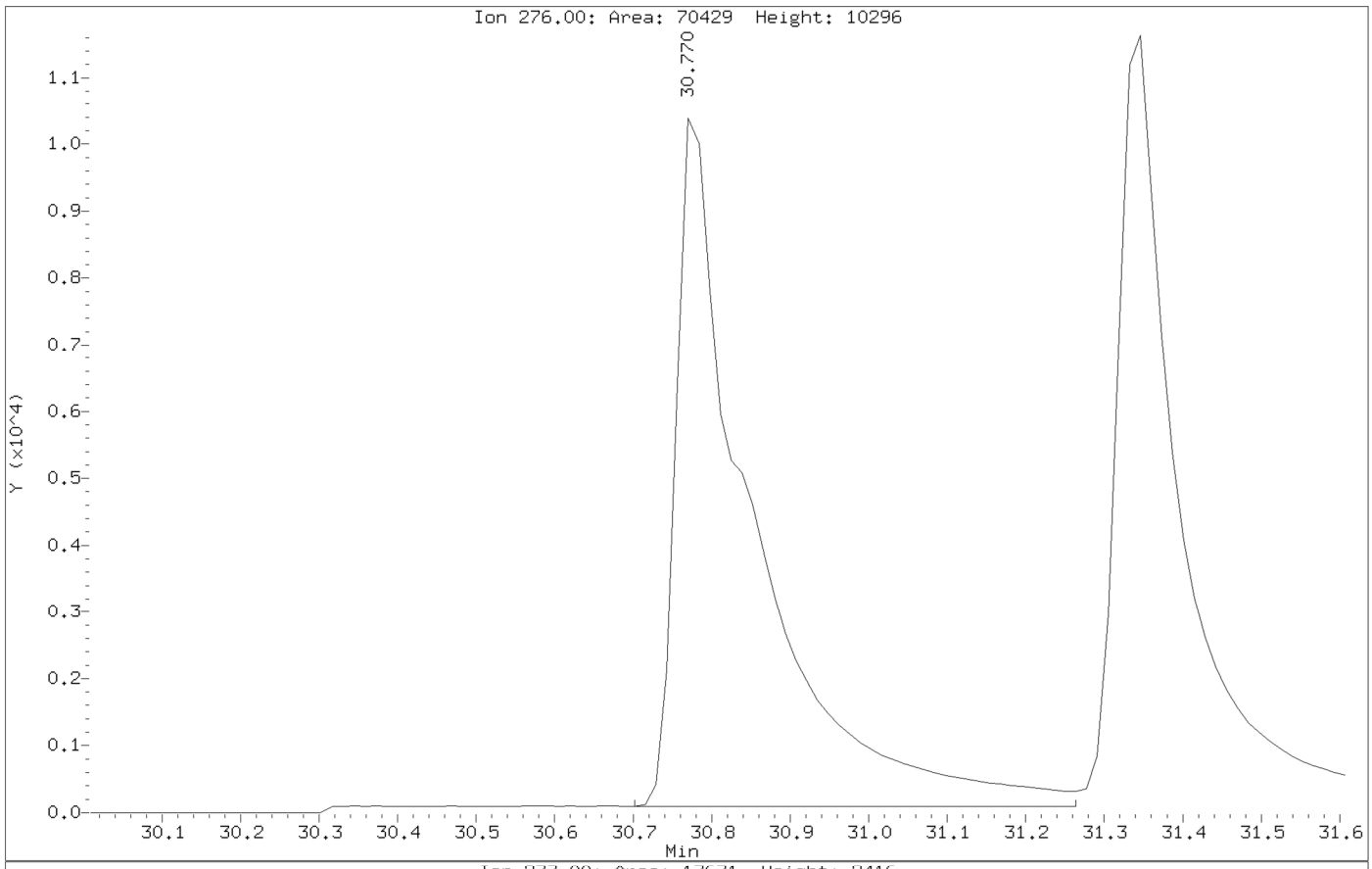


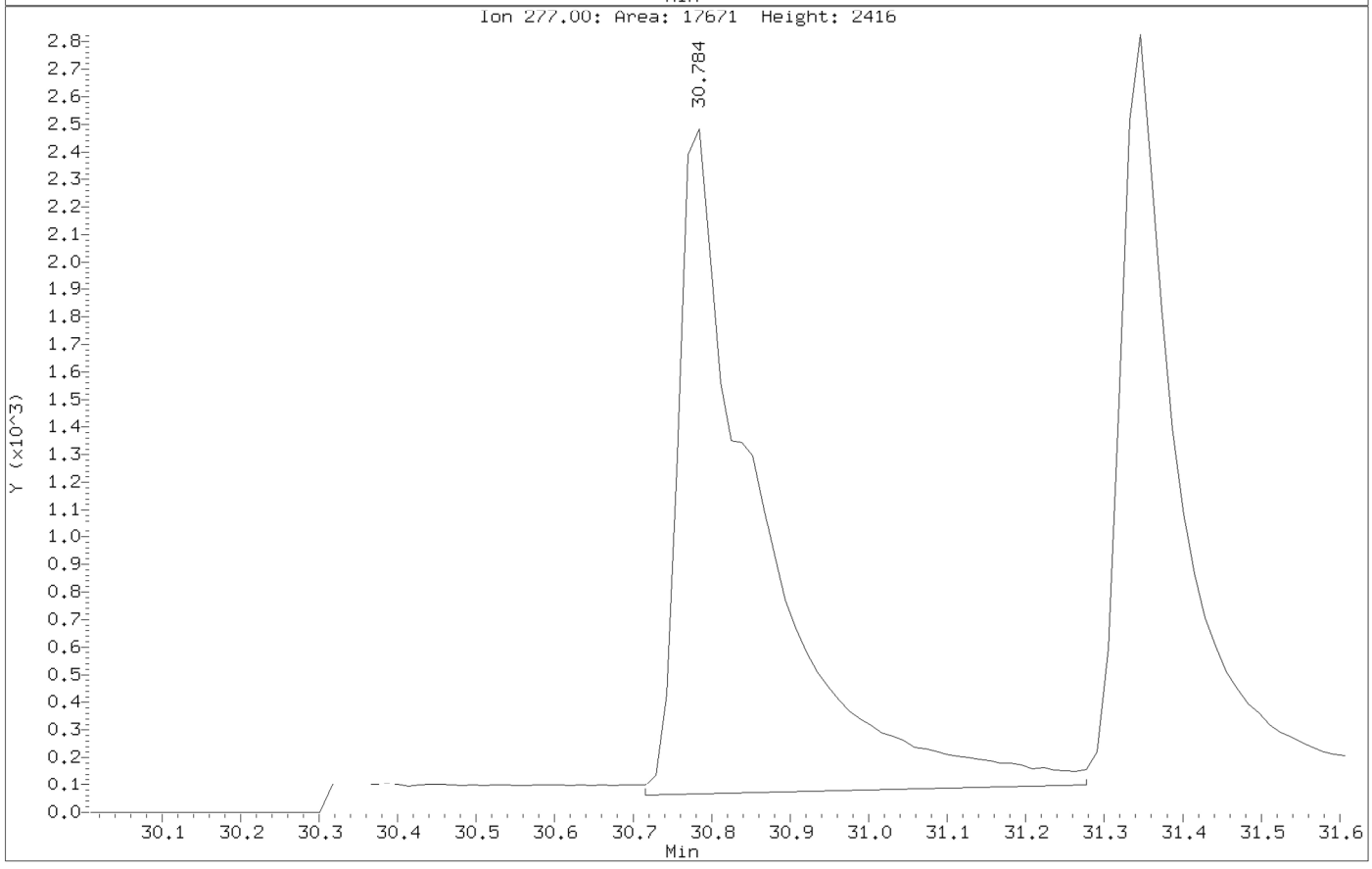
Katahdin Analytical Services 6000252

Data File: \\target_server\gg\chem\gcms-n.i\N062814.b\N2963.D
Injection Date: 28-JUN-2014 12:54
Instrument: gcms-n.i
Client Sample ID: FTA-MW-210-061814MS

Compound: Indeno(1,2,3-cd)pyrene
CAS Number: 193-39-5

BEFORE MANUAL INTEGRATION

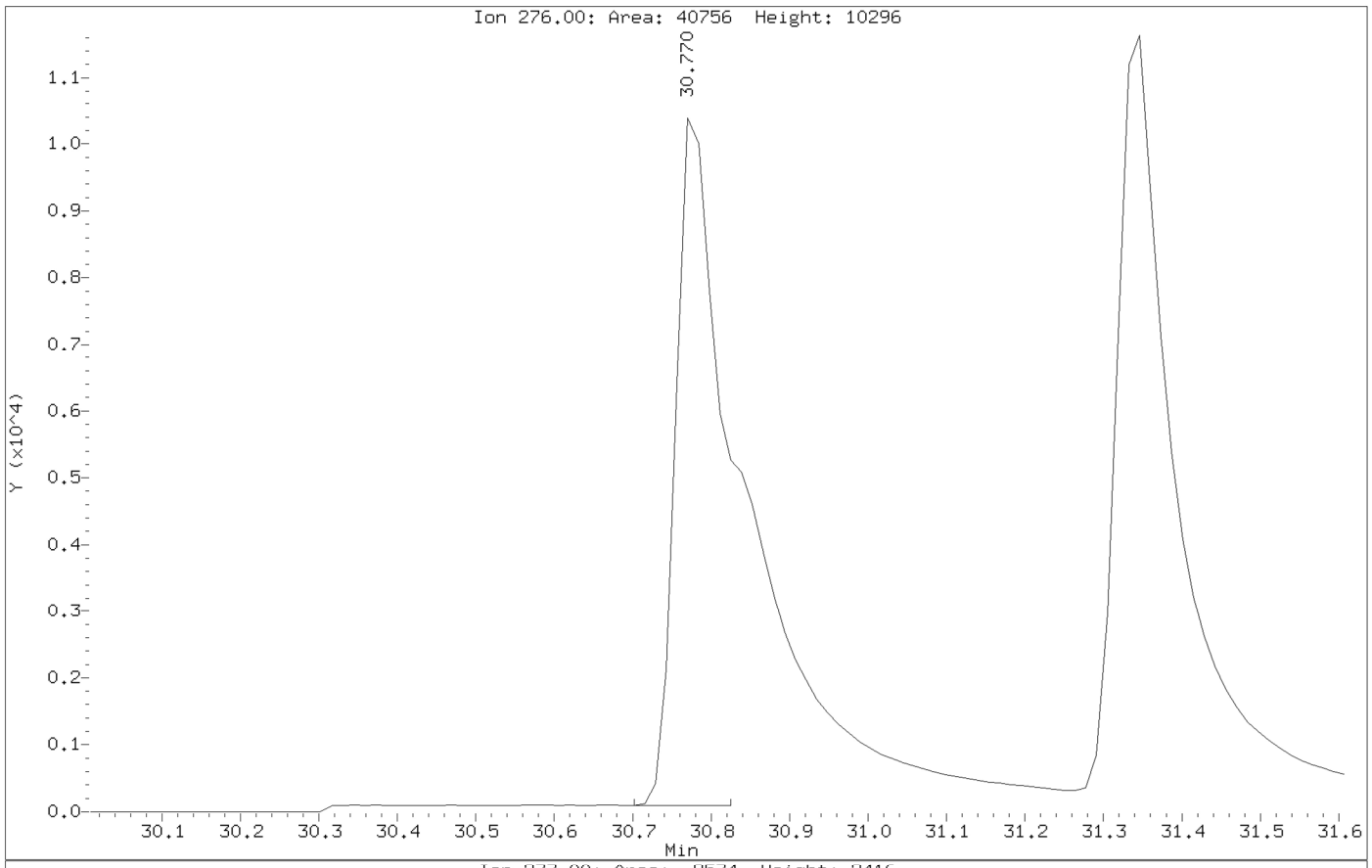


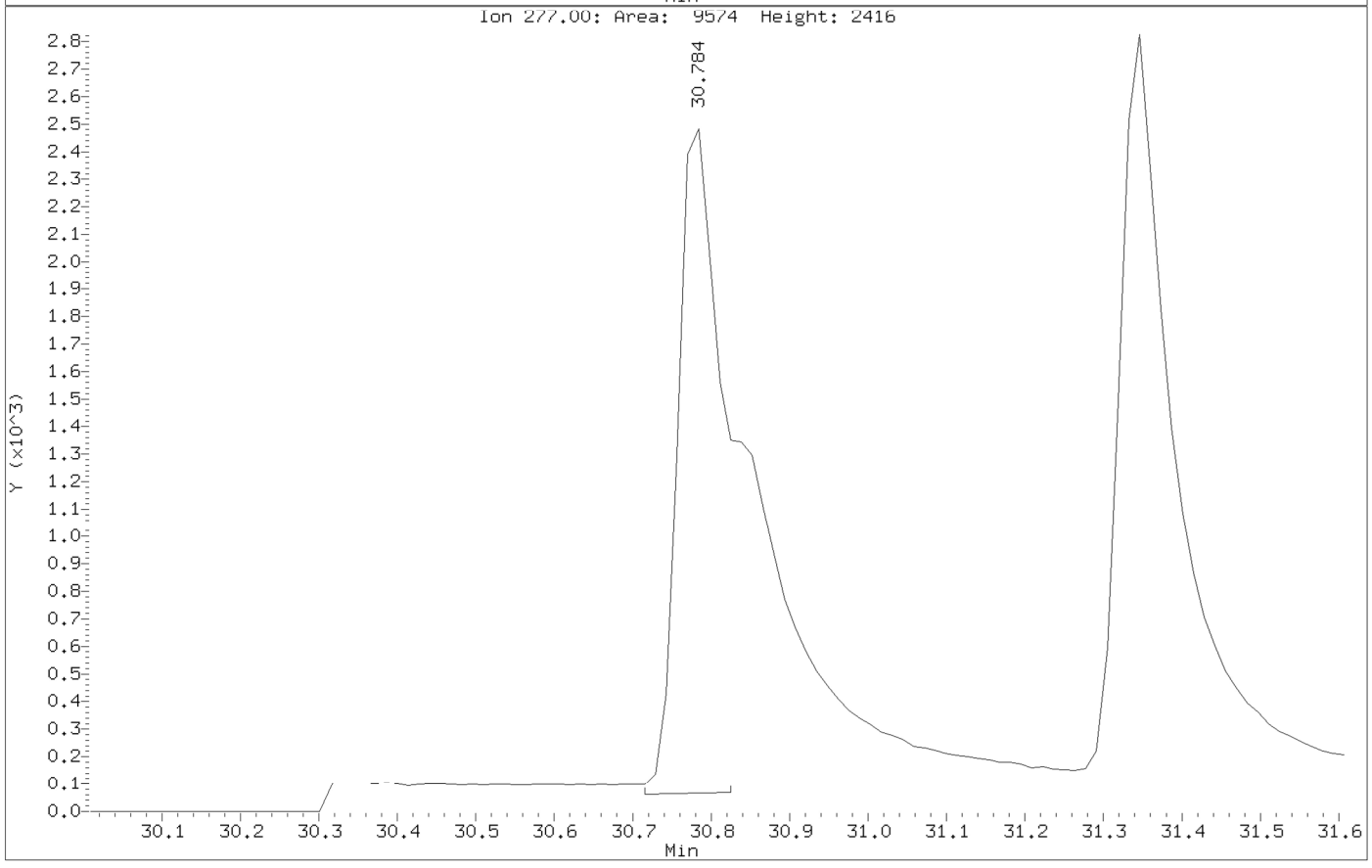


Data File: \\target_server\gg\chem\gcms-n.i\N062814.b\N2963.D
Injection Date: 28-JUN-2014 12:54
Instrument: gcms-n.i
Client Sample ID: FTA-MW-210-061814MS

Compound: Indeno(1,2,3-cd)pyrene
CAS Number: 193-39-5

AFTER MANUAL INTEGRATION





Katahdin
ANALYTICAL SERVICES

Cert No E87604

MS/MSD Recovery Report

MS ID: WG145381-6
MSD ID: WG145381-7
Sample ID: SH4521-14
Client ID: FTA-SW-03-061914
Project:
SDG: WE53-7
MS File ID: N2967.D

Received Date:
Extract Date: 25-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145381
Report Date: 11-JUL-14
MSD File ID: N2968.D

Analysis Date: 28-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
1,4-Dioxane	2.02	1.90	ug/L	U0.51	0.64	0.47	31.8	24.7	31*	30	10-93
2-Chlorophenol	4.04	3.81	ug/L	U0.51	2.2	1.8	53.2	47.5	17	30	30-112
Naphthalene	2.02	1.90	ug/L	U0.10	1.4	1.2	68.3	60.4	18	30	46-84
Hexachlorobutadiene	2.02	1.90	ug/L	U0.10	1.1	1.0	53.5	53.0	7	30	48-95
2-Methylnaphthalene	2.02	1.90	ug/L	U0.10	1.3	1.1	65.3	56.7	20	30	51-114
Hexachlorobenzene	2.02	1.90	ug/L	UM0.10	1.2	1.2	59.9*	63.0	1	30	62-90
Pentachlorophenol	4.04	3.81	ug/L	ULLMM0	3.8	3.3	93.8*	86.1*	14	30	10-66
Phenanthrene	2.02	1.90	ug/L	U0.10	1.5	1.4	76.2	74.0	9	30	73-100
Pyrene	2.02	1.90	ug/L	U0.10	1.5	1.7	74.2	87.2	10	30	71-104
Benzo(a)anthracene	2.02	1.90	ug/L	UM0.10	1.2	1.4	57.4*	73.5	19	30	70-110
Chrysene	2.02	1.90	ug/L	ULLM0.1	1.3	1.5	62.9*	79.8	18	30	70-95
Benzo(b)fluoranthene	2.02	1.90	ug/L	JMM0.10	0.90	1.2	44.7*	65.6*	32*	30	67-102
Benzo(a)pyrene	2.02	1.90	ug/L	JMM0.10	0.90	1.2	44.3*	63.0*	29	30	63-98
Indeno(1,2,3-cd)pyrene	2.02	1.90	ug/L	JMM0.10	0.70	1.1	34.6*	58.8*	46*	30	61-112
Dibenzo(a,h)anthracene	2.02	1.90	ug/L	ULLMM0	0.77	1.1	38.3*	59.3*	38*	30	66-108
1,1'-Biphenyl	4.04	3.81	ug/L	ULLMM0	1.3	1.1	31.4*	28.4*	16	30	56-96
1,2,4,5-Tetrachlorobenzene	2.02	1.90	ug/L	U0.10	1.3	1.1	62.4	55.6	17	30	30-150
2,2'-Oxybis(1-Chloropropane)	2.02	1.90	ug/L	ULLMM0	0.86	0.70	42.4*	36.6*	20	30	57-90
2,4,6-Trichlorophenol	4.04	3.81	ug/L	U0.51	3.1	2.5	76.0	65.1	21	30	19-139
2,4-Dichlorophenol	4.04	3.81	ug/L	U0.51	2.6	2.2	65.1	58.3	17	30	31-106
2,4-Dinitrophenol	4.04	3.81	ug/L	U0.51	3.4	2.8	84.6	72.7	21	30	10-95
2,4-Dinitrotoluene	2.02	1.90	ug/L	U0.10	1.6	1.3	77.7	66.2	22	30	48-95
2,6-Dinitrotoluene	2.02	1.90	ug/L	U0.10	1.5	1.1	74.7	57.8	31*	30	47-86
2-Nitroaniline	2.02	1.90	ug/L	U0.15	1.5	1.1	73.3	59.8	26	30	54-105
3,3'-Dichlorobenzidine	4.04	3.81	ug/L	JMM0.10	0.11	0.095	2.75*	2.48*	16	30	10-118
4,6-Dinitro-2-Methylphenol	4.04	3.81	ug/L	UM0.76	3.7	2.9	92.3*	76.9	24	30	10-77
4-Chloroaniline	2.02	1.90	ug/L	JMM0.51	U0.50	0.48	0*	0*	0	30	38-122
3&4-Methylphenol	4.04	3.81	ug/L	U0.51	1.8	1.4	44.8	37.8	23	30	31-78
4-Nitroaniline	2.02	1.90	ug/L	JMM0.10	0.80	0.61	39.7*	31.9*	28	30	42-152
Atrazine	2.02	1.90	ug/L	U0.10	1.8	1.6	90.6	81.9	16	30	66-126
Bis(2-Chloroethyl)Ether	2.02	1.90	ug/L	ULMM0.	1.0	0.85	52.0*	44.6*	21	30	56-87
Bis(2-Ethylhexyl)Phthalate	2.02	1.90	ug/L	ULLMM0	1.1	1.5	54.4*	79.3*	31*	30	97-188
Dibenzofuran	2.02	1.90	ug/L	U0.10	1.4	1.2	70.8	61.4	20	30	56-98

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://www.katahdinlab.com

MS/MSD Recovery Report

MS ID: WG145381-6
MSD ID: WG145381-7
Sample ID: SH4521-14
Client ID: FTA-SW-03-061914
Project:
SDG: WE53-7
MS File ID: N2967.D

Received Date:
Extract Date: 25-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145381
Report Date: 11-JUL-14
MSD File ID: N2968.D

Analysis Date: 28-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
Hexachlorocyclopentadiene	2.02	1.90	ug/L	UMM0.10	0.14	0.11	6.73*	5.83*	20	30	10-96
Hexachloroethane	2.02	1.90	ug/L	UM0.10	1.1	0.87	52.5	45.7*	20	30	48-80
Nitrobenzene	2.02	1.90	ug/L	U0.15	1.3	1.3	65.8	69.8	0	30	43-89
N-Nitroso-Di-N-Propylamine	2.02	1.90	ug/L	U0.10	1.2	0.86	56.9	45.2	29	30	43-86
3-Nitroaniline	2.02	1.90	ug/L	UMM0.10	0.35	0.20	17.5*	10.6*	54*	30	50-103
2-Methylnaphthalene-D10							57.9	50.3			43-92
Fluorene-D10							67.9	61.5			29-101
Pyrene-D10							69.7	81.4			53-166
2,4-Dibromophenol							66.5	62.4			10-130

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://www.katahdinlab.com

Data File: \\target_server\gg\chem\gcms-n.i\N062814.b\N2967.D
Report Date: 11-Jul-2014 13:32

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N062814.b\N2967.D
Lab Smp Id: WG145381-6 Client Smp ID: FTA-SW-03-061914MS
Inj Date : 28-JUN-2014 15:47 MS Autotune Date: 12-NOV-2013 09:32
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG145381-6,WE53-7
Misc Info : WG145582,WG145381,WG145455-4,SH4521-2
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N062814.b\NSPSIM09.m
Meth Date : 28-Jun-2014 09:09 cgomez Quant Type: ISTD
Cal Date : 26-JUN-2014 13:22 Cal File: N2926.D
Als bottle: 12 QC Sample: MS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ttcutler53ocs.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	0.99000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

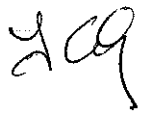
			QUANT SIG					CONCENTRATIONS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
	2	1,4-Dioxane	88	3.242	3.208	(0.361)	33683	0.63575	0.642(a)	
	5	Bis(2-Chloroethyl)ether	93	8.494	8.494	(0.947)	151248	1.03912	1.05(R)	
	6	2-Chlorophenol	128	8.560	8.560	(0.954)	265073	2.13261	2.15	
*	8	1,4-Dichlorobenzene-D4	152	8.971	8.970	(1.000)	69183	0.80000	(a)	
	12	2,2'-Oxybis(1-chloropropane)	45	9.667	9.667	(1.078)	142713	0.84723	0.856(R)	
	14	N-Nitroso-di-n-propylamine	70	9.935	9.950	(1.107)	89652	1.13495	1.15	
	15	3&4-Methylphenol	108	10.045	10.045	(1.120)	188340	1.79580	1.81	
	16	Hexachloroethane	117	10.029	10.029	(1.118)	55747	1.04993	1.06	
	17	Nitrobenzene	77	10.203	10.218	(0.869)	145113	1.32059	1.33	
	22	2,4-Dichlorophenol	162	11.558	11.558	(0.984)	206898	2.60013	2.63	
*	24	Naphthalene-D8	136	11.746	11.746	(1.000)	234842	0.80000	(a)	
	25	Naphthalene	128	11.797	11.797	(1.004)	397433	1.36722	1.38	
	27	Hexachlorobutadiene	225	12.190	12.190	(1.038)	49298	1.06979	1.08	
$	30	2-Methylnaphthalene-D10	152	13.353	13.353	(0.843)	169664	1.15856	1.17	
	31	2-Methylnaphthalene	142	13.429	13.429	(1.143)	261406	1.30580	1.32	
	33	1,2,4,5-Tetrachlorobenzene	216	13.843	13.843	(0.874)	94052	1.24755	1.26	
	34	Hexachlorocyclopentadiene	237	13.862	13.862	(0.875)	1216	0.13466	0.136(aR)	
$	35	2,4-Dibromophenol	252	14.088	14.107	(0.889)	126920	2.65851	2.68	
	36	2,4,6-Trichlorophenol	196	14.164	14.182	(0.894)	155763	3.04227	3.07	
	39	1,1'-Biphenyl	154	14.559	14.559	(0.919)	268926	1.25799	1.27	

Data File: \\target_server\gg\chem\gcms-n.i\N062814.b\N2967.D
Report Date: 11-Jul-2014 13:32

			QUANT SIG					CONCENTRATIONS ON-COLUMN	FINAL	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/ml)	(ug/L)	REVIEW CODE
	40	2-Nitroaniline	65	14.861	14.879	(0.938)	59296	1.46803	1.48	
	42	2,6-Dinitrotoluene	165	15.473	15.473	(0.977)	61824	1.49446	1.51	
	44	3-Nitroaniline	138	15.881	15.881	(1.002)	9935	0.34973	0.353(QR)	
*	45	Acenaphthene-D10	164	15.842	15.842	(1.000)	97025	0.80000	(a)	
	47	2,4-Dinitrophenol	184	16.119	16.132	(1.017)	39156	3.38619	3.42	
	48	Dibenzofuran	168	16.343	16.343	(1.032)	303345	1.41560	1.43	
	50	2,4-Dinitrotoluene	165	16.422	16.435	(1.037)	75734	1.55655	1.57	
$	52	Fluorene-D10	174	17.069	17.068	(1.077)	151662	1.35728	1.37	
	56	4-Nitroaniline	138	17.322	17.370	(1.093)	17678	0.79359	0.802(R)	
	57	4,6-Dinitro-2-Methylphenol	198	17.370	17.386	(0.899)	72203	3.69503	3.73(R)	
	60	Hexachlorobenzene	284	18.454	18.453	(0.955)	68135	1.19621	1.21(R)	
	61	Atrazine	200	18.918	18.918	(0.979)	58430	1.81167	1.83	
	62	Pentachlorophenol	266	18.978	18.993	(0.982)	118521	3.75487	3.79(R)	
*	63	Phenanthrene-D10	188	19.323	19.323	(1.000)	144640	0.80000	(a)	
	64	Phenanthrene	178	19.368	19.368	(1.002)	347108	1.52401	1.54	
$	69	Pyrene-D10	212	22.632	22.646	(0.885)	157427	1.39492	1.41	
	70	Pyrene	202	22.674	22.687	(0.887)	270919	1.49073	1.50	
	72	Benzo(a)anthracene	228	25.549	25.562	(0.999)	113865	1.15239	1.16(R)	
*	73	Chrysene-D12	240	25.576	25.589	(1.000)	64703	0.80000	(a)	
	75	3,3'-Dichlorobenzidine	252	25.670	25.670	(1.004)	2753	0.10964	0.111(aQR)	
	74	Chrysene	228	25.630	25.643	(1.002)	147852	1.25880	1.27(R)	
	76	bis(2-Ethylhexyl)phthalate	149	26.008	26.008	(1.017)	254308	1.09399	1.10(R)	
	78	Benzo(b)fluoranthene	252	27.934	27.951	(0.973)	62756	0.89536	0.904(R)	
	80	Benzo(a)pyrene	252	28.569	28.586	(0.995)	61196	0.88589	0.895(R)	
*	81	Perylene-D12	264	28.706	28.723	(1.000)	43592	0.80000	(a)	
	82	Indeno(1,2,3-cd)pyrene	276	30.784	30.811	(1.072)	23708	0.69196	0.699(RMH)	M3
	83	Dibenzo(a,h)anthracene	278	30.866	30.893	(1.075)	29552	0.76567	0.773(R)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
R - Spike/Surrogate failed recovery limits.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.



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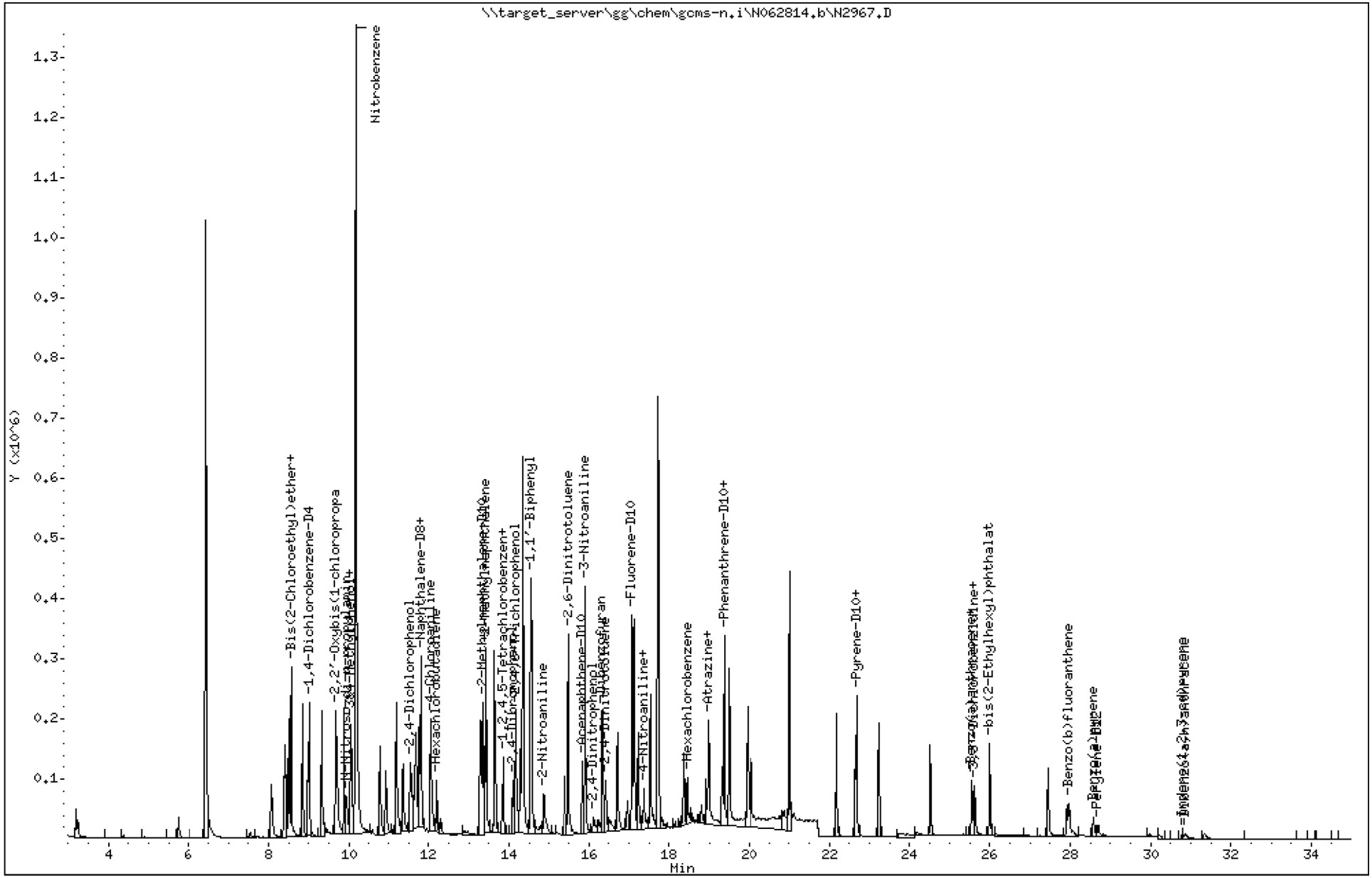
Date : 28-JUN-2014 15:47
Client ID: FTA-SW-03-061914MS
Instrument: gcms-n.i
Sample Info: WG145381-6,WE53-7
Volume Injected (uL): 1.0
Operator: JCG
Column phase: ZB5-MS
Column diameter: 0.25



Katahdin Analytical Services 6000259

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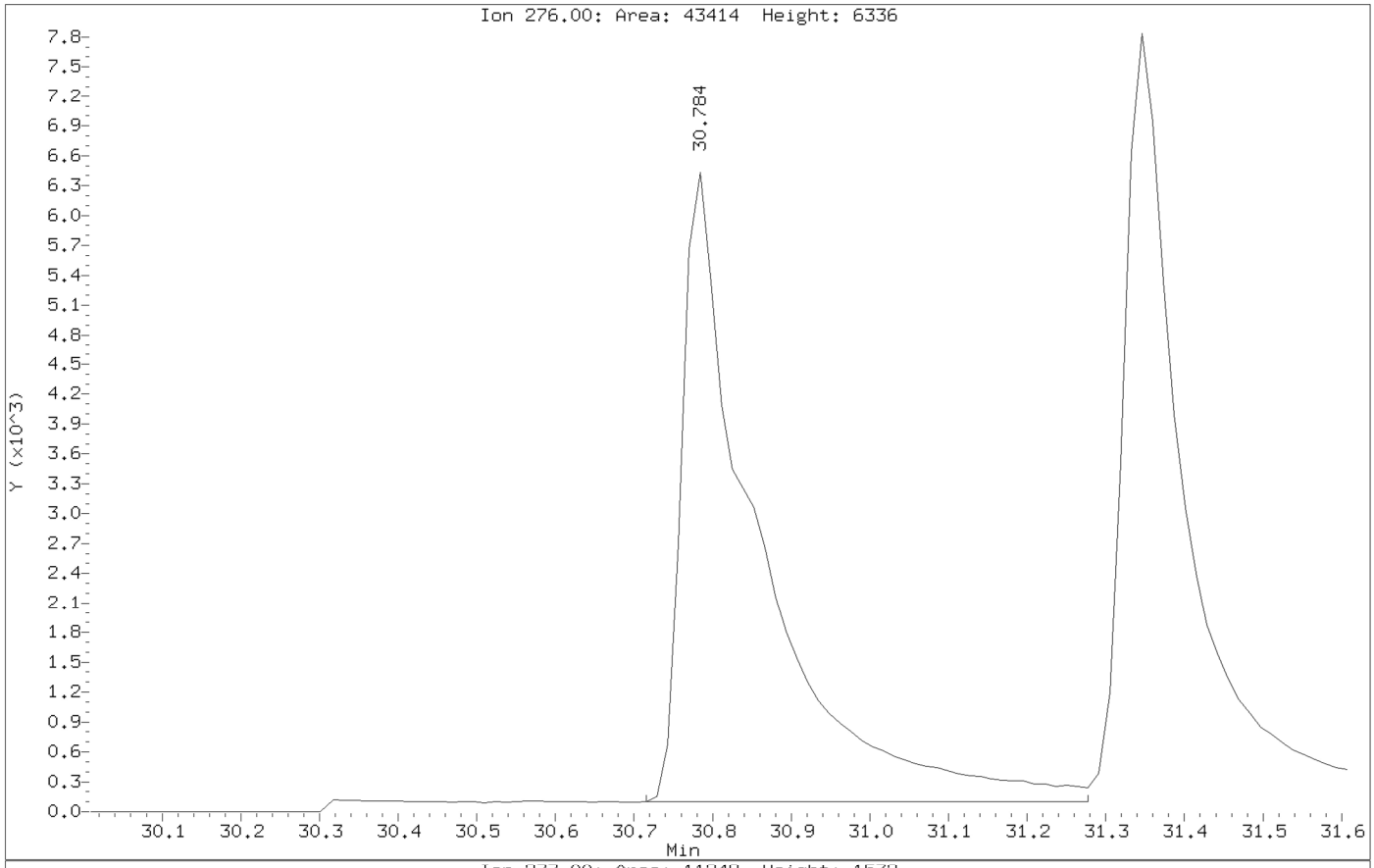
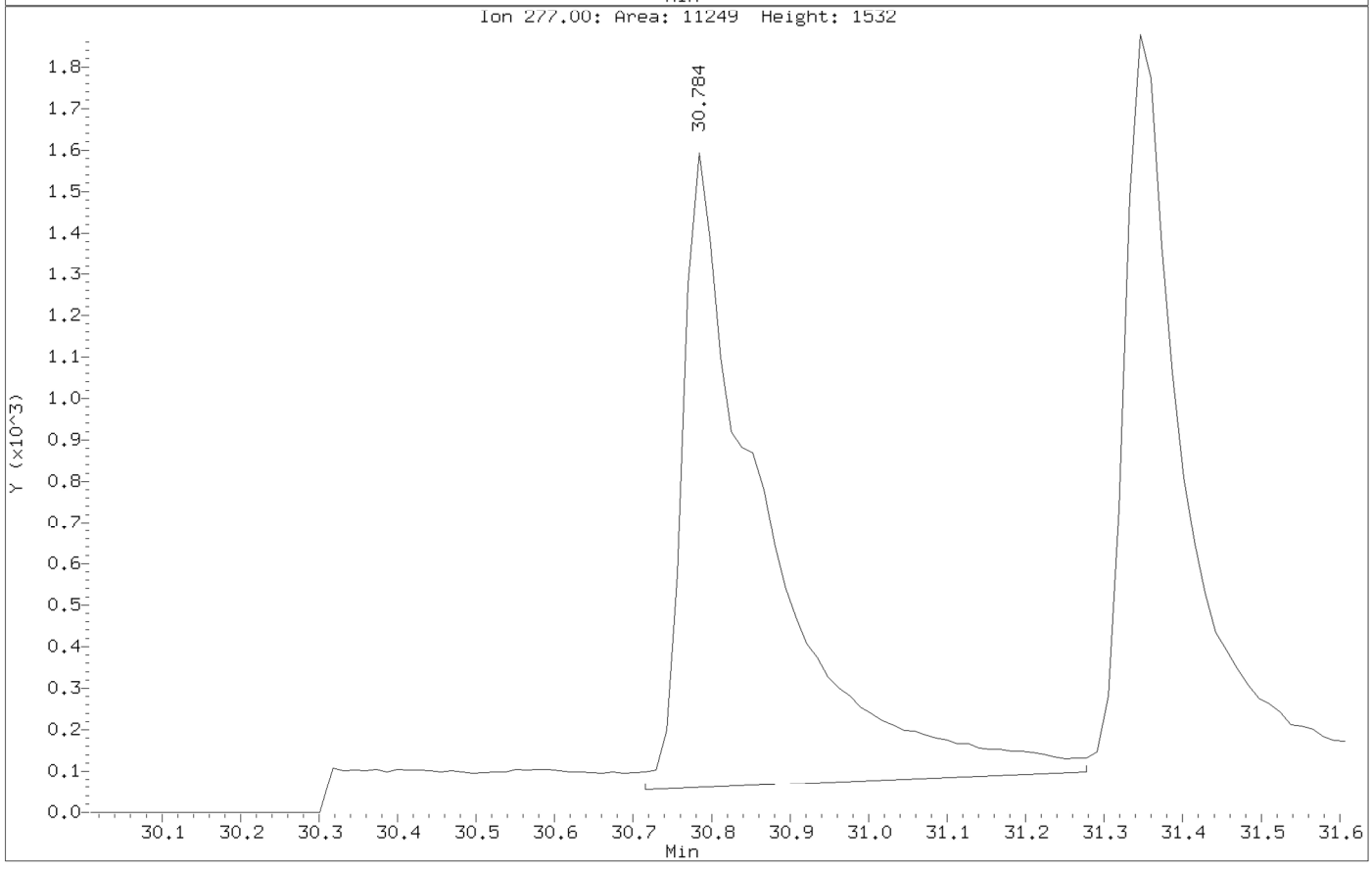
Injection Date: 28-JUN-2014 15:47
Instrument: gcms-n.i
Client Sample ID: FTA-SW-03-061914MS

Compound: Indeno(1,2,3-cd)pyrene
CAS Number: 193-39-5

BEFORE MANUAL INTEGRATION





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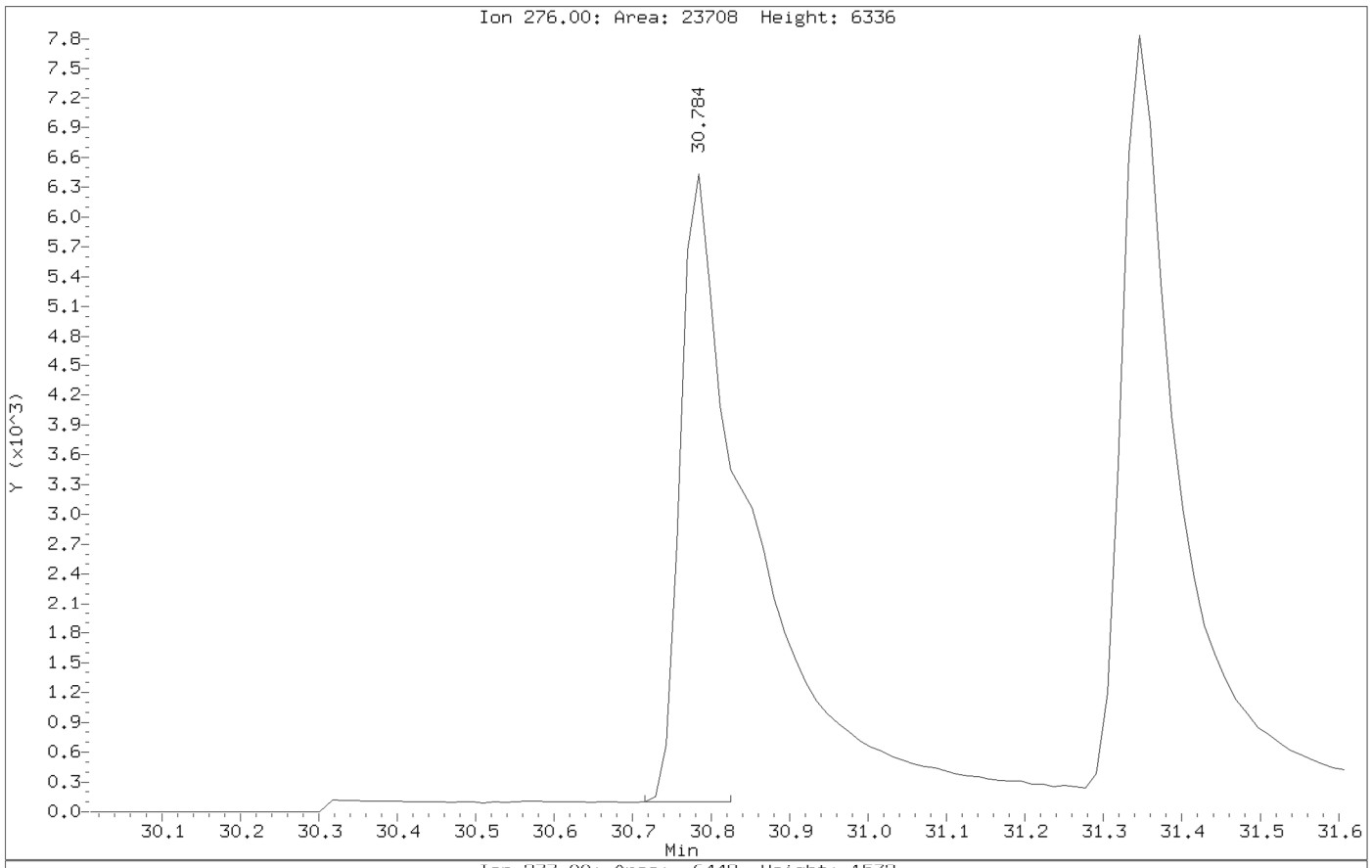
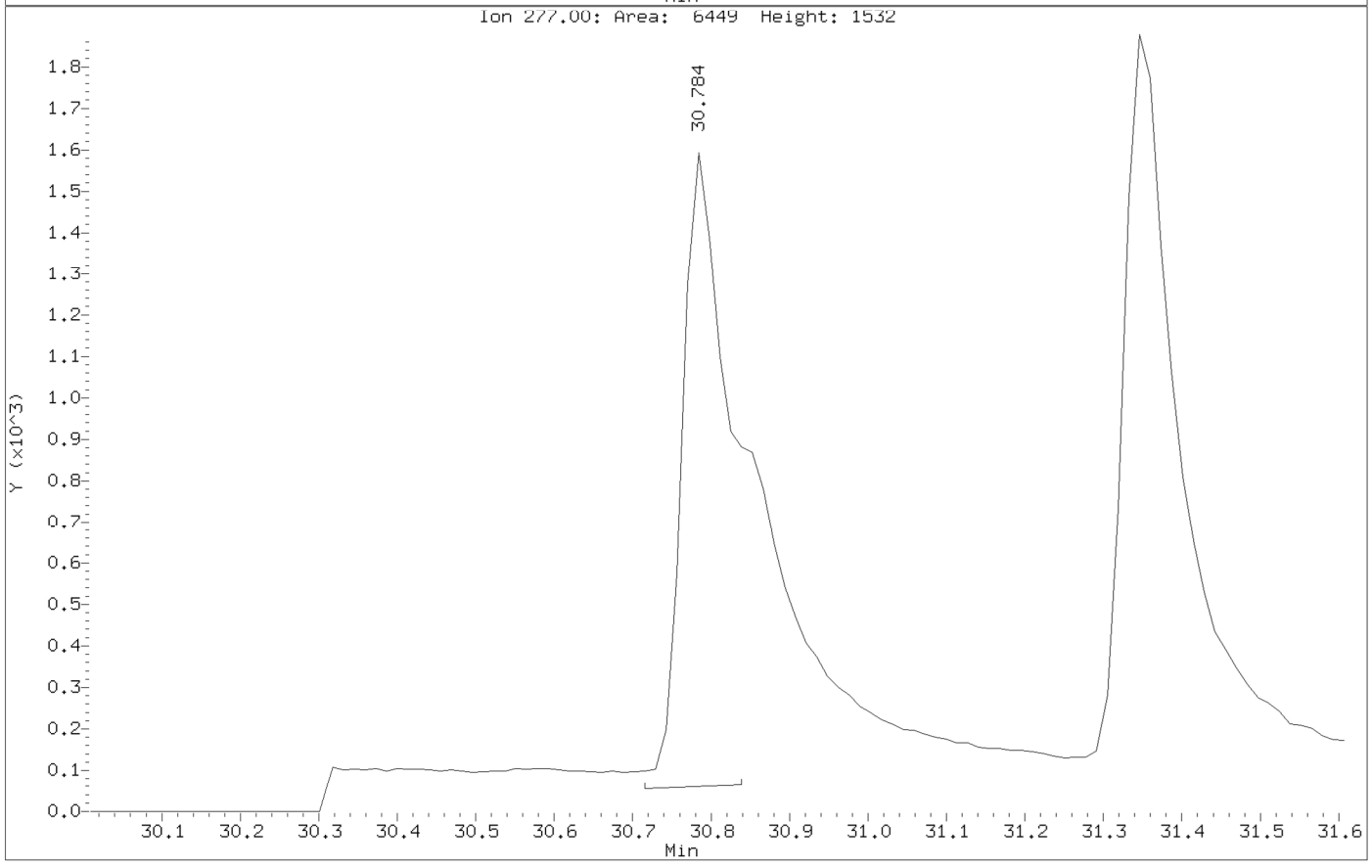
Injection Date: 28-JUN-2014 15:47
Instrument: gcms-n.i
Client Sample ID: FTA-SW-03-061914MS

Compound: Indeno(1,2,3-cd)pyrene
CAS Number: 193-39-5

AFTER MANUAL INTEGRATION





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Injection Date: 28-JUN-2014 15:47
Instrument: gcms-n.i
Client Sample ID: FTA-SW-03-061914MS

Compound: 4-Chloroaniline
CAS Number: 106-47-8

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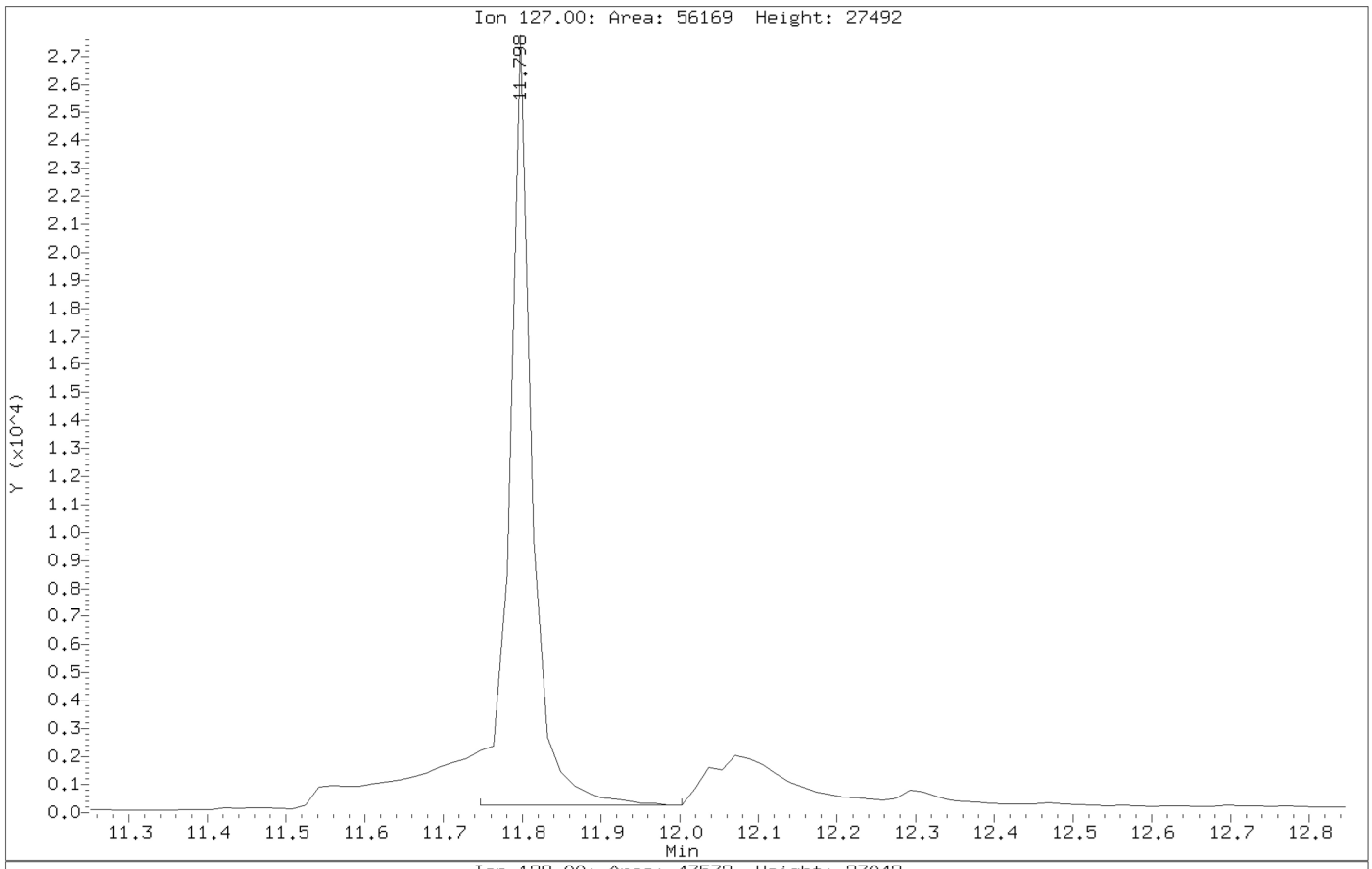

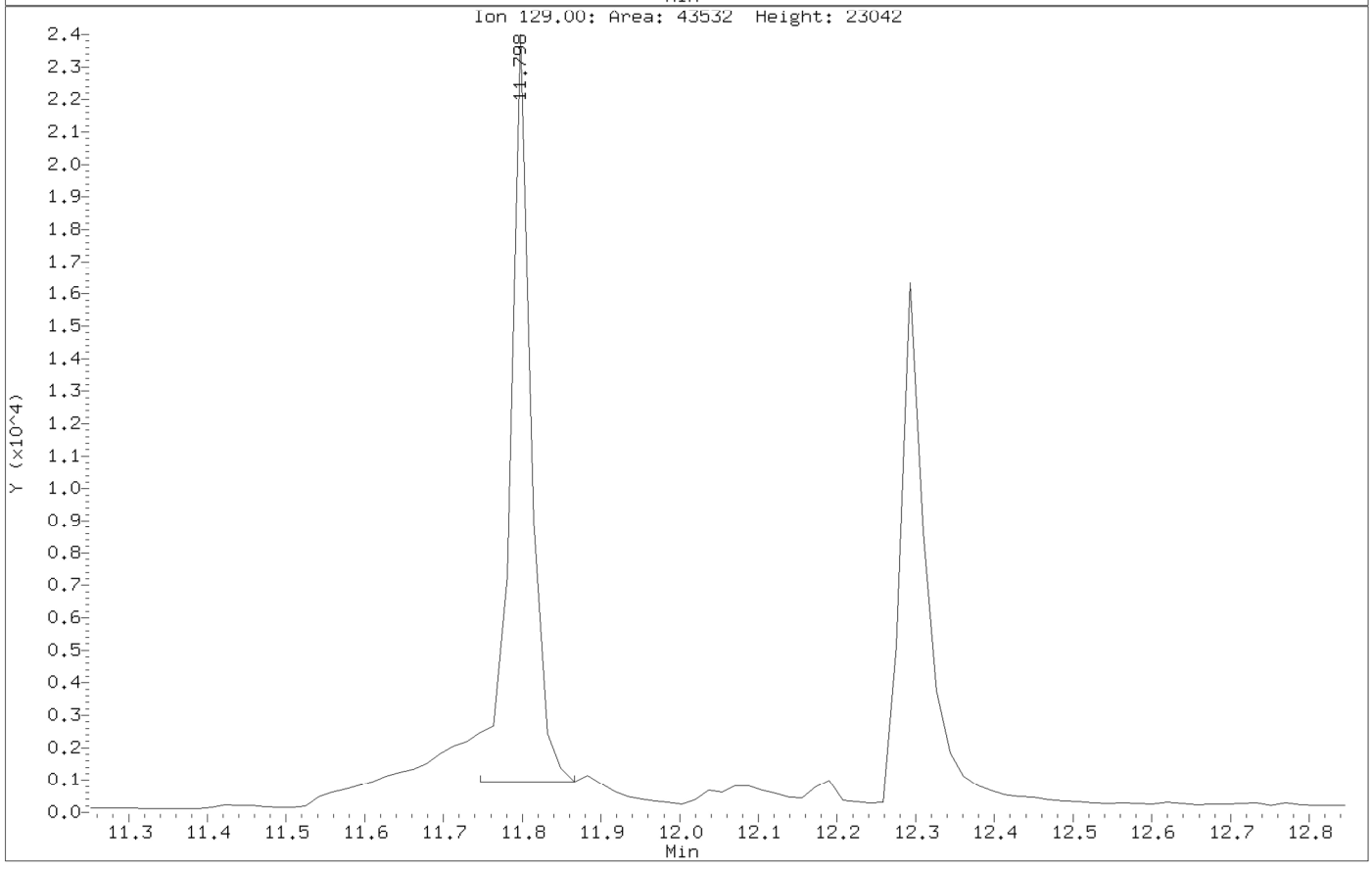

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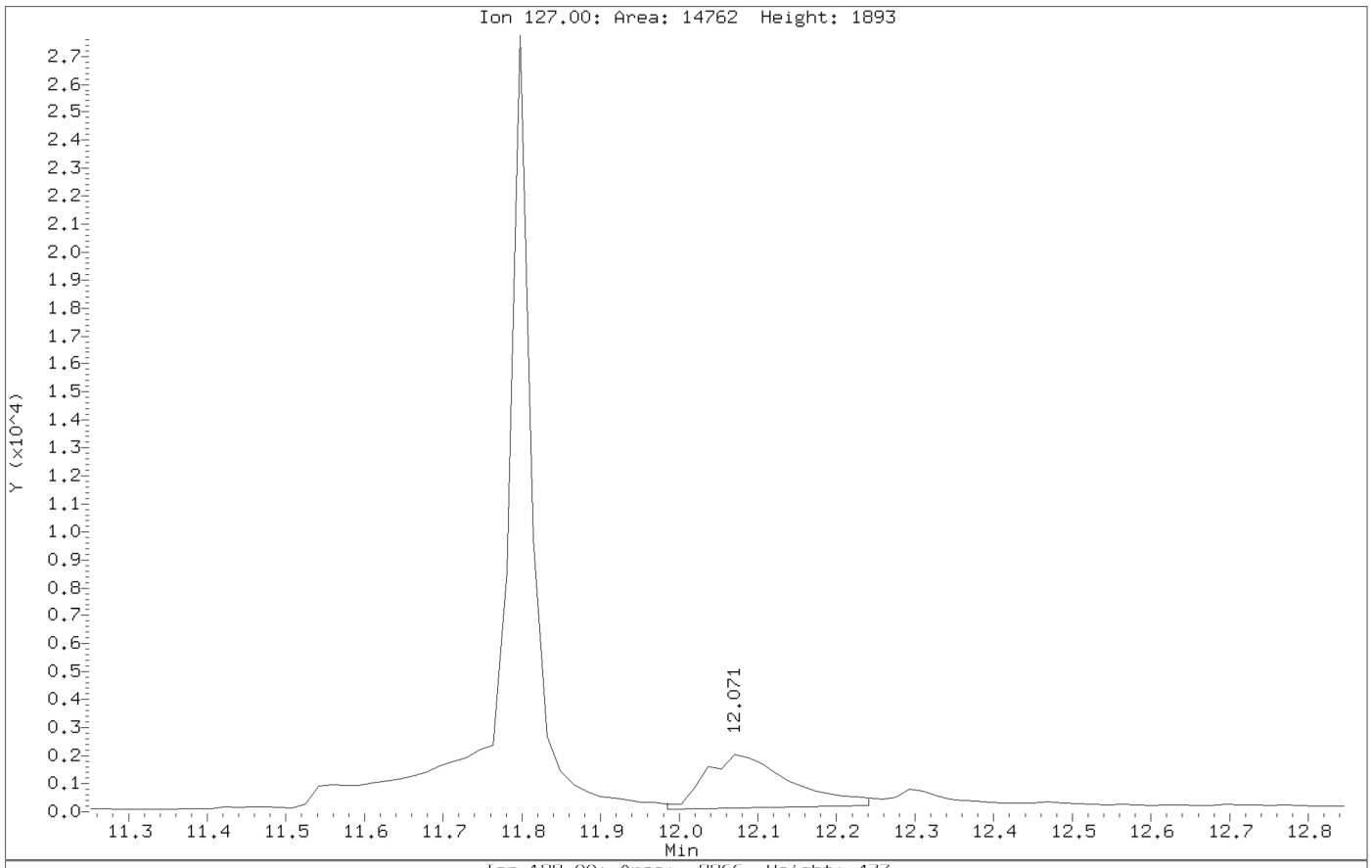
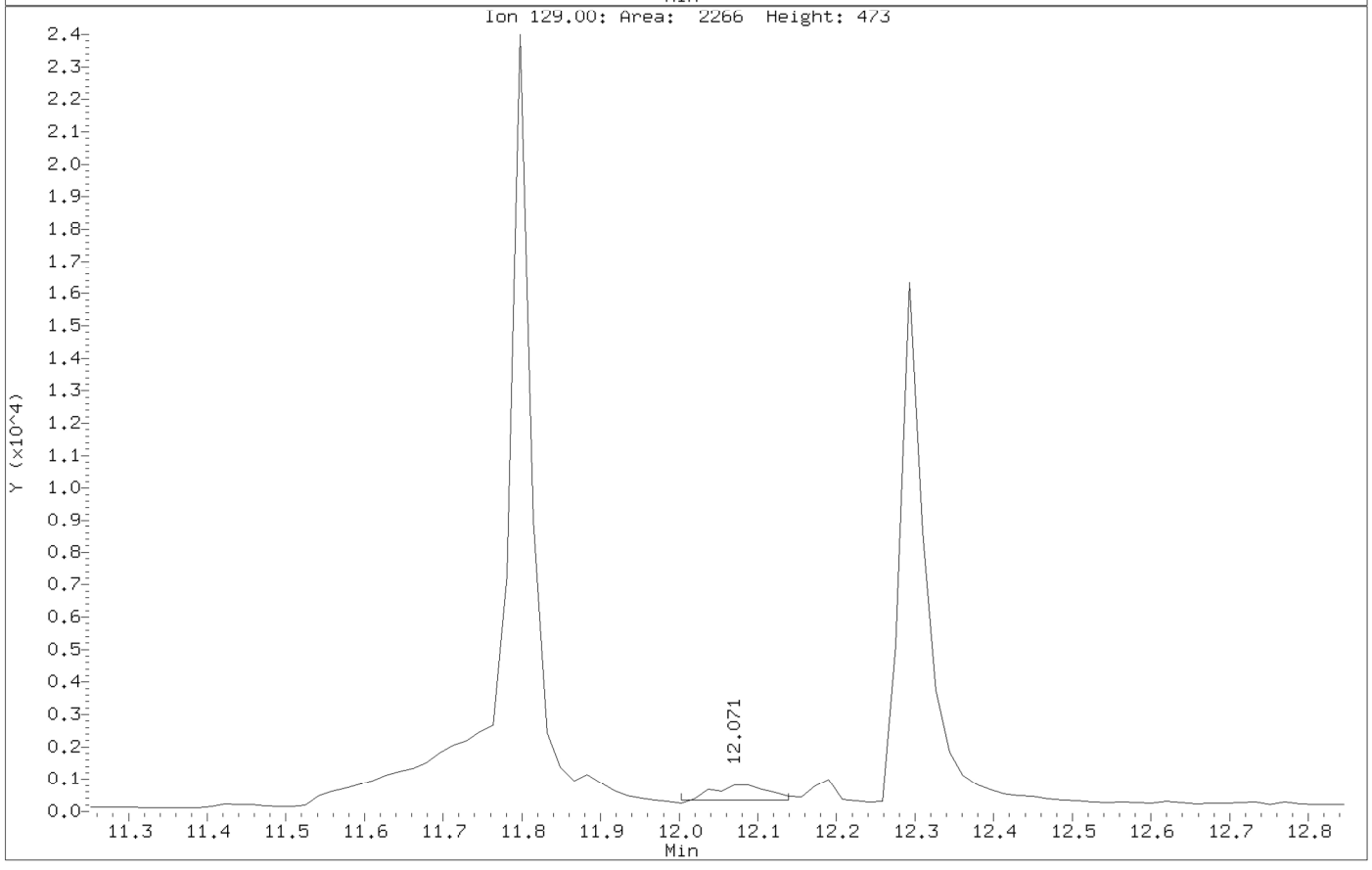
Injection Date: 28-JUN-2014 15:47
Instrument: gcms-n.i
Client Sample ID: FTA-SW-03-061914MS

Compound: 4-Chloroaniline
CAS Number: 106-47-8

AFTER MANUAL INTEGRATION





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Report Date: 11-Jul-2014 13:33

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N062814.b\N2968.D
Lab Smp Id: WG145381-7 Client Smp ID: FTA-SW-03-061914MSD
Inj Date : 28-JUN-2014 16:31 MS Autotune Date: 12-NOV-2013 09:32
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG145381-7,WE53-7
Misc Info : WG145582,WG145381,WG145455-4,SH4521-2
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N062814.b\NSPSIM09.m
Meth Date : 28-Jun-2014 09:09 cgomez Quant Type: ISTD
Cal Date : 26-JUN-2014 13:22 Cal File: N2926.D
Als bottle: 13 QC Sample: MSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ttcutler53ocs.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.050	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
	2	1,4-Dioxane	88	3.225	3.208	(0.360)	25319	0.49394	0.470(a)	
	5	Bis(2-Chloroethyl)ether	93	8.494	8.494	(0.947)	125628	0.89210	0.850(R)	
	6	2-Chlorophenol	128	8.560	8.560	(0.954)	228816	1.90277	1.81	
*	8	1,4-Dichlorobenzene-D4	152	8.971	8.970	(1.000)	66934	0.80000	(a)	
	12	2,2'-Oxybis(1-chloropropane)	45	9.667	9.667	(1.078)	119505	0.73329	0.698(R)	
	14	N-Nitroso-di-n-propylamine	70	9.951	9.950	(1.109)	69187	0.90531	0.862	
	15	3&4-Methylphenol	108	10.045	10.045	(1.120)	153550	1.51327	1.44	
	16	Hexachloroethane	117	10.029	10.029	(1.118)	46975	0.91445	0.871(R)	
	17	Nitrobenzene	77	10.203	10.218	(0.869)	145842	1.39898	1.33	
	22	2,4-Dichlorophenol	162	11.558	11.558	(0.984)	177166	2.33279	2.22	
*	24	Naphthalene-D8	136	11.746	11.746	(1.000)	224140	0.80000	(a)	
	25	Naphthalene	128	11.797	11.797	(1.004)	334141	1.20437	1.15	
	27	Hexachlorobutadiene	225	12.190	12.190	(1.038)	46669	1.06110	1.01	
$	30	2-Methylnaphthalene-D10	152	13.354	13.353	(0.843)	145314	1.00575	0.958	
	31	2-Methylnaphthalene	142	13.429	13.429	(1.143)	221359	1.12994	1.08	
	33	1,2,4,5-Tetrachlorobenzene	216	13.843	13.843	(0.874)	83044	1.11648	1.06	
	34	Hexachlorocyclopentadiene	237	13.862	13.862	(0.875)	411	0.11674	0.111(aQR)	
$	35	2,4-Dibromophenol	252	14.107	14.107	(0.890)	117480	2.49417	2.38	
	36	2,4,6-Trichlorophenol	196	14.164	14.182	(0.894)	131592	2.60505	2.48	
	39	1,1'-Biphenyl	154	14.559	14.559	(0.919)	239851	1.13720	1.08	

Data File: \\target_server\gg\chem\gcms-n.i\N062814.b\N2968.D
Report Date: 11-Jul-2014 13:33

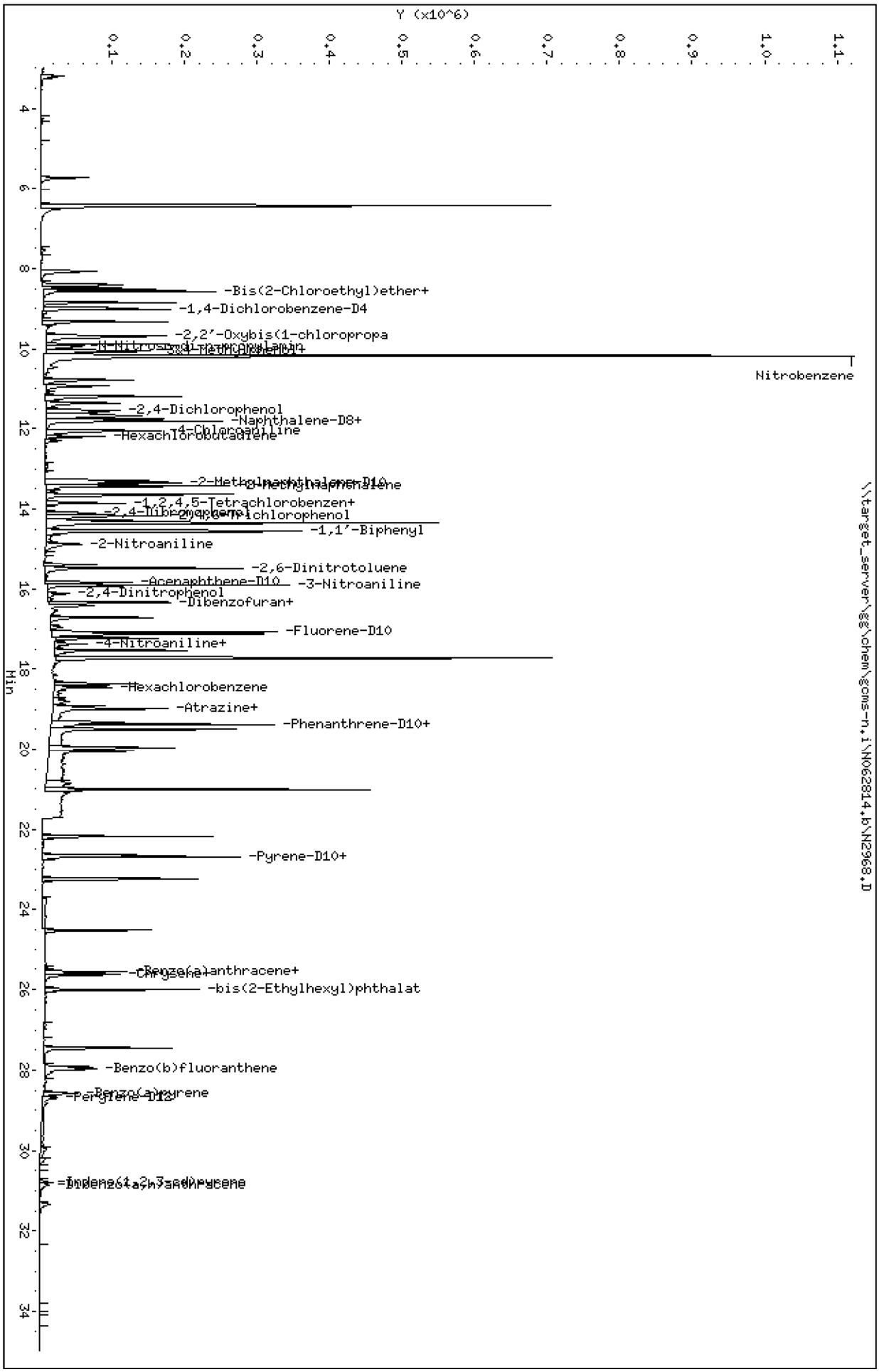
		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
	40	2-Nitroaniline	65	14.861	14.879	(0.938)	47669	1.19619	1.14	
	42	2,6-Dinitrotoluene	165	15.473	15.473	(0.977)	47144	1.15507	1.10	
	44	3-Nitroaniline	138	15.895	15.881	(1.003)	6841	0.21182	0.202(QR)	
*	45	Acenaphthene-D10	164	15.842	15.842	(1.000)	95726	0.80000	(a)	
	47	2,4-Dinitrophenol	184	16.119	16.132	(1.017)	32053	2.91047	2.77(Q)	
	48	Dibenzofuran	168	16.343	16.343	(1.032)	260545	1.23237	1.17	
	50	2,4-Dinitrotoluene	165	16.422	16.435	(1.037)	62426	1.31822	1.26	
$	52	Fluorene-D10	174	17.069	17.068	(1.077)	135580	1.22982	1.17(Q)	
	56	4-Nitroaniline	138	17.354	17.370	(1.095)	14013	0.63760	0.607(QR)	
	57	4,6-Dinitro-2-Methylphenol	198	17.370	17.386	(0.899)	58296	3.07786	2.93	
	60	Hexachlorobenzene	284	18.454	18.453	(0.955)	71683	1.26230	1.20	
	61	Atrazine	200	18.918	18.918	(0.979)	52575	1.63505	1.56	
	62	Pentachlorophenol	266	18.978	18.993	(0.982)	108447	3.44608	3.28(R)	
*	63	Phenanthrene-D10	188	19.323	19.323	(1.000)	144205	0.80000	(a)	
	64	Phenanthrene	178	19.368	19.368	(1.002)	337063	1.48437	1.41	
$	69	Pyrene-D10	212	22.632	22.646	(0.885)	181537	1.62843	1.55	
	70	Pyrene	202	22.674	22.687	(0.887)	308401	1.74457	1.66	
	72	Benzo(a)anthracene	228	25.549	25.562	(0.999)	143653	1.47184	1.40	
*	73	Chrysene-D12	240	25.576	25.589	(1.000)	63913	0.80000	(a)	
	75	3,3'-Dichlorobenzidine	252	25.657	25.670	(1.003)	2466	0.09942	0.0947(aQRM)	M6
	74	Chrysene	228	25.630	25.643	(1.002)	180911	1.60123	1.52	
	76	bis(2-Ethylhexyl)phthalate	149	26.008	26.008	(1.017)	344173	1.58685	1.51(R)	
	78	Benzo(b)fluoranthene	252	27.934	27.951	(0.974)	85374	1.31654	1.25(R)	
	80	Benzo(a)pyrene	252	28.569	28.586	(0.996)	80439	1.25862	1.20(R)	
*	81	Perylene-D12	264	28.689	28.723	(1.000)	40331	0.80000	(a)	
	82	Indeno(1,2,3-cd)pyrene	276	30.784	30.811	(1.073)	37475	1.18221	1.12(RM)	M3
	83	Dibenzo(a,h)anthracene	278	30.852	30.893	(1.075)	42526	1.19090	1.13(R)	

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
R - Spike/Surrogate failed recovery limits.
M - Compound response manually integrated.



2:53 pm, Jul 11, 2014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Date : 28-JUN-2014 16:31
Client ID: FTA-SW-03-061914HSD
Sample Info: WG145381-7,WE53-7
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
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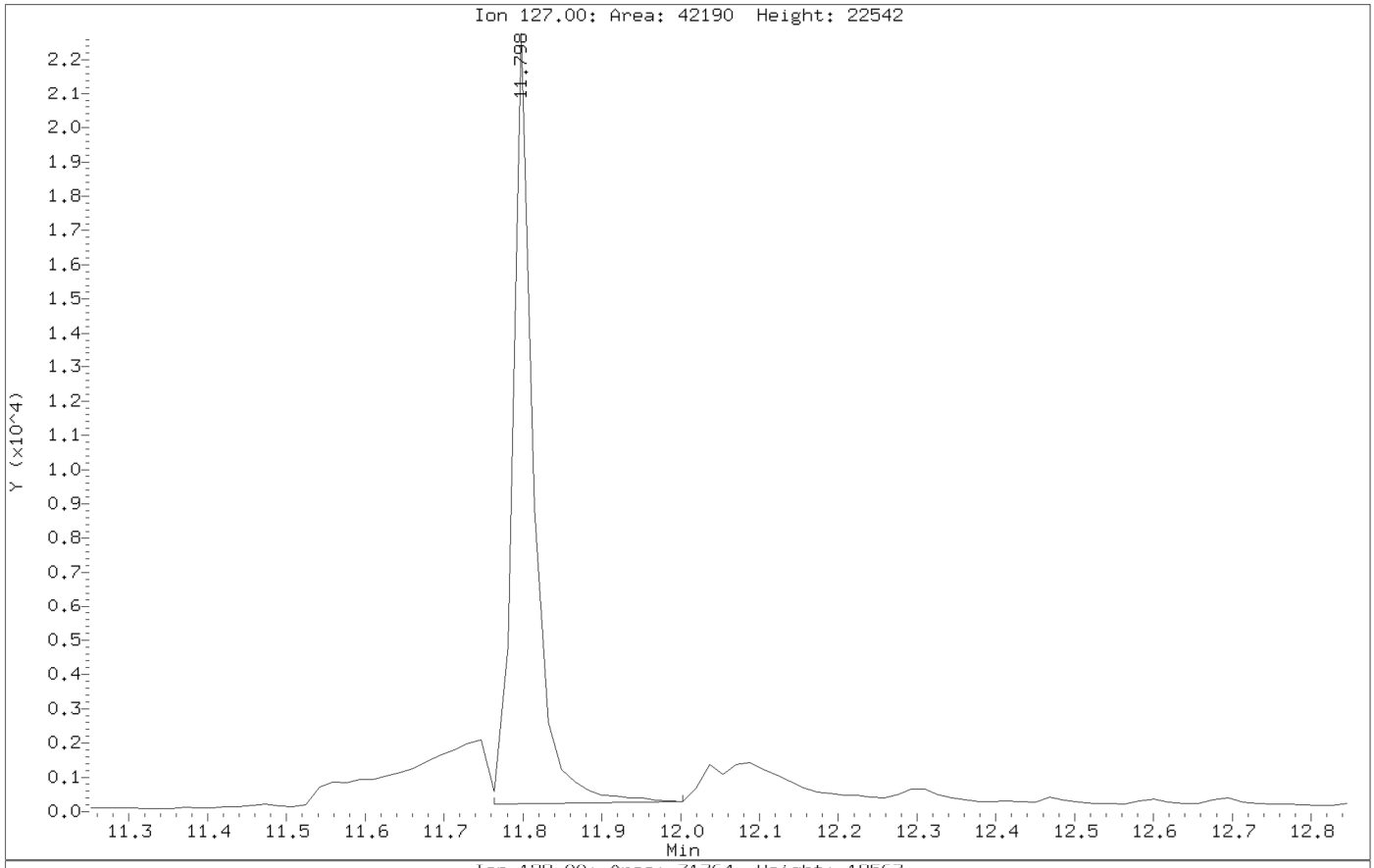
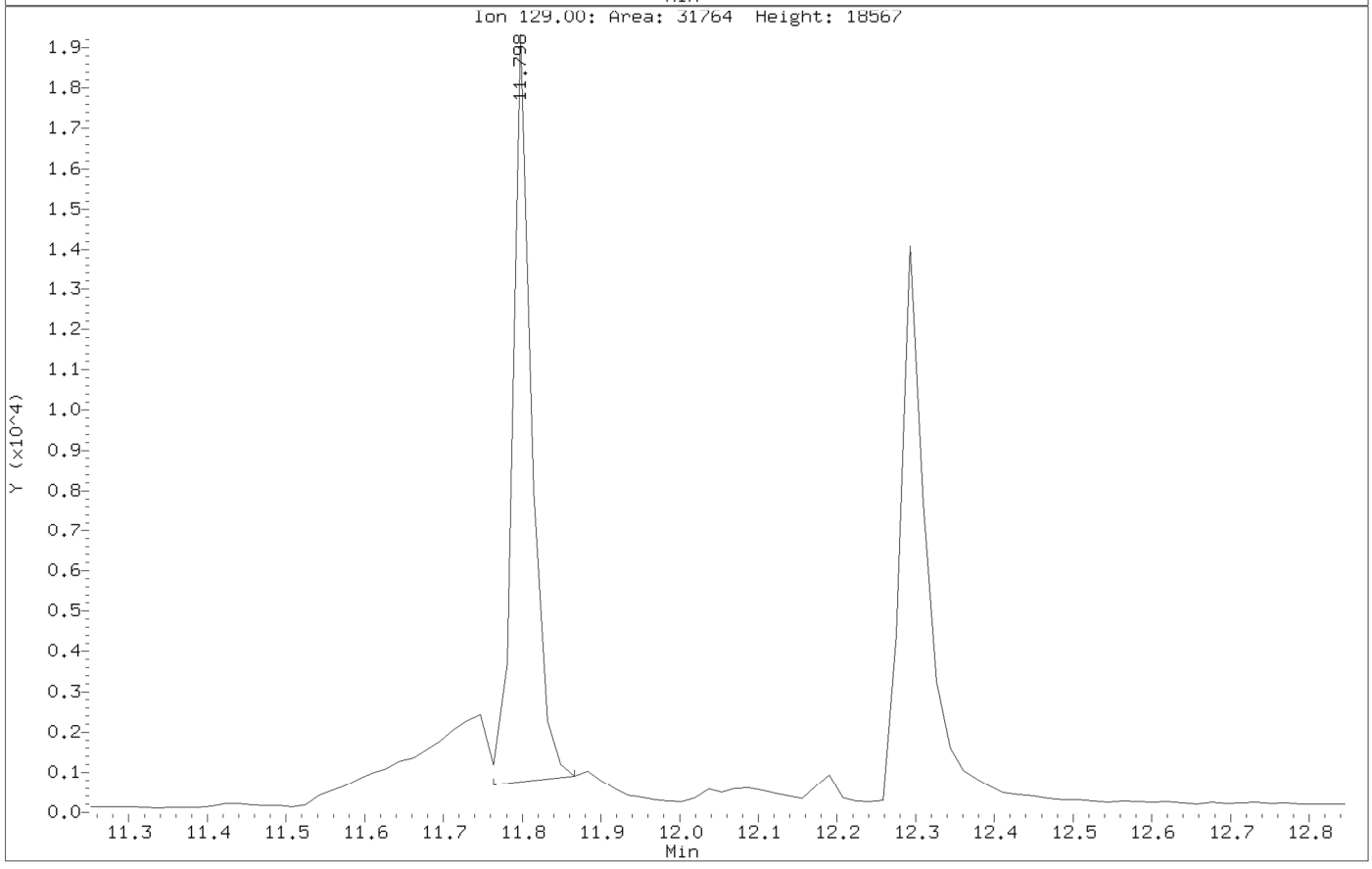
Y (x10^6)
Min
Nitrobenzene
-Bis(2-Chloroethyl)ether+
-1,4-Dichlorobenzene-D4
-2,2'-Oxybis(1-chloropropa
-2,4-Dichlorophenol
-Naphthalene-D8+
-Hexachlorobutadiene
-1,2,4,5-Tetrachlorobenzen+
-1,1'-Biphenyl
-2-Nitroaniline
-2,6-Dinitrotoluene
-3-Nitroaniline
-2,4-Dinitrophenol
-Dibenzofuran+
-Fluorene-D10
-4-Nitroaniline+
-Hexachlorobenzene
-Atrazine+
-Phenanthrene-D10+
-Pyrene-D10+
-bis(2-Ethylhexyl)phthalat
-Benzo(b)fluoranthene

Data File: \\target_server\gg\chem\gcms-n.i\N062814.b\N2968.D
Injection Date: 28-JUN-2014 16:31
Instrument: gcms-n.i
Client Sample ID: FTA-SW-03-061914MSD

Compound: 4-Chloroaniline
CAS Number: 106-47-8

BEFORE MANUAL INTEGRATION

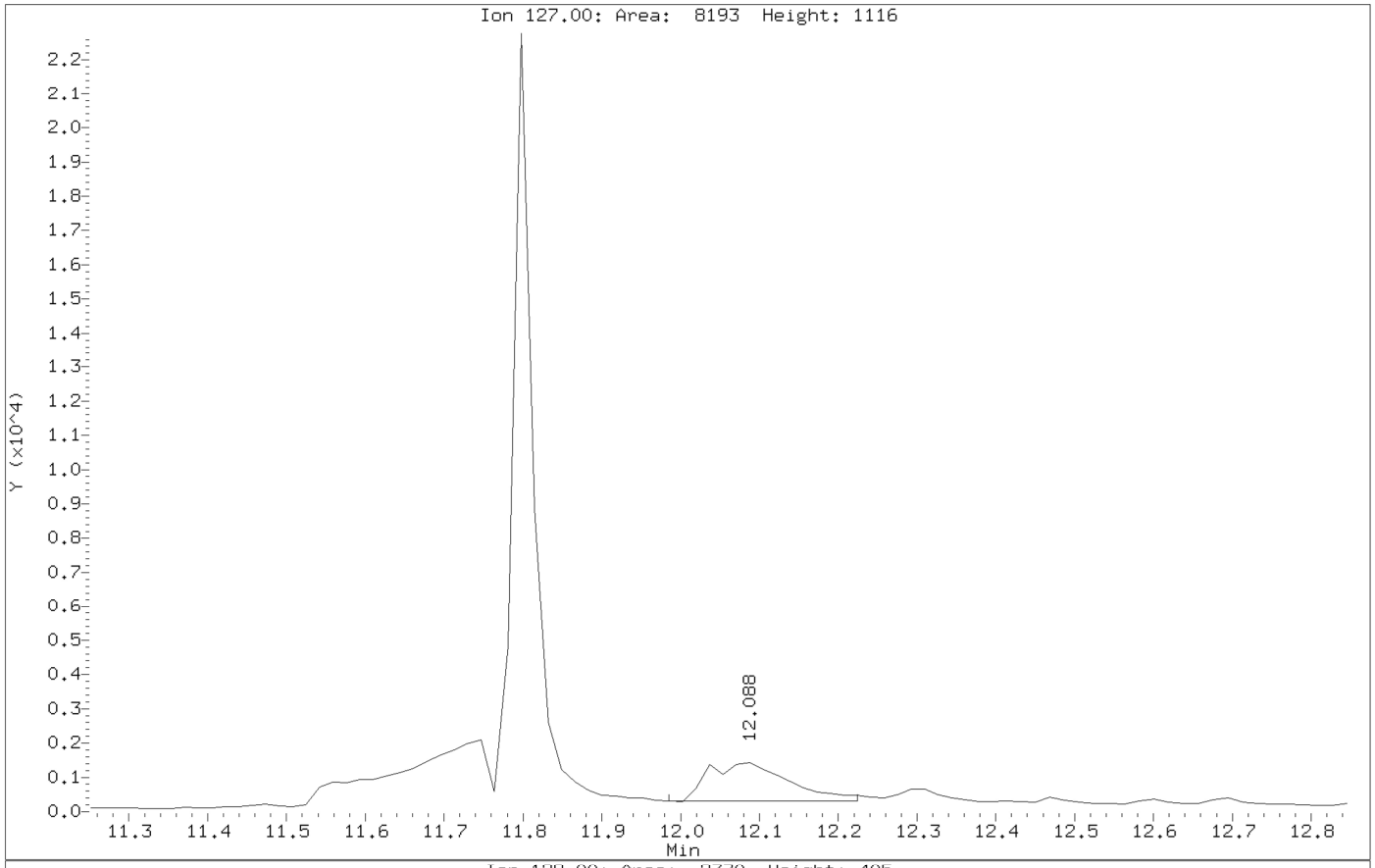


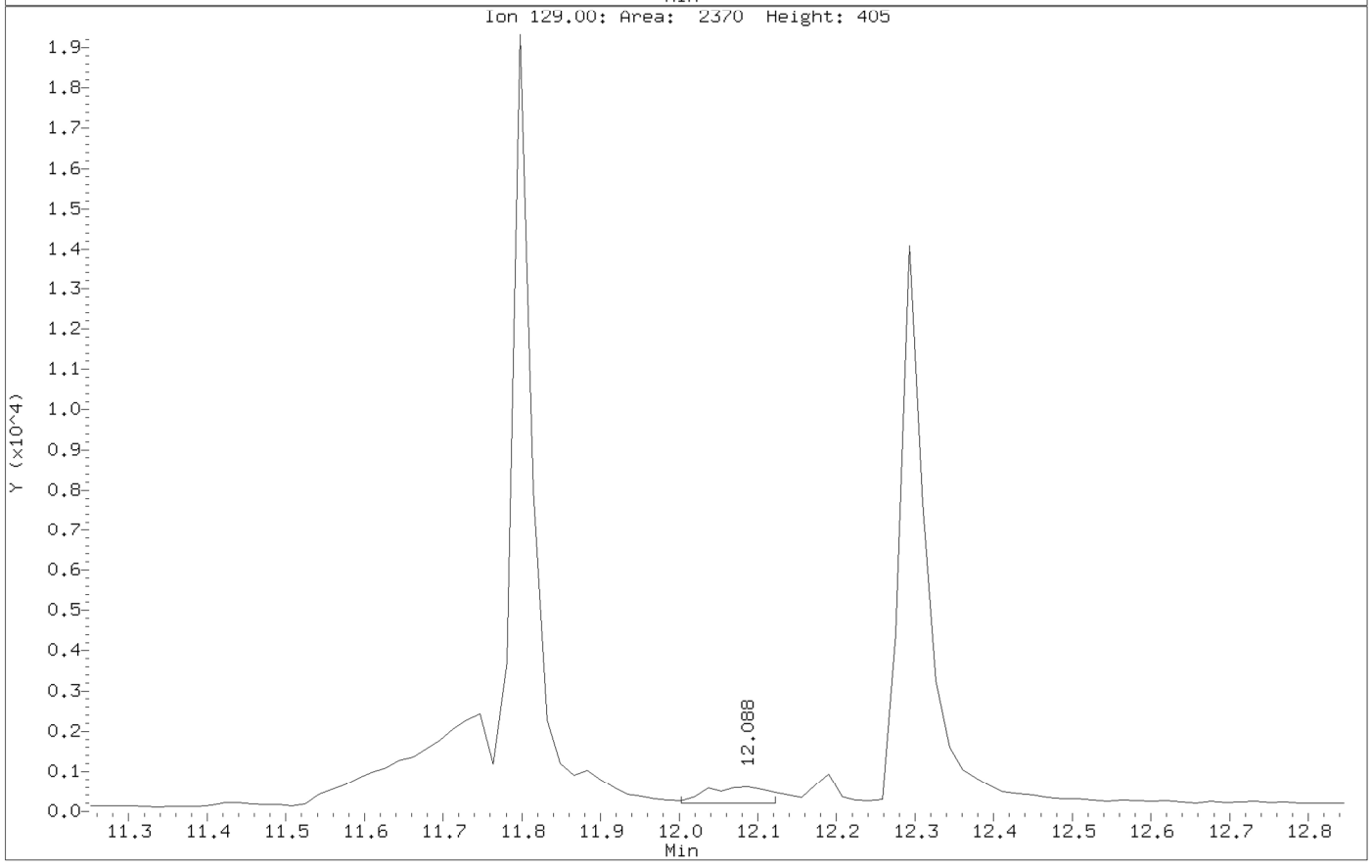


Data File: \\target_server\gg\chem\gcms-n.i\N062814.b\N2968.D
Injection Date: 28-JUN-2014 16:31
Instrument: gcms-n.i
Client Sample ID: FTA-SW-03-061914MSD

Compound: 4-Chloroaniline
CAS Number: 106-47-8

AFTER MANUAL INTEGRATION

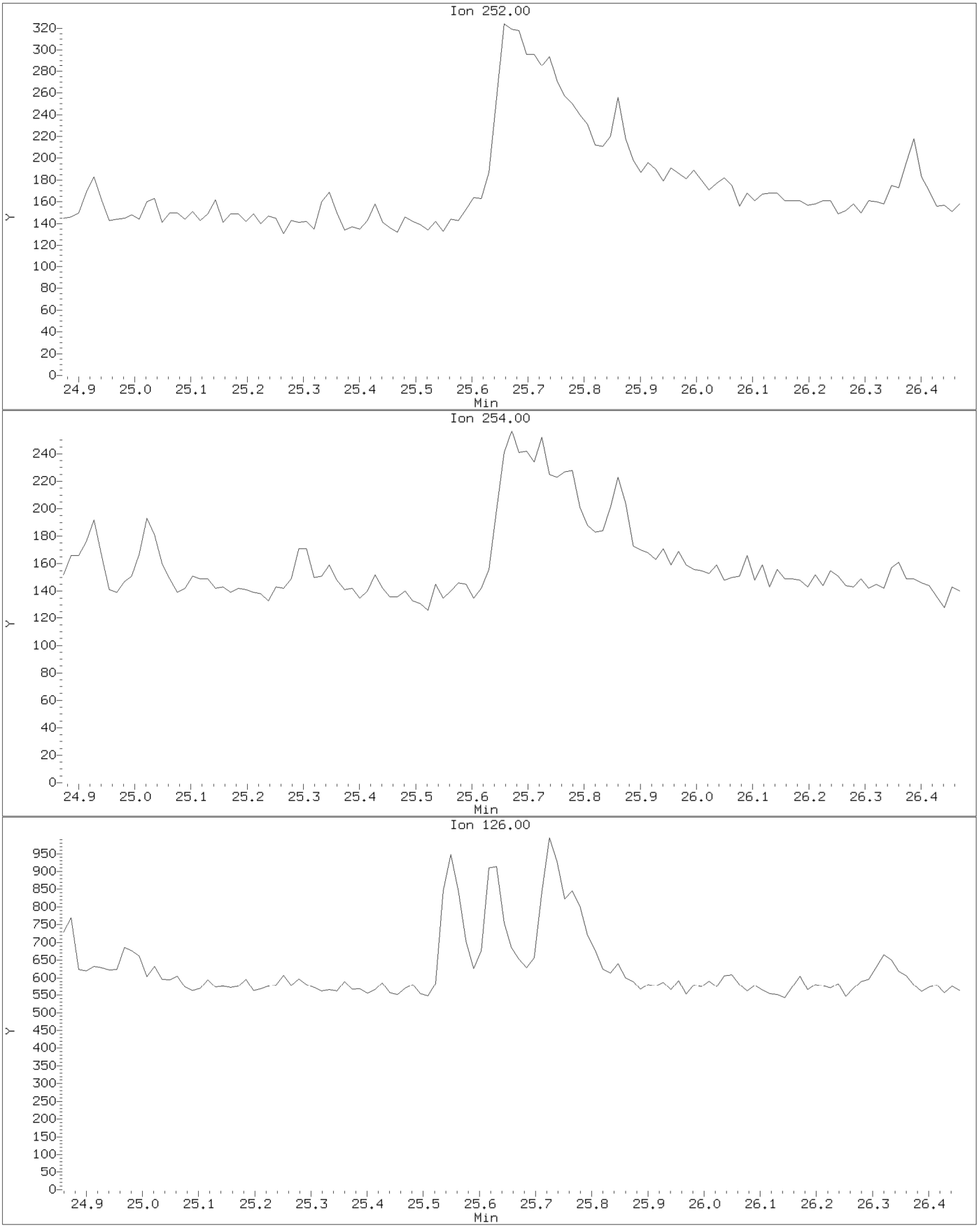




Data File: \\target_server\gg\chem\gcms-n.i\N062814.b\N2968.D
Injection Date: 28-JUN-2014 16:31
Instrument: gcms-n.i
Client Sample ID: FTA-SW-03-061914MSD

Compound: 3,3'-Dichlorobenzidine
CAS Number: 91-94-1

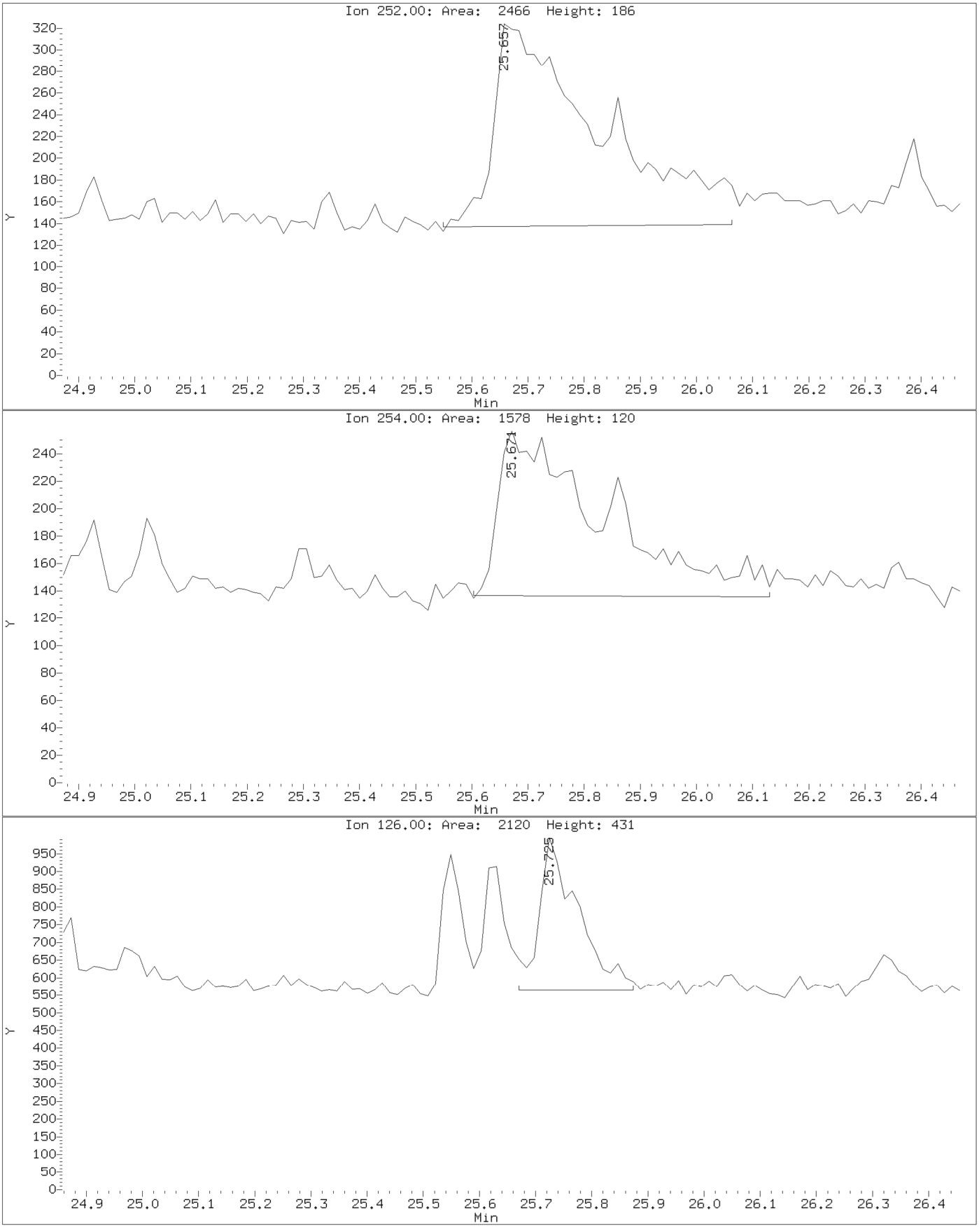
BEFORE MANUAL INTEGRATION



Data File: \\target_server\gg\chem\gcms-n.i\N062814.b\N2968.D
Injection Date: 28-JUN-2014 16:31
Instrument: gcms-n.i
Client Sample ID: FTA-SW-03-061914MSD

Compound: 3,3'-Dichlorobenzidine
CAS Number: 91-94-1

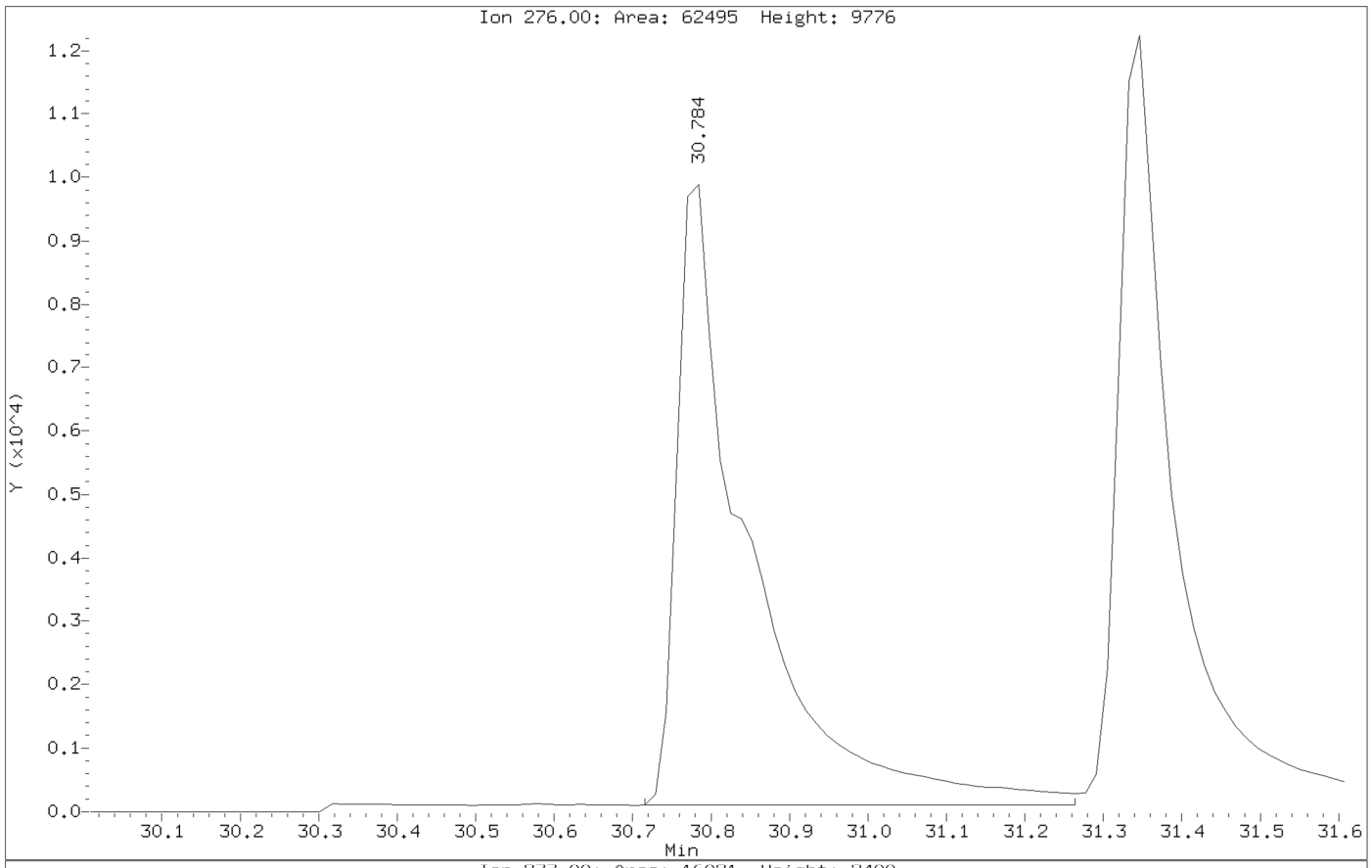
AFTER MANUAL INTEGRATION

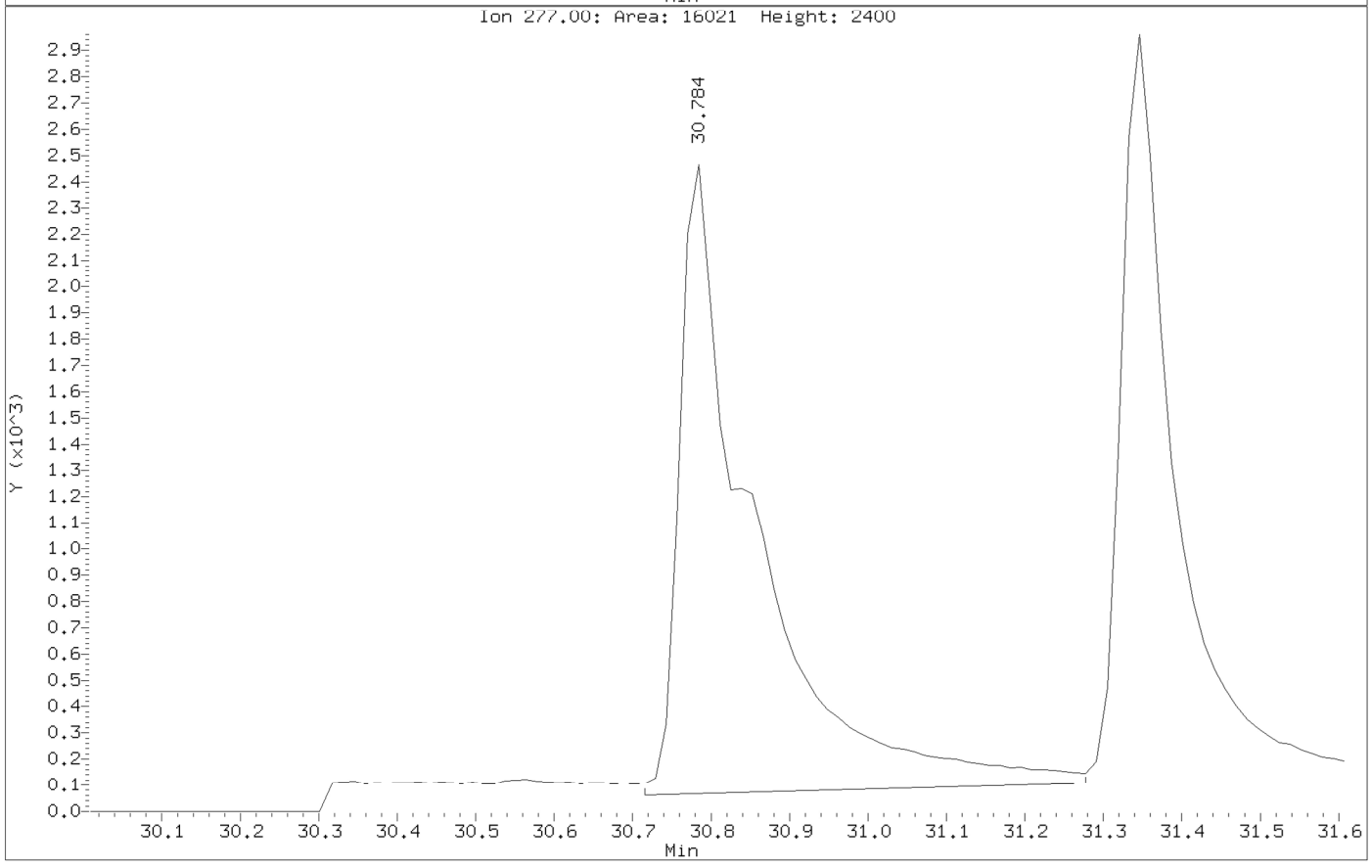


Data File: \\target_server\gg\chem\gcms-n.i\N062814.b\N2968.D
Injection Date: 28-JUN-2014 16:31
Instrument: gcms-n.i
Client Sample ID: FTA-SW-03-061914MSD

Compound: Indeno(1,2,3-cd)pyrene
CAS Number: 193-39-5

BEFORE MANUAL INTEGRATION

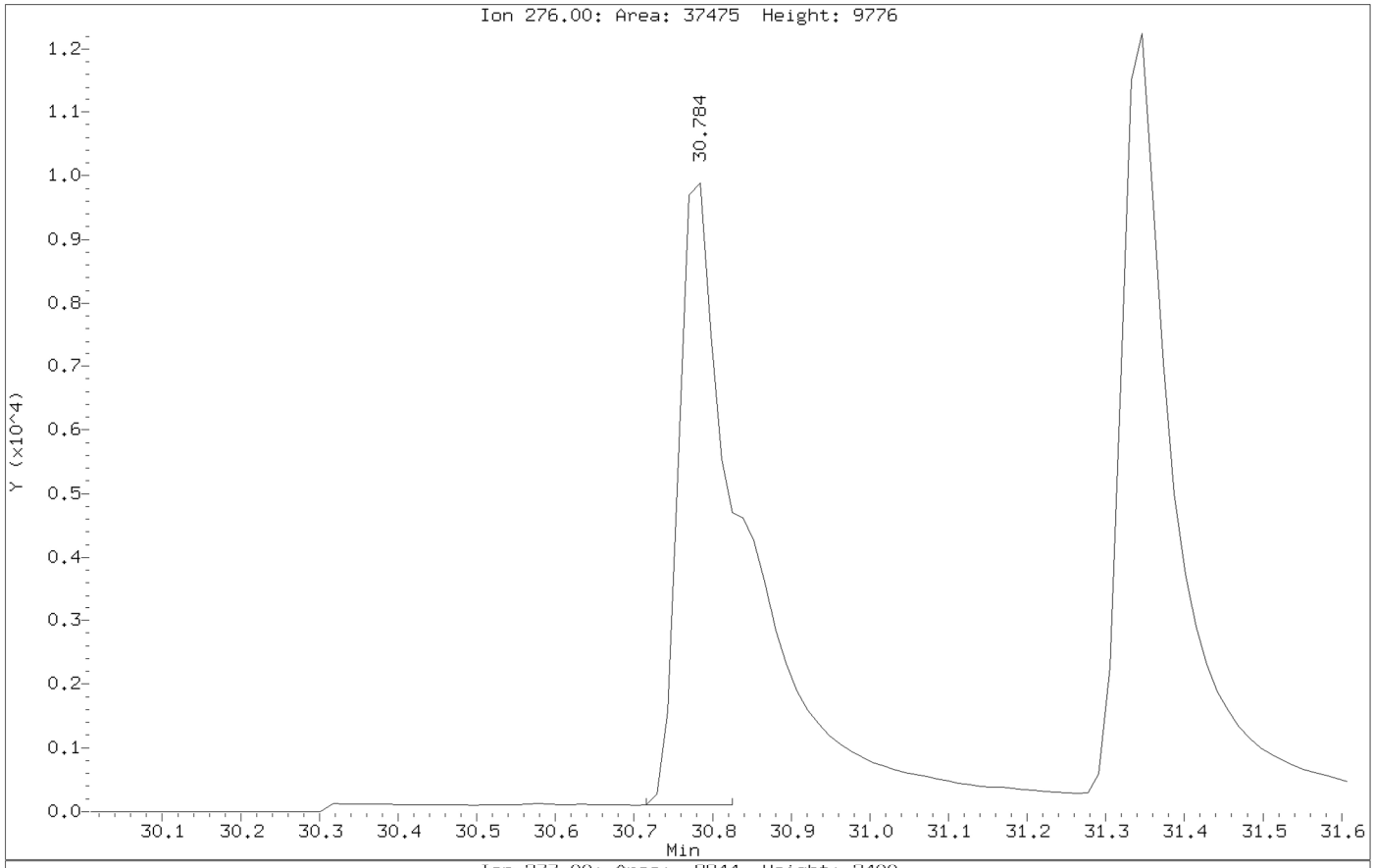


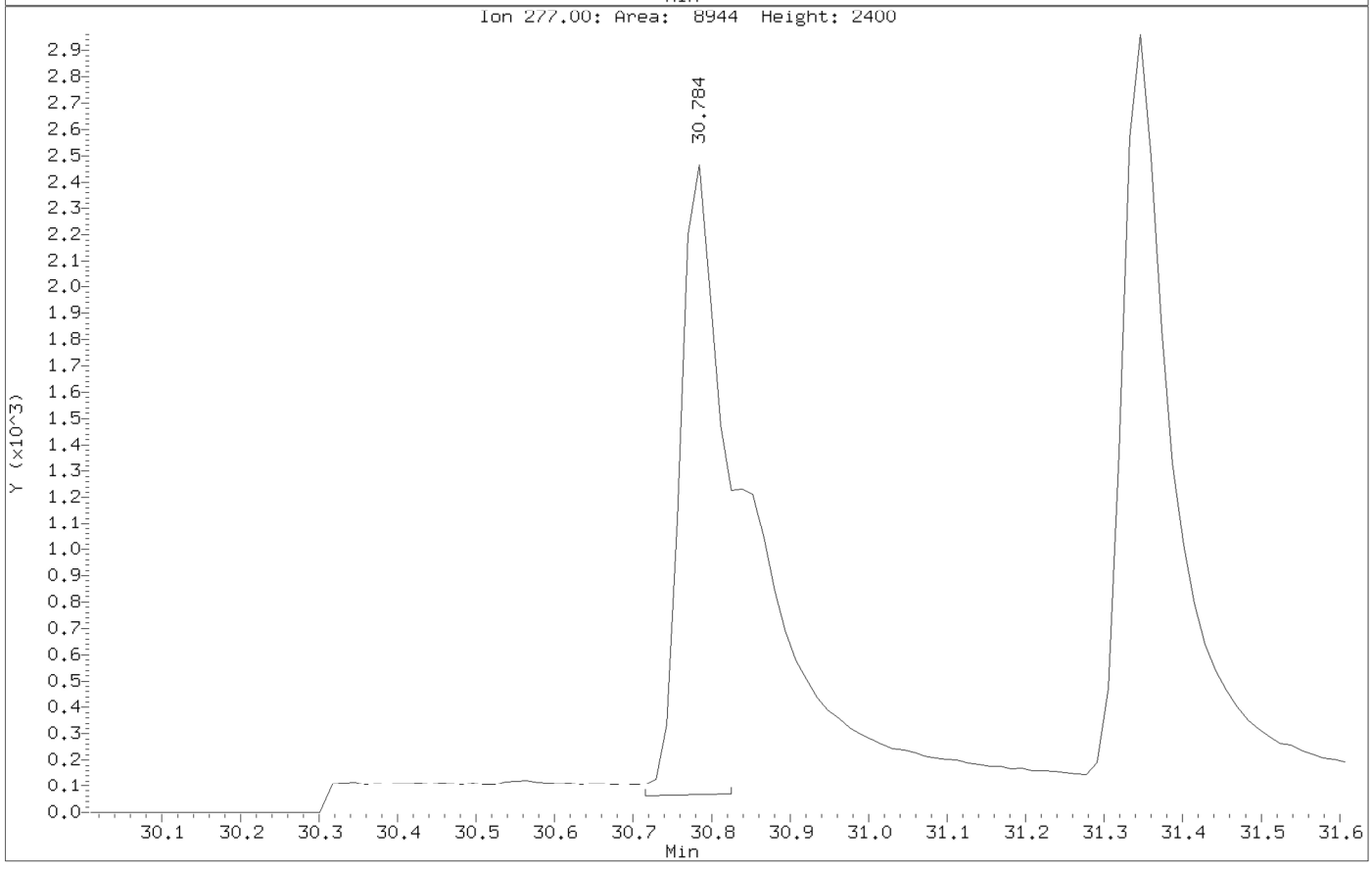


Data File: \\target_server\gg\chem\gcms-n.i\N062814.b\N2968.D
Injection Date: 28-JUN-2014 16:31
Instrument: gcms-n.i
Client Sample ID: FTA-SW-03-061914MSD

Compound: Indeno(1,2,3-cd)pyrene
CAS Number: 193-39-5

AFTER MANUAL INTEGRATION





Logbooks and Supporting Documents

KATAHDIN ANALYTICAL SERVICES
GC/MS SVOA INJ LOG INSTRUMENT: 5975B - N

DATE OF DFTPP INJECTION: 062614

JOB	SAMPLE	DATAFILE	DF	ALS #	METHOD	UL INJ	CHEMIST	COMMENTS
WG145455-1	50ng DFTPP	ND762	1	1	DFTPPSIM	2.0	JCG	OK
-4	SSTD1-10 N0626	N2922		2	NSPSIM09			~~OK~~
-2	0.2	23		3				✓
-3	0.5	24		4				✓
-5	3.0	25		5				✓
-6	7.0	26		6				✓
-7	10.	27		7				✓
-8	SIM IND	28		8				OK
3510	WG145278-1	29		9				OK
3550	WG144641-1RA	30		10				
3510	WG144152-1RA	31		11				
	-2RA	32		12				
	-3RA	33		13				
3550	WG144641-2RA	34		14				
	-3RA	35		15				
	SH4180-1	36		16				
	-3	37		17				
	-2	38		18				— DL1:10
	SV2678-DL	39	✓	19				

J 062714

STANDARD	CODE
DFTPP	52423
CAL. STD.	52437 52442
IS MIX	52443

REVIEWED AND APPROVED BY:
DATE:

SVOA-005 – Revision 1 – 03/01/2011

QAMS545

0000022

Katahdin Analytical Services 6000274

KATAHDIN ANALYTICAL SERVICES

GC/MS SVOA INJ LOG INSTRUMENT: 5975B - N

DATE OF DFTPP INJECTION: 062714

JOB	SAMPLE	DATAFILE	DF	ALS #	METHOD	UL INJ	CHEMIST	COMMENTS
WG145527-1	50ng DFTPP	ND763	1	1	DFTPPSM	20	JH	OK
-2	55TD 1.00 ND627	N2940		2	NSPSIM09			OK
3550	WG145381-1	41		3				OK
↓	↓ -2	42		4				OK
↓	↓ -3	43		5				OK
3510	WG145278-2	44		6				OK
↓	↓ -3	45	↓	7				OK
3550	SH4180-2DL	46	10	8				OK
3510	SH4401-2	47	1	9				OK
	-4	48	1	10				OK
	-6	49		11				OK
	-8	50		12				OK
	-10	51		13				OK
	-12	52		14				OK
	-14	53		15				OK
	-16	54		16				OK
	-18	55		17				OK
↓	-20	56	↓	18	↓	↓	↓	OK
								-1 062814

STANDARD	CODE
DFTPP	52423
CAL. STD.	52437 52442
IS MIX	52443

REVIEWED AND APPROVED BY: _____

DATE: _____

Katahdin Analytical Services 6000275

KATAHDIN ANALYTICAL SERVICES
GC/MS SVOA INJ LOG INSTRUMENT: 5975B - N

DATE OF DFTPP INJECTION: 062814

JOB	SAMPLE	DATAFILE	DF	ALS #	METHOD	UL INJ	CHEMIST	COMMENTS
WG145582-1	50 ng DFTPP	ND764	1	1	DFTPPSIM	2.0	Ach	OK
-2	SSTD 1.00 N0628	N2957		2	NSPSIM09			OK
3510	SH4521-2	58		3				OK
	-4	59		4				OK
	-6	60		5				OK
	-8	61		6				OK
	WG145381-4	62		7				OK
	-5	63		8				OK
	SH4521-10	64		9				OK
	-12	65		10				OK
	-14	66		11				OK
	WG145381-6	67		12				OK
	-7	68		13				OK
	SH4521-16	69		14				OK
	-18	70		15				OK
	-20	71		16				OK
	-22	72		17				OK
	-24	73		18				OK

JW063014

STANDARD	CODE
DFTPP	52423
CAL. STD.	52437 52442
IS MIX	52443

REVIEWED AND APPROVED BY: _____
DATE: _____

SVOA-005 – Revision 1 – 03/01/2011

SIS
Sep Re

KATAHDIN ANALYTICAL SERVICES, INC.
ORGANIC EXTRACTIONS LOG - AQUEOUS SEMI-VOLATILES

Extraction Method: (check one)	SW846 3510 (SEP) ✓		SW846 3520 (CLLE)		SW846 3535 (SPE)	
Analytical Method: (check one)	SW846 8270 ✓	EPA 625	CLP OLM04.2	CLP OLC02.1	CLP SOM01.2	
Standards	Surrogate ID (1): SV2676		Spike ID (1): SVM: SV2670			
	Surrogate ID (2):		Spike ID (2): SVM: SV2669			
Solvents/Acid/Base	Solvent Lot # (MeCl2): DK536		H_2SO_4 Lot # 50730		NaOH Lot # 52850	
Consumables	Filter Paper Lot # FC010220		$NaSO_4$ Lot # 3796402A			
Nitrogen Water Bath Temperature	36°C		pH (1st Extraction) ≥ 12		pH (2nd Extraction) ≤ 2	
Prep Start Time: 1490	Prep End Time: 1700		CLLE Start Time:		CLLE End Time:	

Date Extracted	Ext. Init.	Sample ID	Initial Vol. mL	Surr. Vol.	Spike Vol.	Fraction SV	Fraction SIM	Final Vol. mL	Date Conc.	Tray Location	Initials	Comments
6-23-14	AM	WG-145277-1 WG-145278-1	1000	1ml	NR	✓	✓	1ml	6/24/14	C2	KF	SVM: R279098 SIM: R278095
		WG-145277-2			1ml					3		
		-5								4		
		WG-145278-2					✓			5		
		-3					✓			C6	✓	
									KF	6/24/14		

EX-007 – Revision 2 – 12/05/2013 QAEX253 0000148

Date Extracted	Ext. Init.	Sample ID	Initial Vol. mL	Surr. Vol.	Spike Vol.	Fraction SV	Fraction SIM	Final Vol. mL	Date Conc.	Tray Location	Initials	Comments
6-23-14	AM	SH4348-3 G	1068	1ml	NR	✓		1ml	6/24/14	C7	KF	Re
		SH4401-2 M	1060				✓			8		
		-4 M	1040							9		
		-6 M	1050							C10		
		-8 L	940							D1		
		-10 M	1060							2		
		-12 M	1060							3		
		-14 M	1060							4		
		-16 M	1030							5		
		-18 M	1080							6		
		-20 L	1060				✓			7		SS for email.
		SH4480-2 F	1090							8		
		-4 G	1060							9		
		-5 F	1060							D10		
		-6 F	1060							E1		
		SH4523-9 L	1050				✓			E2		
		-22 M	1040				✓			E3		
									KF	6/24/14		

Reviewed By_____ Date_____

SIS

Sep Re

KATAHDIN ANALYTICAL SERVICES, INC.
ORGANIC EXTRACTIONS LOG - AQUEOUS SEMI-VOLATILES

Extraction Method: (check one)	SW846 3510 (SEP) ✓		SW846 3520 (CLLE)		SW846 3535 (SPE)	
Analytical Method: (check one)	SW846 8270 ✓	EPA 625	CLP OLM04.2	CLP OLC02.1	CLP SOM01.2	
Standards	Surrogate ID (1): SV2676		Spike ID (1): SVM: SV2670			
	Surrogate ID (2):		Spike ID (2): Scan: SV2699			
Solvents/Acid/Base	Solvent Lot # (MeCl2): DE982		H_2SO_4 Lot # 50730		NaOH Lot # 52850	
Consumables	Filter Paper Lot # FC010270		$NaSO_4$ Lot # 2796402			
Nitrogen Water Bath Temperature 36°C			pH (1st Extraction) ≥12		pH (2nd Extraction) ≤2	
Prep Start Time:	Prep End Time:		CLLE Start Time:		CLLE End Time:	

Date Extracted	Ext. Init.	Sample ID	Initial Vol. mL	Surr. Vol.	Spike Vol.	Fraction SV	Fraction SIM	Final Vol. mL	Date Conc.	Tray Location SV933	Initials	Comments
6.25M	AM	WG145380-1 WG145381-1	1000	1mL	NA	✓	✓	1	6/26/14	A2	KF	SV- R2279386
		WG145380-2	1		1mL					3		SVM- R2279387
		-3	L							4		
		-4	1060							5		MS SH4521-5 L1
		-5	1020							6		MSD SH4521-5 H1
		-6	1030							7		MS SH4521-14 I1
		-7	1040							8		MSD SH4521-14 N1
		WG145381-2	1000				✓			9		
		-3	L							A10		
		-4	1030							B1		MS SH4521-5 K1
		-5	950							2		MSD SH4521-5 J1
		-6	990							B3		MS SH4521-M G1

Date Extracted	Ext. Init.	Sample ID	Initial Vol. mL	Surr. Vol.	Spike Vol.	Fraction SV	Fraction SIM	Final Vol. mL	Date Conc.	Tray Location	Initials	Comments
6.25M	AM	WG145381-7	1050	1mL	NA		✓	1	6/26M	B4	KF	MSD SH4521-M J1
		SH4521-2 L	1050							5		
		-4 I	990							6		
		-6 L	1050							7		
		-8 I1	1060							8		MS/D
		-10 L	1040							9		
		-12 L	1050							B10		2.5 Extract
		-14 M2	980							C1		2.5. Extract. MS/D
		-16 M	1000							2		
		-18 M	1060							3		
		-20 L	1030							4		8.3. Extract
		-22 M	1030							5		
		-24 M	1040							C6		
		~~SH4480-2~~ AM 6-23-14										
		SH4480-6 G	1080							C7		Re
		SH4523-9 M	1040				✓			8		
		SH4401-2 L	1050							9		
		-6 L	1050							C10		
		-8 M	1050							D1		
											KF 6/26/14	

Reviewed By_____ Date_____

PESTICIDE DATA

QC Summary Section

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NCTAMSLANT Cutler CTO WE53 **Matrix:** AQ
Lab Code: KAS **SDG:** WE53-7

Client Sample ID	Lab Sample ID	Col. ID	DCB	#	TCX	#
FTA-SD-RB01-062014	SH4521-24	B	61.9		56.1	
FTA-SD-RB01-062014	SH4521-24	A	62.4		59.2	
Method Blank Sample	WG145481-1RA	B	77.0		43.0	
Method Blank Sample	WG145481-1RA	A	77.5		44.2	
Laboratory Control S	WG145481-2RA	B	72.0		37.6	
Laboratory Control S	WG145481-2RA	A	73.0		37.8	
Laboratory Control S	WG145481-3RA	B	76.0		45.8	
Laboratory Control S	WG145481-3RA	A	76.5		46.2	
Laboratory Control S	WG145481-4RA	B	76.0		46.2	
Laboratory Control S	WG145481-4RA	A	76.0		46.8	

		QC Limits
TCX	TETRACHLORO-M-XYLENE	25-140
DCB	DECACHLOROBIPHENYL	30-135

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

Form 4
Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : NCTAMSLANT Cutler CTO WE53
Lab File ID : 1HG00448.D
Matrix : AQ

Column A
Instrument ID : GC01
Date Analyzed : 21-JUL-14
Time Analyzed : 13:38

SDG : WE53-7
Lab Sample ID : WG145481-1RA
Date Extracted : 26-JUN-14
Extraction Method : SW846 3510

Column B
Instrument ID : GC01
Date Analyzed : 21-JUL-14
Time Analyzed : 13:38

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG145481-2RA	1HG00449.	07/21/14	13:55
Laboratory Control S	WG145481-3RA	1HG00450.	07/21/14	14:13
Laboratory Control S	WG145481-4RA	1HG00451.	07/21/14	14:30
FTA-SD-RB01-062014	SH4521-24	1HG00452.	07/21/14	14:48

Form 8
GC Analytical Sequence

Lab Name : Katahdin Analytical Services
SDG : WE53-7
Project : NCTAMSLANT Cutler CTO WE53
Column ID : A
Instrument ID : GC01

Client Sample ID	Lab Sample ID	Date Analyzed	Time Analyzed	TCX	DCB	
Initial Calibration	WG144812-1	06/16/14	18:40			
Initial Calibration	WG144812-3	06/16/14	18:58			
Initial Calibration	WG144812-5	06/16/14	19:15			
Initial Calibration	WG144812-7	06/16/14	19:33			
Initial Calibration	WG144812-9	06/16/14	19:50			
Initial Calibration	WG144812-11	06/16/14	20:07			
Breakdown Evaluation	WG146672-1	07/21/14	10:42			
Initial Calibration	WG146672-3	07/21/14	10:59	3.742	11.71	
Initial Calibration	WG146672-5	07/21/14	11:24	3.748	11.71	
Initial Calibration	WG146672-7	07/21/14	11:42	3.74	11.71	
Initial Calibration	WG146672-9	07/21/14	11:59	3.741	11.71	
Initial Calibration	WG146672-11	07/21/14	12:16	3.739	11.71	
Initial Calibration	WG146672-13	07/21/14	12:34	3.739	11.71	
Independent Source	WG146672-15	07/21/14	12:51			
Continuing Calibrati	WG146672-16	07/21/14	13:09			
Method Blank Sample	WG145481-1RA	07/21/14	13:38	3.752	11.71	
Laboratory Control S	WG145481-2RA	07/21/14	13:55	3.741	11.71	
Laboratory Control S	WG145481-3RA	07/21/14	14:13	3.742	11.71	
Laboratory Control S	WG145481-4RA	07/21/14	14:30	3.742	11.71	
FTA-SD-RB01-062014	SH4521-24	07/21/14	14:48	3.743	11.71	
Continuing Calibrati	WG146672-18	07/21/14	16:50	3.74	11.71	
Continuing Calibrati	WG146672-20	07/21/14	17:07			

Form 8
GC Analytical Sequence

Lab Name : Katahdin Analytical Services
Project : NCTAMSLANT Cutler CTO WE53
Instrument ID : GC01

SDG : WE53-7
Column ID : B

Client Sample ID	Lab Sample ID	Date Analyzed	Time Analyzed	TCX	DCB	
Initial Calibration	WG144812-2	06/16/14	18:40			
Initial Calibration	WG144812-4	06/16/14	18:58			
Initial Calibration	WG144812-6	06/16/14	19:15			
Initial Calibration	WG144812-8	06/16/14	19:33			
Initial Calibration	WG144812-10	06/16/14	19:50			
Initial Calibration	WG144812-12	06/16/14	20:07			
Breakdown Evaluation	WG146672-2	07/21/14	10:42			
Initial Calibration	WG146672-4	07/21/14	10:59	4.049	12.71	
Initial Calibration	WG146672-6	07/21/14	11:24	4.047	12.71	
Initial Calibration	WG146672-8	07/21/14	11:42	4.049	12.71	
Initial Calibration	WG146672-10	07/21/14	11:59	4.049	12.71	
Initial Calibration	WG146672-12	07/21/14	12:16	4.048	12.71	
Initial Calibration	WG146672-14	07/21/14	12:34	4.048	12.71	
Independent Source	WG146672-15	07/21/14	12:51			
Continuing Calibrati	WG146672-17	07/21/14	13:09			
Method Blank Sample	WG145481-1RA	07/21/14	13:38	4.051	12.71	
Laboratory Control S	WG145481-2RA	07/21/14	13:55	4.05	12.71	
Laboratory Control S	WG145481-3RA	07/21/14	14:13	4.05	12.71	
Laboratory Control S	WG145481-4RA	07/21/14	14:30	4.049	12.71	
FTA-SD-RB01-062014	SH4521-24	07/21/14	14:48	4.05	12.71	
Continuing Calibrati	WG146672-19	07/21/14	16:50	4.047	12.71	
Continuing Calibrati	WG146672-21	07/21/14	17:07			

Sample Data Section

KATAHDIN ANALYTICAL SERVICES - ORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

* Compound recovery outside of quality control limits.

D Indicates the result was obtained from analysis of a diluted sample. Surrogate recoveries may not be calculable.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

or

J Used for Pesticides, PCBs, Herbicides, Formaldehyde, Explosives and Method 504.1 analytes when there is a greater than 40% difference for detected concentrations between the two GC columns.

B Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.

C Indicates that the flagged compound did not meet DoD criteria in the corresponding daily calibration verification (CV).

L Indicates that the flagged compound did not meet DoD criteria in the corresponding Laboratory Control Sample (LCS) and/or Laboratory Control Sample Duplicate (LCSD) prepared and/or analyzed concurrently with the sample.

M Indicates that the flagged compound did not meet DoD criteria in the Matrix Spike and/or Matrix Spike Duplicate prepared and/or analyzed concurrently with the native sample.

N Presumptive evidence of a compound based on a mass spectral library search.

A Indicates that a tentatively identified compound is a suspected aldol-condensation product.

P Used for Pesticide/Aroclor analyte when there is a greater than 25% difference for detected concentrations between the two GC columns. (for CLP methods only).

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Manual Integration Codes For GC/MS, GC, HPLC and/or IC

M1	Peak splitting.
M2	Well defined peaks on the shoulders of the other peaks.
M3	There is additional area due to a coeluting interferant.
M4	There are negative spikes in the baseline.
M5	There are rising or falling baselines.
M6	The software has failed to detect a peak or misidentified a peak.
M7	Excessive peak tailing.
M8	Analysis such as GRO, DRO and TPH require a baseline hold.
M9	Peak was not completely integrated as in GC/MS.
M10	Primary ion was correctly integrated, but secondary or tertiary ion needed manual integration as in GC/MS.
M11	For GC analysis, when a sample is diluted by 1:10 or more, the surrogate is set to undetected and then the area under the surrogate is manually integrated.
M12	Manual integration saved in method due to TurboChrom floating point error.

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SH4521-24
Client ID: FTA-SD-RB01-062014
Project: NCTAMSLANT Cutler CTO
SDG: WE53-7
Lab File ID: 1HG00452.D

Sample Date: 20-JUN-14
Received Date: 20-JUN-14
Extract Date: 26-JUN-14
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG145481

Analysis Date: 21-JUL-14
Analyst: JLP
Analysis Method: SW846 8081B
Matrix: AQ
% Solids: NA
Report Date: 22-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
alpha-BHC	U	0.0047	ug/L	1	.05	0.0094	0.0013	0.0047
Gamma-BHC	U	0.0047	ug/L	1	.05	0.0094	0.0014	0.0047
Heptachlor	U	0.0047	ug/L	1	.05	0.0094	0.0015	0.0047
Aldrin	U	0.0047	ug/L	1	.05	0.0094	0.0014	0.0047
beta-BHC	U	0.0047	ug/L	1	.05	0.0094	0.0012	0.0047
delta-BHC	U	0.0047	ug/L	1	.05	0.0094	0.0024	0.0047
Heptachlor Epoxide	U	0.0047	ug/L	1	.05	0.0094	0.0014	0.0047
Endosulfan I	U	0.0047	ug/L	1	.05	0.0094	0.0012	0.0047
Gamma-Chlordane	U	0.0047	ug/L	1	.05	0.0094	0.0011	0.0047
Alpha-Chlordane	U	0.0047	ug/L	1	.05	0.0094	0.0014	0.0047
4,4'-DDE	U	0.0094	ug/L	1	.1	0.019	0.00092	0.0094
Dieldrin	U	0.0094	ug/L	1	.1	0.019	0.0012	0.0094
Endrin	U	0.0094	ug/L	1	.1	0.019	0.0016	0.0094
4,4'-DDD	U	0.0094	ug/L	1	.1	0.019	0.0017	0.0094
Endosulfan II	U	0.0094	ug/L	1	.1	0.019	0.0011	0.0094
4,4'-DDT	U	0.0094	ug/L	1	.1	0.019	0.0017	0.0094
Endrin Aldehyde	UL	0.0094	ug/L	1	.1	0.019	0.0012	0.0094
Endosulfan Sulfate	U	0.0094	ug/L	1	.1	0.019	0.0013	0.0094
Methoxychlor	U	0.047	ug/L	1	.5	0.094	0.0016	0.047
Endrin Ketone	U	0.0094	ug/L	1	.1	0.019	0.0015	0.0094
Toxaphene	U	0.094	ug/L	1	1	0.19	0.032	0.094
Tetrachloro-M-Xylene		59.2	%					
Decachlorobiphenyl		62.4	%					

600 Technology Way
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Data File: \\target_server\gg\chem\gc01.i\GC01HG21.b\1HG00452.D
Report Date: 22-Jul-2014 06:32

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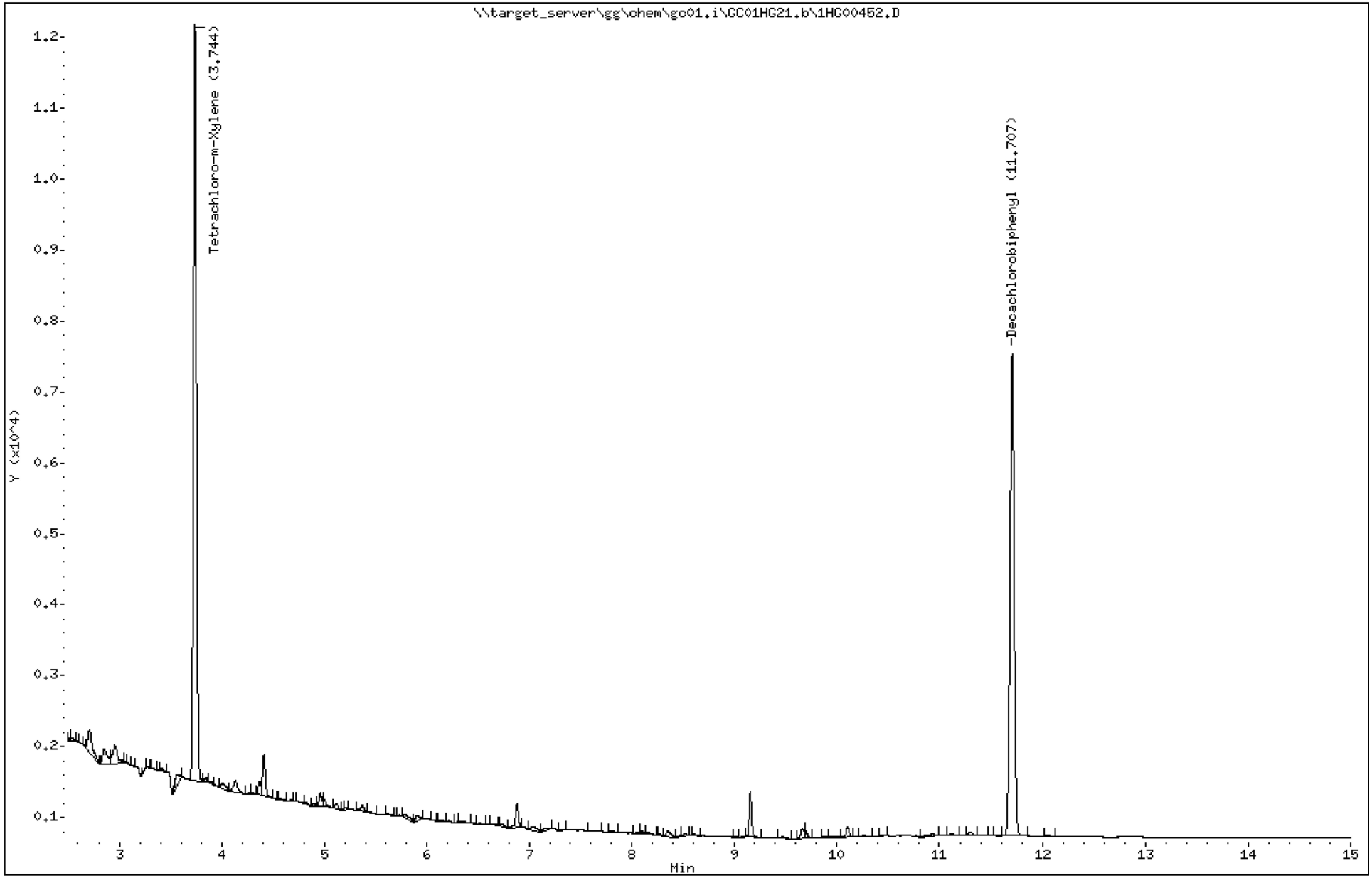
Data file : \\target_server\gg\chem\gc01.i\GC01HG21.b\1HG00452.D
Lab Smp Id: SH4521-24 Client Smp ID: FTA-SD-RB01-062014
Inj Date : 21-JUL-2014 14:48
Operator : JLP Inst ID: gc01.i
Smp Info : SH4521-24
Misc Info : WG146672,WG145481,WG146672-3
Comment :
Method : \\target_server\gg\chem\gc01.i\GC01HG21.b\PEST135.m
Meth Date : 22-Jul-2014 06:18 gc01.i Quant Type: ESTD
Cal Date : 11-JUL-2014 14:48 Cal File: 1HG00248.D
Als bottle: 15
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: DoD8081.sub
Target Version: 4.12
Processing Host: V200T2

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00200	Final Volume (L)
Vo	1.060	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
$ 4 Tetrachloro-m-Xylene	3.743	3.740	0.003	10661	0.05931	0.112	
$ 34 Decachlorobiphenyl	11.707	11.706	0.001	6797	0.06285	0.118	

Data File: \\target_server\gg\chem\gc01.i\GC01HG21.b\1HG00452.D
Date : 21-JUL-2014 14:48
Client ID: FTA-SD-RB01-062014
Instrument: gc01.i
Sample Info: SH4521-24
Purge Volume: 1.1
Operator: JLP
Column phase: ZB-Multiresidue-1
Column diameter: 0.53



Katahdin Analytical Services 7000012

Data File: 1HG00452.D
Report Date: 22-Jul-2014 06:36

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc01.i\GC01HG21.b\GC01HG21.b\1HG00452.D
Lab Smp Id: SH4521-24 Client Smp ID: FTA-SD-RB01-062014
Inj Date : 21-JUL-2014 14:48
Operator : JLP Inst ID: gc01.i
Smp Info : SH4521-24
Misc Info : WG146672,WG145481,WG146672-4
Comment :
Method : \\target_server\gg\chem\gc01.i\GC01HG21.b\PEST135.m\PEST135.m
Meth Date : 22-Jul-2014 06:19 gc01.i Quant Type: ESTD
Cal Date : 11-JUL-2014 14:48 Cal File: 1HG00248.D
Als bottle: 15
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: DoD8081.sub
Target Version: 4.12
Processing Host: V200T2

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

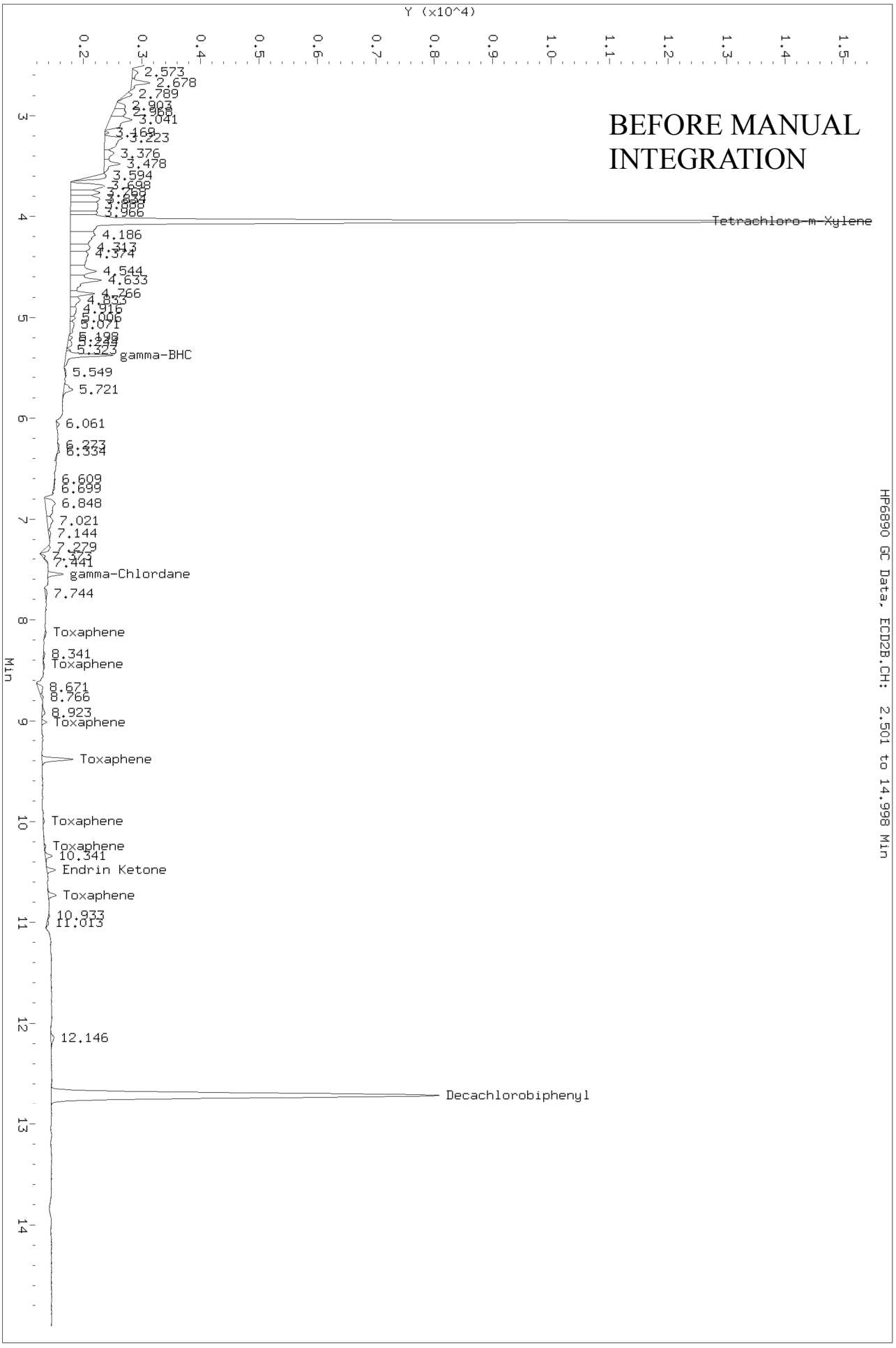
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00200	Final Volume (L)
Vo	1.060	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
$ 4 Tetrachloro-m-Xylene	4.050	4.047	0.003	13244	0.05629	0.106(M)	M5
$ 34 Decachlorobiphenyl	12.712	12.710	0.002	6640	0.06209	0.117	

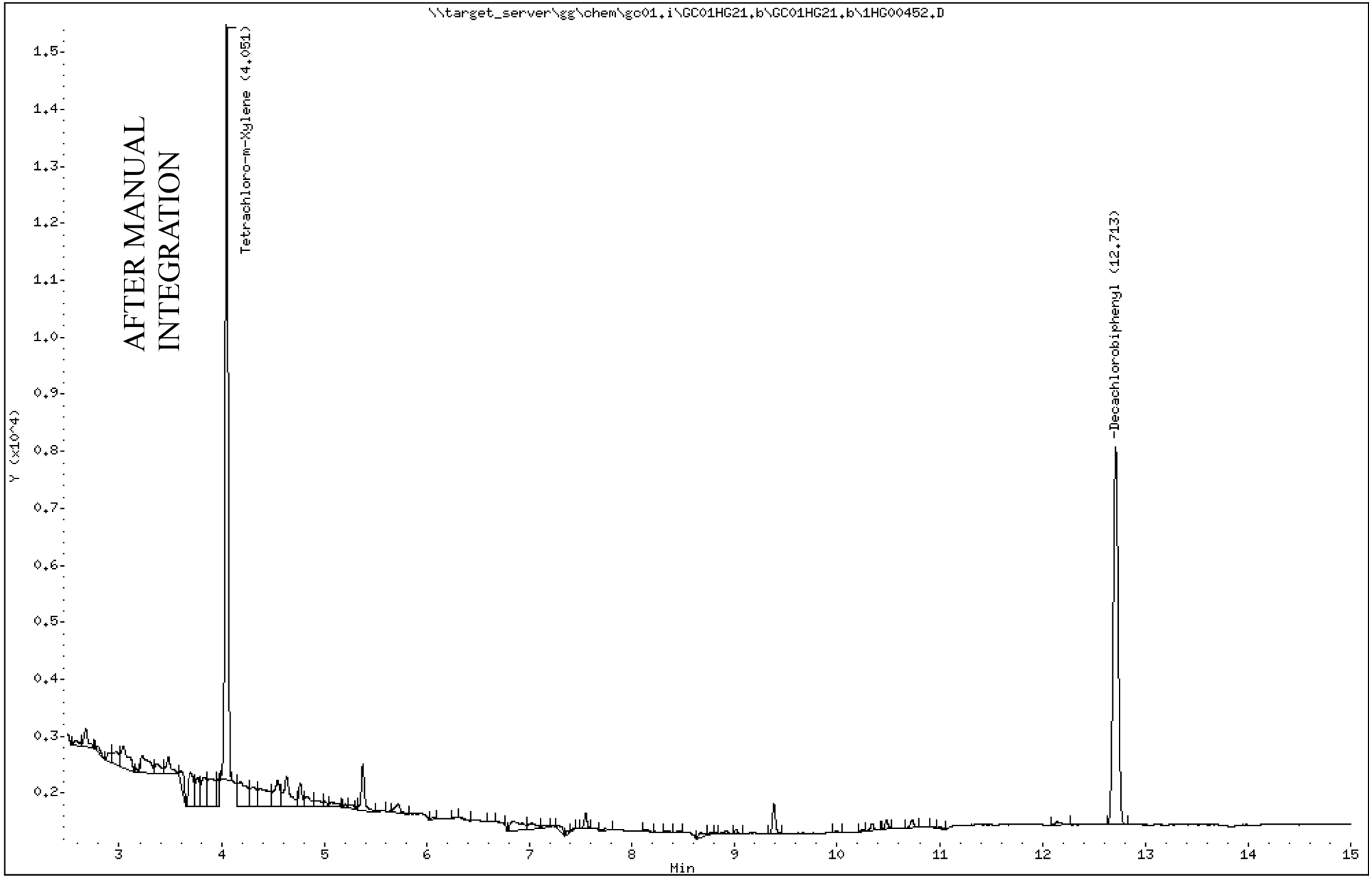
QC Flag Legend

M - Compound response manually integrated.

JLP
7:20 am, Jul 22, 2014


Data File: \\target_server\gg\chem\gc01.i\GC01HG21.b\GC01HG21.b\1HG00452.D
Injection Date: 21-JUL-2014 14:48
Instrument: gc01.i
Client Sample ID: FTA-SD-RB01-062014
BEFORE MANUAL INTEGRATION
HP6890 GC Data, ECD2B.CH: 2.501 to 14.998 Min
Y (x10^4)
Min
Tetrachloro-m-Xylene
gamma-BHC
gamma-Chlordane
Toxaphene
Endrin Ketone
Decachlorobiphenyl
2.573
2.678
2.789
3.041
3.169
3.223
3.376
3.478
3.594
3.966
4.186
4.374
4.544
4.633
4.766
5.006
5.071
5.549
5.721
6.061
6.334
6.609
6.689
6.848
7.021
7.144
7.279
7.441
7.744
8.341
8.671
8.766
8.923
10.341
10.933
11.013
12.146

Data File: \\target_server\gg\chem\gc01.i\GC01HG21.b\GC01HG21.b\1HG00452.D
Date : 21-JUL-2014 14:48
Client ID: FTA-SD-RB01-062014
Instrument: gc01.i
Sample Info: SH4521-24
Purge Volume: 1.1
Operator: JLP
Column phase: ZB-Multiresidue-2
Column diameter: 0.53



Katahdin Analytical Services 7000015

Standards Data Section

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: WE53-7
Project : NCTAMSLANT Cutler CTO WE53
Instrument ID: GC01
Lab File IDs : 1HF00258.D 1HF00259.D 1HF00260.D 1HF00257.D 1HF00261.D 1HF00262.D
Column ID: A
Calibration Date(s): 16-JUN-14 16:39, 16-JUN-14 20:07

	0.0050000 Level 1	0.0100000 Level 2	0.0250000 Level 3	0.0500000 Level 4	0.1000000 Level 5	0.2500000 Level 6	New Crv	b	m1	m2	%RSD	Max %RSD	
Toxaphene(3)	224	675	1633	3271	9455	38365	LNR	0.08119	3868		0.99990	0.99000	O
Toxaphene(6)	209	577	1339	2731	7949	32169	LNR	0.08070	3244		0.99988	0.99000	O
Toxaphene(4)	457	1254	2803	5611	15833	59609	LNR	0.00971	5987		0.99960	0.99000	O
Toxaphene(1)	115	285	592	1222	3421	14219	LNR	0.08039	1432		0.99986	0.99000	O
Toxaphene(7)	653	1779	3966	8010	21514	77991	LNR	-0.03881	7811		0.99922	0.99000	O
Toxaphene(8)	250	620	1387	2853	8072	31931	LNR	0.05145	3213		0.99988	0.99000	O
Toxaphene(9)	204	406	870	1916	5761	26430	LNR	0.17790	2679		0.99901	0.99000	O
Toxaphene(2)	249	621	1368	2764	7867	31048	LNR	0.04799	3123		0.99986	0.99000	O
Toxaphene(5)	314	867	2027	4035	11342	44810	LNR	0.04749	4507		0.99989	0.99000	O

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

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Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: WE53-7
Project : NCTAMSLANT Cutler CTO WE53
Instrument ID: GC01
Lab File IDs : 1HF00258.D 1HF00259.D 1HF00260.D 1HF00257.D 1HF00261.D 1HF00262.D
Column ID: B
Calibration Date(s): 16-JUN-14 16:39, 16-JUN-14 20:07

	0.0050000 Level 1	0.0100000 Level 2	0.0250000 Level 3	0.0500000 Level 4	0.1000000 Level 5	0.2500000 Level 6	New Crv	b	m1	m2	%RSD	Max %RSD	
Toxaphene(4)	499	1352	2892	5831	16024	61289	LNR	0.01001	6150		0.99977	0.99000	O
Toxaphene(1)	102	277	599	1252	3639	14643	LNR	0.07540	1476		0.99986	0.99000	O
Toxaphene(7)	453	1152	2356	4799	13106	50482	LNR	0.01041	5064		0.99983	0.99000	O
Toxaphene(9)	211	529	1071	2279	6105	24539	LNR	0.04304	2465		0.99996	0.99000	O
Toxaphene(8)	235	536	1040	2172	5859	24045	LNR	0.05318	2415		0.99992	0.99000	O
Toxaphene(5)	265	678	1423	3003	8305	33803	LNR	0.06543	3402		0.99993	0.99000	O
Toxaphene(6)	310	805	1710	3413	9578	38684	LNR	0.05673	3890		0.99991	0.99000	O
Toxaphene(3)	269	792	1721	3649	10597	41270	LNR	0.05478	4158		0.99977	0.99000	O
Toxaphene(2)	125	342	740	1569	4576	19388	LNR	0.11570	1958		0.99976	0.99000	O

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Data File: \\target_server\gg\chem\gc01.i\GC01HF16.b\1HF00257.D
Report Date: 24-Jun-2014 15:30

Katahdin Analytical Services

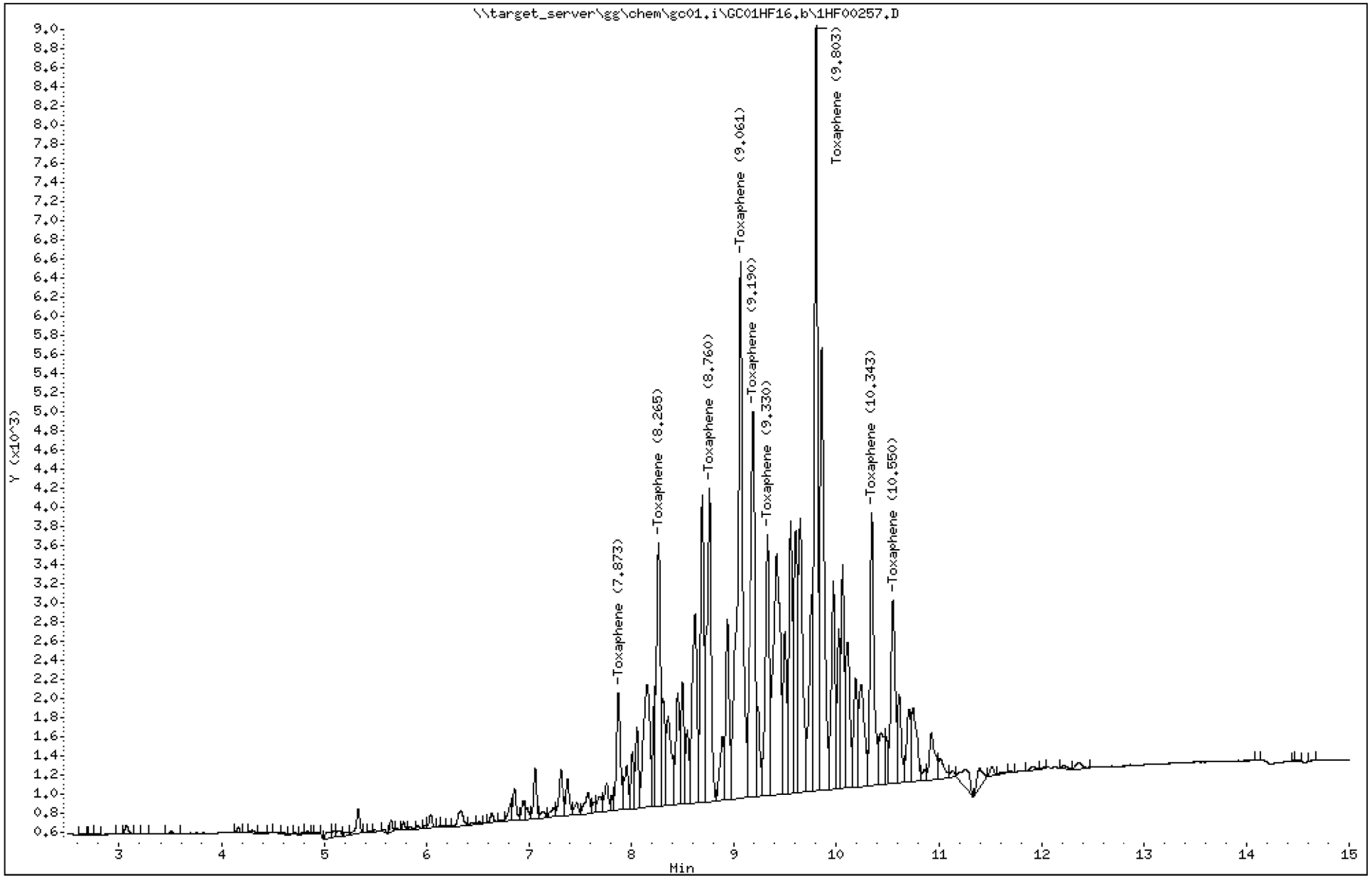
Data file : \\target_server\gg\chem\gc01.i\GC01HF16.b\1HF00257.D
Lab Smp Id: WG144812-1
Inj Date : 16-JUN-2014 18:40
Operator : JLP Inst ID: gc01.i
Smp Info : WG144812-1
Misc Info :
Comment :
Method : \\target_server\gg\chem\gc01.i\GC01HF16.b\PEST127.m
Meth Date : 17-Jun-2014 09:14 kasgc Quant Type: ESTD
Cal Date : 16-JUN-2014 18:40 Cal File: 1HF00257.D
Als bottle: 11 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: Tox.sub
Target Version: 4.12 Sample Matrix: WATER
Processing Host: V200T2

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.01000	Final Volume (L)
Vo	1.000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

				AMOUNTS					
				CAL-AMT	ON-COL				
RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	TARGET RANGE		RATIO	REVIEW CODE
18 Toxaphene						CAS #: 8001-35-2			
7.873	7.874	-0.001	1222	1.00000	1.00	80.00-	120.00	100.00	
8.264	8.262	0.002	2764	1.00000	1.00	174.72-	262.07	226.19	
8.759	8.759	0.000	3271	1.00000	1.00	236.49-	354.73	267.68	
9.061	9.061	0.000	5611	1.00000	1.00	369.84-	554.76	459.17	
9.189	9.191	-0.002	4035	1.00000	1.00	264.89-	397.34	330.20	
9.329	9.331	-0.002	2731	1.00000	1.00	184.53-	276.79	223.49	
9.803	9.802	0.001	8010	1.00000	1.00	478.36-	717.55	655.48	
10.343	10.342	0.001	2853	1.00000	1.00	178.65-	267.98	233.47	
10.549	10.549	0.000	1916	1.00000	1.00	112.22-	168.33	156.79	
Average of Peak Amounts =				1.00000					

Data File: \\target_server\gg\chem\gc01.i\GC01HF16.b\1HF00257.D
Date : 16-JUN-2014 18:40
Client ID:
Instrument: gc01.i
Sample Info: WG144812-1
Purge Volume: 1.0
Operator: JLP
Column phase: ZB-Multiresidue-1
Column diameter: 0.53



Katahdin Analytical Services 7000020

Data File: 1HF00257.D
Report Date: 24-Jun-2014 15:30

Katahdin Analytical Services

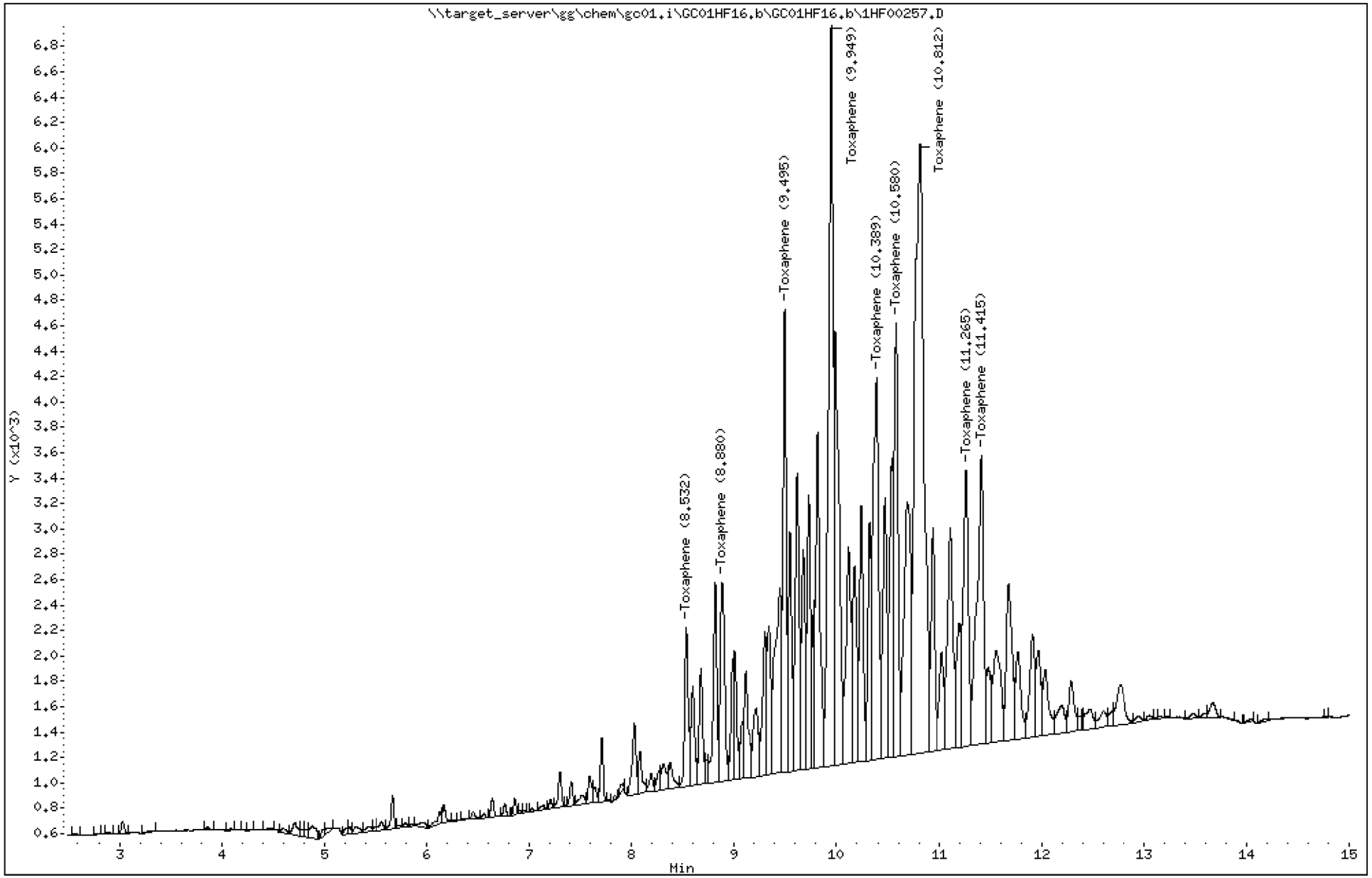
Data file : \\target_server\gg\chem\gc01.i\GC01HF16.b\GC01HF16.b\1HF00257.D
Lab Smp Id: WG144812-2
Inj Date : 16-JUN-2014 18:40
Operator : JLP Inst ID: gc01.i
Smp Info : WG144812-2
Misc Info :
Comment :
Method : \\target_server\gg\chem\gc01.i\GC01HF16.b\PEST127.m\PEST127.m
Meth Date : 17-Jun-2014 09:20 jprescott Quant Type: ESTD
Cal Date : 16-JUN-2014 18:40 Cal File: 1HF00257.D
Als bottle: 11 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: Tox.sub
Target Version: 4.12 Sample Matrix: WATER
Processing Host: V200T2

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.01000	Final Volume (L)
Vo	1.000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)	TARGET RANGE	RATIO	REVIEW CODE
18 Toxaphene					CAS #: 8001-35-2			
8.531	8.531	0.000	1252	1.00000	1.00	80.00- 120.00	100.00	
8.880	8.879	0.001	1569	1.00000	1.00	102.45- 153.68	125.32	
9.495	9.494	0.001	3649	1.00000	1.00	234.51- 351.76	291.45	
9.948	9.948	0.000	5831	1.00000	1.00	352.26- 528.39	465.73	
10.388	10.388	0.000	3003	1.00000	1.00	176.90- 265.35	239.86	
10.580	10.579	0.001	3413	1.00000	1.00	205.44- 308.15	272.60	
10.811	10.816	-0.005	4799	1.00000	1.00	280.59- 420.89	383.31	
11.265	11.264	0.001	2172	1.00000	1.00	118.76- 178.14	173.48	
11.415	11.416	-0.001	2279	1.00000	1.00	127.62- 191.43	182.03	
Average of Peak Amounts =				1.00000				

Data File: \\target_server\gg\chem\gc01.i\GC01HF16.b\GC01HF16.b\1HF00257.D
Date : 16-JUN-2014 18:40
Client ID:
Instrument: gc01.i
Sample Info: WG144812-2
Purge Volume: 1.0
Operator: JLP
Column phase: ZB-Multiresidue-2
Column diameter: 0.53



Katahdin Analytical Services 7000022

Data File: \\target_server\gg\chem\gc01.i\GC01HF16.b\1HF00258.D
Report Date: 24-Jun-2014 15:30

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc01.i\GC01HF16.b\1HF00258.D
Lab Smp Id: WG144812-3
Inj Date : 16-JUN-2014 18:58
Operator : JLP Inst ID: gc01.i
Smp Info : WG144812-3
Misc Info :
Comment :
Method : \\target_server\gg\chem\gc01.i\GC01HF16.b\PEST127.m
Meth Date : 17-Jun-2014 09:14 kasgc Quant Type: ESTD
Cal Date : 16-JUN-2014 18:58 Cal File: 1HF00258.D
Als bottle: 12 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: Tox.sub
Target Version: 4.12 Sample Matrix: WATER
Processing Host: V200T2

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

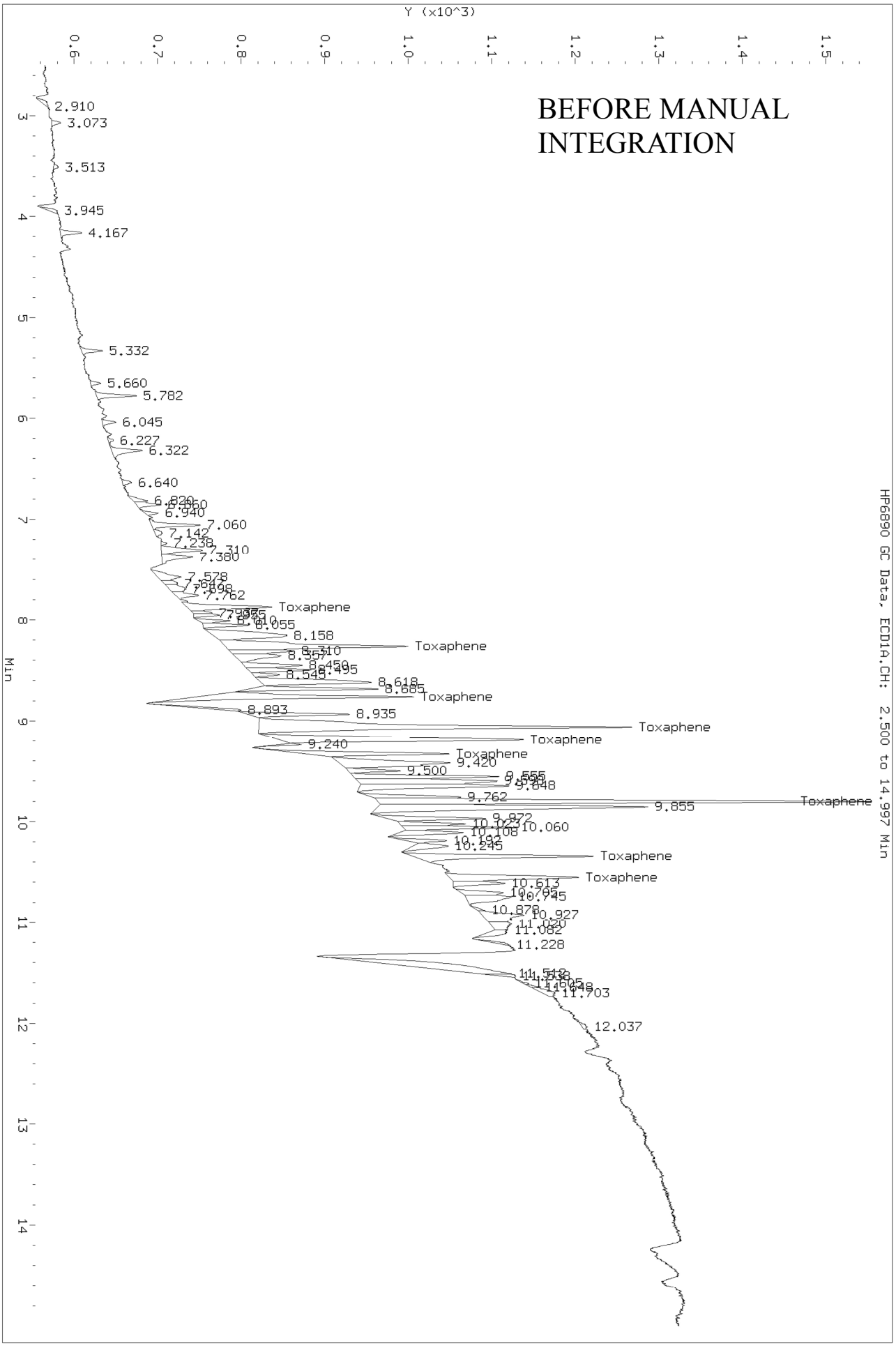
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.01000	Final Volume (L)
Vo	1.000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

				AMOUNTS					
				CAL-AMT	ON-COL				
RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	TARGET RANGE	RATIO	REVIEW CODE	
18 Toxaphene					CAS #: 8001-35-2				
7.873	7.874	-0.001	115	0.10000	0.0940	80.00- 120.00	100.00(M)	M5	
8.261	8.262	-0.001	249	0.10000	0.0902	174.72- 262.07	216.52	M5	
8.760	8.759	0.001	224	0.10000	0.0699	236.49- 354.73	229.57	M5	
9.061	9.061	0.000	457	0.10000	0.0831	369.84- 554.76	397.39	M5	
9.188	9.191	-0.003	314	0.10000	0.0798	264.89- 397.34	273.04	M5	
9.331	9.331	0.000	209	0.10000	0.0777	184.53- 276.79	181.74	M5	
9.801	9.802	-0.001	653	0.10000	0.0854	478.36- 717.55	567.83	M5	
10.341	10.342	-0.001	250	0.10000	0.0884	178.65- 267.98	217.39	M5	
10.551	10.549	0.002	204	0.10000	0.100	112.22- 168.33	177.39	M5	
Average of Peak Amounts =					0.08539				

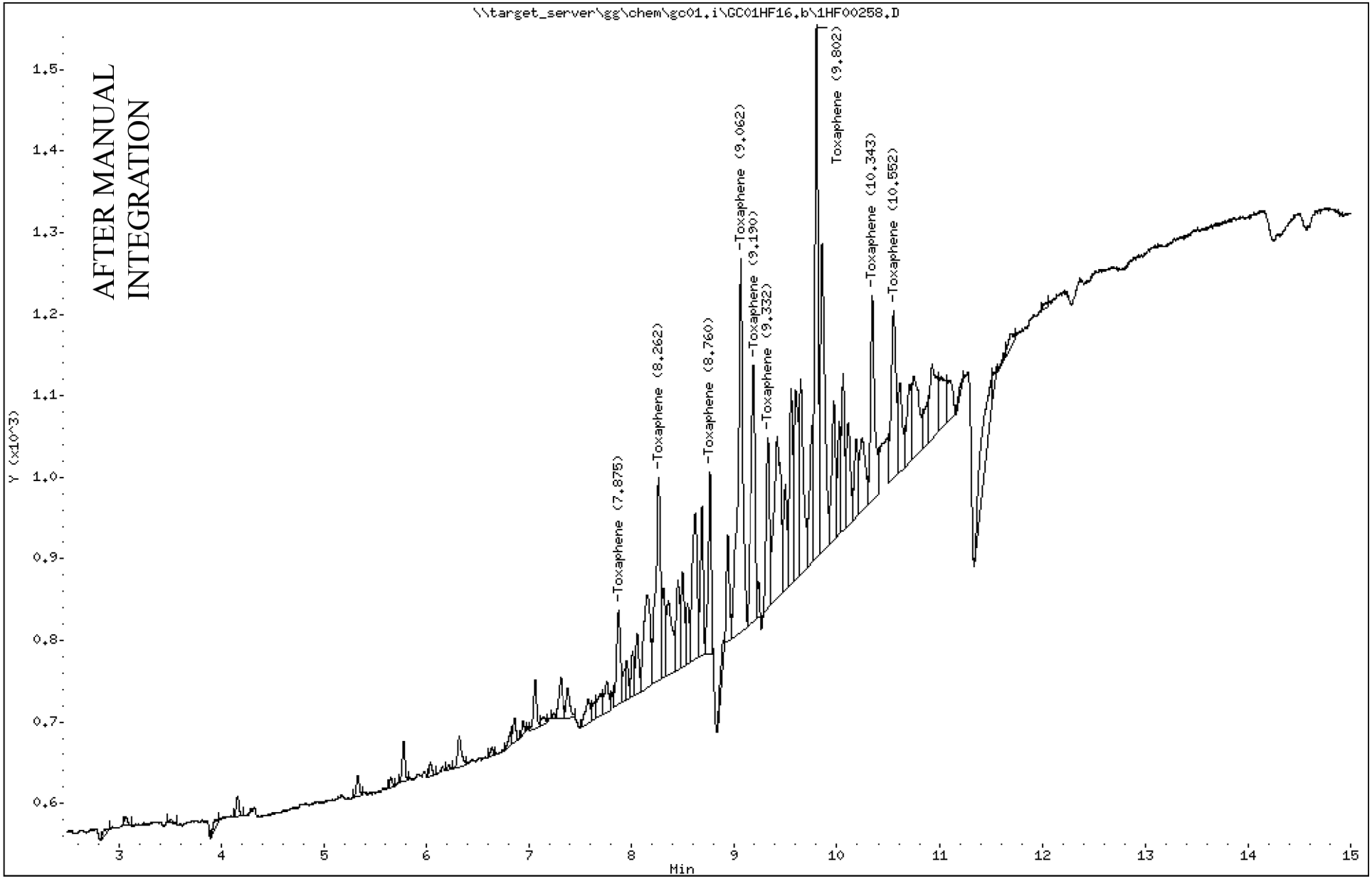
JLP
9:51 am, Jun 26, 2014

QC Flag Legend

M - Compound response manually integrated.


Data File: \\target_server\gg\chem\gc01.i\GC01HF16.b\1HF00258.D
Injection Date: 16-JUN-2014 18:58
Instrument: gc01.i
Client Sample ID:
HP6890 GC Data, ECD1A.CH: 2.500 to 14.997 Min
Y (x10^3)
Min
BEFORE MANUAL INTEGRATION
2.910
3.073
3.513
3.945
4.167
5.332
5.660
5.782
6.045
6.227
6.322
6.640
6.940
7.060
7.142
7.238
7.380
7.578
7.762
Toxaphene
8.055
8.158
Toxaphene
8.495
8.618
8.685
Toxaphene
8.893
8.935
Toxaphene
Toxaphene
9.240
Toxaphene
9.420
9.500
9.762
9.855
Toxaphene
9.972
10.060
Toxaphene
Toxaphene
10.613
10.878
10.927
11.082
11.228
11.703
12.037

Data File: \\target_server\gg\chem\gc01.i\GC01HF16.b\1HF00258.D
Date : 16-JUN-2014 18:58
Client ID:
Instrument: gc01.i
Sample Info: WG144812-3
Purge Volume: 1.0
Operator: JLP
Column phase: ZB-Multiresidue-1
Column diameter: 0.53



Katahdin Analytical Services 7000025

Data File: 1HF00258.D
Report Date: 24-Jun-2014 15:30

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc01.i\GC01HF16.b\GC01HF16.b\1HF00258.D
Lab Smp Id: WG144812-4
Inj Date : 16-JUN-2014 18:58
Operator : JLP Inst ID: gc01.i
Smp Info : WG144812-4
Misc Info :
Comment :
Method : \\target_server\gg\chem\gc01.i\GC01HF16.b\PEST127.m\PEST127.m
Meth Date : 17-Jun-2014 09:20 jprescott Quant Type: ESTD
Cal Date : 16-JUN-2014 18:58 Cal File: 1HF00258.D
Als bottle: 12 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: Tox.sub
Target Version: 4.12 Sample Matrix: WATER
Processing Host: V200T2

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

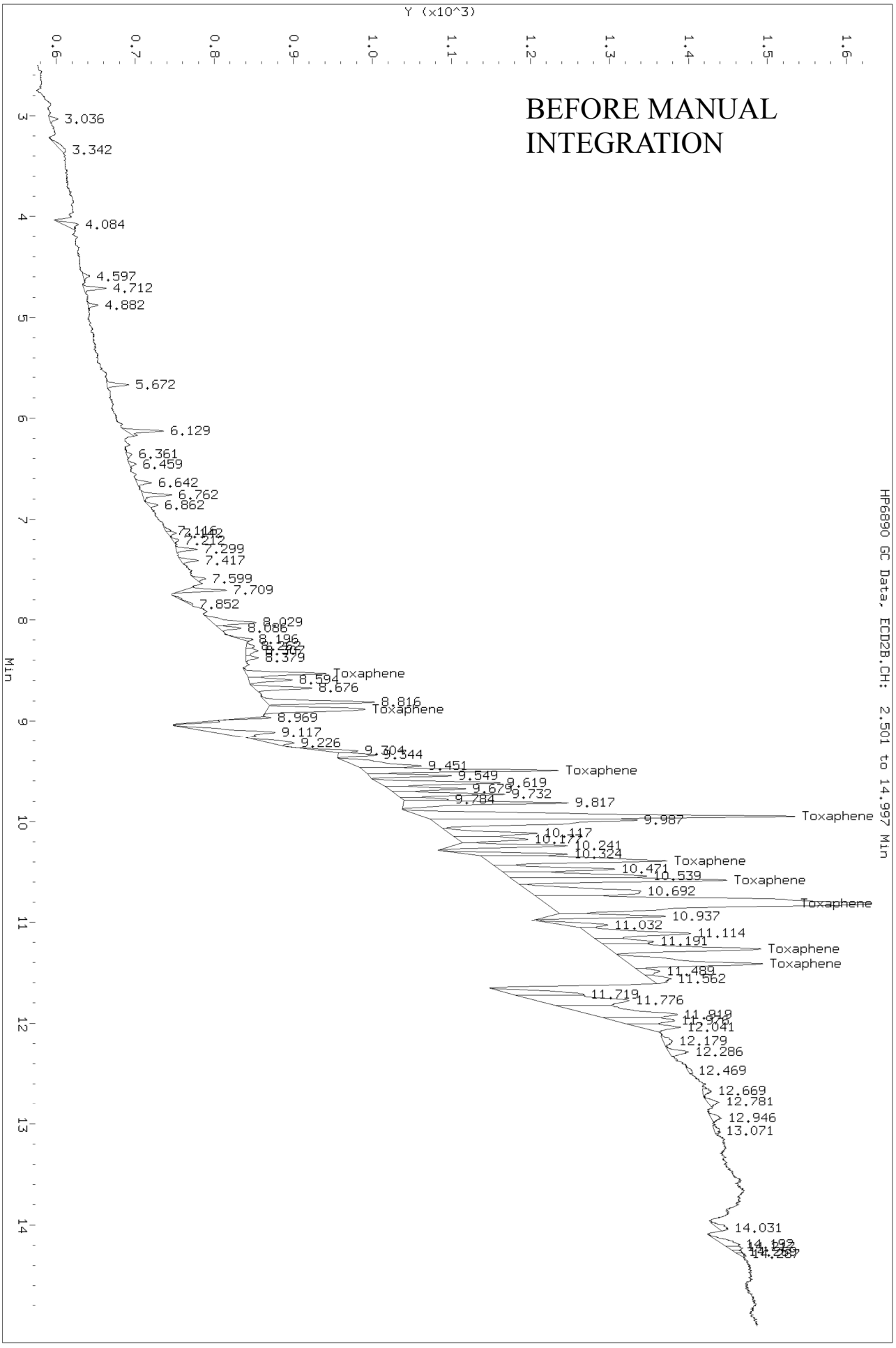
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.01000	Final Volume (L)
Vo	1.000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

				AMOUNTS					
				CAL-AMT	ON-COL				
RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	TARGET RANGE	RATIO	REVIEW CODE	
18 Toxaphene					CAS #: 8001-35-2				
8.530	8.531	-0.001	102	0.10000	0.0834	80.00- 120.00	100.00(M)	M5	
8.885	8.879	0.006	125	0.10000	0.0806	102.45- 153.68	122.55	M5	
9.495	9.494	0.001	269	0.10000	0.0757	234.51- 351.76	263.73	M5	
9.948	9.948	0.000	499	0.10000	0.0866	352.26- 528.39	489.22	M5	
10.390	10.388	0.002	265	0.10000	0.0888	176.90- 265.35	259.80	M5	
10.578	10.579	-0.001	310	0.10000	0.0892	205.44- 308.15	303.92	M5	
10.808	10.816	-0.008	453	0.10000	0.0939	280.59- 420.89	444.12	M5	
11.265	11.264	0.001	235	0.10000	0.104	118.76- 178.14	230.39	M5	
11.412	11.416	-0.004	211	0.10000	0.0935	127.62- 191.43	206.86	M5	
Average of Peak Amounts =					0.08841				

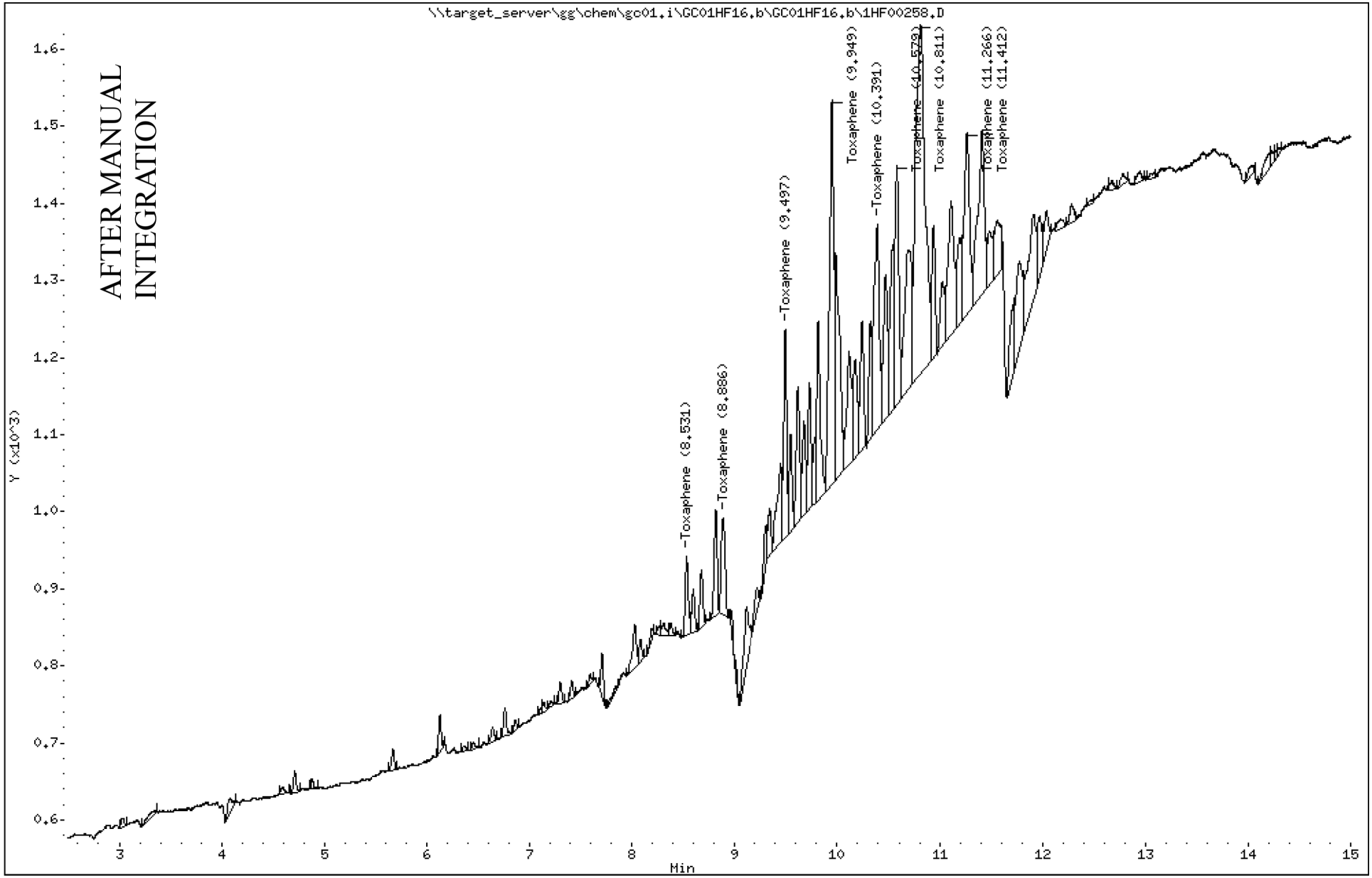
JLP
9:51 am, Jun 26, 2014

QC Flag Legend

M - Compound response manually integrated.


Data File: \\target_server\gg\chem\gc01.i\GC01HF16.b\GC01HF16.b\1HF00258.D
Injection Date: 16-JUN-2014 18:58
Instrument: gc01.i
Client Sample ID:
HP6890 GC Data, ECD2B.CH: 2.501 to 14.997 Min
Y (x10^3)
Min
BEFORE MANUAL INTEGRATION
3.036
3.342
4.084
4.597
4.712
4.882
5.672
6.129
6.361
6.459
6.642
6.762
6.862
7.299
7.417
7.599
7.709
7.852
8.029
8.379
Toxaphene
8.594
8.676
8.816
Toxaphene
8.969
9.117
9.226
9.451
Toxaphene
9.549
9.619
9.732
9.784
9.817
9.987
Toxaphene
10.117
10.241
10.324
Toxaphene
10.471
10.539
Toxaphene
10.692
Toxaphene
10.937
11.032
11.114
11.191
Toxaphene
Toxaphene
11.489
11.562
11.719
11.776
12.041
12.179
12.286
12.469
12.669
12.781
12.946
13.071
14.031

Data File: \\target_server\gg\chem\gc01.i\GC01HF16.b\GC01HF16.b\1HF00258.D
Date : 16-JUN-2014 18:58
Client ID:
Instrument: gc01.i
Sample Info: WG144812-4
Purge Volume: 1.0
Operator: JLP
Column phase: ZB-Multiresidue-2
Column diameter: 0.53



Katahdin Analytical Services 7000028

Data File: \\target_server\gg\chem\gc01.i\GC01HF16.b\1HF00259.D
Report Date: 24-Jun-2014 15:30

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc01.i\GC01HF16.b\1HF00259.D
Lab Smp Id: WG144812-5
Inj Date : 16-JUN-2014 19:15
Operator : JLP Inst ID: gc01.i
Smp Info : WG144812-5
Misc Info :
Comment :
Method : \\target_server\gg\chem\gc01.i\GC01HF16.b\PEST127.m
Meth Date : 17-Jun-2014 09:14 kasgc Quant Type: ESTD
Cal Date : 16-JUN-2014 19:15 Cal File: 1HF00259.D
Als bottle: 13 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: Tox.sub
Target Version: 4.12 Sample Matrix: WATER
Processing Host: V200T2

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

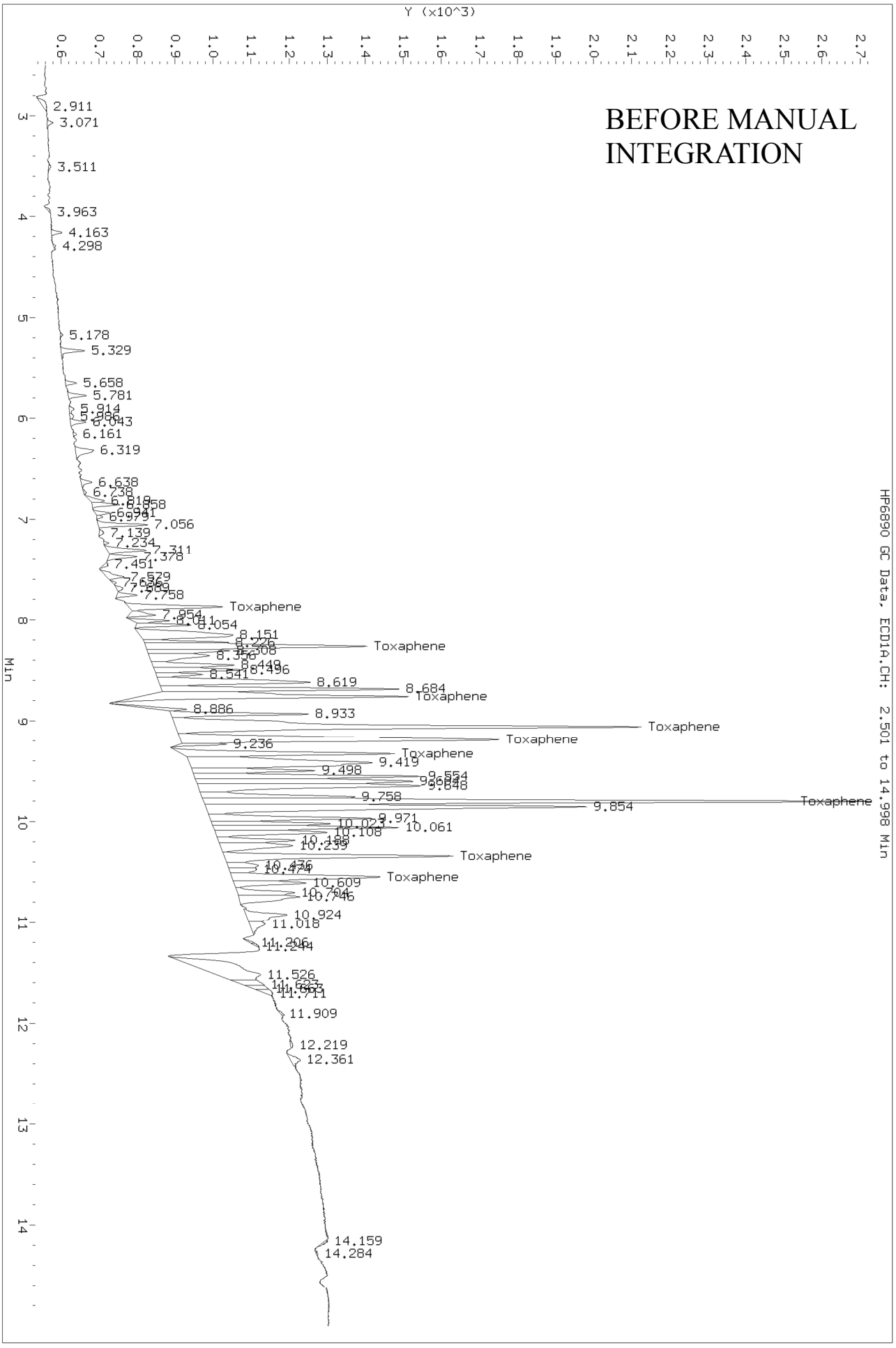
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.01000	Final Volume (L)
Vo	1.000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

				AMOUNTS					
				CAL-AMT	ON-COL				
RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	TARGET RANGE	RATIO	REVIEW CODE	
18 Toxaphene					CAS #: 8001-35-2				
7.872	7.874	-0.002	285	0.25000	0.228	80.00- 120.00	100.00(M)	M5	
8.262	8.262	0.000	621	0.25000	0.223	174.72- 262.07	217.89	M5	
8.759	8.759	0.000	675	0.25000	0.212	236.49- 354.73	236.84	M5	
9.059	9.061	-0.002	1254	0.25000	0.227	369.84- 554.76	440.00	M5	
9.189	9.191	-0.002	867	0.25000	0.219	264.89- 397.34	304.21	M5	
9.329	9.331	-0.002	577	0.25000	0.214	184.53- 276.79	202.46	M5	
9.800	9.802	-0.002	1779	0.25000	0.232	478.36- 717.55	624.21	M5	
10.342	10.342	0.000	620	0.25000	0.218	178.65- 267.98	217.54	M5	
10.547	10.549	-0.002	406	0.25000	0.198	112.22- 168.33	142.46	M5	
		Average of Peak Amounts =			0.21900				

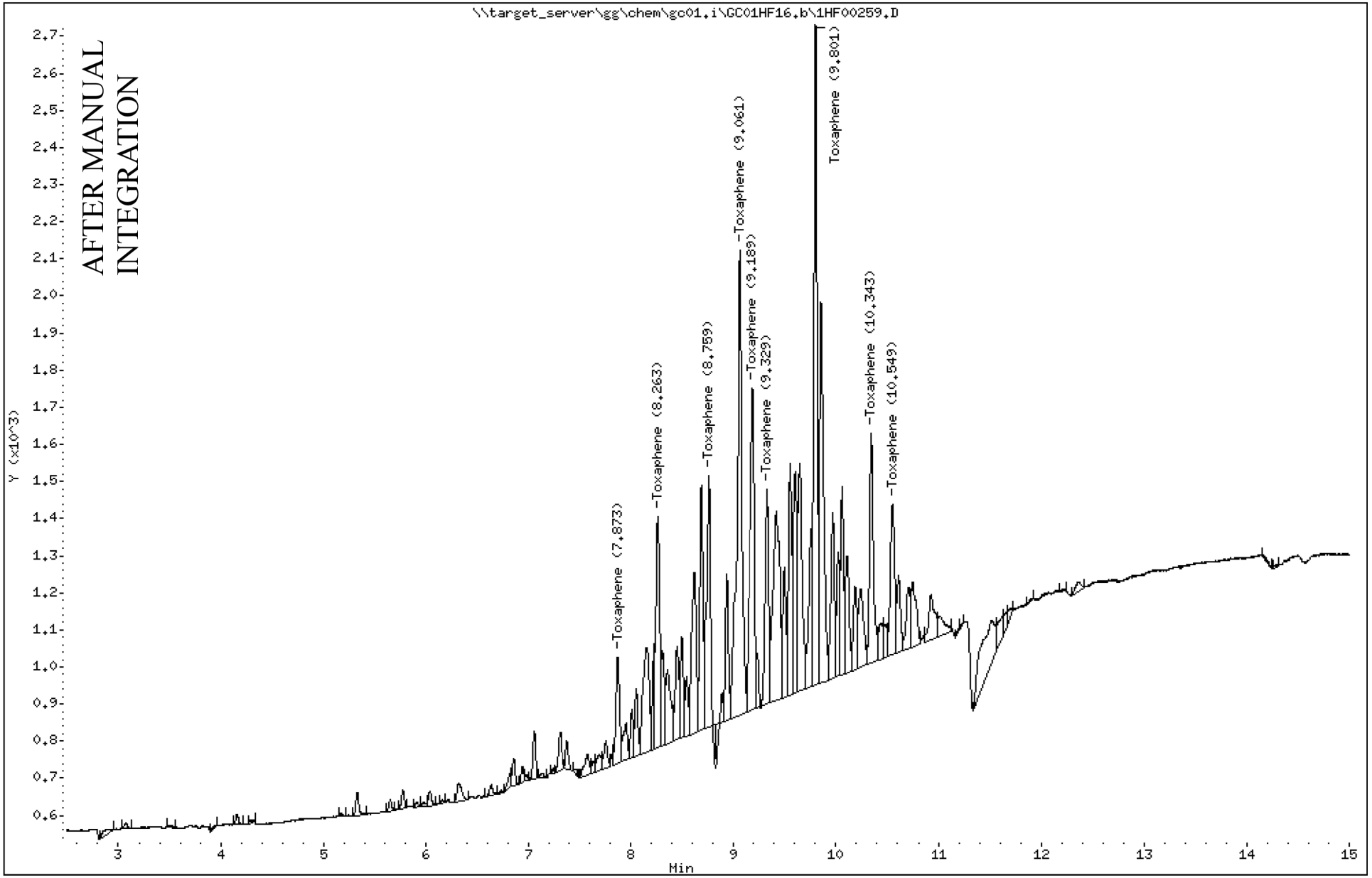
JLP
9:51 am, Jun 26, 2014

QC Flag Legend

M - Compound response manually integrated.


Data File: \\target_server\gg\chem\gc01.i\GC01:HF16.b\1HF00259.D
Injection Date: 16-JUN-2014 19:15
Instrument: gc01.i
Client Sample ID:
BEFORE MANUAL INTEGRATION
Y (x10^3)
Min
HP6890 GC Data, ECD1A.CH: 2.501 to 14.998 Min
2.911
3.071
3.511
3.963
4.163
4.298
5.178
5.329
5.658
5.781
5.914
6.043
6.161
6.319
6.638
7.056
7.139
7.234
7.311
7.378
7.451
7.529
7.758
Toxaphene
8.151
Toxaphene
8.541
8.619
8.684
Toxaphene
8.886
8.933
Toxaphene
Toxaphene
9.236
Toxaphene
9.419
9.498
9.758
9.854
Toxaphene
9.971
10.061
10.239
Toxaphene
10.609
Toxaphene
10.924
11.018
11.526
11.909
12.219
12.361
14.159
14.284

Data File: \\target_server\gg\chem\gc01.i\GC01HF16.b\1HF00259.D
Date : 16-JUN-2014 19:15
Client ID:
Instrument: gc01.i
Sample Info: WG144812-5
Purge Volume: 1.0
Operator: JLP
Column phase: ZB-Multiresidue-1
Column diameter: 0.53



Katahdin Analytical Services 7000031

Data File: 1HF00259.D
Report Date: 24-Jun-2014 15:30

Katahdin Analytical Services

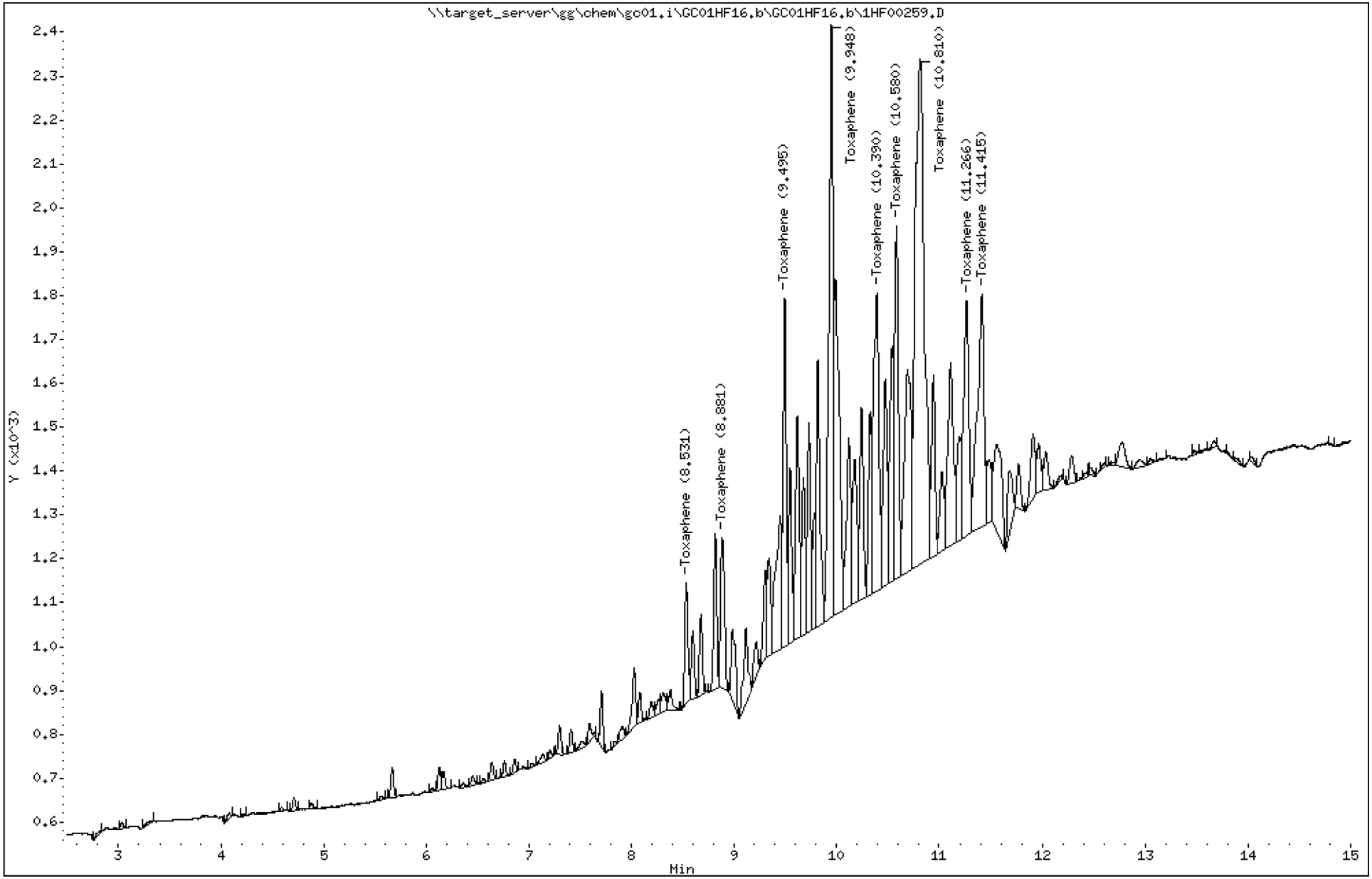
Data file : \\target_server\gg\chem\gc01.i\GC01HF16.b\GC01HF16.b\1HF00259.D
Lab Smp Id: WG144812-6
Inj Date : 16-JUN-2014 19:15
Operator : JLP Inst ID: gc01.i
Smp Info : WG144812-6
Misc Info :
Comment :
Method : \\target_server\gg\chem\gc01.i\GC01HF16.b\PEST127.m\PEST127.m
Meth Date : 17-Jun-2014 09:20 jprescott Quant Type: ESTD
Cal Date : 16-JUN-2014 19:15 Cal File: 1HF00259.D
Als bottle: 13 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: Tox.sub
Target Version: 4.12 Sample Matrix: WATER
Processing Host: V200T2

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.01000	Final Volume (L)
Vo	1.000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

				AMOUNTS				
				CAL-AMT	ON-COL			
RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	TARGET RANGE	RATIO	REVIEW CODE
18 Toxaphene						CAS #: 8001-35-2		
8.531	8.531	0.000	277	0.25000	0.246	80.00- 120.00	100.00	
8.881	8.879	0.002	342	0.25000	0.245	102.45- 153.68	123.47	
9.494	9.494	0.000	792	0.25000	0.256	234.51- 351.76	285.92	
9.948	9.948	0.000	1352	0.25000	0.254	352.26- 528.39	488.09	
10.389	10.388	0.001	678	0.25000	0.255	176.90- 265.35	244.77	
10.579	10.579	0.000	805	0.25000	0.258	205.44- 308.15	290.61	
10.809	10.816	-0.007	1152	0.25000	0.255	280.59- 420.89	415.88	
11.266	11.264	0.002	536	0.25000	0.257	118.76- 178.14	193.50	
11.414	11.416	-0.002	529	0.25000	0.261	127.62- 191.43	190.97	
Average of Peak Amounts =				0.25411				

Data File: \\target_server\gg\chem\gc01.i\GC01HF16.b\GC01HF16.b\1HF00259.D
Date : 16-JUN-2014 19:15
Client ID:
Instrument: gc01.i
Sample Info: WG144812-6
Purge Volume: 1.0
Operator: JLP
Column phase: ZB-Multiresidue-2
Column diameter: 0.53



Katahdin Analytical Services 7000033

Data File: \\target_server\gg\chem\gc01.i\GC01HF16.b\1HF00260.D
Report Date: 24-Jun-2014 15:30

Katahdin Analytical Services

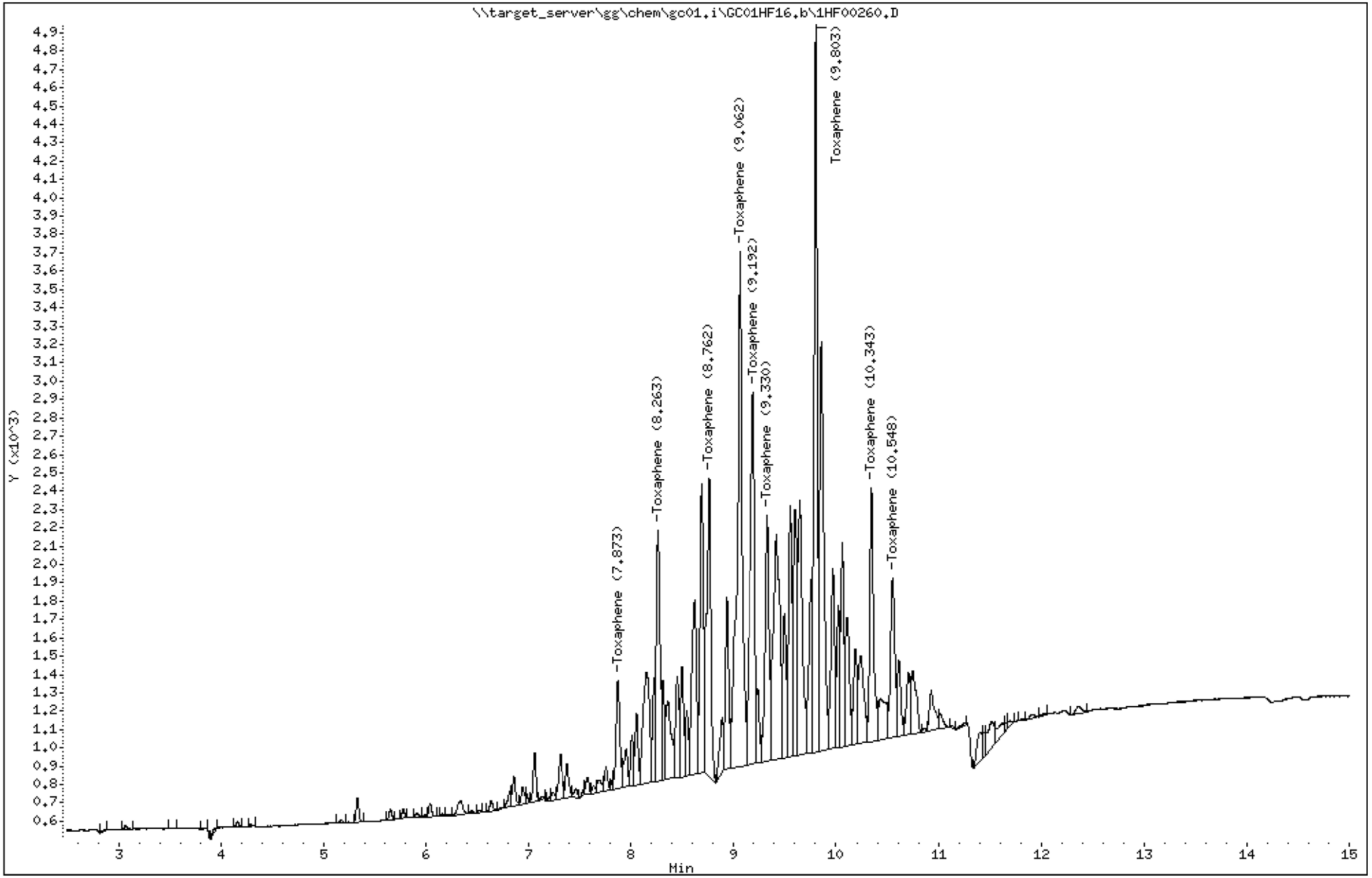
Data file : \\target_server\gg\chem\gc01.i\GC01HF16.b\1HF00260.D
Lab Smp Id: WG144812-7
Inj Date : 16-JUN-2014 19:33
Operator : JLP Inst ID: gc01.i
Smp Info : WG144812-7
Misc Info :
Comment :
Method : \\target_server\gg\chem\gc01.i\GC01HF16.b\PEST127.m
Meth Date : 17-Jun-2014 09:14 kasgc Quant Type: ESTD
Cal Date : 16-JUN-2014 19:33 Cal File: 1HF00260.D
Als bottle: 14 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: Tox.sub
Target Version: 4.12 Sample Matrix: WATER
Processing Host: V200T2

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.01000	Final Volume (L)
Vo	1.000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

				AMOUNTS				
				CAL-AMT	ON-COL			
RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	TARGET RANGE	RATIO	REVIEW CODE
18 Toxaphene						CAS #: 8001-35-2		
7.873	7.874	-0.001	592	0.50000	0.536	80.00- 120.00	100.00	
8.263	8.262	0.001	1368	0.50000	0.546	174.72- 262.07	231.08	
8.761	8.759	0.002	1633	0.50000	0.546	236.49- 354.73	275.84	
9.061	9.061	0.000	2803	0.50000	0.545	369.84- 554.76	473.48	
9.191	9.191	0.000	2027	0.50000	0.564	264.89- 397.34	342.40	
9.330	9.331	-0.001	1339	0.50000	0.572	184.53- 276.79	226.18	
9.803	9.802	0.001	3966	0.50000	0.549	478.36- 717.55	669.93	
10.343	10.342	0.001	1387	0.50000	0.544	178.65- 267.98	234.29	
10.548	10.549	-0.001	870	0.50000	0.514	112.22- 168.33	146.96	
Average of Peak Amounts =				0.54622				

Data File: \\target_server\gg\chem\gc01.i\GC01HF16.b\1HF00260.D
Date : 16-JUN-2014 19:33
Client ID:
Instrument: gc01.i
Sample Info: WG144812-7
Purge Volume: 1.0
Operator: JLP
Column phase: ZB-Multiresidue-1
Column diameter: 0.53



Katahdin Analytical Services 7000035

Data File: 1HF00260.D
Report Date: 24-Jun-2014 15:30

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc01.i\GC01HF16.b\GC01HF16.b\1HF00260.D
Lab Smp Id: WG144812-8
Inj Date : 16-JUN-2014 19:33
Operator : JLP Inst ID: gc01.i
Smp Info : WG144812-8
Misc Info :
Comment :
Method : \\target_server\gg\chem\gc01.i\GC01HF16.b\PEST127.m\PEST127.m
Meth Date : 17-Jun-2014 09:20 jprescott Quant Type: ESTD
Cal Date : 16-JUN-2014 19:33 Cal File: 1HF00260.D
Als bottle: 14 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: Tox.sub
Target Version: 4.12 Sample Matrix: WATER
Processing Host: V200T2

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

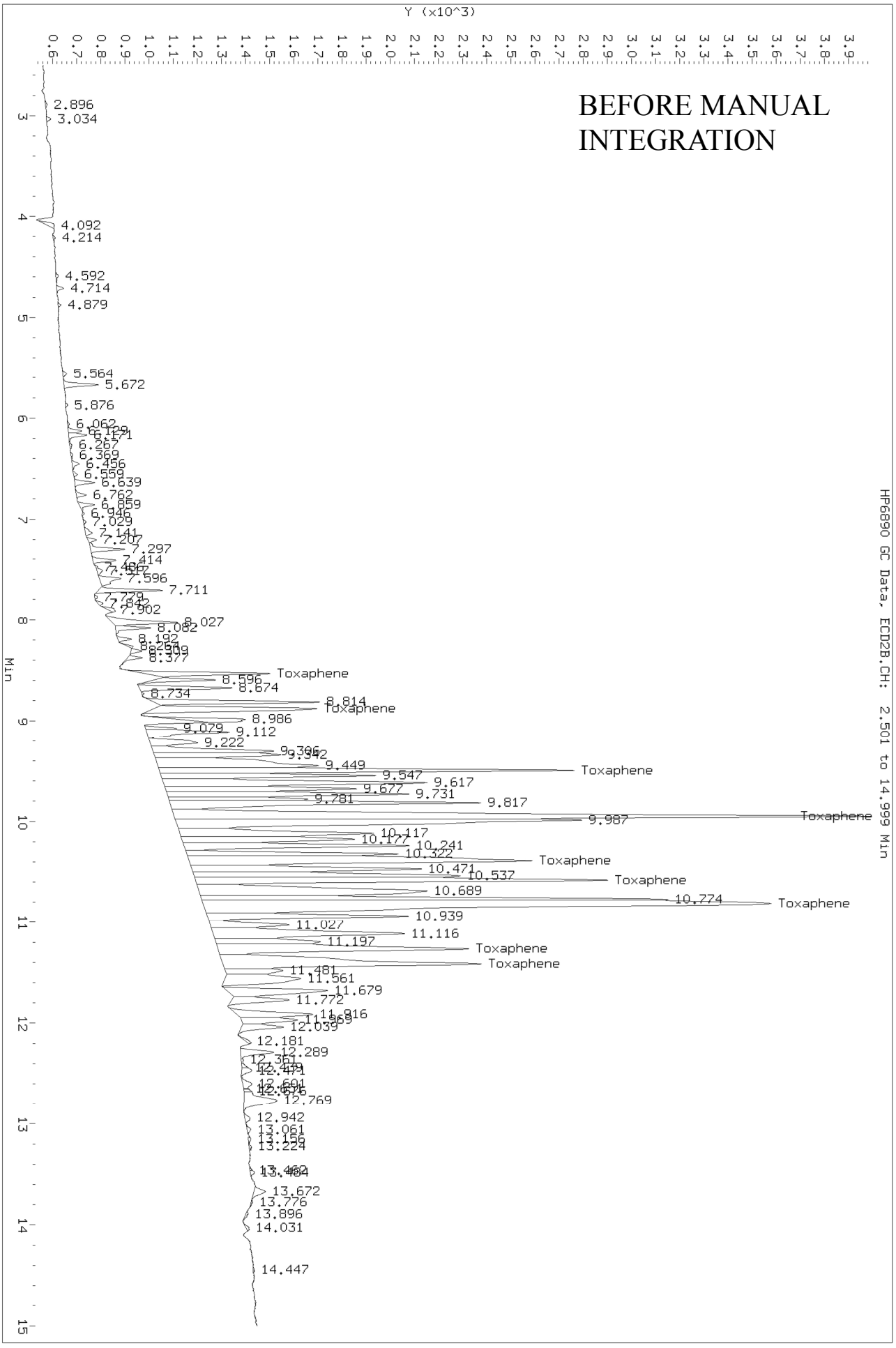
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.01000	Final Volume (L)
Vo	1.000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

				AMOUNTS					
				CAL-AMT	ON-COL				
RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	TARGET RANGE	RATIO	REVIEW CODE	
18 Toxaphene					CAS #: 8001-35-2				
8.532	8.531	0.001	599	0.50000	0.479	80.00- 120.00	100.00(M)	M5	
8.878	8.879	-0.001	740	0.50000	0.470	102.45- 153.68	123.54	M5	
9.495	9.494	0.001	1721	0.50000	0.484	234.51- 351.76	287.31	M5	
9.948	9.948	0.000	2892	0.50000	0.502	352.26- 528.39	482.80	M5	
10.388	10.388	0.000	1423	0.50000	0.477	176.90- 265.35	237.56	M5	
10.580	10.579	0.001	1710	0.50000	0.492	205.44- 308.15	285.48	M5	
10.812	10.816	-0.004	2356	0.50000	0.488	280.59- 420.89	393.32	M5	
11.265	11.264	0.001	1040	0.50000	0.462	118.76- 178.14	173.62	M5	
11.415	11.416	-0.001	1071	0.50000	0.474	127.62- 191.43	178.80	M5	
Average of Peak Amounts =					0.48089				

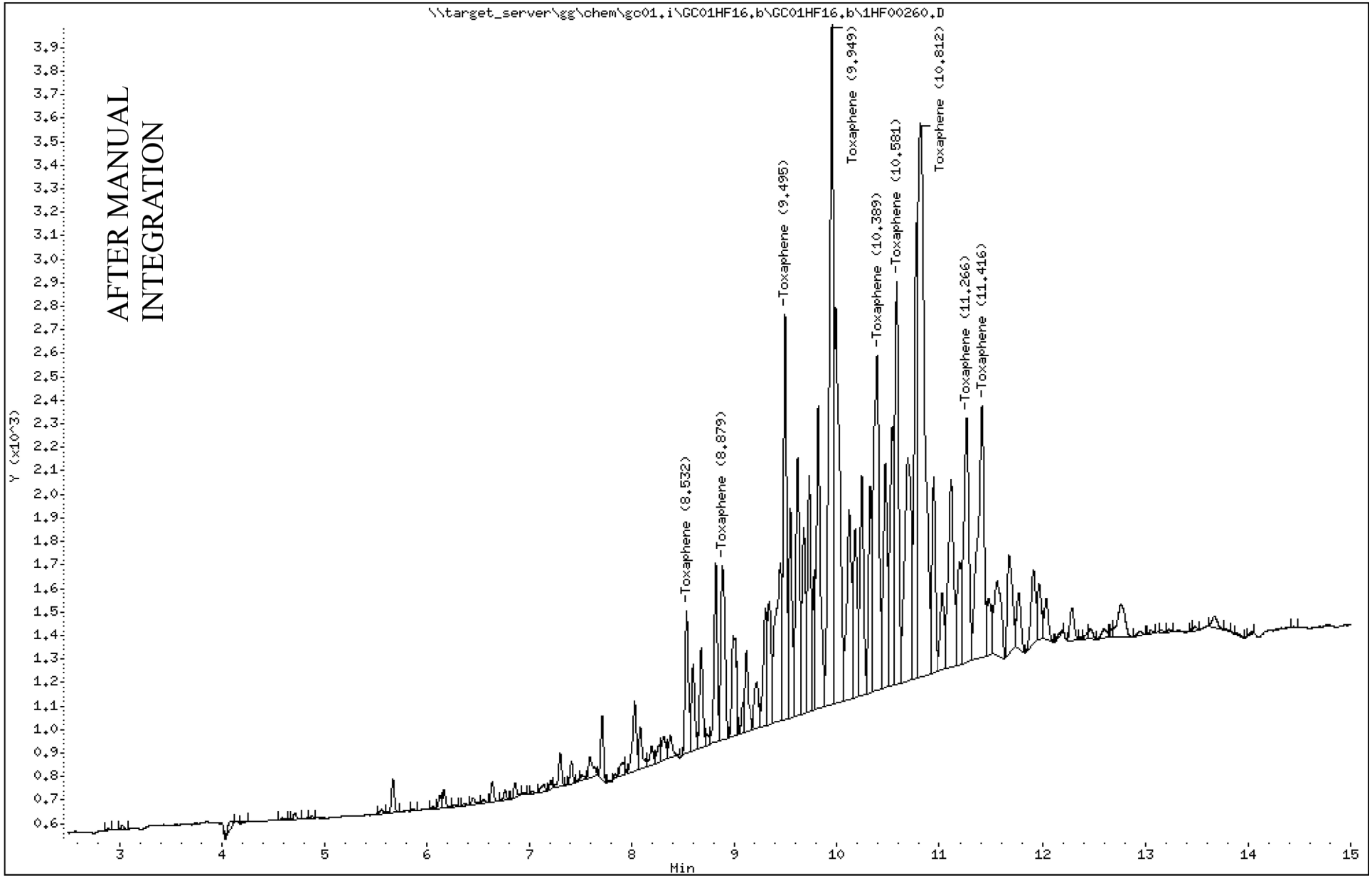
JLP
9:52 am, Jun 26, 2014

QC Flag Legend

M - Compound response manually integrated.


Y (x10^3)
Min
Data File: \\target_server\gg\chem\gc01.i\GC01HF16.b\GC01HF16.b\1HF00260.D
Injection Date: 16-JUN-2014 19:33
Instrument: gc01.i
Client Sample ID:
HP6890 GC Data, ECD2B.CH: 2.501 to 14.999 Min
BEFORE MANUAL INTEGRATION
Toxaphene

Data File: \\target_server\gg\chem\gc01.i\GC01HF16.b\GC01HF16.b\1HF00260.D
Date : 16-JUN-2014 19:33
Client ID:
Instrument: gc01.i
Sample Info: WG144812-8
Purge Volume: 1.0
Operator: JLP
Column phase: ZB-Multiresidue-2
Column diameter: 0.53



Katahdin Analytical Services 7000038

Data File: \\target_server\gg\chem\gc01.i\GC01HF16.b\1HF00261.D
Report Date: 24-Jun-2014 15:30

Katahdin Analytical Services

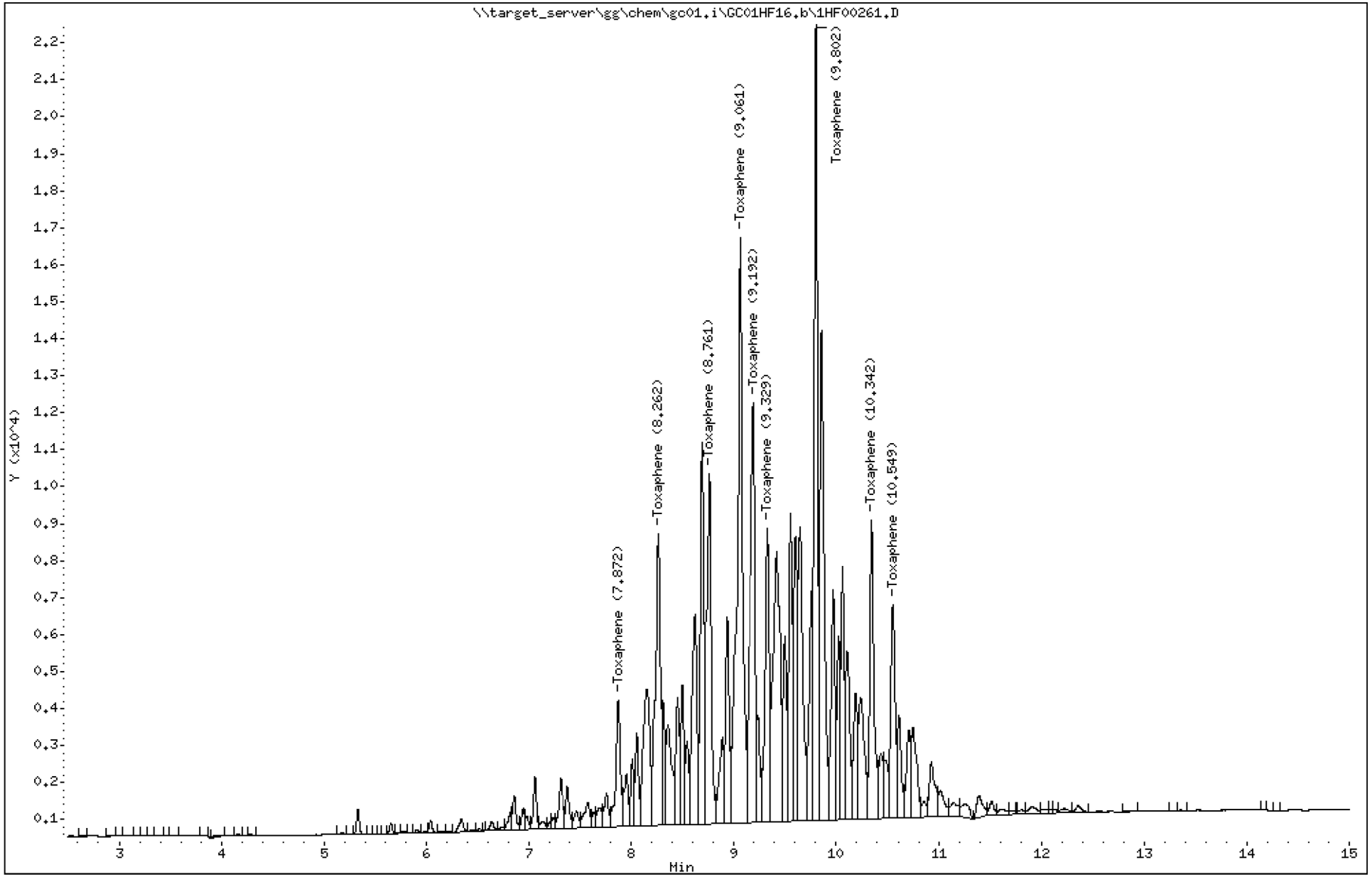
Data file : \\target_server\gg\chem\gc01.i\GC01HF16.b\1HF00261.D
Lab Smp Id: WG144812-9
Inj Date : 16-JUN-2014 19:50
Operator : JLP Inst ID: gc01.i
Smp Info : WG144812-9
Misc Info :
Comment :
Method : \\target_server\gg\chem\gc01.i\GC01HF16.b\PEST127.m
Meth Date : 17-Jun-2014 09:14 kasgc Quant Type: ESTD
Cal Date : 16-JUN-2014 19:50 Cal File: 1HF00261.D
Als bottle: 15 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: Tox.sub
Target Version: 4.12 Sample Matrix: WATER
Processing Host: V200T2

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.01000	Final Volume (L)
Vo	1.000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

				AMOUNTS				
				CAL-AMT	ON-COL			
RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	TARGET RANGE	RATIO	REVIEW CODE
18 Toxaphene						CAS #: 8001-35-2		
7.872	7.874	-0.002	3421	2.50000	2.96	80.00- 120.00	100.00	
8.262	8.262	0.000	7867	2.50000	2.99	174.72- 262.07	229.96	
8.760	8.759	0.001	9455	2.50000	3.00	236.49- 354.73	276.38	
9.060	9.061	-0.001	15833	2.50000	2.94	369.84- 554.76	462.82	
9.192	9.191	0.001	11342	2.50000	3.00	264.89- 397.34	331.54	
9.328	9.331	-0.003	7949	2.50000	3.17	184.53- 276.79	232.36	
9.802	9.802	0.000	21514	2.50000	2.87	478.36- 717.55	628.88	
10.342	10.342	0.000	8072	2.50000	3.00	178.65- 267.98	235.95	
10.548	10.549	-0.001	5761	2.50000	3.18	112.22- 168.33	168.40	
Average of Peak Amounts =				3.01222				

Data File: \\target_server\gg\chem\gc01.i\GC01HF16.b\1HF00261.D
Date : 16-JUN-2014 19:50
Client ID:
Instrument: gc01.i
Sample Info: WG144812-9
Purge Volume: 1.0
Operator: JLP
Column phase: ZB-Multiresidue-1
Column diameter: 0.53



Katahdin Analytical Services 7000040

Data File: 1HF00261.D
Report Date: 24-Jun-2014 15:30

Katahdin Analytical Services

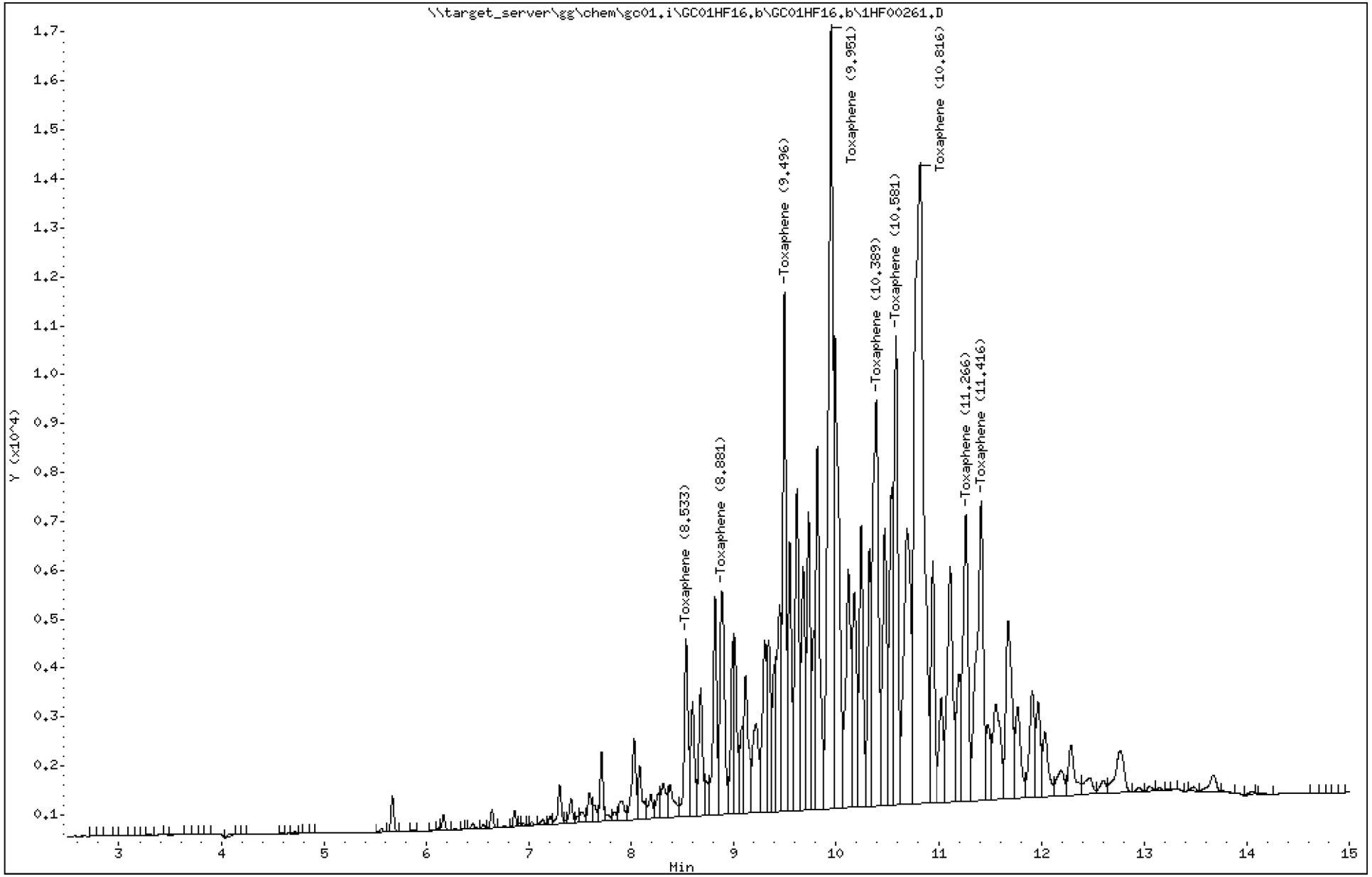
Data file : \\target_server\gg\chem\gc01.i\GC01HF16.b\GC01HF16.b\1HF00261.D
Lab Smp Id: WG144812-10
Inj Date : 16-JUN-2014 19:50
Operator : JLP Inst ID: gc01.i
Smp Info : WG144812-10
Misc Info :
Comment :
Method : \\target_server\gg\chem\gc01.i\GC01HF16.b\PEST127.m\PEST127.m
Meth Date : 17-Jun-2014 09:20 jprescott Quant Type: ESTD
Cal Date : 16-JUN-2014 19:50 Cal File: 1HF00261.D
Als bottle: 15 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: Tox.sub
Target Version: 4.12 Sample Matrix: WATER
Processing Host: V200T2

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.01000	Final Volume (L)
Vo	1.000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)	TARGET RANGE	RATIO	REVIEW CODE
18 Toxaphene					CAS #: 8001-35-2			
8.532	8.531	0.001	3639	2.50000	3.10	80.00- 120.00	100.00	
8.881	8.879	0.002	4576	2.50000	3.10	102.45- 153.68	125.75	
9.496	9.494	0.002	10597	2.50000	3.12	234.51- 351.76	291.21	
9.951	9.948	0.003	16024	2.50000	2.84	352.26- 528.39	440.34	
10.389	10.388	0.001	8305	2.50000	2.93	176.90- 265.35	228.22	
10.581	10.579	0.002	9578	2.50000	2.88	205.44- 308.15	263.20	
10.816	10.816	0.000	13106	2.50000	2.79	280.59- 420.89	360.15	
11.266	11.264	0.002	5859	2.50000	2.74	118.76- 178.14	161.01	
11.416	11.416	0.000	6105	2.50000	2.86	127.62- 191.43	167.77	
Average of Peak Amounts =					2.92889			

Data File: \\target_server\gg\chem\gc01.i\GC01HF16.b\GC01HF16.b\1HF00261.D
Date : 16-JUN-2014 19:50
Client ID:
Instrument: gc01.i
Sample Info: WG144812-10
Purge Volume: 1.0
Operator: JLP
Column phase: ZB-Multiresidue-2
Column diameter: 0.53



Katahdin Analytical Services 7000042

Data File: \\target_server\gg\chem\gc01.i\GC01HF16.b\1HF00262.D
Report Date: 24-Jun-2014 15:30

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc01.i\GC01HF16.b\1HF00262.D
Lab Smp Id: WG144812-11
Inj Date : 16-JUN-2014 20:07
Operator : JLP Inst ID: gc01.i
Smp Info : WG144812-11
Misc Info :
Comment :
Method : \\target_server\gg\chem\gc01.i\GC01HF16.b\PEST127.m
Meth Date : 17-Jun-2014 09:14 kasgc Quant Type: ESTD
Cal Date : 16-JUN-2014 20:07 Cal File: 1HF00262.D
Als bottle: 16 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: Tox.sub
Target Version: 4.12 Sample Matrix: WATER
Processing Host: V200T2

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

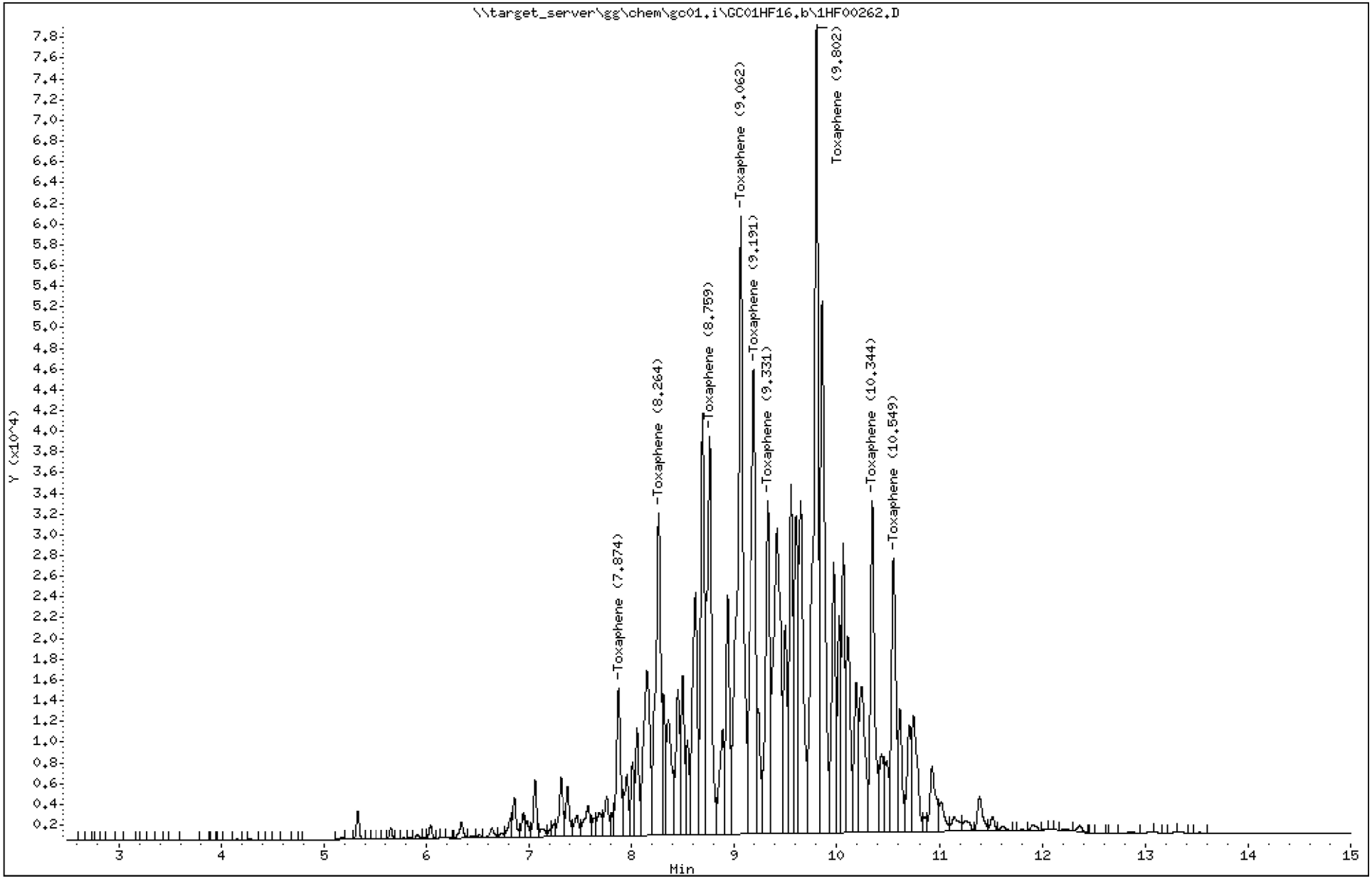
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.01000	Final Volume (L)
Vo	1.000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

				AMOUNTS				
				CAL-AMT	ON-COL			
RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	TARGET RANGE	RATIO	REVIEW CODE
18 Toxaphene					CAS #: 8001-35-2			
7.874	7.874	0.000	14219	10.0000	11.8	80.00- 120.00	100.00(A)	
8.264	8.262	0.002	31048	10.0000	11.4	174.72- 262.07	218.36	
8.759	8.759	0.000	38365	10.0000	11.8	236.49- 354.73	269.82	
9.062	9.061	0.001	59609	10.0000	10.9	369.84- 554.76	419.22	
9.190	9.191	-0.001	44810	10.0000	11.5	264.89- 397.34	315.14	
9.330	9.331	-0.001	32169	10.0000	12.2	184.53- 276.79	226.24	
9.802	9.802	0.000	77991	10.0000	10.3	478.36- 717.55	548.50	
10.344	10.342	0.002	31931	10.0000	11.5	178.65- 267.98	224.57	
10.549	10.549	0.000	26430	10.0000	13.5	112.22- 168.33	185.88	
Average of Peak Amounts =					11.6556			

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.

Data File: \\target_server\gg\chem\gc01.i\GC01HF16.b\1HF00262.D
Date : 16-JUN-2014 20:07
Client ID:
Instrument: gc01.i
Sample Info: WG144812-11
Purge Volume: 1.0
Operator: JLP
Column phase: ZB-Multiresidue-1
Column diameter: 0.53



Katahdin Analytical Services 7000044

Data File: 1HF00262.D
Report Date: 24-Jun-2014 15:30

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc01.i\GC01HF16.b\GC01HF16.b\1HF00262.D
Lab Smp Id: WG144812-12
Inj Date : 16-JUN-2014 20:07
Operator : JLP Inst ID: gc01.i
Smp Info : WG144812-12
Misc Info :
Comment :
Method : \\target_server\gg\chem\gc01.i\GC01HF16.b\PEST127.m\PEST127.m
Meth Date : 17-Jun-2014 09:20 jprescott Quant Type: ESTD
Cal Date : 16-JUN-2014 20:07 Cal File: 1HF00262.D
Als bottle: 16 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: Tox.sub
Target Version: 4.12 Sample Matrix: WATER
Processing Host: V200T2

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

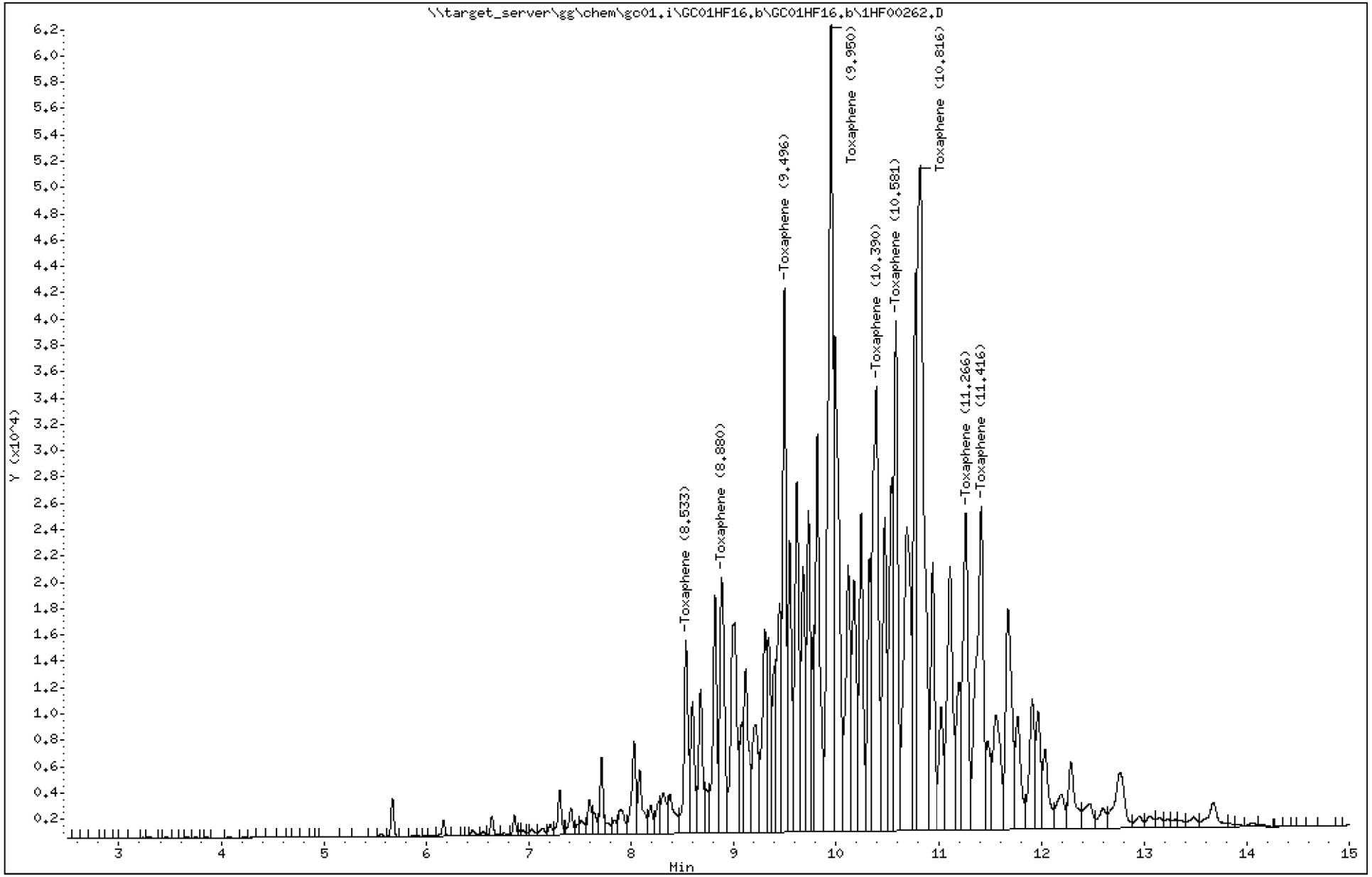
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.01000	Final Volume (L)
Vo	1.000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

				AMOUNTS				
				CAL-AMT	ON-COL			
RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	TARGET RANGE	RATIO	REVIEW CODE
18 Toxaphene					CAS #: 8001-35-2			
8.532	8.531	0.001	14643	10.0000	12.0	80.00- 120.00	100.00(A)	
8.879	8.879	0.000	19388	10.0000	12.5	102.45- 153.68	132.40	
9.496	9.494	0.002	41270	10.0000	11.7	234.51- 351.76	281.84	
9.949	9.948	0.001	61289	10.0000	10.7	352.26- 528.39	418.55	
10.389	10.388	0.001	33803	10.0000	11.6	176.90- 265.35	230.85	
10.581	10.579	0.002	38684	10.0000	11.3	205.44- 308.15	264.18	
10.816	10.816	0.000	50482	10.0000	10.6	280.59- 420.89	344.75	
11.266	11.264	0.002	24045	10.0000	11.0	118.76- 178.14	164.21	
11.416	11.416	0.000	24539	10.0000	11.2	127.62- 191.43	167.58	
Average of Peak Amounts =					11.4000			

QC Flag Legend

A - Target compound detected but, quantitated amount
exceeded maximum amount.

Data File: \\target_server\gg\chem\gc01.i\GC01HF16.b\GC01HF16.b\1HF00262.D
Date : 16-JUN-2014 20:07
Client ID:
Instrument: gc01.i
Sample Info: WG144812-12
Purge Volume: 1.0
Operator: JLP
Column phase: ZB-Multiresidue-2
Column diameter: 0.53



Katahdin Analytical Services 7000046

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: WE53-7
Project : NCTAMSLANT Cutler CTO WE53
Instrument ID: GC01
Lab File IDs : 1HG00244.D1HG00245.D1HG00246.D 1HG00255.D1HG00253.D1HG00248.D
Column ID: A
Calibration Date(s): 16-JUN-14 16:39 21-JUL-14 12:34

	Level 1 0.0050000	Level 2 0.0100000	Level 3 0.0250000	Level 4 0.0500000	Level 5 0.1000000	Level 6 0.2500000	Crv New	b	m1	m2	%RSD	Max %RSD	
alpha-BHC	240000	258600	275560	272560	298960	251204	AVG		266147		7.82811	20.00000	O
gamma-BHC	222600	236500	253480	248420	273290	224324	AVG		243102		7.94199	20.00000	O
beta-BHC	101200	104900	103720	100600	112850	98936	AVG		103701		4.79678	20.00000	O
delta-BHC	188800	205000	219280	222580	240240	211144	AVG		214507		8.10862	20.00000	O
Heptachlor	219200	232800	239840	241800	243690	209032	AVG		231060		6.06172	20.00000	O
Aldrin	194200	214300	225520	220400	234950	212604	AVG		216996		6.36160	20.00000	O
Heptachlor Epoxide	186400	199800	202720	194080	201540	181984	AVG		194421		4.41033	20.00000	O
gamma-Chlordane	184000	198900	207240	198280	219050	205524	AVG		202166		5.75941	20.00000	O
alpha-Chlordane	180200	193500	197600	191720	206190	193216	AVG		193738		4.36544	20.00000	O
4,4'-DDE	174400	191700	201280	196440	219980	202380	AVG		197697		7.54204	20.00000	O
Endosulfan I	168600	182300	184400	179960	188640	170940	AVG		179140		4.37347	20.00000	O
Dieldrin	176600	188100	201280	194960	207220	188008	AVG		192695		5.64656	20.00000	O
Endrin	155600	163600	175200	165140	184340	167404	AVG		168547		5.92529	20.00000	O
4,4'-DDD	139600	152400	160400	155840	174150	164404	AVG		157799		7.40087	20.00000	O
Endosulfan II	151800	160100	163520	159380	171200	160204	AVG		161034		3.91854	20.00000	O
4,4'-DDT	147400	156400	165360	159560	178810	171300	AVG		163138		6.84261	20.00000	O
Endrin Aldehyde	127600	134200	135920	129800	137060	130224	AVG		132467		2.86175	20.00000	O
Methoxychlor	79600	82600	83280	76500	84940	82408	AVG		81555		3.70411	20.00000	O
Endosulfan sulfate	127800	130600	132960	125180	138610	131672	AVG		131137		3.51714	20.00000	O
Endrin Ketone	152800	156900	162120	149900	167120	156788	AVG		157605		3.95777	20.00000	O
Tetrachloro-m-Xylene	176000	181400	179800	177200	188990	175148	AVG		179756		2.83495	20.00000	
Decachlorobiphenyl	112200	112500	109800	96940	111630	105804	AVG		108146		5.56846	20.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: WE53-7
Project : NCTAMSLANT Cutler CTO WE53
Instrument ID: GC01
Lab File IDs : 1HG00244.D1HG00245.D1HG00246.D 1HG00255.D1HG00253.D1HG00248.D
Column ID: B
Calibration Date(s): 16-JUN-14 16:39 21-JUL-14 12:34

	0.0050000 Level 1	0.0100000 Level 2	0.0250000 Level 3	0.0500000 Level 4	0.1000000 Level 5	0.2500000 Level 6	New Crv	b	m1	m2	%RSD	Max %RSD	
alpha-BHC	355200	349000	360960	348120	373460	289528	AVG		346045		8.44006	20.00000	O
gamma-BHC	328200	338300	340040	321780	340680	291904	AVG		326817		5.71635	20.00000	O
beta-BHC	140400	143300	139520	131480	142560	133324	AVG		138431		3.54213	20.00000	O
delta-BHC	273400	291400	295960	264920	299610	271132	AVG		282737		5.18338	20.00000	O
Heptachlor	277000	283500	286120	258260	272490	235400	AVG		268795		7.10487	20.00000	O
Aldrin	264600	280800	279880	251280	281950	252680	AVG		268532		5.32852	20.00000	O
Heptachlor Epoxide	235400	251500	246760	210800	237980	208172	AVG		231769		7.86715	20.00000	D
gamma-Chlordane	237600	253600	249920	215140	250330	234860	AVG		240242		6.00299	20.00000	O
alpha-Chlordane	230800	238800	236280	203620	239050	222452	AVG		228500		5.99674	20.00000	O
4,4'-DDE	242000	253900	251680	216040	251160	231996	AVG		241129		6.11946	20.00000	O
Endosulfan I	212200	231300	226920	185320	219580	196124	AVG		211907		8.48486	20.00000	O
Dieldrin	221200	238700	243720	198660	240670	220624	AVG		227262		7.57130	20.00000	O
Endrin	178400	187200	190880	156980	191620	174364	AVG		179907		7.32966	20.00000	O
4,4'-DDD	184600	187200	196920	152940	200910	186516	AVG		184848		9.14960	20.00000	O
Endosulfan II	191000	193600	196640	156280	197730	178636	AVG		185648		8.58584	20.00000	O
4,4'-DDT	175400	180700	191800	148600	199400	192612	AVG		181419		10.07435	20.00000	O
Endrin Aldehyde	156200	156900	158600	121540	161730	147904	AVG		150479		9.90413	20.00000	O
Methoxychlor	84000	85000	86760	69800	88040	82516	AVG		82686		7.99339	20.00000	O
Endosulfan sulfate	150000	148600	156280	123480	159530	148932	AVG		147804		8.59928	20.00000	O
Endrin Ketone	145800	158400	165280	134560	164400	155404	AVG		153974		7.69483	20.00000	D
Tetrachloro-m-Xylene	244800	250000	240080	222540	236910	217440	AVG		235295		5.42128	20.00000	
Decachlorobiphenyl	111000	113900	107720	97000	106710	105272	AVG		106934		5.40732	20.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Report Date: 21-Jul-2014 13:59

Calibration History

Method : \\target_server\gg\chem\gc01.i\GC01HG21.b\PEST135.m\PEST135.m
Start Cal Date: 16-JUN-2014 16:39
End Cal Date : 21-JUL-2014 12:34
Last Cal Level: 6
Last Cal Type : Continuing Calibration

Initial Calibration

Injection Date	Sublist	Calibration File
Cal Level: 1 , Cal Amount: 0.00500		
11-JUL-2014 13:38	ar1660	1HG00244.D
02-JUL-2014 15:24	TC	1HG00046.D
16-JUN-2014 18:58	Tox	1HF00258.D
21-JUL-2014 11:24	cv	1HG00441.D
Cal Level: 2 , Cal Amount: 0.01000		
11-JUL-2014 13:55	ar1660	1HG00245.D
02-JUL-2014 15:42	TC	1HG00047.D
16-JUN-2014 19:15	Tox	1HF00259.D
21-JUL-2014 11:42	cv	1HG00442.D
Cal Level: 3 , Cal Amount: 0.02500		
11-JUL-2014 14:13	ar1660	1HG00246.D
02-JUL-2014 15:59	TC	1HG00048.D
16-JUN-2014 19:33	Tox	1HF00260.D
21-JUL-2014 11:59	cv	1HG00443.D
Cal Level: 4 , Cal Amount: 0.05000		
11-JUL-2014 16:50	AR1232	1HG00255.D
11-JUL-2014 16:32	AR1221	1HG00254.D
11-JUL-2014 15:57	AR1248	1HG00252.D
11-JUL-2014 15:40	AR1242	1HG00251.D
11-JUL-2014 13:20	ar1660	1HG00243.D
02-JUL-2014 15:05	TC	1HG00045.D
16-JUN-2014 18:40	Tox	1HF00257.D
21-JUL-2014 10:59	cv	1HG00440.D
Cal Level: 5 , Cal Amount: 0.10000		
11-JUL-2014 16:15	AR1254	1HG00253.D
11-JUL-2014 14:30	ar1660	1HG00247.D
02-JUL-2014 16:16	TC	1HG00049.D
16-JUN-2014 19:50	Tox	1HF00261.D
21-JUL-2014 12:16	cv	1HG00444.D
Cal Level: 6 , Cal Amount: 0.25000		

11-JUL-2014 14:48	ar1660	1HG00248.D
02-JUL-2014 16:34	TC	1HG00050.D
16-JUN-2014 20:07	Tox	1HF00262.D
21-JUL-2014 12:34	cv	1HG00445.D

Continuing Calibration
Ccal Level Mode: BY SAMPLE

21-JUL-2014 13:09	Tox	1HG00447.D
21-JUL-2014 10:59	cv	1HG00440.D

Report Date: 21-Jul-2014 13:59

Calibration History

Method : \\target_server\gg\chem\gc01.i\GC01HG21.b\PEST135.m
Start Cal Date: 16-JUN-2014 16:39
End Cal Date : 21-JUL-2014 12:34
Last Cal Level: 6
Last Cal Type : Continuing Calibration

Initial Calibration

Injection Date	Sublist	Calibration File
Cal Level: 1 , Cal Amount: 0.00500		
11-JUL-2014 13:38	ar1660	1HG00244.D
02-JUL-2014 15:24	TC	1HG00046.D
16-JUN-2014 18:58	Tox	1HF00258.D
21-JUL-2014 11:24	cv	1HG00441.D
Cal Level: 2 , Cal Amount: 0.01000		
11-JUL-2014 13:55	ar1660	1HG00245.D
02-JUL-2014 15:42	TC	1HG00047.D
16-JUN-2014 19:15	Tox	1HF00259.D
21-JUL-2014 11:42	cv	1HG00442.D
Cal Level: 3 , Cal Amount: 0.02500		
11-JUL-2014 14:13	ar1660	1HG00246.D
02-JUL-2014 15:59	TC	1HG00048.D
16-JUN-2014 19:33	Tox	1HF00260.D
21-JUL-2014 11:59	cv	1HG00443.D
Cal Level: 4 , Cal Amount: 0.05000		
11-JUL-2014 16:50	AR1232	1HG00255.D
11-JUL-2014 16:32	AR1221	1HG00254.D
11-JUL-2014 15:57	AR1248	1HG00252.D
11-JUL-2014 15:40	AR1242	1HG00251.D
11-JUL-2014 13:20	ar1660	1HG00243.D
02-JUL-2014 15:05	TC	1HG00045.D
16-JUN-2014 18:40	Tox	1HF00257.D
21-JUL-2014 10:59	cv	1HG00440.D
Cal Level: 5 , Cal Amount: 0.10000		
11-JUL-2014 16:15	AR1254	1HG00253.D
11-JUL-2014 14:30	ar1660	1HG00247.D
02-JUL-2014 16:16	TC	1HG00049.D
16-JUN-2014 19:50	Tox	1HF00261.D
21-JUL-2014 12:16	cv	1HG00444.D
Cal Level: 6 , Cal Amount: 0.25000		

11-JUL-2014 14:48	ar1660	1HG00248.D
02-JUL-2014 16:34	TC	1HG00050.D
16-JUN-2014 20:07	Tox	1HF00262.D
21-JUL-2014 12:34	cv	1HG00445.D

Continuing Calibration
Ccal Level Mode: BY SAMPLE

21-JUL-2014 13:09	Tox	1HG00447.D
21-JUL-2014 10:59	cv	1HG00440.D

Data File: \\target_server\gg\chem\gc01.i\GC01HG21.b\1HG00446.D
Report Date: 21-Jul-2014 14:00

Katahdin Analytical Services

RECOVERY REPORT

Client Name: Client SDG: SDGa00508
Sample Matrix: LIQUID Fraction: PESTICIDE
Lab Smp Id: WG146672-15
Level: LOW Operator: JLP
Data Type: GC MULTI COMP SampleType: LCS
SpikeList File: IND.spk Quant Type: ESTD
Sublist File: IND.sub
Method File: \\target_server\gg\chem\gc01.i\GC01HG21.b\PEST135.m
Misc Info: WG146672,WG146672,WG146672-3

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
5 alpha-BHC	0.0500	0.0535	107.05	80-120
6 gamma-BHC	0.0500	0.0529	105.77	80-120
7 beta-BHC	0.0500	0.0541	108.21	80-120
8 delta-BHC	0.0500	0.0538	107.72	80-120
9 Heptachlor	0.0500	0.0531	106.13	80-120
10 Aldrin	0.0500	0.0530	105.94	80-120
13 Heptachlor Epoxide	0.0500	0.0523	104.67	80-120
15 gamma-Chlordane	0.0500	0.0529	105.74	80-120
17 alpha-Chlordane	0.0500	0.0527	105.46	80-120
19 4,4'-DDE	0.0500	0.0540	107.90	80-120
20 Endosulfan I	0.0500	0.0501	100.18	80-120
21 Dieldrin	0.0500	0.0524	104.90	80-120
23 Endrin	0.0500	0.0525	105.04	80-120
24 4,4'-DDD	0.0500	0.0515	102.93	80-120
26 Endosulfan II	0.0500	0.0511	102.16	80-120
27 4,4'-DDT	0.0500	0.0519	103.76	80-120
28 Endrin Aldehyde	0.0500	0.0522	104.42	80-120
29 Methoxychlor	0.0500	0.0502	100.35	80-120
32 Endosulfan sulfate	0.0500	0.0523	104.65	80-120
33 Endrin Ketone	0.0500	0.0506	101.25	80-120

Data File: 1HG00446.D
Report Date: 21-Jul-2014 14:00

Katahdin Analytical Services

RECOVERY REPORT

Client Name: Client SDG: SDGa00508
Sample Matrix: LIQUID Fraction: PESTICIDE
Lab Smp Id: WG146672-15
Level: LOW Operator: JLP
Data Type: GC MULTI COMP SampleType: LCS
SpikeList File: IND.spk Quant Type: ESTD
Sublist File: IND.sub
Method File: \\target_server\gg\chem\gc01.i\GC01HG21.b\PEST135.m\PEST135.m
Misc Info: WG146672,WG146672,WG146672-3

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
5 alpha-BHC	0.0500	0.0536	107.17	80-120
6 gamma-BHC	0.0500	0.0512	102.43	80-120
7 beta-BHC	0.0500	0.0529	105.84	80-120
8 delta-BHC	0.0500	0.0540	108.08	80-120
9 Heptachlor	0.0500	0.0527	105.47	80-120
10 Aldrin	0.0500	0.0517	103.47	80-120
13 Heptachlor Epoxide	0.0500	0.0532	106.49	80-120
15 gamma-Chlordane	0.0500	0.0522	104.44	80-120
17 alpha-Chlordane	0.0500	0.0525	104.95	80-120
19 4,4'-DDE	0.0500	0.0531	106.27	80-120
20 Endosulfan I	0.0500	0.0522	104.45	80-120
21 Dieldrin	0.0500	0.0537	107.34	80-120
23 Endrin	0.0500	0.0536	107.23	80-120
24 4,4'-DDD	0.0500	0.0531	106.22	80-120
26 Endosulfan II	0.0500	0.0516	103.25	80-120
27 4,4'-DDT	0.0500	0.0540	108.00	80-120
28 Endrin Aldehyde	0.0500	0.0540	108.08	80-120
29 Methoxychlor	0.0500	0.0526	105.31	80-120
32 Endosulfan sulfate	0.0500	0.0543	108.58	80-120
33 Endrin Ketone	0.0500	0.0506	101.21	80-120

Form 7D

Pesticide Calibration Verification Summary

Lab ID: WG146672-1
Client ID: Breakdown Evaluation
Init. Calib. Date(s): 16-JUN-14 -21-JUL-14
Lab File ID: 1HG00439.D

Analysis Date: 21-JUL-14
Report Date: 22-JUL-14
SDG: WE53-7
Column ID: A

Lab Sample ID	Filename	% DDT Breakdown	% Endrin Breakdown
WG146672-1	1HG00439.D	1.03	1.46

QC Limits:

4,4'-DDT breakdown must be less than or equal to 15.0%

Endrin breakdown must be less than or equal to 15.0%

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://www.katahdinlab.com

Data File: \\target_server\gg\chem\gc01.i\GC01HG21.b\1HG00439.D
Report Date: 22-Jul-2014 06:32

Katahdin Analytical Services

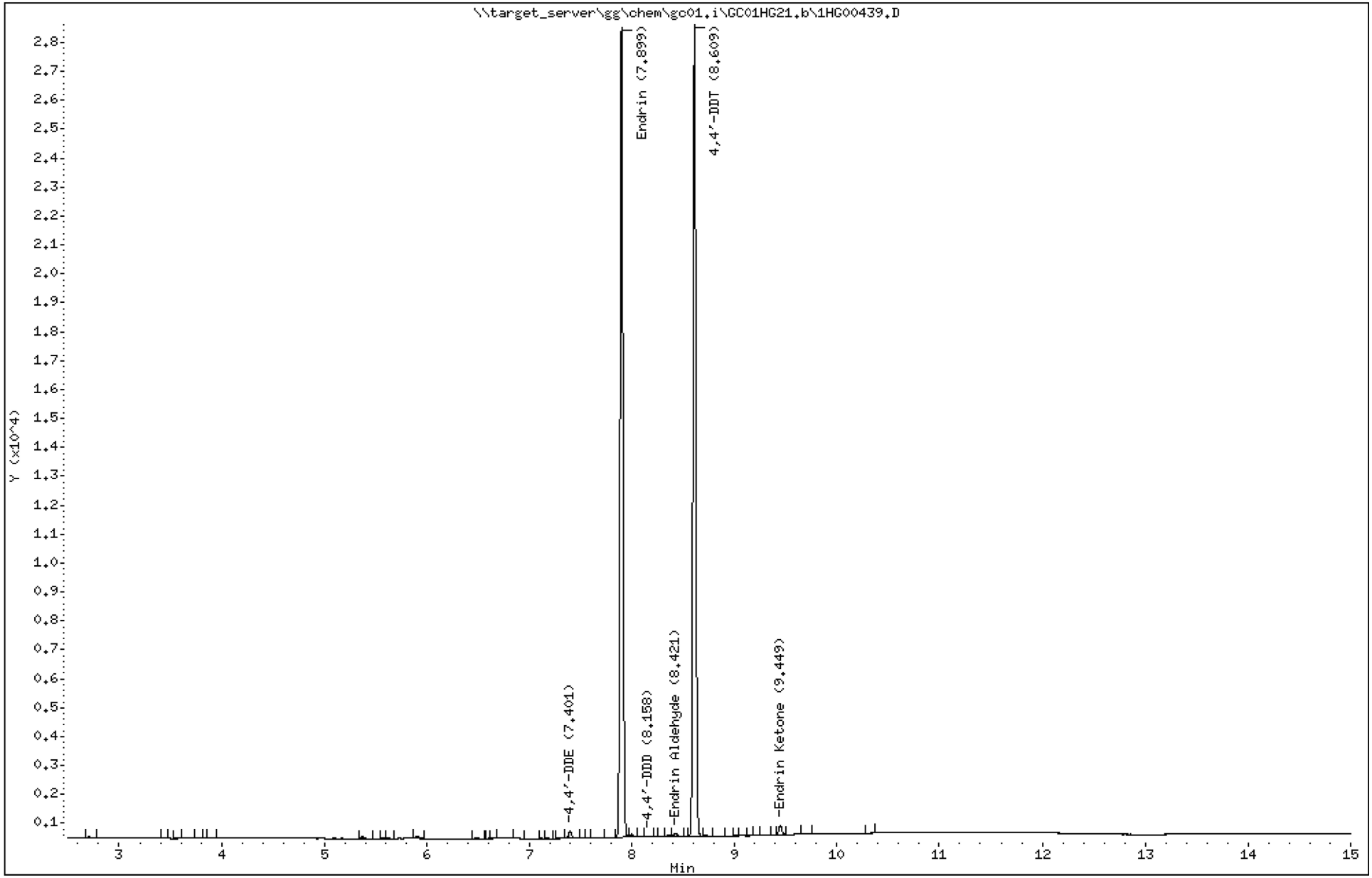
Data file : \\target_server\gg\chem\gc01.i\GC01HG21.b\1HG00439.D
Lab Smp Id: WG146672-1
Inj Date : 21-JUL-2014 10:42
Operator : JLP Inst ID: gc01.i
Smp Info : WG146672-1,WE53-7
Misc Info : WG146672,WG146672,WG146672-3,SH4521-24
Comment :
Method : \\target_server\gg\chem\gc01.i\GC01HG21.b\PEST135.m
Meth Date : 22-Jul-2014 06:18 gc01.i Quant Type: ESTD
Cal Date : 11-JUL-2014 14:48 Cal File: 1HG00248.D
Als bottle: 2
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: eval.sub
Target Version: 4.12
Processing Host: V200T2

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.01000	Final Volume (L)
Vo	1.000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
19 4,4'-DDE	7.401	7.396	0.005	261	0.00132	0.0132	
23 Endrin	7.899	7.895	0.004	28014	0.16621	1.66	
24 4,4'-DDD	8.157	8.148	0.009	31	2.e-004	0.00196	
27 4,4'-DDT	8.609	8.603	0.006	28054	0.17196	1.72	
28 Endrin Aldehyde	8.421	8.415	0.006	95	7e-004	0.00717	
33 Endrin Ketone	9.449	9.445	0.004	321	0.00204	0.0204	

Data File: \\target_server\gg\chem\gc01.i\GC01HG21.b\1HG00439.D
Date : 21-JUL-2014 10:42
Client ID:
Instrument: gc01.i
Sample Info: WG146672-1,WE53-7
Purge Volume: 1.0
Operator: JLP
Column phase: ZB-Multiresidue-1
Column diameter: 0.53



Katahdin Analytical Services 7000057

Form 7D

Pesticide Calibration Verification Summary

Lab ID: WG146672-2
Client ID: Breakdown Evaluation
Init. Calib. Date(s): 16-JUN-14 -21-JUL-14
Lab File ID: 1HG00439.D

Analysis Date: 21-JUL-14
Report Date: 22-JUL-14
SDG: WE53-7
Column ID: B

Lab Sample ID	Filename	% DDT Breakdown	% Endrin Breakdown
WG146672-2	1HG00439.D	1.61	1.63

QC Limits:

4,4'-DDT breakdown must be less than or equal to 15.0%

Endrin breakdown must be less than or equal to 15.0%

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Data File: 1HG00439.D
Report Date: 22-Jul-2014 06:36

Katahdin Analytical Services

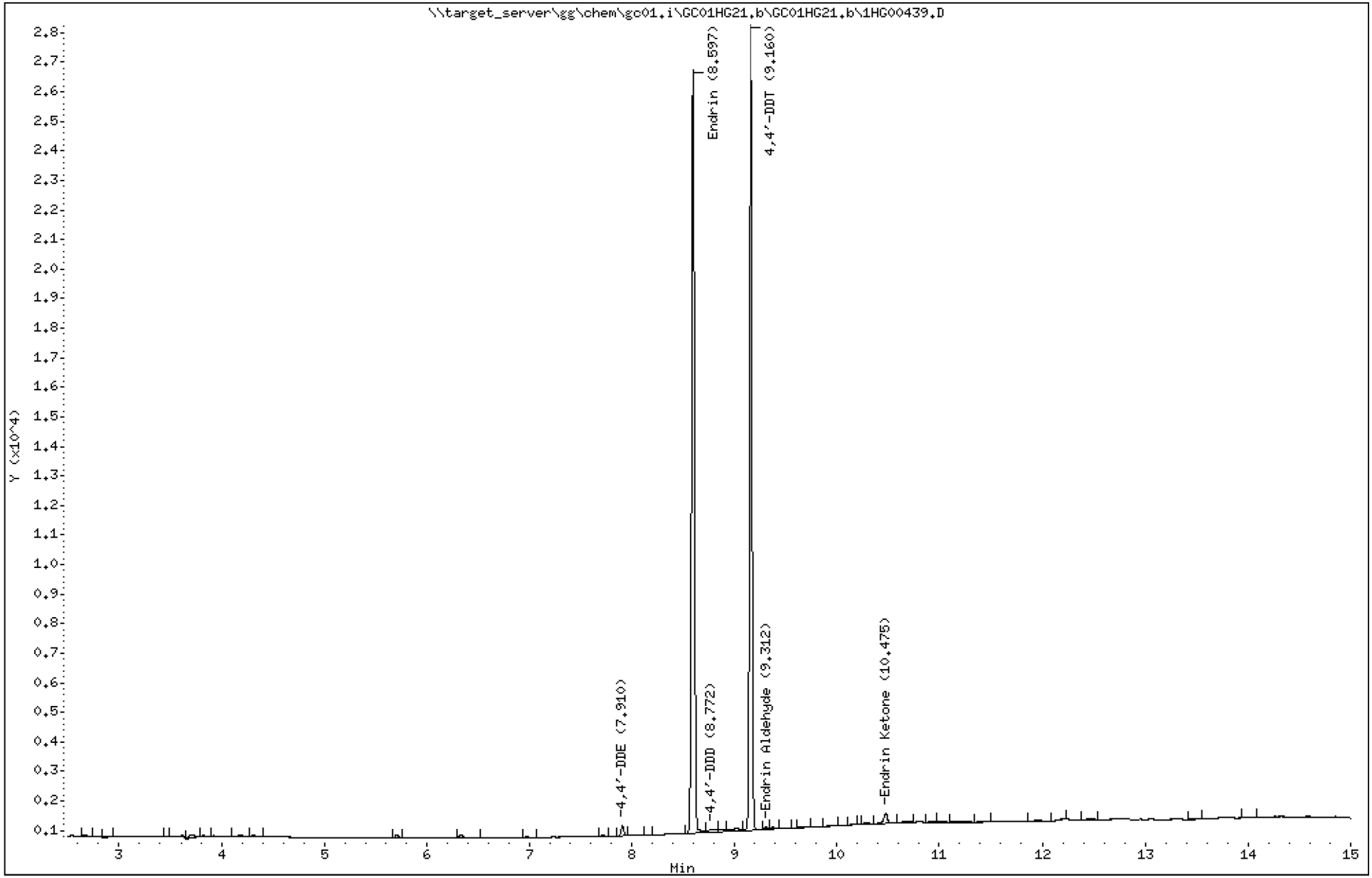
Data file : \\target_server\gg\chem\gc01.i\GC01HG21.b\GC01HG21.b\1HG00439.D
Lab Smp Id: WG146672-2
Inj Date : 21-JUL-2014 10:42
Operator : JLP Inst ID: gc01.i
Smp Info : WG146672-2,WE53-7
Misc Info : WG146672,WG146672,WG146672-4,SH4521-24
Comment :
Method : \\target_server\gg\chem\gc01.i\GC01HG21.b\PEST135.m\PEST135.m
Meth Date : 22-Jul-2014 06:19 gc01.i Quant Type: ESTD
Cal Date : 11-JUL-2014 14:48 Cal File: 1HG00248.D
Als bottle: 2
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: eval.sub
Target Version: 4.12
Processing Host: V200T2

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.01000	Final Volume (L)
Vo	1.000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
19 4,4'-DDE	7.909	7.905	0.004	339	0.00141	0.0140	
23 Endrin	8.596	8.592	0.004	25829	0.14357	1.44	
24 4,4'-DDD	8.771	8.762	0.009	106	6e-004	0.00573	
27 4,4'-DDT	9.159	9.155	0.004	27256	0.15024	1.50	
28 Endrin Aldehyde	9.311	9.305	0.006	83	6e-004	0.00552	
33 Endrin Ketone	10.474	10.470	0.004	345	0.00224	0.0224	

Data File: \\target_server\gg\chem\gc01.i\GC01HG21.b\GC01HG21.b\1HG00439.D
Date : 21-JUL-2014 10:42
Client ID:
Instrument: gc01.i
Sample Info: WG146672-2,WE53-7
Purge Volume: 1.0
Operator: JLP
Column phase: ZB-Multiresidue-2
Column diameter: 0.53



Katahdin Analytical Services 7000060

Data File: \\target_server\gg\chem\gc01.i\GC01HG21.b\1HG00440.D
Report Date: 22-Jul-2014 06:32

Katahdin Analytical Services

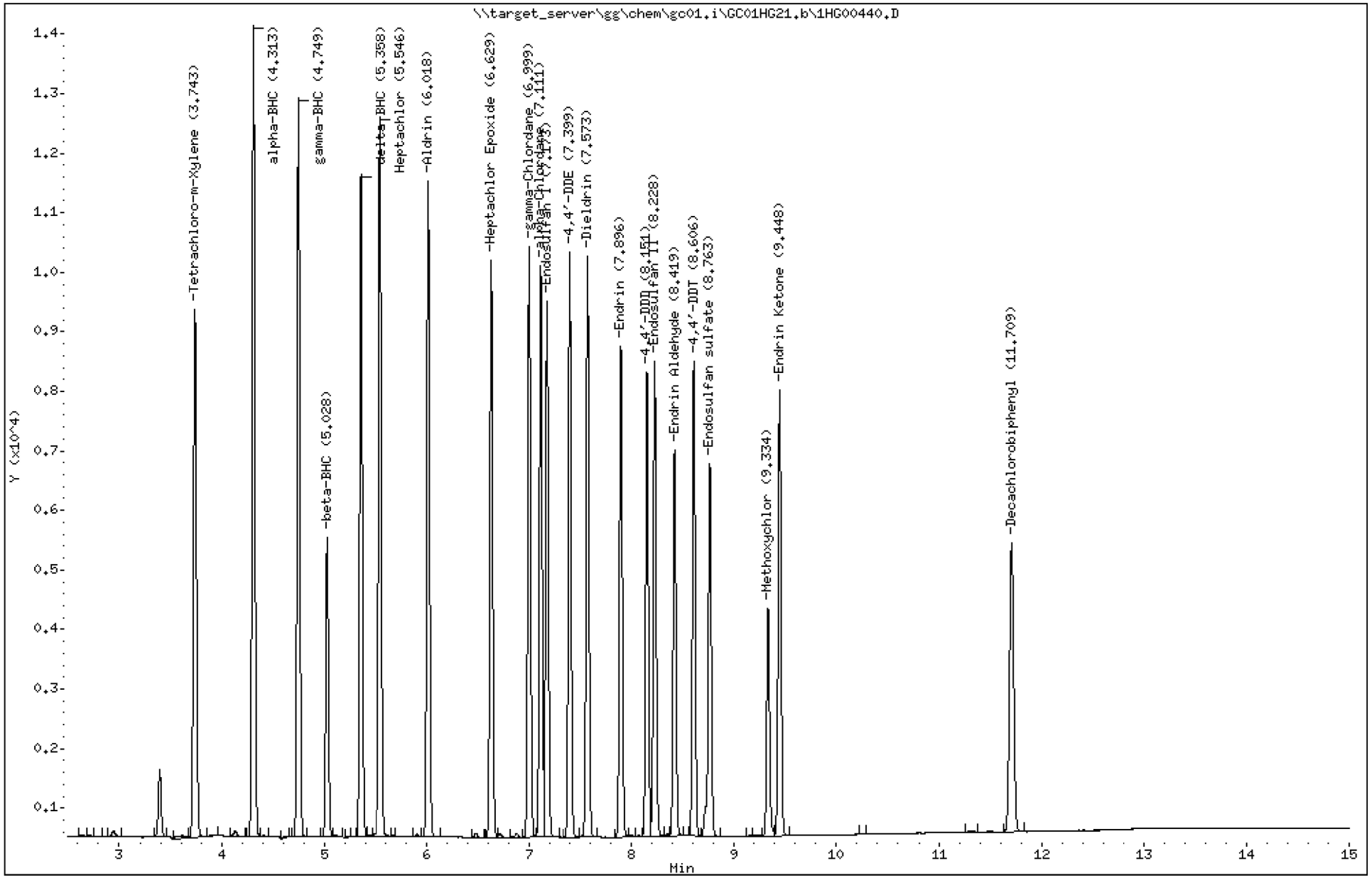
Data file : \\target_server\gg\chem\gc01.i\GC01HG21.b\1HG00440.D
Lab Smp Id: WG146672-3
Inj Date : 21-JUL-2014 10:59
Operator : JLP Inst ID: gc01.i
Smp Info : WG146672-3
Misc Info :
Comment :
Method : \\target_server\gg\chem\gc01.i\GC01HG21.b\PEST135.m
Meth Date : 22-Jul-2014 06:18 gc01.i Quant Type: ESTD
Cal Date : 11-JUL-2014 16:50 Cal File: 1HG00255.D
Als bottle: 3 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: cv.sub
Target Version: 4.12
Processing Host: V200T2

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.01000	Final Volume (L)
Vo	1.000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
$ 4 Tetrachloro-m-Xylene	3.742	3.740	0.002	8860	0.05000	0.0471	
5 alpha-BHC	4.312	4.310	0.002	13628	0.05000	0.0520	
6 gamma-BHC	4.749	4.745	0.004	12421	0.05000	0.0518	
7 beta-BHC	5.027	5.025	0.002	5030	0.05000	0.0473	
8 delta-BHC	5.357	5.355	0.002	11129	0.05000	0.0668	
9 Heptachlor	5.546	5.543	0.003	12090	0.05000	0.0491	
10 Aldrin	6.017	6.013	0.004	11020	0.05000	0.0497	
13 Heptachlor Epoxide	6.629	6.626	0.003	9704	0.05000	0.0485	
15 gamma-Chlordane	6.999	6.996	0.003	9914	0.05000	0.0489	
17 alpha-Chlordane	7.111	7.108	0.003	9586	0.05000	0.0497	
19 4,4'-DDE	7.399	7.396	0.003	9822	0.05000	0.0479	
20 Endosulfan I	7.172	7.170	0.002	8998	0.05000	0.0496	
21 Dieldrin	7.572	7.570	0.002	9748	0.05000	0.0494	
23 Endrin	7.896	7.895	0.001	8257	0.05000	0.0476	
24 4,4'-DDD	8.151	8.148	0.003	7792	0.05000	0.0490	
26 Endosulfan II	8.227	8.223	0.004	7969	0.05000	0.0493	
27 4,4'-DDT	8.606	8.603	0.003	7978	0.05000	0.0512	
28 Endrin Aldehyde	8.419	8.415	0.004	6490	0.05000	0.0492	
29 Methoxychlor	9.334	9.333	0.001	3825	0.05000	0.0467	
32 Endosulfan sulfate	8.762	8.760	0.002	6259	0.05000	0.0610	
33 Endrin Ketone	9.447	9.445	0.002	7495	0.05000	0.0579	
$ 34 Decachlorobiphenyl	11.709	11.706	0.003	4847	0.05000	0.0446	

Data File: \\target_server\gg\chem\gc01.i\GC01HG21.b\1HG00440.D
Date : 21-JUL-2014 10:59
Client ID:
Instrument: gc01.i
Sample Info: WG146672-3
Purge Volume: 1.0
Operator: JLP
Column phase: ZB-Multiresidue-1
Column diameter: 0.53



Katahdin Analytical Services 7000062

Data File: 1HG00440.D
Report Date: 22-Jul-2014 06:36

Katahdin Analytical Services

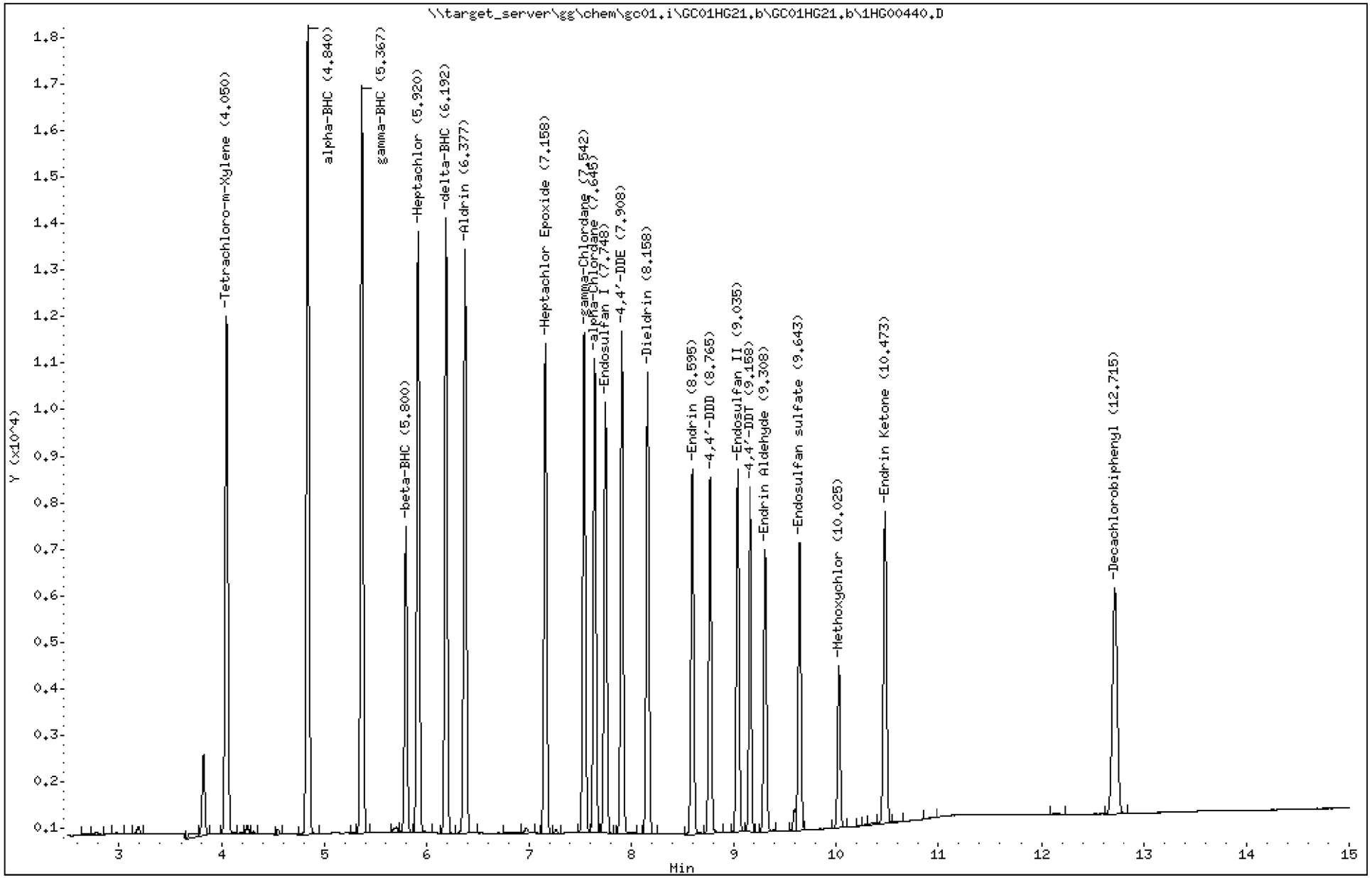
Data file : \\target_server\gg\chem\gc01.i\GC01HG21.b\GC01HG21.b\1HG00440.D
Lab Smp Id: WG146672-4
Inj Date : 21-JUL-2014 10:59
Operator : JLP Inst ID: gc01.i
Smp Info : WG146672-4
Misc Info :
Comment :
Method : \\target_server\gg\chem\gc01.i\GC01HG21.b\PEST135.m\PEST135.m
Meth Date : 22-Jul-2014 06:19 gc01.i Quant Type: ESTD
Cal Date : 11-JUL-2014 16:50 Cal File: 1HG00255.D
Als bottle: 3 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: cv.sub
Target Version: 4.12
Processing Host: V200T2

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.01000	Final Volume (L)
Vo	1.000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

						AMOUNTS		
	Compounds	RT	EXP RT	DLT RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)	REVIEW CODE
$	4 Tetrachloro-m-Xylene	4.049	4.047	0.002	11127	0.05000	0.0465	
	5 alpha-BHC	4.839	4.837	0.002	17406	0.05000	0.0500	
	6 gamma-BHC	5.366	5.365	0.001	16089	0.05000	0.0500	
	7 beta-BHC	5.799	5.799	0.000	6574	0.05000	0.0500	
	8 delta-BHC	6.191	6.189	0.002	13246	0.05000	0.0500	
	9 Heptachlor	5.919	5.917	0.002	12913	0.05000	0.0500	
	10 Aldrin	6.376	6.374	0.002	12564	0.05000	0.0500	
	13 Heptachlor Epoxide	7.158	7.155	0.003	10540	0.05000	0.241	
	15 gamma-Chlordane	7.541	7.539	0.002	10757	0.05000	0.0467	
	17 alpha-Chlordane	7.644	7.642	0.002	10181	0.05000	0.0474	
	19 4,4'-DDE	7.908	7.905	0.003	10802	0.05000	0.0448	
	20 Endosulfan I	7.748	7.745	0.003	9266	0.05000	0.0500	
	21 Dieldrin	8.158	8.155	0.003	9933	0.05000	0.0437	
	23 Endrin	8.594	8.592	0.002	7849	0.05000	0.0436	
	24 4,4'-DDD	8.764	8.762	0.002	7647	0.05000	0.0414	
	26 Endosulfan II	9.034	9.032	0.002	7814	0.05000	0.0421	
	27 4,4'-DDT	9.158	9.155	0.003	7430	0.05000	0.0410	
	28 Endrin Aldehyde	9.308	9.305	0.003	6077	0.05000	0.0404	
	29 Methoxychlor	10.024	10.022	0.002	3490	0.05000	0.0422	
	32 Endosulfan sulfate	9.643	9.642	0.001	6174	0.05000	0.0418	
	33 Endrin Ketone	10.473	10.470	0.003	6728	0.05000	0.149	
$	34 Decachlorobiphenyl	12.714	12.710	0.004	4850	0.05000	0.0500	

Data File: \\target_server\gg\chem\gc01.i\GC01HG21.b\GC01HG21.b\1HG00440.D
Date : 21-JUL-2014 10:59
Client ID:
Instrument: gc01.i
Sample Info: WG146672-4
Purge Volume: 1.0
Operator: JLP
Column phase: ZB-Multiresidue-2
Column diameter: 0.53



Katahdin Analytical Services 7000064

Data File: \\target_server\gg\chem\gc01.i\GC01HG21.b\1HG00441.D
Report Date: 22-Jul-2014 06:32

Katahdin Analytical Services

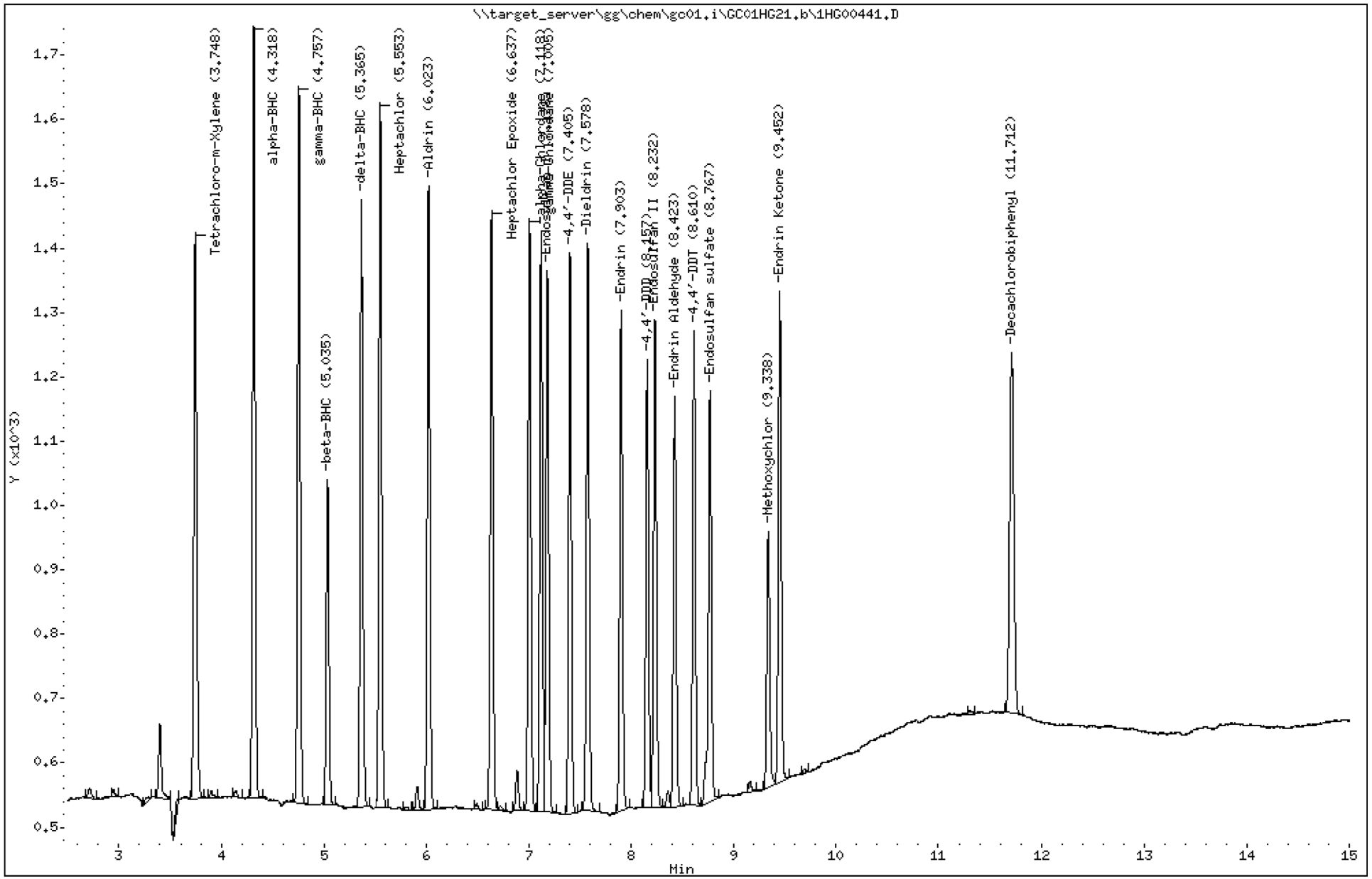
Data file : \\target_server\gg\chem\gc01.i\GC01HG21.b\1HG00441.D
Lab Smp Id: WG146672-5
Inj Date : 21-JUL-2014 11:24
Operator : JLP Inst ID: gc01.i
Smp Info : WG146672-5
Misc Info :
Comment :
Method : \\target_server\gg\chem\gc01.i\GC01HG21.b\PEST135.m
Meth Date : 22-Jul-2014 06:18 gc01.i Quant Type: ESTD
Cal Date : 11-JUL-2014 13:38 Cal File: 1HG00244.D
Als bottle: 4 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: cv.sub
Target Version: 4.12
Processing Host: V200T2

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.01000	Final Volume (L)
Vo	1.000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

						AMOUNTS		
	Compounds	RT	EXP RT	DLT RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)	REVIEW CODE
$	4 Tetrachloro-m-Xylene	3.748	3.740	0.008	880	0.00500	0.00466	
	5 alpha-BHC	4.318	4.310	0.008	1200	0.00500	0.00450	
	6 gamma-BHC	4.756	4.745	0.011	1113	0.00500	0.00458	
	7 beta-BHC	5.034	5.025	0.009	506	0.00500	0.00472	
	8 delta-BHC	5.364	5.355	0.009	944	0.00500	0.00531	
	9 Heptachlor	5.553	5.543	0.010	1096	0.00500	0.00446	
	10 Aldrin	6.023	6.013	0.010	971	0.00500	0.00433	
	13 Heptachlor Epoxide	6.636	6.626	0.010	932	0.00500	0.00460	
	15 gamma-Chlordane	7.004	6.996	0.008	920	0.00500	0.00448	
	17 alpha-Chlordane	7.118	7.108	0.010	901	0.00500	0.00462	
	19 4,4'-DDE	7.404	7.396	0.008	872	0.00500	0.00423	
	20 Endosulfan I	7.178	7.170	0.008	843	0.00500	0.00460	
	21 Dieldrin	7.578	7.570	0.008	883	0.00500	0.00442	
	23 Endrin	7.903	7.895	0.008	778	0.00500	0.00444	
	24 4,4'-DDD	8.156	8.148	0.008	698	0.00500	0.00436	
	26 Endosulfan II	8.231	8.223	0.008	759	0.00500	0.00462	
	27 4,4'-DDT	8.609	8.603	0.006	737	0.00500	0.00464	
	28 Endrin Aldehyde	8.423	8.415	0.008	638	0.00500	0.00478	
	29 Methoxychlor	9.338	9.333	0.005	398	0.00500	0.00484	
	32 Endosulfan sulfate	8.766	8.760	0.006	639	0.00500	0.00582	
	33 Endrin Ketone	9.451	9.445	0.006	764	0.00500	0.00562	
$	34 Decachlorobiphenyl	11.711	11.706	0.005	561	0.00500	0.00512	

Data File: \\target_server\gg\chem\gc01.i\GC01HG21.b\1HG00441.D
Date : 21-JUL-2014 11:24
Client ID:
Instrument: gc01.i
Sample Info: WG146672-5
Purge Volume: 1.0
Operator: JLP
Column phase: ZB-Multiresidue-1
Column diameter: 0.53



Katahdin Analytical Services 7000066

Data File: 1HG00441.D
Report Date: 22-Jul-2014 06:36

Katahdin Analytical Services

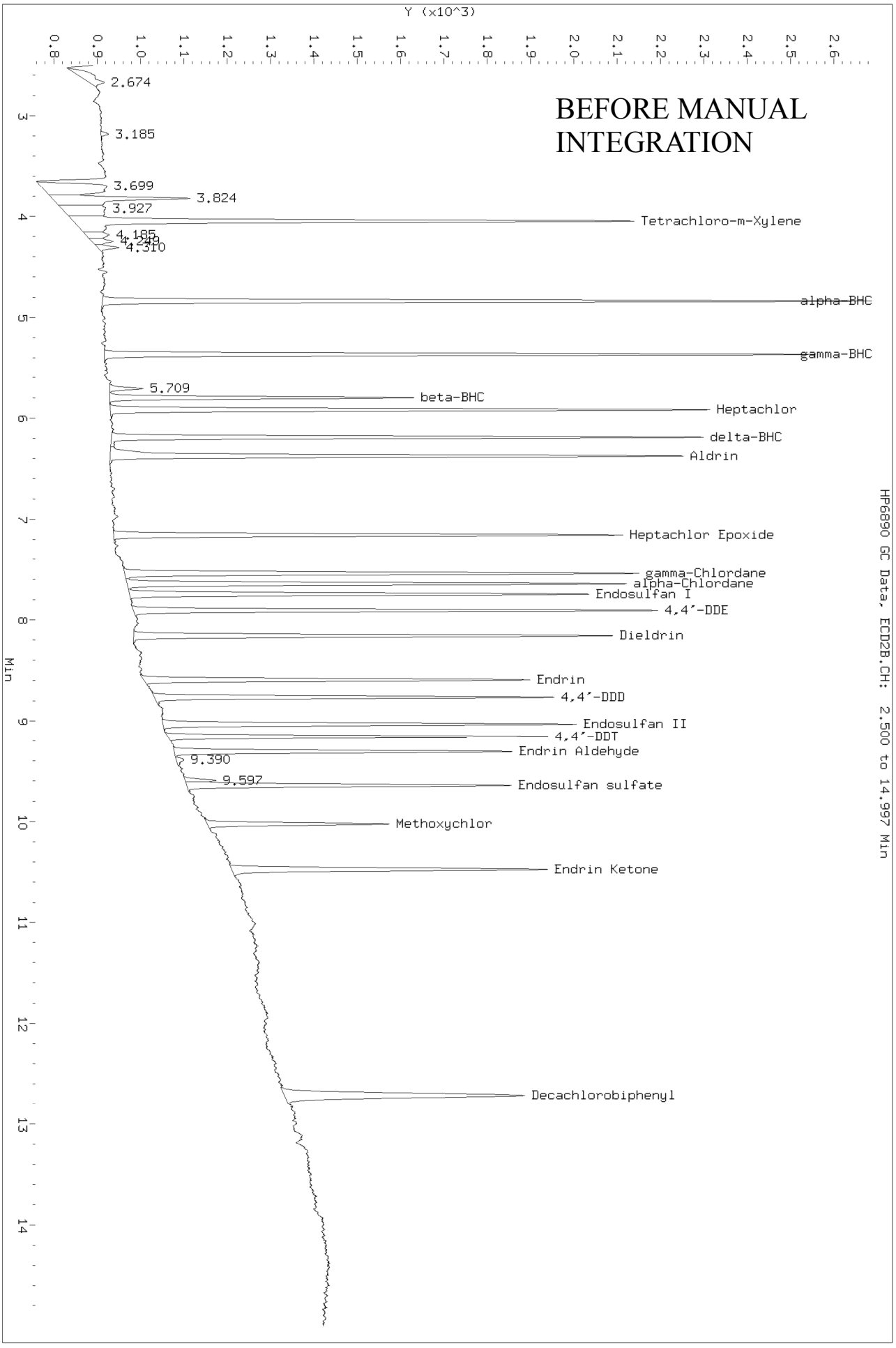
Data file : \\target_server\gg\chem\gc01.i\GC01HG21.b\GC01HG21.b\1HG00441.D
Lab Smp Id: WG146672-6
Inj Date : 21-JUL-2014 11:24
Operator : JLP Inst ID: gc01.i
Smp Info : WG146672-6
Misc Info :
Comment :
Method : \\target_server\gg\chem\gc01.i\GC01HG21.b\PEST135.m\PEST135.m
Meth Date : 22-Jul-2014 06:19 gc01.i Quant Type: ESTD
Cal Date : 11-JUL-2014 13:38 Cal File: 1HG00244.D
Als bottle: 4 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: cv.sub
Target Version: 4.12
Processing Host: V200T2

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.01000	Final Volume (L)
Vo	1.000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
$ 4	Tetrachloro-m-Xylene	4.047	4.047	0.000	1224	0.00500	0.00517(M)	M4
5	alpha-BHC	4.837	4.837	0.000	1776	0.00500	0.00505	
6	gamma-BHC	5.365	5.365	0.000	1641	0.00500	0.00505	
7	beta-BHC	5.798	5.799	-0.001	702	0.00500	0.00516	
8	delta-BHC	6.190	6.189	0.001	1367	0.00500	0.00508	
9	Heptachlor	5.918	5.917	0.001	1385	0.00500	0.00518	
10	Aldrin	6.375	6.374	0.001	1323	0.00500	0.00513	
13	Heptachlor Epoxide	7.155	7.155	0.000	1177	0.00500	0.0156	
15	gamma-Chlordane	7.540	7.539	0.001	1188	0.00500	0.00513	
17	alpha-Chlordane	7.643	7.642	0.001	1154	0.00500	0.00529	
19	4,4'-DDE	7.908	7.905	0.003	1210	0.00500	0.00502	
20	Endosulfan I	7.747	7.745	0.002	1061	0.00500	0.00534	
21	Dieldrin	8.157	8.155	0.002	1106	0.00500	0.00487	
23	Endrin	8.593	8.592	0.001	892	0.00500	0.00496	
24	4,4'-DDD	8.765	8.762	0.003	923	0.00500	0.00499	
26	Endosulfan II	9.033	9.032	0.001	955	0.00500	0.00514	
27	4,4'-DDT	9.158	9.155	0.003	877	0.00500	0.00483	
28	Endrin Aldehyde	9.307	9.305	0.002	781	0.00500	0.00519	
29	Methoxychlor	10.023	10.022	0.001	420	0.00500	0.00508	
32	Endosulfan sulfate	9.643	9.642	0.001	750	0.00500	0.00507	
33	Endrin Ketone	10.473	10.470	0.003	729	0.00500	0.0104	
$ 34	Decachlorobiphenyl	12.713	12.710	0.003	555	0.00500	0.00534	

JLP
7:18 am, Jul 22, 2014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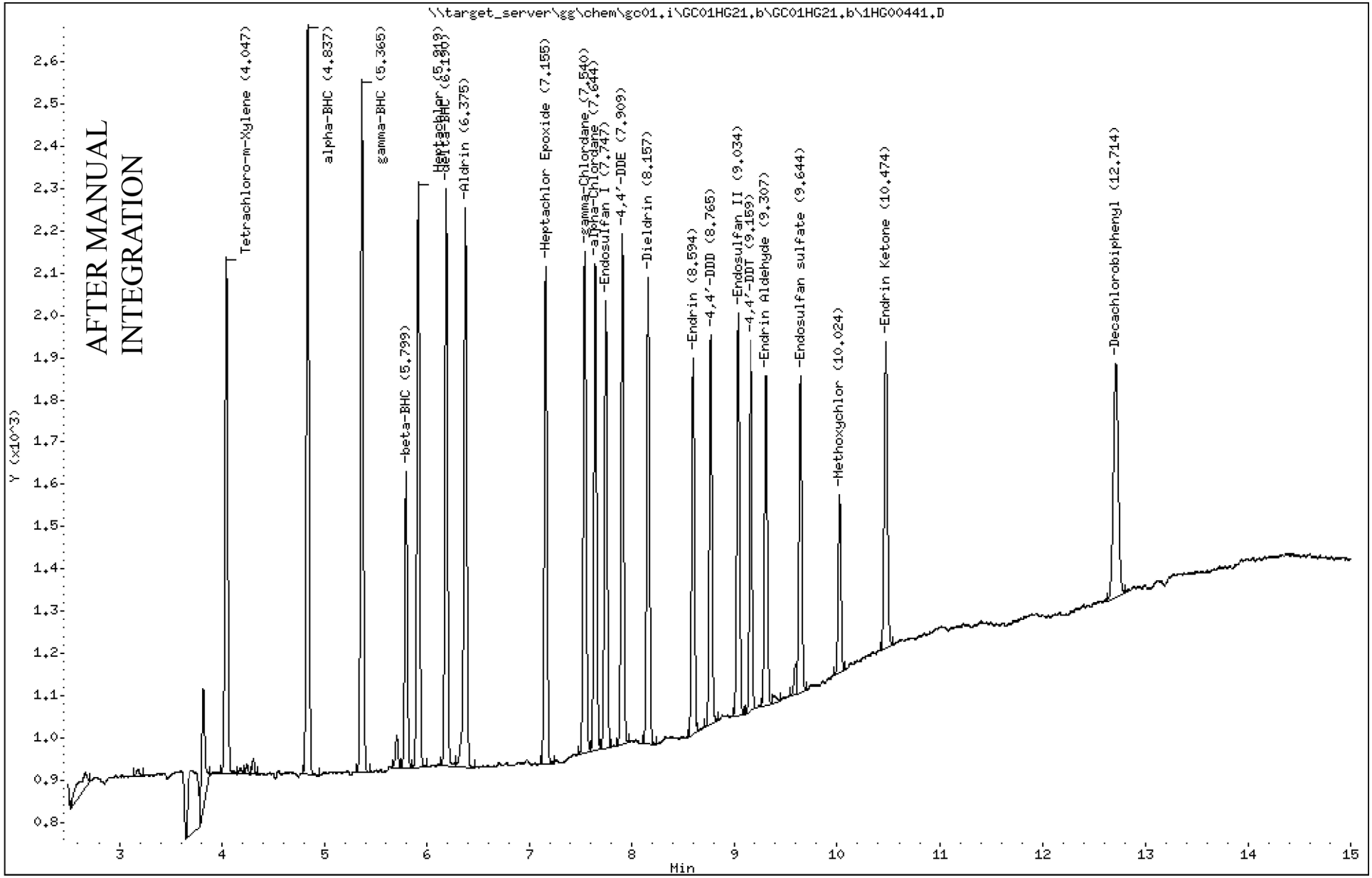
Injection Date: 21-JUL-2014 11:24
Instrument: gc01.i
Client Sample ID:
HP6890 GC Data, ECD2B.CH: 2.500 to 14.997 Min
Y (x10^3)
Min
BEFORE MANUAL INTEGRATION
2.674
3.185
3.699
3.824
3.927
Tetrachloro-m-Xylene
4.185
4.249
4.310
alpha-BHC
gamma-BHC
5.709
beta-BHC
Heptachlor
delta-BHC
Aldrin
Heptachlor Epoxide
gamma-Chlordane
alpha-Chlordane
Endosulfan I
4,4'-DDE
Dieldrin
Endrin
4,4'-DDD
Endosulfan II
4,4'-DDT
Endrin Aldehyde
9.390
9.597
Endosulfan sulfate
Methoxychlor
Endrin Ketone
Decachlorobiphenyl

Data File: \\target_server\gg\chem\gc01.i\GC01HG21.b\GC01HG21.b\1HG00441.D
Date : 21-JUL-2014 11:24
Client ID:
Instrument: gc01.i
Sample Info: WG146672-6
Purge Volume: 1.0
Operator: JLP
Column phase: ZB-Multiresidue-2
Column diameter: 0.53



Katahdin Analytical Services 7000069

Data File: \\target_server\gg\chem\gc01.i\GC01HG21.b\1HG00442.D
Report Date: 22-Jul-2014 06:32

Katahdin Analytical Services

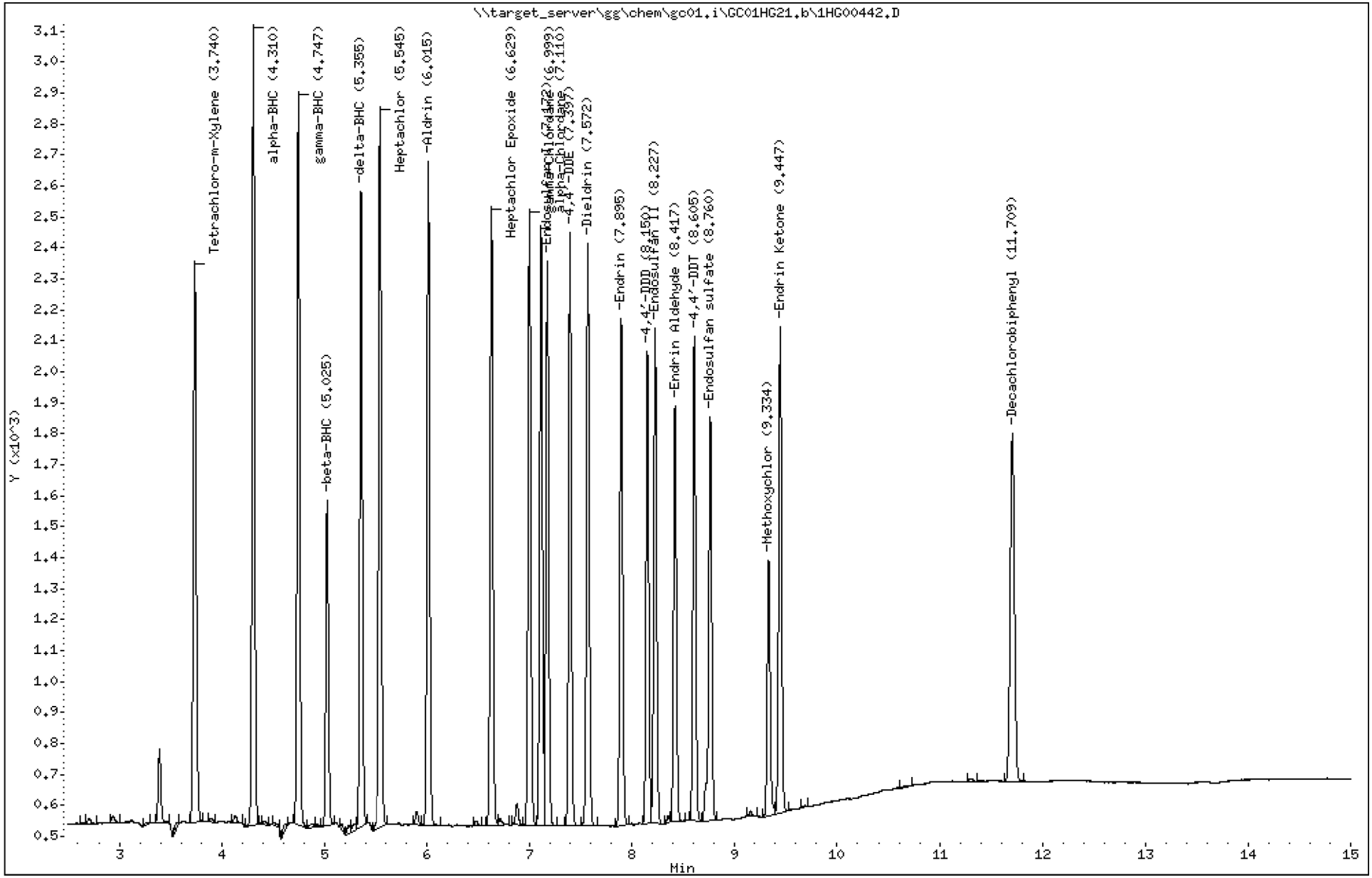
Data file : \\target_server\gg\chem\gc01.i\GC01HG21.b\1HG00442.D
Lab Smp Id: WG146672-7
Inj Date : 21-JUL-2014 11:42
Operator : JLP Inst ID: gc01.i
Smp Info : WG146672-7
Misc Info :
Comment :
Method : \\target_server\gg\chem\gc01.i\GC01HG21.b\PEST135.m
Meth Date : 22-Jul-2014 06:18 gc01.i Quant Type: ESTD
Cal Date : 11-JUL-2014 13:55 Cal File: 1HG00245.D
Als bottle: 5 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: cv.sub
Target Version: 4.12
Processing Host: V200T2

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.01000	Final Volume (L)
Vo	1.000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

						AMOUNTS		
	Compounds	RT	EXP RT	DLT RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)	REVIEW CODE
$	4 Tetrachloro-m-Xylene	3.740	3.740	0.000	1814	0.01000	0.00962	
	5 alpha-BHC	4.310	4.310	0.000	2586	0.01000	0.00959	
	6 gamma-BHC	4.746	4.745	0.001	2365	0.01000	0.00962	
	7 beta-BHC	5.025	5.025	0.000	1049	0.01000	0.00974	
	8 delta-BHC	5.355	5.355	0.000	2050	0.01000	0.0108	
	9 Heptachlor	5.545	5.543	0.002	2328	0.01000	0.00950	
	10 Aldrin	6.015	6.013	0.002	2143	0.01000	0.00949	
	13 Heptachlor Epoxide	6.628	6.626	0.002	1998	0.01000	0.00981	
	15 gamma-Chlordane	6.998	6.996	0.002	1989	0.01000	0.00962	
	17 alpha-Chlordane	7.110	7.108	0.002	1935	0.01000	0.00979	
	19 4,4'-DDE	7.396	7.396	0.000	1917	0.01000	0.00927	
	20 Endosulfan I	7.171	7.170	0.001	1823	0.01000	0.00985	
	21 Dieldrin	7.571	7.570	0.001	1881	0.01000	0.00936	
	23 Endrin	7.895	7.895	0.000	1636	0.01000	0.00933	
	24 4,4'-DDD	8.150	8.148	0.002	1524	0.01000	0.00942	
	26 Endosulfan II	8.226	8.223	0.003	1601	0.01000	0.00967	
	27 4,4'-DDT	8.605	8.603	0.002	1564	0.01000	0.00964	
	28 Endrin Aldehyde	8.416	8.415	0.001	1342	0.01000	0.00992	
	29 Methoxychlor	9.333	9.333	0.000	826	0.01000	0.00994	
	32 Endosulfan sulfate	8.760	8.760	0.000	1306	0.01000	0.0112	
	33 Endrin Ketone	9.446	9.445	0.001	1569	0.01000	0.0110	
$	34 Decachlorobiphenyl	11.708	11.706	0.002	1125	0.01000	0.0102	

Data File: \\target_server\gg\chem\gc01.i\GC01HG21.b\1HG00442.D
Date : 21-JUL-2014 11:42
Client ID:
Instrument: gc01.i
Sample Info: WG146672-7
Purge Volume: 1.0
Operator: JLP
Column phase: ZB-Multiresidue-1
Column diameter: 0.53



Katahdin Analytical Services 7000071

Data File: 1HG00442.D
Report Date: 22-Jul-2014 06:36

Katahdin Analytical Services

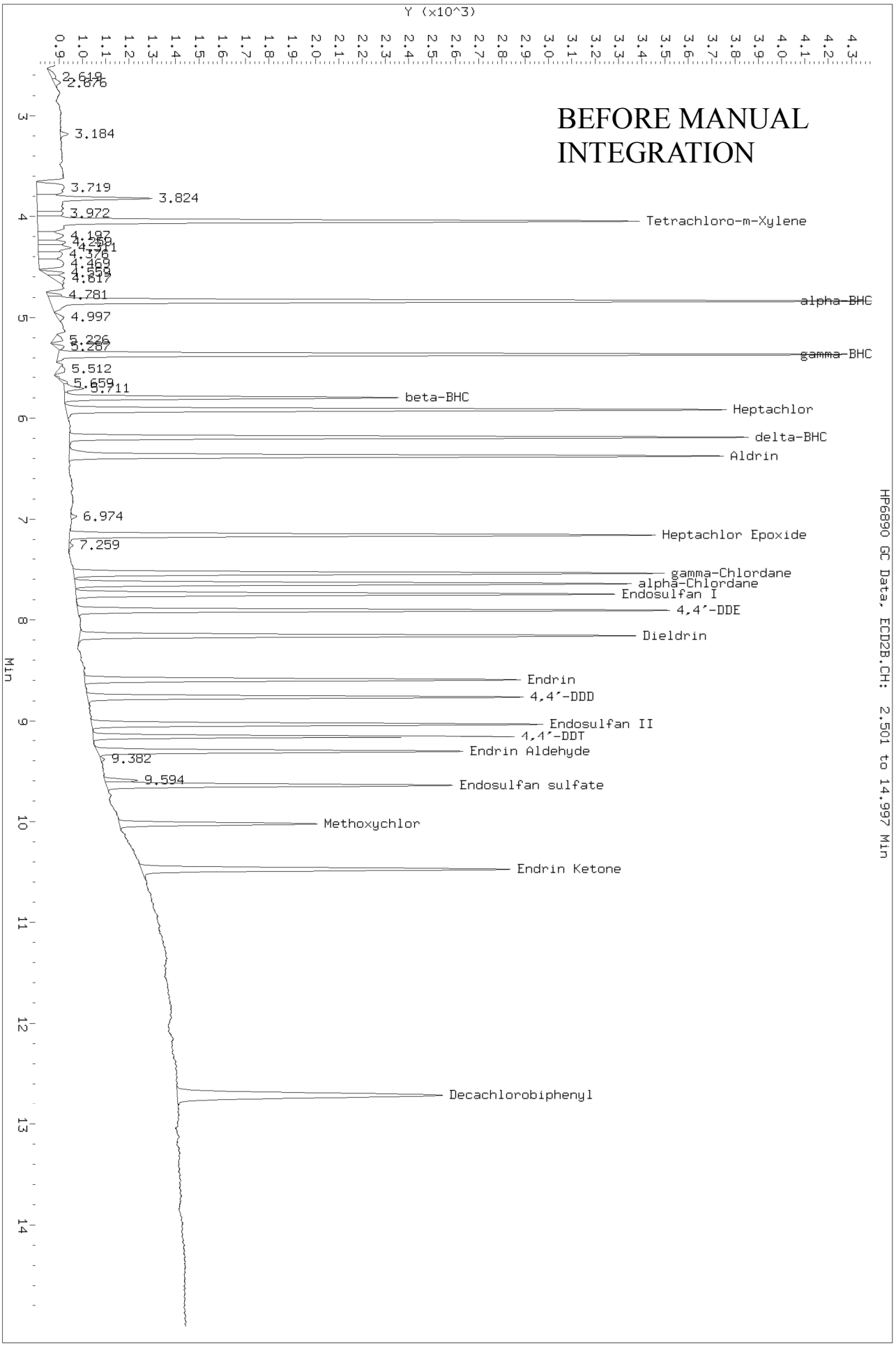
Data file : \\target_server\gg\chem\gc01.i\GC01HG21.b\GC01HG21.b\1HG00442.D
Lab Smp Id: WG146672-8
Inj Date : 21-JUL-2014 11:42
Operator : JLP Inst ID: gc01.i
Smp Info : WG146672-8
Misc Info :
Comment :
Method : \\target_server\gg\chem\gc01.i\GC01HG21.b\PEST135.m\PEST135.m
Meth Date : 22-Jul-2014 06:19 gc01.i Quant Type: ESTD
Cal Date : 11-JUL-2014 13:55 Cal File: 1HG00245.D
Als bottle: 5 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: cv.sub
Target Version: 4.12
Processing Host: V200T2

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.01000	Final Volume (L)
Vo	1.000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
$ 4 Tetrachloro-m-Xylene	4.049	4.047	0.002	2500	0.01000	0.0106(M)	M4
5 alpha-BHC	4.837	4.837	0.000	3490	0.01000	0.00995(M)	
6 gamma-BHC	5.365	5.365	0.000	3383	0.01000	0.0103	
7 beta-BHC	5.799	5.799	0.000	1433	0.01000	0.0104	
8 delta-BHC	6.190	6.189	0.001	2914	0.01000	0.0105	
9 Heptachlor	5.919	5.917	0.002	2835	0.01000	0.0104	
10 Aldrin	6.375	6.374	0.001	2808	0.01000	0.0106	
13 Heptachlor Epoxide	7.157	7.155	0.002	2515	0.01000	0.0214	
15 gamma-Chlordane	7.540	7.539	0.001	2536	0.01000	0.0108	
17 alpha-Chlordane	7.644	7.642	0.002	2388	0.01000	0.0109	
19 4,4'-DDE	7.907	7.905	0.002	2539	0.01000	0.0105	
20 Endosulfan I	7.747	7.745	0.002	2313	0.01000	0.0110	
21 Dieldrin	8.159	8.155	0.004	2387	0.01000	0.0105	
23 Endrin	8.592	8.592	0.000	1872	0.01000	0.0104	
24 4,4'-DDD	8.764	8.762	0.002	1872	0.01000	0.0101	
26 Endosulfan II	9.032	9.032	0.000	1936	0.01000	0.0104	
27 4,4'-DDT	9.157	9.155	0.002	1807	0.01000	0.00996	
28 Endrin Aldehyde	9.305	9.305	0.000	1569	0.01000	0.0104	
29 Methoxychlor	10.024	10.022	0.002	850	0.01000	0.0103	
32 Endosulfan sulfate	9.642	9.642	0.000	1486	0.01000	0.0100	
33 Endrin Ketone	10.472	10.470	0.002	1584	0.01000	0.0180	
$ 34 Decachlorobiphenyl	12.710	12.710	0.000	1139	0.01000	0.0106	

JLP
7:18 am, Jul 22, 2014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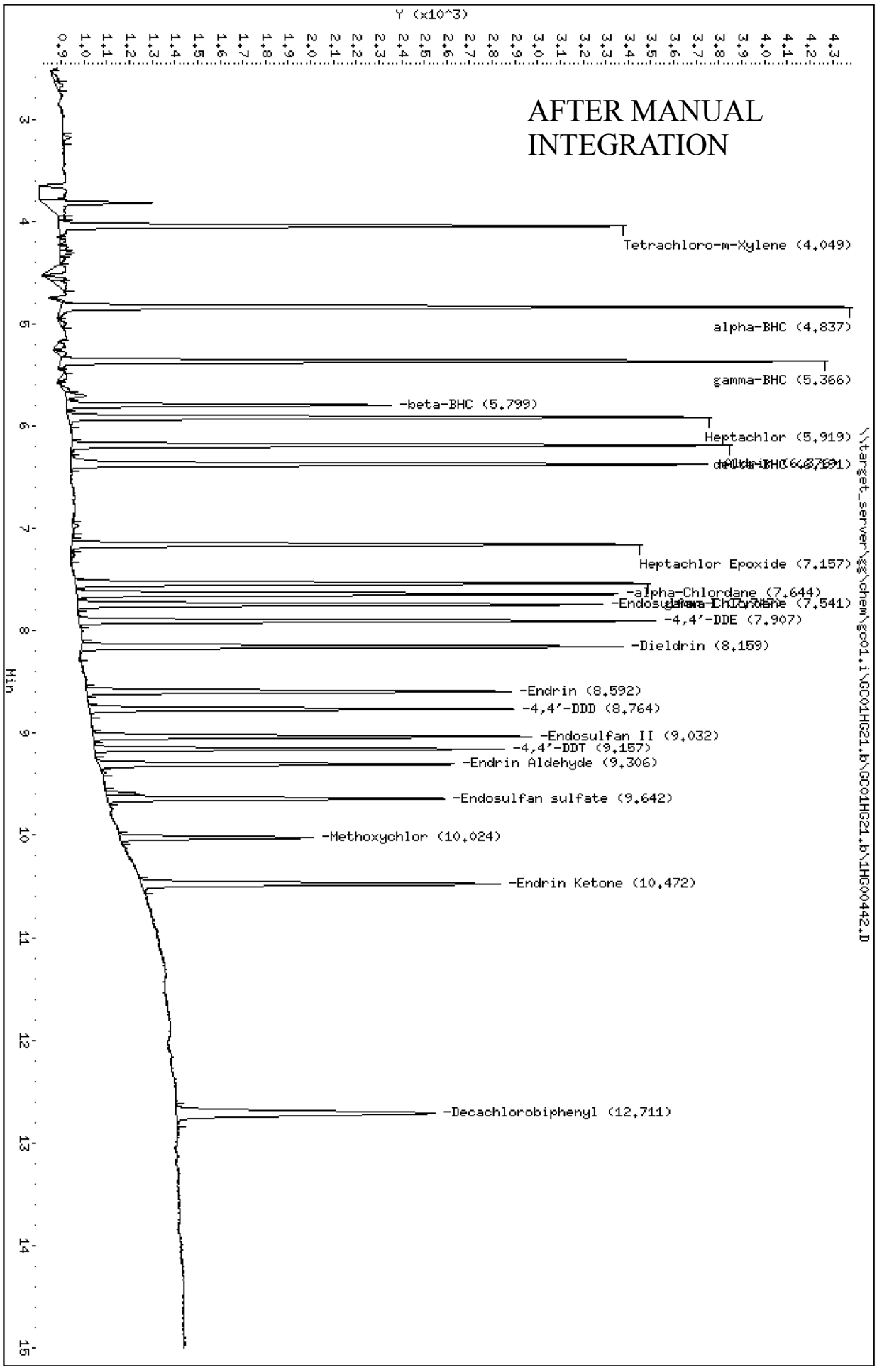
Injection Date: 21-JUL-2014 11:42
Instrument: gc01.i
Client Sample ID:
BEFORE MANUAL INTEGRATION
Y (x10^3)
Min
HP6890 GC Data, ECD2B.CH: 2.501 to 14.997 Min
2.619
2.676
3.184
3.719
3.824
3.972
Tetrachloro-m-Xylene
4.781
alpha-BHC
4.997
5.287
gamma-BHC
5.512
beta-BHC
Heptachlor
delta-BHC
Aldrin
6.974
Heptachlor Epoxide
7.259
gamma-Chlordane
alpha-Chlordane
Endosulfan I
4,4'-DDE
Dieldrin
Endrin
4,4'-DDD
Endosulfan II
4,4'-DDT
Endrin Aldehyde
9.382
9.594
Endosulfan sulfate
Methoxychlor
Endrin Ketone
Decachlorobiphenyl


Data File: \\target_server\gg\chem\gc01.i\GC01HG24.b\GC01HG24.b\1HG00442.D
Date : 21-JUL-2014 11:42
Client ID:
Sample Info: WG146672-8
Purge Volume: 1.0
Column phase: ZB-Multiresidue-2
Instrument: gc01.i
Operator: JLP
Column diameter: 0.53
AFTER MANUAL INTEGRATION
Y (x10^3)
Min
Tetrachloro-m-Xylene (4.049)
alpha-BHC (4.837)
gamma-BHC (5.366)
-beta-BHC (5.799)
Heptachlor (5.919)
Heptachlor Epoxide (7.157)
-alpha-Chlordane (7.644)
-4,4'-DDE (7.907)
-Dieldrin (8.159)
-Endrin (8.592)
-4,4'-DDD (8.764)
-Endosulfan II (9.032)
-4,4'-DDT (9.157)
-Endrin Aldehyde (9.306)
-Endosulfan sulfate (9.642)
-Methoxychlor (10.024)
-Endrin Ketone (10.472)
-Decachlorobiphenyl (12.711)
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Data File: 1HG00443.D
Report Date: 22-Jul-2014 06:36

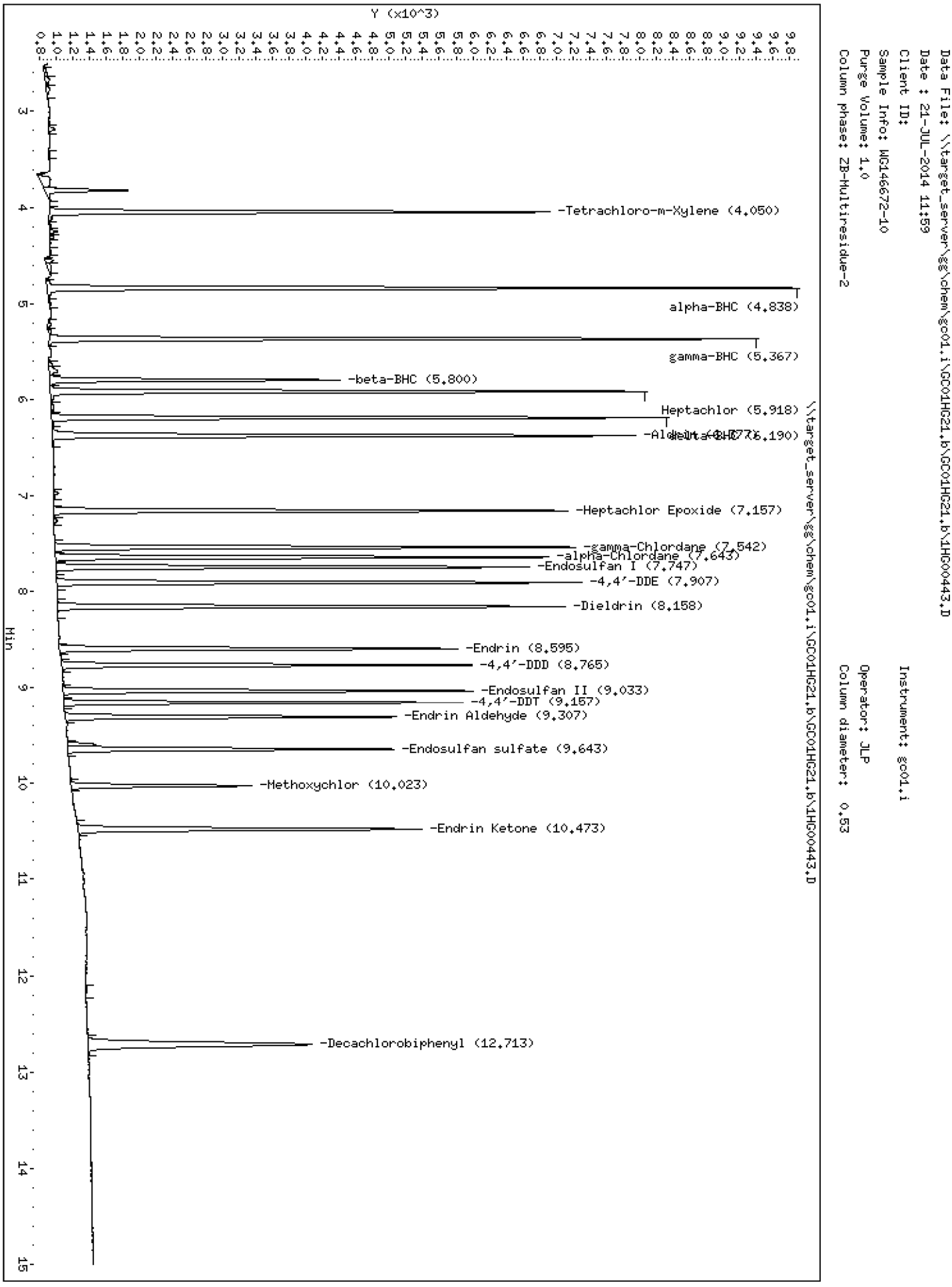
Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc01.i\GC01HG21.b\GC01HG21.b\1HG00443.D
Lab Smp Id: WG146672-10
Inj Date : 21-JUL-2014 11:59
Operator : JLP Inst ID: gc01.i
Smp Info : WG146672-10
Misc Info :
Comment :
Method : \\target_server\gg\chem\gc01.i\GC01HG21.b\PEST135.m\PEST135.m
Meth Date : 22-Jul-2014 06:19 gc01.i Quant Type: ESTD
Cal Date : 11-JUL-2014 14:13 Cal File: 1HG00246.D
Als bottle: 6 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: cv.sub
Target Version: 4.12
Processing Host: V200T2

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.01000	Final Volume (L)
Vo	1.000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
$ 4	Tetrachloro-m-Xylene	4.049	4.047	0.002	6002	0.02500	0.0255	
5	alpha-BHC	4.838	4.837	0.001	9024	0.02500	0.0255	
6	gamma-BHC	5.366	5.365	0.001	8501	0.02500	0.0256	
7	beta-BHC	5.799	5.799	0.000	3488	0.02500	0.0252	
8	delta-BHC	6.189	6.189	0.000	7399	0.02500	0.0263	
9	Heptachlor	5.918	5.917	0.001	7153	0.02500	0.0259	
10	Aldrin	6.376	6.374	0.002	6997	0.02500	0.0260	
13	Heptachlor Epoxide	7.156	7.155	0.001	6169	0.02500	0.0390	
15	gamma-Chlordane	7.541	7.539	0.002	6248	0.02500	0.0264	
17	alpha-Chlordane	7.643	7.642	0.001	5907	0.02500	0.0267	
19	4,4'-DDE	7.906	7.905	0.001	6292	0.02500	0.0261	
20	Endosulfan I	7.746	7.745	0.001	5673	0.02500	0.0265	
21	Dieldrin	8.158	8.155	0.003	6093	0.02500	0.0268	
23	Endrin	8.594	8.592	0.002	4772	0.02500	0.0265	
24	4,4'-DDD	8.764	8.762	0.002	4923	0.02500	0.0266	
26	Endosulfan II	9.033	9.032	0.001	4916	0.02500	0.0265	
27	4,4'-DDT	9.156	9.155	0.001	4795	0.02500	0.0264	
28	Endrin Aldehyde	9.306	9.305	0.001	3965	0.02500	0.0263	
29	Methoxychlor	10.023	10.022	0.001	2169	0.02500	0.0262	
32	Endosulfan sulfate	9.643	9.642	0.001	3907	0.02500	0.0264	
33	Endrin Ketone	10.473	10.470	0.003	4132	0.02500	0.0410	
$ 34	Decachlorobiphenyl	12.713	12.710	0.003	2693	0.02500	0.0251	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Date : 21-JUL-2014 11:59
Client ID:
Sample Info: WG146672-10
Purge Volume: 1.0
Column phase: ZB-Multiresidue-2
Instrument: gc01.i
Operator: JLP
Column diameter: 0.53
\\target_server\gg\chem\gc01.i\GC01HG21.b\GC01HG21.b\1HG00443.D
Y (x10^3)
Min
-Tetrachloro-m-Xylene (4.050)
alpha-BHC (4.838)
gamma-BHC (5.367)
-beta-BHC (5.800)
Heptachlor (5.918)
-Aldrin (6.190)
-Heptachlor Epoxide (7.157)
-gamma-Chlordane (7.542)
-alpha-Chlordane (7.643)
-Endosulfan I (7.747)
-4,4'-DDE (7.907)
-Dieldrin (8.158)
-Endrin (8.595)
-4,4'-DDD (8.765)
-Endosulfan II (9.033)
-4,4'-DDT (9.157)
-Endrin Aldehyde (9.307)
-Endosulfan sulfate (9.643)
-Methoxychlor (10.023)
-Endrin Ketone (10.473)
-Decachlorobiphenyl (12.713)

Data File: \\target_server\gg\chem\gc01.i\GC01HG21.b\1HG00443.D
Report Date: 22-Jul-2014 06:32

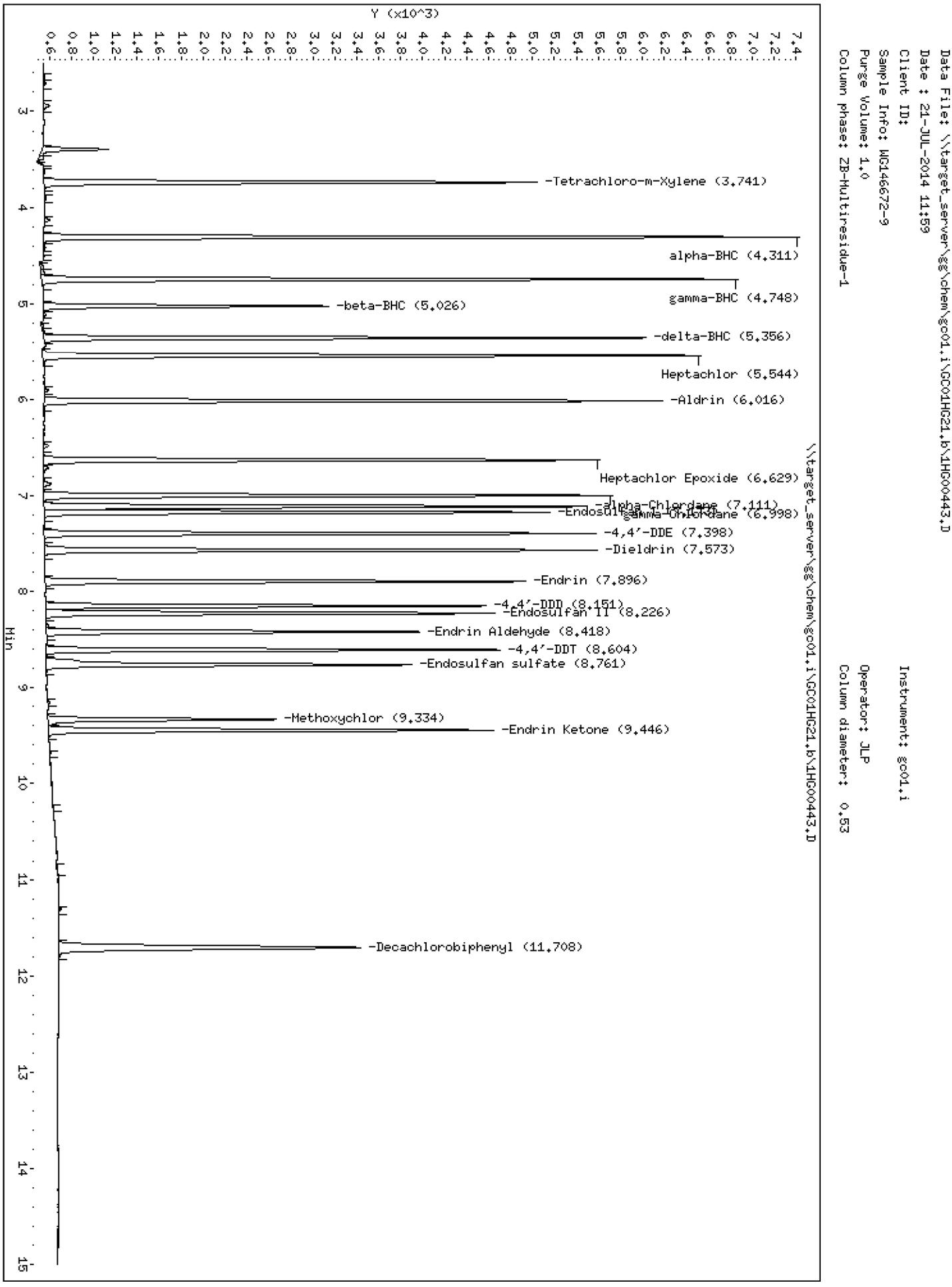
Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc01.i\GC01HG21.b\1HG00443.D
Lab Smp Id: WG146672-9
Inj Date : 21-JUL-2014 11:59
Operator : JLP Inst ID: gc01.i
Smp Info : WG146672-9
Misc Info :
Comment :
Method : \\target_server\gg\chem\gc01.i\GC01HG21.b\PEST135.m
Meth Date : 22-Jul-2014 06:18 gc01.i Quant Type: ESTD
Cal Date : 11-JUL-2014 14:13 Cal File: 1HG00246.D
Als bottle: 6 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: cv.sub
Target Version: 4.12
Processing Host: V200T2

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.01000	Final Volume (L)
Vo	1.000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
$ 4 Tetrachloro-m-Xylene	3.741	3.740	0.001	4495	0.02500	0.0245	
5 alpha-BHC	4.311	4.310	0.001	6889	0.02500	0.0260	
6 gamma-BHC	4.747	4.745	0.002	6337	0.02500	0.0262	
7 beta-BHC	5.026	5.025	0.001	2593	0.02500	0.0249	
8 delta-BHC	5.356	5.355	0.001	5482	0.02500	0.0281	
9 Heptachlor	5.544	5.543	0.001	5996	0.02500	0.0254	
10 Aldrin	6.016	6.013	0.003	5638	0.02500	0.0258	
13 Heptachlor Epoxide	6.629	6.626	0.003	5068	0.02500	0.0257	
15 gamma-Chlordane	6.997	6.996	0.001	5181	0.02500	0.0257	
17 alpha-Chlordane	7.111	7.108	0.003	4940	0.02500	0.0256	
19 4,4'-DDE	7.397	7.396	0.001	5032	0.02500	0.0253	
20 Endosulfan I	7.172	7.170	0.002	4610	0.02500	0.0256	
21 Dieldrin	7.572	7.570	0.002	5032	0.02500	0.0258	
23 Endrin	7.896	7.895	0.001	4380	0.02500	0.0259	
24 4,4'-DDD	8.151	8.148	0.003	4010	0.02500	0.0256	
26 Endosulfan II	8.226	8.223	0.003	4088	0.02500	0.0254	
27 4,4'-DDT	8.604	8.603	0.001	4134	0.02500	0.0259	
28 Endrin Aldehyde	8.417	8.415	0.002	3398	0.02500	0.0257	
29 Methoxychlor	9.334	9.333	0.001	2082	0.02500	0.0256	
32 Endosulfan sulfate	8.761	8.760	0.001	3324	0.02500	0.0277	
33 Endrin Ketone	9.446	9.445	0.001	4053	0.02500	0.0277	
$ 34 Decachlorobiphenyl	11.707	11.706	0.001	2745	0.02500	0.0255	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Date : 21-JUL-2014 11:59
Client ID:
Sample Info: WG146672-9
Purge Volume: 1.0
Column phase: ZB-Multiresidue-1
Instrument: gc01.i
Operator: JLP
Column diameter: 0.53
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Y (x10^3)
Min
-Tetrachloro-m-Xylene (3.741)
alpha-BHC (4.311)
gamma-BHC (4.748)
-beta-BHC (5.026)
-delta-BHC (5.356)
Heptachlor (5.544)
-Aldrin (6.016)
Heptachlor Epoxide (6.629)
-alpha-Chlordane (7.111)
-Endosulfan I
gamma-Chlordane (6.998)
-4,4'-DDE (7.398)
-Dieldrin (7.573)
-Endrin (7.896)
-4,4'-DDD (8.151)
-Endosulfan II (8.226)
-Endrin Aldehyde (8.418)
-4,4'-DDT (8.604)
-Endosulfan sulfate (8.761)
-Methoxychlor (9.334)
-Endrin Ketone (9.446)
-Decachlorobiphenyl (11.708)

Data File: \\target_server\gg\chem\gc01.i\GC01HG21.b\1HG00444.D
Report Date: 22-Jul-2014 06:32

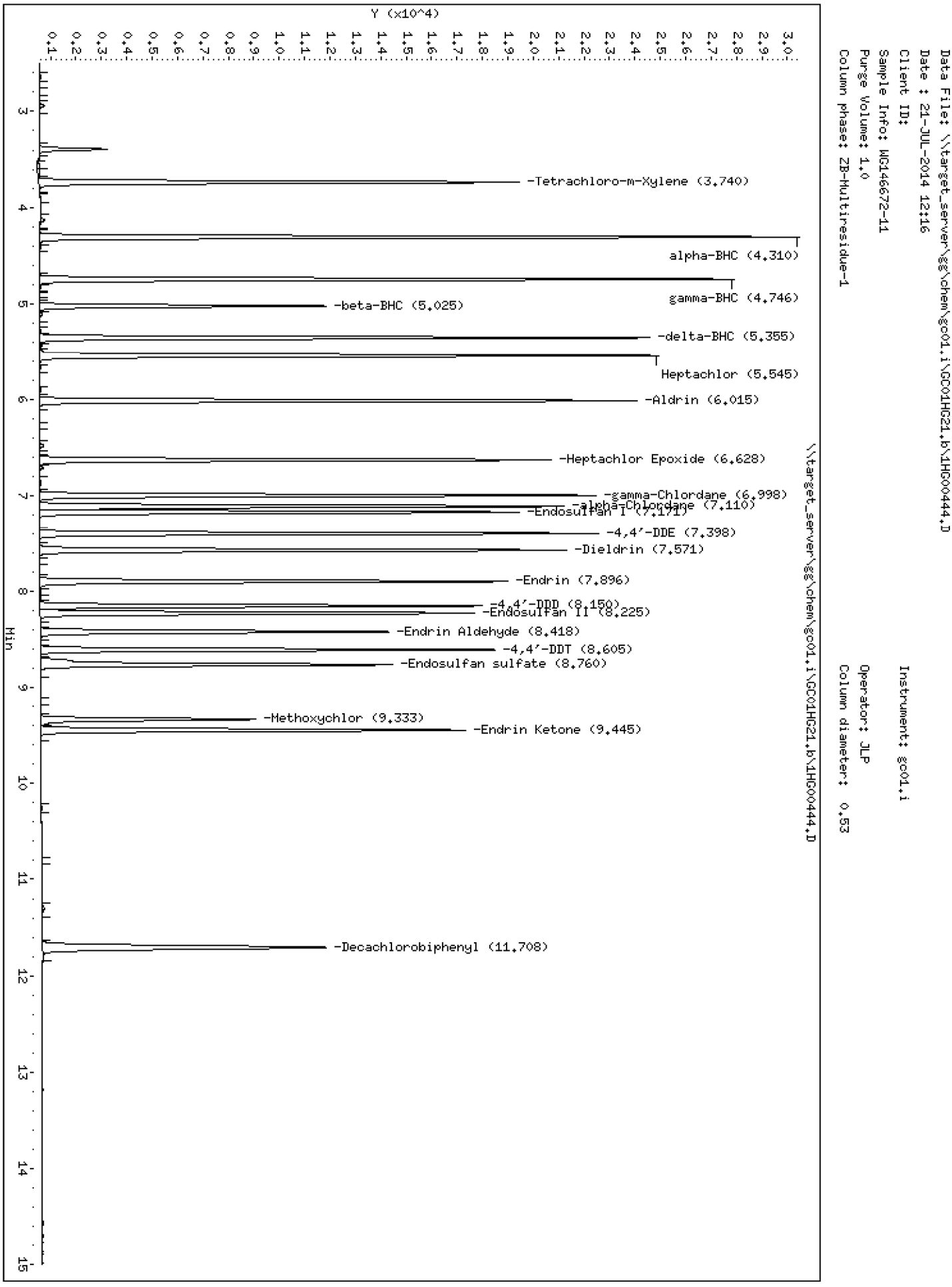
Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc01.i\GC01HG21.b\1HG00444.D
Lab Smp Id: WG146672-11
Inj Date : 21-JUL-2014 12:16
Operator : JLP Inst ID: gc01.i
Smp Info : WG146672-11
Misc Info :
Comment :
Method : \\target_server\gg\chem\gc01.i\GC01HG21.b\PEST135.m
Meth Date : 22-Jul-2014 06:18 gc01.i Quant Type: ESTD
Cal Date : 11-JUL-2014 16:15 Cal File: 1HG00253.D
Als bottle: 7 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: cv.sub
Target Version: 4.12
Processing Host: V200T2

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.01000	Final Volume (L)
Vo	1.000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
$ 4	Tetrachloro-m-Xylene	3.739	3.740	-0.001	18899	0.10000	0.104	
5	alpha-BHC	4.309	4.310	-0.001	29896	0.10000	0.112	
6	gamma-BHC	4.746	4.745	0.001	27329	0.10000	0.112	
7	beta-BHC	5.024	5.025	-0.001	11285	0.10000	0.108	
8	delta-BHC	5.354	5.355	-0.001	24024	0.10000	0.116	
9	Heptachlor	5.544	5.543	0.001	24369	0.10000	0.104	
10	Aldrin	6.014	6.013	0.001	23495	0.10000	0.108	
13	Heptachlor Epoxide	6.628	6.626	0.002	20154	0.10000	0.103	
15	gamma-Chlordane	6.998	6.996	0.002	21905	0.10000	0.108	
17	alpha-Chlordane	7.109	7.108	0.001	20619	0.10000	0.106	
19	4,4'-DDE	7.398	7.396	0.002	21998	0.10000	0.111	
20	Endosulfan I	7.171	7.170	0.001	18864	0.10000	0.105	
21	Dieldrin	7.571	7.570	0.001	20722	0.10000	0.107	
23	Endrin	7.896	7.895	0.001	18434	0.10000	0.109	
24	4,4'-DDD	8.149	8.148	0.001	17415	0.10000	0.110	
26	Endosulfan II	8.224	8.223	0.001	17120	0.10000	0.106	
27	4,4'-DDT	8.604	8.603	0.001	17881	0.10000	0.110	
28	Endrin Aldehyde	8.418	8.415	0.003	13706	0.10000	0.103	
29	Methoxychlor	9.333	9.333	0.000	8494	0.10000	0.104	
32	Endosulfan sulfate	8.759	8.760	-0.001	13861	0.10000	0.110	
33	Endrin Ketone	9.444	9.445	-0.001	16712	0.10000	0.110	
$ 34	Decachlorobiphenyl	11.708	11.706	0.002	11163	0.10000	0.103	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Date : 21-JUL-2014 12:16
Client ID:
Sample Info: WG146672-11
Purge Volume: 1.0
Column phase: ZB-Multiresidue-1
Instrument: gc01.i
Operator: JLP
Column diameter: 0.53
Y (x10^4)
-Tetrachloro-m-Xylene (3.740)
alpha-BHC (4.310)
gamma-BHC (4.746)
-beta-BHC (5.025)
-delta-BHC (5.355)
Heptachlor (5.545)
-Aldrin (6.015)
-Heptachlor Epoxide (6.628)
-gamma-Chlordane (6.998)
-alpha-Chlordane (7.110)
-Endosulfan I (7.171)
-4,4'-DDE (7.398)
-Dieldrin (7.571)
-Endrin (7.896)
-4,4'-DDD (8.150)
-Endosulfan II (8.225)
-Endrin Aldehyde (8.418)
-4,4'-DDT (8.605)
-Endosulfan sulfate (8.760)
-Methoxychlor (9.333)
-Endrin Ketone (9.445)
-Decachlorobiphenyl (11.708)
\\target_server\gg\chem\gc01.i\GC01HG21.b\1HG00444.D
Min

Data File: 1HG00444.D
Report Date: 22-Jul-2014 06:36

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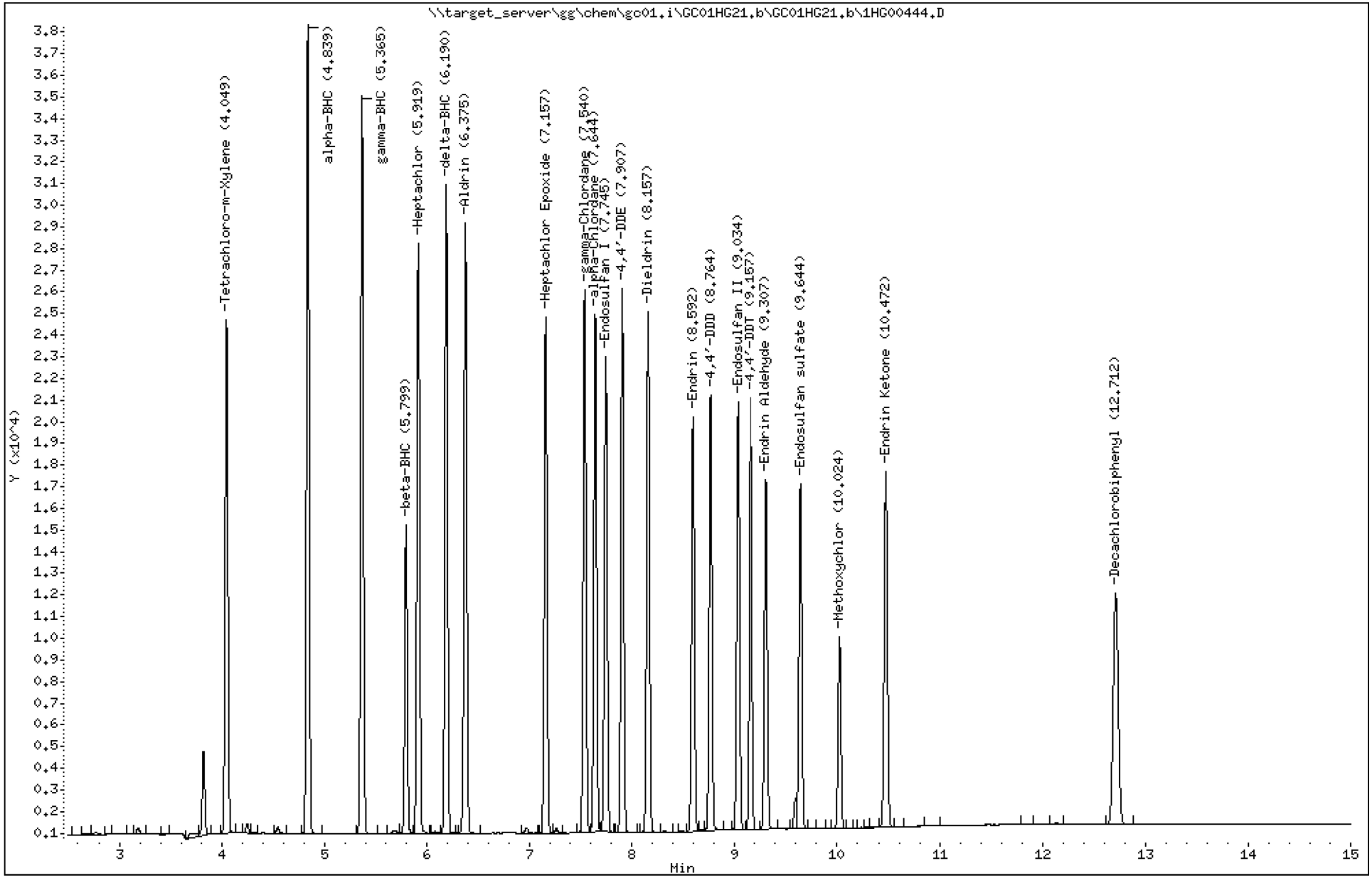
Data file : \\target_server\gg\chem\gc01.i\GC01HG21.b\GC01HG21.b\1HG00444.D
Lab Smp Id: WG146672-12
Inj Date : 21-JUL-2014 12:16
Operator : JLP Inst ID: gc01.i
Smp Info : WG146672-12
Misc Info :
Comment :
Method : \\target_server\gg\chem\gc01.i\GC01HG21.b\PEST135.m\PEST135.m
Meth Date : 22-Jul-2014 06:19 gc01.i Quant Type: ESTD
Cal Date : 11-JUL-2014 16:15 Cal File: 1HG00253.D
Als bottle: 7 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: cv.sub
Target Version: 4.12
Processing Host: V200T2

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.01000	Final Volume (L)
Vo	1.000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
$ 4	Tetrachloro-m-Xylene	4.048	4.047	0.001	23691	0.10000	0.101	
5	alpha-BHC	4.838	4.837	0.001	37346	0.10000	0.104	
6	gamma-BHC	5.365	5.365	0.000	34068	0.10000	0.102	
7	beta-BHC	5.798	5.799	-0.001	14256	0.10000	0.102	
8	delta-BHC	6.190	6.189	0.001	29961	0.10000	0.105	
9	Heptachlor	5.918	5.917	0.001	27249	0.10000	0.0989	
10	Aldrin	6.375	6.374	0.001	28195	0.10000	0.104	
13	Heptachlor Epoxide	7.156	7.155	0.001	23798	0.10000	0.120	
15	gamma-Chlordane	7.540	7.539	0.001	25033	0.10000	0.105	
17	alpha-Chlordane	7.643	7.642	0.001	23905	0.10000	0.107	
19	4,4'-DDE	7.906	7.905	0.001	25116	0.10000	0.104	
20	Endosulfan I	7.745	7.745	0.000	21958	0.10000	0.102	
21	Dieldrin	8.156	8.155	0.001	24067	0.10000	0.106	
23	Endrin	8.591	8.592	-0.001	19162	0.10000	0.106	
24	4,4'-DDD	8.763	8.762	0.001	20091	0.10000	0.109	
26	Endosulfan II	9.033	9.032	0.001	19773	0.10000	0.106	
27	4,4'-DDT	9.156	9.155	0.001	19940	0.10000	0.110	
28	Endrin Aldehyde	9.306	9.305	0.001	16173	0.10000	0.107	
29	Methoxychlor	10.023	10.022	0.001	8804	0.10000	0.106	
32	Endosulfan sulfate	9.643	9.642	0.001	15953	0.10000	0.108	
33	Endrin Ketone	10.471	10.470	0.001	16440	0.10000	0.128	
$ 34	Decachlorobiphenyl	12.711	12.710	0.001	10671	0.10000	0.0995	

Data File: \\target_server\gg\chem\gc01.i\GC01HG21.b\GC01HG21.b\1HG00444.D
Date : 21-JUL-2014 12:16
Client ID:
Instrument: gc01.i
Sample Info: WG146672-12
Purge Volume: 1.0
Operator: JLP
Column phase: ZB-Multiresidue-2
Column diameter: 0.53



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