CHEMIST REVIEW-VALIDATION CHECKLIST

Alkylphenols (i.e. nonylphenols)

Project: Olin Chemical Superfund Site **Method:** Modified 8270 SIM
Project #: 6107110016-12 **Laboratory and SDG:** TestAmerica-West Sacramento **SDG:** 360-34253-1
Date: 9-1-11 **Reviewer:** Tige Cunningham

☐ Chemist Review ☐ Full Validation (add page 2)

1. **Case Narrative and Data Package Completeness (COC Review)**

Narrative states OC-SW-SD-1-XXX was not received @ the lab and analysis was canceled.

2. **Holding Time and Sample Preservation** (7 days to extract; 40 days from extraction to analysis) (H_2SO_4 to pH<2 and Cool, 4°C)

Samples OC-SW-ISCO-1-DUP and OC-SW-PZ-17RR-XXX were received at 16°C. Results were Qualified estimated (J/UJ)

3. **QC Blanks**

OK Method blank < than RL's.

4. **Laboratory Control Sample Review (Limits 40% -140%)**

OK LCS w/in control limits

5. **Field Duplicate Precision (Limit = 30%)**

OK✓ Sample & FD were ND.

6. **Lab Duplicate Precision (RPD ≤ 20)**

N/A

7. **Matrix Spike Results (if applicable) (Limits 40% -140%, RPD = 50%)**

Sample OC-SW-ISCO-1-XXX Spiked. Recovery of Bisphenol-A was above control @ 174% & 152%. No detections in sample, NO further action.

8. **Surrogate Recovery (if applicable) (Limits 40% -140%)**

OK✓ w/in limits

9. **Internal Standards (50%-200% for Acenaphthene-d10 and Phenanthrene-d10)**

Note: The following analyses will be evaluated according to the "MADEP QA/QC Guidelines for **Sampling, Data Evaluation and Reporting Activities.**" MADEP, however, may not list QA/QC criteria for every chemical analysis. Where not defined by MADEP, criteria will default to values stipulated in the QAPP. Where the QAPP does not define criteria, QA/QC requirements will default to limits employed by the laboratory.

1.0 Laboratory Deliverable Requirements

1.1 Laboratory Information: Was all of the following provided in the laboratory report? **Yes [X]** No [ ] N/A [ ] Comments:
Check items received.

☑ *Name of Laboratory* ☑ *Address* ☑ *Project ID* ☑ *Phone #* ☑ *Sample identification – Field and Laboratory*

Client Information: ☑ *Name* ☑ *Address* ☑ *Client Contact* *(IDs must be cross-referenced)*

ACTION: If no, contact lab for submission of missing or illegible information.

1.2 Laboratory Report Certification Statement ***Yes [ ]*** *No [ ]* *N/A [X]* *Comments:*

Does the laboratory report include a completed Analytical Report Certification in the required format?

***ACTION**: If no, contact lab for submission of missing certification or certification with correct format.*

1.3 Laboratory Case Narrative: ***Yes [X]*** *No [ ]* *N/A [ ]* *Comments:*

☑ *Narrative serves as an exception report for the project and method QA/QC performance.* **NA** *Narrative includes an explanation of each discrepancy on the Certification Statement.*

***ACTION**: If no, contact lab for submission of missing or illegible information.*

1.4 Chain of Custody (COC) copy present with all documentation completed? **Yes [X]** No [ ] N/A [ ] Comments:

Does the laboratory report include copies of Chain of Custody forms containing all samples in this SDG?

NOTE: Olin receives and maintains the *original* COC.

ACTION: If no, contact lab for submission of copy of missing completed COC.

1.5 Sample Receipt Information (*Cooler Receipt Form*): Were each of the following tasks completed and recorded upon receipt of the sample(s) into the laboratory?

Yes [X] No [ ] N/A [ ] Comments:

☑ Sample temperature confirmed: must be 1° – 10° C. (If samples were sent by courier and delivered on the same day as collection, temperature requirement does not apply).

☑ Container type noted ☑ Condition observed ☑ pH verified (where applicable) ☑ Field and lab IDs cross referenced

ACTION: If no, contact lab for submission of missing or incomplete documentation.

1.5.1 Were the correct bottles and preservatives used? **Yes [X]** No [__] N/A [__] Comments:

Ammonia,– 1 Liter polyethylene/H_2SO_4 to pH<2,cool to 4°C

Oil & Grease – 1 Liter glass/HCL or H2SO4 to pH<2,cool to 4°C

Alkalinity – 1 Liter polyethylene/cool to 4°C

Chemical Oxygen Demand – 50 mL polyethylene/H_2SO_4 to pH<2,cool to 4°C

Chloride, pH, sulfate, nitrate, nitrite - 50 mL polyethylene/cool to 4°C

Nitrate/nitrite - H2SO4 to pH<2,cool to 4°C

Organic Carbon – 500 mL amber glass bottle/HCl or H_2SO_4 to pH<2,cool to 4°C

Sulfide – 50 mL polyethylene/ZnAcetate + NaOH to pH>9, cool to 4°C

Phenolics - H_2SO_4 to pH<2,cool to 4°C

Specific conductance, TDS, TSS – 100 mL polyethylene/cool to 4°C

ACTION: If no, inform senior chemist. Document justification for change in container/volume (if applicable), qualify positive and non-detect data (J) data if cooler temperature exceeds 10°C. Rejection of data requires professional judgment

1.5.2 Were all samples delivered to the laboratory without breakage? **Yes [X]** No [__] N/A [__] Comments:

1.5.3 Does the *Cooler Receipt Form* or Lab Narrative indicate other problems with sample receipt, condition of the samples, analytical problems or special circumstances affecting the quality of the data? Yes [__] **No [X]** N/A [__] Comments:

1.6 Sample Results Section: *Was the following information supplied in the laboratory report for each sample?* **Yes [X]** No [__] N/A [__] Comments:

☑ Field ID and Lab ID ☑ Date and time collected ☑ Analyst Initials ☑ Dilution Factor NA % moisture or solids ☑ Reporting limits
NA *Clean-up method* ☑ Analysis method ☑ Preparation method ☑ Date of preparation/extraction/digestion clean-up and analysis, where applicable
☑ Matrix ☑ Target analytes and concentrations ☑Units (soils must be reported in dry weight)

ACTION: If no, contact lab for submission of missing or incomplete information.

1.7 QA/QC Information: Was the following information provided in the laboratory report for each sample batch? **Yes [X]** No [__] N/A [__] Comments:

☑ Method blank results ☑ LCS recoveries ☑ MS/MSD recoveries and RPDs ☑ Laboratory duplicate results (where applicable)

ACTION: If no, contact lab for submission of missing or incomplete information.

2.0 Holding Times Yes [X] **No [__]** N/A __] Comments:
OC-SW-SDBK-002-XXX nitrate, nitrite
OC-SW-LB-1-XXX nitrate, nitrite

Have any technical holding times, determined from date of collection to date of analysis, been exceeded? The holding times are as follows:
28 days = ammonia, chemical oxygen demand, chloride, organic carbon, oil & grease, specific conductance, total organic carbon and sulfate

Alkalinity = 14 days Sulfide, TDS, TSS = 7 days pH = analyze immediately Nitrate nitrogen as N = 48 hrs

Nitrite nitrogen as N = 48 hrs Nitrate + Nitrite as N = 28 days

NOTE: List samples that exceed hold time with # of days exceeded on checklist

ACTION: If technical holding times are exceeded qualify results (J). For water samples that are grossly exceeded (>2X hold time) reject (R) all non-detect results. Professional judgment used to qualify soils.

3.0 Laboratory Method **Yes [X]** No [__] N/A [__] Comments:

3.1 Was the correct laboratory method used?

ACTION: If no, contact lab to provide justification for method change compared to the requested method. Contact senior chemist to inform Client of change or to request variance.

3.2 Are the practical quantitation limits the same as those specified by the ☑ QAPP/IRSWP ☐ Lab? **Yes [__]** No [X] N/A [__] Comments: Lab uses 0.1 mg/L vice the specified PQL from the QAPP

3.3 **Note:** *The MADEP QA/QC Guidelines do not yet list PQLs for wet chemistry*

analyses, therefore all criteria will default to values stipulated in the QAPP. Where the QAPP does not define criteria, QA/QC requirements default to limits employed by the lab**. Other criteria may also apply.*

Ammonia* ☑ = 0.1 mg/ L	Alkalinity**☐ = 1 mg/L	Bicarbonate Alkalinity** ☐ = 1 mg/L	Carbonate Alkalinity** ☐ = 1 mg/L
Nitrate Nitrogen as N* ☑ = .05 mg/L	Nitrite Nitrogen as N* ☑ = .01 mg/L	Chloride* ☑ = 1 mg/L	Hardness *☑ = 2 mg/L
Spec. Cond.** ☐ 3 umhos/cm	Total Organic Carbon** ☑ = 1 mg/L	Oil & Grease* ☐ = 5.5 mg/L	Sulfate (EPA 300.0)* ☑ = 2 mg/L
COD:* Low – 20 mg/L	COD* High - 50 mg/L ☐	TDS* ☐ = 10 mg/L	TSS* ☑ = 5 mg/L
pH* ☐ < 2 to > 12	Phenolic - 0.01 mg/L		

Other parameter(list) Bromide PQL = 0.01 mg/L ☑ Source of PQL = QAPP

Other parameter(list) _____ PQL = _____ ☐ Source of PQL = _____

ACTION: If no, evaluate change with respect to sample matrix, preparation, dilution, moisture, etc. If sample PQL is indeterminate, contact lab for explanation.

3.3 Are the appropriate parameter results present for each sample in the SDG? **Yes [X]** No [ ] N/A [ ] Comments:

ACTION: If no, check Request for Analysis to verify if method was ordered and COC to verify that it was sent, and contact lab for resubmission of the missing data

3.4 If *dilutions were required, were dilution factors reported?* **Yes [X]** No [ ] N/A [ ] Comments:

ACTION: If no, contact the lab for submission.

4.0 Method Blanks **Yes [X]** No [ ] N/A [ ] Comments:

4.1 Are the Method Blank Summaries present?

ACTION: If no, call the laboratory for submission of missing data.

4.2 Was a method blank analyzed for each analysis batch of wet chemistry field samples of 20 or less? **Yes [X]** No [ ] N/A [ ] Comments:

ACTION: If no, document discrepancy in case narrative and contact lab for justification. Consult senior chemist for action needed.

4.3 Is the method blank less than the PQL? (See Section 3.2 for PQLs).	**Yes [X]**	No [__]	N/A [__]	Comments:
4.4 Do any method blanks have positive results for wet chemistry parameters? Qualify data according to the following: If the sample concentration is < 5 × blank value, flag sample result non-detect "U" at the PQL or the concentration reported if greater than the PQL. If the sample concentration is > 5 × blank value, no qualification is needed.	Yes [__]	**No [X]**	N/A [__]	Comments:

ACTION: If any blank has positive results, list all the concentrations detected and flagging level (flagging level = 5 × blank value) on the checklist. List all affected samples and their qualifiers.

5.0 Laboratory Control Standards

5.1 Was a laboratory control standard (LCS) run with each analytical batch of 20 samples or less?	**Yes [X]**	No [__]	N/A [__]	Comments:

ACTION: If no, call laboratory for LCS form submittal. If data is not available, use professional judgment to determine qualification actions for data associated with the batch.

5.2 Is a LCS Summary Form present?	**Yes [X]**	No [__]	N/A [__]	Comments:

ACTION: If no, contact lab for resubmission of missing data.

5.3 Is any wet chemistry analyte LCS recovery outside the control limits?	Yes [__]	**No [X]**	N/A [__]	Comments:

LCS Limits:

Alkalinity** ☐ = 80-120%	Bicarbonate Alkalinity** ☐ = 80-120%	Carbonate Alkalinity** ☐ = 80-120%	Specific Conductivity *☐ = 80-120%
Total Organic Carbon** ☑ = 80-120%	TDS** ☐ = 80-120%	Oil & Grease* ☐ = 80-120%	Ammonia Nitrogen as N* ☑ = 80-120%
COD Low* ☐ = 80-120%	COD High* ☐ = 80-120%	Nitrate Nitrogen as N**☑ = 80-120%	Nitrite Nitrogen as N** ☑= 80-120%
Hardness* ☐ = 80-120%	Chloride* ☑ = 80-120%	Sulfate (EPA 300.0)* ☑ = 80-120%	pH* ☐ = 98-102% TSS* NA

Other parameter(list) Bromide %R = 80-120 ☑ Rec Limits= QAPP

Other parameter(list) _____ %R = _____ ☐ Rec Limits = _____

(MADEP has not yet defined LCS recovery limits for wet chemistry analyses.)

ACTION: If recovery is above the upper limit, qualify all positive sample results within the batch as (J). If recovery is below the lower limit, qualify all positive and no-detect results within the batch as (J). If LCS recovery is <10%, non-detect results are rejected (R).

6.0 Matrix Spikes

Matrix spikes may be collected at different frequencies based on monthly, quarterly, or task specific schedules. Confirm spike requirements for each set with the senior chemist.

OC-SW-MMB-SW/SD-4-XXX

6.1 Were project-specific MS/MSDs analyzed? List project samples that were spiked.
ACTION: If no, contact senior chemist to see if any were specified.

Yes [X] No [__] N/A [__] Comments:

6.2 Is the MS/MSD Recovery Form present?
ACTION: If no, contact lab for resubmission of missing data.

Yes [X] No [__] N/A [__] Comments:

6.3 Were matrix spikes analyzed at the required frequency of 1 per 20 samples per matrix?
ACTION: If any matrix spike data is missing, call lab for resubmission.

Yes [X] No [__] N/A [__] Comments:

6.4 Are any wet chemistry analyte spike recoveries outside of the QC limits?

Yes [__] **No [X]** N/A [__] Comments:

NOTE: $\%R = \frac{(SSR-SR)}{SA} \times 100\%$

SA = Spike added

Where: SSR = Spiked sample result
SR = Sample result

MS/MSD Recovery Limits:

Alkalinity* = NA	Bicarbonate Alkalinity* = NA	Carbonate alkalinity* = NA	Ammonia* (LACHAT) ☑ = 75-125%
Chloride*(SM 4500 Cl) ☑= 75-125%	Specific Conductivity * = NA	Total Organic Carbon* = NA	TDS** = NA
Oil & Grease* = NA	COD Low* ☐ = 75-125%	COD High* ☐ = 75-125%	Nitrate Nitrogen as N** ☑ = 75-125%
Nitrite Nitrogen as N** ☑ = 75-125%	Hardness* ☐ = 75-125%	Sulfate (EPA 300.0)* ☑ = 75-125% pH* = NA	TSS* = NA

Other parameter(list) Bromide % R = 75-125 ☑ Rec Limits = QAPP

* = Laboratory Limits ** = Olin QAPP Limits (*MADEP has not yet defined LCS recovery limits for wet chemistry analyses.*)

NOTES: 1) If only one of the recoveries for an MS/MSD pair is outside of the control limits, no qualification is necessary. Use professional judgment for the MS/MSD flags.
2) If the MS/MSD was performed by the laboratory on a non-project sample, no qualification is required.

ACTION: MS/MSD flags only apply to the sample spiked. Do not evaluate if sample concentration is > 4X spike. If the recoveries of the MS and MSD exceed the upper control limit, qualify positive results as estimated (J). If the recoveries of the MS and MSD are lower than the lower control limit but > 30%, qualify both positive results and non-detects (J). If the MS/MSD recovery is < 30% and the sample is non-detect, the results are considered unusable and flagged (R).

ACTION: Laboratory control limits apply when spiked sample results fall within the normal calibration range. If dilutions are required due to high sample concentrations, the data is evaluated, but no flags are applied.

6.5 Are any RPDs for MS/MSD recoveries outside of the QA/QC limits? Yes [ ] **No [X]** N/A [ ] Comments:

NOTE: $RPD = \frac{S - D}{(S + D)/2} \times 100\%$ Where S = MS result, D = MSD result

MS/MSD RPD Limits:

RPD ≤ 20

7.0 Laboratory Duplicate

Are the RPDs for the laboratory duplicates <20% unless otherwise specified below? **Yes [X]** No [ ] N/A [ ] Comments:

ACTION: If the RPD is greater than specified limits, qualify all results for that analyte as estimated (J).

pH* ☐ = 3% Specific Conductivity *☐ = 5% TSS** ☑ = 6% TDS** ☐ = 6%

8.0 Sampling Accuracy

The majority of ground water samples are collected directly from a tap, process stream, or with dedicated tubing. Rinse blanks will not be collected.

8.1 Were rinsate blanks collected? Prior to evaluating rinsate blanks, obtain a list of the associated samples from the senior chemist.	**Yes [__]**	No [__]	N/A [X]	Comments:
8.2 Do any rinsate blanks have positive results?	Yes [__]	**No [__]**	N/A [X]	Comments:

ACTION: Evaluate rinsate results vs. blank results to determine if contaminant may be laboratory-derived. If not lab-related, qualify according to the table below.

If the sample concentration is < 5 × blank value, flag sample result non-detect "U" at the PQL or the concentration reported if greater than the PQL.

If the sample concentration is > 5 × blank value, no qualification is needed.

NOTE: *MADEP does not require the collection of rinsate blanks.*

9.0 Field Duplicates

9.1 Were field duplicate samples collected? Obtain a list of samples and their associated field duplicates.	**Yes [__]**	No [__]	N/A [X]	Comments:
9.2 Were field duplicates collected per the required frequency?	**Yes [__]**	No [__]	N/A [X]	Comments:

QAPP/IRSWP ☑ *MADEP Option 1(1 per 20)* ☐ *MADEP Option 3 (1 per 10)* ☐

9.3 Was the RPD ≤ 30% for waters ≤ 50% for soils? Calculate the RPD for results and attach to this review.	**Yes [__]**	No [__]	N/A [X]	Comments:

ACTION:. Qualify data (J) for both sample results if the RPD exceeded.

Was any of the data qualified?	Yes [X]	**No [__]**	N/A [__]	Comments:

If so, apply data qualifiers directly to the DQE copy of laboratory report and **flag pages** for entry in database.

REFERENCES:-

MACTEC, 2007. "Draft Interim Response Steps Work Plan"; Olin Chemical Superfund Site, 51 Eames Street, Wilmington, Massachusetts.; Project No. 6300-06-0010/41.1; July 25, 2007.

Massachusetts Department of Environmental Protection (MADEP), 2004. "The Compendium of Quality Assurance and Quality Control Requirements and Performance Standards for Selected Analytical Methods Used in Support of Response Actions for the Massachusetts Contingency Plan (MCP)"; Bureau of Waste Site Cleanup; 1 Winter Street, Boston, Massachusetts 02108; WSC-CAM; May 2004.

lab_sample_id	field_sample_id	param_name	field_sample_date	analysis_date	Amt Exceeded (hrs)
360-34288-10	OC-SW-MMB-SW/SD-5-XXX	Nitrate as N	6/7/11 9:30	6/8/11 16:40	0
360-34288-11	OC-SW-MMB-SW/SD-8-XXX	Nitrate as N	6/7/11 10:10	6/8/11 17:12	0
360-34288-12	OC-SW-OPWD-1-XXX	Nitrate as N	6/7/11 9:00	6/8/11 15:36	0
360-34288-13	OC-SW-OPWD-2-XXX	Nitrate as N	6/7/11 10:05	6/8/11 17:44	0
360-34288-14	OC-SW-OPWD-SD/SO/SW-S-XXX	Nitrate as N	6/7/11 8:35	6/8/11 15:03	0
360-34288-15	OC-SW-SDBK-002-XXX	Nitrate as N	6/7/11 14:30	6/9/11 19:21	2.85
360-34288-5	OC-SW-LB-1-XXX	Nitrate as N	6/7/11 13:40	6/9/11 18:49	3.15
360-34288-6	OC-SW-LB-2-XXX	Nitrate as N	6/7/11 12:50	6/8/11 18:49	0
360-34288-7	OC-SW-LB-3-XXX	Nitrate as N	6/7/11 11:15	6/8/11 18:17	0
360-34288-8	OC-SW-MMB-SW/SD-10-XXX	Nitrate as N	6/6/11 15:20	6/8/11 14:31	0
360-34288-9	OC-SW-MMB-SW/SD-4-XXX	Nitrate as N	6/6/11 16:00	6/8/11 13:27	0
360-34288-10	OC-SW-MMB-SW/SD-5-XXX	Nitrite as N	6/7/11 9:30	6/8/11 16:56	0
360-34288-11	OC-SW-MMB-SW/SD-8-XXX	Nitrite as N	6/7/11 10:10	6/8/11 17:28	0
360-34288-12	OC-SW-OPWD-1-XXX	Nitrite as N	6/7/11 9:00	6/8/11 15:52	0
360-34288-13	OC-SW-OPWD-2-XXX	Nitrite as N	6/7/11 10:05	6/8/11 17:44	0
360-34288-14	OC-SW-OPWD-SD/SO/SW-S-XXX	Nitrite as N	6/7/11 8:35	6/8/11 15:20	0
360-34288-15	OC-SW-SDBK-002-XXX	Nitrite as N	6/7/11 14:30	6/9/11 19:37	3.12
360-34288-5	OC-SW-LB-1-XXX	Nitrite as N	6/7/11 13:40	6/9/11 19:05	5.42
360-34288-6	OC-SW-LB-2-XXX	Nitrite as N	6/7/11 12:50	6/8/11 18:49	0
360-34288-7	OC-SW-LB-3-XXX	Nitrite as N	6/7/11 11:15	6/8/11 18:33	0
360-34288-8	OC-SW-MMB-SW/SD-10-XXX	Nitrite as N	6/6/11 15:20	6/8/11 14:47	0
360-34288-9	OC-SW-MMB-SW/SD-4-XXX	Nitrite as N	6/6/11 16:00	6/8/11 13:43	0

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: OC-SW-LB-1-XXX

Lab Sample ID: 360-34288-5

Lab Name: TestAmerica Westfield

Job No.: 360-34288-1

SDG ID.: 360-34288-1

Matrix: Water

Date Sampled: 06/07/2011 13:40

Reporting Basis: WET

Date Received: 06/08/2011 10:19

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
14797-55-8	Nitrate as N	ND	0.050		mg/L		~~H~~ W	1	300.0
14808-79-8	Sulfate	4.4	2.0		mg/L			1	300.0
16887-00-6	Chloride	360	10		mg/L			10	300.0
14797-65-0	Nitrite as N	ND	0.10		mg/L		~~H~~ W	10	300.0
24959-67-9	Bromide	ND	0.10		mg/L			1	300.0
	Total Suspended Solids	32	5.0		mg/L			1	SM 2540D
7440-44-0	Total Organic Carbon	13	1.0		mg/L			1	SM 5310B
7664-41-7	Ammonia	0.52	0.10		mg/L			1	L107-06-1B

MJW 8/24/11

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: OC-SW-SDBK-002-XXX
Lab Sample ID: 360-34288-15
Lab Name: TestAmerica Westfield
Job No.: 360-34288-1
SDG ID.: 360-34288-1
Matrix: Water
Date Sampled: 06/07/2011 14:30
Reporting Basis: WET
Date Received: 06/08/2011 10:19

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
14797-55-8	Nitrate as N	0.94	0.050		mg/L		~~H~~ J	1	300.0
14808-79-8	Sulfate	12	2.0		mg/L			1	300.0
16887-00-6	Chloride	160	10		mg/L			10	300.0
14797-65-0	Nitrite as N	ND	0.10		mg/L		~~H~~ UJ	10	300.0
24959-67-9	Bromide	ND	0.10		mg/L			1	300.0
	Total Suspended Solids	ND	2.5		mg/L			1	SM 2540D
7440-44-0	Total Organic Carbon	ND	1.0		mg/L			1	SM 5310B
7664-41-7	Ammonia	0.13	0.10		mg/L			1	L107-06-1B

MJW
8/29/11

OLIN-WILMINGTON
LEVEL I DATA QUALITY EVALUATION
STANDARD OPERATING PROCEDURE AND CHECKLIST
WET CHEMISTRY PARAMETERS BY VARIOUS METHODS

Reviewer/Date Mike Washburn 8/24/2011
Sr. Review/Date 9/2/11
Lab Report # TAL 360-34315-1
Project # 6107110016-12

Note: The following analyses will be evaluated according to the "MADEP QA/QC Guidelines for **Sampling, Data Evaluation and Reporting Activities.**" MADEP, however, may not list QA/QC criteria for every chemical analysis. Where not defined by MADEP, criteria will default to values stipulated in the QAPP. Where the QAPP does not define criteria, QA/QC requirements will default to limits employed by the laboratory.

1.0 Laboratory Deliverable Requirements

1.1 Laboratory Information: Was all of the following provided in the laboratory report? **Yes [X]** No [__] N/A [__] Comments:
Check items received.

☑ *Name of Laboratory* ☑ *Address* ☑ *Project ID* ☑ *Phone #* ☑ *Sample identification – Field and Laboratory*

Client Information: ☑ *Name* ☑ *Address* ☑ *Client Contact* *(IDs must be cross-referenced)*

ACTION: If no, contact lab for submission of missing or illegible information.

1.2 Laboratory Report Certification Statement ***Yes [__]*** *No [__]* *N/A [X]* *Comments:*

Does the laboratory report include a completed Analytical Report Certification in the required format?

***ACTION**: If no, contact lab for submission of missing certification or certification with correct format.*

1.3 Laboratory Case Narrative: ***Yes [X]*** *No [__]* *N/A [__]* *Comments:*

☑ *Narrative serves as an exception report for the project and method QA/QC performance.* **NA** *Narrative includes an explanation of each discrepancy on the Certification Statement.*

***ACTION**: If no, contact lab for submission of missing or illegible information.*

1.4 Chain of Custody (COC) copy present with all documentation completed? **Yes [X]** No [__] N/A [__] Comments:

Does the laboratory report include copies of Chain of Custody forms containing all samples in this SDG?

NOTE: Olin receives and maintains the *original* COC.

ACTION: If no, contact lab for submission of copy of missing completed COC.

1.5 Sample Receipt Information (*Cooler Receipt Form*): Were each of the following tasks completed and recorded upon receipt of the sample(s) into the laboratory?

Yes [X] No [__] N/A [__] Comments:

☑ Sample temperature confirmed: must be 1° – 10° C. (If samples were sent by courier and delivered on the same day as collection, temperature requirement does not apply).

☑ Container type noted ☑ Condition observed ☑ pH verified (where applicable) ☑ Field and lab IDs cross referenced

ACTION: If no, contact lab for submission of missing or incomplete documentation.

1.5.1 Were the correct bottles and preservatives used? **Yes [X]** No [ ] N/A [ ] Comments:

Ammonia,– 1 Liter polyethylene/H_2SO_4 to pH<2,cool to 4°C

Oil & Grease – 1 Liter glass/HCL or H2SO4 to pH<2,cool to 4°C

Alkalinity – 1 Liter polyethylene/cool to 4°C

Chemical Oxygen Demand – 50 mL polyethylene/H_2SO_4 to pH<2,cool to 4°C

Chloride, pH, sulfate, nitrate, nitrite - 50 mL polyethylene/cool to 4°C

Nitrate/nitrite - H2SO4 to pH<2,cool to 4°C

Organic Carbon – 500 mL amber glass bottle/HCl or H_2SO_4 to pH<2,cool to 4°C

Sulfide – 50 mL polyethylene/ZnAcetate + NaOH to pH>9, cool to 4°C

Phenolics - H_2SO_4 to pH<2,cool to 4°C

Specific conductance, TDS, TSS – 100 mL polyethylene/cool to 4°C

ACTION: If no, inform senior chemist. Document justification for change in container/volume (if applicable), qualify positive and non-detect data (J) data if cooler temperature exceeds 10°C. Rejection of data requires professional judgment

1.5.2 Were all samples delivered to the laboratory without breakage? **Yes [X]** No [ ] N/A [ ] Comments:

1.5.3 Does the *Cooler Receipt Form* or Lab Narrative indicate other problems with sample receipt, condition of the samples, analytical problems or special circumstances affecting the quality of the data? Yes [ ] **No [X]** N/A [ ] Comments:

1.6 Sample Results Section: *Was the following information supplied in the laboratory report for each sample?* **Yes [X]** No [ ] N/A [ ] Comments:

☑ Field ID and Lab ID ☑ Date and time collected ☑ Analyst Initials ☑ Dilution Factor NA % moisture or solids ☑ Reporting limits
NA *Clean-up method* ☑ Analysis method ☑ Preparation method ☑ Date of preparation/extraction/digestion clean-up and analysis, where applicable
☑ Matrix ☑ Target analytes and concentrations ☑Units (soils must be reported in dry weight)

ACTION: If no, contact lab for submission of missing or incomplete information.

1.7 QA/QC Information: Was the following information provided in the laboratory report for each sample batch? **Yes [X]** No [__] N/A [__] Comments:

☑ Method blank results ☑ LCS recoveries ☑ MS/MSD recoveries and RPDs ☑ Laboratory duplicate results (where applicable)

ACTION: If no, contact lab for submission of missing or incomplete information.

2.0 <u>Holding Times</u> Yes [X] **No [__]** N/A [__] Comments: Grossly exceeded nitrate: OC-SW-SDBK-001-XXX, OC-SW-MMB-SW/SD-6-XXX, OC-SW-MMB-SW/SD-8A-XXX, OC-SW-SDBK-004-XXX, OC-SW-SD-EDSD/SW0-XXX, OC-SW-MMB-SW/SD-11-XXX, OC-SW-MMB-SW/SD-2-XXX
Exceeded nitrite: OC-SW-MMB-SW/SD-11-XXX

Have any technical holding times, determined from date of collection to date of analysis, been exceeded? The holding times are as follows:
28 days = ammonia, chemical oxygen demand, chloride, organic carbon, oil & grease, specific conductance, total organic carbon and sulfate

Alkalinity = 14 days Sulfide, TDS, TSS = 7 days pH = analyze immediately Nitrate nitrogen as N = 48 hrs

Nitrite nitrogen as N = 48 hrs Nitrate + Nitrite as N = 28 days

NOTE: List samples that exceed hold time with # of days exceeded on checklist

ACTION: If technical holding times are exceeded qualify results (J). For water samples that are grossly exceeded (>2X hold time) reject (R) all non-detect results. Professional judgment used to qualify soils.

3.0 Laboratory Method **Yes [X]** No [__] N/A [__] Comments:

3.1 Was the correct laboratory method used?

ACTION: If no, contact lab to provide justification for method change compared to the requested method. Contact senior chemist to inform Client of change or to request variance.

3.2 Are the practical quantitation limits the same as those specified by the ☑ QAPP/IRSWP ☐ Lab? **Yes** [ ] No [X] N/A [ ] Comments: Lab uses 0.1 mg/L vice the specified PQL from the QAPP

3.3 **Note:** *The MADEP QA/QC Guidelines do not yet list PQLs for wet chemistry analyses, therefore all criteria will default to values stipulated in the QAPP*. Where the QAPP does not define criteria, QA/QC requirements default to limits employed by the lab**. Other criteria may also apply.*

Ammonia* ☑ = 0.1 mg/ L	Alkalinity**☐ = 1 mg/L	Bicarbonate Alkalinity** ☐ = 1 mg/L	Carbonate Alkalinity** ☐ = 1 mg/L
Nitrate Nitrogen as N* ☑ = .05 mg/L	Nitrite Nitrogen as N* ☑ = .01 mg/L	Chloride* ☑ = 1 mg/L	Hardness *☑ = 2 mg/L
Spec. Cond.** ☐ 3 umhos/cm	Total Organic Carbon** ☑ = 1 mg/L	Oil & Grease* ☐ = 5.5 mg/L	Sulfate (EPA 300.0)* ☑ = 2 mg/L
COD:* Low – 20 mg/L	COD* High - 50 mg/L ☐	TDS* ☐ = 10 mg/L	TSS* ☑ = 5 mg/L
pH* ☐ < 2 to > 12	Phenolic - 0.01 mg/L		

Other parameter(list) Bromide PQL = 0.01 mg/L ☑ Source of PQL = QAPP

Other parameter(list) _____ PQL = _____ ☐ Source of PQL = _____

ACTION: If no, evaluate change with respect to sample matrix, preparation, dilution, moisture, etc. If sample PQL is indeterminate, contact lab for explanation.

3.3 Are the appropriate parameter results present for each sample in the SDG? **Yes [X]** No [ ] N/A [ ] Comments:

ACTION: If no, check Request for Analysis to verify if method was ordered and COC to verify that it was sent, and contact lab for resubmission of the missing data

3.4 If *dilutions were required, were dilution factors reported?* **Yes [X]** No [ ] N/A [ ] Comments:

ACTION: If no, contact the lab for submission.

4.0 **Method Blanks** **Yes [X]** No [ ] N/A [ ] Comments:

4.1 Are the Method Blank Summaries present?

ACTION: If no, call the laboratory for submission of missing data.

4.2 Was a method blank analyzed for each analysis batch of wet chemistry field samples of 20 or less? **Yes [X]** No [__] N/A [__] Comments:

ACTION: If no, document discrepancy in case narrative and contact lab for justification. Consult senior chemist for action needed.

4.3 Is the method blank less than the PQL? (See Section 3.2 for PQLs). **Yes [X]** No [__] N/A [__] Comments:

4.4 Do any method blanks have positive results for wet chemistry parameters? Qualify data according to the following: Yes [__] **No [X]** N/A [__] Comments:

If the sample concentration is < 5 × blank value, flag sample result non-detect "U" at the PQL or the concentration reported if greater than the PQL.

If the sample concentration is > 5 × blank value, no qualification is needed.

ACTION: If any blank has positive results, list all the concentrations detected and flagging level (flagging level = 5 × blank value) on the checklist. List all affected samples and their qualifiers.

5.0 Laboratory Control Standards

5.1 Was a laboratory control standard (LCS) run with each analytical batch of 20 samples or less? **Yes [X]** No [__] N/A [__] Comments:

ACTION: If no, call laboratory for LCS form submittal. If data is not available, use professional judgment to determine qualification actions for data associated with the batch.

5.2 Is a LCS Summary Form present? **Yes [X]** No [__] N/A [__] Comments:

ACTION: If no, contact lab for resubmission of missing data.

5.3 Is any wet chemistry analyte LCS recovery outside the control limits? Yes [__] **No [X]** N/A [__] Comments:

LCS Limits:

Alkalinity** ☐ = 80-120%	Bicarbonate Alkalinity** ☐ = 80-120%	Carbonate Alkalinity** ☐ = 80-120%	Specific Conductivity *☐ = 80-120%
Total Organic Carbon** ☑ = 80-120%	TDS** ☐ = 80-120%	Oil & Grease* ☐ = 80-120%	Ammonia Nitrogen as N* ☑ = 80-120%
COD Low* ☐ = 80-120%	COD High* ☐ = 80-120%	Nitrate Nitrogen as N**☑ = 80-120%	Nitrite Nitrogen as N** ☑= 80-120%
Hardness* ☐ = 80-120%	Chloride* ☑ = 80-120%	Sulfate (EPA 300.0)* ☑ = 80-120%	pH* ☐ = 98-102% TSS* NA

Other parameter(list) Bromide %R = 80-120 ☑ Rec Limits= QAPP

Other parameter(list) _____ %R = _____ ☐ Rec Limits = _____

(MADEP has not yet defined LCS recovery limits for wet chemistry analyses.)

ACTION: If recovery is above the upper limit, qualify all positive sample results within the batch as (J). If recovery is below the lower limit, qualify all positive and no-detect results within the batch as (J). If LCS recovery is <10%, non-detect results are rejected (R).

6.0 Matrix Spikes

Matrix spikes may be collected at different frequencies based on monthly, quarterly, or task specific schedules. Confirm spike requirements for each set with the senior chemist.

OC-SW-SD-EDSD-SW0-XXX
OC-SW-SD-EDSD-SW2 (EDBS6)-XXX
OC-SW-MMB-SW/SD-6-XXX

6.1 Were project-specific MS/MSDs analyzed? List project samples that were spiked.
ACTION: If no, contact senior chemist to see if any were specified. **Yes [X]** No [__] N/A [__] Comments:

6.2 Is the MS/MSD Recovery Form present?
ACTION: If no, contact lab for resubmission of missing data. **Yes [X]** No [__] N/A [__] Comments:

6.3 Were matrix spikes analyzed at the required frequency of 1 per 20 samples per matrix? **Yes [X]** No [__] N/A [__] Comments:
ACTION: If any matrix spike data is missing, call lab for resubmission.

6.4 Are any wet chemistry analyte spike recoveries outside of the QC limits? Yes [__] **No [X]** N/A [__] Comments:

NOTE: $\%R = \frac{(SSR-SR)}{SA} \times 100\%$ Where: SSR = Spiked sample result; SR = Sample result; SA = Spike added

MS/MSD Recovery Limits:

Alkalinity* = NA	Bicarbonate Alkalinity* = NA	Carbonate alkalinity* = NA	Ammonia* (LACHAT) ☑ = 75-125%
Chloride*(SM 4500 Cl) ☑= 75-125%	Specific Conductivity * = NA	Total Organic Carbon* = NA	TDS** = NA
Oil & Grease* = NA	COD Low* ☐ = 75-125%	COD High* ☐ = 75-125%	Nitrate Nitrogen as N** ☑ = 75-125%
Nitrite Nitrogen as N** ☑ = 75-125%	Hardness* ☐ = 75-125%	Sulfate (EPA 300.0)* ☑ = 75-125% pH* = NA	TSS* = NA

Other parameter(list) Bromide % R = 75-125 ☑ Rec Limits = QAPP

* = Laboratory Limits ** = Olin QAPP Limits (*MADEP has not yet defined LCS recovery limits for wet chemistry analyses.*)

NOTES: 1) If only one of the recoveries for an MS/MSD pair is outside of the control limits, no qualification is necessary. Use professional judgment for the MS/MSD flags.
2) If the MS/MSD was performed by the laboratory on a non-project sample, no qualification is required.

ACTION: MS/MSD flags only apply to the sample spiked. Do not evaluate if sample concentration is > 4X spike. If the recoveries of the MS and MSD exceed the upper control limit, qualify positive results as estimated (J). If the recoveries of the MS and MSD are lower than the lower control limit but > 30%, qualify both positive results and non-detects (J). If the MS/MSD recovery is < 30% and the sample is non-detect, the results are considered unusable and flagged (R).

ACTION: Laboratory control limits apply when spiked sample results fall within the normal calibration range. If dilutions are required due to high sample concentrations, the data is evaluated, but no flags are applied.

6.5 Are any RPDs for MS/MSD recoveries outside of the QA/QC limits? Yes [ ] **No [X]** N/A [ ] Comments:

NOTE: $RPD = \frac{S - D}{(S + D)/2} \times 100\%$ Where S = MS result, D = MSD result

MS/MSD RPD Limits:

RPD ≤ 20

7.0 Laboratory Duplicate

Are the RPDs for the laboratory duplicates <20% unless otherwise specified below? **Yes [X]** No [ ] N/A [ ] Comments:

ACTION: If the RPD is greater than specified limits, qualify all results for that analyte as estimated (J).

pH* ☐ = 3% Specific Conductivity *☐ = 5% TSS** ☑ = 6% TDS** ☐ = 6%

8.0 Sampling Accuracy

The majority of ground water samples are collected directly from a tap, process stream, or with dedicated tubing. Rinse blanks will not be collected.

8.1 Were rinsate blanks collected? Prior to evaluating rinsate blanks, obtain a list of the associated samples from the senior chemist.	**Yes [__]**	No [__]	N/A [X]	Comments:
8.2 Do any rinsate blanks have positive results?	Yes [__]	**No [__]**	N/A [X]	Comments:

ACTION: Evaluate rinsate results vs. blank results to determine if contaminant may be laboratory-derived. If not lab-related, qualify according to the table below.

If the sample concentration is < 5 × blank value, flag sample result non-detect "U" at the PQL or the concentration reported if greater than the PQL.

If the sample concentration is > 5 × blank value, no qualification is needed.

NOTE: *MADEP does not require the collection of rinsate blanks.*

9.0 Field Duplicates

9.1 Were field duplicate samples collected? Obtain a list of samples and their associated field duplicates.	**Yes [__]**	No [__]	N/A [X]	Comments:
9.2 Were field duplicates collected per the required frequency?	**Yes [__]**	No [__]	N/A [X]	Comments:

QAPP/IRSWP ☑ *MADEP Option 1(1 per 20)* ☐ *MADEP Option 3 (1 per 10)* ☐

9.3 Was the RPD ≤ 30% for waters ≤ 50% for soils? Calculate the RPD for results and attach to this review.	**Yes [__]**	No [__]	N/A [X]	Comments:

ACTION:. Qualify data (J) for both sample results if the RPD exceeded.

Was any of the data qualified?	Yes [X]	**No [__]**	N/A [__]	Comments:

If so, apply data qualifiers directly to the DQE copy of laboratory report and **flag pages** for entry in database.

REFERENCES:-

MACTEC, 2007. "Draft Interim Response Steps Work Plan"; Olin Chemical Superfund Site, 51 Eames Street, Wilmington, Massachusetts.; Project No. 6300-06-0010/41.1; July 25, 2007.

Massachusetts Department of Environmental Protection (MADEP), 2004. "The Compendium of Quality Assurance and Quality Control Requirements and Performance Standards for Selected Analytical Methods Used in Support of Response Actions for the Massachusetts Contingency Plan (MCP)"; Bureau of Waste Site Cleanup; 1 Winter Street, Boston, Massachusetts 02108; WSC-CAM; May 2004.

lab_sample_id	field_sample_id	param_name	field_sample_date	analysis_date	Amt Exceeded (hrs)
360-34315-1	OC-SW-SDBK-001-XXX	Nitrate as N	6/8/11 11:30	6/14/11 14:14	98.73
360-34315-10	OC-SW-MMB-SW/SD-6-XXX	Nitrate as N	6/8/11 11:55	6/21/11 13:00	265.08
360-34315-11	OC-SW-MMB-SW/SD-8A-XXX	Nitrate as N	6/8/11 13:30	6/14/11 16:55	99.42
360-34315-2	OC-SW-SDBK-004-XXX	Nitrate as N	6/8/11 12:20	6/14/11 15:19	99.00
360-34315-3	OC-SW-SD-EDSD/SW0-XXX	Nitrate as N	6/8/11 10:45	6/14/11 16:07	101.37
360-34315-7	OC-SW-MMB-SW/SD-11-XXX	Nitrate as N	6/7/11 15:00	6/14/11 16:23	121.38
360-34315-8	OC-SW-MMB-SW/SD-2-XXX	Nitrate as N	6/8/11 10:50	6/14/11 16:39	101.82
360-34315-7	OC-SW-MMB-SW/SD-11-XXX	Nitrite as N	6/7/11 15:00	6/10/11 6:54	15.90

MJW 8/25/11

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: OC-SW-SDBK-001-XXX
Lab Sample ID: 360-34315-1
Lab Name: TestAmerica Westfield
Job No.: 360-34315-1
SDG ID.: 360-34315-1
Matrix: Water
Date Sampled: 06/08/2011 11:30
Reporting Basis: WET
Date Received: 06/08/2011 17:50

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
14797-55-8	Nitrate as N	0.47	0.050		mg/L		~~H~~ J	1	300.0
14808-79-8	Sulfate	12	2.0		mg/L			1	300.0
16887-00-6	Chloride	930	50		mg/L			50	300.0
14797-65-0	Nitrite as N	ND	0.10		mg/L			10	300.0
24959-67-9	Bromide	0.13	0.10		mg/L			1	300.0
	Total Suspended Solids	82	5.0		mg/L			1	SM 2540D
7440-44-0	Total Organic Carbon	12	1.0		mg/L			1	SM 5310B
7664-41-7	Ammonia	0.40	0.10		mg/L			1	L107-06-1B

MJW 8/25/11

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: OC-SW-SDBK-004-XXX
Lab Sample ID: 360-34315-2
Lab Name: TestAmerica Westfield
Job No.: 360-34315-1
SDG ID.: 360-34315-1
Matrix: Water
Date Sampled: 06/08/2011 12:20
Reporting Basis: WET
Date Received: 06/08/2011 17:50

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
14797-55-8	Nitrate as N	0.49	0.050		mg/L		~~#~~ J	1	300.0
14808-79-8	Sulfate	8.1	2.0		mg/L			1	300.0
16887-00-6	Chloride	140	10		mg/L			10	300.0
14797-65-0	Nitrite as N	ND	0.10		mg/L			10	300.0
24959-67-9	Bromide	ND	0.10		mg/L			1	300.0
	Total Suspended Solids	ND	5.0		mg/L			1	SM 2540D
7440-44-0	Total Organic Carbon	8.9	1.0		mg/L			1	SM 5310B
7664-41-7	Ammonia	0.25	0.10		mg/L			1	L107-06-1B

MJW 8/25/11

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: OC-SW-SD-EDSD/SW0-XXX
Lab Sample ID: 360-34315-3
Lab Name: TestAmerica Westfield
Job No.: 360-34315-1
SDG ID.: 360-34315-1
Matrix: Water
Date Sampled: 06/08/2011 10:45
Reporting Basis: WET
Date Received: 06/08/2011 17:50

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
14797-55-8	Nitrate as N	2.6	0.050		mg/L		~~H~~ J	1	300.0
14808-79-8	Sulfate	19	2.0		mg/L			1	300.0
16887-00-6	Chloride	360	10		mg/L			10	300.0
14797-65-0	Nitrite as N	ND	0.10		mg/L			10	300.0
24959-67-9	Bromide	ND	0.10		mg/L			1	300.0
	Total Suspended Solids	14	5.0		mg/L			1	SM 2540D
7440-44-0	Total Organic Carbon	2.3	1.0		mg/L			1	SM 5310B
7664-41-7	Ammonia	ND	0.10		mg/L			1	L107-06-1B

MJW 8/25/11

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: OC-SW-MMB-SW/SD-11-XXX
Lab Sample ID: 360-34315-7
Lab Name: TestAmerica Westfield
Job No.: 360-34315-1
SDG ID.: 360-34315-1
Matrix: Water
Date Sampled: 06/07/2011 15:00
Reporting Basis: WET
Date Received: 06/08/2011 17:50

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
14797-55-8	Nitrate as N	0.31	0.050		mg/L		~~H~~ J	1	300.0
14808-79-8	Sulfate	13	2.0		mg/L			1	300.0
16887-00-6	Chloride	220	10		mg/L			10	300.0
14797-65-0	Nitrite as N	ND	0.10		mg/L		~~H~~ UJ	10	300.0
24959-67-9	Bromide	ND	0.10		mg/L			1	300.0
	Total Suspended Solids	ND	5.0		mg/L			1	SM 2540D
7440-44-0	Total Organic Carbon	2.3	1.0		mg/L			1	SM 5310B
7664-41-7	Ammonia	0.25	0.10		mg/L			1	L107-06-1B

MJW
8/25/11

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: OC-SW-MMB-SW/SD-2-XXX
Lab Sample ID: 360-34315-8
Lab Name: TestAmerica Westfield
Job No.: 360-34315-1
SDG ID.: 360-34315-1
Matrix: Water
Date Sampled: 06/08/2011 10:50
Reporting Basis: WET
Date Received: 06/08/2011 17:50

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
14797-55-8	Nitrate as N	0.55	0.050		mg/L		~~H~~ J	1	300.0
14808-79-8	Sulfate	16	2.0		mg/L			1	300.0
16887-00-6	Chloride	160	10		mg/L			10	300.0
14797-65-0	Nitrite as N	ND	0.10		mg/L			10	300.0
24959-67-9	Bromide	ND	0.10		mg/L			1	300.0
	Total Suspended Solids	ND	5.0		mg/L			1	SM 2540D
7440-44-0	Total Organic Carbon	1.7	1.0		mg/L			1	SM 5310B
7664-41-7	Ammonia	0.66	0.10		mg/L			1	L107-06-1B

MIW
8/25/11

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: OC-SW-MMB-SW/SD-6-XXX
Lab Sample ID: 360-34315-10
Lab Name: TestAmerica Westfield
Job No.: 360-34315-1
SDG ID.: 360-34315-1
Matrix: Water
Date Sampled: 06/08/2011 11:55
Reporting Basis: WET
Date Received: 06/08/2011 17:50

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
14797-55-8	Nitrate as N	ND	0.050		mg/L		~~*~~ W	1	300.0
14808-79-8	Sulfate	39	2.0		mg/L			1	300.0
16887-00-6	Chloride	76	10		mg/L			10	300.0
14797-65-0	Nitrite as N	ND	0.010		mg/L			1	300.0
24959-67-9	Bromide	ND	0.10		mg/L			1	300.0
	Total Suspended Solids	1000	9.1		mg/L			1	SM 2540D
7440-44-0	Total Organic Carbon	7.5	1.0		mg/L			1	SM 5310B
7664-41-7	Ammonia	2.5	0.10		mg/L			1	L107-06-1B

MW 8/25/11

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: OC-SW-MMB-SW/SD-8A-XXX
Lab Sample ID: 360-34315-11
Lab Name: TestAmerica Westfield
Job No.: 360-34315-1
SDG ID.: 360-34315-1
Matrix: Water
Date Sampled: 06/08/2011 13:30
Reporting Basis: WET
Date Received: 06/08/2011 17:50

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
14797-55-8	Nitrate as N	0.15	0.050		mg/L		~~H~~ J	1	300.0
14808-79-8	Sulfate	11	2.0		mg/L			1	300.0
16887-00-6	Chloride	210	10		mg/L			10	300.0
14797-65-0	Nitrite as N	ND	0.10		mg/L			10	300.0
24959-67-9	Bromide	ND	0.10		mg/L			1	300.0
	Total Suspended Solids	40	25		mg/L			1	SM 2540D
7440-44-0	Total Organic Carbon	2.9	1.0		mg/L			1	SM 5310B
7664-41-7	Ammonia	0.15	0.10		mg/L			1	L107-06-1B

MLW 8/25/11

Note: The following analyses will be evaluated according to the "MADEP QA/QC Guidelines for **Sampling, Data Evaluation and Reporting Activities.**" MADEP, however, may not list QA/QC criteria for every chemical analysis. Where not defined by MADEP, criteria will default to values stipulated in the QAPP. Where the QAPP does not define criteria, QA/QC requirements will default to limits employed by the laboratory.

1.0 Laboratory Deliverable Requirements

1.1 Laboratory Information: Was all of the following provided in the laboratory report? **Yes [X]** No [__] N/A [__] Comments:
Check items received.

☑ *Name of Laboratory* ☑ *Address* ☑ *Project ID* ☑ *Phone #* ☑ *Sample identification – Field and Laboratory (IDs must be cross-referenced)*

Client Information: ☑ *Name* ☑ *Address* ☑ *Client Contact*

ACTION: If no, contact lab for submission of missing or illegible information.

1.2 Laboratory Report Certification Statement ***Yes [__]*** *No [__]* *N/A [X]* *Comments:*

Does the laboratory report include a completed Analytical Report Certification in the required format?

***ACTION**: If no, contact lab for submission of missing certification or certification with correct format.*

1.3 Laboratory Case Narrative: ***Yes [X]*** *No [__]* *N/A [__]* *Comments:*

☑ *Narrative serves as an exception report for the project and method QA/QC performance.* **NA** *Narrative includes an explanation of each discrepancy on the Certification Statement.*

***ACTION**: If no, contact lab for submission of missing or illegible information.*

1.4 Chain of Custody (COC) copy present with all documentation completed? **Yes [X]** No [__] N/A [__] Comments:

Does the laboratory report include copies of Chain of Custody forms containing all samples in this SDG?

NOTE: Olin receives and maintains the *original* COC.

ACTION: If no, contact lab for submission of copy of missing completed COC.

1.5 Sample Receipt Information (*Cooler Receipt Form*): Were each of the following tasks completed and recorded upon receipt of the sample(s) into the laboratory?

Yes [X] No [ ] N/A [ ] Comments:

☑ Sample temperature confirmed: must be 1° – 10° C. (If samples were sent by courier and delivered on the same day as collection, temperature requirement does not apply).

☑ Container type noted ☑ Condition observed ☑ pH verified (where applicable) ☑ Field and lab IDs cross referenced

ACTION: If no, contact lab for submission of missing or incomplete documentation.

1.5.1 Were the correct bottles and preservatives used?

Yes [X] No [ ] N/A [ ] Comments:

Ammonia,– 1 Liter polyethylene/H_2SO_4 to pH<2,cool to 4°C

Oil & Grease – 1 Liter glass/HCL or H2SO4 to pH<2,cool to 4°C

Alkalinity – 1 Liter polyethylene/cool to 4°C

Chemical Oxygen Demand – 50 mL polyethylene/H_2SO_4 to pH<2,cool to 4°C

Chloride, pH, sulfate, nitrate, nitrite - 50 mL polyethylene/cool to 4°C

Nitrate/nitrite - H2SO4 to pH<2,cool to 4°C

Organic Carbon – 500 mL amber glass bottle/HCl or H_2SO_4 to pH<2,cool to 4°C

Sulfide – 50 mL polyethylene/ZnAcetate + NaOH to pH>9, cool to 4°C

Phenolics - H_2SO_4 to pH<2,cool to 4°C

Specific conductance, TDS, TSS – 100 mL polyethylene/cool to 4°C

ACTION: If no, inform senior chemist. Document justification for change in container/volume (if applicable), qualify positive and non-detect data (J) data if cooler temperature exceeds 10°C. Rejection of data requires professional judgment

1.5.2 Were all samples delivered to the laboratory without breakage?

Yes [X] No [ ] N/A [ ] Comments:

1.5.3 Does the *Cooler Receipt Form* or Lab Narrative indicate other problems with sample receipt, condition of the samples, analytical problems or special circumstances affecting the quality of the data?

Yes [ ] **No [X]** N/A [ ] Comments:

1.6 Sample Results Section: *Was the following information supplied in the laboratory report for each sample?* **Yes [X]** No [__] N/A [__] Comments:

☑ Field ID and Lab ID ☑ Date and time collected ☑ Analyst Initials ☑ Dilution Factor NA % moisture or solids ☑ Reporting limits
NA *Clean-up method* ☑ Analysis method ☑ Preparation method ☑ Date of preparation/extraction/digestion clean-up and analysis, where applicable
☑ Matrix ☑ Target analytes and concentrations ☑Units (soils must be reported in dry weight)

ACTION: If no, contact lab for submission of missing or incomplete information.

1.7 QA/QC Information: Was the following information provided in the laboratory report for each sample batch? **Yes [X]** No [__] N/A [__] Comments:

☑ Method blank results ☑ LCS recoveries ☑ MS/MSD recoveries and RPDs ☑ Laboratory duplicate results (where applicable)

ACTION: If no, contact lab for submission of missing or incomplete information.

2.0 Holding Times Yes [__] **No [X]** N/A __] Comments:

Have any technical holding times, determined from date of collection to date of analysis, been exceeded? The holding times are as follows:

28 days = ammonia, chemical oxygen demand, chloride, organic carbon, oil & grease, specific conductance, total organic carbon and sulfate

Alkalinity = 14 days Sulfide, TDS, TSS = 7 days pH = analyze immediately Nitrate nitrogen as N = 48 hrs

Nitrite nitrogen as N = 48 hrs Nitrate + Nitrite as N = 28 days

NOTE: List samples that exceed hold time with # of days exceeded on checklist

ACTION: If technical holding times are exceeded qualify results (J). For water samples that are grossly exceeded (>2X hold time) reject (R) all non-detect results. Professional judgment used to qualify soils.

3.0 Laboratory Method **Yes [X]** No [__] N/A [__] Comments:

3.1 Was the correct laboratory method used?

ACTION: If no, contact lab to provide justification for method change compared to the requested method. Contact senior chemist to inform Client of change or to request variance.

3.2 Are the practical quantitation limits the same as those specified by the ☑ QAPP/IRSWP ☐ Lab? **Yes** [__] No [X] N/A [__] Comments: Lab uses 0.1 mg/L vice the specified PQL from the QAPP

3.3 **Note:** *The MADEP QA/QC Guidelines do not yet list PQLs for wet chemistry analyses, therefore all criteria will default to values stipulated in the QAPP*. Where the QAPP does not define criteria, QA/QC requirements default to limits employed by the lab**. Other criteria may also apply.*

Ammonia* ☑ = 0.1 mg/ L	Alkalinity**☐ = 1 mg/L	Bicarbonate Alkalinity** ☐ = 1 mg/L	Carbonate Alkalinity** ☐ = 1 mg/L
Nitrate Nitrogen as N* ☑ = .05 mg/L	Nitrite Nitrogen as N* ☑ = .01 mg/L	Chloride* ☑ = 1 mg/L	Hardness *☑ = 2 mg/L
Spec. Cond.** ☐ 3 umhos/cm	Total Organic Carbon** ☑ = 1 mg/L	Oil & Grease* ☐ = 5.5 mg/L	Sulfate (EPA 300.0)* ☑ = 2 mg/L
COD:* Low – 20 mg/L	COD* High - 50 mg/L ☐	TDS* ☐ = 10 mg/L	TSS* ☑ = 5 mg/L
pH* ☐ < 2 to > 12	Phenolic - 0.01 mg/L		

Other parameter(list) Bromide PQL = 0.01 mg/L ☑ Source of PQL = QAPP

Other parameter(list) _____ PQL = _____ ☐ Source of PQL = _____

ACTION: If no, evaluate change with respect to sample matrix, preparation, dilution, moisture, etc. If sample PQL is indeterminate, contact lab for explanation.

3.3 Are the appropriate parameter results present for each sample in the SDG? **Yes [X]** No [__] N/A [__] Comments:

ACTION: If no, check Request for Analysis to verify if method was ordered and COC to verify that it was sent, and contact lab for resubmission of the missing data

3.4 If *dilutions were required, were dilution factors reported?* **Yes [X]** No [__] N/A [__] Comments:

ACTION: If no, contact the lab for submission.

4.0 Method Blanks **Yes [X]** No [__] N/A [__] Comments:

4.1 Are the Method Blank Summaries present?

ACTION: If no, call the laboratory for submission of missing data.

4.2 Was a method blank analyzed for each analysis batch of wet chemistry field samples of 20 or less? **Yes [X]** No [__] N/A [__] Comments:

ACTION: If no, document discrepancy in case narrative and contact lab for justification. Consult senior chemist for action needed.

4.3 Is the method blank less than the PQL? (See Section 3.2 for PQLs).	**Yes [X]**	No [__]	N/A [__]	Comments:
4.4 Do any method blanks have positive results for wet chemistry parameters? Qualify data according to the following: If the sample concentration is < 5 × blank value, flag sample result non-detect "U" at the PQL or the concentration reported if greater than the PQL. If the sample concentration is > 5 × blank value, no qualification is needed.	Yes [__]	**No [X]**	N/A [__]	Comments:

ACTION: If any blank has positive results, list all the concentrations detected and flagging level (flagging level = 5 × blank value) on the checklist. List all affected samples and their qualifiers.

5.0 Laboratory Control Standards

5.1 Was a laboratory control standard (LCS) run with each analytical batch of 20 samples or less?	**Yes [X]**	No [__]	N/A [__]	Comments:

ACTION: If no, call laboratory for LCS form submittal. If data is not available, use professional judgment to determine qualification actions for data associated with the batch.

5.2 Is a LCS Summary Form present?	**Yes [X]**	No [__]	N/A [__]	Comments:

ACTION: If no, contact lab for resubmission of missing data.

5.3 Is any wet chemistry analyte LCS recovery outside the control limits?	Yes [__]	**No [X]**	N/A [__]	Comments:

LCS Limits:

Alkalinity** ☐ = 80-120%	Bicarbonate Alkalinity** ☐ = 80-120%	Carbonate Alkalinity** ☐ = 80-120%	Specific Conductivity *☐ = 80-120%
Total Organic Carbon** ☑ = 80-120%	TDS** ☐ = 80-120%	Oil & Grease* ☐ = 80-120%	Ammonia Nitrogen as N* ☑ = 80-120%
COD Low* ☐ = 80-120%	COD High* ☐ = 80-120%	Nitrate Nitrogen as N**☑ = 80-120%	Nitrite Nitrogen as N** ☑= 80-120%
Hardness* ☐ = 80-120%	Chloride* ☑ = 80-120%	Sulfate (EPA 300.0)* ☑ = 80-120%	pH* ☐ = 98-102% TSS* NA

Other parameter(list) Bromide %R = 80-120 ☑ Rec Limits= QAPP

Other parameter(list) _____ %R = _____ ☐ Rec Limits = _____

(MADEP has not yet defined LCS recovery limits for wet chemistry analyses.)

ACTION: If recovery is above the upper limit, qualify all positive sample results within the batch as (J). If recovery is below the lower limit, qualify all positive and no-detect results within the batch as (J). If LCS recovery is <10%, non-detect results are rejected (R).

6.0 Matrix Spikes

Matrix spikes may be collected at different frequencies based on monthly, quarterly, or task specific schedules. Confirm spike requirements for each set with the senior chemist.

OC-SW-ISCO-1-XXX
OC-SW-MMB-SW/SD-1-XXX

6.1 Were project-specific MS/MSDs analyzed? List project samples that were spiked.

Yes [X] No [__] N/A [__] Comments:

ACTION: If no, contact senior chemist to see if any were specified.

6.2 Is the MS/MSD Recovery Form present?

Yes [X] No [__] N/A [__] Comments:

ACTION: If no, contact lab for resubmission of missing data.

6.3 Were matrix spikes analyzed at the required frequency of 1 per 20 samples per matrix?

Yes [X] No [__] N/A [__] Comments:

ACTION: If any matrix spike data is missing, call lab for resubmission.

6.4 Are any wet chemistry analyte spike recoveries outside of the QC limits?

Yes [X] **No [__]** N/A [__] Comments: In sample OC-SW-ISCO-1-XXX, the percent recovery of ammonia (138) exceeded the upper QC limit of 125. Result qualified as estimated (J).

NOTE: $\%R = \frac{(SSR-SR)}{SA} \times 100\%$ Where: SSR = Spiked sample result; SR = Sample result; SA = Spike added

MS/MSD Recovery Limits:

Alkalinity* = NA	Bicarbonate Alkalinity* = NA	Carbonate alkalinity* = NA	Ammonia* (LACHAT) ☑ = 75-125%
Chloride*(SM 4500 Cl) ☑= 75-125%	Specific Conductivity * = NA	Total Organic Carbon* = NA	TDS** = NA
Oil & Grease* = NA	COD Low* ☐ = 75-125%	COD High* ☐ = 75-125%	Nitrate Nitrogen as N** ☑ = 75-125%
Nitrite Nitrogen as N** ☑ = 75-125%	Hardness* ☐ = 75-125%	Sulfate (EPA 300.0)* ☑ = 75-125% pH* = NA	TSS* = NA

Other parameter(list) Bromide % R = 75-125 ☑ Rec Limits = QAPP

* = Laboratory Limits ** = Olin QAPP Limits (*MADEP has not yet defined LCS recovery limits for wet chemistry analyses.*)

NOTES: 1) If only one of the recoveries for an MS/MSD pair is outside of the control limits, no qualification is necessary. Use professional judgment for the MS/MSD flags.
2) If the MS/MSD was performed by the laboratory on a non-project sample, no qualification is required.

ACTION: MS/MSD flags only apply to the sample spiked. Do not evaluate if sample concentration is > 4X spike. If the recoveries of the MS and MSD exceed the upper control limit, qualify positive results as estimated (J). If the recoveries of the MS and MSD are lower than the lower control limit but > 30%, qualify both positive results and non-detects (J). If the MS/MSD recovery is < 30% and the sample is non-detect, the results are considered unusable and flagged (R).

ACTION: Laboratory control limits apply when spiked sample results fall within the normal calibration range. If dilutions are required due to high sample concentrations, the data is evaluated, but no flags are applied.

6.5 Are any RPDs for MS/MSD recoveries outside of the QA/QC limits? Yes [__] **No [X]** N/A [__] Comments:

NOTE: $RPD = \frac{S-D}{(S+D)/2} \times 100\%$ Where S = MS result, D = MSD result

MS/MSD RPD Limits:

RPD ≤ 20

7.0 Laboratory Duplicate

Are the RPDs for the laboratory duplicates <20% unless otherwise specified below? **Yes [__]** No [X] N/A [__] Comments: In sample OC-SW-ISCO-1-DUP, he RPD for total suspended solids (13) exceeded the QC limit of 6. The associated samples TSS results were qualified as estimated (J/UJ).

ACTION: If the RPD is greater than specified limits, qualify all results for that analyte as estimated (J).

pH* ☐ = 3% Specific Conductivity *☐ = 5% TSS** ☑ = 6% TDS** ☐ = 6%

8.0 Sampling Accuracy

The majority of ground water samples are collected directly from a tap, process stream, or with dedicated tubing. Rinse blanks will not be collected.

8.1 Were rinsate blanks collected? Prior to evaluating rinsate blanks, obtain a list of the associated samples from the senior chemist.	**Yes [__]**	No [__]	N/A [X]	Comments:
8.2 Do any rinsate blanks have positive results?	Yes [__]	**No [__]**	N/A [X]	Comments:

ACTION: Evaluate rinsate results vs. blank results to determine if contaminant may be laboratory-derived. If not lab-related, qualify according to the table below.

If the sample concentration is < 5 × blank value, flag sample result non-detect "U" at the PQL or the concentration reported if greater than the PQL.

If the sample concentration is > 5 × blank value, no qualification is needed.

***NOTE**: MADEP does not require the collection of rinsate blanks.*

9.0 Field Duplicates

9.1 Were field duplicate samples collected? Obtain a list of samples and their associated field duplicates.	**Yes [X]**	No [__]	N/A [__]	Comments:
9.2 Were field duplicates collected per the required frequency?	**Yes [X]**	No [__]	N/A [__]	Comments:

QAPP/IRSWP ☑ *MADEP Option 1(1 per 20)* ☐ *MADEP Option 3 (1 per 10)* ☐

9.3 Was the RPD ≤ 30% for waters ≤ 50% for soils? Calculate the RPD for results and attach to this review.	**Yes [__]**	No [X]	N/A [__]	Comments: In sample OC-SW-MMB-SW/SD-1-XXX for bromide, the sample results were greater than five times the reporting limit, while the results in the associated duplicate were non-detect. Professional judgment was used to qualify the results as estimated (J/UJ) due to inconsistency of sample results.

ACTION:. Qualify data (J) for both sample results if the RPD exceeded.

Was any of the data qualified? Yes [X] No [__] N/A [__] Comments:

If so, apply data qualifiers directly to the DQE copy of laboratory report and **flag pages** for entry in database.

REFERENCES:-

MACTEC, 2007. "Draft Interim Response Steps Work Plan"; Olin Chemical Superfund Site, 51 Eames Street, Wilmington, Massachusetts.; Project No. 6300-06-0010/41.1; July 25, 2007.

Massachusetts Department of Environmental Protection (MADEP), 2004. "The Compendium of Quality Assurance and Quality Control Requirements and Performance Standards for Selected Analytical Methods Used in Support of Response Actions for the Massachusetts Contingency Plan (MCP)"; Bureau of Waste Site Cleanup; 1 Winter Street, Boston, Massachusetts 02108; WSC-CAM; May 2004.

6-IN
DUPLICATE
GENERAL CHEMISTRY

Lab Name: TestAmerica Westfield Job No.: 360-34253-1

SDG No.: 360-34253-1

Matrix: Water

Method	Client Sample ID	Lab Sample ID	Analyte	Result	Unit	RPD	RPD Limit	Qual
Batch ID: 75407	Date: 06/07/2011 19:23							
300.0	OC-SW-ISCO-1-DUP	360-34253-1	Nitrate as N	ND	mg/L			
300.0	OC-SW-ISCO-1-DUP	360-34253-1 DU	Nitrate as N	ND	mg/L	NC	20	
300.0	OC-SW-ISCO-1-DUP	360-34253-1	Nitrite as N	ND	mg/L			
300.0	OC-SW-ISCO-1-DUP	360-34253-1 DU	Nitrite as N	ND	mg/L	NC	20	
Batch ID: 75414	Date: 06/07/2011 19:23							
300.0	OC-SW-ISCO-1-DUP	360-34253-1	Bromide	0.14	mg/L			
300.0	OC-SW-ISCO-1-DUP	360-34253-1 DU	Bromide	0.141	mg/L	3	20	
Batch ID: 75414	Date: 06/07/2011 19:39							
300.0	OC-SW-ISCO-1-DUP	360-34253-1	Sulfate	150	mg/L			
300.0	OC-SW-ISCO-1-DUP	360-34253-1 DU	Sulfate	152	mg/L	0.6	20	
300.0	OC-SW-ISCO-1-DUP	360-34253-1	Chloride	130	mg/L			
300.0	OC-SW-ISCO-1-DUP	360-34253-1 DU	Chloride	128	mg/L	0.7	20	
Batch ID: 75133	Date: 06/10/2011 17:07	Prep Batch: 75020	Date: 06/10/2011 10:10					
L107-06-1B	OC-SW-ISCO-1-DUP	360-34253-1	Ammonia	32	mg/L			
L107-06-1B	OC-SW-ISCO-1-DUP	360-34253-1 DU	Ammonia	35.4	mg/L	10	20	
Batch ID: 75170	Date: 06/13/2011 16:29							
SM 2540D	OC-SW-ISCO-1-DUP	360-34253-1	Total Suspended Solids	8.0	mg/L			
SM 2540D	OC-SW-ISCO-1-DUP	360-34253-1 DU	Total Suspended Solids	7.00	mg/L	13	20	
Batch ID: 75377	Date: 06/15/2011 20:19							
SM 5310B	OC-SW-ISCO-1-DUP	360-34253-1	Total Organic Carbon	5.9	mg/L			
SM 5310B	OC-SW-ISCO-1-DUP	360-34253-1 DU	Total Organic Carbon	5.29	mg/L	12	20	

MJW 8/24/11

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

FORM VI-IN

field_sample_id	param_name	final_result	final_qualifier	Difference	Average	RPD
OC-SW-ISCO-1-DUP	Bromide	0.14		0	0.14	0%
OC-SW-ISCO-1-XXX	Bromide	0.14				
OC-SW-MMB-SW/SD-1-DUP	Bromide	0.1	U	0.73	0.465	157%
OC-SW-MMB-SW/SD-1-XXX	Bromide	0.83				
OC-SW-ISCO-1-DUP	Chloride	130		0	130	0%
OC-SW-ISCO-1-XXX	Chloride	130				
OC-SW-MMB-SW/SD-1-DUP	Chloride	130		10	135	7%
OC-SW-MMB-SW/SD-1-XXX	Chloride	140				
OC-SW-ISCO-1-DUP	Hardness	80		0	80	0%
OC-SW-ISCO-1-XXX	Hardness	80				
OC-SW-MMB-SW/SD-1-DUP	Hardness	70		0	70	0%
OC-SW-MMB-SW/SD-1-XXX	Hardness	70				
OC-SW-ISCO-1-DUP	Nitrogen, as Ammonia	32		1	31.5	3%
OC-SW-ISCO-1-XXX	Nitrogen, as Ammonia	31	J			
OC-SW-ISCO-1-DUP	Sulfate	150		0	150	0%
OC-SW-ISCO-1-XXX	Sulfate	150				
OC-SW-MMB-SW/SD-1-DUP	Sulfate	5.9		0.5	5.65	9%
OC-SW-MMB-SW/SD-1-XXX	Sulfate	5.4				
OC-SW-ISCO-1-DUP	Total Suspended Solids	8		2	7	29%
OC-SW-ISCO-1-XXX	Total Suspended Solids	6				

					RPD
OC-SW-ISCO-1-DUP	Total Organic Carbon	5.9	0.2	6	3%
OC-SW-ISCO-1-XXX	Total Organic Carbon	6.1			
OC-SW-MMB-SW/SD-1-DUP	Total Organic Carbon	4.7	0.6	4.4	14%
OC-SW-MMB-SW/SD-1-XXX	Total Organic Carbon	4.1			

5-IN
MATRIX SPIKE DUPLICATE SAMPLE RECOVERY
GENERAL CHEMISTRY

Lab Name: TestAmerica Westfield Job No.: 360-34253-1

SDG No.: 360-34253-1

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 75407	Date: 06/07/2011 16:25										
300.0	360-34253-L-2 MSD	Nitrate as N	8.99		mg/L	10.0	90	75-125	0	20	
300.0	360-34253-L-2 MSD	Nitrite as N	9.53		mg/L	10.0	95	75-125	0	20	
Batch ID: 75414	Date: 06/07/2011 16:25										
300.0	360-34253-2 MSD	Sulfate	353		mg/L	200	100	75-125	0	20	
300.0	360-34253-2 MSD	Chloride	231		mg/L	100	100	75-125	1	20	
300.0	360-34253-2 MSD	Bromide	9.30		mg/L	10.0	93	75-125	1	20	
Batch ID: 74953	Date: 06/07/2011 23:24										
300.0	360-34253-5 MSD	Sulfate	209		mg/L	200	105	75-125	0	20	
300.0	360-34253-5 MSD	Chloride	249		mg/L	100	112	75-125	0	20	
300.0	360-34253-5 MSD	Bromide	10.8		mg/L	10.0	108	75-125	0	20	
Batch ID: 75412	Date: 06/07/2011 23:24										
300.0	360-34253-L-5 MSD	Nitrate as N	10.5		mg/L	10.0	105	75-125	0	20	
300.0	360-34253-L-5 MSD	Nitrite as N	10.8		mg/L	10.0	108	75-125	0	20	
Batch ID: 75134	Date: 06/10/2011 16:43	Prep Batch: 75045			Date: 06/10/2011 12:34						
L107-06 -1B	360-34253-5 MSD	Ammonia	8.12		mg/L	10.0	81	90-110	18	20	F
Batch ID: 75133	Date: 06/10/2011 17:05	Prep Batch: 75020			Date: 06/10/2011 10:10						
L107-06 -1B	360-34253-2 MSD	Ammonia	44.4		mg/L	10.0	138	90-110	5	20	F
Batch ID: 75377	Date: 06/15/2011 21:23										
SM 5310B	360-34253-2 MSD	Total Organic Carbon	12.1		mg/L	10.0	60	75-125	1	20	F
Batch ID: 75377	Date: 06/16/2011 05:31										
SM 5310B	360-34253-5 MSD	Total Organic Carbon	10.6		mg/L	10.0	65	75-125	2	20	F

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

FORM V-IN

MJW 8/24/11

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: OC-SW-ISCO-1-DUP
Lab Sample ID: 360-34253-1
Lab Name: TestAmerica Westfield
Job No.: 360-34253-1
SDG ID.: 360-34253-1
Matrix: Water
Date Sampled: 06/06/2011 14:35
Reporting Basis: WET
Date Received: 06/07/2011 10:21

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
14797-55-8	Nitrate as N	ND	0.050		mg/L			1	300.0
14808-79-8	Sulfate	150	20		mg/L			10	300.0
16887-00-6	Chloride	130	10		mg/L			10	300.0
14797-65-0	Nitrite as N	ND	0.010		mg/L			1	300.0
24959-67-9	Bromide	0.14	0.10		mg/L			1	300.0
	Total Suspended Solids	8.0	5.0		mg/L		J	1	SM 2540D
7440-44-0	Total Organic Carbon	5.9	1.0		mg/L			1	SM 5310B
7664-41-7	Ammonia	32	1.0		mg/L			10	L107-06-1B

MJW
8/24/11

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: OC-SW-ISCO-1-XXX
Lab Sample ID: 360-34253-2
Lab Name: TestAmerica Westfield
Job No.: 360-34253-1
SDG ID.: 360-34253-1
Matrix: Water
Date Sampled: 06/06/2011 14:35
Reporting Basis: WET
Date Received: 06/07/2011 10:21

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
14797-55-8	Nitrate as N	ND	0.050		mg/L			1	300.0
14808-79-8	Sulfate	150	20		mg/L			10	300.0
16887-00-6	Chloride	130	10		mg/L			10	300.0
14797-65-0	Nitrite as N	ND	0.010		mg/L			1	300.0
24959-67-9	Bromide	0.14	0.10		mg/L			1	300.0
	Total Suspended Solids	6.0	5.0		mg/L		J	1	SM 2540D
7440-44-0	Total Organic Carbon	6.1	1.0		mg/L			1	SM 5310B
7664-41-7	Ammonia	31	1.0		mg/L		J	10	L107-06-1B

MJW 8/24/11

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: OC-SW-ISCO-2-XXX
Lab Sample ID: 360-34253-3
Lab Name: TestAmerica Westfield
Job No.: 360-34253-1
SDG ID.: 360-34253-1
Matrix: Water
Date Sampled: 06/06/2011 11:00
Reporting Basis: WET
Date Received: 06/07/2011 10:21

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
14797-55-8	Nitrate as N	0.57	0.050		mg/L			1	300.0
14808-79-8	Sulfate	800	20		mg/L			10	300.0
16887-00-6	Chloride	180	10		mg/L			10	300.0
14797-65-0	Nitrite as N	ND	0.10		mg/L			10	300.0
24959-67-9	Bromide	0.43	0.10		mg/L			1	300.0
	Total Suspended Solids	240	10		mg/L		J	1	SM 2540D
7440-44-0	Total Organic Carbon	9.4	1.0		mg/L			1	SM 5310B
7664-41-7	Ammonia	110	1.0		mg/L			10	L107-06-1B

MW 8/24/11

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: OC-SW-MMB-SW/SD-1-DUP
Lab Sample ID: 360-34253-4
Lab Name: TestAmerica Westfield
Job No.: 360-34253-1
SDG ID.: 360-34253-1
Matrix: Water
Date Sampled: 06/06/2011 13:00
Reporting Basis: WET
Date Received: 06/07/2011 10:21

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
14797-55-8	Nitrate as N	ND	0.050		mg/L			1	300.0
14808-79-8	Sulfate	5.9	2.0		mg/L			1	300.0
16887-00-6	Chloride	130	10		mg/L			10	300.0
14797-65-0	Nitrite as N	ND	0.010		mg/L			1	300.0
24959-67-9	Bromide	ND	0.10		mg/L		W	1	300.0
	Total Suspended Solids	ND	5.0		mg/L		W	1	SM 2540D
7440-44-0	Total Organic Carbon	4.7	1.0		mg/L			1	SM 5310B
7664-41-7	Ammonia	ND	0.10		mg/L			1	L107-06-1B

MW
8/24/11

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: OC-SW-MMB-SW/SD-1-XXX
Lab Sample ID: 360-34253-5
Lab Name: TestAmerica Westfield
Job No.: 360-34253-1
SDG ID.: 360-34253-1
Matrix: Water
Date Sampled: 06/06/2011 13:00
Reporting Basis: WET
Date Received: 06/07/2011 10:21

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
14797-55-8	Nitrate as N	ND	0.050		mg/L			1	300.0
14808-79-8	Sulfate	5.4	2.0		mg/L			1	300.0
16887-00-6	Chloride	140	10		mg/L			10	300.0
14797-65-0	Nitrite as N	ND	0.010		mg/L			1	300.0
24959-67-9	Bromide	ND	0.10		mg/L			1	300.0
	Total Suspended Solids	ND	5.0		mg/L		US	1	SM 2540D
7440-44-0	Total Organic Carbon	4.1	1.0		mg/L			1	SM 5310B
7664-41-7	Ammonia	ND	0.10		mg/L			1	L107-06-1B

6/14/11

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: OC-SW-MMB-SW/SD-1-XXX
Lab Sample ID: 360-34253-5
Lab Name: TestAmerica Westfield
Job No.: 360-34253-1
SDG ID.: 360-34253-1
Matrix: Water
Date Sampled: 06/06/2011 13:00
Reporting Basis: WET
Date Received: 06/07/2011 10:21

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
14797-55-8	Nitrate as N	ND	0.050		mg/L			1	300.0
14808-79-8	Sulfate	5.4	2.0		mg/L			1	300.0
16887-00-6	Chloride	140	10		mg/L			10	300.0
14797-65-0	Nitrite as N	ND	0.010		mg/L			1	300.0
24959-67-9	Bromide	0.83	0.10		mg/L		J	1	300.0
	Total Suspended Solids	ND	5.0		mg/L		W	1	SM 2540D
7440-44-0	Total Organic Carbon	4.1	1.0		mg/L			1	SM 5310B
7664-41-7	Ammonia	ND	0.10		mg/L			1	L107-06-1B

MJW 8/24/11

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: OC-SW-MMB-SW/SD-9-XXX
Lab Sample ID: 360-34253-6
Lab Name: TestAmerica Westfield
Job No.: 360-34253-1
SDG ID.: 360-34253-1
Matrix: Water
Date Sampled: 06/06/2011 11:00
Reporting Basis: WET
Date Received: 06/07/2011 10:21

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
14797-55-8	Nitrate as N	ND	0.050		mg/L			1	300.0
14808-79-8	Sulfate	3.9	2.0		mg/L			1	300.0
16887-00-6	Chloride	130	10		mg/L			10	300.0
14797-65-0	Nitrite as N	ND	0.10		mg/L			10	300.0
24959-67-9	Bromide	ND	0.10		mg/L			1	300.0
	Total Suspended Solids	ND	5.0		mg/L		UJ	1	SM 2540D
7440-44-0	Total Organic Carbon	5.1	1.0		mg/L			1	SM 5310B
7664-41-7	Ammonia	ND	0.10		mg/L			1	L107-06-1B

MJW
8/24/11

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: OC-SW-PZ-16RR-XXX
Lab Sample ID: 360-34253-7
Lab Name: TestAmerica Westfield
Job No.: 360-34253-1
SDG ID.: 360-34253-1
Matrix: Water
Date Sampled: 06/06/2011 13:05
Reporting Basis: WET
Date Received: 06/07/2011 10:21

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
14797-55-8	Nitrate as N	0.26	0.050		mg/L			1	300.0
14808-79-8	Sulfate	800	20		mg/L			10	300.0
16887-00-6	Chloride	190	10		mg/L			10	300.0
14797-65-0	Nitrite as N	ND	0.010		mg/L			1	300.0
24959-67-9	Bromide	0.43	0.10		mg/L			1	300.0
	Total Suspended Solids	14	5.0		mg/L		J	1	SM 2540D
7440-44-0	Total Organic Carbon	10	1.0		mg/L			1	SM 5310B
7664-41-7	Ammonia	110	1.0		mg/L			10	L107-06-1B

MJW
8/24/11

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: OC-SW-PZ-17RR-XXX
Lab Sample ID: 360-34253-8
Lab Name: TestAmerica Westfield
Job No.: 360-34253-1
SDG ID.: 360-34253-1
Matrix: Water
Date Sampled: 06/06/2011 13:45
Reporting Basis: WET
Date Received: 06/07/2011 10:21

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
14797-55-8	Nitrate as N	1.8	0.50		mg/L			10	300.0
14808-79-8	Sulfate	990	20		mg/L			10	300.0
16887-00-6	Chloride	230	10		mg/L			10	300.0
14797-65-0	Nitrite as N	ND	0.10		mg/L			10	300.0
24959-67-9	Bromide	0.48	0.10		mg/L			1	300.0
	Total Suspended Solids	70	5.0		mg/L		J	1	SM 2540D
7440-44-0	Total Organic Carbon	14	1.0		mg/L			1	SM 5310B
7664-41-7	Ammonia	130	1.0		mg/L			10	L107-06-1B

MJW
8/24/11

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: OC-SW-SD-1-XXX
Lab Sample ID: 360-34253-9
Lab Name: TestAmerica Westfield
Job No.: 360-34253-1
SDG ID.: 360-34253-1
Matrix: Water
Date Sampled: 06/06/2011 12:15
Reporting Basis: WET
Date Received: 06/07/2011 10:21

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
14797-55-8	Nitrate as N	6.0	0.50		mg/L			10	300.0
14808-79-8	Sulfate	800	40		mg/L			20	300.0
16887-00-6	Chloride	300	10		mg/L			10	300.0
14797-65-0	Nitrite as N	ND	0.10		mg/L			10	300.0
24959-67-9	Bromide	0.46	0.10		mg/L			1	300.0
	Total Suspended Solids	19	5.0		mg/L		J	1	SM 2540D
7440-44-0	Total Organic Carbon	24	1.0		mg/L			1	SM 5310B
7664-41-7	Ammonia	95	1.0		mg/L			10	L107-06-1B

MJW
8/24/11

CHEMIST REVIEW-VALIDATION CHECKLIST

FULL VALIDATION CHECKS

Ten Percent of data sets will have full validation checks completed during chemist review.

☑ **Initial Calibration**

☑ **Continuing Calibration Verification**

<u>Transcription and Calculation Checks</u>

☑ **Instrument Calibration**

☑ **Blank Review – raw data/chromatogram check**

clean

☑ **Laboratory Control Sample**

ok

☑ **Matrix Spike**

MSD calculated

☑ **Field Sample Results**

☑ **Surrogate Recovery**

TestAmerica Westfield

Client Sample ID: OC-SW-ISCO-1-DUP (360-34253-1)

GC/MS Semivolatiles

Lot-Sample #...: G1F070508-001 Work Order #...: MJ2781AA Matrix.....: WG
Date Sampled...: 06/06/11 Date Received..: 06/07/11
Prep Date.....: 06/09/11 Analysis Date..: 06/16/11
Prep Batch #...: 1160050
Dilution Factor: 0.95 Method.....: NONE MS-SIM

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Bisphenol-A	ND UJ	0.95	ug/L	0.30
p-Nonylphenol (Tech.)	ND	4.8	ug/L	1.5
Nonylphenol Diethoxylate (Tech.)	ND	19	ug/L	1.9
p-tert-Octylphenol	ND	0.95	ug/L	0.30

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
para-n-Nonylphenol	64	(40 - 140)
para-n-Nonlyphenol Ethoxylate	76	(40 - 140)

9/1/11
TC

TestAmerica Westfield

Client Sample ID: OC-SW-PZ-17RR-XXX (360-34253-8)

GC/MS Semivolatiles

Lot-Sample #...: G1F070508-008 Work Order #...: MJ28G1AA Matrix.....: WG
Date Sampled...: 06/06/11 Date Received..: 06/07/11
Prep Date.....: 06/09/11 Analysis Date..: 06/16/11
Prep Batch #...: 1160050
Dilution Factor: 0.95 Method.....: NONE MS-SIM

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Bisphenol-A	0.87 J	0.95	ug/L	0.30
p-Nonylphenol (Tech.)	18 J	4.8	ug/L	1.5
Nonylphenol Diethoxylate (Tech.)	ND UJ	19	ug/L	1.9
p-tert-Octylphenol	ND UJ	0.95	ug/L	0.30

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
para-n-Nonylphenol	93	(40 - 140)
para-n-Nonlyphenol Ethoxylate	99	(40 - 140)

NOTE(S):

J Estimated result. Result is less than RL.

TC 9/1/11

Case Narrative

TestAmerica West Sacramento Project Number G1F070508

General Comments
Two of the bottles for sample OC-SW-ISCO-1-DUP (360-34253-1) were received broken. One of the bottles for sample OC-SW-ISCO-1-XXX (360-34253-2) was received broken. One of the bottles for sample OC-SW-ISCO-2-XXX (360-34253-3 was received broken.

The bottles for Nonylphenol analysis for sample OC-SW-SD-1-XXX (360-34253-9) were not received. As requested, this analysis was cancelled on this sample.

As discussed, all the sample containers for OC-SW-ISCO-1-DUP (360-34253-1) and OC-SW-PZ-17RR-XXX (360-34253-8) and the unpreserved containers for sample OC-SW-PZ-16RR-XXX (360-34253-7) were received at the lab at 16 degrees Celsius. The temperature blank in the cooler was also received at 16 degrees Celsius.

WATER, Nonylphenols
Samples: 1, 2, 3, 7, 8
The matrix spikes, which were performed on sample 2, have high recoveries for Bisphenol-A due to possible matrix interferences. Since the laboratory control sample met acceptance criteria, no corrective action was performed.

WATER, NDMA & NDPA
Sample: 6
This sample has a low recovery for the N-Nitrosodi-n-propylamine-d14 internal standard. Data quality is not considered affected if the internal standard signal-to-noise ratio is greater than 10:1, which is achieved for all internal standards for this sample.

There are no other anomalies associated with this project.

TC
9/1/11

METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: G1F070508 Work Order #...: MJ4AJ1AA Matrix.....: WATER
MB Lot-Sample #: G1F090000-050

Prep Date.....: 06/09/11
Analysis Date..: 06/15/11 Prep Batch #...: 1160050
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
p-Nonylphenol (Tech.)	ND	5.0	ug/L	NONE MS-SIM
Bisphenol-A	ND	1.0	ug/L	NONE MS-SIM
p-tert-Octylphenol	ND	1.0	ug/L	NONE MS-SIM
Nonylphenol Diethoxylate	ND	20	ug/L	NONE MS-SIM

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
para-n-Nonylphenol	65	(40 - 140)
para-n-Nonlyphenol Ethoxy	70	(40 - 140)

NOTE(S):

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

Raw Spectra Reviewed on Pg 2450

✓ 9/1/11
JC

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: G1F070508 Work Order #...: MJ4AJ1AC Matrix.....: WATER
LCS Lot-Sample#: G1F090000-050
Prep Date.....: 06/09/11 Analysis Date..: 06/15/11
Prep Batch #...: 1160050
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
p-Nonylphenol (Tech.)	20.0	20.4	ug/L	102	NONE MS-SIM
Nonylphenol Diethoxylate	80.0	84.0	ug/L	105	NONE MS-SIM
Bisphenol-A	4.00	4.70	ug/L	118	NONE MS-SIM
p-tert-Octylphenol	4.00	3.74	ug/L	94	NONE MS-SIM

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
para-n-Nonylphenol	63	(40 - 140)
para-n-Nonlyphenol Ethoxy	83	(40 - 140)

NOTE(S):

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

Bold print denotes control parameters

$$0.382 = \frac{288734\ (20)}{371089\ (x)} = 40.736\ \text{ug} \times \frac{500}{1000} = \frac{20.36}{20} = 102\%\ \text{Rec}$$

Pg 2456

9/1/11 ✓
TC

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: G1F070508 Work Order #...: MJ2791AD-MS Matrix.....: WG
MS Lot-Sample #: G1F070508-002 MJ2791AE-MSD
Date Sampled...: 06/06/11 Date Received..: 06/07/11
Prep Date.....: 06/09/11 Analysis Date..: 06/16/11
Prep Batch #...: 1160050
Dilution Factor: 0.95

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
p-Nonylphenol (Tech.)	ND	19.1	17.6	ug/L	92		NONE MS-SIM
	ND	19.3	18.0	ug/L	93	1.9	NONE MS-SIM
Nonylphenol Diethoxylate	ND	76.6	103	ug/L	134		NONE MS-SIM
	ND	77.3	92.2	ug/L	119	11	NONE MS-SIM
Bisphenol-A	ND	3.83	6.64	ug/L	174 a		NONE MS-SIM
	ND	3.86	5.88	ug/L	152 a	12	NONE MS-SIM
p-tert-Octylphenol	ND	3.83	3.64	ug/L	95		NONE MS-SIM
	ND	3.86	3.72	ug/L	96	2.0	NONE MS-SIM

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
para-n-Nonylphenol	95	(40 - 140)
	84	(40 - 140)
para-n-Nonlyphenol Ethoxy	111	(40 - 140)
	91	(40 - 140)

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

Spike Calculation MSD

P nonylphenol

$$0.3823 = \frac{335517\ (20)}{471205\ (X)} = \frac{37.25}{2}\ 18.625$$

9/1/11 ✓
TC

TestAmerica West Sacramento

INITIAL CALIBRATION DATA

Start Cal Date : 20-APR-2010 16:51
End Cal Date : 09-JUN-2011 14:08
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP RTE
Method file : \\Svoa4\c\chem\1db.i\060911.B\NPE.M
Last Edit : 10-Jun-2011 18:00 truongk
Curve Type : Average

Calibration File Names:
Level 1: \\Svoa4\c\chem\1db.i\chem\1db.i\060911.B\NPE0609A.D
Level 2: \\Svoa4\c\chem\1db.i\chem\1db.i\060911.B\NPE0609B.D
Level 3: \\Svoa4\c\chem\1db.i\chem\1db.i\060911.B\NPE0609C.D
Level 4: \\Svoa4\c\chem\1db.i\chem\1db.i\060911.B\NPE0609D.D
Level 5: \\Svoa4\c\chem\1db.i\chem\1db.i\060911.B\NPE0609E.D

Compound	50.000 Level 1	100.000 Level 2	500.000 Level 3	2000.000 Level 4	5000.000 Level 5	RRF	% RSD
5 Octylphenol	1.92566	2.48740	2.84805	2.21345	1.81330	2.25757	18.675
6 NP Totals	0.29643	0.37371	0.43692	0.39986	0.40481	0.38235	13.868
7 NP1EO Totals	0.11818	0.11724	0.12871	0.12957	0.13632	0.12601	6.455
8 NP2EO Totals	0.10047	0.10038	0.12700	0.12607	0.13613	0.11801	14.004
9 BISPHENOL A	0.29308	0.39439	0.48598	0.51883	0.56205	0.45087	23.862
10 4-NP	1.13256	1.22876	1.29421	1.12810	1.38253	1.23323	8.810
$ 3 n-NP	1.13256	1.22876	1.29421	1.12810	1.40175	1.23708	9.327
$ 4 n-NP1EO	0.28765	0.29568	0.37308	0.46413	0.49848	0.38380	24.967

Manual calculation for NP Totals @ Level 2:
$\frac{175261}{469982} \times \frac{20}{20} = 0.3737$ By 9/1/11 6-13-11

Avg = 0.38232

STDEV = 0.138692

Line (50)
RF = $\frac{43131\ (20)}{582004\ (5)} = 0.2964$

Line (100)
RF = $\frac{175261\ (20)}{469982\ (20)} = 0.3737$

Line (500) $\frac{317823\ (20)}{363708\ (40)} = 0.4369$

Line (2000)
RF $\frac{712954\ (20)}{445750\ (80)} = 0.3998$

Line (5000)
RF = $\frac{1463183\ (20)}{451815\ (160)} = 0.4048$

TC 9/1/11

Data File: \\Svoa4\c\chem\1db.i\060911.B\NPE0609F.D Page 1
Report Date: 13-Jun-2011 11:45

TestAmerica West Sacramento

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 1db.i Injection Date: 09-JUN-2011 15:45
Lab File ID: NPE0609F.D Init. Cal. Date(s): 20-APR-2010 09-JUN-2011
Analysis Type: Init. Cal. Times: 16:51 14:08
Lab Sample ID: NPE_ICV Quant Type: ISTD
Method: \\Svoa4\c\chem\1db.i\060911.B\NPE.M

COMPOUND	RRF / AMOUNT	RF500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
$ 3 n-NP	1.23708	1.25670	0.010	1.58597	30.00000	Averaged
$ 4 n-NP1EO	0.38380	0.42008	0.010	9.45222	30.00000	Averaged
5 Octylphenol	2.25757	2.73771	0.010	21.26818	30.00000	Averaged
6 NP Totals	0.38235	0.44965	0.010	17.60261	30.00000	Averaged
7 NP1EO Totals	0.12601	0.14306	0.010	13.53724	30.00000	Averaged
8 NP2EO Totals	0.11801	0.12855	0.010	8.92866	30.00000	Averaged
9 BISPHENOL A	0.45087	0.53184	0.010	17.95984	30.00000	Averaged
10 4-NP	1.23323	1.26401	0.000	2.49539	30.00000	Averaged

$$\frac{260097\ (20)}{289223\ (40)} = .449647$$

6-13-11

8/2/11
TC

TestAmerica Westfield

Client Sample ID: OC-SW-PZ-17RR-XXX (360-34253-8)

GC/MS Semivolatiles

Lot-Sample #...:	G1F070508-008	Work Order #...:	MJ28G1AA	Matrix.....:	WATER
Date Sampled...:	06/06/11	Date Received..:	06/07/11		
Prep Date.....:	06/09/11	Analysis Date..:	06/16/11		
Prep Batch #...:	1160050				
Dilution Factor:	0.95	Method.....:	NONE MS-SIM		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Bisphenol-A	**0.87 J**	**0.95**	**ug/L**	**0.30**
p-Nonylphenol (Tech.)	**18**	**4.8**	**ug/L**	**1.5**
Nonylphenol Diethoxylate (Tech.)	ND	19	ug/L	1.9
p-tert-Octylphenol	ND	0.95	ug/L	0.30

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
para-n-Nonylphenol	93	(40 - 140)
para-n-Nonlyphenol Ethoxylate	99	(40 - 140)

NOTE(S):

J Estimated result. Result is less than RL.

NP totals

$$0.38232 = \frac{360848\ (20)}{499702\ (X)} = 37.776\,ug$$

$$\frac{37.77\,ug}{1\,mL} \times \frac{500\,mL}{1050.35\,mL} = 17.9825\,ug/L$$

9/1/11
TC

TestAmerica West Sacramento

Alkyphenol Compounds by SIM Analysis

Data file : \\Svoa4\c\chem\1db.i\061511A.B\S061530.D
Lab Smp Id: MJ28G1AA G1F070508- Client Smp ID: 1160050
Inj Date : 16-JUN-2011 14:06
Operator : KT Inst ID: 1db.i
Smp Info : MJ28G1AA G1F070508-8 1X;0;;;1050.35;;500;5
Misc Info : 1;WAT;0;I096OMO.SUB;;0;1160050;NPE.M
Comment : SOP: WS-MS-0010
Method : \\Svoa4\c\chem\1db.i\061511A.B\NPE.M
Meth Date : 16-Jun-2011 16:57 truongk Quant Type: ISTD
Cal Date : 09-JUN-2011 14:08 Cal File: NPE0609E.D
Als bottle: 30
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: I096OMO.SUB
Target Version: 4.14 Sample Matrix: WAT
Processing Host: SACP307UM

Concentration Formula: Amt * DF * Vt/(Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	500.000	Volume of final extract (uL)
Vo	1050.350	Volume of sample (mL)
Cpnd Variable		Local Compound Variable

RT	EXP RT	REL RT	MASS	RESPONSE	CONCENTRATIONS ON-COL (ug)	FINAL (ug/L)	TARGET RANGE	RATIO
* 1 Acenapthene-d10						CAS #: 15067-26-2		
12.597	12.599	(1.000)	164	499702	20.0000		80.00- 120.00	100.00
12.597	12.572	(1.000)	160	234009			23.87- 63.87	46.83
12.597	12.572	(1.000)	162	505433			75.48- 115.48	101.15
* 2 Phenanthrene-d10						CAS #: 1517-22-2		
15.995	15.998	(1.000)	188	514730	20.0000		80.00- 120.00	100.00
15.995	15.970	(1.000)	94	59006			0.00- 28.14	11.46
15.995	15.998	(1.000)	160	64477			0.00- 32.07	12.53
$ 3 n-NP						CAS #: 104-40-5		
16.927	16.930	(1.058)	107	379246	11.9117	5.670	80.00- 120.00	100.00
16.955	16.930	(1.060)	220	28439			0.00- 26.71	7.50
16.927	16.710	(1.058)	135	2369			0.00- 20.41	0.62
$ 4 n-NP1EO						CAS #: 104-35-8		
19.504	19.506	(1.219)	107	124558	12.6100	6.003	80.00- 120.00	100.00
19.504	19.506	(1.219)	151	110237			58.96- 98.96	88.50
19.531	19.533	(1.221)	264	15041			0.00- 31.79	12.08
19.504	19.506	(1.219)	91	7075			0.00- 26.52	5.68

6/16/11

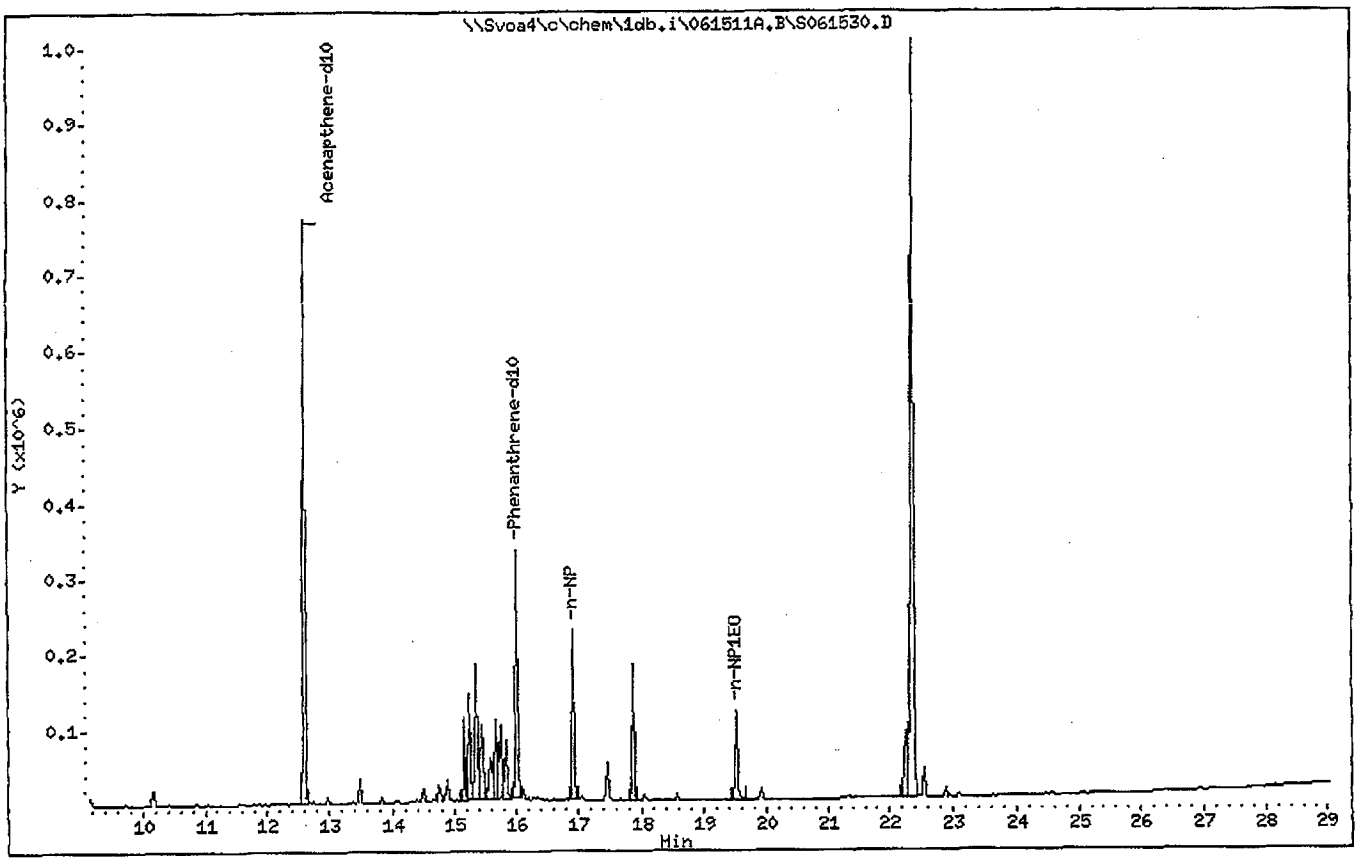
TC 6/16/11

RT	EXP RT	REL RT	MASS	RESPONSE	CONCENTRATIONS ON-COL (ug)	FINAL (ug/L)	TARGET RANGE	RATIO
5 Octylphenol						CAS #: 140-66-9		
Qualifier signal(s) failed ratio test.								
6 NP Totals						CAS #: 84852-15-3		
15.146	15.312	(1.202)	121	360848	37.7735	17.98	80.00- 120.00	100.00(M)
15.338	15.340	(1.218)	220	22791			0.00- 26.07	6.32
8 NP2EO Totals						CAS #: Q02838		
Operator disabled compound identification.								
9 BISPHENOL A						CAS #: 80-05-7		
19.915	19.862	(1.245)	213	21221	1.82881	0.8706	80.00- 120.00	100.00
19.915	19.890	(1.245)	228	3713			0.56- 40.56	17.50
19.888	19.862	(1.243)	119	3894			3.07- 43.07	18.35

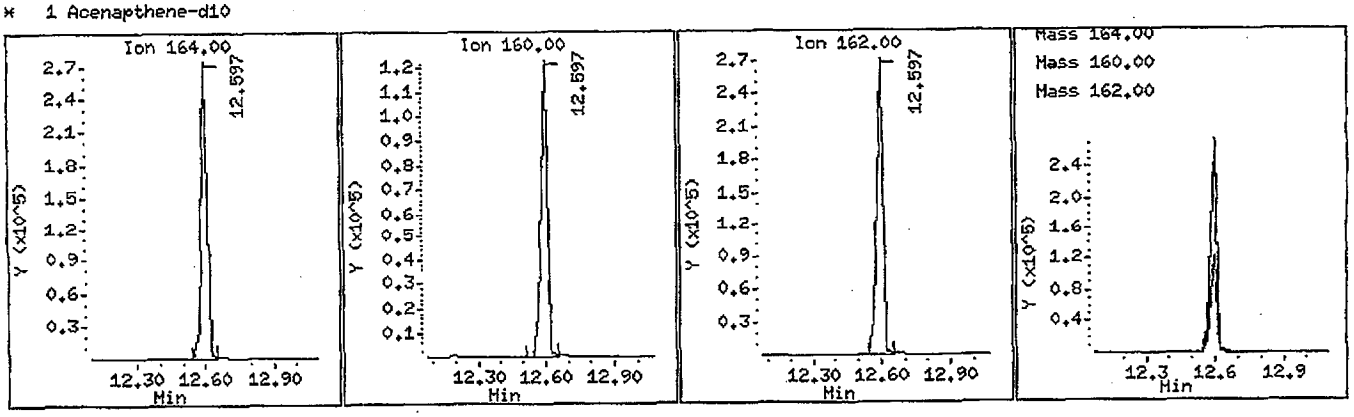
QC Flag Legend

M - Compound response manually integrated.

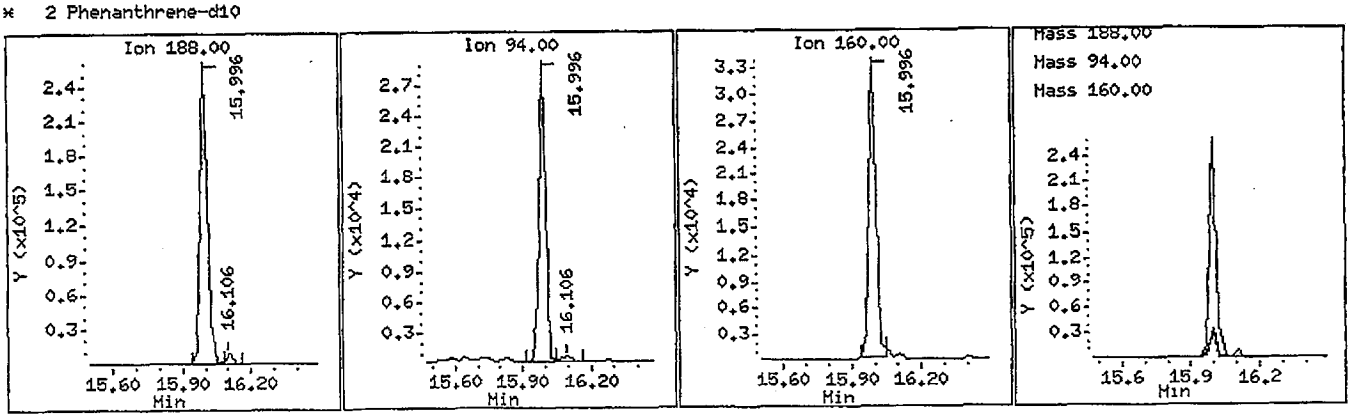
TC
6/1/11



* 1 Acenapthene-d10



* 2 Phenanthrene-d10



TC 9/1/11

TestAmerica West Sacramento Page# 65

GC/MS INSTRUMENT LOG
SEMI-VOLATILES

Method Key (MTH Column)
QL = EPA 8270C (WS-MS-0005)
JZ = EPA TO-13A (WS-MS-0005)
VX = EPA 8270C-SIM (mod) CWM (WS-MS-0003)
QI = EPA 8270C-SIM (WS-MS-0008)
FX = PAH-SIM Isotope Dilution (WS-MS-0006)
F9 = EPA 8270C-SIM (mod) 1,4-Dioxane (WS-MS-0011)

Inst ID : 1db.i
Batch ID : 061511A.B
ICAL Date: See Calib Report
See raw data for standard IDs

Date	Time	USER	Sample ID	File ID	Vol or Wt	Extract Vol	Diln	MTH	Comments
15-JUN-2011	18:55	KT	PRIMER	QC061501.	NA	NA	NA		
15-JUN-2011	19:29	KT	NPE_CS-3	NPE0615.D	NA	NA	NA		
15-JUN-2011	20:04	KT	MJ3991AA G1F090000-047B	S061501.D	1000 mL	0.5 mL	1		
15-JUN-2011	20:39	KT	MJ3991AC G1F090000-047C	S061502.D	1000 mL	0.5 mL	1		
15-JUN-2011	21:13	KT	MJ1DF1AD G1F040404-1 10X	S061503.D	960.41 mL	0.5 mL	10		RI 1X
15-JUN-2011	21:49	KT	MJ1DG1AD G1F040404-2	S061504.D	962.96 mL	0.5 mL	1		
15-JUN-2011	22:23	KT	MJ1DH1AD G1F040404-3	S061505.D	953.45 mL	0.5 mL	1		
15-JUN-2011	22:58	KT	MJ1DJ1AD G1F040404-4	S061506.D	945.45 mL	0.5 mL	1		
15-JUN-2011	23:33	KT	MJ1DK1AD G1F040404-5	S061507.D	956.19 mL	0.5 mL	1		
16-JUN-2011	00:08	KT	MJ1DL1AD G1F040404-6	S061508.D	981.97 mL	0.5 mL	1		
16-JUN-2011	00:43	KT	MJ1DM1AD G1F040404-7	S061509.D	992.48 mL	0.5 mL	1		
16-JUN-2011	01:18	KT	MJ1DN1AD G1F040404-8	S061510.D	956.6 mL	0.5 mL	1		
16-JUN-2011	01:53	KT	MJ2781AA G1F070508-1 10X	S061511.D	1047.23 mL	0.5 mL	10		RI@1X
16-JUN-2011	02:28	KT	MJ2791AA G1F070508-2 10X	S061512.D	1044.1 mL	0.5 mL	10		
16-JUN-2011	03:03	KT	MJ2791AD F070508-2S 10X	S061513.D	1044.88 mL	0.5 mL	10		
16-JUN-2011	03:38	KT	MJ2791AE F070508-2D 10X	S061514.D	1035.13 mL	0.5 mL	10		
16-JUN-2011	04:13	KT	MJ28A1AA G1F070508-3 20X	S061515.D	1008.3 mL	0.5 mL	20		
16-JUN-2011	04:48	KT	MJ28F1AA G1F070508-7 10X	S061516.D	1051.56 mL	0.5 mL	10		
16-JUN-2011	05:22	KT	MJ28G1AA G1F070508-8 10X	S061517.D	1050.35 mL	0.5 mL	10		
16-JUN-2011	05:57	KT	NPE_CS-3	NPE0615A.	NA	NA	NA		
16-JUN-2011	06:32	KT	MJ6K71AA G1F130000-062B	S061518.D	1000 mL	0.5 mL	1		
16-JUN-2011	07:07	KT	MJ6K71AC G1F130000-062C	S061519.D	1000 mL	0.5 mL	1		
16-JUN-2011	07:42	KT	MJ0CC1AA G1F020453-1 10X	S061520.D	1005.91 mL	0.5 mL	10		RI@1X
16-JUN-2011	08:17	KT	MJ0CN1AA G1F020453-2 1X	S061521.D	986.73 mL	0.5 mL	1		
16-JUN-2011	08:52	KT	MJ0CC1AA G1F020453-1 1X	S061531.D	1005.91 mL	0.5 mL	1		
16-JUN-2011	09:27	KT	MJ30P1AA G1F080468-1	S061522.D	885.22 mL	0.5 mL	1		
16-JUN-2011	10:02	KT	MJ1DF1AD G1F040404-1RI	S061523.D	960.41 mL	0.5 mL	1		
16-JUN-2011	10:37	KT	MJ2781AA G1F070508-1 1X	S061524.D	1047.23 mL	0.5 mL	1		
16-JUN-2011	11:12	KT	MJ2791AA G1F070508-2 1X	S061525.D	1044.1 mL	0.5 mL	1		
16-JUN-2011	11:46	KT	MJ2791AD F070508-2S 1X	S061526.D	1044.88 mL	0.5 mL	1		
16-JUN-2011	12:21	KT	MJ2791AE F070508-2D 1X	S061527.D	1035.13 mL	0.5 mL	1		
16-JUN-2011	12:56	KT	MJ28A1AA G1F070508-3 1X	S061528.D	1008.3 mL	0.5 mL	1		
16-JUN-2011	13:31	KT	MJ28F1AA G1F070508-7 1X	S061529.D	1051.56 mL	0.5 mL	1		
16-JUN-2011	14:06	KT	MJ28G1AA G1F070508-8 1X	S061530.D	1050.35 mL	0.5 mL	1		

6/16/11

TC 9/1/11

CHEMIST REVIEW-VALIDATION CHECKLIST

Project: Olin Chemical Superfund Site **Method:** DMF
Project #: 6107110016 **Laboratory and SDG:** Katahdin WIL-23
Date: August 25, 2011 **Reviewer:** Mike Washburn
☐ **Chemist Review** ☑ **Full Validation (add page 2)**

1. **Case Narrative and Data Package Completeness (COC Review)**
   Package complete. Noted issued discussed in the following sections.

2. **Holding Time and Sample Preservation/Collection**
   Analyzed within technical holding time.

3. **QC Blanks**
   No detections

4. **Laboratory Control Sample Review**
   Within QC limits

5. **Field Duplicate Precision**
   Within QC limits. Both samples non-detect.

6. **Lab Duplicate Precision**
   Within QC limits. Both samples non-detect.

7. **Matrix Spike Results (if applicable)**
   Within QC limits.

8. **Surrogate Recovery (if applicable)**
   Within QC limits.

9. **Internal Standard Recovery (if applicable)**
   Within QC limits

CHEMIST REVIEW-VALIDATION CHECKLIST

FULL VALIDATION CHECKS

Ten Percent of data sets will have full validation checks completed during chemist review.

☐ **Initial Calibration**
No problems noted. Within QC limits

☐ **Continuing Calibration Verification**
The percent difference between the standard amount and the recovered amount (34) exceed the QC limit of 25 for DMF. DMF was not detected in the associated sample and the reporting limits were qualified as estimated (UJ).

Transcription and Calculation Checks

☐ **Instrument Calibration**
Completed

☐ **Blank Review – raw data/chromatogram check**
Completed

☐ **Laboratory Control Sample**
Completed

☐ **Matrix Spike**
Completed

☐ **Field Sample Results**
Completed

☐ **Surrogate Recovery**
Completed

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: KATAHDIN ANALYTICAL SERVICES Lab Code: KAS

Project: RI ANALYTICAL - WILMINGTON SDG No.: WIL-23

Instrument ID: GC06 Calibration Date: 06/22/11 Time: 2209

Lab File ID: 6EF1081 Init. Calib. Date(s): 06/22/11 06/22/11

Init. Calib. Times: 0905 1111

GC Column: STABILWAX ID: 0.53 (mm)

COMPOUND	RRF or AMOUNT	RRF0.2500 or AMOUNT	CCAL RRF0.2500	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE	
dimethylformamide	0.1661600	0.2500000	36928.000	0.01	-33.54	25.00	LINR	<-
diethylformamide	1.7678000	2.5000000	30066.000	0.01	-29.29	25.00	LINR	<-

FORM VII PEST

MJW 8/25/11

MS/MSD

DMF Concentration = (Response + 464.35)/57965

Sample	Response	Calculated Concentration	on-column concentration	Spiked Concentration	% Recov	%RPD
MS	3849	0.074	0.073	0.1	73	6
MSD	4106	0.079	0.078	0.1	78	

Sample Concentration = 0.00 mg/L

LCS

DMF Concentration = (Response + 464.35)/57965

Sample	Response	Calculated Concentration	on-column concentration	Spiked Concentration	% Recov	
LCS	4692	0.0890	0.0877	0.1	88	17
LCSD	3895	0.0752	0.0739	0.1	74	
					% D	
CCV	9232	0.167279393	0.166	0.25	33.60	

MJW 8/25/11

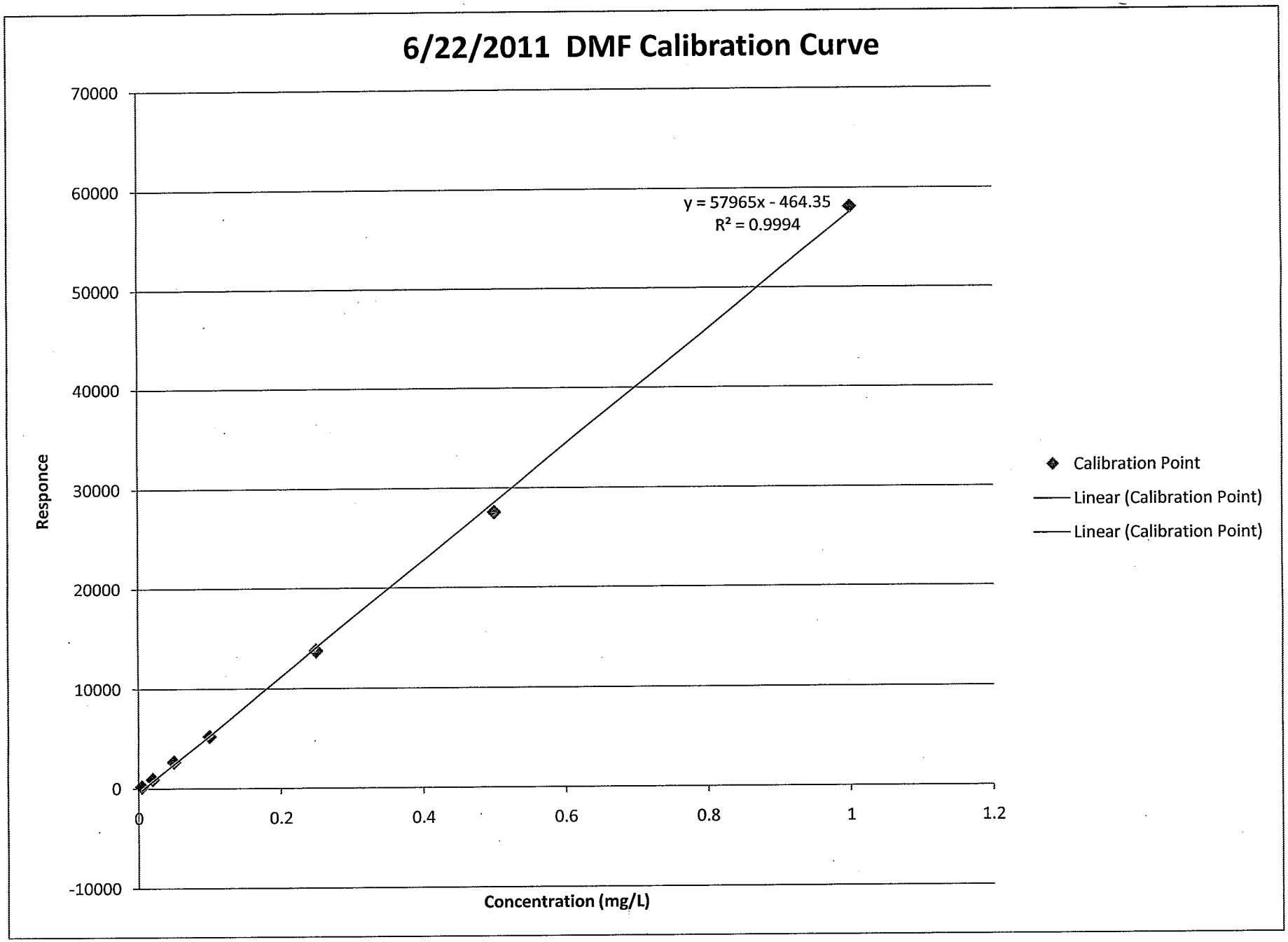
DMF Concentration = (Response + 464.35)/57965

Sample	Response	Calculated Concentration	on-column concentration
LCS	4692	0.088956267	0.0877
LCSD	3895	0.07520659	0.07394
MS	3849	0.074413008	0.07314
MSD	4106	0.078846718	0.07758
CCV	9232	0.167279393	0.166

Surrogate Concentration = (Response + 774.88)/42914

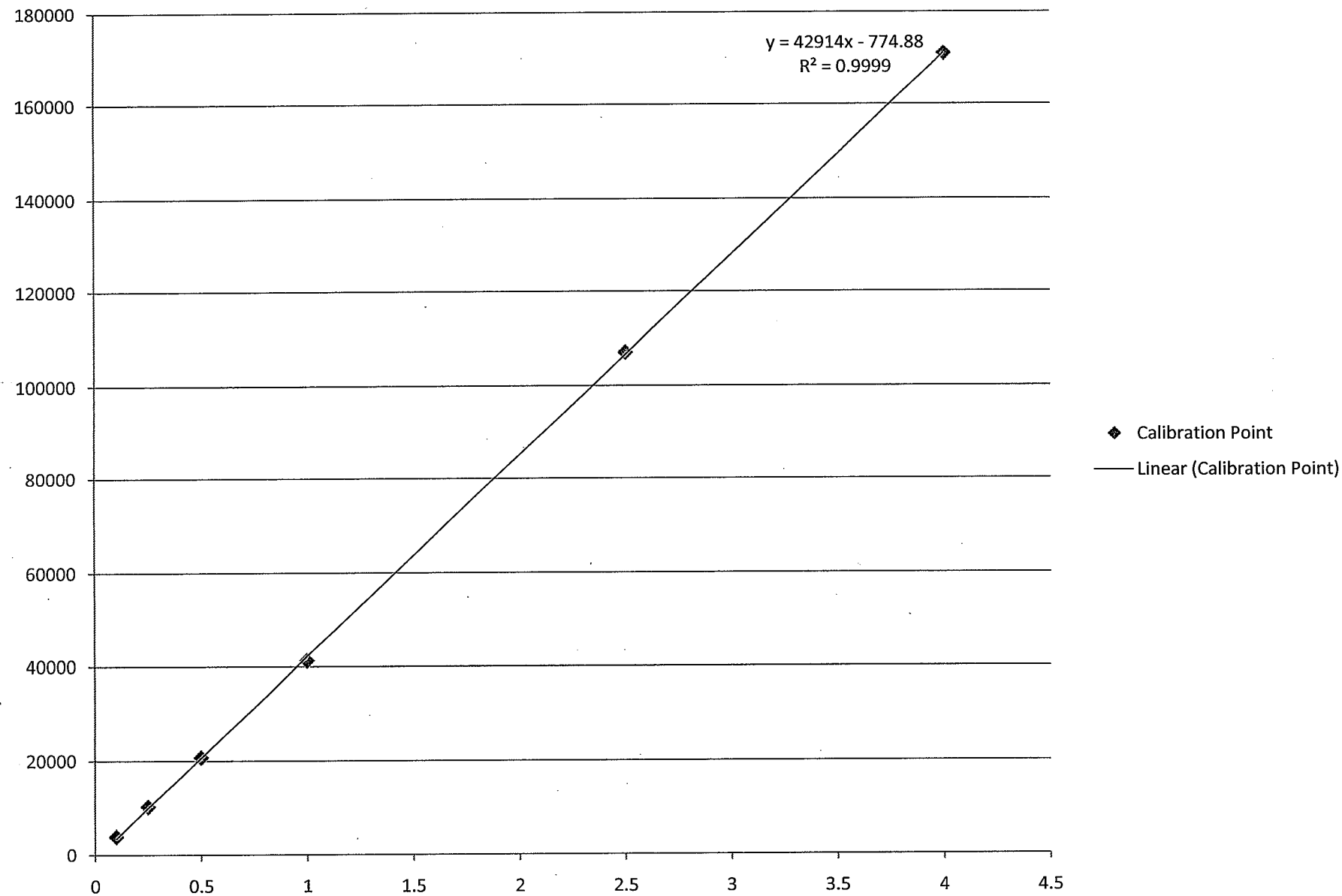
				Injected Amt	% Recovered
OC-SW-ISCO-1-DUP	17866	0.434377592	0.43065	0.5	86
OC-SW-ISCO-1-XXX	18328	0.44514331	0.44143	0.5	88
OC-SW-ISCO-2-XXX	20006	0.484244769	0.48059	0.5	96
OC-SW-ISCO-2-XXX	18348	0.445609358	0.4419	0.5	88
CO-SW-PZ-16RR-XXX	18322	0.445003495	0.44129	0.5	88
CO-SW-PZ-17RR-XXX	18702	0.453858415	0.45016	0.5	90
OC-SW-SD-1-XXX	17372	0.422866198	0.41912	0.5	84
OC-EBK-019	17790	0.432606609	0.42887	0.5	86

MJW 8/25/11


6/22/2011 DMF Calibration Curve
y = 57965x - 464.35
R² = 0.9994
Responce
70000
60000
50000
40000
30000
20000
10000
0
-10000
0
0.2
0.4
0.6
0.8
1
1.2
Concentration (mg/L)
Calibration Point
Linear (Calibration Point)
Linear (Calibration Point)

MW 1/25/11

6/25/2011 Surrogate Calibration Curve



MJW 8/25/11

KATAHDIN ANALYTICAL SERVICES
Report of Analytical Results

Client: Olin Corporation
Project: RI Analytical - Wilmington
PO No:
Sample Date: 06/06/11
Received Date: 06/08/11
Extraction Date:
Analysis Date: 22-JUN-2011 14:19
Report Date: 06/28/2011
Matrix: WATER
% Solids: NA

Lab ID: SE3250-1
Client ID: OC-SW-ISCO-1-DUP
SDG: WIL-23
Extracted by:
Extraction Method: 8033M
Analyst: JLP
Analysis Method: SW846 8033M
Lab Prep Batch: WG93073
Units: mg/L

CAS#	Compound	Flags	Results	DF	PQL	Adj.PQL	Adj.MDL
	dimethylformamide	U J	0.020	1.0	0.020	0.020	0.0091
	diethylformamide		86%				

MJW 8/25/11

KATAHDIN ANALYTICAL SERVICES
Report of Analytical Results

Client: Olin Corporation
Project: RI Analytical - Wilmington
PO No:
Sample Date: 06/06/11
Received Date: 06/08/11
Extraction Date:
Analysis Date: 22-JUN-2011 14:47
Report Date: 06/28/2011
Matrix: WATER
% Solids: NA

Lab ID: SE3250-2
Client ID: OC-SW-ISCO-1-XXX
SDG: WIL-23
Extracted by:
Extraction Method: 8033M
Analyst: JLP
Analysis Method: SW846 8033M
Lab Prep Batch: WG93073
Units: mg/L

CAS#	Compound	Flags	Results	DF	PQL	Adj.PQL	Adj.MDL
	dimethylformamide	U J	0.020	1.0	0.020	0.020	0.0091
	diethylformamide		88%				

MJW 8/25/11

KATAHDIN ANALYTICAL SERVICES
Report of Analytical Results

Client: Olin Corporation
Project: RI Analytical - Wilmington
PO No:
Sample Date: 06/06/11
Received Date: 06/08/11
Extraction Date:
Analysis Date: 22-JUN-2011 15:16
Report Date: 06/28/2011
Matrix: WATER
% Solids: NA

Lab ID: SE3250-3
Client ID: OC-SW-ISCO-2-XXX
SDG: WIL-23
Extracted by:
Extraction Method: 8033M
Analyst: JLP
Analysis Method: SW846 8033M
Lab Prep Batch: WG93073
Units: mg/L

CAS#	Compound	Flags	Results	DF	PQL	Adj.PQL	Adj.MDL
	dimethylformamide	U J	0.020	1.0	0.020	0.020	0.0091
	diethylformamide		96%				

Page 01 of 01 6EF1052.d

MJW 8/25/11

KATAHDIN ANALYTICAL SERVICES
Report of Analytical Results

Client: Olin Corporation
Project: RI Analytical - Wilmington
PO No:
Sample Date: 06/06/11
Received Date: 06/08/11
Extraction Date:
Analysis Date: 22-JUN-2011 13:50
Report Date: 06/28/2011
Matrix: WATER
% Solids: NA

Lab ID: WG93073-6
Client ID: OC-SW-ISCO-2-XXX
SDG: WIL-23
Extracted by:
Extraction Method: 8033M
Analyst: JLP
Analysis Method: SW846 8033M
Lab Prep Batch: WG93073
Units: mg/L

CAS#	Compound	Flags	Results	DF	PQL	Adj.PQL	Adj.MDL
	dimethylformamide	U J	0.020	1.0	0.020	0.020	0.0091
	diethylformamide		88%				

MJW 8/25/11

KATAHDIN ANALYTICAL SERVICES
Report of Analytical Results

Client: Olin Corporation
Project: RI Analytical - Wilmington
PO No:
Sample Date: 06/06/11
Received Date: 06/08/11
Extraction Date:
Analysis Date: 22-JUN-2011 15:44
Report Date: 06/28/2011
Matrix: WATER
% Solids: NA

Lab ID: SE3250-4
Client ID: OC-SW-PZ-16RR-XXX
SDG: WIL-23
Extracted by:
Extraction Method: 8033M
Analyst: JLP
Analysis Method: SW846 8033M
Lab Prep Batch: WG93073
Units: mg/L

CAS#	Compound	Flags	Results	DF	PQL	Adj.PQL	Adj.MDL
	dimethylformamide	U J	0.020	1.0	0.020	0.020	0.0091
	diethylformamide		88%				

MJW 8/25/11

KATAHDIN ANALYTICAL SERVICES
Report of Analytical Results

Client: Olin Corporation
Project: RI Analytical - Wilmington
PO No:
Sample Date: 06/06/11
Received Date: 06/08/11
Extraction Date:
Analysis Date: 22-JUN-2011 16:13
Report Date: 06/28/2011
Matrix: WATER
% Solids: NA

Lab ID: SE3250-5
Client ID: OC-SW-PZ-17RR-XXX
SDG: WIL-23
Extracted by:
Extraction Method: 8033M
Analyst: JLP
Analysis Method: SW846 8033M
Lab Prep Batch: WG93073
Units: mg/L

CAS#	Compound	Flags	Results	DF	PQL	Adj.PQL	Adj.MDL
	dimethylformamide	UJ	0.020	1.0	0.020	0.020	0.0091
	diethylformamide		90%				

MJW 8/25/11

KATAHDIN ANALYTICAL SERVICES
Report of Analytical Results

Client: Olin Corporation
Project: RI Analytical - Wilmington
PO No:
Sample Date: 06/06/11
Received Date: 06/08/11
Extraction Date:
Analysis Date: 22-JUN-2011 16:41
Report Date: 06/28/2011
Matrix: WATER
% Solids: NA

Lab ID: SE3250-6
Client ID: OC-SW-SD-1-XXX
SDG: WIL-23
Extracted by:
Extraction Method: 8033M
Analyst: JLP
Analysis Method: SW846 8033M
Lab Prep Batch: WG93073
Units: mg/L

CAS#	Compound	Flags	Results	DF	PQL	Adj.PQL	Adj.MDL
	dimethylformamide	UJ	0.020	1.0	0.020	0.020	0.0091
	diethylformamide		84%				

MJW 8/25/11

KATAHDIN ANALYTICAL SERVICES
Report of Analytical Results

Client: Olin Corporation
Project: RI Analytical - Wilmington
PO No:
Sample Date: 06/08/11
Received Date: 06/08/11
Extraction Date:
Analysis Date: 22-JUN-2011 17:38
Report Date: 06/28/2011
Matrix: WATER
% Solids: NA

Lab ID: SE3250-7
Client ID: OC-EBK-019
SDG: WIL-23
Extracted by:
Extraction Method: 8033M
Analyst: JLP
Analysis Method: SW846 8033M
Lab Prep Batch: WG93073
Units: mg/L

CAS#	Compound	Flags	Results	DF	PQL	Adj.PQL	Adj.MDL
	dimethylformamide	U J	0.020	1.0	0.020	0.020	0.0091
	diethylformamide		86%				

MW 8/25/11

Version 1.1, April 2002

OLIN CORPORATION
LEVEL I DATA QUALITY EVALUATION
STANDARD OPERATING PROCEDURE AND CHECKLIST
EXTRACTABLE PETROLEUM HYDROCARBONS BY METHOD MADEP-EPH-98-1

Reviewer/Date BRADLEY R LAFOREST 8/22/11
Sr. Review/Date
Lab Report # 360-34253-1
LAW Project # 60107110016-12

1.0 Laboratory Deliverable Requirements

1.1 Laboratory Information: Was all of the following provided in the laboratory report? **Yes** [✓] No [ ] N/A [ ] Comments:
Check items received.

☐ *Name of Laboratory* ☐ *Certification ID #* ☐ *Address* ☐ *Project ID* ☐ *Phone #* ☐ *Sample identification – Field and Laboratory (IDs must be cross-referenced)*

Client Information: ☐ *Name* ☐ *Address* ☐ *Phone #* ☐ *Client Contact*

ACTION: If no, contact lab for submission of missing or illegible information.

1.2 Laboratory Report Certification Statement ***Yes*** [✓] *No* [ ] *N/A* [ ] *Comments:*

Does the laboratory report include a completed Analytical Report Certification in the required format?

ACTION: *If no, contact lab for submission of missing certification or certification with correct format.*

1.3 Laboratory Case Narrative: *Are both of the following statements true?* ***Yes*** [✓] *No* [ ] *N/A* [ ] *Comments:*

☐ *Narrative serves as an exception report for the project and method QA/QC performance.* ☐ *Narrative includes an explanation of each discrepancy on the Certification Statement.*

ACTION: *If no, contact lab for submission of missing or illegible information.*

1.4 Chain of Custody (COC) **Yes** [✓] No [ ] N/A [ ] Comments:

Does the laboratory report include the *original* Chain of Custody forms containing all samples in this SDG?

NOTE: Olin receives and maintains the *original* COC.

ACTION: If no, contact lab for submission of missing original COC.

1.5 Sample Receipt Information (*Cooler Receipt Form*): Were each of the following tasks completed and recorded upon receipt of the sample(s) into the laboratory? **Yes [✓]** No [ ] N/A [ ] Comments:

☐ Sample temperature confirmed: must be 1° – 10° C. (If samples were sent by courier and delivered on the same day as collection, temperature requirement does not apply).

☐ Container type noted ☐ Custody seals checked ☐ Condition observed ☐ pH verified (where applicable) ☐ Field and lab IDs cross referenced

ACTION: If no, contact lab for submission of missing or incomplete documentation.

1.5.1 Were the correct bottles and preservatives used? **Yes [✓]** No [ ] N/A [ ] Comments:

Water - 1 Liter amber bottle / 5 ml 1:1 HCl, cool to 4°C
Soil - 4 oz amber soil jar w/ Teflon lined cap / cool to 4°C

ACTION: If no, inform senior chemist. Document justification for change in container/volume (if applicable), qualify positive and non-detect data (J) data if cooler temperature exceeds 10°C. Rejection of data requires professional judgment

ACTION: If each VOA vial for a sample contains air bubbles or the VOA vial analyzed contained air bubbles, flag positives (J) and reject nondetects (R).

1.5.2 Were all samples delivered to the laboratory without breakage? **Yes [✓]** No [ ] N/A [ ] Comments:

1.5.3 Does the *Cooler Receipt Form* or Lab Narrative indicate other problems with sample receipt, condition of the samples, analytical problems or special circumstances affecting the quality of the data? Yes [ ] **No [✓]** N/A [ ] Comments:

1.6 Sample Results Section: *Was the following information supplied in the laboratory report for each sample?* **Yes [✓]** No [ ] N/A [ ] Comments:

☐ Field ID and Lab ID ☐ *Date and time collected* ☐ Analyst Initials ☐ *Dilution Factor* ☐ % moisture or solids ☐ *Reporting limits*
☐ *Clean-up method* ☐ Analysis method ☐ *Preparation method* ☐ *Date of preparation/extraction/digestion clean-up and analysis, where applicable* ☐ Matrix ☐ Target analytes and concentrations ☐ Units (soils must be reported in dry weight)

ACTION: If no, contact lab for submission of missing or incomplete information.

1.7 QA/QC Information: Was the following information provided in the laboratory report for each sample batch? **Yes** [✓] No [ ] N/A [ ] Comments:

☐ Method blank results ☐ LCS recoveries ☐ MS/MSD recoveries and RPDs ☐ Laboratory duplicate results (where applicable) ☐ Surrogate recoveries

ACTION: If no, contact lab for submission of missing or incomplete information.

2.0 Holding Times **Yes** [✓] No [ ] N/A [ ] Comments:

Have any technical holding times, determined from date of collection to date of analysis, been exceeded? For water samples, the holding time is 14 days from sampling to extraction and 40 days from extraction to analysis. For soil samples, the holding time is 7 days from sampling to extraction and 40 days from extraction to analysis.

NOTE: List samples that exceeded hold time with number of days exceeded on checklist.

ACTION: If technical holding times are exceeded, qualify all positive results (J) and reject (R) all non-detect results.

3.0 Laboratory Method

3.1 Was the correct laboratory method used? **Yes** [✓] No [ ] N/A [ ] Comments:

Extractable Petroleum Hydrocarbons MADEP-EPH-98-1

ACTION: If no, contact lab to provide justification for method change compared to the requested method. Contact senior chemist to inform Client of change or to request variance.

3.2 Are the practical quantitation limits the same as those specified by the **Yes** [✓] No [ ] N/A [ ] Comments:

☐ SOW ☐ QAPP ☐ Lab?

ACTION: If no, evaluate change with respect to sample matrix, preparation, dilution, moisture, etc. If sample PQL is indeterminate, contact lab for explanation.

3.3 Are the appropriate parameter results present for each sample in the SDG? **Yes** [✓] No [ ] N/A [ ] Comments:

ACTION: If no, check Request for Analysis to verify if method was ordered and COC to verify that it was sent, and contact lab for resubmission of the missing data

3.4 If *dilutions were required, were dilution factors reported?* **Yes** [✓] No [ ] N/A [ ] Comments:

ACTION: If no, contact the lab for submission.

4.0 Method Blanks

4.1 Is the Method Blank Summary present? **Yes** [✓] No [ ] N/A [ ] Comments:

ACTION: If no, call the laboratory for submission of missing data.

4.2 Was a method blank analyzed for each analysis batch of EPH field samples of 20 or less? **Yes** [✓] No [ ] N/A [ ] Comments:

ACTION: If no, document discrepancy in case narrative and contact lab for justification. Consult senior chemist for action needed.

4.3 Is the method blank less than the PQL? (See attached table for PQLs) Yes [ ] **No** [✓] N/A [ ] Comments:

4.4 Do any method blanks have positive results for EPHs? Qualify data according to the following: Yes [ ] **No** [✓] N/A [ ] Comments:

If the sample concentration is < 5 × blank value, flag sample result "JB"

If the sample concentration is > 5 × blank value, no qualification is needed.

ACTION: If any blank has positive results, list all the concentrations detected and flagging level (flagging level = 5 × blank value) on the checklist. List all affected samples and their qualifiers.

5.0 Laboratory Control Standard

5.1 Was a laboratory control standard run with each analytical batch of 20 samples or less? **Yes** [✓] No [ ] N/A [ ] Comments:

ACTION: Call laboratory for LCS form submittal. If data are not available, reject (R) data associated with that batch.

5.2 Is a LCS Summary Form present? **Yes** [✓] No [ ] N/A [ ] Comments:

ACTION: If no, contact lab for resubmission of missing data.

5.3 Is the recovery of any analyte outside of control limits of 40-140%? Yes [ ] **No** [✓] N/A [ ] Comments:

NOTE: *A second source LCS containing at least five target analytes from each fraction is required by MADEP.*

NOTE: *MADEP guidelines list LCS recovery limits as 40-140 for all analytes except C36. The laboratory must identify analytes that routinely exceed these limits. See the attached table for a listing of MADEP LCS control limits vs. the control limits listed in the QAPP.*

ACTION: If recovery is above the upper limit, qualify all positive sample results within the batch as (J). If recovery is below the lower limit but > 10%, qualify all positive and no-detect results within the batch as (J). If LCS recovery is <10%, positive and non-detect results are rejected (R) unless the QC limit for that compound is below 10% (flag as above).

5.4 Are 80% of LCS recoveries within laboratory control limits? **Yes** [✓] No [ ] N/A [ ] Comments:

ACTION: If 80% of LCS recoveries are not within limits, use professional judgment and consult Senior Chemist. If more than half of the recoveries are above control limits, qualify all positive results as (J). If more than half of the recoveries are below control limits, batch may require rejection and reanalysis

6.0 Matrix Spikes

6.1 Were project-specific MS/MSDs collected? List project samples that were spiked.

Yes [✓] No [ ] N/A [ ] Comments:

ACTION: If no, contact senior chemist to see if any were specified.

6.2 Is the MS/MSD Recovery Form present?

Yes [✓] No [ ] N/A [ ] Comments:

ACTION: If no, contact lab for resubmission of missing data.

6.3 Were matrix spikes analyzed at the required frequency of 1 per 20 samples per matrix?

Yes [✓] No [ ] N/A [ ] Comments:

ACTION: If any matrix spike data is missing, call lab for resubmission.

6.4 Are any EPH spike recoveries outside of the QC limits?

Yes [ ] No [✓] N/A [ ] Comments:

NOTE: $\%R = \frac{(SSR-SR)}{SA} \times 100\%$ Where: SSR = Spiked sample result
SR = Sample result
SA = Spike added

NOTE: *A second source MS/MSD containing at least five target analytes from each fraction is required by MADEP.*

NOTE: *MADEP guidelines list MS/MSD recovery limits as 40-140 for all analytes except C36. The laboratory must identify analytes that routinely exceed these limits. See the attached table for a listing of MADEP LCS control limits vs. the control limits listed in the QAPP*

NOTES: 1) If only one of the recoveries for an MS/MSD pair is outside of the control limits, no qualification is necessary. Use professional judgment for the MS/MSD flags.
2) If the MS/MSD was performed by the laboratory on a non-project sample, no qualification is required.

NOTE: Laboratory control limits apply when spiked sample results fall within the normal calibration range. If dilutions are required due to high sample concentrations, the data is evaluated, but no flags are applied.

ACTION: MS/MSD flags only apply to the sample spiked. If the recoveries of the MS and MSD exceed the upper control limit, qualify positive results as estimated (J). If the recoveries of the MS and MSD are lower than the lower control limit but > 30%, qualify both positive results and non-detects (J). If the MS/MSD recovery is < 30% and the sample is non-detect, the results are considered unusable and flagged (R).

6.5 Are any RPDs for MS/MSD recoveries outside of the QC limits of *≤ 50 for soil and ≤ 30 for water*? Yes [ ] **No** [✓] N/A [ ] Comments:

NOTE: $RPD = \frac{S-D}{(S+D)/2} \times 100\%$ Where: S = MS sample result
D = MSD sample result

NOTE: *MADEP guidelines list MS/MSD RPD limits for water and soil as ≤ 50. See the attached table for a listing of MADEP MS/MSD RPD limits vs. the control limits listed in the QAPP.*

NOTE: Laboratory control limits apply when spiked sample results fall within the normal calibration range. If dilutions are required due to high sample concentrations, the data are evaluated, but no flags are applied.

ACTION: If the RPD exceeds the control limit, qualify positive and non-detects results (J).

7.0 Surrogate Recoveries

Were one or more EPH surrogate recoveries outside of laboratory limits for any sample or method blank? If yes, were samples re-analyzed? Yes [ ] **No** [✓] N/A [ ] Comments:

NOTE: %R = QD x 100% Where: S = MS sample result
D = MSD sample result

NOTE: *MADEP guidelines require at least two extraction and two fractionation surrogates, and lists recovery limits as 40-140% for all surrogates. See the attached table for a listing of MADEP surrogate limits vs. the control limits listed in the QAPP*

NOTE: If surrogate recoveries fail due to dilution, results are not flagged. Document on checklist and in the case narrative.

ACTION: If recoveries are >10%, but fail to meet QC criteria: (1) For recoveries below the QC limit, qualify non-detects and positives (J), and (2) For recoveries above the QC limit, qualify only positives (J). If any surrogate recovery is <10% (unless the QC limits are below 10%, in which case, results are flagged as stated above), flag positives (J) and reject nondetects (R).

8.0 Sampling Accuracy

8.1 Were rinsate blanks collected? Prior to evaluating rinsate blanks, obtain a list of the associated samples from the project chemist. Yes [ ] **No** [✓] N/A [ ] Comments:

NOTE: *MADEP does not specify the collection of rinsate blanks.*

8.2 Do any rinsate blanks have positive results? Yes [ ] **No** [ ] N/A [✓] Comments:

ACTION: Evaluate rinsate results against other blank results to determine if contaminant may be laboratory-, ambient, or shipment-derived. If results are not lab-, ambient, or shipment related, qualify according to the table below.

Sample conc. < 5x blank value:	Sample conc. > 5x blank value:
Flag sample result "JB"	No qualification is needed

9.0 Field Duplicates

9.1 Were field duplicate samples collected? Obtain a list of the samples and their associated field duplicates. Yes [✓] **No** [ ] N/A [ ] Comments:

9.2 Were field duplicates collected per the required frequency? **Yes** [✓] No [ ] N/A [ ] Comments:

☐ SOW ☐ QAPP ☐ *MADEP Option 1(1 per 20)* ☐ *MADEP Option 3 (1 per 10)*

9.3 Was the RPD ≤ 50% for soils or waters? Calculate the RPD for all results and attach to this review. **Yes** [✓] No [ ] N/A [ ] Comments:

ACTION: RPD must be ≤50% for soil and water. Qualify data (J) for both sample results if the RPD exceeds 50%.

10.0 Application of Validation Qualifiers

Was any of the data qualified? Yes [ ] **No** [✓] N/A [ ] Comments:

If so, apply data qualifiers directly to the DQE copy of laboratory report and **flag pages** for entry in database.

REFERENCES

MACTEC, Quality Assurance Project Plan for Remedial Investigation/Feasibility Study – Olin Chemical Superfund Site, Wilmington Property, 51 Eames Street, Wilmington, MA", MACTEC Engineering and Consulting. Draft .October 2008.

STL-Westfield, 2002. "Olin – General Chemistry Control Limits (Soil & Water)," Severn Trent Laboratories, Inc., 53 Southampton Road, Westfield, MA, 01085.

USEPA, 1988. "Laboratory Data Validation Functional Guidelines for Evaluating Organic and Inorganic Analysis," EPA/540/R-94-012 and EPA/540-R-94-013, July 1988.

MADEP, 2001. Massachusetts Department of Environmental Protection Bureau of Waste Site Cleanup, "Massachusetts Quality Assurance / Quality Control (QA / QC Requirements," BWSC-CAM, Interim Final Draft, Revision No. 2, 5 October 2001.

MADEP, 2001. Massachusetts Department of Environmental Protection Bureau of Waste Site Cleanup, "Quality Assurance / Quality Control Guidelines for Sampling, Data Evaluation and reporting Activities, " BWSC-CAM, Section VII, Public Comment Draft, Revision No. 0, 21 December 2001.

CHEMIST REVIEW-VALIDATION CHECKLIST

Project: Olin Chemical Superfund Site
Project #: 6107110016.12
Date: 8/31/11

Method: Formaldehyde/Acetaldehyde
Laboratory and SDG: TAL 360-34253-1
Reviewer:

☐ **Chemist Review** ☑ **Full Validation (add page 2)**

1. **Case Narrative and Data Package Completeness (COC Review)**

Present and complete.

2. **Holding Time and Sample Preservation/Collection (aqueous 3 days to extraction then 3 days to analysis)**

All criteria met.

3. **QC Blanks**

All non-detect.

4. **Laboratory Control Sample Review (% recovery 80-120, RPD 30)**

All criteria were met.

5. **Field Duplicate Precision (RPD 30)**

All criteria were met.

6. **Lab Duplicate Precision (RPD 20)**

Not applicable.

7. **Matrix Spike Results (if applicable) (% recovery 75-125, RPD 25)**

Sample OC-SW-MMB-SW/SD-1-XXX was analyzed for MS/MSD. The formaldehyde MS/MSD percent recoveries (65 and 73) were less than the lower QC limit of 75. The result for formaldehyde in associated samples OC-SW-MMB-SW/SD-1-XXX and OC-SW-MMB-SW/SD-1-DUP were not detected and the reporting limits were qualified estimated (UJ).

8. **Surrogate Recovery (if applicable)**

Not applicable.

9. **Internal Standard Recovery (if applicable)**

Not applicable.

CHEMIST REVIEW-VALIDATION CHECKLIST

FULL VALIDATION CHECKS

Ten Percent of data sets will have full validation checks completed during chemist review.

☑ **Initial Calibration**

☑ **Continuing Calibration Verification**

Transcription and Calculation Checks

☑ **Instrument Calibration**

☑ **Blank Review – raw data/chromatogram check**

☑ **Laboratory Control Sample**

☑ **Matrix Spike**

Calculation Checks
FORMALDEHYDE SDG 360-34253-1
Olin

360-34253-1 ICAL 81659

Std Level	Formaldehyde Std Conc (µg/L)	Response Formaldehyde	Calibration Factor
1	0.5	24527	49054
2	1.25	40201	32160.8
3	2.5	63887	25554.8
4	12.5	268766	21501.28
5	25	518941	20757.64
	y	x	

Formaldehyde

slope	4.9493E-05	-0.720312169	intercept
+-	1.47999E-07	0.039035576	+-
r2	0.999973175	0.06277418	s(y)
F	111832.8269	3	degrees of freedom
regression ss	440.6881782	0.011821793	residual ss

CCV 640-81744/18

Formaldehyde	
Response	62806
Amount Found (µg/L)	2.388
Amount Spiked (µg/L)	2.5
Percent Diff. (%)	-4.47

Method Blank

Formaldehyde	
Response	—
Amount Raw (µg/L)	#VALUE!
Amount Nominal (µg/L)	#VALUE!

LCS 640-81645/2-A

Formaldehyde		
Response	90522	AMT Spiked (µg/L)
Amount Found (µg/L)	3.760	150
Amount Nominal (µg/L)	150.40	
Percent Recovery (%)	100.26	

LCSD 640-81645/3-A

Formaldehyde		
Response	89948	AMT Spiked (µg/L)
Amount Raw (µg/L)	3.731	150
Amount Nominal (µg/L)	149.26	RPD
Percent Recovery (%)	99.51	0.76

OC-SW-ISCO-1-XXX MS

Formaldehyde		
Response	81445	AMT Spiked (µg/L)
Amount Raw (µg/L)	3.311	150
Amount Nominal (µg/L)	132.43	
Unspiked Amt (µg/L)	0.00	
Percent Recovery (%)	88.28	

OC-SW-ISCO-1-XXX MSD

Formaldehyde		
Response	81698	AMT Spiked (µg/L)
Amount Raw (µg/L)	3.323	150
Amount Nominal (µg/L)	132.93	RPD
Unspiked Amt (µg/L)	0.00	
Percent Recovery (%)	88.62	-0.38

OC-SW-ISCO-1-XXX

Formaldehyde	
Response	0
Amount Found (µg/L)	0.000

OC-SW-ISCO-1-DUP

Formaldehyde		
Response	0	RPD
Amount Found (µg/L)	0.000	#DIV/0!

8/31/11

360-34253-1 ICAL 81659

Std Level	Acetaldehyde Std Conc (µg/L)	Response Acetaldehyde	Calibration Factor
1	0.5	5595	11190
2	1.25	12811	10248.8
3	2.5	23764	9505.6
4	12.5	117373	9389.84
5	25	236964	9478.56
	y	x	

Acetaldehyde

slope	0.000105967	-0.053292066	intercept
+-	4.35886E-07	0.051827706	+-
r2	0.999949242	0.086350422	s(y)
F	59100.62486	3	degrees of freedom
regression ss	440.6776308	0.022369186	residual ss

CCV 640-81744/18

Acetaldehyde	
Response	25001
Amount Found (µg/L)	2.596
Amount Spiked (µg/L)	2.5
Percent Diff. (%)	3.84

Method Blank

Acetaldehyde	
Response	---
Amount Raw (µg/L)	#VALUE!
Amount Nominal (µg/L)	#VALUE!

LCS 640-81645/2-A

Acetaldehyde		
Response	39494	AMT Spiked (µg/L)
Amount Found (µg/L)	4.132	150
Amount Nominal (µg/L)	165.27	
Percent Recovery (%)	110.18	

LCSD 640-81645/3-A

Acetaldehyde		
Response	39632	AMT Spiked (µg/L)
Amount Raw (µg/L)	4.146	150
Amount Nominal (µg/L)	165.85	RPD
Percent Recovery (%)	110.57	-0.35

OC-SW-ISCO-1-XXX MS

Acetaldehyde		
Response	40785	AMT Spiked (µg/L)
Amount Raw (µg/L)	4.269	150
Amount Nominal (µg/L)	170.74	
Unspiked Amt (µg/L)	0.00	
Percent Recovery (%)	113.83	

OC-SW-ISCO-1-XXX MSD

Acetaldehyde		
Response	41120	AMT Spiked (µg/L)
Amount Raw (µg/L)	4.304	150
Amount Nominal (µg/L)	172.16	RPD
Unspiked Amt (µg/L)	0.00	
Percent Recovery (%)	114.77	-0.83

OC-SW-ISCO-1-XXX

Acetaldehyde	
Response	0
Amount Found (µg/L)	0.000

OC-SW-ISCO-1-DUP

Acetaldehyde		
Response	0	RPD
Amount Found (µg/L)	0.000	#DIV/0!

8/31/14

FORM VI
HPLC/IC INITIAL CALIBRATION DATA
EXTERNAL STANDARD CURVE EVALUTION

Lab Name: TestAmerica Tallahassee Job No.: 360-34253-1 Analy Batch No.: 81659

SDG No.: 360-34253-1

Instrument ID: LCM GC Column: LC-C18 ID: Heated Purge: (Y/N) N

Calibration Start Date: 06/07/2011 10:34 Calibration End Date: 06/07/2011 11:21 Calibration ID: 1043

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 640-81659/8	1F07M2.d
Level 2	IC 640-81659/9	1F07M3.d
Level 3	IC 640-81659/10	1F07M4.d
Level 4	IC 640-81659/11	1F07M5.d
Level 5	IC 640-81659/12	1F07M6.d

ANALYTE	CF				CURVE TYPE	COEFFICIENT			#	MIN CF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 5	LVL 2	LVL 3	LVL 4		B	M1	M2								
Formaldehyde	49054 20758	32161	25555	21501	Lin	-0.7203122	20204.8614							1.0000		0.9900
Acetaldehyde	11190 9478.6	10249	9505.6	9389.8	Lin	-0.0532921	9436.94440							0.9999		0.9900

8/31/11

8/31/11

Note: The m1 coefficient is the same as Ave CF for an Ave curve type.

FORM VI
HPLC/IC INITIAL CALIBRATION DATA
EXTERNAL STANDARD RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Tallahassee Job No.: 360-34253-1 Analy Batch No.: 81659

SDG No.: 360-34253-1

Instrument ID: LCM GC Column: LC-C18 ID: Heated Purge: (Y/N) N

Calibration Start Date: 06/07/2011 10:34 Calibration End Date: 06/07/2011 11:21 Calibration ID: 1043

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 640-81659/8	1F07M2.d
Level 2	IC 640-81659/9	1F07M3.d
Level 3	IC 640-81659/10	1F07M4.d
Level 4	IC 640-81659/11	1F07M5.d
Level 5	IC 640-81659/12	1F07M6.d

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (UG/ML)				
		LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
Formaldehyde	Lin	24527	40201	63887	268766	518941	0.500	1.25	2.50	12.5	25.0
Acetaldehyde	Lin	5595	12811	23764	117373	236964	0.500	1.25	2.50	12.5	25.0

Curve Type Legend:
Lin = Linear by Height

FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Tallahassee Job No.: 360-34253-1

SDG No.: 360-34253-1

Lab Sample ID: CCVRT 640-81744/18 Calibration Date: 06/09/2011 08:26

Instrument ID: LCM Calib Start Date: 06/07/2011 10:34

GC Column: LC-C18 ID: Calib End Date: 06/07/2011 11:21

Lab File ID: 1F09M2.d Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Formaldehyde	Lin	29806	25122		2.39	2.50	-4.5	15.0
Acetaldehyde	Lin	9963	10000		2.60	2.50	3.8	15.0

8/31/11

TestAmerica Tallahassee

Semivolatile REPORT SW-846 Method 8315

Data file : \\Talsvr05\chem\LC\TLCMUV1.i\1MF09K.b\1F09M3.d
Lab Smp Id: MB 640-81645/1A Client Smp ID: 81645MB
Inj Date : 09-JUN-2011 08:48
Operator : DS Inst ID: TLCMUV1.i
Smp Info : MB 640-81645/1A
Misc Info : 8315A
Comment :
Method : \\Talsvr05\chem\LC\TLCMUV1.i\1MF09K.b\8315_A&F.m
Meth Date : 09-Jun-2011 08:38 smithdn Quant Type: ESTD
Cal Date : 07-JUN-2011 11:21 Cal File: 1F07M6.d
Als bottle: 1 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: 831509J.sub
Target Version: 4.14
Processing Host: TALSG01

Concentration Formula: Amt * DF * Vt/Vo * A * E * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	4.000	Final Volume
Vo	100.000	Sample Volume
A	1000.000	mL to L conversion
E	1.000	ug to mg conversion (1 if no conversion)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (µg/L)	REVIEW CODE
1 Formaldehyde	Compound Not Detected.						
2 Acetaldehyde	Compound Not Detected.						

Method Blank

8/31/11

TestAmerica Tallahassee

Semivolatile REPORT SW-846 Method 8315

Data file : \\Talsvr05\chem\LC\TLCMUV1.i\1MF09K.b\1F09M4.d
Lab Smp Id: LCS 640-81645/2A Client Smp ID: 81645MBLCS
Inj Date : 09-JUN-2011 09:00
Operator : DS Inst ID: TLCMUV1.i
Smp Info : LCS 640-81645/2A
Misc Info : 8315A
Comment :
Method : \\Talsvr05\chem\LC\TLCMUV1.i\1MF09K.b\8315_A&F.m
Meth Date : 09-Jun-2011 08:38 smithdn Quant Type: ESTD
Cal Date : 07-JUN-2011 11:21 Cal File: 1F07M6.d
Als bottle: 1 QC Sample: LCS
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: 831509J.sub
Target Version: 4.14
Processing Host: TALSG01

Concentration Formula: Amt * DF * Vt/Vo * A * E * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	4.000	Final Volume
Vo	100.000	Sample Volume
A	1000.000	mL to L conversion
E	1.000	ug to mg conversion (1 if no conversion)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
1 Formaldehyde	3.133	3.133	0.000	90522	3.75990	150	
2 Acetaldehyde	4.150	4.150	0.000	39494	4.13175	165	

8/31/11

TestAmerica Tallahassee

Semivolatile REPORT SW-846 Method 8315

Data file : \\Talsvr05\chem\LC\TLCMUV1.i\1MF09K.b\1F09M8.d
Lab Smp Id: 360-34253R2C MS Client Smp ID: OC-SW-ISCO-1MS
Inj Date : 09-JUN-2011 09:47
Operator : DS Inst ID: TLCMUV1.i
Smp Info : 360-34253R2C MS
Misc Info : 8315A
Comment :
Method : \\Talsvr05\chem\LC\TLCMUV1.i\1MF09K.b\8315_A&F.m
Meth Date : 09-Jun-2011 08:38 smithdn Quant Type: ESTD
Cal Date : 07-JUN-2011 11:21 Cal File: 1F07M6.d
Als bottle: 1 QC Sample: MS
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: 831509J.sub
Target Version: 4.14
Processing Host: TALSG01

Concentration Formula: Amt * DF * Vt/Vo * A * E * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	4.000	Final Volume
Vo	100.000	Sample Volume
A	1000.000	mL to L conversion
E	1.000	ug to mg conversion (1 if no conversion)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
1 Formaldehyde	3.133	3.133	0.000	81445	3.31065	132	
2 Acetaldehyde	4.166	4.150	0.016	40785	4.26855	171	

8/31/11

TestAmerica Tallahassee

Semivolatile REPORT SW-846 Method 8315

Data file : \\Talsvr05\chem\LC\TLCMUV1.i\1MF09K.b\1F09M9.d
Lab Smp Id: 360-34253R2B MSD Client Smp ID: OC-SW-ISCO-1MSD
Inj Date : 09-JUN-2011 09:59
Operator : DS Inst ID: TLCMUV1.i
Smp Info : 360-34253R2B MSD
Misc Info : 8315A
Comment :
Method : \\Talsvr05\chem\LC\TLCMUV1.i\1MF09K.b\8315_A&F.m
Meth Date : 09-Jun-2011 08:38 smithdn Quant Type: ESTD
Cal Date : 07-JUN-2011 11:21 Cal File: 1F07M6.d
Als bottle: 1 QC Sample: MSD
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: 831509J.sub
Target Version: 4.14
Processing Host: TALSG01

Concentration Formula: Amt * DF * Vt/Vo * A * E * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	4.000	Final Volume
Vo	100.000	Sample Volume
A	1000.000	mL to L conversion
E	1.000	ug to mg conversion (1 if no conversion)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
1 Formaldehyde	3.133	3.133	0.000	81698	3.32317	133	
2 Acetaldehyde	4.150	4.150	0.000	41120	4.30405	172	

8/31/11

8/31/11

TestAmerica Tallahassee

Semivolatile REPORT SW-846 Method 8315

Data file : \\Talsvr05\chem\LC\TLCMUV1.i\1MF09K.b\1F09M6.d
Lab Smp Id: 360-34253-R-1-A Client Smp ID: OC-SW-ISCO-1-DUP
Inj Date : 09-JUN-2011 09:24
Operator : DS Inst ID: TLCMUV1.i
Smp Info : 360-34253-R-1-A
Misc Info : 8315A
Comment :
Method : \\Talsvr05\chem\LC\TLCMUV1.i\1MF09K.b\8315_A&F.m
Meth Date : 09-Jun-2011 08:38 smithdn Quant Type: ESTD
Cal Date : 07-JUN-2011 11:21 Cal File: 1F07M6.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: 831509J.sub
Target Version: 4.14
Processing Host: TALSG01

Concentration Formula: Amt * DF * Vt/Vo * A * E * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	4.000	Final Volume
Vo	100.000	Sample Volume
A	1000.000	mL to L conversion
E	1.000	ug to mg conversion (1 if no conversion)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
1 Formaldehyde	Compound Not Detected.						
2 Acetaldehyde	Compound Not Detected.						

3/31/11

Data File: 1F09M6.d

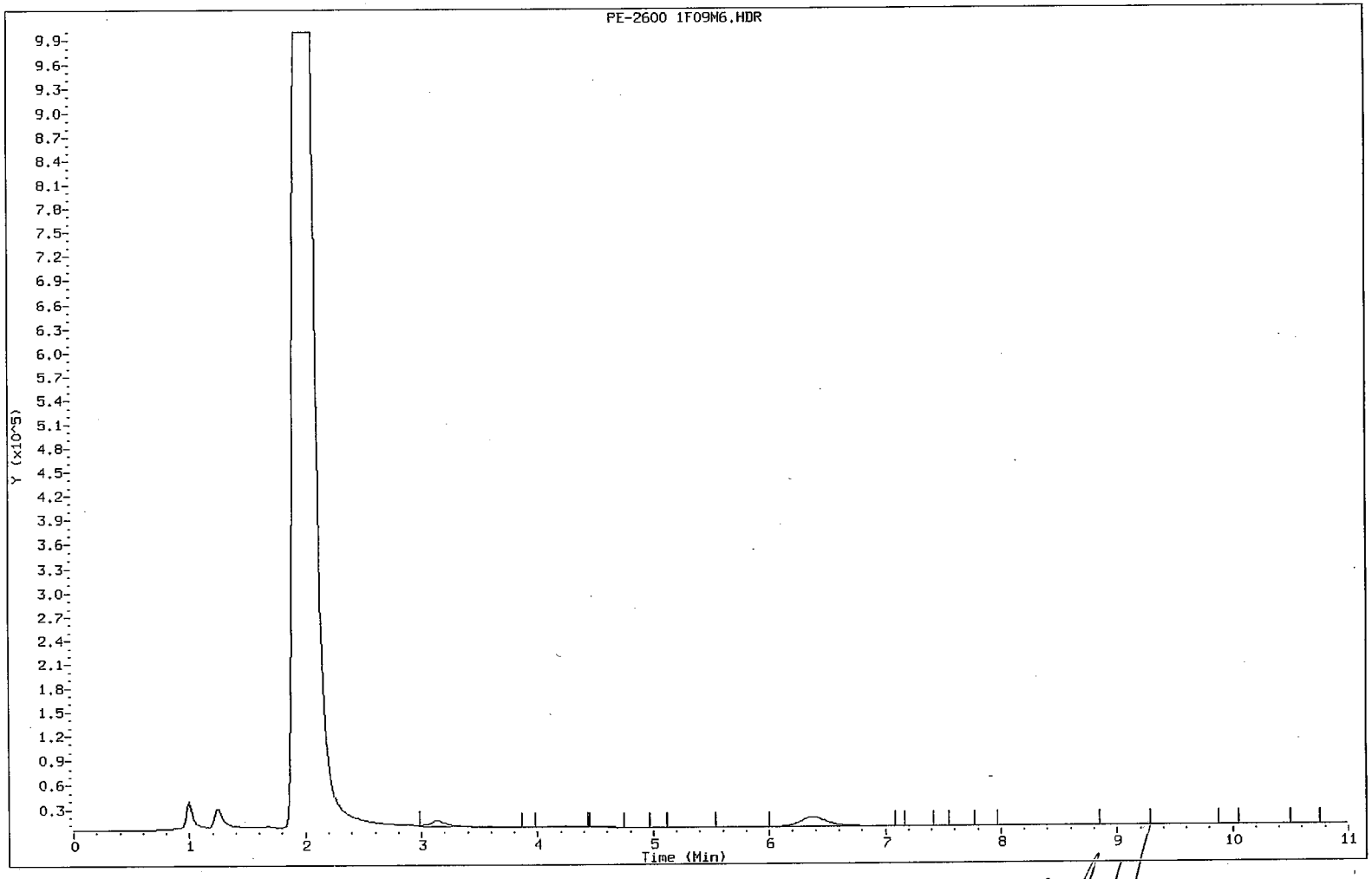
Date: 09-JUN-2011 09:24

Client ID: OC-SW-ISCO-1-DUP

Instrument: TLCMUV1.i

Sample Info: 360-34253-R-1-A

Operator: DS



8/31/11

TestAmerica Tallahassee

Semivolatile REPORT SW-846 Method 8315

Data file : \\Talsvr05\chem\LC\TLCMUV1.i\1MF09K.b\1F09M7.d
Lab Smp Id: 360-34253-R-2-A Client Smp ID: OC-SW-ISCO-1
Inj Date : 09-JUN-2011 09:36
Operator : DS Inst ID: TLCMUV1.i
Smp Info : 360-34253-R-2-A
Misc Info : 360-34253-R-2-A
Comment :
Method : \\Talsvr05\chem\LC\TLCMUV1.i\1MF09K.b\8315_A&F.m
Meth Date : 09-Jun-2011 08:38 smithdn Quant Type: ESTD
Cal Date : 07-JUN-2011 11:21 Cal File: 1F07M6.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: 831509J.sub
Target Version: 4.14
Processing Host: TALSG01

Concentration Formula: Amt * DF * Vt/Vo * A * E * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	4.000	Final Volume
Vo	100.000	Sample Volume
A	1000.000	mL to L conversion
E	1.000	ug to mg conversion (1 if no conversion)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
1 Formaldehyde	Compound Not Detected.						
2 Acetaldehyde	Compound Not Detected.						

8/31/11

Data File: 1F09M7.d

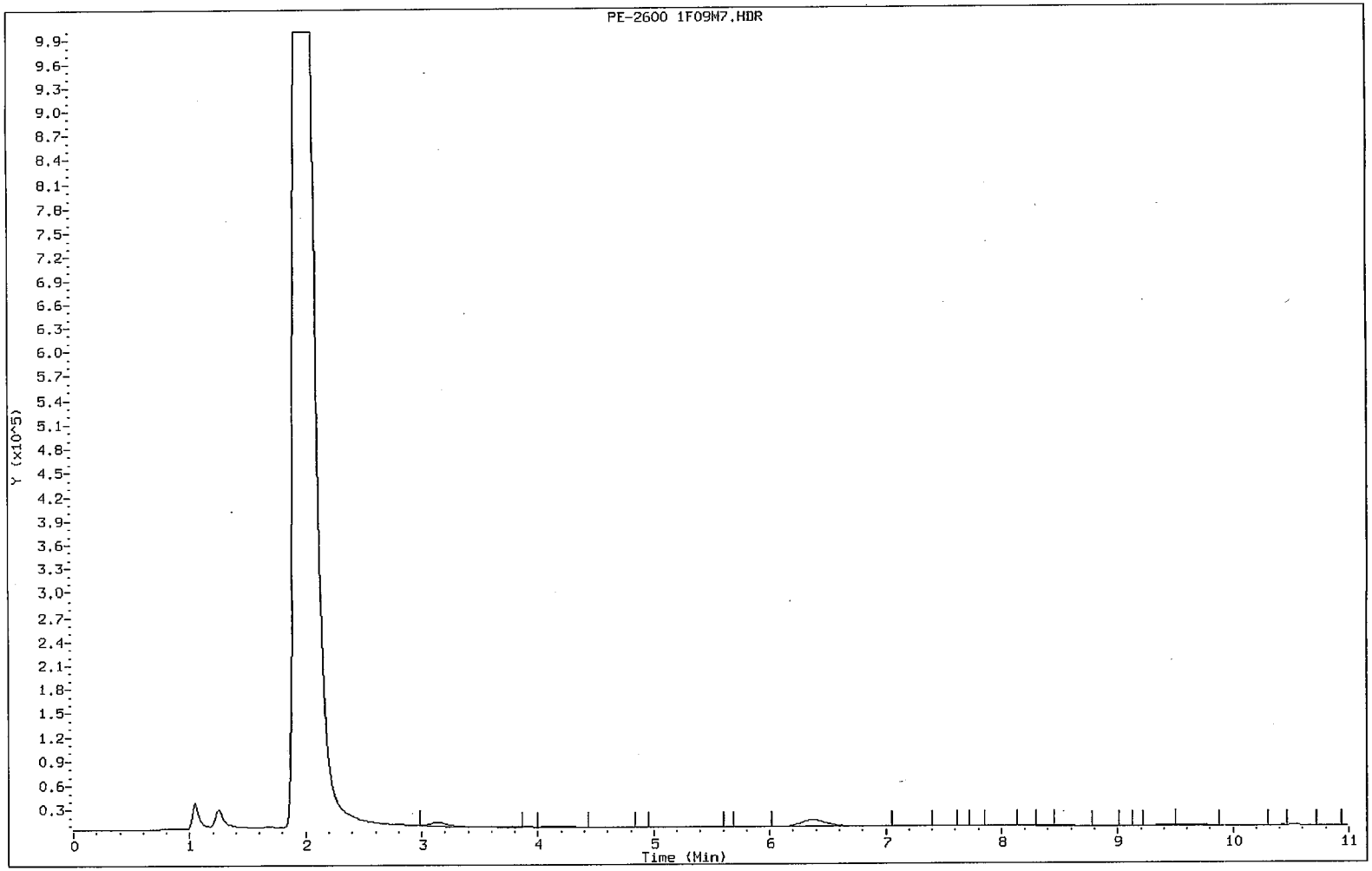
Date: 09-JUN-2011 09:36

Client ID: OC-SW-ISCO-1

Instrument: TLCMUV1.i

Sample Info: 360-34253-R-2-A

Operator: DS



07/08/2011

HPLC/IC ANALYSIS RUN LOG

Lab Name: TestAmerica Tallahassee Job No.: 360-34253-1

SDG No.: 360-34253-1

Instrument ID: LCM Start Date: 06/09/2011 08:26

Analysis Batch Number: 81744 End Date: 06/09/2011 15:53

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCVRT 640-81744/18		06/09/2011 08:26	1	1F09M2.d	LC-C18
MB 640-81645/1-A		06/09/2011 08:48	1	1F09M3.d	LC-C18
LCS 640-81645/2-A		06/09/2011 09:00	1	1F09M4.d	LC-C18
LCSD 640-81645/3-A		06/09/2011 09:12	1	1F09M5.d	LC-C18
360-34253-1	OC-SW-ISCO-1-DUP	06/09/2011 09:24	1	1F09M6.d	LC-C18
360-34253-2	OC-SW-ISCO-1-XXX	06/09/2011 09:36	1	1F09M7.d	LC-C18
360-34253-2 MS	OC-SW-ISCO-1-XXX MS	06/09/2011 09:47	1	1F09M8.d	LC-C18
360-34253-2 MSD	OC-SW-ISCO-1-XXX MSD	06/09/2011 09:59	1	1F09M9.d	LC-C18
360-34253-3	OC-SW-ISCO-2-XXX	06/09/2011 10:11	1	1F09M10.d	LC-C18
360-34253-4	OC-SW-MMB-SW/SD-1-DUP	06/09/2011 10:23	1	1F09M11.d	LC-C18
360-34253-5	OC-SW-MMB-SW/SD-1-XXX	06/09/2011 10:35	1	1F09M12.d	LC-C18
360-34253-6	OC-SW-MMB-SW/SD-9-XXX	06/09/2011 10:46	1	1F09M13.d	LC-C18
360-34253-7	OC-SW-PZ-16RR-XXX	06/09/2011 10:58	1	1F09M14.d	LC-C18
360-34253-8	OC-SW-PZ-17RR-XXX	06/09/2011 11:10	1	1F09M15.d	LC-C18
360-34253-9	OC-SW-SD-1-XXX	06/09/2011 11:22	1	1F09M16.d	LC-C18
360-34253-5 MS	OC-SW-MMB-SW/SD-1-XXX MS	06/09/2011 11:34	1	1F09M17.d	LC-C18
360-34253-5 MSD	OC-SW-MMB-SW/SD-1-XXX MSD	06/09/2011 11:45	1	1F09M18.d	LC-C18
CCV 640-81744/17		06/09/2011 11:57	1	1F09M19.d	LC-C18
ZZZZZ		06/09/2011 12:21	1		LC-C18
ZZZZZ		06/09/2011 12:33	1		LC-C18
ZZZZZ		06/09/2011 12:45	1		LC-C18
ZZZZZ		06/09/2011 12:56	1		LC-C18
ZZZZZ		06/09/2011 13:08	1		LC-C18
ZZZZZ		06/09/2011 13:20	1		LC-C18
ZZZZZ		06/09/2011 13:32	1		LC-C18
ZZZZZ		06/09/2011 13:44	1		LC-C18
ZZZZZ		06/09/2011 13:55	1		LC-C18
ZZZZZ		06/09/2011 14:07	1		LC-C18
ZZZZZ		06/09/2011 14:19	1		LC-C18
ZZZZZ		06/09/2011 14:31	1		LC-C18
ZZZZZ		06/09/2011 14:43	1		LC-C18
ZZZZZ		06/09/2011 14:54	1		LC-C18
ZZZZZ		06/09/2011 15:06	1		LC-C18
CCV 640-81744/36		06/09/2011 15:18	1		LC-C18
ZZZZZ		06/09/2011 15:30	1		LC-C18
ZZZZZ		06/09/2011 15:42	1		LC-C18
CCV 640-81744/37		06/09/2011 15:53	1		LC-C18

reviewed

8/3/11

8315A

FORM III
HPLC/IC MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Tallahassee Job No.: 360-34253-1

SDG No.: 360-34253-1

Matrix: Water Level: Low Lab File ID: 1F09M17.d

Lab ID: 360-34253-5 MS Client ID: OC-SW-MMB-SW/SD-1-XXX MS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC	QC LIMITS REC	#
Formaldehyde	150	ND	97.8	65	55-144	
Acetaldehyde	150	ND	156	104	59-153	

Column to be used to flag recovery and RPD values

FORM III 8315A

FORM III
HPLC/IC MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Tallahassee Job No.: 360-34253-1

SDG No.: 360-34253-1

Matrix: Water Level: Low Lab File ID: 1F09M18.d

Lab ID: 360-34253-5 MSD Client ID: OC-SW-MMB-SW/SD-1-XXX MSD

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
Formaldehyde	150	109	73	11	30	55-144	
Acetaldehyde	150	164	109	5	30	59-153	

Column to be used to flag recovery and RPD values

FORM III 8315A

Analytical Data

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-SW-MMB-SW/SD-1-DUP**

Lab Sample ID: 360-34253-4
Client Matrix: Water

Date Sampled: 06/06/2011 1300
Date Received: 06/07/2011 1021

8315A Carbonyl Compounds (HPLC)

Analysis Method:	8315A	Analysis Batch:	640-81744	Instrument ID:	LCM
Prep Method:	8315_W_Prep	Prep Batch:	640-81645	Lab File ID:	1F09M11.d
Dilution:	1.0			Initial Weight/Volume:	100 mL
Analysis Date:	06/09/2011 1023			Final Weight/Volume:	4 mL
Prep Date:	06/07/2011 1300			Injection Volume:	10 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Formaldehyde	ND J		5.0	30
Acetaldehyde	ND		10	30

8/30/11

Analytical Data

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-SW-MMB-SW/SD-1-XXX**

Lab Sample ID: 360-34253-5
Client Matrix: Water

Date Sampled: 06/06/2011 1300
Date Received: 06/07/2011 1021

8315A Carbonyl Compounds (HPLC)

Analysis Method:	8315A	Analysis Batch:	640-81744	Instrument ID:	LCM
Prep Method:	8315_W_Prep	Prep Batch:	640-81645	Lab File ID:	1F09M12.d
Dilution:	1.0			Initial Weight/Volume:	100 mL
Analysis Date:	06/09/2011 1035			Final Weight/Volume:	4 mL
Prep Date:	06/07/2011 1300			Injection Volume:	10 uL

Analyte	Result (µg/L)	Qualifier	MDL	RL
Formaldehyde	ND		5.0	30
Acetaldehyde	ND		10	30

8/30/11

CHEMIST REVIEW-VALIDATION CHECKLIST

Project: Olin Chemical Superfund Site **Method: Formaldehyde/Acetaldehyde**
Project #: 6107110016.12 **Laboratory and SDG: TAL 360-34288-1**
Date: 8/30/11 **Reviewer:**

☑ **Chemist Review** ☐ **Full Validation (add page 2)**

1. **Case Narrative and Data Package Completeness (COC Review)**

Present and complete.

2. **Holding Time and Sample Preservation/Collection (aqueous 3 days to extraction then 3 days to analysis)**

All criteria met.

3. **QC Blanks**

All non-detect.

4. **Laboratory Control Sample Review (% recovery 80-120, RPD 30)**

All criteria were met.

5. **Field Duplicate Precision (RPD 30)**

Not applicable.

6. **Lab Duplicate Precision (RPD 20)**

Not applicable.

7. **Matrix Spike Results (if applicable) (% recovery 75-125, RPD 25)**

Sample OC-SW-MMB-SW/SD-10-XXX was analyzed for MS/MSD. The formaldehyde MS/MSD percent recoveries (72 and 73) were less than the lower QC limit of 75. The result for formaldehyde in sample OC-SW-MMB-SW/SD-10-XXX was not detected and the reporting limit was qualified estimated (UJ).

8. **Surrogate Recovery (if applicable)**

Not applicable.

9. **Internal Standard Recovery (if applicable)**

Not applicable.

FORM III
HPLC/IC MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Tallahassee Job No.: 360-34288-1

SDG No.: 360-34288-1

Matrix: Water Level: Low Lab File ID: 1F09M25.d

Lab ID: 360-34288-8 MSD Client ID: OC-SW-MMB-SW/SD-10-XXX MSD

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
Formaldehyde	150	108	72	1	30	55-144	
Acetaldehyde	150	144	96	1	30	59-153	

Column to be used to flag recovery and RPD values

FORM III 8315A

FORM III
HPLC/IC MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Tallahassee Job No.: 360-34288-1

SDG No.: 360-34288-1

Matrix: Water Level: Low Lab File ID: 1F09M24.d

Lab ID: 360-34288-8 MS Client ID: OC-SW-MMB-SW/SD-10-XXX MS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC	QC LIMITS REC	#
Formaldehyde	150	ND	109	73	55-144	
Acetaldehyde	150	ND	145	97	59-153	

Column to be used to flag recovery and RPD values

FORM III 8315A

Analytical Data

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-MMB-SW/SD-10-XXX**

Lab Sample ID: 360-34288-8
Client Matrix: Water

Date Sampled: 06/06/2011 1520
Date Received: 06/08/2011 1019

8315A Carbonyl Compounds (HPLC)

Analysis Method:	8315A	Analysis Batch:	640-81744	Instrument ID:	LCM
Prep Method:	8315_W_Prep	Prep Batch:	640-81721	Lab File ID:	1F09M23.d
Dilution:	1.0			Initial Weight/Volume:	100 mL
Analysis Date:	06/09/2011 1256			Final Weight/Volume:	4 mL
Prep Date:	06/09/2011 0755			Injection Volume:	10 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Formaldehyde	ND J		5.0	30
Acetaldehyde	ND		10	30

8/30/11

CHEMIST REVIEW-VALIDATION CHECKLIST

Project: Olin Chemical Superfund Site
Project #: 6107110016.12
Date: 8/30/11

Method: Formaldehyde/Acetaldehyde
Laboratory and SDG: TAL 360-34315-1
Reviewer: [signature]

☑ **Chemist Review** ☐ **Full Validation (add page 2)**

1. **Case Narrative and Data Package Completeness (COC Review)**

Present and complete.

2. **Holding Time and Sample Preservation/Collection (aqueous 3 days to extraction then 3 days to analysis)**

All criteria met.

3. **QC Blanks**

All non-detect.

4. **Laboratory Control Sample Review (% recovery 80-120, RPD 30)**

All criteria were met.

5. **Field Duplicate Precision (RPD 30)**

Not applicable.

6. **Lab Duplicate Precision (RPD 20)**

Not applicable.

7. **Matrix Spike Results (if applicable) (% recovery 75-125, RPD 25)**

Not applicable.

8. **Surrogate Recovery (if applicable)**

Not applicable.

9. **Internal Standard Recovery (if applicable)**

Not applicable.

DATA VALIDATION MDL STUDY REVIEW
OLIN OU2 SW SPRING 2011

Analyte	Units	MDL1	MDL2	MDL3	MDL4	MDL5	MDL6	MDL7	MDL8	MDL9	Average	Standard Deviation	*MDL (T*SD)	MDL reported by the lab
Formaldehyde	µg/L	10.3	16.6	17.2	17.7	18.8	17.9	17.8	17.2		16.69	2.660	7.97	5

* = Values for the Student T @ 99% CONFIDENCE

# Replicates (n)	Degrees of Freedom (n-1)	0.990 value
1	0	---
2	1	31.821
3	2	6.965
4	3	4.541
5	4	3.747
6	5	3.365
7	6	3.143
8	7	2.998
9	8	2.896
10	9	2.821
11	10	2.764
12	11	2.718

Is MDL > Spike Conc.?	N	Y = failure
Is Spike Conc. > 10x MDL?	N	Y = failure

8/30/11

MDL/RECOVERY SUMMARY REPORT

Instrument ID: TLCMUV1.i

Method Info: 8315A Matrix: WATER

Target Version: Target 4.14
Report Version: 1.6

Files Used:

MDL1	\\Talsvr05\chem\LC\TLCMUV1.i\1MG079.b\1G07M10.d	07-JUL-2009 15:07	Clock: 1MG079.b
MDL2	\\Talsvr05\chem\LC\TLCMUV1.i\1MG079.b\1G07M11.d	07-JUL-2009 15:19	1MG079.b
MDL3	\\Talsvr05\chem\LC\TLCMUV1.i\1MG079.b\1G07M12.d	07-JUL-2009 15:30	1MG079.b
MDL4	\\Talsvr05\chem\LC\TLCMUV1.i\1MG079.b\1G07M13.d	07-JUL-2009 15:42	1MG079.b
MDL5	\\Talsvr05\chem\LC\TLCMUV1.i\1MG079.b\1G07M14.d	07-JUL-2009 15:54	1MG079.b
MDL6	\\Talsvr05\chem\LC\TLCMUV1.i\1MG079.b\1G07M15.d	07-JUL-2009 16:06	1MG079.b
MDL7	\\Talsvr05\chem\LC\TLCMUV1.i\1MG079.b\1G07M16.d	07-JUL-2009 16:17	1MG079.b
MDL8	\\Talsvr05\chem\LC\TLCMUV1.i\1MG079.b\1G07M17.d	07-JUL-2009 16:29	1MG079.b

MDL Summary Report (Compound Concentrations ug/L)

Report Date: 07/08/2009 08:44

Compound Name	MDL1	MDL2	MDL3	MDL4	MDL5	MDL6	MDL7	MDL8	Avg.	St.Dev.	MDL	Spike	LOQ	SPK/MDL	FLAG
Formaldehyde	10.3	16.6	17.2	17.7	18.8	17.9	17.8	17.2	16.7	2.66	7.97	5.00	50.0	0.6	C

Flags: A. MDL > LOQ B. MDL < Spike/10 C. MDL > Spike D. MDL > 1/3 LOQ

High = 17.9 18.8
① Low = 10.3 10.3
8.5

② 16.6 · 10.2 = 6.4

③ Q = 6.4/8.5 = ~~75%~~ 0.753

④ Q 0.95(8) = 0.526

Reviewed
8/30/11

PROJECT CHEMIST REVIEW RECORD

Method :7199 Hexavalent Chromium

Laboratory and SDG: TAL Westfield 360-34288-1

Date: August 23, 2011

Reviewer: Mike Washburn

☑ **Chemist Review** ☐ **Full Validation (add page 2)**

1. Case Narrative
   Package complete. No problems noted.

2. Holding time and Sample Collection (24 hours)
   Sample analyzed within the technical holding time.

3. QC Blanks
   No detection in QC blanks.

4. Laboratory Control Sample Results (% recovery 80-120 insoluble, batch QC for soluble)
   Within QC limits.

5. ICV/CCV (+/- 10% of true)
   Within QC limits.

6. Field Duplicate Precision (RPD = 30 aqueous)
   Not applicable.

7. Laboratory Duplicates (RPD 20 aqueous)
   Within QC limits. Both samples non-detect.

8. Matrix Spike Results (if applicable) (% recovery 85-115)
   Within QC limits.

9. Post verification Spike (% recovery 85-115)
   Within QC limits.

10. Reporting Limits and Data Completeness
    Verified

PROJECT CHEMIST REVIEW RECORD

Method :7199 Hexavalent Chromium

Laboratory and SDG: TAL Westfield 360-34253-1

Date: August 22, 2011

Reviewer: Mike Washburn

☐ **Chemist Review** ☑ **Full Validation (add page 2)**

1. Case Narrative
   Package complete. Problems noted in narrative addressed below.

2. Holding time and Sample Collection (24 hours)
   The technical hold time for hexavalent chromium of 24 hours was exceeded in sample OC-SW-ISCO-1-DUP and OC-SW-ISCO-2-XXX. Hexavalent chromium was not detected in the associated samples and the reporting limits were qualified estimated (UJ).

3. QC Blanks
   No detection in QC blanks.

4. Laboratory Control Sample Results (% recovery 80-120 insoluble, batch QC for soluble)
   Within QC limits.

5. ICV/CCV (+/- 10% of true)
   Within QC limits.

6. Field Duplicate Precision (RPD = 30 aqueous)
   Within QC limits. Both samples non-detect.

7. Laboratory Duplicates (RPD 20 aqueous)
   Within QC limits. Both samples non-detect.

8. Matrix Spike Results (if applicable) (% recovery 85-115)
   Within QC limits.

9. Post verification Spike (% recovery 85-115)
   Within QC limits.

10. Reporting Limits and Data Completeness
    Verified

FULL VALIDATION CHECKS

Ten Percent of data sets will have full validation checks completed during chemist review.

☐ **Initial Calibration**
Completed.

☐ **Continuing Calibration Verification**
Completed.

<u>Transcription and Calculation Checks</u>

☐ **Instrument Calibration**
Completed.

☐ **Blank Review – raw data/chromatogram check**
No peaks.

☐ **Laboratory Control Sample**
Completed.

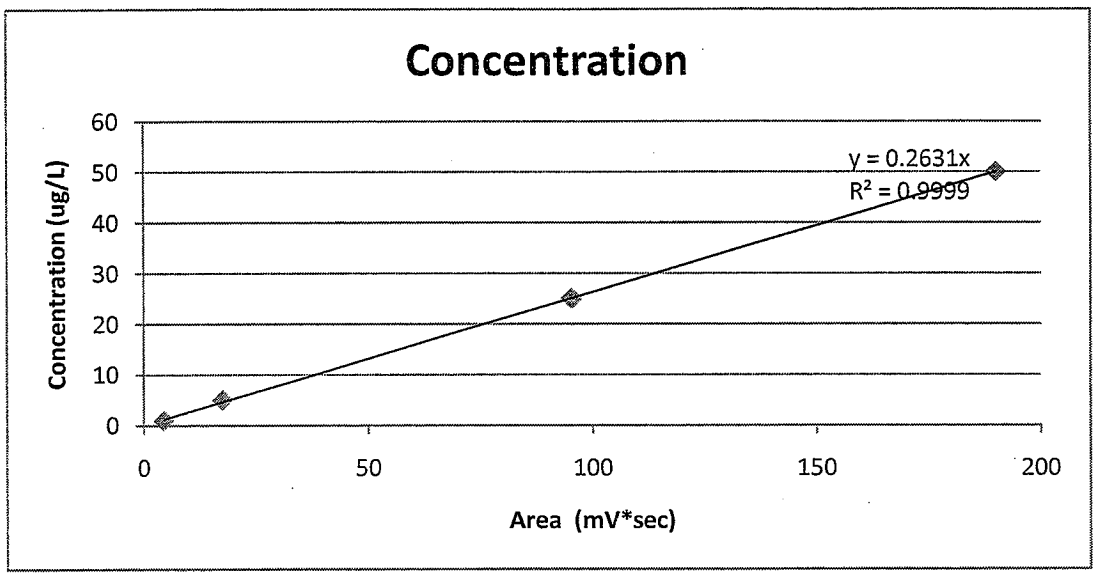
☐ **Matrix Spike**
Completed.

☐ **Field Sample Results**
Completed.

☐ **Surrogate Recovery**
Not applicable.

Calibration	
Area	Concentration
4.526	1
17.734	5
95.271	25
190.037	50

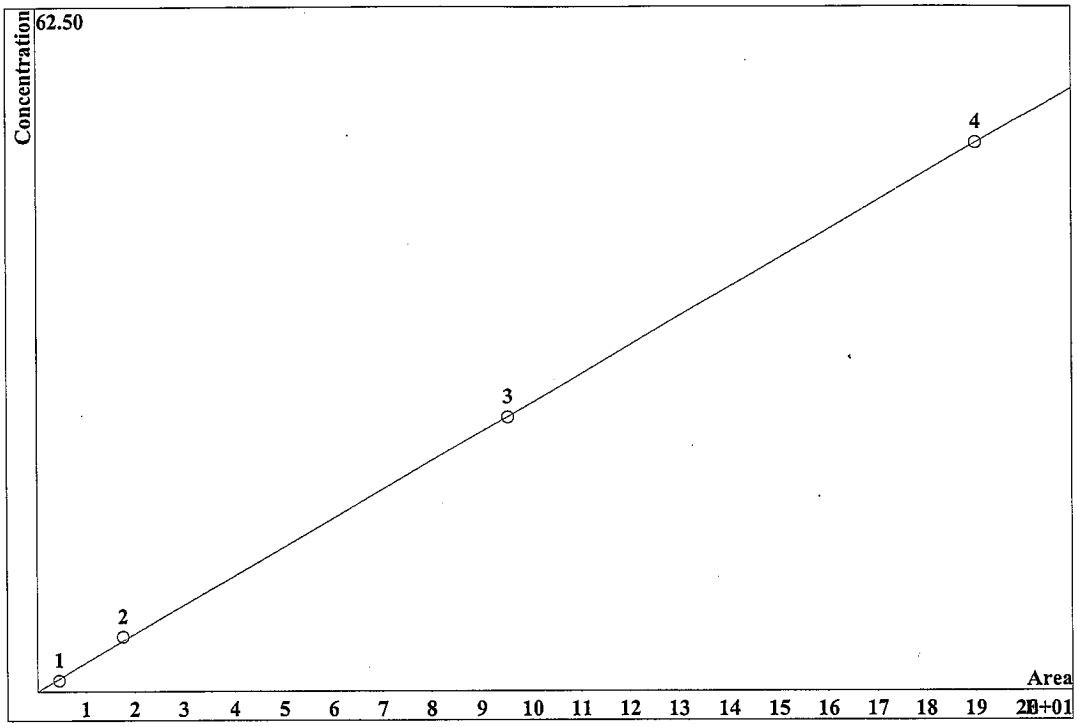
Sample ID	Area	Calc. Conc
ICV	95.189	25.044
LCS	63.928	16.819
LCS	62.972	16.568
SW-ISCP-2-XXX	0.385	0.101
SW-ISCO-1-DUP	0.456	0.120
CCV	95.43	25.108
SW-ISCO-1-X-PS	17.811	4.686
SW-ISCO-1-X-PS	17.799	4.683
SW-ISCO-1-X-MS	156.608	41.204
SW-ISCO-1-X-MS	155.979	41.038
CCV	95.164	25.038



MJ 8/23/11

CALIBRATION OF COMPONENT Cr+6

Method: Cr6 Method water.mtw
Equation: Q = 0.263079·A
RSD: 1.114 %
Correlation coefficient: 0.999951



K3 = 0 K2 = 0 K1 = 0.263079 K0 = 0
Base: Area
Ref.channel: ch4
ISTD:
Formula: Linear through zero
Weight: 1

Level	Height	Area	Conc.	Vol/Dil	Retention	Used	File
1;	0.6482;	4.526;	1;	1;	2.964;	Yes;	v6071253.chw
2;	2.491;	17.73;	5;	1;	2.964;	Yes;	v6071301.chw
3;	13.28;	95.27;	25;	1;	2.964;	Yes;	v6071308.chw
4;	26.24;	190;	50;	1;	2.964;	Yes;	v6071316.chw

 MJW 8/27/11

field_sample_id	param_name	field_sample_date	analysis_date	Exceeded Hold Time (hrs)
OC-SW-ISCO-1-DUP	Chromium, Hexavalent	6/6/11 14:35	6/7/11 14:40	0.08
OC-SW-ISCO-2-XXX	Chromium, Hexavalent	6/6/11 11:00	6/7/11 14:09	3.15
~~OC-SW-EDSP/SWS(EDAW)-XXX~~	~~Chromium, Hexavalent~~	~~6/8/11 8:15~~	~~6/9/11 8:33~~	~~0.30~~

MJW 8/22/11

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: TestAmerica Edison Job No.: 360-34253-1

SDG No.: 360-34253-1

Analyst: LE Batch Start Date: 06/07/2011

Reporting Units: ug/L Analytical Batch No.: 77098

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
6	ICV	13:23	Chromium (hexavalent)	25.0	25.0	100 ✓	90-110		WThcrIM6_00315
7	ICB	13:31	Chromium (hexavalent)	ND					
18	CCV	14:55	Chromium (hexavalent)	25.1	25.0	100 ✓	90-110		WThcrIM6_00315
19	CCB	15:03	Chromium (hexavalent)	ND					
26	CCV	15:57	Chromium (hexavalent)	25.0	25.0	100 ✓	90-110		WThcrIM6_00315
27	CCB	16:05	Chromium (hexavalent)	ND					

$$\frac{25.0}{25.0} \times 100\% = 100\%$$

$$\frac{25.1}{25} \times 100\% = 100\%$$

MJW 6/23/11

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

FORM II-IN

5-IN
MATRIX SPIKE SAMPLE RECOVERY
GENERAL CHEMISTRY

Lab Name: TestAmerica Edison Job No.: 360-34253-1

SDG No.: 360-34253-1

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 77098		Date: 06/07/2011 15:42									
7199	360-34253-2	Chromium (hexavalent)	ND		ug/L						
7199	360-34253-2 MS	Chromium (hexavalent)	41.2		ug/L	40.0	103	85-115			H

$\frac{41.2}{40} \times 100\% = 103\%$

MJW 8/23/11

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

FORM V-IN

5-IN
POST DIGESTION SPIKE SAMPLE RECOVERY
GENERAL CHEMISTRY

Lab Name: TestAmerica Edison Job No.: 360-34253-1

SDG No.: 360-34253-1

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 77098		Date: 06/07/2011 15:26									
7199	360-34253-2	Chromium (hexavalent)	ND		ug/L						
7199	360-34253-2 PDS	Chromium (hexavalent)	4.69		ug/L	5.00	94	85-115			

$\frac{4.69}{5.00} \times 100\% = 93.8\%$

MJW 7/26/11

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

FORM V-IN

6-IN
DUPLICATE
GENERAL CHEMISTRY

Lab Name: TestAmerica Edison Job No.: 360-34253-1

SDG No.: 360-34253-1

Matrix: Water

Method	Client Sample ID	Lab Sample ID	Analyte	Result	Unit	RPD	RPD Limit	Qual
Batch ID: 77098	Date: 06/07/2011 15:11							
7199	OC-SW-ISCO-1-XXX	360-34253-2	Chromium (hexavalent)	ND	ug/L			
7199	OC-SW-ISCO-1-XXX	360-34253-2 DU	Chromium (hexavalent)	ND	ug/L	NC	20	

Non-Detect

NJW 7/23/11

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

FORM VI-IN

7A-IN
LAB CONTROL SAMPLE
GENERAL CHEMISTRY

Lab Name: TestAmerica Edison Job No.: 360-34253-1

SDG No.: 360-34253-1

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 77098		Date: 06/07/2011 13:54									
						LCS Source:	WThcrsLCS_00040				
7199	LCS 460-77098/10	Chromium (hexavalent)	16.8		ug/L	16.8	100	85-115			

$$\frac{16.8}{16.8} \times 100\% = 100\%$$

MJW 6/23/11

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

FORM VIIA-IN

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: OC-SW-ISCO-2-XXX
Lab Sample ID: 360-34253-3
Lab Name: TestAmerica Edison
Job No.: 360-34253-1
SDG ID.: 360-34253-1
Matrix: Water
Date Sampled: 06/06/2011 11:00
Reporting Basis: WET
Date Received: 06/07/2011 10:21

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
18540-29-9	Chromium (hexavalent)	ND	1.0	0.56	ug/L		UJ	1	7199

MJW
7/23/11

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: OC-SW-ISCO-1-DUP
Lab Sample ID: 360-34253-1
Lab Name: TestAmerica Edison
Job No.: 360-34253-1
SDG ID.: 360-34253-1
Matrix: Water
Date Sampled: 06/06/2011 14:35
Reporting Basis: WET
Date Received: 06/07/2011 10:21

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
18540-29-9	Chromium (hexavalent)	ND	1.0	0.56	ug/L		~~U~~ UJ	1	7199

MJW 8/23/11

PROJECT CHEMIST REVIEW RECORD

Method :7199 Hexavalent Chromium

Laboratory and SDG: TAL Westfield 360-34315-1

Date: August 23, 2011

Reviewer: Mike Washburn

☑ **Chemist Review** ☐ **Full Validation (add page 2)**

1. Case Narrative
   Package complete. No problems noted.

2. Holding time and Sample Collection (24 hours)
   Sample OC-SW-EDSD/SW5(EDBS11)-XXX exceeded the technical holding time for hexavalent chromium. Hexavalent chromium was not detected in the sample and the reporting limit was qualified as estimate (UJ).

3. QC Blanks
   No detection in QC blanks.

4. Laboratory Control Sample Results (% recovery 80-120 insoluble, batch QC for soluble)
   Within QC limits.

5. ICV/CCV (+/- 10% of true)
   Within QC limits.

6. Field Duplicate Precision (RPD = 30 aqueous)
   Not applicable.

7. Laboratory Duplicates (RPD 20 aqueous)
   Within QC limits. Both samples non-detect.

8. Matrix Spike Results (if applicable) (% recovery 85-115)
   Within QC limits.

9. Post verification Spike (% recovery 85-115)
   Within QC limits.

10. Reporting Limits and Data Completeness
    Verified

Hold time

field_sample_id	param_name	field_sample_date	analysis_date	Exceeded Hold Time (min)
OC-SW-EDSD/SW5(EDBS11)-XXX	Chromium, Hexavalent	6/8/11 8:15	6/9/11 8:33	18.00

MJW 8/23/11

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: OC-SW-EDSD/SW5(EDBS11)-XXX
Lab Sample ID: 360-34315-6
Lab Name: TestAmerica Edison
Job No.: 360-34315-1
SDG ID.: 360-34315-1
Matrix: Water
Date Sampled: 06/08/2011 08:15
Reporting Basis: WET
Date Received: 06/08/2011 17:50

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
18540-29-9	Chromium (hexavalent)	ND	1.0	0.56	ug/L		~~U~~ UJ	1	7199

MW 8/23/11

OU/OU2 SW
OLN70 Hydrazine

CHEMIST REVIEW-VALIDATION CHECKLIST

FULL VALIDATION CHECKS

Ten Percent of data sets will have full validation checks completed during chemist review.

- ☐ **Initial Calibration**
- ☐ **Continuing Calibration Verification**

Transcription and Calculation Checks

- ☐ **Instrument Calibration**
- ☐ **Blank Review – raw data/chromatogram check**
- ☐ **Laboratory Control Sample**
- ☐ **Matrix Spike**
- ☐ **Field Sample Results**
- ☐ **Surrogate Recovery**

NA

- ☐
- ☐

SAMP DATA

	Coefficients					
Y Intercept	0.031456202					
X coef	7.42738E-06					
				Multi X		
sample no	cal std	Area	found	dilution	final conc	conc
	0	0		1	0.000	µg/L
1	0.1	12083.00	0.12	1	0.121	µg/L
2	0.2	27583.00	0.24	1	0.236	µg/L
3	0.5	61282.00	0.49	1	0.487	µg/L
4	1	124589.00	0.96	1	0.957	µg/L
5	5	662784.00	4.95	1	4.954	µg/L
6	10	1367424.00	10.19	1	10.188	µg/L
7	20	2641166.00	19.65	1	19.648	µg/L
8	25	3389775.00	25.21	1	25.209	µg/L
ccv 1		64481	0.51	1	0.510	µg/L
ccv 2		130730	1.00	1	1.002	µg/L
ccv 3		66098	0.52	1	0.522	µg/L
mbk		0	0.03	1	0.031	µg/L
LCS		1615910	12.03	1	12.033	µg/L
LCSD		1578813	11.76	1	11.758	µg/L
MS		1594689	11.88	1	11.876	µg/L
MSD		1560290	11.62	1	11.620	µg/L
SW-SD-1		8444	0.09	1	0.094	µg/L

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.999845
R Square	0.999691
Adjusted R	0.999639
Standard E	0.186337
Observatio	8

ANOVA

	df	*SS*	*MS*	*F*	*ignificance F*
Regressior	1	673.6867	673.6867	19402.59	9.23E-12
Residual	6	0.208329	0.034721		
Total	7	673.895			

	Coefficients	*tandard Err*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*ower 95.0%*	*pper 95.0%*
Intercept	0.031456	0.08597	0.365897	0.726996	-0.178905	0.241817	-0.178905	0.241817
X Variable	7.43E-06	5.33E-08	139.2932	9.23E-12	7.3E-06	7.56E-06	7.3E-06	7.56E-06

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Raw Data Check CK 8/12/11

LCMSMS ANALYSIS REPORT

See Excel Sheet for Calc.

Component Name: Hydrazine

Summary of Quan Results

Sample ID	Data File Name	Area	ISTD Area	Area Ratio	Specified Amount	Calculated Amount	% Diff	Excluded
conditioner	A11161001_01	N/A	N/A	N/A	N/A	N/A	N/A	N/A
conditioner	A11161001_02	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SYS(MDL)	A11161001_03	6327.78	N/A	6327.782	N/A	0.05992ug/L	N/A	N/A
CAL1	A11161001_04	12083.07	N/A	12083.074	0.1	0.10277ug/L	2.77	N/A
CAL2	A11161001_05	27583.66	N/A	27583.657	0.2	0.21818ug/L	9.09	N/A
CAL3	A11161001_06	61282.56	N/A	61282.560	0.5	0.46908ug/L	-6.18	N/A
CAL4	A11161001_07	124589.91	N/A	124589.912	1	0.94043ug/L	-5.96	N/A
CAL5	A11161001_08	662784.46	N/A	662784.461	5	4.94749ug/L	-1.05	N/A
CAL6	A11161001_09	1367424.96	N/A	1367424.963	10	10.19380ug/L	1.94	N/A
CAL7	A11161001_10	2641166.41	N/A	2641166.406	20	19.67729ug/L	-1.61	N/A
CAL8	A11161001_11	3389775.58	N/A	3389775.575	25	25.25096ug/L	1.00	N/A
Conditioner	A11161001_12	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Conditioner	A11161001_13	N/A	N/A	N/A	N/A	N/A	N/A	N/A
BLK (reagent)	A11161001_14	N/A	N/A	N/A	0	N/A	N/A	N/A
CCV1	A11161001_15	64481.08	N/A	64481.083	0.5	0.49290ug/L	-1.42	N/A
6308068(BKG)	A11161001_16	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ICV/LCS	A11161001_17	1615910.44	N/A	1615910.437	N/A	12.04387ug/L	N/A	N/A
ICV/LCSD	A11161001_18	1578813.77	N/A	1578813.767	N/A	11.76767ug/L	N/A	N/A
6308069MS	A11161001_19	1594689.95	N/A	1594689.950	N/A	11.88588ug/L	N/A	N/A
6308070MSD	A11161001_20	1560290.39	N/A	1560290.387	N/A	11.62976ug/L	N/A	N/A
CCV2	A11161001_21	130730.53	N/A	130730.530	1	0.98615ug/L	-1.39	N/A
Conditioner	A11161001_22	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6308071	A11161001_23	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6308072	A11161001_24	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6308073	A11161001_25	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6308074	A11161001_26	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6308075	A11161001_27	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6308076	A11161001_28	8444.73	N/A	8444.726	N/A	0.07568ug/L	N/A	N/A
6309549	A11161001_29	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CCV3	A11161001_30	666098.45	N/A	666098.454	5	4.97216ug/L	-0.56	N/A
Conditioner	A11161001_31	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6309550	A11161001_32	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6309551	A11161001_33	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6309552	A11161001_34	6279.68	N/A	6279.678	N/A	0.05956ug/L	N/A	N/A
6309553	A11161001_35	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6309554	A11161001_36	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6310724	A11161001_37	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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Quality Control Summary
Matrix Spike/Matrix Spike Duplicate

SDG: OLN70
Matrix: LIQUID

Specialty Services Group
Fraction: Hydrazines by LC/MS/MS

UNSPK: 6308068 MS: 6308069 MSD: 6308070 **Analyte**	Batch: **11161001** (Sample number(s): 6308068-6308076)								
	Spike Added ug/l	**Unspiked Conc ug/l**	**MS Conc ug/l**	**MSD Conc ug/l**	**MS %Rec**	**MSD %Rec**	**%Rec Limits**	**%RPD**	**%RPD Limits**
Hydrazine	12	N.D.	11.89	11.63	99	97	70-130	2	25
Methylhydrazine	60	N.D.	44.38	43.52	74	73	70-130	2	25
1,1-Dimethylhydrazine	60	N.D.	57.18	55.22	95	92	70-130	3	25

Ch
8/12/11

OLN70 0211

Results are being reported on an as received basis.

6/27/2011 9:42:48 AM

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Quality Control Summary
Laboratory Control Standard (LCS)
Laboratory Control Standard Duplicate(LCSD)

SDG: OLN70
Matrix: LIQUID

Specialty Services Group
Fraction: Hydrazines by LC/MS/MS

LCS LCSD Analyte	Batch: **11161001** (Sample number(s): 6308068-6308076)							
	Spike Added ug/l	**LCS Conc ug/l**	**LCSD Conc ug/l**	**LCS %Rec**	**LCSD %Rec**	**%Rec Limits**	**%RPD**	**%RPD Limits**
Hydrazine	12	12.04	11.77	100	98	70-130	2	25
Methylhydrazine	60	59.03	60.54	98	101	70-130	3	25
1,1-Dimethylhydrazine	60	62.34	61.52	104	103	70-130	1	25

CW
8/12/11

OLN70 8212

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VM 8/12/11

Sequence Table

File Name	Sample ID	Sample Type	Level	Vial	Inj Vol	Dil Factor	Path	Inst Method	Proc Method
A11161001_01	conditioner	Unknown	N/A	A:1	5.0	1.000	C:\XCalibur\Hydrazine Analysis\2011June	C:\XCalibur\Hydrazine Analysis\Hydraz_02	C:\XCalibur\Hydrazine Analysis\Processing Methods\Hydraz
A11161001_02	conditioner	Unknown	N/A	A:1	5.0	1.000	C:\XCalibur\Hydrazine Analysis\2011June	C:\XCalibur\Hydrazine Analysis\Hydraz_02	C:\XCalibur\Hydrazine Analysis\Processing Methods\Hydraz
A11161001_03	SYS(MDL)	Unknown	N/A	A:2	5.0	1.000	C:\XCalibur\Hydrazine Analysis\2011June	C:\XCalibur\Hydrazine Analysis\Hydraz_02	C:\XCalibur\Hydrazine Analysis\Processing Methods\Hydraz
A11161001_04	CAL1	Std Bracket	1	A:3	5.0	1.000	C:\XCalibur\Hydrazine Analysis\2011June	C:\XCalibur\Hydrazine Analysis\Hydraz_02	C:\XCalibur\Hydrazine Analysis\Processing Methods\Hydraz
A11161001_05	CAL2	Std Bracket	2	A:4	5.0	1.000	C:\XCalibur\Hydrazine Analysis\2011June	C:\XCalibur\Hydrazine Analysis\Hydraz_02	C:\XCalibur\Hydrazine Analysis\Processing Methods\Hydraz
A11161001_06	CAL3	Std Bracket	3	A:5	5.0	1.000	C:\XCalibur\Hydrazine Analysis\2011June	C:\XCalibur\Hydrazine Analysis\Hydraz_02	C:\XCalibur\Hydrazine Analysis\Processing Methods\Hydraz
A11161001_07	CAL4	Std Bracket	4	A:6	5.0	1.000	C:\XCalibur\Hydrazine Analysis\2011June	C:\XCalibur\Hydrazine Analysis\Hydraz_02	C:\XCalibur\Hydrazine Analysis\Processing Methods\Hydraz
A11161001_08	CAL5	Std Bracket	5	A:7	5.0	1.000	C:\XCalibur\Hydrazine Analysis\2011June	C:\XCalibur\Hydrazine Analysis\Hydraz_02	C:\XCalibur\Hydrazine Analysis\Processing Methods\Hydraz
A11161001_09	CAL6	Std Bracket	6	A:8	5.0	1.000	C:\XCalibur\Hydrazine Analysis\2011June	C:\XCalibur\Hydrazine Analysis\Hydraz_02	C:\XCalibur\Hydrazine Analysis\Processing Methods\Hydraz
A11161001_10	CAL7	Std Bracket	7	A:9	5.0	1.000	C:\XCalibur\Hydrazine Analysis\2011June	C:\XCalibur\Hydrazine Analysis\Hydraz_02	C:\XCalibur\Hydrazine Analysis\Processing Methods\Hydraz
A11161001_11	CAL8	Std Bracket	8	A:10	5.0	1.000	C:\XCalibur\Hydrazine Analysis\2011June	C:\XCalibur\Hydrazine Analysis\Hydraz_02	C:\XCalibur\Hydrazine Analysis\Processing Methods\Hydraz
A11161001_12	Conditioner	Unknown	N/A	A:1	5.0	1.000	C:\XCalibur\Hydrazine Analysis\2011June	C:\XCalibur\Hydrazine Analysis\Hydraz_02	C:\XCalibur\Hydrazine Analysis\Processing Methods\Hydraz
A11161001_13	Conditioner	Unknown	N/A	A:1	5.0	1.000	C:\XCalibur\Hydrazine Analysis\2011June	C:\XCalibur\Hydrazine Analysis\Hydraz_02	C:\XCalibur\Hydrazine Analysis\Processing Methods\Hydraz
A11161001_14	BLK (reagent)	Blank	N/A	a:11	5.0	1.000	C:\XCalibur\Hydrazine Analysis\2011June	C:\XCalibur\Hydrazine Analysis\Hydraz_02	C:\XCalibur\Hydrazine Analysis\Processing Methods\Hydraz
A11161001_15	CCV1	QC	1	a:5	5.0	1.000	C:\XCalibur\Hydrazine Analysis\2011June	C:\XCalibur\Hydrazine Analysis\Hydraz_02	C:\XCalibur\Hydrazine Analysis\Processing Methods\Hydraz
A11161001_16	6308068(BKG)	Unknown	N/A	a:16	5.0	1.000	C:\XCalibur\Hydrazine Analysis\2011June	C:\XCalibur\Hydrazine Analysis\Hydraz_02	C:\XCalibur\Hydrazine Analysis\Processing Methods\Hydraz
A11161001_17	ICV/LCS	Unknown	N/A	a:12	5.0	1.000	C:\XCalibur\Hydrazine Analysis\2011June	C:\XCalibur\Hydrazine Analysis\Hydraz_02	C:\XCalibur\Hydrazine Analysis\Processing Methods\Hydraz
A11161001_18	ICV/LCSD	Unknown	N/A	a:13	5.0	1.000	C:\XCalibur\Hydrazine Analysis\2011June	C:\XCalibur\Hydrazine Analysis\Hydraz_02	C:\XCalibur\Hydrazine Analysis\Processing Methods\Hydraz
A11161001_19	6308069MS	Unknown	N/A	a:14	5.0	1.000	C:\XCalibur\Hydrazine Analysis\2011June	C:\XCalibur\Hydrazine Analysis\Hydraz_02	C:\XCalibur\Hydrazine Analysis\Processing Methods\Hydraz
A11161001_20	6308070MSD	Unknown	N/A	a:15	5.0	1.000	C:\XCalibur\Hydrazine Analysis\2011June	C:\XCalibur\Hydrazine Analysis\Hydraz_02	C:\XCalibur\Hydrazine Analysis\Processing Methods\Hydraz
A11161001_21	CCV2	QC	2	a:6	5.0	1.000	C:\XCalibur\Hydrazine Analysis\2011June	C:\XCalibur\Hydrazine Analysis\Hydraz_02	C:\XCalibur\Hydrazine Analysis\Processing Methods\Hydraz
A11161001_22	Conditioner	Unknown	N/A	A:1	5.0	1.000	C:\XCalibur\Hydrazine Analysis\2011June	C:\XCalibur\Hydrazine Analysis\Hydraz_02	C:\XCalibur\Hydrazine Analysis\Processing Methods\Hydraz

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CW 8/12/11

File Name	Sample ID	Sample Type	Level	Vial	Inj Vol	Dil Factor	Path	Inst Method	Proc Method
A11161001_23	6308071	Unknown	N/A	a:17	5.0	1.000	C:\XCalibur\Hydrazine Analysis\2011June	C:\XCalibur\Hydrazine Analysis\Hydraz_02	C:\XCalibur\Hydrazine Analysis\Processing Methods\Hydraz
A11161001_24	6308072	Unknown	N/A	a:18	5.0	1.000	C:\XCalibur\Hydrazine Analysis\2011June	C:\XCalibur\Hydrazine Analysis\Hydraz_02	C:\XCalibur\Hydrazine Analysis\Processing Methods\Hydraz
A11161001_25	6308073	Unknown	N/A	a:19	5.0	1.000	C:\XCalibur\Hydrazine Analysis\2011June	C:\XCalibur\Hydrazine Analysis\Hydraz_02	C:\XCalibur\Hydrazine Analysis\Processing Methods\Hydraz
A11161001_26	6308074	Unknown	N/A	a:20	5.0	1.000	C:\XCalibur\Hydrazine Analysis\2011June	C:\XCalibur\Hydrazine Analysis\Hydraz_02	C:\XCalibur\Hydrazine Analysis\Processing Methods\Hydraz
A11161001_27	6308075	Unknown	N/A	a:21	5.0	1.000	C:\XCalibur\Hydrazine Analysis\2011June	C:\XCalibur\Hydrazine Analysis\Hydraz_02	C:\XCalibur\Hydrazine Analysis\Processing Methods\Hydraz
A11161001_28	6308076	Unknown	N/A	a:22	5.0	1.000	C:\XCalibur\Hydrazine Analysis\2011June	C:\XCalibur\Hydrazine Analysis\Hydraz_02	C:\XCalibur\Hydrazine Analysis\Processing Methods\Hydraz
A11161001_29	6309549	Unknown	N/A	a:23	5.0	1.000	C:\XCalibur\Hydrazine Analysis\2011June	C:\XCalibur\Hydrazine Analysis\Hydraz_02	C:\XCalibur\Hydrazine Analysis\Processing Methods\Hydraz
A11161001_30	CCV3	QC	3	a:7	5.0	1.000	C:\XCalibur\Hydrazine Analysis\2011June	C:\XCalibur\Hydrazine Analysis\Hydraz_02	C:\XCalibur\Hydrazine Analysis\Processing Methods\Hydraz
A11161001_31	Conditioner	Unknown	N/A	A:1	5.0	1.000	C:\XCalibur\Hydrazine Analysis\2011June	C:\XCalibur\Hydrazine Analysis\Hydraz_02	C:\XCalibur\Hydrazine Analysis\Processing Methods\Hydraz
A11161001_32	6309550	Unknown	N/A	a:24	5.0	1.000	C:\XCalibur\Hydrazine Analysis\2011June	C:\XCalibur\Hydrazine Analysis\Hydraz_02	C:\XCalibur\Hydrazine Analysis\Processing Methods\Hydraz
A11161001_33	6309551	Unknown	N/A	a:25	5.0	1.000	C:\XCalibur\Hydrazine Analysis\2011June	C:\XCalibur\Hydrazine Analysis\Hydraz_02	C:\XCalibur\Hydrazine Analysis\Processing Methods\Hydraz
A11161001_34	6309552	Unknown	N/A	a:26	5.0	1.000	C:\XCalibur\Hydrazine Analysis\2011June	C:\XCalibur\Hydrazine Analysis\Hydraz_02	C:\XCalibur\Hydrazine Analysis\Processing Methods\Hydraz
A11161001_35	6309553	Unknown	N/A	a:27	5.0	1.000	C:\XCalibur\Hydrazine Analysis\2011June	C:\XCalibur\Hydrazine Analysis\Hydraz_02	C:\XCalibur\Hydrazine Analysis\Processing Methods\Hydraz
A11161001_36	6309554	Unknown	N/A	a:28	5.0	1.000	C:\XCalibur\Hydrazine Analysis\2011June	C:\XCalibur\Hydrazine Analysis\Hydraz_02	C:\XCalibur\Hydrazine Analysis\Processing Methods\Hydraz
A11161001_37	6310724	Unknown	N/A	a:29	5.0	1.000	C:\XCalibur\Hydrazine Analysis\2011June	C:\XCalibur\Hydrazine Analysis\Hydraz_02	C:\XCalibur\Hydrazine Analysis\Processing Methods\Hydraz
A11161001_38	6310725	Unknown	N/A	a:30	5.0	1.000	C:\XCalibur\Hydrazine Analysis\2011June	C:\XCalibur\Hydrazine Analysis\Hydraz_02	C:\XCalibur\Hydrazine Analysis\Processing Methods\Hydraz
A11161001_39	6310726	Unknown	N/A	a:31	5.0	1.000	C:\XCalibur\Hydrazine Analysis\2011June	C:\XCalibur\Hydrazine Analysis\Hydraz_02	C:\XCalibur\Hydrazine Analysis\Processing Methods\Hydraz
A11161001_40	6310727	Unknown	N/A	a:32	5.0	1.000	C:\XCalibur\Hydrazine Analysis\2011June	C:\XCalibur\Hydrazine Analysis\Hydraz_02	C:\XCalibur\Hydrazine Analysis\Processing Methods\Hydraz
A11161001_41	CCV4	QC	4	A:8	5.0	1.000	C:\XCalibur\Hydrazine Analysis\2011June	C:\XCalibur\Hydrazine Analysis\Hydraz_02	C:\XCalibur\Hydrazine Analysis\Processing Methods\Hydraz

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / (II) / III (circle one)

SITE: **Olin Chemical** Project #: 6107110016-12 SDG #: 360-34253-1

LAB # : Test America – Westfield for ICP-AES and Hg Test America – Irvine for ICP-MS

Sample IDs: Attached tracking sheet or sample listing.

This checklist is designed to be used with the USEPA Data Validation Guidelines Part IV (November 2008). During Level III validation, calculation and transcription checks are completed for instrument tuning, surrogates, target compounds, spike recoveries, calibration data, and internal standards as specified in the guideline. These checks are documented on attached validation notes.

Method 6020A for Cu, Pb, and Ag. Hg by 7470A, All other Metals by 6010C.

YES	NO	NA		
Data completeness				
☑	☐	☐	All data summaries, QC forms and raw data available from hard copy or electronic data package	Contact lab if missing data. Lab to respond with 24 hours.
☑	☐	☐	Data summaries match EDD	9 samples x 24 metals = 216 records
Holding Times and Preservation				
☑	☐	☐	Hold times met (6 months, 28 days Hg)	
☑	☐	☐	Preserved (waters HNO_3)	
Calibration				
☑	☐	☐	ICP/MS Instrument Tune.	Verify that tuning meets mass, resolution, and RSD method criteria.
☑	☐	☐	Mass calibration criteria ≤ 0.1amu from true	ICP: at least one blank and one standard
☑	☐	☐	Resolution <0.7 +/-0.1amu full width @ 10% peak height	Hg: at least one blank and four standards
☑	☐	☐	RSD < 5%	Correlation coefficient criteria applicable to all analyses except ICP-AES.
☑	☐	☐	Appropriate number of standards used to establish calibration curve.	
☑	☐	☐	Correlation coefficient > 0.995 for Hg	90-110% for ICP-AES/MS, 80-120% for Hg. See additional qualification actions in the Region 1 guidelines.
☑	☐	☐	Calibrated daily.	Every 10 samples or every 2 hrs.
☑	☐	☐	ICV/CCV %R within acceptance range.	50-150% (Per QAPP)
☑	☐	☐	CCVs analyzed at the proper frequency.	~~70-130%~~ for QL Standard. If out low, (J) detects less then 2X QL standard and (UJ) non-detects. See additional validation actions in the Region I guidelines.
☑	☑	☐	QL Standard within limits OK	

TC 8/23

→ Copper @ 61% (0.2 ppb spike): ~~J/UJ all Cu results by 6020 if ND or ≥ 1ppb.~~ TC 8/23/11

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

Yes No N/A — **TIER I / (II) / III (circle one)**

Blanks Method: ☑ ☐ ☐ Method blank was prepared with each batch of samples or with a maximum of 20 samples ☑ ☐ ☐ Results >MDL Sodium @ 303 ☐ ☐ ☑ Absolute value negative MB results > 5x MDL Not reported On Form 3 ☑ ☐ ☐ For ICP/MS verify IS responses meet method criteria	Evaluate all blanks for contamination. Highest contaminant level used for action level. 5X the highest blank contamination is the action level.
Calibration Blanks: ☑ ☐ ☐ ICB/CCB results > IDL Cd @ 0.164, ☐ ☐ ☑ Absolute value of negative ICB/CCB results > 5x MDL not presented on summary form ☑ ☐ ☐ CCB analyzed every 10 samples or 2 hrs. Equipment/Rinseate Blanks: ☐ ☐ ☑ Results >MDL Not Collected w/ SW Program ☐ ☐ ☑ Absolute value of negative ICB/CCB results > 5x MDL not presented on Summary Form	Na @ 299ppb, Tl @ 2.55, Silver @ 0.0603
Interference Check Sample ☑ ☐ ☐ ICS analyzed at proper frequency ☑ ☐ ☐ Interference present in sample at > 50% concentration in ICS Cd @ 0.315 but ☑ ☐ ☐ ICS AB %R 80%-120% was ND in samples ∴ no action ICP-MS Internal Standard Intensities ☑ ☐ ☐ Internal standard relative intensities reported by the laboratory ☑ ☐ ☐ Internal standard relative intensities are within 60 – 125 %	An ICS must be run at the beginning and end of run or every 8 hours. If interferences (Al, Ca, Fe, Mg) are not > 50% ICS concentration in sample, do not apply. Lead and Copper Qualified J and U in a subset of Samples see attached Form Qualify data based on Region 1 guideline Note: MCP Limits are 30 – 120%
Matrix Spikes ☑ ☐ ☐ All compounds are within %R of 75-125% excluding results exceeding the spike concentration by ≥4x ☐ ☐ ☑ Were post-digestion spikes reported for unacceptable pre-digestion spike recoveries ☐ ☑ ☐ Was a field blank used for spike analysis	OC-SW-MMO-SW/SD-1-XXX OC-SW-ISCO-1-XXX Post-digestion spikes %R limits = 75% - 125%

INORGANICS

TAL METALS (including mercury)

REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

Yes	No	N/A	TIER I / (II) / III (circle one)	
			Laboratory Control Samples (LCS)	
☑	☐	☐	Percent recoveries are within limits (waters and soil 80-120%)	
☑	☐	☐	An LCS was analyzed for each matrix, batch of samples, or every 20 samples.	
			Laboratory Duplicate	
☐	☑	☐	Was a field blank used as the lab duplicate	
☑	☐	☐	Is the RPD within water control limits of ±20% for sample values >5x RL(35% for soil)	
☑	☐	☐	Is the control limit of ± RL met for sample values <5x RL (2x RL for soil)	
☑	☐	☐	Was a duplicate analyzed for every matrix and every 20 samples or batch	
			Field Duplicate	
☑	☐	☐	For sample values >5x RL, the RPD control limit of ± 30% (50% for soil) was met	
☑	☐	☐	For sample values <5x RL, the control limit of ±2x RL (4x RL for soil) was met	
			Serial Dilution	
☐	☑	☐	Are any percent difference criteria > 15% (for samples with a concentration >50 times the IDL)	
☑	☐	☐	Are results of the diluted samples > the original sample results but OK	

Validator's Signature: [signature]

Date: 8/23/11

Reference:

MACTEC, Project Operation Plan Volume IIB, Quality Assurance Project Plan for Remedial Investigation/Feasibility Study – Olin Chemical Superfund Site, Wilmington Property, 51 Eames Street, Wilmington, MA", MACTEC Engineering and Consulting. .April 2009.

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OC-SW-ISCO-1-DUP

Lab Sample ID: 360-34253-1

Lab Name: TestAmerica Westfield

Job No.: 360-34253-1

SDG ID.: 360-34253-1

Matrix: Water

Date Sampled: 06/06/2011 14:35

Reporting Basis: WET

Date Received: 06/07/2011 10:21

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	91	100	13	ug/L	J		1	6010B
7440-38-2	Arsenic	ND	10	2.8	ug/L			1	6010B
7440-39-3	Barium	28	10	1.4	ug/L			1	6010B
7440-41-7	Beryllium	ND	1.0	0.15	ug/L			1	6010B
7440-70-2	Calcium	25000	400	50	ug/L			1	6010B
7440-43-9	Cadmium	ND	1.0	0.13	ug/L			1	6010B
7440-48-4	Cobalt	5.2	10	1.3	ug/L	J		1	6010B
7440-47-3	Chromium	12	5.0	0.65	ug/L			1	6010B
7439-89-6	Iron	4600	100	14	ug/L			1	6010B
7440-09-7	Potassium	2400	4000	1100	ug/L	J		1	6010B
7439-95-4	Magnesium	4400	400	50	ug/L			1	6010B
7439-96-5	Manganese	810	10	3.0	ug/L			1	6010B
7440-23-5	Sodium	97000	2000	280	ug/L		~~B~~	1	6010B
7440-02-0	Nickel	4.1	10	1.3	ug/L	J		1	6010B
7440-36-0	Antimony	ND	6.0	1.5	ug/L			1	6010B
7782-49-2	Selenium	ND	10	4.0	ug/L			1	6010B
7440-31-5	Tin	ND	50	6.5	ug/L			1	6010B
7440-28-0	Thallium	ND ~~3.6~~	10	2.2	ug/L	~~J~~		1	6010B
7440-62-2	Vanadium	ND	10	1.5	ug/L			1	6010B
7440-66-6	Zinc	13	50	6.6	ug/L	J		1	6010B
7439-97-6	Mercury	ND	0.20	0.15	ug/L			1	7470A

Form 1

INORGANIC ANALYSIS DATA SHEET

EPA 6020

OC-SW-ISCO-1-DUP

Laboratory: TestAmerica Irvine
SDG:
Client: TestAmerica Westfield
Project: Olin
Matrix: Water
Laboratory ID: IUF0653-01
File ID: 110615-2-019
Sampled: 06/06/11 14:35
Prepared: 06/14/11 18:28
Analyzed: 06/15/11 15:02
Solids: 0.00
Preparation: EPA 3005A ICPMS
Initial/Final: 50 ml / 50 ml
Batch: 11F1926
Sequence: U000399
Calibration: I11F047
Instrument: ICPMS4

CAS NO.	Analyte	Concentration (ug/l)	Dilution Factor	Q	Method
7440-50-8	Copper	0.62	1		EPA 6020
7439-92-1	Lead	0.24 J	1		EPA 6020

8/23/11
TC

Form 1

INORGANIC ANALYSIS DATA SHEET

EPA 6020

OC-SW-ISCO-1-DUP

Laboratory: TestAmerica Irvine
SDG:
Client: TestAmerica Westfield
Project: Olin
Matrix: Water
Laboratory ID: IUF0653-01
File ID: 110616-1-019
Sampled: 06/06/11 14:35
Prepared: 06/14/11 18:28
Analyzed: 06/16/11 12:07
Solids: 0.00
Preparation: EPA 3005A ICPMS
Initial/Final: 50 ml / 50 ml
Batch: 11F1926
Sequence: U000400
Calibration: I11F047
Instrument: ICPMS4

CAS NO.	Analyte	Concentration (ug/l)	Dilution Factor	Q	Method
7440-22-4	Silver	0.1 ~~0.094~~ ND	1		EPA 6020

8/23/11
TC

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OC-SW-ISCO-1-XXX
Lab Sample ID: 360-34253-2
Lab Name: TestAmerica Westfield
Job No.: 360-34253-1
SDG ID.: 360-34253-1
Matrix: Water
Date Sampled: 06/06/2011 14:35
Reporting Basis: WET
Date Received: 06/07/2011 10:21

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	100	100	13	ug/L			1	6010B
7440-38-2	Arsenic	ND	10	2.8	ug/L			1	6010B
7440-39-3	Barium	28	10	1.4	ug/L			1	6010B
7440-41-7	Beryllium	ND	1.0	0.15	ug/L			1	6010B
7440-70-2	Calcium	25000	400	50	ug/L			1	6010B
7440-43-9	Cadmium	ND ~~0.66~~	1.0	0.13	ug/L	~~J~~		1	6010B
7440-48-4	Cobalt	5.4	10	1.3	ug/L	J		1	6010B
7440-47-3	Chromium	12	5.0	0.65	ug/L			1	6010B
7439-89-6	Iron	4700	100	14	ug/L			1	6010B
7440-09-7	Potassium	2200	4000	1100	ug/L	J		1	6010B
7439-95-4	Magnesium	4400	400	50	ug/L			1	6010B
7439-96-5	Manganese	810	10	3.0	ug/L			1	6010B
7440-23-5	Sodium	98000	2000	280	ug/L		~~B~~	1	6010B
7440-02-0	Nickel	4.2	10	1.3	ug/L	J		1	6010B
7440-36-0	Antimony	ND	6.0	1.5	ug/L			1	6010B
7782-49-2	Selenium	ND	10	4.0	ug/L			1	6010B
7440-31-5	Tin	ND	50	6.5	ug/L			1	6010B
7440-28-0	Thallium	ND	10	2.2	ug/L			1	6010B
7440-62-2	Vanadium	ND	10	1.5	ug/L			1	6010B
7440-66-6	Zinc	21	50	6.6	ug/L	J		1	6010B
7439-97-6	Mercury	ND	0.20	0.15	ug/L			1	7470A

8/23/11
TC

Form 1

INORGANIC ANALYSIS DATA SHEET

EPA 6020

OC-SW-ISCO-1-XXX

Laboratory: TestAmerica Irvine
SDG:
Client: TestAmerica Westfield
Project: Olin
Matrix: Water
Laboratory ID: IUF0653-02
File ID: 110615-2-023
Sampled: 06/06/11 14:35
Prepared: 06/14/11 18:28
Analyzed: 06/15/11 15:13
Solids: 0.00
Preparation: EPA 3005A ICPMS
Initial/Final: 50 ml / 50 ml
Batch: 11F1926
Sequence: U000399
Calibration: I11F047
Instrument: ICPMS4

CAS NO.	Analyte	Concentration (ug/l)	Dilution Factor	Q	Method
7440-50-8	Copper	0.49	1	J	EPA 6020
7439-92-1	Lead	0.32	1	J	EPA 6020

8/23/11
TC

Form 1

INORGANIC ANALYSIS DATA SHEET

EPA 6020

OC-SW-ISCO-1-XXX

Laboratory: TestAmerica Irvine
SDG:
Client: TestAmerica Westfield
Project: Olin
Matrix: Water
Laboratory ID: IUF0653-02
File ID: 110616-1-023
Sampled: 06/06/11 14:35
Prepared: 06/14/11 18:28
Analyzed: 06/16/11 12:18
Solids: 0.00
Preparation: EPA 3005A ICPMS
Initial/Final: 50 ml / 50 ml
Batch: 11F1926
Sequence: U000400
Calibration: I11F047
Instrument: ICPMS4

CAS NO.	Analyte	Concentration (ug/l)	Dilution Factor	Q	Method
7440-22-4	Silver	~~0.094~~ 0.1	1	~~J~~ U	EPA 6020

8/23/11
TC

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OC-SW-ISCO-2-XXX
Lab Sample ID: 360-34253-3
Lab Name: TestAmerica Westfield
Job No.: 360-34253-1
SDG ID.: 360-34253-1
Matrix: Water
Date Sampled: 06/06/2011 11:00
Reporting Basis: WET
Date Received: 06/07/2011 10:21

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	5400	100	13	ug/L			1	6010B
7440-38-2	Arsenic	ND	10	2.8	ug/L			1	6010B
7440-39-3	Barium	27	10	1.4	ug/L			1	6010B
7440-41-7	Beryllium	0.74	1.0	0.15	ug/L	J		1	6010B
7440-70-2	Calcium	67000	400	50	ug/L			1	6010B
7440-43-9	Cadmium	ND ~~0.32~~	1.0	0.13	ug/L	~~J~~		1	6010B
7440-48-4	Cobalt	32	10	1.3	ug/L			1	6010B
7440-47-3	Chromium	1100	5.0	0.65	ug/L			1	6010B
7439-89-6	Iron	13000	100	14	ug/L			1	6010B
7440-09-7	Potassium	2200	4000	1100	ug/L	J		1	6010B
7439-95-4	Magnesium	14000	400	50	ug/L			1	6010B
7439-96-5	Manganese	1700	10	3.0	ug/L			1	6010B
7440-23-5	Sodium	170000	2000	280	ug/L		~~J~~	1	6010B
7440-02-0	Nickel	34	10	1.3	ug/L			1	6010B
7440-36-0	Antimony	ND	6.0	1.5	ug/L			1	6010B
7782-49-2	Selenium	ND	10	4.0	ug/L			1	6010B
7440-31-5	Tin	ND	50	6.5	ug/L			1	6010B
7440-28-0	Thallium	ND ~~4.0~~	10	2.2	ug/L	~~J~~		1	6010B
7440-62-2	Vanadium	ND	10	1.5	ug/L			1	6010B
7440-66-6	Zinc	59	50	6.6	ug/L			1	6010B
7439-97-6	Mercury	ND	0.20	0.15	ug/L			1	7470A

8/23/11
TC

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OC-SW-MMB-SW/SD-1-DUP
Lab Sample ID: 360-34253-4
Lab Name: TestAmerica Westfield
Job No.: 360-34253-1
SDG ID.: 360-34253-1
Matrix: Water
Date Sampled: 06/06/2011 13:00
Reporting Basis: WET
Date Received: 06/07/2011 10:21

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	ND	100	13	ug/L			1	6010B
7440-38-2	Arsenic	ND	10	2.8	ug/L			1	6010B
7440-39-3	Barium	26	10	1.4	ug/L			1	6010B
7440-41-7	Beryllium	ND	1.0	0.15	ug/L			1	6010B
7440-70-2	Calcium	22000	400	50	ug/L			1	6010B
7440-43-9	Cadmium	ND	1.0	0.13	ug/L			1	6010B
7440-48-4	Cobalt	ND	10	1.3	ug/L			1	6010B
7440-47-3	Chromium	ND	5.0	0.65	ug/L			1	6010B
7439-89-6	Iron	1100	100	14	ug/L			1	6010B
7440-09-7	Potassium	2000	4000	1100	ug/L	J		1	6010B
7439-95-4	Magnesium	3900	400	50	ug/L			1	6010B
7439-96-5	Manganese	200	10	3.0	ug/L			1	6010B
7440-23-5	Sodium	78000	2000	280	ug/L			1	6010B
7440-02-0	Nickel	ND	10	1.3	ug/L			1	6010B
7440-36-0	Antimony	ND	6.0	1.5	ug/L			1	6010B
7782-49-2	Selenium	ND	10	4.0	ug/L			1	6010B
7440-31-5	Tin	ND	50	6.5	ug/L			1	6010B
7440-28-0	Thallium	ND	10	2.2	ug/L			1	6010B
7440-62-2	Vanadium	ND	10	1.5	ug/L			1	6010B
7440-66-6	Zinc	ND	50	6.6	ug/L			1	6010B
7439-97-6	Mercury	ND	0.20	0.15	ug/L			1	7470A

8/23/11
TC

Form 1

INORGANIC ANALYSIS DATA SHEET

EPA 6020

OC-SW-MMB-SW/SD-1-DUP

Laboratory: TestAmerica Irvine
SDG:
Client: TestAmerica Westfield
Project: Olin
Matrix: Water
Laboratory ID: IUF0653-05
File ID: 110615-2-030
Sampled: 06/06/11 13:00
Prepared: 06/14/11 18:28
Analyzed: 06/15/11 15:53
Solids: 0.00
Preparation: EPA 3005A ICPMS
Initial/Final: 50 ml / 50 ml
Batch: 11F1926
Sequence: U000399
Calibration: I11F047
Instrument: ICPMS4

CAS NO.	Analyte	Concentration (ug/l)	Dilution Factor	Q	Method
7440-50-8	Copper	0.50	1	U	EPA 6020
7439-92-1	Lead	0.1 ~~0.070~~	1	~~J~~ U	EPA 6020
7440-22-4	Silver	0.10	1	UC	EPA 6020

8/23/11
JC

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OC-SW-MMB-SW/SD-1-XXX
Lab Sample ID: 360-34253-5
Lab Name: TestAmerica Westfield
Job No.: 360-34253-1
SDG ID.: 360-34253-1
Matrix: Water
Date Sampled: 06/06/2011 13:00
Reporting Basis: WET
Date Received: 06/07/2011 10:21

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	63	100	13	ug/L	J		1	6010B
7440-38-2	Arsenic	ND	10	2.8	ug/L			1	6010B
7440-39-3	Barium	27	10	1.4	ug/L			1	6010B
7440-41-7	Beryllium	ND	1.0	0.15	ug/L			1	6010B
7440-70-2	Calcium	22000	400	50	ug/L			1	6010B
7440-43-9	Cadmium	ND	1.0	0.13	ug/L			1	6010B
7440-48-4	Cobalt	ND	10	1.3	ug/L			1	6010B
7440-47-3	Chromium	ND	5.0	0.65	ug/L			1	6010B
7439-89-6	Iron	1200	100	14	ug/L			1	6010B
7440-09-7	Potassium	2000	4000	1100	ug/L	J		1	6010B
7439-95-4	Magnesium	3900	400	50	ug/L			1	6010B
7439-96-5	Manganese	210	10	3.0	ug/L			1	6010B
7440-23-5	Sodium	79000	2000	280	ug/L		B	1	6010B
7440-02-0	Nickel	ND	10	1.3	ug/L			1	6010B
7440-36-0	Antimony	ND	6.0	1.5	ug/L			1	6010B
7782-49-2	Selenium	ND	10	4.0	ug/L			1	6010B
7440-31-5	Tin	ND	50	6.5	ug/L			1	6010B
7440-28-0	Thallium	ND	10	2.2	ug/L			1	6010B
7440-62-2	Vanadium	ND	10	1.5	ug/L			1	6010B
7440-66-6	Zinc	ND	50	6.6	ug/L			1	6010B
7439-97-6	Mercury	ND	0.20	0.15	ug/L			1	7470A

TC
8/25/11

Form 1

INORGANIC ANALYSIS DATA SHEET

EPA 6020

OC-SW-MMB-SW/SD-1-XXX

Laboratory: TestAmerica Irvine
SDG:
Client: TestAmerica Westfield
Project: Olin
Matrix: Water
Laboratory ID: IUF0653-06
File ID: 110615-2-031
Sampled: 06/06/11 13:00
Prepared: 06/14/11 18:28
Analyzed: 06/15/11 15:56
Solids: 0.00
Preparation: EPA 3005A ICPMS
Initial/Final: 50 ml / 50 ml
Batch: 11F1926
Sequence: U000399
Calibration: I11F047
Instrument: ICPMS4

CAS NO.	Analyte	Concentration (ug/l)	Dilution Factor	Q	Method
7440-50-8	Copper	2.7	1		EPA 6020
7439-92-1	Lead	0.23	1	J	EPA 6020
7440-22-4	Silver	0.10	1	UC	EPA 6020

TC
8/23/11

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OC-SW-MMB-SW/SD-9-XXX
Lab Sample ID: 360-34253-6
Lab Name: TestAmerica Westfield
Job No.: 360-34253-1
SDG ID.: 360-34253-1
Matrix: Water
Date Sampled: 06/06/2011 11:00
Reporting Basis: WET
Date Received: 06/07/2011 10:21

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	ND	100	13	ug/L			1	6010B
7440-38-2	Arsenic	ND	10	2.8	ug/L			1	6010B
7440-39-3	Barium	22	10	1.4	ug/L			1	6010B
7440-41-7	Beryllium	ND	1.0	0.15	ug/L			1	6010B
7440-70-2	Calcium	24000	400	50	ug/L			1	6010B
7440-43-9	Cadmium	ND	1.0	0.13	ug/L			1	6010B
7440-48-4	Cobalt	ND	10	1.3	ug/L			1	6010B
7440-47-3	Chromium	ND	5.0	0.65	ug/L			1	6010B
7439-89-6	Iron	2200	100	14	ug/L			1	6010B
7440-09-7	Potassium	1900	4000	1100	ug/L	J		1	6010B
7439-95-4	Magnesium	4100	400	50	ug/L			1	6010B
7439-96-5	Manganese	170	10	3.0	ug/L			1	6010B
7440-23-5	Sodium	76000	2000	280	ug/L		B	1	6010B
7440-02-0	Nickel	ND	10	1.3	ug/L			1	6010B
7440-36-0	Antimony	ND	6.0	1.5	ug/L			1	6010B
7782-49-2	Selenium	ND	10	4.0	ug/L			1	6010B
7440-31-5	Tin	ND	50	6.5	ug/L			1	6010B
7440-28-0	Thallium	ND ~~3.8~~	10	2.2	ug/L	J		1	6010B
7440-62-2	Vanadium	ND	10	1.5	ug/L			1	6010B
7440-66-6	Zinc	ND	50	6.6	ug/L			1	6010B
7439-97-6	Mercury	ND	0.20	0.15	ug/L			1	7470A

8/23/11
TC

Form 1

INORGANIC ANALYSIS DATA SHEET

EPA 6020

OC-SW-MMB-SW/SD-9-XXX

Laboratory: TestAmerica Irvine
SDG:
Client: TestAmerica Westfield
Project: Olin
Matrix: Water
Laboratory ID: IUF0653-08
File ID: 110615-2-033
Sampled: 06/06/11 11:00
Prepared: 06/14/11 18:28
Analyzed: 06/15/11 16:01
Solids: 0.00
Preparation: EPA 3005A ICPMS
Initial/Final: 50 ml / 50 ml
Batch: 11F1926
Sequence: U000399
Calibration: I11F047
Instrument: ICPMS4

CAS NO.	Analyte	Concentration (ug/l)	Dilution Factor	Q	Method
7440-50-8	Copper	0.50	1	U	EPA 6020
7439-92-1	Lead	~~0.097~~ 0.1	1	~~J~~ U	EPA 6020
7440-22-4	Silver	0.10	1	UC	EPA 6020

8/23/11
TC

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OC-SW-PZ-16RR-XXX

Lab Sample ID: 360-34253-7

Lab Name: TestAmerica Westfield

Job No.: 360-34253-1

SDG ID.: 360-34253-1

Matrix: Water

Date Sampled: 06/06/2011 13:05

Reporting Basis: WET

Date Received: 06/07/2011 10:21

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	850	100	13	ug/L			1	6010B
7440-38-2	Arsenic	ND	10	2.8	ug/L			1	6010B
7440-39-3	Barium	23	10	1.4	ug/L			1	6010B
7440-41-7	Beryllium	0.30	1.0	0.15	ug/L	J		1	6010B
7440-70-2	Calcium	72000	400	50	ug/L			1	6010B
7440-43-9	Cadmium	ND ~~0.47~~	1.0	0.13	ug/L	~~J~~		1	6010B
7440-48-4	Cobalt	41	10	1.3	ug/L			1	6010B
7440-47-3	Chromium	270	5.0	0.65	ug/L			1	6010B
7439-89-6	Iron	4800	100	14	ug/L			1	6010B
7440-09-7	Potassium	2200	4000	1100	ug/L	J		1	6010B
7439-95-4	Magnesium	16000	400	50	ug/L			1	6010B
7439-96-5	Manganese	1900	10	3.0	ug/L			1	6010B
7440-23-5	Sodium	200000	2000	280	ug/L		~~E~~	1	6010B
7440-02-0	Nickel	47	10	1.3	ug/L			1	6010B
7440-36-0	Antimony	ND	6.0	1.5	ug/L			1	6010B
7782-49-2	Selenium	ND	10	4.0	ug/L			1	6010B
7440-31-5	Tin	ND	50	6.5	ug/L			1	6010B
7440-28-0	Thallium	ND	10	2.2	ug/L			1	6010B
7440-62-2	Vanadium	ND	10	1.5	ug/L			1	6010B
7440-66-6	Zinc	75	50	6.6	ug/L			1	6010B
7439-97-6	Mercury	0.29	0.20	0.15	ug/L			1	7470A

TC
8/23/11

Form 1

INORGANIC ANALYSIS DATA SHEET

EPA 6020

OC-SW-PZ-16RR-XXX

Laboratory: TestAmerica Irvine SDG:

Client: TestAmerica Westfield Project: Olin

Matrix: Water Laboratory ID: IUF0653-09 File ID: 110615-2-034

Sampled: 06/06/11 13:05 Prepared: 06/14/11 18:28 Analyzed: 06/15/11 16:04

Solids: 0.00 Preparation: EPA 3005A ICPMS Initial/Final: 50 ml / 50 ml

Batch: 11F1926 Sequence: U000399 Calibration: I11F047 Instrument: ICPMS4

CAS NO.	Analyte	Concentration (ug/l)	Dilution Factor	Q	Method
7440-50-8	Copper	6.4	1		EPA 6020
7439-92-1	Lead	0.068	1	J	EPA 6020
7440-22-4	Silver	0.10	1	~~UC~~	EPA 6020

TC
8/23/11

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OC-SW-PZ-17RR-XXX

Lab Sample ID: 360-34253-8

Lab Name: TestAmerica Westfield

Job No.: 360-34253-1

SDG ID.: 360-34253-1

Matrix: Water

Date Sampled: 06/06/2011 13:45

Reporting Basis: WET

Date Received: 06/07/2011 10:21

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	9000	100	13	ug/L			1	6010B
7440-38-2	Arsenic	ND	10	2.8	ug/L			1	6010B
7440-39-3	Barium	21	10	1.4	ug/L			1	6010B
7440-41-7	Beryllium	1.1	1.0	0.15	ug/L			1	6010B
7440-70-2	Calcium	72000	400	50	ug/L			1	6010B
7440-43-9	Cadmium	ND ~~0.66~~	1.0	0.13	ug/L			1	6010B
7440-48-4	Cobalt	50	10	1.3	ug/L			1	6010B
7440-47-3	Chromium	1800	5.0	0.65	ug/L			1	6010B
7439-89-6	Iron	12000	100	14	ug/L			1	6010B
7440-09-7	Potassium	3400	4000	1100	ug/L	J		1	6010B
7439-95-4	Magnesium	17000	400	50	ug/L			1	6010B
7439-96-5	Manganese	2200	10	3.0	ug/L			1	6010B
7440-23-5	Sodium	220000	2000	280	ug/L		B	1	6010B
7440-02-0	Nickel	57	10	1.3	ug/L			1	6010B
7440-36-0	Antimony	ND	6.0	1.5	ug/L			1	6010B
7782-49-2	Selenium	ND	10	4.0	ug/L			1	6010B
7440-31-5	Tin	ND	50	6.5	ug/L			1	6010B
7440-28-0	Thallium	ND	10	2.2	ug/L			1	6010B
7440-62-2	Vanadium	ND	10	1.5	ug/L			1	6010B
7440-66-6	Zinc	97	50	6.6	ug/L			1	6010B
7439-97-6	Mercury	ND	0.20	0.15	ug/L			1	7470A

TC
8/23/11

Form 1

INORGANIC ANALYSIS DATA SHEET

EPA 6020

OC-SW-PZ-17RR-XXX

Laboratory: TestAmerica Irvine
SDG:
Client: TestAmerica Westfield
Project: Olin
Matrix: Water
Laboratory ID: IUF0653-10
File ID: 110615-2-035
Sampled: 06/06/11 13:45
Prepared: 06/14/11 18:28
Analyzed: 06/15/11 16:06
Solids: 0.00
Preparation: EPA 3005A ICPMS
Initial/Final: 50 ml / 50 ml
Batch: 11F1926
Sequence: U000399
Calibration: I11F047
Instrument: ICPMS4

CAS NO.	Analyte	Concentration (ug/l)	Dilution Factor	Q	Method
7440-50-8	Copper	21	1		EPA 6020
7439-92-1	Lead	0.42	1	J	EPA 6020
7440-22-4	Silver	0.10	1	U~~C~~	EPA 6020

TC
8/23/11

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OC-SW-SD-1-XXX
Lab Sample ID: 360-34253-9
Lab Name: TestAmerica Westfield
Job No.: 360-34253-1
SDG ID.: 360-34253-1
Matrix: Water
Date Sampled: 06/06/2011 12:15
Reporting Basis: WET
Date Received: 06/07/2011 10:21

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	460	100	13	ug/L			1	6010B
7440-38-2	Arsenic	ND	10	2.8	ug/L			1	6010B
7440-39-3	Barium	26	10	1.4	ug/L			1	6010B
7440-41-7	Beryllium	ND	1.0	0.15	ug/L			1	6010B
7440-70-2	Calcium	81000	400	50	ug/L			1	6010B
7440-43-9	Cadmium	ND ~~0.35~~	1.0	0.13	ug/L			1	6010B
7440-48-4	Cobalt	39	10	1.3	ug/L			1	6010B
7440-47-3	Chromium	110	5.0	0.65	ug/L			1	6010B
7439-89-6	Iron	2000	100	14	ug/L			1	6010B
7440-09-7	Potassium	2600	4000	1100	ug/L	J		1	6010B
7439-95-4	Magnesium	17000	400	50	ug/L			1	6010B
7439-96-5	Manganese	2000	10	3.0	ug/L			1	6010B
7440-23-5	Sodium	220000	2000	280	ug/L			1	6010B
7440-02-0	Nickel	41	10	1.3	ug/L			1	6010B
7440-36-0	Antimony	ND	6.0	1.5	ug/L			1	6010B
7782-49-2	Selenium	ND	10	4.0	ug/L			1	6010B
7440-31-5	Tin	ND	50	6.5	ug/L			1	6010B
7440-28-0	Thallium	ND	10	2.2	ug/L			1	6010B
7440-62-2	Vanadium	ND	10	1.5	ug/L			1	6010B
7440-66-6	Zinc	55	50	6.6	ug/L			1	6010B
7439-97-6	Mercury	ND	0.20	0.15	ug/L			1	7470A

8/23/11
TC

Form 1

INORGANIC ANALYSIS DATA SHEET

EPA 6020

OC-SW-SD-1-XXX

Laboratory: TestAmerica Irvine
SDG:
Client: TestAmerica Westfield
Project: Olin
Matrix: Water
Laboratory ID: IUF0653-11
File ID: 110615-2-036
Sampled: 06/06/11 12:15
Prepared: 06/14/11 18:28
Analyzed: 06/15/11 16:09
Solids: 0.00
Preparation: EPA 3005A ICPMS
Initial/Final: 50 ml / 50 ml
Batch: 11F1926
Sequence: U000399
Calibration: I11F047
Instrument: ICPMS4

CAS NO.	Analyte	Concentration (ug/l)	Dilution Factor	Q	Method
7440-50-8	Copper	0.21	1	J	EPA 6020
7439-92-1	Lead	0.30	1	J	EPA 6020
7440-22-4	Silver	0.10	1	U	EPA 6020

8/23/11
TC

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-34253-1

SDG No.: 360-34253-1

Concentration Units: ug/L

Analyte	RL	ICB 360-75339/11 06/15/2011 11:45		CCB 360-75339/18 06/15/2011 12:06		CCB 360-75339/30 06/15/2011 12:57		CCB 360-75339/42 06/15/2011 13:33	
		Found	C	Found	C	Found	C	Found	C
Aluminum	100	ND		ND		ND		ND	
Antimony	6.0	ND		ND		ND		ND	
Arsenic	10	ND		ND		ND		ND	
Barium	10	ND		ND		ND		ND	
Beryllium	1.0	ND		ND		~~ND~~		ND	
Cadmium	1.0	ND		ND		0.164	J	ND	
Calcium	400	ND		ND		~~ND~~		ND	
Chromium	5.0	ND		ND		ND		ND	
Cobalt	10	ND		ND		ND		ND	
Iron	100	ND		ND		ND		ND	
Magnesium	400	ND		ND		ND		ND	
Manganese	10	ND		ND		ND		ND	
Nickel	10	ND		ND		ND		ND	
Potassium	4000	ND		ND		ND		ND	
Selenium	10	ND		ND		ND		ND	
Sodium	2000	ND		ND		299	J	ND	
Thallium	10	ND		2.55	J	ND		2.49	J
Tin	50	ND		ND		ND		ND	
Vanadium	10	ND		ND		ND		ND	
Zinc	50	ND		ND		ND		ND	

Metal	Blanks highest conc (ppb)	Action	Samples w/ detects < RL & Action
Cd	0.164 x 5 =	0.82	#2, 3, 7, 8, 9
Na	299 x 5 =	1495	NONE
Tl	2.55 x 5 =	12.75	#1, 3, 6

TC 8/19/11

Italicized analytes were not requested for this sequence.

BLANKS
EPA 6020

Laboratory: TestAmerica Irvine
SDG:
Client: TestAmerica Westfield
Instrument ID: ICPMS4
Project: Olin
Sequence: U000400
Calibration: I11F047

Lab Sample ID	Analyte	Found	MRL	Units	C	Method	Analyzed
U000400-ICB1	Silver	0.0577	0.10	ug/l		EPA 6020	6/16/11 11:27
U000400-CCB1	Silver	0.0603	0.10	ug/l		EPA 6020	6/16/11 12:29
U000400-CCB2	Silver	0.0134	0.10	ug/l		EPA 6020	6/16/11 12:32

Silver (ppb) 5X Action

0.0603 X5 = 0.3015

8/23/11
TC ✓

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Westfield Job No.: 360-34253-1

SDG No.: 360-34253-1

Concentration Units: ug/L Lab Sample ID: MB 360-75089/1-A

Instrument Code: Varian ICP Batch No.: 75339

CAS No.	Analyte	Concentration	C	Q	Method
7429-90-5	Aluminum	ND			6010B
7440-38-2	Arsenic	ND			6010B
7440-39-3	Barium	ND			6010B
7440-41-7	Beryllium	ND			6010B
7440-70-2	Calcium	ND			6010B
7440-43-9	Cadmium	ND			6010B
7440-48-4	Cobalt	ND			6010B
7440-47-3	Chromium	ND			6010B
7439-89-6	Iron	ND			6010B
7440-09-7	Potassium	ND			6010B
7439-95-4	Magnesium	ND			6010B
7439-96-5	Manganese	ND			6010B
7440-23-5	Sodium	308	J		6010B
7440-02-0	Nickel	~~ND~~			6010B
7440-36-0	Antimony	ND			6010B
7782-49-2	Selenium	ND			6010B
7440-31-5	Tin	ND			6010B
7440-28-0	Thallium	ND			6010B
7440-62-2	Vanadium	ND			6010B
7440-66-6	Zinc	ND			6010B

TC
8/19/11

FORM III-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Westfield Job No.: 360-34253-1

SDG No.: 360-34253-1

Lab Sample ID: ICSA 360-75339/56 Instrument ID: Varian ICP

Lab File ID: 061511a.csv ICS Source: ICSA wk_00021

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Aluminum	100000	110354	110
Antimony		-0.809	
Arsenic		0.128	
Barium		0.960	
Beryllium		-0.0209	
Cadmium		0.317	MDL 0.13
Calcium	100000	98831	99
Chromium		-0.372	
Cobalt		-0.167	
Iron	100000	113822	114
Magnesium	100000	102167	102
Manganese		-0.580	
Nickel		1.05	
Potassium		825	
Selenium		-1.62	
Sodium		428	
Thallium		-1.74	
Tin		1.47	
Vanadium		-1.25	
Zinc		1.36	
Boron		*9.78*	
Copper		*0.879*	
Lead		*-0.509*	
Lithium		*0.956*	
Molybdenum		*0.912*	
Silicon		*0.560*	
Silicon		*2.87*	
Silver		*0.779*	
SiO2, Silica		*1.20*	
Strontium		*-1.38*	
Titanium		*0.240*	
Zirconium		*1.43*	

All Cadmium results were ND @ 1 U

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

FORM IVA-IN

TC 8/19/11

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 6020

Laboratory: TestAmerica Irvine
Client: TestAmerica Westfield
Instrument ID: ICPMS4
Control Limt: +/- 10.00%

SDG:
Project: Olin
Calibration: I11F047
Sequence: U000399

Lab Sample ID	Analyte	True	Found	%R	Limit	Units	Method	Analyzed
U000399-ICV2	Copper	25.0	25.3	101	90 - 110	ug/l	EPA 6020	6/15/11 13:54
	Lead	25.0	25.9	104	90 - 110	ug/l	EPA 6020	6/15/11 13:54
	Silver	25.0	25.3	101	90 - 110	ug/l	EPA 6020	6/15/11 13:54
U000399-CCV2	Copper	50.0	49.4	99	90 - 110	ug/l	EPA 6020	6/15/11 15:24
	Lead	50.0	49.1	98	90 - 110	ug/l	EPA 6020	6/15/11 15:24
	Silver	50.0	65.8	132 *	90 - 110	ug/l	EPA 6020	6/15/11 15:24
U000399-CCV3	Copper	50.0	51.3	103	90 - 110	ug/l	EPA 6020	6/15/11 16:15
	Lead	50.0	51.7	103	90 - 110	ug/l	EPA 6020	6/15/11 16:15
	Silver	50.0	67.5	135 *	90 - 110	ug/l	EPA 6020	6/15/11 16:15

* Values outside of QC limits

No detections
No Quals

TC
8/19/11

MDL STUDY

Metals by ICPMS - EPA 6020/200.8

Analytical Method: EPA 6020/200.8 | Instrument: ICPMS4
Prep Method: EPA 3005A/200.2 | Alternative Line
Matrix: Water (50ml->50ml) | Cu(63)
Units: ug/L | Fortification: 10x nominal conc

Ca, Mg, K, and Na are in mg.l

Reviewed: LH (3/01/2011)

#	Analyte	Spike raw (ug/L)	Spike final (ug/L)	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Avr'g	Std Dev	N	T(s)	raw MDL	final MDL	MDL	MRL	2nd MRL	? MDL< RL	Ch'g	avr'g-to-calcMDL [1-10]	spike-to-LimsMDL [1-2]	%Rec	Symbol
				filename: 110222-2-11	110222-2-11	110222-2-11	110222-2-12	110222-2-14	110222-2-14	110222-2-15	110222-2-151															
				labnumber: LCS-01	LCS-02	LCS-03	LCS-04	LCS-05	LCS-06	LCS-07	LCS-08															
				date: Feb/22/11	Feb/22/11	Feb/22/11	Feb/22/11	Feb/22/11	Feb/22/11	Feb/22/11	Feb/22/11															
				time: 21:47	21:49	21:51	21:54	22:57	22:59	23:02	23:04															
1	Aluminum	10.00	10.00	11.29731	11.61463	12.66385	11.25367	12.40679	12.2019	12.45287	12.25953	12.02	0.55	8	2.998	1.65	1.648	8.5	10		OK	-81%	7.3	1.2	120%	Al [27]
2	Antimony	1.00	1.00	1.107091	1.111317	1.082206	1.103854	1.079083	1.114812	1.064356	1.055517	1.09	0.02	8	2.998	0.07	0.068	0.30	2.0	1.0	OK	-77%	16.1	3.3	109%	Sb [121]
3	Arsenic	1.00	1.00	1.115021	1.081206	0.973749	1.067236	1.038665	1.009208	1.08573	1.115529	1.06	0.05	8	2.998	0.15	0.149	0.9	1.0		OK	-64%	7.1	1.1	106%	As [75]
4	Barium	1.00	1.00	1.119268	1.102849	1.125861	1.152749	1.038309	1.120242	1.153045	1.081447	1.11	0.04	8	2.998	0.11	0.141	0.30	1.0		OK	-62%	9.8	3.3	111%	Ba [135]
5	Beryllium	0.20	0.20	0.219562	0.215954	0.195097	0.224526	0.194666	0.22143	0.213732	0.199812	0.21	0.01	8	2.998	0.04	0.037	0.1	0.5	0.20	OK	-63%	5.8	2.0	105%	Be [9]
7	Cerium	1.00	1.00	1.137306	1.103249	1.103798	1.144506	1.097648	1.10573	1.100629	1.133999	1.12	0.02	8	2.998	0.06	0.058	0.1	1.0		OK	-42%	19.4	10.0	112%	Ce [140]
8	Chromium	1.00	1.00	1.053782	1.052784	1.088603	1.095322	1.138091	1.109472	1.096876	1.095381	1.09	0.03	8	2.998	0.08	0.084	0.9	2.0	1.0	OK	-91%	13.0	1.1	109%	Cr [52]
9	Cobalt	1.00	1.00	1.103008	1.073461	1.089031	1.087133	1.111418	1.147579	1.10576	1.139228	1.10	0.03	8	2.998	0.09	0.085	0.10	1.0		OK	-15%	13.0	10.0	110%	Co [59]
10	Copper	1.00	1.00	0.9398	1.165083	1.046847	1.004441	1.088832	1.083582	1.032819	1.043539	1.05	0.07	8	2.998	0.20	0.198	0.5	2.0	1.0	OK	-60%	5.3	2.0	105%	Cu [65]
11	Iron	10.00	10.00	9.986896	10.28172	10.05821	10.30252	12.59058	11.76858	11.08794	11.11002	10.90	0.92	8	2.998	2.77	2.770	8.00	10		OK	-65%	3.9	1.3	109%	Fe [54]
12	Lead	0.20	0.20	0.238139	0.235229	0.239248	0.240036	0.220608	0.241261	0.235583	0.237056	0.24	0.01	8	2.998	0.02	0.020	0.20	1.0		OK	-90%	12.0	1.0	118%	Pb [208]
13	Manganes	1.00	1.00	0.955267	1.012041	1.115821	1.148159	1.157749	1.58939	0.999103	1.124321	1.14	0.20	8	2.998	0.59	0.593	0.7	1.0		OK	-15%	1.9	1.4	114%	Mn [55]
14	Molybdenu	1.00	1.00	1.044574	1.054728	1.061705	1.068972	1.074294	1.098636	1.035562	1.037486	1.06	0.02	8	2.998	0.06	0.064	0.2	2.0	1.0	OK	-68%	16.7	5.0	106%	Mo [98]
15	Nickel	1.00	1.00	0.794017	1.043458	0.925213	1.218939	1.199336	1.019972	0.91426	0.987618	1.01	0.14	8	2.998	0.43	0.430	0.50	2.0	1.0	OK	-14%	2.4	2.0	101%	Ni [60]
17	Silver	0.20	0.20	0.210438	0.220946	0.204371	0.2172	0.18716	0.211843	0.221038	0.207836	0.21	0.01	8	2.998	0.03	0.033	0.10	1.0	0.20	OK	-67%	6.3	2.0	105%	Ag [107]
18	Thallium	0.20	0.20	0.240439	0.232867	0.222973	0.224252	0.217249	0.233422	0.225184	0.227003	0.23	0.01	8	2.998	0.02	0.022	0.2	1.0		OK	-89%	10.5	1.0	114%	Tl [205]
19	Uranium	0.20	0.20	0.232655	0.22553	0.223911	0.227179	0.204244	0.233168	0.220625	0.227847	0.22	0.01	8	2.998	0.03	0.027	0.2	1.0		OK	-86%	8.2	1.0	112%	U [238]
20	Vanadium	1.00	1.00	1.04549	1.007325	0.956921	1.07555	1.186125	1.148824	1.032886	1.015267	1.06	0.08	8	2.998	0.23	0.228	0.8	2.0	1.0	OK	-72%	4.6	1.3	106%	V [51]
21	Zinc	5.00	5.00	6.503272	5.825136	6.818215	6.055525	6.057541	5.153811	5.497042	4.987674	5.86	0.63	8	2.998	1.90	1.897	4.00	10	5.0	OK	-53%	3.1	1.3	117%	Zn [66]
22	Strontium	0.20	0.20	0.244623	0.237407	0.24412	0.260924	0.24012	0.30976	0.234041	0.245966	0.25	0.02	8	2.998	0.07	0.074	0.50	2.0		OK	-85%	3.4	0.4	126%	Sr [86]
23	Tin	0.20	0.20	0.31965	0.294386	0.279805	0.24359	0.261986	0.25087	0.22643	0.234394	0.26	0.03	8	2.998	0.10	0.096	.5	10		OK	-98%	2.8	0.0	132%	Sn [120]
24	Calcium	50.00	50.00	71.13912	82.77771	67.77001	64.50002	71.46217	69.87002	60.78855	67.86674	66.97	3.93	8	2.998	11.78	11.778	50	100		OK	-76%	5.7	1.0	134%	Ca [44]
25	Magnesiur	25.00	25.00	25.54038	25.53566	26.93555	26.06129	26.18934	28.38928	26.48497	27.2807	26.80	1.10	8	2.998	3.31	3.311	50	100		OK	-93%	8.1	0.5	107%	Mg [24]
26	Potassium	25.00	25.00	23.75475	24.31177	23.4532	22.92927	26.30841	25.74217	25.65299	24.47987	24.56	1.21	8	2.998	3.63	3.627	50	100		OK	-93%	6.8	0.5	98%	K [39]

0.2ppb

filename:	110222-2-11	110222-2-11	110222-2-11	110222-2-11	110222-2-14	110222-2-14	110222-2-14	110222-2-147
labnumber:	LCS-01	LCS-02	LCS-03	LCS-04	LCS-05	LCS-06	LCS-07	LCS-08
date:	Feb/22/11	Feb/22/11	Feb/22/11	Feb/22/11	Feb/22/11	Feb/22/11	Feb/22/11	Feb/22/11
time:	21:38	21:40	21:42	21:45	22:48	22:50	22:52	22:55

5.0ppb

filename:	110222-2-12	110222-2-12	110222-2-12	110222-2-12	110222-2-15	110222-2-15	110222-2-15	110222-2-159
labnumber:	LCS-01	LCS-02	LCS-03	LCS-04	LCS-05	LCS-06	LCS-07	LCS-08
date:	Feb/22/11	Feb/22/11	Feb/22/11	Feb/22/11	Feb/22/11	Feb/22/11	Feb/22/11	Feb/22/11
time:	22:05	22:07	22:10	22:12	23:16	23:18	23:20	23:22

10ppb

filename:	110215-2-02	110215-2-02	110215-2-03	110215-2-03	110216-1-03	110216-1-03	110216-1-03	110216-1-040
labnumber:	LCS-01	LCS-02	LCS-03	LCS-04	LCS-05	LCS-06	LCS-07	LCS-08
date:	Feb/15/11	Feb/15/11	Feb/15/11	Feb/15/11	Feb/16/11	Feb/16/11	Feb/16/11	Feb/16/11
time:	12:11	12:13	12:16	12:18	11:18	11:20	11:22	11:25

#	Analyte	Spike raw (ug/L)	Spike final (ug/L)	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Avr'g	Std Dev	N	T(s)	raw MDL	final MDL	MDL	MRL	2nd MRL	? MDL< RL	Ch'g	avr'g-to-calcMDL [1-10]	spike-to-LimsMDL [1-2]	%Rec	Comm't Grubbs test	Symbol
				filename: 110312-2A-0	110312-2A-0	110312-2A-0	110312-2A-0	110312-2A-0	110312-2A-0	110312-2A-019																

Checked 8/23/11 TC

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Form 4

ICP INTERFERENCE CHECK SAMPLE

EPA 6020

Laboratory: TestAmerica Irvine
Client: TestAmerica Westfield
Instrument ID: ICPMS4
Sequence: U000399

SDG:
Project: Olin
Calibration: I11F047
Check Nbr: 1
Analyzed: 6/15/11 14:00

			True		Found				
Analyte	MDL	Units	Sol A	Sol B	Sol A	%R	Sol B	%R	Limit
Copper	0.20 ~~0.046~~	ug/l	NA	NA	0.0739	NA		NA	0 - 200
Copper		ug/l	NA	20.0		NA	17.8	89	70 - 130
Lead	0.02	ug/l	NA	NA	0.180	NA		NA	0 - 200
Lead		ug/l	NA	20.0		NA	18.5	93	70 - 130
Silver	0.033	ug/l	NA	NA	0.0467	NA		NA	0 - 200
Silver		ug/l	NA	20.0		NA	24.5	123	70 - 130

* Values outside of QC limits

detection — Samples w/ concentrations of Ca/Na >50K ppb

~~Copper 0.0739 Samples Qualified (J): #1, 2, 11~~ TC 8/31/11

Lead 0.180 Samples Qualified (J): #1, 2, 6, 10, 11

Samples Qualified (U): #5, 8, 9

8/23/11
TC ✓

INORGANICS

TAL METALS (including mercury)

REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER III Checklist

SITE: **Olin Chemical** Project #: Olin Chemical OU2 Spring 2011 Surface Water SDG #: 360-34253-1

LAB Name : TAL Westfield & Irvine

Sample IDs: Attached tracking sheet or sample listing.

This checklist is designed to be used with the USEPA Data Validation Guidelines Part IV (November 2008). During Level III validation, calculation and transcription checks are completed for instrument tuning (ICP-MS), target compounds, spike recoveries, calibration data, and internal standards (ICP-MS) as specified in the guideline. Tier III checks contained in the USEPA Data Validation Guidelines Part IV (November 2008) are documented below.

YES	NO	NA		Action
Holding Times and Preservation				
☑	☐	☐	Check the raw data including instrument run to verify reported sample extraction and analysis dates.	
ICP-MS Tune				
☑	☐	☐	Were the method-required number of analyses or scans of the tuning solution performed?	If any transcription and/or calculation errors are detected, perform a more comprehensive review to determine the magnitude of the problem. If the problem is extensive, then the validator should have the laboratory requantitate and resubmit all corrected raw data and forms.
☑	☐	☐	Check raw data. Is the tune data accurately reported on the tabulated forms?	
☐	☐	☑	Review standard preparation logs (if available in the data package) to verify that the analytes in the tuning solution were at the method-required concentrations. Not provided by lab	
Calibration				
☑	☐	☐	For methods that require determination of correlation coefficients for the calibration curve, verify that the method-required correlation coefficient criteria were met. Were Criteria met?	If the correlation coefficient for any target analyte did not meet the method QC acceptance criteria, then the validator should: Estimate (J or UJ) all associated samples. Depending on the degree of the deviation from linearity, the validator may use professional judgment to reject (R) all positive detects and/or all non-detects.
☑	☐	☐	For methods which require replicate analyses (i.e., replicate integrations). Is the %RSD is within the method QC acceptance criteria?	If any %RSD for replicate analyses in the ICV or CCV is outside the method QC acceptance criteria, then the validator should use professional judgment to either accept or qualify associated sample data.

INORGANICS

TAL METALS (including mercury)

REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
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TIER III Checklist

YES	NO	NA		Action
Calibration (continued)				
☐	☐	☑	Review standard preparation logs (if provided in the data package) to ensure that all initial calibration, initial calibration verification, continuing calibration verification and Quantitation Limit Check Standard concentrations are accurate and traceable. Not provided by lab	If standards preparation data have not been submitted with the data package, then the validator should use professional judgment to determine if standards preparation data are necessary to facilitate the validation of sample data. If necessary, the validator should contact the laboratory to obtain the information.
☑	☐	☐	Check and recalculate the initial calibration, initial calibration verification, continuing calibration verification, and QL Check Standard concentrations and percent recoveries for at least one analyte per method (if standards preparation documentation was provided in the data package). Verify that the calculated values agree within 10% of the laboratory reported values. Do values agree?	If errors greater than 10% are detected in the standard concentration calculations, then the validator should perform a more comprehensive review to determine the magnitude of the problem. If the problem is extensive, then the validator should have the laboratory requantitate and resubmit all corrected raw data and forms. If a discrepancy remains unresolved, the validator must use professional judgment to decide which value is accurate. Under these circumstances, the validator may determine that the sample data should be qualified or rejected. A discussion of the rationale for data qualification should be documented in the Data Validation Memorandum.
☑	☐	☐	For methods that require determination of calibration curve correlation coefficients, check and recalculate the correlation coefficient for at least one target analyte per method. Verify that the recalculated value agrees within ±10% of the laboratory reported value. Do values agree?	

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
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TIER III Checklist

YES	NO	NA		Action
Blanks				
☑	☐	☐	Verified from the raw data. Were the digestion/distillation and analysis dates and times, sample IDs, sequence of blank analyses and times, sample IDs, etc., accurately reported on the tabulated result forms?	If review of the raw data reveals discrepancies and/or transcription errors, then the validator should have the laboratory requantitate and resubmit all corrected raw data and forms. If a discrepancy remains unresolved, the validator must use professional judgment to decide which value is accurate. Under these circumstances, the validator may determine that the sample data should be qualified or rejected. A discussion of the rationale for data qualification and the qualifiers used should be documented in the Data Validation Memorandum.
☑	☐	☐	For ICP/MS Data. Were the standard responses and/or percent relative intensities correctly transcribed to the tabulated forms? Check 10% of the raw data for each blank to verify that internal standard responses and/or percent relative intensities have been correctly transcribed to tabulated forms and that percent relative intensities have been correctly calculated.	
☑	☐	☐	Review the raw data to confirm the presence of target analytes in the blanks and to evaluate the presence of additional contaminants. Confirm any negative results reported for the blanks as well as any negative blank results in the raw data that were not reported on the tabulated forms. Were additional contaminants found on the raw data?	If review of the raw data suggests that additional contaminants or additional negative results are present or, conversely, the review indicates false positive or false negative results have been reported, then the validator should contact the laboratory to obtain additional information and/or have the laboratory requantitate and resubmit all corrected raw data and forms. If a discrepancy remains unresolved, the validator must use professional judgment to decide which value is accurate. Under these circumstances, the validator may determine that the sample data should be qualified or rejected. A discussion of the rationale for data qualification and the qualifiers used should be documented in the Data Validation Memorandum.
Interference Check Sample- ICP-AES				If there are any transcription and/or calculation errors, then the validator should contact the laboratory to obtain corrected raw data and forms. If errors greater than 10% are detected, then the validator should perform a more comprehensive review to determine the magnitude of the problem. If the problem is extensive, then the validator should have the laboratory requantitate and resubmit all corrected raw data and forms. If a discrepancy remains unresolved, the validator must use professional judgment to decide which value is accurate. Under these circumstances, the validator may determine that the sample data should be qualified or rejected. A discussion of the rationale for data qualification and the qualifiers used should be documented in the Data Validation Memorandum.
☑	☐	☐	Check raw data. Were the ICS results accurately reported on the tabulated forms? Confirm that results equal to or below the negative MDL are also reported on the forms.	
☑	☐	☐	Check and recalculate the ICS percent recovery for at least one analyte per each pair of ICSA/ICSAB. Were the recalculated values within ±10% of the reported value?	

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER III Checklist

YES NO NA	Action
Interference Check Sample- ICP-MS	
☐ ☐ ☑ Were the ICS solutions obtained from a source providing certified solutions? If the ICS solution was prepared by the laboratory, verify that the required concentrations of analytes and interferents were used. Not provided by lab	If the ICS solution was not obtained from a source providing certified solutions or if the required analytes and interferents were not used to prepare the ICS solutions at the required concentrations, then the validator should use professional judgment to determine if sample qualification is required.
☑ ☐ ☐ Check raw data. Were the ICS results accurately reported on the tabulated forms? Confirm that results equal to or below the negative MDL are also reported on the forms. ☑ ☐ ☐ Check and recalculate the ICS percent recovery for at least one analyte per each pair of ICSA/ICSAB. Do the calculated values agree within ±10% of the reported value.	If any transcription and/or calculation errors are detected, perform a more comprehensive review to determine the magnitude of the problem. If the problem is extensive, then the validator should have the laboratory requantitate and resubmit all corrected raw data and forms. If a discrepancy remains unresolved, the validator must use professional judgment to decide which value is accurate. Under these circumstances, the validator may determine that the sample data should be qualified or rejected. A discussion of the rationale for data qualification and the qualifiers used should be documented in the Data Validation Memorandum.
ICP-MS - Internal Standards	
☑ ☐ ☐ Check raw data to verify that IS relative intensities are accurately reported on the tabulated forms. Recalculate the internal standard percent relative intensities for each internal standard in at least one sample. Do the recalculated value agrees within ±10% of the reported value? IS intensities and % Recoveries reported on the Raw data	If errors greater than 10% are detected in the percent relative intensity calculations, then the validator should perform a more comprehensive review to determine the magnitude of the problem. If the problem is extensive, then the validator should have the laboratory requantitate and resubmit all corrected raw data and forms. If a discrepancy remains unresolved, the validator must use professional judgment to decide which value is accurate.
Matrix Spikes	
☑ ☐ ☐ Check and recalculate the analytical concentrations and percent recovery for at least one spiked analyte per method. Does the recalculated value agree within ±10% of the reported value?	**Follow action from ICP-MS - Internal Standards**

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
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TIER III Checklist

YES NO NA	Action
Lab Duplicates ☑ ☐ ☐ Check and recalculate the analytical concentrations and RPD for at least one duplicate sample per analytical method. Does the recalculated value agree within ±10% of the reported value?	If any transcription and/or calculation errors are detected, perform a more comprehensive review to determine the magnitude of the problem. If the problem is extensive, then the validator should have the laboratory requantitate and resubmit all corrected raw data and forms. If a discrepancy remains unresolved, the validator must use professional judgment to decide which value is accurate. Under these circumstances, the validator may determine that the sample data should be qualified or rejected. A discussion of the rationale for data qualification and the qualifiers used should be documented in the Data Validation Memorandum.
Field Duplicates ☐ ☐ ☑ Check and recalculate the analytical concentrations for at least one positive detect and one sample quantitation limit (for a diluted sample or soil sample) for each analytical method in each field duplicate sample. Were errors detected? Not Reported in this SDG	If calculation and/or transcription errors are detected, then the validator should follow the procedures outlined in Section INORG-XIV (Analyte Quantitation and Reported Quantitation Limits), D.1-D.3.
Serial Dilutions ☐ ☐ ☑ Check and recalculate the analytical concentrations and percent differences for at least one analyte per analytical method. Verify that the recalculated values and % differences agree within ±10% of the reported values. Confirm that the laboratory used the appropriate method criteria. Are values within criteria? Not Reported in this SDG	**Follow action from ICP-MS - Internal Standards**

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER III Checklist

YES NO NA	Action
Sensitivity Check	
☑ ☐ ☐ Was the MDL study was generated in accordance with the method and 40 CFR Part 136, App. B? Were a minimum of seven replicates for each matrix of interest prepared and analyzed?	If the required MDL study was not performed at all or was not performed according to the method or the CFR criteria, then the validator should evaluate the LFB data, if available, to determine the action to be taken. See Table INORG-XII-1. If no LFB data are available, then the validator should use professional judgment to assess the impact of analytical sensitivity on data quality. The results of other low level standards (e.g., Quantitation Limit Check Standard) should be evaluated and appropriate action taken. (See Section III, Calibrations.)
☑ ☐ ☐ For ICP-MS, do the internal standard responses meet QC acceptance criteria?	If the MDL study reveals that a target analyte has a detection limit greater than the method-required quantitation limit, then the validator should evaluate the LFB data.
☑ ☐ ☐ Check and recalculate the MDL value for at least one analyte per MDL study per method. Do the recalculated values agree within ±10% of the reported results? (Note: The MDL study raw data may not be provided with the data packages and may not be readily available to allow for verification or recalculation, as in the case of the CLP SOWs.) checked Copper for ICP-MS 6020. Lead & Mercury checked	If any transcription and/or calculation errors are detected, perform a more comprehensive review to determine the magnitude of the problem. If the problem is extensive, the validator should have the laboratory requantitate and resubmit all corrected raw data and forms. If a discrepancy remains unresolved, the validator must use professional judgment to decide which value is accurate. Under these circumstances, the validator may determine that the sample data should be qualified or rejected. A discussion of the rationale for data qualification and the qualifiers used should be documented in the Data Validation Memorandum.
Lab Control Samples	
☑ ☐ ☐ Check and recalculate the percent recovery for at least one analyte per method per LCS. Do the recalculated values agree within ±10% of the reported result?	If any transcription and/or calculation errors are detected, perform a more comprehensive review to determine the magnitude of the problem. If the problem is extensive, the validator should have the laboratory requantitate and resubmit all corrected raw data and forms. If a discrepancy remains unresolved, the validator must use professional judgment to decide which value is accurate.

SDG 360-34253-1	Mercury Line from 6/16/11			
Std Level	**Hg Std Conc (ppb)**	**Avg Response Hg**	**run 1**	**run 2**
1	0.2	10116	**10716**	**9516**
0	0	7560	**8393**	**6726**
2	0.5	21161	19908	22413
3	1	38607	40337	36877
4	5	174653	174422	174883
5	10	355083	354603	355563
	y	x		
	Mercury			
slope	2.86435E-05	-0.115289697	**intercept**	
+-	2.62708E-07	0.042723359	**+-**	
r2	0.999663638	0.081921387	**s(y)**	
F	11887.9656	4	**degrees of freedom**	
regression ss	79.78148888	0.026844455	**residual ss**	
CCAL				
Hg				
Response	NOT PERFORMED	Lab did not provide area counts		
Amount Found (mg/l)	#VALUE!			
Amount Nominal (mg/l)				
Percent Diff. (%)	#VALUE!			
LCS				
Hg				
Response	NOT PERFORMED	Lab did not provide area counts		
Amount Found (mg/l)	#VALUE!			
Amount Nominal (mg/l)				
Percent Recovery (%)	#VALUE!			

SDG 360-34253-1	Magnesium Line from 6/15/2011		Lab used Quadratic			
Std Level	**Mg Std Conc (ppb)**	**Avg Response Mg**				
1	20000	93481				
0	0	13				
0	100000	421769				
2	40000	180023				
3	50000	223461				
4	60000	255002				
5	80000	345565				
	y	x				
	Mg					
slope	0.237763638	-1605.391556	**intercept**			
+-	0.003966806	1009.574679	**+-**			
r2	0.998610185	1394.898175	**s(y)**			
F	3592.601268	5	**degrees of freedom**			
regression ss	6990271295	9728704.598	**residual ss**			
ICV @ 11:42am on 6/15/11			**CRI-RL @ 11:48am on 6/15/11**			
Mg			**Mg**			
Response	42687		Response	1989		
Amount Found (ug/l)	8544.025		Amount Found (ug/l)	-1132.480	Lab used quadratic regression for	
Amount Nominal (ug/l)	10000		Amount Nominal (ug/l)	400		
Percent Diff. (%)	-14.56		Percent Diff. (%)	-383.12		
LCS @ 12:42 on 6/15/11			**CCAL @ 12:03 on 6/15/11**			
Mg			**Mg**			
Response	91532		Response	93549		
Amount Found (ug/l)	20157.590		Amount Found (ug/l)	20637.159		
Amount Nominal (ug/l)	20000		Amount Nominal (ug/l)	20000		
Percent Recovery (%)	100.79		Percent Diff. (%)	3.19		
Sample 360-34253-1 @ 12:48pm on 6/15/11						
Mg						
Response	20544					
Amount Found (ug/l)	3279.225	lab used quadratic regression				
Reported on Form I	4,376.00					
Percent Diff. (%)	-25.06					
Sample 360-34253-1 DUP @ 12:51pm on 6/15/11						
Mg						
Response	20117					
Amount Found (ug/l)	3177.700					
Reported on Form I	4,284.00					
Percent Diff. (%)	-25.82					

Matrix spike on Sample 360-34253-1 @ 1:00pm on 6/15/11						
Mg						
Response	106418	sample concentration =	4400			
Amount Found (ug/l)	23696.939	spike concentration =	20000			
Reported on Form 5A-IN	23,200.00					
Percent Diff. (%)	2.14	96%	percent recovery			
		94% reported on Form				
Sample 360-34253-2 @ 1:09pm on 6/15/11						
Mg						
Response	20734					
Amount Found (ug/l)	3324.400					
Reported on Form I	4,416.00					
Percent Diff. (%)	-24.72					
Sample 360-34253-3 @ 1:15pm on 6/15/11						
Mg						
Response	64428					
Amount Found (ug/l)	13713.244					
Reported on Form I	13,874.00					
Percent Diff. (%)	-1.16					

SDG 360-34253-1	Copper line from 6/15/11	Method 6020 - Collision Cell			
Std Level	**Cu Std Conc (ppb)**	**Response Cu**			
1	0	1736			
2	1	6536			
3	10	49674			
4	100	469904			
	y	x			
	As				
slope	0.000213747	-0.456642708	**intercept**		
+-	3.47266E-07	0.082053821	**+-**		
r2	0.999994721	0.136129364	**s(y)**		
F	378858.9801	2	**degrees of freedom**		
regression ss	7020.712938	0.037062407	**residual ss**		
ICV @ 13:54 on 6/15/11			**CCAL @ 15:24 6/15/11**		
Cu			**Cu**		
Response	123197		Response	238008	
Amount Found (ug/l)	25.876		Amount Found (mg/l)	50.417	
Amount Nominal (ug/l)	25.33		Amount Nominal (mg/l)	50	
Percent Diff. (%)	2.16		Percent Diff. (%)	0.83	calculated at 49.6ppb
LCS @ 15:00 on 6/15/11					
Cu					
Response	399169				
Amount Found (mg/l)	84.865	calculated at 76.8ppb on raw data			
Amount Nominal (mg/l)	80				
Percent Recovery (%)	106.08				
Sample 360-34253-1 @ 15:02 on 6/15/11					
Cu					
Response	5068				
Amount Found (mg/l)	0.627				
Reported on Form I	0.62				
Percent Diff. (%)	0.78				
Sample 360-34253-2 @ 15:13 on 9/1/11					
Cu					
Response	4205				
Amount Found (mg/l)	0.442				
Reported on Form I	0.49				
Percent Diff. (%)	-9.76				

Matrix spike on Sample 360-34253-1 @ 15:05 on 6/15/11					
Cu					
Response	373330				
Amount Found (mg/l)	79.342	75.38			
Reported on Form I	76.00	added 80ppb.			
Percent Diff. (%)	4.40	94%	percent recovery		
Sample 360-34253-3 @ 15:16 on 6/15/11					
Cu					
Response	5609				
Amount Found (mg/l)	0.742				
Reported on Form I	0.78				
Percent Diff. (%)	-4.84				

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Blank (Blk) **6/15/2011, 11:13:18 AM** **Rack 0, Tube 1**

Label	Sol'n Conc.	Units	SD(Int)	%RSD(Int)	Int. (c/s)
Ag 338.289	0.000000	ug/L	3.682	115.8	3.18054
Al 237.312	0.000000	ug/L	0.708	10.1	6.99005
As 188.980	0.000000	ug/L	0.788	35.6	2.21489
B 249.678	0.000000	ug/L	0.731	0.4	196.602
Ba 493.408	0.000000	ug/L	2.793	1.7	160.332
Be 313.042	0.000000	ug/L	5.923	4.9	121.908
Ca 373.690	0.000000	ug/L	1.391	3.6	38.3217
Cd 214.439	0.000000	ug/L	1.336	51.8	2.57725
Co 228.615	0.000000	ug/L	0.919	8.2	11.2204
Cr 267.716	0.000000	ug/L	1.248	2.4	51.0372
Cu 327.395	0.000000	ug/L	19.213	36.7	52.3794
Fe 273.955	0.000000	ug/L	1.341	3.0	44.7469
K 404.721	0.000000	ug/L	0.904	17.0	5.33289
Li 610.365	0.000000	ug/L	0.093	4.3	-2.15527
Mg 279.078	0.000000	ug/L	5.558	41.2	13.4962
Mn 257.610	0.000000	ug/L	1.568	4.5	35.2240
Mo 202.032	0.000000	ug/L	0.093	0.7	13.6633
Na 330.237	0.000000	ug/L	1.488	18.6	8.01306
Ni 216.555	0.000000	ug/L	2.174	35.9	6.05135
Pb 220.353	0.000000	ug/L	2.263	35.1	6.45543
Sb 217.582	0.000000	ug/L	0.063	2.0	3.10233
Se 196.026	0.000000	ug/L	0.273	10.5	2.60460
Si 251.611	0.000000	ug/L	0.727	2.4	30.1157
Si 288.158	0.000000	ug/L	5.755	1.4	399.703
Sn 189.925	0.000000	ug/L	0.362	14.0	2.58224
Sr 421.552	0.000000	ug/L	8.162	6.5	125.457
Ti 336.122	0.000000	ug/L	6.412	14.5	44.3535
Tl 190.794	0.000000	ug/L	0.527	20.8	2.54120
V 292.401	0.000000	ug/L	4.649	23.8	19.4963
Zn 202.548	0.000000	ug/L	1.501	10.4	14.3953
Zr 339.198	0.000000	ug/L	0.634	20.8	3.05359

Standard 1 (Std) **6/15/2011, 11:16:15 AM** **Rack 0, Tube 2**

Label	Sol'n Conc.	Units	SD(Int)	%RSD(Int)	Int. (c/s)
Ag 338.289	1000.00	ug/L	41.963	0.4	9897.09
Al 237.312	5000.00	ug/L	138.369	0.6	23471.6
As 188.980	1000.00	ug/L	7.640	0.6	1189.69
B 249.678	1000.00	ug/L	455.207	1.5	29899.0
Ba 493.408	1000.00	ug/L	8005.863	0.3	2788758
Be 313.042	1000.00	ug/L	17099.609	0.5	3741210
Ca 373.690	20000.0	ug/L	581.888	0.5	121733
Cd 214.439	1000.00	ug/L	165.598	0.4	37743.5
Co 228.615	1000.00	ug/L	46.728	0.5	9797.82
Cr 267.716	1000.00	ug/L	253.738	0.5	51376.4
Cu 327.395	1000.00	ug/L	739.871	1.0	75534.8
Fe 273.955	5000.00	ug/L	383.710	0.5	84659.0
K 404.721	20000.0	ug/L	0.132	0.0	344.523
Li 610.365	5000.00	ug/L	1550.641	0.4	386893
Mg 279.078	20000.0	ug/L	368.712	0.4	93481.3
Mn 257.610	1000.00	ug/L	1686.406	0.5	318987
Mo 202.032	1000.00	ug/L	124.177	1.3	9265.93
Na 330.237	20000.0	ug/L	9.294	0.3	3390.17

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Label	Sol'n Conc.	Units	SD(Int)	%RSD(Int)	Int. (c/s)
Ni 216.555	1000.00	ug/L	42.380	0.5	8755.70
Pb 220.353	1000.00	ug/L	23.303	0.5	4964.95
Sb 217.582	1000.00	ug/L	7.421	0.4	1964.48
Se 196.026	1000.00	ug/L	0.438	0.1	642.479
Si 251.611	1000.00	ug/L	24.971	0.5	5356.02
Si 288.158	1000.00	ug/L	71.992	0.6	12251.7
Sn 189.925	1000.00	ug/L	6.968	0.4	1631.32
Sr 421.552	1000.00	ug/L	10421.870	0.3	3195496
Ti 336.122	1000.00	ug/L	1526.423	0.5	290386
Tl 190.794	1000.00	ug/L	7.734	0.7	1055.35
V 292.401	1000.00	ug/L	203.183	0.4	45500.4
Zn 202.548	1000.00	ug/L	143.340	0.6	24882.5
Zr 339.198	1000.00	ug/L	702.165	1.1	64310.5

Standard 2 (Std) **6/15/2011, 11:19:12 AM** **Rack 0, Tube 3**

Label	Sol'n Conc.	Units	SD(Int)	%RSD(Int)	Int. (c/s)
Al 237.312	10000.0	ug/L	244.526	0.5	45484.6
Ca 373.690	40000.0	ug/L	616.840	0.3	234616
Fe 273.955	10000.0	ug/L	560.238	0.3	160986
K 404.721	40000.0	ug/L	4.138	0.6	741.995
Mg 279.078	40000.0	ug/L	406.774	0.2	180023
Na 330.237	40000.0	ug/L	5.529	0.1	7243.15

Standard 3 (Std) **6/15/2011, 11:22:09 AM** **Rack 0, Tube 4**

Label	Sol'n Conc.	Units	SD(Int)	%RSD(Int)	Int. (c/s)
Al 237.312	12500.0	ug/L	199.183	0.4	56145.4
Ca 373.690	50000.0	ug/L	1452.110	0.5	290671
Fe 273.955	12500.0	ug/L	1144.574	0.6	198621
K 404.721	50000.0	ug/L	5.177	0.5	968.196
Mg 279.078	50000.0	ug/L	831.756	0.4	223461
Na 330.237	50000.0	ug/L	25.598	0.3	9167.79

Standard 4 (Std) **6/15/2011, 11:25:05 AM** **Rack 0, Tube 5**

Label	Sol'n Conc.	Units	SD(Int)	%RSD(Int)	Int. (c/s)
Al 237.312	15000.0	ug/L	447.380	0.7	64278.0
Ca 373.690	60000.0	ug/L	1939.307	0.6	331701
Fe 273.955	15000.0	ug/L	1204.954	0.5	225667
K 404.721	60000.0	ug/L	10.600	0.9	1132.34
Mg 279.078	60000.0	ug/L	1296.679	0.5	255002
Na 330.237	60000.0	ug/L	43.606	0.4	10599.3

Standard 5 (Std) **6/15/2011, 11:28:02 AM** **Rack 0, Tube 6**

Label	Sol'n Conc.	Units	SD(Int)	%RSD(Int)	Int. (c/s)
Al 237.312	20000.0	ug/L	534.263	0.6	85916.8
Ca 373.690	80000.0	ug/L	1496.370	0.3	448639
Fe 273.955	20000.0	ug/L	1867.668	0.6	302582
K 404.721	80000.0	ug/L	2.164	0.1	1645.87
Mg 279.078	80000.0	ug/L	1628.776	0.5	345565
Na 330.237	80000.0	ug/L	27.782	0.2	14791.4

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Standard 6 (Std) **6/15/2011, 11:31:01 AM** **Rack 0, Tube 7**

Label	Sol'n Conc.	Units	SD(Int)	%RSD(Int)	Int. (c/s)
Al 237.312	25000.0	ug/L	368.789	0.3	105665
Ca 373.690	100000	ug/L	245.278	0.0	545890
Fe 273.955	25000.0	ug/L	892.855	0.2	366441
K 404.721	100000	ug/L	3.475	0.2	2064.26
Mg 279.078	100000	ug/L	1131.857	0.3	421769
Na 330.237	100000	ug/L	39.776	0.2	18464.9

Ag 338.289 Calibration (ug/L) **6/15/2011, 11:16:15 AM** **Correlation Coefficient: 1.000000**

Label	Flags	Int. (c/s)	Std Conc.	Calc Conc.	Error	%Error
Blank		3.18054	0.000000	0.000000	-	-
Standard 1		9897.09	1000.00	1000.00	0.000000	0.0

Curve Type: Linear Equation: $y = 9.9\,x + 3.2$

Al 237.312 Calibration (ug/L) **6/15/2011, 11:31:01 AM** **Correlation Coefficient: 0.999700**

Label	Flags	Int. (c/s)	Std Conc.	Calc Conc.	Error	%Error
Blank		6.99005	0.000000	-0.000710	-	-
Standard 1		23471.6	5000.00	5048.45	48.4502	1.0
Standard 2		45484.6	10000.0	10021.5	21.4902	0.2
Standard 3		56145.4	12500.0	12523.2	23.2168	0.2
Standard 4		64278.0	15000.0	14476.8	-523.199	-3.5
Standard 5		85916.8	20000.0	19886.1	-113.859	-0.6
Standard 6		105665	25000.0	25131.5	131.484	0.5

Curve Type: Quadratic Equation: $y = 0.0\,x^2 + 4.8\,x + 7.0$

As 188.980 Calibration (ug/L) **6/15/2011, 11:16:15 AM** **Correlation Coefficient: 1.000000**

Label	Flags	Int. (c/s)	Std Conc.	Calc Conc.	Error	%Error
Blank		2.21489	0.000000	0.000000	-	-
Standard 1		1189.69	1000.00	1000.00	0.000000	0.0

Curve Type: Linear Equation: $y = 1.2\,x + 2.2$

B 249.678 Calibration (ug/L) **6/15/2011, 11:16:15 AM** **Correlation Coefficient: 1.000000**

Label	Flags	Int. (c/s)	Std Conc.	Calc Conc.	Error	%Error
Blank		196.602	0.000000	0.000000	-	-
Standard 1		29899.0	1000.00	1000.00	0.000000	0.0

Curve Type: Linear Equation: $y = 29.7\,x + 196.6$

Ba 493.408 Calibration (ug/L) **6/15/2011, 11:16:15 AM** **Correlation Coefficient: 1.000000**

Label	Flags	Int. (c/s)	Std Conc.	Calc Conc.	Error	%Error
Blank		160.332	0.000000	0.000000	-	-
Standard 1		2788758	1000.00	1000.00	0.000000	0.0

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Label	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	QC Value
Cd 214.439	993.382	ug/L	3.84019	0.4	37494.5	99.33821
Co 228.615	974.449	ug/L	6.76421	0.7	9569.33	97.44494
Cr 267.716	978.183	ug/L	6.26616	0.6	50256.7	97.81834
Cu 327.395	964.724	ug/L	7.74606	0.8	72891.4	96.47235
Fe 273.955	1000.98	ug/L	6.04204	0.6	17114.3	100.09770
K 404.721	8785.00	ug/L	370.958	4.2	149.376	87.85005Q
Li 610.365	9049.13	ug/L	33.0897	0.4	700212	90.49127
Mg 279.078	9144.69	ug/L	46.1387	0.5	42687.0	91.44695
Mn 257.610	992.796	ug/L	6.25136	0.6	316767	99.27961
Mo 202.032	991.448	ug/L	14.5487	1.5	9186.82	99.14479
Na 330.237	8107.84	ug/L	13.3698	0.2	1383.28	81.07835Q
Ni 216.555	975.511	ug/L	6.58463	0.7	8573.06	97.55113
Pb 220.353	981.906	ug/L	4.41130	0.4	4875.20	98.19061
Sb 217.582	1001.51	ug/L	10.1343	1.0	1968.99	100.15109
Se 196.026	954.096	ug/L	2.46257	0.3	613.623	95.40962
Si 251.611	512.971	ug/L	12.6925	2.5	3066.26	102.59430
Si 288.158	520.710	ug/L	13.2999	2.6	6831.05	104.14192
Sn 189.925	927.326	ug/L	5.46924	0.6	1513.01	92.73259
Sr 421.552	917.917	ug/L	4.98945	0.5	2933781	91.79168
Ti 336.122	1006.70	ug/L	1.96409	0.2	292332	100.67028
Tl 190.794	991.737	ug/L	0.910555	0.1	1050.66	99.17367
V 292.401	974.279	ug/L	6.80599	0.7	44370.8	97.42789
Zn 202.548	972.012	ug/L	4.05046	0.4	24393.2	97.20120
Zr 339.198	963.723	ug/L	2.66753	0.3	61977.5	96.37227

Cal check done on excel

ICB (ICB) **6/15/2011, 11:45:44 AM** **Rack 0, Tube 10**

Weight: 1 **Volume: 1** **Dilution: 1**

Label	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	QC Value
Ag 338.289	0.041600uv	ug/L	0.207192	498.1	3.66913	0.04160
Al 237.312	0.780209	ug/L	0.575315	73.7	10.7040	0.78021
As 188.980	-0.798554uv	ug/L	0.777677	97.4	1.26677	-0.79855
B 249.678	21.8010	ug/L	3.32894	15.3	843.930	21.80098
Ba 493.408	0.104315	ug/L	0.013603	13.0	451.224	0.10431
Be 313.042	0.080060	ug/L	0.006341	7.9	421.467	0.08006
Ca 373.690	0.418531	ug/L	0.002473	0.6	40.8810	0.41853
Cd 214.439	0.129339	ug/L	0.010285	8.0	7.45856	0.12934
Co 228.615	-0.006406uv	ug/L	0.091870	1434.1	11.1618	-0.00641
Cr 267.716	0.038381uv	ug/L	0.066360	172.9	53.0071	0.03838
Cu 327.395	0.254480	ug/L	0.090726	35.7	71.5756	0.25448
Fe 273.955	-0.785351uv	ug/L	0.146793	18.7	31.3028	-0.78535
K 404.721	497.192	ug/L	478.788	96.3	9.01929	497.19189
Li 610.365	-0.099917uv	ug/L	0.002392	2.4	-9.88672	-0.09992
Mg 279.078	0.919825	ug/L	0.660487	71.8	17.9733	0.91982
Mn 257.610	0.094005	ug/L	0.001439	1.5	65.2051	0.09400
Mo 202.032	6.70732	ug/L	0.133035	2.0	75.7212	6.70732
Na 330.237	276.767	ug/L	32.0686	11.6	8.89209	276.76651
Ni 216.555	0.071616	ug/L	0.086111	120.2	6.66435	0.07162
Pb 220.353	-0.139277uv	ug/L	0.351873	252.6	5.76483	-0.13928
Sb 217.582	1.43942	ug/L	0.370450	25.7	5.92567	1.43942
Se 196.026	1.01820uv	ug/L	1.78120	174.9	3.25614	1.01820
Si 251.611	0.459087	ug/L	0.070581	15.4	32.6724	0.45909
Si 288.158	-0.069484uv	ug/L	0.400844	576.9	399.045	-0.06948
Sn 189.925	0.421329	ug/L	0.142732	33.9	3.26848	0.42133

All ND on Form 3

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Label	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	QC Value
Sr 421.552	0.096847	ug/L	0.005191	5.4	434.917	0.09685
Ti 336.122	0.229528	ug/L	0.032871	14.3	110.995	0.22953
Tl 190.794	1.26471	ug/L	0.676580	53.5	3.87144	1.26471
V 292.401	0.071878	ug/L	0.047337	65.9	22.7721	0.07188
Zn 202.548	0.062784	ug/L	0.029218	46.5	15.8792	0.06278
Zr 339.198	0.319911	ug/L	0.056038	17.5	23.6263	0.31991

All ND on Form

CRI-RL (CRI) **6/15/2011, 11:48:42 AM** **Rack 1, Tube 1**

Weight: 1 **Volume: 1** **Dilution: 1**

Label	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	QC Value
Ag 338.289	4.31592	ug/L	0.186550	4.3	46.8715	86.31847
Al 237.312	104.382	ug/L	1.60264	1.5	503.595	104.38178
As 188.980	9.39253	ug/L	0.006901	0.1	13.3701	93.92528
B 249.678	19.4060	ug/L	0.717403	3.7	776.997	194.05989R
Ba 493.408	11.0583	ug/L	0.053279	0.5	30997.4	110.58281
Be 313.042	1.02764	ug/L	0.004362	0.4	3971.44	102.76434
Ca 373.690	412.796	ug/L	1.59431	0.4	2582.06	103.19907
Cd 214.439	1.12358	ug/L	0.007246	0.6	45.0608	112.35771
Co 228.615	10.1996	ug/L	0.123241	1.2	111.304	101.99555
Cr 267.716	4.99011	ug/L	0.001271	0.0	307.157	99.80226
Cu 327.395	10.8931	ug/L	0.046263	0.4	874.806	108.93078
Fe 273.955	106.393	ug/L	0.744843	0.7	1867.16	106.39288
K 404.721	4182.99	ug/L	24.0813	0.6	69.5939	104.57483
Li 610.365	79.0520	ug/L	0.306041	0.4	6114.83	79.05200
Mg 279.078	419.316	ug/L	2.55560	0.6	1989.19	104.82896
Mn 257.610	10.8849	ug/L	0.035690	0.3	3510.57	108.84880
Mo 202.032	11.7044	ug/L	0.391169	3.3	121.956	117.04438
Na 330.237	2059.53	ug/L	33.7683	1.6	322.759	102.97627
Ni 216.555	10.2111	ug/L	0.087691	0.9	95.8099	102.11101
Pb 220.353	5.03308	ug/L	0.288452	5.7	31.4085	100.66164
Sb 217.582	10.5785	ug/L	0.818199	7.7	23.8525	105.78523
Se 196.026	9.43290	ug/L	0.576404	6.1	8.64558	94.32900
Si 251.611	107.060	ug/L	0.701680	0.7	603.444	107.05992
Si 288.158	106.256	ug/L	0.338313	0.3	1661.59	106.25636
Sn 189.925	52.7800	ug/L	0.232926	0.4	88.5497	105.56001
Sr 421.552	22.0583	ug/L	0.057488	0.3	70636.0	110.29175
Ti 336.122	10.7161	ug/L	0.099918	0.9	3155.67	107.16064
Tl 190.794	8.73594	ug/L	0.917202	10.5	11.7781	87.35939
V 292.401	9.97077	ug/L	0.146620	1.5	473.718	99.70766
Zn 202.548	51.6450	ug/L	0.070523	0.1	1300.97	103.28993
Zr 339.198	10.3419	ug/L	0.023693	0.2	668.107	103.41873

Amount found via excel Linear regression was -1132. Lab used Quadratic Regression

CRI-MCP (CRI) **6/15/2011, 11:51:39 AM** **Rack 1, Tube 2**

Weight: 1 **Volume: 1** **Dilution: 1**

Label	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	QC Value
Ag 338.289	6.33605	ug/L	0.997685	15.7	86.0459	90.51505
Al 237.312	5.31123	ug/L	0.792203	14.9	32.2889	-
As 188.980	50.1808	ug/L	0.866812	1.7	61.8394	100.36163
B 249.678	6.07302	ug/L	0.907779	14.9	378.216	-
Ba 493.408	2164.84	ug/L	21.4699	1.0	6037018	108.24182
Be 313.042	4.16827	ug/L	0.029367	0.7	15735.8	104.20680

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Label	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	QC Value
Ca 373.690	15.9365	ug/L	0.018100	0.1	136.268	-
Cd 214.439	5.33847	ug/L	0.047563	0.9	204.018	106.76942
Co 228.615	-0.234383uv	ug/L	0.296176	126.4	9.03687	-
Cr 267.716	108.735	ug/L	0.746117	0.7	5631.89	108.73472
Cu 327.395	0.440387	ug/L	0.217862	49.5	85.6045	-
Fe 273.955	-0.107161uv	ug/L	0.229050	213.7	44.6829	-
K 404.721	347.489	ug/L	43.4390	12.5	11.3346	-
Li 610.365	0.024775	ug/L	0.005354	21.6	-0.238281	-
Mg 279.078	0.847789	ug/L	0.483984	57.1	17.6343	-
Mn 257.610	0.232085	ug/L	0.002084	0.9	109.247	-
Mo 202.032	0.604367	ug/L	0.147289	24.4	19.2551	-
Na 330.237	267.249	ug/L	7.04591	2.6	-3.73682	-
Ni 216.555	111.312	ug/L	0.972887	0.9	981.564	111.31159
Pb 220.353	16.4362	ug/L	0.388877	2.4	87.9541	109.57453
Sb 217.582	7.10679	ug/L	0.555713	7.8	17.0496	118.44646
Se 196.026	48.6232	ug/L	1.39035	2.9	33.7174	97.24641
Si 251.611	2.50841	ug/L	0.259230	10.3	44.1703	-
Si 288.158	1.75587	ug/L	0.304615	17.3	422.151	-
Sn 189.925	0.340268	ug/L	0.200908	59.0	3.13645	-
Sr 421.552	0.036471	ug/L	0.000433	1.2	242.995	-
Ti 336.122	0.022217	ug/L	0.022472	101.1	50.8042	-
Tl 190.794	2.25940	ug/L	0.205199	9.1	5.01871	112.96980
V 292.401	51.9798	ug/L	0.386769	0.7	2383.60	103.95953
Zn 202.548	946.810	ug/L	6.82951	0.7	23559.8	105.20116
Zr 339.198	0.006362uv	ug/L	0.009150	143.8	3.46271	-

ICSA (ICSA) **6/15/2011, 11:54:36 AM** **Rack 4, Tube 5**

Weight: 1 **Volume: 1** **Dilution: 1**

Label	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	QC Value
Ag 338.289	0.717496	ug/L	0.072490	10.1	11.4634	0.71750
Al 237.312	110247	ug/L	547.533	0.5	4167480	247.46094K
As 188.980	-0.111115uv	ug/L	0.944067	849.6	2.08308	-0.11111
B 249.678	4.79398	ug/L	0.483637	10.1	338.973	4.79398
Ba 493.408	0.899085	ug/L	0.011313	1.3	2667.52	0.89908
Be 313.042	-0.028326	ug/L	0.000201	0.7	293.681	-0.02833
Ca 373.690	98030.1	ug/L	1398.23	1.4	5420498	030.08594K
Cd 214.439	0.129846	ug/L	0.091034	70.1	67.1762	0.12985
Co 228.615	0.194525	ug/L	0.013706	7.0	43.7902	0.19453
Cr 267.716	0.036047	ug/L	0.006934	19.2	52.8873	0.03605
Cu 327.395	0.680814	ug/L	0.106436	15.6	103.823	0.68081
Fe 273.955	113142	ug/L	640.407	0.6	14279963	142.25000K
K 404.721	823.414	ug/L	86.9164	10.6	21.2417	823.41364
Li 610.365	0.929984	ug/L	0.080191	8.6	72.0283	0.92998
Mg 279.078	101684	ug/L	689.379	0.7	4262551	684.07031K
Mn 257.610	-0.600343	ug/L	0.028791	4.8	621.353	-0.60034
Mo 202.032	-0.114810uv	ug/L	0.114535	99.8	12.7116	-0.11481
Na 330.237	406.898	ug/L	6.39404	1.6	31.8015	406.89804
Ni 216.555	1.13235	ug/L	0.537933	47.5	101.797	1.13235
Pb 220.353	-0.357492uv	ug/L	0.305334	85.4	2.01221	-0.35749
Sb 217.582	0.650398uv	ug/L	1.70730	262.5	4.38055	0.65040 ✓
Se 196.026	-2.58311uv	ug/L	0.628111	24.3	0.490952	-2.58311
Si 251.611	-1.95198uv	ug/L	0.598345	30.7	19.7437	-1.95198
Si 288.158	0.748966	ug/L	0.352362	47.0	408.541	0.74897

$\frac{110247}{100000} = 110\%$

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Label	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	QC Value
Sn 189.925	-0.154187uv	ug/L	0.268114	173.9	2.87800	-0.15419
Sr 421.552	-1.37166	ug/L	0.001300	0.1	1364.84	-1.37166
Ti 336.122	0.229988	ug/L	0.050628	22.0	111.129	0.22999
Tl 190.794	-0.192215uv	ug/L	0.384674	200.1	2.50069	-0.19221
V 292.401	-1.26979	ug/L	0.126504	10.0	78.2905	-1.26979
Zn 202.548	0.226552	ug/L	0.773528	341.4	66.2783	0.22655
Zr 339.198	1.08174	ug/L	0.018676	1.7	71.3485	1.08174

ICSAB (ICSAB) **6/15/2011, 11:57:32 AM** **Rack 4, Tube 6**

Weight: 1 **Volume: 1** **Dilution: 1**

Label	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	QC Value
Ag 338.289	590.168	ug/L	2.04933	0.3	5945.14	98.36141
Al 237.312	112454	ug/L	342.251	0.3	424815	112.45412
As 188.980	1884.62	ug/L	11.8581	0.6	2240.34	94.23087
B 249.678	1.74438	ug/L	0.127390	7.3	278.141	-
Ba 493.408	554.141	ug/L	0.823548	0.1	1545437	92.35690
Be 313.042	182.804	ug/L	0.485586	0.3	684498	91.40176
Ca 373.690	97595.1	ug/L	422.397	0.4	540074	97.59514
Cd 214.439	552.652	ug/L	3.35151	0.6	20920.9	92.10873
Co 228.615	552.320	ug/L	2.58657	0.5	5448.32	92.05335
Cr 267.716	553.862	ug/L	2.15977	0.4	28478.2	92.31030
Cu 327.395	583.636	ug/L	6.73448	1.2	44117.6	97.27261
Fe 273.955	115356	ug/L	863.234	0.7	1454703	115.35630
K 404.721	39903.2	ug/L	685.590	1.7	736.428	99.75793
Li 610.365	0.924132	ug/L	0.010084	1.1	71.6104	-
Mg 279.078	102852	ug/L	625.436	0.6	430561	102.85191
Mn 257.610	364.760	ug/L	1.59233	0.4	117162	91.18988
Mo 202.032	-0.205872uv	ug/L	0.083450	40.5	11.8687	-
Na 330.237	291.265	ug/L	23.9100	8.2	5.15955	-
Ni 216.555	547.831	ug/L	2.34277	0.4	4945.48	91.30511
Pb 220.353	1781.43	ug/L	8.86352	0.5	8836.97	89.07165
Sb 217.582	936.040	ug/L	2.80258	0.3	1839.89	93.60396
Se 196.026	906.370	ug/L	5.83199	0.6	582.291	90.63703
Si 251.611	-21.3193uv	ug/L	1.15176	5.4	19.4742	-
Si 288.158	-19.3970	ug/L	1.08952	5.6	412.642	-
Sn 189.925	1.26943	ug/L	0.517175	40.7	5.20241	-
Sr 421.552	-1.38984	ug/L	0.001254	0.1	1292.34	-
Ti 336.122	0.248669	ug/L	0.132846	53.4	116.700	-
Tl 190.794	1799.66	ug/L	23.1004	1.3	1899.67	89.98317
V 292.401	556.696	ug/L	2.07350	0.4	25455.6	92.78262
Zn 202.548	538.733	ug/L	3.26018	0.6	13583.4	89.78884
Zr 339.198	2.30084	ug/L	0.051073	2.2	149.733	-

$\frac{102852}{100000} = 102\%$

RB (Samp) **6/15/2011, 12:00:29 PM** **Rack 4, Tube 2**

Weight: 1 **Volume: 1** **Dilution: 1**

Label	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)
Ag 338.289	0.289725uv	ug/L	0.446907	154.3	6.12585
Al 237.312	5.54825	ug/L	0.130749	2.4	33.3976
As 188.980	0.851634	ug/L	1.12755	132.4	3.22633
B 249.678	0.263257	ug/L	0.117166	44.5	204.236
Ba 493.408	0.177094	ug/L	0.005507	3.1	654.177

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Label	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)
Be 313.042	0.113122	ug/L	0.001053	0.9	545.136
Ca 373.690	2.59258	ug/L	0.341175	13.2	54.5923
Cd 214.439	0.165866	ug/L	0.029032	17.5	8.84004
Co 228.615	0.296270	ug/L	0.034188	11.5	14.1208
Cr 267.716	0.046284uv	ug/L	0.089437	193.2	53.4128
Cu 327.395	0.213722	ug/L	0.103918	48.6	68.5050
Fe 273.955	3.33308	ug/L	0.313108	9.4	101.887
K 404.721	369.604	ug/L	282.358	76.4	6.94434
Li 610.365	-0.051265uv	ug/L	0.159008	310.2	-6.12207
Mg 279.078	3.69383	ug/L	0.683712	18.5	31.0509
Mn 257.610	0.165667	ug/L	0.004826	2.9	88.0852
Mo 202.032	-0.186184uv	ug/L	0.087845	47.2	11.9407
Na 330.237	319.922	ug/L	23.4900	7.3	16.4956
Ni 216.555	-0.013567uv	ug/L	0.129959	957.9	5.97455
Pb 220.353	-0.275870uv	ug/L	0.030481	11.0	5.08740
Sb 217.582	0.368343uv	ug/L	0.846068	229.7	3.82494
Se 196.026	1.79673	ug/L	0.264051	14.7	3.75431
Si 251.611	0.949338	ug/L	0.314172	33.1	35.1216
Si 288.158	0.297079uv	ug/L	0.819786	275.9	403.112
Sn 189.925	0.191606uv	ug/L	0.379627	198.1	2.89434
Sr 421.552	0.155919	ug/L	0.000946	0.6	623.818
Ti 336.122	-0.000304uv	ug/L	0.015208	4998.8	44.2651
Tl 190.794	5.35090	ug/L	1.87397	35.0	8.17403
V 292.401	-0.003163uv	ug/L	0.053898	1704.1	19.3559
Zn 202.548	0.218441	ug/L	0.102042	46.7	19.7445
Zr 339.198	-0.006840uv	ug/L	0.004565	66.7	2.61371

Tier 3 check

CCV (CCV) **6/15/2011, 12:03:25 PM** **Rack 4, Tube 3**

Weight: 1 **Volume: 1** **Dilution: 1**

Label	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	QC Value
Ag 338.289	998.154	ug/L	5.59859	0.6	10062.8	99.81537
Al 237.312	5039.33	ug/L	44.4794	0.9	23434.8	100.78661
As 188.980	1000.05	ug/L	8.37497	0.8	1190.09	100.00528
B 249.678	994.407	ug/L	20.5181	2.1	29823.3	99.44069
Ba 493.408	997.581	ug/L	5.89863	0.6	2782013	99.75813
Be 313.042	1000.07	ug/L	6.63582	0.7	3741914	100.00720
Ca 373.690	20260.5	ug/L	122.908	0.6	122093	101.30225
Cd 214.439	1003.27	ug/L	5.99815	0.6	37870.8	100.32744
Co 228.615	1000.77	ug/L	7.47758	0.7	9828.21	100.07668
Cr 267.716	1001.44	ug/L	7.19277	0.7	51450.1	100.14354
Cu 327.395	1002.72	ug/L	3.35133	0.3	75760.1	100.27216
Fe 273.955	5150.10	ug/L	12.7773	0.2	85633.0	103.00200
K 404.721	19484.9	ug/L	256.033	1.3	338.249	97.42442
Li 610.365	5008.68	ug/L	25.4379	0.5	387566	100.17368
Mg 279.078	20292.7	ug/L	113.846	0.6	93549.0	101.46348
Mn 257.610	998.504	ug/L	6.05810	0.6	318681	99.85040
Mo 202.032	996.685	ug/L	14.5601	1.5	9235.28	99.66846
Na 330.237	19281.7	ug/L	74.1523	0.4	3379.87	96.40873
Ni 216.555	992.198	ug/L	7.37102	0.7	8723.74	99.21978
Pb 220.353	1001.33	ug/L	7.89393	0.8	4971.40	100.13332
Sb 217.582	998.367	ug/L	6.81648	0.7	1962.84	99.83665
Se 196.026	997.274	ug/L	12.1679	1.2	641.232	99.72745
Si 251.611	997.937	ug/L	6.70552	0.7	5647.20	99.79372

Calculated @ 20637Mb on excel

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Label	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	QC Value
Si 288.158	997.497	ug/L	7.18729	0.7	12481.1	99.74969
Sn 189.925	1000.21	ug/L	3.91278	0.4	1631.78	100.02053
Sr 421.552	998.268	ug/L	5.42682	0.5	3191211	99.82679
Ti 336.122	998.399	ug/L	8.18641	0.8	289921	99.83987
Tl 190.794	1000.98	ug/L	12.9958	1.3	1060.52	100.09782
V 292.401	999.854	ug/L	6.21938	0.6	45544.8	99.98542
Zn 202.548	1000.88	ug/L	6.47345	0.6	25121.4	100.08812
Zr 339.198	997.483	ug/L	13.4368	1.3	64148.3	99.74826

CCB (CCB) **6/15/2011, 12:06:21 PM** **Rack 4, Tube 4**

Weight: 1 **Volume: 1** **Dilution: 1**

Label	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	QC Value
Ag 338.289	0.159679	ug/L	0.207488	129.9	4.82440	0.15968
Al 237.312	0.396402	ug/L	0.060974	15.4	8.87781	0.39640
As 188.980	-0.333602uv	ug/L	0.698860	209.5	1.81886	-0.33360
B 249.678	17.5248	ug/L	3.34252	19.1	716.927	17.52477
Ba 493.408	0.081041	ug/L	0.011161	13.8	386.323	0.08104
Be 313.042	0.066017	ug/L	0.008221	12.5	368.880	0.06602
Ca 373.690	0.365175	ug/L	0.311635	85.3	40.5947	0.36517
Cd 214.439	0.110341	ug/L	0.027545	25.0	6.74188	0.11034
Co 228.615	0.104024	ug/L	0.082078	78.9	12.2430	0.10402
Cr 267.716	-0.035509uv	ug/L	0.047624	134.1	49.2147	-0.03551
Cu 327.395	0.184961	ug/L	0.127355	68.9	66.3307	0.18496
Fe 273.955	-0.305590uv	ug/L	0.007338	2.4	39.5242	-0.30559
K 404.721	539.011	ug/L	186.656	34.6	9.69385	539.01068
Li 610.365	-0.044905uv	ug/L	0.032251	71.8	-5.62988	-0.04490
Mg 279.078	0.764944	ug/L	0.196117	25.6	17.2436	0.76494
Mn 257.610	0.065192	ug/L	0.004692	7.2	56.0136	0.06519
Mo 202.032	6.18076	ug/L	0.300649	4.9	70.8493	6.18076
Na 330.237	251.200	ug/L	7.49816	3.0	4.38550	251.19965
Ni 216.555	0.104885	ug/L	0.021158	20.2	6.97072	0.10489
Pb 220.353	-0.419376uv	ug/L	0.077561	18.5	4.37595	-0.41938
Sb 217.582	0.625511	ug/L	0.676515	108.2	4.32925	0.62551
Se 196.026	0.709355	ug/L	0.392793	55.4	3.05850	0.70936
Si 251.611	0.741189	ug/L	0.038852	5.2	34.0874	0.74119
Si 288.158	0.303896	ug/L	0.348137	114.6	403.259	0.30390
Sn 189.925	0.283545	ug/L	0.289839	102.2	3.04406	0.28355
Sr 421.552	0.078424	ug/L	0.006977	8.9	376.048	0.07842
Ti 336.122	0.241013	ug/L	0.024391	10.1	114.329	0.24101
Tl 190.794	2.54857	ug/L	0.885401	34.7	5.22320	2.54857
V 292.401	-0.063330uv	ug/L	0.090255	142.5	16.6233	-0.06333
Zn 202.548	0.161029	ug/L	0.056276	34.9	18.3081	0.16103
Zr 339.198	0.720929	ug/L	0.035213	4.9	49.4147	0.72093

→ correctly reported on Form 3

ICV K Na Ca Mg 75ppm (Samp) **6/15/2011, 12:09:17 PM** **Rack 1, Tube 3**

Weight: 1 **Volume: 1** **Dilution: 1**

Label	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)
Ag 338.289	0.081053	ug/L	0.113031	139.5	4.05310
Al 237.312	7159.92	ug/L	53.4580	0.7	32951.4
As 188.980	0.122840uv	ug/L	1.48975	1212.8	2.36089
B 249.678	6.36537	ug/L	0.458685	7.2	385.635

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Label	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)
Se 196.026	-1.21391uv	ug/L	0.648767	53.4	1.83012
Si 251.611	4897.31	ug/L	7.90627	0.2	26112.8
Si 288.158	4818.16	ug/L	4.03790	0.1	57504.7
Sn 189.925	0.277242uv	ug/L	1.15319	415.9	3.38439
Sr 421.552	1058.61	ug/L	2.11364	0.2	3392410
Ti 336.122	-0.114199uv	ug/L	0.010813	9.5	11.1975
Tl 190.794	-1.10247uv	ug/L	0.427185	38.7	1.65476
V 292.401	2.95955	ug/L	0.119072	4.0	283.288
Zn 202.548	0.626680	ug/L	0.418694	66.8	30.0573
Zr 339.198	0.713090	ug/L	0.021594	3.0	48.0972

MB 360-75089/1-A (Samp) **6/15/2011, 12:39:57 PM** **Rack 1, Tube 8**

Weight: 1 **Volume: 1** **Dilution: 1**

Label	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)
Ag 338.289	0.154286uv	ug/L	0.463806	300.6	4.83417
Al 237.312	1.60084	ug/L	0.598117	37.4	14.6087
As 188.980	-0.505385uv	ug/L	0.686089	135.8	1.61499
B 249.678	-1.00270uv	ug/L	0.455565	45.4	166.799
Ba 493.408	0.048044	ug/L	0.003683	7.7	294.308
Be 313.042	-0.020200uv	ug/L	0.001102	5.5	46.3479
Ca 373.690	8.52783	ug/L	0.495630	5.8	91.0065
Cd 214.439	0.007746	ug/L	0.009626	124.3	2.87209
Co 228.615	-0.206979uv	ug/L	0.132764	64.1	9.19765
Cr 267.716	0.308922	ug/L	0.072290	23.4	66.8928
Cu 327.395	0.132984	ug/L	0.117736	88.5	62.4008
Fe 273.955	2.83470	ug/L	0.442724	15.6	93.3503
K 404.721	256.618	ug/L	104.058	40.5	5.10901
Li 610.365	0.117773	ug/L	0.049279	41.8	6.95801
Mg 279.078	4.40054	ug/L	0.640750	14.6	34.3815
Mn 257.610	1.57364	ug/L	0.021145	1.3	537.165
Mo 202.032	-0.783744uv	ug/L	0.019635	2.5	6.41187
Na 330.237	308.285	ug/L	13.0500	4.2	14.4434
Ni 216.555	0.069605uv	ug/L	0.230034	330.5	6.65855
Pb 220.353	0.245160	ug/L	0.161088	65.7	7.67094
Sb 217.582	-0.181068uv	ug/L	0.399473	220.6	2.74709
Se 196.026	2.13068	ug/L	2.32086	108.9	3.96874
Si 251.611	6.10545	ug/L	0.166121	2.7	62.5415
Si 288.158	6.42579	ug/L	0.548504	8.5	475.606
Sn 189.925	0.736050	ug/L	0.229241	31.1	3.78110
Sr 421.552	-0.009840uv	ug/L	0.000581	5.9	94.5261
Ti 336.122	0.103255	ug/L	0.045135	43.7	74.3328
Tl 190.794	-1.05002uv	ug/L	0.641499	61.1	1.43387
V 292.401	-0.071083uv	ug/L	0.034065	47.9	16.2747
Zn 202.548	0.332928	ug/L	0.083636	25.1	22.5734
Zr 339.198	0.218699	ug/L	0.004007	1.8	17.1175

LCS 360-75089/2-A (Samp) **6/15/2011, 12:42:53 PM** **Rack 1, Tube 9**

Weight: 1 **Volume: 1** **Dilution: 1**

Label	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)
Ag 338.289	993.577	ug/L	3.73242	0.4	10018.0
Al 237.312	4927.35	ug/L	36.0790	0.7	22926.5

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Label	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)
As 188.980	986.018	ug/L	7.29821	0.7	1173.42
B 249.678	996.412	ug/L	27.4695	2.8	29883.6
Ba 493.408	995.998	ug/L	6.34204	0.6	2777596
Be 313.042	983.408	ug/L	7.11962	0.7	3679573
Ca 373.690	20271.2	ug/L	152.111	0.8	122154
Cd 214.439	989.384	ug/L	7.26407	0.7	37346.5
Co 228.615	995.764	ug/L	6.87789	0.7	9779.94
Cr 267.716	1003.93	ug/L	7.89539	0.8	51577.9
Cu 327.395	1010.28	ug/L	22.7961	2.3	76330.7
Fe 273.955	5113.84	ug/L	15.7324	0.3	85049.3
K 404.721	19086.9	ug/L	87.5514	0.5	331.027
Li 610.365	4792.84	ug/L	31.4486	0.7	370865
Mg 279.078	19845.3	ug/L	141.477	0.7	91532.3
Mn 257.610	999.368	ug/L	7.31647	0.7	318952
Mo 202.032	1038.87	ug/L	13.5623	1.3	9625.58
Na 330.237	18567.1	ug/L	192.444	1.0	3251.68
Ni 216.555	992.637	ug/L	19.4548	2.0	8727.13
Pb 220.353	987.953	ug/L	8.06142	0.8	4905.06
Sb 217.582	1012.98	ug/L	4.95018	0.5	1991.47
Se 196.026	967.008	ug/L	3.59539	0.4	621.866
Si 251.611	1020.09	ug/L	7.78016	0.8	5773.58
Si 288.158	1018.27	ug/L	8.90616	0.9	12731.1
Sn 189.925	1017.94	ug/L	6.99166	0.7	1660.66
Sr 421.552	996.010	ug/L	6.16725	0.6	3184000
Ti 336.122	1033.72	ug/L	8.28753	0.8	300177
Tl 190.794	964.754	ug/L	14.1532	1.5	1022.38
V 292.401	1005.56	ug/L	7.94761	0.8	45805.6
Zn 202.548	985.478	ug/L	6.46012	0.7	24740.0
Zr 339.198	1035.98	ug/L	10.4917	1.0	66623.7

calculated @ 20,152 on excel.

LCSD 360-75089/3-A (Samp) **6/15/2011, 12:45:50 PM** **Rack 1, Tube 10**

Weight: 1 **Volume: 1** **Dilution: 1**

Label	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)
Ag 338.289	993.888	ug/L	7.55202	0.8	10021.0
Al 237.312	4931.48	ug/L	40.2896	0.8	22945.3
As 188.980	986.666	ug/L	6.48480	0.7	1174.19
B 249.678	1016.45	ug/L	19.6442	1.9	30478.7
Ba 493.408	995.407	ug/L	7.47481	0.8	2775950
Be 313.042	980.192	ug/L	7.34832	0.7	3667541
Ca 373.690	20249.2	ug/L	168.856	0.8	122024
Cd 214.439	990.114	ug/L	7.05985	0.7	37374.1
Co 228.615	996.236	ug/L	8.81717	0.9	9784.50
Cr 267.716	1003.25	ug/L	8.65230	0.9	51543.1
Cu 327.395	989.017	ug/L	2.45541	0.2	74725.6
Fe 273.955	5102.60	ug/L	13.4661	0.3	84868.4
K 404.721	19059.5	ug/L	250.356	1.3	330.530
Li 610.365	4803.37	ug/L	26.6287	0.6	371679
Mg 279.078	19865.8	ug/L	140.687	0.7	91624.9
Mn 257.610	999.039	ug/L	8.33720	0.8	318848
Mo 202.032	1042.69	ug/L	13.4562	1.3	9660.94
Na 330.237	18583.9	ug/L	109.278	0.6	3254.67
Ni 216.555	987.418	ug/L	11.9455	1.2	8681.48
Pb 220.353	988.894	ug/L	7.30732	0.7	4909.72

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Label	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)
Sb 217.582	1007.31	ug/L	6.52788	0.6	1980.35
Se 196.026	969.785	ug/L	8.47423	0.9	623.644
Si 251.611	1012.93	ug/L	8.06544	0.8	5734.39
Si 288.158	1012.75	ug/L	9.17823	0.9	12664.2
Sn 189.925	1018.65	ug/L	11.1091	1.1	1661.82
Sr 421.552	995.511	ug/L	8.35408	0.8	3182401
Ti 336.122	1031.46	ug/L	3.90203	0.4	299520
Tl 190.794	972.473	ug/L	17.0940	1.8	1030.50
V 292.401	1004.60	ug/L	9.16412	0.9	45761.5
Zn 202.548	985.841	ug/L	7.80925	0.8	24744.5
Zr 339.198	1036.85	ug/L	11.2364	1.1	66680.3

360-34253-K-1-A (Samp) **6/15/2011, 12:48:54 PM** **Rack 1, Tube 11**
Weight: 1 **Volume: 1** **Dilution: 1**

Label	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)
Ag 338.289	-0.278769uv	ug/L	0.378736	135.9	2.82056
Al 237.312	90.6199	ug/L	0.575177	0.6	438.130
As 188.980	1.87033	ug/L	1.06830	57.1	4.44004
B 249.678	34.6896	ug/L	3.11551	9.0	1396.14
Ba 493.408	28.3022	ug/L	0.102005	0.4	79083.7
Be 313.042	0.035351	ug/L	0.021288	60.2	292.389
Ca 373.690	24710.2	ug/L	195.282	0.8	148007
Cd 214.439	0.092264	ug/L	0.013725	14.9	9.41640
Co 228.615	5.21890	ug/L	0.274695	5.3	63.9585
Cr 267.716	12.3227	ug/L	0.019103	0.2	683.506
Cu 327.395	1.07050	ug/L	0.006303	0.6	133.278
Fe 273.955	4566.30	ug/L	39.5452	0.9	76188.4
K 404.721	2402.70	ug/L	137.575	5.7	40.5823
Li 610.365	0.329103	ug/L	0.054472	16.6	23.4180
Mg 279.078	4376.17	ug/L	33.1625	0.8	20544.8
Mn 257.610	813.841	ug/L	5.95197	0.7	259649
Mo 202.032	7.43748	ug/L	0.147407	2.0	82.5070
Na 330.237	97109.7	ug/L	735.424	0.8	17946.9
Ni 216.555	4.11949	ug/L	0.040940	1.0	46.7430
Pb 220.353	0.097184uv	ug/L	0.527632	542.9	6.79492
Sb 217.582	-0.385716uv	ug/L	0.015018	3.9	2.34596
Se 196.026	-2.69642uv	ug/L	0.605010	22.4	1.28235
Si 251.611	4853.74	ug/L	46.2071	1.0	25880.7
Si 288.158	4771.24	ug/L	30.5955	0.6	56948.0
Sn 189.925	1.69629	ug/L	0.253460	14.9	5.37139
Sr 421.552	110.780	ug/L	0.682954	0.6	355621
Ti 336.122	0.747535	ug/L	0.032714	4.4	261.491
Tl 190.794	3.59842	ug/L	0.426749	11.9	6.38733
V 292.401	0.376187	ug/L	0.051706	13.7	59.1362
Zn 202.548	12.7139	ug/L	0.157101	1.2	333.131
Zr 339.198	6.95301	ug/L	0.205343	3.0	450.123

✓ calculated on excel.

360-34253-B-1-A DU (Samp) **6/15/2011, 12:51:52 PM** **Rack 1, Tube 12**
Weight: 1 **Volume: 1** **Dilution: 1**

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Label	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)
Ag 338.289	-0.067559uv	ug/L	0.339451	502.5	4.81061
Al 237.312	87.5342	ug/L	0.711962	0.8	423.456
As 188.980	1.73275	ug/L	2.35962	136.2	4.27648
B 249.678	22.3621	ug/L	0.407403	1.8	1024.96
Ba 493.408	27.6018	ug/L	0.180178	0.7	77130.7
Be 313.042	0.010271	ug/L	0.003051	29.7	197.666
Ca 373.690	24125.7	ug/L	165.506	0.7	144605
Cd 214.439	0.051910	ug/L	0.020124	38.8	7.81874
Co 228.615	5.17639	ug/L	0.150781	2.9	63.5031
Cr 267.716	11.7815	ug/L	0.091868	0.8	655.728
Cu 327.395	1.34438	ug/L	0.091615	6.8	153.950
Fe 273.955	4461.28	ug/L	33.1902	0.7	74484.8
K 404.721	2290.14	ug/L	330.519	14.4	38.7253
Li 610.365	0.322369	ug/L	0.042086	13.1	22.8945
Mg 279.078	4284.67	ug/L	24.8368	0.6	20117.5
Mn 257.610	795.831	ug/L	5.29100	0.7	253903
Mo 202.032	1.39057	ug/L	0.357145	25.7	26.5587
Na 330.237	95018.5	ug/L	870.393	0.9	17541.0
Ni 216.555	4.57019	ug/L	0.106781	2.3	50.5789
Pb 220.353	-0.004422uv	ug/L	0.683841	15462.9	6.29428
Sb 217.582	-0.072849uv	ug/L	0.513278	704.6	2.95955
Se 196.026	0.266799uv	ug/L	4.36352	1635.5	3.16975
Si 251.611	4717.01	ug/L	64.9468	1.4	25152.5
Si 288.158	4676.09	ug/L	25.3761	0.5	55820.3
Sn 189.925	1.11511	ug/L	0.907829	81.4	4.42425
Sr 421.552	108.490	ug/L	0.749343	0.7	348268
Ti 336.122	0.587652	ug/L	0.017371	3.0	215.068
Tl 190.794	-0.064532uv	ug/L	0.181551	281.3	2.52964
V 292.401	0.349095	ug/L	0.107962	30.9	57.3706
Zn 202.548	12.2077	ug/L	0.033697	0.3	320.548
Zr 339.198	3.13452	ug/L	0.228674	7.3	204.567

calculated on excel sheet

CCV (CCV) **6/15/2011, 12:55:02 PM** **Rack 4, Tube 3**

Weight: 1 **Volume: 1** **Dilution: 1**

Label	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	QC Value
Ag 338.289	997.183	ug/L	1.43079	0.1	10053.7	99.71831
Al 237.312	5023.04	ug/L	23.6018	0.5	23360.9	100.46089
As 188.980	1002.62	ug/L	1.17827	0.1	1193.14	100.26206
B 249.678	999.216	ug/L	14.9375	1.5	29966.3	99.92163
Ba 493.408	994.601	ug/L	2.81047	0.3	2773701	99.46007
Be 313.042	998.897	ug/L	4.82023	0.5	3737518	99.88966
Ca 373.690	20304.7	ug/L	37.6410	0.2	122352	101.52373
Cd 214.439	1006.61	ug/L	0.060508	0.0	37996.5	100.66055
Co 228.615	1002.43	ug/L	0.930408	0.1	9844.55	100.24321
Cr 267.716	1003.68	ug/L	2.37423	0.2	51565.3	100.36812
Cu 327.395	989.875	ug/L	9.35699	0.9	74790.5	98.98753
Fe 273.955	5131.25	ug/L	70.9085	1.4	85329.4	102.62504
K 404.721	20004.6	ug/L	380.581	1.9	347.686	100.02312
Li 610.365	5002.52	ug/L	4.34242	0.1	387089	100.05030
Mg 279.078	20335.4	ug/L	24.0043	0.1	93741.4	101.67698
Mn 257.610	998.932	ug/L	1.91697	0.2	318817	99.89316
Mo 202.032	1006.85	ug/L	6.90543	0.7	9329.37	100.68541
Na 330.237	19230.9	ug/L	8.03505	0.0	3370.64	96.15430

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Label	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	QC Value
Ni 216.555	998.356	ug/L	6.25136	0.6	8777.72	99.83562
Pb 220.353	1003.38	ug/L	2.44453	0.2	4981.54	100.33765
Sb 217.582	995.982	ug/L	2.00704	0.2	1958.17	99.59822
Se 196.026	990.163	ug/L	6.09060	0.6	636.683	99.01630
Si 251.611	999.790	ug/L	3.79612	0.4	5657.19	99.97905
Si 288.158	998.929	ug/L	4.63681	0.5	12497.5	99.89291
Sn 189.925	1003.14	ug/L	0.180229	0.0	1636.56	100.31429
Sr 421.552	995.493	ug/L	3.36765	0.3	3182348	99.54934
Ti 336.122	1000.61	ug/L	2.00432	0.2	290564	100.06143
Tl 190.794	1000.66	ug/L	7.20171	0.7	1060.19	100.06609
V 292.401	1000.82	ug/L	3.45250	0.3	45588.8	100.08197
Zn 202.548	1006.35	ug/L	0.433094	0.0	25254.9	100.63477
Zr 339.198	1010.20	ug/L	3.27676	0.3	64966.4	101.02037

CCB (CCB) **6/15/2011, 12:57:59 PM** **Rack 4, Tube 4**

Weight: 1 **Volume: 1** **Dilution: 1**

Label	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	QC Value
Ag 338.289	0.025860uv	ug/L	0.481185	1860.7	3.47723	0.02586
Al 237.312	1.31955	ug/L	0.276542	21.0	13.2706	1.31955
As 188.980	-0.701163uv	ug/L	0.494971	70.6	1.38235	-0.70116
B 249.678	22.5677	ug/L	3.84986	17.1	866.732	22.56769
Ba 493.408	0.089340	ug/L	0.006686	7.5	409.464	0.08934
Be 313.042	0.077636	ug/L	0.005807	7.5	412.388	0.07764
Ca 373.690	0.272881	ug/L	0.250466	91.8	40.0315	0.27288
Cd 214.439	0.163759	ug/L	0.018594	11.4	8.75798	0.16376 ✓ ok
Co 228.615	-0.061387uv	ug/L	0.022460	36.6	10.6241	-0.06139
Cr 267.716	-0.159569uv	ug/L	0.005846	3.7	42.8473	-0.15957
Cu 327.395	0.178885	ug/L	0.059066	33.0	65.8684	0.17888
Fe 273.955	-0.266894uv	ug/L	0.014001	5.2	40.1854	-0.26689
K 404.721	401.712	ug/L	110.611	27.5	7.46338	401.71185
Li 610.365	-0.036588uv	ug/L	0.074819	204.5	-4.98633	-0.03659
Mg 279.078	1.31627	ug/L	0.137039	10.4	19.8422	1.31627 ✓
Mn 257.610	0.074722	ug/L	0.002731	3.7	59.0576	0.07472
Mo 202.032	6.65666	ug/L	0.297807	4.5	75.2525	6.65666
Na 330.237	299.172	ug/L	14.4392	4.8	12.8401	299.17242 299 on Form 3
Ni 216.555	0.077571uv	ug/L	0.153507	197.9	6.72705	0.07757
Pb 220.353	-0.470083uv	ug/L	0.127147	27.0	4.12451	-0.47008
Sb 217.582	1.08279	ug/L	0.433447	40.0	5.22624	1.08279
Se 196.026	3.18644	ug/L	0.621577	19.5	4.64353	3.18644
Si 251.611	1.41772	ug/L	0.495159	34.9	37.7408	1.41772
Si 288.158	0.799236	ug/L	0.074861	9.4	409.249	0.79924
Sn 189.925	0.615524	ug/L	0.404635	65.7	3.58477	0.61552
Sr 421.552	0.088746	ug/L	0.005848	6.6	409.026	0.08875
Ti 336.122	0.239810	ug/L	0.019388	8.1	113.980	0.23981
Tl 190.794	1.29619	ug/L	0.700551	54.0	3.90437	1.29619
V 292.401	0.047505	ug/L	0.039405	83.0	21.6641	0.04750
Zn 202.548	0.119817	ug/L	0.002236	1.9	17.2847	0.11982
Zr 339.198	0.737962	ug/L	0.058486	7.9	50.5101	0.73796

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360-34253-K-1-B MS (Samp) **6/15/2011, 1:00:55 PM** **Rack 1, Tube 13**

Weight: 1 **Volume: 1** **Dilution: 1**

Label	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)
Ag 338.289	969.958	ug/L	4.62174	0.5	9778.84
Al 237.312	4873.77	ug/L	40.9065	0.8	22682.9
As 188.980	976.975	ug/L	8.89714	0.9	1162.67
B 249.678	994.986	ug/L	22.0339	2.2	29994.6
Ba 493.408	960.856	ug/L	7.86924	0.8	2679600
Be 313.042	950.966	ug/L	8.74078	0.9	3558223
Ca 373.690	43678.2	ug/L	346.192	0.8	255958
Cd 214.439	953.479	ug/L	5.71348	0.6	35994.3
Co 228.615	957.994	ug/L	7.80666	0.8	9410.62
Cr 267.716	973.221	ug/L	8.99882	0.9	50002.0
Cu 327.395	962.742	ug/L	8.82023	0.9	72741.5
Fe 273.955	9216.44	ug/L	90.5877	1.0	149390
K 404.721	24018.4	ug/L	253.496	1.1	421.787
Li 610.365	4697.40	ug/L	32.4406	0.7	363480
Mg 279.078	23158.1	ug/L	144.207	0.6	106418
Mn 257.610	1653.04	ug/L	12.5185	0.8	527470
Mo 202.032	1002.23	ug/L	13.4178	1.3	9286.59
Na 330.237	111478	ug/L	884.121	0.8	20732.9
Ni 216.555	949.777	ug/L	12.2432	1.3	8355.73
Pb 220.353	936.271	ug/L	4.87038	0.5	4648.67
Sb 217.582	993.870	ug/L	8.06768	0.8	1953.94
Se 196.026	951.520	ug/L	10.1739	1.1	612.280
Si 251.611	5498.07	ug/L	30.2105	0.5	29610.9
Si 288.158	5438.91	ug/L	38.3733	0.7	65119.4
Sn 189.925	977.499	ug/L	9.03831	0.9	1594.81
Sr 421.552	1039.18	ug/L	9.18315	0.9	3323308
Ti 336.122	982.633	ug/L	11.0028	1.1	285344
Tl 190.794	901.922	ug/L	15.8791	1.8	956.111
V 292.401	964.991	ug/L	7.97208	0.8	43978.9
Zn 202.548	960.543	ug/L	6.36331	0.7	24112.2
Zr 339.198	1001.93	ug/L	8.17040	0.8	64434.0

See excel sheet for Tier 3 calc check

360-34253-K-1-A sd (Samp) **6/15/2011, 1:03:52 PM** **Rack 1, Tube 14**

Weight: 1 **Volume: 1** **Dilution: 1**

Label	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)
Ag 338.289	0.329364uv	ug/L	0.588388	178.6	6.94659
Al 237.312	19.1841	ug/L	0.003555	0.0	98.2926
As 188.980	0.292908uv	ug/L	0.820568	280.1	2.56360
B 249.678	25.5254	ug/L	3.28145	12.9	989.364
Ba 493.408	6.19113	ug/L	0.007859	0.1	17424.9
Be 313.042	0.015175	ug/L	0.017544	115.6	186.801
Ca 373.690	5071.79	ug/L	9.03322	0.2	31096.6
Cd 214.439	0.021350uv	ug/L	0.061666	288.8	4.09206
Co 228.615	1.08067	ug/L	0.106412	9.8	22.1486
Cr 267.716	2.30846	ug/L	0.054849	2.4	169.520
Cu 327.395	0.289876	ug/L	0.014294	4.9	74.2698
Fe 273.955	943.296	ug/L	2.07389	0.2	16121.5
K 404.721	286.652	ug/L	42.4567	14.8	5.68677
Li 610.365	0.200159	ug/L	0.014510	7.2	13.3564
Mg 279.078	958.379	ug/L	1.76453	0.2	4526.74

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061511tjs@720/725/730/735-ES@Quant@. All Data Report 6/16/2011, 2:53:55 PM

360-34253-K-2-A (Samp) **6/15/2011, 1:09:52 PM** **Rack 1, Tube 16**

Weight: 1 **Volume: 1** **Dilution: 1**

Label	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)
Ag 338.289	-0.191087uv	ug/L	0.107988	56.5	3.61975
Al 237.312	100.395	ug/L	0.042754	0.0	484.614
As 188.980	0.979642	ug/L	1.29794	132.5	3.38224
B 249.678	33.8057	ug/L	2.54376	7.5	1367.99
Ba 493.408	28.3804	ug/L	0.075128	0.3	79302.0
Be 313.042	0.024951	ug/L	0.019948	79.9	253.706
Ca 373.690	24820.7	ug/L	64.9751	0.3	148658
Cd 214.439	0.664710	ug/L	0.006853	1.0	31.1005
Co 228.615	5.40039	ug/L	0.118819	2.2	65.7816
Cr 267.716	11.9444	ug/L	0.098800	0.8	664.088
Cu 327.395	0.958256	ug/L	0.035292	3.7	124.809
Fe 273.955	4683.49	ug/L	21.7111	0.5	78086.9
K 404.721	2189.92	ug/L	276.133	12.6	37.0981
Li 610.365	0.278228	ug/L	0.076818	27.6	19.4824
Mg 279.078	4416.88	ug/L	14.1867	0.3	20734.9
Mn 257.610	811.958	ug/L	2.13759	0.3	259048
Mo 202.032	5.35635	ug/L	0.221279	4.1	63.2519
Na 330.237	97935.2	ug/L	99.3982	0.1	18107.2
Ni 216.555	4.23802	ug/L	0.253515	6.0	47.8669
Pb 220.353	0.434555	ug/L	0.108120	24.9	8.46423
Sb 217.582	1.44974	ug/L	1.83572	126.6	5.94688
Se 196.026	-1.17850uv	ug/L	2.68740	228.0	2.25211
Si 251.611	4808.04	ug/L	4.35692	0.1	25637.5
Si 288.158	4766.72	ug/L	3.75305	0.1	56894.9
Sn 189.925	1.71836	ug/L	0.544693	31.7	5.40758
Sr 421.552	110.761	ug/L	0.169424	0.2	355565
Ti 336.122	1.05345	ug/L	0.021993	2.1	350.312
Tl 190.794	0.016340uv	ug/L	0.654556	4005.9	2.61679
V 292.401	0.489445	ug/L	0.019755	4.0	64.4124
Zn 202.548	20.6513	ug/L	0.085903	0.4	530.557
Zr 339.198	4.82325	ug/L	0.091931	1.9	313.163

✓ verified on Form I

Calcket on excel sheet

✓ 21 Reported in EDD ✓

360-34253-K-2-B MS (Samp) **6/15/2011, 1:12:48 PM** **Rack 1, Tube 17**

Weight: 1 **Volume: 1** **Dilution: 1**

Label	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)
Ag 338.289	986.027	ug/L	2.26426	0.2	9941.16
Al 237.312	4961.19	ug/L	29.6022	0.6	23080.1
As 188.980	991.021	ug/L	0.411213	0.0	1179.36
B 249.678	1016.57	ug/L	14.5670	1.4	30642.7
Ba 493.408	976.403	ug/L	4.17346	0.4	2722954
Be 313.042	968.351	ug/L	4.00074	0.4	3623273
Ca 373.690	44826.1	ug/L	216.819	0.5	262333
Cd 214.439	971.916	ug/L	1.41698	0.1	36690.3
Co 228.615	975.368	ug/L	5.80044	0.6	9581.15
Cr 267.716	991.958	ug/L	7.25920	0.7	50963.6
Cu 327.395	986.246	ug/L	6.20730	0.6	74516.0
Fe 273.955	9520.78	ug/L	65.8279	0.7	154027
K 404.721	24320.4	ug/L	1.37140	0.0	427.470
Li 610.365	4783.70	ug/L	24.2823	0.5	370157
Mg 279.078	23579.5	ug/L	176.629	0.7	108303

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061511tjs@720/725/730/735-ES@Quant@. All Data Report 6/16/2011, 2:53:55 PM

Label	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)
Mn 257.610	1684.96	ug/L	12.2255	0.7	537654
Mo 202.032	1017.54	ug/L	12.6981	1.2	9428.30
Na 330.237	114415	ug/L	445.626	0.4	21304.9
Ni 216.555	964.341	ug/L	12.2439	1.3	8483.85
Pb 220.353	952.383	ug/L	4.31510	0.5	4728.55
Sb 217.582	1006.77	ug/L	7.17517	0.7	1979.28
Se 196.026	972.822	ug/L	5.83415	0.6	625.924
Si 251.611	5657.35	ug/L	19.8753	0.4	30464.2
Si 288.158	5613.69	ug/L	20.5517	0.4	67194.3
Sn 189.925	994.843	ug/L	9.27646	0.9	1623.06
Sr 421.552	1057.29	ug/L	4.90866	0.5	3381246
Ti 336.122	1001.07	ug/L	6.79403	0.7	290696
Tl 190.794	915.428	ug/L	19.2808	2.1	970.405
V 292.401	984.029	ug/L	5.30826	0.5	44846.3
Zn 202.548	985.533	ug/L	7.07133	0.7	24738.5
Zr 339.198	1018.35	ug/L	3.40438	0.3	65490.1

360-34253-K-3-A (Samp) **6/15/2011, 1:15:44 PM** **Rack 1, Tube 18**

Weight: 1 **Volume: 1** **Dilution: 1**

Label	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)
Ag 338.289	-1.64453	ug/L	0.241495	14.7	182.650
Al 237.312	5370.21	ug/L	27.6845	0.5	24929.0
As 188.980	1.70150	ug/L	0.629869	37.0	4.58466
B 249.678	39.0960	ug/L	2.99133	7.7	1668.14
Ba 493.408	26.8893	ug/L	0.091543	0.3	75143.6
Be 313.042	0.737030	ug/L	0.014235	1.9	2981.85
Ca 373.690	66976.0	ug/L	466.370	0.7	381626
Cd 214.439	0.323771	ug/L	0.016849	5.2	23.9182
Co 228.615	31.6843	ug/L	0.179825	0.6	326.014
Cr 267.716	1065.10	ug/L	6.64061	0.6	54717.9
Cu 327.395	11.9251	ug/L	0.010516	0.1	953.143
Fe 273.955	13042.2	ug/L	96.3937	0.7	206310
K 404.721	2200.69	ug/L	204.663	9.3	37.8967
Li 610.365	10.2383	ug/L	0.103465	1.0	790.415
Mg 279.078	13874.5	ug/L	67.4672	0.5	64428.5
Mn 257.610	1670.94	ug/L	8.98885	0.5	533103
Mo 202.032	6.25129	ug/L	0.367669	5.9	71.5796
Na 330.237	168256	ug/L	1197.44	0.7	31805.3
Ni 216.555	34.4646	ug/L	0.182223	0.5	320.076
Pb 220.353	2.29610	ug/L	0.298762	13.0	17.4550
Sb 217.582	0.870738	ug/L	0.010298	1.2	4.81094
Se 196.026	-1.76775uv	ug/L	0.351944	19.9	2.28439
Si 251.611	8491.47	ug/L	59.7409	0.7	45257.1
Si 288.158	8415.34	ug/L	38.1423	0.5	100138
Sn 189.925	1.39389	ug/L	0.101504	7.3	4.93521
Sr 421.552	120.523	ug/L	0.608436	0.5	389142
Ti 336.122	11.3022	ug/L	0.075339	0.7	3326.06
Tl 190.794	3.98285	ug/L	1.00899	25.3	7.17950
V 292.401	1.15329	ug/L	0.108710	9.4	130.612
Zn 202.548	58.6941	ug/L	1.73058	2.9	1483.11
Zr 339.198	7.39685	ug/L	0.125919	1.7	478.534

13000 Reported on Form I

Cal check performed on excel sheet.

8/31/11
TC

Metals Prep Report

PREPARATION BENCH SHEET

11F1926

Matrix: Water

TestAmerica Irvine

Prepared using: Metals - EPA 3005A ICPMS

Printed: 6/14/2011 9:56:32PM

Lab Number and bottle	Prepared	Pr	Due Date	Initial (ml)	Final (ml)	Spike 1	ul Spike 1	Spike 2	ul Spike 2	Source ID	pH	Turbidity	Comments
11F1926-BLK1	06/14/11 18:28	\>		50	50								
11F1926-BS1	06/14/11 18:28	\>		50	50	IU03711	400						
11F1926-MS1	06/14/11 18:28	\>		50	50	IU03711	400			IUF0653-01			
11F1926-MSD1	06/14/11 18:28	\>		50	50	IU03711	400			IUF0653-01			
1 IUF0653-01 A	06/14/11 18:28	\>	06/16/11 12:00	50	50						<2		MADEP - Run in batches of 10-20 samples - J Flag | MADEP - Run in batches of 10-20 samples - J Flag
Copper-6020 (collision cell)	Lead-6020 (collision cell)		Silver-6020 (collision cell)										
2 IUF0653-02 A	06/14/11 18:28	\>	06/16/11 12:00	50	50						<2		MADEP - Run in batches of 10-20 samples - J Flag | MADEP - Run in batches of 10-20 samples - J Flag
Lead-6020 (collision cell)	Silver-6020 (collision cell)		Copper-6020 (collision cell)										
3 IUF0653-03 A	06/14/11 18:28	\>	06/16/11 12:00	50	50						<2		MADEP - Run in batches of 10-20 samples - J Flag | MADEP - Run in batches of 10-20 samples - J Flag
Lead-6020 (collision cell)	Silver-6020 (collision cell)		Copper-6020 (collision cell)										
4 IUF0653-04 A	06/14/11 18:28	\>	06/16/11 12:00	50	50						<2		MADEP - Run in batches of 10-20 samples - J Flag | MADEP - Run in batches of 10-20 samples - J Flag
Copper-6020 (collision cell)	Lead-6020 (collision cell)		Silver-6020 (collision cell)										
5 IUF0653-05 A	06/14/11 18:28	\>	06/16/11 12:00	50	50						<2		MADEP - Run in batches of 10-20 samples - J Flag | MADEP - Run in batches of 10-20 samples - J Flag
Silver-6020 (collision cell)	Copper-6020 (collision cell)		Lead-6020 (collision cell)										
6 IUF0653-06 A	06/14/11 18:28	\>	06/16/11 12:00	50	50						<2		MADEP - Run in batches of 10-20 samples - J Flag | MADEP - Run in batches of 10-20 samples - J Flag
Copper-6020 (collision cell)	Lead-6020 (collision cell)		Silver-6020 (collision cell)										
7 IUF0653-07 A	06/14/11 18:28	\>	06/16/11 12:00	50	50						<2		MADEP - Run in batches of 10-20 samples - J Flag | MADEP - Run in batches of 10-20 samples - J Flag

pH verified preservation

Prepared By: see original Date: 8/31/11 TC

Preparation Reviewed By: [signature] Date: 6/15/11

bch_Metals.rpt

Page 1 of 3

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07/08/2011

55

Calibration Blank Report

Sample Name	SEQ-CAL1
Data File Name	003CALB.D
DataPath	C:\ICPMH\1\DATA\110615-2.B
Acq Date Time	2011-06-15T13:40:58-07:00
Type	CalBlk
VialNumber	1101
Dilution	1
Comment	BLANK
Operator	KB

QC Analyte Table

Element	m/z	ISTD	Tune	CPS	%RSD
Be	9	6	1	2	124.90
Na	23	45	1	33018	0.54
Mg	24	45	1	848	6.70
Al	27	45	1	289	3.49
K	39	45	1	11952	0.13
Ca	44	45	1	182	13.08
V	51	45	1	233	13.22
Cr	52	45	1	623	12.75
Mn	55	45	1	194	13.65
Fe	56	45	1	9077	1.30
Co	59	45	1	329	12.35
Ni	60	45	1	321	6.30
Cu	63	45	1	3601	3.28
Cu	65	45	1	1736	1.24
Zn	66	72	1	1634	5.19
As	75	72	1	38	17.68
Se	78	72	1	6	36.46
Se	82	72	1	42	9.70
Mo	95	115	1	291	5.53
Ag	107	115	1	248	21.51
Cd	111	115	1	50	8.66
Sb	121	115	1	168	8.18
Ba	137	115	1	58	24.37
Tl	205	159	1	888	6.73
Pb	208	159	1	777	7.98
U	238	159	1	1245	6.22

Line Calc Check

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD
Li	6	1	3148	0.84
Sc	45	1	86544	0.56
Ge	72	1	72945	0.68
In	115	1	608277	0.51
Tb	159	1	2844495	0.63

TuneStep	TuneFile
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9/1/11
TC

Sample Name	SEQ-CAL2
Data File Name	004CALS.D
DataPath	C:\ICPMH\1\DATA\110615-2.B
Acq Date Time	2011-06-15T13:43:41-07:00
Type	CalStd
VialNumber	1102
Dilution	1
Comment	1 PPB
Operator	KB
ISTDRefDataFileName	003CALB.D
ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune	CPS	%RSD
Be	9	6	1	119	11.37
Na	23	45	1	49484	1.29
Mg	24	45	1	8191	0.99
Al	27	45	1	400	14.54
K	39	45	1	16345	0.70
Ca	44	45	1	759	2.64
V	51	45	1	4727	2.63
Cr	52	45	1	6453	2.23
Mn	55	45	1	2339	1.45
Fe	56	45	1	52041	1.08
Co	59	45	1	11427	1.19
Ni	60	45	1	3628	2.11
Cu	63	45	1	13042	0.97
Cu	65	45	1	6536	3.34
Zn	66	72	1	3605	1.53
As	75	72	1	763	2.76
Se	78	72	1	35	15.12
Se	82	72	1	77	4.50
Mo	95	115	1	4176	0.52
Ag	107	115	1	11225	3.30
Cd	111	115	1	1787	3.01
Sb	121	115	1	4001	3.75
Ba	137	115	1	1230	10.59
Tl	205	159	1	31009	0.38
Pb	208	159	1	22058	1.36
U	238	159	1	48193	1.25

QC ISTD Table

Element	m/z	Tune	CPS	%RSD	RefCPS	%Rec	%Low	%High	Flag
Li	6	1	3205	1.39	3146	101.8	59.5	125.49	
Sc	45	1	87778	0.54	86544	101.4	59.5	125.49	
Ge	72	1	74650	0.58	72945	102.3	59.5	125.49	
In	115	1	614673	1.10	608277	101.1	59.5	125.49	
Tb	159	1	2898226	0.76	2844495	101.9	59.5	125.49	

TuneStep	TuneFile
1	he.u

9/1/11
TC

Calibration Standard Report

Sample Name	SEQ-CAL3
Data File Name	005CALS.D
DataPath	C:\ICPMH\1\DATA\110615-2.B
Acq Date Time	2011-06-15T13:46:27-07:00
Type	CalStd
VialNumber	1103
Dilution	1
Comment	10 PPB
Operator	KB
ISTDRefDataFileName	003CALB.D
ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune	CPS	%RSD
Be	9	6	1	989	5.78
Na	23	45	1	200455	0.38
Mg	24	45	1	77514	0.53
Al	27	45	1	1236	4.34
K	39	45	1	58562	0.71
Ca	44	45	1	6013	4.15
V	51	45	1	45759	0.84
Cr	52	45	1	61797	2.46
Mn	55	45	1	22179	0.89
Fe	56	45	1	459582	0.41
Co	59	45	1	115592	0.96
Ni	60	45	1	34911	1.62
Cu	63	45	1	99855	0.40
Cu	65	45	1	49674	1.30
Zn	66	72	1	14427	0.25
As	75	72	1	7654	1.54
Se	78	72	1	283	4.41
Se	82	72	1	208	8.00
Mo	95	115	1	40649	1.43
Ag	107	115	1	114455	0.27
Cd	111	115	1	16525	1.59
Sb	121	115	1	38079	0.91
Ba	137	115	1	11950	2.07
Tl	205	159	1	312090	0.72
Pb	208	159	1	219134	0.95
U	238	159	1	480946	0.86

QC ISTD Table

Element	m/z	Tune	CPS	%RSD	RefCPS	%Rec	%Low	%High	Flag
Li	6	1	3195	3.12	3148	101.5	59.5	125.49	
Sc	45	1	89460	0.37	86544	103.4	59.5	125.49	
Ge	72	1	74284	0.47	72945	101.8	59.5	125.49	
In	115	1	619750	0.56	608277	101.9	59.5	125.49	
Tb	159	1	2962968	0.91	2844495	104.2	59.5	125.49	

TuneStep	TuneFile
1	he.u

9/1/11
TC

Sample Name	SEQ-CAL4
Data File Name	006CALS.D
DataPath	C:\ICPMH\1\DATA\110615-2.B
Acq Date Time	2011-06-15T13:49:14-07:00
Type	CalStd
VialNumber	1104
Dilution	1
Comment	100 PPB
Operator	KB
ISTDRefDataFileName	003CALB.D
ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune	CPS	%RSD
Be	9	6	1	10207	0.86
Na	23	45	1	1769235	1.40
Mg	24	45	1	766664	0.70
Al	27	45	1	8284	1.21
K	39	45	1	483870	1.02
Ca	44	45	1	60239	1.66
V	51	45	1	457890	0.89
Cr	52	45	1	609195	0.76
Mn	55	45	1	220947	1.04
Fe	56	45	1	4430222	0.97
Co	59	45	1	1138670	0.82
Ni	60	45	1	340435	1.04
Cu	63	45	1	943161	0.55
Cu	65	45	1	469904	0.71
Zn	66	72	1	119258	0.88
As	75	72	1	76742	1.17
Se	78	72	1	2881	0.49
Se	82	72	1	1540	1.17
Mo	95	115	1	401360	1.25
Ag	107	115	1	1122339	0.50
Cd	111	115	1	166483	1.27
Sb	121	115	1	381411	1.04
Ba	137	115	1	116019	0.45
Tl	205	159	1	3061810	0.56
Pb	208	159	1	2123399	2.11
U	238	159	1	4777425	1.45

QC ISTD Table

Element	m/z	Tune	CPS	%RSD	RefCPS	%Rec	%Low	%High	Flag
Li	6	1	3178	2.14	3148	100.9	59.5	125.49	
Sc	45	1	88199	0.93	86544	101.9	59.5	125.49	
Ge	72	1	73255	2.12	72945	100.4	59.5	125.49	
In	115	1	610552	0.64	608277	100.4	59.5	125.49	
Tb	159	1	2982162	1.30	2844495	104.8	59.5	125.49	

TuneStep	TuneFile
1	he.u

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TC

Initial Calibration Verification (ICV)

Sample Name	SEQ-ICV
Data File Name	008_ICV.D
DataPath	C:\ICPMH\1\DATA\110615-2.B
Acq Date Time	2011-06-15T13:54:41-07:00
Type	ICV
VialNumber	1105
Dilution	1
Comment	
Operator	KB
ISTDRefDataFileName	003CALB.D
SamplePassFail	Fail
ISTD PassFail	Pass

Se 82 ↑

QC Analyte Table

Element	m/z	ISTD	Tune	CPS	RawConc	FinalConc	Units	%RSD	ExpValue	%Rec	%Low	%High	Flag
Be	9	6	1	2558	24.8083	24.8083	ppb	0.45	25	99.2	89.5	110.49	
Na	23	45	1	462556	602.9876	602.9876	ppb	0.93	625	96.5	89.5	110.49	
Mg	24	45	1	197181	626.2859	626.2859	ppb	1.38	625	100.2	89.5	110.49	
Al	27	45	1	2550	27.4527	27.4527	ppb	0.74	25	109.9	89.5	110.49	
K	39	45	1	132851	623.7593	623.7593	ppb	0.83	625	99.8	89.5	110.49	
Ca	44	45	1	15745	1266.3756	1266.3756	ppb	1.54	1250	101.3	89.5	110.49	
V	51	45	1	116313	24.7899	24.7899	ppb	0.80	25	99.2	89.5	110.49	
Cr	52	45	1	155993	24.9477	24.9477	ppb	1.01	25	99.8	89.5	110.49	
Mn	55	45	1	56661	24.9983	24.9983	ppb	0.82	25	100.0	89.5	110.49	
Fe	56	45	1	1157143	253.6768	253.6768	ppb	0.72	250	101.5	89.5	110.49	
Co	59	45	1	292847	25.1123	25.1123	ppb	0.22	25	100.4	89.5	110.49	
Ni	60	45	1	87474	25.0369	25.0369	ppb	1.32	25	100.1	89.5	110.49	
Cu	63	45	1	245230	25.1147	25.1147	ppb	1.34	25	100.5	89.5	110.49	
Cu	65	45	1	123197	25.3367	25.3367	ppb	1.45	25	101.3	89.5	110.49	
Zn	66	72	1	32541	25.5520	25.5520	ppb	1.05	25	102.2	89.5	110.49	
As	75	72	1	19830	25.1551	25.1551	ppb	0.51	25	100.6	89.5	110.49	
Se	78	72	1	785	26.4029	26.4029	ppb	5.76	25	105.6	89.5	110.49	
Se	82	72	1	473	27.9495	27.9495	ppb	9.14	25	[illegible]	89.5	110.49	>+/-10%
Mo	95	115	1	104879	25.3866	25.3866	ppb	1.47	25	101.5	89.5	110.49	
Ag	107	115	1	292335	25.3391	25.3391	ppb	1.27	25	101.4	89.5	110.49	
Cd	111	115	1	43377	25.3477	25.3477	ppb	0.65	25	101.4	89.5	110.49	
Sb	121	115	1	98801	25.1895	25.1895	ppb	1.53	25	100.8	89.5	110.49	
Ba	137	115	1	30122	25.2350	25.2350	ppb	0.47	25	100.9	89.5	110.49	
Tl	205	159	1	790193	25.5304	25.5304	ppb	1.73	25	102.1	89.5	110.49	
Pb	208	159	1	556032	25.8977	25.8977	ppb	1.04	25	103.6	89.5	110.49	
U	238	159	1	1231736	25.5116	25.5116	ppb	1.58	25	102.0	89.5	110.49	

QC ISTD Table

Element	m/z	Tune	CPS	%RSD	RefCPS	%Recovery	Low	High	Flag
Li	6	1	3209	0.77	3148	101.9	59.5	125.49	
Sc	45	1	90251	0.56	86544	104.3	59.5	125.49	
Ge	72	1	75145	0.46	72945	103.0	59.5	125.49	
In	115	1	627162	0.48	608277	103.1	59.5	125.49	
Tb	159	1	3010914	1.27	2844495	105.9	59.5	125.49	

TuneStep	TuneFile
1	he.u

Check done on excel

9/1/11
TC

Initial Calibration Blank (ICB)

Sample Name	SEQ-ICB
Data File Name	009_ICB.D
DataPath	C:\ICPMH\1\DATA\110615-2.B
Acq Date Time	2011-06-15T13:57:27-07:00
Type	ICB
VialNumber	1101
Dilution	1
Comment	
Operator	KB
ISTDRefDataFileName	003CALB.D
SamplePassFail	Fail
ISTD PassFail	Pass

Se 82 Mo Sb 121

QC Analyte Table

Element	m/z	ISTD	Tune	CPS	Conc	%RSD	Units	QC High	Flag
Be	9	6	1	5	0.0284	32.73	ppb	0.1	
Na	23	45	1	33263	-2.4489	1.27	ppb	110	
Mg	24	45	1	811	-0.2786	7.18	ppb	55	
Al	27	45	1	263	-0.5230	13.84	ppb	10	
K	39	45	1	12353	-1.6772	2.15	ppb	110	
Ca	44	45	1	183	-0.7681	26.49	ppb	110	
V	51	45	1	241	-0.0012	11.20	ppb	0.1	
Cr	52	45	1	660	0.0000	2.00	ppb	0.5	
Mn	55	45	1	244	0.0165	10.31	ppb	0.5	
Fe	56	45	1	10557	0.2019	7.17	ppb	10	
Co	59	45	1	370	0.0018	3.10	ppb	0.1	
Ni	60	45	1	389	0.0137	9.66	ppb	0.1	
Cu	63	45	1	3428	-0.0402	0.84	ppb	0.5	
Cu	65	45	1	1748	-0.0193	3.61	ppb	0.5	
Zn	66	72	1	1688	-0.0328	2.54	ppb	5	
As	75	72	1	52	0.0150	10.18	ppb	0.1	
Se	78	72	1	9	0.0649	35.25	ppb	0.5	
Se	82	72	1	59	0.9439	7.77	ppb	0.5	OUT OF RANGE
Mo	95	115	1	1852	0.3655	21.81	ppb	0.1	OUT OF RANGE
Ag	107	115	1	1246	0.0831	38.37	ppb	0.5	
Cd	111	115	1	54	0.0007	18.65	ppb	0.5	
Sb	121	115	1	1343	0.2902	10.33	ppb	0.2	OUT OF RANGE
Ba	137	115	1	53	-0.0076	12.60	ppb	0.1	
Tl	205	159	1	2340	0.0452	6.86	ppb	0.1	
Pb	208	159	1	1121	0.0138	2.91	ppb	0.1	
U	238	159	1	4533	0.0665	11.78	ppb	0.1	

QC ISTD Table

Element	m/z	Tune	CPS	%RSD	RefCPS	%Rec	%Low	%High	QC Flag
Li	6	1	3236	0.93	3148	102.8	59.5	125.49	
Sc	45	1	91820	0.82	86544	106.1	59.5	125.49	
Ge	72	1	77154	0.44	72945	105.8	59.5	125.49	
In	115	1	643256	0.45	608277	105.8	59.5	125.49	
Tb	159	1	3016069	0.21	2844495	106.0	59.5	125.49	

TuneStep	TuneFile
1	he.u

OK
TC
9/1/11

Interference Check Sample A (ICS-A) - US EPA Method 6020

Sample Name	SEQ-IFA
Data File Name	010ICSA.D
DataPath	C:\ICPMH\1\DATA\110615-2.B
Acq Date Time	2011-06-15T14:00:13-07:00
Type	ICSA
VialNumber	1205
Dilution	1
Comment	
Operator	KB
ISTDRefDataFileName	003CALB.D
SamplePassFail	Fail
ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune	CPS	Conc	%RSD	Units	QC Low	QC High	QC Flag
Be	9	6	1	2	0.00	91.65	ppb	-5	5.49	
Al	27	45	1	6935496	89093.69	0.31	ppb	-5	5.49	ICSA Main Failed
V	51	45	1	171	-0.01	4.47	ppb	-5	5.49	
Cr	52	45	1	6432	0.98	4.40	ppb	-5	5.49	
Mn	55	45	1	5915	2.66	3.08	ppb	-5	5.49	
Co	59	45	1	1038	0.06	6.06	ppb	-5	5.49	
Ni	60	45	1	5472	1.56	2.67	ppb	-5	5.49	
Cu	63	45	1	4203	0.07	1.94	ppb	-5	5.49	
Cu	65	45	1	2058	0.07	3.07	ppb	-5	5.49	
Zn	66	72	1	5702	3.52	0.89	ppb	-15	15.49	
As	75	72	1	191	0.20	9.44	ppb	-5	5.49	
Se	78	72	1	115	3.85	10.84	ppb	-5	5.49	
Se	82	72	1	100	3.95	12.10	ppb	-5	5.49	
Ag	107	115	1	732	0.05	6.78	ppb	-5	5.49	
Cd	111	115	1	1496	0.92	2.75	ppb	-5	5.49	
Sb	121	115	1	1160	0.28	4.53	ppb	-5	5.49	
Ba	137	115	1	450	0.36	12.02	ppb	-5	5.49	
Tl	205	159	1	1135	0.01	7.48	ppb	-5	5.49	
Pb	208	159	1	4412	0.18	3.02	ppb	-5	5.49	
U	238	159	1	1140	0.00	14.30	ppb	-5	5.49	

✓ OK

QC ISTD Table

Element	m/z	Tune	CPS	%RSD	RefCPS	%Rec	%Low	%High	Flag
Li	6	1	2884	2.00	3148	91.6	59.5	125.49	
Sc	45	1	85803	0.87	86544	99.1	59.5	125.49	
Ge	72	1	72167	0.62	72945	98.9	59.5	125.49	
In	115	1	577833	1.43	608277	95.0	59.5	125.49	
Tb	159	1	2838896	1.10	2844495	99.8	59.5	125.49	

TuneStep	TuneFile
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TC

Sample Name	SEQ-CRL
Data File Name	013_RL0.D
DataPath	C:\ICPMH\1\DATA\110615-2.B
Acq Date Time	2011-06-15T14:08:15-07:00
Type	RL0_2
VialNumber	1201
Dilution	1
Comment	0.2 RL CHECK
Operator	KB
ISTDRefDataFileName	003CALB.D
SamplePassFail	Fail
ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune	CPS	Conc	%RSD	Units	ExpVal	%Rec	%Low	%High	Flag
Be	9	6	1	21	0.2208	23.81	ppb	0.2	110.4	50	150	
Al	27	45	1	1736	18.5758	6.38	ppb	0.2	9287.9	50	150	>+/-50%
V	51	45	1	1027	0.1784	5.25	ppb	0.2	89.2	50	150	
Cr	52	45	1	1717	0.1852	2.32	ppb	0.2	92.6	50	150	
Mn	55	45	1	552	0.1669	13.45	ppb	0.2	83.4	50	150	
Co	59	45	1	2496	0.1955	0.31	ppb	0.2	97.8	50	150	
Ni	60	45	1	974	0.1978	6.82	ppb	0.2	98.9	50	150	
Cu	63	45	1	4512	0.1019	1.23	ppb	0.2	51.0	50	150	
Cu	65	45	1	2282	0.1221	1.10	ppb	0.2	61.1	50	150	
Zn	66	72	1	4660	2.4997	1.17	ppb	0.2	1249.8	50	150	>+/-50%
As	75	72	1	162	0.1588	6.08	ppb	0.2	79.4	50	150	
Se	78	72	1	14	0.2465	11.18	ppb	0.2	123.3	50	150	
Se	82	72	1	52	0.6409	3.98	ppb	0.2	320.4	50	150	>+/-50%
Mo	95	115	1	4031	0.9513	9.41	ppb	0.2	475.7	50	150	>+/-50%
Ag	107	115	1	2955	0.2461	11.01	ppb	0.2	123.0	50	150	
Cd	111	115	1	366	0.1937	7.24	ppb	0.2	96.9	50	150	
Sb	121	115	1	894	0.1947	12.93	ppb	0.2	97.4	50	150	
Ba	137	115	1	239	0.1595	6.96	ppb	0.2	79.7	50	150	
Tl	205	159	1	6591	0.1941	1.76	ppb	0.2	97.1	50	150	
Pb	208	159	1	4908	0.2027	0.90	ppb	0.2	101.4	50	150	
U	236	159	1	10071	0.1925	0.74	ppb	0.2	96.3	50	150	

$\frac{0.122}{.2} = 61\%$

w/in 50-150% limits

QC ISTD Table

Element	m/z	Tune	CPS	%RSD	RefCPS	%Rec	%LOW	%High	Flag
Li	6	1	2761	2.67	3148	67.7	59.5	125.49	
Sc	45	1	85969	0.52	86544	99.3	59.5	125.49	
Ge	72	1	74472	0.20	72945	102.1	59.5	125.49	
In	115	1	599528	0.50	608277	98.6	59.5	125.49	
Tb	159	1	2859045	0.65	2844495	100.5	59.5	125.49	

9/1/11
TC

TuneStep	TuneFile
1	he.u

Sample Name	11F1926-BLK1
Data File Name	017_MB.D
DataPath	C:\ICPMH\1\DATA\110615-2.B
Acq Date Time	2011-06-15T14:57:25-07:00
Type	MB
VialNumber	3101
Dilution	1
Comment	CUPBAG 6020 COLL CELL 11F1926
Operator	KB
ISTDRefDataFileName	003CALB.D
SamplePassFail	Fail
ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune	CPS	RawConc	FinalConc	%RSD	Units	%Low	%High	Flag
Be	9	6	1	1	-0.0101	<0.000	173.21	ppb	0	10	
Na	23	45	1	37484	-0.3506	<0.000	2.07	ppb	0	11000	
Mg	24	45	1	968	-0.0113	<0.000	12.84	ppb	0	5500	
Al	27	45	1	383	0.5886	0.5886	3.01	ppb	0	1000	
K	39	45	1	13058	-2.8789	<0.000	2.86	ppb	0	11000	
Ca	44	45	1	373	12.2937	12.2937	2.71	ppb	0	11000	
V	51	45	1	126	-0.0272	<0.000	25.16	ppb	0	10	
Cr	52	45	1	383	-0.0483	<0.000	9.49	ppb	0	50	
Mn	55	45	1	351	0.0519	0.0519	5.53	ppb	0	50	
Fe	56	45	1	105721	19.2232	19.2232	1.23	ppb	0	1000	OUT OF RANGE
Co	59	45	1	97	-0.0219	<0.000	16.63	ppb	0	10	
Ni	60	45	1	363	-0.0012	<0.000	13.46	ppb	0	10	
Cu	63	45	1	2269	-0.1753	<0.000	3.59	ppb	0	50	
Cu	65	45	1	1036	-0.1806	<0.000	7.88	ppb	0	50	
Zn	66	72	1	1036	-0.6217	<0.000	10.58	ppb	0	500	
As	75	72	1	14	-0.0334	<0.000	12.37	ppb	0	10	
Se	78	72	1	9	0.0594	0.0594	43.30	ppb	0	50	
Se	82	72	1	50	0.1538	0.1538	12.77	ppb	0	50	
Mo	95	115	1	308	-0.0055	<0.000	4.47	ppb	0	10	
Ag	107	115	1	130	-0.0121	<0.000	15.02	ppb	0	50	
Cd	111	115	1	11	-0.0243	<0.000	74.18	ppb	0	50	
Sb	121	115	1	108	-0.0194	<0.000	31.46	ppb	0	20	
Ba	137	115	1	49	-0.0134	<0.000	12.80	ppb	0	10	
Tl	205	159	1	222	-0.0235	<0.000	6.89	ppb	0	10	
Pb	208	159	1	318	-0.0242	<0.000	4.80	ppb	0	10	
U	238	159	1	232	-0.0227	<0.000	14.25	ppb	0	10	

ND Method blank

QC ISTD Table

Element	m/z	Tune	CPS	%RSD	RefCPS	%Rec	%Low	%High	Flag
Li	6	1	3228	3.58	3148	102.6	59.5	125.49	
Sc	45	1	98984	3.07	86544	114.4	59.5	125.49	
Ge	72	1	83782	4.99	72945	114.9	59.5	125.49	
In	115	1	697847	3.57	608277	114.7	59.5	125.49	
Tb	159	1	3156069	2.85	2844495	111.0	59.5	125.49	

TuneStep	TuneFile
1	he.u

TC 9/1/11

Laboratory Control Sample (LCS)

Sample Name	11F1926-BS1
Data File Name	018_LCS.D
DataPath	C:\ICPMH\1\DATA\110615-2.B
Acq Date Time	2011-06-15T15:00:13-07:00
Type	LCS
VialNumber	3102
Dilution	1
Comment	CUPBAG 6020 COLL CELL 11F1926
Operator	KB
ISTDRefDataFileName	003CALB.D
SamplePassFail	Fail
ISTD PassFail	Pass

Ag

QC Analyte Table

Element	m/z	ISTD	Tune	CPS	RawConc	FinalConc	%RSD	Units	ExpValue	%Rec	%Low	%High	Flag
Be	9	6	1	7949	76.3775	76.3775	0.98	ppb	80	95.5	85	115	
Na	23	45	1	1528520	1947.3904	1947.3904	0.65	ppb	2000	97.4	85	115	
Mg	24	45	1	640498	1891.4490	1891.4490	1.08	ppb	2000	94.6	85	115	
Al	27	45	1	6762	72.8694	72.8694	2.55	ppb	80	91.1	85	115	
K	39	45	1	417516	1940.6852	1940.6852	0.85	ppb	2000	97.0	85	115	
Ca	44	45	1	51758	3890.3617	3890.3617	0.99	ppb	4000	97.3	85	115	
V	51	45	1	386703	76.5065	76.5065	0.76	ppb	80	95.6	85	115	
Cr	52	45	1	513457	76.3302	76.3302	1.26	ppb	80	95.4	85	115	
Mn	55	45	1	187936	77.0425	77.0425	1.56	ppb	80	96.3	85	115	
Fe	56	45	1	3739547	764.1274	764.1274	0.77	ppb	800	95.5	85	115	
Co	59	45	1	968226	77.0186	77.0186	1.38	ppb	80	96.3	85	115	
Ni	60	45	1	286411	76.1839	76.1839	1.28	ppb	80	95.2	85	115	
Cu	65	45	1	399169	76.8531	76.8531	1.74	ppb	80	96.1	85	115	
Zn	66	72	1	99777	75.0471	75.0471	1.05	ppb	80	93.8	85	115	
As	75	72	1	66235	77.8369	77.8369	0.74	ppb	80	97.3	85	115	
Se	78	72	1	2569	80.3884	80.3884	3.32	ppb	80	100.5	85	115	
Se	82	72	1	1355	78.6974	78.6974	2.45	ppb	80	98.4	85	115	
Mo	95	115	1	341572	76.7754	76.7754	1.16	ppb	80	96.0	85	115	
Ag	107	115	1	1284595	103.2620	103.2620	1.59	ppb	80	129.1	85	115	>+/-15%
Cd	111	115	1	142836	77.4132	77.4132	2.02	ppb	80	96.8	85	115	
Sb	121	115	1	326062	77.1324	77.1324	1.76	ppb	80	96.4	85	115	
Ba	137	115	1	99815	77.6019	77.6019	1.14	ppb	80	97.0	85	115	
Tl	205	159	1	2548908	77.9900	77.9900	1.02	ppb	80	97.5	85	115	
Pb	208	159	1	1766255	78.0068	78.0068	1.07	ppb	80	97.5	85	115	
U	238	159	1	3924014	76.9586	76.9586	0.77	ppb	80	96.2	85	115	

QC ISTD Table

Element	m/z	Tune	CPS	%RSD	RefCPS	%Rec	%Low	%High	Flag
Li	6	1	3241	1.96	3148	103.0	59.5	125.49	
Sc	45	1	97365	0.95	86544	112.5	59.5	125.49	
Ge	72	1	81235	1.92	72945	111.4	59.5	125.49	
In	115	1	676720	1.17	608277	111.3	59.5	125.49	
Tb	159	1	3182245	1.38	2844495	111.9	59.5	125.49	

TuneStep	TuneFile
1	he.u

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TC

Sample Name	IUF0653-01
Data File Name	019AREF.D
DataPath	C:\ICPMH\1\DATA\110615-2.B
Acq Date Time	2011-06-15T15:02:54-07:00
Type	AllRef
VialNumber	3103
Dilution	1
Comment	CUPBAG 6020 COLL CELL 11F1926
Operator	KB
ISTDRefDataFileName	003CALB.D
SamplePassFail	Pass
ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune	CPS	RawConc	FinalConc	%RSD	Units	QC High	Flag
Be	9	6	1	6	0.0433	0.0433	50.00	ppb	3600	>25%RSD
Na	23	45	1	60999942	81145.4054	81145.4054	1.18	ppb	90000	
Mg	24	45	1	1352020	4073.7869	4073.7869	0.80	ppb	90000	
Al	27	45	1	8109	89.9073	89.9073	2.45	ppb	3600	
K	39	45	1	585647	2803.0341	2803.0341	1.10	ppb	90000	
Ca	44	45	1	266255	20467.4406	20467.4406	0.89	ppb	180000	
V	51	45	1	2489	0.4505	0.4505	1.46	ppb	3600	
Cr	52	45	1	71495	10.7466	10.7466	1.17	ppb	3600	
Mn	55	45	1	1751202	732.6820	732.6820	0.30	ppb	3600	
Fe	56	45	1	18380481	3837.3132	3837.3132	1.12	ppb	36000	
Co	59	45	1	66374	5.3556	5.3556	1.26	ppb	3600	
Ni	60	45	1	15149	4.0173	4.0173	0.94	ppb	2700	
Cu	63	45	1	10610	0.6522	0.6522	2.21	ppb	1800	
Cu	65	45	1	5068	0.6218	0.6218	4.47	ppb	1800	
Zn	66	72	1	16161	11.0880	11.0880	2.34	ppb	3600	
As	75	72	1	1763	2.0411	2.0411	1.90	ppb	3600	
Se	78	72	1	12	0.1586	0.1586	28.87	ppb	3600	>25%RSD
Se	82	72	1	69	1.4127	1.4127	12.93	ppb	3600	
Mo	95	115	1	6194	1.3651	1.3651	14.31	ppb	3600	
Ag	107	115	1	1258	0.0817	0.0817	32.19	ppb	90	>25%RSD
Cd	111	115	1	74	0.0113	0.0113	14.03	ppb	3600	
Sb	121	115	1	2484	0.5624	0.5624	17.32	ppb	3600	
Ba	137	115	1	34860	27.8962	27.8962	0.39	ppb	3600	
Tl	205	159	1	2276	0.0411	0.0411	3.76	ppb	3600	
Pb	208	159	1	6235	0.2438	0.2438	1.58	ppb	3600	
U	238	159	1	14645	0.2672	0.2672	8.73	ppb	3600	

QC ISTD Table

Element	m/z	Tune	CPS	%RSD	Ref CPS	%Rec	%Low	%High	Flag
Li	6	1	3135	0.81	3148	99.6	59.5	125.49	
Sc	45	1	95502	0.13	86544	110.3	59.5	125.49	
Ge	72	1	80560	0.92	72945	110.4	59.5	125.49	
In	115	1	656835	1.64	608277	108.0	59.5	125.49	
Tb	159	1	3103306	0.47	2844495	109.1	59.5	125.49	

TuneStep	TuneFile
1	he.u

TC 8/23/11

Sample Name	11F1926-MS1
Data File Name	020SMPL.D
DataPath	C:\ICPMH\1\DATA\110615-2.B
Acq Date Time	2011-06-15T15:05:37-07:00
Type	Sample
VialNumber	3104
Dilution	1
Comment	CUPBAG 6020 COLL CELL 11F1926
Operator	KB
ISTDRefDataFileName	003CALB.D
SamplePassFail	Fail
ISTD PassFail	Pass

Ag ↑

QC Analyte Table

Element	m/z	ISTD	Tune	CPS	RawConc	FinalConc	%RSD	Units	QC High	Flag
Be	9	6	1	7737	75.7167	75.7167	2.84	ppb	3600	
Na	23	45	1	63047716	87034.4233	87034.4233	0.32	ppb	90000	
Mg	24	45	1	1966529	6149.6618	6149.6618	1.37	ppb	90000	
Al	27	45	1	13766	161.1767	161.1767	1.11	ppb	3600	
K	39	45	1	951623	4770.4460	4770.4460	0.49	ppb	90000	
Ca	44	45	1	312446	24924.3313	24924.3313	0.95	ppb	180000	
V	51	45	1	372725	78.0081	78.0081	0.66	ppb	3600	
Cr	52	45	1	547261	86.0734	86.0734	1.20	ppb	3600	
Mn	55	45	1	1958477	850.2712	850.2712	0.97	ppb	3600	
Fe	56	45	1	22042200	4775.7547	4775.7547	1.15	ppb	36000	
Co	59	45	1	962655	81.0112	81.0112	0.49	ppb	3600	
Ni	60	45	1	276633	77.9038	77.9038	0.55	ppb	2700	
Cu	63	45	1	749503	76.0491	76.0491	0.81	ppb	1800	
Cu	65	45	1	373330	76.0314	76.0314	1.22	ppb	1800	
Zn	66	72	1	108777	85.7117	85.7117	0.74	ppb	3600	
As	75	72	1	65160	80.0360	80.0360	1.78	ppb	3600	
Se	78	72	1	2445	79.9802	79.9802	3.42	ppb	3600	
Se	82	72	1	1323	80.3422	80.3422	4.99	ppb	3600	
Mo	95	115	1	327095	78.9527	78.9527	1.21	ppb	3600	
Ag	107	115	1	1155401	99.7407	99.7407	0.89	ppb	90	>LDR
Cd	111	115	1	132923	77.3672	77.3672	1.01	ppb	3600	
Sb	121	115	1	313735	79.7007	79.7007	1.80	ppb	3600	
Ba	137	115	1	128813	107.5613	107.5613	1.50	ppb	3600	
Tl	205	159	1	2420720	76.1585	76.1585	0.20	ppb	3600	
Pb	208	159	1	1690230	76.6584	76.6584	1.26	ppb	3600	
U	238	159	1	3870872	78.0618	78.0618	0.83	ppb	3600	

✓ Check performed on Excel

QC ISTD Table

Element	m/z	Tune	CPS	%RSD	Ref CPS	%Rec	%Low	%High	Flag
Li	6	1	3182	1.25	3146	101.1	59.5	125.49	
Sc	45	1	92045	1.39	86544	106.4	59.5	125.49	
Ge	72	1	77707	0.47	72945	106.5	59.5	125.49	
In	115	1	630161	1.00	608277	103.6	59.5	125.49	
Tb	159	1	3095146	1.97	2844495	108.8	59.5	125.49	

TuneStep	TuneFile
1	he.u

9/1/11
TC

Printed at: 3:06 PM on:6/15/2011

Sample Name	IUF0653-02
Data File Name	023SMPL.D
DataPath	C:\ICPMH\1\DATA\110615-2.B
Acq Date Time	2011-06-15T15:13:53-07:00
Type	Sample
VialNumber	3107
Dilution	1
Comment	CUPBAG 6020 COLL CELL 11F1926
Operator	KB
ISTDRefDataFileName	003CALB.D
SamplePassFail	Pass
ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune	CPS	RawConc	FinalConc	%RSD	Units	QC High	Flag
Be	9	6	1	9	0.0763	0.0763	40.06	ppb	3600	>25%RSD
Na	23	45	1	60317526	84018.7871	84018.7871	1.71	ppb	90000	
Mg	24	45	1	1341901	4234.0253	4234.0253	0.59	ppb	90000	
Al	27	45	1	7792	90.5184	90.5184	2.68	ppb	3600	
K	39	45	1	569069	2853.3874	2853.3874	0.99	ppb	90000	
Ca	44	45	1	258631	20819.4062	20819.4062	0.78	ppb	180000	
V	51	45	1	2387	0.4528	0.4528	5.79	ppb	3600	
Cr	52	45	1	70086	11.0348	11.0348	0.61	ppb	3600	
Mn	55	45	1	1689974	740.4174	740.4174	1.39	ppb	3600	
Fe	56	45	1	18360691	4014.4980	4014.4980	0.83	ppb	36000	
Co	59	45	1	64982	5.4916	5.4916	1.49	ppb	3600	
Ni	60	45	1	14859	4.1287	4.1287	1.12	ppb	2700	
Cu	63	45	1	8409	0.4748	0.4748	1.47	ppb	1800	
Cu	65	45	1	4205	0.4905	0.4905	2.10	ppb	1800	
Zn	66	72	1	17549	12.7951	12.7951	1.22	ppb	3600	
As	75	72	1	1238	1.4869	1.4869	3.69	ppb	3600	
Se	78	72	1	11	0.1438	0.1438	36.36	ppb	3600	>25%RSD
Se	82	72	1	58	0.9101	0.9101	8.63	ppb	3600	
Mo	95	115	1	6840	1.5976	1.5976	19.26	ppb	3600	
Ag	107	115	1	1228	0.0845	0.0845	31.27	ppb	90	>25%RSD
Cd	111	115	1	434	0.2249	0.2249	5.53	ppb	3600	
Sb	121	115	1	3102	0.7524	0.7524	15.65	ppb	3600	
Ba	137	115	1	33778	28.4327	28.4327	0.28	ppb	3600	
Tl	205	159	1	1529	0.0189	0.0189	3.95	ppb	3600	
Pb	208	159	1	7674	0.3185	0.3185	2.95	ppb	3600	
U	238	159	1	15639	0.2950	0.2950	9.79	ppb	3600	

✓ Check on Excel done

QC ISTD Table

Element	m/z	Tune	CPS	%RSD	Ref CPS	%Rec	%Low	%High	Flag
Li	6	1	3038	1.95	3148	96.5	59.5	125.49	
Sc	45	1	91211	1.55	86544	105.4	59.5	125.49	
Ge	72	1	76958	0.83	72945	105.5	59.5	125.49	
In	115	1	624376	1.18	608277	102.6	59.5	125.49	
Tb	159	1	3020013	0.48	2844495	106.2	59.5	125.49	

TuneStep	TuneFile
1	he.u

✓

Sample Name	IUF0653-03
Data File Name	024SMPL.D
DataPath	C:\ICPMH11\DATA\110615-2.B
Acq Date Time	2011-06-15T15:15:36-07:00
Type	Sample
VialNumber	3108
Dilution	1
Comment	CUPBAG 6020 COLL CELL 11F1926
Operator	KB
ISTDRefDataFileName	003CALB.D
SamplePassFail	Pass
ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune	CPS	RawConc	FinalConc	%RSD	Units	QC High	Flag
Be	9	6	1	6	0.0419	0.0419	26.96	ppb	3600	>25%RSD
Na	23	45	1	58714927	82237.7954	82237.7954	0.73	ppb	90000	
Mg	24	45	1	1309272	4153.8582	4153.8582	1.46	ppb	90000	
Al	27	45	1	7669	89.5115	89.5115	1.75	ppb	3600	
K	39	45	1	555855	2801.3293	2801.3293	0.34	ppb	90000	
Ca	44	45	1	253254	20498.4373	20498.4373	0.65	ppb	180000	
V	51	45	1	2294	0.4356	0.4356	3.63	ppb	3600	
Cr	52	45	1	72995	11.5611	11.5611	0.83	ppb	3600	
Mn	55	45	1	1691140	745.0450	745.0450	0.28	ppb	3600	
Fe	56	45	1	17513911	3850.0421	3850.0421	0.11	ppb	36000	
Co	59	45	1	66158	5.6226	5.6226	1.00	ppb	3600	
Ni	60	45	1	14701	4.1066	4.1066	1.43	ppb	2700	
Cu	63	45	1	11347	0.7836	0.7836	1.66	ppb	1800	
Cu	65	45	1	5609	0.7872	0.7872	1.16	ppb	1800	
Zn	66	72	1	15188	10.8895	10.8895	1.82	ppb	3600	
As	75	72	1	2538	3.1017	3.1017	1.42	ppb	3600	
Se	78	72	1	12	0.1652	0.1652	42.28	ppb	3600	>25%RSD
Se	82	72	1	66	1.4187	1.4187	17.86	ppb	3600	
Mo	95	115	1	2207	0.4643	0.4643	12.43	ppb	3600	
Ag	107	115	1	413	0.0136	0.0136	12.52	ppb	90	
Cd	111	115	1	81	0.0173	0.0173	34.21	ppb	3600	>25%RSD
Sb	121	115	1	1141	0.2480	0.2480	24.55	ppb	3600	
Ba	137	115	1	33274	27.9369	27.9369	2.58	ppb	3600	
Tl	205	159	1	762	-0.0058	<0.000	0.50	ppb	3600	
Pb	208	159	1	6407	0.2601	0.2601	3.24	ppb	3600	
U	238	159	1	8361	0.1457	0.1457	3.50	ppb	3600	

✓ Check done on Excel

QC ISTD Table

Element	m/z	Tune	CPS	%RSD	Ref CPS	%Rec	%Low	%High	Flag
Li	6	1	3032	1.20	3148	96.3	59.5	125.49	
Sc	45	1	90707	1.21	86544	104.8	59.5	125.49	
Ge	72	1	76936	0.12	72945	105.5	59.5	125.49	
In	115	1	625850	0.62	608277	102.9	59.5	125.49	
Tb	159	1	3015225	1.24	2844495	106.0	59.5	125.49	

TuneStep	TuneFile
1	he.u

9/1/11
TC ✓

Sample Name	SEQ-CCV
Data File Name	027_CCV.D
DataPath	C:\ICPMH\1\DATA\110615-2.B
Acq Date Time	2011-06-15T15:24:47-07:00
Type	CCV
VialNumber	1106
Dilution	1
Comment	
Operator	KB
ISTDRefDataFileName	003CALB.D
SamplePassFail	Fail
ISTD PassFail	Pass

Al & Ag

QC Analyte Table

Element	m/z	ISTD	Tune	CPS	RawConc	FinalConc	%RSD	Units	ExpValue	%Rec	%Low	%High	Flag
Be	9	6	1	4618	51.8588	51.8588	1.75	ppb	50	103.7	89.5	110.49	
Na	23	45	1	937609	1274.3063	1274.3063	0.55	ppb	1250	101.9	89.5	110.49	
Mg	24	45	1	368509	1174.9053	1174.9053	0.51	ppb	1250	94.0	89.5	110.49	
Al	27	45	1	3839	43.2786	43.2786	1.34	ppb	50	86.6	89.5	110.49	>+/-10%
K	39	45	1	243013	1196.6767	1196.6767	0.44	ppb	1250	95.7	89.5	110.49	
Ca	44	45	1	29681	2404.7779	2404.7779	0.44	ppb	2500	96.2	89.5	110.49	
V	51	45	1	224153	47.9027	47.9027	0.75	ppb	50	95.8	89.5	110.49	
Cr	52	45	1	299465	48.0595	48.0595	0.91	ppb	50	96.1	89.5	110.49	
Mn	55	45	1	109657	48.5461	48.5461	0.79	ppb	50	97.1	89.5	110.49	
Fe	56	45	1	2236852	493.1695	493.1695	0.58	ppb	500	98.6	89.5	110.49	
Co	59	45	1	567441	48.7680	48.7680	0.36	ppb	50	97.5	89.5	110.49	
Ni	60	45	1	171277	49.1982	49.1982	0.90	ppb	50	98.4	89.5	110.49	
Cu	63	45	1	475130	49.1102	49.1102	0.52	ppb	50	98.2	89.5	110.49	
Cu	65	45	1	238006	49.3855	49.3855	0.78	ppb	50	98.8	89.5	110.49	
Zn	66	72	1	59931	47.4206	47.4206	0.50	ppb	50	94.8	89.5	110.49	
As	75	72	1	38498	48.0800	48.0800	0.89	ppb	50	96.2	89.5	110.49	
Se	78	72	1	1457	48.3932	48.3932	3.56	ppb	50	96.8	89.5	110.49	
Se	82	72	1	758	45.6228	45.6228	0.94	ppb	50	91.2	89.5	110.49	
Mo	95	115	1	202540	49.6112	49.6112	1.09	ppb	50	99.2	89.5	110.49	
Ag	107	115	1	751117	65.8263	65.8263	0.81	ppb	50	131.7	89.5	110.49	>+/-10%
Cd	111	115	1	82895	48.9770	48.9770	1.05	ppb	50	98.0	89.5	110.49	
Sb	121	115	1	185737	47.8923	47.8923	0.64	ppb	50	95.8	89.5	110.49	
Ba	137	115	1	56914	48.2273	48.2273	0.99	ppb	50	96.5	89.5	110.49	
Tl	205	159	1	1531697	49.4743	49.4743	0.19	ppb	50	98.9	89.5	110.49	
Pb	208	159	1	1054670	49.1184	49.1184	1.63	ppb	50	98.2	89.5	110.49	
U	238	159	1	2327706	48.1909	48.1909	0.36	ppb	50	96.4	89.5	110.49	

QC ISTD Table

Element	m/z	Tune	CPS	%RSD	RefCPS	%Recovery	Low	High	Flag
Li	6	1	2772	1.38	3148	88.0	59.5	125.49	
Sc	45	1	90101	0.49	86544	104.1	59.5	125.49	
Ge	72	1	76396	0.36	72945	104.7	59.5	125.49	
In	115	1	620644	0.21	608277	102.0	59.5	125.49	
Tb	159	1	3013565	1.11	2844495	105.9	59.5	125.49	

TuneStep	TuneFile
1	he.u

9/1/11
TC

WinHg Database 1.4

File Utility Help

RN RN

Protocol mercury

Dataset/Proto 06-16-11/mercury

Protocol | Line info | Cal Curve | Report | Ctrl Chart | Viewer

Reset

Calib Coeffs

New Cal

Update Coeffs

Spike Coeffs

A

B 2.86425e-5

C -1.14991e-1

Rho .999833

Type Linear

Calibrated

Accepted

Accept

Rel. Abs.
355083

Accepted

New

Include S1 Rep 1 2 3 4 5

Conc. 10.1

S	Conc.	Calc.	Dev.	Mean	SD or %RSD	Rep 1	Rep 2	Rep 3
01	.00000	.100	.100	7519	3142	9741	5298	
02	.20000	.175	-.025	10116	8.39%	10716	9516	
03	.50000	.491	-.009	21161	8.37%	19908	22413	
04	1.0000	.991	-.009	38607	6.34%	40338	36877	
05	5.0000	4.89	-.113	174652	0.19%	174423	174883	
06	10.000	10.1	.055	355083	0.19%	354603	355563	

Ready

CAP NUM

7470

75378

TC
9/1/11

Line Conc. Units SD/RSD 1 2 3 4 5

*** Sample ID: 34253K1C Seq: 28 12:11:08 16 Jun 11 HG

Hg -.012 ppb .000 -.012

✓ ND

*** Sample ID: 34253B1B Seq: 29 12:13:30 16 Jun 11 HG

DU

Hg -.072 ppb .000 -.072

*** Sample ID: 34253K1D Seq: 30 12:17:07 16 Jun 11 HG

MS

Hg 5.20 ppb .000 5.20

5.20/5.00 104% Rec

*** Sample ID: 34253K2C Seq: 31 12:20:38 16 Jun 11 HG

Hg .103 ppb .000 .103

*** Sample ID: 32453K2D Seq: 32 12:22:40 16 Jun 11 HG

MS

Hg 5.03 ppb .000 5.03

*** Sample ID: 34253K3B Seq: 33 12:26:17 16 Jun 11 HG

Hg -.027 ppb .000 -.027

*** Sample ID: 34253K4B Seq: 34 12:29:48 16 Jun 11 HG

Hg -.017 ppb .000 -.017

*** Check Standard: 4 Ck4CCV Seq: 35 12:33:15 16 Jun 11 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg		98.8	4.94	5.00	ppb	.000

4.94/5 = 99% Rec

*** Check Standard: 1 Ck1CCB Seq: 36 12:35:22 16 Jun 11 HG

Line	Flag	Found	Range(+/-)	Units	SD/RSD
Hg		-.059	.100	ppb	.000

*** Sample ID: 34253K5C Seq: 37 12:37:26 16 Jun 11 HG

Hg -.063 ppb .000 -.063

*** Sample ID: 32453K5D Seq: 38 12:39:08 16 Jun 11 HG

MS

Hg 4.87 ppb .000 4.87

*** Sample ID: 34253K6B Seq: 39 12:40:53 16 Jun 11 HG

Hg .035 ppb .000 .035

*** Sample ID: 34253K7B Seq: 40 12:43:17 16 Jun 11 HG

✓ Hg .293 ppb .000 .293

*** Sample ID: 34253K7B Seq: 41 12:46:08 16 Jun 11 HG

w/q comp only Hg .222 ppb .000 .222

9/1/11
TC

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / (II) / III (circle one)

SITE: **Olin Chemical** Project #: 6107110016-12 SDG #: 360-34288-1

LAB # : Test America – Westfield for ICP-AES and Hg Test America – Irvine for ICP-MS

Sample IDs: Attached tracking sheet or sample listing.

This checklist is designed to be used with the USEPA Data Validation Guidelines Part IV (November 2008). During Level III validation, calculation and transcription checks are completed for instrument tuning, surrogates, target compounds, spike recoveries, calibration data, and internal standards as specified in the guideline. These checks are documented on attached validation notes.

Method 6020A for Cu, Pb, and Ag. Hg by 7470A, All other Metals by 6010C.

YES	NO	NA		
Data completeness				
☑	☐	☐	All data summaries, QC forms and raw data available from hard copy or electronic data package	Contact lab if missing data. Lab to respond with 24 hours.
☑	☐	☐	Data summaries match EDD	
Holding Times and Preservation				
☑	☐	☐	Hold times met (6 months, 28 days Hg)	
☑	☐	☐	Preserved (waters HNO_3)	
Calibration				
☑	☐	☐	ICP/MS Instrument Tune.	Verify that tuning meets mass, resolution, and RSD method criteria.
☑	☐	☐	Mass calibration criteria ≤ 0.1amu from true	ICP: at least one blank and one standard
☑	☐	☐	Resolution <0.7 +/-0.1amu full width @ 10% peak height	Hg: at least one blank and four standards
☑	☐	☐	RSD < 5%	Correlation coefficient criteria applicable to all analyses except ICP-AES.
☑	☐	☐	Appropriate number of standards used to establish calibration curve.	
☑	☐	☐	Correlation coefficient > 0.995 for Hg	90-110% for ICP-AES/MS, 80-120% for Hg. See additional qualification actions in the Region 1 guidelines.
☑	☐	☐	Calibrated daily.	Every 10 samples or every 2 hrs.
☑	☐	☐	ICV/CCV %R within acceptance range.	
☑	☐	☐	CCVs analyzed at the proper frequency.	50-150% ~~70-130%~~ for QL Standard. If out low, (J) detects less then 2X QL standard and (UJ) non-detects. See additional validation actions in the Region I guidelines.
☑	☐	☐	QL Standard within limits	

INORGANICS

TAL METALS (including mercury)

REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

Yes No N/A **TIER I / (II) III (circle one)**

Blanks Method: ☑ ☐ ☐ Method blank was prepared with each batch of samples or with a maximum of 20 samples ☐ ☑ ☐ Results >MDL ☐ ☐ ☑ Absolute value negative MB results > 5x MDL Not presented on Forms ☑ ☐ ☐ For ICP/MS verify IS responses meet method criteria	Evaluate all blanks for contamination. Highest contaminant level used for action level. 5X the highest blank contamination is the action level.
* Calibration Blanks: ☑ ☐ ☐ ICB/CCB results > IDL ☐ ☐ ☑ Absolute value of negative ICB/CCB results > 5x MDL Not reported on Forms ☑ ☐ ☐ CCB analyzed every 10 samples or 2 hrs. Equipment/Rinseate Blanks: N/A ☐ ☐ ☐ Results >MDL ☐ ☐ ☐ Absolute value of negative ICB/CCB results > 5x MDL	dedicated equipment used
* Interference Check Sample ☑ ☐ ☐ ICS analyzed at proper frequency ☑ ☐ ☐ Interference present in sample at > 50% concentration in ICS Sodium but not affecting results for ICP-AES run. Copper and Lead results were qualified estimated (see attached Form 4) ☑ ☐ ☐ ICS AB %R 80%-120% ICP-MS Internal Standard Intensities ☑ ☐ ☐ Internal standard relative intensities reported by the laboratory ☑ ☐ ☐ Internal standard relative intensities are within 60 – 125 %	An ICS must be run at the beginning and end of run or every 8 hours. If interferences (Al, Ca, Fe, Mg) are not > 50% ICS concentration in sample, do not apply. Qualify data based on Region 1 guideline Note: MCP Limits are 30 – 120%
Matrix Spikes ☑ ☐ ☐ All compounds are within %R of 75-125% excluding results exceeding the spike concentration by ≥4x ☑ ☐ ☐ Were post-digestion spikes reported for unacceptable pre-digestion spike recoveries ☐ ☑ ☐ Was a field blank used for spike analysis	Post-digestion spikes %R limits = 75% - 125%

INORGANICS

TAL METALS (including mercury)

REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

Yes	No	N/A	TIER I / (II) / III (circle one)	
			Laboratory Control Samples (LCS)	
☑	☐	☐	Percent recoveries are within limits (waters and soil 80-120%)	
☑	☐	☐	An LCS was analyzed for each matrix, batch of samples, or every 20 samples.	
			Laboratory Duplicate	
☐	☑	☐	Was a field blank used as the lab duplicate	
☑	☐	☐	Is the RPD within water control limits of ±20% for sample values >5x RL(35% for soil)	
☑	☐	☐	Is the control limit of ± RL met for sample values <5x RL (2x RL for soil)	
☑	☐	☐	Was a duplicate analyzed for every matrix and every 20 samples or batch	
			Field Duplicate	
☐	☐	☑	For sample values >5x RL, the RPD control limit of ± 30% (50% for soil) was met	Not submitted w/ this SDG
☐	☐	☑	For sample values <5x RL, the control limit of ±2x RL (4x RL for soil) was met	
			Serial Dilution	
☐	☐	☑	Are any percent difference criteria > 15% (for samples with a concentration >50 times the IDL)	
☐	☐	☑	Are results of the diluted samples > the original sample results	Not analyzed

Validator's Signature: [signature]

Date: 8/30/11

Reference:

MACTEC, Project Operation Plan Volume IIB, Quality Assurance Project Plan for Remedial Investigation/Feasibility Study – Olin Chemical Superfund Site, Wilmington Property, 51 Eames Street, Wilmington, MA", MACTEC Engineering and Consulting. .April 2009.

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OC-SW-LB-1-XXX
Lab Sample ID: 360-34288-5
Lab Name: TestAmerica Westfield
Job No.: 360-34288-1
SDG ID.: 360-34288-1
Matrix: Water
Date Sampled: 06/07/2011 13:40
Reporting Basis: WET
Date Received: 06/08/2011 10:19

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	1200	100	13	ug/L			1	6010B
7440-38-2	Arsenic	11	10	2.8	ug/L			1	6010B
7440-39-3	Barium	95	10	1.4	ug/L			1	6010B
7440-41-7	Beryllium	ND	1.0	0.15	ug/L			1	6010B
7440-70-2	Calcium	31000	400	50	ug/L			1	6010B
7440-43-9	Cadmium	ND ~~0.66~~	1.0	0.13	ug/L	~~J~~		1	6010B
7440-48-4	Cobalt	2.6	10	1.3	ug/L	J		1	6010B
7440-47-3	Chromium	5.4	5.0	0.65	ug/L			1	6010B
7439-89-6	Iron	15000	100	14	ug/L			1	6010B
7440-09-7	Potassium	1400	4000	1100	ug/L	J		1	6010B
7439-95-4	Magnesium	3300	400	50	ug/L			1	6010B
7439-96-5	Manganese	540	10	3.0	ug/L			1	6010B
7440-23-5	Sodium	180000	2000	280	ug/L			1	6010B
7440-02-0	Nickel	4.6	10	1.3	ug/L	J		1	6010B
7440-36-0	Antimony	ND	6.0	1.5	ug/L			1	6010B
7782-49-2	Selenium	ND	10	4.0	ug/L			1	6010B
7440-31-5	Tin	ND	50	6.5	ug/L			1	6010B
7440-28-0	Thallium	ND	10	2.2	ug/L			1	6010B
7440-62-2	Vanadium	7.0	10	1.5	ug/L	J		1	6010B
7440-66-6	Zinc	110	50	6.6	ug/L			1	6010B
7439-97-6	Mercury	ND	0.20	0.15	ug/L			1	7470A

TK
9/1/11

Form 1

INORGANIC ANALYSIS DATA SHEET

EPA 6020

OC-SW-LB-1-XXX

Laboratory: TestAmerica Irvine
SDG:
Client: TestAmerica Westfield
Project: Olin
Matrix: Water
Laboratory ID: IUF0803-01
File ID: 110617-1-023
Sampled: 06/07/11 13:40
Prepared: 06/16/11 08:42
Analyzed: 06/17/11 13:30
Solids: 0.00
Preparation: EPA 3005A ICPMS
Initial/Final: 50 ml / 50 ml
Batch: 11F2198
Sequence: U000401
Calibration: I11F048
Instrument: ICPMS4

CAS NO.	Analyte	Concentration (ug/l)	Dilution Factor	Q	Method
7440-50-8	Copper	12	2	D	EPA 6020
7439-92-1	Lead	27	2	D	EPA 6020
7440-22-4	Silver	0.21	2	~~D~~ U	EPA 6020

9/1/11

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OC-SW-LB-2-XXX
Lab Sample ID: 360-34288-6
Lab Name: TestAmerica Westfield
Job No.: 360-34288-1
SDG ID.: 360-34288-1
Matrix: Water
Date Sampled: 06/07/2011 12:50
Reporting Basis: WET
Date Received: 06/08/2011 10:19

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	1000	100	13	ug/L			1	6010B
7440-38-2	Arsenic	34	10	2.8	ug/L			1	6010B
7440-39-3	Barium	53	10	1.4	ug/L			1	6010B
7440-41-7	Beryllium	ND	1.0	0.15	ug/L			1	6010B
7440-70-2	Calcium	24000	400	50	ug/L			1	6010B
7440-43-9	Cadmium	ND ~~0.42~~	1.0	0.13	ug/L	~~J~~		1	6010B
7440-48-4	Cobalt	1.4	10	1.3	ug/L	J		1	6010B
7440-47-3	Chromium	20	5.0	0.65	ug/L			1	6010B
7439-89-6	Iron	18000	100	14	ug/L			1	6010B
7440-09-7	Potassium	4100	4000	1100	ug/L			1	6010B
7439-95-4	Magnesium	3600	400	50	ug/L			1	6010B
7439-96-5	Manganese	990	10	3.0	ug/L			1	6010B
7440-23-5	Sodium	83000	2000	280	ug/L			1	6010B
7440-02-0	Nickel	2.3	10	1.3	ug/L	J		1	6010B
7440-36-0	Antimony	ND	6.0	1.5	ug/L			1	6010B
7782-49-2	Selenium	ND	10	4.0	ug/L			1	6010B
7440-31-5	Tin	ND	50	6.5	ug/L			1	6010B
7440-28-0	Thallium	ND	10	2.2	ug/L			1	6010B
7440-62-2	Vanadium	4.7	10	1.5	ug/L	J		1	6010B
7440-66-6	Zinc	38	50	6.6	ug/L	J		1	6010B
7439-97-6	Mercury	ND	0.20	0.15	ug/L			1	7470A

9/1/11
TC

Form 1

INORGANIC ANALYSIS DATA SHEET

EPA 6020

OC-SW-LB-3-XXX

Laboratory: TestAmerica Irvine
SDG:
Client: TestAmerica Westfield
Project: Olin
Matrix: Water
Laboratory ID: IUF0803-03
File ID: 110617-1-025
Sampled: 06/07/11 11:15
Prepared: 06/16/11 08:42
Analyzed: 06/17/11 13:36
Solids: 0.00
Preparation: EPA 3005A ICPMS
Initial/Final: 50 ml / 50 ml
Batch: 11F2198
Sequence: U000401
Calibration: I11F048
Instrument: ICPMS4

CAS NO.	Analyte	Concentration (ug/l)	Dilution Factor	Q	Method
7440-50-8	Copper	8.7	1		EPA 6020
7439-92-1	Lead	0.42	1	J	EPA 6020
7440-22-4	Silver	0.10	1	U	EPA 6020

9/1/11
TC

Form 1

INORGANIC ANALYSIS DATA SHEET

EPA 6020

OC-SW-MMB-SW/SD-4-XXX

Laboratory: TestAmerica Irvine SDG:

Client: TestAmerica Westfield Project: Olin

Matrix: Water Laboratory ID: IUF0803-05 File ID: 110617-1-030

Sampled: 06/06/11 14:00 Prepared: 06/16/11 08:42 Analyzed: 06/17/11 13:50

Solids: 0.00 Preparation: EPA 3005A ICPMS Initial/Final: 50 ml / 50 ml

Batch: 11F2198 Sequence: U000401 Calibration: I11F048 Instrument: ICPMS4

CAS NO.	Analyte	Concentration (ug/l)	Dilution Factor	Q	Method
7440-50-8	Copper	0.50 ~~0.29~~	1	~~J~~ U	EPA 6020
7439-92-1	Lead	0.10 ~~0.095~~	1	~~J~~ U	EPA 6020
7440-22-4	Silver	0.10	1	U	EPA 6020

9/1/11
TC

Form 1

INORGANIC ANALYSIS DATA SHEET

EPA 6020

OC-SW-MMB-SW/SD-5-XXX

Laboratory: TestAmerica Irvine
SDG:
Client: TestAmerica Westfield
Project: Olin
Matrix: Water
Laboratory ID: IUF0803-06
File ID: 110617-1-031
Sampled: 06/07/11 09:30
Prepared: 06/16/11 08:42
Analyzed: 06/17/11 13:53
Solids: 0.00
Preparation: EPA 3005A ICPMS
Initial/Final: 50 ml / 50 ml
Batch: 11F2198
Sequence: U000401
Calibration: I11F048
Instrument: ICPMS4

CAS NO.	Analyte	Concentration (ug/l)	Dilution Factor	Q	Method
7440-50-8	Copper	1.8	1		EPA 6020
7439-92-1	Lead	1.4	1	J	EPA 6020
7440-22-4	Silver	0.10	1	U	EPA 6020

9/1/11
TC

Form 1

INORGANIC ANALYSIS DATA SHEET

EPA 6020

OC-SW-MMB-SW/SD-8-XXX

Laboratory: TestAmerica Irvine
SDG:
Client: TestAmerica Westfield
Project: Olin
Matrix: Water
Laboratory ID: IUF0803-07
File ID: 110617-1-032
Sampled: 06/07/11 10:10
Prepared: 06/16/11 08:42
Analyzed: 06/17/11 13:55
Solids: 0.00
Preparation: EPA 3005A ICPMS
Initial/Final: 50 ml / 50 ml
Batch: 11F2198
Sequence: U000401
Calibration: I11F048
Instrument: ICPMS4

CAS NO.	Analyte	Concentration (ug/l)	Dilution Factor	Q	Method
7440-50-8	Copper	0.83	1		EPA 6020
7439-92-1	Lead	0.42	1	J	EPA 6020
7440-22-4	Silver	0.10	1	U	EPA 6020

9/1/11
TC

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OC-SW-OPWD-2-XXX
Lab Sample ID: 360-34288-13
Lab Name: TestAmerica Westfield
Job No.: 360-34288-1
SDG ID.: 360-34288-1
Matrix: Water
Date Sampled: 06/07/2011 10:05
Reporting Basis: WET
Date Received: 06/08/2011 10:19

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	1600	100	13	ug/L			1	6010B
7440-38-2	Arsenic	12	10	2.8	ug/L			1	6010B
7440-39-3	Barium	46	10	1.4	ug/L			1	6010B
7440-41-7	Beryllium	0.17	1.0	0.15	ug/L	J		1	6010B
7440-70-2	Calcium	6800	400	50	ug/L			1	6010B
7440-43-9	Cadmium	ND ~~0.13~~	1.0	0.13	ug/L	~~J~~		1	6010B
7440-48-4	Cobalt	3.3	10	1.3	ug/L	J		1	6010B
7440-47-3	Chromium	13	5.0	0.65	ug/L			1	6010B
7439-89-6	Iron	30000	100	14	ug/L			1	6010B
7440-09-7	Potassium	ND	4000	1100	ug/L			1	6010B
7439-95-4	Magnesium	1200	400	50	ug/L			1	6010B
7439-96-5	Manganese	270	10	3.0	ug/L			1	6010B
7440-23-5	Sodium	42000	2000	280	ug/L			1	6010B
7440-02-0	Nickel	5.1	10	1.3	ug/L	J		1	6010B
7440-36-0	Antimony	ND	6.0	1.5	ug/L			1	6010B
7782-49-2	Selenium	ND	10	4.0	ug/L			1	6010B
7440-31-5	Tin	ND	50	6.5	ug/L			1	6010B
7440-28-0	Thallium	ND	10	2.2	ug/L			1	6010B
7440-62-2	Vanadium	12	10	1.5	ug/L			1	6010B
7440-66-6	Zinc	120	50	6.6	ug/L			1	6010B
7439-97-6	Mercury	ND	0.20	0.15	ug/L			1	7470A

9/1/11
TC

Form 1

INORGANIC ANALYSIS DATA SHEET

EPA 6020

-SW-OPWD-SD/SO/SW-S-X

Laboratory: TestAmerica Irvine SDG:

Client: TestAmerica Westfield Project: Olin

Matrix: Water Laboratory ID: IUF0803-10 File ID: 110617-1-035

Sampled: 06/07/11 08:35 Prepared: 06/16/11 08:42 Analyzed: 06/17/11 14:04

Solids: 0.00 Preparation: EPA 3005A ICPMS Initial/Final: 50 ml / 50 ml

Batch: 11F2198 Sequence: U000401 Calibration: I11F048 Instrument: ICPMS4

CAS NO.	Analyte	Concentration (ug/l)	Dilution Factor	Q	Method
7440-50-8	Copper	0.79	1		EPA 6020
7439-92-1	Lead	0.82	1	J	EPA 6020
7440-22-4	Silver	0.10	1	U	EPA 6020

9/1/11
TC

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OC-SW-SDBK-002-XXX
Lab Sample ID: 360-34288-15
Lab Name: TestAmerica Westfield
Job No.: 360-34288-1
SDG ID.: 360-34288-1
Matrix: Water
Date Sampled: 06/07/2011 14:30
Reporting Basis: WET
Date Received: 06/08/2011 10:19

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	26	100	13	ug/L	J		1	6010B
7440-38-2	Arsenic	ND	10	2.8	ug/L			1	6010B
7440-39-3	Barium	34	10	1.4	ug/L			1	6010B
7440-41-7	Beryllium	ND	1.0	0.15	ug/L			1	6010B
7440-70-2	Calcium	27000	400	50	ug/L			1	6010B
7440-43-9	Cadmium	ND	1.0	0.13	ug/L			1	6010B
7440-48-4	Cobalt	ND	10	1.3	ug/L			1	6010B
7440-47-3	Chromium	ND	5.0	0.65	ug/L			1	6010B
7439-89-6	Iron	420	100	14	ug/L			1	6010B
7440-09-7	Potassium	3000	4000	1100	ug/L	J		1	6010B
7439-95-4	Magnesium	4100	400	50	ug/L			1	6010B
7439-96-5	Manganese	160	10	3.0	ug/L			1	6010B
7440-23-5	Sodium	75000	2000	280	ug/L			1	6010B
7440-02-0	Nickel	ND	10	1.3	ug/L			1	6010B
7440-36-0	Antimony	ND	6.0	1.5	ug/L			1	6010B
7782-49-2	Selenium	ND	10	4.0	ug/L			1	6010B
7440-31-5	Tin	ND	50	6.5	ug/L			1	6010B
7440-28-0	Thallium	ND ~~4.7~~	10	2.2	ug/L	J		1	6010B
7440-62-2	Vanadium	ND	10	1.5	ug/L			1	6010B
7440-66-6	Zinc	ND	50	6.6	ug/L			1	6010B
7439-97-6	Mercury	ND	0.20	0.15	ug/L			1	7470A

9/1/11
TC

Form 1

INORGANIC ANALYSIS DATA SHEET

EPA 6020

OC-SW-SDBK-002-XXX

Laboratory: TestAmerica Irvine
SDG:
Client: TestAmerica Westfield
Project: Olin
Matrix: Water
Laboratory ID: IUF0803-11
File ID: 110617-1-019
Sampled: 06/07/11 14:30
Prepared: 06/16/11 08:42
Analyzed: 06/17/11 13:20
Solids: 0.00
Preparation: EPA 3005A ICPMS
Initial/Final: 50 ml / 50 ml
Batch: 11F2198
Sequence: U000401
Calibration: I11F048
Instrument: ICPMS4

CAS NO.	Analyte	Concentration (ug/l)	Dilution Factor	Q	Method
7440-50-8	Copper	1.1	1		EPA 6020
7439-92-1	Lead	0.27	1	J	EPA 6020
7440-22-4	Silver	0.1 ~~0.081~~	1	JU	EPA 6020

9/1/11
TC

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-34288-1

SDG No.: 360-34288-1

Concentration Units: ug/L

Analyte	RL	ICB 360-75341/11 06/15/2011 11:45		CCB 360-75341/18 06/15/2011 12:06		CCB 360-75341/23 06/15/2011 15:27		CCB 360-75341/35 06/15/2011 16:03	
		Found	C	Found	C	Found	C	Found	C
Aluminum	100	ND		ND		ND		ND	
Antimony	6.0	ND		ND		ND		ND	
Arsenic	10	ND		ND		ND		ND	
Barium	10	ND		ND		ND		ND	
Beryllium	1.0	ND		ND		ND		ND	
Cadmium	1.0	ND		ND		0.168	J	0.172	J
Calcium	400	ND		ND		ND		ND	
Chromium	5.0	ND		ND		ND		ND	
Cobalt	10	ND		ND		ND		ND	
Iron	100	ND		ND		ND		ND	
Magnesium	400	ND		ND		ND		ND	
Manganese	10	ND		ND		ND		ND	
Nickel	10	ND		ND		ND		ND	
Potassium	4000	ND		ND		ND		ND	
Selenium	10	ND		ND		ND		ND	
Sodium	2000	ND		ND		ND		ND	
Thallium	10	ND		2.55	J	2.32	J	ND	
Tin	50	ND		ND		ND		ND	
Vanadium	10	ND		ND		ND		ND	
Zinc	50	ND		ND		ND		ND	

Metal	Conc (ppb)	Action Limit (5x)	Samples Qualified (U)
Cadmium	0.172	0.86	#5, #6, #13
Thallium	2.55	12.75	#15
Sodium	281	1405	none

TC
8/30/11

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-34288-1

SDG No.: 360-34288-1

Concentration Units: ug/L

Analyte	RL	CCB 360-75341/46 06/15/2011 16:41		CCB 360-75341/48 06/15/2011 19:31					
		Found	C	Found	C	Found	C	Found	C
Aluminum	100	ND		ND					
Antimony	6.0	ND		ND					
Arsenic	10	ND		ND					
Barium	10	ND		ND					
Beryllium	1.0	ND		0.197	J				
Cadmium	1.0	0.152	J	0.212	J				
Calcium	400	ND		ND					
Chromium	5.0	ND		ND					
Cobalt	10	ND		ND					
Iron	100	ND		ND					
Magnesium	400	ND		ND					
Manganese	10	ND		ND					
Nickel	10	ND		ND					
Potassium	4000	ND		ND					
Selenium	10	ND		ND					
Sodium	2000	281	J	ND					
Thallium	10	ND		ND					
Tin	50	ND		ND					
Vanadium	10	ND		ND					
Zinc	50	ND		ND					

TC 8/30/11

Italicized analytes were not requested for this sequence.

BLANKS
EPA 6020

Laboratory: TestAmerica Irvine
SDG:
Client: TestAmerica Westfield
Instrument ID: ICPMS4
Project: Olin
Sequence: U000401
Calibration: I11F048

Lab Sample ID	Analyte	Found	MRL	Units	C	Method	Analyzed
* U000401-ICB1	Copper	0.0128	0.50	ug/l		EPA 6020	6/17/11 12:51
	Lead	0.00916	0.10	ug/l		EPA 6020	6/17/11 12:51
	Silver	0.0630	0.10	ug/l		EPA 6020	6/17/11 12:51
I1F2198-BLK1	Copper	ND	0.50	ug/l		EPA 6020	6/17/11 13:14
	Lead	ND	0.10	ug/l		EPA 6020	6/17/11 13:14
	Silver	ND	0.10	ug/l		EPA 6020	6/17/11 13:14
* U000401-CCB2	Copper	0.0929	0.50	ug/l		EPA 6020	6/17/11 13:44
	Lead	0.000431	0.10	ug/l		EPA 6020	6/17/11 13:44
	Silver	0.0227	0.10	ug/l		EPA 6020	6/17/11 13:44
* U000401-CCB3	Copper	0.0790	0.50	ug/l		EPA 6020	6/17/11 14:12
	Lead	0.0118	0.10	ug/l		EPA 6020	6/17/11 14:12
	Silver	0.0750	0.10	ug/l		EPA 6020	6/17/11 14:12
U000401-CCB4	Copper	0.102	0.50	ug/l		EPA 6020	6/17/11 14:51
	Lead	0.0212	0.10	ug/l		EPA 6020	6/17/11 14:51
	Silver	0.0807	0.10	ug/l		EPA 6020	6/17/11 14:51
U000401-CCB5	Copper	0.0878	0.50	ug/l		EPA 6020	6/17/11 15:18
	Lead	0.0145	0.10	ug/l		EPA 6020	6/17/11 15:18
	Silver	0.0762	0.10	ug/l		EPA 6020	6/17/11 15:18
U000401-CCB6	Copper	0.118	0.50	ug/l		EPA 6020	6/17/11 15:51
	Lead	0.0542	0.10	ug/l		EPA 6020	6/17/11 15:51
	Silver	0.114	0.10	ug/l	*	EPA 6020	6/17/11 15:51
U000401-CCB7	Copper	0.116	0.50	ug/l		EPA 6020	6/17/11 16:25
	Lead	0.0429	0.10	ug/l		EPA 6020	6/17/11 16:25
	Silver	0.103	0.10	ug/l	*	EPA 6020	6/17/11 16:25
U000401-CCB8	Copper	0.109	0.50	ug/l		EPA 6020	6/17/11 16:58
	Lead	0.0299	0.10	ug/l		EPA 6020	6/17/11 16:58
	Silver	0.0884	0.10	ug/l		EPA 6020	6/17/11 16:58
U000401-CCB9	Copper	0.0991	0.50	ug/l		EPA 6020	6/17/11 17:07
	Lead	0.0290	0.10	ug/l		EPA 6020	6/17/11 17:07
	Silver	0.0898	0.10	ug/l		EPA 6020	6/17/11 17:07

	Conc (ppb)	5X Action	Samples Qualified
Copper	0.0929	0.4645	#5
Lead	0.0118	0.059	none
Silver	0.0750	0.375	#11, #01 @ 0.21ppbU

TC
8/30/11

CRDL STANDARD

EPA 6020

Laboratory: TestAmerica Irvine
SDG: DRAFT
Client: TestAmerica Westfield
Project: Olin
Instrument ID: ICPMS4
Calibration: I11F048
Sequence: U000401
Injection Date: 06/17/11 13:02

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
U000401-CRL1	Copper	0.200	0.318	159 *	ug/l	50 - 150
	Lead	0.200	0.229	115	ug/l	50 - 150
	Silver	0.200	0.127	63	ug/l	50 - 150
U000401-CRL2	Copper	1.00	1.25	125	ug/l	50 - 150
	Lead	1.00	1.16	116	ug/l	50 - 150
	Silver	1.00	0.760	76	ug/l	50 - 150
U000401-CRL3	Copper	2.00	2.39	120	ug/l	50 - 150
	Lead	2.00	2.30	115	ug/l	50 - 150
	Silver	2.00	1.58	79	ug/l	50 - 150

* Values outside of QC limits

no detections ~~>~~ <
0.4 ppb
NO Quals

8/30/11
TC

Form 4

ICP INTERFERENCE CHECK SAMPLE

EPA 6020

Laboratory: TestAmerica Irvine
Client: TestAmerica Westfield
Instrument ID: ICPMS4
Sequence: U000401

SDG:
Project: Olin
Calibration: I11F048
Check Nbr: 1
Analyzed: 6/17/11 12:54

		True		Found				
Analyte	Units	Sol A	Sol B	Sol A	%R	Sol B	%R	Limit
Copper	ug/l	NA	NA	0.292	NA		NA	0 - 200
Copper	ug/l	NA	20.0		NA	19.2	96	70 - 130
Lead	ug/l	NA	NA	0.194	NA		NA	0 - 200
Lead	ug/l	NA	20.0		NA	20.5	103	70 - 130
Silver	ug/l	NA	NA	0.0461	NA		NA	0 - 200
Silver	ug/l	NA	20.0		NA	19.9	100	70 - 130

* Values outside of QC limits

no detections no Quals

µDL
Silver 0.03
Lead 0.02
Copper 0.20

~~Copper results estimated in samples~~
~~#6, #7, #10, #11~~

8/31/11 TC

Lead results estimated in samples

#3, #6, #7, #10, #11

Lead Qualified (U) @ the RL in #5

8/30/11 TC

INORGANICS

TAL METALS (including mercury)

REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / (II) / III (circle one)

SITE: **Olin Chemical** Project #: 6107110016-12 SDG #: 360-34315-1

LAB # : Test America – Westfield for ICP-AES and Hg Test America – Irvine for ICP-MS

Sample IDs: Attached tracking sheet or sample listing.

This checklist is designed to be used with the USEPA Data Validation Guidelines Part IV (November 2008). During Level III validation, calculation and transcription checks are completed for instrument tuning, surrogates, target compounds, spike recoveries, calibration data, and internal standards as specified in the guideline. These checks are documented on attached validation notes.

Method 6020A for Cu, Pb, and Ag. Hg by 7470A, All other Metals by 6010C.

YES	NO	NA		
Data completeness				
☑	☐	☐	All data summaries, QC forms and raw data available from hard copy or electronic data package	Contact lab if missing data. Lab to respond with 24 hours.
☑	☐	☐	Data summaries match EDD	12 samples x 24 metals = 288 records
Holding Times and Preservation				
☑	☐	☐	Hold times met (6 months, 28 days Hg)	
☑	☐	☐	Preserved (waters HNO_3)	
Calibration				
☑	☐	☐	ICP/MS Instrument Tune.	Verify that tuning meets mass, resolution, and RSD method criteria.
☑	☐	☐	Mass calibration criteria ≤ 0.1amu from true	ICP: at least one blank and one standard
☑	☐	☐	Resolution <0.7 +/-0.1amu full width @ 10% peak height	Hg: at least one blank and four standards
☑	☐	☐	RSD < 5%	Correlation coefficient criteria applicable to all analyses except ICP-AES.
☑	☐	☐	Appropriate number of standards used to establish calibration curve.	
☑	☐	☐	Correlation coefficient > 0.995 for Hg	90-110% for ICP-AES/MS, 80-120% for Hg. See additional qualification actions in the Region 1 guidelines.
☑	☐	☐	Calibrated daily.	Every 10 samples or every 2 hrs.
☑	☐	☐	ICV/CCV %R within acceptance range.	50-150% ~~70-130%~~ for QL Standard. If out low, (J) detects less then 2X QL standard and (UJ) non-detects. See additional validation actions in the Region I guidelines.
☑	☐	☐	CCVs analyzed at the proper frequency.	
☑	☐	☐	QL Standard within limits	

INORGANICS

TAL METALS (including mercury)

REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / (II) / III (circle one)

Yes	No	N/A		
Blanks				Evaluate all blanks for contamination. Highest contaminant level used for action level. 5X the highest blank contamination is the action level.
Method:				
☑	☐		☐ Method blank was prepared with each batch of samples or with a maximum of 20 samples	
☐	☑		☐ Results >MDL	
☐	☐		☑ Absolute value negative MB results > 5x MDL Not reported on Forms	
☑	☐		☐ For ICP/MS verify IS responses meet method criteria	
Calibration Blanks:				No Quals
* ☑	☐		☐ ICB/CCB results > IDL Cd @ 0.218,	Na @ 281, Be @ 0.162
☐	☐		☑ Absolute value of negative ICB/CCB results > 5x MDL Not reported on forms	
☑	☐		☐ CCB analyzed every 10 samples or 2 hrs.	
Equipment/Rinseate Blanks:				
N/A ☐	☐	☐	Results >MDL	
☐	☐	☐	Absolute value of negative ICB/CCB results > 5x MDL	
Interference Check Sample				
* ☑	☐		☐ ICS analyzed at proper frequency	An ICS must be run at the beginning and end of run or every 8 hours.
☑	☐		☐ Interference present in sample at > 50% concentration in ICS OC-SW-SDBK-001-XXX	If interferences (Al, Ca, Fe, Mg) are not > 50% ICS concentration in sample, do not apply.
☑	☐		☐ ICS AB %R 80%-120%	interference of 0.194ppb of lead (J) Qual #2, 3, 7, 8, 9, 11
ICP-MS Internal Standard Intensities				
☑	☐		☐ Internal standard relative intensities reported by the laboratory	
☑	☐		☐ Internal standard relative intensities are within 60 – 125 %	Qualify data based on Region 1 guideline Note: MCP Limits are 30 – 120%
Matrix Spikes				
☑	☐	☐	All compounds are within %R of 75-125% excluding results exceeding the spike concentration by ≥4x	
☑	☐	☐	Were post-digestion spikes reported for unacceptable pre-digestion spike recoveries	
☐	☑	☐	Was a field blank used for spike analysis	Post-digestion spikes %R limits = 75% - 125%

INORGANICS

TAL METALS (including mercury)

REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / (II) / III (circle one)

Yes	No	N/A		
Laboratory Control Samples (LCS)				
☑	☐	☐	Percent recoveries are within limits (waters and soil 80-120%)	
☑	☐	☐	An LCS was analyzed for each matrix, batch of samples, or every 20 samples.	
Laboratory Duplicate				
☐	☑	☐	Was a field blank used as the lab duplicate	
☑	☐	☐	Is the RPD within water control limits of ±20% for sample values >5x RL(35% for soil)	
☑	☐	☐	Is the control limit of ± RL met for sample values <5x RL (2x RL for soil)	
☑	☐	☐	Was a duplicate analyzed for every matrix and every 20 samples or batch	
Field Duplicate				
☐	☐	☑	For sample values >5x RL, the RPD control limit of ± 30% (50% for soil) was met	
☐	☐	☑	For sample values <5x RL, the control limit of ±2x RL (4x RL for soil) was met	
Serial Dilution				
☐	☐	☑	Are any percent difference criteria > 15% (for samples with a concentration >50 times the IDL)	
☐	☐	☑	Are results of the diluted samples > the original sample results	

Not Collected

Validator's Signature: [signature]

Date: 8/31/11

Reference:

MACTEC, Project Operation Plan Volume IIB, Quality Assurance Project Plan for Remedial Investigation/Feasibility Study – Olin Chemical Superfund Site, Wilmington Property, 51 Eames Street, Wilmington, MA", MACTEC Engineering and Consulting. .April 2009.

Form 1

INORGANIC ANALYSIS DATA SHEET

EPA 6020

C-SW-EDSD/SW1(EDBS5)-X

Laboratory: TestAmerica Irvine
SDG:
Client: TestAmerica Westfield
Project: Olin
Matrix: Water
Laboratory ID: IUF0953-04
File ID: 110617-1-079
Sampled: 06/08/11 10:00
Prepared: 06/16/11 08:45
Analyzed: 06/17/11 14:29
Solids: 0.00
Preparation: EPA 3005A ICPMS
Initial/Final: 50 ml / 50 ml
Batch: 11F2199
Sequence: U000401
Calibration: I11F048
Instrument: ICPMS4

CAS NO.	Analyte	Concentration (ug/l)	Dilution Factor	Q	Method
7440-50-8	Copper	0.72	1		EPA 6020
7439-92-1	Lead	0.10	1	U	EPA 6020
7440-22-4	Silver	0.1 ~~0.074~~	1	~~J~~U	EPA 6020

8/31/11
TC

Form 1

INORGANIC ANALYSIS DATA SHEET

EPA 6020

C-SW-EDSD/SW2(EDBS6)-X

Laboratory: TestAmerica Irvine
SDG:
Client: TestAmerica Westfield
Project: Olin
Matrix: Water
Laboratory ID: IUF0953-05
File ID: 110617-1-088
Sampled: 06/08/11 09:00
Prepared: 06/16/11 08:45
Analyzed: 06/17/11 14:53
Solids: 0.00
Preparation: EPA 3005A ICPMS
Initial/Final: 50 ml / 50 ml
Batch: 11F2199
Sequence: U000401
Calibration: I11F048
Instrument: ICPMS4

CAS NO.	Analyte	Concentration (ug/l)	Dilution Factor	Q	Method
7440-50-8	Copper	1.4	1		EPA 6020
7439-92-1	Lead	0.13	1	~~B~~ U	EPA 6020
7440-22-4	Silver	0.10	1	U	EPA 6020

8/31/11
TC

Form 1

INORGANIC ANALYSIS DATA SHEET

EPA 6020

DC-SW-MMB-SW/SD-11-XX

Laboratory: TestAmerica Irvine
SDG:
Client: TestAmerica Westfield
Project: Olin
Matrix: Water
Laboratory ID: IUF0953-07
File ID: 110617-1-090
Sampled: 06/08/11 15:00
Prepared: 06/16/11 08:45
Analyzed: 06/17/11 14:59
Solids: 0.00
Preparation: EPA 3005A ICPMS
Initial/Final: 50 ml / 50 ml
Batch: 11F2199
Sequence: U000401
Calibration: I11F048
Instrument: ICPMS4

CAS NO.	Analyte	Concentration (ug/l)	Dilution Factor	Q	Method
7440-50-8	Copper	1.5	1		EPA 6020
7439-92-1	Lead	0.64	1	J	EPA 6020
7440-22-4	Silver	0.10	1	U	EPA 6020

8/31/11
TC

Form 1

INORGANIC ANALYSIS DATA SHEET

EPA 6020

OC-SW-MMB-SW/SD-2-XXX

Laboratory: TestAmerica Irvine
SDG:
Client: TestAmerica Westfield
Project: Olin
Matrix: Water
Laboratory ID: IUF0953-08
File ID: 110617-1-091
Sampled: 06/08/11 10:50
Prepared: 06/16/11 08:45
Analyzed: 06/17/11 15:02
Solids: 0.00
Preparation: EPA 3005A ICPMS
Initial/Final: 50 ml / 50 ml
Batch: 11F2199
Sequence: U000401
Calibration: I11F048
Instrument: ICPMS4

CAS NO.	Analyte	Concentration (ug/l)	Dilution Factor	Q	Method
7440-50-8	Copper	0.77	1		EPA 6020
7439-92-1	Lead	0.44	1	~~B~~ J	EPA 6020
7440-22-4	Silver	0.10	1	U	EPA 6020

TS 8/31/11

Form 1

INORGANIC ANALYSIS DATA SHEET

EPA 6020

OC-SW-MMB-SW/SD-3-XXX

Laboratory: TestAmerica Irvine
SDG:
Client: TestAmerica Westfield
Project: Olin
Matrix: Water
Laboratory ID: IUF0953-09
File ID: 110617-1-092
Sampled: 06/08/11 09:15
Prepared: 06/16/11 08:45
Analyzed: 06/17/11 15:05
Solids: 0.00
Preparation: EPA 3005A ICPMS
Initial/Final: 50 ml / 50 ml
Batch: 11F2199
Sequence: U000401
Calibration: I11F048
Instrument: ICPMS4

CAS NO.	Analyte	Concentration (ug/l)	Dilution Factor	Q	Method
7440-50-8	Copper	2.6	1		EPA 6020
7439-92-1	Lead	1.6	1	J	EPA 6020
7440-22-4	Silver	0.10	1	U	EPA 6020

8/31/11
TC

Form 1

INORGANIC ANALYSIS DATA SHEET

EPA 6020

OC-SW-MMB-SW/SD-6-XXX

Laboratory: TestAmerica Irvine
SDG:
Client: TestAmerica Westfield
Project: Olin
Matrix: Water
Laboratory ID: IUF0953-10
File ID: 110617-1-093
Sampled: 06/08/11 11:55
Prepared: 06/16/11 08:45
Analyzed: 06/17/11 15:07
Solids: 0.00
Preparation: EPA 3005A ICPMS
Initial/Final: 50 ml / 50 ml
Batch: 11F2199
Sequence: U000401
Calibration: I11F048
Instrument: ICPMS4

CAS NO.	Analyte	Concentration (ug/l)	Dilution Factor	Q	Method
7440-50-8	Copper	54	5	D	EPA 6020
7439-92-1	Lead	110	5	D	EPA 6020
7440-22-4	Silver	~~0.32~~ 0.5	5	~~JD~~ U	EPA 6020

Form 1

INORGANIC ANALYSIS DATA SHEET

EPA 6020

DC-SW-MMB-SW/SD-8A-XX

Laboratory: TestAmerica Irvine
SDG:
Client: TestAmerica Westfield
Project: Olin
Matrix: Water
Laboratory ID: IUF0953-11
File ID: 110617-1-094
Sampled: 06/08/11 13:30
Prepared: 06/16/11 08:45
Analyzed: 06/17/11 15:10
Solids: 0.00
Preparation: EPA 3005A ICPMS
Initial/Final: 50 ml / 50 ml
Batch: 11F2199
Sequence: U000401
Calibration: I11F048
Instrument: ICPMS4

CAS NO.	Analyte	Concentration (ug/l)	Dilution Factor	Q	Method
7440-50-8	Copper	1.2	1		EPA 6020
7439-92-1	Lead	1.5	1	J	EPA 6020
7440-22-4	Silver	0.10	1	U	EPA 6020

8/31/11
TC

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OC-SW-SDBK-001-XXX
Lab Sample ID: 360-34315-1
Lab Name: TestAmerica Westfield
Job No.: 360-34315-1
SDG ID.: 360-34315-1
Matrix: Water
Date Sampled: 06/08/2011 11:30
Reporting Basis: WET
Date Received: 06/08/2011 17:50

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	1100	100	13	ug/L			1	6010B
7440-38-2	Arsenic	3.6	10	2.8	ug/L	J		1	6010B
7440-39-3	Barium	200	10	1.4	ug/L			1	6010B
7440-41-7	Beryllium	ND	1.0	0.15	ug/L			1	6010B
7440-70-2	Calcium	79000	400	50	ug/L			1	6010B
7440-43-9	Cadmium	1.1	1.0	0.13	ug/L	J		1	6010B
7440-48-4	Cobalt	3.0	10	1.3	ug/L	J		1	6010B
7440-47-3	Chromium	2.2	5.0	0.65	ug/L	J		1	6010B
7439-89-6	Iron	6700	100	14	ug/L			1	6010B
7440-09-7	Potassium	9600	4000	1100	ug/L			1	6010B
7439-95-4	Magnesium	7700	400	50	ug/L			1	6010B
7439-96-5	Manganese	3400	10	3.0	ug/L			1	6010B
7440-23-5	Sodium	450000	2000	280	ug/L			1	6010B
7440-02-0	Nickel	3.7	10	1.3	ug/L	J		1	6010B
7440-36-0	Antimony	ND	6.0	1.5	ug/L			1	6010B
7782-49-2	Selenium	ND	10	4.0	ug/L			1	6010B
7440-31-5	Tin	ND	50	6.5	ug/L			1	6010B
7440-28-0	Thallium	ND	10	2.2	ug/L			1	6010B
7440-62-2	Vanadium	2.2	10	1.5	ug/L	J		1	6010B
7440-66-6	Zinc	23	50	6.6	ug/L	J		1	6010B
7439-97-6	Mercury	ND	0.20	0.15	ug/L			1	7470A

8/31/11
TC

Form 1

INORGANIC ANALYSIS DATA SHEET

EPA 6020

OC-SW-SDBK-001-XXX

Laboratory: TestAmerica Irvine
SDG:
Client: TestAmerica Westfield
Project: Olin
Matrix: Water
Laboratory ID: IUF0953-01
File ID: 110617-1-083
Sampled: 06/08/11 11:30
Prepared: 06/16/11 08:45
Analyzed: 06/17/11 14:40
Solids: 0.00
Preparation: EPA 3005A ICPMS
Initial/Final: 50 ml / 50 ml
Batch: 11F2199
Sequence: U000401
Calibration: I11F048
Instrument: ICPMS4

CAS NO.	Analyte	Concentration (ug/l)	Dilution Factor	Q	Method
7440-50-8	Copper	27	1		EPA 6020
7439-92-1	Lead	14	1		EPA 6020
7440-22-4	Silver	0.23	1	U	EPA 6020

TC
8/31/11

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OC-SW-SDBK-004-XXX

Lab Sample ID: 360-34315-2

Lab Name: TestAmerica Westfield

Job No.: 360-34315-1

SDG ID.: 360-34315-1

Matrix: Water

Date Sampled: 06/08/2011 12:20

Reporting Basis: WET

Date Received: 06/08/2011 17:50

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	440	100	13	ug/L			1	6010B
7440-38-2	Arsenic	ND	10	2.8	ug/L			1	6010B
7440-39-3	Barium	50	10	1.4	ug/L			1	6010B
7440-41-7	Beryllium	ND	1.0	0.15	ug/L			1	6010B
7440-70-2	Calcium	18000	400	50	ug/L			1	6010B
7440-43-9	Cadmium	ND ~~0.28~~	1.0	0.13	ug/L	~~J~~		1	6010B
7440-48-4	Cobalt	ND	10	1.3	ug/L			1	6010B
7440-47-3	Chromium	0.77	5.0	0.65	ug/L	J		1	6010B
7439-89-6	Iron	2000	100	14	ug/L			1	6010B
7440-09-7	Potassium	2700	4000	1100	ug/L	J		1	6010B
7439-95-4	Magnesium	3400	400	50	ug/L			1	6010B
7439-96-5	Manganese	590	10	3.0	ug/L			1	6010B
7440-23-5	Sodium	65000	2000	280	ug/L			1	6010B
7440-02-0	Nickel	2.1	10	1.3	ug/L	J		1	6010B
7440-36-0	Antimony	ND	6.0	1.5	ug/L			1	6010B
7782-49-2	Selenium	ND	10	4.0	ug/L			1	6010B
7440-31-5	Tin	ND	50	6.5	ug/L			1	6010B
7440-28-0	Thallium	ND	10	2.2	ug/L			1	6010B
7440-62-2	Vanadium	1.5	10	1.5	ug/L	J		1	6010B
7440-66-6	Zinc	24	50	6.6	ug/L	J		1	6010B
7439-97-6	Mercury	ND	0.20	0.15	ug/L			1	7470A

8/31/11
TC

Form 1

INORGANIC ANALYSIS DATA SHEET

EPA 6020

OC-SW-SDBK-004-XXX

Laboratory: TestAmerica Irvine
SDG:
Client: TestAmerica Westfield
Project: Olin
Matrix: Water
Laboratory ID: IUF0953-02
File ID: 110617-1-084
Sampled: 06/08/11 12:20
Prepared: 06/16/11 08:45
Analyzed: 06/17/11 14:42
Solids: 0.00
Preparation: EPA 3005A ICPMS
Initial/Final: 50 ml / 50 ml
Batch: 11F2199
Sequence: U000401
Calibration: I11F048
Instrument: ICPMS4

CAS NO.	Analyte	Concentration (ug/l)	Dilution Factor	Q	Method
7440-50-8	Copper	1.2	1		EPA 6020
7439-92-1	Lead	1.3	1	J	EPA 6020
7440-22-4	Silver	0.10	1	U	EPA 6020

8/31/11
TC

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OC-SW-SD-EDSD/SW0-XXX
Lab Sample ID: 360-34315-3
Lab Name: TestAmerica Westfield
Job No.: 360-34315-1
SDG ID.: 360-34315-1
Matrix: Water
Date Sampled: 06/08/2011 10:45
Reporting Basis: WET
Date Received: 06/08/2011 17:50

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	390	100	13	ug/L			1	6010B
7440-38-2	Arsenic	5.0	10	2.8	ug/L	J		1	6010B
7440-39-3	Barium	100	10	1.4	ug/L			1	6010B
7440-41-7	Beryllium	ND	1.0	0.15	ug/L			1	6010B
7440-70-2	Calcium	46000	400	50	ug/L			1	6010B
7440-43-9	Cadmium	ND ~~0.16~~	1.0	0.13	ug/L	~~J~~		1	6010B
7440-48-4	Cobalt	ND	10	1.3	ug/L			1	6010B
7440-47-3	Chromium	1.4	5.0	0.65	ug/L	J		1	6010B
7439-89-6	Iron	11000	100	14	ug/L			1	6010B
7440-09-7	Potassium	3700	4000	1100	ug/L	J		1	6010B
7439-95-4	Magnesium	5200	400	50	ug/L			1	6010B
7439-96-5	Manganese	90	10	3.0	ug/L			1	6010B
7440-23-5	Sodium	190000	2000	280	ug/L			1	6010B
7440-02-0	Nickel	ND	10	1.3	ug/L			1	6010B
7440-36-0	Antimony	ND	6.0	1.5	ug/L			1	6010B
7782-49-2	Selenium	ND	10	4.0	ug/L			1	6010B
7440-31-5	Tin	ND	50	6.5	ug/L			1	6010B
7440-28-0	Thallium	ND	10	2.2	ug/L			1	6010B
7440-62-2	Vanadium	2.5	10	1.5	ug/L	J		1	6010B
7440-66-6	Zinc	53	50	6.6	ug/L			1	6010B
7439-97-6	Mercury	ND	0.20	0.15	ug/L			1	7470A

TC
8/31/11

Form 1

INORGANIC ANALYSIS DATA SHEET

EPA 6020

OC-SW-SD-EDSD/SW0-XXX

Laboratory: TestAmerica Irvine
SDG:
Client: TestAmerica Westfield
Project: Olin
Matrix: Water
Laboratory ID: IUF0953-03
File ID: 110617-1-085
Sampled: 06/08/11 10:45
Prepared: 06/16/11 08:45
Analyzed: 06/17/11 14:45
Solids: 0.00
Preparation: EPA 3005A ICPMS
Initial/Final: 50 ml / 50 ml
Batch: 11F2199
Sequence: U000401
Calibration: I11F048
Instrument: ICPMS4

CAS NO.	Analyte	Concentration (ug/l)	Dilution Factor	Q	Method
7440-50-8	Copper	3.2	1		EPA 6020
7439-92-1	Lead	0.51	1	~~B~~ J	EPA 6020
7440-22-4	Silver	0.10	1	U	EPA 6020

8/31/11
TC

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-34315-1

SDG No.: 360-34315-1

Concentration Units: ug/L

Analyte	RL	ICB 360-75342/11 06/15/2011 11:45		CCB 360-75342/18 06/15/2011 12:06		CCB 360-75342/23 06/15/2011 16:41		CCB 360-75342/35 06/15/2011 17:17	
		Found	C	Found	C	Found	C	Found	C
Aluminum	100	ND		ND		ND		ND	
Antimony	6.0	ND		ND		ND		ND	
Arsenic	10	ND		ND		ND		ND	
Barium	10	ND		ND		ND		ND	
Beryllium	1.0	ND		ND		ND		0.155	J
Cadmium	1.0	ND		ND		0.152	J	0.201	J
Calcium	400	ND		ND		ND		ND	
Chromium	5.0	ND		ND		ND		ND	
Cobalt	10	ND		ND		ND		ND	
Copper	10	ND		ND		ND		ND	
Iron	100	ND		ND		ND		ND	
Lead	5.0	ND		ND		ND		ND	
Magnesium	400	ND		ND		ND		ND	
Manganese	10	ND		ND		ND		ND	
Nickel	10	ND		ND		ND		ND	
Potassium	4000	ND		ND		ND		ND	
Selenium	10	ND		ND		ND		ND	
Silver	5.0	ND		ND		ND		ND	
Sodium	2000	ND		ND		281	J	ND	
Thallium	10	ND		2.55	J	ND		ND	
Tin	50	ND		ND		ND		ND	
Vanadium	10	ND		ND		ND		ND	
Zinc	50	ND		ND		ND		ND	

✓ ✓

Metal	Conc in blank (ppb)	5X Action	
Cadmium	0.218	1.09	samples #2, #3
Sodium	281	1405	NO Quals
Beryllium	0.162	0.81	NO Quals

8/30/11
TC

Italicized analytes were not requested for this sequence.

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Westfield Job No.: 360-34315-1

SDG No.: 360-34315-1

Lab Sample ID: ICSA 360-75342/49 Instrument ID: Varian ICP

Lab File ID: 061511d.csv ICS Source: ICSA wk_00021

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Aluminum	100000	110354	110
Antimony		-0.809	
Arsenic		0.128	
Barium		0.960	
Beryllium		-0.0209	
Cadmium		0.317	MDL = 0.13
Calcium	100000	98831	99
Chromium		-0.372	
Cobalt		-0.167	
Copper		0.879	
Iron	100000	113822	114
Lead		-0.509	
Magnesium	100000	102167	102
Manganese		-0.580	
Nickel		1.05	
Potassium		825	
Selenium		-1.62	
Silver		0.779	
Sodium		428	
Thallium		-1.74	
Tin		1.47	
Vanadium		-1.25	
Zinc		1.36	
Boron		*9.78*	
Lithium		*0.956*	
Molybdenum		*0.912*	
Silicon		*0.560*	
Silicon		*2.87*	
SiO2, Silica		*1.20*	
Strontium		*-1.38*	
Titanium		*0.240*	
Zirconium		*1.43*	

Qualify Cd (J) estimated in OC-SW-SDBK-001-XXX

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

8/30/14
TC

FORM IVA-IN

BLANKS
EPA 6020

Laboratory: TestAmerica Irvine
SDG:
Client: TestAmerica Westfield
Instrument ID: ICPMS4
Project: Olin
Sequence: U000401
Calibration: I11F048

Lab Sample ID	Analyte	Found	MRL	Units	C	Method	Analyzed
U000401-ICB1	Copper	0.0128	0.50	ug/l		EPA 6020	6/17/11 12:51
	Lead	0.00916	0.10	ug/l		EPA 6020	6/17/11 12:51
	Silver	0.0630	0.10	ug/l		EPA 6020	6/17/11 12:51
U000401-CCB2	Copper	0.0929	0.50	ug/l		EPA 6020	6/17/11 13:44
	Lead	0.000431	0.10	ug/l		EPA 6020	6/17/11 13:44
	Silver	0.0227	0.10	ug/l		EPA 6020	6/17/11 13:44
U000401-CCB3	Copper	0.0790	0.50	ug/l		EPA 6020	6/17/11 14:12
	Lead	0.0118	0.10	ug/l		EPA 6020	6/17/11 14:12
	Silver	0.0750	0.10	ug/l		EPA 6020	6/17/11 14:12
11F2199-BLK1	Copper	ND	0.50	ug/l		EPA 6020	6/17/11 14:17
	Lead	0.0636	0.10	ug/l		EPA 6020	6/17/11 14:17
	Silver	ND	0.10	ug/l		EPA 6020	6/17/11 14:17
U000401-CCB4	Copper	0.102	0.50	ug/l		EPA 6020	6/17/11 14:51
	Lead	0.0212	0.10	ug/l		EPA 6020	6/17/11 14:51
	Silver	0.0807	0.10	ug/l		EPA 6020	6/17/11 14:51
U000401-CCB5	Copper	0.0878	0.50	ug/l		EPA 6020	6/17/11 15:18
	Lead	0.0145	0.10	ug/l		EPA 6020	6/17/11 15:18
	Silver	0.0762	0.10	ug/l		EPA 6020	6/17/11 15:18
U000401-CCB6	Copper	0.118	0.50	ug/l		EPA 6020	6/17/11 15:51
	Lead	0.0542	0.10	ug/l		EPA 6020	6/17/11 15:51
	Silver	0.114	0.10	ug/l	*	EPA 6020	6/17/11 15:51
U000401-CCB7	Copper	0.116	0.50	ug/l		EPA 6020	6/17/11 16:25
	Lead	0.0429	0.10	ug/l		EPA 6020	6/17/11 16:25
	Silver	0.103	0.10	ug/l	*	EPA 6020	6/17/11 16:25
U000401-CCB8	Copper	0.109	0.50	ug/l		EPA 6020	6/17/11 16:58
	Lead	0.0299	0.10	ug/l		EPA 6020	6/17/11 16:58
	Silver	0.0884	0.10	ug/l		EPA 6020	6/17/11 16:58
U000401-CCB9	Copper	0.0991	0.50	ug/l		EPA 6020	6/17/11 17:07
	Lead	0.0290	0.10	ug/l		EPA 6020	6/17/11 17:07
	Silver	0.0898	0.10	ug/l		EPA 6020	6/17/11 17:07

	Blank Conc (ppb)			Samples Qualified
Copper	0.102	x5 =	0.51	none
Lead	0.0636	=	0.318	#5
Silver	0.0807	=	0.4035	#1, #4, #10

8/31/11
TC

CRDL STANDARD

EPA 6020

Laboratory: TestAmerica Irvine

SDG: DRAFT

Client: TestAmerica Westfield

Project: Olin

Instrument ID: ICPMS4

Calibration: I11F048

Sequence: U000401

Injection Date: 06/17/11 13:02

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
U000401-CRL1	Copper	0.200	0.318	159 *	ug/l	50 - 150
	Lead	0.200	0.229	115	ug/l	50 - 150
	Silver	0.200	0.127	63	ug/l	50 - 150
U000401-CRL2	Copper	1.00	1.25	125	ug/l	50 - 150
	Lead	1.00	1.16	116	ug/l	50 - 150
	Silver	1.00	0.760	76	ug/l	50 - 150
U000401-CRL3	Copper	2.00	2.39	120	ug/l	50 - 150
	Lead	2.00	2.30	115	ug/l	50 - 150
	Silver	2.00	1.58	79	ug/l	50 - 150

* Values outside of QC limits

All detections are > 0.4 ppb so no Quals.

8/31/11
TC

Form 1

METHOD BLANK DATA SHEET

EPA 6020

Laboratory:	TestAmerica Irvine		SDG:		
Client:	TestAmerica Westfield		Project:	Olin	
Matrix:	Water	Laboratory ID:	11F2199-BLK1	File ID:	110617-1-077
Prepared:	06/16/11 08:45	Preparation:	EPA 3005A ICPMS	Initial/Final:	50 ml / 50 ml
Analyzed:	06/17/11 14:17	Instrument:	ICPMS4		
Batch:	11F2199	Sequence:	U000401	Calibration:	I11F048

CAS NO.	COMPOUND	CONC. (ug/l)	Q
7440-50-8	Copper	0.50	U
7439-92-1	Lead	0.0636	J
7440-22-4	Silver	0.10	U

0.06 x5 = 0.318ppb
see summary sheet
for Quals.

8/31/11
TC

Form 4

ICP INTERFERENCE CHECK SAMPLE

EPA 6020

Laboratory: TestAmerica Irvine
SDG:
Client: TestAmerica Westfield
Project: Olin
Instrument ID: ICPMS4
Calibration: I11F048
Sequence: U000401
Check Nbr: 1
Analyzed: 6/17/11 12:54

		True		Found				
Analyte	Units	Sol A	Sol B	Sol A	%R	Sol B	%R	Limit
Copper	ug/l	NA	NA	0.292	NA		NA	0 - 200
Copper	ug/l	NA	20.0		NA	19.2	96	70 - 130
Lead	ug/l	NA	NA	0.194	NA		NA	0 - 200
Lead	ug/l	NA	20.0		NA	20.5	103	70 - 130
Silver	ug/l	NA	NA	0.0461	NA		NA	0 - 200
Silver	ug/l	NA	20.0		NA	19.9	100	70 - 130

* Values outside of QC limits

	RL	MDL	Samples qualified
Copper	0.5	0.2	No interference (none)
Lead	0.1	0.02	#2, #3, #7, #8, #9, #11
Silver	0.1	0.03	no interference (none)

8/31/11
TC

OLIN-WILMINGTON
CHEMIST REVIEW
STANDARD OPERATING PROCEDURE AND CHECKLIST
N-NITROSODIMETHYLAMINE (NDMA) AND
N-NITROSODI-N-PROPYLAMINE (NDPA) BY METHOD 521

Reviewer/Date [signature] 8/22/11
Sr. Review/Date
Lab Report # 360-34253-1 /G1F070508
Project 6107110066.12

1.0 Laboratory Deliverable Requirements

1.1 Laboratory Information: Was all of the following provided in the laboratory report? Check items received. **Yes** [✓] No [ ] N/A [ ] Comments:

[✓] *Name of Laboratory* [✓] *Address* [✓] *Project ID* [✓] *Phone #* [✓] *Sample identification -- Field and Laboratory (IDs must be cross-referenced)*

Client Information: [✓] *Name* [✓] *Address* [✓] *Client Contact*

[✓] Data Package Narrative [✓] results and QC summaries [✓] raw data [✓] chromatograms

ACTION: If no, contact lab for submission of missing or illegible information.

1.1 Laboratory Case Narrative: ***Yes*** [✓] *No* [ ] *N/A* [ ] *Comments:*

[✓] *Narrative serves as an exception report for the project and method QA/QC performance.*

***ACTION**: If no, contact lab for submission of missing or illegible information.*

1.2 Chain of Custody (COC) copy present of completed COC? **Yes** [✓] No [ ] N/A [ ] Comments:

Does the laboratory report include a copy of the completed Chain of Custody forms containing all samples in this SDG?

ACTION: If no, contact lab for submission of missing completed *COC*.

1.3 Sample Receipt Information (*Cooler Receipt Form*): Were each of the following tasks completed and recorded upon receipt of the sample(s) into the laboratory? **Yes** [✓] No [ ] N/A [ ] Comments:

☒ Sample temperature confirmed: must be 1° – 10° C. (If samples were sent by courier and delivered on the same day as collection, temperature requirement does not apply). see below

☑ Container type noted ☑ Condition observed ☑ Field and lab IDs cross referenced

ACTION: If no, contact lab for submission of missing or incomplete documentation.

1.3.1 Were the correct bottles and preservatives used? **Yes** [ ] No [✓] N/A [ ] Comments:

Water - 1 Liter amber bottle cool to 4°C. Sodium thiosulfate may be added if source is chlorinated.

Samples OC-SW-1SCD-1-DUP, OC-SW-PZ-17RR-XXX, and OC-SW-PZ-16RR-XXX were received at 16°C. Results and reporting limits are flagged estimated (J/UJ).

ACTION: If no, inform senior chemist. Document justification for change in container/volume (if applicable), qualify positive and non-detect data (J) if cooler temperature exceeds 10°C or use professional judgment for data rejection.

1.3.2 Were all samples delivered to the laboratory without breakage? **Yes** [ ] No [✓] N/A [ ] Comments: See narrative attached

1.3.3 Does the *Cooler Receipt Form* or Lab Narrative indicate other problems with sample receipt, condition of the samples, analytical problems or special circumstances affecting the quality of the data? Yes [✓] **No** [ ] N/A [ ] Comments: see attached.

1.4 Sample Results Section: *Was the following information supplied in the laboratory report for each sample?* **Yes** [✓] No [ ] N/A [ ] Comments:

Case Narrative

TestAmerica West Sacramento Project Number G1F070508

General Comments
Two of the bottles for sample OC-SW-ISCO-1-DUP (360-34253-1) were received broken. One of the bottles for sample OC-SW-ISCO-1-XXX (360-34253-2) was received broken. One of the bottles for sample OC-SW-ISCO-2-XXX (360-34253-3 was received broken.

The bottles for Nonylphenol analysis for sample OC-SW-SD-1-XXX (360-34253-9) were not received. As requested, this analysis was cancelled on this sample.

As discussed, all the sample containers for OC-SW-ISCO-1-DUP (360-34253-1) and OC-SW-PZ-17RR-XXX (360-34253-8) and the unpreserved containers for sample OC-SW-PZ-16RR-XXX (360-34253-7) were received at the lab at 16 degrees Celsius. The temperature blank in the cooler was also received at 16 degrees Celsius.

WATER, Nonylphenols
Samples: 1, 2, 3, 7, 8
The matrix spikes, which were performed on sample 2, have high recoveries for Bisphenol-A due to possible matrix interferences. Since the laboratory control sample met acceptance criteria, no corrective action was performed.

WATER, NDMA & NDPA
Sample: 6
This sample has a low recovery for the N-Nitrosodi-n-propylamine-d14 internal standard. Data quality is not considered affected if the internal standard signal-to-noise ratio is greater than 10:1, which is achieved for all internal standards for this sample.

There are no other anomalies associated with this project.

☑ Field ID and Lab ID ☑ *Date and time collected* ☑ Analyst Initials ☑ *Dilution Factor* ☑ *Reporting limits*
☑ Analysis method ☑ *Preparation method* ☑ *Date of preparation/extraction/ and analysis,* ☑ Matrix ☑ Target analytes and concentrations ☑ Units

ACTION: If no, contact lab for submission of missing or incomplete information.

1.5 QA/QC Information: Was the following information provided in the laboratory report for each sample batch? **Yes** [✓] No [ ] Comments:

☑ Method blank results ☑ LCS recoveries ☑ MS/MSD recoveries and RPDs ☑ Internal Standard Recoveries

ACTION: If no, contact lab for submission of missing or incomplete information.

2.0 <u>Holding Times</u> Yes [ ] **No** [✓] N/A [ ] Comments:

Have any technical holding times, determined from date of collection to date of analysis, been exceeded?

NOTE: For water samples, the holding time is 7 days from sampling to extraction and 40 days from extraction to analysis.

ACTION: If technical holding times are exceeded, qualify all positive results (J) and non-detects (UJ). For water samples that are grossly exceeded (>2X hold time) reject (R) all non-detect results. For soil samples professional judgement will be used to determine if rejection is necessary.

3.0 Laboratory Method — **Yes** [✓] No [ ] N/A [ ] Comments:

3.1 Was the correct laboratory method used?

Water Extraction 3510C or *3520C*
NDMA and NDPA 521

ACTION: If no, contact project manager to inform Client of change; request variance from Client; contact laboratory to provide justification for method change compared to the requested method.

3.2 Are the practical quantitation limits the same as those specified by the [✓] QAPP — **Yes** [✓] No [ ] N/A [ ] Comments: except where dilution due to analyte concentration elevated RL in samples.

NOTE: *The project PQL is 2 ng/L for GW and 5 ng/L for SW.*

ACTION: If no, evaluate change with respect to sample matrix, preparation, dilution, moisture, etc. If sample PQL is indeterminate, contact lab for explanation.

OC-SW-PZ-16RA-XXX, OC-SW-PZ-17RA-XXX

3.3 Did the laboratory complete a mulit-point initial calibration with a NDMA RPD ≤ 20? Is NDPA RPD ≤ 30? Is the low point standard equal to the PQL? **Yes** [✓] No [ ] Comments:

Has a second source standard been analyzed to verify initial calibration? Is the percent difference < 25? **Yes** [✓] No [ ]

3.4 Did the laboratory analyze a continuing calibration every 12 hours or every 20 samples? Was the NDMA recovery 80-120 percent (percent difference ≤ 20)? Was the NDPA recovery 70 -130 percent (percent difference ≤ 30)? **Yes** [✓] No [ ]

3.5 Is the RRT in the CCAL ± 0.06 min from ICAL? **Yes** [✓] No [ ] N/A [ ] Comments:

ACTION: If no, contact the lab for submission.

4.0 **Method Blanks**

4.1 Is the Method Blank Summary present? **Yes** [✓] No [ ] N/A [ ] Comments:

ACTION: If no, call the laboratory for submission of missing data.

4.2 For the analysis of NDMA, has a method blank been analyzed for each analysis batch of field samples of 20 or less? **Yes** [✓] No [ ] N/A [ ] Comments:

ACTION: If no, document discrepancy in case narrative and contact lab for justification. Consult senior chemist for action needed.

4.3 Is the method blank less than the PQL? **Yes** [✓] No [ ] N/A [ ] Comments:

4.4 Do any method blanks have positive results for NDMA parameters? Qualify data according to the following: Yes [ ] **No [✓]** N/A [ ] Comments:

For NDMA contaminants:

If the sample concentration is < 5 × blank value, flag sample result non-detect "U" at the PQL or the concentration reported if greater than the PQL.

If the sample concentration is > 5 × blank value, no qualification is needed.

5.0 Laboratory Control Sample

5.1 Was a laboratory control sample extracted and run with each analytical batch of 20 samples or less? **Yes [✓]** No [ ] N/A [ ] Comments:

ACTION: Call laboratory for LCS form submittal. If data are not available, use professional judgment to determine the usability of sample results associated with that batch.

5.2 Is a LCS Summary Form present? **Yes [✓]** No [ ] N/A [ ] Comments:

ACTION: If no, contact lab for resubmission of missing data.

5.3 Is the recovery of any analyte outside of control limits?

Yes [ ] **No** [✓] N/A [ ] Comments:

NOTE: QAPP LCS recovery limits 60-140.

ACTION: If recovery is above the upper limit, qualify all positive sample results within the batch as (J). If recovery is below the lower limit but > 10%, qualify all positive and no-detect results within the batch as (J). If LCS recovery is <10%, non-detect results are rejected (R).

6.0 Matrix Spikes

Matrix spikes may be collected at different frequencies based on monthly, quarterly, or task specific schedules. Confirm spike requirements for each set with the senior chemist.

6.1 Were project specified MS/MSDs analyzed? List project samples that were spiked.

Yes [✓] No [ ] N/A [ ] Comments:

Sample OC-SW-1510-1-XXX was submitted for MS/MSD analysis.

ACTION: If no, contact senior chemist to see if any were specified.

6.2 Is the MS/MSD recovery form present?

Yes [✓] No [ ] N/A [ ] Comments:

ACTION: If no, contact lab for resubmission of missing data.

6.3 Were matrix spikes analyzed at the required frequency of 1 per 20 samples per matrix?

Yes [✓] No [ ] N/A [ ] Comments:

ACTION: If any matrix spike data are missing, call lab for resubmission.

6.4 Are any NDMA spike recoveries outside of the QC limits? Yes [ ] No [✓] N/A [ ] Comments:

NOTE: $\%R = \frac{(SSR-SR)}{SA} \times 100\%$

Where: SSR = Spiked sample result SA = Spike added
SR = Sample result

NOTE: *QAPP MS/MSD recovery limits are 60-140.*
NOTES: 1) Use professional judgment for the MS/MSD flags.
2) If the MS/MSD was performed by the laboratory on a non-project sample, no qualification is required.

ACTION: Professional judgment used to qualify associated samples. If the recoveries of the MS and MSD exceed the upper control limit, qualify positive results as estimated (J). If the recoveries of the MS and MSD are lower than the lower control limit, qualify both positive results and non-detects (J).

6.5 Are any RPDs for MS/MSD recoveries outside of the QC limits? Yes [ ] **No** [✓] N/A [ ] Comments:

NOTE: $RPD = \frac{S-D}{(S+D)/2} \times 100\%$ Where: S = MS sample result
D = MSD sample result

NOTE: *QAPP MS/MSD RPD limits for water ≤ 20.*

ACTION: If the RPD exceeds the control limit, qualify positive results and non-detects (J).

7.0 Isotope IS Recoveries

Were internal recoveries outside of laboratory limits for any sample or method blank? Yes [✓] **No** [ ] N/A [ ] Comments:

NOTE: *Lab IS recovery limits 25 -150.*

ACTION: If recoveries are >10% and sample extracts were not diluted, reject non-detects and qualify positive detections as estimated (J). For recoveries outside the lab QC limit, qualify non-detects and positives (J).

NDPA-d_{14} IS recovery (12) less than 25. NDPA result in OC-SW-M MB-SW/SD-9-xxx was ND, RL qualified estimated (UJ).

8.0 Sampling Accuracy

If ground water samples are collected directly from a tap, process stream, or with dedicated tubing, rinse blanks will not be collected.

8.1 Were rinsate blanks collected? Prior to evaluating rinsate blanks, obtain a list of the associated samples. **Yes** [ ] No [✓] N/A [ ] Comments:

8.2 Do any rinsate blanks have positive results? Yes [ ] **No** [ ] N/A [✓] Comments:

NOTE:

If the sample concentration is < 5 × blank value, flag sample result non-detect "U" at the PQL or the concentration reported if greater than the PQL.

If the sample concentration is > 5 × blank value, no qualification is needed.

9.0 Field Duplicates

9.1 Were field duplicate samples collected? Obtain a list of the samples and their associated field duplicates. **Yes** [✓] No [ ] N/A [ ] Comments: OC-SW-1SCO-1-XXX
*OC-SW-MMB-SW1SD-1-XXX

9.2 Was the RPD ≤ 30% for waters? Calculate the RPD for all results and attach to this review. **Yes** [✓] No [ ] N/A [ ] Comments:

	NDMA ORIG	NDMA DUP	RPD	NDPA ORIG	NDPA DUP	RPD
OC-SW-1SCO-1-XXX	23	20J	14	1.94J	1.94J	NA
OC-SW-MMB-SW1SD-1-XXX	0.47J	1.9U	~~1.5~~ NA	1.9U	1.9U	—

ACTION: RPD must be ≤30% for water. Qualify data (J) for both sample results if the RPD exceeds 30%.

10.0 Calculation and Transcription Checks

- [✓] Initial Calibration
- [✓] Continuing Calibration
- [✓] Method Blank Raw Data Reveiw
- [✓] Sample NDMA and NDPA Results
- [✓] LCS
- [✓] Internal Standard Recovery

REFERENCES

MACTEC, 2009, "Project Operation Plan Volume III-B Quality Assurance Project Plan, Olin Wilmington Superfund Site, 51 Eames Street, Wilmington, MA", April 2009.

U.S. Environmental Protection Agency (USEPA), 1996. "Region 1 EPA-NE Data Validation Guidelines For Evaluating Environmental Analyses"; Quality Assurance Unit Staff; Office of Environmental Measurement and Evaluation; December 1996.

TestAmerica Westfield

Client Sample ID: OC-SW-MMB-SW/SD-9-XXX (360-34253-6)

GC/MS Semivolatiles

Lot-Sample #...:	G1F070508-006	Work Order #...:	MJ28E1AA	Matrix.....:	WG
Date Sampled...:	06/06/11	Date Received..:	06/07/11		
Prep Date.....:	06/10/11	Analysis Date..:	06/20/11		
Prep Batch #...:	1161121				
Dilution Factor:	0.96	Method.....:	SAC WS-MS-0012		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
N-Nitrosodimethylamine	ND	1.9	ng/L	0.37
N-Nitrosodi-n-propyl-amine	ND J	1.9	ng/L	0.45

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
N-Nitrosodimethylamine-d6	70	(25 - 140)
N-Nitrosodi-n-propylamine-d14	12 *	(25 - 140)

NOTE(S):

* Surrogate recovery is outside stated control limits.

7/22/11

TestAmerica Westfield

Client Sample ID: OC-SW-ISCO-1-DUP (360-34253-1)

GC/MS Semivolatiles

Lot-Sample #...: G1F070508-001 Work Order #...: MJ2781AC Matrix.....: WG
Date Sampled...: 06/06/11 Date Received..: 06/07/11
Prep Date.....: 06/10/11 Analysis Date..: 06/17/11
Prep Batch #...: 1161121
Dilution Factor: 0.95 Method.....: SAC WS-MS-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
N-Nitrosodimethylamine	20 J	1.9	ng/L	0.37
N-Nitrosodi-n-propyl-amine	ND J	1.9	ng/L	0.45

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
N-Nitrosodimethylamine-d6	30	(25 - 140)
N-Nitrosodi-n-propylamine-d14	118	(25 - 140)

8/22/11

TestAmerica Westfield

Client Sample ID: OC-SW-PZ-16RR-XXX (360-34253-7)

GC/MS Semivolatiles

Lot-Sample #...:	G1F070508-007	**Work Order #...:**	MJ28F1AC	**Matrix.....:**	WG
Date Sampled...:	06/06/11	**Date Received..:**	06/07/11		
Prep Date.....:	06/10/11	**Analysis Date..:**	06/20/11		
Prep Batch #...:	1161121				
Dilution Factor:	4.76	**Method.....:**	SAC WS-MS-0012		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
N-Nitrosodimethylamine	170 ~~Q~~ J	9.5	ng/L	1.9
N-Nitrosodi-n-propyl-amine	ND J	9.5	ng/L	2.2

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
N-Nitrosodimethylamine-d6	58	(25 - 140)
N-Nitrosodi-n-propylamine-d14	34	(25 - 140)

NOTE(S):

Q Elevated reporting limit. The reporting limit is elevated due to high analyte levels.

7/22/11

TestAmerica Westfield

Client Sample ID: OC-SW-PZ-17RR-XXX (360-34253-8)

GC/MS Semivolatiles

Lot-Sample #...:	G1F070508-008	Work Order #...:	MJ28G1AC	Matrix.....:	WG
Date Sampled...:	06/06/11	Date Received..:	06/07/11		
Prep Date.....:	06/10/11	Analysis Date..:	06/20/11		
Prep Batch #...:	1161121				
Dilution Factor:	10.3	Method.....:	SAC WS-MS-0012		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
N-Nitrosodimethylamine	**290 Q J**	**21**	**ng/L**	**4.0**
N-Nitrosodi-n-propyl-amine	ND J	21	ng/L	4.8

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
N-Nitrosodimethylamine-d6	47	(25 - 140)
N-Nitrosodi-n-propylamine-d14	88	(25 - 140)

NOTE(S):

Q Elevated reporting limit. The reporting limit is elevated due to high analyte levels.

P/22/11

Print Date: 26 Apr 2011 09:53:47

TestAmerica West Sacramento Nitrosamines

Method:	c:\varianws\methods\method ws_ms_0012 042511.mth		
Recalc Method:	...anws\methods\method ws_ms_0012 042511.mth	Last Calibration:	4/26/2011 9:52 AM
Sample List:	N/A	Compound Table Updated:	4/26/2011 9:52 AM
Sequence:	N/A	Detector:	2000 Mass Spec
Workstation Name:	MS Workstation	Workstation Version:	Version 6.9
Peak Measurement:	Area	Calibration Type:	Internal Standard Analysis

RRF1	Level 1	Rep. 1	4/25/2011 12:28 PM	...april\042511\cs-1...2.0pg-ul, 4-25-2011, 12-28-13 pm,method ws_ms_0012 042511.sms
RRF2	Level 2	Rep. 1	4/25/2011 1:33 PM	...\april\042511\cs-2...5.0pg-ul, 4-25-2011, 1-33-22 pm,method ws_ms_0012 042511.sms
RRF3	Level 3	Rep. 1	4/25/2011 2:38 PM	...april\042511\cs-3.. 10.0pg-ul, 4-25-2011, 2-38-48 pm,method ws_ms_0012 042511.sms
RRF4	Level 4	Rep. 1	4/25/2011 3:44 PM	...april\042511\cs-4...20.0pg-ul, 4-25-2011, 3-44-23 pm,method ws_ms_0012 042511 sms
RRF5	Level 5	Rep. 1	4/25/2011 4:50 PM	...april\042511\cs-5...50.0pg-ul, 4-25-2011, 4-50-09 pm,method ws_ms_0012 042511.sms
RRF6	Level 6	Rep. 1	4/25/2011 5:55 PM	...\april\042511\cs-6...100pg-ul, 4-25-2011, 5-55-53 pm,method ws_ms_0012 042511.sms
RRF7	Level 7	Rep. 1	4/25/2011 7:02 PM	.. \april\042511\cs-7...200pg-ul, 4-25-2011, 7-02-02 pm,method ws_ms_0012 042511.sms

#	Compound Name	Cal. Method	Corr.	Avg. RRF	% RSD
1	NDMA-d6 (IS)	Standard #1			
2	NDMA-d6	1 IN None	0.975823	0.135341	6.01103
3	NDMA	1 IG 1/X2	0.998770	2.18918	5.88251
4	NMEA	2 IG 1/X2	0.999675	1.49534	5.93942
5	NDEA	2 IG 1/X2	0.999955	1.04969	9.10581
6	2-Chloropyridine (RS)	Standard #2			
7	NDPA-d14 (IS)	Standard #3			
8	NDPA-d14	1 IN None	0.998270	0.264884	1.58984
9	NDPA	2 IG 1/X2	0.999861	1.31962	3.95790
10	NPYR	1 IG 1/X2	0.999678	1.60238	6.33691
11	NPIP	2 IG 1/X2	0.999831	3.36180	6.80184
12	NDBA	2 IG 1/X2	0.999261	0.806792	22.8974

#	Compound Name	RRF1	RRF2	RRF3	RRF4	RRF5	RRF6	RRF7
1	NDMA-d6 (IS)							
2	NDMA-d6	0.135556	0.139063	0.136360	0.147945	0.135773	0.131883	0.120810
3	NDMA	2.09971	2.13369	2.43492	2.20154	2.05426	2.26878	2.13138
4	NMEA	1.40270	1.45385	1.61707	1.53611	1.55659	1.53046	1.37060
5	NDEA	0.930236	0.961106	1.18739	1.12338	1.10500	1.06234	0.978353
6	2-Chloropyridine							
7	NDPA-d14 (IS)							
8	NDPA-d14	0.268136	0.263880	0.261124	0.271150	0.266902	0.264182	0.258814
9	NDPA	1.24097	1.26341	1.36319	1.31418	1.38727	1.32730	1.34104
10	NPYR	1.79304	1.57944	1.64652	1.48375	1.63383	1.54999	1.53007
11	NPIP	3.02026	3.09726	3.57916	3.34458	3.62030	3.46600	3.40502
12	NDBA	0.493415	0.647037	0.757873	0.867120	0.977691	0.910342	0.994069

Curve Fit Codes	Origin Point Codes		Regression Weighting Codes	
1 linear	IN	Include	None	1/nX
2 quadratic	IG	Ignore	1/n	1/X2
3 cubic	FO	force	1/X	1/nX2

Manual calculation for NDMA @ Level 3:

$\frac{107082}{439776} \times \frac{1A}{1D} = 0.243492$ by 4/28/11

8/30/11

Olin Level I
Calculations
NDMA SDG 360-34253-1
OU2 SW
Olin

Analyte	L1	L2	L3	L4	L5	L6	L7	Ave.	%SD	%RSD
NDMA	2.09971	2.13369	2.43492	2.20154	2.05426	2.26878	2.13138	2.189183	12.9	5.9
NDMA-d6	0.135556	0.139063	0.13636	0.147945	0.135773	0.131883	0.12081	0.135341	0.8	6.0
NDPA	0.268136	0.26388	0.261124	0.27115	0.266902	0.264182	0.258814	0.264884	0.4	1.6
NDPA-d14	1.24097	1.26341	1.36319	1.31418	1.38727	1.3273	1.34104	1.319623	5.2	4.0

8/30/11

Test America – West Sacramento

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Initial Calibration Checklist
NDMA by Ion Trap
(GC/CI/MS/MS)

ICAL ID WS MS 0012 042511

Method ID WS MS 0012

Column ID VF5 MS

Instrument ID IT-1

STD ID's CS-1 -> CS-7 + 2nd Source

STD Solution NDMA 112 -> 118 + NDMA 119

GC Program WS MS 0012

Multiplier Setting 1250

Analyzed By S. Scott

Date Analyzed 4/25/11

Prepared By S. Scott

Date Prepared 4/26/11

Reviewed By [illegible]

Date Reviewed 4/28/11

Curve summary present?	✓	✓
Hardcopies of chromatograms for CS1-CS7 present?	✓	✓
EICP of target compounds present?	✓	✓
Copy of auto tune file present?	✓	✓
Target file RT's correct?	✓	✓
%RSD within method-specified limits?*	✓	✓
Signal-to-noise criteria met?	✓	✓
High point free of saturation?	✓	✓
Are chromatographic windows correct?	✓	✓
Manual reintegration's checked and hardcopies included?	✓	✓

COMMENTS:

NDMA @ 5.9% RSD ; NDPA @ 4.0% RSD
All other compounds < 30% RSD

2nd Source : NDMA @ 104% D ✓
NDPA @ 107% D ✓

*Method 1625: %RSD ≤30% for natives, except NDMA ≤20%; %RSD ≤40% for labeled compunds: S/N≥10

✓ reviewed [illegible] 8/30/11

U:\GCMS\8270 Cover Pages\NDMA\QA-596 NDMA by Ion Trap ICAL Checklist.doc. 5/11/09 rev GEC

TestAmerica THE LEADER IN ENVIRONMENTAL TESTING	Test America – West Sacramento Daily Calibration Checklist NDMA by Ion Trap (GC/CI/MS/MS)

Method ID: WS MS 0012 **Associated ICAL:** WS MS 0012 042511

Column ID: VF5 MS **Instrument ID:** IT-1

STD ID: 11DXN114 **STD Solution :** CS-3; 10pg/uL

Analyzed By S. Scott **Date Analyzed:** 6/17/11

Std. Pkg. By S. Scott **Date Std. Pkg. Assembled** 6/20/11

Std. Pkg. Reviewed By _____ **Date Std. Pkg. Reviewed** _____

DAILY STANDARD PACKAGE	INITIATED	REVIEWED
Standard chromatogram and EICP present?	✓	
Copy of autotune file present?	✓	
ICAL Summary present?	✓	
Summary of Method criteria present or documented below?	✓	
Daily standard within method specified limits?*	✓	
Analyte retention times correct?	✓	
Are chromatographic windows correct?	✓	
Samples analyzed within 12 hrs of daily standard?	✓	
Manual reintegration's checked and hardcopies included?	NA	

COMMENTS: NDMA @ 95% ✓
NDPA @ 109%

NDMA Ion Trap: Acceptance ranges:

NDMA: 80-120% recovery
All other unlabelled compounds: 70-130% recovery
Labeled compounds: 50-150% recovery

8/25/11

U:\GCMS\8270 Cover Pages\NDMA\QA-597 NDMA by Ion Trap Daily Std Checklist.doc. 5/11/09 rev GEC

TestAmerica THE LEADER IN ENVIRONMENTAL TESTING	Test America – West Sacramento Daily Calibration Checklist NDMA by Ion Trap (GC/CI/MS/MS)

Method ID: WS MS 0012 **Associated ICAL:** WS MS 0012 042511

Column ID: VF5 MS **Instrument ID:** IT-1

STD ID: 11DXN114 **STD Solution :** CS-3; 10pg/uL

Analyzed By S. Scott **Date Analyzed:** 6/20/11

Std. Pkg. By S. Scott **Date Std. Pkg. Assembled** 6/21/11

Std. Pkg. Reviewed By [illegible] **Date Std. Pkg. Reviewed** 6/22/11

DAILY STANDARD PACKAGE	INITIATED	REVIEWED
Standard chromatogram and EICP present?	✓	✓
Copy of autotune file present?	✓	✓
ICAL Summary present?	✓	✓
Summary of Method criteria present or documented below?	✓	✓
Daily standard within method specified limits?*	✓	✓
Analyte retention times correct?	✓	✓
Are chromatographic windows correct?	✓	✓
Samples analyzed within 12 hrs of daily standard?	✓	✓
Manual reintegration's checked and hardcopies included?	NA	NA

COMMENTS: NDMA @ 82% ✓
NDPA @ 101% ✓

NDMA Ion Trap: Acceptance ranges:

NDMA: 80-120% recovery
All other unlabelled compounds: 70-130% recovery
Labeled compounds: 50-150% recovery

[illegible] 8/2/11

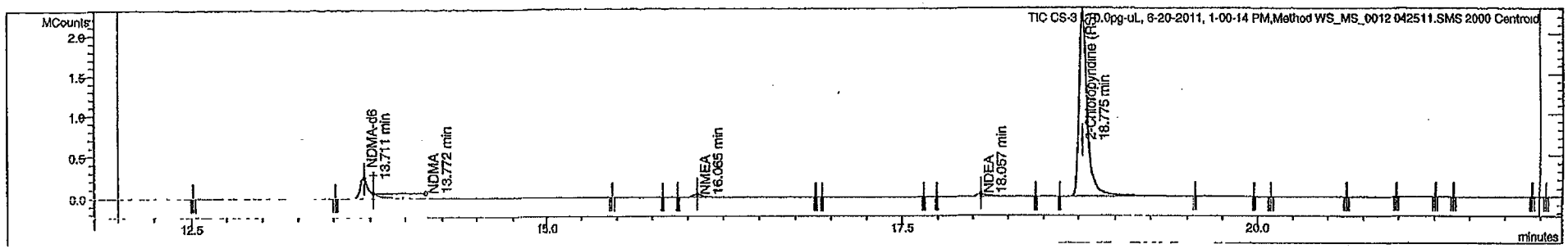
U:\GCMS\8270 Cover Pages\NDMA\QA-597 NDMA by Ion Trap Daily Std Checklist.doc. 5/11/09 rev GEC

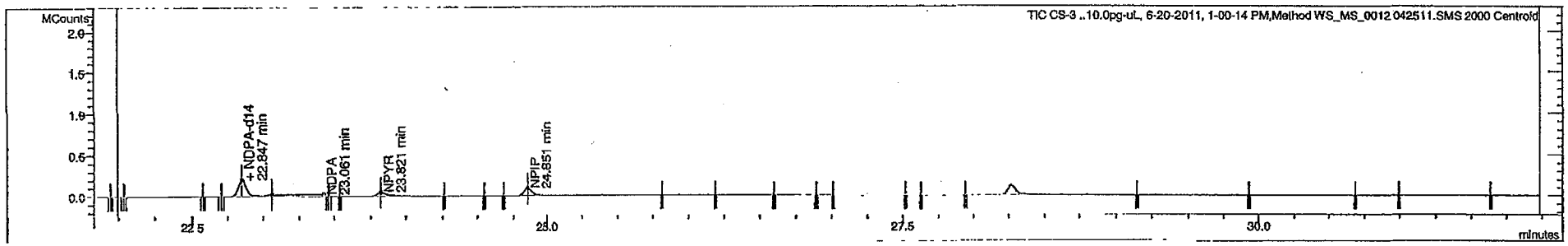
Print Date: 21 Jun 2011 17:46:05

Sample Report for ...ethod ws_ms_0012 042511.sms

TestAmerica West Sacramento Nitrosamines by GC/CI/MS/MS

Sample ID:	CS-3...10.0pg/uL	Operator:	SRS	Acquisition Date:	6/20/2011 1:00 PM
Instrument ID:	IT-1 (Ion Trap)	Data File:	... ws_ms_0012 042511.sms	Method:	.. hod ws_ms_0012 042511.mth
Inj. Sample Notes:	11DXN114, exp 6/23/11			Divisor:	1.000000
Injection:	1	Vial:	0		
Sample Prep Info:	Vial: 0 Injection Number: 1 Volume: 20.0 uL Position: 2				
				Last Calibration:	4/26/2011 9:52 AM





Target Compounds

Cmpd. Number	Peak Name	RT (min)	Status	Area	Amount/RF	Amount/RF Units	S/N Ratio	Calibration Equation
1	NDMA-d6 (IS)	13.711	S	366621	100.000	ng/L	12013	y= +1.0000x +0.0
6	2-Chloropyridine (RS)	18.775	S	4.873e+6	200.000	ng/L	8876	y= +1.0000x +0.0
7	NDPA-d14 (IS)	22.847	S	768716	100.000	ng/L	10982	y= +1.0000x +0.0
2	NDMA-d6	13.711		366621	111.171	ng/L	12013	y= +0.1353x +1.3878e-17
3	NDMA	13.772		65873	8.205	ng/L	1392	y= +2.2109x -0.0017
4	NMEA	16.065		114889	9.598	ng/L	3390	y= -0.1132x2 +1.6154x -0.0045
5	NDEA	18.057		78042	9.212	ng/L	1077	y= -0.0937x2 +1.1666x -0.0051
8	NDPA-d14	22.847		767897	118.975	ng/L	9149	y= +0.2649x +0.0
9	NDPA	23.061		103431	10.119	ng/L	1789	y= -0.0069x2 +1.3550x -0.0025
10	NPYR	23.821		119566	9.775	ng/L	1180	y= +1.5435x +0.0047
11	NPIP	24.851		238310	9.108	ng/L	576	y= -0.0502x2 +3.5334x -0.0114
12	NDBA	28.242	X MW	0	0.000	ng/L	N/A	y= +0.0670x2 +0.8736x -0.0082

Status and Errors:
X : Error
M : Missing Peak
S : Internal Standard Peak.
W . Spectrum Match < Threshold. Check Identification params.

SB 6/21/11

$$NDMA = \left[\frac{\frac{65873}{366621} + 0.0017}{2.2109}\right] \times 100 = 8.204$$

✓ checked RY 6/22/11

8/30/11

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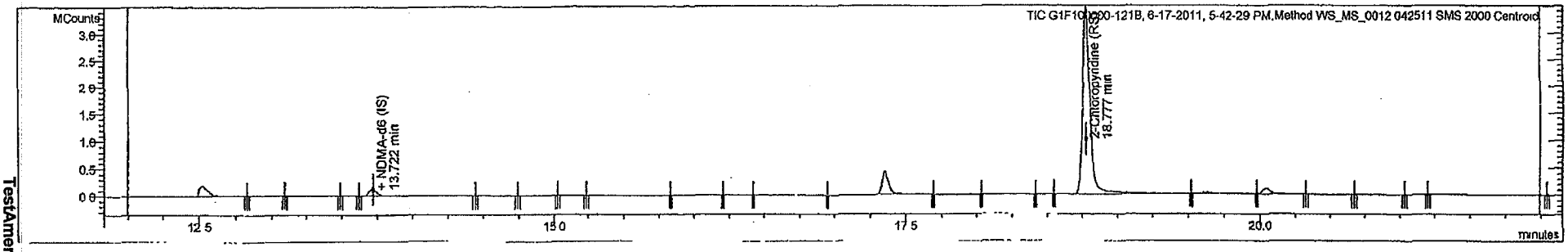
Print Date: 20 Jun 2011 11:04:51

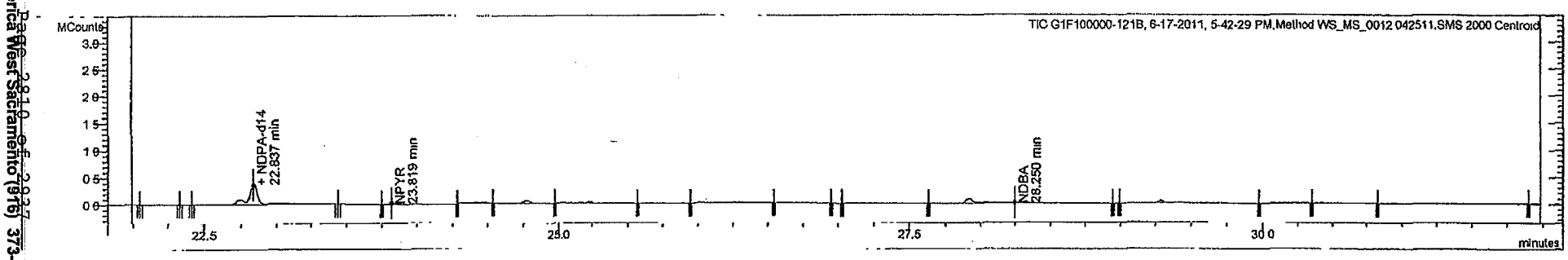
Sample Report for ethod ws_ms_0012 042511 sms

TestAmerica West Sacramento Nitrosamines by GC/CI/MS/MS

BLANK

Sample ID:	G1F100000-121B	Operator	SRS	Acquisition Date:	6/17/2011 5:42 PM
Instrument ID.	IT-1 (Ion Trap)	Data File:	... ws_ms_0012 042511 sms	Method	...hod ws_ms_0012 042511 mth
Inj. Sample Notes:	1161121; MJ5VR1AA, 1000mL			Divisor:	1.000000
Injection:	1	Vial:	1		
Sample Prep Info:	Vial: 1 Injection Number: 1 Volume: 20 0 uL Position. 2				
				Last Calibration:	4/26/2011 9:52 AM





Target Compounds

Cmpd. Number	Peak Name	RT (min)	Status	Area	Amount/RF	Amount/RF Units	S/N Ratio	Calibration Equation
1	NDMA-d6 (IS)	13.722	S	145991	100.000	ng/L	2033	y= +1.0000x +0.0
6	2-Chloropyridine (RS)	18.777	S	6.460e+6	200.000	ng/L	4526	y= +1.0000x +0.0
7	NDPA-d14 (IS)	22.837	S	1.037e+6	100.000	ng/L	1663	y= +1.0000x +0.0
2	NDMA-d6	13.722		145991	33.394	ng/L	2033	y= +0.1353x +1.3878e-17
3	NDMA	13.762	X MY	0	0.000	ng/L	N/A	y= +2.2109x -0.0017
4	NMEA	16.044	X MY	0	0.000	ng/L	N/A	y= -0.1132x2 +1.6154x -0.0045
5	NDEA	18.038	X Mp	0	0.000	ng/L	N/A	y= -0.0937x2 +1.1666x -0.0051
8	NDPA-d14	22.837	X C	1.038e+6	121.275	ng/L	1663	y= +0.2649x +0.0
9	NDPA	22.992	X a	468	0.218	ng/L	2	y= -0.0069x2 +1.3550x -0.0025
10	NPYR	23.819		12496	0.479	ng/L	75	y= +1.5435x +0.0047
11	NPIP	24.929	X a	1552	0.364	ng/L	2	y= -0.0502x2 +3.5334x -0.0114
12	NDBA	28.250		644	1.011	ng/L	9	y= +0.0670x2 +0.8736x -0.0082

SP 6/21/11

Status and Errors

X : Error
M : Missing Peak
C : Result out of Tolerance or Calibration Range
S : Internal Standard Peak
Y : Peak not detected or not in Search Window Check RT, Int parms
a S/N less than threshold

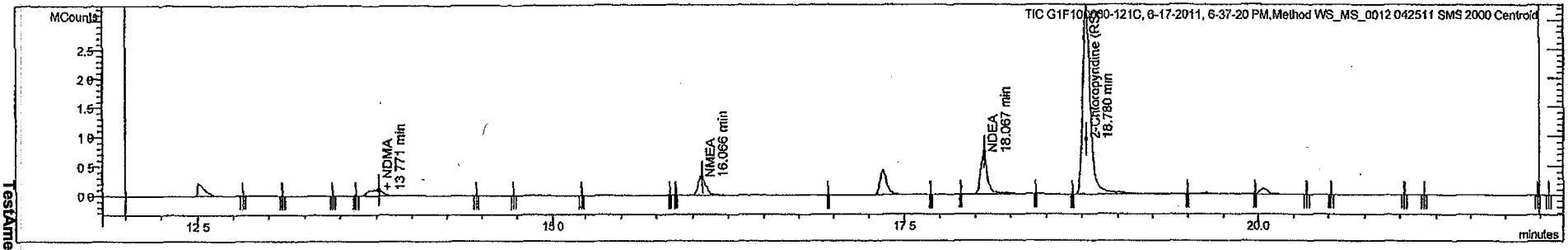
2/30/4

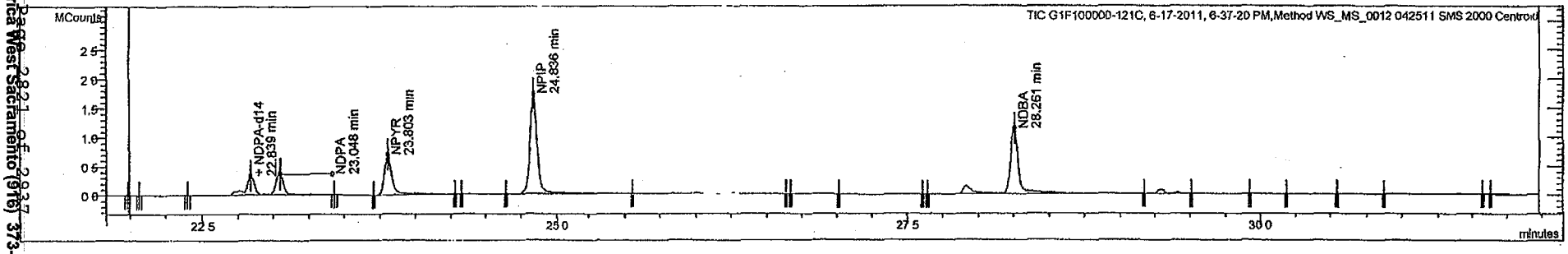
Print Date: 20 Jun 2011 11:05:17

Sample Report for ethod ws_ms_0012 042511 sms

TestAmerica West Sacramento Nitrosamines by GC/CI/MS/MS

Sample ID:	G1F100000-121C	Operator.	SRS	Acquisition Date:	6/17/2011 6:37 PM
Instrument ID:	IT-1 (Ion Trap)	Data File	... ws_ms_0012 042511.sms	Method:	.hod ws_ms_0012 042511.mth
Inj. Sample Notes:	1161121, MJ5VR1AC; 1000mL			Divisor.	1.000000
Injection.	1	Vial:	2		
Sample Prep Info:	Vial: 2 Injection Number. 1 Volume: 20.0 uL Position: 2				
				Last Calibration:	4/26/2011 9 52 AM





Target Compounds

Cmpd. Number	Peak Name	RT (min)	Status	Area	Amount/RF	Amount/RF Units	S/N Ratio	Calibration Equation
1	NDMA-d6 (IS)	13.712	S	118176	100.000	ng/L	1961	y= +1.0000x +0.0
6	2-Chloropyridine (RS)	18.780	S	6.317e+6	200.000	ng/L	6797	y= +1.0000x +0.0
7	NDPA-d14 (IS)	22.839	S	971444	100.000	ng/L	2035	y= +1.0000x +0.0
2	NDMA-d6	13.712		118176	27.643	ng/L	1961	y= +0.1353x +1.3878e-17
3	NDMA	13.771		283277	108.498	ng/L	2774	y= +2.2109x -0.0017
4	NMEA	16.066		951318	63.751	ng/L	11909	y= -0.1132x2 +1.6154x -0.0045
5	NDEA	18.067		937502	89.619	ng/L	12358	y= -0.0937x2 +1.1666x -0.0051
8	NDPA-d14	22.839		971009	116.052	ng/L	2277	y= +0.2649x +0.0
9	NDPA	23.048		1.436e+6	109.887	ng/L	1890	y= -0.0069x2 +1.3550x -0.0025
10	NPYR	23.803		1.301e+6	86.470	ng/L	5966	y= +1.5435x +0.0047
11	NPIP	24.836		3.665e+6	108.763	ng/L	1846	y= -0.0502x2 +3.5334x -0.0114
12	NDBA	28.261		1.180e+6	127.553	ng/L	4971	y= +0.0670x2 +0.8736x -0.0082

Status and Errors. S : Internal Standard Peak

NDMA & NDPA Spiked @ 100 ng/L

NDMA : 108.5% Recovery

NDPA : 110% Recovery

SB 6/20/11

2nd Source Passes Criteria

8/30/11

****

Acquisition Segment Information

****

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: G1F070508 Work Order #...: MJ5VR1AC Matrix.....: WATER
LCS Lot-Sample#: G1F100000-121
Prep Date.....: 06/10/11 Analysis Date..: 06/17/11
Prep Batch #...: 1161121
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
N-Nitrosodimethylamine	**100**	**108**	**ng/L**	**108**	**SAC WS-MS-001**
N-Nitrosodi-n-propyl-amine	**100**	**110**	**ng/L**	**110**	**SAC WS-MS-001**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
N-Nitrosodimethylamine-d6	28	(25 - 140)
N-Nitrosodi-n-propylamine	116	(25 - 140)

NOTE(S):

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

Bold print denotes control parameters

8/30/11

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: G1F070508 Work Order #...: MJ2791AF-MS Matrix.....: WATER
MS Lot-Sample #: G1F070508-002 MJ2791AG-MSD
Date Sampled...: 06/06/11 Date Received..: 06/07/11
Prep Date.....: 06/10/11 Analysis Date..: 06/17/11
Prep Batch #...: 1161121
Dilution Factor: 0.95

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
N-Nitrosodimethylamine	23	100	134	ng/L	112		SAC WS-MS-0012
	23	100	141	ng/L	118	4.7	SAC WS-MS-0012
N-Nitrosodi-n-propyl-amine	ND	100	100	ng/L	100		SAC WS-MS-0012
	ND	100	93.9	ng/L	94	6.4	SAC WS-MS-0012

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
N-Nitrosodimethylamine-d6	29	(25 - 140)
	31	(25 - 140)
N-Nitrosodi-n-propylamine	92	(25 - 140)
	87	(25 - 140)

NOTE(S):

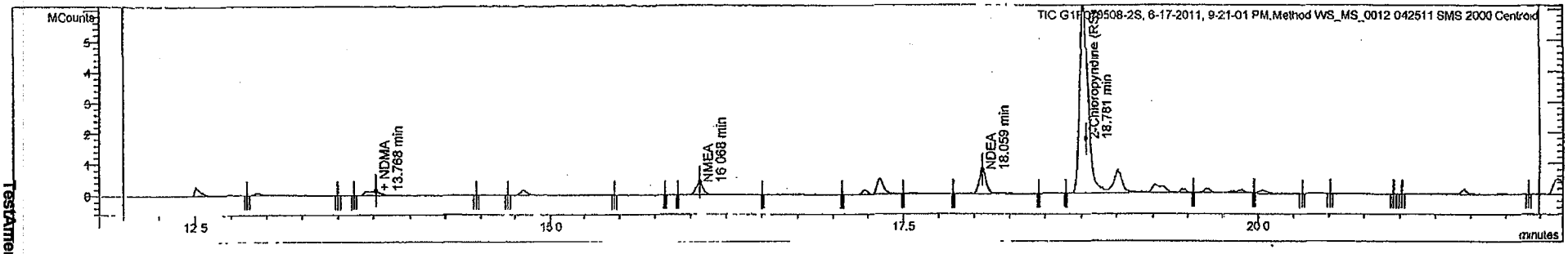
Calculations are performed before rounding to avoid round-off errors in calculated results.

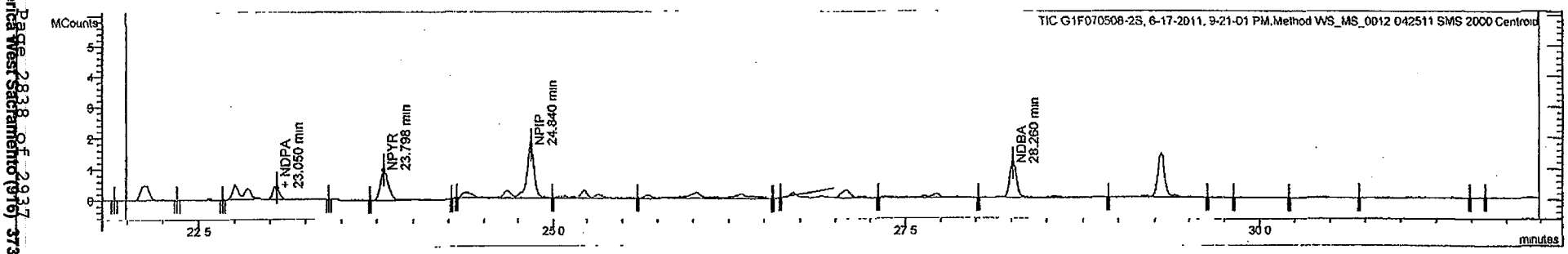
Bold print denotes control parameters

8/30/11

TestAmerica West Sacramento Nitrosamines by GC/CI/MS/MS

Sample ID:	G1F070508-2S	Operator:	SRS	Acquisition Date.	6/17/2011 9:21 PM
Instrument ID:	IT-1 (Ion Trap)	Data File:	. ws_ms_0012 042511.sms	Method:	. .hod ws_ms_0012 042511.mth
Inj Sample Notes:	1161121; MJ2791AF; 1053.83mL			Divisor:	1.053830
Injection:	1	Vial:	5		
Sample Prep Info.	Vial: 5 Injection Number. 1 Volume: 20.0 uL Position 2				
				Last Calibration:	4/26/2011 9:52 AM





Target Compounds

Cmpd. Number	Peak Name	RT (min)	Status	Area	Amount/RF	Amount/RF Units	S/N Ratio	Calibration Equation
1	NDMA-d6 (IS)	13.710	S	139717	100.000	ng/L	1064	y= +1.0000x +0.0
6	2-Chloropyridine (RS)	18.781	S	7.127e+6	200.000	ng/L	3007	y= +1.0000x +0.0
7	NDPA-d14 (IS)	22.838	SU	865724	100.000	ng/L	377	y= +1.0000x +0.0
2	NDMA-d6	13.710		139717	27.491	ng/L	1064	y= +0.1353x +1.3878e-17
3	NDMA	13.768		437568	134.491	ng/L	1594	y= +2.2109x -0.0017
4	NMEA	16.068	U	1.041e+6	75.098	ng/L	10509	y= -0.1132x2 +1.6154x -0.0045
5	NDEA	18.059	U	986349	101.882	ng/L	1260	y= -0.0937x2 +1.1666x -0.0051
8	NDPA-d14	22.838	U	865724	87.036	ng/L	315	y= +0.2649x +0.0
9	NDPA	23.050	U	1.229e+6	100.087	ng/L	1568	y= -0.0069x2 +1.3550x -0.0025
10	NPYR	23.798	U	1.275e+6	90.229	ng/L	2031	y= +1.5435x +0.0047
11	NPIP	24.840	U	3.340e+6	105.586	ng/L	625	y= -0.0502x2 +3.5334x -0.0114
12	NDBA	28.260	U	886877	103.506	ng/L	1524	y= +0.0670x2 +0.8736x -0.0082

Status and Errors: S : Internal Standard Peak
U : User-defined EndPoints

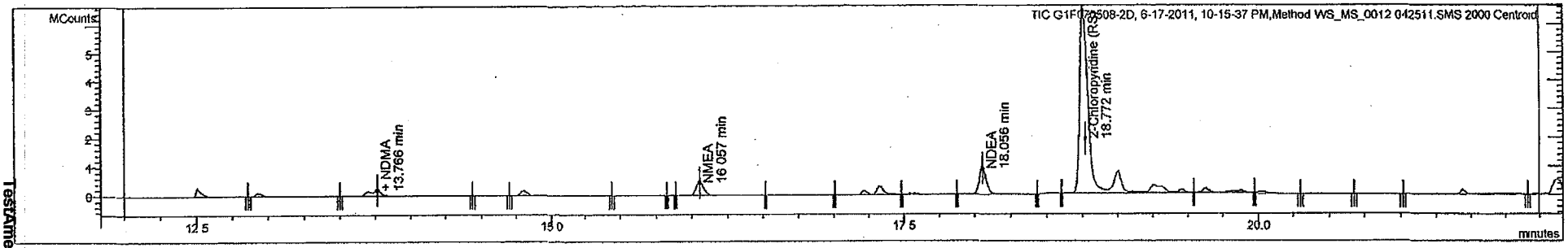
SR 6/21/11

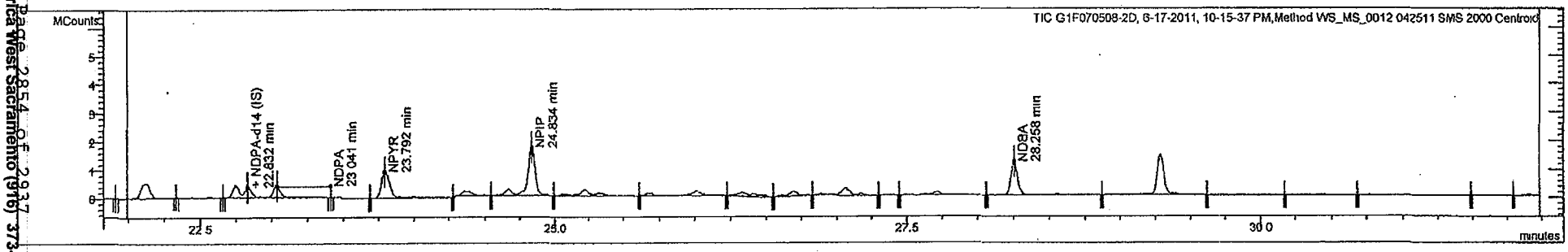
8/31/11

****
Acquisition Segment Information
****

TestAmerica West Sacramento Nitrosamines by GC/CI/MS/MS

Sample ID:	G1F070508-2D	Operator:	SRS	Acquisition Date:	6/17/2011 10:15 PM
Instrument ID.	IT-1 (Ion Trap)	Data File:	.. ws_ms_0012 042511.sms	Method:	...hod ws_ms_0012 042511.mth
Inj. Sample Notes:	1161121; MJ2791AG; 1050.70mL			Divisor:	1 050700
Injection:	1	Vial	6		
Sample Prep Info:	Vial: 6 Injection Number 1 Volume. 20.0 uL Position: 2				
				Last Calibration:	4/26/2011 9:52 AM





Target Compounds

Cmpd. Number	Peak Name	RT (min)	Status	Area	Amount/RF	Amount/RF Units	S/N Ratio	Calibration Equation
1	NDMA-d6 (IS)	13.707	S	163850	100.000	ng/L	1009	y= +1.0000x +0.0
6	2-Chloropyridine (RS)	18.772	S	7.892e+6	200.000	ng/L	4277	y= +1.0000x +0.0
7	NDPA-d14 (IS)	22.832	S	907814	100.000	ng/L	362	y= +1.0000x +0.0
2	NDMA-d6	13.707		163850	29.198	ng/L	1009	y= +0.1353x +1.3878e-17
3	NDMA	13.766		536384	140.997	ng/L	1934	y= +2.2109x -0.0017
4	NMEA	16.057		1.274e+6	88.729	ng/L	20496	y= -0.1132x2 +1.6154x -0.0045
5	NDEA	18.056		1.055e+6	104.390	ng/L	2044	y= -0.0937x2 +1.1666x -0.0051
8	NDPA-d14	22.832		907814	82.658	ng/L	362	y= +0.2649x +0.0
9	NDPA	23.041		1.206e+6	93.920	ng/L	1847	y= -0.0069x2 +1.3550x -0.0025
10	NPYR	23.792		1.222e+6	82.718	ng/L	2012	y= +1.5435x +0.0047
11	NPIP	24.834		3.396e+6	102.632	ng/L	508	y= -0.0502x2 +3.5334x -0.0114
12	NDBA	28.258		866189	97.225	ng/L	1997	y= +0.0670x2 +0.8736x -0.0082

Status and Errors: S Internal Standard Peak.

5% bl/ch/lk

8/30/11

****
Acquisition Segment Information
****

TestAmerica Westfield

Client Sample ID: OC-SW-ISCO-1-XXX (360-34253-2)

GC/MS Semivolatiles

Lot-Sample #...:	G1F070508-002	Work Order #...:	MJ2791AC	Matrix.....:	WATER
Date Sampled...:	06/06/11	Date Received..:	06/07/11		
Prep Date.....:	06/10/11	Analysis Date..:	06/17/11		
Prep Batch #...:	1161121				
Dilution Factor:	0.95	Method.....:	SAC WS-MS-0012		

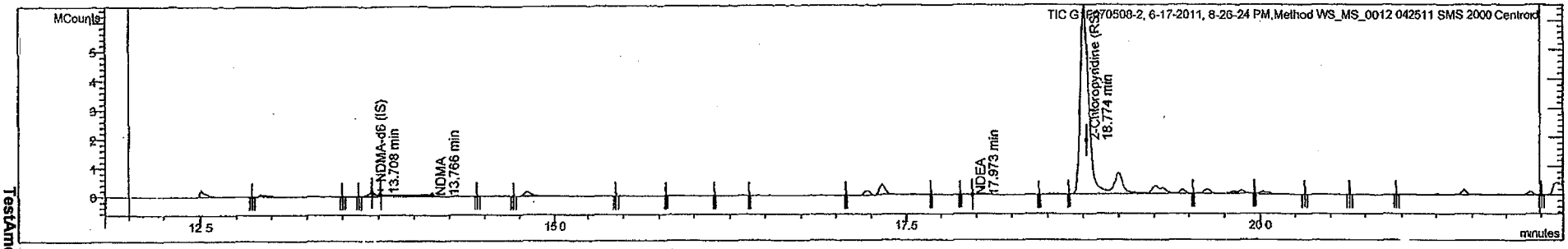
PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
N-Nitrosodimethylamine	23	1.9	ng/L	0.37
N-Nitrosodi-n-propyl-amine	ND	1.9	ng/L	0.45

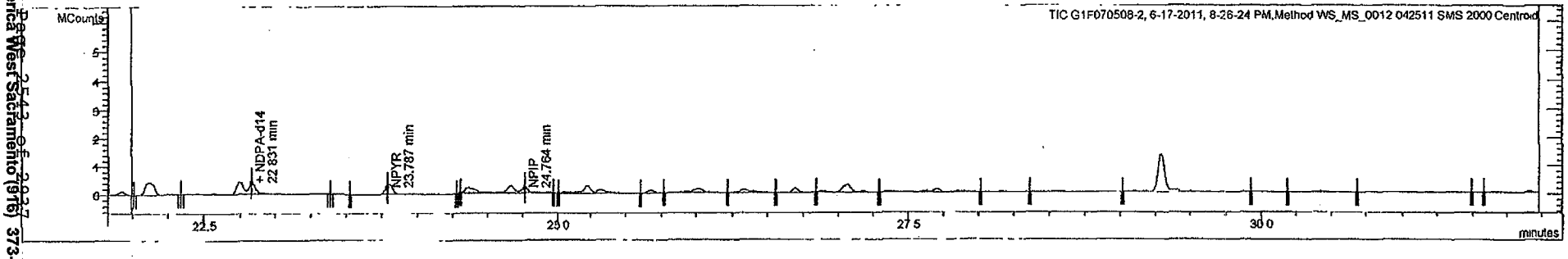
SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
N-Nitrosodimethylamine-d6	25	(25 - 140)
N-Nitrosodi-n-propylamine-d14	107	(25 - 140)

8/30/11

TestAmerica West Sacramento Nitrosamines by GC/CI/MS/MS

Sample ID:	G1F070508-2	Operator:	SRS	Acquisition Date:	6/17/2011 8:26 PM
Instrument ID:	IT-1 (Ion Trap)	Data File:	.. ws_ms_0012 042511 sms	Method:	. .hod ws_ms_0012 042511.mth
Inj. Sample Notes:	1161121; MJ2791AC; 1053.91mL			Divisor:	1 053910
Injection:	1	Vial:	4		
Sample Prep Info:	Vial: 4 Injection Number: 1 Volume: 20 0 uL Position: 2				
				Last Calibration:	4/26/2011 9:52 AM





Target Compounds

Cmpd. Number	Peak Name	RT (min)	Status	Area	Amount/RF	Amount/RF Units	S/N Ratio	Calibration Equation
1	NDMA-d6 (IS)	13.708	S	121097	100.000	ng/L	928	y= +1.0000x +0.0
6	2-Chloropyridine (RS)	18.774	S	7.214e+6	200.000	ng/L	2842	y= +1.0000x +0.0
7	NDPA-d14 (IS)	22.831	S	1.026e+6	100.000	ng/L	390	y= +1.0000x +0.0
2	NDMA-d6	13.708		121097	23.537	ng/L	928	y= +0.1353x +1.3878e-17
3	NDMA	13.766	U	63839	22.698	ng/L	487	y= +2.2109x -0.0017
4	NMEA	16.044	X MY	0	0.000	ng/L	N/A	y= -0.1132x2 +1.6154x -0.0045
5	NDEA	17.973		3075	0.663	ng/L	23	y= -0.0937x2 +1.1666x -0.0051
8	NDPA-d14	22.831		1.026e+6	101.932	ng/L	267	y= +0.2649x +0.0
9	NDPA	23.035	X MY	0	0.000	ng/L	N/A	y= -0.0069x2 +1.3550x -0.0025
10	NPYR	23.787		131452	7.587	ng/L	272	y= +1.5435x +0.0047
11	NPIP	24.764		180462	5.031	ng/L	76	y= -0.0502x2 +3.5334x -0.0114
12	NDBA	28.242	X MY	0	0.000	ng/L	N/A	y= +0.0670x2 +0.8736x -0.0082

Status and Errors:
X : Error
M : Missing Peak.
S : Internal Standard Peak.
U : User-defined EndPoints
Y . Peak not detected or not in Search Window Check RT, Int parms

8/30/11

TestAmerica Westfield

Client Sample ID: OC-SW-MMB-SW/SD-1-DUP (360-34253-4)

GC/MS Semivolatiles

Lot-Sample #...:	G1F070508-004	Work Order #...:	MJ28C1AA	Matrix.....:	WATER
Date Sampled...:	06/06/11	Date Received..:	06/07/11		
Prep Date.....:	06/10/11	Analysis Date..:	06/17/11		
Prep Batch #...:	1161121				
Dilution Factor:	0.95	Method.....:	SAC WS-MS-0012		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
N-Nitrosodimethylamine	ND	1.9	ng/L	0.37
N-Nitrosodi-n-propyl-amine	ND	1.9	ng/L	0.45

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
N-Nitrosodimethylamine-d6	36	(25 - 140)
N-Nitrosodi-n-propylamine-d14	88	(25 - 140)

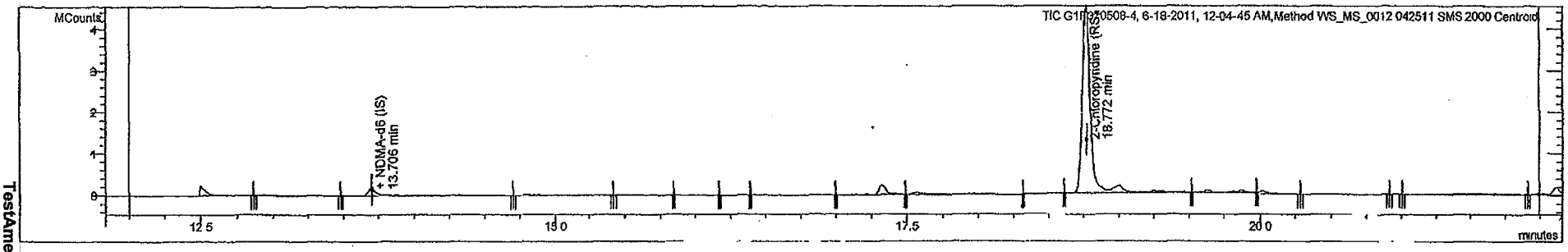
8/30/11

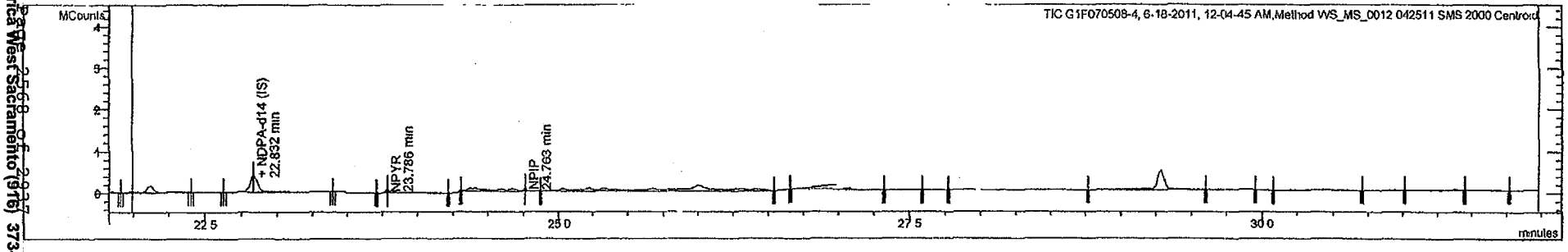
Print Date: 20 Jun 2011 11:11:21

Sample Report for . .ethod ws_ms_0012 042511 sms

TestAmerica West Sacramento Nitrosamines by GC/CI/MS/MS

Sample ID:	G1F070508-4	Operator:	SRS	Acquisition Date:	6/18/2011 12 04 AM
Instrument ID:	IT-1 (Ion Trap)	Data File:	.. ws_ms_0012 042511.sms	Method:	...hod ws_ms_0012 042511.mth
Inj. Sample Notes:	1161121, MJ28C1AA; 1049.97mL			Divisor.	1.049970
Injection:	1	Vial	8		
Sample Prep Info:	Vial. 8 Injection Number: 1 Volume: 20.0 uL Position: 2				
				Last Calibration:	4/26/2011 9:52 AM





Target Compounds

Cmpd. Number	Peak Name	RT (min)	Status	Area	Amount/RF	Amount/RF Units	S/N Ratio	Calibration Equation
1	NDMA-d6 (IS)	13.706	S	198845	100.000	ng/L	1512	y= +1.0000x +0.0
6	2-Chloropyridine (RS)	18.772	S	8.288e+6	200.000	ng/L	3719	y= +1.0000x +0.0
7	NDPA-d14 (IS)	22.832	S	963816	100.000	ng/L	685	y= +1.0000x +0.0
2	NDMA-d6	13.706		198845	33.767	ng/L	1512	y= +0.1353x +1.3878e-17
3	NDMA	13.762	X MY	0	0.000	ng/L	N/A	y= +2.2109x -0.0017
4	NMEA	16.044	X MY	0	0.000	ng/L	N/A	y= -0.1132x2 +1.6154x -0.0045
5	NDEA	18.038	X MW	0	0.000	ng/L	N/A	y= -0.0937x2 +1.1666x -0.0051
8	NDPA-d14	22.832		963816	83.626	ng/L	635	y= +0.2649x +0.0
9	NDPA	22.894	X a	433	0.207	ng/L	2	y= -0.0069x2 +1.3550x -0.0025
10	NPYR	23.786		25352	1.336	ng/L	192	y= +1.5435x +0.0047
11	NPIP	24.763		16678	0.773	ng/L	12	y= -0.0502x2 +3.5334x -0.0114
12	NDBA	28.242	X MY	0	0.000	ng/L	N/A	y= +0.0670x2 +0.8736x -0.0082

Status and Errors:
- X Error
- M : Missing Peak
- S : Internal Standard Peak
- W Spectrum Match < Threshold Check Identification params.
- Y Peak not detected or not in Search Window, Check RT, Int parms
- a S/N less than threshold

SB 6/27/11

8/30/11

TestAmerica Westfield

Client Sample ID: OC-SW-MMB-SW/SD-1-XXX (360-34253-5)

GC/MS Semivolatiles

Lot-Sample #...:	G1F070508-005	Work Order #...:	MJ28D1AC	Matrix.....:	WATER
Date Sampled...:	06/06/11	Date Received..:	06/07/11		
Prep Date.....:	06/10/11	Analysis Date..:	06/17/11		
Prep Batch #...:	1161121				
Dilution Factor:	0.95	Method.....:	SAC WS-MS-0012		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
N-Nitrosodimethylamine	**0.47 J**	**1.9**	**ng/L**	**0.37**
N-Nitrosodi-n-propyl-amine	ND	1.9	ng/L	0.45

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
N-Nitrosodimethylamine-d6	33	(25 - 140)
N-Nitrosodi-n-propylamine-d14	89	(25 - 140)

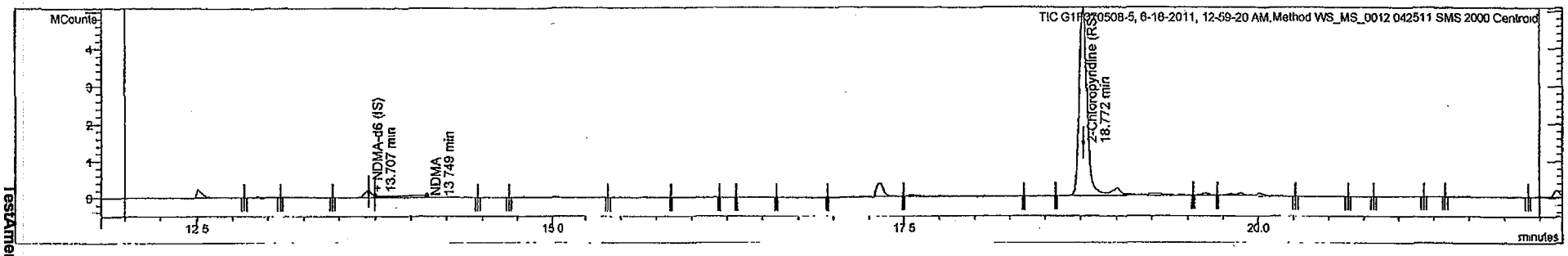
NOTE(S):

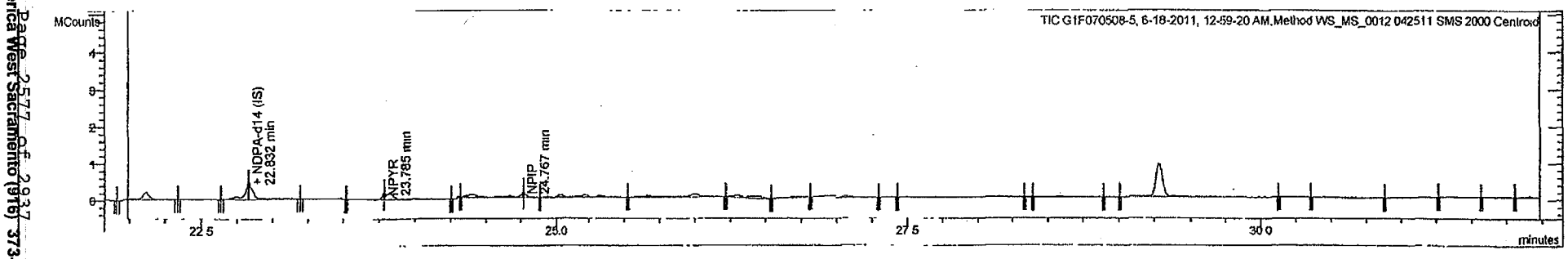
J Estimated result. Result is less than RL.

8/30/11

TestAmerica West Sacramento Nitrosamines by GC/CI/MS/MS

Sample ID:	G1F070508-5	Operator:	SRS	Acquisition Date.	6/18/2011 12:59 AM
Instrument ID:	IT-1 (Ion Trap)	Data File:	... ws_ms_0012 042511.sms	Method	.. hod ws_ms_0012 042511.mth
Inj Sample Notes:	1161121, MJ28D1AC; 1050 04mL			Divisor.	1.050040
Injection:	1	Vial.	9		
Sample Prep Info.	Vial: 9 Injection Number: 1 Volume: 20.0 uL Position. 2				
				Last Calibration:	4/26/2011 9:52 AM





Target Compounds

Cmpd. Number	Peak Name	RT (min)	Status	Area	Amount/RF	Amount/RF Units	S/N Ratio	Calibration Equation
1	NDMA-d6 (IS)	13.707	S	207387	100.000	ng/L	1588	y= +1.0000x +0.0
6	2-Chloropyridine (RS)	18.772	S	9.382e+6	200.000	ng/L	6096	y= +1.0000x +0.0
7	NDPA-d14 (IS)	22.832	S	1.102e+6	100.000	ng/L	875	y= +1.0000x +0.0
2	NDMA-d6	13.707		207387	31.107	ng/L	1588	y= +0.1353x +1.3878e-17
3	NDMA	13.749	U	1909	0.470	ng/L	13	y= +2.2109x -0.0017
4	NMEA	16.044	X MY	0	0.000	ng/L	N/A	y= -0.1132x2 +1.6154x -0.0045
5	NDEA	17.872	X a	366	0.448	ng/L	2	y= -0.0937x2 +1.1666x -0.0051
8	NDPA-d14	22.832		1.102e+6	84.480	ng/L	893	y= +0.2649x +0.0
9	NDPA	22.947	X a	958	0.237	ng/L	3	y= -0.0069x2 +1.3550x -0.0025
10	NPYR	23.785		112341	6.001	ng/L	446	y= +1.5435x +0.0047
11	NPIP	24.767		107551	2.938	ng/L	42	y= -0.0502x2 +3.5334x -0.0114
12	NDBA	28.242	X MW	0	0.000	ng/L	N/A	y= +0.0670x2 +0.8736x -0.0082

Status and Errors

X Error
M Missing Peak
S Internal Standard Peak
U: User-defined EndPoints.
W Spectrum Match < Threshold Check Identification params
Y Peak not detected or not in Search Window Check RT, Int parms

SB 6/21/11

2/3/11

TestAmerica Westfield

Client Sample ID: OC-SW-SD-1-XXX (360-34253-9)

GC/MS Semivolatiles

Lot-Sample #...:	G1F070508-009	Work Order #...:	MJ28H1AC	Matrix.....:	WATER
Date Sampled...:	06/06/11	Date Received..:	06/07/11		
Prep Date.....:	06/10/11	Analysis Date..:	06/20/11		
Prep Batch #...:	1161121				
Dilution Factor:	1	Method.....:	SAC WS-MS-0012		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
N-Nitrosodimethylamine	**48**	**2.0**	**ng/L**	**0.39**
N-Nitrosodi-n-propyl-amine	ND	2.0	ng/L	0.47

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
N-Nitrosodimethylamine-d6	48	(25 - 140)
N-Nitrosodi-n-propylamine-d14	52	(25 - 140)

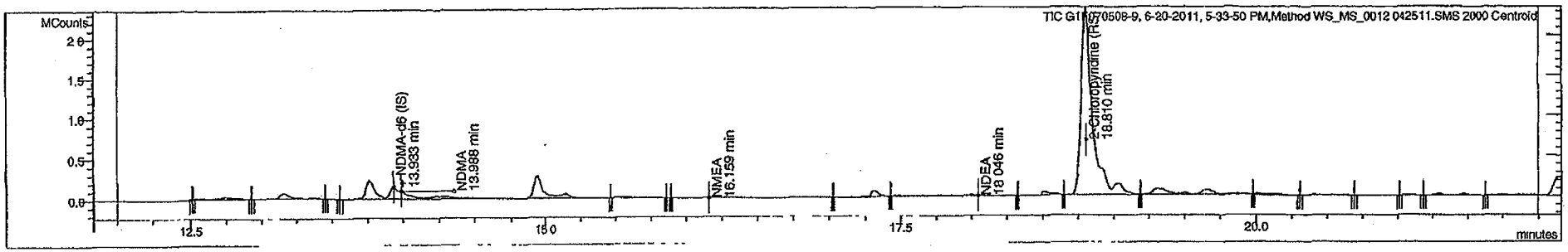
8/30/11

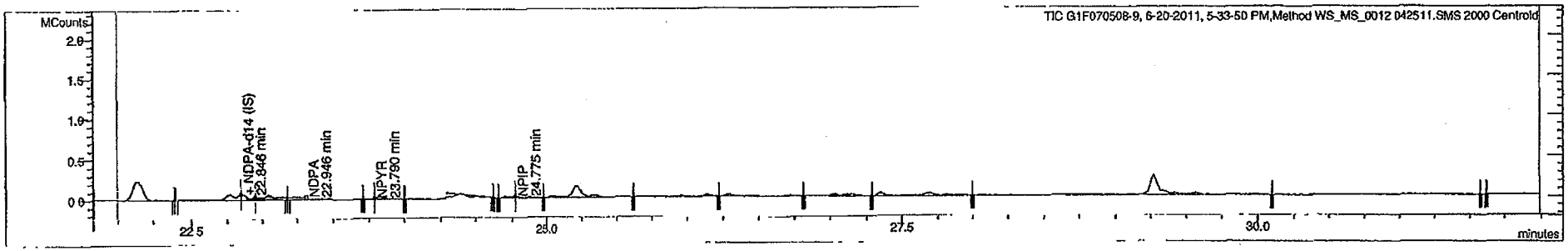
Print Date: 21 Jun 2011 13:02:10

Sample Report for . ethod ws_ms_0012 042511 sms

TestAmerica West Sacramento Nitrosamines by GC/CI/MS/MS

Sample ID:	G1F070508-9	Operator:	SRS	Acquisition Date:	6/20/2011 5:33 PM
Instrument ID:	IT-1 (Ion Trap)	Data File:	... ws_ms_0012 042511.sms	Method:	...hod ws_ms_0012 042511.mth
Inj. Sample Notes:	1161121; MJ28H1AC; 998.13mL			Divisor:	0.998130
Injection:	1	Vial:	5		
Sample Prep Info:	Vial: 5 Injection Number: 1 Volume: 20.0 uL Position: 2				
				Last Calibration:	4/26/2011 9:52 AM





Target Compounds

Cmpd. Number	Peak Name	RT (min)	Status	Area	Amount/RF	Amount/RF Units	S/N Ratio	Calibration Equation
1	NDMA-d6 (IS)	13.933	S	136372	100.000	ng/L	494	y= +1.0000x +0.0
6	2-Chloropyridine (RS)	18.810	SU	4.393e+6	200.000	ng/L	4308	y= +1.0000x +0.0
7	NDPA-d14 (IS)	22.846	S	298240	100.000	ng/L	286	y= +1.0000x +0.0
2	NDMA-d6	13.933	U	142547	48.040	ng/L	499	y= +0.1353x +1.3878e-17
3	NDMA	13.988	U	145429	48.403	ng/L	407	y= +2.2109x -0.0017
4	NMEA	16.159		518	0.390	ng/L	14	y= -0.1132x2 +1.6154x -0.0045
5	NDEA	18.046		9387	3.153	ng/L	18	y= -0.0937x2 +1.1666x -0.0051
8	NDPA-d14	22.846	U	300207	51.694	ng/L	288	y= +0.2649x +0.0
9	NDPA	22.946		1427	0.539	ng/L	3	y= -0.0069x2 +1.3550x -0.0025
10	NPYR	23.790		4808	0.744	ng/L	25	y= +1.5435x +0.0047
11	NPIP	24.775		24436	2.647	ng/L	13	y= -0.0502x2 +3.5334x -0.0114
12	NDBA	28.242	X MY	0	0.000	ng/L	N/A	y= +0.0670x2 +0.8736x -0.0082

Status and Errors:

X: Error
M. Missing Peak.
S Internal Standard Peak.
U User-defined EndPoints.
Y: Peak not detected or not in Search Window. Check RT, Int parms.

8/30/11

8/30/11

DATA VALIDATION MDL STUDY REVIEW
OLIN OU2 SW SPRING 2011

Analyte	Units	MDL1	MDL2	MDL3	MDL4	MDL5	MDL6	MDL7	MDL8	MDL9	Average	Standard Deviation	*MDL (T*SD)	MDL reported by the lab
NDMA	ng/L	1.009	1.216	1.271	1.125	1.014	1.204	1.19			1.15	0.102	0.32	0.37
NDPA	ng/L	0.468	0.742	0.423	0.421	0.671	0.748	0.465			0.56	0.151	0.47	0.45

* = Values for the Student T @ 99% CONFIDENCE

# Replicates (n)	Degrees of Freedom (n-1)	0.990 value
1	0	---
2	1	31.821
3	2	6.965
4	3	4.541
5	4	3.747
6	5	3.365
7	6	3.143
8	7	2.998
9	8	2.896
10	9	2.821
11	10	2.764
12	11	2.718

Is MDL > Spike Conc.?	N	Y = failure
Is Spike Conc. > 10x MDL?	N	Y = failure

P/30/11

TestAmerica West Sacramento

Method Detection Limit Study

Date Analyzed:	6/7/2010	Matrix:	Aqueous
Method ID	NDMA Isotope Dilution	Instrument	IT1 (Varian Ion Trap)
Method Description	GC/CI/MS/MS ng/L	Analyst:	Gary Costley
Prep Method / Date	Sep Funnel / 5.27.10	Quality Assurance	

Analyte	Spike ng/L	MDL #1 ng/L	MDL #2 ng/L	MDL #3 ng/L	MDL #4 ng/L	MDL #5 ng/L	MDL #6 ng/L	MDL #7 ng/L	MDL #8 ng/L	AVE. ng/L	%R	SD ng/L	MDL ng/L	RL ng/L	AVE/MDL		MB ng/L
NDMA	1.0	1.009	1.216	1.271	1.125	1.014	1.204	1.190		1.1 ✓	115%	0.10 ✓	0.320	2	3.6 ✓	PASS	
NDPA	1.0	0.468	0.742	0.423	0.421	0.671	0.748	0.465		0.6 ✓	56%	0.15 ✓	0.473	2	1.2 ✓	PASS	

MDL CHECK	Spike ng/L	MDL Chk ng/L	% Rec
NDMA	1.50	1.719	115
NDPA	1.50	1.551	103

Note: Method Reference is SOP WS-MS-0012

Reviewed 6/30/2011

	Qtims MDL ng/L	Calc. MDL ng/L	MDL Evaluation
NDMA	0.741	0.320	

Current QTIMS MDL to remain intact due to occasional Method Blank detection <0.5ng/L for NDMA

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

METHOD DETECTION LIMIT SUMMARY

ID Number: 1105

Method: **WS-MS-0012 (SOP reference)**
Matrix: **Aqueous**
Extraction: **EPA SW3510 (Sep Funnel)**

MDL Study

Extracted: **5/27/10**
Analyzed: **6/7/10**
Spike Level: **1.0ng/L**
Instrument: **IT-1 (Ion Trap)**

MDL Check

Extracted: **5/27/10**
Analyzed: **6/7/10**
Spike Level: **1.5ng/L**
Acceptable: **Yes**

QuanTims Updated: **NO**
Date Updated: **NA**
Static MDL Acceptable: **YES**

Comments: *The static MDLs in QuanTims will remain intact due to trace levels of NDMA (<0.5ng/L) frequently detected in the method blank. Calculated MDL for NDMA is 0.32ng/L and the static MDL in QuanTims is 0.71ng/L.*

7/30/2011

N:\QA\MDL\MDL Summary_NDMA.doc

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica West Sacramento

MDL Review Checklist
Chromatography Methods

Test: NDMA **Analysis Date:** 6-7-10 **MDL Conc'n:** 1ng/L

Preparation Method/Comments 3510 / WS-MS-0012 (SOP Reference)

A. Method/SOP requirements	Analyst Y	Analyst N	Reviewer Y	Reviewer N
• ICAL identified?	✓			
• ICAL, CCV (including tunes, MRLs, etc) Frequency and Criteria met?	✓			
• Peaks correctly ID'd/quantitated by data system?	✓			
B. Data Evaluation				
All peaks meet qualitative criteria for method:				
• Retention time	✓			
• Signal to noise ratios (3 times noise or greater)	✓			
• Spectrum quality (Primary and secondary ions present),	✓			
• Second column confirmation, or	NA	✓		
• Pattern recognition?		✓		
• Distinguishable from the method blank?	✓			
• All manual integrations reviewed and approved?	✓			
• Method blank level compared to the MDL? Background contribution insignificant compared to the MDL? (MDLs should not be at the same level as background contamination in the method blank)	✓			
C. Documentation				
• Logbooks/prep sheets complete, including spiking information, analyst initials and nominal sample size.	✓			
D. MDL Specifics				
• MDL spiked at the reporting limit or lower?	✓			
• MDL Spreadsheet complete, with: Analyst, Date of Analysis, Correct units, Method number, Prep method number (if applicable) and description, Instrument ID, Spike level, Reporting Limit, Correct value used for AVG/MDL test (5 for aqueous, 10 for solid/waste)				
• 7 replicates for each analyte (no values dropped)	✓			
• Minimum of 3 sig figs for each value reported.	✓			
• MDL Check a) Meets all qualitative criteria (RT, S/N, Spectrum, etc) b) Spiked concentration within 1-3 times the calculated MDL (i.e., MDL to 3x MDL)	✓			
• Electronic spreadsheet e-mailed to QA.	NA	NA		
• Failed MDLs (MDL > spike value) repeated?	NA			
• MDL is reasonable and supportable?	✓			

QA Reviewed JUN 27 2011

QA Reviewed JUN 27 2011

QA Reviewed JUN 27 2011

Analyst: [signature] QA Reviewed Date: 6-27-11

2nd Level Reviewer: JUN 27 2011 Date:

Comments: MDL Check spiked ~~@1.5 ng/L~~ which is 2x the static MDL in QuanTims Static MDL to remain intact due to NDMA detected in MB <0.5ng/L on several occasions.

[signature] 8/30/11

Revision 0, April 2009

OLIN-WILMINGTON
CHEMIST REVIEW
STANDARD OPERATING PROCEDURE AND CHECKLIST
N-NITROSODIMETHYLAMINE (NDMA) AND
N-NITROSODI-N-PROPYLAMINE (NDPA) BY METHOD 521

Reviewer/Date [signature] 8/22/11
Sr. Review/Date
Lab Report # 360-34288-1 / GIF0884773
Project 6107110016.12

1.0 Laboratory Deliverable Requirements

1.1 Laboratory Information: Was all of the following provided in the laboratory report? Check items received. **Yes** [✓] No [ ] N/A [ ] Comments:

☑ *Name of Laboratory* ☑ *Address* ☑ *Project ID* ☑ *Phone #* ☑ *Sample identification – Field and Laboratory*

Client Information: ☑ *Name* ☑ *Address* ☑ *Client Contact* *(IDs must be cross-referenced)*

☑ Data Package Narrative ☑ results and QC summaries ☑ raw data ☑ chromatograms

ACTION: If no, contact lab for submission of missing or illegible information.

1.1 Laboratory Case Narrative:

Yes [✓] *No* [ ] *N/A* [ ] *Comments:*

☑ *Narrative serves as an exception report for the project and method QA/QC performance.*

***ACTION**: If no, contact lab for submission of missing or illegible information.*

1.2 Chain of Custody (COC) copy present of completed COC? **Yes** [✓] No [ ] N/A [ ] Comments:

Does the laboratory report include a copy of the completed Chain of Custody forms containing all samples in this SDG?

ACTION: If no, contact lab for submission of missing completed *COC*.

1.3 Sample Receipt Information (*Cooler Receipt Form*): Were each of the following tasks completed and recorded upon receipt of the sample(s) into the laboratory? **Yes** [✓] No [ ] N/A [ ] Comments:

☑ Sample temperature confirmed: must be 1° – 10° C. (If samples were sent by courier and delivered on the same day as collection, temperature requirement does not apply).

☑ Container type noted ☑ Condition observed ☑ Field and lab IDs cross referenced documentation.

ACTION: If no, contact lab for submission of missing or incomplete

1.3.1 Were the correct bottles and preservatives used? **Yes** [✓] No [ ] N/A [ ] Comments:

Water - 1 Liter amber bottle cool to 4°C. Sodium thiosulfate may be added if source is chlorinated.

ACTION: If no, inform senior chemist. Document justification for change in container/volume (if applicable), qualify positive and non-detect data (J) if cooler temperature exceeds 10°C or use professional judgment for data rejection.

1.3.2 Were all samples delivered to the laboratory without breakage? **Yes** [✓] No [ ] N/A [ ] Comments:

1.3.3 Does the *Cooler Receipt Form* or Lab Narrative indicate other problems with sample receipt, condition of the samples, analytical problems or special circumstances affecting the quality of the data? Yes [✓] **No** [ ] N/A [ ] Comments: Case narrative states sample OC-SW-MMB-SW/SD-5-xxx, OC-SW-MMB-SW/SD-8-xxx, OC-SW-OPW-2-xxx, and OC-SW-OPW-SD/SO/SW-5-xxx were analyzed at dilutions

1.4 Sample Results Section: *Was the following information supplied in the laboratory report for each sample?* **Yes** [✓] No [ ] N/A [ ] Comments: due to extreme matrix interference. Reporting limits were elevated

Case Narrative

TestAmerica West Sacramento Project Number G1F080473

WATER, NDMA & NDPA
Samples: 3, 4, 5, 6, 7
There was insufficient sample volume to prepare a matrix spike/matrix spike duplicate (MS/MSD) pair with this batch.

Samples: 3, 4, 6, 7
These samples were analyzed at dilutions to minimize the effects of extreme matrix interferences. The reporting limits have been elevated accordingly.

Samples: 3, 4, 5, 6, 7
Sample 6, the associated method blank, and the laboratory control sample have a low recovery for one of the internal standards. Data quality is not considered affected if the internal standard signal-to-noise ratio is greater that 10:1, which is achieved for all internal standards for this sample, the method blank & the laboratory control sample.

There are no other anomalies associated with this project.

☑ Field ID and Lab ID ☑ *Date and time collected* ☑ Analyst Initials ☑ *Dilution Factor* ☑ *Reporting limits*
☑ Analysis method ☑ *Preparation method* ☑ *Date of preparation/extraction/ and analysis,* ☑ Matrix ☑ Target analytes and concentrations ☑ Units

ACTION: If no, contact lab for submission of missing or incomplete information.

1.5 QA/QC Information: Was the following information provided in the laboratory report for each sample batch?

Yes [✓] No [ ] Comments:

☑ Method blank results ☑ LCS recoveries ☑ MS/MSD recoveries and RPDs ☑ Internal Standard Recoveries

ACTION: If no, contact lab for submission of missing or incomplete information.

2.0 <u>Holding Times</u> Yes [ ] **No** [✓] N/A [ ] Comments:

Have any technical holding times, determined from date of collection to date of analysis, been exceeded?

NOTE: For water samples, the holding time is 7 days from sampling to extraction and 40 days from extraction to analysis.

ACTION: If technical holding times are exceeded, qualify all positive results (J) and non-detects (UJ). For water samples that are grossly exceeded (>2X hold time) reject (R) all non-detect results. For soil samples professional judgement will be used to determine if rejection is necessary.

3.0 Laboratory Method — **Yes** [✓] No [ ] N/A [ ] Comments:

3.1 Was the correct laboratory method used?

Water Extraction 3510C or *3520C*
NDMA and NDPA 521

ACTION: If no, contact project manager to inform Client of change; request variance from Client; contact laboratory to provide justification for method change compared to the requested method.

3.2 Are the practical quantitation limits the same as those specified by the ☑ QAPP — **Yes** [✓] No [ ] N/A [ ] Comments: Except where dilution to matrix effects

NOTE: *The project PQL is 2 ng/L for GW and 5 ng/L for SW.*

ACTION: If no, evaluate change with respect to sample matrix, preparation, dilution, moisture, etc. If sample PQL is indeterminate, contact lab for explanation.

3.3 Did the laboratory complete a mulit-point initial calibration with a NDMA RPD ≤ 20? Is NDPA RPD ≤ 30? Is the low point standard equal to the PQL? **Yes** [✓] No [ ] Comments:

Has a second source standard been analyzed to verify initial calibration? Is the percent difference < 25? **Yes** [✓] No [ ]

3.4 Did the laboratory analyze a continuing calibration every 12 hours or every 20 samples? Was the NDMA recovery 80-120 percent (percent difference ≤ 20)? Was the NDPA recovery 70 -130 percent (percent difference ≤ 30)? **Yes** [✓] No [ ]

3.5 Is the RRT in the CCAL ± 0.06 min from ICAL? **Yes** [✓] No [ ] N/A [ ] Comments:

ACTION: If no, contact the lab for submission.

4.0 **Method Blanks**

4.1 Is the Method Blank Summary present? **Yes** [✓] No [ ] N/A [ ] Comments:

ACTION: If no, call the laboratory for submission of missing data.

4.2 For the analysis of NDMA, has a method blank been analyzed for each analysis batch of field samples of 20 or less? **Yes** [✓] No [ ] N/A [ ] Comments:

ACTION: If no, document discrepancy in case narrative and contact lab for justification. Consult senior chemist for action needed.

4.3 Is the method blank less than the PQL? **Yes** [✓] No [ ] N/A [ ] Comments:

4.4 Do any method blanks have positive results for NDMA parameters? Qualify data according to the following: Yes [ ] **No [✓]** N/A [ ] Comments:

For NDMA contaminants:

If the sample concentration is < 5 × blank value, flag sample result non-detect "U" at the PQL or the concentration reported if greater than the PQL.

If the sample concentration is > 5 × blank value, no qualification is needed.

5.0 Laboratory Control Sample

5.1 Was a laboratory control sample extracted and run with each analytical batch of 20 samples or less? **Yes [✓]** No [ ] N/A [ ] Comments:

ACTION: Call laboratory for LCS form submittal. If data are not available, use professional judgment to determine the usability of sample results associated with that batch.

5.2 Is a LCS Summary Form present? **Yes [✓]** No [ ] N/A [ ] Comments:

ACTION: If no, contact lab for resubmission of missing data.

5.3 Is the recovery of any analyte outside of control limits? Yes [ ] **No** [✓] N/A [ ] Comments:

NOTE: QAPP LCS recovery limits 60-140.

ACTION: If recovery is above the upper limit, qualify all positive sample results within the batch as (J). If recovery is below the lower limit but > 10%, qualify all positive and no-detect results within the batch as (J). If LCS recovery is <10%, non-detect results are rejected (R).

6.0 Matrix Spikes

Matrix spikes may be collected at different frequencies based on monthly, quarterly, or task specific schedules. Confirm spike requirements for each set with the senior chemist.

6.1 Were project specified MS/MSDs analyzed? List project samples that were spiked. **Yes** [ ] No [✓] N/A [ ] Comments: Insufficient sample volume.

ACTION: If no, contact senior chemist to see if any were specified.

6.2 Is the MS/MSD recovery form present? **Yes** [ ] No [ ] N/A [✓] Comments:

ACTION: If no, contact lab for resubmission of missing data.

6.3 Were matrix spikes analyzed at the required frequency of 1 per 20 samples per matrix? **Yes** [ ] No [ ] N/A [✓] Comments:

ACTION: If any matrix spike data are missing, call lab for resubmission.

6.4 Are any NDMA spike recoveries outside of the QC limits? Yes [ ] No [ ] N/A [✓] Comments:

NOTE: $\%R = \frac{(SSR-SR)}{SA} \times 100\%$

Where: SSR = Spiked sample result SA = Spike added
SR = Sample result

NOTE: *QAPP MS/MSD recovery limits are 60-140.*
NOTES: 1) Use professional judgment for the MS/MSD flags.
2) If the MS/MSD was performed by the laboratory on a non-project sample, no qualification is required.

ACTION: Professional judgment used to qualify associated samples. If the recoveries of the MS and MSD exceed the upper control limit, qualify positive results as estimated (J). If the recoveries of the MS and MSD are lower than the lower control limit, qualify both positive results and non-detects (J).

6.5 Are any RPDs for MS/MSD recoveries outside of the QC limits? Yes [ ] **No** [ ] N/A [✓] Comments:

NOTE: $RPD = \frac{S-D}{(S+D)/2} \times 100\%$ Where: S = MS sample result
D = MSD sample result

NOTE: *QAPP MS/MSD RPD limits for water $\leq$ 20.*

ACTION: If the RPD exceeds the control limit, qualify positive results and non-detects (J).

7.0 Isotope IS Recoveries

Were internal recoveries outside of laboratory limits for any sample or method blank?

Yes [✓] **No** [ ] N/A [ ] Comments:

NDMA-d6 percent recovery in sample OC-SW-OPWD-2-xxx (22) was less than the lower QC limit of 25. Result for NDMA in sample OC-SW-OPWD-2-xxx was not detected and the reporting limit was qualified estimated (UJ).

NOTE: *Lab IS recovery limits 25 -150.*

ACTION: If recoveries are >10% and sample extracts were not diluted, reject non-detects and qualify positive detections as estimated (J). For recoveries outside the lab QC limit, qualify non-detects and positives (J).

8.0 Sampling Accuracy

If ground water samples are collected directly from a tap, process stream, or with dedicated tubing, rinse blanks will not be collected.

8.1 Were rinsate blanks collected? Prior to evaluating rinsate blanks, obtain a list of the associated samples.

Yes [ ] No [✓] N/A [ ] Comments:

8.2 Do any rinsate blanks have positive results?

Yes [ ] **No** [ ] N/A [✓] Comments:

NOTE:

If the sample concentration is < 5 × blank value, flag sample result non-detect "U" at the PQL or the concentration reported if greater than the PQL.

If the sample concentration is > 5 × blank value, no qualification is needed.

9.0 Field Duplicates

9.1 Were field duplicate samples collected? Obtain a list of the samples and their associated field duplicates. **Yes** [ ] No [✓] N/A [ ] Comments:

9.2 Was the RPD ≤ 30% for waters? Calculate the RPD for all results and attach to this review. **Yes** [ ] No [ ] N/A [✓] Comments:

ACTION: RPD must be ≤30% for water. Qualify data (J) for both sample results if the RPD exceeds 30%.

10.0 Calculation and Transcription Checks

Refer to SDG 360-34253-1

- ☐ Initial Calibration
- ☐ Continuing Calibration
- ☐ Method Blank Raw Data Reveiw
- ☐ Sample NDMA and NDPA Results
- ☐ LCS
- ☐ Internal Standard Recovery

REFERENCES

MACTEC, 2009, "Project Operation Plan Volume III-B Quality Assurance Project Plan, Olin Wilmington Superfund Site, 51 Eames Street, Wilmington, MA", April 2009.

U.S. Environmental Protection Agency (USEPA), 1996. "Region 1 EPA-NE Data Validation Guidelines For Evaluating Environmental Analyses"; Quality Assurance Unit Staff; Office of Environmental Measurement and Evaluation; December 1996.

TestAmerica Westfield

Client Sample ID: OC-SW-MMB-SW/SD-5-XXX (360-34288-10)

GC/MS Semivolatiles

Lot-Sample #...: G1F080473-003 Work Order #...: MJ31M1AA Matrix.....: WG
Date Sampled...: 06/07/11 Date Received..: 06/08/11
Prep Date.....: 06/13/11 Analysis Date..: 06/22/11
Prep Batch #...: 1164060
Dilution Factor: 9.51 Method.....: SAC WS-MS-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
N-Nitrosodimethylamine	ND G	19	ng/L	3.7
N-Nitrosodi-n-propyl-amine	ND	19	ng/L	4.5

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
N-Nitrosodimethylamine-d6	26	(25 - 140)
N-Nitrosodi-n-propylamine-d14	130	(25 - 140)

NOTE(S):

G Elevated reporting limit. The reporting limit is elevated due to matrix interference.

3/22/11

TestAmerica Westfield

Client Sample ID: OC-SW-MMB-SW/SD-8-XXX (360-34288-11)

GC/MS Semivolatiles

Lot-Sample #...: G1F080473-004 Work Order #...: MJ31N1AA Matrix.....: WG
Date Sampled...: 06/07/11 Date Received..: 06/08/11
Prep Date.....: 06/13/11 Analysis Date..: 06/22/11
Prep Batch #...: 1164060
Dilution Factor: 9.53 Method.....: SAC WS-MS-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
N-Nitrosodimethylamine	ND G	19	ng/L	3.7
N-Nitrosodi-n-propyl-amine	ND	19	ng/L	4.5

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
N-Nitrosodimethylamine-d6	36	(25 - 140)
N-Nitrosodi-n-propylamine-d14	112	(25 - 140)

NOTE(S):

G Elevated reporting limit. The reporting limit is elevated due to matrix interference.

8/22/11

TestAmerica Westfield

Client Sample ID: OC-SW-OPWD-1-XXX (360-34288-12)

GC/MS Semivolatiles

Lot-Sample #...: G1F080473-005 Work Order #...: MJ31P1AA Matrix.....: WG
Date Sampled...: 06/07/11 Date Received..: 06/08/11
Prep Date.....: 06/13/11 Analysis Date..: 06/22/11
Prep Batch #...: 1164060
Dilution Factor: 9.7 Method.....: SAC WS-MS-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
N-Nitrosodimethylamine	60 Q	19	ng/L	3.8
N-Nitrosodi-n-propyl-amine	ND	19	ng/L	4.6

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
N-Nitrosodimethylamine-d6	43	(25 - 140)
N-Nitrosodi-n-propylamine-d14	103	(25 - 140)

NOTE(S):

Q Elevated reporting limit. The reporting limit is elevated due to high analyte levels.

8/22/11

TestAmerica Westfield

Client Sample ID: OC-SW-OPWD-2-XXX (360-34288-13)

GC/MS Semivolatiles

Lot-Sample #...: G1F080473-006 Work Order #...: MJ31Q1AA Matrix.....: WG
Date Sampled...: 06/07/11 Date Received..: 06/08/11
Prep Date.....: 06/13/11 Analysis Date..: 06/22/11
Prep Batch #...: 1164060
Dilution Factor: 18.9 Method.....: SAC WS-MS-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
N-Nitrosodimethylamine	ND ~~G~~ J	38	ng/L	7.4
N-Nitrosodi-n-propyl-amine	ND	38	ng/L	8.9

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
N-Nitrosodimethylamine-d6	22 *	(25 - 140)
N-Nitrosodi-n-propylamine-d14	97	(25 - 140)

NOTE(S):

* Surrogate recovery is outside stated control limits.

G Elevated reporting limit. The reporting limit is elevated due to matrix interference.

8/22/11

TestAmerica Westfield

Client Sample ID: OC-SW-OPWD-SD/SO/SW-XXX (360-34288-14)

GC/MS Semivolatiles

Lot-Sample #...: G1F080473-007 Work Order #...: MJ31R1AA Matrix.....: WG
Date Sampled...: 06/07/11 Date Received..: 06/08/11
Prep Date.....: 06/13/11 Analysis Date..: 06/22/11
Prep Batch #...: 1164060
Dilution Factor: 9.76 Method.....: SAC WS-MS-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
N-Nitrosodimethylamine	23 G	20	ng/L	3.8
N-Nitrosodi-n-propyl-amine	ND	20	ng/L	4.6

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
N-Nitrosodimethylamine-d6	33	(25 - 140)
N-Nitrosodi-n-propylamine-d14	114	(25 - 140)

NOTE(S):

G Elevated reporting limit. The reporting limit is elevated due to matrix interference.

3/22/11

OLIN-WILMINGTON
CHEMIST REVIEW
STANDARD OPERATING PROCEDURE AND CHECKLIST
N-NITROSODIMETHYLAMINE (NDMA) AND
N-NITROSODI-N-PROPYLAMINE (NDPA) BY METHOD 521

Reviewer/Date [signature] 8/30/14
Sr. Review/Date
Lab Report # 360-34315-1 / GIF090508
Project 6107 110016.12

1.0 Laboratory Deliverable Requirements

1.1 Laboratory Information: Was all of the following provided in the laboratory report? Check items received. **Yes** [✓] No [ ] N/A [ ] Comments:

[✓] *Name of Laboratory* [✓] *Address* [✓] *Project ID* [✓] *Phone #* [✓] *Sample identification – Field and Laboratory (IDs must be cross-referenced)*

Client Information: [✓] *Name* [✓] *Address* [✓] *Client Contact*

[✓] Data Package Narrative [✓] results and QC summaries [✓] raw data [✓] chromatograms

ACTION: If no, contact lab for submission of missing or illegible information.

1.1 Laboratory Case Narrative: ***Yes*** [✓] *No* [ ] *N/A* [ ] *Comments:*

[✓] *Narrative serves as an exception report for the project and method QA/QC performance.*

***ACTION**: If no, contact lab for submission of missing or illegible information.*

1.2 Chain of Custody (COC) copy present of completed COC? **Yes** [✓] No [ ] N/A [ ] Comments:

Does the laboratory report include a copy of the completed Chain of Custody forms containing all samples in this SDG?

ACTION: If no, contact lab for submission of missing completed *COC*.

1.3 Sample Receipt Information (*Cooler Receipt Form*): Were each of the following tasks completed and recorded upon receipt of the sample(s) into the laboratory? **Yes** [✓] No [ ] N/A [ ] Comments:

☑ Sample temperature confirmed: must be 1° – 10° C. (If samples were sent by courier and delivered on the same day as collection, temperature requirement does not apply).

☑ Container type noted ☑ Condition observed ☑ Field and lab IDs cross referenced

ACTION: If no, contact lab for submission of missing or incomplete documentation.

1.3.1 Were the correct bottles and preservatives used? **Yes** [✓] No [ ] N/A [ ] Comments:

Water - 1 Liter amber bottle cool to 4°C. Sodium thiosulfate may be added if source is chlorinated.

ACTION: If no, inform senior chemist. Document justification for change in container/volume (if applicable), qualify positive and non-detect data (J) if cooler temperature exceeds 10°C or use professional judgment for data rejection.

1.3.2 Were all samples delivered to the laboratory without breakage? **Yes** [✓] No [ ] N/A [ ] Comments:

1.3.3 Does the *Cooler Receipt Form* or Lab Narrative indicate other problems with sample receipt, condition of the samples, analytical problems or special circumstances affecting the quality of the data? Yes [✓] **No** [ ] N/A [ ] Comments: See attached.

1.4 Sample Results Section: *Was the following information supplied in the laboratory report for each sample?* **Yes** [✓] No [ ] N/A [ ] Comments:

Case Narrative

TestAmerica West Sacramento Project Number G1F090508

WATER, NDMA & NDPA
Samples: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10
There was insufficient sample volume to prepare a matrix spike/matrix spike duplicate (MS/MSD) pair with this batch.

Samples: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10
The associated method blank and laboratory control sample have a low recovery for the N-Nitrosodi-n-propylamine-d14 internal standard. Data quality is not considered affected if the internal standard signal-to-noise ratio is greater that 10:1, which is achieved for all internal standards for the method blank & laboratory control sample.

Samples: 4, 5, 6, 7, 8, 9, 10
These samples were analyzed at dilutions to minimize the effects of extreme matrix interference. The reporting limits have been elevated accordingly.

Samples: 9, 10
These samples have high recoveries for the N-Nitrosodi-n-propylamine-d14 internal standard. Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated internal standard recoveries.

There are no other anomalies associated with this project.

☑ Field ID and Lab ID ☑ *Date and time collected* ☑ Analyst Initials ☑ *Dilution Factor* ☑ *Reporting limits*
☑ Analysis method ☑ *Preparation method* ☑ *Date of preparation/extraction/ and analysis,* ☑ Matrix ☑ Target analytes and concentrations ☐ Units

ACTION: If no, contact lab for submission of missing or incomplete information.

1.5 QA/QC Information: Was the following information provided in the laboratory report for each sample batch?

Yes [✓] No [ ] Comments:

☑ Method blank results ☑ LCS recoveries ☐ MS/MSD recoveries and RPDs ☑ Internal Standard Recoveries

ACTION: If no, contact lab for submission of missing or incomplete information.

2.0 Holding Times Yes [ ] **No** [✓] N/A [ ] Comments:

Have any technical holding times, determined from date of collection to date of analysis, been exceeded?

NOTE: For water samples, the holding time is 7 days from sampling to extraction and 40 days from extraction to analysis.

ACTION: If technical holding times are exceeded, qualify all positive results (J) and non-detects (UJ). For water samples that are grossly exceeded (>2X hold time) reject (R) all non-detect results. For soil samples professional judgement will be used to determine if rejection is necessary.

3.0 Laboratory Method — **Yes** [✓] No [ ] N/A [ ] Comments:

3.1 Was the correct laboratory method used?

Water Extraction 3510C or *3520C*
NDMA and NDPA 521

ACTION: If no, contact project manager to inform Client of change; request variance from Client; contact laboratory to provide justification for method change compared to the requested method.

3.2 Are the practical quantitation limits the same as those specified by the [✓] QAPP — **Yes** [ ] No [✓] N/A [ ] Comments:

NOTE: *The project PQL is 2 ng/L for GW and 5 ng/L for SW.*

ACTION: If no, evaluate change with respect to sample matrix, preparation, dilution, moisture, etc. If sample PQL is indeterminate, contact lab for explanation.

Samples OC-SW-EDSD/SW5(EDB511)-xxx, OC-SW-MMB-SW/SD-11-xxx, OC-SW-MMB-SW/SD-2-xxx, OC-SW-MMB-SW/SD-3-xxx, OC-SW-MMB-SW/SD-6-xxx, and OC-SW-MMB-SW/SD-84-xxx were analyzed at dilutions to minimize effects of extreme matrix interferences. Reporting limits were adjusted accordingly.

3.3 Did the laboratory complete a mulit-point initial calibration with a NDMA RPD ≤ 20? Is NDPA RPD ≤ 30? Is the low point standard equal to the PQL? **Yes** [✓] No [ ] Comments:

Has a second source standard been analyzed to verify initial calibration? Is the percent difference < 25? **Yes** [✓] No [ ]

3.4 Did the laboratory analyze a continuing calibration every 12 hours or every 20 samples? Was the NDMA recovery 80-120 percent (percent difference ≤ 20)? Was the NDPA recovery 70 -130 percent (percent difference ≤ 30)? **Yes** [✓] No [ ]

3.5 Is the RRT in the CCAL ± 0.06 min from ICAL? **Yes** [✓] No [ ] N/A [ ] Comments:

ACTION: If no, contact the lab for submission.

4.0 **Method Blanks**

4.1 Is the Method Blank Summary present? **Yes** [✓] No [ ] N/A [ ] Comments:

ACTION: If no, call the laboratory for submission of missing data.

4.2 For the analysis of NDMA, has a method blank been analyzed for each analysis batch of field samples of 20 or less? **Yes** [✓] No [ ] N/A [ ] Comments:

ACTION: If no, document discrepancy in case narrative and contact lab for justification. Consult senior chemist for action needed.

4.3 Is the method blank less than the PQL? **Yes** [✓] No [ ] N/A [ ] Comments:

4.4 Do any method blanks have positive results for NDMA parameters? Qualify data according to the following: Yes [ ] **No [✓]** N/A [ ] Comments:

For NDMA contaminants:

If the sample concentration is < 5 × blank value, flag sample result non-detect "U" at the PQL or the concentration reported if greater than the PQL.

If the sample concentration is > 5 × blank value, no qualification is needed.

5.0 Laboratory Control Sample

5.1 Was a laboratory control sample extracted and run with each analytical batch of 20 samples or less? **Yes [✓]** No [ ] N/A [ ] Comments:

ACTION: Call laboratory for LCS form submittal. If data are not available, use professional judgment to determine the usability of sample results associated with that batch.

5.2 Is a LCS Summary Form present? **Yes [✓]** No [ ] N/A [ ] Comments:

ACTION: If no, contact lab for resubmission of missing data.

5.3 Is the recovery of any analyte outside of control limits? Yes [ ] **No** [✓] N/A [ ] Comments:

NOTE: QAPP LCS recovery limits 60-140.

ACTION: If recovery is above the upper limit, qualify all positive sample results within the batch as (J). If recovery is below the lower limit but > 10%, qualify all positive and no-detect results within the batch as (J). If LCS recovery is <10%, non-detect results are rejected (R).

6.0 Matrix Spikes

Matrix spikes may be collected at different frequencies based on monthly, quarterly, or task specific schedules. Confirm spike requirements for each set with the senior chemist.

6.1 Were project specified MS/MSDs analyzed? List project samples that were spiked. **Yes** [ ] No [✓] N/A [ ] Comments:

ACTION: If no, contact senior chemist to see if any were specified.

6.2 Is the MS/MSD recovery form present? **Yes** [ ] No [ ] N/A [✓] Comments:

ACTION: If no, contact lab for resubmission of missing data.

6.3 Were matrix spikes analyzed at the required frequency of 1 per 20 samples per matrix? **Yes** [ ] No [ ] N/A [✓] Comments:

ACTION: If any matrix spike data are missing, call lab for resubmission.

6.4 Are any NDMA spike recoveries outside of the QC limits? Yes [ ] No [ ] N/A [✓] Comments:

NOTE: $\%R = \frac{(SSR-SR)}{SA} \times 100\%$

Where: SSR = Spiked sample result SA = Spike added
SR = Sample result

NOTE: *QAPP MS/MSD recovery limits are 60-140.*
NOTES: 1) Use professional judgment for the MS/MSD flags.
2) If the MS/MSD was performed by the laboratory on a non-project sample, no qualification is required.

ACTION: Professional judgment used to qualify associated samples. If the recoveries of the MS and MSD exceed the upper control limit, qualify positive results as estimated (J). If the recoveries of the MS and MSD are lower than the lower control limit, qualify both positive results and non-detects (J).

6.5 Are any RPDs for MS/MSD recoveries outside of the QC limits? Yes [ ] **No** [ ] N/A [✓] Comments:

NOTE: $RPD = \frac{S-D}{(S+D)/2} \times 100\%$ Where: S = MS sample result
D = MSD sample result

NOTE: *QAPP MS/MSD RPD limits for water ≤ 20.*

ACTION: If the RPD exceeds the control limit, qualify positive results and non-detects (J).

7.0 Isotope IS Recoveries

Were internal recoveries outside of laboratory limits for any sample or method blank? Yes [✓] **No** [ ] N/A [ ] Comments: the NDPA-d14 percent recovery in sample OC-SW-MMB-SW/SO-8A-+++ (142) exceeded the upper QC limit of 140. NDPA result was not detected; no action was required.

NOTE: *Lab IS recovery limits 25 -150.*

ACTION: If recoveries are >10% and sample extracts were not diluted, reject non-detects and qualify positive detections as estimated (J). For recoveries outside the lab QC limit, qualify non-detects and positives (J).

8.0 Sampling Accuracy

If ground water samples are collected directly from a tap, process stream, or with dedicated tubing, rinse blanks will not be collected.

8.1 Were rinsate blanks collected? Prior to evaluating rinsate blanks, obtain a list of the associated samples. **Yes** [ ] No [✓] N/A [ ] Comments:

8.2 Do any rinsate blanks have positive results? Yes [ ] **No** [ ] N/A [✓] Comments:

NOTE:

If the sample concentration is < 5 × blank value, flag sample result non-detect "U" at the PQL or the concentration reported if greater than the PQL.

If the sample concentration is > 5 × blank value, no qualification is needed.

9.0 Field Duplicates

9.1 Were field duplicate samples collected? Obtain a list of the samples and their associated field duplicates. **Yes** [ ] No [✓] N/A [ ] Comments:

9.2 Was the RPD ≤ 30% for waters? Calculate the RPD for all results and attach to this review. **Yes** [ ] No [ ] N/A [✓] Comments:

ACTION: RPD must be ≤30% for water. Qualify data (J) for both sample results if the RPD exceeds 30%.

10.0 Calculation and Transcription Checks

Refer to SDG-360-34253-1

- ☐ Initial Calibration
- ☐ Continuing Calibration
- ☐ Method Blank Raw Data Reveiw
- ☐ Sample NDMA and NDPA Results
- ☐ LCS
- ☐ Internal Standard Recovery

REFERENCES

MACTEC, 2009, "Project Operation Plan Volume III-B Quality Assurance Project Plan, Olin Wilmington Superfund Site, 51 Eames Street, Wilmington, MA", April 2009.

U.S. Environmental Protection Agency (USEPA), 1996. "Region 1 EPA-NE Data Validation Guidelines For Evaluating Environmental Analyses"; Quality Assurance Unit Staff; Office of Environmental Measurement and Evaluation; December 1996.

TestAmerica Westfield

Client Sample ID: OC-SW-EDSD/SW5(EDBS11)-XXX(360-34315-6)

GC/MS Semivolatiles

Lot-Sample #...: G1F090508-004 Work Order #...: MJ49P1AA Matrix.....: WG
Date Sampled...: 06/08/11 Date Received..: 06/09/11
Prep Date.....: 06/13/11 Analysis Date..: 06/22/11
Prep Batch #...: 1164060
Dilution Factor: 10.1 Method.....: SAC WS-MS-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
N-Nitrosodimethylamine	ND G	20	ng/L	3.9
N-Nitrosodi-n-propyl-amine	ND	20	ng/L	4.7

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
N-Nitrosodimethylamine-d6	36	(25 - 140)
N-Nitrosodi-n-propylamine-d14	105	(25 - 140)

NOTE(S):

G Elevated reporting limit. The reporting limit is elevated due to matrix interference.

8/30/11

TestAmerica Westfield

Client Sample ID: OC-SW-MMB-SW/SD-11-XXX(360-34315-7)

GC/MS Semivolatiles

Lot-Sample #...: G1F090508-005 Work Order #...: MJ49Q1AA Matrix.....: WG
Date Sampled...: 06/07/11 Date Received..: 06/09/11
Prep Date.....: 06/13/11 Analysis Date..: 06/22/11
Prep Batch #...: 1164060
Dilution Factor: 9.56 Method.....: SAC WS-MS-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
N-Nitrosodimethylamine	ND G	19	ng/L	3.7
N-Nitrosodi-n-propyl-amine	ND	19	ng/L	4.5

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
N-Nitrosodimethylamine-d6	45	(25 - 140)
N-Nitrosodi-n-propylamine-d14	114	(25 - 140)

NOTE(S):

G Elevated reporting limit. The reporting limit is elevated due to matrix interference.

8/30/11

TestAmerica Westfield

Client Sample ID: OC-SW-MMB-SW/SD-2-XXX(360-34315-8)

GC/MS Semivolatiles

Lot-Sample #...: G1F090508-006 Work Order #...: MJ49R1AA Matrix.....: WG
Date Sampled...: 06/08/11 Date Received..: 06/09/11
Prep Date.....: 06/13/11 Analysis Date..: 06/22/11
Prep Batch #...: 1164060
Dilution Factor: 9.81 Method.....: SAC WS-MS-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
N-Nitrosodimethylamine	ND G	20	ng/L	3.8
N-Nitrosodi-n-propyl-amine	ND	20	ng/L	4.6

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
N-Nitrosodimethylamine-d6	29	(25 - 140)
N-Nitrosodi-n-propylamine-d14	100	(25 - 140)

NOTE(S):

G Elevated reporting limit. The reporting limit is elevated due to matrix interference.

9/30/11

TestAmerica Westfield

Client Sample ID: OC-SW-MMB-SW/SD-3-XXX(360-34315-9)

GC/MS Semivolatiles

Lot-Sample #...:	G1F090508-007	Work Order #...:	MJ49T1AA	Matrix.....:	WG
Date Sampled...:	06/08/11	Date Received..:	06/09/11		
Prep Date.....:	06/13/11	Analysis Date..:	06/22/11		
Prep Batch #...:	1164060				
Dilution Factor:	9.65	Method.....:	SAC WS-MS-0012		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
N-Nitrosodimethylamine	ND G	19	ng/L	3.8
N-Nitrosodi-n-propyl-amine	ND	19	ng/L	4.5

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
N-Nitrosodimethylamine-d6	34	(25 - 140)
N-Nitrosodi-n-propylamine-d14	133	(25 - 140)

NOTE(S):

G Elevated reporting limit The reporting limit is elevated due to matrix interference.

8/30/11

TestAmerica Westfield

Client Sample ID: OC-SW-MMB-SW/SD-6-XXX(360-34315-10)

GC/MS Semivolatiles

Lot-Sample #...:	G1F090508-008	Work Order #...:	MJ49V1AA	Matrix.....:	WG
Date Sampled...:	06/08/11	Date Received..:	06/09/11		
Prep Date.....:	06/13/11	Analysis Date..:	06/22/11		
Prep Batch #...:	1164060				
Dilution Factor:	19	Method.....:	SAC WS-MS-0012		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
N-Nitrosodimethylamine	ND G	38	ng/L	7.4
N-Nitrosodi-n-propyl-amine	ND	38	ng/L	8.9

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
N-Nitrosodimethylamine-d6	33	(25 - 140)
N-Nitrosodi-n-propylamine-d14	115	(25 - 140)

NOTE(S):

G Elevated reporting limit. The reporting limit is elevated due to matrix interference.

8/30/11

TestAmerica Westfield

Client Sample ID: OC-SW-MMB-SW/SD-8A-XXX(360-34315-11)

GC/MS Semivolatiles

Lot-Sample #...:	G1F090508-009	Work Order #...:	MJ49W1AA	Matrix.....:	WG
Date Sampled...:	06/08/11	Date Received..:	06/09/11		
Prep Date.....:	06/13/11	Analysis Date..:	06/22/11		
Prep Batch #...:	1164060				
Dilution Factor:	9.66	Method.....:	SAC WS-MS-0012		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
N-Nitrosodimethylamine	ND G	19	ng/L	3.8
N-Nitrosodi-n-propyl-amine	ND	19	ng/L	4.5

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
N-Nitrosodimethylamine-d6	28	(25 - 140)
N-Nitrosodi-n-propylamine-d14	142 *	(25 - 140)

NOTE(S):

* Surrogate recovery is outside stated control limits.

G Elevated reporting limit The reporting limit is elevated due to matrix interference.

8/30/14

TestAmerica Westfield

Client Sample ID: OC-EBK-019(360-34315-13)

GC/MS Semivolatiles

Lot-Sample #...: G1F090508-010 Work Order #...: MJ49X1AA Matrix.....: WG
Date Sampled...: 06/08/11 Date Received..: 06/09/11
Prep Date.....: 06/13/11 Analysis Date..: 06/22/11
Prep Batch #...: 1164060
Dilution Factor: 9.55 Method.....: SAC WS-MS-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
N-Nitrosodimethylamine	ND G	19	ng/L	3.7
N-Nitrosodi-n-propyl-amine	ND	19	ng/L	4.5

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
N-Nitrosodimethylamine-d6	30	(25 - 140)
N-Nitrosodi-n-propylamine-d14	142 *	(25 - 140)

NOTE(S):

* Surrogate recovery is outside stated control limits.

G Elevated reporting limit. The reporting limit is elevated due to matrix interference.

8/30/11

OU1/OU2 SW

CHEMIST REVIEW-VALIDATION CHECKLIST

Project: Olin Chemical Superfund Site **Method:** Opex/Kimpore 8000
Project #: 6107110016 **Laboratory and SDG:** LANCASTER OLN69
Date: 8/12/11 **Reviewer:** C Ricardi

☑ **Chemist Review** ☐ **Full Validation (add page 2)**

1. **Case Narrative and Data Package Completeness (COC Review)**

2. **Holding Time and Sample Preservation/Collection**
   Collected 6/6 Opex 6/10
   Kemp 6/9

3. **QC Blanks** MBK-ND

4. **Laboratory Control Sample Review** within limits

5. **Field Duplicate Precision** OC-SW-ISCO-1/Dup All ND

6. **Lab Duplicate Precision**

   NA

7. **Matrix Spike Results (if applicable)** ISCO-1 Kemporte 200/168
   Opex 19/22

8. **Surrogate Recovery (if applicable)**

   NA

9. **Internal Standard Recovery (if applicable)**

   NA

OU1/OU2 SW

CHEMIST REVIEW-VALIDATION CHECKLIST

Project: Olin Chemical Superfund Site Method: Hydrazine 8315
Project #: 6107110016 Laboratory and SDG: LANCASTER OLN69
Date: 8/1/11 Reviewer: C Ricardi

☐ Chemist Review ☐ Full Validation (add page 2)

1. Case Narrative and Data Package Completeness (COC Review)

2. Holding Time and Sample Preservation/Collection
Collected 6/6 6/11

3. QC Blanks MBK - ND

4. Laboratory Control Sample Review within limits

5. Field Duplicate Precision OC-SW-ISCO-1 /Dup All ND

6. Lab Duplicate Precision
NA

7. Matrix Spike Results (if applicable) ISCO-1 within limits

8. Surrogate Recovery (if applicable)
NA

9. Internal Standard Recovery (if applicable)
NA

Lancaster Laboratories

Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: OC-SW-ISCO-2-XXX Grab Water
Wilmington MA Superfund Site

LLI Sample # WW 6308059
LLI Group # 1250152
Account # 12670

Project Name: Olin Wilmington, MA Superfund Site/6107090016

Collected: 06/06/2011 11:00

Submitted: 06/07/2011 10:15
Reported: 06/17/2011 12:43

Olin Corporation
Suite 200
3855 North Ocoee Street
Cleveland TN 37312

ISC2- SDG#: OLN69-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Dilution Factor
HPLC Organics	SW-846 8000B		ug/l	ug/l	ug/l	
02727	Kempore in Water	123-77-3	1,200 N	1,000	230	1
02726	Opex in Water	101-25-7	N.D.	100	20	1
Misc. Organics	SW-846 8315A modified		ug/l	ug/l	ug/l	
10342	1,1-Dimethylhydrazine	57-14-7	N.D.	0.50	0.25	1
10342	Hydrazine	302-01-2	0.080 J	0.10	0.050	1
10342	Methylhydrazine	60-34-4	N.D.	0.50	0.25	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02727	Kempore in Water	SW-846 8000B	1	111580040A	06/09/2011 20:50	Michele D Hamilton	1
02726	Opex in Water	SW-846 8000B	1	111610022A	06/10/2011 21:57	James H Place	1
10342	Hydrazines in Water	SW-846 8315A modified	1	11161002	06/11/2011 08:51	Meng Yu	1

ev
8/12/11

*=This limit was used in the evaluation of the final result

OU1/OU2 SW

CHEMIST REVIEW-VALIDATION CHECKLIST

Project: Olin Chemical Superfund Site
Project #: 6107110016
Date: 8/12/11

Method: Opex/Kempore 8000
Laboratory and SDG: LANCASTER OLN70
Reviewer: C Ricardi

☒ Chemist Review ☐ Full Validation (add page 2)

1. Case Narrative and Data Package Completeness (COC Review)

2. Holding Time and Sample Preservation/Collection

Collected 6/6 Kemp 6/9 Opex 6/10

3. QC Blanks

MBK - ND

4. Laboratory Control Sample Review

Kempore PZ17A - %D dual column 67 J

5. Field Duplicate Precision

NA

6. Lab Duplicate Precision

NA

7. Matrix Spike Results (if applicable)

See OLN69

8. Surrogate Recovery (if applicable)

NA

9. Internal Standard Recovery (if applicable)

NA

OU1/OU2 SW

CHEMIST REVIEW-VALIDATION CHECKLIST

Project: Olin Chemical Superfund Site
Project #: 6107110016
Date: 8/12/11

Method: Hydrazine 8315
Laboratory and SDG: LANCASTER OLN70
Reviewer: C Ricardi

☑ Chemist Review ☐ Full Validation (add page 2)

1. Case Narrative and Data Package Completeness (COC Review)

2. Holding Time and Sample Preservation/Collection

Collected 6/6 6/10

3. QC Blanks

MBK - ND

4. Laboratory Control Sample Review Within limits

5. Field Duplicate Precision GC-SW-MMB-SW/SD-1 Both ND

6. Lab Duplicate Precision

NA

7. Matrix Spike Results (if applicable)

See OLN69

8. Surrogate Recovery (if applicable)

NA

9. Internal Standard Recovery (if applicable)

NA

Lancaster Laboratories

Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: OC-SW-PZ-17RR-XXX Grab Water
Wilmington MA Superfund Site

LLI Sample # WW 6308075
LLI Group # 1250154
Account # 12670

Project Name: Olin Wilmington, MA Superfund Site/6107090016

Collected: 06/06/2011 13:45

Submitted: 06/07/2011 10:15
Reported: 06/20/2011 13:00

Olin Corporation
Suite 200
3855 North Ocoee Street
Cleveland TN 37312

PZ17R SDG#: OLN70-06

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Dilution Factor
HPLC Organics	**SW-846 8000B**		ug/l	ug/l	ug/l	
02727	Kempore in Water	123-77-3	1,100 J	1,000	230	1
02726	Opex in Water	101-25-7	N.D.	100	20	1

The project QA/QC requirements were not met.
The sample was injected numerous times. Each time the response for opex in the calibration check standard injected after the sample was outside the acceptance criteria. Therefore, this effect is attributed to the sample matrix and the data is reported.

Misc. Organics	**SW-846 8315A modified**		ug/l	ug/l	ug/l	
10342	1,1-Dimethylhydrazine	57-14-7	N.D.	0.50	0.25	1
10342	Hydrazine	302-01-2	N.D.	0.10	0.050	1
10342	Methylhydrazine	60-34-4	N.D.	0.50	0.25	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02727	Kempore in Water	SW-846 8000B	1	111580040A	06/09/2011 21:02	Michele D Hamilton	1
02726	Opex in Water	SW-846 8000B	2	111610022A	06/10/2011 22:18	Michele D Hamilton	1
10342	Hydrazines in Water	SW-846 8315A modified	1	11161001	06/10/2011 22:53	Meng Yu	1

ch 8/16/11

*=This limit was used in the evaluation of the final result

Lancaster Laboratories

Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: OC-SW-SD-1-XXX Grab Water
Wilmington MA Superfund Site

LLI Sample # WW 6308076
LLI Group # 1250154
Account # 12670

Project Name: Olin Wilmington, MA Superfund Site/6107090016

Collected: 06/06/2011 12:15

Submitted: 06/07/2011 10:15
Reported: 06/20/2011 13:00

Olin Corporation
Suite 200
3855 North Ocoee Street
Cleveland TN 37312

-SD-1 SDG#: OLN70-07*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Dilution Factor
HPLC Organics	**SW-846 8000B**		ug/l	ug/l	ug/l	
02727	Kempore in Water	123-77-3	1,400 N	1,000	230	1
02726	Opex in Water	101-25-7	N.D.	100	20	1
	The sample was injected numerous times. Each time the response for opes in the calibration check standard injected after the sample was outside the acceptance criteria. Therefore, this effect is attributed to the sample matrix and the data is reported.					
Misc. Organics	**SW-846 8315A modified**		ug/l	ug/l	ug/l	
10342	1,1-Dimethylhydrazine	57-14-7	N.D.	0.50	0.25	1
10342	Hydrazine	302-01-2	0.076 J	0.10	0.050	1
10342	Methylhydrazine	60-34-4	N.D.	0.50	0.25	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02727	Kempore in Water	SW-846 8000B	1	111580040A	06/09/2011 21:08	Michele D Hamilton	1
02726	Opex in Water	SW-846 8000B	2	111610022A	06/10/2011 22:24	Michele D Hamilton	1
10342	Hydrazines in Water	SW-846 8315A modified	1	11161001	06/10/2011 23:09	Meng Yu	1

ch
8/17/11

*=This limit was used in the evaluation of the final result

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Quality Control Summary

Client Name: Olin Corporation
Reported: 06/20/11 at 01:00 PM

Group Number: 1250154

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Raw data checks

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank LOQ**	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 111580040A	Sample number(s): 6308074-6308076								
Kempore in Water	N.D.	1,000.	230	ug/l	84	87	70-130	4	30
Batch number: 111610022A	Sample number(s): 6308074-6308076								
Opex in Water	N.D.	100.	20	ug/l	93	93	70-130	0	30
Batch number: 11161001	Sample number(s): 6308068-6308076								
1,1-Dimethylhydrazine	N.D.	0.50	0.25	ug/l	104	103	70-130	1	25
Hydrazine	N.D.	0.10	0.050	ug/l	100	98	70-130	2	25
Methylhydrazine	N.D.	0.50	0.25	ug/l	98	101	70-130	3	25

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 111580040A	Sample number(s): 6308074-6308076 UNSPK: P308055								
Kempore in Water	200*	168*	70-130	17	30				
Batch number: 111610022A	Sample number(s): 6308074-6308076 UNSPK: P308055								
Opex in Water	19*	22*	70-130	13	30				
Batch number: 11161001	Sample number(s): 6308068-6308076 UNSPK: 6308068								
1,1-Dimethylhydrazine	95	92	70-130	3	25				
Hydrazine	99	97	70-130	2	25				
Methylhydrazine	74	73	70-130	2	25				

CL 8/26/11

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

OU1/OU2 SW

CHEMIST REVIEW-VALIDATION CHECKLIST

Project: Olin Chemical Superfund Site
Project #: 6107110016
Date: 8/11

Method: Opex/kemporc 8000
Laboratory and SDG: LANCASTER OLN71
Reviewer: C Ricardi

☒ Chemist Review ☐ Full Validation (add page 2)

1. Case Narrative and Data Package Completeness (COC Review)

* lab reports calib check standards ~~with~~ not meeting method goals

2. Holding Time and Sample Preservation/Collection

6/7 6/9 6/10

3. QC Blanks

MBK-ND

4. Laboratory Control Sample Review Within limits

5. Field Duplicate Precision

NA

6. Lab Duplicate Precision

NA

7. Matrix Spike Results (if applicable) see OLN69 opex 19/22%

8. Surrogate Recovery (if applicable)

NA

9. Internal Standard Recovery (if applicable)

NA

OU1/OU2 SW

CHEMIST REVIEW-VALIDATION CHECKLIST

Project: Olin Chemical Superfund Site Method: Hydrazine 8315
Project #: 6107110016 Laboratory and SDG: LANCASTER OLN71
Date: 8/12/11 Reviewer: C Ricardi

☒ Chemist Review ☐ Full Validation (add page 2)

1. Case Narrative and Data Package Completeness (COC Review)

OK

2. Holding Time and Sample Preservation/Collection

Collect 6/7 6/11

3. QC Blanks

MB/L-ND

4. Laboratory Control Sample Review

within limits

5. Field Duplicate Precision

NA

6. Lab Duplicate Precision

NA

7. Matrix Spike Results (if applicable) See OLN69

8. Surrogate Recovery (if applicable)

NA

9. Internal Standard Recovery (if applicable)

NA

OU1/OU2 SW

CHEMIST REVIEW-VALIDATION CHECKLIST

Project: Olin Chemical Superfund Site
Project #: 6107110016
Date: 8/12/11

Method: Oxpex/Kempore
Laboratory and SDG: LANCASTER OLN71 #2 (OLN72)
Reviewer: C Ricardi

☒ Chemist Review ☐ Full Validation (add page 2)

1. Case Narrative and Data Package Completeness (COC Review)

lab reports ccv outside method criteria for Kempore

2. Holding Time and Sample Preservation/Collection

Collected 6/8 Kemp 6/9 Opex 6/15

3. QC Blanks

MBK-ND

4. Laboratory Control Sample Review/LCSD

LCS within limits

5. Field Duplicate Precision

NA

6. Lab Duplicate Precision

NA

7. Matrix Spike Results (if applicable)

See OLN69 Opex 19/22

8. Surrogate Recovery (if applicable)

NA

9. Internal Standard Recovery (if applicable)

NA

OU1/OU2 SW

CHEMIST REVIEW-VALIDATION CHECKLIST

Project: Olin Chemical Superfund Site
Project #: 6107110016
Date: 8/12/11

Method: Hydrazine 8315
Laboratory and SDG: LANCASTER OLN
Reviewer: C Ricardi

☒ Chemist Review ☐ Full Validation (add page 2)

1. Case Narrative and Data Package Completeness (COC Review)

2. Holding Time and Sample Preservation/Collection

Collected 6/8 Anal 6/11

3. QC Blanks

MBK-ND

4. Laboratory Control Sample Review / LCSD

Within limits

5. Field Duplicate Precision

NA

6. Lab Duplicate Precision

NA

7. Matrix Spike Results (if applicable)

within limits

8. Surrogate Recovery (if applicable)

NA

9. Internal Standard Recovery (if applicable)

NA

1D

ORGANICS ANALYSIS DATA SHEET

SAMPLE CODE NO.

EDSD2

Lab Name: Lancaster Laboratories **Contract:** **Batchnumber:** 111600026A

Lab Code: **Case No.:** **SAS No.:** **SDG No.:** OLN71

Matrix: (soil/water) WATER **Lab Sample ID:** 6310722

Sample wt/vol: 10 (g/ml) ml **Lab File ID:** 1K11160.32R

% Moisture: **Decanted: (Y/N)** **Date Received:** 6/9/2011

Extraction: (SepF/Cont/Sonc) Direct Injection **Date Extracted:** 6/9/2011

Concentrated Extract Volume: 10000 (uL) **Date Analyzed:** 6/9/2011

Injection Volume: 35 (uL) **Dilution Factor:** 1

GPC Cleanup: (Y/N) N **pH:** **Sulfur Cleanup: (Y/N)** N

CAS NO.	COMPOUND	CONCENTRATION UNITS (UG/L or UG/KG) ug/l	Q
123-77-3	Kempore	4100	

Same peak (as 6310720) Pattern, but RT Shift makes this a Detection

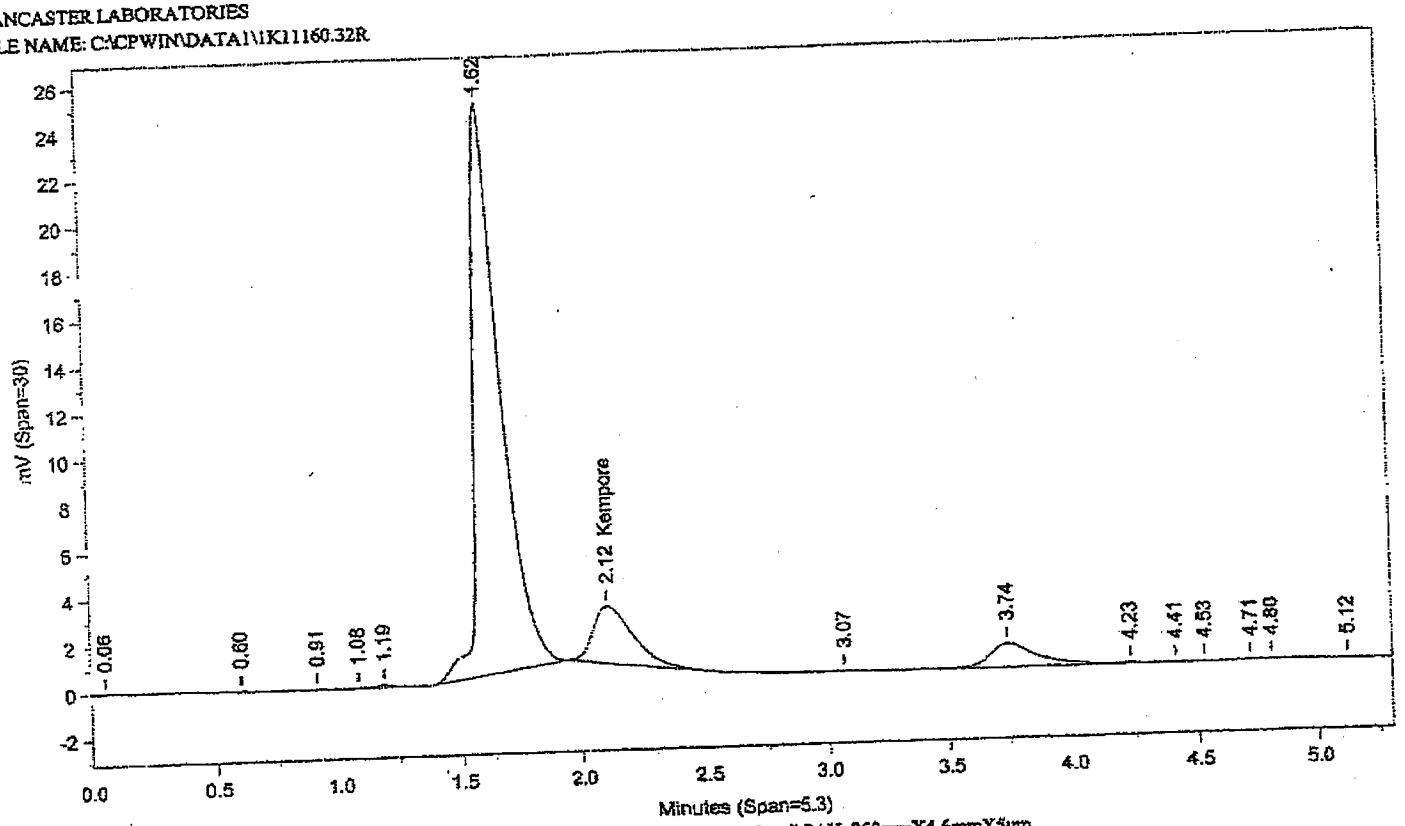
OLN71 0382.

FORM I

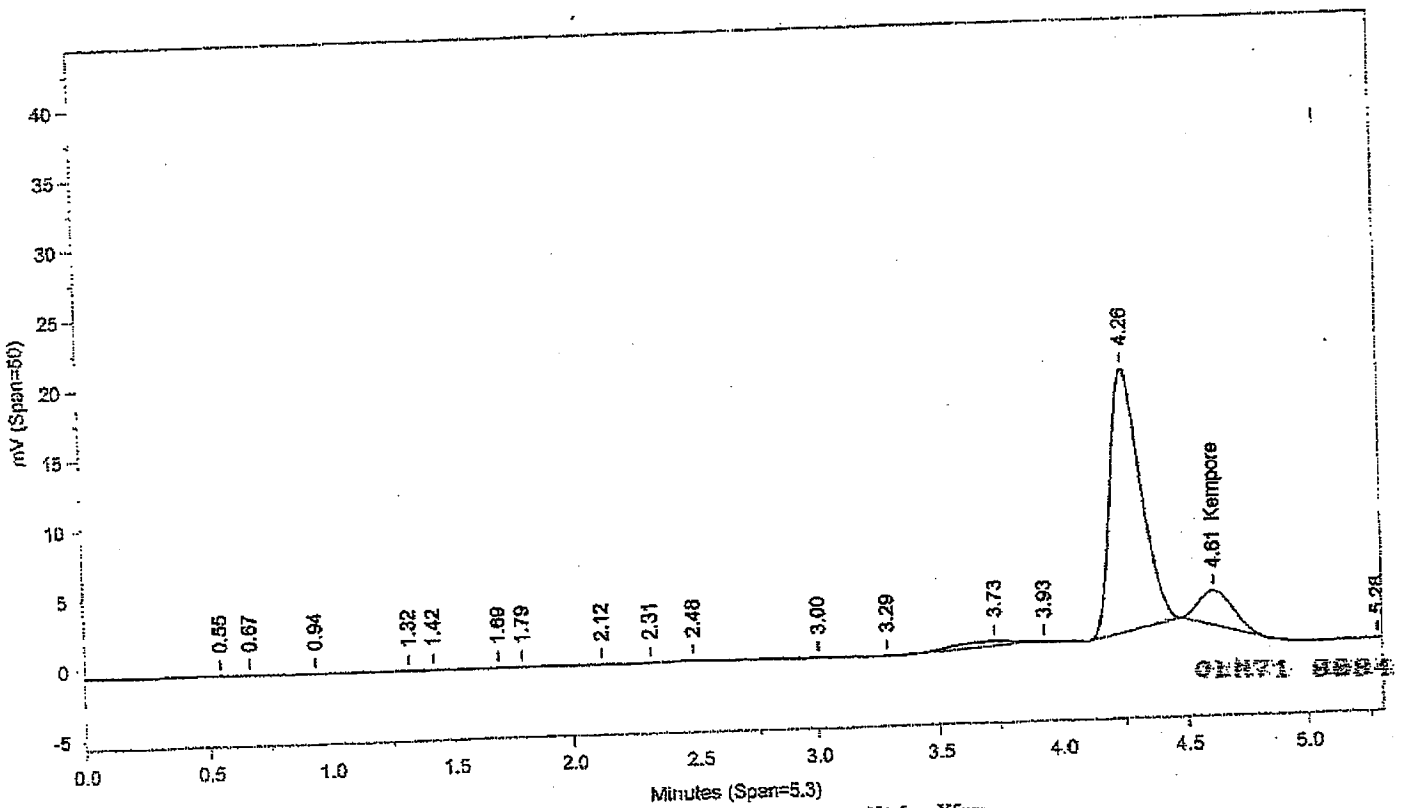
6310722 AAEDSD2 T 111600026A 02727

LANCASTER LABORATORIES

FILE NAME: C:\CPWIN\DATA1\1K11160.32R



Instrument ID: CP09--X3593A Injected On: 6/9/2011 9:58:28 PM Column ID: Supelcosil PAH, 250mmX4.6mmX5um



Instrument ID: CP09--X3593B Injected On: 6/9/2011 9:58:28 PM Column ID: Capcell CN, 250mmX4.6mmX5um

1D

ORGANICS ANALYSIS DATA SHEET

SAMPLE CODE NO.

EDSD0

Lab Name: Lancaster Laboratories Contract: Batchnumber: 111600026A

Lab Code: Case No.: SAS No.: SDG No.: OLN71

Matrix: (soil/water) WATER

Sample wt/vol: 10 (g/ml) ml

% Moisture: Decanted: (Y/N)

Extraction: (SepF/Cont/Sonc) Direct Injection

Concentrated Extract Volume: 10000 (uL)

Injection Volume: 35 (uL)

GPC Cleanup: (Y/N) N pH:

Lab Sample ID: 6310720

Lab File ID: 1K11160.29R

Date Received: 6/9/2011

Date Extracted: 6/9/2011

Date Analyzed: 6/9/2011

Dilution Factor: 1

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS (UG/L or UG/KG) ug/l	Q
123-77-3	Kempore	3000	U

* Lab elevated RL

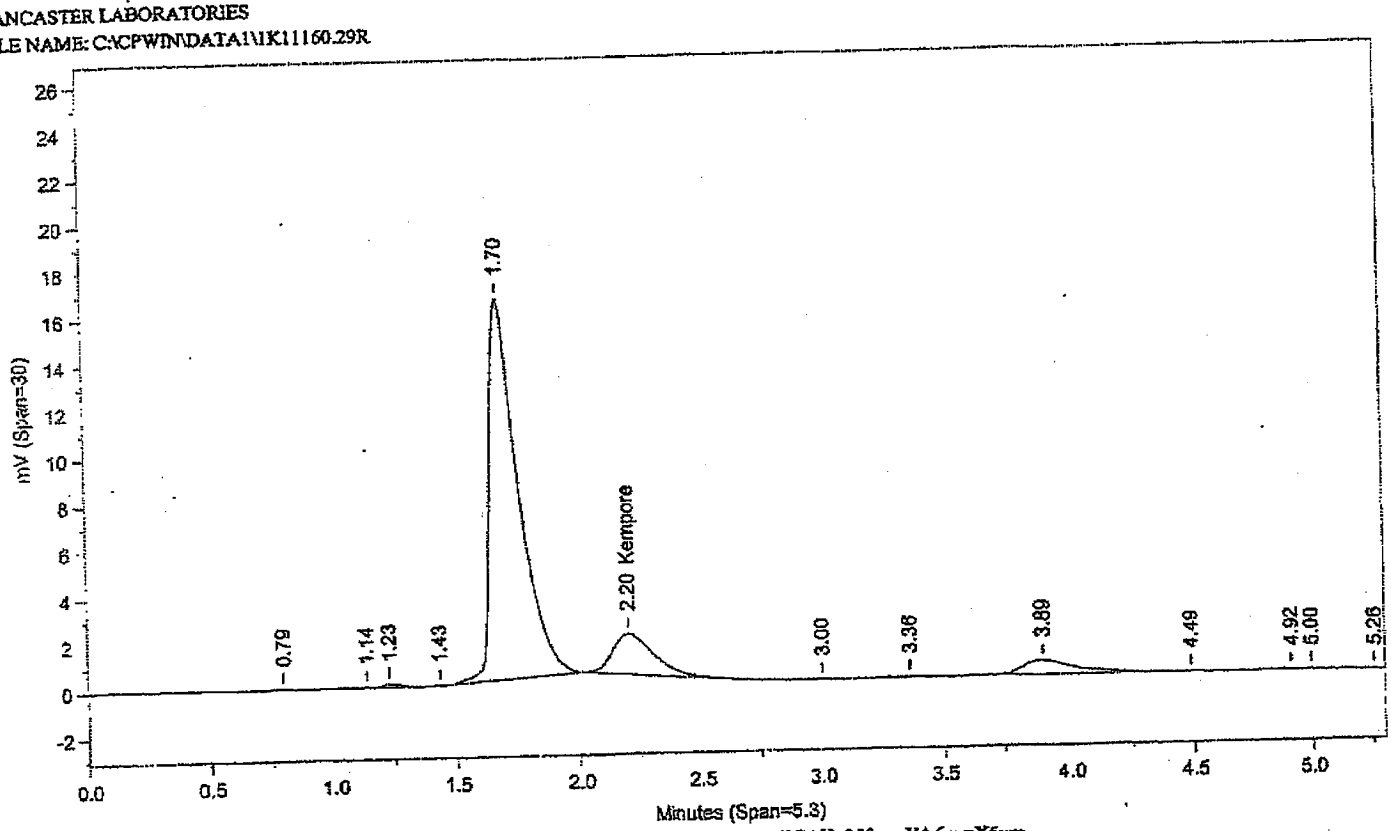
OLN71 0874

FORM I

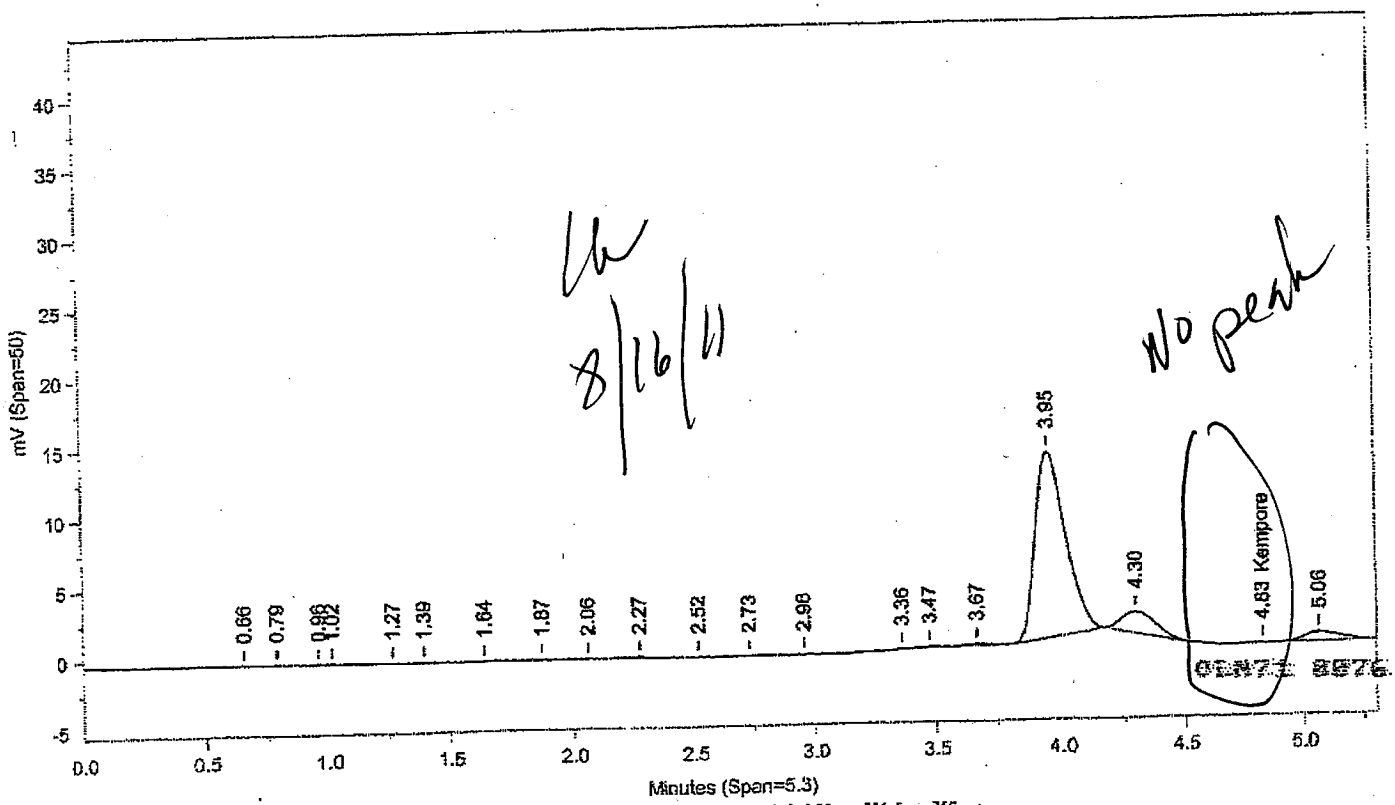
6310720 AAEDSD0 T 111600026A 02727

LANCASTER LABORATORIES

FILE NAME: C:\CPWIN\DATA1\K11160.29R



Instrument ID: CP09--X3593A Injected On: 6/9/2011 9:39:49 PM Column ID: Supelcosil PAH, 250mmX4.6mmX5um



Instrument ID: CP09--X3593B Injected On: 6/9/2011 9:39:49 PM Column ID: Capcell CN, 250mmX4.6mmX5um

Oven Parameters: 100% Phosphate Buffer

Volume Inj: 1

Detector A Parameters:
Threshold: -4 Width: 0.1
Calibration Type: External

Area Reject: 0
Quantitation: Height

Detector B Parameters:
Threshold: -5 Width: 0.1
Calibration Type: External

Area Reject: 0
Quantiation: Height

Sample Weight: 10
Analyst: 1566

Dilution Factor: 10

RT A	Height A	Amount A	Compound A	RT B	Height B	Amount B	Compound B
2.202	1745	2902.098	Kempore	4.831	21	257.212	Kempore

Files:
Area File: C:\CPWIN\DATA1\IK11160.29A
Area File: C:\CPWIN\DATA1\IK11160B.29A
Method A: C:\CPWIN\DATA1\KEMP.MET
Method B: C:\CPWIN\DATA1\KEMPB.MET
Calibration File A: C:\CPWIN\DATA1\IK11160.CAL
Calibration File B: C:\CPWIN\DATA1\IK11160B.CAL
Format A: C:\CPWIN\DATA1\OPEXD.FMTA
Format B: C:\CPWIN\DATA1\OPEXD.FMTB
Area File Created On: 6/9/2011 9:45:20 PM
File Reported On: 6/9/2011 at 9:45:32 PM

Lancaster Laboratories

Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: OC-SW-EDSD/SW2(EDBS6)-XXX Grab Water
Wilmington MA Superfund Site

LLI Sample # WW 6310722
LLI Group # 1250627
Account # 12670

Project Name: Olin Wilmington, MA Superfund Site/6107090016

Collected: 06/08/2011 09:00

Submitted: 06/09/2011 09:05
Reported: 06/20/2011 16:22

Olin Corporation
Suite 200
3855 North Ocoee Street
Cleveland TN 37312

EDSD2 SDG#: OLN71-10

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Dilution Factor
HPLC Organics	**SW-846 8000B**		ug/l	ug/l	ug/l	
02727	Kempore in Water	123-77-3	4,100 N	1,000	230	1
	The project QA/QC requirements were not met. The sample was injected numerous times. Each time the response for the calibration check standard injected after the sample was outside the acceptance criteria. Therefore, this effect is attributed to the sample matrix and the data is reported.					
02726	Opex in Water	101-25-7	N.D.	100	20	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02727	Kempore in Water	SW-846 8000B	1	111600026A	06/09/2011 21:58	Michele D Hamilton	1
02726	Opex in Water	SW-846 8000B	1	111610022A	06/15/2011 21:08	Michele D Hamilton	1

cw
8/17/11

*=This limit was used in the evaluation of the final result

Lancaster Laboratories

Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: OC-SW-EDSD/SW5(EDBS11)XXX Grab Water
Wilmington MA Superfund Site

LLI Sample # WW 6310723
LLI Group # 1250627
Account # 12670

Project Name: Olin Wilmington, MA Superfund Site/6107090016

Collected: 06/08/2011 08:15

Submitted: 06/09/2011 09:05
Reported: 06/20/2011 16:22

Olin Corporation
Suite 200
3855 North Ocoee Street
Cleveland TN 37312

EDSD5 SDG#: OLN71-11

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Dilution Factor
HPLC Organics	**SW-846 8000B**		ug/l	ug/l	ug/l	
02727	Kempore in Water	123-77-3	1,200 N	1,000	230	1
	The project QA/QC requirements were not met. The sample was injected numerous times. Each time the response for the calibration check standard injected after the sample was outside the acceptance criteria. Therefore, this effect is attributed to the sample matrix and the data is reported.					
02726	Opex in Water	101-25-7	N.D.	100	20	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02727	Kempore in Water	SW-846 8000B	1	111600026A	06/09/2011 22:04	Michele D Hamilton	1
02726	Opex in Water	SW-846 8000B	1	111610022A	06/15/2011 21:15	Michele D Hamilton	1

CN
8/12/11

*=This limit was used in the evaluation of the final result

Lancaster Laboratories

Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: OC-SW-MMB-SW/SD-2-XXX Grab Water
Wilmington MA Superfund Site

LLI Sample # WW 6310724
LLI Group # 1250627
Account # 12670

Project Name: Olin Wilmington, MA Superfund Site/6107090016

Collected: 06/08/2011 10:50

Submitted: 06/09/2011 09:05
Reported: 06/20/2011 16:22

Olin Corporation
Suite 200
3855 North Ocoee Street
Cleveland TN 37312

MMB-2 SDG#: OLN71-12

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Dilution Factor
HPLC Organics	**SW-846 8000B**		ug/l	ug/l	ug/l	
02727	Kempore in Water	123-77-3	710 J	1,000	230	1
	The project QA/QC requirements were not met. The sample was injected numerous times. Each time the response for the calibration check standard injected after the sample was outside the acceptance criteria. Therefore, this effect is attributed to the sample matrix and the data is reported.					
02726	Opex in Water	101-25-7	N.D.	100	20	1
Misc. Organics	**SW-846 8315A modified**		ug/l	ug/l	ug/l	
10342	1,1-Dimethylhydrazine	57-14-7	N.D.	0.50	0.25	1
10342	Hydrazine	302-01-2	N.D.	0.10	0.050	1
10342	Methylhydrazine	60-34-4	N.D.	0.50	0.25	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02727	Kempore in Water	SW-846 8000B	1	111600026A	06/09/2011 22:10	Michele D Hamilton	1
02726	Opex in Water	SW-846 8000B	1	111610022A	06/15/2011 21:29	Michele D Hamilton	1
10342	Hydrazines in Water	SW-846 8315A modified	1	11161001	06/11/2011 01:30	Meng Yu	1

CV
8/17/11

*=This limit was used in the evaluation of the final result

OU1/OU2 SW

CHEMIST REVIEW-VALIDATION CHECKLIST

OLN70 ~~Opex~~ Kempor

FULL VALIDATION CHECKS

Ten Percent of data sets will have full validation checks completed during chemist review.

- [x] **Initial Calibration** RSD=17, 25 Confirm Column * quantified using Primary column
- [x] **Continuing Calibration Verification** %D Clm1 4.5-9.9% C2 17-22% Missed peak CCV1, 2nd Colum CCV2 outside window

Transcription and Calculation Checks

- [x] **Instrument Calibration**
- [x] **Blank Review – raw data/chromatogram check**
- [x] **Laboratory Control Sample** LCS Confirm Column peak outside window
- [x] **Matrix Spike** MS Conf Column ~~outside~~ within CW window See OLN69
- [x] **Field Sample Results**
- [ ] **Surrogate Recovery**

NA

- [ ]
- [ ]

KEMPORE OLN54

Std Level	Std Conc (µg/l)	Height Column A	Height Column B		CF A	CF B
1	0	0	0		#DIV/0!	#DIV/0!
2	950	465	333		0.4895	0.3505
3	2376	1316	934		0.5539	0.3931
4	9506	6082	4962		0.6398	0.5220
5	23765	17960	15560		0.7557	0.6547
6	47530	27003	27219		0.5681	0.5727
				average CF	#DIV/0!	#DIV/0!
				SD	#DIV/0!	#DIV/0!
				%RSD	#DIV/0!	#DIV/0!

Column A

slope	1.65777015	-689.2731851	**intercept**
+-	0.161705441	2388.277597	**+-**
r2	0.97224771	3731.66676	**s(y)**
F	105.0991887	3	**degrees of freedom**
regression ss	1463541601	41776010.42	**residual ss**

Column B

slope	1.682256642	336.5932972	**intercept**
+-	0.081080656	1151.56926	**+-**
r2	0.993079218	1863.506957	**s(y)**
F	430.4770464	3	**degrees of freedom**
regression ss	1494899637	10417974.54	**residual ss**

CCAL1		**(µg/l)**	**%D**	**Nominal AMT**
Height A				**9797.0000**
Height B	4490	7890		

CCAL2		**(µg/l)**	**%D**	**Nominal AMT**
Height A				**9797.0000**
Height B	4227	7447		

Formula = height/average CF

Regression Column B check
CN 8/17/11

6D

INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories
Contract:
Lab Code:
Case No.:
SAS No.:
SDG No.:
Instrument: X3593A
Calibration File: 1K11160
GC Column (1) : SUP PAH
ID: 250 (mm)
Update File:
Date(s) Analyzed: 6/9/2011 6/9/2011

COMPOUND	RT OF STANDARDS LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	~~MIDPOINT~~ Level 1 RT	RT WINDOW FROM	TO
Kempore	2.06	2.05	2.08	2.10	2.13	2.06	1.91	2.21

AP 1566
6/10/11

Avg = 2.084

± .15

CW
8/14/11

0LN76 0826

FORM VI-1

6E

INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories Contract:

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

Instrument: X3593A Calibration File: 1K11160

GC Column (1) : SUP PAH ID: 250 (mm) Date(s) Analyzed: 6/9/2011 6/9/2011

COMPOUND	CALIBRATION FACTORS						
	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	MEAN	%RSD
Kempore	4.90E-01	5.54E-01	6.40E-01	7.56E-01	5.68E-01	6.01E-01	16.9

Average % RSD: 16.9

RF

Avg = .601

ch

8/14/11

01R28 0827

FORM VI-2

6D

INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories
Contract:
Lab Code:
Case No.:
SAS No.:
SDG No.:
Instrument: X3593B
Calibration File: 1K11160B
GC Column (2) : CapCell CN
ID: 250 (mm)
Update File:
Date(s) Analyzed: 6/9/2011 6/9/2011

COMPOUND	RT OF STANDARDS					~~MIDPOINT~~ Level 1	RT WINDOW	
	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	RT	FROM	TO
Kempore	4.75	4.71	4.70	4.63	4.57	4.75	4.60	4.90

JRiek 6/10/11

CW 8/14/11

OLM78 0029

FORM VI-1

6E

INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories Contract:

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

Instrument: X3593B Calibration File: 1K11160B

GC Column (2) : CapCell CN ID: 250 (mm) Date(s) Analyzed: 6/9/2011 6/9/2011

COMPOUND	CALIBRATION FACTORS						
	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	MEAN	%RSD
Kempore	3.50E-01	3.93E-01	5.22E-01	6.55E-01	5.73E-01	4.99E-01	25.3

-Linear

Average % RSD: 25.3

JP 1566
6/10/11

8/14/11

OLR70 0038

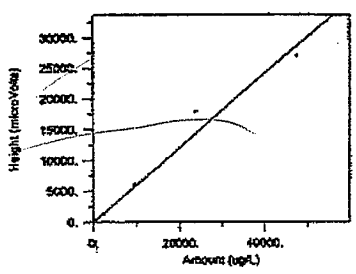
FORM VI-2

Calibration File Name: **C:\CPWIN\DATA1\1K11160.CAL** Version = 8
External standard calibration
Standard injection volume = 1
No sample weight correction
Area reject threshold = 0
Reference peak area reject threshold = 500
Amount units = ug/L
1 components with 5 levels each

1 Kempore
Retention time = 2.060 min., Search window = 0.150 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

Times don't match Raw data

Level	Amount	Height	Height/Amt	Source	Date and time
1	950.600	465.3	0.4895011	1K11160.08A	6/9/2011 7:34:45
2	2376.500	1316.6	0.5540047	1K11160.07A	6/9/2011 7:29:04
3	9506.000	6082.4	0.6398451	1K11160.06A	6/9/2011 7:28:40
4	23765.000	17960.2	0.7557403	1K11160.05A	6/9/2011 7:28:17
5	47530.000	27003.1	0.5681264	1K11160.04A	6/9/2011 7:27:53



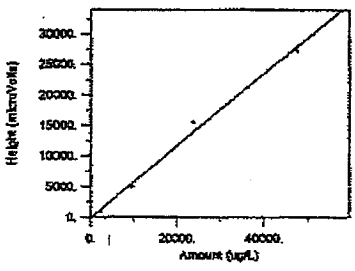
Calibration formula: Y = 0.601 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9697, Average error = 12.82%
Average CF = 0.6014 with RSD = 16.87%

Calibration File Name: **C:\CPWIN\DATA1\1K11160B.CAL** Version = 15
External standard calibration
Standard injection volume = 1
No sample weight correction
Area reject threshold = 0
Reference peak area reject threshold = 500
Amount units = ug/L
1 components with 5 levels each

1 Kempore
Retention time = 4.745 min., Search window = 0.150 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

Level	Amount	Height	Height/Amt	Source	Date and time
1	950.600	333.1	0.3503657	1K11160B.08A	6/9/2011 7:35:00
2	2376.500	934.4	0.3931739	1K11160B.07A	6/9/2011 7:29:19
3	9506.000	4962.9	0.5220817	1K11160B.06A	6/9/2011 7:28:54
4	23765.000	15560.3	0.6547587	1K11160B.05A	6/9/2011 7:28:32
5	47530.000	27219.8	0.572687	1K11160B.04A	6/9/2011 7:28:08

OK
8/14/11



Avg .4982

Calibration formula: Y = 0.59 X + -130.763
Fit type = Linear with equal weighting
Coefficient of determination = 0.9931, Average error = 14.62%
Average CF = 0.4986 with RSD = 25.27%

7E

CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

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

Instrument: X3593A Init. Calib Date(s): 06/09/11 06/09/11

GC Column (1) : SUP PAH ID: 250 (mm) Date Analyzed: 06/09/11

Lab File ID: 1K11160.20R Time Analyzed: 20:43

Lab Standard ID: KEMP3EO Initial Calibration: 1K11160

COMPOUND	RT	RT WINDOW FROM	TO	CALC AMOUNT	NOM AMOUNT	%D
Kempore	2.03	1.91	2.21	9074.31	9506.00	-4.5

Average of %D: 4.5

8/14/11

OLN28 8832

FORM VII

7E

CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

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

Instrument: X3593B Init. Calib Date(s): 06/09/11 06/09/11

GC Column (2) : CapCell CN ID: 250 (mm) Date Analyzed: 06/09/11

Lab File ID: 1K11160B.20R Time Analyzed: 20:43

Lab Standard ID: KEMP3EO Initial Calibration: 1K11160B

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT	NOM AMOUNT	%D
Kempore	4.90	4.60	4.90	7827.94	9506.00	-17.7
					Average of %D:	17.7

matches
* Raw data, but
Calculation did not check

$\frac{8998}{9506} = 95\%$ R

Sec* Regression

ch
8/14/11

OLNTB 8833

FORM VII

7E
CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories
Contract:
Lab Code:
Case No.:
SAS No.:
SDG No.:
Instrument: X3593A
Init. Calib Date(s): 06/09/11 06/09/11
GC Column (1) : SUP PAH
ID: 250 (mm)
Date Analyzed: 06/09/11
Lab File ID: 1K11160.31R
Time Analyzed: 21:52
Lab Standard ID: KEMP3EP
Initial Calibration: 1K11160

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT	NOM AMOUNT	%D
Kempore	2.02	1.91	2.21	8562.45	9506.00	-9.9
					Average of %D:	9.9

8/14/11

OLM75 2034

FORM VII

7E
CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories
Contract:
Lab Code:
Case No.:
SAS No.:
SDG No.:
Instrument: X3593B
Init. Calib Date(s): 06/09/11 06/09/11
GC Column (2) : CapCell CN ID: 250 (mm)
Date Analyzed: 06/09/11
Lab File ID: 1K11160B.31R
Time Analyzed: 21:52
Lab Standard ID: KEMP3EP
Initial Calibration: 1K11160B

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT	NOM AMOUNT	%D
Kempore	4.93	4.60	4.90	7381.07	9506.00	-22.4

Average of %D: 22.4

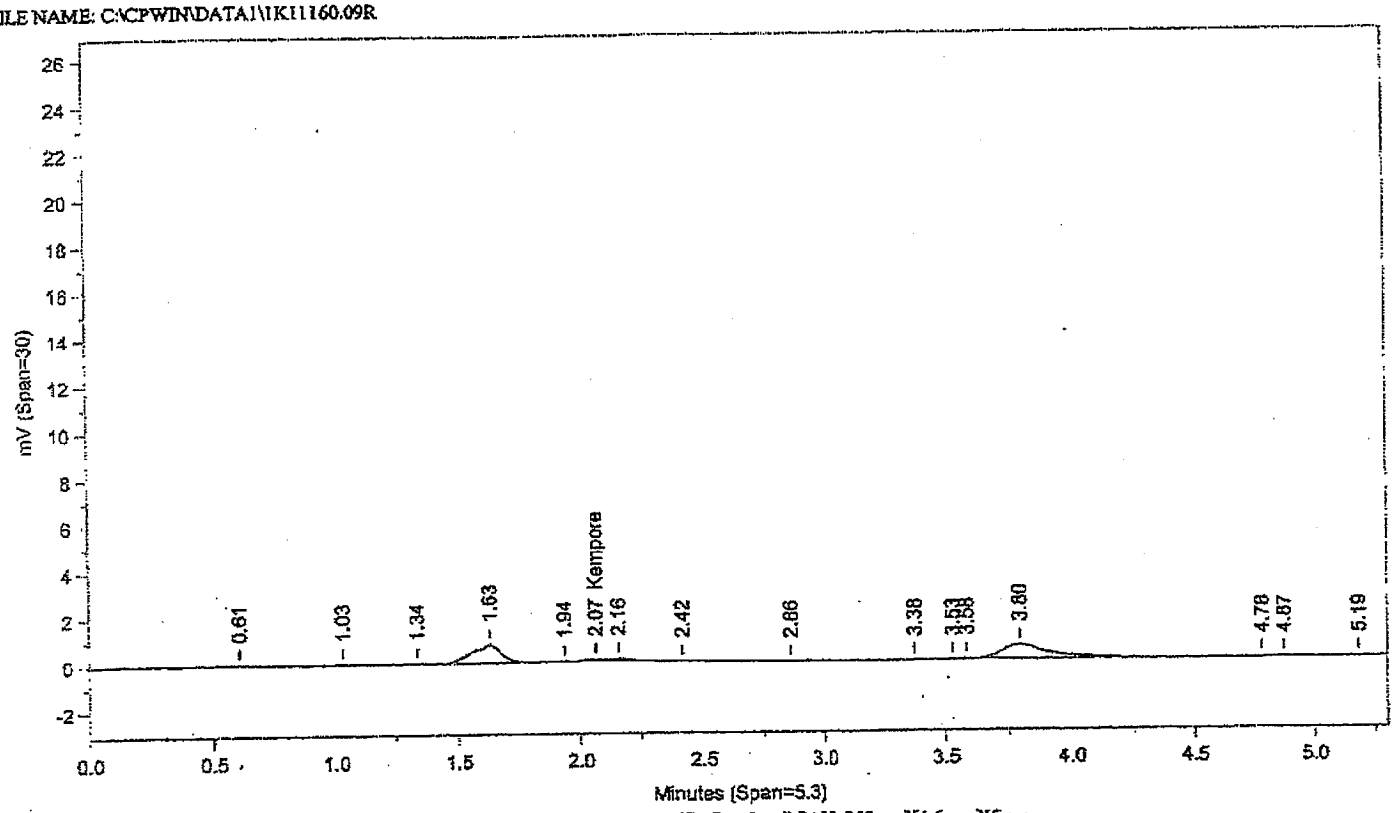
Matches Raw data but Calculation did not match

$\frac{8471}{9506} = 89\%$

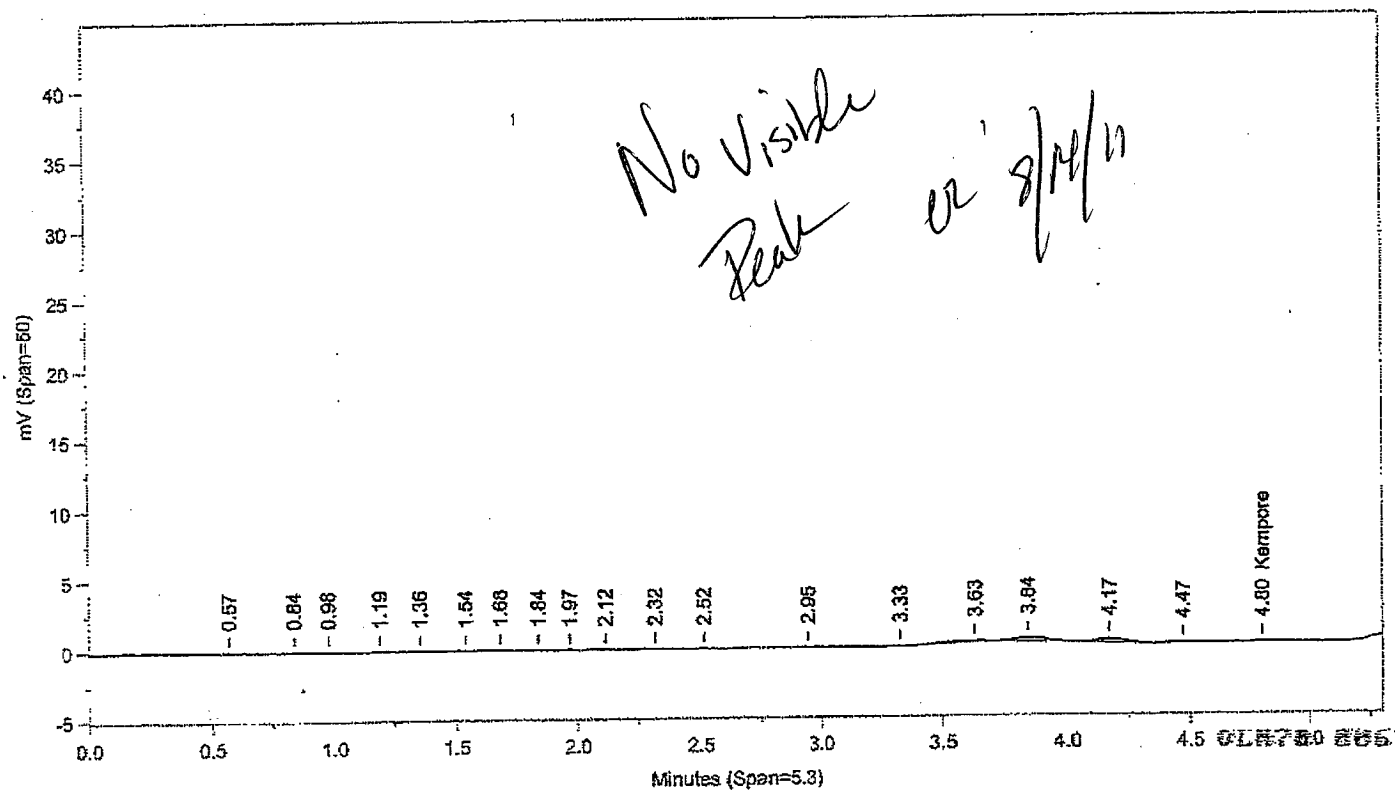
OLM7.0 0035

FORM VII

LANCASTER LABORATORIES
FILE NAME: C:\CPWIN\DATA1\1K11160.09R

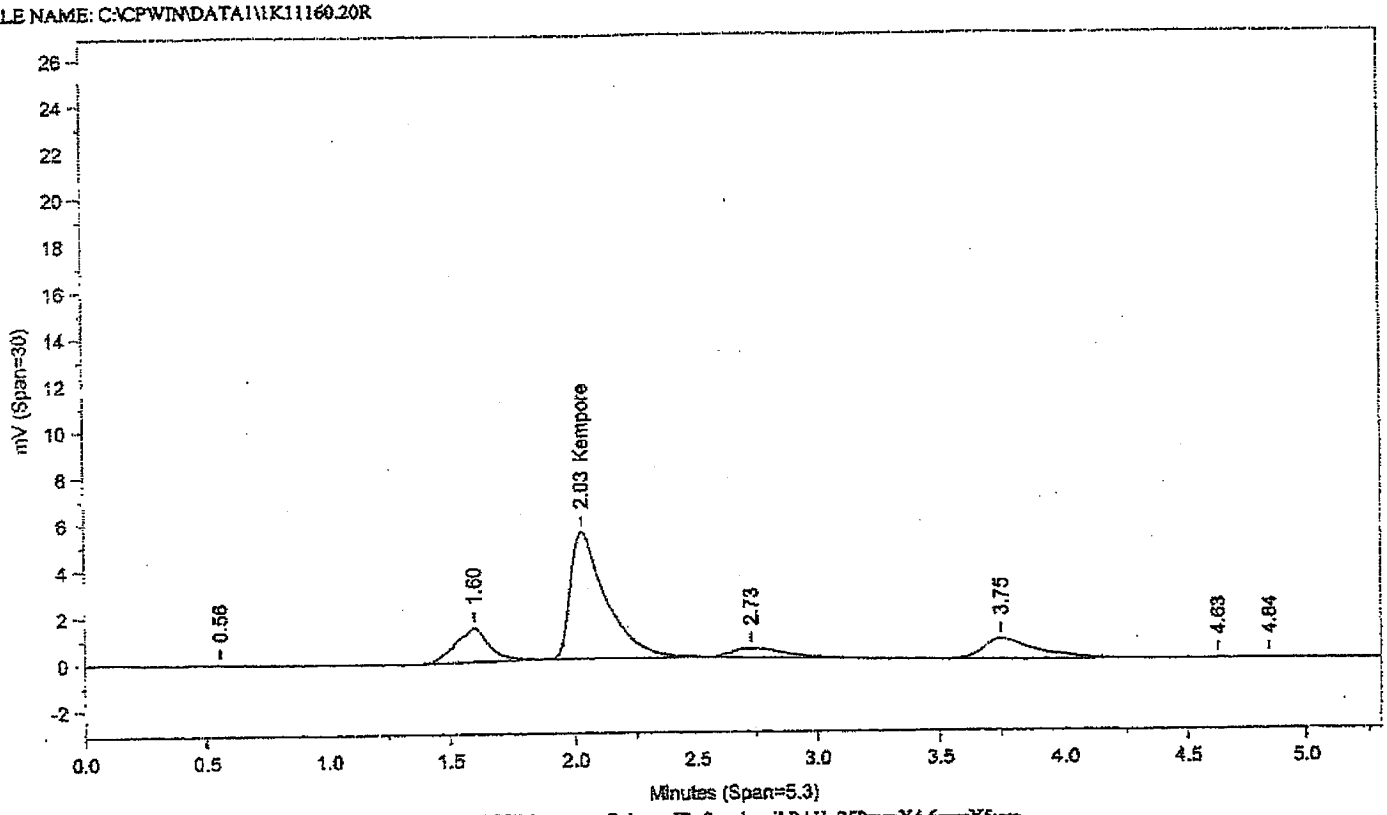


Instrument ID: CP09--X3593A Injected On: 6/9/2011 7:35:31 PM Column ID: Supelcosil PAH, 250mmX4.6mmX5um

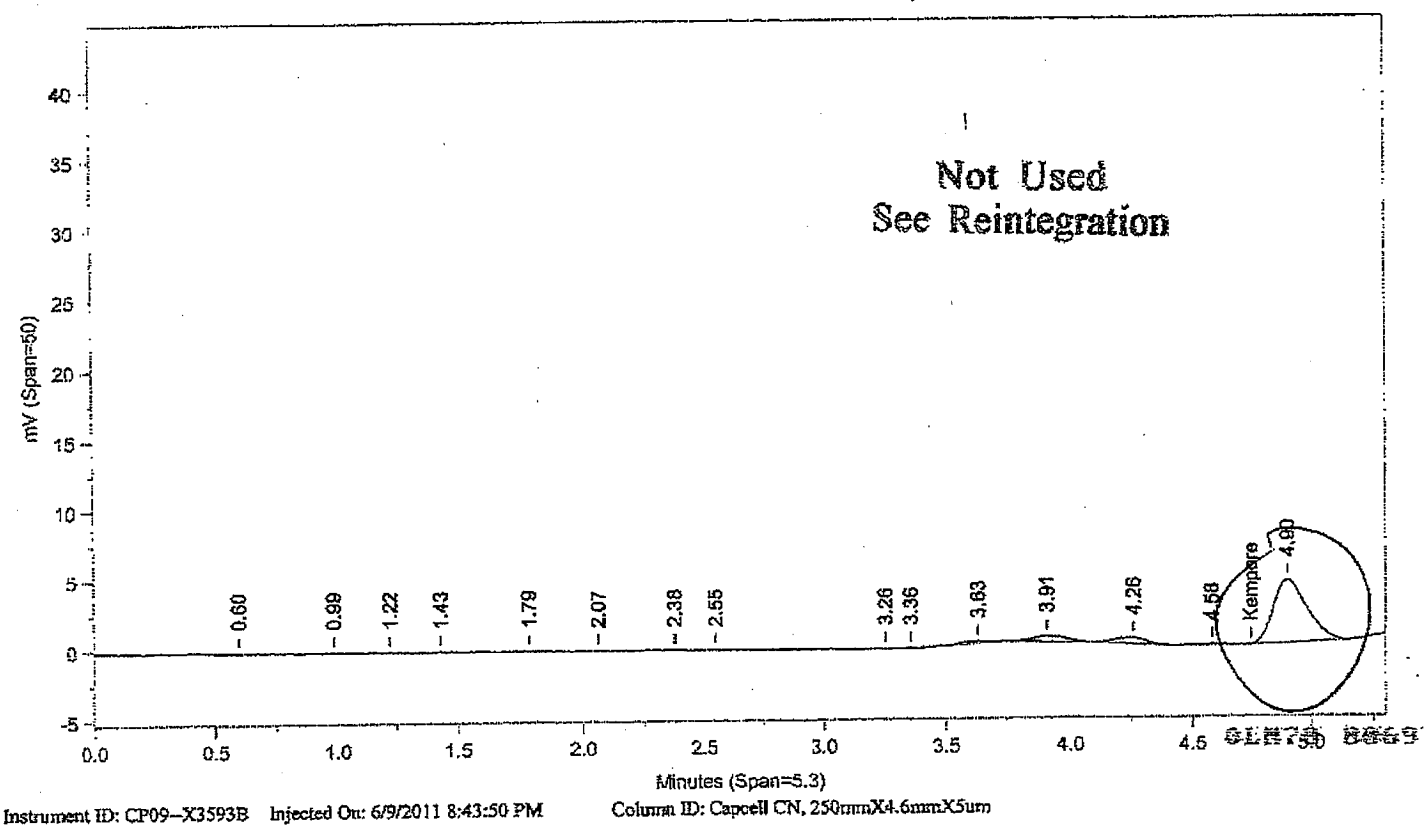


Instrument ID: CP09--X3593B Injected On: 6/9/2011 7:35:31 PM Column ID: Capcell CN, 250mmX4.6mmX5um

LANCASTER LABORATORIES
FILE NAME: C:\CPWIN\DATA1\1K11160.20R



Instrument ID: CP09--X3593A Injected On: 6/9/2011 8:43:50 PM Column ID: Supelcosil PAH, 250mmX4.6mmX5um

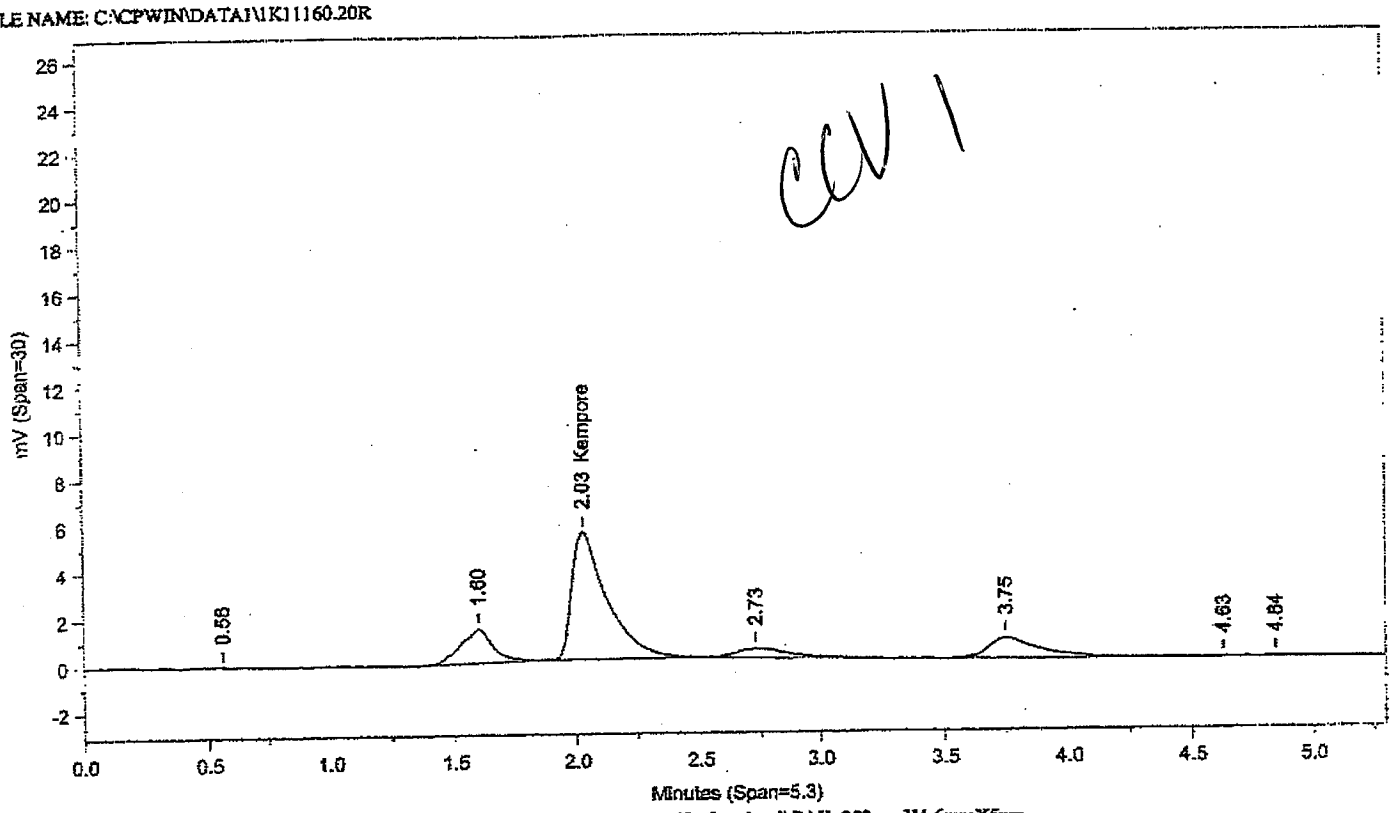


Instrument ID: CP09--X3593B Injected On: 6/9/2011 8:43:50 PM Column ID: Capcell CN, 250mmX4.6mmX5um

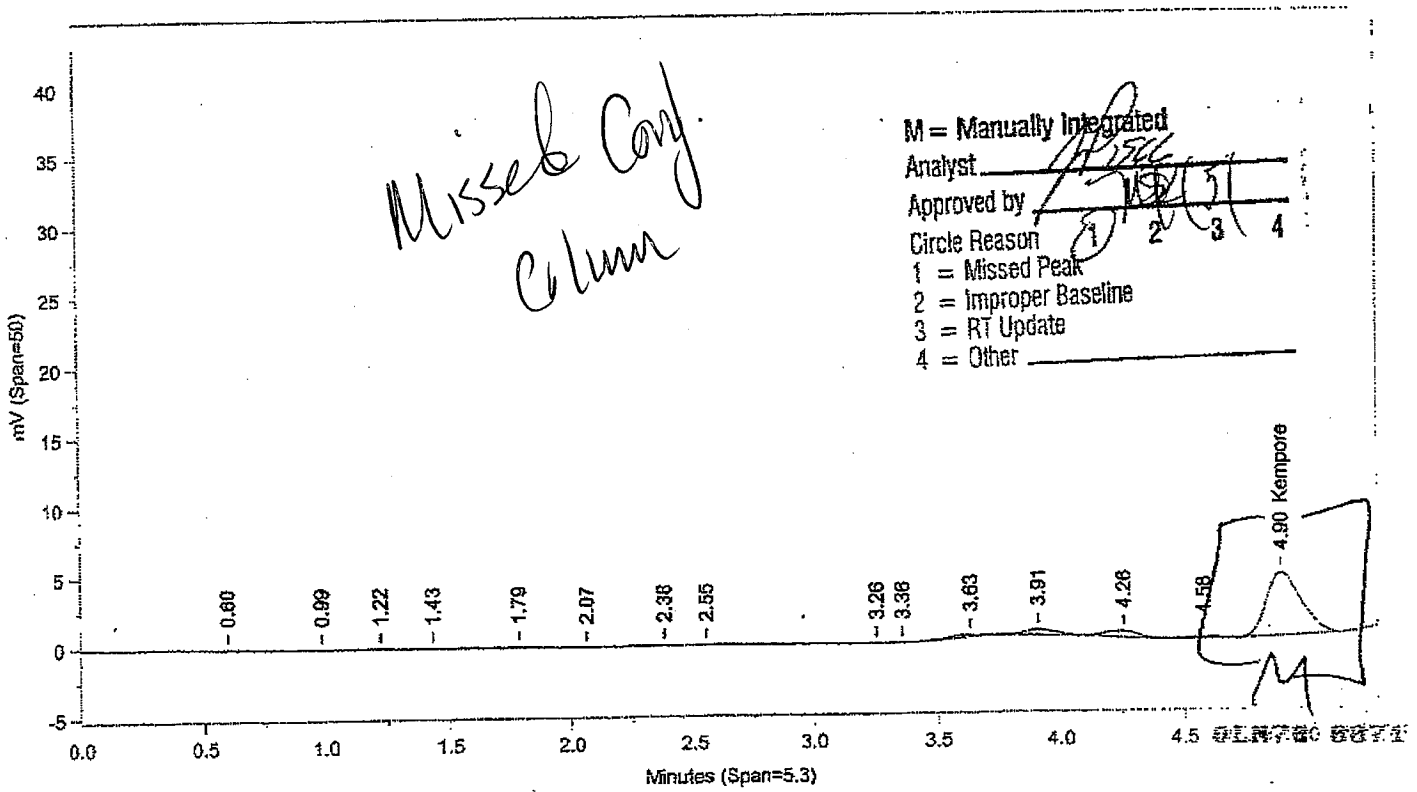
KEMP31124C EOKEMP3EO CCAL 1115999999

LANCASTER LABORATORIES

FILE NAME: C:\CPWIN\DATA\1K11160.20R



Instrument ID: CP09--X3593A Injected On: 6/9/2011 8:43:50 PM Column ID: Supelcosil PAH, 250mmX4.6mmX5um



Instrument ID: CP09--X3593B Injected On: 6/9/2011 8:43:50 PM Column ID: Capcell CN, 250mmX4.6mmX5um

Oven Parameters: 100% Phosphate Buffer

Volume Inj: 1

Detector A Parameters:
Threshold: -4 Width: 0.1
Calibration Type: External

Area Reject: 0
Quantitation: Height

Detector B Parameters:
Threshold: -5 Width: 0.1
Calibration Type: External

Area Reject: 0
Quantiation: Height

Sample Weight: 1
Analyst: 1566

Dilution Factor: 1

RT A	Height A	Amount A	Compound A
2.031	5458	9074.311	Kempore

RT B	Height B	Amount B	Compound B
4.901	4490	7827.937	Kempore

Does Not Match

Files:
Area File: C:\CPWIN\~Dualcha.00A
Area File: C:\CPWIN\~Dualchb.00A
Method A: C:\CPWIN\DATA1\KEMP.MET
Method B: C:\CPWIN\DATA1\KEMPB.MET
Calibration File A: C:\CPWIN\DATA1\1K11160.CAL
Calibration File B: C:\CPWIN\DATA1\1K11160B.CAL
Format A: C:\CPWIN\DATA1\OPEXD.FMTA
Format B: C:\CPWIN\DATA1\OPEXD.FMTB
Area File Created On: 6/10/2011 4:40:02 PM
File Reported On: 6/10/2011 at 4:40:00 PM

OK

$\frac{5458}{.601} = 9081$

$\frac{4490}{.499} = 8998$

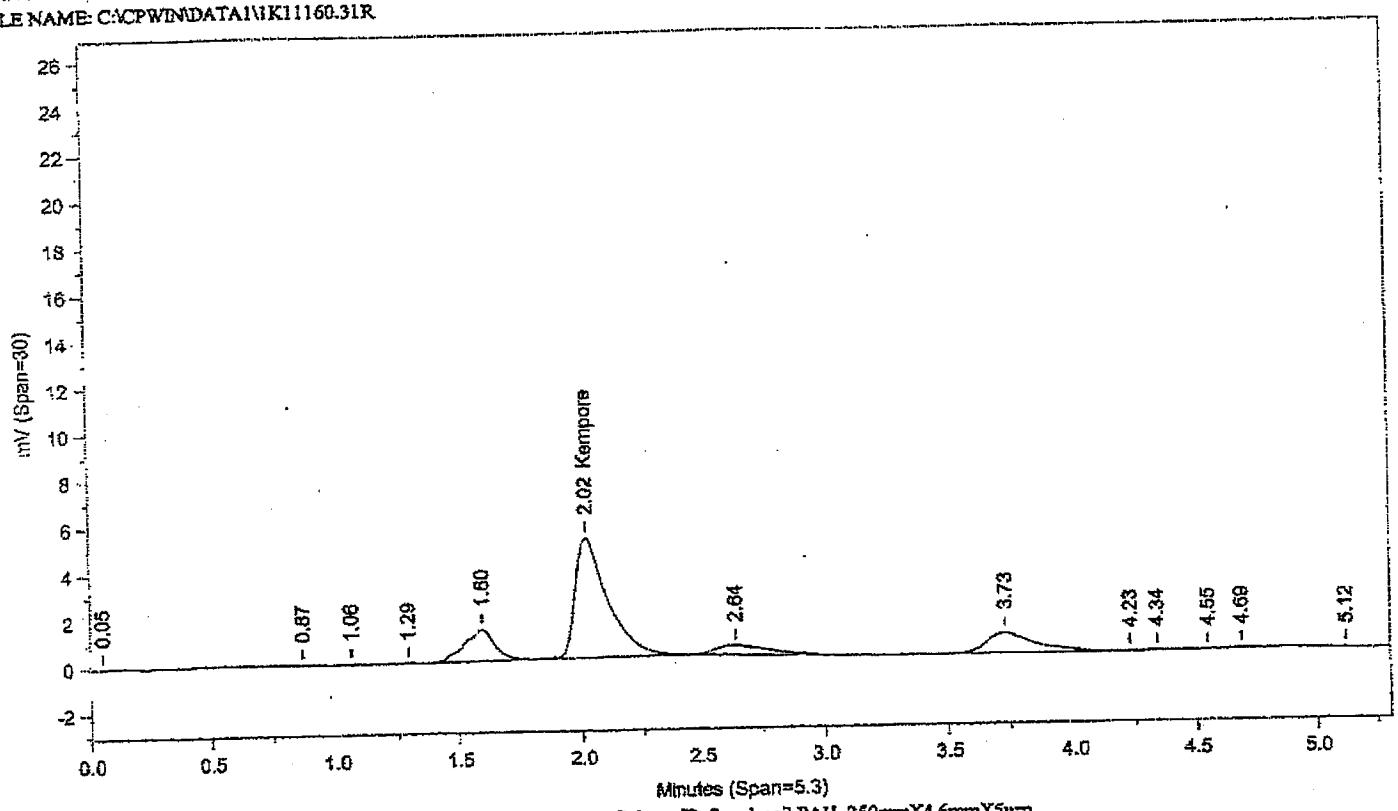
* See Regression Calc.

CL
8/14/11

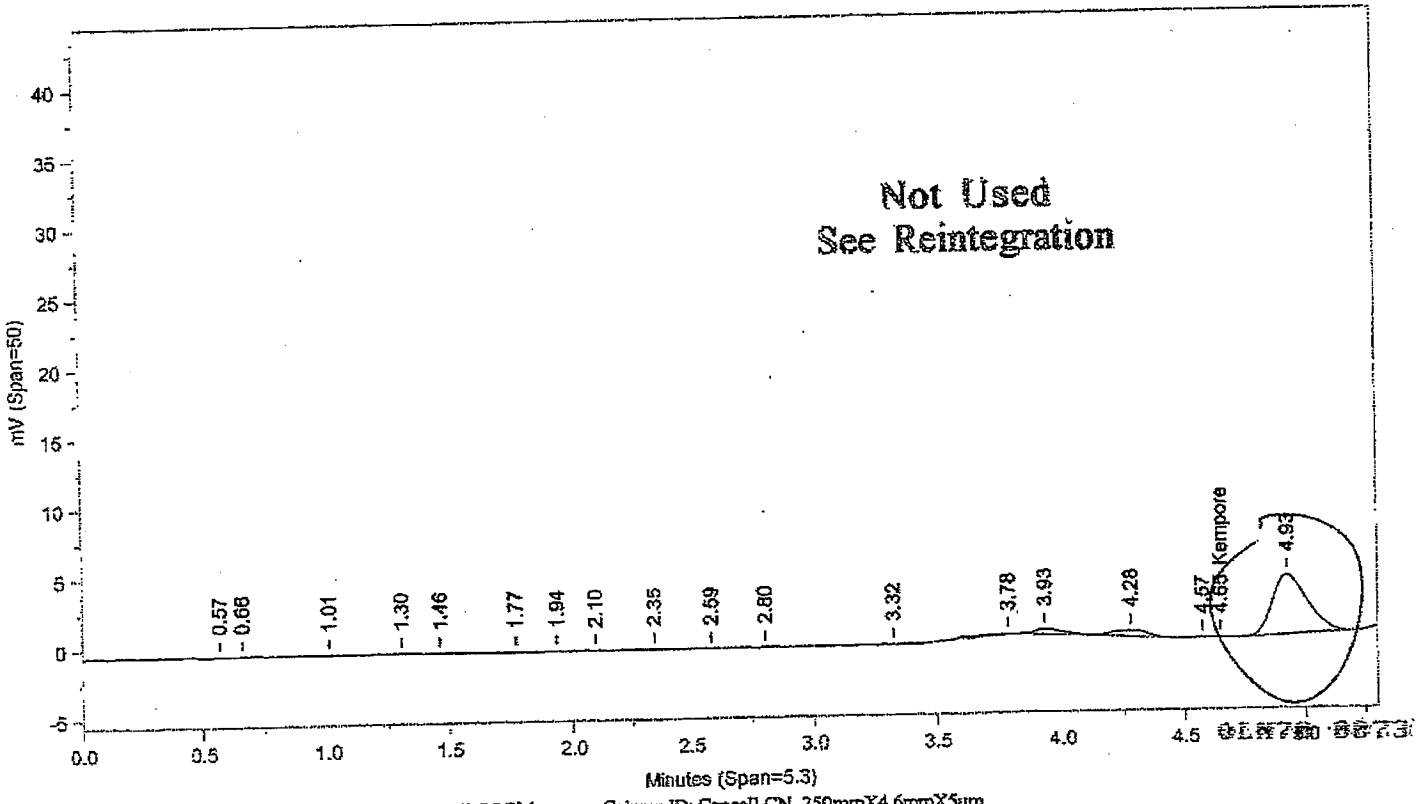
KEMP31124C EPKEMP3EP CCAL 1115999999

LANCASTER LABORATORIES

FILE NAME: C:\CPWIN\DATA1\IK11160.31R



Instrument ID: CP09–X3593A Injected On: 6/9/2011 9:52:15 PM Column ID: Supelcosil PAH, 250mmX4.6mmX5um

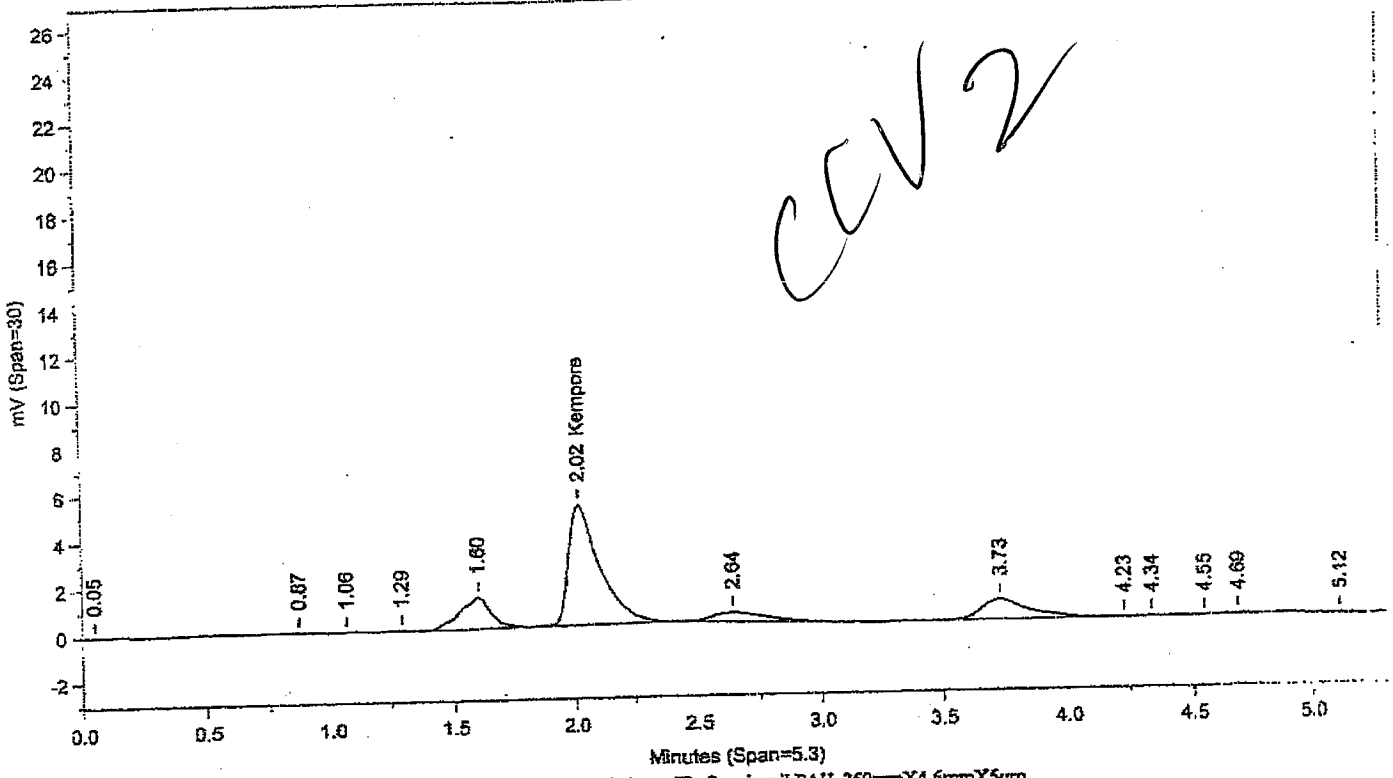


Instrument ID: CP09–X3593B Injected On: 6/9/2011 9:52:15 PM Column ID: Capcell CN, 250mmX4.6mmX5um

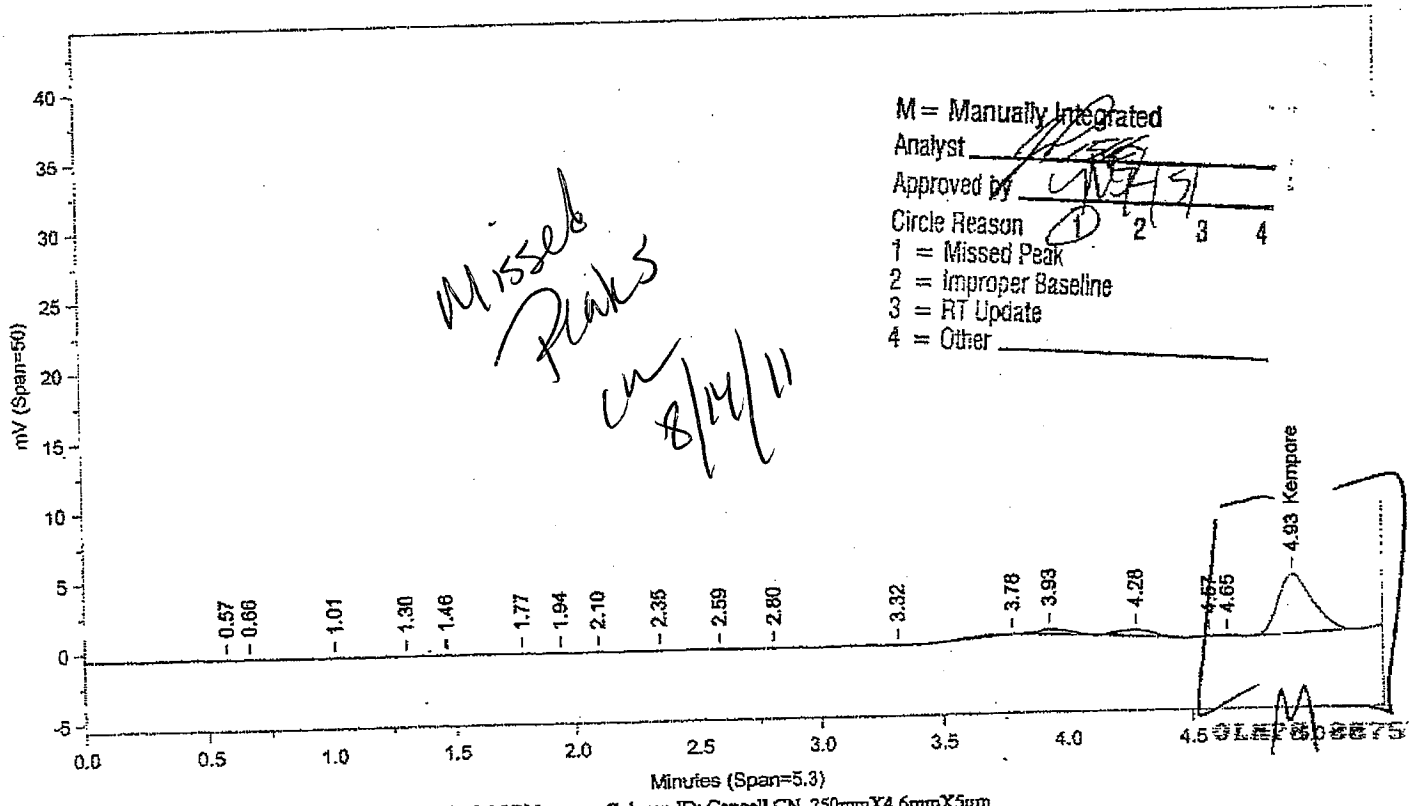
KEMP31124C EPKEMP3EP CCAL 1115999999

LANCASTER LABORATORIES

FILE NAME: C:\CPWIN\DATA1\1K11160.31R



Instrument ID: CP09--X3593A Injected On: 6/9/2011 9:52:15 PM Column ID: Supelcosil PAH, 250mmX4.6mmX5um



Instrument ID: CP09--X3593B Injected On: 6/9/2011 9:52:15 PM Column ID: Capcell CN, 250mmX4.6mmX5um

Oven Parameters: 100% Phosphate Buffer

Volume Inj: 1

Detector A Parameters:
Threshold: -4 Width: 0.1
Calibration Type: External

Area Reject: 0
Quantitation: Height

Detector B Parameters:
Threshold: -5 Width: 0.1
Calibration Type: External

Area Reject: 0
Quantiation: Height

Sample Weight: 1
Analyst: 1566

Dilution Factor: 1

RT A	Height A	Amount A	Compound A
2.021	5150	8562.453	Kempore

RT B	Height B	Amount B	Compound B
4.928	4227	7381.069	Kempore

Files:
Area File: C:\CPWIN\~Dualcha.00A
Area File: C:\CPWIN\~Dualchb.00A
Method A: C:\CPWIN\DATA1\KEMP.MET
Method B: C:\CPWIN\DATA1\KEMPB.MET
Calibration File A: C:\CPWIN\DATA1\1K11160.CAL
Calibration File B: C:\CPWIN\DATA1\1K11160B.CAL
Format A: C:\CPWIN\DATA1\OPEXD.FMTA
Format B: C:\CPWIN\DATA1\OPEXD.FMTB
Area File Created On: 6/10/2011 4:42:00 PM
File Reported On: 6/10/2011 at 4:41:59 PM

does not match

ok

$\frac{5150}{.601} = 8569$

$\frac{4227}{.499} = 8471$

Oven Parameters: 100% Phosphate Buffer

Volume Inj: 1

Detector A Parameters:
Threshold: -4 Width: 0.1
Calibration Type: External

Area Reject: 0
Quantitation: Height

Detector B Parameters:
Threshold: -5 Width: 0.1
Calibration Type: External

Area Reject: 0
Quantiation: Height

Sample Weight: 10
Analyst: 1566

Dilution Factor: 10

RT A	Height A	Amount A	Compound A	RT B	Height B	Amount B	Compound B
2.123	108	180.265	Kempore			0	Kempore

Files:
Area File: C:\CPWIN\DATA1\1K11160.10A
Area File: C:\CPWIN\DATA1\1K11160B.10A
Method A: C:\CPWIN\DATA1\KEMP.MET
Method B: C:\CPWIN\DATA1\KEMPB.MET
Calibration File A: C:\CPWIN\DATA1\1K11160.CAL
Calibration File B: C:\CPWIN\DATA1\1K11160B.CAL
Format A: C:\CPWIN\DATA1\OPEXD.FMTA
Format B: C:\CPWIN\DATA1\OPEXD.FMTB
Area File Created On: 6/9/2011 8:04:38 PM
File Reported On: 6/9/2011 at 8:04:47 PM

✓

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8/16/11

Lancaster Laboratories

Quality Control Summary
Laboratory Control Standard (LCS)
Laboratory Control Standard Duplicate(LCSD)

SDG: OLN70
Matrix: LIQUID

Pesticide Residue Analysis
Fraction: Kempore

LCS: LCS40158 LCSD: LCSD40158 Analyte	Batch: 111580040A (Sample number(s): 6308074-6308076)							
	Spike Added ug/l	LCS Conc ug/l	LCSD Conc ug/l	LCS %Rec	LCSD %Rec	%Rec Limits	%RPD	%RPD Limits
Kempore in Water	9500	8000	8300	84	87	70-130	4	30

ev
8/16/11

OLN70 0825

Oven Parameters: 100% Phosphate Buffer

Volume Inj: 1

Detector A Parameters:
Threshold: -4 Width: 0.1
Calibration Type: External

Area Reject: 0
Quantitation: Height

Detector B Parameters:
Threshold: -5 Width: 0.1
Calibration Type: External

Area Reject: 0
Quantiation: Height

Sample Weight: 10
Analyst: 1566

Dilution Factor: 10

RT A	Height A	Amount A	Compound A	RT B	Height B	Amount B	Compound B
2.126	4798	7977.626	Kempore	4.558	4685	8157.018	Kempore

Files:
Area File: C:\CPWIN\~Dualcha.00A
Area File: C:\CPWIN\~Dualchb.00A
Method A: C:\CPWIN\DATA1\KEMP.MET
Method B: C:\CPWIN\DATA1\KEMPB.MET
Calibration File A: C:\CPWIN\DATA1\1K11160.CAL
Calibration File B: C:\CPWIN\DATA1\1K11160B.CAL
Format A: C:\CPWIN\DATA1\OPEXD.FMTA
Format B: C:\CPWIN\DATA1\OPEXD.FMTB
Area File Created On: 6/10/2011 4:18:28 PM
File Reported On: 6/10/2011 at 4:18:27 PM

4798
~~7977~~
.601 = 7983

4685
.499 = 9389

8/16/11

Oven Parameters: 100% Phosphate Buffer

Volume Inj: 1

Detector A Parameters:
Threshold: -4 Width: 0.1
Calibration Type: External

Area Reject: 0
Quantitation: Height

Detector B Parameters:
Threshold: -5 Width: 0.1
Calibration Type: External

Area Reject: 0
Quantiation: Height

Sample Weight: 10
Analyst: 1566

Dilution Factor: 10

RT A	Height A	Amount A	Compound A	RT B	Height B	Amount B	Compound B
2.08	4985	8289.09	Kempore	4.738	4608	8027.291	Kempore

Files:
Area File: C:\CPWIN\DATA1\IK11160.12A
Area File: C:\CPWIN\DATA1\IK11160B.12A
Method A: C:\CPWIN\DATA1\KEMP.MET
Method B: C:\CPWIN\DATA1\KEMPB.MET
Calibration File A: C:\CPWIN\DATA1\IK11160.CAL
Calibration File B: C:\CPWIN\DATA1\IK11160B.CAL
Format A: C:\CPWIN\DATA1\OPEXD.FMTA
Format B: C:\CPWIN\DATA1\OPEXD.FMTB
Area File Created On: 6/9/2011 8:05:22 PM
File Reported On: 6/9/2011 at 8:05:31 PM

ch
8/16/11

$\frac{4985}{.601} = 8294$

Lancaster Laboratories

Quality Control Summary
Matrix Spike/Matrix Spike Duplicate

SDG: OLN69
Matrix: LIQUID

Pesticide Residue Analysis
Fraction: Kempore

UNSPK: 6308055 MS: 6308056 MSD: 6308057 **Analyte**	Batch: **111580040A** (Sample number(s): 6308055-6308059)								
	Spike Added ug/l	**Unspiked Conc ug/l**	**MS Conc ug/l**	**MSD Conc ug/l**	**MS %Rec**	**MSD %Rec**	**%Rec Limits**	**%RPD**	**%RPD Limits**
Kempore in Water	9500	N.D.	19000.	16000.	200 *	168 *	70-130	17	30

CW
8/16/4

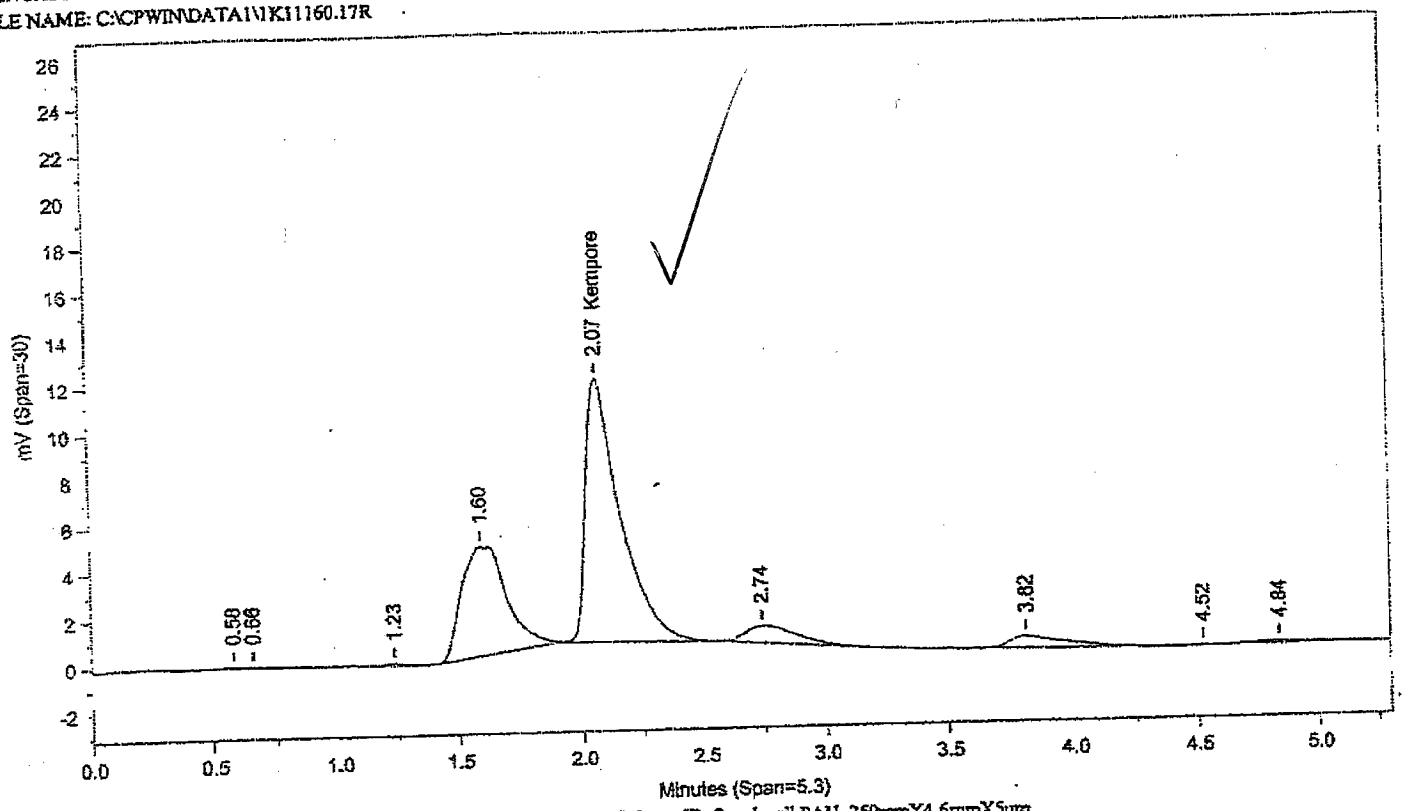
OLN69 0623

Results are being reported on an as received basis.

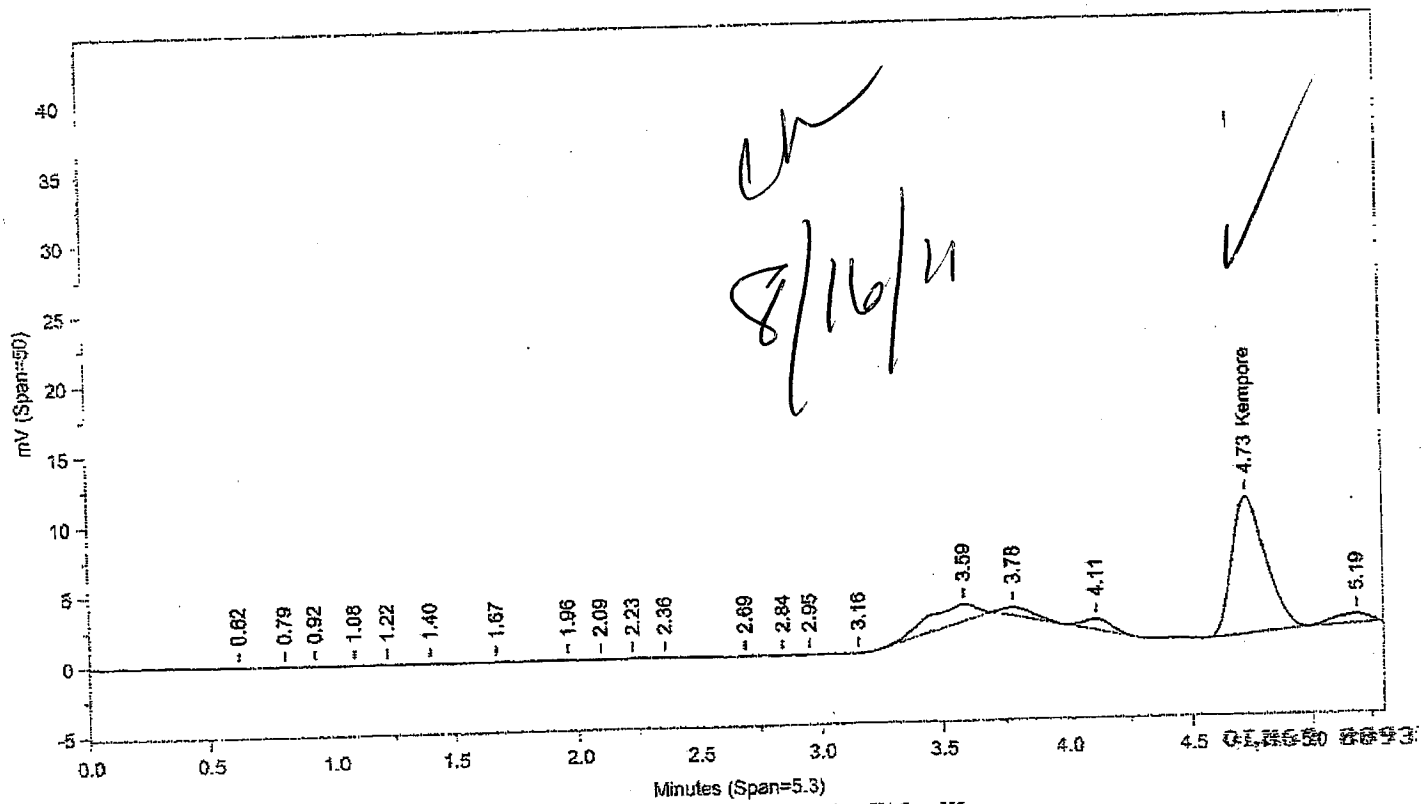
6/23/2011 7:16:42 PM

6308056MS RI AAISC1- MS 111580040A 02727

LANCASTER LABORATORIES
FILE NAME: C:\CPWIN\DATA1\1KI1160.17R



Instrument ID: CP09--X3593A Injected On: 6/9/2011 8:25:12 PM Column ID: Supelcosil PAH, 250mmX4.6mmX5um



8/16/11

Instrument ID: CP09--X3593B Injected On: 6/9/2011 8:25:12 PM Column ID: Capcell CN, 250mmX4.6mmX5um

Oven Parameters: 100% Phosphate Buffer

Volume Inj: 1

Detector A Parameters:
Threshold: -4 Width: 0.1
Calibration Type: External

Area Reject: 0
Quantitation: Height

Detector B Parameters:
Threshold: -5 Width: 0.1
Calibration Type: External

Area Reject: 0
Quantiation: Height

Sample Weight: 10
Analyst: 1566

Dilution Factor: 10

RT A	Height A	Amount A	Compound A
2.075	11281	18757.31	Kempore

RT B	Height B	Amount B	Compound B
4.729	9739	16717.94	Kempore

Files:
Area File: C:\CPWIN\DATA1\1K11160.17A
Area File: C:\CPWIN\DATA1\1K11160B.17A
Method A: C:\CPWIN\DATA1\KEMP.MET
Method B: C:\CPWIN\DATA1\KEMPB.MET
Calibration File A: C:\CPWIN\DATA1\1K11160.CAL
Calibration File B: C:\CPWIN\DATA1\1K11160B.CAL
Format A: C:\CPWIN\DATA1\OPEXD.FMTA
Format B: C:\CPWIN\DATA1\OPEXD.FMTB
Area File Created On: 6/9/2011 8:30:38 PM
File Reported On: 6/9/2011 at 8:30:46 PM

Not Matching

$\frac{11281}{.601} = 18770$

$\frac{9739}{.499} = 19517$

* See Regression

Oven Parameters: 100% Phosphate Buffer

Volume Inj: 1

Detector A Parameters:
Threshold: -4 Width: 0.1
Calibration Type: External

Area Reject: 0
Quantitation: Height

Detector B Parameters:
Threshold: -5 Width: 0.1
Calibration Type: External

Area Reject: 0
Quantiation: Height

Sample Weight: 10
Analyst: 1566

Dilution Factor: 10

RT A	Height A	Amount A	Compound A
2.07	9917	16488.93	Kempore

RT B	Height B	Amount B	Compound B
4.689	8560	14720.94	Kempore

Files:
Area File: C:\CPWIN\DATA1\IK11160.18A
Area File: C:\CPWIN\DATA1\IK11160B.18A
Method A: C:\CPWIN\DATA1\KEMP.MET
Method B: C:\CPWIN\DATA1\KEMPB.MET
Calibration File A: C:\CPWIN\DATA1\IK11160.CAL
Calibration File B: C:\CPWIN\DATA1\IK11160B.CAL
Format A: C:\CPWIN\DATA1\OPEXD.FMTA
Format B: C:\CPWIN\DATA1\OPEXD.FMTB
Area File Created On: 6/9/2011 8:36:50 PM
File Reported On: 6/9/2011 at 8:36:59 PM

$\frac{9917}{.601} = 16500$

8D
ANALYTICAL SEQUENCE

Sequence: 1K11160 Lab Name: Lancaster laboratories Contract:

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

GC Column: SUP PAH ID: 250

Instrument: X3593A

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

*	Sample Code No.	Lab Sample ID	Date Analyzed	Time Analyzed	Calibration File
001	KEMP5AA	KEMP51124C	06/09/2011	19:04:31	1K11160
002	KEMP4AA	KEMP41124C	06/09/2011	19:10:43	1K11160
003	KEMP3AA	KEMP31124C	06/09/2011	19:16:56	1K11160
004	KEMP2AA	KEMP21124C	06/09/2011	19:23:08	1K11160
005	KEMP1AA	KEMP11124C	06/09/2011	19:29:20	1K11160
006	MDKRXAA	MDKRX1124C	06/09/2011	19:35:32	1K11160
007	PBLK40158	BLANKA	06/09/2011	19:41:44	1K11160
008	LCS40158	LCSA	06/09/2011	19:47:57	1K11160
009	LCSD40158	LCSDA	06/09/2011	19:54:10	1K11160
010	PBLK26160	BLANKA	06/09/2011	20:00:23	1K11160
011	LCS26160	LCSA	06/09/2011	20:06:35	1K11160
012	LCSD26160	LCSDA	06/09/2011	20:12:48	1K11160
013	ISC1-	6308055	06/09/2011	20:19:01	1K11160
014	ISC1-	6308056	06/09/2011	20:25:13	1K11160
015	ISC1-	6308057	06/09/2011	20:31:26	1K11160
016	ISC1D	6308058	06/09/2011	20:37:38	1K11160
017	KEMP3EO	KEMP31124C	06/09/2011	20:43:51	1K11160
018	ISC2-	6308059	06/09/2011	20:50:04	1K11160
019	PZ16R	6308074	06/09/2011	20:56:17	1K11160
020	PZ17R	6308075	06/09/2011	21:02:30	1K11160
021	-SD-1	6308076	06/09/2011	21:08:44	1K11160
022	5-XXX	6309550	06/09/2011	21:14:57	1K11160
023	1-XXX	6309553	06/09/2011	21:21:10	1K11160
024	2-XXX	6309554	06/09/2011	21:27:23	1K11160
025	S-XXX	6309555	06/09/2011	21:33:37	1K11160
026	EDSD0	6310720	06/09/2011	21:39:50	1K11160
027	EDSD1	6310721	06/09/2011	21:46:03	1K11160
028	KEMP3EP	KEMP31124C	06/09/2011	21:52:16	1K11160
029	EDSD2	6310722	06/09/2011	21:58:29	1K11160
030	EDSD5	6310723	06/09/2011	22:04:43	1K11160
031	MMB-2	6310724	06/09/2011	22:10:56	1K11160
032	KEMP3EQ	KEMP31124C	06/09/2011	22:17:09	1K11160

*missing 3 conditioner injections

MSK(5) 6/24/11

~~Missing~~ ON

8/14/11

10A

IDENTIFICATION SUMMARY

SAMPLE CODE NO.

PZ17R

Lab Name: Lancaster Laboratories **Contract:** **Batchnumber:** 111580040A

Lab Code: **Case No.:** **SAS No.:** **SDG No.:** OLN70

Lab Sample ID: 6308075 **Date(s) Analyzed:** 6/7/2011 6/9/2011

Instrument ID (1): X3593A **Instrument ID (2):** X3593B

GC Column (1): **ID:** **(mm)** **GC Column (2):** **ID:** **(mm)**

ANALYTE	COL	RT	FROM	TO	CONCENTRATION	%D
Kempore	1	2.10	1.91	2.21	1100	
	2	4.63	4.60	4.90	550	66.7

UJ
Result

CN
8/14/11

OLN70 8839

FORM X PEST - 1

1D

ORGANICS ANALYSIS DATA SHEET

SAMPLE CODE NO.

PZ17R

Lab Name: Lancaster Laboratories **Contract:** **Batchnumber:** 111580040A

Lab Code: **Case No.:** **SAS No.:** **SDG No.:** OLN70

Matrix: (soil/water) WATER **Lab Sample ID:** 6308075

Sample wt/vol: 10 (g/ml) ml **Lab File ID:** 1K11160.23R

% Moisture: **Decanted: (Y/N)** **Date Received:** 6/7/2011

Extraction: (SepF/Cont/Sonc) Direct Injection **Date Extracted:** 6/7/2011

Concentrated Extract Volume: 10000 (uL) **Date Analyzed:** 6/9/2011

Injection Volume: 35 (uL) **Dilution Factor:** 1

GPC Cleanup: (Y/N) N **pH:** **Sulfur Cleanup: (Y/N)** N

CAS NO.	COMPOUND	CONCENTRATION UNITS (UG/L or UG/KG) ug/l	Q
123-77-3	Kempore	1100	P

J

OLN78 5847

FORM I

Lancaster Laboratories-Single Component Data Summary

Sample Name: 6308075 RI PZ17R Sample ID: AA **Batchnumber: 111580040A**
Sample Amount: 10 ml Total Volume: 10 ml Analyst: 1566 SDG: OLN70 State: MA
Analyses: 02727 10342

Analysis Report (A)

Injected on : JUN 09, 2011 21:02:30
Instrument : CP09--X3593A
Result file : 1K11160.23R
Calibration file : 1K11160.CAL
Method file : KEMP.MET

Peak name	Min	R.T.	Max	Height	Amount
Kempore	1.91	2.10	2.21	638	1061.152222

Analysis Report (B)

Injected on : JUN 09, 2011 21:02:30
Instrument : CP09--X3593B
Result file : 1K11160B.23R
Calibration file : 1K11160B.CAL
Method file : KEMPB.MET

Peak name	Min	R.T.	Max	Height	Amount
Kempore	4.60	4.63	4.90	195	552.341797

Summary Report

Compound Name	Column	Amount Found	LOQ	MDL	Qualifiers	%Difference	Comments
☑ Kempore	A	1061	<1000	<230			

Units: ug/l

Reviewed by: [signature] Date: 6/10/11

Verified by: Valerie Tomayko Date: JUN 11 2011

Valerie Tomayko
Senior Specialist

Less than QL

OLN70 0848

%Difference = High - Low Amount divided by the Average times 100

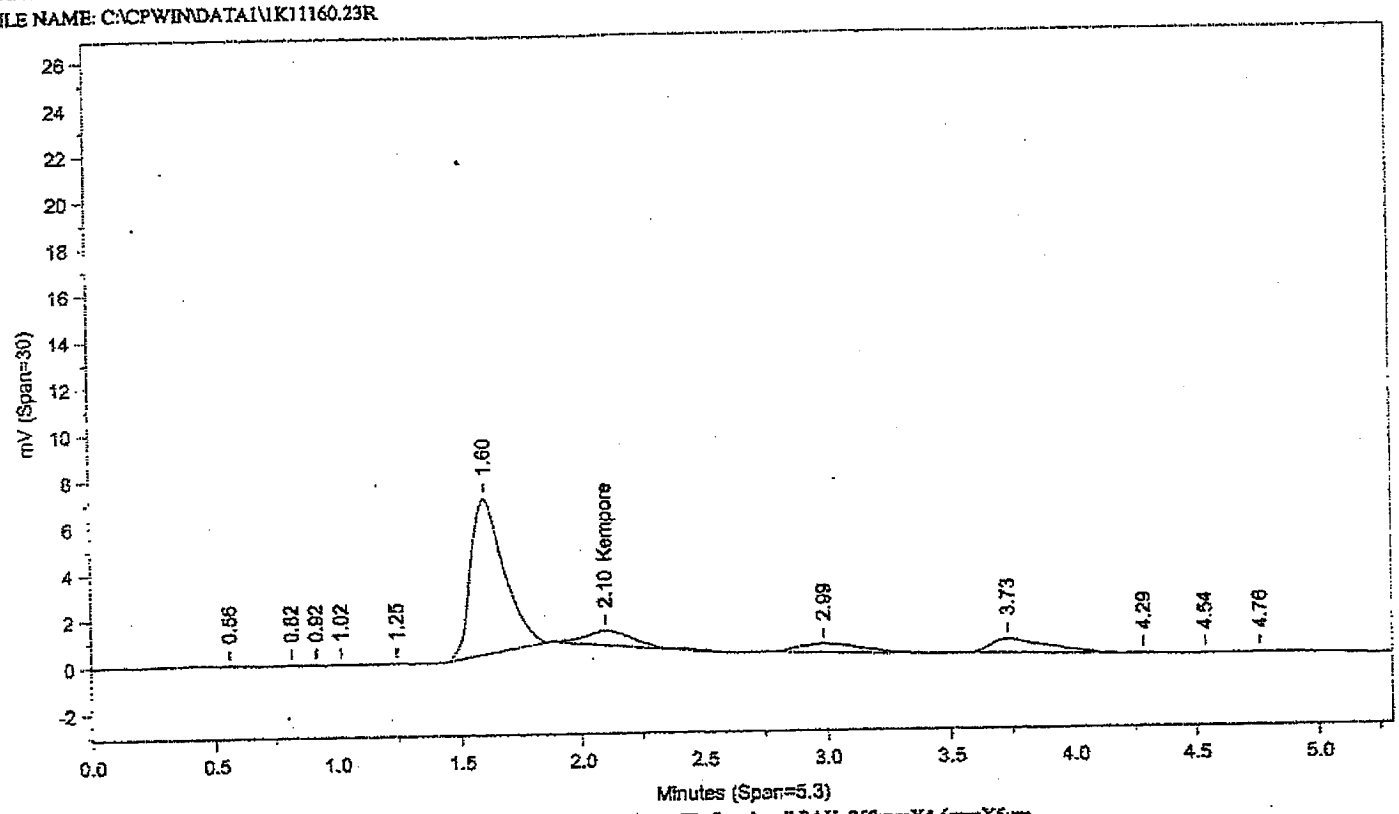
* Recovery outside QC Limits

Printed on: 6/10/11 16:52:46

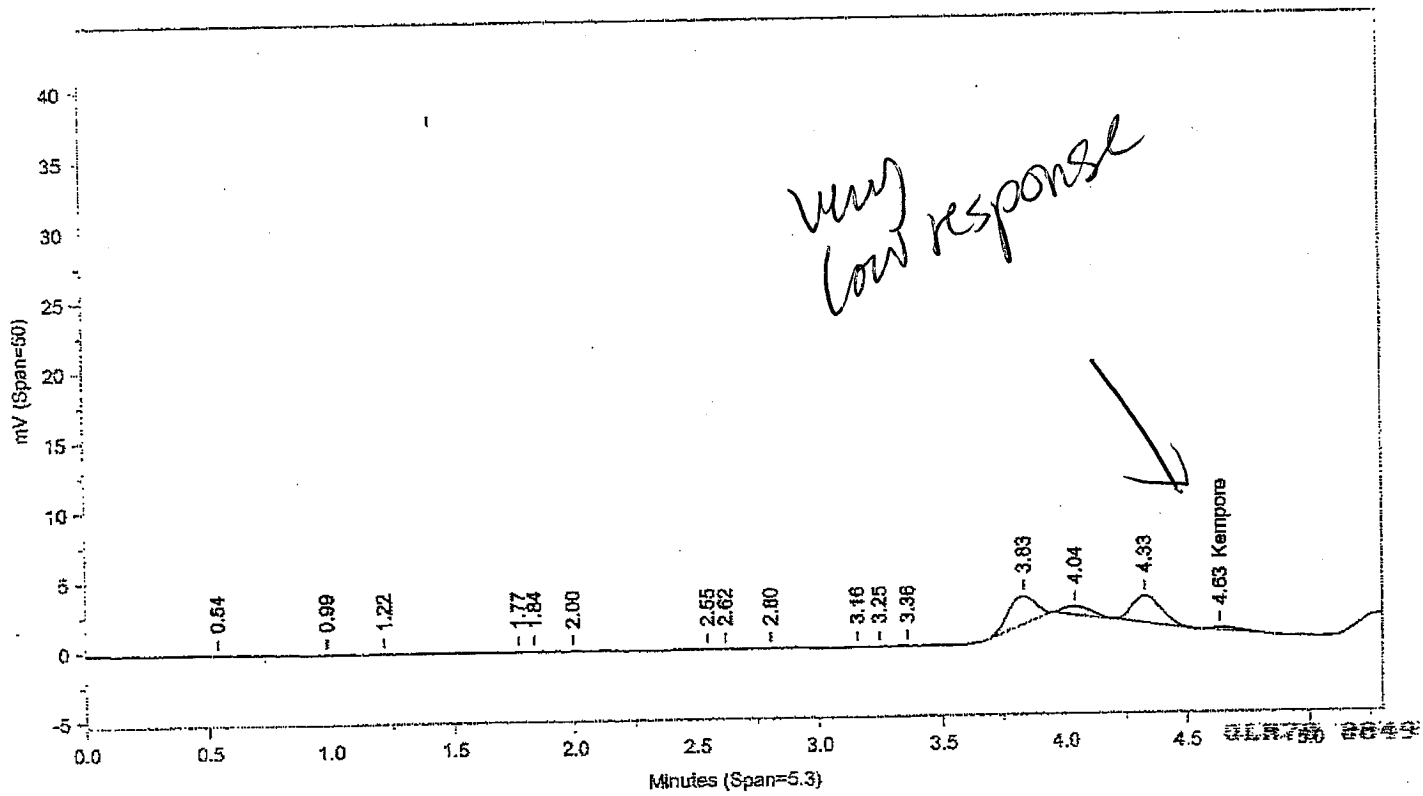
6308075 RI AAPZ17R T 111580040A 02727

LANCASTER LABORATORIES

FILE NAME: C:\CPWIN\DATA1\1K11160.23R



Instrument ID: CP09--X3593A Injected On: 6/9/2011 9:02:29 PM Column ID: Supelcosil PAH, 250mmX4.6mmX5um



Instrument ID: CP09--X3593B Injected On: 6/9/2011 9:02:29 PM Column ID: Capcell CN, 250mmX4.6mmX5um

Oven Parameters: 100% Phosphate Buffer

Volume Inj: 1

Detector A Parameters:
Threshold: -4 Width: 0.1
Calibration Type: External

Area Reject: 0
Quantitation: Height

Detector B Parameters:
Threshold: -5 Width: 0.1
Calibration Type: External

Area Reject: 0
Quantiation: Height

Sample Weight: 10
Analyst: 1566

Dilution Factor: 10

RT A	Height A	Amount A	Compound A
2.102	638	1061.152	Kempore

RT B	Height B	Amount B	Compound B
4.635	195	552.342	Kempore

Files:
Area File: C:\CPWIN\DATA1\1K11160.23A
Area File: C:\CPWIN\DATA1\1K11160B.23A
Method A: C:\CPWIN\DATA1\KEMP.MET
Method B: C:\CPWIN\DATA1\KEMPB.MET
Calibration File A: C:\CPWIN\DATA1\1K11160.CAL
Calibration File B: C:\CPWIN\DATA1\1K11160B.CAL
Format A: C:\CPWIN\DATA1\OPEXD.FMTA
Format B: C:\CPWIN\DATA1\OPEXD.FMTB
Area File Created On: 6/9/2011 9:07:54 PM
File Reported On: 6/9/2011 at 9:08:03 PM

$\frac{638}{.601} = 1061$

Oven Parameters: 100% Phosphate Buffer

Volume Inj: 1

Detector A Parameters:
Threshold: -4 Width: 0.1
Calibration Type: External

Area Reject: 0
Quantitation: Height

Detector B Parameters:
Threshold: -5 Width: 0.1
Calibration Type: External

Area Reject: 0
Quantitation: Height

Sample Weight: 10
Analyst: 1566

Dilution Factor: 10

RT A	Height A	Amount A	Compound A
2.124	838	1394.041	Kempore

RT B	Height B	Amount B	Compound B
4.6	502	1072.153	Kempore

Files:
Area File: C:\CPWIN\DATA1\IK11160.24A
Area File: C:\CPWIN\DATA1\IK11160B.24A
Method A: C:\CPWIN\DATA1\KEMP.MET
Method B: C:\CPWIN\DATA1\KEMPB.MET
Calibration File A: C:\CPWIN\DATA1\IK11160.CAL
Calibration File B: C:\CPWIN\DATA1\IK11160B.CAL
Format A: C:\CPWIN\DATA1\OPEXD.FMTA
Format B: C:\CPWIN\DATA1\OPEXD.FMTB
Area File Created On: 6/9/2011 9:14:08 PM
File Reported On: 6/9/2011 at 9:14:17 PM

$\frac{838}{.601} = 1394$

OU1/OU2 SW

CHEMIST REVIEW-VALIDATION CHECKLIST

Opex OLN70

FULL VALIDATION CHECKS

Ten Percent of data sets will have full validation checks completed during chemist review.

- [x] **Initial Calibration** linear curve used
- [x] **Continuing Calibration Verification** CCV missed conf. column peak. Closing CCV out both columns 21/32 %D UJ P217 SD-1

<u>Transcription and Calculation Checks</u>

- [x] **Instrument Calibration**
- [x] **Blank Review – raw data/chromatogram check**
- [x] **Laboratory Control Sample**
- [ ] **Matrix Spike**
- [x] **Field Sample Results**
- [ ] **Surrogate Recovery** NA
- [ ]
- [ ]

OPEX OLN54

Std Level	Std Conc (µg/l)	Height Column A	Height Column B		CF A	CF B
1	111	744	378		6.7027	3.4054
2	222	1178	619		5.3063	2.7883
3	444	2039	1034		4.5923	2.3288
4	740	3302	1576		4.4622	2.1297
5	1110	4793	2232		4.3180	2.0108
MDL	200	89	211			

average CF	5.0763	2.5326
SD	0.9855	0.5708
%RSD	19.4128	22.5380

Column A

slope	0.245650023	-66.9113343	intercept
+-	0.002086803	5.900510248	+-
r2	0.999783551 ✓	6.891306922	s(y)
F	13857.0476	3	degrees of freedom
regression ss	658072.7297	142.4703333	residual ss

Column B

slope	0.541664719	-107.1560589	intercept
+-	0.007769067	10.45844539	+-
r2	0.999383221 ✓	11.63290738	s(y)
F	4860.97536	3	degrees of freedom
regression ss	657809.2264	405.9736026	residual ss

Regression Calc Check
Opex — CN 8/16/11

CCAL 1		Regression Calc. (µg/l)	Regression Calc.
Height A	1856	389	
Height B	1003	436	

LCS		(µg/l)	percent recovery (%)	Spike added (µg/l)
Height A	3067	686	93	740
Height B	1472	690	93	

MS		(µg/l)	percent recovery (%)	Spike added (µg/l)
Height A	841	140	19	740
Height B	650	245	33	

Lancaster Laboratories

Quality Control Summary
Laboratory Control Standard (LCS)
Laboratory Control Standard Duplicate(LCSD)

SDG: OLN70
Matrix: LIQUID

Pesticide Residue Analysis

Fraction: Opex

LCS: LCS22161 LCSD: LCSD22161 **Analyte**	Batch: **111610022A** (Sample number(s): 6308074-6308076)							
	Spike Added ug/l	**LCS Conc ug/l**	**LCSD Conc ug/l**	**LCS %Rec**	**LCSD %Rec**	**%Rec Limits**	**%RPD**	**%RPD Limits**
Opex in Water	740	690	690	93	93	70-130	0	30

ev
8/16/11

OLN70 0181

1D

ORGANICS ANALYSIS DATA SHEET

SAMPLE CODE NO.

PBLK22161

Lab Name: Lancaster Laboratories **Contract:** **Batchnumber:** 111610022A

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

Matrix: (soil/water) WATER **Lab Sample ID:** BLANKA

Sample wt/vol: 10 **(g/ml)** ml **Lab File ID:** 1X11161.10R

% Moisture: **Decanted: (Y/N)** **Date Received:**

Extraction: (SepF/Cont/Sonc) Direct Injection **Date Extracted:** 6/10/2011

Concentrated Extract Volume: 10000 (uL) **Date Analyzed:** 6/10/2011

Injection Volume: 30 (uL) **Dilution Factor:** 1

GPC Cleanup: (Y/N) N **pH:** **Sulfur Cleanup: (Y/N)** N

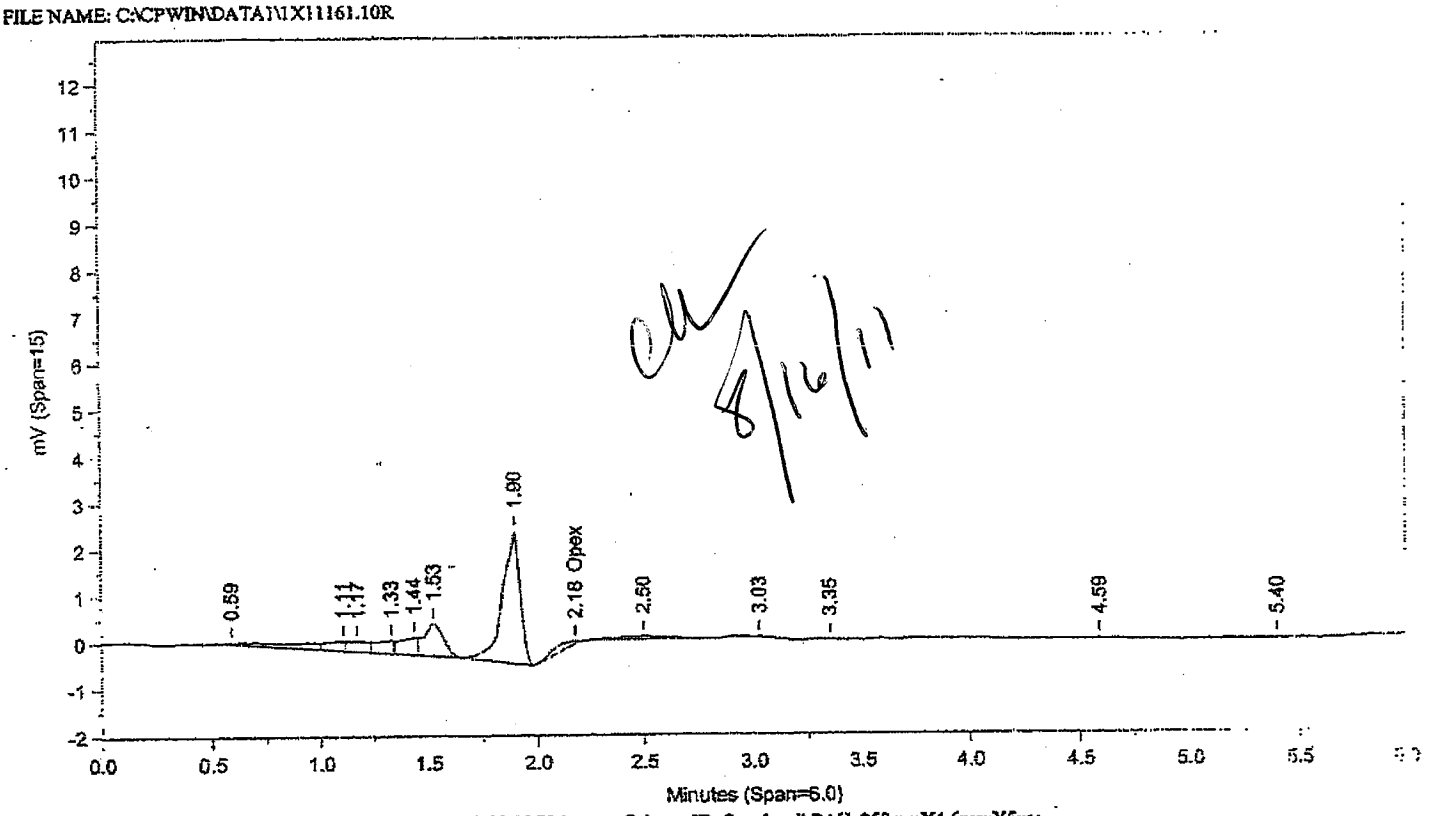
CAS NO.	COMPOUND	CONCENTRATION UNITS (UG/L or UG/KG) ug/l	Q
101-25-7	Opex	20	U

CW 8/16/11

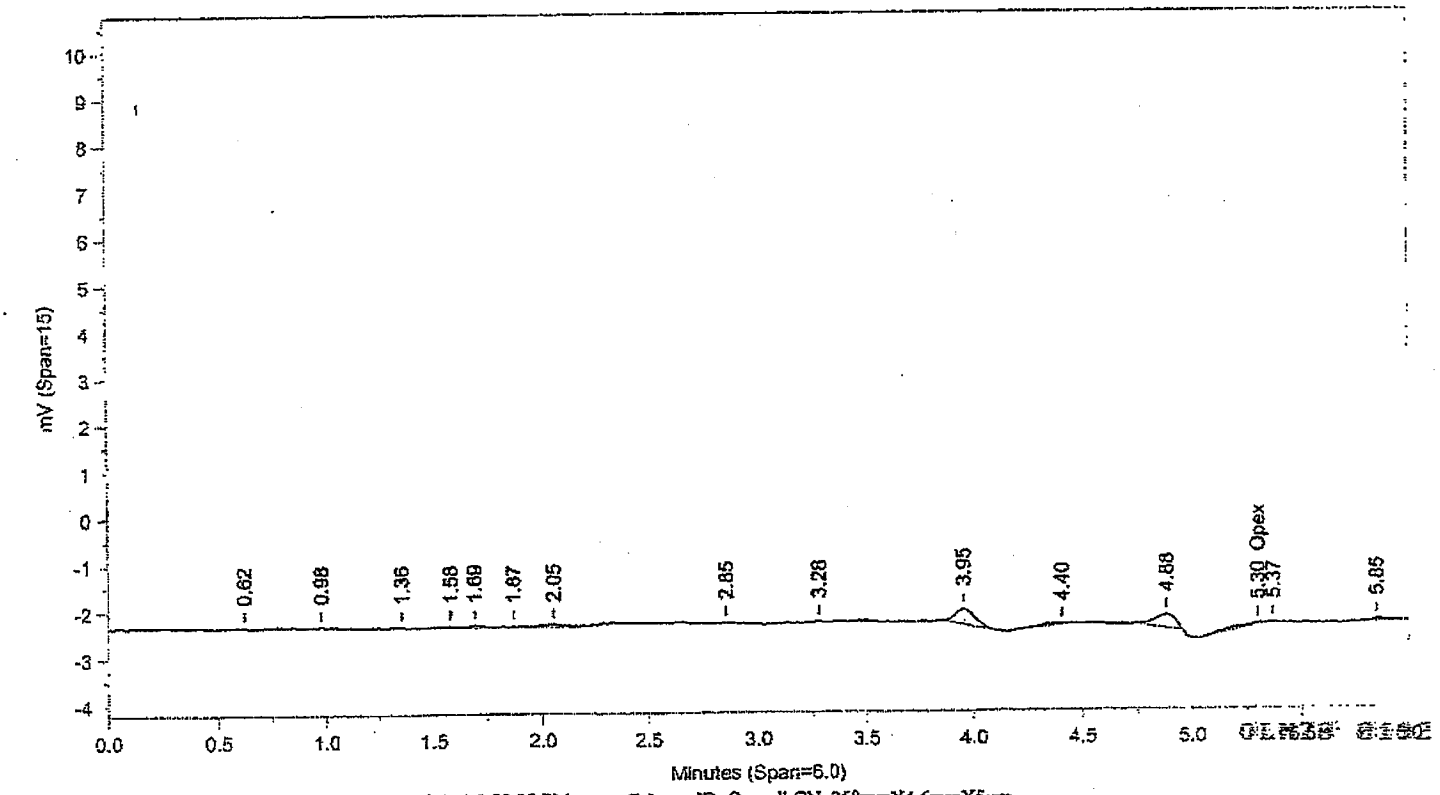
OLA78 8198

FORM I

LANCASTER LABORATORIES
FILE NAME: C:\CPWIN\DATA1\1X11161.10R



Instrument ID: CP09--K3593A Injected On: 6/10/2011 9:09:28 PM Column ID: Supelcosil PAH, 250mmX4.6mmX5um



Instrument ID: CP09--K3593B Injected On: 6/10/2011 9:09:28 PM Column ID: Capcell CN, 250mmX4.6mmX5um

1D

ORGANICS ANALYSIS DATA SHEET

SAMPLE CODE NO.

LCS22161

Lab Name: Lancaster Laboratories **Contract:** **Batchnumber:** 111610022A

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

Matrix: (soil/water) WATER **Lab Sample ID:** LCSA

Sample wt/vol: 10 (g/ml) ml **Lab File ID:** 1X11161.11R

% Moisture: **Decanted: (Y/N)** **Date Received:**

Extraction: (SepF/Cont/Sonc) Direct Injection **Date Extracted:** 6/10/2011

Concentrated Extract Volume: 10000 (uL) **Date Analyzed:** 6/10/2011

Injection Volume: 30 (uL) **Dilution Factor:** 1

GPC Cleanup: (Y/N) N **pH:** **Sulfur Cleanup: (Y/N)** N

CAS NO.	COMPOUND	CONCENTRATION UNITS (UG/L or UG/KG) ug/l	Q
101-25-7	Opex	690	

8/16/11

OLM26 0194

Lancaster Laboratories-Single Component Data Summary

Sample Name: LCSA 6/10/11 LCS22161 Sample ID: AA **Batchnumber: 111610022A**
Sample Amount: 10 ml Total Volume: 10 ml Analyst: 1566 SDG: State:
Analyses: 02726 10342

Analysis Report (A)

Injected on	: JUN 10, 2011 21:16:20
Instrument	: CP09--K3593A
Result file	: 1X11161.11R
Calibration file	: 1X11161.CAL
Method file	: OPEX.MET
%SSR(Opex)	:

Peak name	Min	R.T.	Max	Height	Amount
Opex	2.02	2.11	2.22	3067	686.423096

Analysis Report (B)

Injected on	: JUN 10, 2011 21:16:20
Instrument	: CP09--K3593B
Result file	: 1X11161B.11R
Calibration file	: 1X11161B.CAL
Method file	: OPEXB.MET
%SSR(Opex)	:

Peak name	Min	R.T.	Max	Height	Amount
Opex	5.21	5.32	5.41	1472	690.061340

Summary Report

Compound Name	Column	Amount Found	LOQ	MDL	Qualifiers	%Difference	Comments
☑ Opex			<100	<20			

Units: ug/l

Reviewed by: [signature] Date: 6/15/11

Verified by: Valerie Tomayko Date: JUN 16 2011

Valerie Tomayko
Senior Specialist

OLM78: 8195

%Difference = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

Printed on: 6/14/11 19:21:47

Oven Parameters: 75% Phosphate Buffer : 25% ACN

Volume Inj: 1

Detector A Parameters:
Threshold: -4 Width: 0.1
Calibration Type: External

Area Reject: 100
Quantitation: Height

Detector B Parameters:
Threshold: -4 Width: 0.1
Calibration Type: External

Area Reject: 100
Quantiation: Height

Sample Weight: 10
Analyst: 1566

Linear R

Dilution Factor: 10

RT A	Height A	Amount A	Compound A	RT B	Height B	Amount B	Compound B
2.114	3067	686.423	Opex	5.323	1472	690.061	Opex

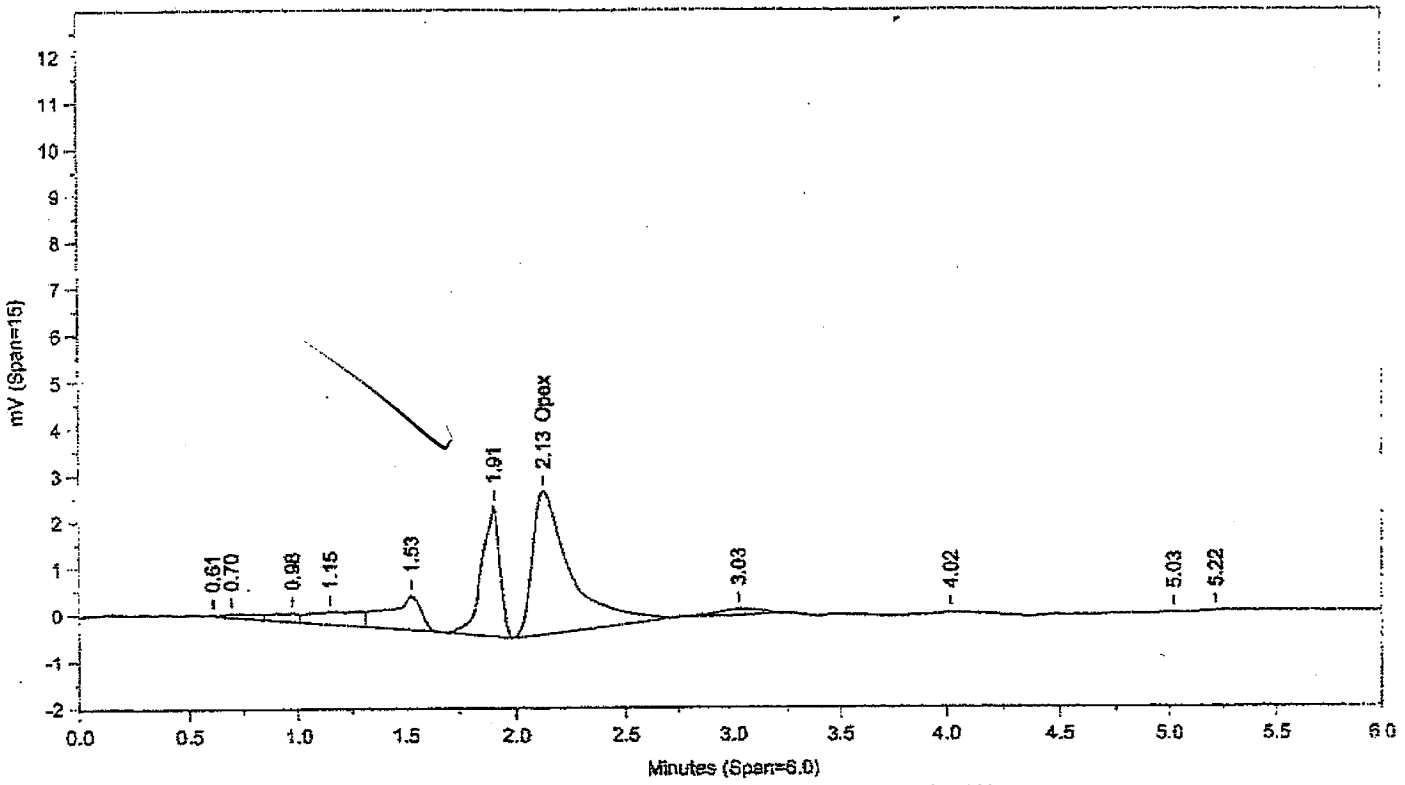
Files:
Area File: C:\CPWIN\DATA1\1X11161.11A
Area File: C:\CPWIN\DATA1\1X11161B.11A
Method A: C:\CPWIN\DATA1\OPEX.MET
Method B: C:\CPWIN\DATA1\OPEXB.MET
Calibration File A: C:\CPWIN\DATA1\1X11161.CAL
Calibration File B: C:\CPWIN\DATA1\1X11161B.CAL
Format A: C:\CPWIN\DATA1\OPEXD.FMTA
Format B: C:\CPWIN\DATA1\OPEXD.FMTB
Area File Created On: 6/14/2011 6:54:02 PM
File Reported On: 6/14/2011 at 6:54:11 PM

ck 8/16/11

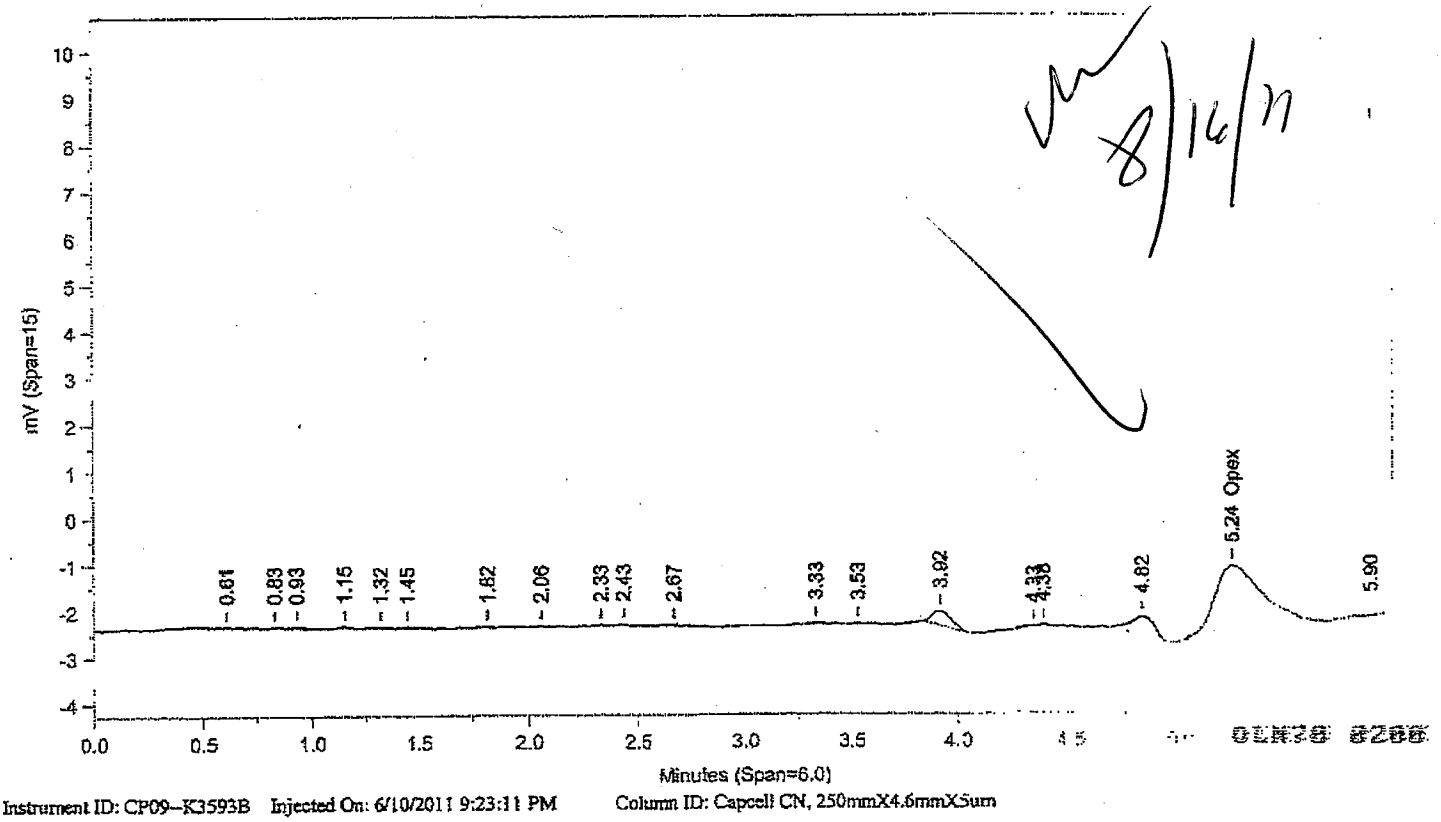
$\frac{3067}{4.59} = 668$ ok

Based on RF

LANCASTER LABORATORIES
FILE NAME: C:\CPWIN\DATA1\1X11161.12R



Instrument ID: CP09--K3593A Injected On: 6/10/2011 9:23:11 PM Column ID: Supelcosil PAH, 250mmX4.6mmX5um



8/16/11

Instrument ID: CP09--K3593B Injected On: 6/10/2011 9:23:11 PM Column ID: Capcell CN, 250mmX4.6mmX5um

Organic Extraction Batchlog Assigned to: 1566 James Place

Reviewed by: _____ Start Date: 6/10/11 Start time: 7:00pm

111610022A

Tech 1: [signature] Tech 2: _____

Dept: 24 Prep Analysis: 00000 Opex in Water

QC	Sample Code	Amt (mL)	SS/IS Sol.	Amt (mL)	MS Sol.	Amt (mL)	FV (mL)	pH	pH	BC	Comments
6308056MS	ISC1-	10			ST1114324B	0.1	10	6.57	9.72	178A	Yellowish
6308057MSD	ISC1-	10				0.1	10	6.62	9.34		
BLANKA	PBLK22161	10					10			N/C	
LCSA	LCS22161	10			ST1114324B	0.1	10				
LCSDA	LCSD22161	10				0.1	10				

ST1114324B - Opex stock

	Sample #	Sample Code	Amt (mL)	SS/IS Sol.	Amt (mL)	FV (mL)	pH	pH	BC	Comments	Analyses	Due Date	Prio
1	6308055BKG	ISC1-	10			10	6.51	9.42	178A	Yellowish	02726	06/17/2011	P
2	6308058	ISC1D	10			10	6.62	9.70		Yellowish	02726	06/17/2011	P
3	6308059	ISC2-	10			10	6.88	9.22			02726	06/17/2011	P
4	6308074	PZ16R	10			10	6.15	9.73		Orangish sediment	02726	06/17/2011	P
5	6308075	PZ17R	10			10	5.10	9.12			02726	06/17/2011	P
6	6308076	-SD-1	10			10	7.08	9.30			02726	06/17/2011	P
7	6309550	5-XXX	10			10	7.04	9.89		Yellowish w/sediment	02726	06/20/2011	P
8	6309553	1-XXX	10			10	5.84	9.66		Orange sediment	02726	06/20/2011	P
9	6309554	2-XXX	10			10	6.48	9.59			02726	06/20/2011	P
10	6309555	S-XXX	10			10	6.57	9.28			02726	06/20/2011	P
11	6310720	EDSD0	10			10	6.53	9.69			02726	06/21/2011	P
12	6310721	EDSD1	10			10	7.26	9.64			02726	06/21/2011	P
13	6310722	EDSD2	10			10	7.05	9.15			02726	06/21/2011	P
14	6310723	EDSD5	10			10	7.19	9.58			02726	06/21/2011	P
15	6310724	MMB-2	10			10	7.33	9.82			02726	06/21/2011	P

Rack ID:		Work Station	
Internal Standard		Balance #	

S-bath ID	C	S-bath ID	C	N-Evap	C	M-vap	C	111610022A

Documented temps are NIST corrected.

DF = Dilution Factor FV = Final Volume

Lancaster Laboratories

Quality Control Summary
Matrix Spike/Matrix Spike Duplicate

SDG: OLN69
Matrix: LIQUID

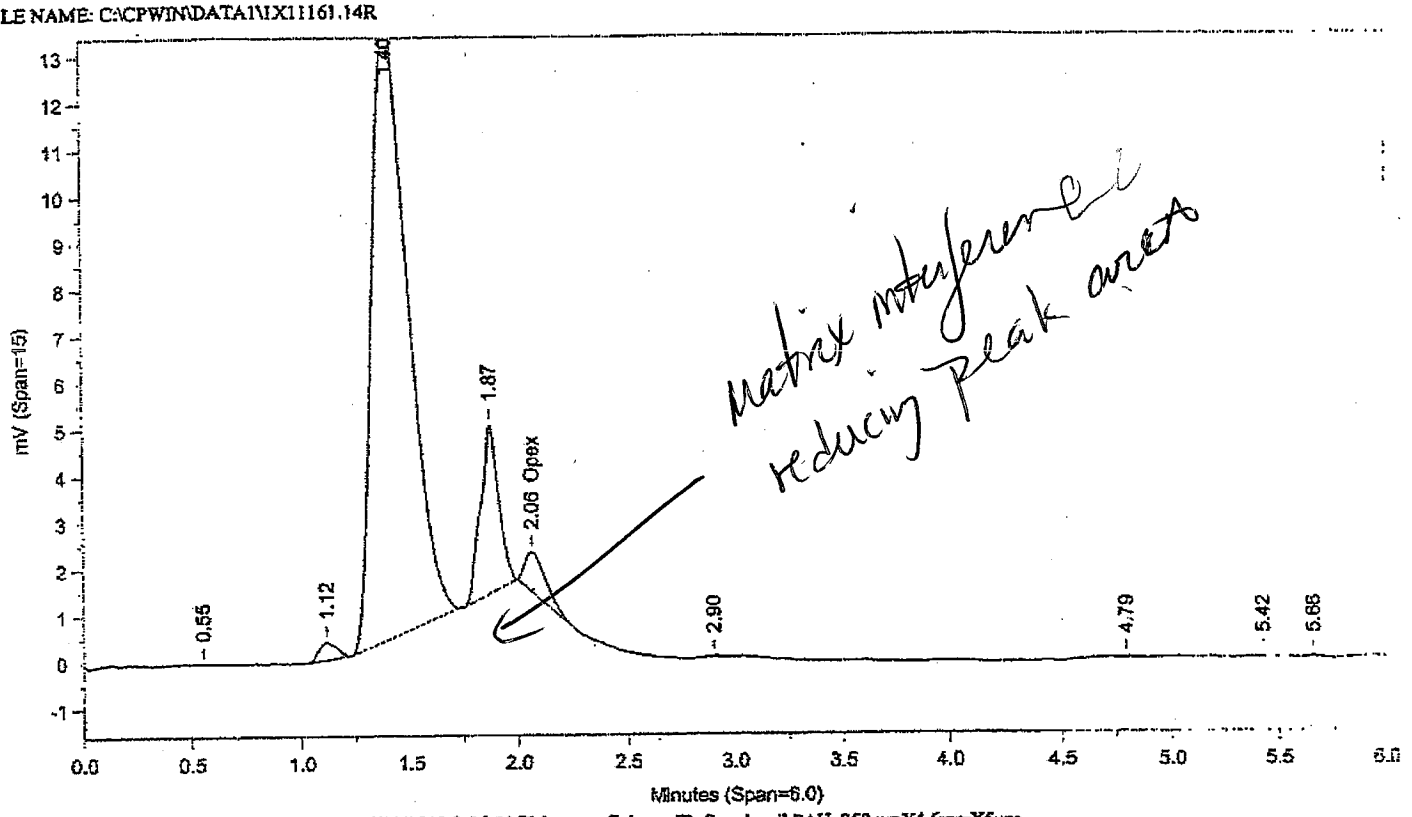
Pesticide Residue Analysis
Fraction: Opex

UNSPK: 6308055 MS: 6308056 MSD: 6308057 **Analyte**	Batch: **111610022A** (Sample number(s): 6308055-6308059)								
	Spike Added ug/l	**Unspiked Conc ug/l**	**MS Conc ug/l**	**MSD Conc ug/l**	**MS %Rec**	**MSD %Rec**	**%Rec Limits**	**%RPD**	**%RPD Limits**
Opex in Water	740	N.D.	140.	160.	19 *	22 *	70-130	13	30

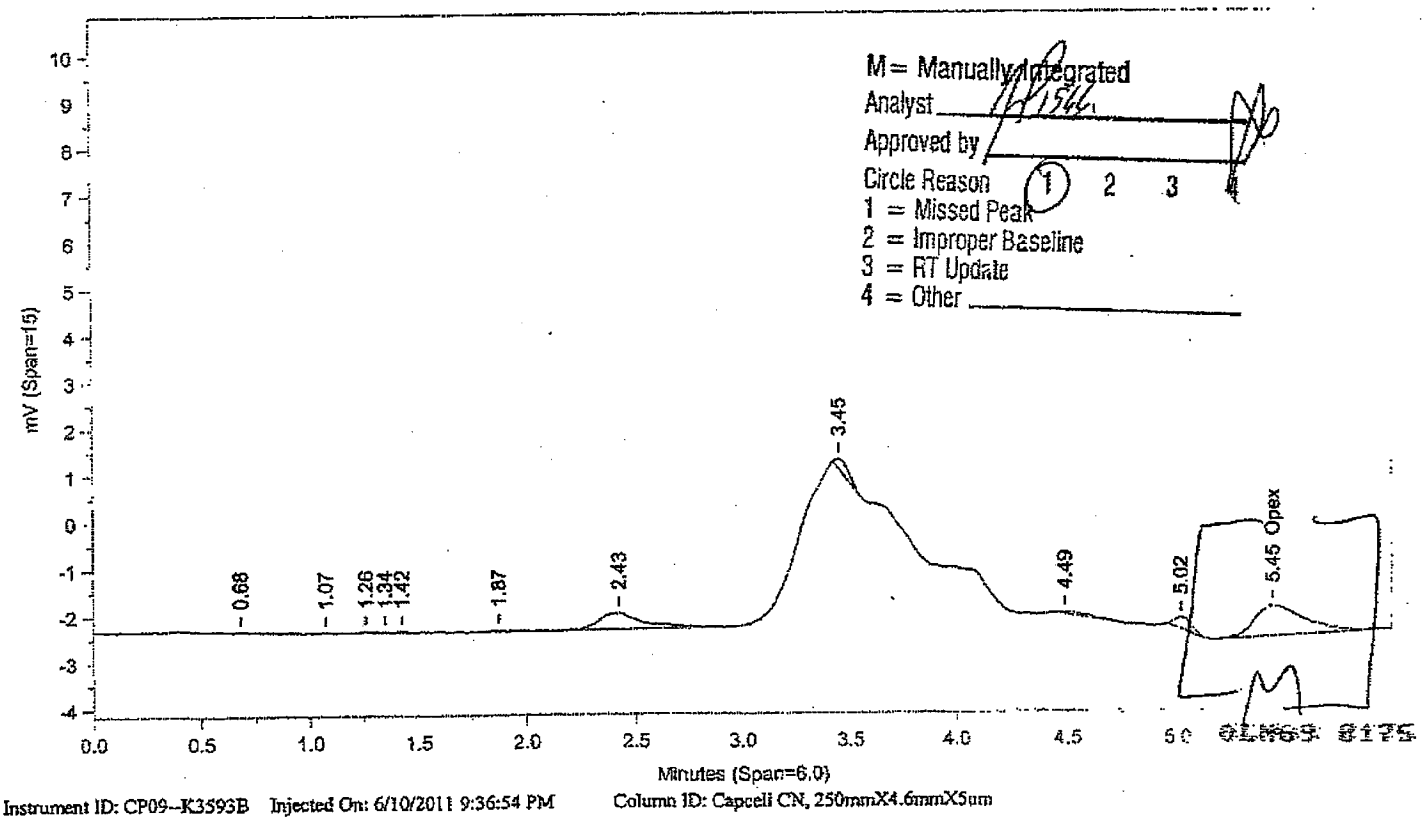
OLN69 6185

Results are being reported on an as received basis.

LANCASTER LABORATORIES
FILE NAME: C:\CPWIN\DATA1\IX11161.14R



Instrument ID: CP09--K3593A Injected On: 6/10/2011 9:36:54 PM Column ID: Supelcosil PAH, 250mmX4.6mmX5um



M = Manually Integrated
Analyst
Approved by
Circle Reason 1 2 3 4
1 = Missed Peak
2 = Improper Baseline
3 = RT Update
4 = Other

Instrument ID: CP09--K3593B Injected On: 6/10/2011 9:36:54 PM Column ID: Capcell CN, 250mmX4.6mmX5um

Oven Parameters: 75% Phosphate Buffer : 25% ACN

Volume Inj: 1

Detector A Parameters:
Threshold: -4 Width: 0.1
Calibration Type: External

Area Reject: 100
Quantitation: Height

Detector B Parameters:
Threshold: -4 Width: 0.1
Calibration Type: External

Area Reject: 100
Quantiation: Height

Sample Weight: 10
Analyst: 1566

Dilution Factor: 10

RT A	Height A	Amount A	Compound A	RT B	Height B	Amount B	Compound B
2.065	841	139.564	Opex	5.447	650	244.782	Opex

Files:
Area File: C:\CPWIN\~Dualcha.00A
Area File: C:\CPWIN\~Dualchb.00A
Method A: C:\CPWIN\DATA1\OPEX.MET
Method B: C:\CPWIN\DATA1\OPEXB.MET
Calibration File A: C:\CPWIN\DATA1\1X11161.CAL
Calibration File B: C:\CPWIN\DATA1\1X11161B.CAL
Format A: C:\CPWIN\DATA1\OPEXD.FMTA
Format B: C:\CPWIN\DATA1\OPEXD.FMTB
Area File Created On: 6/14/2011 7:04:20 PM
File Reported On: 6/14/2011 at 7:04:19 PM

$\frac{244}{740} = 32\%$

6D
INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories Contract:

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

Instrument: K3593A Calibration File: 1X11161

GC Column (1) : SUP-PAH ID: 4.6 (mm) Update File:

Date(s) Analyzed: 6/10/2011 6/10/2011

COMPOUND	RT OF STANDARDS LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	~~MIDPOINT~~ Level 1 RT	RT WINDOW FROM	TO
Opex	2.12	2.11	2.12	2.13	2.13	2.12	2.02	2.22

JP 1566
6/14/11

Ch
8/16/11

OLN70 0102

FORM VI-1

6E

INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories Contract:

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

Instrument: K3593A Calibration File: 1X11161

GC Column (1) : SUP-PAH ID: 4.6 (mm) Date(s) Analyzed: 6/10/2011 6/10/2011

COMPOUND	CALIBRATION FACTORS						
	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	MEAN	%RSD
Opex	6.71E+00	5.31E+00	4.59E+00	4.46E+00	4.32E+00	5.08E+00	19.4

— Linear

Average % RSD: 19.4

CW
8/16/11

JP 1566
6/14/11

GLN76 8183

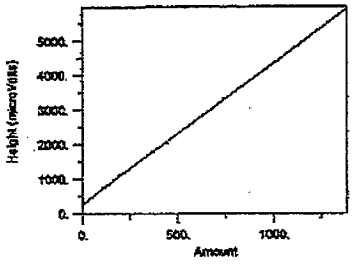
FORM VI-2

Calibration File Name: **C:\CPWIN\DATA1\1X11161.CAL** Version = 19
External standard calibration
No injection volume correction
No sample weight correction
Area reject threshold = 100
Reference peak area reject threshold = 1000
Amount units =
1 components with 5 levels each

1 · Opex
Retention time = 2.120 min., Search window = 0.100 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

Level	Amount	Height	Height/Amt	Source	Date and time
1	111.000	744.5	6.706909	1X11161.08A	6/14/2011 6:47:5
2	222.000	1178.8	5.309752	1X11161.07A	6/14/2011 6:47:3
3	444.000	2039.2	4.592723	1X11161.06A	6/14/2011 6:47:0
4	740.000	3302.1	4.462337	1X11161.05A	6/14/2011 6:46:4
5	1110.000	4793.2	4.318211	1X11161.04A	6/14/2011 6:46:1

Date Time Do not match Chromatogram



ek 8/16/11

Calibration formula: Y = 4.07 X + 273.425
Fit type = Linear with equal weighting
Coefficient of determination = 0.9998, Average error = 1.08%
Average CF = 5.0780 with RSD = 19.44%

6D
INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories Contract:

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

Instrument: K3593B Calibration File: 1X11161B

GC Column (2) : CAPCELL-CN ID: 4.6 (mm) Update File:

Date(s) Analyzed: 6/10/2011 6/10/2011

COMPOUND	RT OF STANDARDS					~~MIDPOINT~~ Level 1	RT WINDOW	
	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	RT	FROM	TO
Opex	5.31	5.34	5.33	5.25	5.25	5.31	5.21	5.41

6/14/11

cw
8/16/11

OLM70 0105

FORM VI-1

6E

INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories Contract:

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

Instrument: K3593B Calibration File: 1X11161B

GC Column (2) : CAPCELL-CN ID: 4.6 (mm) Date(s) Analyzed: 6/10/2011 6/10/2011

COMPOUND	CALIBRATION FACTORS						
	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	MEAN	%RSD
Opex	3.41E+00	2.79E+00	2.33E+00	2.13E+00	2.01E+00	2.53E+00	22.5 — Linear

Average % RSD: 22.5

JP 1566
6/14/11

CN
8/16/11

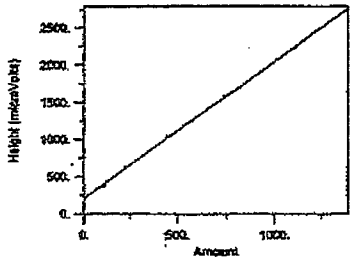
OLM7B: 0106

FORM VI-2

Calibration File Name: **C:\CPWIN\DATA1\1X11161B.CAL** Version = 21
External standard calibration
No injection volume correction
No sample weight correction
Area reject threshold = 100
Reference peak area reject threshold = 1000
Amount units =
1 components with 5 levels each

1 Opex
Retention time = 5.311 min., Search window = 0.100 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

Level	Amount	Height	Height/Amt	Source	Date and time
1	111.000	378.0	3.405406	Manual	6/14/2011 6:52:1
2	222.000	619.5	2.790514	1X11161B.07A	6/14/2011 6:47:4
3	444.000	1034.2	2.329351	1X11161B.06A	6/14/2011 6:47:2
4	740.000	1576.4	2.130264	1X11161B.05A	6/14/2011 6:46:5
5	1110.000	2232.3	2.011071	1X11161B.04A	6/14/2011 6:46:3



CH 8/16/11

Calibration formula: Y = 1.845 X + 198.64
Fit type = Linear with equal weighting
Coefficient of determination = 0.9994, Average error = 2.24%
Average CF = 2.5333 with RSD = 22.53%

Lancaster Laboratories

CHROM PERFECT SEQUENCE FILE

Sequence File: \\cp9\C-Drive\CPWIN\DATA1\1x11161.seq
Chromatography Directory: \\cp9\C-Drive\CPWIN\data1
Method Directory: \\cp9\C-Drive\CPWIN\data1
Number of Entries: 32

	Samplename	Code	ID	FileName	Method	Samp Amt	DF	Int Std	C	Batch Number	Analysis
1	CONDITIONER	MISC	AA	1x11161.01R	OPEX.MET	1	1	1	0	1116099999	
2	CONDITIONER	MISC	AA	1x11161.02R	OPEX.MET	1	1	1	0	1116099999	
3	CONDITIONER	MISC	AA	1x11161.03R	OPEX.MET	1	1	1	0	1116099999	
4	OPEX51124C	ICAL	AA	1x11161.04R	OPEX.MET	1	1	1	5	1116099999	
5	OPEX41124C	ICAL	AA	1x11161.05R	OPEX.MET	1	1	1	4	1116099999	
6	OPEX31124C	ICAL	AA	1x11161.06R	OPEX.MET	1	1	1	3	1116099999	
7	OPEX21124C	ICAL	AA	1x11161.07R	OPEX.MET	1	1	1	2	1116099999	
8	OPEX11124C	ICAL	AA	1x11161.08R	OPEX.MET	1	1	1	1	1116099999	
9	MDOXX1124C	ICAL	AA	1x11161.09R	OPEX.MET	1	1	1	0	1116099999	
10	BLANKA 6/10/11	BLK	AA	1x11161.10R	OPEX.MET	10	10	1	0	111610022A	02726
11	LCSA 6/10/11	LCS	AA	1x11161.11R	OPEX.MET	10	10	1	0	111610022A	02726
12	LCSDA 6/10/11	LCSD	AA	1x11161.12R	OPEX.MET	10	10	1	0	111610022A	02726
13	6308055	T	AA	1x11161.13R	OPEX.MET	10	10	1	0	111610022A	02726
14	6308056MS	MS	AA	1x11161.14R	OPEX.MET	10	10	1	0	111610022A	02726
15	6308057MSD	MSD	AA	1x11161.15R	OPEX.MET	10	10	1	0	111610022A	02726
16	6308058	T	AA	1x11161.16R	OPEX.MET	10	10	1	0	111610022A	02726
17	6308059	T	AA	1x11161.17R	OPEX.MET	10	10	1	0	111610022A	02726
18	6308074	T	AA	1x11161.18R	OPEX.MET	10	10	1	0	111610022A	02726
19	OPEX31124C	CCAL	DT	1x11161.19R	OPEX.MET	1	1	1	0	1116099999	
20	6308075	T	AA	1x11161.20R	OPEX.MET	10	10	1	0	111610022A	02726
21	6308076	T	AA	1x11161.21R	OPEX.MET	10	10	1	0	111610022A	02726
22	6309550	T	AA	1x11161.22R	OPEX.MET	10	10	1	0	111610022A	02726
23	6309553	T	AA	1x11161.23R	OPEX.MET	10	10	1	0	111610022A	02726
24	6309554	T	AA	1x11161.24R	OPEX.MET	10	10	1	0	111610022A	02726
25	6309555	T	AA	1x11161.25R	OPEX.MET	10	10	1	0	111610022A	02726
26	6310720	T	AA	1x11161.26R	OPEX.MET	10	10	1	0	111610022A	02726
27	6310721	T	AA	1x11161.27R	OPEX.MET	10	10	1	0	111610022A	02726
28	6310722	T	AA	1x11161.28R	OPEX.MET	10	10	1	0	111610022A	02726
29	6310723	T	AA	1x11161.29R	OPEX.MET	10	10	1	0	111610022A	02726
30	OPEX31124C	CCAL	DU	1x11161.30R	OPEX.MET	1	1	1	0	1116099999	
31	6310724	T	AA	1x11161.31R	OPEX.MET	10	10	1	0	111610022A	02726
32	OPEX31124C	CCAL	DV	1x11161.32R	OPEX.MET	1	1	1	0	1116099999	

01878 8149

Set-up by: _____ Date: 6/10/11
6/10/2011

Oven Parameters: 75% Phosphate Buffer : 25% ACN

Volume Inj: 1

Detector A Parameters:
Threshold: -4 Width: 0.1
Calibration Type: External

Area Reject: 100
Quantitation: Height

Detector B Parameters:
Threshold: -4 Width: 0.1
Calibration Type: External

Area Reject: 100
Quantiation: Height

Sample Weight: 1
Analyst: 1566

Dilution Factor: 1

RT A	Height A	Amount A	Compound A
2.131	4793	1110.619	Opex

RT B	Height B	Amount B	Compound B
5.248	2232	1102.247	Opex

Files:
Area File: C:\CPWIN\DATA1\1X11161.04A
Area File: C:\CPWIN\DATA1\1X11161B.04A
Method A: C:\CPWIN\DATA1\OPEX.MET
Method B: C:\CPWIN\DATA1\OPEXB.MET
Calibration File A: C:\CPWIN\DATA1\1X11161.CAL
Calibration File B: C:\CPWIN\DATA1\1X11161B.CAL
Format A: C:\CPWIN\DATA1\OPEXD.FMTA
Format B: C:\CPWIN\DATA1\OPEXD.FMTB
Area File Created On: 6/14/2011 6:46:14 PM
File Reported On: 6/14/2011 at 6:46:27 PM

CW 8/16/11

Oven Parameters: 75% Phosphate Buffer : 25% ACN

Volume Inj: 1

Detector A Parameters:
Threshold: -4 Width: 0.1
Calibration Type: External

Area Reject: 100
Quantitation: Height

Detector B Parameters:
Threshold: -4 Width: 0.1
Calibration Type: External

Area Reject: 100
Quantiation: Height

Sample Weight: 1
Analyst: 1566

Dilution Factor: 1

RT A	Height A	Amount A	Compound A	RT B	Height B	Amount B	Compound B
2.117	2039	425.197	Opex	5.328	1034	452.725	Opex

Files:
Area File: C:\CPWIN\DATA1\1X11161.06A
Area File: C:\CPWIN\DATA1\1X11161B.06A
Method A: C:\CPWIN\DATA1\OPEX.MET
Method B: C:\CPWIN\DATA1\OPEXB.MET
Calibration File A: C:\CPWIN\DATA1\1X11161.CAL
Calibration File B: C:\CPWIN\DATA1\1X11161B.CAL
Format A: C:\CPWIN\DATA1\OPEXD.FMTA
Format B: C:\CPWIN\DATA1\OPEXD.FMTB
Area File Created On: 6/14/2011 6:47:06 PM
File Reported On: 6/14/2011 at 6:47:17 PM

8/16/11

7E
CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

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

Instrument: K3593A Init. Calib Date(s): 06/10/11 06/10/11

GC Column (1) : SUP-PAH ID: 4.6 (mm) Date Analyzed: 06/10/11

Lab File ID: 1X11161.19R Time Analyzed: 22:11

Lab Standard ID: OPEX3DW Initial Calibration: 1X11161

COMPOUND	RT	RT WINDOW FROM	TO	CALC AMOUNT	NOM AMOUNT	%D
Opex	2.18	2.02	2.22	388.85	444.00	-12.4

Average of %D: 12.4

8/10/11

7E

CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

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

Instrument: K3593B Init. Calib Date(s): 06/10/11 06/10/11

GC Column (2) : CAPCELL-CN ID: 4.6 (mm) Date Analyzed: 06/10/11

Lab File ID: 1X11161B.19R Time Analyzed: 22:11

Lab Standard ID: OPEX3DW Initial Calibration: 1X11161B

COMPOUND	RT	RT WINDOW FROM	TO	CALC AMOUNT	NOM AMOUNT	%D
Opex	5.10	5.21	5.41	435.98	444.00	-1.8

Average of %D: 1.8

8/16/11

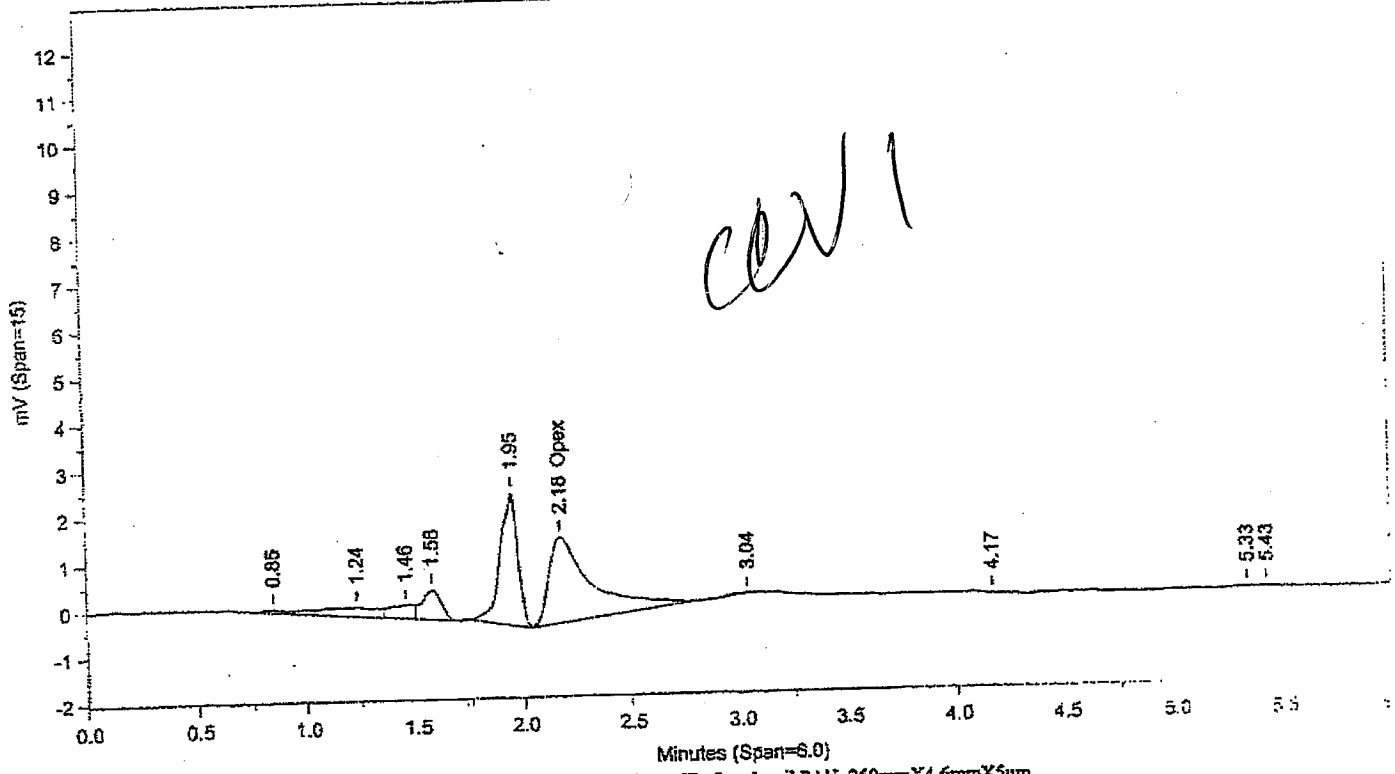
OLMTB 8115

FORM VII

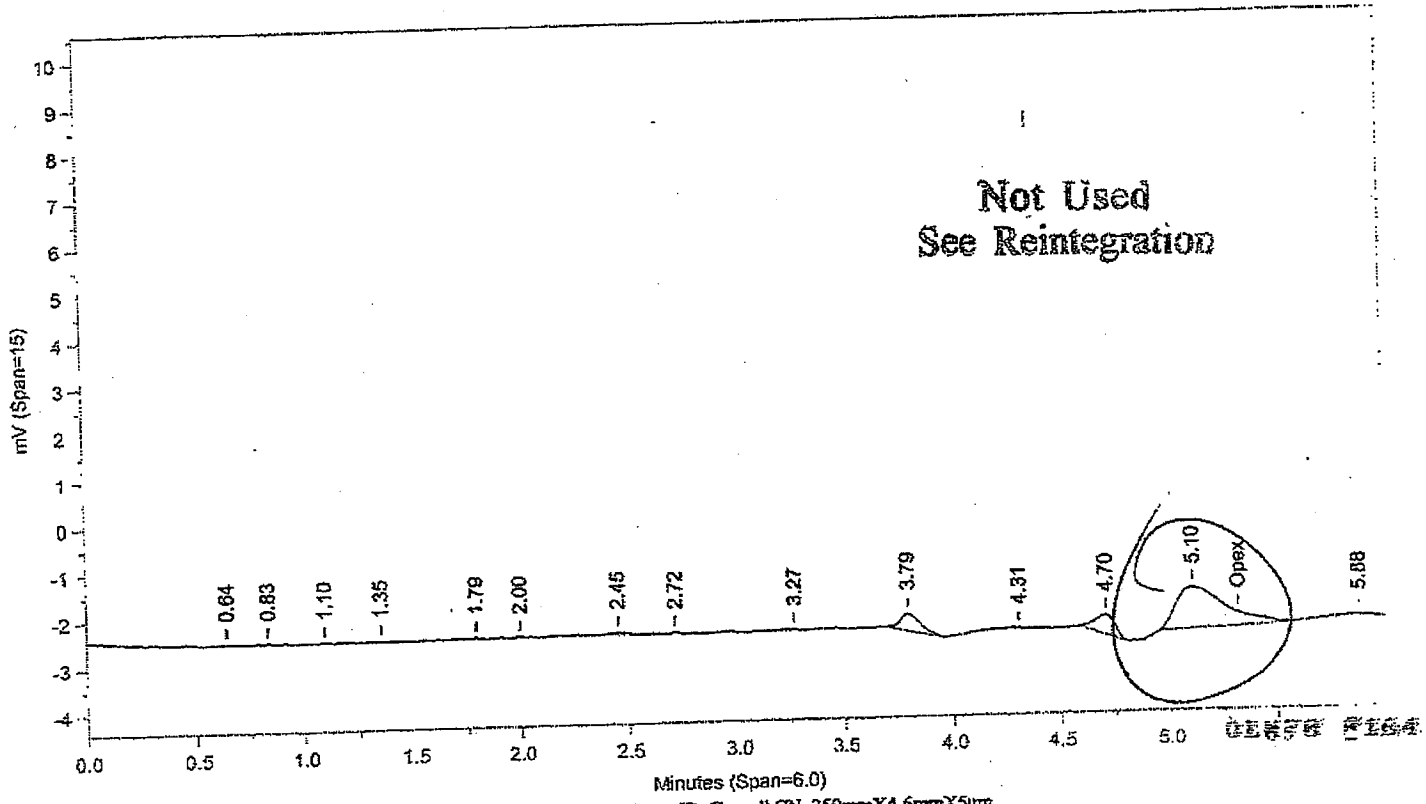
OPEX31124C DWOPEX3DW CCAL 1116099999

LANCASTER LABORATORIES

FILE NAME: C:\CPWIN\DATA1\1X11161.19R



Instrument ID: CP09--K3593A Injected On: 6/10/2011 10:11:13 PM Column ID: Supelcosil PAH, 250mmX4.6mmX5um



Instrument ID: CP09--K3593B Injected On: 6/10/2011 10:11:13 PM Column ID: Capcell CN, 250mmX4.6mmX5um

Oven Parameters: 75% Phosphate Buffer : 25% ACN

Volume Inj: 1

Detector A Parameters:
Threshold: -4 Width: 0.1
Calibration Type: External

Area Reject: 100
Quantitation: Height

Detector B Parameters:
Threshold: -4 Width: 0.1
Calibration Type: External

Area Reject: 100
Quantiation: Height

Sample Weight: 1
Analyst: 1566

Dilution Factor: 1

RT A	Height A	Amount A	Compound A	RT B	Height B	Amount B	Compound B
2.18	1856	388.854	Opex	5.102	1003	435.977	Opex

ch
8/16/11

Files:
Area File: C:\CPWIN\~Dualcha.00A
Area File: C:\CPWIN\~Dualchb.00A
Method A: C:\CPWIN\DATA1\OPEX.MET
Method B: C:\CPWIN\DATA1\OPEXB.MET
Calibration File A: C:\CPWIN\DATA1\1X11161.CAL
Calibration File B: C:\CPWIN\DATA1\1X11161B.CAL
Format A: C:\CPWIN\DATA1\OPEXD.FMTA
Format B: C:\CPWIN\DATA1\OPEXD.FMTB
Area File Created On: 6/14/2011 7:06:06 PM
File Reported On: 6/14/2011 at 7:06:04 PM

$\frac{1856}{4.59} = 397$

Based on Mid RF
OK

7E
CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:
Lab Code: Case No.: SAS No.: SDG No.:
Instrument: K3593A Init. Calib Date(s): 06/10/11 06/10/11
GC Column (1) : SUP-PAH ID: 4.6 (mm) Date Analyzed: 06/10/11
Lab File ID: 1X11161.30R Time Analyzed: 23:26
Lab Standard ID: OPEX3DX Initial Calibration: 1X11161

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT	NOM AMOUNT	%D
Opex	2.18	2.02	2.22	300.56	444.00	-32.3
					Average of %D:	32.3

Ch
8/16/11

OLM7B 8116

FORM VII

7E
CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:
Lab Code: Case No.: SAS No.: SDG No.:
Instrument: K3593B Init. Calib Date(s): 06/10/11 06/10/11
GC Column (2): CAPCELL-CN ID: 4.6 (mm) Date Analyzed: 06/10/11
Lab File ID: 1X11161B.30R Time Analyzed: 23:26
Lab Standard ID: OPEX3DX Initial Calibration: 1X11161B

COMPOUND	RT	RT WINDOW FROM	TO	CALC AMOUNT	NOM AMOUNT	%D
Opex	5.07	5.21	5.41	351.56	444.00	-20.8

Average of %D: 20.8

CW 8/18/11

01N76 8117

FORM VII

Lancaster Laboratories Single Component Data Summary

Sample Name: 6308074 PZ16R Sample ID: AA **Batchnumber: 111610022A**
Sample Amount: 10 ml Total Volume: 10 ml Analyst: 1566 SDG: OLN70 State: MA
Analyses: 02726 10342

Analysis Report (A)

Injected on	: JUN 10, 2011 22:04:22
Instrument	: CP09--K3593A
Result file	: 1X11161.18R
Calibration file	: 1X11161.CAL
Method file	: OPEX.MET

Analysis Report (B)

Injected on	: JUN 10, 2011 22:04:22
Instrument	: CP09--K3593B
Result file	: 1X11161B.18R
Calibration file	: 1X11161B.CAL
Method file	: OPEXB.MET

Peak name	Min	R.T.	Max	Height	Amount
Opex	5.21	5.26	5.41	40	-86.032471

Summary Report

Compound Name	Column	Amount Found	LOQ	MDL	Qualifiers	%Difference	Comments
☑ Opex			<100	<20			no pk on cofm

Units: ug/l

Reviewed by: [signature] Verified by: Valerie Tomayko

Date: 6/15/11 Date: JUN 16 2011

Valerie Tomayko
Senior Specialist

< MDL
[signature]
8/16/11

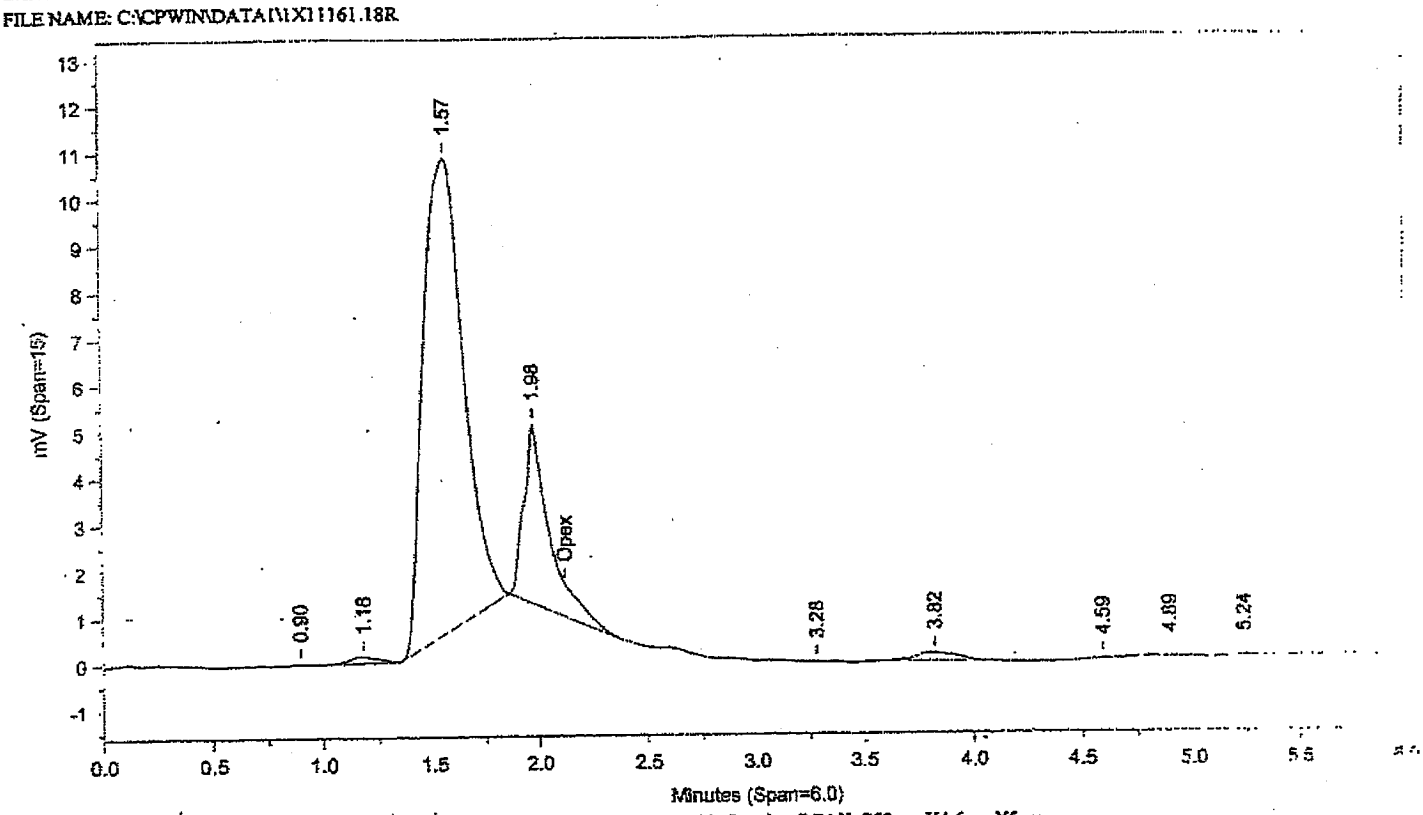
OLN78 8129

%Difference = High - Low Amount divided by the Average times 100

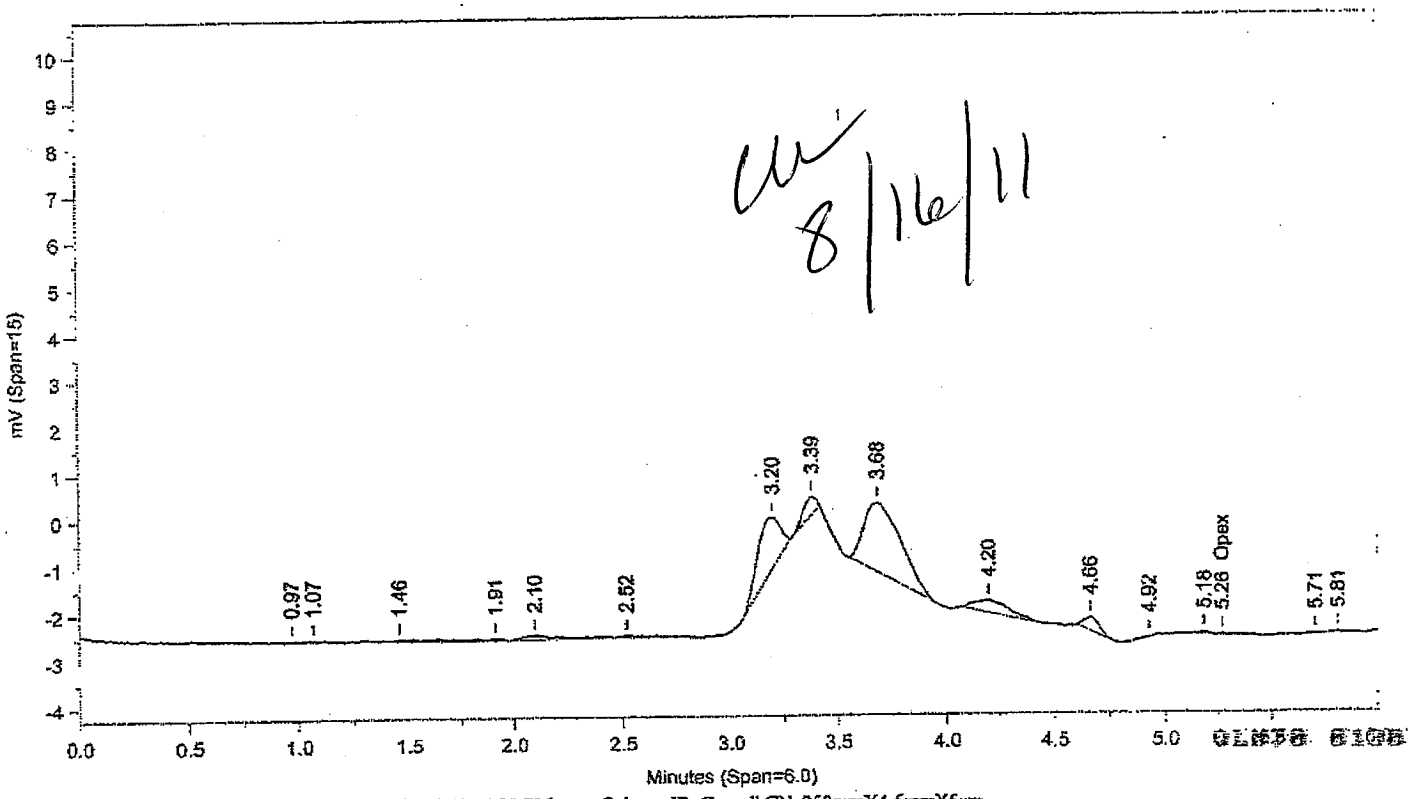
* Recovery outside QC Limits

Printed on: 6/14/11 19:24:03

LANCASTER LABORATORIES
FILE NAME: C:\CPWIN\DATA\\X11161.18R



Instrument ID: CP09--K3593A Injected On: 6/10/2011 10:04:21 PM Column ID: Supelcosil PAH, 250mmX4.6mmX5um



8/16/11

Instrument ID: CP09--K3593B Injected On: 6/10/2011 10:04:21 PM Column ID: Capcell CN, 250mmX4.6mmX5um

Oven Parameters: 75% Phosphate Buffer : 25% ACN

Volume Inj: 1

Detector A Parameters:
Threshold: -4 Width: 0.1
Calibration Type: External

Area Reject: 100
Quantitation: Height

Detector B Parameters:
Threshold: -4 Width: 0.1
Calibration Type: External

Area Reject: 100
Quantiation: Height

Sample Weight: 10
Analyst: 1566

Dilution Factor: 10

RT A	Height A	Amount A	Compound A	RT B	Height B	Amount B	Compound B
	0		Opex	5.264	40	-86.032	Opex

Files:
Area File: C:\CPWIN\DATA1\1X11161.18A
Area File: C:\CPWIN\DATA1\1X11161B.18A
Method A: C:\CPWIN\DATA1\OPEX.MET
Method B: C:\CPWIN\DATA1\OPEXB.MET
Calibration File A: C:\CPWIN\DATA1\1X11161.CAL
Calibration File B: C:\CPWIN\DATA1\1X11161B.CAL
Format A: C:\CPWIN\DATA1\OPEXD.FMTA
Format B: C:\CPWIN\DATA1\OPEXD.FMTB
Area File Created On: 6/14/2011 6:56:22 PM
File Reported On: 6/14/2011 at 6:56:31 PM

CW 8/16/11

1D

ORGANICS ANALYSIS DATA SHEET

SAMPLE CODE NO.

PZ17R

Lab Name: Lancaster Laboratories **Contract:** **Batchnumber:** 111610022A

Lab Code: **Case No.:** **SAS No.:** **SDG No.:** OLN70

Matrix: (soil/water) WATER **Lab Sample ID:** 6308075

Sample wt/vol: 10 **(g/ml)** ml **Lab File ID:** 1X11161.20R

% Moisture: **Decanted: (Y/N)** **Date Received:** 6/7/2011

Extraction: (SepF/Cont/Sonc) Direct Injection **Date Extracted:** 6/10/2011

Concentrated Extract Volume: 10000 **(uL)** **Date Analyzed:** 6/10/2011

Injection Volume: 30 **(uL)** **Dilution Factor:** 1

GPC Cleanup: (Y/N) N **pH:** **Sulfur Cleanup: (Y/N)** N

CAS NO.	COMPOUND	CONCENTRATION UNITS (UG/L or UG/KG) ug/l	Q
101-25-7	Opex	20	U

100 UJ

CW 8/16/11

OLN70 P132

FORM I

Lancaster Laboratories-Single Component Data Summary

Sample Name: 6308075 PZ17R Sample ID: AA **Batchnumber: 111610022A**
Sample Amount: 10 ml Total Volume: 10 ml Analyst: 1566 SDG: OLN70 State: MA
Analyses:02726 10342

Analysis Report (A)

Injected on	: JUN 10, 2011 22:18:05
Instrument	: CP09--K3593A
Result file	: 1X11161.20R
Calibration file	: 1X11161.CAL
Method file	: OPEX.MET

Analysis Report (B)

Injected on	: JUN 10, 2011 22:18:05
Instrument	: CP09--K3593B
Result file	: 1X11161B.20R
Calibration file	: 1X11161B.CAL
Method file	: OPEXB.MET

Peak name	Min	R.T.	Max	Height	Amount
Opex	5.21	5.22	5.41	56	-77.345093

Summary Report

Compound Name	Column	Amount Found	LOQ	MDL	Qualifiers	%Difference	Comments
☑ Opex			<100	<20			

Units: ug/l

Reviewed by: S Johnson Verified by: [illegible]
Date: 6/20/11 Date: 6/20/11

CK 8/16/11

OLN70 8133

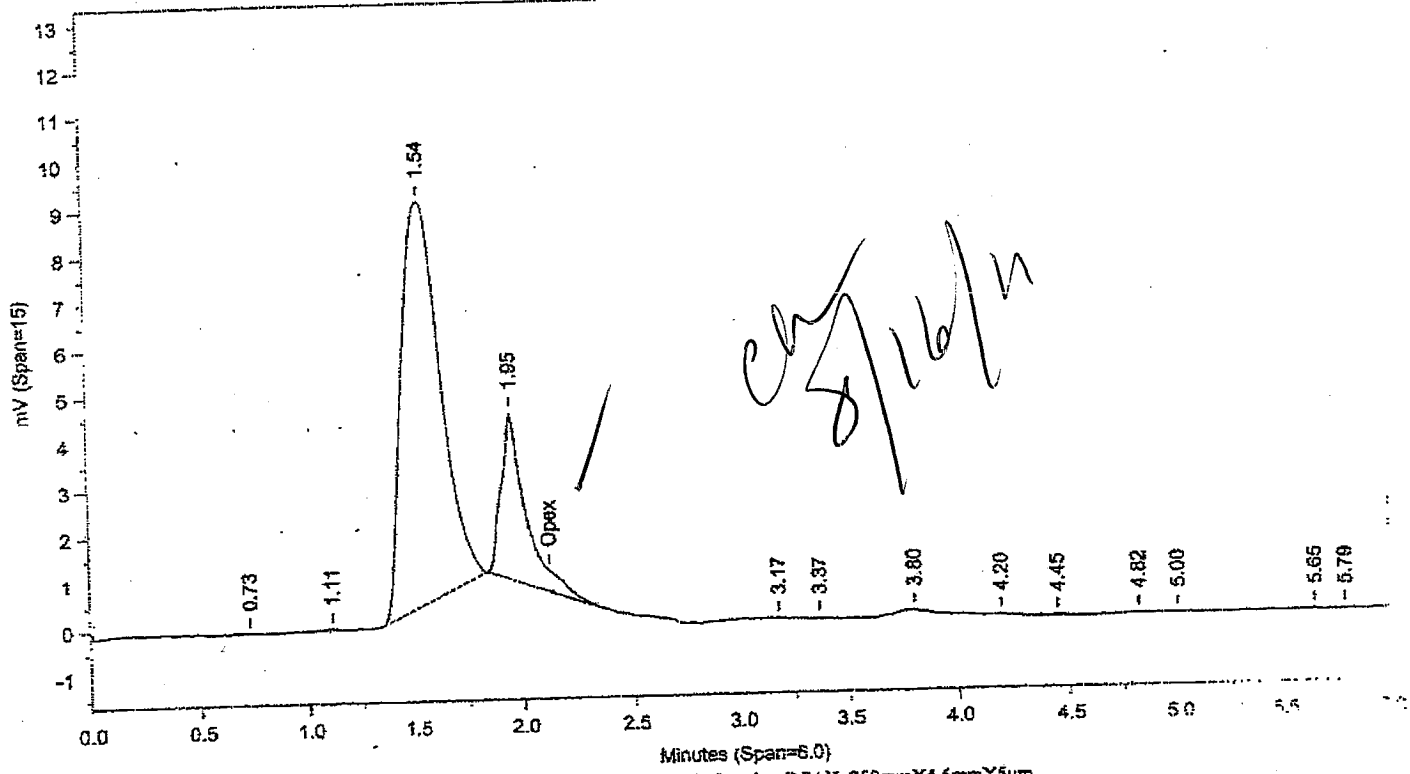
%Difference = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

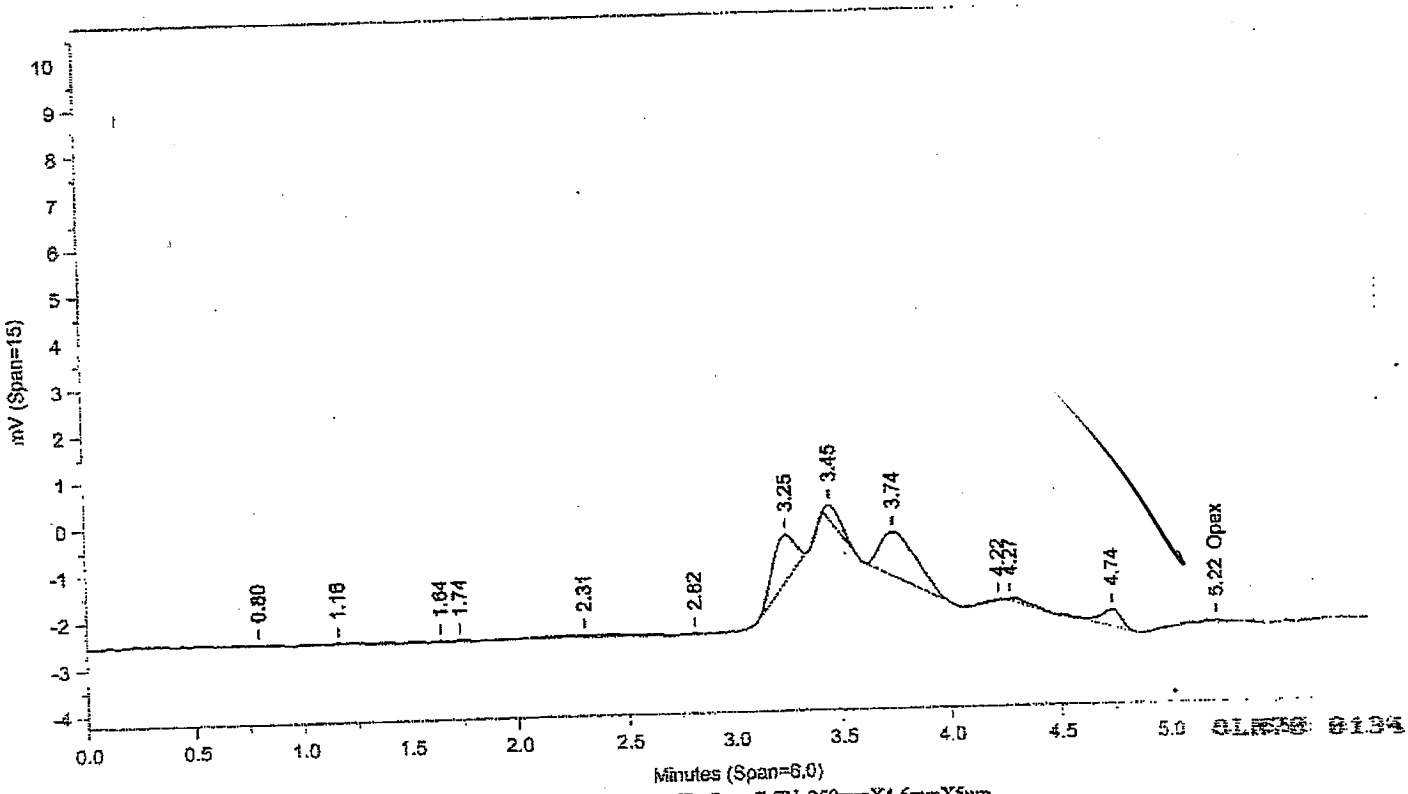
Printed on: 6/20/2011 08:47:00

6308075 AAPZ17R T 111610022A 02726

LANCASTER LABORATORIES
FILE NAME: C:\CPWIN\DATA\IX11161.20R



Instrument ID: CP09--K3593A Injected On: 6/10/2011 10:18:04 PM Column ID: Supelcosil PAH, 250mmX4.6mmX5um



Instrument ID: CP09--K3593B Injected On: 6/10/2011 10:18:04 PM Column ID: Capcell CN, 250mmX4.6mmX5um

Oven Parameters: 75% Phosphate Buffer : 25% ACN

Volume Inj: 1

Detector A Parameters:
Threshold: -4 Width: 0.1
Calibration Type: External

Area Reject: 100
Quantitation: Height

Detector B Parameters:
Threshold: -4 Width: 0.1
Calibration Type: External

Area Reject: 100
Quantitation: Height

Sample Weight: 10
Analyst: 1566

Dilution Factor: 10

RT A	Height A	Amount A	Compound A	RT B	Height B	Amount B	Compound B
	0		Opex	5.218	56	-77.345	Opex

Files:
Area File: C:\CPWIN\DATA1\1X11161.20A
Area File: C:\CPWIN\DATA1\1X11161B.20A
Method A: C:\CPWIN\DATA1\OPEX.MET
Method B: C:\CPWIN\DATA1\OPEXB.MET
Calibration File A: C:\CPWIN\DATA1\1X11161.CAL
Calibration File B: C:\CPWIN\DATA1\1X11161B.CAL
Format A: C:\CPWIN\DATA1\OPEXD.FMTA
Format B: C:\CPWIN\DATA1\OPEXD.FMTB
Area File Created On: 6/14/2011 6:57:02 PM
File Reported On: 6/14/2011 at 6:57:11 PM

ew 8/16/11

1D

ORGANICS ANALYSIS DATA SHEET

SAMPLE CODE NO.

PZ17R RI

Lab Name: Lancaster Laboratories Contract: Batchnumber: 111610022A

Lab Code: Case No.: SAS No.: SDG No.: OLN70

Matrix: (soil/water) WATER

Lab Sample ID: 6308075

Sample wt/vol: 10 (g/ml) ml

Lab File ID: 1X11166.10R

% Moisture: Decanted: (Y/N)

Date Received: 6/7/2011

Extraction: (SepF/Cont/Sonc) Direct Injection

Date Extracted: 6/10/2011

Concentrated Extract Volume: 10000 (uL)

Date Analyzed: 6/15/2011

Injection Volume: 30 (uL)

Dilution Factor: 1

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS (UG/L or UG/KG) ug/l	Q
101-25-7	Opex	20	U

cb 8/16/11

OLN70 0136

FORM I

Lancaster Laboratories-Single Component Data Summary

Sample Name: 6308075 RI PZ17R Sample ID: AA **Batchnumber: 111610022A**
Sample Amount: 10 ml Total Volume: 10 ml Analyst: 1566 SDG: OLN70 State: MA
Analyses: 02726 10342

Analysis Report (A)

Injected on	: JUN 15, 2011 20:13:32
Instrument	: CP09-K3593A
Result file	: 1X11166.10R
Calibration file	: 1X11166.CAL
Method file	: OPEX.MET

Analysis Report (B)

Injected on	: JUN 15, 2011 20:13:32
Instrument	: CP09-K3593B
Result file	: 1X11166B.10R
Calibration file	: 1X11166B.CAL
Method file	: OPEXB.MET

Summary Report

Compound Name	Column	Amount Found	LOQ	MDL	Qualifiers	%Difference	Comments
☑ Opex			<100	<20			

Units: ug/l

Reviewed by: [signature] Verified by: [signature]

Date: 6/17/11 Date: 6/16/11

8/16/11

OLN70 0137

%Difference = High - Low Amount divided by the Average times 100

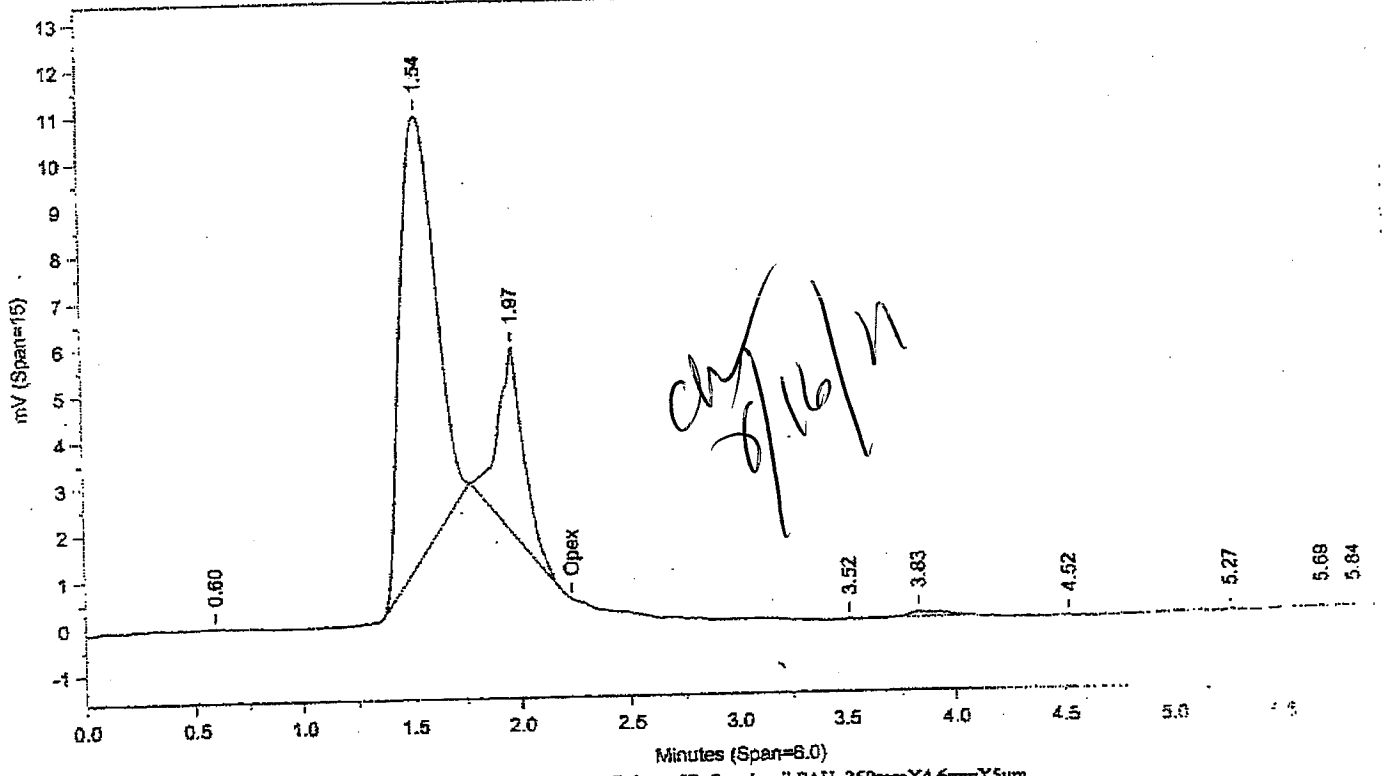
* Recovery outside QC Limits

Printed on: 6/16/11 21:06:58

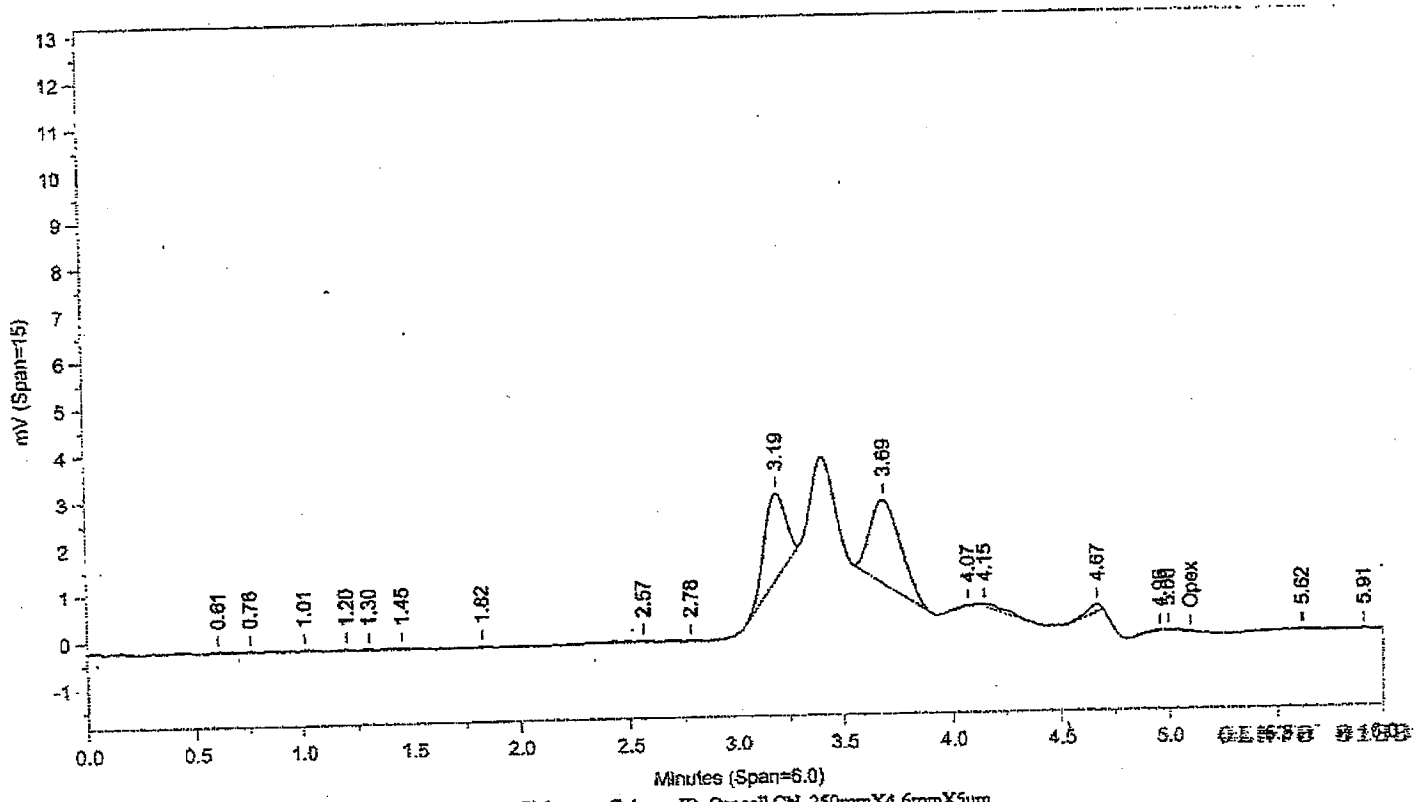
6308075 RI AAPZ17R T 111610022A 02726

LANCASTER LABORATORIES

FILE NAME: C:\CPWIN\DATA1\1X11166.10R



Instrument ID: CP09--K3593A Injected On: 6/15/2011 8:13:31 PM Column ID: Supelcosil PAH, 250mmX4.6mmX5um



Instrument ID: CP09--K3593B Injected On: 6/15/2011 8:13:31 PM Column ID: Capcell CN, 250mmX4.6mmX5um

Oven Parameters: 75% Phosphate Buffer : 25% ACN

Volume Inj: 1

Detector A Parameters:
Threshold: -4 Width: 0.1
Calibration Type: External

Area Reject: 100
Quantitation: Height

Detector B Parameters:
Threshold: -4 Width: 0.1
Calibration Type: External

Area Reject: 100
Quantiation: Height

Sample Weight: 10
Analyst: 1566

Dilution Factor: 10

RT A	Height A	Amount A	Compound A	RT B	Height B	Amount B	Compound B

ch 8/16/11

Files:
Area File: C:\CPWIN\DATA1\IX11166.10A
Area File: C:\CPWIN\DATA1\IX11166B.10A
Method A: C:\CPWIN\DATA1\OPEX.MET
Method B: C:\CPWIN\DATA1\OPEXB.MET
Calibration File A: C:\CPWIN\DATA1\IX11166.CAL
Calibration File B: C:\CPWIN\DATA1\IX11166B.CAL
Format A: C:\CPWIN\DATA1\OPEXD.FMTA
Format B: C:\CPWIN\DATA1\OPEXD.FMTB
Area File Created On: 6/16/2011 8:55:04 PM
File Reported On: 6/16/2011 at 8:55:13 PM

1D

ORGANICS ANALYSIS DATA SHEET

SAMPLE CODE NO.

-SD-1

Lab Name: Lancaster Laboratories Contract: Batchnumber: 111610022A

Lab Code: Case No.: SAS No.: SDG No.: OLN70

Matrix: (soil/water) WATER Lab Sample ID: 6308076

Sample wt/vol: 10 (g/ml) ml Lab File ID: 1X11161.21R

% Moisture: Decanted: (Y/N) Date Received: 6/7/2011

Extraction: (SepF/Cont/Sonc) Direct Injection Date Extracted: 6/10/2011

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 6/10/2011

Injection Volume: 30 (uL) Dilution Factor: 1

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS (UG/L or UG/KG) ug/l	Q
101-25-7	Opex	20	U

100 UJ

8/16/11

OLN70 0148

FORM I

Lancaster Laboratories-Single Component Data Summary

Sample Name: 6308076 -SD-1 Sample ID: AA **Batchnumber: 111610022A**
Sample Amount: 10 ml Total Volume: 10 ml Analyst: 1566 SDG: OLN70 State: MA
Analyses: 02726 10342

Analysis Report (A)

Injected on	: JUN 10, 2011 22:24:57
Instrument	: CP09-K3593A
Result file	: 1X11161.21R
Calibration file	: 1X11161.CAL
Method file	: OPEX.MET

Analysis Report (B)

Injected on	: JUN 10, 2011 22:24:57
Instrument	: CP09-K3593B
Result file	: 1X11161B.21R
Calibration file	: 1X11161B.CAL
Method file	: OPEXB.MET

Summary Report

Compound Name	Column	Amount Found	LOQ	MDL	Qualifiers	%Difference	Comments
☑ Opex			<100	<20			

Units: ug/l

Reviewed by: [signature] Verified by: [signature]

Date: 6/20/11 Date: 6/20/11

[signature] 8/16/11

02726. 8141

%Difference = High - Low Amount divided by the Average times 100

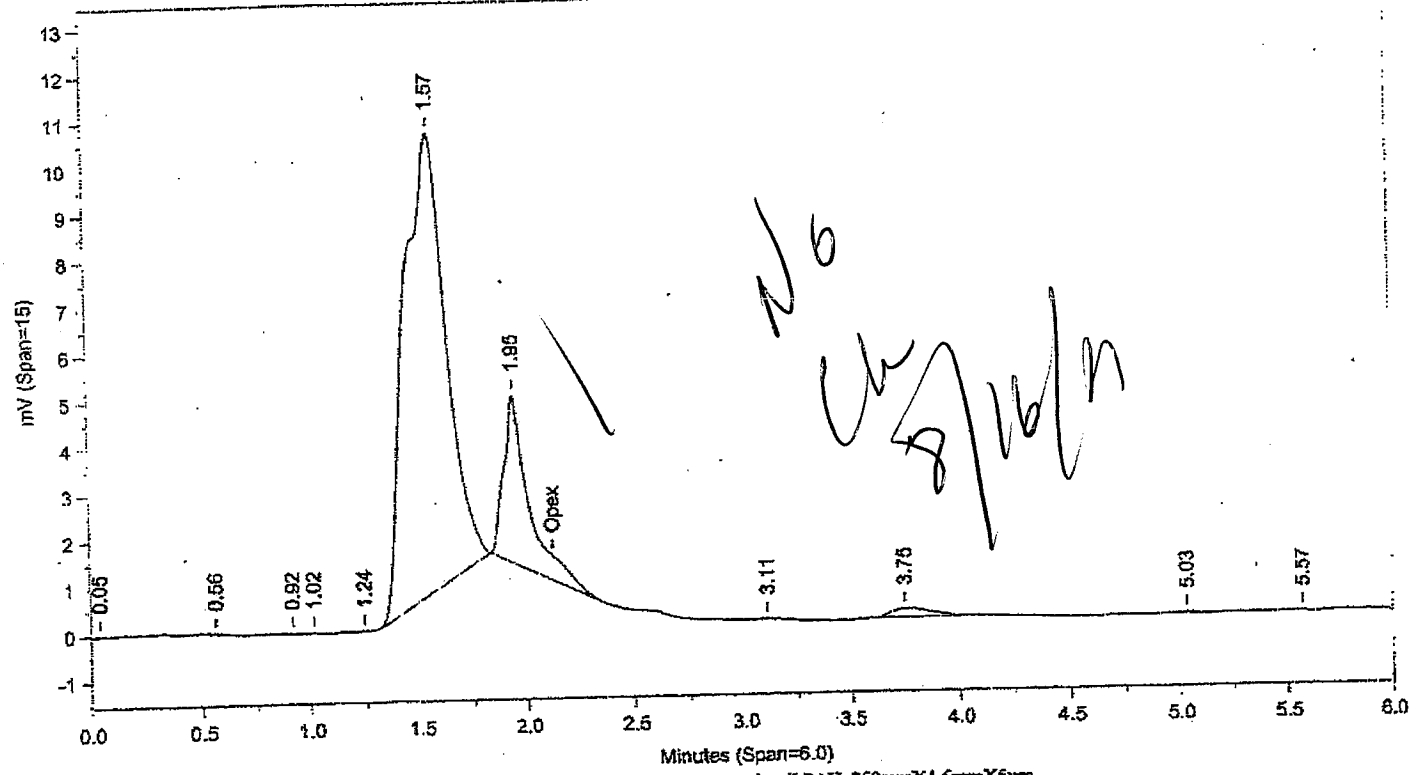
* Recovery outside QC Limits

Printed on: 6/20/2011 08:47:13

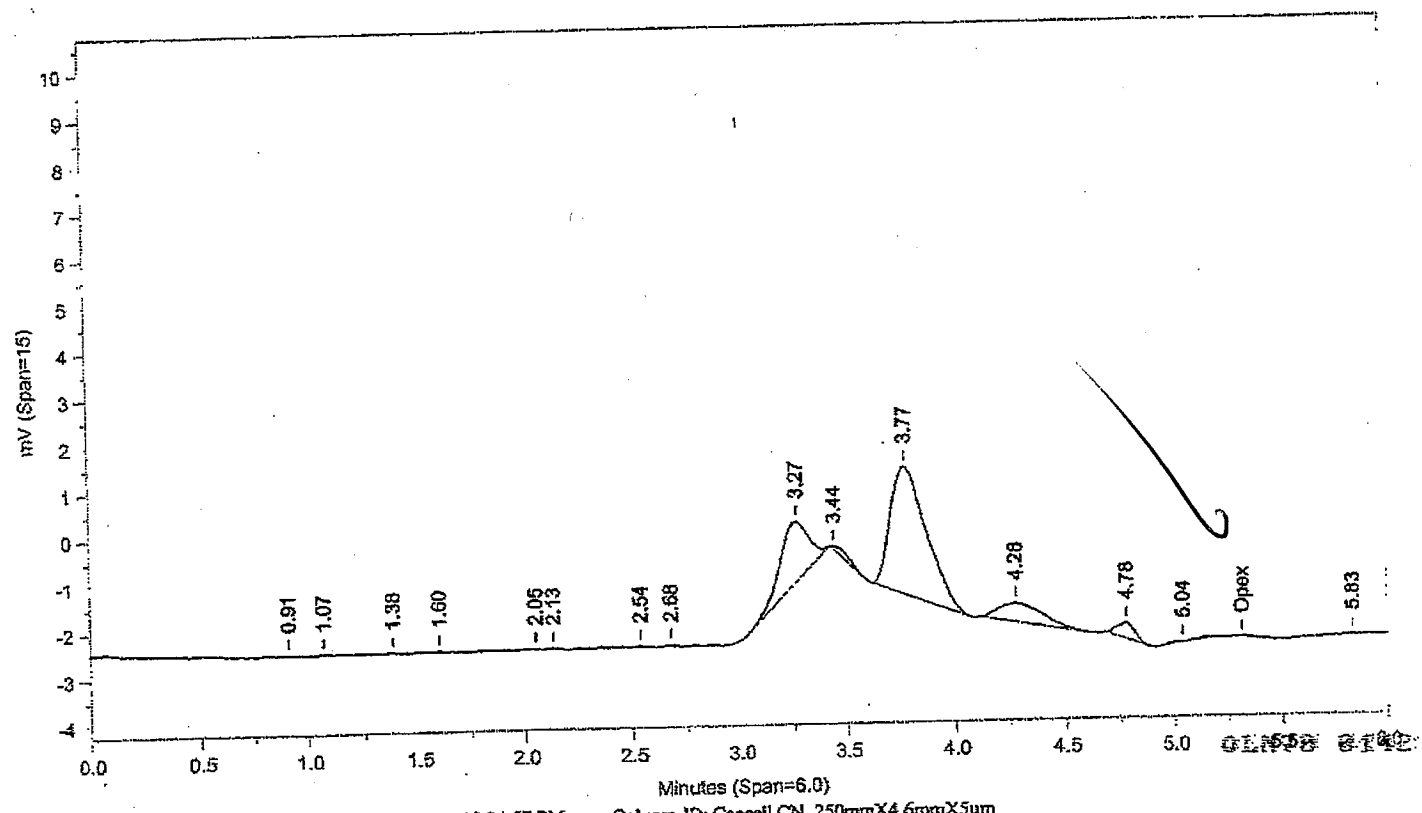
6308076 AA-SD-1 T 111610022A 02726

LANCASTER LABORATORIES

FILE NAME: C:\CPWIN\DATA1\IX11161.21R



Instrument ID: CP09—K3593A Injected On: 6/10/2011 10:24:56 PM Column ID: Supelcosil PAH, 250mmX4.6mmX5um



Instrument ID: CP09—K3593B Injected On: 6/10/2011 10:24:57 PM Column ID: Capcell CN, 250mmX4.6mmX5um

Oven Parameters: 75% Phosphate Buffer : 25% ACN

Volume Inj: 1

Detector A Parameters:
Threshold: -4 Width: 0.1
Calibration Type: External

Area Reject: 100
Quantitation: Height

Detector B Parameters:
Threshold: -4 Width: 0.1
Calibration Type: External

Area Reject: 100
Quantiation: Height

Sample Weight: 10
Analyst: 1566

Dilution Factor: 10

RT A	Height A	Amount A	Compound A	RT B	Height B	Amount B	Compound B

Files:
Area File: C:\CPWIN\DATA1\1X11161.21A
Area File: C:\CPWIN\DATA1\1X11161B.21A
Method A: C:\CPWIN\DATA1\OPEX.MET
Method B: C:\CPWIN\DATA1\OPEXB.MET
Calibration File A: C:\CPWIN\DATA1\1X11161.CAL
Calibration File B: C:\CPWIN\DATA1\1X11161B.CAL
Format A: C:\CPWIN\DATA1\OPEXD.FMTA
Format B: C:\CPWIN\DATA1\OPEXD.FMTB
Area File Created On: 6/14/2011 6:57:22 PM
File Reported On: 6/14/2011 at 6:57:31 PM

CA
8/16/11

1D

ORGANICS ANALYSIS DATA SHEET

SAMPLE CODE NO.

-SD-1 RI

Lab Name: Lancaster Laboratories Contract: Batchnumber: 111610022A

Lab Code: Case No.: SAS No.: SDG No.: OLN70

Matrix: (soil/water) WATER

Sample wt/vol: 10 (g/ml) ml

% Moisture: Decanted: (Y/N)

Extraction: (SepF/Cont/Sonc) Direct Injection

Concentrated Extract Volume: 10000 (uL)

Injection Volume: 30 (uL)

GPC Cleanup: (Y/N) N pH:

Lab Sample ID: 6308076

Lab File ID: 1X11166.11R

Date Received: 6/7/2011

Date Extracted: 6/10/2011

Date Analyzed: 6/15/2011

Dilution Factor: 1

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS (UG/L or UG/KG) ug/l	Q
101-25-7	Opex	20	U

8/26/11

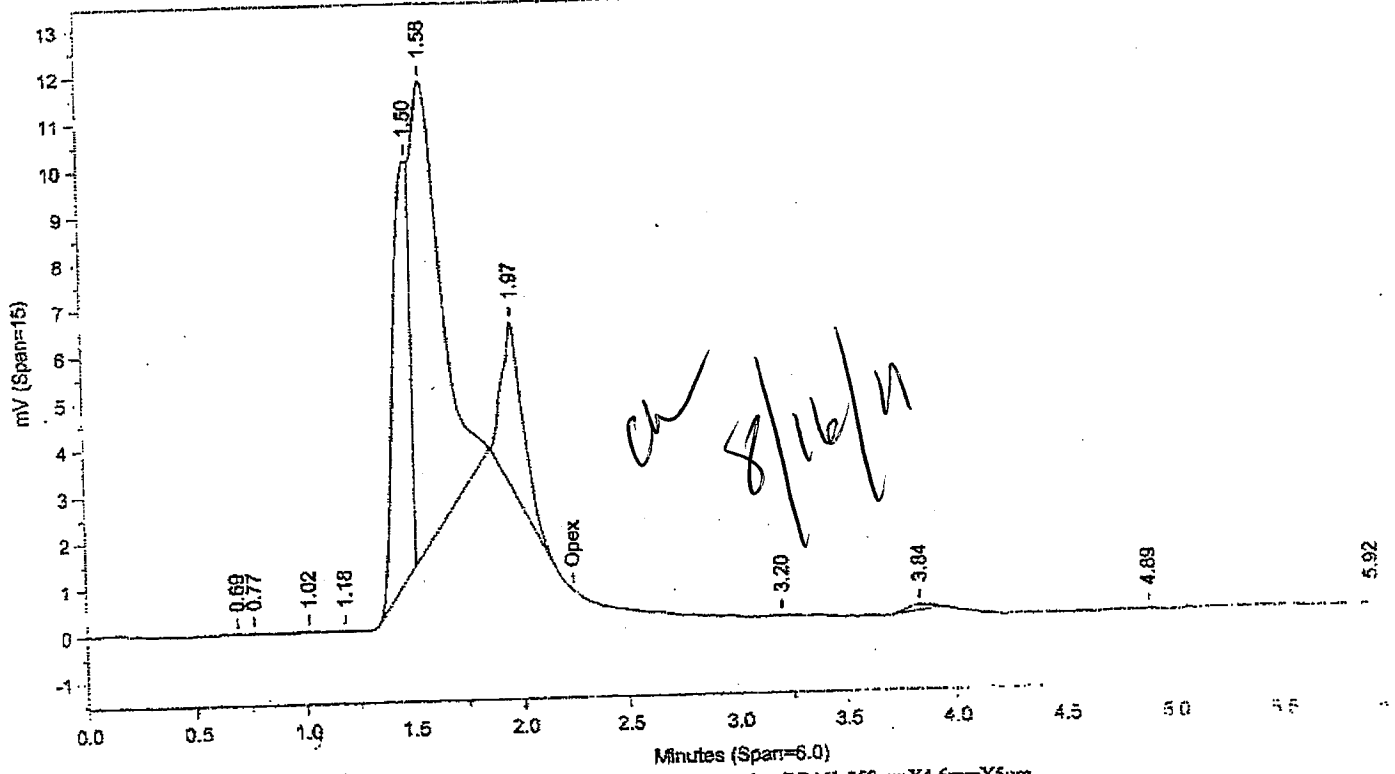
OLN70 8144

FORM I

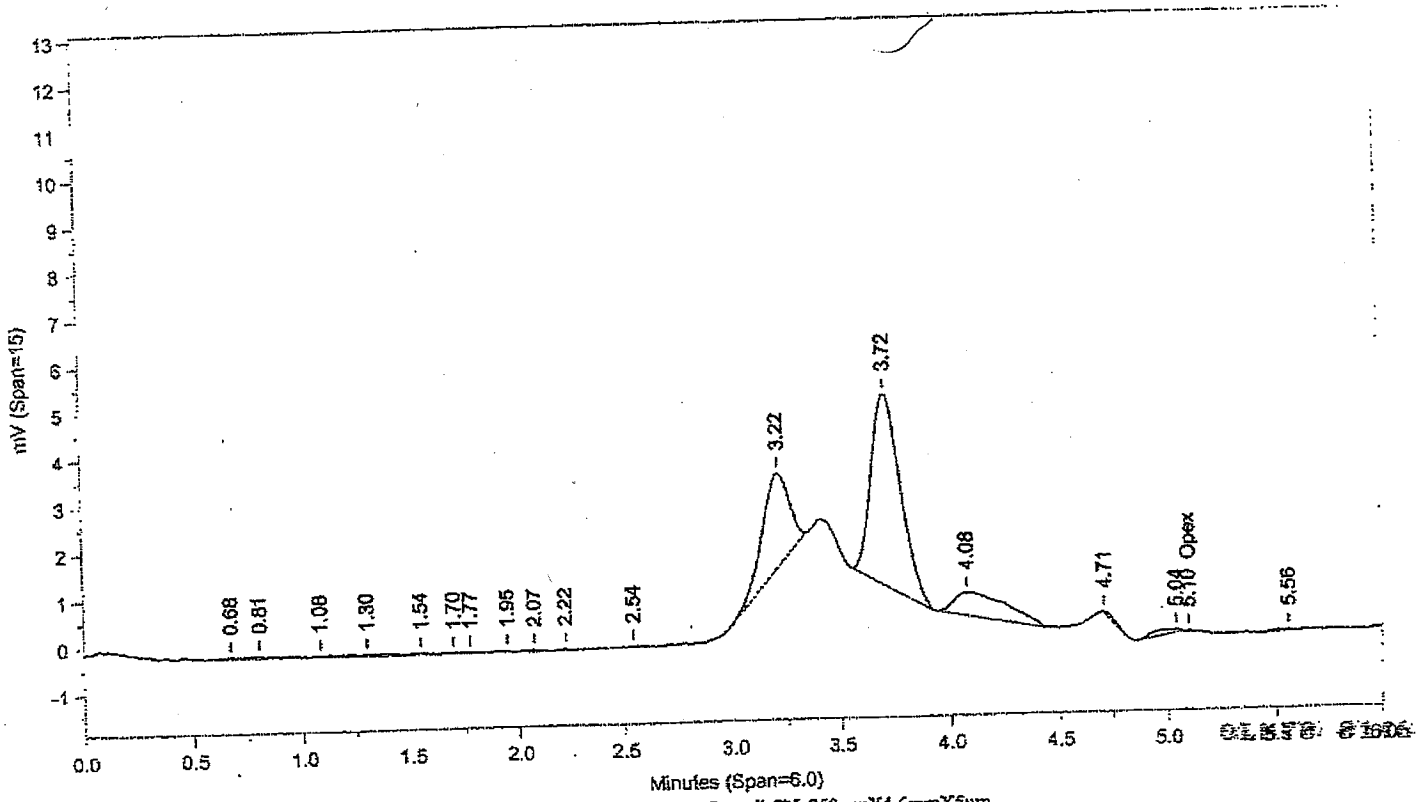
6308076 RI AA-SD-1 T 111610022A 02726

LANCASTER LABORATORIES

FILE NAME: C:\CPWIN\DATA1\1X11166.11R



Instrument ID: CP09--K3593A Injected On: 6/15/2011 8:20:22 PM Column ID: Supelcosil PAH, 250mmX4.6mmX5um



Instrument ID: CP09--K3593B Injected On: 6/15/2011 8:20:22 PM Column ID: Capcell CN, 250mmX4.6mmX5um

6308076 RI AA-SD-1 T 111610022A 02726

Oven Parameters: 75% Phosphate Buffer : 25% ACN

Volume Inj: 1

Detector A Parameters:
Threshold: -4 Width: 0.1
Calibration Type: External

Area Reject: 100
Quantitation: Height

Detector B Parameters:
Threshold: -4 Width: 0.1
Calibration Type: External

Area Reject: 100
Quantiation: Height

Sample Weight: 10
Analyst: 1566

Dilution Factor: 10

RT A	Height A	Amount A	Compound A
	0		Opex

RT B	Height B	Amount B	Compound B
5.101	24	-68.525	Opex

Files:
Area File: C:\CPWIN\DATA1\1X11166.11A
Area File: C:\CPWIN\DATA1\1X11166B.11A
Method A: C:\CPWIN\DATA1\OPEX.MET
Method B: C:\CPWIN\DATA1\OPEXB.MET
Calibration File A: C:\CPWIN\DATA1\1X11166.CAL
Calibration File B: C:\CPWIN\DATA1\1X11166B.CAL
Format A: C:\CPWIN\DATA1\OPEXD.FMTA
Format B: C:\CPWIN\DATA1\OPEXD.FMTB
Area File Created On: 6/16/2011 8:55:24 PM
File Reported On: 6/16/2011 at 8:55:33 PM

CHEMIST REVIEW-VALIDATION CHECKLIST

Project: Olin Chemical Superfund Site
Project #: 6107110016.12
Date: 9-1-11

Method: Phthalic Acid/Phthalic Anhydride
Laboratory and SDG: TAL 360-34253-1 & Equipment Blank from 360-34315-1
Reviewer: Tige Cunningham

☑ **Chemist Review** ☑ **Full Validation (add page 2)**

1. **Case Narrative and Data Package Completeness (COC Review)**

   OK ✓

2. **Holding Time and Sample Preservation/Collection (aqueous 7 days to ~~analysis~~ extraction)**

   Hold times met ✓

3. **QC Blanks**

   Clean ✓

4. **Laboratory Control Sample Review (% recovery 50-150)**

   OK w/in Limits

5. **Field Duplicate Precision (RPD 30)**

   ISCO-1-XXX & FD were ND

6. **Lab Duplicate Precision (RPD 20)**

   Not applicable.

7. **Matrix Spike Results (if applicable) (% recovery 50-150, RPD 50)**

   OK ✓ MS performed on OC-SW-ISCO-1-XXX

8. **Surrogate Recovery (if applicable)**

   Not applicable.

9. **Internal Standard Recovery (if applicable)**

   Not applicable.

CHEMIST REVIEW-VALIDATION CHECKLIST

FULL VALIDATION CHECKS

Ten Percent of data sets will have full validation checks completed during chemist review.

☑ **Initial Calibration**

☑ **Continuing Calibration Verification**

Transcription and Calculation Checks

☑ **Instrument Calibration**

☑ **Blank Review – raw data/chromatogram check**

OK

☑ **Laboratory Control Sample**

OK

☑ **Matrix Spike**

OK

☑ **Field Sample Results**

All samples were ND Chromatograms reviewed for peaks.

☑ **Surrogate Recovery**

N/A

FORM VI
HPLC/IC INITIAL CALIBRATION DATA
EXTERNAL STANDARD RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Tallahassee Job No.: 360-34253-1 Analy Batch No.: 78523

SDG No.: 360-34253-1

Instrument ID: LCJ GC Column: LC-NH2 ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/04/2011 14:34 Calibration End Date: 03/04/2011 14:59 Calibration ID: 892

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 640-78523/18	2C04J1.d
Level 2	ICRT 640-78523/19	2C04J2.d
Level 3	IC 640-78523/20	2C04J3.d

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (UG/ML)				
		LVL 1	LVL 2	LVL 3			LVL 1	LVL 2	LVL 3		
Phthalic Acid/Phthalic anhydride	Ave	622	3147	62565			0.100	0.500	10.0		
Maleic Acid/Maleic anhydride	Ave	371	1945	37601			0.100	0.500	10.0		

Curve Type Legend:
Ave = Average by Height

$\frac{622}{.100} = 6220.$

$\frac{3147}{.5} = 6294$ $\bar{X} = 6256$

$\frac{62565}{10} = 6256$

TC 9/11/11

TestAmerica Tallahassee

Semivolatile Report-LC65 Phthalic and Maleic Acid

Data file : \\Talsvr05\chem\LC\TLCJUV1.i\1JF16K.b\1F16J2.d
Lab Smp Id: M2_00031 Client Smp ID: M2_00031
Inj Date : 16-JUN-2011 14:57
Operator : DS Inst ID: TLCJUV1.i
Smp Info : M2_00031
Misc Info : LC65 Anion Ex. Column
Comment :
Method : \\Talsvr05\chem\LC\TLCJUV1.i\1JF16K.b\PHTH-MAL-ANEX.m
Meth Date : 16-Jun-2011 15:10 smithdn Quant Type: ESTD
Cal Date : 04-MAR-2011 14:59 Cal File: 2C04J3.d
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: all11J.sub
Target Version: 4.14
Processing Host: TALSG01

Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1 Phthalic Acid_Phthalic Anhydri	7.496	7.496	0.000	3060	0.50000	0.489	
2 Maleic Acid_Maleic Anhydride	9.367	9.367	0.000	1946	0.50000	0.514	

CCV

$$\frac{3060}{6256} = \frac{0.489}{.5} = 98\% \text{ Rec}$$

TC
9/1/11

TestAmerica Tallahassee

Semivolatile Report-LC65 Phthalic and Maleic Acid

Data file : \\Talsvr05\chem\LC\TLCJUV1.i\1JF16K.b\1F16J24.d
Lab Smp Id: M2_00031 Client Smp ID: M2_00031
Inj Date : 16-JUN-2011 19:51
Operator : DS Inst ID: TLCJUV1.i
Smp Info : M2_00031
Misc Info : LC65 Anion Ex. Column
Comment :
Method : \\Talsvr05\chem\LC\TLCJUV1.i\1JF16K.b\PHTH-MAL-ANEX.m
Meth Date : 17-Jun-2011 09:24 smithdn Quant Type: ESTD
Cal Date : 04-MAR-2011 14:59 Cal File: 2C04J3.d
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: all11J.sub
Target Version: 4.14
Processing Host: TALSG01

Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1 Phthalic Acid_Phthalic Anhydri	7.453	7.453	0.000	3123	0.50000	0.499	
2 Maleic Acid_Maleic Anhydride	9.327	9.327	0.000	1964	0.50000	0.519	

CCV check

$$\frac{3123}{6256} = \frac{0.499}{.5} = 99.8\% \text{ Rec}$$

9/1/11
TC

Data File: 1F16J4.d

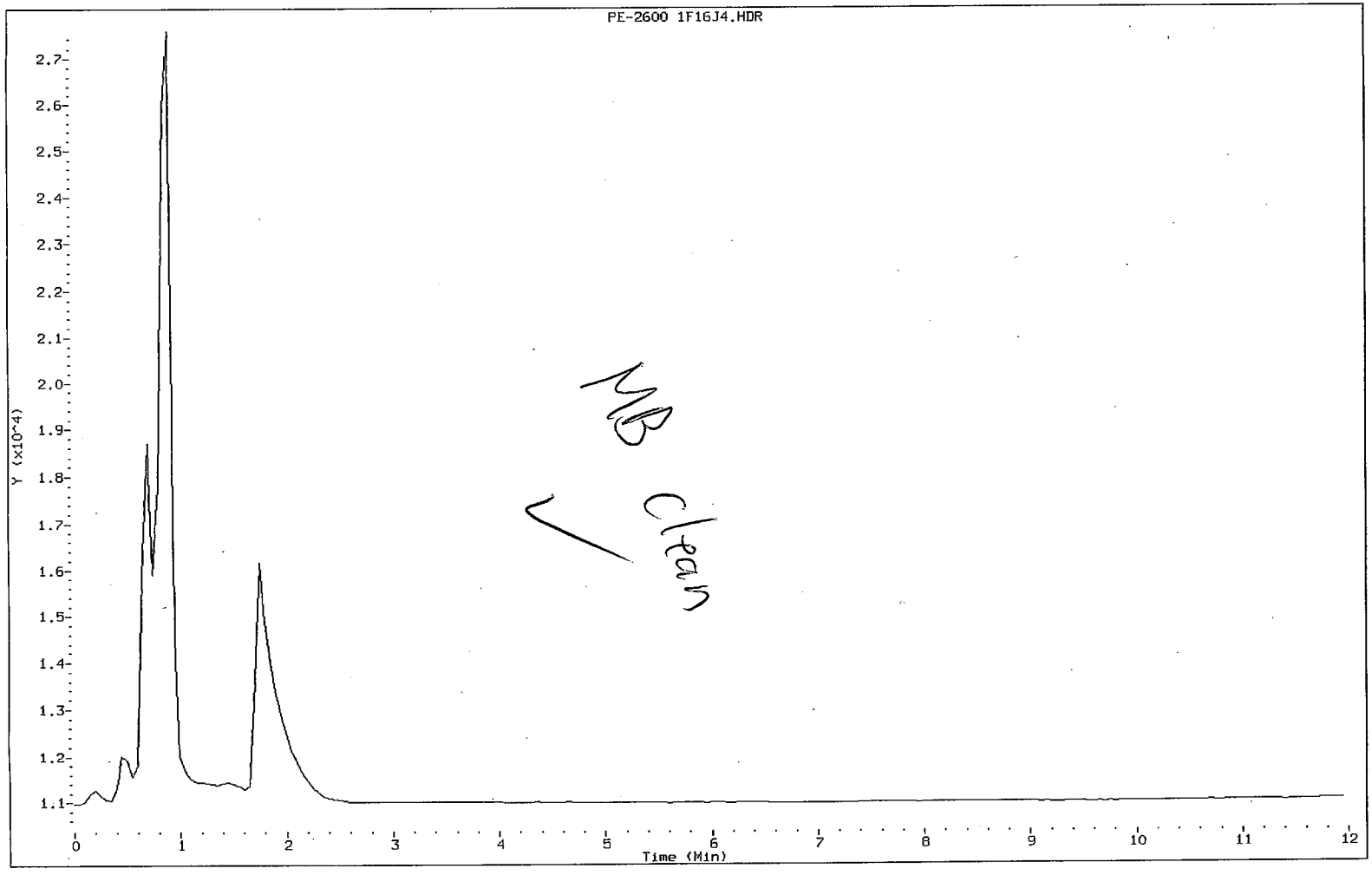
Date: 16-JUN-2011 15:34

Client ID: 81648MB

Instrument: TLCJUV1.i

Sample Info: MB 640-81648/1A

Operator: DS



MB Clean

TestAmerica Tallahassee

Semivolatile Report-LC65 Phthalic and Maleic Acid

Data file : \\Talsvr05\chem\LC\TLCJUV1.i\1JF16K.b\1F16J5.d
Lab Smp Id: LCS 640-81648/2A Client Smp ID: 81648MBLCS
Inj Date : 16-JUN-2011 15:47
Operator : DS Inst ID: TLCJUV1.i
Smp Info : LCS 640-81648/2A
Misc Info : LC65 Anion Ex. Column
Comment :
Method : \\Talsvr05\chem\LC\TLCJUV1.i\1JF16K.b\PHTH-MAL-ANEX.m
Meth Date : 16-Jun-2011 15:10 smithdn Quant Type: ESTD
Cal Date : 04-MAR-2011 14:59 Cal File: 2C04J3.d
Als bottle: 1 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: all11J.sub
Target Version: 4.14
Processing Host: TALSG01

Concentration Formula: Amt * DF * Vt/Vo * A * E * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	4.000	Final Volume
Vo	50.000	Sample Volume
A	1000.000	mL to L conversion
E	1.000	ug to mg conversion (1 if no conversion)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
1 Phthalic Acid_Phthalic Anhydri	7.532	7.496	0.036	2774	0.44336	35.5	
2 Maleic Acid_Maleic Anhydride	9.413	9.367	0.046	2204	0.58204	46.6	

$$\frac{2774}{6256} = \frac{0.4434\ mg}{ml} \times \frac{4}{50} \times 1000 = \frac{35.47\ mg/L}{40} =$$

89% Rec

TC
9/1/11

TestAmerica Tallahassee

Semivolatile Report-LC65 Phthalic and Maleic Acid

Data file : \\Talsvr05\chem\LC\TLCJUV1.i\1JF16K.b\1F16J9.d
Lab Smp Id: 360-34253R2E MS Client Smp ID: OC-SW-ISCOMS
Inj Date : 16-JUN-2011 16:39
Operator : DS Inst ID: TLCJUV1.i
Smp Info : 360-34253R2E MS
Misc Info : LC65 Anion Ex. Column
Comment :
Method : \\Talsvr05\chem\LC\TLCJUV1.i\1JF16K.b\PHTH-MAL-ANEX.m
Meth Date : 16-Jun-2011 15:10 smithdn Quant Type: ESTD
Cal Date : 04-MAR-2011 14:59 Cal File: 2C04J3.d
Als bottle: 1 QC Sample: MS
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: all11J.sub
Target Version: 4.14
Processing Host: TALSG01

Concentration Formula: Amt * DF * Vt/Vo * A * E * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	4.000	Final Volume
Vo	50.000	Sample Volume
A	1000.000	mL to L conversion
E	1.000	ug to mg conversion (1 if no conversion)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	FINAL (ug/L)	REVIEW CODE
1 Phthalic Acid_Phthalic Anhydri	7.520	7.496	0.024	2796	0.44687	35.7	
2 Maleic Acid_Maleic Anhydride	9.403	9.367	0.036	1427	0.37685	30.1(R)	

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

$$\frac{2796}{6256} = \frac{0.4469\,ug}{mL} \times \frac{4\,ml}{50\,ml} \times \frac{1000\,ml}{1L} = 35.75\,ug/L$$

TC
9-1-11

SEMIVOLATILE ORGANICS

REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifications: REGION I Organics Guideline (1996)

TIER I / (II) / III (circle one)

SITE: Olin Chemical Superfund Site . Project #: 6107110016.12 SDG #: 360-34253-1

LAB #: TAL-Westfield

Sample IDs: Attach tracking sheet and/or sample listing.

This checklist is designed to be used with USEPA Region I Validation Guidelines Part II (12/1996). During Level III validation, calculation and transcription checks are completed for instrument tuning, surrogates, target compounds, spike recoveries, calibration data, and internal standards as specified in the guideline. These checks are documented on attached validation notes.

YES	NO	NA		
Data completeness				
☑	☐	☐	All data summaries, QC forms and raw data available from hard copy or electronic data package	Contact lab if missing data. Lab to respond with 24 hours.
☑	☐	☐	Data summaries match EDD	
Holding Times and Preservation				
☑	☐	☐	Hold times met (Waters – Extract within 7 days, analyze within 40 days. Soils – extract within 14 days, analyze within 40 days)	
Instrument Performance Check (Tune)				
☑	☐	☐	Tune available for each 12-hour period samples were analyzed	
☑	☐	☐	Appropriate number of significant figures reported (at least 2)	
☑	☐	☐	Mass/Charge list (m/z) criteria met	
Initial Calibration				
☑	☐	☐	%RSD less than or equal to 30%	
☑	☐	☐	RRF greater than or equal to 0.05	
Continuing Calibration				See below.
☐	☒	☐	%D less than or equal to 25%	
☑	☐	☐	RRF greater than or equal to 0.05.	
Blank Contamination				Evaluate all blanks for contamination. Highest contaminant level used for action level.
☒	☐	☐	Method blank contamination	
☐	☐	☑	Equipment/Rinseate blank contamination	See below.
Surrogate Recoveries				

SEMIVOLATILE ORGANICS

REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifications: REGION I Organics Guideline (1996)

TIER I / II / III (circle one)

☐	☒	☐	Surrogates percent recovery criteria met: Soil = (base/neutral 30%-130%, acid 30%-130%) Water = (base/neutral 30%-130%, acid 15%-110%)	See below.
Matrix Spikes and Laboratory Control Samples				
☐	☒	☐	MS/MSD percent recovery criteria met Soil and Water = (base/neutral 40%-140%, acid 30%-130%)	See below.
☑	☐	☐	MS/MSD RPD criteria met (soils <50%, water <30%)	
☐	☒	☐	LCS/LCSD percent recovery criteria met soil/water (base 40%-140%, acid 30%-130%)	See below.
☑	☐	☐	LCS/LCSD RPD criteria met (soils <50%, water <30%)	
Field Duplicates				
☑	☐	☐	RPD criteria met (soils <50%, water <30%)	
Internal Standard				
☑	☐	☐	Area counts within -50 to +100 percent of calib. std.	
☑	☐	☐	Retention Time within 30 seconds of calib. std.	
Target Compounds				
☑	☐	☐	Reviewed narrative for anomalies	
Tentatively Identified Compounds (TICs)				
☐	☑	☐	TCL compounds reported as TICs	

Blanks:

Acetophenone (1.64 µg/L), benzaldehyde (0.742 µg/L), benzyl alcohol (1.33 µg/L), caprolactum (0.799 µg/L), di-n-butyl phthalate (0.822 µg/L) and various TICs were reported in method blank associated with all samples. Action levels were established at five times the reported acetophenone, benzaldehyde, benzyl alcohol, caprolactum blank concentrations, and ten times the reported di-n-butyl phthalate blank concentration. Sample results for acetophenone,

benzaldehyde, benzyl alcohol, caprolactum were not detected; no qualification was required. Sample detections of di-n-butyl phthalate were less than the action levels and less than the reporting limits, and were qualified as not detected (U) at the reporting limits. Method blank TICs that were reported in associated samples were rejected and not reported in the final data.

Continuing Calibration:

In the continuing calibration associated with all samples, the percent difference for benzo(b)fluoranthene (33) exceeded the QC limit of 25. The sample results for benzo(b)fluoranthene were not detected and were qualified estimated (UJ) at the reporting limits.

LCS:

The LCS/LCSD percent recoveries of aniline (38 and 34) and caprolactum (22 and 22) were less than the lower QC limit of 40. Sample results for aniline and caprolactum were not detected and were qualified estimated (UJ) at the reporting limits.

MS/MSD:

Sample OC-SW-ISCO-1-XXX was submitted for MS/MSD analysis. The MS and/or MSD percent recovery of 3,3'-dichlorobenzidine (0 and 0), aniline (25 and 28), benzo(b)fluoranthene (141), benzoic acid (39 and 34), and caprolactum (28 and 23) were outside of the QC limits. Associated samples are OC-SW-ISCO-1-XXX and OC-SW-ISCO-1-DUP. The associated sample results for 3,3'-dichlorobenzidine were not detected and were rejected (R). The associated sample results for aniline and caprolactum were not detected and were qualified previously under LCS criteria. The associated sample results for benzo(b)fluoranthene were not detected; no qualification required. The associated sample results for benzoic acid were qualified estimated (J).

Sample OC-SW-MMB-SW/SD-1-XXX was submitted for MS/MSD analysis. The MS and/or MSD percent recovery of 3,3'-dichlorobenzidine (0 and 0), aniline (31 and 28), caprolactum (22 and 24), and phenol (31 and 27) were less than the lower QC limits. Associated samples are OC-SW- MMB-SW/SD -1-XXX and OC-SW- MMB-SW/SD -1-DUP. The associated sample results for 3,3'-dichlorobenzidine were not detected and were rejected (R). The associated sample

results for aniline and caprolactum were not detected and were qualified previously under LCS criteria. The associated sample results for phenol were not detected and the reporting limits were qualified estimated (UJ).

Surrogates:

The surrogate percent recoveries for 2,4,6-tribromophenol in samples OC-SW-PZ-16RR-XXX (113) and OC-SW-PZ-17RR-XXX (134) exceeded the upper QC limit of 110. The remaining acid fraction surrogate recoveries were within QC limits; no qualification was required.

Result Reporting:

N-nitrosodi-n-propylamine was reported from both the 8270 and modified 521 methods. The N-nitrosodi-n-propylamine results from modified 521 with lower reporting limits were reported in the final data set.

Performance Evaluation:

A PES was submitted with the program samples. Laboratory results from the PES were evaluated by the EPA Region I chemist. Results from the PES evaluation indicated the laboratory was biased low for reporting of phenol results. Sample results for phenol were not detected and were qualified estimated (UJ) at the reporting limits.

Validator's Signature: _____

Date: 8 9 7/1/11

(W) 9/1/11

Reference:

MACTEC, Quality Assurance Project Plan for Remedial Investigation/Feasibility Study – Olin Chemical Superfund Site, Wilmington Property, 51 Eames Street, Wilmington, MA", MACTEC Engineering and Consulting. Draft .October 2008.

Analytical Data

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-SW-ISCO-1-DUP**

Lab Sample ID: 360-34253-1
Client Matrix: Water

Date Sampled: 06/06/2011 1435
Date Received: 06/07/2011 1021

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2862.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/14/2011 1833			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1'-Biphenyl	ND		0.45	4.5
1,2,4,5-Tetrachlorobenzene	ND		0.45	4.5
1-Methylnaphthalene	ND		0.045	4.5
2,2'-oxybis[1-chloropropane]	ND		0.45	4.5
2,3,4,6-Tetrachlorophenol	ND		0.45	4.5
2,4,5-Trichlorophenol	ND		0.45	4.5
2,4,6-Trichlorophenol	ND		0.45	4.5
2,4-Dichlorophenol	ND		0.45	4.5
2,4-Dimethylphenol	ND		0.45	4.5
2,4-Dinitrophenol	ND		0.45	4.5
2,4-Dinitrotoluene	ND		0.45	4.5
2,6-Dinitrotoluene	ND		0.45	4.5
2-Chloronaphthalene	ND		0.45	4.5
2-Chlorophenol	ND		0.45	4.5
2-Methylnaphthalene	ND		0.045	0.91
2-Methylphenol	ND		0.45	4.5
2-Nitroaniline	ND		0.45	4.5
2-Nitrophenol	ND		0.45	4.5
3 & 4 Methylphenol	ND		0.45	4.5
3,3'-Dichlorobenzidine	~~ND~~ J R		0.45	4.5
3-Nitroaniline	ND		0.45	4.5
4,6-Dinitro-2-methylphenol	ND		0.45	4.5
4-Bromophenyl phenyl ether	ND		0.45	4.5
4-Chloro-3-methylphenol	ND		0.45	4.5
4-Chloroaniline	ND		0.45	4.5
4-Chlorophenyl phenyl ether	ND		0.45	4.5
4-Nitroaniline	ND		0.45	4.5
4-Nitrophenol	ND		0.45	4.5
Acenaphthene	ND		0.045	0.91
Acenaphthylene	ND		0.045	0.27
Acetophenone	ND		0.45	4.5
Aniline	ND J		0.45	4.5
Anthracene	ND		0.064	0.91
Atrazine	ND		0.45	4.5
Azobenzene	ND		0.45	4.5
Benzaldehyde	ND		0.45	4.5
Benzo[a]anthracene	ND		0.15	0.27
Benzo[a]pyrene	ND		0.094	0.18
Benzo[b]fluoranthene	ND J		0.13	0.27
Benzo[g,h,i]perylene	ND		0.085	0.45
Benzo[k]fluoranthene	ND		0.15	0.27
Benzoic acid	1.9	J	0.45	4.5
Benzophenone	ND		0.45	4.5
Benzyl alcohol	ND		0.45	9.1
Bis(2-chloroethoxy)methane	ND		0.45	4.5
Bis(2-chloroethyl)ether	ND		0.45	4.5

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Analytical Data

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-SW-ISCO-1-DUP**

Lab Sample ID: 360-34253-1
Client Matrix: Water

Date Sampled: 06/06/2011 1435
Date Received: 06/07/2011 1021

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2862.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/14/2011 1833			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Bis(2-ethylhexyl) phthalate	ND		0.45	1.8
Butyl benzyl phthalate	ND		0.45	4.5
Caprolactam	ND J		0.45	4.5
Carbazole	ND		0.45	4.5
Chrysene	ND		0.15	0.91
Dibenz(a,h)anthracene	ND		0.058	0.45
Dibenzofuran	ND		0.45	4.5
Diethyl phthalate	ND		0.45	4.5
Dimethyl phthalate	ND		0.45	4.5
Di-n-butyl phthalate	~~0.56~~ 4.5UL	~~J B~~	0.55	4.5
Di-n-octyl phthalate	ND		0.66	4.5
Fluoranthene	ND		0.18	0.91
Fluorene	ND		0.073	0.91
Hexachlorobenzene	ND		0.45	0.91
Hexachlorocyclopentadiene	ND		0.45	4.5
Hexachloroethane	ND		0.45	2.7
Indeno[1,2,3-cd]pyrene	ND		0.072	0.45
Isophorone	ND		0.45	4.5
N-Nitrosodi-n-propylamine	ND		0.45	4.5
N-Nitrosodiphenylamine	ND		0.45	4.5
Nitrobenzene	ND		0.45	4.5
Pentachlorophenol	ND		0.45	0.91
Phenanthrene	ND		0.077	0.18
Phenol	ND J		0.45	4.5
Pyrene	ND		0.17	4.5
Phenyl ether	ND		0.45	4.5
Diphenylamine	ND		0.45	4.5

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorophenol	31		15 - 110
Phenol-d5	19		15 - 110
Nitrobenzene-d5	59		30 - 130
2,4,6-Tribromophenol	80		15 - 110
Terphenyl-d14	75		30 - 130
2-Fluorobiphenyl	58		30 - 130

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Analytical Data

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client: Olin Corporation

Client Sample ID: **OC-SW-ISCO-1-DUP**

Lab Sample ID: 360-34253-1
Client Matrix: Water

Date Sampled: 06/06/2011 1435
Date Received: 06/07/2011 1021

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2862.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/14/2011 1833			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Tentatively Identified Compounds **Number TIC's Found:** 8

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
	Unknown	1.83	7.9	TJ
	~~Unknown~~	~~5.85~~	~~0.92~~	~~TJ~~
~~541-2-6~~	~~Cyclopentasiloxane, decamethyl-~~	~~7.92~~	~~0.47~~	~~JN~~
934-34-9	2(3H)-Benzothiazolone	11.02	0.84	TJN
6750-34-1	1-Dodecanol, 3,7,11-trimethyl-	11.47	1.1	TJN
57-10-3	n-Hexadecanoic acid	12.18	0.98	TJN
57-11-4	Octadecanoic acid	12.96	1.4	TJN
	Unknown	14.33	0.58	TJ

8/19/11

Analytical Data

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-SW-ISCO-1-XXX**

Lab Sample ID: 360-34253-2
Client Matrix: Water

Date Sampled: 06/06/2011 1435
Date Received: 06/07/2011 1021

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2863.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/14/2011 1903			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1'-Biphenyl	ND		0.45	4.5
1,2,4,5-Tetrachlorobenzene	ND		0.45	4.5
1-Methylnaphthalene	ND		0.045	4.5
2,2'-oxybis[1-chloropropane]	ND		0.45	4.5
2,3,4,6-Tetrachlorophenol	ND		0.45	4.5
2,4,5-Trichlorophenol	ND		0.45	4.5
2,4,6-Trichlorophenol	ND		0.45	4.5
2,4-Dichlorophenol	ND		0.45	4.5
2,4-Dimethylphenol	ND		0.45	4.5
2,4-Dinitrophenol	ND		0.45	4.5
2,4-Dinitrotoluene	ND		0.45	4.5
2,6-Dinitrotoluene	ND		0.45	4.5
2-Chloronaphthalene	ND		0.45	4.5
2-Chlorophenol	ND		0.45	4.5
2-Methylnaphthalene	ND		0.045	0.91
2-Methylphenol	ND		0.45	4.5
2-Nitroaniline	ND		0.45	4.5
2-Nitrophenol	ND		0.45	4.5
3 & 4 Methylphenol	ND		0.45	4.5
3,3'-Dichlorobenzidine	~~ND~~ R		0.45	4.5
3-Nitroaniline	ND		0.45	4.5
4,6-Dinitro-2-methylphenol	ND		0.45	4.5
4-Bromophenyl phenyl ether	ND		0.45	4.5
4-Chloro-3-methylphenol	ND		0.45	4.5
4-Chloroaniline	ND		0.45	4.5
4-Chlorophenyl phenyl ether	ND		0.45	4.5
4-Nitroaniline	ND		0.45	4.5
4-Nitrophenol	ND		0.45	4.5
Acenaphthene	ND		0.045	0.91
Acenaphthylene	ND		0.045	0.27
Acetophenone	ND		0.45	4.5
Aniline	ND J	—	0.45	4.5
Anthracene	ND		0.064	0.91
Atrazine	ND		0.45	4.5
Azobenzene	ND		0.45	4.5
Benzaldehyde	ND		0.45	4.5
Benzo[a]anthracene	ND		0.15	0.27
Benzo[a]pyrene	ND		0.094	0.18
Benzo[b]fluoranthene	ND J		0.13	0.27
Benzo[g,h,i]perylene	ND	—	0.085	0.45
Benzo[k]fluoranthene	ND		0.15	0.27
Benzoic acid	1.9	J	0.45	4.5
Benzophenone	ND		0.45	4.5
Benzyl alcohol	ND		0.45	9.1
Bis(2-chloroethoxy)methane	ND		0.45	4.5
Bis(2-chloroethyl)ether	ND		0.45	4.5

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Analytical Data

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-SW-ISCO-1-XXX**

Lab Sample ID: 360-34253-2
Client Matrix: Water

Date Sampled: 06/06/2011 1435
Date Received: 06/07/2011 1021

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2863.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/14/2011 1903			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Bis(2-ethylhexyl) phthalate	ND		0.45	1.8
Butyl benzyl phthalate	ND		0.45	4.5
Caprolactam	ND J		0.45	4.5
Carbazole	ND		0.45	4.5
Chrysene	ND		0.15	0.91
Dibenz(a,h)anthracene	ND		0.058	0.45
Dibenzofuran	ND		0.45	4.5
Diethyl phthalate	ND		0.45	4.5
Dimethyl phthalate	ND		0.45	4.5
Di-n-butyl phthalate	~~0.68~~ 4.5 ul	J-B	0.55	4.5
Di-n-octyl phthalate	ND		0.66	4.5
Fluoranthene	ND		0.18	0.91
Fluorene	ND		0.073	0.91
Hexachlorobenzene	ND		0.45	0.91
Hexachlorocyclopentadiene	ND		0.45	4.5
Hexachloroethane	ND		0.45	2.7
Indeno[1,2,3-cd]pyrene	ND		0.072	0.45
Isophorone	ND		0.45	4.5
N-Nitrosodi-n-propylamine	ND		0.45	4.5
N-Nitrosodiphenylamine	ND		0.45	4.5
Nitrobenzene	ND		0.45	4.5
Pentachlorophenol	ND		0.45	0.91
Phenanthrene	ND		0.077	0.18
Phenol	ND J		0.45	4.5
Pyrene	ND		0.17	4.5
Phenyl ether	ND		0.45	4.5
Diphenylamine	ND		0.45	4.5

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorophenol	33		15 - 110
Phenol-d5	20		15 - 110
Nitrobenzene-d5	57		30 - 130
2,4,6-Tribromophenol	79		15 - 110
Terphenyl-d14	79		30 - 130
2-Fluorobiphenyl	55		30 - 130

8/19/4

Analytical Data

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-SW-ISCO-1-XXX**

Lab Sample ID: 360-34253-2
Client Matrix: Water

Date Sampled: 06/06/2011 1435
Date Received: 06/07/2011 1021

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2863.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/14/2011 1903			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Tentatively Identified Compounds **Number TIC's Found:** **10**

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
	~~Unknown~~	~~1.85~~	~~7.2~~	~~J~~
	~~Unknown~~	~~5.85~~	~~0.79~~	~~J~~
	~~Unknown~~	~~7.92~~	~~0.40~~	~~J~~
	Unknown	8.65	0.43	J
934-34-9	2(3H)-Benzothiazolone	11.03	0.85	J N
	Unknown	11.47	0.94	J
57-10-3	n-Hexadecanoic acid	12.18	1.1	J N
57-11-4	Octadecanoic acid	12.96	1.2	J N
791-28-6	Triphenylphosphine oxide	14.33	0.58	J N
	Unknown	15.99	0.98	J

3/19/11

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-SW-ISCO-2-XXX**

Lab Sample ID: 360-34253-3
Client Matrix: Water

Date Sampled: 06/06/2011 1100
Date Received: 06/07/2011 1021

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2866.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/14/2011 2031			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1'-Biphenyl	ND		0.45	4.5
1,2,4,5-Tetrachlorobenzene	ND		0.45	4.5
1-Methylnaphthalene	ND		0.045	4.5
2,2'-oxybis[1-chloropropane]	ND		0.45	4.5
2,3,4,6-Tetrachlorophenol	ND		0.45	4.5
2,4,5-Trichlorophenol	ND		0.45	4.5
2,4,6-Trichlorophenol	ND		0.45	4.5
2,4-Dichlorophenol	ND		0.45	4.5
2,4-Dimethylphenol	ND		0.45	4.5
2,4-Dinitrophenol	ND		0.45	4.5
2,4-Dinitrotoluene	ND		0.45	4.5
2,6-Dinitrotoluene	ND		0.45	4.5
2-Chloronaphthalene	ND		0.45	4.5
2-Chlorophenol	ND		0.45	4.5
2-Methylnaphthalene	ND		0.045	0.91
2-Methylphenol	ND		0.45	4.5
2-Nitroaniline	ND		0.45	4.5
2-Nitrophenol	0.91	J	0.45	4.5
3 & 4 Methylphenol	ND		0.45	4.5
3,3'-Dichlorobenzidine	ND		0.45	4.5
3-Nitroaniline	ND		0.45	4.5
4,6-Dinitro-2-methylphenol	ND		0.45	4.5
4-Bromophenyl phenyl ether	ND		0.45	4.5
4-Chloro-3-methylphenol	ND		0.45	4.5
4-Chloroaniline	ND		0.45	4.5
4-Chlorophenyl phenyl ether	ND		0.45	4.5
4-Nitroaniline	ND		0.45	4.5
4-Nitrophenol	ND		0.45	4.5
Acenaphthene	ND		0.045	0.91
Acenaphthylene	ND		0.045	0.27
Acetophenone	ND		0.45	4.5
Aniline	ND J		0.45	4.5
Anthracene	ND		0.064	0.91
Atrazine	ND		0.45	4.5
Azobenzene	ND		0.45	4.5
Benzaldehyde	ND		0.45	4.5
Benzo[a]anthracene	ND		0.15	0.27
Benzo[a]pyrene	0.15	J	0.094	0.18
Benzo[b]fluoranthene	ND J		0.13	0.27
Benzo[g,h,i]perylene	ND		0.085	0.45
Benzo[k]fluoranthene	ND		0.15	0.27
Benzoic acid	1.9	J	0.45	4.5
Benzophenone	0.67	J	0.45	4.5
Benzyl alcohol	ND		0.45	9.1
Bis(2-chloroethoxy)methane	ND		0.45	4.5
Bis(2-chloroethyl)ether	ND		0.45	4.5

8/19/11

Analytical Data

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-SW-ISCO-2-XXX**

Lab Sample ID: 360-34253-3
Client Matrix: Water

Date Sampled: 06/06/2011 1100
Date Received: 06/07/2011 1021

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2866.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/14/2011 2031			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Bis(2-ethylhexyl) phthalate	6.1		0.45	1.8
Butyl benzyl phthalate	ND		0.45	4.5
Caprolactam	ND J		0.45	4.5
Carbazole	ND		0.45	4.5
Chrysene	ND		0.15	0.91
Dibenz(a,h)anthracene	ND		0.058	0.45
Dibenzofuran	ND		0.45	4.5
Diethyl phthalate	ND		0.45	4.5
Dimethyl phthalate	ND		0.45	4.5
Di-n-butyl phthalate	ND		0.55	4.5
Di-n-octyl phthalate	ND		0.66	4.5
Fluoranthene	ND		0.18	0.91
Fluorene	ND		0.073	0.91
Hexachlorobenzene	ND		0.45	0.91
Hexachlorocyclopentadiene	ND		0.45	4.5
Hexachloroethane	ND		0.45	2.7
Indeno[1,2,3-cd]pyrene	ND		0.072	0.45
Isophorone	ND		0.45	4.5
N-Nitrosodi-n-propylamine	ND		0.45	4.5
Nitrobenzene	ND		0.45	4.5
Pentachlorophenol	ND		0.45	0.91
Phenanthrene	ND		0.077	0.18
Phenol	ND J		0.45	4.5
Pyrene	ND		0.17	4.5
Phenyl ether	ND		0.45	4.5

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorophenol	42		15 - 110
Phenol-d5	24		15 - 110
Nitrobenzene-d5	67		30 - 130
2,4,6-Tribromophenol	101		15 - 110
Terphenyl-d14	82		30 - 130
2-Fluorobiphenyl	63		30 - 130

8/19/11

Analytical Data

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-SW-ISCO-2-XXX**

Lab Sample ID: 360-34253-3
Client Matrix: Water

Date Sampled: 06/06/2011 1100
Date Received: 06/07/2011 1021

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2866.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/14/2011 2031			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Tentatively Identified Compounds **Number TIC's Found:** **10**

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
	~~Unknown~~	~~1.84~~	~~8.9~~	~~T J~~
	Unknown	5.24	2.8	T J
	~~Unknown~~	~~5.84~~	~~1.0~~	~~T J~~
	~~Unknown~~	~~7.92~~	~~1.1~~	~~T J~~
	Unknown	8.54	0.63	T J
	Unknown	8.67	1.3	T J
	Unknown	8.77	0.85	T J
~~540-97-6~~	~~Cyclohexasiloxane, dodecamethyl~~	~~8.98~~	~~1.2~~	~~T J N~~
57-10-3	n-Hexadecanoic acid	12.18	2.2	T J N
	Unknown	13.52	1.2	T J

8/19/11

Analytical Data

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-SW-MMB-SW/SD-1-DUP**

Lab Sample ID: 360-34253-4
Client Matrix: Water

Date Sampled: 06/06/2011 1300
Date Received: 06/07/2011 1021

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2867.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/14/2011 2100			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1'-Biphenyl	ND		0.45	4.5
1,2,4,5-Tetrachlorobenzene	ND		0.45	4.5
1-Methylnaphthalene	ND		0.045	4.5
2,2'-oxybis[1-chloropropane]	ND		0.45	4.5
2,3,4,6-Tetrachlorophenol	ND		0.45	4.5
2,4,5-Trichlorophenol	ND		0.45	4.5
2,4,6-Trichlorophenol	ND		0.45	4.5
2,4-Dichlorophenol	ND		0.45	4.5
2,4-Dimethylphenol	ND		0.45	4.5
2,4-Dinitrophenol	ND		0.45	4.5
2,4-Dinitrotoluene	ND		0.45	4.5
2,6-Dinitrotoluene	ND		0.45	4.5
2-Chloronaphthalene	ND		0.45	4.5
2-Chlorophenol	ND		0.45	4.5
2-Methylnaphthalene	ND		0.045	0.91
2-Methylphenol	ND		0.45	4.5
2-Nitroaniline	ND		0.45	4.5
2-Nitrophenol	ND		0.45	4.5
3 & 4 Methylphenol	ND		0.45	4.5
3,3'-Dichlorobenzidine	~~ND~~ R		0.45	4.5
3-Nitroaniline	ND		0.45	4.5
4,6-Dinitro-2-methylphenol	ND		0.45	4.5
4-Bromophenyl phenyl ether	ND		0.45	4.5
4-Chloro-3-methylphenol	ND		0.45	4.5
4-Chloroaniline	ND		0.45	4.5
4-Chlorophenyl phenyl ether	ND		0.45	4.5
4-Nitroaniline	ND		0.45	4.5
4-Nitrophenol	ND		0.45	4.5
Acenaphthene	ND		0.045	0.91
Acenaphthylene	ND		0.045	0.27
Acetophenone	ND		0.45	4.5
Aniline	ND J		0.45	4.5
Anthracene	ND		0.064	0.91
Atrazine	ND		0.45	4.5
Azobenzene	ND		0.45	4.5
Benzaldehyde	ND		0.45	4.5
Benzo[a]anthracene	ND		0.15	0.27
Benzo[a]pyrene	ND		0.094	0.18
Benzo[b]fluoranthene	ND J		0.13	0.27
Benzo[g,h,i]perylene	ND		0.085	0.45
Benzo[k]fluoranthene	ND		0.15	0.27
Benzoic acid	1.9	J	0.45	4.5
Benzophenone	ND		0.45	4.5
Benzyl alcohol	ND		0.45	9.1
Bis(2-chloroethoxy)methane	ND		0.45	4.5
Bis(2-chloroethyl)ether	ND		0.45	4.5

8/19/11

Analytical Data

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-SW-MMB-SW/SD-1-DUP**

Lab Sample ID: 360-34253-4
Client Matrix: Water

Date Sampled: 06/06/2011 1300
Date Received: 06/07/2011 1021

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2867.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/14/2011 2100			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Bis(2-ethylhexyl) phthalate	ND		0.45	1.8
Butyl benzyl phthalate	ND		0.45	4.5
Caprolactam	ND J		0.45	4.5
Carbazole	ND		0.45	4.5
Chrysene	ND		0.15	0.91
Dibenz(a,h)anthracene	ND		0.058	0.45
Dibenzofuran	ND		0.45	4.5
Diethyl phthalate	ND		0.45	4.5
Dimethyl phthalate	ND		0.45	4.5
Di-n-butyl phthalate	ND		0.55	4.5
Di-n-octyl phthalate	ND		0.66	4.5
Fluoranthene	ND		0.18	0.91
Fluorene	ND		0.073	0.91
Hexachlorobenzene	ND		0.45	0.91
Hexachlorocyclopentadiene	ND		0.45	4.5
Hexachloroethane	ND		0.45	2.7
Indeno[1,2,3-cd]pyrene	0.20	J	0.072	0.45
Isophorone	ND		0.45	4.5
N-Nitrosodi-n-propylamine	ND		0.45	4.5
N-Nitrosodiphenylamine	ND		0.45	4.5
Nitrobenzene	ND		0.45	4.5
Pentachlorophenol	ND		0.45	0.91
Phenanthrene	ND		0.077	0.18
Phenol	ND J		0.45	4.5
Pyrene	ND		0.17	4.5
Phenyl ether	ND		0.45	4.5
Diphenylamine	ND		0.45	4.5

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorophenol	36		15 - 110
Phenol-d5	20		15 - 110
Nitrobenzene-d5	58		30 - 130
2,4,6-Tribromophenol	79		15 - 110
Terphenyl-d14	82		30 - 130
2-Fluorobiphenyl	62		30 - 130

8/19/11

Analytical Data

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-SW-MMB-SW/SD-1-DUP**

Lab Sample ID: 360-34253-4
Client Matrix: Water

Date Sampled: 06/06/2011 1300
Date Received: 06/07/2011 1021

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2867.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/14/2011 2100			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Tentatively Identified Compounds **Number TIC's Found:** 7

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
	~~Unknown~~	~~1.84~~	~~8.7~~	~~J~~
111-76-2	Ethanol, 2-butoxy-	5.84	1.0	T J N
~~541-2-6~~	~~Cyclopentasiloxane, decamethyl-~~	~~7.92~~	~~0.53~~	~~T J N~~
57-10-3	n-Hexadecanoic acid	12.18	1.1	T J N
112-88-9	1-Octadecene	12.70	2.4	T J N
57-11-4	Octadecanoic acid	12.96	1.5	T J N
791-28-6	Triphenylphosphine oxide	14.33	0.73	T J N

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Analytical Data

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-SW-MMB-SW/SD-1-XXX**

Lab Sample ID: 360-34253-5
Client Matrix: Water

Date Sampled: 06/06/2011 1300
Date Received: 06/07/2011 1021

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2868.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/14/2011 2129			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1'-Biphenyl	ND		0.45	4.5
1,2,4,5-Tetrachlorobenzene	ND		0.45	4.5
1-Methylnaphthalene	ND		0.045	4.5
2,2'-oxybis[1-chloropropane]	ND		0.45	4.5
2,3,4,6-Tetrachlorophenol	ND		0.45	4.5
2,4,5-Trichlorophenol	ND		0.45	4.5
2,4,6-Trichlorophenol	ND		0.45	4.5
2,4-Dichlorophenol	ND		0.45	4.5
2,4-Dimethylphenol	ND		0.45	4.5
2,4-Dinitrophenol	ND		0.45	4.5
2,4-Dinitrotoluene	ND		0.45	4.5
2,6-Dinitrotoluene	ND		0.45	4.5
2-Chloronaphthalene	ND		0.45	4.5
2-Chlorophenol	ND		0.45	4.5
2-Methylnaphthalene	ND		0.045	0.91
2-Methylphenol	ND		0.45	4.5
2-Nitroaniline	ND		0.45	4.5
2-Nitrophenol	ND		0.45	4.5
3 & 4 Methylphenol	ND		0.45	4.5
3,3'-Dichlorobenzidine	~~ND~~ R		0.45	4.5
3-Nitroaniline	ND		0.45	4.5
4,6-Dinitro-2-methylphenol	ND		0.45	4.5
4-Bromophenyl phenyl ether	ND		0.45	4.5
4-Chloro-3-methylphenol	ND		0.45	4.5
4-Chloroaniline	ND		0.45	4.5
4-Chlorophenyl phenyl ether	ND		0.45	4.5
4-Nitroaniline	ND		0.45	4.5
4-Nitrophenol	ND		0.45	4.5
Acenaphthene	ND		0.045	0.91
Acenaphthylene	ND		0.045	0.27
Acetophenone	ND		0.45	4.5
Aniline	ND J	✓	0.45	4.5
Anthracene	ND		0.064	0.91
Atrazine	ND		0.45	4.5
Azobenzene	ND		0.45	4.5
Benzaldehyde	ND		0.45	4.5
Benzo[a]anthracene	ND		0.15	0.27
Benzo[a]pyrene	ND		0.094	0.18
Benzo[b]fluoranthene	ND J	✓	0.13	0.27
Benzo[g,h,i]perylene	ND		0.085	0.45
Benzo[k]fluoranthene	ND		0.15	0.27
Benzoic acid	ND		0.45	4.5
Benzophenone	ND		0.45	4.5
Benzyl alcohol	ND		0.45	9.1
Bis(2-chloroethoxy)methane	ND		0.45	4.5
Bis(2-chloroethyl)ether	ND		0.45	4.5

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Analytical Data

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-SW-MMB-SW/SD-1-XXX**

Lab Sample ID: 360-34253-5
Client Matrix: Water

Date Sampled: 06/06/2011 1300
Date Received: 06/07/2011 1021

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2868.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/14/2011 2129			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Bis(2-ethylhexyl) phthalate	ND		0.45	1.8
Butyl benzyl phthalate	ND		0.45	4.5
Caprolactam	ND J		0.45	4.5
Carbazole	ND		0.45	4.5
Chrysene	ND		0.15	0.91
Dibenz(a,h)anthracene	ND		0.058	0.45
Dibenzofuran	ND		0.45	4.5
Diethyl phthalate	ND		0.45	4.5
Dimethyl phthalate	ND		0.45	4.5
Di-n-butyl phthalate	ND		0.55	4.5
Di-n-octyl phthalate	ND		0.66	4.5
Fluoranthene	ND		0.18	0.91
Fluorene	ND		0.073	0.91
Hexachlorobenzene	ND		0.45	0.91
Hexachlorocyclopentadiene	ND		0.45	4.5
Hexachloroethane	ND		0.45	2.7
Indeno[1,2,3-cd]pyrene	ND		0.072	0.45
Isophorone	ND		0.45	4.5
N-Nitrosodi-n-propylamine	ND		0.45	4.5
N-Nitrosodiphenylamine	ND		0.45	4.5
Nitrobenzene	ND		0.45	4.5
Pentachlorophenol	ND		0.45	0.91
Phenanthrene	ND		0.077	0.18
Phenol	ND J		0.45	4.5
Pyrene	ND		0.17	4.5
Phenyl ether	ND		0.45	4.5
Diphenylamine	ND		0.45	4.5

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorophenol	37		15 - 110
Phenol-d5	22		15 - 110
Nitrobenzene-d5	64		30 - 130
2,4,6-Tribromophenol	77		15 - 110
Terphenyl-d14	81		30 - 130
2-Fluorobiphenyl	64		30 - 130

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Analytical Data

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-SW-MMB-SW/SD-1-XXX**

Lab Sample ID: 360-34253-5
Client Matrix: Water

Date Sampled: 06/06/2011 1300
Date Received: 06/07/2011 1021

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2868.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/14/2011 2129			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Tentatively Identified Compounds **Number TIC's Found:** 7

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
	~~Unknown~~	~~1.84~~	~~8.1~~	~~T J~~
	~~Unknown~~	~~5.84~~	~~0.76~~	~~T J~~
	~~Unknown~~	~~7.92~~	~~0.47~~	~~T J~~
57-10-3	n-Hexadecanoic acid	12.18	0.51	T J N
1000197-14-1	4b,8-Dimethyl-2-isopropylphenanthrene, 4	12.59	0.44	T J N
57-11-4	Octadecanoic acid	12.96	0.69	T J N
28900-91-6	Formylmethylenetriphenylphosphorane	14.33	0.71	T J N

8/19/11

Analytical Data

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-SW-MMB-SW/SD-9-XXX**

Lab Sample ID: 360-34253-6
Client Matrix: Water

Date Sampled: 06/06/2011 1100
Date Received: 06/07/2011 1021

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2871.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/14/2011 2257			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1'-Biphenyl	ND		0.45	4.5
1,2,4,5-Tetrachlorobenzene	ND		0.45	4.5
1-Methylnaphthalene	ND		0.045	4.5
2,2'-oxybis[1-chloropropane]	ND		0.45	4.5
2,3,4,6-Tetrachlorophenol	ND		0.45	4.5
2,4,5-Trichlorophenol	ND		0.45	4.5
2,4,6-Trichlorophenol	ND		0.45	4.5
2,4-Dichlorophenol	ND		0.45	4.5
2,4-Dimethylphenol	ND		0.45	4.5
2,4-Dinitrophenol	ND		0.45	4.5
2,4-Dinitrotoluene	ND		0.45	4.5
2,6-Dinitrotoluene	ND		0.45	4.5
2-Chloronaphthalene	ND		0.45	4.5
2-Chlorophenol	ND		0.45	4.5
2-Methylnaphthalene	ND		0.045	0.91
2-Methylphenol	ND		0.45	4.5
2-Nitroaniline	ND		0.45	4.5
2-Nitrophenol	ND		0.45	4.5
3 & 4 Methylphenol	ND		0.45	4.5
3,3'-Dichlorobenzidine	ND		0.45	4.5
3-Nitroaniline	ND		0.45	4.5
4,6-Dinitro-2-methylphenol	ND		0.45	4.5
4-Bromophenyl phenyl ether	ND		0.45	4.5
4-Chloro-3-methylphenol	ND		0.45	4.5
4-Chloroaniline	ND		0.45	4.5
4-Chlorophenyl phenyl ether	ND		0.45	4.5
4-Nitroaniline	ND		0.45	4.5
4-Nitrophenol	ND		0.45	4.5
Acenaphthene	ND		0.045	0.91
Acenaphthylene	ND		0.045	0.27
Acetophenone	ND		0.45	4.5
Aniline	ND J	✓	0.45	4.5
Anthracene	ND		0.064	0.91
Atrazine	ND		0.45	4.5
Azobenzene	ND		0.45	4.5
Benzaldehyde	ND		0.45	4.5
Benzo[a]anthracene	ND		0.15	0.27
Benzo[a]pyrene	0.13	J	0.094	0.18
Benzo[b]fluoranthene	ND J	✓	0.13	0.27
Benzo[g,h,i]perylene	ND		0.085	0.45
Benzo[k]fluoranthene	ND		0.15	0.27
Benzoic acid	1.9	J	0.45	4.5
Benzophenone	ND		0.45	4.5
Benzyl alcohol	ND		0.45	9.1
Bis(2-chloroethoxy)methane	ND		0.45	4.5
Bis(2-chloroethyl)ether	ND		0.45	4.5

8/14/11

Analytical Data

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-SW-MMB-SW/SD-9-XXX**

Lab Sample ID: 360-34253-6
Client Matrix: Water

Date Sampled: 06/06/2011 1100
Date Received: 06/07/2011 1021

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2871.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/14/2011 2257			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Bis(2-ethylhexyl) phthalate	ND		0.45	1.8
Butyl benzyl phthalate	ND		0.45	4.5
Caprolactam	ND J	✓	0.45	4.5
Carbazole	ND		0.45	4.5
Chrysene	ND		0.15	0.91
Dibenz(a,h)anthracene	ND		0.058	0.45
Dibenzofuran	ND		0.45	4.5
Diethyl phthalate	ND		0.45	4.5
Dimethyl phthalate	ND		0.45	4.5
Di-n-butyl phthalate	~~0.64~~ 4.5U	~~JB~~	0.55	4.5
Di-n-octyl phthalate	ND		0.66	4.5
Fluoranthene	ND		0.18	0.91
Fluorene	ND		0.073	0.91
Hexachlorobenzene	ND		0.45	0.91
Hexachlorocyclopentadiene	ND		0.45	4.5
Hexachloroethane	ND		0.45	2.7
Indeno[1,2,3-cd]pyrene	ND	✓	0.072	0.45
Isophorone	ND		0.45	4.5
N-Nitrosodi-n-propylamine	ND		0.45	4.5
N-Nitrosodiphenylamine	ND		0.45	4.5
Nitrobenzene	ND		0.45	4.5
Pentachlorophenol	ND		0.45	4.5
Phenanthrene	ND		0.077	0.91
Phenol	ND J		0.45	0.18
Pyrene	ND		0.17	4.5
Phenyl ether	ND		0.45	4.5
Diphenylamine	ND		0.45	4.5

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorophenol	33		15 - 110
Phenol-d5	21		15 - 110
Nitrobenzene-d5	59		30 - 130
2,4,6-Tribromophenol	80		15 - 110
Terphenyl-d14	88		30 - 130
2-Fluorobiphenyl	60		30 - 130

8/19/11

Analytical Data

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-SW-MMB-SW/SD-9-XXX**

Lab Sample ID: 360-34253-6
Client Matrix: Water

Date Sampled: 06/06/2011 1100
Date Received: 06/07/2011 1021

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2871.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/14/2011 2257			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Tentatively Identified Compounds **Number TIC's Found:** 5

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
	~~Unknown~~	~~1.85~~	~~7.6~~	~~T J~~
	~~Unknown~~	~~5.85~~	~~0.79~~	~~T J~~
57-10-3	n-Hexadecanoic acid	12.18	0.81	J N
57-11-4	Octadecanoic acid	12.96	1.0	J N
28900-91-6	Formylmethylenetriphenylphosphorane	14.33	0.63	J N

8/19/11

Analytical Data

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-SW-PZ-16RR-XXX**

Lab Sample ID: 360-34253-7
Client Matrix: Water

Date Sampled: 06/06/2011 1305
Date Received: 06/07/2011 1021

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2872.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/14/2011 2326			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1'-Biphenyl	ND		0.45	4.5
1,2,4,5-Tetrachlorobenzene	ND		0.45	4.5
1-Methylnaphthalene	ND		0.045	4.5
2,2'-oxybis[1-chloropropane]	ND		0.45	4.5
2,3,4,6-Tetrachlorophenol	ND		0.45	4.5
2,4,5-Trichlorophenol	ND		0.45	4.5
2,4,6-Trichlorophenol	ND		0.45	4.5
2,4-Dichlorophenol	ND		0.45	4.5
2,4-Dimethylphenol	ND		0.45	4.5
2,4-Dinitrophenol	ND		0.45	4.5
2,4-Dinitrotoluene	ND		0.45	4.5
2,6-Dinitrotoluene	ND		0.45	4.5
2-Chloronaphthalene	ND		0.45	4.5
2-Chlorophenol	ND		0.45	4.5
2-Methylnaphthalene	ND		0.045	0.91
2-Methylphenol	ND		0.45	4.5
2-Nitroaniline	ND		0.45	4.5
2-Nitrophenol	1.3	J	0.45	4.5
3 & 4 Methylphenol	ND		0.45	4.5
3,3'-Dichlorobenzidine	ND		0.45	4.5
3-Nitroaniline	ND		0.45	4.5
4,6-Dinitro-2-methylphenol	ND		0.45	4.5
4-Bromophenyl phenyl ether	ND		0.45	4.5
4-Chloro-3-methylphenol	ND		0.45	4.5
4-Chloroaniline	ND		0.45	4.5
4-Chlorophenyl phenyl ether	ND		0.45	4.5
4-Nitroaniline	ND		0.45	4.5
4-Nitrophenol	1.8	J	0.45	4.5
Acenaphthene	ND		0.045	0.91
Acenaphthylene	ND		0.045	0.27
Acetophenone	ND		0.45	4.5
Aniline	ND J		0.45	4.5
Anthracene	ND		0.064	0.91
Atrazine	ND		0.45	4.5
Azobenzene	0.46	J	0.45	4.5
Benzaldehyde	ND		0.45	4.5
Benzo[a]anthracene	ND		0.15	0.27
Benzo[a]pyrene	ND		0.094	0.18
Benzo[b]fluoranthene	ND J		0.13	0.27
Benzo[g,h,i]perylene	ND		0.085	0.45
Benzo[k]fluoranthene	ND		0.15	0.27
Benzoic acid	2.0	J	0.45	4.5
Benzophenone	1.0	J	0.45	4.5
Benzyl alcohol	ND		0.45	9.1
Bis(2-chloroethoxy)methane	ND		0.45	4.5
Bis(2-chloroethyl)ether	ND		0.45	4.5

8/19/11

Analytical Data

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-SW-PZ-16RR-XXX**

Lab Sample ID: 360-34253-7
Client Matrix: Water

Date Sampled: 06/06/2011 1305
Date Received: 06/07/2011 1021

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2872.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/14/2011 2326			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Bis(2-ethylhexyl) phthalate	ND		0.45	1.8
Butyl benzyl phthalate	ND		0.45	4.5
Caprolactam	ND J		0.45	4.5
Carbazole	ND		0.45	4.5
Chrysene	ND		0.15	0.91
Dibenz(a,h)anthracene	ND		0.058	0.45
Dibenzofuran	ND		0.45	4.5
Diethyl phthalate	ND		0.45	4.5
Dimethyl phthalate	ND		0.45	4.5
Di-n-butyl phthalate	ND		0.55	4.5
Di-n-octyl phthalate	ND		0.66	4.5
Fluoranthene	ND		0.18	0.91
Fluorene	ND		0.073	0.91
Hexachlorobenzene	ND		0.45	0.91
Hexachlorocyclopentadiene	ND		0.45	4.5
Hexachloroethane	ND		0.45	2.7
Indeno[1,2,3-cd]pyrene	ND		0.072	0.45
Isophorone	ND		0.45	4.5
N-Nitrosodi-n-propylamine	ND		0.45	4.5
Nitrobenzene	ND		0.45	4.5
Pentachlorophenol	ND		0.45	0.91
Phenanthrene	ND		0.077	0.18
Phenol	ND J		0.45	4.5
Pyrene	ND		0.17	4.5
Phenyl ether	0.62	J	0.45	4.5

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorophenol	37		15 - 110
Phenol-d5	22		15 - 110
Nitrobenzene-d5	59		30 - 130
2,4,6-Tribromophenol	113	X	15 - 110
Terphenyl-d14	85		30 - 130
2-Fluorobiphenyl	63		30 - 130

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Analytical Data

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client: Olin Corporation

Client Sample ID: **OC-SW-PZ-16RR-XXX**

Lab Sample ID: 360-34253-7
Client Matrix: Water

Date Sampled: 06/06/2011 1305
Date Received: 06/07/2011 1021

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2872.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/14/2011 2326			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Tentatively Identified Compounds **Number TIC's Found:** **10**

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
	Unknown	1.82	6.7	J
	Unknown	5.24	7.3	J
	Unknown	~~5.84~~	~~1.1~~	~~J~~
	Unknown	8.67	1.7	J
	Unknown	11.14	1.7	J
	Unknown	11.17	2.8	J
	Unknown	11.21	1.6	J N
25154-52-3	Phenol, nonyl-	11.27	1.3	J
	Unknown	11.32	1.7	J
	Unknown	11.35	1.6	J
	Unknown			

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Analytical Data

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-SW-PZ-17RR-XXX**

Lab Sample ID: 360-34253-8
Client Matrix: Water

Date Sampled: 06/06/2011 1345
Date Received: 06/07/2011 1021

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method: 8270D
Prep Method: 3510C
Dilution: 1.0
Analysis Date: 06/14/2011 2355
Prep Date: 06/13/2011 1524

Analysis Batch: 360-75230
Prep Batch: 360-75165

Instrument ID: Inst. J
Lab File ID: J2873.D
Initial Weight/Volume: 1100 mL
Final Weight/Volume: 1.0 mL
Injection Volume: 1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1'-Biphenyl	ND		0.45	4.5
1,2,4,5-Tetrachlorobenzene	ND		0.45	4.5
1-Methylnaphthalene	ND		0.045	4.5
2,2'-oxybis[1-chloropropane]	ND		0.45	4.5
2,3,4,6-Tetrachlorophenol	ND		0.45	4.5
2,4,5-Trichlorophenol	ND		0.45	4.5
2,4,6-Trichlorophenol	ND		0.45	4.5
2,4-Dichlorophenol	ND		0.45	4.5
2,4-Dimethylphenol	ND		0.45	4.5
2,4-Dinitrophenol	ND		0.45	4.5
2,4-Dinitrotoluene	ND		0.45	4.5
2,6-Dinitrotoluene	ND		0.45	4.5
2-Chloronaphthalene	ND		0.45	4.5
2-Chlorophenol	ND		0.45	4.5
2-Methylnaphthalene	ND		0.045	0.91
2-Methylphenol	ND		0.45	4.5
2-Nitroaniline	ND		0.45	4.5
2-Nitrophenol	1.8	J	0.45	4.5
3 & 4 Methylphenol	ND		0.45	4.5
3,3'-Dichlorobenzidine	ND		0.45	4.5
3-Nitroaniline	ND		0.45	4.5
4,6-Dinitro-2-methylphenol	ND		0.45	4.5
4-Bromophenyl phenyl ether	ND		0.45	4.5
4-Chloro-3-methylphenol	ND		0.45	4.5
4-Chloroaniline	ND		0.45	4.5
4-Chlorophenyl phenyl ether	ND		0.45	4.5
4-Nitroaniline	ND		0.45	4.5
4-Nitrophenol	2.1	J	0.45	4.5
Acenaphthene	ND		0.045	0.91
Acenaphthylene	ND		0.045	0.27
Acetophenone	ND		0.45	4.5
Aniline	ND J		0.45	4.5
Anthracene	ND		0.064	0.91
Atrazine	ND		0.45	4.5
Azobenzene	0.53	J	0.45	4.5
Benzaldehyde	ND		0.45	4.5
Benzo[a]anthracene	ND		0.15	0.27
Benzo[a]pyrene	ND		0.094	0.18
Benzo[b]fluoranthene	ND J		0.13	0.27
Benzo[g,h,i]perylene	ND		0.085	0.45
Benzo[k]fluoranthene	ND		0.15	0.27
Benzoic acid	2.1	J	0.45	4.5
Benzophenone	1.2	J	0.45	4.5
Benzyl alcohol	ND		0.45	9.1
Bis(2-chloroethoxy)methane	ND		0.45	4.5
Bis(2-chloroethyl)ether	ND		0.45	4.5

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Analytical Data

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-SW-PZ-17RR-XXX**

Lab Sample ID: 360-34253-8
Client Matrix: Water

Date Sampled: 06/06/2011 1345
Date Received: 06/07/2011 1021

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2873.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/14/2011 2355			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Bis(2-ethylhexyl) phthalate	ND		0.45	1.8
Butyl benzyl phthalate	ND		0.45	4.5
Caprolactam	ND J		0.45	4.5
Carbazole	ND		0.45	4.5
Chrysene	ND		0.15	0.91
Dibenz(a,h)anthracene	ND		0.058	0.45
Dibenzofuran	ND		0.45	4.5
Diethyl phthalate	ND		0.45	4.5
Dimethyl phthalate	ND		0.45	4.5
Di-n-butyl phthalate	ND		0.55	4.5
Di-n-octyl phthalate	ND		0.66	4.5
Fluoranthene	ND		0.18	0.91
Fluorene	ND		0.073	0.91
Hexachlorobenzene	ND		0.45	0.91
Hexachlorocyclopentadiene	ND		0.45	4.5
Hexachloroethane	ND		0.45	2.7
Indeno[1,2,3-cd]pyrene	ND		0.072	0.45
Isophorone	ND		0.45	4.5
N-Nitrosodi-n-propylamine	ND		0.45	4.5
Nitrobenzene	ND		0.45	4.5
Pentachlorophenol	ND		0.45	0.91
Phenanthrene	ND		0.077	0.18
Phenol	ND J		0.45	4.5
Pyrene	ND		0.17	4.5
Phenyl ether	1.1	J	0.45	4.5

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorophenol	36		15 - 110
Phenol-d5	24		15 - 110
Nitrobenzene-d5	56		30 - 130
2,4,6-Tribromophenol	134	X	15 - 110
Terphenyl-d14	88		30 - 130
2-Fluorobiphenyl	63		30 - 130

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Analytical Data

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-SW-PZ-17RR-XXX**

Lab Sample ID: 360-34253-8
Client Matrix: Water

Date Sampled: 06/06/2011 1345
Date Received: 06/07/2011 1021

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2873.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/14/2011 2355			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Tentatively Identified Compounds **Number TIC's Found:** **10**

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
	Unknown	1.83	6.4	T J
	Unknown	5.24	10	T J
	Unknown	8.67	2.1	T J
	Unknown	11.14	1.9	T J
	Unknown	11.17	3.1	T J
104-40-5	4-Nonylphenol	11.21	1.8	T J N
	Unknown	11.32	1.9	T J
140-66-9	Phenol, 4-(1,1,3,3-tetramethylbutyl)-	11.36	1.7	T J N
57-10-3	n-Hexadecanoic acid	12.18	1.6	T J N
57-11-4	Octadecanoic acid	12.96	1.9	T J N

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Analytical Data

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-SW-SD-1-XXX**

Lab Sample ID: 360-34253-9
Client Matrix: Water

Date Sampled: 06/06/2011 1215
Date Received: 06/07/2011 1021

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2874.D
Dilution:	1.0			Initial Weight/Volume:	1000 mL
Analysis Date:	06/15/2011 0024			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1'-Biphenyl	ND		0.50	5.0
1,2,4,5-Tetrachlorobenzene	ND		0.50	5.0
1-Methylnaphthalene	ND		0.050	5.0
2,2'-oxybis[1-chloropropane]	ND		0.50	5.0
2,3,4,6-Tetrachlorophenol	ND		0.50	5.0
2,4,5-Trichlorophenol	ND		0.50	5.0
2,4,6-Trichlorophenol	ND		0.50	5.0
2,4-Dichlorophenol	ND		0.50	5.0
2,4-Dimethylphenol	ND		0.50	5.0
2,4-Dinitrophenol	ND		0.50	5.0
2,4-Dinitrotoluene	ND		0.50	5.0
2,6-Dinitrotoluene	ND		0.50	5.0
2-Chloronaphthalene	ND		0.50	5.0
2-Chlorophenol	ND		0.50	5.0
2-Methylnaphthalene	ND		0.050	1.0
2-Methylphenol	ND		0.50	5.0
2-Nitroaniline	ND		0.50	5.0
2-Nitrophenol	0.67	J	0.50	5.0
3 & 4 Methylphenol	ND		0.50	5.0
3,3'-Dichlorobenzidine	ND		0.50	5.0
3-Nitroaniline	ND		0.50	5.0
4,6-Dinitro-2-methylphenol	ND		0.50	5.0
4-Bromophenyl phenyl ether	ND		0.50	5.0
4-Chloro-3-methylphenol	ND		0.50	5.0
4-Chloroaniline	ND		0.50	5.0
4-Chlorophenyl phenyl ether	ND		0.50	5.0
4-Nitroaniline	ND		0.50	5.0
4-Nitrophenol	ND		0.50	5.0
Acenaphthene	ND		0.050	1.0
Acenaphthylene	ND		0.050	0.30
Acetophenone	ND		0.50	5.0
Aniline	ND		0.50	5.0
Anthracene	ND		0.070	1.0
Atrazine	ND		0.50	5.0
Azobenzene	ND		0.50	5.0
Benzaldehyde	ND		0.50	5.0
Benzo[a]anthracene	ND		0.17	0.30
Benzo[a]pyrene	ND		0.10	0.20
Benzo[b]fluoranthene	ND		0.15	0.30
Benzo[g,h,i]perylene	ND		0.094	0.50
Benzo[k]fluoranthene	ND		0.17	0.30
Benzoic acid	2.1	J	0.50	5.0
Benzophenone	ND		0.50	5.0
Benzyl alcohol	ND		0.50	10
Bis(2-chloroethoxy)methane	ND		0.50	5.0
Bis(2-chloroethyl)ether	ND		0.50	5.0

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Analytical Data

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-SW-SD-1-XXX**

Lab Sample ID: 360-34253-9
Client Matrix: Water

Date Sampled: 06/06/2011 1215
Date Received: 06/07/2011 1021

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2874.D
Dilution:	1.0			Initial Weight/Volume:	1000 mL
Analysis Date:	06/15/2011 0024			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Bis(2-ethylhexyl) phthalate	1.8	J	0.50	2.0
Butyl benzyl phthalate	ND		0.50	5.0
Caprolactam	ND J		0.50	5.0
Carbazole	ND		0.50	5.0
Chrysene	ND		0.17	1.0
Dibenz(a,h)anthracene	ND		0.064	0.50
Dibenzofuran	ND		0.50	5.0
Diethyl phthalate	ND		0.50	5.0
Dimethyl phthalate	ND		0.50	5.0
Di-n-butyl phthalate	~~0.72~~ 5.04	~~J B~~	0.60	5.0
Di-n-octyl phthalate	ND		0.73	5.0
Fluoranthene	ND		0.20	1.0
Fluorene	ND		0.080	1.0
Hexachlorobenzene	ND		0.50	1.0
Hexachlorocyclopentadiene	ND		0.50	5.0
Hexachloroethane	ND		0.50	3.0
Indeno[1,2,3-cd]pyrene	ND		0.079	0.50
Isophorone	ND		0.50	5.0
N-Nitrosodi-n-propylamine	ND		0.50	5.0
N-Nitrosodiphenylamine	ND		0.50	5.0
Nitrobenzene	ND		0.50	5.0
Pentachlorophenol	ND		0.50	1.0
Phenanthrene	ND		0.085	0.20
Phenol	ND J		0.50	5.0
Pyrene	ND		0.19	5.0
Phenyl ether	ND		0.50	5.0
Diphenylamine	ND		0.50	5.0

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorophenol	31		15 - 110
Phenol-d5	23		15 - 110
Nitrobenzene-d5	52		30 - 130
2,4,6-Tribromophenol	93		15 - 110
Terphenyl-d14	90		30 - 130
2-Fluorobiphenyl	56		30 - 130

8/19/11

Analytical Data

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-SW-SD-1-XXX**

Lab Sample ID: 360-34253-9
Client Matrix: Water

Date Sampled: 06/06/2011 1215
Date Received: 06/07/2011 1021

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2874.D
Dilution:	1.0			Initial Weight/Volume:	1000 mL
Analysis Date:	06/15/2011 0024			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Tentatively Identified Compounds **Number TIC's Found:** **10**

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
	~~Unknown~~	~~1.84~~	~~7.5~~	~~T J~~
	Unknown	5.24	1.7	~~T~~ J N
	~~Unknown~~	~~5.84~~	~~1.1~~	~~T J~~
	Unknown	8.67	1.2	~~T~~ J N
134-62-3	Diethyltoluamide	10.54	7.6	T J N
934-34-9	2(3H)-Benzothiazolone	11.03	0.91	T J N
57-10-3	n-Hexadecanoic acid	12.18	3.0	T J N
	Unknown	13.52	1.3	T J N
630-6-8	Hexatriacontane	14.12	0.76	T J N
295-65-8	Cyclohexadecane	14.70	0.94	T J N

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FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Westfield Job No.: 360-34253-1

SDG No.: 360-34253-1

Lab Sample ID: CCVIS 360-75230/2 Calibration Date: 06/14/2011 16:35

Instrument ID: Inst. J Calib Start Date: 06/13/2011 15:56

GC Column: Rtx-5ms ID: 0.25(um) Calib End Date: 06/13/2011 19:53

Lab File ID: J2858.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Dimethyl phthalate	Ave	1.191	1.168	0.0100	4900	5000	-2.0	20.0
2,6-Dinitrotoluene	Ave	0.2659	0.2712	0.1000	5100	5000	2.0	20.0
Acenaphthylene	Ave	1.448	1.456	0.9000	5030	5000	0.6	20.0
3-Nitroaniline	Lin		0.2461	0.0100	4890	5000	-2.2	20.0
Acenaphthene	Ave	1.021	1.005	0.8000	4920	5000	-1.6	20.0
2,4-Dinitrophenol	Lin		0.1206	0.0100	5120	5000	2.4	20.0
4-Nitrophenol	Lin		0.1846	0.0100	4850	5000	-3.0	20.0
2,4-Dinitrotoluene	Ave	0.3369	0.3315	0.2000	4920	5000	-1.6	20.0
Dibenzofuran	Ave	1.402	1.352	0.8000	4820	5000	-3.6	20.0
2,3,4,6-Tetrachlorophenol	Lin		0.2264		4820	5000	-3.6	20.0
Diethyl phthalate	Ave	1.250	1.193	0.0100	4770	5000	-4.6	20.0
4-Chlorophenyl phenyl ether	Ave	0.5417	0.5270	0.4000	4860	5000	-2.7	20.0
4-Nitroaniline	Ave	0.2316	0.2220	0.0100	4790	5000	-4.1	20.0
Fluorene	Ave	1.138	1.104	0.8000	4850	5000	-3.0	20.0
4,6-Dinitro-2-methylphenol	Lin		0.1099	0.0100	5260	5000	5.2	20.0
Diphenylamine	Ave	0.5552	0.5573		5020	5000	0.4	20.0
N-Nitrosodiphenylamine	Ave	0.4746	0.4763	0.0100	5870	5850	0.4	20.0
1,2-Diphenylhydrazine	Ave	0.9430	0.9937		5270	5000	5.4	20.0
Azobenzene	Ave	0.9430	0.9937		5270	5000	5.4	20.0
Benzophenone	Ave	0.6097	0.6336		5200	5000	3.9	20.0
4-Bromophenyl phenyl ether	Ave	0.1616	0.1664	0.1000	5150	5000	3.0	20.0
Hexachlorobenzene	Ave	0.1538	0.1540	0.1000	5010	5000	0.2	20.0
Atrazine	Ave	0.1289	0.1312		5090	5000	1.8	20.0
Pentachlorophenol	Lin		0.0811	0.0500	4990	5000	-0.2	20.0
Pentachloronitrobenzene	Ave	0.0882	0.0896		5080	5000	1.6	20.0
Phenanthrene	Ave	0.9349	0.8987	0.6000	4810	5000	-3.9	20.0
Anthracene	Ave	0.8747	0.8785	0.6000	5020	5000	0.4	20.0
Carbazole	Ave	0.7815	0.8066	0.0100	5160	5000	3.2	20.0
Di-n-butyl phthalate	Ave	1.241	1.179	0.0100	4750	5000	-5.0	20.0
Fluoranthene	Ave	0.9073	0.9250	0.6000	5100	5000	2.0	20.0
Benzidine	Ave	0.2594	0.2264		4360	5000	-12.7	20.0
Pyrene	Ave	1.279	1.186	0.6000	4630	5000	-7.3	20.0
Butyl benzyl phthalate	Ave	0.6219	0.5829	0.0100	4690	5000	-6.3	20.0
3,3'-Dichlorobenzidine	Lin		0.2507	0.0100	4380	5000	-12.4	20.0
Benzo[a]anthracene	Ave	1.001	0.9849	0.6000	4920	5000	-1.6	20.0
Bis(2-ethylhexyl) phthalate	Ave	0.8563	0.8817	0.0100	5150	5000	3.0	20.0
Chrysene	Ave	1.014	0.9620	0.6000	4740	5000	-5.2	20.0
Di-n-octyl phthalate	Lin		3.370	0.0100	5310	5000	6.2	20.0
Benzo[b]fluoranthene	Ave	1.428	1.898	0.7000	6650	5000	32.9*	20.0
Benzo[k]fluoranthene	Ave	1.377	1.541	0.7000	5600	5000	11.9	20.0
Benzo[a]pyrene	Lin2		0.9342	0.7000	5050	5000	1.0	20.0

FORM VII 8270D

Quality Control Results

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Method Blank - Batch: 360-75165

Method: 8270D
Preparation: 3510C

Lab Sample ID:	MB 360-75165/1-A	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Client Matrix:	Water	Prep Batch:	360-75165	Lab File ID:	J2859.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1000 mL
Analysis Date:	06/14/2011 1705	Units:	ug/L	Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
1,1'-Biphenyl	ND		0.50	5.0
1,2,4,5-Tetrachlorobenzene	ND		0.50	5.0
1-Methylnaphthalene	ND		0.050	5.0
2,2'-oxybis[1-chloropropane]	ND		0.50	5.0
2,3,4,6-Tetrachlorophenol	ND		0.50	5.0
2,4,5-Trichlorophenol	ND		0.50	5.0
2,4,6-Trichlorophenol	ND		0.50	5.0
2,4-Dichlorophenol	ND		0.50	5.0
2,4-Dimethylphenol	ND		0.50	5.0
2,4-Dinitrophenol	ND		0.50	5.0
2,4-Dinitrotoluene	ND		0.50	5.0
2,6-Dinitrotoluene	ND		0.50	5.0
2-Chloronaphthalene	ND		0.50	5.0
2-Chlorophenol	ND		0.50	5.0
2-Methylnaphthalene	ND		0.050	1.0
2-Methylphenol	ND		0.50	5.0
2-Nitroaniline	ND		0.50	5.0
2-Nitrophenol	ND		0.50	5.0
3 & 4 Methylphenol	ND		0.50	5.0
3,3'-Dichlorobenzidine	ND		0.50	5.0
3-Nitroaniline	ND		0.50	5.0
4,6-Dinitro-2-methylphenol	ND		0.50	5.0
4-Bromophenyl phenyl ether	ND		0.50	5.0
4-Chloro-3-methylphenol	ND		0.50	5.0
4-Chloroaniline	ND		0.50	5.0
4-Chlorophenyl phenyl ether	ND		0.50	5.0
4-Nitroaniline	ND		0.50	5.0
4-Nitrophenol	ND		0.50	5.0
Acenaphthene	ND		0.050	1.0
Acenaphthylene	ND		0.050	0.30
Acetophenone	1.64	J	0.50	5.0
Aniline	ND		0.50	5.0
Anthracene	ND		0.070	1.0
Atrazine	ND		0.50	5.0
Azobenzene	ND		0.50	5.0
Benzaldehyde	0.742	J	0.50	5.0
Benzo[a]anthracene	ND		0.17	0.30
Benzo[a]pyrene	ND		0.10	0.20
Benzo[b]fluoranthene	ND		0.15	0.30
Benzo[g,h,i]perylene	ND		0.094	0.50
Benzo[k]fluoranthene	ND		0.17	0.30
Benzoic acid	ND		0.50	5.0
Benzophenone	ND		0.50	5.0
Benzyl alcohol	1.33	J	0.50	10
Bis(2-chloroethoxy)methane	ND		0.50	5.0

Quality Control Results

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Method Blank - Batch: 360-75165

Method: 8270D
Preparation: 3510C

Lab Sample ID:	MB 360-75165/1-A	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Client Matrix:	Water	Prep Batch:	360-75165	Lab File ID:	J2859.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1000 mL
Analysis Date:	06/14/2011 1705	Units:	ug/L	Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Bis(2-chloroethyl)ether	ND		0.50	5.0
Bis(2-ethylhexyl) phthalate	ND		0.50	2.0
Butyl benzyl phthalate	ND		0.50	5.0
Caprolactam	0.799	J	0.50	5.0
Carbazole	ND		0.50	5.0
Chrysene	ND		0.17	1.0
Dibenz(a,h)anthracene	ND		0.064	0.50
Dibenzofuran	ND		0.50	5.0
Diethyl phthalate	ND		0.50	5.0
Dimethyl phthalate	ND		0.50	5.0
Di-n-butyl phthalate	0.822	J	0.60	5.0
Di-n-octyl phthalate	ND		0.73	5.0
Fluoranthene	ND		0.20	1.0
Fluorene	ND		0.080	1.0
Hexachlorobenzene	ND		0.50	1.0
Hexachlorocyclopentadiene	ND		0.50	5.0
Hexachloroethane	ND		0.50	3.0
Indeno[1,2,3-cd]pyrene	ND		0.079	0.50
Isophorone	ND		0.50	5.0
N-Nitrosodi-n-propylamine	ND		0.50	5.0
N-Nitrosodiphenylamine	ND		0.50	5.0
Nitrobenzene	ND		0.50	5.0
Pentachlorophenol	ND		0.50	1.0
Phenanthrene	ND		0.085	0.20
Phenol	ND		0.50	5.0
Pyrene	ND		0.19	5.0
Phenyl ether	ND		0.50	5.0
Diphenylamine	ND		0.50	5.0

Surrogate	% Rec	Acceptance Limits
2-Fluorophenol	49	15 - 110
Phenol-d5	28	15 - 110
Nitrobenzene-d5	68	30 - 130
2,4,6-Tribromophenol	75	15 - 110
Terphenyl-d14	73	30 - 130
2-Fluorobiphenyl	61	30 - 130

Quality Control Results

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Method Blank TICs- Batch: 360-75165

Cas Number	Analyte	RT	Est. Result	Qual
	Unknown	1.85	17.0	T J
	Unknown	2.58	0.765	T J
100-41-4	Ethylbenzene	5.25	1.15	T J N
106-42-3	p-Xylene	5.39	2.94	T J N
108-38-3	Benzene, 1,3-dimethyl-	5.72	1.94	T J N
	Unknown	5.85	1.34	T J
104-76-7	1-Hexanol, 2-ethyl-	7.13	0.877	T J N
	Unknown	7.92	1.49	T J
144-19-4	1,3-Pentanediol, 2,2,4-trimethyl-	8.08	1.78	T J N
	Unknown	8.29	0.709	T J

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 360-75165

Method: 8270D
Preparation: 3510C

LCS Lab Sample ID:	LCS 360-75165/2-A	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Client Matrix:	Water	Prep Batch:	360-75165	Lab File ID:	J2860.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1000 mL
Analysis Date:	06/14/2011 1734	Units:	ug/L	Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 360-75165/3-A	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Client Matrix:	Water	Prep Batch:	360-75165	Lab File ID:	J2861.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1000 mL
Analysis Date:	06/14/2011 1804	Units:	ug/L	Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL
Leach Date:	N/A				

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
1,1'-Biphenyl	60	58	40 - 140	4	20		
1,2,4,5-Tetrachlorobenzene	53	52	40 - 140	2	20	J	J
1-Methylnaphthalene	52	51	40 - 140	1	20		
2,2'-oxybis[1-chloropropane]	67	64	40 - 140	3	20		
2,3,4,6-Tetrachlorophenol	74	67	30 - 130	10	20		
2,4,5-Trichlorophenol	89	86	30 - 130	3	20		
2,4,6-Trichlorophenol	87	82	30 - 130	6	20		
2,4-Dichlorophenol	78	73	30 - 130	6	20		
2,4-Dimethylphenol	116	110	30 - 130	6	20		
2,4-Dinitrophenol	86	83	30 - 130	4	20		
2,4-Dinitrotoluene	86	80	40 - 140	8	20		
2,6-Dinitrotoluene	84	82	40 - 140	3	20		
2-Chloronaphthalene	55	51	40 - 140	7	20	J	J
2-Chlorophenol	66	64	30 - 130	4	20		
2-Methylnaphthalene	59	55	40 - 140	7	20		
2-Methylphenol	65	62	30 - 130	5	20		J
2-Nitroaniline	86	83	40 - 140	3	20		
2-Nitrophenol	72	69	30 - 130	4	20		
3 & 4 Methylphenol	67	63	30 - 130	6	20		
3,3'-Dichlorobenzidine	83	75	40 - 140	9	20		
3-Nitroaniline	79	76	40 - 140	5	20		
4,6-Dinitro-2-methylphenol	98	91	30 - 130	7	20		
4-Bromophenyl phenyl ether	83	77	40 - 140	7	20		
4-Chloro-3-methylphenol	81	80	30 - 130	2	20		
4-Chloroaniline	74	70	40 - 140	5	20		
4-Chlorophenyl phenyl ether	75	71	40 - 140	6	20		
4-Nitroaniline	89	83	40 - 140	7	20		
4-Nitrophenol	40	39	30 - 130	3	20	J	J
Acenaphthene	84	81	40 - 140	3	20		
Acenaphthylene	78	75	40 - 140	5	20		
Acetophenone	84	81	40 - 140	4	20		
Aniline	38	34	40 - 140	10	20	J *	J *
Anthracene	104	95	40 - 140	9	20		
Atrazine	109	105	40 - 140	4	20		
Azobenzene	89	83	40 - 140	8	20		
Benzaldehyde	74	70	40 - 140	6	20		

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 360-75165

Method: 8270D
Preparation: 3510C

LCS Lab Sample ID:	LCS 360-75165/2-A	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Client Matrix:	Water	Prep Batch:	360-75165	Lab File ID:	J2860.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1000 mL
Analysis Date:	06/14/2011 1734	Units:	ug/L	Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 360-75165/3-A	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Client Matrix:	Water	Prep Batch:	360-75165	Lab File ID:	J2861.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1000 mL
Analysis Date:	06/14/2011 1804	Units:	ug/L	Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL
Leach Date:	N/A				

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Benzo[a]anthracene	105	99	40 - 140	6	20		
Benzo[a]pyrene	114	107	40 - 140	6	20		
Benzo[b]fluoranthene	117	112	40 - 140	5	20		
Benzo[g,h,i]perylene	129	100	40 - 140	25	20		*
Benzo[k]fluoranthene	126	119	40 - 140	6	20		
Benzoic acid	40	47	40 - 140	16	20	J	J
Benzophenone	77	71	40 - 140	8	20		
Benzyl alcohol	73	69	40 - 140	6	20	J	J
Bis(2-chloroethoxy)methane	73	68	40 - 140	8	20		
Bis(2-chloroethyl)ether	67	64	40 - 140	5	20		
Bis(2-ethylhexyl) phthalate	99	92	40 - 140	8	20		
Butyl benzyl phthalate	89	87	40 - 140	3	20		
Caprolactam	22	22	40 - 140	1	20	J *	J *
Carbazole	90	85	40 - 140	6	20		
Chrysene	103	93	40 - 140	11	20		
Dibenz(a,h)anthracene	122	101	40 - 140	19	20		
Dibenzofuran	72	68	40 - 140	7	20		
Diethyl phthalate	86	81	40 - 140	6	20		
Dimethyl phthalate	86	81	40 - 140	5	20		
Di-n-butyl phthalate	92	88	40 - 140	4	20		
Di-n-octyl phthalate	81	84	40 - 140	3	20		
Fluoranthene	88	82	40 - 140	7	20		
Fluorene	92	87	40 - 140	6	20		
Hexachlorobenzene	81	76	40 - 140	7	20		
Hexachlorocyclopentadiene	86	81	40 - 140	5	20		
Hexachloroethane	46	43	40 - 140	7	20		
Indeno[1,2,3-cd]pyrene	121	97	40 - 140	22	20		*
Isophorone	67	62	40 - 140	7	20		J
N-Nitrosodi-n-propylamine	71	68	40 - 140	4	20		
N-Nitrosodiphenylamine	83	77	40 - 140	8	20		
Nitrobenzene	77	70	40 - 140	9	20		
Pentachlorophenol	97	89	30 - 130	9	20		
Phenanthrene	95	88	40 - 140	8	20		
Phenol	32	30	30 - 130	5	20	J	J
Pyrene	97	95	40 - 140	2	20		
Phenyl ether	59	56	40 - 140	5	20		

Quality Control Results

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 360-75165

Method: 8270D
Preparation: 3510C

MS Lab Sample ID:	360-34253-2	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Client Matrix:	Water	Prep Batch:	360-75165	Lab File ID:	J2864.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1100 mL
Analysis Date:	06/14/2011 1932			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL
Leach Date:	N/A				

MSD Lab Sample ID:	360-34253-2	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Client Matrix:	Water	Prep Batch:	360-75165	Lab File ID:	J2865.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1100 mL
Analysis Date:	06/14/2011 2001			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL
Leach Date:	N/A				

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
1,1'-Biphenyl	69	65	40 - 140	7	20		
1,2,4,5-Tetrachlorobenzene	73	61	40 - 140	17	20		J
1-Methylnaphthalene	65	54	40 - 140	19	20		
2,2'-oxybis[1-chloropropane]	84	70	40 - 140	18	20		
2,3,4,6-Tetrachlorophenol	78	78	30 - 130	1	20		
2,4,5-Trichlorophenol	96	95	30 - 130	2	20		
2,4,6-Trichlorophenol	95	96	30 - 130	2	20		
2,4-Dichlorophenol	88	80	30 - 130	10	20		
2,4-Dimethylphenol	123	112	30 - 130	9	20		
2,4-Dinitrophenol	94	95	30 - 130	1	20		
2,4-Dinitrotoluene	88	91	40 - 140	4	20		
2,6-Dinitrotoluene	90	89	40 - 140	1	20		
2-Chloronaphthalene	64	60	40 - 140	7	20		J
2-Chlorophenol	76	67	30 - 130	13	20		
2-Methylnaphthalene	76	65	40 - 140	16	20		
2-Methylphenol	71	65	30 - 130	9	20		
2-Nitroaniline	93	94	40 - 140	1	20		
2-Nitrophenol	83	69	30 - 130	19	20		
3 & 4 Methylphenol	72	69	30 - 130	4	20		
3,3'-Dichlorobenzidine	0	0	40 - 140	NC	20	F	F
3-Nitroaniline	55	62	40 - 140	12	20	J	
4,6-Dinitro-2-methylphenol	101	101	30 - 130	0	20		
4-Bromophenyl phenyl ether	89	88	40 - 140	2	20		
4-Chloro-3-methylphenol	90	87	30 - 130	4	20		
4-Chloroaniline	49	52	40 - 140	5	20	J	J
4-Chlorophenyl phenyl ether	84	81	40 - 140	4	20		
4-Nitroaniline	70	73	40 - 140	5	20		
4-Nitrophenol	39	41	30 - 130	4	20	J	J
Acenaphthene	96	90	40 - 140	6	20		
Acenaphthylene	89	84	40 - 140	6	20		
Acetophenone	82	71	40 - 140	14	20		
Aniline	25	28	40 - 140	10	20	J F	J F
Anthracene	110	109	40 - 140	1	20		

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 360-75165

Method: 8270D
Preparation: 3510C

MS Lab Sample ID:	360-34253-2	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Client Matrix:	Water	Prep Batch:	360-75165	Lab File ID:	J2864.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1100 mL
Analysis Date:	06/14/2011 1932			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL
Leach Date:	N/A				

MSD Lab Sample ID:	360-34253-2	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Client Matrix:	Water	Prep Batch:	360-75165	Lab File ID:	J2865.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1100 mL
Analysis Date:	06/14/2011 2001			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL
Leach Date:	N/A				

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Atrazine	100	106	40 - 140	6	20		
Azobenzene	95	93	40 - 140	2	20		
Benzaldehyde	82	69	40 - 140	18	20		
Benzo[a]anthracene	105	111	40 - 140	5	20		
Benzo[a]pyrene	119	123	40 - 140	3	20		
Benzo[b]fluoranthene	122	141	40 - 140	15	20		F
Benzo[g,h,i]perylene	116	140	40 - 140	19	20		
Benzo[k]fluoranthene	132	125	40 - 140	6	20		
Benzoic acid	39	34	40 - 140	8	20	F	J F
Benzophenone	80	81	40 - 140	0	20		
Benzyl alcohol	68	59	40 - 140	14	20	J	J
Bis(2-chloroethoxy)methane	82	71	40 - 140	14	20		
Bis(2-chloroethyl)ether	79	69	40 - 140	14	20		
Bis(2-ethylhexyl) phthalate	111	119	40 - 140	6	20		
Butyl benzyl phthalate	105	109	40 - 140	4	20		
Caprolactam	28	23	40 - 140	19	20	J F	J F
Carbazole	90	93	40 - 140	4	20		
Chrysene	100	104	40 - 140	3	20		
Dibenz(a,h)anthracene	112	132	40 - 140	17	20		
Dibenzofuran	80	78	40 - 140	3	20		
Diethyl phthalate	88	89	40 - 140	2	20		
Dimethyl phthalate	92	90	40 - 140	3	20		
Di-n-butyl phthalate	87	89	40 - 140	3	20		
Di-n-octyl phthalate	116	123	40 - 140	6	20		
Fluoranthene	88	90	40 - 140	2	20		
Fluorene	100	99	40 - 140	1	20		
Hexachlorobenzene	86	85	40 - 140	1	20		
Hexachlorocyclopentadiene	92	77	40 - 140	18	20		
Hexachloroethane	65	52	40 - 140	23	20		F
Indeno[1,2,3-cd]pyrene	112	136	40 - 140	20	20		
Isophorone	76	66	40 - 140	15	20		
N-Nitrosodi-n-propylamine	83	76	40 - 140	9	20		
N-Nitrosodiphenylamine	89	88	40 - 140	1	20		

Quality Control Results

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 360-75165

Method: 8270D
Preparation: 3510C

MS Lab Sample ID:	360-34253-5	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Client Matrix:	Water	Prep Batch:	360-75165	Lab File ID:	J2869.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1100 mL
Analysis Date:	06/14/2011 2158			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL
Leach Date:	N/A				

MSD Lab Sample ID:	360-34253-5	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Client Matrix:	Water	Prep Batch:	360-75165	Lab File ID:	J2870.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1100 mL
Analysis Date:	06/14/2011 2227			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL
Leach Date:	N/A				

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
1,1'-Biphenyl	68	66	40 - 140	2	20		
1,2,4,5-Tetrachlorobenzene	67	61	40 - 140	9	20		J
1-Methylnaphthalene	60	56	40 - 140	7	20		
2,2'-oxybis[1-chloropropane]	79	68	40 - 140	15	20		
2,3,4,6-Tetrachlorophenol	75	75	30 - 130	1	20		
2,4,5-Trichlorophenol	94	96	30 - 130	2	20		
2,4,6-Trichlorophenol	94	92	30 - 130	2	20		
2,4-Dichlorophenol	81	77	30 - 130	5	20		
2,4-Dimethylphenol	111	103	30 - 130	8	20		
2,4-Dinitrophenol	87	91	30 - 130	5	20		
2,4-Dinitrotoluene	86	86	40 - 140	0	20		
2,6-Dinitrotoluene	87	88	40 - 140	1	20		
2-Chloronaphthalene	64	61	40 - 140	5	20		J
2-Chlorophenol	71	61	30 - 130	14	20		J
2-Methylnaphthalene	70	65	40 - 140	7	20		
2-Methylphenol	64	56	30 - 130	13	20		J
2-Nitroaniline	91	92	40 - 140	1	20		
2-Nitrophenol	78	70	30 - 130	11	20		
3 & 4 Methylphenol	62	58	30 - 130	6	20		J
3,3'-Dichlorobenzidine	0	0	40 - 140	NC	20	F	F
3-Nitroaniline	68	73	40 - 140	7	20		
4,6-Dinitro-2-methylphenol	92	97	30 - 130	4	20		
4-Bromophenyl phenyl ether	90	87	40 - 140	3	20		
4-Chloro-3-methylphenol	81	83	30 - 130	2	20		
4-Chloroaniline	61	55	40 - 140	10	20	J	J
4-Chlorophenyl phenyl ether	83	83	40 - 140	0	20		
4-Nitroaniline	74	77	40 - 140	4	20		
4-Nitrophenol	38	40	30 - 130	5	20	J	J
Acenaphthene	95	90	40 - 140	6	20		
Acenaphthylene	86	83	40 - 140	3	20		
Acetophenone	74	66	40 - 140	11	20		
Aniline	31	28	40 - 140	9	20	J F	J F
Anthracene	105	106	40 - 140	1	20		

Quality Control Results

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 360-75165

Method: 8270D
Preparation: 3510C

MS Lab Sample ID:	360-34253-5	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Client Matrix:	Water	Prep Batch:	360-75165	Lab File ID:	J2869.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1100 mL
Analysis Date:	06/14/2011 2158			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL
Leach Date:	N/A				

MSD Lab Sample ID:	360-34253-5	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Client Matrix:	Water	Prep Batch:	360-75165	Lab File ID:	J2870.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1100 mL
Analysis Date:	06/14/2011 2227			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL
Leach Date:	N/A				

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Atrazine	103	108	40 - 140	5	20		
Azobenzene	94	94	40 - 140	1	20		
Benzaldehyde	76	66	40 - 140	14	20		
Benzo[a]anthracene	102	110	40 - 140	7	20		
Benzo[a]pyrene	108	113	40 - 140	4	20		
Benzo[b]fluoranthene	113	119	40 - 140	5	20		
Benzo[g,h,i]perylene	131	137	40 - 140	5	20		
Benzo[k]fluoranthene	126	126	40 - 140	0	20		
Benzoic acid	54	57	40 - 140	6	20	J	J
Benzophenone	79	81	40 - 140	2	20		
Benzyl alcohol	60	57	40 - 140	6	20	J	J
Bis(2-chloroethoxy)methane	81	75	40 - 140	7	20		
Bis(2-chloroethyl)ether	75	64	40 - 140	15	20		
Bis(2-ethylhexyl) phthalate	109	114	40 - 140	5	20		
Butyl benzyl phthalate	100	110	40 - 140	10	20		
Caprolactam	22	24	40 - 140	9	20	J F	J F
Carbazole	87	90	40 - 140	4	20		
Chrysene	95	102	40 - 140	7	20		
Dibenz(a,h)anthracene	121	131	40 - 140	8	20		
Dibenzofuran	79	77	40 - 140	2	20		
Diethyl phthalate	84	88	40 - 140	4	20		
Dimethyl phthalate	90	89	40 - 140	1	20		
Di-n-butyl phthalate	90	93	40 - 140	3	20		
Di-n-octyl phthalate	109	114	40 - 140	5	20		
Fluoranthene	83	86	40 - 140	4	20		
Fluorene	96	97	40 - 140	1	20		
Hexachlorobenzene	86	82	40 - 140	6	20		
Hexachlorocyclopentadiene	66	60	40 - 140	10	20		J
Hexachloroethane	58	48	40 - 140	19	20		
Indeno[1,2,3-cd]pyrene	117	130	40 - 140	10	20		
Isophorone	72	66	40 - 140	8	20		
N-Nitrosodi-n-propylamine	79	71	40 - 140	11	20		
N-Nitrosodiphenylamine	82	81	40 - 140	1	20		

Quality Control Results

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 360-75165

Method: 8270D
Preparation: 3510C

MS Lab Sample ID:	360-34253-5	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Client Matrix:	Water	Prep Batch:	360-75165	Lab File ID:	J2869.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1100 mL
Analysis Date:	06/14/2011 2158			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL
Leach Date:	N/A				

MSD Lab Sample ID:	360-34253-5	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Client Matrix:	Water	Prep Batch:	360-75165	Lab File ID:	J2870.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1100 mL
Analysis Date:	06/14/2011 2227			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL
Leach Date:	N/A				

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Nitrobenzene	82	75	40 - 140	9	20		
Pentachlorophenol	99	100	30 - 130	2	20		
Phenanthrene	96	98	40 - 140	1	20		
Phenol	31	27	30 - 130	14	20	J	J F
Pyrene	108	116	40 - 140	7	20		
Phenyl ether	64	64	40 - 140	1	20		
Diphenylamine	82	82	40 - 140	1	20		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
2-Fluorophenol	45	38	15 - 110
Phenol-d5	24	22	15 - 110
Nitrobenzene-d5	75	68	30 - 130
2,4,6-Tribromophenol	84	86	15 - 110
Terphenyl-d14	80	93	30 - 130
2-Fluorobiphenyl	73	70	30 - 130

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Surrogate Recovery Report

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Client Matrix: Water

Lab Sample ID	Client Sample ID	2FP %Rec	PHL %Rec	NBZ %Rec	FBP %Rec	TBP %Rec	TPH %Rec
360-34253-1	OC-SW-ISCO-1-DUP	31	19	59	58	80	75
360-34253-2	OC-SW-ISCO-1-XXX	33	20	57	55	79	79
360-34253-3	OC-SW-ISCO-2-XXX	42	24	67	63	101	82
360-34253-4	OC-SW-MMB-SW/SD -1-DUP	36	20	58	62	79	82
360-34253-5	OC-SW-MMB-SW/SD -1-XXX	37	22	64	64	77	81
360-34253-6	OC-SW-MMB-SW/SD -9-XXX	33	21	59	60	80	88
360-34253-7	OC-SW-PZ-16RR-XX X	37	22	59	63	113X	85
360-34253-8	OC-SW-PZ-17RR-XX X	36	24	56	63	134X	88
360-34253-9	OC-SW-SD-1-XXX	31	23	52	56	93	90
MB 360-75165/1-A		49	28	68	61	75	73
LCS 360-75165/2-A		46	25	71	64	82	75
LCSD 360-75165/3-A		42	25	65	62	79	70
360-34253-2 MS	OC-SW-ISCO-1-XXX MS	43	27	78	74	88	83
360-34253-5 MS	OC-SW-MMB-SW/SD -1-XXX MS	45	24	75	73	84	80
360-34253-2 MSD	OC-SW-ISCO-1-XXX MSD	38	26	65	69	91	88
360-34253-5 MSD	OC-SW-MMB-SW/SD -1-XXX MSD	38	22	68	70	86	93

Surrogate	Acceptance Limits
2FP = 2-Fluorophenol	15-110
PHL = Phenol-d5	15-110
NBZ = Nitrobenzene-d5	30-130
FBP = 2-Fluorobiphenyl	30-130
TBP = 2,4,6-Tribromophenol	15-110
TPH = Terphenyl-d14	30-130

SEMIVOLATILE ORGANICS

REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifications: REGION I Organics Guideline (1996)

TIER III

SITE: Olin Chemical Superfund Site Project #: 6107100016.12 SDG #: 360-34253-1

LAB #: TAL-Westfield

Sample IDs: Attach tracking sheet and/or sample listing.

This checklist is designed to be used with USEPA Region I Validation Guidelines Part II (12/1996). During Level III validation, calculation and transcription checks are completed for instrument tuning, surrogates, target compounds, spike recoveries, calibration data, and internal standards as specified in the guideline. These checks are documented on attached validation notes.

YES	NO	NA		
Holding Times and Preservation				
☑	☐	☐	Check the raw data including instrument run and extraction logs to verify reported sample extraction and analysis dates.	
☑	☐	☐	Review the sample check in log to determine if samples were properly preserved.	
Instrument Performance Check (Tune)				
☑	☐	☐	Compare the reported tuning results on each GC/MS Tuning and Mass Calibration Form with each raw data mass listing and mass spectrum submitted.	Since the spectra are obtained from chromatographic peaks that should be free from co elution problems, background subtraction actions resulting in spectral distortions for the sole purpose of meeting the contract or method specifications are contrary to quality assurance objectives and are, therefore, unacceptable.
☑	☐	☐	Verify that the laboratory has not made any transcription or calculation errors.	
☑	☐	☐	If possible, verify that spectra were generated using appropriate background subtraction techniques.	
Initial Calibration				
☑	☐	☐	Verify that the same instrument parameters were used for sample and calibration analyses, and that the instrument parameters which were utilized met method requirements.	
☑	☐	☐	Check and recalculate the average RRF and RRF for at least one volatile and semivolatile target compound associated with each internal standard.	Verify that the recalculated values agree within 10% of the laboratory reported values.
☑	☐	☐	Check and recalculate the %RSD for at least one volatile and semivolatile target compound associated with each internal standard.	

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REGION I VALIDATION CHECKLIST for OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifications: REGION I Organics Guideline (1996)

TIER III

☐	☐	☑	Review Standard Preparation Logs (if provided in the data package) to ensure that primary and secondary initial calibration standard concentrations are accurate and traceable to NIST standards.	Verify that the recalculated values agree within 10% of the laboratory reported values.
☐	☐	☑	Check and recalculate the initial calibration standard concentration for one volatile and one semivolatile target compound (if standards preparation documentation was provided in the data package).	
Continuing Calibration				
☑	☐	☐	Verify that the same instrument parameters were used for sample and calibration analyses, and that the instrument parameters which were utilized met method requirements.	
☑	☐	☐	Check and recalculate the RRF for at least one volatile and semivolatile target compound associated with each internal standard.	
☑	☐	☐	Check and recalculate the %D for at least one volatile and semivolatile target compound associated with each internal standard.	Verify that the recalculated values agree within 10% of the laboratory reported values.
☐	☐	☑	Review Standard Preparation Logs (if provided in the data package) to ensure that primary and secondary continuing calibration standard concentrations are accurate and traceable to NIST standards.	
☐	☐	☑	Check and recalculate the continuing calibration standard concentration for one volatile and one semivolatile target compound (if standards preparation documentation was provided in the data package).	
Blanks				
☑	☐	☐	Verify from the raw data that the extraction and/or analysis dates and times, sample IDs, file IDs, etc. are accurately reported on the tabulated result forms.	
☑	☐	☐	Verify from the raw data, the Blank Summary form, and Form Is that a VOA instrument blank was analyzed in the same purging/sparging vessel (i.e., same position in the autosampler) as the sample that exceeded the instrument	

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REGION I VALIDATION CHECKLIST for OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifications: REGION I Organics Guideline (1996)

TIER III

			calibration range.	
☐	☐	☑	Verify from the raw GPC data that a GPC instrument blank was analyzed after the GPC calibration and prior to sample analysis.	
☐	☐	☑	Verify from the raw Silica Gel data that a Silica Gel Column reagent blank was analyzed prior to sample analysis.	
☑	☐	☐	Check 10% of the raw data for each blank to verify that internal standard areas and retention time data, have been correctly transcribed to tabulated forms and that surrogate compound recovery data have been correctly calculated and transcribed to tabulated forms.	Review the blank chromatograms, quantitation reports, and mass spectra to ensure that no false positives or false negatives have been reported.
☑	☐	☐	Review the raw data (chromatograms, mass spectra and quantitation reports) to confirm the presence of target and non-target compounds in the blanks and to evaluate the presence of additional contaminants.	
Surrogates				
☑	☐	☐	Check raw data (e.g., chromatograms and quantitation reports) to verify that surrogate recoveries were reported accurately on the Surrogate Recovery Forms.	
☑	☐	☐	Ten percent of the surrogate compound recovery data should be checked for calculation and/or transcription errors. If errors are detected in this ten percent, then an additional ten percent of the data should be checked. If errors are found I the additional 10%, then all surrogate compound recovery calculations and transcriptions in the data package should be checked.	
Internal Standards				
☑	☐	☐	Check raw data (e.g., chromatograms and quantitation reports) to verify that the internal standard retention times and areas are accurately reported on the tabulated forms.	
Field Duplicates				
☑	☐	☐	Check and recalculate the analytical concentration for at least one positive detect and one sample quantitation limit (for a diluted sample or soil sample) for each fraction, in every field duplicate sample.	

SEMIVOLATILE ORGANICS

REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifications: REGION I Organics Guideline (1996)

TIER III

MDL Study				
☐	☐	☑	Check and recalculate the %RSD and % recoveries for at least three compounds per MDL study.	Verify that the recalculated values agree within 10% of the laboratory reported values.
☐	☐	☑	Check the standards preparation logs to verify that the stock standard used to prepare the LFB was from a source independent from the initial and continuing calibration standards.	Lab provided documentation to check MDL on instruments.
☑	☐	☐	Check and recalculate % recovery for at least one compound per LFB fraction.	Verify that the recalculated values agree within 10% of the laboratory reported values.
PE Samples/Accuracy Check				
☑	☐	☐	Check and recalculate the percent recovery for at least one compound per LCS fraction.	Verify that the recalculated values agree within 10% of the laboratory reported values.
☑	☐	☐	Determine what percentages of analytes were below or above PES acceptance criteria.	
☑	☐	☐	Check and recalculate the analytical concentrations for at least one compound per PES fraction.	Verify that the recalculated values agree within 10% of the laboratory reported values.
Target Compound Identification				
☑	☐	☐	Check that the RRT of a reported compound is within+/- 0.06 RRT units of the standard RRT.	
☑	☐	☐	Compare all sample compound spectra to the laboratory standard spectra and verify that the mass spectral identification criteria are met.	
☑	☐	☐	Check the sample chromatogram to verify that all major peaks of interest are identified as target compounds, TICs, surrogate compounds, or the internal standards.	
☐	☑	☐	The validator should be aware of situations when sample carryover is a possibility, and should use professional judgment to determine if instrument cross-contamination has affected any compound identification.	

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REGION I VALIDATION CHECKLIST for OLIN CHEMICAL SUPERFUND SITE

Criteria and Qualifications: REGION I Organics Guideline (1996)

TIER III

Compound Quantitation and Reported Quant Limits				
☑	☐	☐	Recalculate, from the raw data, the concentrations for at least one positive detect and one sample quantitation limit (for a diluted sample or a soil sample) for each fraction, in every field sample to verify that laboratory reported sample results were accurately calculated according to the method.	
☑	☐	☐	Verify that the concentrations for positive detects and sample quantitation limits have been adjusted to reflect sample dilutions, concentrations, cleanup methods and dry weight factors that are not accounted for in the method.	
☑	☐	☐	Verify that the correct internal standard, quantitation ion and standard RRF were used to quantitate sample results for at least one positive detect in each fraction in every field sample.	
Tentatively Identified Compounds				
☑	☐	☐	Verify that the laboratory has generated a library search for all required peaks in the sample and blank chromatograms.	
☐	☑	☐	Verify that a target compound was not missed by the target compound search procedure and erroneously reported as a TIC in the proper analytical fraction.	
☑	☐	☐	Verify that all TICs are reported with estimated (J) concentrations by the laboratory. Verify that TIC concentrations were calculated correctly, assuming a RRF of 1.0 and using the closest eluting IS that is free of interferences.	
☑	☐	☐	Verify that the blanks do not contain any TIC peaks.	
☑	☐	☐	Examine all TIC mass spectra in every sample and blank.	Common lab contaminants: CO2, siloxanes, diethyl ether, hexane, certain Freons, and phthalates.
☑	☐	☐	Verify that TICs were reported as unknowns if the TIC spectra presented do not meet criteria set forth in Section XIV B.4.	Solvent preservatives: cyclohexene, cyclohexanone, cyclohexenone, cyclohexanol, cyclohexenol, chlorocyclohexene, and chlorocyclohexanol.
☑	☐	☐	Review blank and sample TIC spectra to ensure that common laboratory artifacts/contaminants are not reported as TICs.	Aldol condensation reaction products.

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REGION I VALIDATION CHECKLIST for OLIN CHEMICAL SUPERFUND SITE

Criteria and Qualifications: REGION I Organics Guideline (1996)

TIER III

SVOC Cleanup

Gel Permeation Chromatography (GPC)

☐	☐	☑	Verify that the GPC system was calibrated initially in accordance with the method requirements and that peak shape and resolution criteria were met.
☐	☐	☑	Confirm from the raw data that the GPC calibration check was performed at the method required frequency.
☐	☐	☑	Verify that a GPC calibration check solution was analyzed in accordance with the method and that the correct target and surrogate compounds, interferents and concentrations were used.
☐	☐	☑	Verify that surrogate compound recoveries and internal standard area counts and/or retention times in the GPC calibration check meet method QC acceptance.
☐	☐	☑	Review the raw GPC calibration check data to verify that peaks are symmetrical and resolution meets method QC acceptance criteria for target and surrogate compounds and interferents in the GPC calibration check solution.
☐	☐	☑	Check the raw GPC calibration check data to verify that retention times for any compounds or interferents in the GPC calibration solution did not vary more than +/-5% between calibrations.
☐	☐	☑	Verify that a GPC instrument blank was analyzed after each GPC calibration and calibration check and prior to sample analysis.
☐	☐	☑	Verify that there are no target compounds present at greater than or equal to the quantitation limit in the GPC instrument blank.
☐	☐	☑	Verify that surrogate compound recoveries and internal standard area counts and/or retention times (if added) in the GPC instrument blank meet method QC acceptance criteria.
☐	☐	☑	Compare the raw data to the reported results, if available, and verify that no calculation and/or transcription errors have occurred. If the result forms are not available, then the validator must review the cleanup logs to confirm that method required cleanups were performed.

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REGION I VALIDATION CHECKLIST for OLIN CHEMICAL SUPERFUND SITE

Criteria and Qualifications: REGION I Organics Guideline (1996)

TIER III

Silica Gel Cleanup				
☐	☐	☑	Verify that a Silica Gel Check solution was prepared and analyzed in accordance with the method and that the correct target and surrogate compounds, interferents, and concentrations were used.	
☐	☐	☑	Verify that surrogate compound recoveries and internal standard area counts and/or retention times in the Silica Gel Check solution meet method QC acceptance criteria.	
☐	☐	☑	Verify that a Silica Gel column reagent blank was prepared with each cleanup batch and was analyzed after the Silica Gel Check solution but prior to field samples.	
☐	☐	☑	Verify that there are no target compounds present at greater than or equal to the quantitation limit in the Silica Gel column reagent blank.	
☐	☐	☑	Verify that surrogate compound recoveries and internal standard area counts and/or retention times (if added) in the Silica Gel column reagent blank meet method QC acceptance criteria.	
☐	☐	☑	Compare the raw data to the reported results, if available, and verify that no calculation and/or transcription errors have occurred. If the result forms are not available, then the validator must review the cleanup logs to confirm that method required cleanups were performed.	
System Performance				
☑	☐	☐	Evaluate all PES and other relevant QC data to determine if any analytical trends exist over the sample analysis period.	
☑	☐	☐	The validator should ascertain from the PES and other relevant QC data if there is a high or low quantitative bias for a particular compound or group of compounds.	
☐	☑	☐	The validator should ascertain from the PES and other relevant QC data if there is a potential for false negative and/or false positives to be reported.	
☐	☑	☐	The validator should ascertain from the MS/MSD and surrogate spike compound analyses if the sample matrix effects	

			impact compound recovery, thus indicating a method bias outside the control of the laboratory.	
☐	☑	☐	Evaluate sample and QC sample reconstructed ion chromatograms analyzed on all columns to determine if the column chromatography, peak shape, resolution, and baseline drift has either deteriorated or improved over the sample analysis period.	
☐	☑	☐	The validator should ascertain from the raw data if unacceptable chromatography may contribute to a high or a low quantitative bias for a particular compound or group of compounds.	
☐	☑	☐	The validator should also ascertain from the raw data if unacceptable chromatography may result in a potential for false negative and/or false positive identification.	
☐	☑	☐	The validator should determine if chromatography problems are a result of the sample matrix or are unique to the instrument.	
☐	☑	☐	The validator should determine if significant retention time shifts have occurred between initial and continuing calibration.	
☑	☐	☐	Compare the daily standard calibration area counts to ascertain if the instrument generated consistent detector responses over the sample analysis period.	
☐	☑	☐	Review the area counts of the internal standards and surrogate compounds for each sample to ascertain if there is a change in detector response.	
☐	☑	☐	The validator should evaluate the MS/MSD RPDs in conjunction with field duplicate RPDs to identify any analytical trends, ascertain if sample matrices were homogenous or heterogeneous, and determine if sampling error may have contributed to field imprecision.	
☐	☑	☐	Review all daily LFBs, low level calibrated standards, and PES data to evaluate sensitivity for each instrument to verify that no instrument has lost its ability to accurately quantitate and identify compounds at the quantitation limit over the sample analysis period, which could possibly result in false negatives and low	

SEMIVOLATILE ORGANICS

REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifications: REGION I Organics Guideline (1996)

TIER III

			biased results.	
☑	☐	☐	Check the area counts of the individual sample, QC sample, calibration and blank internal standards to monitor instrument sensitivity changes.	
☐	☑	☐	Review the sample chromatograms for abrupt, discrete shifts in the chromatographic baseline which may indicate a change in the instrument's sensitivity or the zero setting.	
☐	☑	☐	The validator may determine that instrument sensitivity is adequate but sample matrix effects may preclude obtaining the quantitation limits required by the project DQOs using the analytical method employed.	
☐	☑	☐	Review all blank and sample results to evaluate the possibility of sample contamination introduced via either cross contamination from a previously run sample or from general lab contamination.	
☐	☑	☐	Compare blank analysis on two different instruments to determine if the contamination is instrument related or the interferents are present in the blank from sample processing activities.	
☐	☐	☑	Assess whether problematic blank results are reproducible when replicate aliquots are analyzed or are sporadic interferences.	

Validator's Signature: _____

Date: 9/1/11

Performance Evaluation:

A PES was submitted with the program samples. Laboratory results from the PES were evaluated by the EPA Region I chemist. Results from the PES evaluation indicated the laboratory was biased low for reporting of phenol results. Sample detections for phenol were qualified estimated (J). Sample results for phenol that were not detected were qualified estimated (UJ) at the reporting limits.

Reference:

U.S. Environmental Protection Agency (USEPA), 1996. "Test Methods for Evaluating Solid Waste"; Laboratory

PES SCORING EVALUATION REPORT

PES S80479 Rev: 1 EPA Sample No.: 360-34288-3 Report Date: 08/30/2011

Lab Name: Testamerica Westfeld
Contract: 360-34288-1
SDG No.: 360-34288-1
Lab File ID: NA
Date Analyzed: 06/15/2011
% Moisture: NA
Injection Vol. (uL): 1
Dilution Factor: 1.0, 5.0

Case No.: 360-34288-1
Matrix: Water
Date Received: 06/08/2011
Sample Wt./Vol. (g/mL): 1000 mL
Decanted: N/A
GPC Cleanup: N/A
Extraction Type: N/A

Lab Code: TESWES
SAS/Client No.: NA
Lab Sample ID: 360-34288-3
Date Extracted: 06/13/2011
Level: N/A
Conc. Extract Vol. (uL): NA
pH: NA
Units: ug/L

Analysis Method: 8270D
Scoring Method: SOM01.1
Comments:

* Scanned in Rpt directory

CAS No.	Analyte	Laboratory Results		PES Evaluation	
		Concentration	Q		
108-95-2	Phenol	11		FAIL	Action Low
111-44-4	bis(2-Chloroethyl)ether	23	J	PASS	Within Limits
95-48-7	2-Methylphenol	24	J	PASS	Within Limits
98-86-2	Acetophenone	19	B	PASS	Within Limits
67-72-1	Hexachloroethane	9.9		PASS	Within Limits
91-20-3	Naphthalene	10		PASS	Within Limits
106-47-8	4-Chloroaniline	32		PASS	Within Limits
91-57-6	2-Methylnaphthalene	11		PASS	Within Limits
95-95-4	2,4,5-Trichlorophenol	40		PASS	Within Limits
92-52-4	1,1'-Biphenyl	24	J	PASS	Within Limits
91-58-7	2-Chloronaphthalene	12		PASS	Within Limits
131-11-3	Dimethylphthalate	39		PASS	Within Limits
606-20-2	2,6-Dinitrotoluene	43		PASS	Within Limits
100-02-7	4-Nitrophenol	12		PASS	Warning Low
85-01-8	Phenanthrene	11		PASS	Within Limits
120-12-7	Anthracene	26		PASS	Within Limits
86-74-8	Carbazole	23	J	PASS	Within Limits
207-08-9	Benzo(k)fluoranthene	13		PASS	Within Limits
191-24-2	Benzo(g,h,i)perylene	20		PASS	Within Limits
1031-07-8	Endosulfan sulfate	15		PASS	TIC Found
92-93-3	4-Nitrobiphenyl	18		PASS	TIC Found
35693-92-6	2,4,6-Trichlorobiphenyl	0		N.E.	Scorer Request
56-49-5	3-Methylcholanthrene	20		PASS	TIC Found
****	END Main Analytes	**********	****	****	**********
65-85-0	BENZOIC ACID	2.1	J	N.E.	Non-spiked TIC
100-51-6	BENZYL ALCOHOL	0.96	JB	N.E.	Non-spiked TIC
84-74-2	Di-n-butylphthalate	0.83	JB	PASS	Less Than CRQL
108-38-3	Benzene,1,3-dimethyl-	3.1	J	N.E.	Non-spiked TIC
541-2-6	Cyclopentasiloxane,decamethyl-	1.1	J	N.E.	Non-spiked TIC
38444-84-7	1,1"-Biphenyl,2,3,3"-trichloro	18	J	N.E.	Non-spiked TIC
84-65-1	9,10-Anthracenedione	1.7	J	N.E.	Non-spiked TIC
****	END All Analytes	**********	****	****	**********

SEMIVOLATILE ORGANICS

REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifications: REGION I Organics Guideline (1996)

TIER III

Manual Physical/Chemical Methods; Office of Solid Waste and Emergency Response; Washington, DC; SW-846; November 1986; Revision 4 -December 1996.

Tier_III Calculations
SVOC SDG 360-34253-1
OU2 SURFACE WATER
Olin

Analyte	IS	L1 .2	L2 .5	L3 1	L4 2.5	L5 5	L6 8	L7 10	L8 15	L9 20	Ave.	%SD	%RSD
Acetophenone	DCB	1.380062	1.401711	1.434372	1.47381	1.439599	1.441395	1.4639428	1.478805	1.422395	1.437344	3.3	2.3
2-Nitrophenol	NPT	0.107184	0.146477	0.154495	0.167744	0.172276	0.169857	0.1705311	0.17868	0.169977	0.159691	2.2	13.8
Diethylphthalate	ANT	1.217468	1.246176	1.269987	1.254765	1.225977	1.272516	1.277891	1.234964	1.257399	1.250794	2.1	1.7
N-nitrosodiphenylamine	PHN	0.433145	0.50706	0.494453	0.467267	0.471812	0.470152	0.4783934	0.467384	0.47604	0.473967	2.0	4.3
Bis(2-ethylhexyl)phthalate	CRY	0.841914	0.76201	0.799694	0.891204	0.899107	0.908826	0.8963592	0.871586	0.835685	0.856265	5.0	5.9
Benzo(a)pyrene	PRY	0.625853	0.789542	0.821309	0.875391	0.924625	0.961577	0.9958575	1.036414	0.983912	0.890498	12.9	14.5
phenol-d5	DCB	0.980741	1.089215	1.123059	1.15287	1.143234	1.124056	1.1352276	1.159406	1.123964	1.114641	5.4	4.9
2-fluorobiphenyl	ANT	1.290625	1.303012	1.28731	1.193071	1.180223	1.213061	1.2070167	1.189745	1.224561	1.23207	4.8	3.9

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Tier_III Calculations
SVOC SDG 360-33936-1
OU3 ROUND 3
Olin

Analyte	IS	Area	RRF
Acetophenone	DCB	393463	1.422395
2-Nitrophenol	NPT	170293	0.169977
Diethylphthalate	ANT	701006	1.257399
N-nitrosodiphenylamine	PHN	531834	0.47604
Bis(2-ethylhexyl)phthalate	CRY	607643	0.835685
Benzo(a)pyrene	PRY	269100	0.983912
phenol-d5	DCB	310911	1.123964
2-fluorobiphenyl	ANT	682699	1.224561

IS	Area	IS AMT	CAL AMT
DCB	55324	4	20
NPT	200372	4	20
ANT	111501	4	20
PHN	190568	4	20
CRY	145424	4	20
PRY	54700	4	20

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Tier_III Calculations
SVOC SDG 360-33936-1
OU3 ROUND 3
Olin

Analyte	IS	Area	RRF
Acetophenone	DCB	286914	1.478805
2-Nitrophenol	NPT	127188	0.17868
Diethylphthalate	ANT	506153	1.234964
N-nitrosodiphenylamine	PHN	379338	0.467384
Bis(2-ethylhexyl)phthalate	CRY	439724	0.871586
Benzo(a)pyrene	PRY	189687	1.036414
phenol-d5	DCB	224945	1.159406
2-fluorobiphenyl	ANT	487620	1.189745

IS	Area	IS AMT	CAL AMT
DCB	51738	4	15
NPT	189819	4	15
ANT	109294	4	15
PHN	184459	4	15
CRY	134536	4	15
PRY	48806	4	15

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Tier_III Calculations
SVOC SDG 360-33936-1
OU3 ROUND 3
Olin

Analyte	IS	Area	RRF
Acetophenone	DCB	211752	1.463943
2-Nitrophenol	NPT	91860	0.170531
Diethylphthalate	ANT	386463	1.277891
N-nitrosodiphenylamine	PHN	285400	0.478393
Bis(2-ethylhexyl)phthalate	CRY	333719	0.896359
Benzo(a)pyrene	PRY	141235	0.995857
phenol-d5	DCB	164205	1.135228
2-fluorobiphenyl	ANT	365029	1.207017

IS	Area	IS AMT	CAL AMT
DCB	57858	4	10
NPT	215468	4	10
ANT	120969	4	10
PHN	203959	4	10
CRY	148922	4	10
PRY	56729	4	10

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Tier_III Calculations
SVOC SDG 360-33936-1
OU3 ROUND 3
Olin

Analyte	IS	Area	RRF
Acetophenone	DCB	158098	1.441395
2-Nitrophenol	NPT	68292	0.169857
Diethylphthalate	ANT	286843	1.272516
N-nitrosodiphenylamine	PHN	210913	0.470152
Bis(2-ethylhexyl)phthalate	CRY	252630	0.908826
Benzo(a)pyrene	PRY	108137	0.961577
phenol-d5	DCB	123291	1.124056
2-fluorobiphenyl	ANT	273441	1.213061

IS	Area	IS AMT	CAL AMT
DCB	54842	4	8
NPT	201028	4	8
ANT	112707	4	8
PHN	191712	4	8
CRY	138987	4	8
PRY	56229	4	8

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Tier_III Calculations
SVOC SDG 360-33936-1
OU3 ROUND 3
Olin

Analyte	IS	Area	RRF
Acetophenone	DCB	99919	1.439599
2-Nitrophenol	NPT	44922	0.172276
Diethylphthalate	ANT	182312	1.225977
N-nitrosodiphenylamine	PHN	138134	0.471812
Bis(2-ethylhexyl)phthalate	CRY	160866	0.899107
Benzo(a)pyrene	PRY	64310	0.924625
phenol-d5	DCB	79349	1.143234
2-fluorobiphenyl	ANT	175508	1.180223

IS	Area	IS AMT	CAL AMT
DCB	55526	4	5
NPT	208605	4	5
ANT	118966	4	5
PHN	200187	4	5
CRY	143134	4	5
PRY	55642	4	5

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Tier_III Calculations
SVOC SDG 360-33936-1
OU3 ROUND 3
Olin

Analyte	IS	Area	RRF
Acetophenone	DCB	47313	1.47381
2-Nitrophenol	NPT	20282	0.167744
Diethylphthalate	ANT	84201	1.254765
N-nitrosodiphenylamine	PHN	60913	0.467267
Bis(2-ethylhexyl)phthalate	CRY	72251	0.891204
Benzo(a)pyrene	PRY	28715	0.875391
phenol-d5	DCB	37010	1.15287
2-fluorobiphenyl	ANT	80061	1.193071

IS	Area	IS AMT	CAL AMT
DCB	51364	4	2.5
NPT	193457	4	2.5
ANT	107368	4	2.5
PHN	177966	4	2.5
CRY	129714	4	2.5
PRY	52484	4	2.5

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Tier_III Calculations
SVOC SDG 360-33936-1
OU3 ROUND 3
Olin

Analyte	IS	Area	RRF
Acetophenone	DCB	19075	1.434372
2-Nitrophenol	NPT	7661	0.154495
Diethylphthalate	ANT	34383	1.269987
N-nitrosodiphenylamine	PHN	26097	0.494453
Bis(2-ethylhexyl)phthalate	CRY	25628	0.799694
Benzo(a)pyrene	PRY	9867	0.821309
phenol-d5	DCB	14935	1.123059
2-fluorobiphenyl	ANT	34852	1.28731

IS	Area	IS AMT	CAL AMT
DCB	53194	4	1
NPT	198349	4	1
ANT	108294	4	1
PHN	179675	4	1
CRY	128189	4	1
PRY	48055	4	1

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Tier_III Calculations
SVOC SDG 360-33936-1
OU3 ROUND 3
Olin

Analyte	IS	Area	RRF
Acetophenone	DCB	8989	1.401711
2-Nitrophenol	NPT	3282	0.146477
Diethylphthalate	ANT	15611	1.246176
N-nitrosodiphenylamine	PHN	12044	0.50706
Bis(2-ethylhexyl)phthalate	CRY	11070	0.76201
Benzo(a)pyrene	PRY	4160	0.789542
phenol-d5	DCB	6985	1.089215
2-fluorobiphenyl	ANT	16323	1.303012

IS	Area	IS AMT	CAL AMT
DCB	51303	4	0.5
NPT	179250	4	0.5
ANT	100217	4	0.5
PHN	162411	4	0.5
CRY	116219	4	0.5
PRY	42151	4	0.5

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Tier_III Calculations
SVOC SDG 360-33936-1
OU3 ROUND 3
Olin

Analyte	IS	Area	RRF
Acetophenone	DCB	3418	1.380062
2-Nitrophenol	NPT	986	0.107184
Diethylphthalate	ANT	6224	1.217468
N-nitrosodiphenylamine	PHN	4246	0.433145
Bis(2-ethylhexyl)phthalate	CRY	4538	0.841914
Benzo(a)pyrene	PRY	1192	0.625853
phenol-d5	DCB	2429	0.980741
2-fluorobiphenyl	ANT	6598	1.290625

IS	Area	IS AMT	CAL AMT
DCB	49534	4	0.2
NPT	183983	4	0.2
ANT	102245	4	0.2
PHN	167568	4	0.2
CRY	107802	4	0.2
PRY	38092	4	0.2

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FORM VI
GC/MS SEMI VOA INITIAL CALIBRATION DATA
INTERNAL STANDARD CURVE EVALUTION

Lab Name: TestAmerica Westfield Job No.: 360-34253-1 Analy Batch No.: 75168

SDG No.: 360-34253-1

Instrument ID: Inst. J GC Column: Rtx-5ms ID: 0.25(um) Heated Purge: (Y/N) N

Calibration Start Date: 06/13/2011 15:56 Calibration End Date: 06/13/2011 19:53 Calibration ID: 14228

ANALYTE	RRF LVL 1 / LVL 6	RRF LVL 2 / LVL 7	RRF LVL 3 / LVL 8	RRF LVL 4 / LVL 9	RRF LVL 5	CURVE TYPE	COEFFICIENT B	COEFFICIENT M1	COEFFICIENT M2	#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
2,2'-oxybis[1-chloropropane]	1.0352 1.0239	1.0794 1.0608	1.0955 1.0591	1.1043 1.0176	1.0523	Ave		1.0587			0.0100	2.9		20.0			
Acetophenone	1.3801 1.4414	1.4017 1.4639	1.4344 1.4788	1.4738 1.4224	1.4396	Ave		1.4373			0.0100	2.3		20.0			
N-Nitrosodi-n-propylamine	0.4595 0.5364	0.4931 0.5365	0.5049 0.5450	0.5080 0.5300	0.5303	Ave		0.5160			0.5000	5.3		20.0			
3 & 4 Methylphenol	0.9064 1.0555	1.0200 1.0716	1.0468 1.0789	1.0535 1.0570	1.0526	Ave		1.0380			0.6000	5.0		20.0			
Hexachloroethane	0.5499 0.5120	0.4898 0.5163	0.5386 0.5291	0.5055 0.5104	0.5158	Ave		0.5186			0.3000	3.5		20.0			
Nitrobenzene	0.2572 0.2878	0.2965 0.2885	0.2835 0.2921	0.2767 0.2852	0.2805	Ave		0.2831			0.1000	4.0		20.0			
Isophorone	0.4408 0.4787	0.4468 0.4667	0.4401 0.4754	0.4561 0.4750	0.4639	Ave		0.4604			0.3000	3.3		20.0			
2-Nitrophenol	0.1072 0.1699	0.1465 0.1705	0.1545 0.1787	0.1677 0.1700	0.1723	Lin	-0.012	0.1734			0.1000				0.9990		0.9900
2,4-Dimethylphenol	0.1948 0.2025	0.1897 0.2032	0.2001 0.2075	0.1971 0.2051	0.2021	Ave		0.2002			0.1000	2.8		20.0			
Benzoic acid	 0.5239	 0.5929	 0.6663	0.3481 0.7020	0.4553	Lin	-1.505	0.7658							0.9960		0.9900
Bis(2-chloroethoxy)methane	0.3358 0.2968	0.2922 0.2839	0.2946 0.3005	0.2995 0.2895	0.2860	Ave		0.2977			0.2000	5.2		20.0			
2,4-Dichlorophenol	0.2270 0.2505	0.2454 0.2466	0.2340 0.2542	0.2391 0.2474	0.2411	Ave		0.2428			0.1000	3.5		20.0			
1,2,4-Trichlorobenzene	0.3473 0.3032	0.3263 0.2963	0.3119 0.3053	0.3082 0.3016	0.2966	Ave		0.3107				5.3		20.0			
Naphthalene	0.9265 0.8556	0.9654 0.8456	0.8714 0.8667	0.8726 0.8386	0.8384	Ave		0.8757			0.6000	4.9		20.0			
4-Chloroaniline	0.2486 0.2935	0.2910 0.2921	0.2836 0.2939	0.2768 0.2883	0.2705	Ave		0.2820			0.0100	5.3		20.0			
Hexachlorobutadiene	0.2000 0.1689	0.1976 0.1712	0.1724 0.1735	0.1674 0.1702	0.1670	Ave		0.1765			0.0100	7.3		20.0			
Caprolactam	 0.0890	 0.0893	0.0651 0.0908	0.0754 0.0908	0.0828	Lin	-0.038	0.0929							1.0000		0.9900
4-Chloro-3-methylphenol	0.2071 0.2527	0.2296 0.2519	0.2282 0.2634	0.2404 0.2536	0.2436	Ave		0.2412			0.2000	7.1		20.0			
2-Methylnaphthalene	0.5739 0.5809	0.6308 0.5751	0.5902 0.5820	0.5884 0.5568	0.5741	Ave		0.5836			0.4000	3.5		20.0			
1-Methylnaphthalene	0.6154 0.5861	0.6201 0.5760	0.5894 0.5925	0.5927 0.5653	0.5851	Ave		0.5914				2.9		20.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

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FORM VI
GC/MS SEMI VOA INITIAL CALIBRATION DATA
INTERNAL STANDARD CURVE EVALUTION

Lab Name: TestAmerica Westfield Job No.: 360-34253-1 Analy Batch No.: 75168

SDG No.: 360-34253-1

Instrument ID: Inst. J GC Column: Rtx-5ms ID: 0.25(um) Heated Purge: (Y/N) N

Calibration Start Date: 06/13/2011 15:56 Calibration End Date: 06/13/2011 19:53 Calibration ID: 14228

ANALYTE	RRF LVL 1 LVL 6	RRF LVL 2 LVL 7	RRF LVL 3 LVL 8	RRF LVL 4 LVL 9	RRF LVL 5	CURVE TYPE	COEFFICIENT B	COEFFICIENT M1	COEFFICIENT M2	#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
Hexachlorocyclopentadiene	0.1577	0.1707	0.1474 0.1751	0.1579 0.1780	0.1621	Lin	-0.083	0.1803			0.0500				0.9980		0.9900
1,2,4,5-Tetrachlorobenzene	0.2659 0.2413	0.2797 0.2518	0.2485 0.2559	0.2614 0.2486	0.2530	Ave		0.2562			0.0100	4.5		20.0			
2,4,6-Trichlorophenol	0.1995 0.3001	0.2767 0.3062	0.2948 0.3062	0.2927 0.3189	0.2879	Ave		0.2870			0.2000	12.0		20.0			
2,4,5-Trichlorophenol	0.2365 0.3022	0.2838 0.3234	0.3050 0.3205	0.3084 0.3331	0.2946	Ave		0.3008			0.2000	9.5		20.0			
1,1'-Biphenyl	1.4401 1.2330	1.3679 1.2319	1.3108 1.2138	1.2949 1.2527	1.2124	Ave		1.2842			0.0100	6.1		20.0			
2-Chloronaphthalene	1.2374 1.2075	1.2911 1.1618	1.2096 1.1527	1.1941 1.1853	1.1139	Ave		1.1948			0.8000	4.3		20.0			
Phenyl ether	0.4373 0.3763	0.4236 0.3773	0.3918 0.3825	0.3860 0.3831	0.3770	Ave		0.3928				5.6		20.0			
2-Nitroaniline	0.2584 0.3346	0.2983 0.3402	0.2951 0.3393	0.3132 0.3475	0.3121	Ave		0.3154			0.0100	9.1		20.0			
Dimethyl phthalate	1.1300 1.1965	1.2446 1.1995	1.1839 1.1767	1.2132 1.1977	1.1770	Ave		1.1910			0.0100	2.6		20.0			
2,6-Dinitrotoluene	0.2375 0.2815	0.2417 0.2747	0.2581 0.2724	0.2702 0.2861	0.2707	Ave		0.2659			0.1000	6.3		20.0			
Acenaphthylene	1.3311 1.4828	1.4610 1.4671	1.5041 1.4528	1.4416 1.4645	1.4241	Ave		1.4477			0.9000	3.4		20.0			
3-Nitroaniline	0.2584	0.2602	0.2618	0.2470 0.2651	0.2455	Lin	-0.083	0.2685			0.0100				1.0000		0.9900
Acenaphthene	1.0410 1.0140	1.0968 0.9949	1.0419 0.9984	1.0151 0.9908	0.9969	Ave		1.0211			0.8000	3.3		20.0			
2,4-Dinitrophenol	0.1280	0.1401	0.1520	0.0922 0.1604	0.1162	Lin	-0.276	0.1716			0.0100				0.9970		0.9900
4-Nitrophenol	0.1970	0.2089	0.2152	0.1833 0.2172	0.1837	Lin	-0.169	0.2253			0.0100				0.9990		0.9900
2,4-Dinitrotoluene	0.2455 0.3573	0.3250 0.3625	0.3273 0.3649	0.3340 0.3723	0.3429	Ave		0.3369			0.2000	11.0		20.0			
Dibenzofuran	1.3970 1.3898	1.4842 1.3951	1.4369 1.3780	1.4039 1.3872	1.3448	Ave		1.4019			0.8000	2.8		20.0			
2,3,4,6-Tetrachlorophenol	0.2461	0.2499	0.2489	0.2336 0.2549	0.2214	Lin	-0.118	0.2595							0.9990		0.9900
Diethyl phthalate	1.2175 1.2725	1.2462 1.2779	1.2700 1.2350	1.2521 1.2574	1.2260	Ave		1.2505			0.0100	1.7		20.0			
4-Chlorophenyl phenyl ether	0.5986 0.5210	0.5475 0.5352	0.5423 0.5292	0.5305 0.5367	0.5345	Ave		0.5417			0.4000	4.2		20.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

8/31/4

FORM VI
GC/MS SEMI VOA INITIAL CALIBRATION DATA
INTERNAL STANDARD CURVE EVALUTION

Lab Name: TestAmerica Westfield Job No.: 360-34253-1 Analy Batch No.: 75168

SDG No.: 360-34253-1

Instrument ID: Inst. J GC Column: Rtx-5ms ID: 0.25(um) Heated Purge: (Y/N) N

Calibration Start Date: 06/13/2011 15:56 Calibration End Date: 06/13/2011 19:53 Calibration ID: 14228

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5		B	M1	M2								
4-Nitroaniline	0.2044 0.2394	0.2192 0.2395	0.2311 0.2424	0.2382 0.2426	0.2274	Ave		0.2316			0.0100	5.5		20.0			
Fluorene	1.1163 1.1561	1.1710 1.1431	1.1303 1.1200	1.1474 1.1433	1.1118	Ave		1.1377			0.8000	1.7		20.0			
4,6-Dinitro-2-methylphenol	0.1102	0.1149	0.1188	0.0936 0.1242	0.1008	Lin	-0.129	0.1290			0.0100				0.9990		0.9900
Diphenylamine	0.5068 0.5501	0.5933 0.5597	0.5810 0.5484	0.5476 0.5582	0.5520	Ave		0.5552				4.3		20.0			
N-Nitrosodiphenylamine	0.4331 0.4702	0.5071 0.4784	0.4966 0.4687	0.4681 0.4771	0.4718	Ave		0.4746			0.0100	4.3		20.0			
1,2-Diphenylhydrazine	0.8393 0.9557	0.9459 0.9690	0.9734 0.9570	0.9587 0.9519	0.9360	Ave		0.9430				4.3		20.0			
Azobenzene	0.8393 0.9557	0.9459 0.9690	0.9734 0.9570	0.9587 0.9519	0.9360	Ave		0.9430				4.3		20.0			
Benzophenone	0.5200 0.6133	0.6103 0.6324	0.6359 0.6204	0.6346 0.6207	0.5998	Ave		0.6097				5.9		20.0			
4-Bromophenyl phenyl ether	0.1487 0.1596	0.1816 0.1592	0.1626 0.1600	0.1602 0.1639	0.1583	Ave		0.1616			0.1000	5.3		20.0			
Hexachlorobenzene	0.1572 0.1489	0.1705 0.1502	0.1634 0.1482	0.1509 0.1518	0.1428	Ave		0.1538			0.1000	5.6		20.0			
Atrazine	0.1047 0.1363	0.1249 0.1399	0.1269 0.1323	0.1313 0.1319	0.1315	Ave		0.1289				7.8		20.0			
Pentachlorophenol	0.0860	0.0909	0.0946	0.0770 0.0976	0.0774	Lin	-0.102	0.1018			0.0500				0.9990		0.9900
Pentachloronitrobenzene	0.0875 0.0890	0.0870 0.0908	0.0774 0.0948	0.0885 0.0921	0.0866	Ave		0.0882				5.5		20.0			
Phenanthrene	1.0127 0.9137	1.0131 0.9254	0.9294 0.9077	0.9222 0.8919	0.8979	Ave		0.9349			0.6000	4.9		20.0			
Anthracene	0.8035 0.8845	0.9122 0.8829	0.8519 0.8886	0.9134 0.8766	0.8590	Ave		0.8747			0.6000	3.9		20.0			
Carbazole	0.7506 0.7931	0.8410 0.7869	0.8112 0.7488	0.7982 0.7092	0.7950	Ave		0.7815			0.0100	5.0		20.0			
Di-n-butyl phthalate	1.3674 1.2272	1.2713 1.2403	1.2028 1.2197	1.2250 1.2225	1.1958	Ave		1.2413			0.0100	4.2		20.0			
Fluoranthene	0.8101 0.9164	0.9540 0.9260	0.8876 0.9333	0.9222 0.9226	0.8932	Ave		0.9073			0.6000	4.6		20.0			
Benzidine	0.2693 0.2710	0.2498 0.2761	0.2650 0.2436	0.2807 0.2463	0.2329	Ave		0.2594				6.4		20.0			
Pyrene	1.3534 1.2746	1.3334 1.2873	1.2690 1.2587	1.2679 1.2113	1.2574	Ave		1.2792			0.6000	3.3		20.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

8/31/4

FORM VI
GC/MS SEMI VOA INITIAL CALIBRATION DATA
INTERNAL STANDARD CURVE EVALUTION

Lab Name: TestAmerica Westfield Job No.: 360-34253-1 Analy Batch No.: 75168

SDG No.: 360-34253-1

Instrument ID: Inst. J GC Column: Rtx-5ms ID: 0.25(um) Heated Purge: (Y/N) N

Calibration Start Date: 06/13/2011 15:56 Calibration End Date: 06/13/2011 19:53 Calibration ID: 14228

ANALYTE	RRF LVL 1 LVL 6	RRF LVL 2 LVL 7	RRF LVL 3 LVL 8	RRF LVL 4 LVL 9	RRF LVL 5	CURVE TYPE	COEFFICIENT B	COEFFICIENT M1	COEFFICIENT M2	#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
Butyl benzyl phthalate	0.5590 0.6625	0.5443 0.6752	0.5743 0.6625	0.6202 0.6442	0.6549	Ave		0.6219			0.0100	8.0		20.0			
3,3'-Dichlorobenzidine	0.2925	0.2913	0.2572 0.2799	0.2776 +++++	0.2875	Lin	0.0091	0.2840			0.0100				0.9990		0.9900
Bis(2-ethylhexyl) phthalate	0.8419 0.9088	0.7620 0.8964	0.7997 0.8716	0.8912 0.8357	0.8991	Ave		0.8563			0.0100	5.9		20.0			
Benzo[a]anthracene	0.9655 1.0226	1.0031 1.0084	0.9763 1.0073	1.0248 0.9937	1.0070	Ave		1.0010			0.6000	2.0		20.0			
Chrysene	1.1462 0.9602	1.1222 0.9567	1.0248 0.9619	1.0285 0.9588	0.9708	Ave		1.0144			0.6000	7.3		20.0			
Di-n-octyl phthalate	2.4877 3.1473	2.4088 3.3311	2.6725 3.3206	2.8922 3.1094	3.1697	Lin	-0.207	3.2122			0.0100				0.9980		0.9900
Benzo[b]fluoranthene	1.3667 1.4533	1.4954 1.4609	1.4274 1.4868	1.3424 1.4543	1.3607	Ave		1.4276			0.7000	4.0		20.0			
Benzo[k]fluoranthene	1.3635 1.2627	1.4018 1.3830	1.3078 1.4602	1.4310 1.3729	1.4106	Ave		1.3771			0.7000	4.4		20.0			
Benzo[a]pyrene	0.6259 0.9616	0.7712 0.9959	0.8213 +++++	0.8754 +++++	0.9246	Lin2	-0.067	0.9386			0.7000				0.9970		0.9900
Indeno[1,2,3-cd]pyrene	0.4185 0.6613	0.5332 0.6838	0.5624 0.6652	0.6523 0.6608	0.6463	Lin2	-0.052	0.6609			0.5000				0.9990		0.9900
Dibenz(a,h)anthracene	0.3297 0.5105	0.4325 0.5148	0.4307 0.5124	0.4852 0.5054	0.4967	Lin2	-0.036	0.5049			0.4000				0.9990		0.9900
Benzo[g,h,i]perylene	0.3875 0.5211	0.5022 0.5357	0.4850 0.5161	0.5409 0.5034	0.5204	Ave		0.5014			0.4000	9.2		20.0			
2-Fluorophenol	0.5045 0.4869	0.4820 0.4912	0.4473 0.4858	0.4814 0.4935	0.4634	Ave		0.4818				3.5		20.0			
Phenol-d5	0.9807 1.1241	1.0892 1.1352	1.1231 1.1594	1.1529 1.1240	1.1432	Ave		1.1146				4.9		20.0			
Nitrobenzene-d5	0.2994 0.2985	0.3112 0.3042	0.2826 0.3046	0.3005 0.3031	0.2963	Ave		0.3000				2.6		20.0			
2-Fluorobiphenyl	1.2906 1.2131	1.3030 1.2070	1.2773 1.1897	1.1931 1.2246	1.1802	Ave		1.2310				3.8		20.0			
2,4,6-Tribromophenol	0.0532 0.0643	0.0572 0.0665	0.0637 0.0665	0.0600 0.0698	0.0632	Ave		0.0627				8.2		20.0			
Terphenyl-d14	0.8041 0.7398	0.7722 0.7507	0.7414 0.7492	0.7507 0.7360	0.7388	Ave		0.7536				2.9		20.0			

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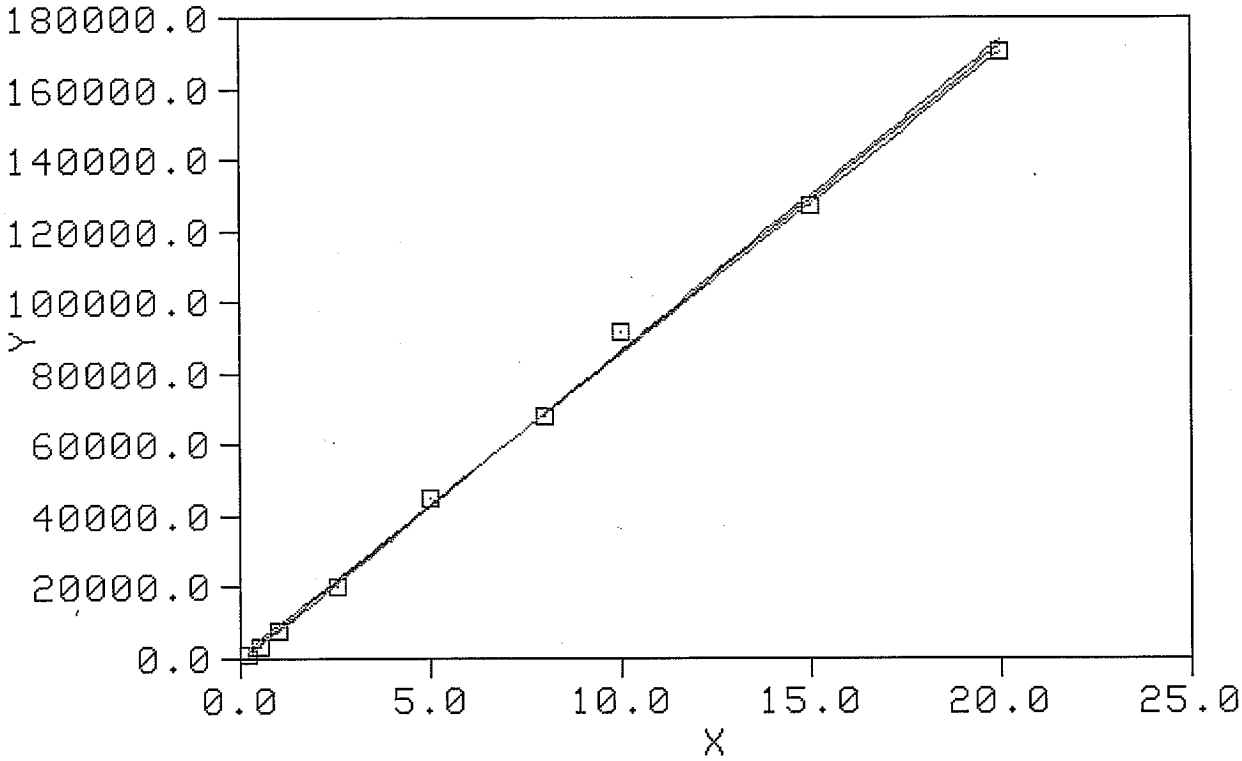
Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI 8270D 07/08/2011

Here are your results:



The blue line is the least squares best fit to the data (points).

The pink lines have slopes 1 sigma away from the best fit. They intersect at the mean of x and y for the data.

number of events entered:	**9**
slope:	**8598.086 +/- 132.901**
y intercept:	**-3.89 +/- 1269.76**
dispersion:	**2630.19**
correlation coefficient (r):	**1.00**
r^2:	**1.00**
chi ^ 2 (degrees of freedom):	**1252.572 (7)**

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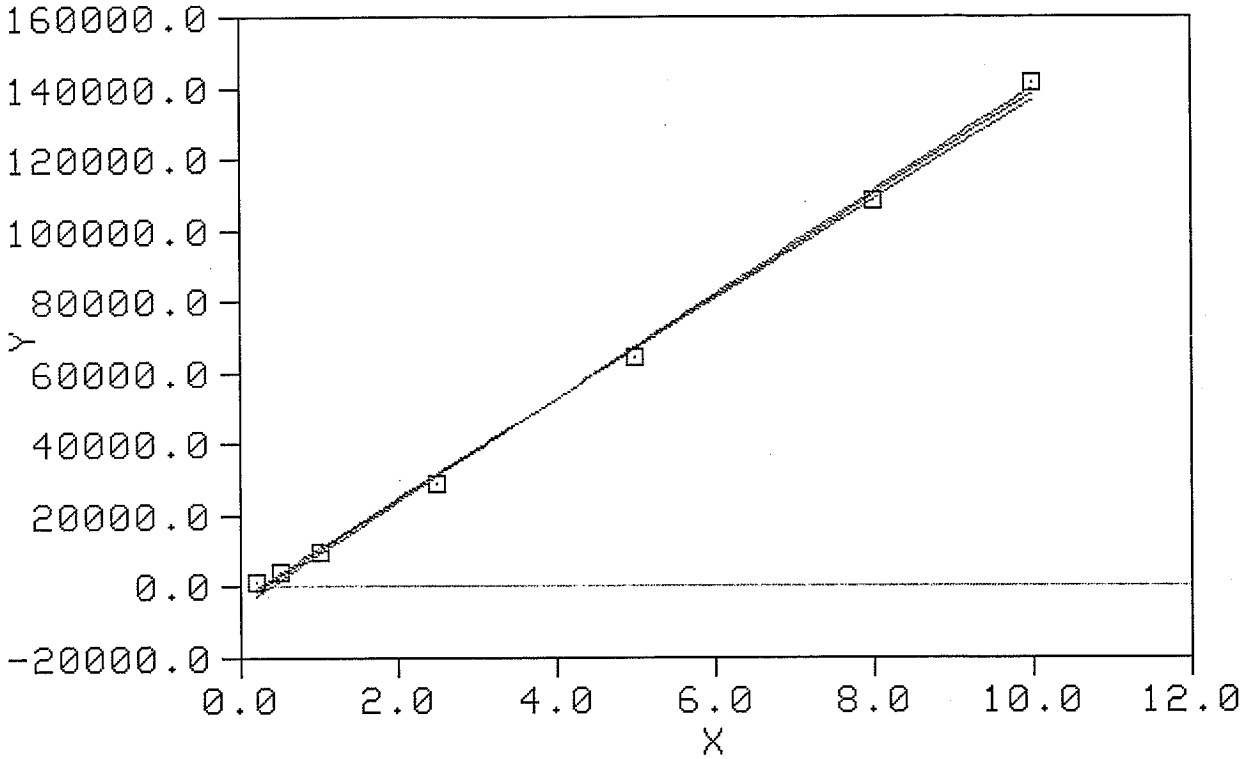
Return to the main Tool Page

Here are your results:



The blue line is the least squares best fit to the data (points).

The pink lines have slopes 1 sigma away from the best fit. They intersect at the mean of x and y for the data.

number of events entered:	**7**
slope:	**14236.606 +/- 274.338**
y intercept:	**-4231.38 +/- 1453.66**
dispersion:	**2614.84**
correlation coefficient (r):	**1.00**
r^2:	**1.00**
chi ^ 2 (degrees of freedom):	**-3813.222 (5)**

Return to the main Tool Page

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FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Westfield Job No.: 360-34253-1

SDG No.: 360-34253-1

Lab Sample ID: CCVIS 360-75230/2 Calibration Date: 06/14/2011 16:35

Instrument ID: Inst. J Calib Start Date: 06/13/2011 15:56

GC Column: Rtx-5ms ID: 0.25(um) Calib End Date: 06/13/2011 19:53

Lab File ID: J2858.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
1,4-Dioxane	Ave	0.3650	0.3826		5240	5000	4.8	20.0
N-Nitrosodimethylamine	Ave	0.6420	0.6647		5180	5000	3.5	20.0
Pyridine	Ave	0.5635	0.6355		5640	5000	12.8	20.0
Benzaldehyde	Ave	0.7144	0.7068		4950	5000	-1.1	20.0
Aniline	Ave	1.040	1.054		5070	5000	1.4	20.0
Phenol	Ave	1.202	1.226	0.7000	5100	5000	2.0	20.0
Bis(2-chloroethyl)ether	Ave	0.9351	0.9373	0.6000	5010	5000	0.2	20.0
2-Chlorophenol	Ave	1.071	1.084	0.8000	5060	5000	1.2	20.0
1,3-Dichlorobenzene	Ave	1.345	1.351		5020	5000	0.5	20.0
1,4-Dichlorobenzene	Ave	1.374	1.367		4970	5000	-0.5	20.0
Benzyl alcohol	Ave	0.8306	0.8464		5090	5000	1.9	20.0
1,2-Dichlorobenzene	Ave	1.283	1.273		4960	5000	-0.8	20.0
2-Methylphenol	Ave	0.8856	0.8901	0.6000	5030	5000	0.5	20.0
2,2'-oxybis[1-chloropropane]	Ave	1.059	1.058	0.0100	5000	5000	-0.0	20.0
Acetophenone	Ave	1.437	1.371	0.0100	4770	5000	-4.6	20.0
N-Nitrosodi-n-propylamine	Ave	0.5160	0.4898*	0.5000	4750	5000	-5.1	20.0
3 & 4 Methylphenol	Ave	1.038	1.031	0.6000	4970	5000	-0.7	20.0
Hexachloroethane	Ave	0.5186	0.5250	0.3000	5060	5000	1.2	20.0
Nitrobenzene	Ave	0.2831	0.2946	0.1000	5200	5000	4.1	20.0
Isophorone	Ave	0.4604	0.4564	0.3000	4960	5000	-0.9	20.0
2-Nitrophenol	Lin		0.1708	0.1000	4990	5000	-0.2	20.0
2,4-Dimethylphenol	Ave	0.2002	0.2009	0.1000	5020	5000	0.3	20.0
Benzoic acid	Lin		0.4777		5080	5000	1.6	20.0
Bis(2-chloroethoxy)methane	Ave	0.2977	0.2947	0.2000	4950	5000	-1.0	20.0
2,4-Dichlorophenol	Ave	0.2428	0.2434	0.1000	5010	5000	0.2	20.0
1,2,4-Trichlorobenzene	Ave	0.3107	0.3017		4850	5000	-2.9	20.0
Naphthalene	Ave	0.8757	0.8632	0.6000	4930	5000	-1.4	20.0
4-Chloroaniline	Ave	0.2820	0.2995	0.0100	5310	5000	6.2	20.0
Hexachlorobutadiene	Ave	0.1765	0.1734	0.0100	4910	5000	-1.8	20.0
Caprolactam	Lin		0.0857		5020	5000	0.4	20.0
4-Chloro-3-methylphenol	Ave	0.2412	0.2501	0.2000	5180	5000	3.7	20.0
2-Methylnaphthalene	Ave	0.5836	0.5401	0.4000	4630	5000	-7.5	20.0
1-Methylnaphthalene	Ave	0.5914	0.5620		4750	5000	-5.0	20.0
1,2,4,5-Tetrachlorobenzene	Ave	0.2562	0.2427	0.0100	4740	5000	-5.3	20.0
Hexachlorocyclopentadiene	Lin		0.1668	0.0500	5080	5000	1.6	20.0
2,4,6-Trichlorophenol	Ave	0.2870	0.3079	0.2000	5360	5000	7.3	20.0
2,4,5-Trichlorophenol	Ave	0.3008	0.3144	0.2000	5220	5000	4.5	20.0
1,1'-Biphenyl	Ave	1.284	1.252	0.0100	4870	5000	-2.5	20.0
2-Chloronaphthalene	Ave	1.195	1.166	0.8000	4880	5000	-2.4	20.0
Phenyl ether	Ave	0.3928	0.3671		4670	5000	-6.5	20.0
2-Nitroaniline	Ave	0.3154	0.3157	0.0100	5000	5000	0.1	20.0

FORM VII 8270D

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FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Westfield Job No.: 360-34253-1

SDG No.: 360-34253-1

Lab Sample ID: CCVIS 360-75230/2 Calibration Date: 06/14/2011 16:35

Instrument ID: Inst. J Calib Start Date: 06/13/2011 15:56

GC Column: Rtx-5ms ID: 0.25(um) Calib End Date: 06/13/2011 19:53

Lab File ID: J2858.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Dimethyl phthalate	Ave	1.191	1.168	0.0100	4900	5000	-2.0	20.0
2,6-Dinitrotoluene	Ave	0.2659	0.2712	0.1000	5100	5000	2.0	20.0
Acenaphthylene	Ave	1.448	1.456	0.9000	5030	5000	0.6	20.0
3-Nitroaniline	Lin		0.2461	0.0100	4890	5000	-2.2	20.0
Acenaphthene	Ave	1.021	1.005	0.8000	4920	5000	-1.6	20.0
2,4-Dinitrophenol	Lin		0.1206	0.0100	5120	5000	2.4	20.0
4-Nitrophenol	Lin		0.1846	0.0100	4850	5000	-3.0	20.0
2,4-Dinitrotoluene	Ave	0.3369	0.3315	0.2000	4920	5000	-1.6	20.0
Dibenzofuran	Ave	1.402	1.352	0.8000	4820	5000	-3.6	20.0
2,3,4,6-Tetrachlorophenol	Lin		0.2264		4820	5000	-3.6	20.0
Diethyl phthalate	Ave	1.250	1.193	0.0100	4770	5000	-4.6	20.0
4-Chlorophenyl phenyl ether	Ave	0.5417	0.5270	0.4000	4860	5000	-2.7	20.0
4-Nitroaniline	Ave	0.2316	0.2220	0.0100	4790	5000	-4.1	20.0
Fluorene	Ave	1.138	1.104	0.8000	4850	5000	-3.0	20.0
4,6-Dinitro-2-methylphenol	Lin		0.1099	0.0100	5260	5000	5.2	20.0
Diphenylamine	Ave	0.5552	0.5573		5020	5000	0.4	20.0
N-Nitrosodiphenylamine	Ave	0.4746	0.4763	0.0100	5870	5850	0.4	20.0
1,2-Diphenylhydrazine	Ave	0.9430	0.9937		5270	5000	5.4	20.0
Azobenzene	Ave	0.9430	0.9937		5270	5000	5.4	20.0
Benzophenone	Ave	0.6097	0.6336		5200	5000	3.9	20.0
4-Bromophenyl phenyl ether	Ave	0.1616	0.1664	0.1000	5150	5000	3.0	20.0
Hexachlorobenzene	Ave	0.1538	0.1540	0.1000	5010	5000	0.2	20.0
Atrazine	Ave	0.1289	0.1312		5090	5000	1.8	20.0
Pentachlorophenol	Lin		0.0811	0.0500	4990	5000	-0.2	20.0
Pentachloronitrobenzene	Ave	0.0882	0.0896		5080	5000	1.6	20.0
Phenanthrene	Ave	0.9349	0.8987	0.6000	4810	5000	-3.9	20.0
Anthracene	Ave	0.8747	0.8785	0.6000	5020	5000	0.4	20.0
Carbazole	Ave	0.7815	0.8066	0.0100	5160	5000	3.2	20.0
Di-n-butyl phthalate	Ave	1.241	1.179	0.0100	4750	5000	-5.0	20.0
Fluoranthene	Ave	0.9073	0.9250	0.6000	5100	5000	2.0	20.0
Benzidine	Ave	0.2594	0.2264		4360	5000	-12.7	20.0
Pyrene	Ave	1.279	1.186	0.6000	4630	5000	-7.3	20.0
Butyl benzyl phthalate	Ave	0.6219	0.5829	0.0100	4690	5000	-6.3	20.0
3,3'-Dichlorobenzidine	Lin		0.2507	0.0100	4380	5000	-12.4	20.0
Benzo[a]anthracene	Ave	1.001	0.9849	0.6000	4920	5000	-1.6	20.0
Bis(2-ethylhexyl) phthalate	Ave	0.8563	0.8817	0.0100	5150	5000	3.0	20.0
Chrysene	Ave	1.014	0.9620	0.6000	4740	5000	-5.2	20.0
Di-n-octyl phthalate	Lin		3.370	0.0100	5310	5000	6.2	20.0
Benzo[b]fluoranthene	Ave	1.428	1.898	0.7000	6650	5000	32.9*	20.0
Benzo[k]fluoranthene	Ave	1.377	1.541	0.7000	5600	5000	11.9	20.0
Benzo[a]pyrene	Lin2		0.9342	0.7000	5050	5000	1.0	20.0

FORM VII 8270D

8/31/11

07/08/2011

Report Date: 15-Jun-2011 09:49:06 Chrom Revision: 1.2 03-Jun-2011 08:44:02

TestAmerica Laboratories
Target Compound Quantitation Report

Data File:	\\wessvr06\chromdata\INSTJ.i\20110614-5864.b\J2866.D		
Lims ID:	360-34253-A-3-A	Client ID:	OC-SW-ISCO-2-XXX
Inject. Date:	14-Jun-2011 20:31:30	Dil. Factor:	1.0000
Sample Type:	Client		
Sample ID:	360-34253-A-3-A		
Misc. Info.:			
Operator:	CR	Instrument ID:	Inst. J
Vol. Injected:	1.0000	ALS Bottle#:	10
Lims Batch ID:	75230	Lims Sample ID:	10
Detector:	MS SCAN		
Method:	\\wessvr06\chromdata\INSTJ.i\20110614-5864.b\LL8270J.m		
Last Update:	15-Jun-2011 09:48:39	Calib Date:	13-Jun-2011 19:53:30
Quant Method:	Internal Standard	Quant By:	Initial Calibration
Last ICal File:	\\wessvr06\chromdata\INSTJ.i\20110613-5850.b\J2841.D		
Limit Group:	SMS - 8270D_LL SVOA Calibration MCP		
Integrator:	RTE	ID Type:	RT Order ID
Process Host:	WESVOAJESS		

First Level Reviewer: rouleauc Date: 15-Jun-2011 09:17:47

Compound	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/mL	Flags
* 1 1,4-Dichlorobenzene-d4	152	7.031	7.033	-0.002	96	43440	4.00	
* 2 Naphthalene-d8	136	8.377	8.380	-0.003	99	147745	4.00	
* 3 Acenaphthene-d10	164	10.152	10.154	-0.002	94	74539	4.00	
* 4 Phenanthrene-d10	188	11.633	11.635	-0.002	95	121288	4.00	
* 5 Chrysene-d12	240	14.244	14.246	-0.002	83	76121	4.00	
* 6 Perylene-d12	264	15.470	15.473	-0.003	95	27330	4.00	
$ 7 2-Fluorophenol	112	5.429	5.427	0.002	87	37597	4.19	
$ 8 Phenol-d5	99	6.641	6.644	-0.003	88	28737	2.37	
$ 9 Nitrobenzene-d5	82	7.622	7.625	-0.003	89	36931	3.33	
$ 10 2-Fluorobiphenyl	172	9.474	9.476	-0.002	99	72587	3.16	
$ 11 2,4,6-Tribromophenol	330	10.940	10.938	0.002	84	19130	10.1	
$ 12 Terphenyl-d14	244	13.220	13.222	-0.002	97	58821	4.10	
16 Benzaldehyde	105	6.516	6.519	-0.003	1	1202	0.1549	
23 Benzyl alcohol	79	7.180	7.187	-0.007	60	1695	0.1879	
*35 2-Nitrophenol	139	7.983	7.985	-0.002	93	5947	1.00	
34 Benzoic acid	105	8.079	8.096	-0.017	36	1232	2.11	
51 1,1'-Biphenyl	154	9.575	9.577	-0.002	65	1332	0.0557	
53 Phenyl ether	170	9.680	9.683	-0.003	94	5711	0.3937	
56 Dimethyl phthalate	163	9.868	9.875	-0.007	83	5218	0.2351	
66 Diethyl phthalate	149	10.575	10.577	-0.002	74	1753	0.0752	
75 N-Nitrosodiphenylamine	169	10.810	10.808	0.002	33	7430	0.5164	
71 Diphenylamine	169	10.810	10.808	0.002	0	7430	0.4413	
72 Azobenzene	77	10.863	10.856	0.007	60	8913	0.3117	
74 Benzophenone	105	10.863	10.861	0.002	93	13550	0.7329	
84 Di-n-butyl phthalate	149	12.210	12.207	0.003	96	22468	0.5969	
91 Bis(2-ethylhexyl) phthalate	149	14.244	14.246	-0.002	93	109597	6.73	
99 Benzo[a]pyrene	252	15.432	15.434	-0.002	19	580	0.1622	

$* \frac{5947 \times 4}{147745 \times 0.159691} = 1.0082417 / 1100\,mL = 0.0009165\,\frac{\mu g}{mL} \times \frac{1000\,mL}{L} = 0.92\,\mu g/L$

07/08/2011

✓ 7/31/11

Report Date: 15-Jun-2011 09:49:25 Chrom Revision: 1.2 03-Jun-2011 08:44:02

TestAmerica Laboratories
Target Compound Quantitation Report

Data File:	\\wessvr06\chromdata\INSTJ.i\20110614-5864.b\J2871.D		
Lims ID:	360-34253-H-6-A	Client ID:	OC-SW-MMB-SW/SD-9-XXX
Inject. Date:	14-Jun-2011 22:57:30	Dil. Factor:	1.0000
Sample Type:	Client		
Sample ID:	360-34253-H-6-A		
Misc. Info.:			
Operator:	CR	Instrument ID:	Inst. J
Vol. Injected:	1.0000	ALS Bottle#:	15
Lims Batch ID:	75230	Lims Sample ID:	15
Detector:	MS SCAN		
Method:	\\wessvr06\chromdata\INSTJ.i\20110614-5864.b\LL8270J.m		
Last Update:	15-Jun-2011 09:48:39	Calib Date:	13-Jun-2011 19:53:30
Quant Method:	Internal Standard	Quant By:	Initial Calibration
Last ICal File:	\\wessvr06\chromdata\INSTJ.i\20110613-5850.b\J2841.D		
Limit Group:	SMS - 8270D_LL SVOA Calibration MCP		
Integrator:	RTE	ID Type:	RT Order ID
Process Host:	WESVOAJESS		

First Level Reviewer: rouleauc Date: 15-Jun-2011 09:28:23

Compound	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/mL	Flags
* 1 1,4-Dichlorobenzene-d4	152	7.033	7.033	0.0	97	47840	4.00	
* 2 Naphthalene-d8	136	8.379	8.380	-0.001	99	165722	4.00	
* 3 Acenaphthene-d10	164	10.154	10.154	0.0	93	87300	4.00	
* 4 Phenanthrene-d10	188	11.630	11.635	-0.005	96	135922	4.00	
* 5 Chrysene-d12	240	14.241	14.246	-0.005	97	78184	4.00	
* 6 Perylene-d12	264	15.472	15.473	-0.001	96	27108	4.00	
$ 7 2-Fluorophenol	112	5.431	5.427	0.004	87	35052	3.33	
$ 8 Phenol-d5	99	6.643	6.644	-0.001	86	28518	2.14	
$ 9 Nitrobenzene-d5	82	7.619	7.625	-0.006	90	36420	2.93	
$ 10 2-Fluorobiphenyl	172	9.476	9.476	0.0	99	81197	3.02	
$ 11 2,4,6-Tribromophenol	330	10.937	10.938	-0.001	78	17121	8.03	
$ 12 Terphenyl-d14	244	13.222	13.222	0.0	97	65088	4.42	
16 Benzaldehyde	105	6.518	6.519	-0.001	1	1052	0.1231	
23 Benzyl alcohol	79	7.182	7.187	-0.005	39	1489	0.1499	
25 2-Methylphenol	108	7.321	7.322	-0.001	5	277	0.0262	
29 Acetophenone	105	7.461	7.466	-0.005	55	941	0.0547	
30 Hexachloroethane	117	7.586	7.586	0.0	4	205	0.0331	
34 Benzoic acid	105	8.071	8.096	-0.025	21	1355	2.11	
45 2-Methylnaphthalene	142	9.105	9.106	-0.001	24	797	0.0330	
51 1,1'-Biphenyl	154	9.572	9.577	-0.005	1	369	0.0132	
52 2-Chloronaphthalene	162	9.591	9.596	-0.005	1	359	0.0138	
58 Acenaphthylene	152	10.009	10.010	-0.001	1	646	0.0204	
62 Acenaphthene	153	10.187	10.188	-0.001	29	554	0.0249	
66 Diethyl phthalate	149	10.572	10.577	-0.005	79	2180	0.0799	
70 Fluorene	166	10.697	10.697	0.0	32	644	0.0259	
81 Phenanthrene	178	11.654	11.659	-0.005	1	1368	0.0431	
82 Anthracene	178	11.707	11.707	0.0	1	1020	0.0343	
84 Di-n-butyl phthalate	149	12.207	12.207	0.0	74	29604	0.7018	
86 Fluoranthene	202	12.842	12.842	0.0	54	998	0.0324	
88 Pyrene	202	13.068	13.068	0.0	57	961	0.0384	
91 Bis(2-ethylhexyl) phthalate	149	14.246	14.246	0.0	48	6530	0.3902	

07/08/2011

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Report Date: 15-Jun-2011 09:49:25 Chrom Revision: 1.2 03-Jun-2011 08:44:02
Data File: \\wessvr06\chromdata\INSTJ.i\20110614-5864.b\J2871.D

Compound	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/mL	Flags
97 Benzo[b]fluoranthene	252	15.188	15.189	-0.001	37	1034	0.1069	
98 Benzo[k]fluoranthene	252	15.212	15.213	-0.001	1	857	0.0918	
99 Benzo[a]pyrene	252	15.434	15.434	0.0	20	477	0.1467	

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Report Date: 15-Jun-2011 09:49:36 Chrom Revision: 1.2 03-Jun-2011 08:44:02

TestAmerica Laboratories
Target Compound Quantitation Report

Data File:	\\wessvr06\chromdata\INSTJ.i\20110614-5864.b\J2873.D		
Lims ID:	360-34253-G-8-A	Client ID:	OC-SW-PZ-17RR-XXX
Inject. Date:	14-Jun-2011 23:55:30	Dil. Factor:	1.0000
Sample Type:	Client		
Sample ID:	360-34253-G-8-A		
Misc. Info.:			
Operator:	CR	Instrument ID:	Inst. J
Vol. Injected:	1.0000	ALS Bottle#:	17
Lims Batch ID:	75230	Lims Sample ID:	17
Detector:	MS SCAN		
Method:	\\wessvr06\chromdata\INSTJ.i\20110614-5864.b\LL8270J.m		
Last Update:	15-Jun-2011 09:48:39	Calib Date:	13-Jun-2011 19:53:30
Quant Method:	Internal Standard	Quant By:	Initial Calibration
Last ICal File:	\\wessvr06\chromdata\INSTJ.i\20110613-5850.b\J2841.D		
Limit Group:	SMS - 8270D_LL SVOA Calibration MCP		
Integrator:	RTE	ID Type:	RT Order ID
Process Host:	WESVOAJESS		

First Level Reviewer: rouleauc Date: 15-Jun-2011 09:32:57

Compound	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/mL	Flags
* 1 1,4-Dichlorobenzene-d4	152	7.027	7.033	-0.006	96	39414	4.00	
* 2 Naphthalene-d8	136	8.378	8.380	-0.002	99	139265	4.00	
* 3 Acenaphthene-d10	164	10.153	10.154	-0.001	90	72405	4.00	
* 4 Phenanthrene-d10	188	11.634	11.635	-0.001	95	115063	4.00	
* 5 Chrysene-d12	240	14.240	14.246	-0.006	80	72058	4.00	
* 6 Perylene-d12	264	15.471	15.473	-0.002	96	26621	4.00	
$ 7 2-Fluorophenol	112	5.426	5.427	-0.001	85	31392	3.60	
$ 8 Phenol-d5	99	6.642	6.644	-0.002	93	26169	2.38	
$ 9 Nitrobenzene-d5	82	7.619	7.625	-0.006	92	29194	2.79	
$ 10 2-Fluorobiphenyl	172	9.475	9.476	-0.001	99	70505	3.16	
$ 11 2,4,6-Tribromophenol	330	10.937	10.938	-0.001	77	24121	13.4	
$ 12 Terphenyl-d14	244	13.221	13.222	-0.001	97	59589	4.39	
16 Benzaldehyde	105	6.517	6.519	-0.002	1	1246	0.1770	
18 Aniline	93	6.652	6.658	-0.006	49	1131	0.1104	
17 Phenol	94	6.657	6.658	-0.001	71	3393	0.2864	
19 Bis(2-chloroethyl)ether	93	6.652	6.740	-0.088	28	1131	0.1227	
23 Benzyl alcohol	79	7.181	7.187	-0.006	61	2368	0.2893	
29 Acetophenone	105	7.465	7.466	-0.001	67	1850	0.1306	
35 2-Nitrophenol	139	7.979	7.985	-0.006	95	11444	1.97	
34 Benzoic acid	105	8.090	8.096	-0.006	51	2876	2.35	
51 1,1'-Biphenyl	154	9.576	9.577	-0.001	64	2072	0.0891	
53 Phenyl ether	170	9.677	9.683	-0.006	97	16536	1.21	
60 4-Nitrophenol	139	10.259	10.255	0.004	85	6416	2.32	
64 Dibenzofuran	168	10.355	10.356	-0.001	45	1146	0.0452	
66 Diethyl phthalate	149	10.576	10.577	-0.001	69	2932	0.1295	
67 4-Chlorophenyl phenyl ether	204	10.696	10.697	-0.001	33	716	0.0730	
75 N-Nitrosodiphenylamine	169	10.807	10.808	-0.001	47	11804	0.8647	
71 Diphenylamine	169	10.807	10.808	-0.001	0	11804	0.7391	
72 Azobenzene	77	10.860	10.856	0.004	59	15714	0.5793	
74 Benzophenone	105	10.860	10.861	-0.001	95	23511	1.34	
83 Carbazole	167	11.860	11.861	-0.001	63	2371	0.1055	

8/31/11

SEMIVOLATILE ORGANICS

REGION I VALIDATION CHECKLIST for OLIN CHEMICAL SUPERFUND SITE

Criteria and Qualifications: REGION I Organics Guideline (1996)

TIER I / II / III (circle one)

SITE: Olin Chemical Superfund Site Project #: 6107110016.12 SDG #: 360-34288-1

LAB #: TAL-Westfield

Sample IDs: Attach tracking sheet and/or sample listing.

This checklist is designed to be used with USEPA Region I Validation Guidelines Part II (12/1996). During Level III validation, calculation and transcription checks are completed for instrument tuning, surrogates, target compounds, spike recoveries, calibration data, and internal standards as specified in the guideline. These checks are documented on attached validation notes.

YES	NO	NA		
			Data completeness	
☑	☐	☐	All data summaries, QC forms and raw data available from hard copy or electronic data package	Contact lab if missing data. Lab to respond with 24 hours.
☑	☐	☐	Data summaries match EDD	
			Holding Times and Preservation	
☑	☐	☐	Hold times met (Waters – Extract within 7 days, analyze within 40 days. Soils – extract within 14 days, analyze within 40 days)	
			Instrument Performance Check (Tune)	
☑	☐	☐	Tune available for each 12-hour period samples were analyzed	
☑	☐	☐	Appropriate number of significant figures reported (at least 2)	
☑	☐	☐	Mass/Charge list (m/z) criteria met	
			Initial Calibration	
☑	☐	☐	%RSD less than or equal to 30%	
☑	☐	☐	RRF greater than or equal to 0.05	
			Continuing Calibration	See below.
☐	☒	☐	%D less than or equal to 25%	
☑	☐	☐	RRF greater than or equal to 0.05.	
			Blank Contamination	Evaluate all blanks for contamination. Highest contaminant level used for action level.
☒	☐	☐	Method blank contamination	
☐	☐	☑	Equipment/Rinseate blank contamination	See below.
			Surrogate Recoveries	

SEMIVOLATILE ORGANICS

REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifications: REGION I Organics Guideline (1996)

TIER I / II / III (circle one)

☑ ☐ ☐ Surrogates percent recovery criteria met: Soil = (base/neutral 30%-130%, acid 30%-130%) Water = (base/neutral 30%-130%, acid 15%-110%)	
Matrix Spikes and Laboratory Control Samples ☐ ☐ ☑ MS/MSD percent recovery criteria met Soil and Water = (base/neutral 40%-140%, acid 30%-130%) ☐ ☐ ☑ MS/MSD RPD criteria met (soils <50%, water <30%) ☐ ☒ ☐ LCS/LCSD percent recovery criteria met soil/water (base 40%-140%, acid 30%-130%) ☑ ☐ ☐ LCS/LCSD RPD criteria met (soils <50%, water <30%)	See below.
Field Duplicates ☐ ☐ ☑ RPD criteria met (soils <50%, water <30%)	
Internal Standard ☑ ☐ ☐ Area counts within -50 to +100 percent of calib. std. ☑ ☐ ☐ Retention Time within 30 seconds of calib. std.	
Target Compounds ☑ ☐ ☐ Reviewed narrative for anomalies	
Tentatively Identified Compounds (TICs) ☐ ☑ ☐ TCL compounds reported as TICs	

Blanks:

For a subset of samples, acetophenone (1.64 µg/L), benzaldehyde (0.742 µg/L), benzyl alcohol (1.33 µg/L), caprolactum (0.799 µg/L), di-n-butyl phthalate (0.822 µg/L) and various TICs were reported in method blank associated with all samples. Action levels were established at five times the reported acetophenone, benzaldehyde, benzyl alcohol, caprolactum blank concentrations, and ten times the reported di-n-butyl phthalate blank concentration. Sample

results for acetophenone, benzaldehyde, benzyl alcohol, caprolactum were not detected; no qualification was required. Sample detections of di-n-butyl phthalate were less than the action levels and less than the reporting limits, and were qualified not detected (U) at the reporting limits. Method blank TICs that were reported in associated samples were rejected and not reported in the final data.

For a subset of samples, acetophenone (1.65 µg/L), benzyl alcohol (0.828 µg/L), di-n-butyl phthalate (0.965 µg/L) and various TICs were reported in method blank associated with all samples. Action levels were established at five times the reported acetophenone and benzyl alcohol blank concentrations, and ten times the reported di-n-butyl phthalate blank concentration. Sample results for acetophenone and benzyl alcohol were not detected; no qualification was required. Sample detections of di-n-butyl phthalate were less than the action levels and less than the reporting limits, and were qualified not detected (U) at the reporting limits. Method blank TICs that were reported in associated samples were rejected and not reported in the final data.

Continuing Calibration:

In the continuing calibration associated with a subset of samples, the percent difference for benzo(b)fluoranthene (33) exceeded the QC limit of 25. The sample results for benzo(b)fluoranthene that were not detected were qualified estimated (UJ) at the reporting limits. The reported detection of benzo(b)fluoranthene in sample OC-SW-LB-2-XXX was qualified estimated (J).

LCS:

In a subset of samples, the LCS/LCSD percent recoveries of aniline (38 and 34) and caprolactum (22 and 22) were less than the lower QC limit of 40. Sample results for aniline and caprolactum were not detected and were qualified estimated (UJ) at the reporting limits.

In a subset of samples, the LCS and/or LCSD percent recoveries of caprolactum (27 and 25) and pyrene (143) were outside of the QC limits of 40 to 140. Sample results for caprolactum were not detected and were qualified estimated (UJ) at the reporting limits. Reported detections of pyrene were qualified estimated (J).

Result Reporting:

N-nitrosodi-n-propylamine was reported from both the 8270 and modified 521 methods. The N-nitrosodi-n-propylamine results from modified 521 with lower reporting limits were reported in the final data set.

Performance Evaluation:

A PES was submitted with the program samples. Laboratory results from the PES were evaluated by the EPA Region I chemist. Results from the PES evaluation indicated the laboratory was biased low for reporting of phenol results. Sample detections for phenol were qualified estimated (J). Sample results for phenol that were not detected were qualified estimated (UJ) at the reporting limits.

Validator's Signature: _____

Date: 9/1/11

Reference:

MACTEC, Quality Assurance Project Plan for Remedial Investigation/Feasibility Study – Olin Chemical Superfund Site, Wilmington Property, 51 Eames Street, Wilmington, MA", MACTEC Engineering and Consulting. Draft .October 2008.

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-PE-S80479-SVOC**

Lab Sample ID: 360-34288-3
Client Matrix: Water

Date Sampled: 06/07/2011 1300
Date Received: 06/08/2011 1019

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2875.D
Dilution:	1.0			Initial Weight/Volume:	1000 mL
Analysis Date:	06/15/2011 0053			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,2,4,5-Tetrachlorobenzene	ND		0.50	5.0
1-Methylnaphthalene	ND		0.050	5.0
2,2'-oxybis[1-chloropropane]	ND		0.50	5.0
2,3,4,6-Tetrachlorophenol	ND		0.50	5.0
2,4,6-Trichlorophenol	ND		0.50	5.0
2,4-Dichlorophenol	ND		0.50	5.0
2,4-Dimethylphenol	ND		0.50	5.0
2,4-Dinitrophenol	ND		0.50	5.0
2,4-Dinitrotoluene	ND		0.50	5.0
2-Chloronaphthalene	12		0.50	5.0
2-Chlorophenol	ND		0.50	5.0
2-Methylnaphthalene	11		0.050	1.0
2-Nitroaniline	ND		0.50	5.0
2-Nitrophenol	ND		0.50	5.0
3 & 4 Methylphenol	ND		0.50	5.0
3,3'-Dichlorobenzidine	ND		0.50	5.0
3-Nitroaniline	ND		0.50	5.0
4,6-Dinitro-2-methylphenol	ND		0.50	5.0
4-Bromophenyl phenyl ether	ND		0.50	5.0
4-Chloro-3-methylphenol	ND		0.50	5.0
4-Chlorophenyl phenyl ether	ND		0.50	5.0
4-Nitroaniline	ND		0.50	5.0
4-Nitrophenol	12		0.50	5.0
Acenaphthene	ND		0.050	1.0
Acenaphthylene	ND		0.050	0.30
Acetophenone	19	B	0.50	5.0
Aniline	ND		0.50	5.0
Atrazine	ND		0.50	5.0
Azobenzene	ND		0.50	5.0
Benzaldehyde	ND		0.50	5.0
Benzo[a]anthracene	ND		0.17	0.30
Benzo[a]pyrene	ND		0.10	0.20
Benzo[b]fluoranthene	ND		0.15	0.30
Benzo[k]fluoranthene	13		0.17	0.30
Benzoic acid	2.1	J	0.50	5.0
Benzophenone	ND		0.50	5.0
Benzyl alcohol	0.96	J B	0.50	10
Bis(2-chloroethoxy)methane	ND		0.50	5.0
Bis(2-ethylhexyl) phthalate	ND		0.50	2.0
Butyl benzyl phthalate	ND		0.50	5.0
Caprolactam	ND		0.50	5.0
Chrysene	ND		0.17	1.0
Dibenz(a,h)anthracene	ND		0.064	0.50
Dibenzofuran	ND		0.50	5.0
Diethyl phthalate	ND		0.50	5.0
Di-n-butyl phthalate	0.83	J B	0.60	5.0

8/22/11

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-PE-S80479-SVOC**

Lab Sample ID: 360-34288-3
Client Matrix: Water

Date Sampled: 06/07/2011 1300
Date Received: 06/08/2011 1019

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2875.D
Dilution:	1.0			Initial Weight/Volume:	1000 mL
Analysis Date:	06/15/2011 0053			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Di-n-octyl phthalate	ND		0.73	5.0
Fluoranthene	ND		0.20	1.0
Fluorene	ND		0.080	1.0
Hexachlorobenzene	ND		0.50	1.0
Hexachlorocyclopentadiene	ND		0.50	5.0
Hexachloroethane	9.9		0.50	3.0
Indeno[1,2,3-cd]pyrene	ND		0.079	0.50
Isophorone	ND		0.50	5.0
N-Nitrosodi-n-propylamine	ND		0.50	5.0
N-Nitrosodiphenylamine	ND		0.50	5.0
Nitrobenzene	ND		0.50	5.0
Pentachlorophenol	ND		0.50	1.0
Phenanthrene	11		0.085	0.20
Phenol	11		0.50	5.0
Pyrene	ND		0.19	5.0
Phenyl ether	ND		0.50	5.0

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorophenol	33		15 - 110
Phenol-d5	22		15 - 110
Nitrobenzene-d5	55		30 - 130
2,4,6-Tribromophenol	71		15 - 110
Terphenyl-d14	76		30 - 130
2-Fluorobiphenyl	55		30 - 130

8/22/11

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-PE-S80479-SVOC**

Lab Sample ID: 360-34288-3
Client Matrix: Water

Date Sampled: 06/07/2011 1300
Date Received: 06/08/2011 1019

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2875.D
Dilution:	1.0			Initial Weight/Volume:	1000 mL
Analysis Date:	06/15/2011 0053			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Tentatively Identified Compounds **Number TIC's Found:** **10**

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
	Unknown	1.83	8.1	J N
108-38-3	Benzene, 1,3-dimethyl-	5.38	1.8	J N
108-38-3	Benzene, 1,3-dimethyl-	5.71	1.3	J N
541-2-6	Cyclopentasiloxane, decamethyl-	7.92	1.1	J N
91-20-3	Naphthalene	8.40	10	J
38444-84-7	1,1"-Biphenyl, 2,3,3"-trichloro-	11.45	16	J N
92-93-3	1,1"-Biphenyl, 4-nitro-	11.91	18	J N
84-65-1	9,10-Anthracenedione	12.45	1.7	J N
1031-7-8	Endosulfan sulfate	13.81	15	J N
56-49-5	3-Methylcholanthrene	15.67	20	J N

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Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-PE-S80479-SVOC**

Lab Sample ID: 360-34288-3
Client Matrix: Water

Date Sampled: 06/07/2011 1300
Date Received: 06/08/2011 1019

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75365	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2906.D
Dilution:	5.0			Initial Weight/Volume:	1000 mL
Analysis Date:	06/15/2011 2324	Run Type:	DL	Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1'-Biphenyl	24	J	2.5	25
2,4,5-Trichlorophenol	40		2.5	25
2,6-Dinitrotoluene	43		2.5	25
2-Methylphenol	24	J	2.5	25
4-Chloroaniline	32		2.5	25
Anthracene	26		0.35	5.0
Benzo[g,h,i]perylene	20		0.47	2.5
Bis(2-chloroethyl)ether	23	J	2.5	25
Carbazole	23	J	2.5	25
Dimethyl phthalate	39		2.5	25

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorophenol	33		15 - 110
Phenol-d5	23		15 - 110
Nitrobenzene-d5	53		30 - 130
2,4,6-Tribromophenol	63		15 - 110
Terphenyl-d14	83		30 - 130
2-Fluorobiphenyl	60		30 - 130

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Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-LB-1-XXX**

Lab Sample ID: 360-34288-5
Client Matrix: Water

Date Sampled: 06/07/2011 1340
Date Received: 06/08/2011 1019

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2876.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/15/2011 0123			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1'-Biphenyl	ND		0.45	4.5
1,2,4,5-Tetrachlorobenzene	ND		0.45	4.5
1-Methylnaphthalene	ND		0.045	4.5
2,2'-oxybis[1-chloropropane]	ND		0.45	4.5
2,3,4,6-Tetrachlorophenol	ND		0.45	4.5
2,4,5-Trichlorophenol	ND		0.45	4.5
2,4,6-Trichlorophenol	ND		0.45	4.5
2,4-Dichlorophenol	ND		0.45	4.5
2,4-Dimethylphenol	ND		0.45	4.5
2,4-Dinitrophenol	ND		0.45	4.5
2,4-Dinitrotoluene	ND		0.45	4.5
2,6-Dinitrotoluene	ND		0.45	4.5
2-Chloronaphthalene	ND		0.45	4.5
2-Chlorophenol	ND		0.45	4.5
2-Methylnaphthalene	ND		0.045	0.91
2-Methylphenol	ND		0.45	4.5
2-Nitroaniline	ND		0.45	4.5
2-Nitrophenol	ND		0.45	4.5
3 & 4 Methylphenol	ND		0.45	4.5
3,3'-Dichlorobenzidine	ND		0.45	4.5
3-Nitroaniline	ND		0.45	4.5
4,6-Dinitro-2-methylphenol	ND		0.45	4.5
4-Bromophenyl phenyl ether	ND		0.45	4.5
4-Chloro-3-methylphenol	ND		0.45	4.5
4-Chloroaniline	ND		0.45	4.5
4-Chlorophenyl phenyl ether	ND		0.45	4.5
4-Nitroaniline	ND		0.45	4.5
4-Nitrophenol	ND		0.45	4.5
Acenaphthene	ND		0.045	0.91
Acenaphthylene	ND		0.045	0.27
Acetophenone	ND		0.45	4.5
Aniline	ND 5		0.45	4.5
Anthracene	ND		0.064	0.91
Atrazine	ND		0.45	4.5
Azobenzene	ND		0.45	4.5
Benzaldehyde	ND		0.45	4.5
Benzo[a]anthracene	ND		0.15	0.27
Benzo[a]pyrene	ND		0.094	0.18
Benzo[b]fluoranthene	ND		0.13	0.27
Benzo[g,h,i]perylene	ND		0.085	0.45
Benzo[k]fluoranthene	ND		0.15	0.27
Benzoic acid	2.0	J	0.45	4.5
Benzophenone	ND		0.45	4.5
Benzyl alcohol	ND		0.45	9.1
Bis(2-chloroethoxy)methane	ND		0.45	4.5
Bis(2-chloroethyl)ether	ND		0.45	4.5

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Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-LB-1-XXX**

Lab Sample ID: 360-34288-5
Client Matrix: Water

Date Sampled: 06/07/2011 1340
Date Received: 06/08/2011 1019

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2876.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/15/2011 0123			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Bis(2-ethylhexyl) phthalate	0.74	J	0.45	1.8
Butyl benzyl phthalate	ND		0.45	4.5
Caprolactam	ND J		0.45	4.5
Carbazole	ND		0.45	4.5
Chrysene	ND		0.15	0.91
Dibenz(a,h)anthracene	ND		0.058	0.45
Dibenzofuran	ND		0.45	4.5
Diethyl phthalate	ND		0.45	4.5
Dimethyl phthalate	ND		0.45	4.5
Di-n-butyl phthalate	~~0.74~~ 4.5 U	~~JB~~	0.55	4.5
Di-n-octyl phthalate	ND		0.66	4.5
Fluoranthene	ND		0.18	0.91
Fluorene	ND		0.073	0.91
Hexachlorobenzene	ND		0.45	0.91
Hexachlorocyclopentadiene	ND		0.45	4.5
Hexachloroethane	ND		0.45	2.7
Indeno[1,2,3-cd]pyrene	ND		0.072	0.45
Isophorone	ND		0.45	4.5
N-Nitrosodi-n-propylamine	ND		0.45	4.5
N-Nitrosodiphenylamine	ND		0.45	4.5
Nitrobenzene	ND		0.45	4.5
Pentachlorophenol	ND		0.45	0.91
Phenanthrene	ND		0.077	0.18
Phenol	ND J		0.45	4.5
Pyrene	ND		0.17	4.5
Phenyl ether	ND		0.45	4.5

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorophenol	23		15 - 110
Phenol-d5	15		15 - 110
Nitrobenzene-d5	58		30 - 130
2,4,6-Tribromophenol	65		15 - 110
Terphenyl-d14	92		30 - 130
2-Fluorobiphenyl	62		30 - 130

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Analytical Data

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-LB-1-XXX**

Lab Sample ID: 360-34288-5
Client Matrix: Water

Date Sampled: 06/07/2011 1340
Date Received: 06/08/2011 1019

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2876.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/15/2011 0123			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Tentatively Identified Compounds **Number TIC's Found:** **10**

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
	~~Unknown~~	~~1.84~~	~~8.2~~	~~J~~
	~~Unknown~~	~~5.85~~	~~1.2~~	~~J~~
112-34-5	Ethanol, 2-(2-butoxyethoxy)-	8.29	0.44	J N
57-10-3	n-Hexadecanoic acid	12.18	1.3	J N
791-28-6	Triphenylphosphine oxide	14.33	0.57	J N
	Unknown	14.70	0.60	J N
7683-64-9	Squalene	15.04	2.1	J N
	Unknown	15.27	2.6	J N
	Unknown	15.98	3.8	J N
	Unknown	16.67	1.8	J N

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Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-LB-2-XXX**

Lab Sample ID: 360-34288-6
Client Matrix: Water

Date Sampled: 06/07/2011 1250
Date Received: 06/08/2011 1019

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2877.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/15/2011 0152			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1'-Biphenyl	ND		0.45	4.5
1,2,4,5-Tetrachlorobenzene	ND		0.45	4.5
1-Methylnaphthalene	ND		0.045	4.5
2,2'-oxybis[1-chloropropane]	ND		0.45	4.5
2,3,4,6-Tetrachlorophenol	ND		0.45	4.5
2,4,5-Trichlorophenol	ND		0.45	4.5
2,4,6-Trichlorophenol	ND		0.45	4.5
2,4-Dichlorophenol	ND		0.45	4.5
2,4-Dimethylphenol	ND		0.45	4.5
2,4-Dinitrophenol	ND		0.45	4.5
2,4-Dinitrotoluene	ND		0.45	4.5
2,6-Dinitrotoluene	ND		0.45	4.5
2-Chloronaphthalene	ND		0.45	4.5
2-Chlorophenol	ND		0.45	4.5
2-Methylnaphthalene	ND		0.045	0.91
2-Methylphenol	ND		0.45	4.5
2-Nitroaniline	ND		0.45	4.5
2-Nitrophenol	ND		0.45	4.5
3 & 4 Methylphenol	ND		0.45	4.5
3,3'-Dichlorobenzidine	ND		0.45	4.5
3-Nitroaniline	ND		0.45	4.5
4,6-Dinitro-2-methylphenol	ND		0.45	4.5
4-Bromophenyl phenyl ether	ND		0.45	4.5
4-Chloro-3-methylphenol	ND		0.45	4.5
4-Chloroaniline	ND		0.45	4.5
4-Chlorophenyl phenyl ether	ND		0.45	4.5
4-Nitroaniline	ND		0.45	4.5
4-Nitrophenol	ND		0.45	4.5
Acenaphthene	ND		0.045	0.91
Acenaphthylene	ND		0.045	0.27
Acetophenone	ND		0.45	4.5
Aniline	ND J		0.45	4.5
Anthracene	ND		0.064	0.91
Atrazine	ND		0.45	4.5
Azobenzene	ND		0.45	4.5
Benzaldehyde	ND		0.45	4.5
Benzo[a]anthracene	ND		0.15	0.27
Benzo[a]pyrene	0.17	J	0.094	0.18
Benzo[b]fluoranthene	0.13	J	0.13	0.27
Benzo[g,h,i]perylene	ND		0.085	0.45
Benzo[k]fluoranthene	0.15	J	0.15	0.27
Benzoic acid	1.9	J	0.45	4.5
Benzophenone	ND		0.45	4.5
Benzyl alcohol	ND		0.45	9.1
Bis(2-chloroethoxy)methane	ND		0.45	4.5
Bis(2-chloroethyl)ether	ND		0.45	4.5

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Analytical Data

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-LB-2-XXX**

Lab Sample ID: 360-34288-6
Client Matrix: Water

Date Sampled: 06/07/2011 1250
Date Received: 06/08/2011 1019

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2877.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/15/2011 0152			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Bis(2-ethylhexyl) phthalate	ND		0.45	1.8
Butyl benzyl phthalate	ND		0.45	4.5
Caprolactam	ND J		0.45	4.5
Carbazole	ND		0.45	4.5
Chrysene	ND		0.15	0.91
Dibenz(a,h)anthracene	ND		0.058	0.45
Dibenzofuran	ND		0.45	4.5
Diethyl phthalate	ND		0.45	4.5
Dimethyl phthalate	ND		0.45	4.5
Di-n-butyl phthalate	~~0.59~~ 4.5U	~~JB~~	0.55	4.5
Di-n-octyl phthalate	ND		0.66	4.5
Fluoranthene	ND		0.18	0.91
Fluorene	ND		0.073	0.91
Hexachlorobenzene	ND		0.45	0.91
Hexachlorocyclopentadiene	ND		0.45	4.5
Hexachloroethane	ND		0.45	2.7
Indeno[1,2,3-cd]pyrene	0.20	J	0.072	0.45
Isophorone	ND		0.45	4.5
N-Nitrosodi-n-propylamine	ND		0.45	4.5
N-Nitrosodiphenylamine	ND		0.45	4.5
Nitrobenzene	ND		0.45	4.5
Pentachlorophenol	ND		0.45	0.91
Phenanthrene	ND		0.077	0.18
Phenol	ND J		0.45	4.5
Pyrene	ND		0.17	4.5
Phenyl ether	ND		0.45	4.5

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorophenol	35		15 - 110
Phenol-d5	21		15 - 110
Nitrobenzene-d5	58		30 - 130
2,4,6-Tribromophenol	76		15 - 110
Terphenyl-d14	90		30 - 130
2-Fluorobiphenyl	65		30 - 130

8/22/11

Analytical Data

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-LB-2-XXX**

Lab Sample ID: 360-34288-6
Client Matrix: Water

Date Sampled: 06/07/2011 1250
Date Received: 06/08/2011 1019

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2877.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/15/2011 0152			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Tentatively Identified Compounds **Number TIC's Found:** 8

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
	~~Unknown~~	~~1.85~~	~~7.9~~	~~T J~~
	~~Unknown~~	~~5.85~~	~~1.0~~	~~T J~~
	Unknown	6.17	0.90	T J N
	Unknown	7.92	0.48	T J N
100-23-2	Benzenamine, N,N-dimethyl-4-nitro-	11.35	0.69	T J N
57-10-3	n-Hexadecanoic acid	12.18	1.3	T J N
57-11-4	Octadecanoic acid	12.96	1.6	T J N
791-28-6	Triphenylphosphine oxide	14.33	0.52	T J N

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Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-LB-3-XXX**

Lab Sample ID: 360-34288-7
Client Matrix: Water

Date Sampled: 06/07/2011 1115
Date Received: 06/08/2011 1019

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2878.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/15/2011 0221			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1'-Biphenyl	ND		0.45	4.5
1,2,4,5-Tetrachlorobenzene	ND		0.45	4.5
1-Methylnaphthalene	ND		0.045	4.5
2,2'-oxybis[1-chloropropane]	ND		0.45	4.5
2,3,4,6-Tetrachlorophenol	ND		0.45	4.5
2,4,5-Trichlorophenol	ND		0.45	4.5
2,4,6-Trichlorophenol	ND		0.45	4.5
2,4-Dichlorophenol	ND		0.45	4.5
2,4-Dimethylphenol	ND		0.45	4.5
2,4-Dinitrophenol	ND		0.45	4.5
2,4-Dinitrotoluene	ND		0.45	4.5
2,6-Dinitrotoluene	ND		0.45	4.5
2-Chloronaphthalene	ND		0.45	4.5
2-Chlorophenol	ND		0.45	4.5
2-Methylnaphthalene	ND		0.045	0.91
2-Methylphenol	ND		0.45	4.5
2-Nitroaniline	ND		0.45	4.5
2-Nitrophenol	ND		0.45	4.5
3 & 4 Methylphenol	ND		0.45	4.5
3,3'-Dichlorobenzidine	ND		0.45	4.5
3-Nitroaniline	ND		0.45	4.5
4,6-Dinitro-2-methylphenol	ND		0.45	4.5
4-Bromophenyl phenyl ether	ND		0.45	4.5
4-Chloro-3-methylphenol	ND		0.45	4.5
4-Chloroaniline	ND		0.45	4.5
4-Chlorophenyl phenyl ether	ND		0.45	4.5
4-Nitroaniline	ND		0.45	4.5
4-Nitrophenol	ND		0.45	4.5
Acenaphthene	ND		0.045	0.91
Acenaphthylene	ND		0.045	0.27
Acetophenone	ND		0.45	4.5
Aniline	ND J		0.45	4.5
Anthracene	ND		0.064	0.91
Atrazine	ND		0.45	4.5
Azobenzene	ND		0.45	4.5
Benzaldehyde	ND		0.45	4.5
Benzo[a]anthracene	ND		0.15	0.27
Benzo[a]pyrene	ND		0.094	0.18
Benzo[b]fluoranthene	ND		0.13	0.27
Benzo[g,h,i]perylene	ND		0.085	0.45
Benzo[k]fluoranthene	ND		0.15	0.27
Benzoic acid	1.9	J	0.45	4.5
Benzophenone	ND		0.45	4.5
Benzyl alcohol	ND		0.45	9.1
Bis(2-chloroethoxy)methane	ND		0.45	4.5
Bis(2-chloroethyl)ether	ND		0.45	4.5

8/22/11

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-LB-3-XXX**

Lab Sample ID: 360-34288-7
Client Matrix: Water

Date Sampled: 06/07/2011 1115
Date Received: 06/08/2011 1019

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2878.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/15/2011 0221			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Bis(2-ethylhexyl) phthalate	ND		0.45	1.8
Butyl benzyl phthalate	ND		0.45	4.5
Caprolactam	ND J	✓	0.45	4.5
Carbazole	ND		0.45	4.5
Chrysene	ND		0.15	0.91
Dibenz(a,h)anthracene	ND		0.058	0.45
Dibenzofuran	ND		0.45	4.5
Diethyl phthalate	ND		0.45	4.5
Dimethyl phthalate	ND		0.45	4.5
Di-n-butyl phthalate	~~0.60~~ 4.5 u	~~JB~~	0.55	4.5
Di-n-octyl phthalate	ND		0.66	4.5
Fluoranthene	ND		0.18	0.91
Fluorene	ND		0.073	0.91
Hexachlorobenzene	ND		0.45	0.91
Hexachlorocyclopentadiene	ND		0.45	4.5
Hexachloroethane	ND		0.45	2.7
Indeno[1,2,3-cd]pyrene	ND	✓	0.072	0.45
Isophorone	ND		0.45	4.5
N-Nitrosodi-n-propylamine	ND		0.45	4.5
N-Nitrosodiphenylamine	ND		0.45	4.5
Nitrobenzene	ND		0.45	4.5
Pentachlorophenol	ND		0.45	0.91
Phenanthrene	ND		0.077	0.18
Phenol	ND		0.45	4.5
Pyrene	ND		0.17	4.5
Phenyl ether	ND		0.45	4.5

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorophenol	31		15 - 110
Phenol-d5	20		15 - 110
Nitrobenzene-d5	54		30 - 130
2,4,6-Tribromophenol	79		15 - 110
Terphenyl-d14	89		30 - 130
2-Fluorobiphenyl	58		30 - 130

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Analytical Data

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-LB-3-XXX**

Lab Sample ID: 360-34288-7
Client Matrix: Water

Date Sampled: 06/07/2011 1115
Date Received: 06/08/2011 1019

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2878.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/15/2011 0221			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Tentatively Identified Compounds **Number TIC's Found:** **10**

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
	~~Unknown~~	~~1.85~~	~~7.0~~	~~J~~
	~~Unknown~~	~~5.84~~	~~1.1~~	~~J~~
15356-70-4	Cyclohexanol, 5-methyl-2-(1-methylethyl)	8.30	1.1	J N
	Unknown	8.98	0.88	J N
15687-27-1	Ibuprofen	10.70	0.84	J N
58-8-2	Caffeine	11.81	1.2	J N
57-10-3	n-Hexadecanoic acid	12.18	2.4	J N
111-2-4	2,6,10,14,18,22-Tetracosahexaene, 2,6,10	15.04	5.3	J N
	Unknown	15.88	3.7	J N
	Unknown	15.98	5.9	J N

8/22/11

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-MMB-SW/SD-10-XXX**

Lab Sample ID: 360-34288-8
Client Matrix: Water

Date Sampled: 06/06/2011 1520
Date Received: 06/08/2011 1019

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2879.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/15/2011 0250			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1'-Biphenyl	ND		0.45	4.5
1,2,4,5-Tetrachlorobenzene	ND		0.45	4.5
1-Methylnaphthalene	ND		0.045	4.5
2,2'-oxybis[1-chloropropane]	ND		0.45	4.5
2,3,4,6-Tetrachlorophenol	ND		0.45	4.5
2,4,5-Trichlorophenol	ND		0.45	4.5
2,4,6-Trichlorophenol	ND		0.45	4.5
2,4-Dichlorophenol	ND		0.45	4.5
2,4-Dimethylphenol	ND		0.45	4.5
2,4-Dinitrophenol	ND		0.45	4.5
2,4-Dinitrotoluene	ND		0.45	4.5
2,6-Dinitrotoluene	ND		0.45	4.5
2-Chloronaphthalene	ND		0.45	4.5
2-Chlorophenol	ND		0.45	4.5
2-Methylnaphthalene	ND		0.045	0.91
2-Methylphenol	ND		0.45	4.5
2-Nitroaniline	ND		0.45	4.5
2-Nitrophenol	ND		0.45	4.5
3 & 4 Methylphenol	ND		0.45	4.5
3,3'-Dichlorobenzidine	ND		0.45	4.5
3-Nitroaniline	ND		0.45	4.5
4,6-Dinitro-2-methylphenol	ND		0.45	4.5
4-Bromophenyl phenyl ether	ND		0.45	4.5
4-Chloro-3-methylphenol	ND		0.45	4.5
4-Chloroaniline	ND		0.45	4.5
4-Chlorophenyl phenyl ether	ND		0.45	4.5
4-Nitroaniline	ND		0.45	4.5
4-Nitrophenol	ND		0.45	4.5
Acenaphthene	ND		0.045	0.91
Acenaphthylene	ND		0.045	0.27
Acetophenone	ND		0.45	4.5
Aniline	ND J		0.45	4.5
Anthracene	ND		0.064	0.91
Atrazine	ND		0.45	4.5
Azobenzene	ND		0.45	4.5
Benzaldehyde	ND		0.45	4.5
Benzo[a]anthracene	ND		0.15	0.27
Benzo[a]pyrene	ND		0.094	0.18
Benzo[b]fluoranthene	ND		0.13	0.27
Benzo[g,h,i]perylene	ND		0.085	0.45
Benzo[k]fluoranthene	ND		0.15	0.27
Benzoic acid	ND		0.45	4.5
Benzophenone	ND		0.45	4.5
Benzyl alcohol	ND		0.45	9.1
Bis(2-chloroethoxy)methane	ND		0.45	4.5
Bis(2-chloroethyl)ether	ND		0.45	4.5

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Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-MMB-SW/SD-10-XXX**

Lab Sample ID: 360-34288-8
Client Matrix: Water

Date Sampled: 06/06/2011 1520
Date Received: 06/08/2011 1019

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2879.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/15/2011 0250			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Bis(2-ethylhexyl) phthalate	ND		0.45	1.8
Butyl benzyl phthalate	ND		0.45	4.5
Caprolactam	ND 5		0.45	4.5
Carbazole	ND		0.45	4.5
Chrysene	ND		0.15	0.91
Dibenz(a,h)anthracene	ND		0.058	0.45
Dibenzofuran	ND		0.45	4.5
Diethyl phthalate	ND		0.45	4.5
Dimethyl phthalate	ND		0.45	4.5
Di-n-butyl phthalate	~~1.3~~ 4.5u	~~J B~~	0.55	4.5
Di-n-octyl phthalate	ND		0.66	4.5
Fluoranthene	ND		0.18	0.91
Fluorene	ND		0.073	0.91
Hexachlorobenzene	ND		0.45	0.91
Hexachlorocyclopentadiene	ND		0.45	4.5
Hexachloroethane	ND		0.45	2.7
Indeno[1,2,3-cd]pyrene	ND		0.072	0.45
Isophorone	ND		0.45	4.5
N-Nitrosodi-n-propylamine	ND		0.45	4.5
N-Nitrosodiphenylamine	ND		0.45	4.5
Nitrobenzene	ND		0.45	4.5
Pentachlorophenol	ND		0.45	0.91
Phenanthrene	ND		0.077	0.18
Phenol	ND 5		0.45	4.5
Pyrene	ND		0.17	4.5
Phenyl ether	ND		0.45	4.5
Diphenylamine	ND		0.45	4.5

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorophenol	30		15 - 110
Phenol-d5	20		15 - 110
Nitrobenzene-d5	57		30 - 130
2,4,6-Tribromophenol	87		15 - 110
Terphenyl-d14	96		30 - 130
2-Fluorobiphenyl	60		30 - 130

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Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-MMB-SW/SD-10-XXX**

Lab Sample ID: 360-34288-8
Client Matrix: Water

Date Sampled: 06/06/2011 1520
Date Received: 06/08/2011 1019

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2879.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/15/2011 0250			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Tentatively Identified Compounds **Number TIC's Found:** 7

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
	~~Unknown~~	~~1.84~~	~~7.8~~	~~T J~~
	~~Unknown~~	~~5.85~~	~~1.0~~	~~T J~~
541-2-6	~~Cyclopentasiloxane, decamethyl-~~	~~7.92~~	~~0.55~~	~~T J N~~
	Unknown	8.98	0.45	T J
57-10-3	n-Hexadecanoic acid	12.18	1.3	T J N
57-11-4	Octadecanoic acid	12.96	2.0	T J N
	Unknown	14.33	0.80	T J

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Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-MMB-SW/SD-4-XXX**

Lab Sample ID: 360-34288-9
Client Matrix: Water

Date Sampled: 06/06/2011 1400
Date Received: 06/08/2011 1019

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2880.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/15/2011 0319			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1'-Biphenyl	ND		0.45	4.5
1,2,4,5-Tetrachlorobenzene	ND		0.45	4.5
1-Methylnaphthalene	ND		0.045	4.5
2,2'-oxybis[1-chloropropane]	ND		0.45	4.5
2,3,4,6-Tetrachlorophenol	ND		0.45	4.5
2,4,5-Trichlorophenol	ND		0.45	4.5
2,4,6-Trichlorophenol	ND		0.45	4.5
2,4-Dichlorophenol	ND		0.45	4.5
2,4-Dimethylphenol	ND		0.45	4.5
2,4-Dinitrophenol	ND		0.45	4.5
2,4-Dinitrotoluene	ND		0.45	4.5
2,6-Dinitrotoluene	ND		0.45	4.5
2-Chloronaphthalene	ND		0.45	4.5
2-Chlorophenol	ND		0.45	4.5
2-Methylnaphthalene	ND		0.045	0.91
2-Methylphenol	ND		0.45	4.5
2-Nitroaniline	ND		0.45	4.5
2-Nitrophenol	ND		0.45	4.5
3 & 4 Methylphenol	ND		0.45	4.5
3,3'-Dichlorobenzidine	ND		0.45	4.5
3-Nitroaniline	ND		0.45	4.5
4,6-Dinitro-2-methylphenol	ND		0.45	4.5
4-Bromophenyl phenyl ether	ND		0.45	4.5
4-Chloro-3-methylphenol	ND		0.45	4.5
4-Chloroaniline	ND		0.45	4.5
4-Chlorophenyl phenyl ether	ND		0.45	4.5
4-Nitroaniline	ND		0.45	4.5
4-Nitrophenol	ND		0.45	4.5
Acenaphthene	ND		0.045	0.91
Acenaphthylene	ND		0.045	0.27
Acetophenone	ND		0.45	4.5
Aniline	ND J		0.45	4.5
Anthracene	ND		0.064	0.91
Atrazine	ND		0.45	4.5
Azobenzene	ND		0.45	4.5
Benzaldehyde	ND		0.45	4.5
Benzo[a]anthracene	ND		0.15	0.27
Benzo[a]pyrene	ND		0.094	0.18
Benzo[b]fluoranthene	ND		0.13	0.27
Benzo[g,h,i]perylene	ND		0.085	0.45
Benzo[k]fluoranthene	ND		0.15	0.27
Benzoic acid	1.9	J	0.45	4.5
Benzophenone	ND		0.45	4.5
Benzyl alcohol	ND		0.45	9.1
Bis(2-chloroethoxy)methane	ND		0.45	4.5
Bis(2-chloroethyl)ether	ND		0.45	4.5

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-MMB-SW/SD-4-XXX**

Lab Sample ID: 360-34288-9
Client Matrix: Water

Date Sampled: 06/06/2011 1400
Date Received: 06/08/2011 1019

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2880.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/15/2011 0319			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Bis(2-ethylhexyl) phthalate	ND		0.45	1.8
Butyl benzyl phthalate	ND		0.45	4.5
Caprolactam	ND 3	6	0.45	4.5
Carbazole	ND		0.45	4.5
Chrysene	ND		0.15	0.91
Dibenz(a,h)anthracene	ND		0.058	0.45
Dibenzofuran	ND		0.45	4.5
Diethyl phthalate	ND		0.45	4.5
Dimethyl phthalate	ND		0.45	4.5
Di-n-butyl phthalate	~~0.68~~ 4.5 u	~~J B~~	0.55	4.5
Di-n-octyl phthalate	ND		0.66	4.5
Fluoranthene	ND		0.18	0.91
Fluorene	ND		0.073	0.91
Hexachlorobenzene	ND		0.45	0.91
Hexachlorocyclopentadiene	ND		0.45	4.5
Hexachloroethane	ND		0.45	2.7
Indeno[1,2,3-cd]pyrene	ND	1	0.072	0.45
Isophorone	ND		0.45	4.5
N-Nitrosodi-n-propylamine	ND		0.45	4.5
N-Nitrosodiphenylamine	ND		0.45	4.5
Nitrobenzene	ND		0.45	4.5
Pentachlorophenol	ND		0.45	0.91
Phenanthrene	ND		0.077	0.18
Phenol	ND 3		0.45	4.5
Pyrene	ND		0.17	4.5
Phenyl ether	ND		0.45	4.5
Diphenylamine	ND		0.45	4.5

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorophenol	32		15 - 110
Phenol-d5	21		15 - 110
Nitrobenzene-d5	63		30 - 130
2,4,6-Tribromophenol	81		15 - 110
Terphenyl-d14	86		30 - 130
2-Fluorobiphenyl	62		30 - 130

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Analytical Data

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-MMB-SW/SD-4-XXX**

Lab Sample ID: 360-34288-9
Client Matrix: Water

Date Sampled: 06/06/2011 1400
Date Received: 06/08/2011 1019

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2880.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/15/2011 0319			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Tentatively Identified Compounds **Number TIC's Found:** 5

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
	~~Unknown~~	~~1.85~~	~~9.4~~	~~T J~~
111-76-2	Ethanol, 2-butoxy-	5.84	1.4	T J N
~~541-2-6~~	~~Cyclopentasiloxane, decamethyl-~~	~~7.92~~	~~0.57~~	~~T J N~~
112-34-5	Ethanol, 2-(2-butoxyethoxy)-	8.29	0.43	T J N
57-10-3	n-Hexadecanoic acid	12.18	0.87	T J N

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Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-MMB-SW/SD-5-XXX**

Lab Sample ID: 360-34288-10
Client Matrix: Water

Date Sampled: 06/07/2011 0930
Date Received: 06/08/2011 1019

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75365	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2907.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/15/2011 2353			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1'-Biphenyl	ND		0.45	4.5
1,2,4,5-Tetrachlorobenzene	ND		0.45	4.5
1-Methylnaphthalene	ND		0.045	4.5
2,2'-oxybis[1-chloropropane]	ND		0.45	4.5
2,3,4,6-Tetrachlorophenol	ND		0.45	4.5
2,4,5-Trichlorophenol	ND		0.45	4.5
2,4,6-Trichlorophenol	ND		0.45	4.5
2,4-Dichlorophenol	ND		0.45	4.5
2,4-Dimethylphenol	ND		0.45	4.5
2,4-Dinitrophenol	ND		0.45	4.5
2,4-Dinitrotoluene	ND		0.45	4.5
2,6-Dinitrotoluene	ND		0.45	4.5
2-Chloronaphthalene	ND		0.45	4.5
2-Chlorophenol	ND		0.45	4.5
2-Methylnaphthalene	ND		0.045	0.91
2-Methylphenol	ND		0.45	4.5
2-Nitroaniline	ND		0.45	4.5
2-Nitrophenol	ND		0.45	4.5
3 & 4 Methylphenol	ND		0.45	4.5
3,3'-Dichlorobenzidine	ND		0.45	4.5
3-Nitroaniline	ND		0.45	4.5
4,6-Dinitro-2-methylphenol	ND		0.45	4.5
4-Bromophenyl phenyl ether	ND		0.45	4.5
4-Chloro-3-methylphenol	ND		0.45	4.5
4-Chloroaniline	ND		0.45	4.5
4-Chlorophenyl phenyl ether	ND		0.45	4.5
4-Nitroaniline	ND		0.45	4.5
4-Nitrophenol	ND		0.45	4.5
Acenaphthene	ND		0.045	0.91
Acenaphthylene	ND		0.045	0.27
Acetophenone	ND		0.45	4.5
Aniline	ND J		0.45	4.5
Anthracene	ND		0.064	0.91
Atrazine	ND		0.45	4.5
Azobenzene	ND		0.45	4.5
Benzaldehyde	ND		0.45	4.5
Benzo[a]anthracene	ND		0.15	0.27
Benzo[a]pyrene	ND		0.094	0.18
Benzo[b]fluoranthene	ND		0.13	0.27
Benzo[g,h,i]perylene	ND		0.085	0.45
Benzo[k]fluoranthene	ND		0.15	0.27
Benzoic acid	2.0	J	0.45	4.5
Benzophenone	ND		0.45	4.5
Benzyl alcohol	ND		0.45	9.1
Bis(2-chloroethoxy)methane	ND		0.45	4.5
Bis(2-chloroethyl)ether	ND		0.45	4.5

8/22/11

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-MMB-SW/SD-5-XXX**

Lab Sample ID: 360-34288-10
Client Matrix: Water

Date Sampled: 06/07/2011 0930
Date Received: 06/08/2011 1019

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75365	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2907.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/15/2011 2353			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Bis(2-ethylhexyl) phthalate	ND		0.45	1.8
Butyl benzyl phthalate	ND		0.45	4.5
Caprolactam	ND J		0.45	4.5
Carbazole	ND		0.45	4.5
Chrysene	ND		0.15	0.91
Dibenz(a,h)anthracene	ND		0.058	0.45
Dibenzofuran	ND		0.45	4.5
Diethyl phthalate	ND		0.45	4.5
Dimethyl phthalate	ND		0.45	4.5
Di-n-butyl phthalate	ND		0.55	4.5
Di-n-octyl phthalate	ND		0.66	4.5
Fluoranthene	ND		0.18	0.91
Fluorene	ND		0.073	0.91
Hexachlorobenzene	ND		0.45	0.91
Hexachlorocyclopentadiene	ND		0.45	4.5
Hexachloroethane	ND		0.45	2.7
Indeno[1,2,3-cd]pyrene	ND		0.072	0.45
Isophorone	ND		0.45	4.5
N-Nitrosodi-n-propylamine	ND		0.45	4.5
N-Nitrosodiphenylamine	ND		0.45	4.5
Nitrobenzene	ND		0.45	4.5
Pentachlorophenol	ND		0.45	0.91
Phenanthrene	ND		0.077	0.18
Phenol	ND J		0.45	4.5
Pyrene	ND		0.17	4.5
Phenyl ether	ND		0.45	4.5
Diphenylamine	ND		0.45	4.5

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorophenol	31		15 - 110
Phenol-d5	21		15 - 110
Nitrobenzene-d5	58		30 - 130
2,4,6-Tribromophenol	74		15 - 110
Terphenyl-d14	83		30 - 130
2-Fluorobiphenyl	60		30 - 130

P/12/11

Analytical Data

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-MMB-SW/SD-5-XXX**

Lab Sample ID: 360-34288-10
Client Matrix: Water

Date Sampled: 06/07/2011 0930
Date Received: 06/08/2011 1019

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75365	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2907.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/15/2011 2353			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Tentatively Identified Compounds **Number TIC's Found:** 8

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
	Unknown	1.51	5.5	~~T~~ J N
	Unknown	1.65	8.6	~~T~~ J N
	Unknown	1.68	0.45	~~T~~ J N
	Unknown	5.62	1.3	~~T~~ J N
~~541-2-6~~	~~Cyclopentasiloxane, decamethyl~~	~~7.75~~	~~0.54~~	~~T~~ J N
134-62-3	Diethyltoluamide	10.35	1.5	~~T~~ J N
57-10-3	n-Hexadecanoic acid	11.99	0.90	~~T~~ J N
57-11-4	Octadecanoic acid	12.78	1.5	~~T~~ J N

8/22/11

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-MMB-SW/SD-8-XXX**

Lab Sample ID: 360-34288-11
Client Matrix: Water

Date Sampled: 06/07/2011 1010
Date Received: 06/08/2011 1019

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75365	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2908.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/16/2011 0023			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1'-Biphenyl	ND		0.45	4.5
1,2,4,5-Tetrachlorobenzene	ND		0.45	4.5
1-Methylnaphthalene	ND		0.045	4.5
2,2'-oxybis[1-chloropropane]	ND		0.45	4.5
2,3,4,6-Tetrachlorophenol	ND		0.45	4.5
2,4,5-Trichlorophenol	ND		0.45	4.5
2,4,6-Trichlorophenol	ND		0.45	4.5
2,4-Dichlorophenol	ND		0.45	4.5
2,4-Dimethylphenol	ND		0.45	4.5
2,4-Dinitrophenol	ND		0.45	4.5
2,4-Dinitrotoluene	ND		0.45	4.5
2,6-Dinitrotoluene	ND		0.45	4.5
2-Chloronaphthalene	ND		0.45	4.5
2-Chlorophenol	ND		0.45	4.5
2-Methylnaphthalene	ND		0.045	0.91
2-Methylphenol	ND		0.45	4.5
2-Nitroaniline	ND		0.45	4.5
2-Nitrophenol	ND		0.45	4.5
3 & 4 Methylphenol	ND		0.45	4.5
3,3'-Dichlorobenzidine	ND		0.45	4.5
3-Nitroaniline	ND		0.45	4.5
4,6-Dinitro-2-methylphenol	ND		0.45	4.5
4-Bromophenyl phenyl ether	ND		0.45	4.5
4-Chloro-3-methylphenol	ND		0.45	4.5
4-Chloroaniline	ND		0.45	4.5
4-Chlorophenyl phenyl ether	ND		0.45	4.5
4-Nitroaniline	ND		0.45	4.5
4-Nitrophenol	ND		0.45	4.5
Acenaphthene	ND		0.045	0.91
Acenaphthylene	ND		0.045	0.27
Acetophenone	ND		0.45	4.5
Aniline	ND		0.45	4.5
Anthracene	ND		0.064	0.91
Atrazine	ND		0.45	4.5
Azobenzene	ND		0.45	4.5
Benzaldehyde	ND		0.45	4.5
Benzo[a]anthracene	ND		0.15	0.27
Benzo[a]pyrene	ND		0.094	0.18
Benzo[b]fluoranthene	ND		0.13	0.27
Benzo[g,h,i]perylene	ND		0.085	0.45
Benzo[k]fluoranthene	ND		0.15	0.27
Benzoic acid	1.9	J	0.45	4.5
Benzophenone	ND		0.45	4.5
Benzyl alcohol	ND		0.45	9.1
Bis(2-chloroethoxy)methane	ND		0.45	4.5
Bis(2-chloroethyl)ether	ND		0.45	4.5

8/22/11

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-MMB-SW/SD-8-XXX**

Lab Sample ID: 360-34288-11
Client Matrix: Water

Date Sampled: 06/07/2011 1010
Date Received: 06/08/2011 1019

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75365	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2908.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/16/2011 0023			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Bis(2-ethylhexyl) phthalate	ND		0.45	1.8
Butyl benzyl phthalate	ND		0.45	4.5
Caprolactam	ND J		0.45	4.5
Carbazole	ND		0.45	4.5
Chrysene	ND		0.15	0.91
Dibenz(a,h)anthracene	ND		0.058	0.45
Dibenzofuran	ND		0.45	4.5
Diethyl phthalate	ND		0.45	4.5
Dimethyl phthalate	ND		0.45	4.5
Di-n-butyl phthalate	4.54 ~~0.56~~	~~J B~~	0.55	4.5
Di-n-octyl phthalate	ND		0.66	4.5
Fluoranthene	ND		0.18	0.91
Fluorene	ND		0.073	0.91
Hexachlorobenzene	ND		0.45	0.91
Hexachlorocyclopentadiene	ND		0.45	4.5
Hexachloroethane	ND		0.45	2.7
Indeno[1,2,3-cd]pyrene	ND		0.072	0.45
Isophorone	ND		0.45	4.5
N-Nitrosodi-n-propylamine	ND		0.45	4.5
N-Nitrosodiphenylamine	ND		0.45	4.5
Nitrobenzene	ND		0.45	4.5
Pentachlorophenol	ND		0.45	0.91
Phenanthrene	ND		0.077	0.18
Phenol	ND J		0.45	4.5
Pyrene	ND		0.17	4.5
Phenyl ether	ND		0.45	4.5
Diphenylamine	ND		0.45	4.5

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorophenol	34		15 - 110
Phenol-d5	21		15 - 110
Nitrobenzene-d5	59		30 - 130
2,4,6-Tribromophenol	81		15 - 110
Terphenyl-d14	88		30 - 130
2-Fluorobiphenyl	65		30 - 130

8/22/11

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-MMB-SW/SD-8-XXX**

Lab Sample ID: 360-34288-11
Client Matrix: Water

Date Sampled: 06/07/2011 1010
Date Received: 06/08/2011 1019

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75365	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2908.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/16/2011 0023			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Tentatively Identified Compounds **Number TIC's Found:** 7

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
	Unknown	1.52	5.5	~~TJ~~ N
	~~Unknown~~	~~1.65~~	~~8.7~~	~~TJ~~
	~~Unknown~~	~~5.62~~	~~1.2~~	~~TJ~~
~~541-2-6~~	~~Cyclopentasiloxane, decamethyl-~~	7.75	0.62	~~TJN~~
~~540-97-6~~	~~Cyclohexasiloxane, dodecamethyl-~~	~~8.81~~	~~0.50~~	~~TJN~~
~~57-10-3~~	~~n-Hexadecanoic acid~~	~~11.99~~	~~0.91~~	~~TJN~~
~~57-11-4~~	~~Octadecanoic acid~~	~~12.78~~	~~1.4~~	~~TJN~~

8/22/11

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-OPWD-1-XXX**

Lab Sample ID: 360-34288-12
Client Matrix: Water

Date Sampled: 06/07/2011 0900
Date Received: 06/08/2011 1019

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75365	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2909.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/16/2011 0052			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1'-Biphenyl	ND		0.45	4.5
1,2,4,5-Tetrachlorobenzene	ND		0.45	4.5
1-Methylnaphthalene	ND		0.045	4.5
2,2'-oxybis[1-chloropropane]	ND		0.45	4.5
2,3,4,6-Tetrachlorophenol	ND		0.45	4.5
2,4,5-Trichlorophenol	ND		0.45	4.5
2,4,6-Trichlorophenol	ND		0.45	4.5
2,4-Dichlorophenol	ND		0.45	4.5
2,4-Dimethylphenol	ND		0.45	4.5
2,4-Dinitrophenol	ND		0.45	4.5
2,4-Dinitrotoluene	ND		0.45	4.5
2,6-Dinitrotoluene	ND		0.45	4.5
2-Chloronaphthalene	ND		0.45	4.5
2-Chlorophenol	ND		0.45	4.5
2-Methylnaphthalene	ND		0.045	0.91
2-Methylphenol	ND		0.45	4.5
2-Nitroaniline	ND		0.45	4.5
2-Nitrophenol	ND		0.45	4.5
3 & 4 Methylphenol	ND		0.45	4.5
3,3'-Dichlorobenzidine	ND		0.45	4.5
3-Nitroaniline	ND		0.45	4.5
4,6-Dinitro-2-methylphenol	ND		0.45	4.5
4-Bromophenyl phenyl ether	ND		0.45	4.5
4-Chloro-3-methylphenol	ND		0.45	4.5
4-Chloroaniline	ND		0.45	4.5
4-Chlorophenyl phenyl ether	ND		0.45	4.5
4-Nitroaniline	ND		0.45	4.5
4-Nitrophenol	ND		0.45	4.5
Acenaphthene	ND		0.045	0.91
Acenaphthylene	ND		0.045	0.27
Acetophenone	ND		0.45	4.5
Aniline	ND		0.45	4.5
Anthracene	ND		0.064	0.91
Atrazine	ND		0.45	4.5
Azobenzene	ND		0.45	4.5
Benzaldehyde	ND		0.45	4.5
Benzo[a]anthracene	ND		0.15	0.27
Benzo[a]pyrene	0.22		0.094	0.18
Benzo[b]fluoranthene	0.29		0.13	0.27
Benzo[g,h,i]perylene	ND		0.085	0.45
Benzo[k]fluoranthene	ND		0.15	0.27
Benzoic acid	1.9	J	0.45	4.5
Benzophenone	ND		0.45	4.5
Benzyl alcohol	ND		0.45	9.1
Bis(2-chloroethoxy)methane	ND		0.45	4.5
Bis(2-chloroethyl)ether	ND		0.45	4.5

8/22/11

Analytical Data

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-OPWD-1-XXX**

Lab Sample ID: 360-34288-12
Client Matrix: Water

Date Sampled: 06/07/2011 0900
Date Received: 06/08/2011 1019

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75365	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2909.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/16/2011 0052			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Bis(2-ethylhexyl) phthalate	ND		0.45	1.8
Butyl benzyl phthalate	ND		0.45	4.5
Caprolactam	ND J		0.45	4.5
Carbazole	ND		0.45	4.5
Chrysene	0.18	J	0.15	0.91
Dibenz(a,h)anthracene	ND		0.058	0.45
Dibenzofuran	ND		0.45	4.5
Diethyl phthalate	ND		0.45	4.5
Dimethyl phthalate	ND		0.45	4.5
Di-n-butyl phthalate	45n ~~0.71~~	~~J B~~	0.55	4.5
Di-n-octyl phthalate	ND		0.66	4.5
Fluoranthene	0.24	J	0.18	0.91
Fluorene	ND		0.073	0.91
Hexachlorobenzene	ND		0.45	0.91
Hexachlorocyclopentadiene	ND		0.45	4.5
Hexachloroethane	ND		0.45	2.7
Indeno[1,2,3-cd]pyrene	ND		0.072	0.45
Isophorone	ND		0.45	4.5
N-Nitrosodi-n-propylamine	ND		0.45	4.5
N-Nitrosodiphenylamine	ND		0.45	4.5
Nitrobenzene	ND		0.45	4.5
Pentachlorophenol	ND		0.45	0.91
Phenanthrene	0.10	J	0.077	0.18
Phenol	ND J		0.45	4.5
Pyrene	0.28	J	0.17	4.5
Phenyl ether	ND		0.45	4.5

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorophenol	34		15 - 110
Phenol-d5	24		15 - 110
Nitrobenzene-d5	63		30 - 130
2,4,6-Tribromophenol	88		15 - 110
Terphenyl-d14	102		30 - 130
2-Fluorobiphenyl	66		30 - 130

8/22/14

Analytical Data

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-OPWD-1-XXX**

Lab Sample ID: 360-34288-12
Client Matrix: Water

Date Sampled: 06/07/2011 0900
Date Received: 06/08/2011 1019

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75365	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75165	Lab File ID:	J2909.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/16/2011 0052			Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL

Tentatively Identified Compounds **Number TIC's Found:** **10**

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
110-82-7	Cyclohexane	1.51	5.2	~~T~~ J N
	~~Unknown~~	~~1.65~~	~~9.2~~	~~T J~~
	Unknown	4.97	0.52	~~T~~ J N
	~~Unknown~~	~~5.62~~	~~1.4~~	~~T J~~
~~541-2-6~~	~~Cyclopentasiloxane, decamethyl~~	~~7.75~~	~~0.88~~	~~T J N~~
	Unknown	8.12	0.47	~~T~~ J N
	Unknown	10.21	0.67	~~T~~ J N
~~57-10-3~~	~~n-Hexadecanoic acid~~	~~12.00~~	~~1.7~~	~~T J N~~
10544-50-0	Cyclic octaatomic sulfur	12.69	2.8	~~T~~ J N
~~57-11-4~~	~~Octadecanoic acid~~	~~12.77~~	~~2.2~~	~~T J N~~

8/22/11

Analytical Data

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-OPWD-2-XXX**

Lab Sample ID: 360-34288-13
Client Matrix: Water

Date Sampled: 06/07/2011 1005
Date Received: 06/08/2011 1019

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75365	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75223	Lab File ID:	J2913.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/16/2011 0250			Final Weight/Volume:	1.0 mL
Prep Date:	06/14/2011 1501			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Bis(2-ethylhexyl) phthalate	ND		0.45	1.8
Butyl benzyl phthalate	ND		0.45	4.5
Caprolactam	ND J		0.45	4.5
Carbazole	ND		0.45	4.5
Chrysene	0.67	J	0.15	0.91
Dibenz(a,h)anthracene	ND		0.058	0.45
Dibenzofuran	ND		0.45	4.5
Diethyl phthalate	ND		0.45	4.5
Dimethyl phthalate	ND		0.45	4.5
Di-n-butyl phthalate 454	~~0.65~~	~~J-B~~	0.55	4.5
Di-n-octyl phthalate	ND		0.66	4.5
Fluoranthene	0.92		0.18	0.91
Fluorene	ND		0.073	0.91
Hexachlorobenzene	ND		0.45	0.91
Hexachlorocyclopentadiene	ND		0.45	4.5
Hexachloroethane	ND		0.45	2.7
Indeno[1,2,3-cd]pyrene	0.49		0.072	0.45
Isophorone	ND		0.45	4.5
N-Nitrosodi-n-propylamine	ND		0.45	4.5
N-Nitrosodiphenylamine	ND		0.45	4.5
Nitrobenzene	ND		0.45	4.5
Pentachlorophenol	ND		0.45	0.91
Phenanthrene	0.32		0.077	0.18
Phenol	0.51	J	0.45	4.5
Pyrene	1.1	J	0.17	4.5
Phenyl ether	ND		0.45	4.5

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorophenol	40		15 - 110
Phenol-d5	26		15 - 110
Nitrobenzene-d5	69		30 - 130
2,4,6-Tribromophenol	92		15 - 110
Terphenyl-d14	100		30 - 130
2-Fluorobiphenyl	68		30 - 130

8/22/11

Analytical Data

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-OPWD-2-XXX**

Lab Sample ID: 360-34288-13
Client Matrix: Water

Date Sampled: 06/07/2011 1005
Date Received: 06/08/2011 1019

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75365	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75223	Lab File ID:	J2913.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/16/2011 0250			Final Weight/Volume:	1.0 mL
Prep Date:	06/14/2011 1501			Injection Volume:	1 uL

Tentatively Identified Compounds **Number TIC's Found:** **10**

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
	~~Unknown~~	~~1.63~~	~~13~~	~~T J~~
	Unknown	4.97	12	T J N
	Unknown	10.21	4.0	T J N
934-34-9	2(3H)-Benzothiazolone	10.83	2.4	T J N
~~57-10-3~~	~~n-Hexadecanoic acid~~	~~12.00~~	~~2.9~~	~~T J N~~
10544-50-0	Cyclic octaatomic sulfur	12.69	6.9	T J N
544-85-4	Dotriacontane	13.94	3.0	T J N
629-78-7	Heptadecane	14.52	3.8	T J N
629-78-7	Heptadecane	15.06	2.1	T J N
	Unknown	15.76	1.8	T J N

8/22/11

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-OPWD-SD/SO/SW-S-XXX**

Lab Sample ID: 360-34288-14
Client Matrix: Water

Date Sampled: 06/07/2011 0835
Date Received: 06/08/2011 1019

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75365	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75223	Lab File ID:	J2914.D
Dilution:	1.0			Initial Weight/Volume:	1000 mL
Analysis Date:	06/16/2011 0320			Final Weight/Volume:	1.0 mL
Prep Date:	06/14/2011 1501			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Bis(2-ethylhexyl) phthalate	ND		0.50	2.0
Butyl benzyl phthalate	ND		0.50	5.0
Caprolactam	ND J		0.50	5.0
Carbazole	ND		0.50	5.0
Chrysene	ND		0.17	1.0
Dibenz(a,h)anthracene	ND		0.064	0.50
Dibenzofuran	ND		0.50	5.0
Diethyl phthalate	ND		0.50	5.0
Dimethyl phthalate	ND		0.50	5.0
Di-n-butyl phthalate	4.54 ~~0.61~~	~~J B~~	0.60	5.0
Di-n-octyl phthalate	ND		0.73	5.0
Fluoranthene	ND		0.20	1.0
Fluorene	ND		0.080	1.0
Hexachlorobenzene	ND		0.50	1.0
Hexachlorocyclopentadiene	ND		0.50	5.0
Hexachloroethane	ND		0.50	3.0
Indeno[1,2,3-cd]pyrene	ND		0.079	0.50
Isophorone	ND		0.50	5.0
N-Nitrosodi-n-propylamine	ND		0.50	5.0
N-Nitrosodiphenylamine	ND		0.50	5.0
Nitrobenzene	ND		0.50	5.0
Pentachlorophenol	ND		0.50	1.0
Phenanthrene	ND		0.085	0.20
Phenol	ND J		0.50	5.0
Pyrene	ND		0.19	5.0
Phenyl ether	ND		0.50	5.0

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorophenol	40		15 - 110
Phenol-d5	27		15 - 110
Nitrobenzene-d5	65		30 - 130
2,4,6-Tribromophenol	91		15 - 110
Terphenyl-d14	98		30 - 130
2-Fluorobiphenyl	65		30 - 130

8/22/11

Analytical Data

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-OPWD-SD/SO/SW-S-XXX**

Lab Sample ID: 360-34288-14
Client Matrix: Water

Date Sampled: 06/07/2011 0835
Date Received: 06/08/2011 1019

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75365	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75223	Lab File ID:	J2914.D
Dilution:	1.0			Initial Weight/Volume:	1000 mL
Analysis Date:	06/16/2011 0320			Final Weight/Volume:	1.0 mL
Prep Date:	06/14/2011 1501			Injection Volume:	1 uL

Tentatively Identified Compounds **Number TIC's Found:** **10**

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
	~~Unknown~~	~~1.64~~	~~13~~	~~T J~~
111-76-2	Ethanol, 2-butoxy-	5.62	1.3	~~T~~ J N
~~541-2-6~~	~~Cyclopentasiloxane, decamethyl-~~	~~7.75~~	~~1.2~~	~~T J N~~
~~540-97-6~~	~~Cyclohexasiloxane, dodecamethyl-~~	~~8.81~~	~~0.86~~	~~T J N~~
934-34-9	2(3H)-Benzothiazolone	10.83	0.81	~~T~~ J N
	Unknown	11.28	1.4	~~T~~ J
544-63-8	Tetradecanoic acid	11.99	2.0	~~T~~ J N
629-73-2	1-Hexadecene	12.51	1.2	~~T~~ J N
~~57-11-4~~	~~Octadecanoic acid~~	~~12.77~~	~~3.1~~	~~T J N~~
	Unknown	15.76	3.3	~~T~~ J

8/22/11

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-SDBK-002-XXX**

Lab Sample ID: 360-34288-15
Client Matrix: Water

Date Sampled: 06/07/2011 1430
Date Received: 06/08/2011 1019

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75365	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75223	Lab File ID:	J2915.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/16/2011 0349			Final Weight/Volume:	1.0 mL
Prep Date:	06/14/2011 1501			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Bis(2-ethylhexyl) phthalate	ND		0.45	1.8
Butyl benzyl phthalate	ND		0.45	4.5
Caprolactam	ND J		0.45	4.5
Carbazole	ND		0.45	4.5
Chrysene	ND		0.15	0.91
Dibenz(a,h)anthracene	ND		0.058	0.45
Dibenzofuran	ND		0.45	4.5
Diethyl phthalate	ND		0.45	4.5
Dimethyl phthalate	ND		0.45	4.5
Di-n-butyl phthalate	ND		0.55	4.5
Di-n-octyl phthalate	ND		0.66	4.5
Fluoranthene	ND		0.18	0.91
Fluorene	ND		0.073	0.91
Hexachlorobenzene	ND		0.45	0.91
Hexachlorocyclopentadiene	ND		0.45	4.5
Hexachloroethane	ND		0.45	2.7
Indeno[1,2,3-cd]pyrene	ND		0.072	0.45
Isophorone	ND		0.45	4.5
N-Nitrosodi-n-propylamine	ND		0.45	4.5
N-Nitrosodiphenylamine	ND		0.45	4.5
Nitrobenzene	ND		0.45	4.5
Pentachlorophenol	ND		0.45	0.91
Phenanthrene	ND		0.077	0.18
Phenol	ND J		0.45	4.5
Pyrene	ND		0.17	4.5
Phenyl ether	ND		0.45	4.5

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorophenol	42		15 - 110
Phenol-d5	27		15 - 110
Nitrobenzene-d5	73		30 - 130
2,4,6-Tribromophenol	86		15 - 110
Terphenyl-d14	98		30 - 130
2-Fluorobiphenyl	70		30 - 130

8/22/11

Analytical Data

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-SDBK-002-XXX**

Lab Sample ID: 360-34288-15
Client Matrix: Water

Date Sampled: 06/07/2011 1430
Date Received: 06/08/2011 1019

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75365	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75223	Lab File ID:	J2915.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/16/2011 0349			Final Weight/Volume:	1.0 mL
Prep Date:	06/14/2011 1501			Injection Volume:	1 uL

Tentatively Identified Compounds **Number TIC's Found:** 8

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
	~~Unknown~~	~~1.64~~	~~13~~	~~T J~~
	~~Unknown~~	~~5.62~~	~~1.0~~	~~T J~~
	Unknown	5.95	0.69	T J
~~541-2-6~~	~~Cyclopentasiloxane, decamethyl-~~	~~7.75~~	~~0.63~~	~~T J N~~
~~540-97-6~~	~~Cyclohexasiloxane, dodecamethyl~~	~~8.81~~	~~0.37~~	~~T J N~~
638-53-9	Tridecanoic acid	11.99	0.72	T J N
36653-82-4	1-Hexadecanol	12.51	0.70	T J N
~~57-11-4~~	~~Octadecanoic acid~~	~~12.77~~	~~1.3~~	~~T J N~~

8/22/11

GC/MS SEMI VOA ANALYSIS RUN LOG

Lab Name: TestAmerica Westfield Job No.: 360-34288-1

SDG No.: 360-34288-1

Instrument ID: Inst. J Start Date: 06/14/2011 16:06

Analysis Batch Number: 75230 End Date: 06/15/2011 03:19

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
DFTPP 360-75230/1		06/14/2011 16:06	1	J2857.D	Rtx-5ms 0.25(um)
CCVIS 360-75230/2		06/14/2011 16:35	1	J2858.D	Rtx-5ms 0.25(um)
MB 360-75165/1-A		06/14/2011 17:05	1	J2859.D	Rtx-5ms 0.25(um)
LCS 360-75165/2-A		06/14/2011 17:34	1	J2860.D	Rtx-5ms 0.25(um)
LCSD 360-75165/3-A		06/14/2011 18:04	1	J2861.D	Rtx-5ms 0.25(um)
ZZZZZ		06/14/2011 18:33	1		Rtx-5ms 0.25(um)
ZZZZZ		06/14/2011 19:03	1		Rtx-5ms 0.25(um)
ZZZZZ		06/14/2011 19:32	1		Rtx-5ms 0.25(um)
ZZZZZ		06/14/2011 20:01	1		Rtx-5ms 0.25(um)
ZZZZZ		06/14/2011 20:31	1		Rtx-5ms 0.25(um)
ZZZZZ		06/14/2011 21:00	1		Rtx-5ms 0.25(um)
ZZZZZ		06/14/2011 21:29	1		Rtx-5ms 0.25(um)
ZZZZZ		06/14/2011 21:58	1		Rtx-5ms 0.25(um)
ZZZZZ		06/14/2011 22:27	1		Rtx-5ms 0.25(um)
ZZZZZ		06/14/2011 22:57	1		Rtx-5ms 0.25(um)
ZZZZZ		06/14/2011 23:26	1		Rtx-5ms 0.25(um)
ZZZZZ		06/14/2011 23:55	1		Rtx-5ms 0.25(um)
ZZZZZ		06/15/2011 00:24	1		Rtx-5ms 0.25(um)
360-34288-3	OC-PE-S80479-SVOC	06/15/2011 00:53	1	J2875.D	Rtx-5ms 0.25(um)
360-34288-5	OC-SW-LB-1-XXX	06/15/2011 01:23	1	J2876.D	Rtx-5ms 0.25(um)
360-34288-6	OC-SW-LB-2-XXX	06/15/2011 01:52	1	J2877.D	Rtx-5ms 0.25(um)
360-34288-7	OC-SW-LB-3-XXX	06/15/2011 02:21	1	J2878.D	Rtx-5ms 0.25(um)
360-34288-8	OC-SW-MMB-SW/SD-10-XXX	06/15/2011 02:50	1	J2879.D	Rtx-5ms 0.25(um)
360-34288-9	OC-SW-MMB-SW/SD-4-XXX	06/15/2011 03:19	1	J2880.D	Rtx-5ms 0.25(um)

MB
LCS

8270D

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Method Blank - Batch: 360-75165

Method: 8270D
Preparation: 3510C

Lab Sample ID:	MB 360-75165/1-A	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Client Matrix:	Water	Prep Batch:	360-75165	Lab File ID:	J2859.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1000 mL
Analysis Date:	06/14/2011 1705	Units:	ug/L	Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
1,1'-Biphenyl	ND		0.50	5.0
1,2,4,5-Tetrachlorobenzene	ND		0.50	5.0
1-Methylnaphthalene	ND		0.050	5.0
2,2'-oxybis[1-chloropropane]	ND		0.50	5.0
2,3,4,6-Tetrachlorophenol	ND		0.50	5.0
2,4,5-Trichlorophenol	ND		0.50	5.0
2,4,6-Trichlorophenol	ND		0.50	5.0
2,4-Dichlorophenol	ND		0.50	5.0
2,4-Dimethylphenol	ND		0.50	5.0
2,4-Dinitrophenol	ND		0.50	5.0
2,4-Dinitrotoluene	ND		0.50	5.0
2,6-Dinitrotoluene	ND		0.50	5.0
2-Chloronaphthalene	ND		0.50	5.0
2-Chlorophenol	ND		0.50	5.0
2-Methylnaphthalene	ND		0.050	1.0
2-Methylphenol	ND		0.50	5.0
2-Nitroaniline	ND		0.50	5.0
2-Nitrophenol	ND		0.50	5.0
3 & 4 Methylphenol	ND		0.50	5.0
3,3'-Dichlorobenzidine	ND		0.50	5.0
3-Nitroaniline	ND		0.50	5.0
4,6-Dinitro-2-methylphenol	ND		0.50	5.0
4-Bromophenyl phenyl ether	ND		0.50	5.0
4-Chloro-3-methylphenol	ND		0.50	5.0
4-Chloroaniline	ND		0.50	5.0
4-Chlorophenyl phenyl ether	ND		0.50	5.0
4-Nitroaniline	ND		0.50	5.0
4-Nitrophenol	ND		0.50	5.0
Acenaphthene	ND		0.050	1.0
Acenaphthylene	ND		0.050	0.30
Acetophenone	1.64	J	0.50	5.0
Aniline	ND		0.50	5.0
Anthracene	ND		0.070	1.0
Atrazine	ND		0.50	5.0
Azobenzene	ND		0.50	5.0
Benzaldehyde	0.742	J	0.50	5.0
Benzo[a]anthracene	ND		0.17	0.30
Benzo[a]pyrene	ND		0.10	0.20
Benzo[b]fluoranthene	ND		0.15	0.30
Benzo[g,h,i]perylene	ND		0.094	0.50
Benzo[k]fluoranthene	ND		0.17	0.30
Benzoic acid	ND		0.50	5.0
Benzophenone	ND		0.50	5.0
Benzyl alcohol	1.33	J	0.50	10
Bis(2-chloroethoxy)methane	ND		0.50	5.0

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Method Blank - Batch: 360-75165

Method: 8270D
Preparation: 3510C

Lab Sample ID:	MB 360-75165/1-A	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Client Matrix:	Water	Prep Batch:	360-75165	Lab File ID:	J2859.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1000 mL
Analysis Date:	06/14/2011 1705	Units:	ug/L	Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Bis(2-chloroethyl)ether	ND		0.50	5.0
Bis(2-ethylhexyl) phthalate	ND		0.50	2.0
Butyl benzyl phthalate	ND		0.50	5.0
Caprolactam	0.799	J	0.50	5.0
Carbazole	ND		0.50	5.0
Chrysene	ND		0.17	1.0
Dibenz(a,h)anthracene	ND		0.064	0.50
Dibenzofuran	ND		0.50	5.0
Diethyl phthalate	ND		0.50	5.0
Dimethyl phthalate	ND		0.50	5.0
Di-n-butyl phthalate	0.822	J	0.60	5.0
Di-n-octyl phthalate	ND		0.73	5.0
Fluoranthene	ND		0.20	1.0
Fluorene	ND		0.080	1.0
Hexachlorobenzene	ND		0.50	1.0
Hexachlorocyclopentadiene	ND		0.50	5.0
Hexachloroethane	ND		0.50	3.0
Indeno[1,2,3-cd]pyrene	ND		0.079	0.50
Isophorone	ND		0.50	5.0
N-Nitrosodi-n-propylamine	ND		0.50	5.0
N-Nitrosodiphenylamine	ND		0.50	5.0
Nitrobenzene	ND		0.50	5.0
Pentachlorophenol	ND		0.50	1.0
Phenanthrene	ND		0.085	0.20
Phenol	ND		0.50	5.0
Pyrene	ND		0.19	5.0
Phenyl ether	ND		0.50	5.0

Surrogate	% Rec	Acceptance Limits
2-Fluorophenol	49	15 - 110
Phenol-d5	28	15 - 110
Nitrobenzene-d5	68	30 - 130
2,4,6-Tribromophenol	75	15 - 110
Terphenyl-d14	73	30 - 130
2-Fluorobiphenyl	61	30 - 130

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Method Blank TICs- Batch: 360-75165

Cas Number	Analyte	RT	Est. Result	Qual
	Unknown	1.85	17.0	T J
	Unknown	2.58	0.765	T J
100-41-4	Ethylbenzene	5.25	1.15	T J N
106-42-3	p-Xylene	5.39	2.94	T J N
108-38-3	Benzene, 1,3-dimethyl-	5.72	1.94	T J N
	Unknown	5.85	1.34	T J
104-76-7	1-Hexanol, 2-ethyl-	7.13	0.877	T J N
	Unknown	7.92	1.49	T J
144-19-4	1,3-Pentanediol, 2,2,4-trimethyl-	8.08	1.78	T J N
	Unknown	8.29	0.709	T J

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 360-75165

Method: 8270D
Preparation: 3510C

LCS Lab Sample ID:	LCS 360-75165/2-A	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Client Matrix:	Water	Prep Batch:	360-75165	Lab File ID:	J2860.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1000 mL
Analysis Date:	06/14/2011 1734	Units:	ug/L	Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 360-75165/3-A	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Client Matrix:	Water	Prep Batch:	360-75165	Lab File ID:	J2861.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1000 mL
Analysis Date:	06/14/2011 1804	Units:	ug/L	Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL
Leach Date:	N/A				

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
1,1'-Biphenyl	60	58	40 - 140	4	20		
1,2,4,5-Tetrachlorobenzene	53	52	40 - 140	2	20	J	J
1-Methylnaphthalene	52	51	40 - 140	1	20		
2,2'-oxybis[1-chloropropane]	67	64	40 - 140	3	20		
2,3,4,6-Tetrachlorophenol	74	67	30 - 130	10	20		
2,4,5-Trichlorophenol	89	86	30 - 130	3	20		
2,4,6-Trichlorophenol	87	82	30 - 130	6	20		
2,4-Dichlorophenol	78	73	30 - 130	6	20		
2,4-Dimethylphenol	116	110	30 - 130	6	20		
2,4-Dinitrophenol	86	83	30 - 130	4	20		
2,4-Dinitrotoluene	86	80	40 - 140	8	20		
2,6-Dinitrotoluene	84	82	40 - 140	3	20		
2-Chloronaphthalene	55	51	40 - 140	7	20	J	J
2-Chlorophenol	66	64	30 - 130	4	20		
2-Methylnaphthalene	59	55	40 - 140	7	20		
2-Methylphenol	65	62	30 - 130	5	20		J
2-Nitroaniline	86	83	40 - 140	3	20		
2-Nitrophenol	72	69	30 - 130	4	20		
3 & 4 Methylphenol	67	63	30 - 130	6	20		
3,3'-Dichlorobenzidine	83	75	40 - 140	9	20		
3-Nitroaniline	79	76	40 - 140	5	20		
4,6-Dinitro-2-methylphenol	98	91	30 - 130	7	20		
4-Bromophenyl phenyl ether	83	77	40 - 140	7	20		
4-Chloro-3-methylphenol	81	80	30 - 130	2	20		
4-Chloroaniline	74	70	40 - 140	5	20		
4-Chlorophenyl phenyl ether	75	71	40 - 140	6	20		
4-Nitroaniline	89	83	40 - 140	7	20		
4-Nitrophenol	40	39	30 - 130	3	20	J	J
Acenaphthene	84	81	40 - 140	3	20		
Acenaphthylene	78	75	40 - 140	5	20		
Acetophenone	84	81	40 - 140	4	20		
Aniline	38	34	40 - 140	10	20	J *	J *
Anthracene	104	95	40 - 140	9	20		
Atrazine	109	105	40 - 140	4	20		
Azobenzene	89	83	40 - 140	8	20		
Benzaldehyde	74	70	40 - 140	6	20		

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 360-75165

Method: 8270D
Preparation: 3510C

LCS Lab Sample ID:	LCS 360-75165/2-A	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Client Matrix:	Water	Prep Batch:	360-75165	Lab File ID:	J2860.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1000 mL
Analysis Date:	06/14/2011 1734	Units:	ug/L	Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 360-75165/3-A	Analysis Batch:	360-75230	Instrument ID:	Inst. J
Client Matrix:	Water	Prep Batch:	360-75165	Lab File ID:	J2861.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1000 mL
Analysis Date:	06/14/2011 1804	Units:	ug/L	Final Weight/Volume:	1.0 mL
Prep Date:	06/13/2011 1524			Injection Volume:	1 uL
Leach Date:	N/A				

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Benzo[a]anthracene	105	99	40 - 140	6	20		
Benzo[a]pyrene	114	107	40 - 140	6	20		
Benzo[b]fluoranthene	117	112	40 - 140	5	20		
Benzo[g,h,i]perylene	129	100	40 - 140	25	20		*
Benzo[k]fluoranthene	126	119	40 - 140	6	20		
Benzoic acid	40	47	40 - 140	16	20	J	J
Benzophenone	77	71	40 - 140	8	20		
Benzyl alcohol	73	69	40 - 140	6	20	J	J
Bis(2-chloroethoxy)methane	73	68	40 - 140	8	20		
Bis(2-chloroethyl)ether	67	64	40 - 140	5	20		
Bis(2-ethylhexyl) phthalate	99	92	40 - 140	8	20		
Butyl benzyl phthalate	89	87	40 - 140	3	20		
Caprolactam	22	22	40 - 140	1	20	J *	J *
Carbazole	90	85	40 - 140	6	20		
Chrysene	103	93	40 - 140	11	20		
Dibenz(a,h)anthracene	122	101	40 - 140	19	20		
Dibenzofuran	72	68	40 - 140	7	20		
Diethyl phthalate	86	81	40 - 140	6	20		
Dimethyl phthalate	86	81	40 - 140	5	20		
Di-n-butyl phthalate	92	88	40 - 140	4	20		
Di-n-octyl phthalate	81	84	40 - 140	3	20		
Fluoranthene	88	82	40 - 140	7	20		
Fluorene	92	87	40 - 140	6	20		
Hexachlorobenzene	81	76	40 - 140	7	20		
Hexachlorocyclopentadiene	86	81	40 - 140	5	20		
Hexachloroethane	46	43	40 - 140	7	20		
Indeno[1,2,3-cd]pyrene	121	97	40 - 140	22	20		*
Isophorone	67	62	40 - 140	7	20		J
N-Nitrosodi-n-propylamine	71	68	40 - 140	4	20		
N-Nitrosodiphenylamine	83	77	40 - 140	8	20		
Nitrobenzene	77	70	40 - 140	9	20		
Pentachlorophenol	97	89	30 - 130	9	20		
Phenanthrene	95	88	40 - 140	8	20		
Phenol	32	30	30 - 130	5	20	J	J
Pyrene	97	95	40 - 140	2	20		
Phenyl ether	59	56	40 - 140	5	20		

FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Westfield Job No.: 360-34288-1

SDG No.: 360-34288-1

Lab Sample ID: CCVIS 360-75230/2 Calibration Date: 06/14/2011 16:35

Instrument ID: Inst. J Calib Start Date: 06/13/2011 15:56

GC Column: Rtx-5ms ID: 0.25(um) Calib End Date: 06/13/2011 19:53

Lab File ID: J2858.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Dimethyl phthalate	Ave	1.191	1.168	0.0100	4900	5000	-2.0	20.0
2,6-Dinitrotoluene	Ave	0.2659	0.2712	0.1000	5100	5000	2.0	20.0
Acenaphthylene	Ave	1.448	1.456	0.9000	5030	5000	0.6	20.0
3-Nitroaniline	Lin		0.2461	0.0100	4890	5000	-2.2	20.0
Acenaphthene	Ave	1.021	1.005	0.8000	4920	5000	-1.6	20.0
2,4-Dinitrophenol	Lin		0.1206	0.0100	5120	5000	2.4	20.0
4-Nitrophenol	Lin		0.1846	0.0100	4850	5000	-3.0	20.0
2,4-Dinitrotoluene	Ave	0.3369	0.3315	0.2000	4920	5000	-1.6	20.0
Dibenzofuran	Ave	1.402	1.352	0.8000	4820	5000	-3.6	20.0
2,3,4,6-Tetrachlorophenol	Lin		0.2264		4820	5000	-3.6	20.0
Diethyl phthalate	Ave	1.250	1.193	0.0100	4770	5000	-4.6	20.0
4-Chlorophenyl phenyl ether	Ave	0.5417	0.5270	0.4000	4860	5000	-2.7	20.0
4-Nitroaniline	Ave	0.2316	0.2220	0.0100	4790	5000	-4.1	20.0
Fluorene	Ave	1.138	1.104	0.8000	4850	5000	-3.0	20.0
4,6-Dinitro-2-methylphenol	Lin		0.1099	0.0100	5260	5000	5.2	20.0
Diphenylamine	Ave	0.5552	0.5573		5020	5000	0.4	20.0
N-Nitrosodiphenylamine	Ave	0.4746	0.4763	0.0100	5870	5850	0.4	20.0
1,2-Diphenylhydrazine	Ave	0.9430	0.9937		5270	5000	5.4	20.0
Azobenzene	Ave	0.9430	0.9937		5270	5000	5.4	20.0
Benzophenone	Ave	0.6097	0.6336		5200	5000	3.9	20.0
4-Bromophenyl phenyl ether	Ave	0.1616	0.1664	0.1000	5150	5000	3.0	20.0
Hexachlorobenzene	Ave	0.1538	0.1540	0.1000	5010	5000	0.2	20.0
Atrazine	Ave	0.1289	0.1312		5090	5000	1.8	20.0
Pentachlorophenol	Lin		0.0811	0.0500	4990	5000	-0.2	20.0
Pentachloronitrobenzene	Ave	0.0882	0.0896		5080	5000	1.6	20.0
Phenanthrene	Ave	0.9349	0.8987	0.6000	4810	5000	-3.9	20.0
Anthracene	Ave	0.8747	0.8785	0.6000	5020	5000	0.4	20.0
Carbazole	Ave	0.7815	0.8066	0.0100	5160	5000	3.2	20.0
Di-n-butyl phthalate	Ave	1.241	1.179	0.0100	4750	5000	-5.0	20.0
Fluoranthene	Ave	0.9073	0.9250	0.6000	5100	5000	2.0	20.0
Benzidine	Ave	0.2594	0.2264		4360	5000	-12.7	20.0
Pyrene	Ave	1.279	1.186	0.6000	4630	5000	-7.3	20.0
Butyl benzyl phthalate	Ave	0.6219	0.5829	0.0100	4690	5000	-6.3	20.0
3,3'-Dichlorobenzidine	Lin		0.2507	0.0100	4380	5000	-12.4	20.0
Benzo[a]anthracene	Ave	1.001	0.9849	0.6000	4920	5000	-1.6	20.0
Bis(2-ethylhexyl) phthalate	Ave	0.8563	0.8817	0.0100	5150	5000	3.0	20.0
Chrysene	Ave	1.014	0.9620	0.6000	4740	5000	-5.2	20.0
Di-n-octyl phthalate	Lin		3.370	0.0100	5310	5000	6.2	20.0
Benzo[b]fluoranthene	Ave	1.428	1.898	0.7000	6650	5000	32.9*	20.0
Benzo[k]fluoranthene	Ave	1.377	1.541	0.7000	5600	5000	11.9	20.0
Benzo[a]pyrene	Lin2		0.9342	0.7000	5050	5000	1.0	20.0

FORM VII 8270D

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Method Blank - Batch: 360-75223

Method: 8270D
Preparation: 3510C

Lab Sample ID:	MB 360-75223/1-A	Analysis Batch:	360-75365	Instrument ID:	Inst. J
Client Matrix:	Water	Prep Batch:	360-75223	Lab File ID:	J2910.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1000 mL
Analysis Date:	06/16/2011 0122	Units:	ug/L	Final Weight/Volume:	1.0 mL
Prep Date:	06/14/2011 1501			Injection Volume:	1 uL
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
1,1'-Biphenyl	ND		0.50	5.0
1,2,4,5-Tetrachlorobenzene	ND		0.50	5.0
1-Methylnaphthalene	ND		0.050	5.0
2,2'-oxybis[1-chloropropane]	ND		0.50	5.0
2,3,4,6-Tetrachlorophenol	ND		0.50	5.0
2,4,5-Trichlorophenol	ND		0.50	5.0
2,4,6-Trichlorophenol	ND		0.50	5.0
2,4-Dichlorophenol	ND		0.50	5.0
2,4-Dimethylphenol	ND		0.50	5.0
2,4-Dinitrophenol	ND		0.50	5.0
2,4-Dinitrotoluene	ND		0.50	5.0
2,6-Dinitrotoluene	ND		0.50	5.0
2-Chloronaphthalene	ND		0.50	5.0
2-Chlorophenol	ND		0.50	5.0
2-Methylnaphthalene	ND		0.050	1.0
2-Methylphenol	ND		0.50	5.0
2-Nitroaniline	ND		0.50	5.0
2-Nitrophenol	ND		0.50	5.0
3 & 4 Methylphenol	ND		0.50	5.0
3,3'-Dichlorobenzidine	ND		0.50	5.0
3-Nitroaniline	ND		0.50	5.0
4,6-Dinitro-2-methylphenol	ND		0.50	5.0
4-Bromophenyl phenyl ether	ND		0.50	5.0
4-Chloro-3-methylphenol	ND		0.50	5.0
4-Chloroaniline	ND		0.50	5.0
4-Chlorophenyl phenyl ether	ND		0.50	5.0
4-Nitroaniline	ND		0.50	5.0
4-Nitrophenol	ND		0.50	5.0
Acenaphthene	ND		0.050	1.0
Acenaphthylene	ND		0.050	0.30
Acetophenone	1.65	J	0.50	5.0
Aniline	ND		0.50	5.0
Anthracene	ND		0.070	1.0
Atrazine	ND		0.50	5.0
Azobenzene	ND		0.50	5.0
Benzaldehyde	ND		0.50	5.0
Benzo[a]anthracene	ND		0.17	0.30
Benzo[a]pyrene	ND		0.10	0.20
Benzo[b]fluoranthene	ND		0.15	0.30
Benzo[g,h,i]perylene	ND		0.094	0.50
Benzo[k]fluoranthene	ND		0.17	0.30
Benzoic acid	ND		0.50	5.0
Benzophenone	ND		0.50	5.0
Benzyl alcohol	0.828	J	0.50	10
Bis(2-chloroethoxy)methane	ND		0.50	5.0

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Method Blank - Batch: 360-75223

Method: 8270D
Preparation: 3510C

Lab Sample ID:	MB 360-75223/1-A	Analysis Batch:	360-75365	Instrument ID:	Inst. J
Client Matrix:	Water	Prep Batch:	360-75223	Lab File ID:	J2910.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1000 mL
Analysis Date:	06/16/2011 0122	Units:	ug/L	Final Weight/Volume:	1.0 mL
Prep Date:	06/14/2011 1501			Injection Volume:	1 uL
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Bis(2-chloroethyl)ether	ND		0.50	5.0
Bis(2-ethylhexyl) phthalate	ND		0.50	2.0
Butyl benzyl phthalate	ND		0.50	5.0
Caprolactam	ND		0.50	5.0
Carbazole	ND		0.50	5.0
Chrysene	ND		0.17	1.0
Dibenz(a,h)anthracene	ND		0.064	0.50
Dibenzofuran	ND		0.50	5.0
Diethyl phthalate	ND		0.50	5.0
Dimethyl phthalate	ND		0.50	5.0
Di-n-butyl phthalate	0.965	J	0.60	5.0
Di-n-octyl phthalate	ND		0.73	5.0
Fluoranthene	ND		0.20	1.0
Fluorene	ND		0.080	1.0
Hexachlorobenzene	ND		0.50	1.0
Hexachlorocyclopentadiene	ND		0.50	5.0
Hexachloroethane	ND		0.50	3.0
Indeno[1,2,3-cd]pyrene	ND		0.079	0.50
Isophorone	ND		0.50	5.0
N-Nitrosodi-n-propylamine	ND		0.50	5.0
N-Nitrosodiphenylamine	ND		0.50	5.0
Nitrobenzene	ND		0.50	5.0
Pentachlorophenol	ND		0.50	1.0
Phenanthrene	ND		0.085	0.20
Phenol	ND		0.50	5.0
Pyrene	ND		0.19	5.0
Phenyl ether	ND		0.50	5.0

Surrogate	% Rec	Acceptance Limits
2-Fluorophenol	48	15 - 110
Phenol-d5	30	15 - 110
Nitrobenzene-d5	70	30 - 130
2,4,6-Tribromophenol	77	15 - 110
Terphenyl-d14	92	30 - 130
2-Fluorobiphenyl	64	30 - 130

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Method Blank TICs- Batch: 360-75223

Cas Number	Analyte	RT	Est. Result	Qual
71-43-2	Benzene	1.51	11.0	T J N
	Unknown	1.64	15.6	T J
108-38-3	Benzene, 1,3-dimethyl-	5.12	1.31	T J N
95-47-6	Benzene, 1,2-dimethyl-	5.47	1.02	T J N
	Unknown	5.62	1.63	T J
541-2-6	Cyclopentasiloxane, decamethyl-	7.75	0.935	T J N
	Unknown	7.90	1.37	T J
96-76-4	Phenol, 2,4-bis(1,1-dimethylethyl)-	9.98	1.04	T J N
57-10-3	n-Hexadecanoic acid	11.99	0.698	T J N
57-11-4	Octadecanoic acid	12.77	0.969	T J N

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 360-75223

Method: 8270D
Preparation: 3510C

LCS Lab Sample ID:	LCS 360-75223/2-A	Analysis Batch:	360-75365	Instrument ID:	Inst. J
Client Matrix:	Water	Prep Batch:	360-75223	Lab File ID:	J2911.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1000 mL
Analysis Date:	06/16/2011 0151	Units:	ug/L	Final Weight/Volume:	1.0 mL
Prep Date:	06/14/2011 1501			Injection Volume:	1 uL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 360-75223/3-A	Analysis Batch:	360-75365	Instrument ID:	Inst. J
Client Matrix:	Water	Prep Batch:	360-75223	Lab File ID:	J2912.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1000 mL
Analysis Date:	06/16/2011 0221	Units:	ug/L	Final Weight/Volume:	1.0 mL
Prep Date:	06/14/2011 1501			Injection Volume:	1 uL
Leach Date:	N/A				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Benzo[a]anthracene	102	104	40 - 140	2	20		
Benzo[a]pyrene	117	121	40 - 140	3	20		
Benzo[b]fluoranthene	120	120	40 - 140	0	20		
Benzo[g,h,i]perylene	108	108	40 - 140	0	20		
Benzo[k]fluoranthene	121	128	40 - 140	5	20		
Benzoic acid	58	58	40 - 140	1	20	J	J
Benzophenone	76	79	40 - 140	4	20		
Benzyl alcohol	79	83	40 - 140	5	20	J	J
Bis(2-chloroethoxy)methane	78	80	40 - 140	3	20		
Bis(2-chloroethyl)ether	70	77	40 - 140	10	20		
Bis(2-ethylhexyl) phthalate	82	82	40 - 140	0	20		
Butyl benzyl phthalate	100	102	40 - 140	3	20		
Caprolactam	27	25	40 - 140	8	20	J *	J *
Carbazole	90	94	40 - 140	4	20		
Chrysene	96	99	40 - 140	3	20		
Dibenz(a,h)anthracene	100	94	40 - 140	6	20		
Dibenzofuran	76	77	40 - 140	1	20		
Diethyl phthalate	86	87	40 - 140	2	20		
Dimethyl phthalate	86	89	40 - 140	3	20		
Di-n-butyl phthalate	85	87	40 - 140	3	20		
Di-n-octyl phthalate	71	71	40 - 140	0	20		
Fluoranthene	75	77	40 - 140	4	20		
Fluorene	92	95	40 - 140	2	20		
Hexachlorobenzene	78	81	40 - 140	4	20		
Hexachlorocyclopentadiene	72	76	40 - 140	5	20		
Hexachloroethane	53	61	40 - 140	13	20		
Indeno[1,2,3-cd]pyrene	98	93	40 - 140	5	20		
Isophorone	72	75	40 - 140	4	20		
N-Nitrosodi-n-propylamine	79	85	40 - 140	7	20		
N-Nitrosodiphenylamine	84	88	40 - 140	6	20		
Nitrobenzene	83	85	40 - 140	3	20		
Pentachlorophenol	90	92	30 - 130	3	20		
Phenanthrene	93	97	40 - 140	4	20		
Phenol	36	38	30 - 130	6	20	J	J
Pyrene	140	143	40 - 140	2	20		*
Phenyl ether	65	67	40 - 140	4	20		

SEMIVOLATILE ORGANICS

REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifications: REGION I Organics Guideline (1996)

TIER I / II / III (circle one)

SITE: Olin Chemical Superfund Site Project #: 6107110016.12 SDG #: 360-34315-1

LAB #: TAL-Westfield

Sample IDs: Attach tracking sheet and/or sample listing.

This checklist is designed to be used with USEPA Region I Validation Guidelines Part II (12/1996). During Level III validation, calculation and transcription checks are completed for instrument tuning, surrogates, target compounds, spike recoveries, calibration data, and internal standards as specified in the guideline. These checks are documented on attached validation notes.

YES	NO	NA		
Data completeness				
☑	☐	☐	All data summaries, QC forms and raw data available from hard copy or electronic data package	Contact lab if missing data. Lab to respond with 24 hours.
☑	☐	☐	Data summaries match EDD	
Holding Times and Preservation				
☑	☐	☐	Hold times met (Waters – Extract within 7 days, analyze within 40 days. Soils – extract within 14 days, analyze within 40 days)	
Instrument Performance Check (Tune)				
☑	☐	☐	Tune available for each 12-hour period samples were analyzed	
☑	☐	☐	Appropriate number of significant figures reported (at least 2)	
☑	☐	☐	Mass/Charge list (m/z) criteria met	
Initial Calibration				
☑	☐	☐	%RSD less than or equal to 30%	
☑	☐	☐	RRF greater than or equal to 0.05	
Continuing Calibration				
☑	☐	☐	%D less than or equal to 25%	
☑	☐	☐	RRF greater than or equal to 0.05.	
Blank Contamination				Evaluate all blanks for contamination. Highest contaminant level used for action level.
☒	☐	☐	Method blank contamination	
☐	☐	☑	Equipment/Rinseate blank contamination	See below.
Surrogate Recoveries				

SEMIVOLATILE ORGANICS

REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifications: REGION I Organics Guideline (1996)

TIER I / II / III (circle one)

☑	☐	☐	Surrogates percent recovery criteria met: Soil = (base/neutral 30%-130%, acid 30%-130%) Water = (base/neutral 30%-130%, acid 15%-110%)	
Matrix Spikes and Laboratory Control Samples				
☐	☐	☑	MS/MSD percent recovery criteria met Soil and Water = (base/neutral 40%-140%, acid 30%-130%)	
☐	☐	☑	MS/MSD RPD criteria met (soils <50%, water <30%)	
☐	☒	☐	LCS/LCSD percent recovery criteria met soil/water (base 40%-140%, acid 30%-130%)	See below.
☑	☐	☐	LCS/LCSD RPD criteria met (soils <50%, water <30%)	
Field Duplicates				
☐	☐	☑	RPD criteria met (soils <50%, water <30%)	
Internal Standard				
☑	☐	☐	Area counts within -50 to +100 percent of calib. std.	
☑	☐	☐	Retention Time within 30 seconds of calib. std.	
Target Compounds				
☑	☐	☐	Reviewed narrative for anomalies	
Tentatively Identified Compounds (TICs)				
☐	☑	☐	TCL compounds reported as TICs	

Blanks:

For a subset of samples, acetophenone (1.65 µg/L), benzyl alcohol (0.828 µg/L), di-n-butyl phthalate (0.965 µg/L) and various TICs were reported in method blank associated with all samples. Action levels were established at five times the reported acetophenone and benzyl alcohol blank concentrations, and ten times the reported di-n-butyl phthalate blank concentration. Sample results for acetophenone and benzyl alcohol were not detected; no qualification was

required. Sample detections of di-n-butyl phthalate were less than the action levels and less than the reporting limits, and were qualified not detected (U) at the reporting limits. Method blank TICs that were reported in associated samples were rejected and not reported in the final data.

LCS:

The LCS and/or LCSD percent recoveries of caprolactum (27 and 25) and pyrene (143) were outside of the QC limits of 40 to 140. Reported detections of caprolactum were qualified estimated (J). Sample results for caprolactum that were not detected were qualified estimated (UJ) at the reporting limits. Pyrene results were all not detected; no qualification was required.

Result Reporting:

N-nitrosodi-n-propylamine was reported from both the 8270 and modified 521 methods. The N-nitrosodi-n-propylamine results from modified 521 with lower reporting limits were reported in the final data set.

Performance Evaluation:

A PES was submitted with the program samples. Laboratory results from the PES were evaluated by the EPA Region I chemist. Results from the PES evaluation indicated the laboratory was biased low for reporting of phenol results. Sample detections for phenol were qualified estimated (J). Sample results for phenol that were not detected were qualified estimated (UJ) at the reporting limits.

Validator's Signature: _____

Date: 9/1/11

Reference:

MACTEC, Quality Assurance Project Plan for Remedial Investigation/Feasibility Study – Olin Chemical Superfund Site, Wilmington Property, 51 Eames Street, Wilmington, MA", MACTEC Engineering and Consulting. Draft .October 2008.

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Client Sample ID: **OC-SW-SDBK-001-XXX**

Lab Sample ID: 360-34315-1
Client Matrix: Water

Date Sampled: 06/08/2011 1130
Date Received: 06/08/2011 1750

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75365	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75223	Lab File ID:	J2917.D
Dilution:	1.0			Initial Weight/Volume:	1000 mL
Analysis Date:	06/16/2011 0448			Final Weight/Volume:	1.0 mL
Prep Date:	06/14/2011 1501			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Bis(2-ethylhexyl) phthalate	ND		0.50	2.0
Butyl benzyl phthalate	ND		0.50	5.0
Caprolactam	ND		0.50	5.0
Carbazole	ND		0.50	5.0
Chrysene	ND		0.17	1.0
Dibenz(a,h)anthracene	ND		0.064	0.50
Dibenzofuran	ND		0.50	5.0
Diethyl phthalate	ND		0.50	5.0
Dimethyl phthalate	ND		0.50	5.0
Di-n-butyl phthalate	ND		0.60	5.0
Di-n-octyl phthalate	ND		0.73	5.0
Fluoranthene	ND		0.20	1.0
Fluorene	ND		0.080	1.0
Hexachlorobenzene	ND		0.50	1.0
Hexachlorocyclopentadiene	ND		0.50	5.0
Hexachloroethane	ND		0.50	3.0
Indeno[1,2,3-cd]pyrene	ND		0.079	0.50
Isophorone	ND		0.50	5.0
N-Nitrosodi-n-propylamine	ND		0.50	5.0
N-Nitrosodiphenylamine	ND		0.50	5.0
Nitrobenzene	ND		0.50	5.0
Pentachlorophenol	ND		0.50	1.0
Phenanthrene	ND		0.085	0.20
Phenol	ND		0.50	5.0
Pyrene	ND		0.19	5.0
Phenyl ether	ND		0.50	5.0

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorophenol	46		15 - 110
Phenol-d5	31		15 - 110
Nitrobenzene-d5	75		30 - 130
2,4,6-Tribromophenol	89		15 - 110
Terphenyl-d14	96		30 - 130
2-Fluorobiphenyl	70		30 - 130

8/22/11

Analytical Data

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Client Sample ID: **OC-SW-SDBK-001-XXX**

Lab Sample ID: 360-34315-1
Client Matrix: Water

Date Sampled: 06/08/2011 1130
Date Received: 06/08/2011 1750

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75365	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75223	Lab File ID:	J2917.D
Dilution:	1.0			Initial Weight/Volume:	1000 mL
Analysis Date:	06/16/2011 0448			Final Weight/Volume:	1.0 mL
Prep Date:	06/14/2011 1501			Injection Volume:	1 uL

Tentatively Identified Compounds **Number TIC's Found:** 8

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
	~~Unknown~~	~~1.63~~	~~16~~	~~T J~~
	~~Unknown~~	~~5.62~~	~~1.3~~	~~T J~~
~~541-2-6~~	~~Cyclopentasiloxane, decamethyl-~~	~~7.75~~	~~0.72~~	~~T J N~~
	Unknown	8.11	0.41	~~T~~ J
1138-52-9	Phenol, 3,5-bis(1,1-dimethylethyl)-	9.97	0.88	~~T~~ J N
~~57-10-3~~	~~n-Hexadecanoic acid~~	~~11.99~~	~~1.1~~	~~T J N~~
629-73-2	1-Hexadecene	12.51	2.1	~~T~~ J N
~~57-11-4~~	~~Octadecanoic acid~~	~~12.77~~	~~1.5~~	~~T J N~~

8/22/11

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Client Sample ID: **OC-SW-SDBK-004-XXX**

Lab Sample ID: 360-34315-2
Client Matrix: Water

Date Sampled: 06/08/2011 1220
Date Received: 06/08/2011 1750

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75365	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75223	Lab File ID:	J2918.D
Dilution:	1.0			Initial Weight/Volume:	1050 mL
Analysis Date:	06/16/2011 0517			Final Weight/Volume:	1.0 mL
Prep Date:	06/14/2011 1501			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Bis(2-ethylhexyl) phthalate	ND		0.48	1.9
Butyl benzyl phthalate	ND		0.48	4.8
Caprolactam	0.56	J	0.48	4.8
Carbazole	ND		0.48	4.8
Chrysene	ND		0.16	0.95
Dibenz(a,h)anthracene	ND		0.061	0.48
Dibenzofuran	ND		0.48	4.8
Diethyl phthalate	ND		0.48	4.8
Dimethyl phthalate	ND		0.48	4.8
Di-n-butyl phthalate	ND		0.57	4.8
Di-n-octyl phthalate	ND		0.70	4.8
Fluoranthene	ND		0.19	0.95
Fluorene	ND		0.076	0.95
Hexachlorobenzene	ND		0.48	0.95
Hexachlorocyclopentadiene	ND		0.48	4.8
Hexachloroethane	ND		0.48	2.9
Indeno[1,2,3-cd]pyrene	ND		0.075	0.48
Isophorone	ND		0.48	4.8
N-Nitrosodi-n-propylamine	ND		0.48	4.8
N-Nitrosodiphenylamine	ND		0.48	4.8
Nitrobenzene	ND		0.48	4.8
Pentachlorophenol	ND		0.48	0.95
Phenanthrene	ND		0.081	0.19
Phenol	ND		0.48	4.8
Pyrene	ND		0.18	4.8
Phenyl ether	ND		0.48	4.8

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorophenol	44		15 - 110
Phenol-d5	27		15 - 110
Nitrobenzene-d5	72		30 - 130
2,4,6-Tribromophenol	80		15 - 110
Terphenyl-d14	101		30 - 130
2-Fluorobiphenyl	72		30 - 130

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Analytical Data

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Client Sample ID: **OC-SW-SDBK-004-XXX**

Lab Sample ID: 360-34315-2
Client Matrix: Water

Date Sampled: 06/08/2011 1220
Date Received: 06/08/2011 1750

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75365	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75223	Lab File ID:	J2918.D
Dilution:	1.0			Initial Weight/Volume:	1050 mL
Analysis Date:	06/16/2011 0517			Final Weight/Volume:	1.0 mL
Prep Date:	06/14/2011 1501			Injection Volume:	1 uL

Tentatively Identified Compounds **Number TIC's Found:** 7

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
	~~Unknown~~	~~1.64~~	~~14~~	~~TJ~~
	Unknown	1.67	0.87	~~T~~J
	~~Unknown~~	~~5.62~~	~~1.2~~	~~TJ~~
	Unknown	5.95	0.65	~~T~~J
	Unknown	7.75	0.57	~~T~~J
~~57-10-3~~	~~n-Hexadecanoic acid~~	~~11.99~~	~~1.1~~	~~TJN~~
~~57-11-4~~	~~Octadecanoic acid~~	~~12.77~~	~~1.8~~	~~TJN~~

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Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Client Sample ID: **OC-SW-SD-EDSD/SW0-XXX**

Lab Sample ID: 360-34315-3
Client Matrix: Water

Date Sampled: 06/08/2011 1045
Date Received: 06/08/2011 1750

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75365	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75223	Lab File ID:	J2919.D
Dilution:	1.0			Initial Weight/Volume:	1000 mL
Analysis Date:	06/16/2011 0547			Final Weight/Volume:	1.0 mL
Prep Date:	06/14/2011 1501			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Bis(2-ethylhexyl) phthalate	ND		0.50	2.0
Butyl benzyl phthalate	ND		0.50	5.0
Caprolactam	0.73	J	0.50	5.0
Carbazole	ND		0.50	5.0
Chrysene	ND		0.17	1.0
Dibenz(a,h)anthracene	ND		0.064	0.50
Dibenzofuran	ND		0.50	5.0
Diethyl phthalate	ND		0.50	5.0
Dimethyl phthalate	ND		0.50	5.0
Di-n-butyl phthalate	ND		0.60	5.0
Di-n-octyl phthalate	ND		0.73	5.0
Fluoranthene	ND		0.20	1.0
Fluorene	ND		0.080	1.0
Hexachlorobenzene	ND		0.50	1.0
Hexachlorocyclopentadiene	ND		0.50	5.0
Hexachloroethane	ND		0.50	3.0
Indeno[1,2,3-cd]pyrene	ND		0.079	0.50
Isophorone	ND		0.50	5.0
N-Nitrosodi-n-propylamine	ND		0.50	5.0
N-Nitrosodiphenylamine	ND		0.50	5.0
Nitrobenzene	ND		0.50	5.0
Pentachlorophenol	ND		0.50	1.0
Phenanthrene	ND		0.085	0.20
Phenol	ND J		0.50	5.0
Pyrene	ND		0.19	5.0
Phenyl ether	ND		0.50	5.0

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorophenol	45		15 - 110
Phenol-d5	28		15 - 110
Nitrobenzene-d5	76		30 - 130
2,4,6-Tribromophenol	84		15 - 110
Terphenyl-d14	96		30 - 130
2-Fluorobiphenyl	70		30 - 130

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Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Client Sample ID: **OC-SW-SD-EDSD/SW0-XXX**

Lab Sample ID: 360-34315-3
Client Matrix: Water

Date Sampled: 06/08/2011 1045
Date Received: 06/08/2011 1750

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75365	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75223	Lab File ID:	J2919.D
Dilution:	1.0			Initial Weight/Volume:	1000 mL
Analysis Date:	06/16/2011 0547			Final Weight/Volume:	1.0 mL
Prep Date:	06/14/2011 1501			Injection Volume:	1 uL

Tentatively Identified Compounds **Number TIC's Found:** 6

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
	~~Unknown~~	~~1.64~~	~~16~~	~~T J~~
	Unknown	1.67	0.85	T J
	~~Unknown~~	~~5.62~~	~~1.3~~	~~T J~~
~~541-2-6~~	~~Cyclopentasiloxane, decamethyl-~~	~~7.75~~	~~0.56~~	~~T J N~~
~~57-10-3~~	~~n-Hexadecanoic acid~~	~~11.99~~	0.74	T J N
	Unknown	12.77	1.3	T J

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Analytical Data

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Client Sample ID: **OC-SW-EDSD/SW1(EDBS5)-XXX**

Lab Sample ID: 360-34315-4
Client Matrix: Water

Date Sampled: 06/08/2011 1000
Date Received: 06/08/2011 1750

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75365	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75223	Lab File ID:	J2920.D
Dilution:	1.0			Initial Weight/Volume:	1050 mL
Analysis Date:	06/16/2011 0616			Final Weight/Volume:	1.0 mL
Prep Date:	06/14/2011 1501			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Bis(2-ethylhexyl) phthalate	ND		0.48	1.9
Butyl benzyl phthalate	ND		0.48	4.8
Caprolactam	ND J		0.48	4.8
Carbazole	ND		0.48	4.8
Chrysene	ND		0.16	0.95
Dibenz(a,h)anthracene	ND		0.061	0.48
Dibenzofuran	ND		0.48	4.8
Diethyl phthalate	ND		0.48	4.8
Dimethyl phthalate	ND		0.48	4.8
Di-n-butyl phthalate	ND		0.57	4.8
Di-n-octyl phthalate	ND		0.70	4.8
Fluoranthene	ND		0.19	0.95
Fluorene	ND		0.076	0.95
Hexachlorobenzene	ND		0.48	0.95
Hexachlorocyclopentadiene	ND		0.48	4.8
Hexachloroethane	ND		0.48	2.9
Indeno[1,2,3-cd]pyrene	ND		0.075	0.48
Isophorone	ND		0.48	4.8
N-Nitrosodi-n-propylamine	ND		0.48	4.8
N-Nitrosodiphenylamine	ND		0.48	4.8
Nitrobenzene	ND		0.48	4.8
Pentachlorophenol	ND		0.48	0.95
Phenanthrene	ND		0.081	0.19
Phenol	ND J		0.48	4.8
Pyrene	ND		0.18	4.8
Phenyl ether	ND		0.48	4.8

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorophenol	40		15 - 110
Phenol-d5	25		15 - 110
Nitrobenzene-d5	67		30 - 130
2,4,6-Tribromophenol	81		15 - 110
Terphenyl-d14	88		30 - 130
2-Fluorobiphenyl	67		30 - 130

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Analytical Data

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Client Sample ID: **OC-SW-EDSD/SW1(EDBS5)-XXX**

Lab Sample ID: 360-34315-4
Client Matrix: Water

Date Sampled: 06/08/2011 1000
Date Received: 06/08/2011 1750

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75365	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75223	Lab File ID:	J2920.D
Dilution:	1.0			Initial Weight/Volume:	1050 mL
Analysis Date:	06/16/2011 0616			Final Weight/Volume:	1.0 mL
Prep Date:	06/14/2011 1501			Injection Volume:	1 uL

Tentatively Identified Compounds **Number TIC's Found:** 6

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
	~~Unknown~~	~~1.64~~	~~13~~	~~T J~~
111-76-2	Ethanol, 2-butoxy-	5.62	1.1	T J N
	Unknown	5.95	1.0	T J
~~541-2-6~~	~~Cyclopentasiloxane, decamethyl-~~	~~7.75~~	~~0.59~~	~~T J N~~
~~57-10-3~~	~~n-Hexadecanoic acid~~	~~11.99~~	~~0.68~~	~~T J N~~
~~57-11-4~~	~~Octadecanoic acid~~	~~12.77~~	~~1.0~~	~~T J N~~

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Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Client Sample ID: **OC-SW-EDSD/SW2(EDBS6)-XXX**

Lab Sample ID: 360-34315-5
Client Matrix: Water

Date Sampled: 06/08/2011 0900
Date Received: 06/08/2011 1750

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75365	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75223	Lab File ID:	J2921.D
Dilution:	1.0			Initial Weight/Volume:	1000 mL
Analysis Date:	06/16/2011 0645			Final Weight/Volume:	1.0 mL
Prep Date:	06/14/2011 1501			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Bis(2-ethylhexyl) phthalate	ND		0.50	2.0
Butyl benzyl phthalate	ND		0.50	5.0
Caprolactam	ND J		0.50	5.0
Carbazole	ND		0.50	5.0
Chrysene	ND		0.17	1.0
Dibenz(a,h)anthracene	ND		0.064	0.50
Dibenzofuran	ND		0.50	5.0
Diethyl phthalate	ND		0.50	5.0
Dimethyl phthalate	ND		0.50	5.0
Di-n-butyl phthalate	ND		0.60	5.0
Di-n-octyl phthalate	ND		0.73	5.0
Fluoranthene	ND		0.20	1.0
Fluorene	ND		0.080	1.0
Hexachlorobenzene	ND		0.50	1.0
Hexachlorocyclopentadiene	ND		0.50	5.0
Hexachloroethane	ND		0.50	3.0
Indeno[1,2,3-cd]pyrene	ND		0.079	0.50
Isophorone	ND		0.50	5.0
N-Nitrosodi-n-propylamine	ND		0.50	5.0
N-Nitrosodiphenylamine	ND		0.50	5.0
Nitrobenzene	ND		0.50	5.0
Pentachlorophenol	ND		0.50	1.0
Phenanthrene	ND		0.085	0.20
Phenol	ND J		0.50	5.0
Pyrene	ND		0.19	5.0
Phenyl ether	ND		0.50	5.0

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorophenol	46		15 - 110
Phenol-d5	28		15 - 110
Nitrobenzene-d5	75		30 - 130
2,4,6-Tribromophenol	84		15 - 110
Terphenyl-d14	103		30 - 130
2-Fluorobiphenyl	68		30 - 130

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Analytical Data

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Client Sample ID: **OC-SW-EDSD/SW2(EDBS6)-XXX**

Lab Sample ID: 360-34315-5
Client Matrix: Water

Date Sampled: 06/08/2011 0900
Date Received: 06/08/2011 1750

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75365	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75223	Lab File ID:	J2921.D
Dilution:	1.0			Initial Weight/Volume:	1000 mL
Analysis Date:	06/16/2011 0645			Final Weight/Volume:	1.0 mL
Prep Date:	06/14/2011 1501			Injection Volume:	1 uL

Tentatively Identified Compounds **Number TIC's Found:** 7

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
110-82-7	Cyclohexane	1.52	8.4	T J N
	~~Unknown~~	~~1.65~~	~~16~~	~~T J~~
	~~Unknown~~	~~5.62~~	~~1.3~~	~~T J~~
	Unknown	7.75	0.66	~~T~~ J
~~57-10-3~~	~~n-Hexadecanoic acid~~	~~11.99~~	~~1.3~~	~~T J N~~
295-65-8	Cyclohexadecane	12.51	0.88	~~T~~ J N
~~57-11-4~~	~~Octadecanoic acid~~	~~12.77~~	~~2.3~~	~~T J N~~

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Analytical Data

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Client Sample ID: **OC-SW-EDSD/SW5(EDBS11)-XXX**

Lab Sample ID: 360-34315-6
Client Matrix: Water

Date Sampled: 06/08/2011 0815
Date Received: 06/08/2011 1750

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75365	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75223	Lab File ID:	J2922.D
Dilution:	1.0			Initial Weight/Volume:	950 mL
Analysis Date:	06/16/2011 0715			Final Weight/Volume:	1.0 mL
Prep Date:	06/14/2011 1501			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Bis(2-ethylhexyl) phthalate	ND		0.53	2.1
Butyl benzyl phthalate	ND		0.53	5.3
Caprolactam	ND J		0.53	5.3
Carbazole	ND		0.53	5.3
Chrysene	ND		0.18	1.1
Dibenz(a,h)anthracene	ND		0.067	0.53
Dibenzofuran	ND		0.53	5.3
Diethyl phthalate	ND		0.53	5.3
Dimethyl phthalate	ND		0.53	5.3
Di-n-butyl phthalate	ND		0.63	5.3
Di-n-octyl phthalate	ND		0.77	5.3
Fluoranthene	ND		0.21	1.1
Fluorene	ND		0.084	1.1
Hexachlorobenzene	ND		0.53	1.1
Hexachlorocyclopentadiene	ND		0.53	5.3
Hexachloroethane	ND		0.53	3.2
Indeno[1,2,3-cd]pyrene	ND		0.083	0.53
Isophorone	ND		0.53	5.3
N-Nitrosodi-n-propylamine	ND		0.53	5.3
N-Nitrosodiphenylamine	ND		0.53	5.3
Nitrobenzene	ND		0.53	5.3
Pentachlorophenol	ND		0.53	1.1
Phenanthrene	ND		0.089	0.21
Phenol	ND J		0.53	5.3
Pyrene	ND		0.20	5.3
Phenyl ether	ND		0.53	5.3

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorophenol	48		15 - 110
Phenol-d5	31		15 - 110
Nitrobenzene-d5	74		30 - 130
2,4,6-Tribromophenol	86		15 - 110
Terphenyl-d14	96		30 - 130
2-Fluorobiphenyl	71		30 - 130

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Analytical Data

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Client Sample ID: **OC-SW-EDSD/SW5(EDBS11)-XXX**

Lab Sample ID: 360-34315-6
Client Matrix: Water

Date Sampled: 06/08/2011 0815
Date Received: 06/08/2011 1750

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75365	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75223	Lab File ID:	J2922.D
Dilution:	1.0			Initial Weight/Volume:	950 mL
Analysis Date:	06/16/2011 0715			Final Weight/Volume:	1.0 mL
Prep Date:	06/14/2011 1501			Injection Volume:	1 uL

Tentatively Identified Compounds **Number TIC's Found:** **10**

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
110-82-7	Cyclohexane	1.51	9.2	J N
	~~Unknown~~	~~1.65~~	~~16~~	~~J~~
123-91-1	1,4-Dioxane	1.94	0.75	J
111-76-2	Ethanol, 2-butoxy-	5.62	1.4	J N
~~541-2-6~~	~~Cyclopentasiloxane, decamethyl-~~	~~7.75~~	~~0.61~~	~~J N~~
100-23-2	Benzenamine, N,N-dimethyl-4-nitro-	11.15	0.47	J N
~~57-10-3~~	~~n-Hexadecanoic acid~~	~~11.99~~	~~0.86~~	~~J N~~
~~57-11-4~~	~~Octadecanoic acid~~	~~12.77~~	~~1.3~~	~~J N~~
1599-67-3	1-Docosene	13.93	0.90	J N
	Unknown	14.52	1.3	J

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Analytical Data

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Client Sample ID: **OC-SW-MMB-SW/SD-11-XXX**

Lab Sample ID: 360-34315-7
Client Matrix: Water

Date Sampled: 06/07/2011 1500
Date Received: 06/08/2011 1750

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75365	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75223	Lab File ID:	J2916.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/16/2011 0418			Final Weight/Volume:	1.0 mL
Prep Date:	06/14/2011 1501			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Bis(2-ethylhexyl) phthalate	ND		0.45	1.8
Butyl benzyl phthalate	ND		0.45	4.5
Caprolactam	ND J		0.45	4.5
Carbazole	ND		0.45	4.5
Chrysene	ND		0.15	0.91
Dibenz(a,h)anthracene	ND		0.058	0.45
Dibenzofuran	ND		0.45	4.5
Diethyl phthalate	ND		0.45	4.5
Dimethyl phthalate	ND		0.45	4.5
Di-n-butyl phthalate	ND		0.55	4.5
Di-n-octyl phthalate	ND		0.66	4.5
Fluoranthene	ND		0.18	0.91
Fluorene	ND		0.073	0.91
Hexachlorobenzene	ND		0.45	0.91
Hexachlorocyclopentadiene	ND		0.45	4.5
Hexachloroethane	ND		0.45	2.7
Indeno[1,2,3-cd]pyrene	ND		0.072	0.45
Isophorone	ND		0.45	4.5
N-Nitrosodi-n-propylamine	ND		0.45	4.5
N-Nitrosodiphenylamine	ND		0.45	4.5
Nitrobenzene	ND		0.45	4.5
Pentachlorophenol	ND		0.45	0.91
Phenanthrene	ND		0.077	0.18
Phenol	ND J		0.45	4.5
Pyrene	ND		0.17	4.5
Phenyl ether	ND		0.45	4.5
Diphenylamine	ND		0.45	4.5

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorophenol	44		15 - 110
Phenol-d5	28		15 - 110
Nitrobenzene-d5	75		30 - 130
2,4,6-Tribromophenol	85		15 - 110
Terphenyl-d14	100		30 - 130
2-Fluorobiphenyl	73		30 - 130

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Analytical Data

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Client Sample ID: **OC-SW-MMB-SW/SD-11-XXX**

Lab Sample ID: 360-34315-7
Client Matrix: Water

Date Sampled: 06/07/2011 1500
Date Received: 06/08/2011 1750

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75365	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75223	Lab File ID:	J2916.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/16/2011 0418			Final Weight/Volume:	1.0 mL
Prep Date:	06/14/2011 1501			Injection Volume:	1 uL

Tentatively Identified Compounds **Number TIC's Found:** 7

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
110-82-7	Cyclohexane	1.52	8.5	~~T~~ J N
	~~Unknown~~	~~1.65~~	~~18~~	~~T J~~
111-76-2	Ethanol, 2-butoxy-	5.62	1.1	~~T~~ J N
	Unknown	5.95	0.69	~~T~~ J
~~541-2-6~~	~~Cyclopentasiloxane, decamethyl-~~	~~7.75~~	~~0.48~~	~~T J N~~
~~57-10-3~~	~~n-Hexadecanoic acid~~	~~11.99~~	~~1.9~~	~~T J N~~
~~57-11-4~~	~~Octadecanoic acid~~	~~12.78~~	~~3.5~~	~~T J N~~

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Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Client Sample ID: **OC-SW-MMB-SW/SD-2-XXX**

Lab Sample ID: 360-34315-8
Client Matrix: Water

Date Sampled: 06/08/2011 1050
Date Received: 06/08/2011 1750

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75365	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75223	Lab File ID:	J2923.D
Dilution:	1.0			Initial Weight/Volume:	1000 mL
Analysis Date:	06/16/2011 0744			Final Weight/Volume:	1.0 mL
Prep Date:	06/14/2011 1501			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Bis(2-ethylhexyl) phthalate	ND		0.50	2.0
Butyl benzyl phthalate	ND		0.50	5.0
Caprolactam	ND J		0.50	5.0
Carbazole	ND		0.50	5.0
Chrysene	ND		0.17	1.0
Dibenz(a,h)anthracene	ND		0.064	0.50
Dibenzofuran	ND		0.50	5.0
Diethyl phthalate	ND		0.50	5.0
Dimethyl phthalate	ND		0.50	5.0
Di-n-butyl phthalate	ND		0.60	5.0
Di-n-octyl phthalate	ND		0.73	5.0
Fluoranthene	ND		0.20	1.0
Fluorene	ND		0.080	1.0
Hexachlorobenzene	ND		0.50	1.0
Hexachlorocyclopentadiene	ND		0.50	5.0
Hexachloroethane	ND		0.50	3.0
Indeno[1,2,3-cd]pyrene	ND		0.079	0.50
Isophorone	ND		0.50	5.0
N-Nitrosodi-n-propylamine	ND		0.50	5.0
N-Nitrosodiphenylamine	ND		0.50	5.0
Nitrobenzene	ND		0.50	5.0
Pentachlorophenol	ND		0.50	1.0
Phenanthrene	ND		0.085	0.20
Phenol	ND J		0.50	5.0
Pyrene	ND		0.19	5.0
Phenyl ether	ND		0.50	5.0
Diphenylamine	ND		0.50	5.0

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorophenol	45		15 - 110
Phenol-d5	28		15 - 110
Nitrobenzene-d5	73		30 - 130
2,4,6-Tribromophenol	79		15 - 110
Terphenyl-d14	95		30 - 130
2-Fluorobiphenyl	68		30 - 130

8/22/14

Analytical Data

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Client Sample ID: **OC-SW-MMB-SW/SD-2-XXX**

Lab Sample ID: 360-34315-8
Client Matrix: Water

Date Sampled: 06/08/2011 1050
Date Received: 06/08/2011 1750

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75365	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75223	Lab File ID:	J2923.D
Dilution:	1.0			Initial Weight/Volume:	1000 mL
Analysis Date:	06/16/2011 0744			Final Weight/Volume:	1.0 mL
Prep Date:	06/14/2011 1501			Injection Volume:	1 uL

Tentatively Identified Compounds **Number TIC's Found:** 8

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
110-82-7	Cyclohexane	1.52	9.2	~~T~~ J N
	~~Unknown~~	~~1.65~~	~~16~~	~~T J~~
	~~Unknown~~	~~5.62~~	~~1.5~~	~~T J~~
	Unknown	5.95	0.69	~~T~~ J N
	Unknown	7.75	0.58	~~T~~ J N
100-23-2	Benzenamine, N,N-dimethyl-4-nitro-	11.15	0.59	~~T~~ J N
~~57-10-3~~	~~n-Hexadecanoic acid~~	~~11.99~~	~~1.7~~	~~T J N~~
~~57-11-4~~	~~Octadecanoic acid~~	~~12.77~~	~~2.8~~	~~T J N~~

8/22/11

Analytical Data

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Client Sample ID: **OC-SW-MMB-SW/SD-3-XXX**

Lab Sample ID: 360-34315-9
Client Matrix: Water

Date Sampled: 06/08/2011 0915
Date Received: 06/08/2011 1750

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75365	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75223	Lab File ID:	J2924.D
Dilution:	1.0			Initial Weight/Volume:	1000 mL
Analysis Date:	06/16/2011 0813			Final Weight/Volume:	1.0 mL
Prep Date:	06/14/2011 1501			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Bis(2-ethylhexyl) phthalate	ND		0.50	2.0
Butyl benzyl phthalate	ND		0.50	5.0
Caprolactam	0.66	J	0.50	5.0
Carbazole	ND		0.50	5.0
Chrysene	ND		0.17	1.0
Dibenz(a,h)anthracene	ND		0.064	0.50
Dibenzofuran	ND		0.50	5.0
Diethyl phthalate	ND		0.50	5.0
Dimethyl phthalate	ND		0.50	5.0
Di-n-butyl phthalate	5U ~~0.64~~	~~JB~~	0.60	5.0
Di-n-octyl phthalate	ND		0.73	5.0
Fluoranthene	ND		0.20	1.0
Fluorene	ND		0.080	1.0
Hexachlorobenzene	ND		0.50	1.0
Hexachlorocyclopentadiene	ND		0.50	5.0
Hexachloroethane	ND		0.50	3.0
Indeno[1,2,3-cd]pyrene	ND		0.079	0.50
Isophorone	ND		0.50	5.0
N-Nitrosodi-n-propylamine	ND		0.50	5.0
N-Nitrosodiphenylamine	ND		0.50	5.0
Nitrobenzene	ND		0.50	5.0
Pentachlorophenol	ND		0.50	1.0
Phenanthrene	ND		0.085	0.20
Phenol	ND J		0.50	5.0
Pyrene	ND		0.19	5.0
Phenyl ether	ND		0.50	5.0
Diphenylamine	ND		0.50	5.0

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorophenol	35		15 - 110
Phenol-d5	23		15 - 110
Nitrobenzene-d5	61		30 - 130
2,4,6-Tribromophenol	79		15 - 110
Terphenyl-d14	91		30 - 130
2-Fluorobiphenyl	63		30 - 130

8/22/11

Analytical Data

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Client Sample ID: **OC-SW-MMB-SW/SD-3-XXX**

Lab Sample ID: 360-34315-9
Client Matrix: Water

Date Sampled: 06/08/2011 0915
Date Received: 06/08/2011 1750

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75365	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75223	Lab File ID:	J2924.D
Dilution:	1.0			Initial Weight/Volume:	1000 mL
Analysis Date:	06/16/2011 0813			Final Weight/Volume:	1.0 mL
Prep Date:	06/14/2011 1501			Injection Volume:	1 uL

Tentatively Identified Compounds **Number TIC's Found:** 9

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
	Unknown	1.54	0.41	T J
	~~Unknown~~	~~1.64~~	~~13~~	~~T J~~
	Unknown	1.66	4.0	T J
111-76-2	Ethanol, 2-butoxy-	5.62	1.3	T J N
	Unknown	7.75	0.53	T J
544-63-8	Tetradecanoic acid	11.99	2.3	T J N
112-88-9	1-Octadecene	12.51	0.58	T J N
	Unknown	12.53	0.45	T J
~~57-11-4~~	~~Octadecanoic acid~~	~~12.77~~	~~4.0~~	~~T J N~~

8/22/11

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Client Sample ID: **OC-SW-MMB-SW/SD-6-XXX**

Lab Sample ID: 360-34315-10
Client Matrix: Water

Date Sampled: 06/08/2011 1155
Date Received: 06/08/2011 1750

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75365	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75223	Lab File ID:	J2925.D
Dilution:	1.0			Initial Weight/Volume:	1000 mL
Analysis Date:	06/16/2011 0843			Final Weight/Volume:	1.0 mL
Prep Date:	06/14/2011 1501			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Bis(2-ethylhexyl) phthalate	ND		0.50	2.0
Butyl benzyl phthalate	ND		0.50	5.0
Caprolactam	ND J		0.50	5.0
Carbazole	ND		0.50	5.0
Chrysene	ND		0.17	1.0
Dibenz(a,h)anthracene	ND		0.064	0.50
Dibenzofuran	ND		0.50	5.0
Diethyl phthalate	ND		0.50	5.0
Dimethyl phthalate	ND		0.50	5.0
Di-n-butyl phthalate	ND		0.60	5.0
Di-n-octyl phthalate	ND		0.73	5.0
Fluoranthene	ND		0.20	1.0
Fluorene	ND		0.080	1.0
Hexachlorobenzene	ND		0.50	1.0
Hexachlorocyclopentadiene	ND		0.50	5.0
Hexachloroethane	ND		0.50	3.0
Indeno[1,2,3-cd]pyrene	ND		0.079	0.50
Isophorone	ND		0.50	5.0
N-Nitrosodi-n-propylamine	ND		0.50	5.0
N-Nitrosodiphenylamine	ND		0.50	5.0
Nitrobenzene	ND		0.50	5.0
Pentachlorophenol	ND		0.50	1.0
Phenanthrene	ND		0.085	0.20
Phenol	0.83	J	0.50	5.0
Pyrene	ND		0.19	5.0
Phenyl ether	ND		0.50	5.0
Diphenylamine	ND		0.50	5.0

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorophenol	42		15 - 110
Phenol-d5	29		15 - 110
Nitrobenzene-d5	72		30 - 130
2,4,6-Tribromophenol	85		15 - 110
Terphenyl-d14	96		30 - 130
2-Fluorobiphenyl	72		30 - 130

8/22/11

Analytical Data

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Client Sample ID: **OC-SW-MMB-SW/SD-6-XXX**

Lab Sample ID: 360-34315-10
Client Matrix: Water

Date Sampled: 06/08/2011 1155
Date Received: 06/08/2011 1750

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75365	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75223	Lab File ID:	J2925.D
Dilution:	1.0			Initial Weight/Volume:	1000 mL
Analysis Date:	06/16/2011 0843			Final Weight/Volume:	1.0 mL
Prep Date:	06/14/2011 1501			Injection Volume:	1 uL

Tentatively Identified Compounds **Number TIC's Found:** **10**

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
	~~Unknown~~	~~1.64~~	~~15~~	~~T J~~
	Unknown	4.54	0.55	T J
	~~Unknown~~	~~5.62~~	~~1.3~~	~~T J~~
~~541-2-6~~	~~Cyclopentasiloxane, decamethyl-~~	~~7.75~~	~~0.65~~	~~T J N~~
103-82-2	Benzeneacetic acid	8.46	0.75	T J N
134-62-3	Diethyltoluamide	10.35	3.2	T J N
~~57-10-3~~	~~n-Hexadecanoic acid~~	~~11.99~~	~~1.7~~	~~T J N~~
	Unknown	12.53	0.72	T J
~~57-11-4~~	~~Octadecanoic acid~~	~~12.77~~	~~2.5~~	~~T J N~~
	Unknown	15.76	1.5	T J

8/22/11

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Client Sample ID: **OC-SW-MMB-SW/SD-8A-XXX**

Lab Sample ID: 360-34315-11
Client Matrix: Water

Date Sampled: 06/08/2011 1330
Date Received: 06/08/2011 1750

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75365	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75223	Lab File ID:	J2926.D
Dilution:	1.0			Initial Weight/Volume:	1000 mL
Analysis Date:	06/16/2011 0912			Final Weight/Volume:	1.0 mL
Prep Date:	06/14/2011 1501			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Bis(2-ethylhexyl) phthalate	ND		0.50	2.0
Butyl benzyl phthalate	ND		0.50	5.0
Caprolactam	0.66	J	0.50	5.0
Carbazole	ND		0.50	5.0
Chrysene	ND		0.17	1.0
Dibenz(a,h)anthracene	ND		0.064	0.50
Dibenzofuran	ND		0.50	5.0
Diethyl phthalate	ND		0.50	5.0
Dimethyl phthalate	ND		0.50	5.0
Di-n-butyl phthalate	ND		0.60	5.0
Di-n-octyl phthalate	ND		0.73	5.0
Fluoranthene	ND		0.20	1.0
Fluorene	ND		0.080	1.0
Hexachlorobenzene	ND		0.50	1.0
Hexachlorocyclopentadiene	ND		0.50	5.0
Hexachloroethane	ND		0.50	3.0
Indeno[1,2,3-cd]pyrene	ND		0.079	0.50
Isophorone	ND		0.50	5.0
N-Nitrosodi-n-propylamine	ND		0.50	5.0
N-Nitrosodiphenylamine	ND		0.50	5.0
Nitrobenzene	ND		0.50	5.0
Pentachlorophenol	ND		0.50	1.0
Phenanthrene	ND		0.085	0.20
Phenol	ND J		0.50	5.0
Pyrene	ND		0.19	5.0
Phenyl ether	ND		0.50	5.0
Diphenylamine	ND		0.50	5.0

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorophenol	46		15 - 110
Phenol-d5	30		15 - 110
Nitrobenzene-d5	77		30 - 130
2,4,6-Tribromophenol	85		15 - 110
Terphenyl-d14	93		30 - 130
2-Fluorobiphenyl	71		30 - 130

8/22/11

Analytical Data

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Client Sample ID: **OC-SW-MMB-SW/SD-8A-XXX**

Lab Sample ID: 360-34315-11
Client Matrix: Water

Date Sampled: 06/08/2011 1330
Date Received: 06/08/2011 1750

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75365	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75223	Lab File ID:	J2926.D
Dilution:	1.0			Initial Weight/Volume:	1000 mL
Analysis Date:	06/16/2011 0912			Final Weight/Volume:	1.0 mL
Prep Date:	06/14/2011 1501			Injection Volume:	1 uL

Tentatively Identified Compounds **Number TIC's Found:** 5

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
	~~Unknown~~	~~1.64~~	~~16~~	~~T J~~
111-76-2	Ethanol, 2-butoxy-	5.62	1.4	~~T~~ J N
~~541-2-6~~	~~Cyclopentasiloxane, decamethyl-~~	~~7.75~~	~~0.66~~	~~T J N~~
~~57-10-3~~	~~n-Hexadecanoic acid~~	~~11.99~~	~~1.7~~	~~T J N~~
~~57-11-4~~	~~Octadecanoic acid~~	~~12.78~~	~~2.7~~	~~T J N~~

7/22/11

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Client Sample ID: **OC-EBK-019**

Lab Sample ID: 360-34315-13
Client Matrix: Water

Date Sampled: 06/08/2011 1315
Date Received: 06/08/2011 1750

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75365	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75223	Lab File ID:	J2927.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/16/2011 0942			Final Weight/Volume:	1.0 mL
Prep Date:	06/14/2011 1501			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1'-Biphenyl	ND		0.45	4.5
1,2,4,5-Tetrachlorobenzene	ND		0.45	4.5
1-Methylnaphthalene	ND		0.045	4.5
2,2'-oxybis[1-chloropropane]	ND		0.45	4.5
2,3,4,6-Tetrachlorophenol	ND		0.45	4.5
2,4,5-Trichlorophenol	ND		0.45	4.5
2,4,6-Trichlorophenol	ND		0.45	4.5
2,4-Dichlorophenol	ND		0.45	4.5
2,4-Dimethylphenol	ND		0.45	4.5
2,4-Dinitrophenol	ND		0.45	4.5
2,4-Dinitrotoluene	ND		0.45	4.5
2,6-Dinitrotoluene	ND		0.45	4.5
2-Chloronaphthalene	ND		0.45	4.5
2-Chlorophenol	ND		0.45	4.5
2-Methylnaphthalene	ND		0.045	0.91
2-Methylphenol	ND		0.45	4.5
2-Nitroaniline	ND		0.45	4.5
2-Nitrophenol	ND		0.45	4.5
3 & 4 Methylphenol	ND		0.45	4.5
3,3'-Dichlorobenzidine	ND		0.45	4.5
3-Nitroaniline	ND		0.45	4.5
4,6-Dinitro-2-methylphenol	ND		0.45	4.5
4-Bromophenyl phenyl ether	ND		0.45	4.5
4-Chloro-3-methylphenol	ND		0.45	4.5
4-Chloroaniline	ND		0.45	4.5
4-Chlorophenyl phenyl ether	ND		0.45	4.5
4-Nitroaniline	ND		0.45	4.5
4-Nitrophenol	ND		0.45	4.5
Acenaphthene	ND		0.045	0.91
Acenaphthylene	ND		0.045	0.27
Acetophenone	1.2	J ~~B~~	0.45	4.5
Aniline	ND		0.45	4.5
Anthracene	ND		0.064	0.91
Atrazine	ND		0.45	4.5
Azobenzene	ND		0.45	4.5
Benzaldehyde	ND		0.45	4.5
Benzo[a]anthracene	ND		0.15	0.27
Benzo[a]pyrene	ND		0.094	0.18
Benzo[b]fluoranthene	ND		0.13	0.27
Benzo[g,h,i]perylene	ND		0.085	0.45
Benzo[k]fluoranthene	ND		0.15	0.27
Benzoic acid	1.9	J	0.45	4.5
Benzophenone	ND		0.45	4.5
Benzyl alcohol	ND		0.45	9.1
Bis(2-chloroethoxy)methane	ND		0.45	4.5
Bis(2-chloroethyl)ether	ND		0.45	4.5

8/31/11

Analytical Data

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Client Sample ID: **OC-EBK-019**

Lab Sample ID: 360-34315-13
Client Matrix: Water

Date Sampled: 06/08/2011 1315
Date Received: 06/08/2011 1750

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75365	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75223	Lab File ID:	J2927.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/16/2011 0942			Final Weight/Volume:	1.0 mL
Prep Date:	06/14/2011 1501			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Bis(2-ethylhexyl) phthalate	ND		0.45	1.8
Butyl benzyl phthalate	1.3	J	0.45	4.5
Caprolactam	0.81	J	0.45	4.5
Carbazole	ND		0.45	4.5
Chrysene	ND		0.15	0.91
Dibenz(a,h)anthracene	ND		0.058	0.45
Dibenzofuran	ND		0.45	4.5
Diethyl phthalate	2.9	J	0.45	4.5
Dimethyl phthalate	0.94	J	0.45	4.5
Di-n-butyl phthalate	1.1	J B	0.55	4.5
Di-n-octyl phthalate	ND		0.66	4.5
Fluoranthene	ND		0.18	0.91
Fluorene	ND		0.073	0.91
Hexachlorobenzene	ND		0.45	0.91
Hexachlorocyclopentadiene	ND		0.45	4.5
Hexachloroethane	ND		0.45	2.7
Indeno[1,2,3-cd]pyrene	ND		0.072	0.45
Isophorone	ND		0.45	4.5
N-Nitrosodi-n-propylamine	ND		0.45	4.5
N-Nitrosodiphenylamine	ND		0.45	4.5
Nitrobenzene	ND		0.45	4.5
Pentachlorophenol	ND		0.45	0.91
Phenanthrene	ND		0.077	0.18
Phenol	ND		0.45	4.5
Pyrene	ND		0.17	4.5
Phenyl ether	ND		0.45	4.5
Diphenylamine	ND		0.45	4.5

8/3/11

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorophenol	42		15 - 110
Phenol-d5	26		15 - 110
Nitrobenzene-d5	71		30 - 130
2,4,6-Tribromophenol	83		15 - 110
Terphenyl-d14	94		30 - 130
2-Fluorobiphenyl	69		30 - 130

8/31/11

Analytical Data

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Client Sample ID: **OC-EBK-019**

Lab Sample ID: 360-34315-13
Client Matrix: Water

Date Sampled: 06/08/2011 1315
Date Received: 06/08/2011 1750

8270D Semivolatile Organic Compounds (GC/MS) Low Level

Analysis Method:	8270D	Analysis Batch:	360-75365	Instrument ID:	Inst. J
Prep Method:	3510C	Prep Batch:	360-75223	Lab File ID:	J2927.D
Dilution:	1.0			Initial Weight/Volume:	1100 mL
Analysis Date:	06/16/2011 0942			Final Weight/Volume:	1.0 mL
Prep Date:	06/14/2011 1501			Injection Volume:	1 uL

Tentatively Identified Compounds **Number TIC's Found:** **10**

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
110-82-7	Cyclohexane	1.52	7.1	J N
	Unknown	1.65	13	J
111-76-2	Ethanol, 2-butoxy-	5.62	1.1	J N
95-16-9	Benzothiazole	8.46	1.9	J N
	Unknown	8.75	0.93	J
134-62-3	Diethyltoluamide	10.35	13	J N
	Unknown	11.09	0.85	J
	Unknown	11.91	1.3	J
57-11-4	Octadecanoic acid	12.77	1.4	J N
	Unknown	14.44	0.81	J

8/31/11

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Method Blank - Batch: 360-75223

Method: 8270D
Preparation: 3510C

Lab Sample ID:	MB 360-75223/1-A	Analysis Batch:	360-75365	Instrument ID:	Inst. J
Client Matrix:	Water	Prep Batch:	360-75223	Lab File ID:	J2910.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1000 mL
Analysis Date:	06/16/2011 0122	Units:	ug/L	Final Weight/Volume:	1.0 mL
Prep Date:	06/14/2011 1501			Injection Volume:	1 uL
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
1,1'-Biphenyl	ND		0.50	5.0
1,2,4,5-Tetrachlorobenzene	ND		0.50	5.0
1-Methylnaphthalene	ND		0.050	5.0
2,2'-oxybis[1-chloropropane]	ND		0.50	5.0
2,3,4,6-Tetrachlorophenol	ND		0.50	5.0
2,4,5-Trichlorophenol	ND		0.50	5.0
2,4,6-Trichlorophenol	ND		0.50	5.0
2,4-Dichlorophenol	ND		0.50	5.0
2,4-Dimethylphenol	ND		0.50	5.0
2,4-Dinitrophenol	ND		0.50	5.0
2,4-Dinitrotoluene	ND		0.50	5.0
2,6-Dinitrotoluene	ND		0.50	5.0
2-Chloronaphthalene	ND		0.50	5.0
2-Chlorophenol	ND		0.50	5.0
2-Methylnaphthalene	ND		0.050	1.0
2-Methylphenol	ND		0.50	5.0
2-Nitroaniline	ND		0.50	5.0
2-Nitrophenol	ND		0.50	5.0
3 & 4 Methylphenol	ND		0.50	5.0
3,3'-Dichlorobenzidine	ND		0.50	5.0
3-Nitroaniline	ND		0.50	5.0
4,6-Dinitro-2-methylphenol	ND		0.50	5.0
4-Bromophenyl phenyl ether	ND		0.50	5.0
4-Chloro-3-methylphenol	ND		0.50	5.0
4-Chloroaniline	ND		0.50	5.0
4-Chlorophenyl phenyl ether	ND		0.50	5.0
4-Nitroaniline	ND		0.50	5.0
4-Nitrophenol	ND		0.50	5.0
Acenaphthene	ND		0.050	1.0
Acenaphthylene	ND		0.050	0.30
Acetophenone	1.65	J	0.50	5.0
Aniline	ND		0.50	5.0
Anthracene	ND		0.070	1.0
Atrazine	ND		0.50	5.0
Azobenzene	ND		0.50	5.0
Benzaldehyde	ND		0.50	5.0
Benzo[a]anthracene	ND		0.17	0.30
Benzo[a]pyrene	ND		0.10	0.20
Benzo[b]fluoranthene	ND		0.15	0.30
Benzo[g,h,i]perylene	ND		0.094	0.50
Benzo[k]fluoranthene	ND		0.17	0.30
Benzoic acid	ND		0.50	5.0
Benzophenone	ND		0.50	5.0
Benzyl alcohol	0.828	J	0.50	10
Bis(2-chloroethoxy)methane	ND		0.50	5.0

Quality Control Results

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Method Blank - Batch: 360-75223

Method: 8270D
Preparation: 3510C

Lab Sample ID:	MB 360-75223/1-A	Analysis Batch:	360-75365	Instrument ID:	Inst. J
Client Matrix:	Water	Prep Batch:	360-75223	Lab File ID:	J2910.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1000 mL
Analysis Date:	06/16/2011 0122	Units:	ug/L	Final Weight/Volume:	1.0 mL
Prep Date:	06/14/2011 1501			Injection Volume:	1 uL
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Bis(2-chloroethyl)ether	ND		0.50	5.0
Bis(2-ethylhexyl) phthalate	ND		0.50	2.0
Butyl benzyl phthalate	ND		0.50	5.0
Caprolactam	ND		0.50	5.0
Carbazole	ND		0.50	5.0
Chrysene	ND		0.17	1.0
Dibenz(a,h)anthracene	ND		0.064	0.50
Dibenzofuran	ND		0.50	5.0
Diethyl phthalate	ND		0.50	5.0
Dimethyl phthalate	ND		0.50	5.0
Di-n-butyl phthalate	0.965	J	0.60	5.0
Di-n-octyl phthalate	ND		0.73	5.0
Fluoranthene	ND		0.20	1.0
Fluorene	ND		0.080	1.0
Hexachlorobenzene	ND		0.50	1.0
Hexachlorocyclopentadiene	ND		0.50	5.0
Hexachloroethane	ND		0.50	3.0
Indeno[1,2,3-cd]pyrene	ND		0.079	0.50
Isophorone	ND		0.50	5.0
N-Nitrosodi-n-propylamine	ND		0.50	5.0
N-Nitrosodiphenylamine	ND		0.50	5.0
Nitrobenzene	ND		0.50	5.0
Pentachlorophenol	ND		0.50	1.0
Phenanthrene	ND		0.085	0.20
Phenol	ND		0.50	5.0
Pyrene	ND		0.19	5.0
Phenyl ether	ND		0.50	5.0
Diphenylamine	ND		0.50	5.0

Surrogate	% Rec	Acceptance Limits
2-Fluorophenol	48	15 - 110
Phenol-d5	30	15 - 110
Nitrobenzene-d5	70	30 - 130
2,4,6-Tribromophenol	77	15 - 110
Terphenyl-d14	92	30 - 130
2-Fluorobiphenyl	64	30 - 130

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Method Blank TICs- Batch: 360-75223

Cas Number	Analyte	RT	Est. Result	Qual
71-43-2	Benzene	1.51	11.0	T J N
	Unknown	1.64	15.6	T J
108-38-3	Benzene, 1,3-dimethyl-	5.12	1.31	T J N
95-47-6	Benzene, 1,2-dimethyl-	5.47	1.02	T J N
	Unknown	5.62	1.63	T J
541-2-6	Cyclopentasiloxane, decamethyl-	7.75	0.935	T J N
	Unknown	7.90	1.37	T J
96-76-4	Phenol, 2,4-bis(1,1-dimethylethyl)-	9.98	1.04	T J N
57-10-3	n-Hexadecanoic acid	11.99	0.698	T J N
57-11-4	Octadecanoic acid	12.77	0.969	T J N

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 360-75223

Method: 8270D
Preparation: 3510C

LCS Lab Sample ID:	LCS 360-75223/2-A	Analysis Batch:	360-75365	Instrument ID:	Inst. J
Client Matrix:	Water	Prep Batch:	360-75223	Lab File ID:	J2911.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1000 mL
Analysis Date:	06/16/2011 0151	Units:	ug/L	Final Weight/Volume:	1.0 mL
Prep Date:	06/14/2011 1501			Injection Volume:	1 uL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 360-75223/3-A	Analysis Batch:	360-75365	Instrument ID:	Inst. J
Client Matrix:	Water	Prep Batch:	360-75223	Lab File ID:	J2912.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1000 mL
Analysis Date:	06/16/2011 0221	Units:	ug/L	Final Weight/Volume:	1.0 mL
Prep Date:	06/14/2011 1501			Injection Volume:	1 uL
Leach Date:	N/A				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Benzo[a]anthracene	102	104	40 - 140	2	20		
Benzo[a]pyrene	117	121	40 - 140	3	20		
Benzo[b]fluoranthene	120	120	40 - 140	0	20		
Benzo[g,h,i]perylene	108	108	40 - 140	0	20		
Benzo[k]fluoranthene	121	128	40 - 140	5	20		
Benzoic acid	58	58	40 - 140	1	20	J	J
Benzophenone	76	79	40 - 140	4	20		
Benzyl alcohol	79	83	40 - 140	5	20	J	J
Bis(2-chloroethoxy)methane	78	80	40 - 140	3	20		
Bis(2-chloroethyl)ether	70	77	40 - 140	10	20		
Bis(2-ethylhexyl) phthalate	82	82	40 - 140	0	20		
Butyl benzyl phthalate	100	102	40 - 140	3	20		
Caprolactam	27	25	40 - 140	8	20	J *	J *
Carbazole	90	94	40 - 140	4	20		
Chrysene	96	99	40 - 140	3	20		
Dibenz(a,h)anthracene	100	94	40 - 140	6	20		
Dibenzofuran	76	77	40 - 140	1	20		
Diethyl phthalate	86	87	40 - 140	2	20		
Dimethyl phthalate	86	89	40 - 140	3	20		
Di-n-butyl phthalate	85	87	40 - 140	3	20		
Di-n-octyl phthalate	71	71	40 - 140	0	20		
Fluoranthene	75	77	40 - 140	4	20		
Fluorene	92	95	40 - 140	2	20		
Hexachlorobenzene	78	81	40 - 140	4	20		
Hexachlorocyclopentadiene	72	76	40 - 140	5	20		
Hexachloroethane	53	61	40 - 140	13	20		
Indeno[1,2,3-cd]pyrene	98	93	40 - 140	5	20		
Isophorone	72	75	40 - 140	4	20		
N-Nitrosodi-n-propylamine	79	85	40 - 140	7	20		
N-Nitrosodiphenylamine	84	88	40 - 140	6	20		
Nitrobenzene	83	85	40 - 140	3	20		
Pentachlorophenol	90	92	30 - 130	3	20		
Phenanthrene	93	97	40 - 140	4	20		
Phenol	36	38	30 - 130	6	20	J	J
Pyrene	140	143	40 - 140	2	20		*
Phenyl ether	65	67	40 - 140	4	20		

VOLATILE ORGANICS

REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifications: REGION I Organics Guideline (1996)

TIER I / II / (III) (circle one)

SITE: Olin Chemical Project #: 6107110016-12 SDG #: 360-34253-1

LAB #: TAL-WFD

Sample IDs: Attach tracking sheet and/or sample listing.

This checklist is designed to be used with USEPA Region I Validation Guidelines Part II (12/1996). During Level III validation, calculation and transcription checks are completed for instrument tuning, surrogates, target compounds, spike recoveries, calibration data, and internal standards as specified in the guideline. These checks are documented on attached validation notes.

YES	NO	NA		
			Data completeness	Contact lab if missing data. Lab to respond with 24 hours.
☑	☐	☐	All data summaries, QC forms and raw data available from hard copy or electronic data package	
☑	☐	☐	Data summaries match EDD	ok
			Holding Times and Preservation	ok
☑	☐	☐	Hold times met (14 days with preservation)	
☑	☐	☐	Preserved (waters HCL, soils methanol)	
			Instrument Performance Check (Tune)	ok
☑	☐	☐	Tune available for each 12-hour period samples were analyzed	
☑	☐	☐	Appropriate number of significant figures reported (at least 2)	
☑	☐	☐	Mass/Charge list (m/z) criteria met	
			Initial Calibration	ok
☑	☐	☐	%RSD less than or equal to 30%	
☑	☐	☐	RRF greater than or equal to 0.05	
			Continuing Calibration	SEE ATTACHED
☐	☑	☐	%D less than or equal to 25%	
☑	☐	☐	RRF greater than or equal to 0.05.	
			Blank Contamination	Evaluate all blanks for contamination. Highest contaminant level used for action level.
☐	☑	☐	Method blank contamination	
☐	☑	☐	Trip blank contamination	
☐	☐	☑	Equipment/Rinseate blank contamination	ok

VOLATILE ORGANICS

REGION I VALIDATION CHECKLIST for OLIN CHEMICAL SUPERFUND SITE

Criteria and Qualifications: REGION I Organics Guideline (1996)

TIER I / II / III (circle one)

Surrogate Recoveries ☑ ☐ ☐ Surrogates percent recovery criteria met (water and soil: 70%-130%)	ok
Matrix Spikes and Laboratory Control Samples ☑ ☐ ☐ MS/MSD percent recovery criteria met (water and soil: 70%-130%) ☑ ☐ ☐ MS/MSD RPD criteria met (water and soil <30%) ☐ ☑ ☐ LCS percent recovery criteria (water and soil: 70%-130%)	ok SEE ATTACHED
Field Duplicates ☑ ☐ ☐ RPD criteria (water <30%, soils <50%) met	ok
Internal Standard ☑ ☐ ☐ Area counts within -50 to +100 percent of calib. std. ☑ ☐ ☐ Retention Time within 30 seconds of calib. std.	ok
Target Compounds ☑ ☐ ☐ Reviewed narrative for anomalies	ok
Tentatively Identified Compounds (TICs) ☐ ☑ ☐ TCL compounds reported as TICs	ok

Validator's Signature: Bradley B. [signature]

Date: 8/22/11

Reference:

MACTEC, Quality Assurance Project Plan for Remedial Investigation/Feasibility Study – Olin Chemical Superfund Site, Wilmington Property, 51 Eames Street, Wilmington, MA", MACTEC Engineering and Consulting. Draft .October 2008.

SAMPLE SUMMARY

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
360-34253-1	OC-SW-ISCO-1-DUP ✓	Water	06/06/2011 1435	06/07/2011 1021
360-34253-1DU	OC-SW-ISCO-1-DUP	Water	06/06/2011 1435	06/07/2011 1021
360-34253-2	OC-SW-ISCO-1-XXX ✓	Water	06/06/2011 1435	06/07/2011 1021
360-34253-2MS	OC-SW-ISCO-1-XXX	Water	06/06/2011 1435	06/07/2011 1021
360-34253-2MSD	OC-SW-ISCO-1-XXX	Water	06/06/2011 1435	06/07/2011 1021
360-34253-3	OC-SW-ISCO-2-XXX ✓	Water	06/06/2011 1100	06/07/2011 1021
360-34253-4	OC-SW-MMB-SW/SD-1-DUP ✓	Water	06/06/2011 1300	06/07/2011 1021
360-34253-5	OC-SW-MMB-SW/SD-1-XXX ✓	Water	06/06/2011 1300	06/07/2011 1021
360-34253-5MS	OC-SW-MMB-SW/SD-1-XXX	Water	06/06/2011 1300	06/07/2011 1021
360-34253-5MSD	OC-SW-MMB-SW/SD-1-XXX	Water	06/06/2011 1300	06/07/2011 1021
360-34253-6	OC-SW-MMB-SW/SD-9-XXX ✓	Water	06/06/2011 1100	06/07/2011 1021
360-34253-7	OC-SW-PZ-16RR-XXX ✓	Water	06/06/2011 1305	06/07/2011 1021
360-34253-8	OC-SW-PZ-17RR-XXX ✓	Water	06/06/2011 1345	06/07/2011 1021
360-34253-9	OC-SW-SD-1-XXX ✓	Water	06/06/2011 1215	06/07/2011 1021
360-34253-10	OC-TBK-078 ✓	Water	06/06/2011 1100	06/07/2011 1021

VOC	EPH	VPH
9	6	6
1-TB		1-TB

Analytical Data

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-SW-ISCO-1-DUP**

Lab Sample ID: 360-34253-1
Client Matrix: Water

Date Sampled: 06/06/2011 1435
Date Received: 06/07/2011 1021

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75118	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18759.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/13/2011 1603			Final Weight/Volume:	5 mL
Prep Date:	06/13/2011 1603				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND		0.20	1.0
1,1,1-Trichloroethane	ND		0.20	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	0.50
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	ND		0.20	1.0
1,1-Dichloroethene	ND		0.20	1.0
1,1-Dichloropropene	ND		0.20	1.0
1,2,3-Trichlorobenzene	ND		0.20	1.0
1,2,3-Trichloropropane	ND		0.20	1.0
1,2,4-Trichlorobenzene	ND		0.20	1.0
1,2,4-Trimethylbenzene	ND		0.20	1.0
1,2-Dibromo-3-Chloropropane	ND		0.20	5.0
1,2-Dichlorobenzene	ND		0.20	1.0
1,2-Dichloroethane	ND		0.20	1.0
1,2-Dichloropropane	ND		0.20	1.0
1,3,5-Trimethylbenzene	ND		0.20	1.0
1,3-Dichlorobenzene	ND		0.20	1.0
1,3-Dichloropropane	ND		0.20	1.0
1,4-Dichlorobenzene	ND		0.20	1.0
1,4-Dioxane	ND		22	50
2,2-Dichloropropane	ND		0.20	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chlorotoluene	ND		0.20	1.0
2-Hexanone	ND		2.0	10
4-Chlorotoluene	ND		0.20	1.0
4-Isopropyltoluene	ND		0.20	1.0
4-Methyl-2-pentanone (MIBK)	ND		2.0	10
Acetone	ND		20	50
Benzene	ND		0.20	1.0
Bromobenzene	ND		0.20	1.0
Bromoform	ND J		0.20	1.0
Bromomethane	ND		0.20	2.0
Carbon disulfide	ND		0.20	10
Carbon tetrachloride	ND J		0.20	1.0
Chlorobenzene	ND		0.20	1.0
Chlorobromomethane	ND		0.20	1.0
Chlorodibromomethane	ND		0.20	0.50
Chloroethane	ND		0.21	2.0
Chloroform	ND		0.20	1.0
Chloromethane	ND		0.20	2.0
cis-1,2-Dichloroethene	ND		0.20	1.0
cis-1,3-Dichloropropene	ND		0.20	0.40
Dibromomethane	ND		0.20	1.0
Dichlorobromomethane	ND		0.20	0.50
Dichlorodifluoromethane	ND		0.20	1.0
Ethyl ether	ND		0.20	10

8/11/11
BBK

Analytical Data

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-SW-ISCO-1-DUP**

Lab Sample ID: 360-34253-1
Client Matrix: Water

Date Sampled: 06/06/2011 1435
Date Received: 06/07/2011 1021

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75118	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18759.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/13/2011 1603			Final Weight/Volume:	5 mL
Prep Date:	06/13/2011 1603				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Ethylbenzene	ND		0.20	1.0
Ethylene Dibromide	ND		0.20	1.0
Hexachlorobutadiene	ND		0.20	0.40
Isopropyl ether	ND		0.20	10
Isopropylbenzene	ND		0.20	1.0
m-Xylene & p-Xylene	ND		0.50	2.0
Methyl tert-butyl ether	ND J		0.20	1.0
Methylene Chloride	ND		1.0	2.0
n-Butylbenzene	ND		0.20	1.0
N-Propylbenzene	ND		0.20	1.0
Naphthalene	ND		2.0	5.0
o-Xylene	ND		0.20	1.0
sec-Butylbenzene	ND		0.20	1.0
Styrene	ND		0.20	1.0
Tert-amyl methyl ether	ND J		0.20	5.0
Tert-butyl ethyl ether	ND J		0.20	5.0
tert-Butylbenzene	ND		0.20	1.0
Tetrachloroethene	ND		0.20	1.0
Tetrahydrofuran	ND		0.44	10
Toluene	ND		0.20	1.0
trans-1,2-Dichloroethene	ND		0.20	1.0
trans-1,3-Dichloropropene	ND		0.20	0.40
Trichloroethene	ND		0.33	1.0
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.20	0.50
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.20	1.0
2,4,4-Trimethyl-1-pentene	ND J		0.20	1.0
2,4,4-Trimethyl-2-pentene	ND		0.20	1.0
Cyclohexane	ND		0.20	10
Methyl acetate	ND		2.0	20
Methylcyclohexane	ND		0.20	10

8/11/11 [illegible]

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	103		70 - 130
Toluene-d8 (Surr)	101		70 - 130
Dibromofluoromethane	110		70 - 130

Analytical Data

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-SW-ISCO-1-XXX**

Lab Sample ID: 360-34253-2
Client Matrix: Water

Date Sampled: 06/06/2011 1435
Date Received: 06/07/2011 1021

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75118	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18760.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/13/2011 1625			Final Weight/Volume:	5 mL
Prep Date:	06/13/2011 1625				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND		0.20	1.0
1,1,1-Trichloroethane	ND		0.20	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	0.50
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	ND		0.20	1.0
1,1-Dichloroethene	ND		0.20	1.0
1,1-Dichloropropene	ND		0.20	1.0
1,2,3-Trichlorobenzene	ND		0.20	1.0
1,2,3-Trichloropropane	ND		0.20	1.0
1,2,4-Trichlorobenzene	ND		0.20	1.0
1,2,4-Trimethylbenzene	ND		0.20	1.0
1,2-Dibromo-3-Chloropropane	ND		0.20	5.0
1,2-Dichlorobenzene	ND		0.20	1.0
1,2-Dichloroethane	ND		0.20	1.0
1,2-Dichloropropane	ND		0.20	1.0
1,3,5-Trimethylbenzene	ND		0.20	1.0
1,3-Dichlorobenzene	ND		0.20	1.0
1,3-Dichloropropane	ND		0.20	1.0
1,4-Dichlorobenzene	ND		0.20	1.0
1,4-Dioxane	ND		22	50
2,2-Dichloropropane	ND		0.20	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chlorotoluene	ND		0.20	1.0
2-Hexanone	ND		2.0	10
4-Chlorotoluene	ND		0.20	1.0
4-Isopropyltoluene	ND		0.20	1.0
4-Methyl-2-pentanone (MIBK)	ND		2.0	10
Acetone	ND		20	50
Benzene	ND		0.20	1.0
Bromobenzene	ND		0.20	1.0
Bromoform	ND J		0.20	1.0
Bromomethane	ND		0.20	2.0
Carbon disulfide	0.21	J	0.20	10
Carbon tetrachloride	ND J		0.20	1.0
Chlorobenzene	ND		0.20	1.0
Chlorobromomethane	ND		0.20	1.0
Chlorodibromomethane	ND		0.20	0.50
Chloroethane	ND		0.21	2.0
Chloroform	ND		0.20	1.0
Chloromethane	ND		0.20	2.0
cis-1,2-Dichloroethene	ND		0.20	1.0
cis-1,3-Dichloropropene	ND		0.20	0.40
Dibromomethane	ND		0.20	1.0
Dichlorobromomethane	ND		0.20	0.50
Dichlorodifluoromethane	ND		0.20	1.0
Ethyl ether	ND		0.20	10

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Analytical Data

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-SW-ISCO-1-XXX**

Lab Sample ID: 360-34253-2
Client Matrix: Water

Date Sampled: 06/06/2011 1435
Date Received: 06/07/2011 1021

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75118	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18760.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/13/2011 1625			Final Weight/Volume:	5 mL
Prep Date:	06/13/2011 1625				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Ethylbenzene	ND		0.20	1.0
Ethylene Dibromide	ND		0.20	1.0
Hexachlorobutadiene	ND		0.20	0.40
Isopropyl ether	ND		0.20	10
Isopropylbenzene	ND		0.20	1.0
m-Xylene & p-Xylene	ND		0.50	2.0
Methyl tert-butyl ether	ND J		0.20	1.0
Methylene Chloride	ND		1.0	2.0
n-Butylbenzene	ND		0.20	1.0
N-Propylbenzene	ND		0.20	1.0
Naphthalene	ND		2.0	5.0
o-Xylene	ND		0.20	1.0
sec-Butylbenzene	ND		0.20	1.0
Styrene	ND		0.20	1.0
Tert-amyl methyl ether	ND J		0.20	5.0
Tert-butyl ethyl ether	ND J		0.20	5.0
tert-Butylbenzene	ND		0.20	1.0
Tetrachloroethene	ND		0.20	1.0
Tetrahydrofuran	ND		0.44	10
Toluene	ND		0.20	1.0
trans-1,2-Dichloroethene	ND		0.20	1.0
trans-1,3-Dichloropropene	ND		0.20	0.40
Trichloroethene	ND		0.33	1.0
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.20	0.50
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.20	1.0
2,4,4-Trimethyl-1-pentene	ND J		0.20	1.0
2,4,4-Trimethyl-2-pentene	ND		0.20	1.0
Cyclohexane	ND		0.20	10
Methyl acetate	ND		2.0	20
Methylcyclohexane	ND		0.20	10

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Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	96		70 - 130
Toluene-d8 (Surr)	101		70 - 130
Dibromofluoromethane	105		70 - 130

Analytical Data

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-SW-ISCO-2-XXX**

Lab Sample ID: 360-34253-3
Client Matrix: Water

Date Sampled: 06/06/2011 1100
Date Received: 06/07/2011 1021

8260C Volatile Organic Compounds (GC/MS)

Analysis Method: 8260C
Prep Method: 5030C
Dilution: 1.0
Analysis Date: 06/13/2011 1647
Prep Date: 06/13/2011 1647

Analysis Batch: 360-75118
Prep Batch: N/A

Instrument ID: Agilent#2 GC/MS
Lab File ID: V18761.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND		0.20	1.0
1,1,1-Trichloroethane	ND		0.20	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	0.50
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	ND		0.20	1.0
1,1-Dichloroethene	ND		0.20	1.0
1,1-Dichloropropene	ND		0.20	1.0
1,2,3-Trichlorobenzene	ND		0.20	1.0
1,2,3-Trichloropropane	ND		0.20	1.0
1,2,4-Trichlorobenzene	ND		0.20	1.0
1,2,4-Trimethylbenzene	ND		0.20	1.0
1,2-Dibromo-3-Chloropropane	ND		0.20	5.0
1,2-Dichlorobenzene	ND		0.20	1.0
1,2-Dichloroethane	ND		0.20	1.0
1,2-Dichloropropane	ND		0.20	1.0
1,3,5-Trimethylbenzene	ND		0.20	1.0
1,3-Dichlorobenzene	ND		0.20	1.0
1,3-Dichloropropane	ND		0.20	1.0
1,4-Dichlorobenzene	ND		0.20	1.0
1,4-Dioxane	ND		22	50
2,2-Dichloropropane	ND		0.20	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chlorotoluene	ND		0.20	1.0
2-Hexanone	ND		2.0	10
4-Chlorotoluene	ND		0.20	1.0
4-Isopropyltoluene	ND		0.20	1.0
4-Methyl-2-pentanone (MIBK)	ND		2.0	10
Acetone	ND		20	50
Benzene	ND		0.20	1.0
Bromobenzene	ND		0.20	1.0
Bromoform	0.67	J	0.20	1.0
Bromomethane	ND		0.20	2.0
Carbon disulfide	ND		0.20	10
Carbon tetrachloride	ND J		0.20	1.0
Chlorobenzene	ND		0.20	1.0
Chlorobromomethane	ND		0.20	1.0
Chlorodibromomethane	ND		0.20	0.50
Chloroethane	ND		0.21	2.0
Chloroform	ND		0.20	1.0
Chloromethane	ND		0.20	2.0
cis-1,2-Dichloroethene	ND		0.20	1.0
cis-1,3-Dichloropropene	ND		0.20	0.40
Dibromomethane	ND		0.20	1.0
Dichlorobromomethane	ND		0.20	0.50
Dichlorodifluoromethane	ND		0.20	1.0
Ethyl ether	ND		0.20	10

Analytical Data

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-SW-ISCO-2-XXX**

Lab Sample ID: 360-34253-3
Client Matrix: Water

Date Sampled: 06/06/2011 1100
Date Received: 06/07/2011 1021

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75118	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18761.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/13/2011 1647			Final Weight/Volume:	5 mL
Prep Date:	06/13/2011 1647				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Ethylbenzene	ND		0.20	1.0
Ethylene Dibromide	ND		0.20	1.0
Hexachlorobutadiene	ND		0.20	0.40
Isopropyl ether	ND		0.20	10
Isopropylbenzene	ND		0.20	1.0
m-Xylene & p-Xylene	ND		0.50	2.0
Methyl tert-butyl ether	ND J		0.20	1.0
Methylene Chloride	ND		1.0	2.0
n-Butylbenzene	ND		0.20	1.0
N-Propylbenzene	ND		0.20	1.0
Naphthalene	ND		2.0	5.0
o-Xylene	ND		0.20	1.0
sec-Butylbenzene	ND		0.20	1.0
Styrene	ND		0.20	1.0
Tert-amyl methyl ether	ND J		0.20	5.0
Tert-butyl ethyl ether	ND J		0.20	5.0
tert-Butylbenzene	ND		0.20	1.0
Tetrachloroethene	ND		0.20	1.0
Tetrahydrofuran	ND		0.44	10
Toluene	ND		0.20	1.0
trans-1,2-Dichloroethene	ND		0.20	1.0
trans-1,3-Dichloropropene	ND		0.20	0.40
Trichloroethene	ND		0.33	1.0
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.20	0.50
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.20	1.0
2,4,4-Trimethyl-1-pentene	1.9 J		0.20	1.0
2,4,4-Trimethyl-2-pentene	0.45	J	0.20	1.0
Cyclohexane	ND		0.20	10
Methyl acetate	ND		2.0	20
Methylcyclohexane	ND		0.20	10

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	97		70 - 130
Toluene-d8 (Surr)	101		70 - 130
Dibromofluoromethane	105		70 - 130

Analytical Data

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-SW-ISCO-2-XXX**

Lab Sample ID: 360-34253-3
Client Matrix: Water

Date Sampled: 06/06/2011 1100
Date Received: 06/07/2011 1021

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75118	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18761.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/13/2011 1647			Final Weight/Volume:	5 mL
Prep Date:	06/13/2011 1647				

Tentatively Identified Compounds **Number TIC's Found:** 1

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
	Unknown	11.83	2.7	~~J~~ N

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Analytical Data

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-SW-MMB-SW/SD-1-DUP**

Lab Sample ID: 360-34253-4
Client Matrix: Water

Date Sampled: 06/06/2011 1300
Date Received: 06/07/2011 1021

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75118	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18762.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/13/2011 1708			Final Weight/Volume:	5 mL
Prep Date:	06/13/2011 1708				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND		0.20	1.0
1,1,1-Trichloroethane	ND		0.20	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	0.50
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	ND		0.20	1.0
1,1-Dichloroethene	ND		0.20	1.0
1,1-Dichloropropene	ND		0.20	1.0
1,2,3-Trichlorobenzene	ND		0.20	1.0
1,2,3-Trichloropropane	ND		0.20	1.0
1,2,4-Trichlorobenzene	ND		0.20	1.0
1,2,4-Trimethylbenzene	ND		0.20	1.0
1,2-Dibromo-3-Chloropropane	ND		0.20	5.0
1,2-Dichlorobenzene	ND		0.20	1.0
1,2-Dichloroethane	ND		0.20	1.0
1,2-Dichloropropane	ND		0.20	1.0
1,3,5-Trimethylbenzene	ND		0.20	1.0
1,3-Dichlorobenzene	ND		0.20	1.0
1,3-Dichloropropane	ND		0.20	1.0
1,4-Dichlorobenzene	ND		0.20	1.0
1,4-Dioxane	ND		22	50
2,2-Dichloropropane	ND		0.20	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chlorotoluene	ND		0.20	1.0
2-Hexanone	ND		2.0	10
4-Chlorotoluene	ND		0.20	1.0
4-Isopropyltoluene	ND		0.20	1.0
4-Methyl-2-pentanone (MIBK)	ND		2.0	10
Acetone	ND		20	50
Benzene	ND		0.20	1.0
Bromobenzene	ND		0.20	1.0
Bromoform	ND J	✓	0.20	1.0
Bromomethane	ND		0.20	2.0
Carbon disulfide	ND	✓	0.20	10
Carbon tetrachloride	ND J		0.20	1.0
Chlorobenzene	ND		0.20	1.0
Chlorobromomethane	ND		0.20	1.0
Chlorodibromomethane	ND		0.20	0.50
Chloroethane	ND		0.21	2.0
Chloroform	ND		0.20	1.0
Chloromethane	ND		0.20	2.0
cis-1,2-Dichloroethene	ND		0.20	1.0
cis-1,3-Dichloropropene	ND		0.20	0.40
Dibromomethane	ND		0.20	1.0
Dichlorobromomethane	ND		0.20	0.50
Dichlorodifluoromethane	ND		0.20	1.0
Ethyl ether	ND		0.20	10

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Analytical Data

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-SW-MMB-SW/SD-1-DUP**

Lab Sample ID: 360-34253-4
Client Matrix: Water

Date Sampled: 06/06/2011 1300
Date Received: 06/07/2011 1021

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75118	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18762.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/13/2011 1708			Final Weight/Volume:	5 mL
Prep Date:	06/13/2011 1708				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Ethylbenzene	ND		0.20	1.0
Ethylene Dibromide	ND		0.20	1.0
Hexachlorobutadiene	ND		0.20	0.40
Isopropyl ether	ND		0.20	10
Isopropylbenzene	ND		0.20	1.0
m-Xylene & p-Xylene	ND		0.50	2.0
Methyl tert-butyl ether	ND J		0.20	1.0
Methylene Chloride	ND		1.0	2.0
n-Butylbenzene	ND		0.20	1.0
N-Propylbenzene	ND		0.20	1.0
Naphthalene	ND		2.0	5.0
o-Xylene	ND		0.20	1.0
sec-Butylbenzene	ND		0.20	1.0
Styrene	ND		0.20	1.0
Tert-amyl methyl ether	ND J		0.20	5.0
Tert-butyl ethyl ether	ND J		0.20	5.0
tert-Butylbenzene	ND		0.20	1.0
Tetrachloroethene	ND		0.20	1.0
Tetrahydrofuran	ND		0.44	10
Toluene	ND		0.20	1.0
trans-1,2-Dichloroethene	ND		0.20	1.0
trans-1,3-Dichloropropene	ND		0.20	0.40
Trichloroethene	ND		0.33	1.0
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.20	0.50
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.20	1.0
2,4,4-Trimethyl-1-pentene	ND J		0.20	1.0
2,4,4-Trimethyl-2-pentene	ND		0.20	1.0
Cyclohexane	ND		0.20	10
Methyl acetate	ND		2.0	20
Methylcyclohexane	ND		0.20	10

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BBL

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	98		70 - 130
Toluene-d8 (Surr)	101		70 - 130
Dibromofluoromethane	105		70 - 130

Analytical Data

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-SW-MMB-SW/SD-1-XXX**

Lab Sample ID: 360-34253-5
Client Matrix: Water

Date Sampled: 06/06/2011 1300
Date Received: 06/07/2011 1021

8260C Volatile Organic Compounds (GC/MS)

Analysis Method: 8260C
Prep Method: 5030C
Dilution: 1.0
Analysis Date: 06/13/2011 1730
Prep Date: 06/13/2011 1730

Analysis Batch: 360-75118
Prep Batch: N/A

Instrument ID: Agilent#2 GC/MS
Lab File ID: V18763.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND		0.20	1.0
1,1,1-Trichloroethane	ND		0.20	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	0.50
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	ND		0.20	1.0
1,1-Dichloroethene	ND		0.20	1.0
1,1-Dichloropropene	ND		0.20	1.0
1,2,3-Trichlorobenzene	ND		0.20	1.0
1,2,3-Trichloropropane	ND		0.20	1.0
1,2,4-Trichlorobenzene	ND		0.20	1.0
1,2,4-Trimethylbenzene	ND		0.20	1.0
1,2-Dibromo-3-Chloropropane	ND		0.20	5.0
1,2-Dichlorobenzene	ND		0.20	1.0
1,2-Dichloroethane	ND		0.20	1.0
1,2-Dichloropropane	ND		0.20	1.0
1,3,5-Trimethylbenzene	ND		0.20	1.0
1,3-Dichlorobenzene	ND		0.20	1.0
1,3-Dichloropropane	ND		0.20	1.0
1,4-Dichlorobenzene	ND		0.20	1.0
1,4-Dioxane	ND		22	50
2,2-Dichloropropane	ND		0.20	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chlorotoluene	ND		0.20	1.0
2-Hexanone	ND		2.0	10
4-Chlorotoluene	ND		0.20	1.0
4-Isopropyltoluene	ND		0.20	1.0
4-Methyl-2-pentanone (MIBK)	ND		2.0	10
Acetone	ND		20	50
Benzene	ND		0.20	1.0
Bromobenzene	ND		0.20	1.0
Bromoform	ND J		0.20	1.0
Bromomethane	ND		0.20	2.0
Carbon disulfide	ND		0.20	10
Carbon tetrachloride	ND J		0.20	1.0
Chlorobenzene	ND		0.20	1.0
Chlorobromomethane	ND		0.20	1.0
Chlorodibromomethane	ND		0.20	0.50
Chloroethane	ND		0.21	2.0
Chloroform	ND		0.20	1.0
Chloromethane	ND		0.20	2.0
cis-1,2-Dichloroethene	ND		0.20	1.0
cis-1,3-Dichloropropene	ND		0.20	0.40
Dibromomethane	ND		0.20	1.0
Dichlorobromomethane	ND		0.20	0.50
Dichlorodifluoromethane	ND		0.20	1.0
Ethyl ether	ND		0.20	10

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Analytical Data

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-SW-MMB-SW/SD-1-XXX**

Lab Sample ID: 360-34253-5
Client Matrix: Water

Date Sampled: 06/06/2011 1300
Date Received: 06/07/2011 1021

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75118	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18763.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/13/2011 1730			Final Weight/Volume:	5 mL
Prep Date:	06/13/2011 1730				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Ethylbenzene	ND		0.20	1.0
Ethylene Dibromide	ND		0.20	1.0
Hexachlorobutadiene	ND		0.20	0.40
Isopropyl ether	ND		0.20	10
Isopropylbenzene	ND		0.20	1.0
m-Xylene & p-Xylene	ND		0.50	2.0
Methyl tert-butyl ether	ND J		0.20	1.0
Methylene Chloride	ND		1.0	2.0
n-Butylbenzene	ND		0.20	1.0
N-Propylbenzene	ND		0.20	1.0
Naphthalene	ND		2.0	5.0
o-Xylene	ND		0.20	1.0
sec-Butylbenzene	ND		0.20	1.0
Styrene	ND		0.20	1.0
Tert-amyl methyl ether	ND J		0.20	5.0
Tert-butyl ethyl ether	ND J		0.20	5.0
tert-Butylbenzene	ND		0.20	1.0
Tetrachloroethene	ND		0.20	1.0
Tetrahydrofuran	ND		0.44	10
Toluene	ND		0.20	1.0
trans-1,2-Dichloroethene	ND		0.20	1.0
trans-1,3-Dichloropropene	ND		0.20	0.40
Trichloroethene	ND		0.33	1.0
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.20	0.50
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.20	1.0
2,4,4-Trimethyl-1-pentene	ND J		0.20	1.0
2,4,4-Trimethyl-2-pentene	ND		0.20	1.0
Cyclohexane	ND		0.20	10
Methyl acetate	ND		2.0	20
Methylcyclohexane	ND		0.20	10

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	98		70 - 130
Toluene-d8 (Surr)	102		70 - 130
Dibromofluoromethane	106		70 - 130

Analytical Data

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-SW-MMB-SW/SD-1-XXX**

Lab Sample ID: 360-34253-5
Client Matrix: Water

Date Sampled: 06/06/2011 1300
Date Received: 06/07/2011 1021

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75118	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18763.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/13/2011 1730			Final Weight/Volume:	5 mL
Prep Date:	06/13/2011 1730				

Tentatively Identified Compounds **Number TIC's Found:** 1

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
	Unknown	17.69	15	~~T~~ J N

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BBW

Analytical Data

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-SW-MMB-SW/SD-9-XXX**

Lab Sample ID: 360-34253-6
Client Matrix: Water

Date Sampled: 06/06/2011 1100
Date Received: 06/07/2011 1021

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75118	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18764.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/13/2011 1752			Final Weight/Volume:	5 mL
Prep Date:	06/13/2011 1752				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND		0.20	1.0
1,1,1-Trichloroethane	ND		0.20	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	0.50
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	ND		0.20	1.0
1,1-Dichloroethene	ND		0.20	1.0
1,1-Dichloropropene	ND		0.20	1.0
1,2,3-Trichlorobenzene	ND		0.20	1.0
1,2,3-Trichloropropane	ND		0.20	1.0
1,2,4-Trichlorobenzene	ND		0.20	1.0
1,2,4-Trimethylbenzene	ND		0.20	1.0
1,2-Dibromo-3-Chloropropane	ND		0.20	5.0
1,2-Dichlorobenzene	ND		0.20	1.0
1,2-Dichloroethane	ND		0.20	1.0
1,2-Dichloropropane	ND		0.20	1.0
1,3,5-Trimethylbenzene	ND		0.20	1.0
1,3-Dichlorobenzene	ND		0.20	1.0
1,3-Dichloropropane	ND		0.20	1.0
1,4-Dichlorobenzene	ND		0.20	1.0
1,4-Dioxane	ND		22	50
2,2-Dichloropropane	ND		0.20	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chlorotoluene	ND		0.20	1.0
2-Hexanone	ND		2.0	10
4-Chlorotoluene	ND		0.20	1.0
4-Isopropyltoluene	ND		0.20	1.0
4-Methyl-2-pentanone (MIBK)	ND		2.0	10
Acetone	ND		20	50
Benzene	ND		0.20	1.0
Bromobenzene	ND		0.20	1.0
Bromoform	ND J	✓	0.20	1.0
Bromomethane	ND		0.20	2.0
Carbon disulfide	ND	✓	0.20	10
Carbon tetrachloride	ND J		0.20	1.0
Chlorobenzene	ND		0.20	1.0
Chlorobromomethane	ND		0.20	1.0
Chlorodibromomethane	ND		0.20	0.50
Chloroethane	ND		0.21	2.0
Chloroform	ND		0.20	1.0
Chloromethane	ND		0.20	2.0
cis-1,2-Dichloroethene	ND		0.20	1.0
cis-1,3-Dichloropropene	ND		0.20	0.40
Dibromomethane	ND		0.20	1.0
Dichlorobromomethane	ND		0.20	0.50
Dichlorodifluoromethane	ND		0.20	1.0
Ethyl ether	ND		0.20	10

8/11/11 BBK ✓

Analytical Data

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-SW-MMB-SW/SD-9-XXX**

Lab Sample ID: 360-34253-6
Client Matrix: Water

Date Sampled: 06/06/2011 1100
Date Received: 06/07/2011 1021

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75118	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18764.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/13/2011 1752			Final Weight/Volume:	5 mL
Prep Date:	06/13/2011 1752				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Ethylbenzene	ND		0.20	1.0
Ethylene Dibromide	ND		0.20	1.0
Hexachlorobutadiene	ND		0.20	0.40
Isopropyl ether	ND		0.20	10
Isopropylbenzene	ND		0.20	1.0
m-Xylene & p-Xylene	ND		0.50	2.0
Methyl tert-butyl ether	ND J		0.20	1.0
Methylene Chloride	ND		1.0	2.0
n-Butylbenzene	ND		0.20	1.0
N-Propylbenzene	ND		0.20	1.0
Naphthalene	ND		2.0	5.0
o-Xylene	ND		0.20	1.0
sec-Butylbenzene	ND		0.20	1.0
Styrene	ND		0.20	1.0
Tert-amyl methyl ether	ND J		0.20	5.0
Tert-butyl ethyl ether	ND J		0.20	5.0
tert-Butylbenzene	ND		0.20	1.0
Tetrachloroethene	ND		0.20	1.0
Tetrahydrofuran	ND		0.44	10
Toluene	ND		0.20	1.0
trans-1,2-Dichloroethene	ND		0.20	1.0
trans-1,3-Dichloropropene	ND		0.20	0.40
Trichloroethene	ND		0.33	1.0
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.20	0.50
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.20	1.0
2,4,4-Trimethyl-1-pentene	ND J		0.20	1.0
2,4,4-Trimethyl-2-pentene	ND		0.20	1.0
Cyclohexane	ND		0.20	10
Methyl acetate	ND		2.0	20
Methylcyclohexane	ND		0.20	10

8/11/11
BBH

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	99		70 - 130
Toluene-d8 (Surr)	101		70 - 130
Dibromofluoromethane	105		70 - 130

Analytical Data

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-SW-PZ-16RR-XXX**

Lab Sample ID: 360-34253-7
Client Matrix: Water

Date Sampled: 06/06/2011 1305
Date Received: 06/07/2011 1021

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75118	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18765.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/13/2011 1813			Final Weight/Volume:	5 mL
Prep Date:	06/13/2011 1813				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND		0.20	1.0
1,1,1-Trichloroethane	ND		0.20	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	0.50
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	ND		0.20	1.0
1,1-Dichloroethene	ND		0.20	1.0
1,1-Dichloropropene	ND		0.20	1.0
1,2,3-Trichlorobenzene	ND		0.20	1.0
1,2,3-Trichloropropane	ND		0.20	1.0
1,2,4-Trichlorobenzene	ND		0.20	1.0
1,2,4-Trimethylbenzene	ND		0.20	1.0
1,2-Dibromo-3-Chloropropane	ND		0.20	5.0
1,2-Dichlorobenzene	ND		0.20	1.0
1,2-Dichloroethane	ND		0.20	1.0
1,2-Dichloropropane	ND		0.20	1.0
1,3,5-Trimethylbenzene	ND		0.20	1.0
1,3-Dichlorobenzene	0.30	J	0.20	1.0
1,3-Dichloropropane	ND		0.20	1.0
1,4-Dichlorobenzene	ND		0.20	1.0
1,4-Dioxane	ND		22	50
2,2-Dichloropropane	ND		0.20	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chlorotoluene	ND		0.20	1.0
2-Hexanone	ND		2.0	10
4-Chlorotoluene	ND		0.20	1.0
4-Isopropyltoluene	ND		0.20	1.0
4-Methyl-2-pentanone (MIBK)	ND		2.0	10
Acetone	ND		20	50
Benzene	ND		0.20	1.0
Bromobenzene	ND		0.20	1.0
Bromomethane	ND		0.20	2.0
Carbon disulfide	ND		0.20	10
Carbon tetrachloride	ND J		0.20	1.0
Chlorobenzene	ND		0.20	1.0
Chlorobromomethane	ND		0.20	1.0
Chlorodibromomethane	0.48	J	0.20	0.50
Chloroethane	ND		0.21	2.0
Chloroform	0.49	J	0.20	1.0
Chloromethane	ND		0.20	2.0
cis-1,2-Dichloroethene	ND		0.20	1.0
cis-1,3-Dichloropropene	ND		0.20	0.40
Dibromomethane	0.57	J	0.20	1.0
Dichlorobromomethane	0.21	J	0.20	0.50
Dichlorodifluoromethane	ND		0.20	1.0
Ethyl ether	ND		0.20	10
Ethylbenzene	ND		0.20	1.0

8/11/11

Analytical Data

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-SW-PZ-16RR-XXX**

Lab Sample ID: 360-34253-7
Client Matrix: Water

Date Sampled: 06/06/2011 1305
Date Received: 06/07/2011 1021

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75118	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18765.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/13/2011 1813			Final Weight/Volume:	5 mL
Prep Date:	06/13/2011 1813				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Ethylene Dibromide	ND		0.20	1.0
Hexachlorobutadiene	ND		0.20	0.40
Isopropyl ether	ND		0.20	10
Isopropylbenzene	ND		0.20	1.0
m-Xylene & p-Xylene	ND		0.50	2.0
Methyl tert-butyl ether	ND J		0.20	1.0
Methylene Chloride	ND		1.0	2.0
n-Butylbenzene	ND		0.20	1.0
N-Propylbenzene	ND		0.20	1.0
Naphthalene	ND		2.0	5.0
o-Xylene	ND		0.20	1.0
sec-Butylbenzene	ND		0.20	1.0
Styrene	ND		0.20	1.0
Tert-amyl methyl ether	ND J		0.20	5.0
Tert-butyl ethyl ether	ND J		0.20	5.0
tert-Butylbenzene	ND		0.20	1.0
Tetrachloroethene	ND		0.20	1.0
Tetrahydrofuran	ND		0.44	10
Toluene	ND		0.20	1.0
trans-1,2-Dichloroethene	ND		0.20	1.0
trans-1,3-Dichloropropene	ND		0.20	0.40
Trichloroethene	ND		0.33	1.0
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.20	0.50
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.20	1.0
2,4,4-Trimethyl-1-pentene	5.6 J		0.20	1.0
2,4,4-Trimethyl-2-pentene	1.2		0.20	1.0
Cyclohexane	ND		0.20	10
Methyl acetate	ND		2.0	20
Methylcyclohexane	ND		0.20	10

8/11/11
BBL

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	99		70 - 130
Toluene-d8 (Surr)	101		70 - 130
Dibromofluoromethane	109		70 - 130

Analytical Data

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-SW-PZ-16RR-XXX**

Lab Sample ID: 360-34253-7
Client Matrix: Water

Date Sampled: 06/06/2011 1305
Date Received: 06/07/2011 1021

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75118	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18765.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/13/2011 1813			Final Weight/Volume:	5 mL
Prep Date:	06/13/2011 1813				

Tentatively Identified Compounds **Number TIC's Found:** 1

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
	Unknown	11.83	6.7	~~J~~ N

8/11/11
[illegible]

Analytical Data

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-SW-PZ-17RR-XXX**

Lab Sample ID: 360-34253-8
Client Matrix: Water

Date Sampled: 06/06/2011 1345
Date Received: 06/07/2011 1021

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75118	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18766.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/13/2011 1835			Final Weight/Volume:	5 mL
Prep Date:	06/13/2011 1835				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND		0.20	1.0
1,1,1-Trichloroethane	ND		0.20	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	0.50
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	ND		0.20	1.0
1,1-Dichloroethene	ND		0.20	1.0
1,1-Dichloropropene	ND		0.20	1.0
1,2,3-Trichlorobenzene	ND		0.20	1.0
1,2,3-Trichloropropane	ND		0.20	1.0
1,2,4-Trichlorobenzene	ND		0.20	1.0
1,2,4-Trimethylbenzene	ND		0.20	1.0
1,2-Dibromo-3-Chloropropane	ND		0.20	5.0
1,2-Dichlorobenzene	ND		0.20	1.0
1,2-Dichloroethane	ND		0.20	1.0
1,2-Dichloropropane	ND		0.20	1.0
1,3,5-Trimethylbenzene	ND		0.20	1.0
1,3-Dichlorobenzene	0.57	J	0.20	1.0
1,3-Dichloropropane	ND		0.20	1.0
1,4-Dichlorobenzene	ND		0.20	1.0
1,4-Dioxane	ND		22	50
2,2-Dichloropropane	ND		0.20	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chlorotoluene	ND		0.20	1.0
2-Hexanone	ND		2.0	10
4-Chlorotoluene	ND		0.20	1.0
4-Isopropyltoluene	ND		0.20	1.0
4-Methyl-2-pentanone (MIBK)	ND		2.0	10
Acetone	ND		20	50
Benzene	ND		0.20	1.0
Bromobenzene	ND		0.20	1.0
Bromomethane	ND		0.20	2.0
Carbon disulfide	ND		0.20	10
Carbon tetrachloride	ND J		0.20	1.0
Chlorobenzene	ND		0.20	1.0
Chlorobromomethane	ND		0.20	1.0
Chlorodibromomethane	1.0		0.20	0.50
Chloroethane	ND		0.21	2.0
Chloroform	1.2		0.20	1.0
Chloromethane	ND		0.20	2.0
cis-1,2-Dichloroethene	ND		0.20	1.0
cis-1,3-Dichloropropene	ND		0.20	0.40
Dibromomethane	1.1		0.20	1.0
Dichlorobromomethane	0.51		0.20	0.50
Dichlorodifluoromethane	ND		0.20	1.0
Ethyl ether	ND		0.20	10
Ethylbenzene	ND		0.20	1.0

8/11/11

Analytical Data

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-SW-PZ-17RR-XXX**

Lab Sample ID: 360-34253-8
Client Matrix: Water

Date Sampled: 06/06/2011 1345
Date Received: 06/07/2011 1021

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75118	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18766.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/13/2011 1835			Final Weight/Volume:	5 mL
Prep Date:	06/13/2011 1835				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Ethylene Dibromide	ND		0.20	1.0
Hexachlorobutadiene	ND		0.20	0.40
Isopropyl ether	ND		0.20	10
Isopropylbenzene	ND		0.20	1.0
m-Xylene & p-Xylene	ND		0.50	2.0
Methyl tert-butyl ether	ND J		0.20	1.0
Methylene Chloride	ND		1.0	2.0
n-Butylbenzene	ND		0.20	1.0
N-Propylbenzene	ND		0.20	1.0
Naphthalene	ND		2.0	5.0
o-Xylene	ND		0.20	1.0
sec-Butylbenzene	ND		0.20	1.0
Styrene	ND		0.20	1.0
Tert-amyl methyl ether	ND J		0.20	5.0
Tert-butyl ethyl ether	ND J		0.20	5.0
tert-Butylbenzene	ND		0.20	1.0
Tetrachloroethene	ND		0.20	1.0
Tetrahydrofuran	ND		0.44	10
Toluene	0.48	J	0.20	1.0
trans-1,2-Dichloroethene	ND		0.20	1.0
trans-1,3-Dichloropropene	ND		0.20	0.40
Trichloroethene	ND		0.33	1.0
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.20	0.50
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.20	1.0
2,4,4-Trimethyl-1-pentene	10 J		0.20	1.0
2,4,4-Trimethyl-2-pentene	2.0		0.20	1.0
Cyclohexane	ND		0.20	10
Methyl acetate	ND		2.0	20
Methylcyclohexane	ND		0.20	10

8/1/11 [illegible]

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	100		70 - 130
Toluene-d8 (Surr)	100		70 - 130
Dibromofluoromethane	108		70 - 130

Analytical Data

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-SW-PZ-17RR-XXX**

Lab Sample ID: 360-34253-8
Client Matrix: Water

Date Sampled: 06/06/2011 1345
Date Received: 06/07/2011 1021

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75118	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18766.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/13/2011 1835			Final Weight/Volume:	5 mL
Prep Date:	06/13/2011 1835				

Tentatively Identified Compounds **Number TIC's Found:** 1

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
	Unknown	11.83	11	~~T~~ J N

Elula
[illegible]

Analytical Data

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-SW-SD-1-XXX**

Lab Sample ID: 360-34253-9
Client Matrix: Water

Date Sampled: 06/06/2011 1215
Date Received: 06/07/2011 1021

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75118	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18767.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/13/2011 1900			Final Weight/Volume:	5 mL
Prep Date:	06/13/2011 1900				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND		0.20	1.0
1,1,1-Trichloroethane	ND		0.20	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	0.50
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	ND		0.20	1.0
1,1-Dichloroethene	ND		0.20	1.0
1,1-Dichloropropene	ND		0.20	1.0
1,2,3-Trichlorobenzene	ND		0.20	1.0
1,2,3-Trichloropropane	ND		0.20	1.0
1,2,4-Trichlorobenzene	ND		0.20	1.0
1,2,4-Trimethylbenzene	ND		0.20	1.0
1,2-Dibromo-3-Chloropropane	ND		0.20	5.0
1,2-Dichlorobenzene	ND		0.20	1.0
1,2-Dichloroethane	ND		0.20	1.0
1,2-Dichloropropane	ND		0.20	1.0
1,3,5-Trimethylbenzene	ND		0.20	1.0
1,3-Dichlorobenzene	ND		0.20	1.0
1,3-Dichloropropane	ND		0.20	1.0
1,4-Dichlorobenzene	ND		0.20	1.0
1,4-Dioxane	ND		22	50
2,2-Dichloropropane	ND		0.20	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chlorotoluene	ND		0.20	1.0
2-Hexanone	ND		2.0	10
4-Chlorotoluene	ND		0.20	1.0
4-Isopropyltoluene	ND		0.20	1.0
4-Methyl-2-pentanone (MIBK)	ND		2.0	10
Acetone	ND		20	50
Benzene	ND		0.20	1.0
Bromobenzene	ND		0.20	1.0
Bromoform	0.72	J	0.20	1.0
Bromomethane	ND		0.20	2.0
Carbon disulfide	ND		0.20	10
Carbon tetrachloride	ND J		0.20	1.0
Chlorobenzene	ND		0.20	1.0
Chlorobromomethane	ND		0.20	1.0
Chlorodibromomethane	ND		0.20	0.50
Chloroethane	ND		0.21	2.0
Chloroform	ND		0.20	1.0
Chloromethane	ND		0.20	2.0
cis-1,2-Dichloroethene	ND		0.20	1.0
cis-1,3-Dichloropropene	ND		0.20	0.40
Dibromomethane	ND		0.20	1.0
Dichlorobromomethane	ND		0.20	0.50
Dichlorodifluoromethane	ND		0.20	1.0
Ethyl ether	ND		0.20	10

81.1 BBLR

Analytical Data

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-SW-SD-1-XXX**

Lab Sample ID: 360-34253-9
Client Matrix: Water

Date Sampled: 06/06/2011 1215
Date Received: 06/07/2011 1021

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75118	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18767.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/13/2011 1900			Final Weight/Volume:	5 mL
Prep Date:	06/13/2011 1900				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Ethylbenzene	ND		0.20	1.0
Ethylene Dibromide	ND		0.20	1.0
Hexachlorobutadiene	ND		0.20	0.40
Isopropyl ether	ND		0.20	10
Isopropylbenzene	ND		0.20	1.0
m-Xylene & p-Xylene	ND		0.50	2.0
Methyl tert-butyl ether	ND J		0.20	1.0
Methylene Chloride	ND		1.0	2.0
n-Butylbenzene	ND		0.20	1.0
N-Propylbenzene	ND		0.20	1.0
Naphthalene	ND		2.0	5.0
o-Xylene	ND		0.20	1.0
sec-Butylbenzene	ND		0.20	1.0
Styrene	ND		0.20	1.0
Tert-amyl methyl ether	ND J		0.20	5.0
Tert-butyl ethyl ether	ND J		0.20	5.0
tert-Butylbenzene	ND		0.20	1.0
Tetrachloroethene	ND		0.20	1.0
Tetrahydrofuran	ND		0.44	10
Toluene	ND		0.20	1.0
trans-1,2-Dichloroethene	ND		0.20	1.0
trans-1,3-Dichloropropene	ND		0.20	0.40
Trichloroethene	ND		0.33	1.0
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.20	0.50
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.20	1.0
2,4,4-Trimethyl-1-pentene	1.9 J		0.20	1.0
2,4,4-Trimethyl-2-pentene	0.44	J	0.20	1.0
Cyclohexane	ND		0.20	10
Methyl acetate	ND		2.0	20
Methylcyclohexane	ND		0.20	10

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	103		70 - 130
Toluene-d8 (Surr)	99		70 - 130
Dibromofluoromethane	114		70 - 130

Analytical Data

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-SW-SD-1-XXX**

Lab Sample ID: 360-34253-9
Client Matrix: Water

Date Sampled: 06/06/2011 1215
Date Received: 06/07/2011 1021

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75118	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18767.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/13/2011 1900			Final Weight/Volume:	5 mL
Prep Date:	06/13/2011 1900				

Tentatively Identified Compounds **Number TIC's Found:** 1

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
	Unknown	11.83	3.2	~~J~~ JN

Analytical Data

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-TBK-078**

Lab Sample ID: 360-34253-10
Client Matrix: Water

Date Sampled: 06/06/2011 1100
Date Received: 06/07/2011 1021

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75118	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18768.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/13/2011 1922			Final Weight/Volume:	5 mL
Prep Date:	06/13/2011 1922				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND		0.20	1.0
1,1,1-Trichloroethane	ND		0.20	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	0.50
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	ND		0.20	1.0
1,1-Dichloroethene	ND		0.20	1.0
1,1-Dichloropropene	ND		0.20	1.0
1,2,3-Trichlorobenzene	ND		0.20	1.0
1,2,3-Trichloropropane	ND		0.20	1.0
1,2,4-Trichlorobenzene	ND		0.20	1.0
1,2,4-Trimethylbenzene	ND		0.20	1.0
1,2-Dibromo-3-Chloropropane	ND		0.20	5.0
1,2-Dichlorobenzene	ND		0.20	1.0
1,2-Dichloroethane	ND		0.20	1.0
1,2-Dichloropropane	ND		0.20	1.0
1,3,5-Trimethylbenzene	ND		0.20	1.0
1,3-Dichlorobenzene	ND		0.20	1.0
1,3-Dichloropropane	ND		0.20	1.0
1,4-Dichlorobenzene	ND		0.20	1.0
1,4-Dioxane	ND		22	50
2,2-Dichloropropane	ND		0.20	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chlorotoluene	ND		0.20	1.0
2-Hexanone	ND		2.0	10
4-Chlorotoluene	ND		0.20	1.0
4-Isopropyltoluene	ND		0.20	1.0
4-Methyl-2-pentanone (MIBK)	ND		2.0	10
Acetone	ND		20	50
Benzene	ND		0.20	1.0
Bromobenzene	ND		0.20	1.0
Bromoform	ND		0.20	1.0
Bromomethane	ND		0.20	2.0
Carbon disulfide	ND		0.20	10
Carbon tetrachloride	ND		0.20	1.0
Chlorobenzene	ND		0.20	1.0
Chlorobromomethane	ND		0.20	1.0
Chlorodibromomethane	ND		0.20	0.50
Chloroethane	ND		0.21	2.0
Chloroform	ND		0.20	1.0
Chloromethane	ND		0.20	2.0
cis-1,2-Dichloroethene	ND		0.20	1.0
cis-1,3-Dichloropropene	ND		0.20	0.40
Dibromomethane	ND		0.20	1.0
Dichlorobromomethane	ND		0.20	0.50
Dichlorodifluoromethane	ND		0.20	1.0
Ethyl ether	ND		0.20	10

Analytical Data

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Client Sample ID: **OC-TBK-078**

Lab Sample ID: 360-34253-10
Client Matrix: Water

Date Sampled: 06/06/2011 1100
Date Received: 06/07/2011 1021

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75118	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18768.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/13/2011 1922			Final Weight/Volume:	5 mL
Prep Date:	06/13/2011 1922				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Ethylbenzene	ND		0.20	1.0
Ethylene Dibromide	ND		0.20	1.0
Hexachlorobutadiene	ND		0.20	0.40
Isopropyl ether	ND		0.20	10
Isopropylbenzene	ND		0.20	1.0
m-Xylene & p-Xylene	ND		0.50	2.0
Methyl tert-butyl ether	ND		0.20	1.0
Methylene Chloride	ND		1.0	2.0
n-Butylbenzene	ND		0.20	1.0
N-Propylbenzene	ND		0.20	1.0
Naphthalene	ND		2.0	5.0
o-Xylene	ND		0.20	1.0
sec-Butylbenzene	ND		0.20	1.0
Styrene	ND		0.20	1.0
Tert-amyl methyl ether	ND		0.20	5.0
Tert-butyl ethyl ether	ND		0.20	5.0
tert-Butylbenzene	ND		0.20	1.0
Tetrachloroethene	ND		0.20	1.0
Tetrahydrofuran	ND		0.44	10
Toluene	ND		0.20	1.0
trans-1,2-Dichloroethene	ND		0.20	1.0
trans-1,3-Dichloropropene	ND		0.20	0.40
Trichloroethene	ND		0.33	1.0
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.20	0.50
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.20	1.0
2,4,4-Trimethyl-1-pentene	ND		0.20	1.0
2,4,4-Trimethyl-2-pentene	ND		0.20	1.0
Cyclohexane	ND		0.20	10
Methyl acetate	ND		2.0	20
Methylcyclohexane	ND		0.20	10

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	98		70 - 130
Toluene-d8 (Surr)	101		70 - 130
Dibromofluoromethane	106		70 - 130

Quality Control Results

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 360-75118

Method: 8260C
Preparation: 5030C

LCS Lab Sample ID:	LCS 360-75118/3	Analysis Batch:	360-75118	Instrument ID:	Agilent#2 GC/MS
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	V18755.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	06/13/2011 1402	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	06/13/2011 1402				
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 360-75118/4	Analysis Batch:	360-75118	Instrument ID:	Agilent#2 GC/MS
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	V18756.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	06/13/2011 1423	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	06/13/2011 1423				
Leach Date:	N/A				

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
1,1,1,2-Tetrachloroethane	115	111	70 - 130	4	20		
1,1,1-Trichloroethane	106	102	70 - 130	4	20		
1,1,2,2-Tetrachloroethane	94	94	70 - 130	1	20		
1,1,2-Trichloroethane	102	98	70 - 130	4	20		
1,1-Dichloroethane	105	99	70 - 130	5	20		
1,1-Dichloroethene	110	100	70 - 130	10	20		
1,1-Dichloropropene	107	100	70 - 130	7	20		
1,2,3-Trichlorobenzene	95	92	70 - 130	3	20		
1,2,3-Trichloropropane	94	93	70 - 130	1	20		
1,2,4-Trichlorobenzene	97	97	70 - 130	0	20		
1,2,4-Trimethylbenzene	113	107	70 - 130	5	20		
1,2-Dibromo-3-Chloropropane	108	110	70 - 130	2	20		
1,2-Dichlorobenzene	99	97	70 - 130	2	20		
1,2-Dichloroethane	95	93	70 - 130	2	20		
1,2-Dichloropropane	105	99	70 - 130	5	20		
1,3,5-Trimethylbenzene	101	96	70 - 130	5	20		
1,3-Dichlorobenzene	108	104	70 - 130	4	20		
1,3-Dichloropropane	104	99	70 - 130	5	20		
1,4-Dichlorobenzene	101	97	70 - 130	4	20		
1,4-Dioxane	102	96	70 - 130	6	20		
2,2-Dichloropropane	107	100	70 - 130	7	20		
2-Butanone (MEK)	104	102	70 - 130	2	20		
2-Chlorotoluene	99	93	70 - 130	6	20		
2-Hexanone	103	100	70 - 130	4	20		
4-Chlorotoluene	99	91	70 - 130	8	20		
4-Isopropyltoluene	118	111	70 - 130	6	20		
4-Methyl-2-pentanone (MIBK)	104	102	70 - 130	3	20		
Acetone	107	106	70 - 130	2	20		
Benzene	107	101	70 - 130	5	20		
Bromobenzene	96	92	70 - 130	4	20		
Bromoform	144	141	70 - 130	2	20	LCS-H	3,9 *
Bromomethane	114	108	70 - 130	5	20		
Carbon disulfide	139	126	70 - 130	9	20	LCS-H	2
Carbon tetrachloride	130	122	70 - 130	6	20		
Chlorobenzene	100	96	70 - 130	5	20		
Chlorobromomethane	104	101	70 - 130	3	20		

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Westfield Job No.: 360-34253-1

SDG No.: 360-34253-1

Lab Sample ID: CCVIS 360-75118/2 Calibration Date: 06/13/2011 13:40

Instrument ID: Agilent#2 GC/MS Calib Start Date: 05/18/2011 18:35

GC Column: RTX-VMS ID: 0.25(um) Calib End Date: 05/18/2011 21:50

Lab File ID: V18754.D Conc. Units: ug/L Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Dichlorodifluoromethane	Lin1F		0.2430	0.1000	19.9	20.0	-0.5	20.0
Chloromethane	Ave	0.3532	0.3517	0.1000	19.9	20.0	-0.4	20.0
Vinyl chloride	Ave	0.2391	0.2472	0.1000	20.7	20.0	3.4	20.0
Bromomethane	Lin1F		0.1619	0.1000	24.6	20.0	23.0*	20.0
Chloroethane	Ave	0.1218	0.1387	0.1000	22.8	20.0	13.8	20.0
Trichlorofluoromethane	Lin1F		0.3223	0.1000	22.3	20.0	11.5	20.0
Ethyl ether	Ave	0.2036	0.2037		20.0	20.0	0.0	20.0
1,1-Dichloroethene	Lin1F		0.2347	0.1000	22.9	20.0	14.5	20.0
Carbon disulfide	Ave	0.5526	0.6613	0.1000	23.9	20.0	19.7	20.0
1,1,2-Trichloro-1,2,2-trifluoroethane	Ave	0.1254	0.1448		23.1	20.0	15.5	20.0
Methylene Chloride	Lin1F		0.2741	0.1000	22.3	20.0	11.5	20.0
Acetone	Lin1F		1.080	0.1000	208	200	4.2	20.0
Methyl acetate	Ave	0.2568	0.2732		213	200	6.4	20.0
trans-1,2-Dichloroethene	Ave	0.3456	0.3707	0.1000	21.5	20.0	7.3	20.0
Methyl tert-butyl ether	Ave	0.3483	0.4560	0.1000	26.2	20.0	30.9*	20.0
Isopropyl ether	Ave	0.6274	0.6586		21.0	20.0	5.0	20.0
1,1-Dichloroethane	Ave	0.4486	0.4639	0.2000	20.7	20.0	3.4	20.0
Halothane	Ave	0.1728	0.2062		23.9	20.0	19.3	20.0
Tert-butyl ethyl ether	Lin1F		0.3601		27.4	20.0	37.0*	20.0
cis-1,2-Dichloroethene	Ave	0.3466	0.3531	0.1000	20.4	20.0	1.9	20.0
2,2-Dichloropropane	Lin1F		0.2282		22.1	20.0	10.5	20.0
Chlorobromomethane	Ave	0.1955	0.2082		21.3	20.0	6.5	20.0
Cyclohexane	Ave	0.3326	0.3729		22.4	20.0	12.1	20.0
Chloroform	Ave	0.4823	0.4816	0.2000	20.0	20.0	-0.1	20.0
Carbon tetrachloride	Lin1F		0.2965	0.1000	26.4	20.0	32.0*	20.0
Tetrahydrofuran	Ave	0.1226	0.1235		202	200	0.8	20.0
1,1,1-Trichloroethane	Ave	0.3137	0.3442	0.1000	21.9	20.0	9.7	20.0
2-Butanone (MEK)	Ave	1.867	1.871	0.1000	200	200	0.2	20.0
1,1-Dichloropropene	Ave	0.3369	0.3631		21.6	20.0	7.8	20.0
Benzene	Ave	0.9571	1.032	0.5000	21.6	20.0	7.9	20.0
Tert-amyl methyl ether	Lin1F		0.3393		28.1	20.0	40.5*	20.0
1,2-Dichloroethane	Ave	0.3470	0.3320	0.1000	19.1	20.0	-4.3	20.0
2,4,4-Trimethyl-1-pentene	QuaF		0.1112		25.7	20.0	28.5*	20.0
Methylcyclohexane	Ave	0.2939	0.3527		24.0	20.0	20.0	20.0
Trichloroethene	Ave	0.2151	0.2303	0.2000	21.4	20.0	7.1	20.0
2,4,4-Trimethyl-2-pentene	QuaF		0.2710		22.9	20.0	14.5	20.0
Dibromomethane	Ave	0.1478	0.1531		20.7	20.0	3.6	20.0
1,2-Dichloropropane	Ave	0.1985	0.2052	0.1000	20.7	20.0	3.4	20.0
Dichlorobromomethane	Lin1F		0.2714	0.2000	21.8	20.0	9.0	20.0
1,4-Dioxane	Lin1F		0.0080		193	200	-3.7	20.0

CCV62

$\frac{0.5526-0.6613}{0.5526} \times 100 = 19.7\%$

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Westfield Job No.: 360-34253-1

SDG No.: 360-34253-1

Lab Sample ID: CCVIS 360-75118/2 Calibration Date: 06/13/2011 13:40

Instrument ID: Agilent#2 GC/MS Calib Start Date: 05/18/2011 18:35

GC Column: RTX-VMS ID: 0.25(um) Calib End Date: 05/18/2011 21:50

Lab File ID: V18754.D Conc. Units: ug/L Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
cis-1,3-Dichloropropene	Ave	0.3002	0.3327	0.2000	22.2	20.0	10.8	20.0
Toluene	Ave	0.4489	0.4802	0.4000	21.4	20.0	7.0	20.0
4-Methyl-2-pentanone (MIBK)	Ave	2.659	2.606	0.1000	196	200	-2.0	20.0
Tetrachloroethene	Ave	0.2148	0.2341	0.2000	21.8	20.0	9.0	20.0
trans-1,3-Dichloropropene	Ave	0.2783	0.2957	0.1000	21.2	20.0	6.2	20.0
1,1,2-Trichloroethane	Ave	0.1630	0.1679	0.1000	20.6	20.0	3.0	20.0
Chlorodibromomethane	Lin1F		0.2282	0.1000	24.0	20.0	20.0	20.0
1,3-Dichloropropane	Ave	0.3037	0.3113		20.5	20.0	2.5	20.0
Ethylene Dibromide	Ave	0.2150	0.2261		21.0	20.0	5.1	20.0
2-Hexanone	Ave	2.041	1.989	0.1000	195	200	-2.5	20.0
Chlorobenzene	Ave	0.7725	0.7893	0.5000	20.4	20.0	2.2	20.0
Ethylbenzene	Ave	1.204	1.219	0.1000	20.3	20.0	1.3	20.0
1,1,1,2-Tetrachloroethane	Ave	0.2235	0.2583		23.1	20.0	15.6	20.0
m-Xylene & p-Xylene	Ave	0.9311	0.9465	0.1000	40.7	40.0	1.7	20.0
o-Xylene	Ave	0.9355	0.9295	0.3000	19.9	20.0	-0.6	20.0
Styrene	Ave	0.7710	0.7647	0.3000	19.8	20.0	-0.8	20.0
Bromoform	QuaF		0.4938	0.1000	30.5	20.0	52.5*	20.0
Isopropylbenzene	Ave	1.118	1.104	0.1000	19.8	20.0	-1.2	20.0
Bromobenzene	Ave	0.4982	0.4808		19.3	20.0	-3.5	20.0
N-Propylbenzene	Ave	1.348	1.340		19.9	20.0	-0.6	20.0
1,1,2,2-Tetrachloroethane	Ave	0.8077	0.7838	0.3000	19.4	20.0	-3.0	20.0
2-Chlorotoluene	Ave	0.8319	0.8058		19.4	20.0	-3.1	20.0
1,2,3-Trichloropropane	Ave	0.1189	0.1133		19.1	20.0	-4.7	20.0
1,3,5-Trimethylbenzene	Ave	0.8786	0.8858		20.2	20.0	0.8	20.0
4-Chlorotoluene	Ave	0.8880	0.8604		19.4	20.0	-3.1	20.0
tert-Butylbenzene	Lin1F		0.7297		21.9	20.0	9.5	20.0
1,2,4-Trimethylbenzene	Lin1F		0.9109		22.3	20.0	11.5	20.0
sec-Butylbenzene	Lin1F		1.132		23.0	20.0	15.0	20.0
4-Isopropyltoluene	Lin1F		0.9377		22.9	20.0	14.5	20.0
1,3-Dichlorobenzene	Lin1F		0.5999*	0.6000	21.4	20.0	7.0	20.0
1,4-Dichlorobenzene	Ave	1.185	1.205	0.5000	20.3	20.0	1.7	20.0
n-Butylbenzene	Ave	1.731	1.791		20.7	20.0	3.4	20.0
1,2-Dichlorobenzene	Ave	1.063	1.086	0.4000	20.4	20.0	2.2	20.0
1,2-Dibromo-3-Chloropropane	QuaF		0.1746	0.0500	21.5	20.0	7.5	20.0
Hexachlorobutadiene	Lin1F		0.3836		21.3	20.0	6.5	20.0
1,2,4-Trichlorobenzene	Ave	0.7257	0.7131	0.2000	19.7	20.0	-1.7	20.0
Naphthalene	Ave	1.838	1.765		19.2	20.0	-4.0	20.0
1,2,3-Trichlorobenzene	Ave	0.6699	0.6470		19.3	20.0	-3.4	20.0
Dibromofluoromethane	Ave	0.3399	0.3497		20.6	20.0	2.9	20.0
Toluene-d8 (Surr)	Ave	0.9289	0.9475		20.4	20.0	2.0	20.0
4-Bromofluorobenzene	Ave	0.4896	0.4744		19.4	20.0	-3.1	20.0

CCV8

Bromoform NOT -7 of 8

Quality Control Results

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 360-75118

Method: 8260C
Preparation: 5030C

LCS Lab Sample ID:	LCS 360-75118/3	Analysis Batch:	360-75118	Instrument ID:	Agilent#2 GC/MS
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	V18755.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	06/13/2011 1402	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	06/13/2011 1402				
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 360-75118/4	Analysis Batch:	360-75118	Instrument ID:	Agilent#2 GC/MS
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	V18756.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	06/13/2011 1423	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	06/13/2011 1423				
Leach Date:	N/A				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Chlorodibromomethane	116	111	70 - 130	4	20		
Chloroethane	111	102	70 - 130	8	20		
Chloroform	97	93	70 - 130	4	20		
Chloromethane	96	89	70 - 130	8	20		
cis-1,2-Dichloroethene	101	98	70 - 130	4	20		
cis-1,3-Dichloropropene	106	100	70 - 130	6	20		
Dibromomethane	106	102	70 - 130	3	20		
Dichlorobromomethane	107	102	70 - 130	4	20		
Dichlorodifluoromethane	85	79	70 - 130	7	20		
Ethyl ether	102	102	70 - 130	0	20		
Ethylbenzene	102	96	70 - 130	7	20		
Ethylene Dibromide	104	101	70 - 130	3	20		
Hexachlorobutadiene	99	95	70 - 130	4	20		
Isopropyl ether	104	103	70 - 130	1	20		
Isopropylbenzene	100	95	70 - 130	6	20		
m-Xylene & p-Xylene	101	95	70 - 130	5	20		
Methyl tert-butyl ether	134	133	70 - 130	1	20	*	*
Methylene Chloride	108	107	70 - 130	1	20		
n-Butylbenzene	103	98	70 - 130	5	20		
N-Propylbenzene	101	96	70 - 130	5	20		
Naphthalene	94	95	70 - 130	1	20		
o-Xylene	100	92	70 - 130	8	20		
sec-Butylbenzene	115	107	70 - 130	7	20		
Styrene	99	94	70 - 130	5	20		
Tert-amyl methyl ether	143	140	70 - 130	2	20	*	*
Tert-butyl ethyl ether	143	142	70 - 130	1	20	*	*
tert-Butylbenzene	110	104	70 - 130	5	20		
Tetrachloroethene	112	103	70 - 130	8	20		
Tetrahydrofuran	101	98	70 - 130	3	20		
Toluene	107	100	70 - 130	7	20		
trans-1,2-Dichloroethene	105	99	70 - 130	6	20		
trans-1,3-Dichloropropene	105	100	70 - 130	4	20		
Trichloroethene	109	100	70 - 130	9	20		
Trichlorofluoromethane	101	90	70 - 130	11	20		
Vinyl chloride	107	98	70 - 130	8	20		
1,1,2-Trichloro-1,2,2-trifluoroethane	100	91	70 - 130	9	20		

Quality Control Results

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Laboratory Control/
Laboratory Duplicate Data Report - Batch: 360-75118

Method: 8260C
Preparation: 5030C

LCS Lab Sample ID:	LCS 360-75118/3	Units:	ug/L	LCSD Lab Sample ID:	LCSD 360-75118/4
Client Matrix:	Water			Client Matrix:	Water
Dilution:	1.0			Dilution:	1.0
Analysis Date:	06/13/2011 1402			Analysis Date:	06/13/2011 1423
Prep Date:	06/13/2011 1402			Prep Date:	06/13/2011 1423
Leach Date:	N/A			Leach Date:	N/A

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
Chloromethane	20.0	20.0	19.1 /20 x100 = 95.5	17.7 /20 x100 = 88.5
cis-1,2-Dichloroethene	20.0	20.0	20.2	19.5
cis-1,3-Dichloropropene	20.0	20.0	21.2	19.9
Dibromomethane	20.0	20.0	21.1	20.4
Dichlorobromomethane	20.0	20.0	21.3	20.4
Dichlorodifluoromethane	20.0	20.0	16.9	15.7
Ethyl ether	20.0	20.0	20.4	20.4
Ethylbenzene	20.0	20.0	20.4	19.1
Ethylene Dibromide	20.0	20.0	20.8	20.2
Hexachlorobutadiene	20.0	20.0	19.7	19.0
Isopropyl ether	20.0	20.0	20.8	20.5
Isopropylbenzene	20.0	20.0	20.0	18.9
m-Xylene & p-Xylene	40.0	40.0	40.2	38.1
Methyl tert-butyl ether	20.0	20.0	26.8 *	26.5 *
Methylene Chloride	20.0	20.0	21.6	21.3
n-Butylbenzene	20.0	20.0	20.6	19.6
N-Propylbenzene	20.0	20.0	20.1	19.2
Naphthalene	20.0	20.0	18.8	18.9
o-Xylene	20.0	20.0	20.0	18.4
sec-Butylbenzene	20.0	20.0	22.9	21.4
Styrene	20.0	20.0	19.7	18.7
Tert-amyl methyl ether	20.0	20.0	28.5 *	27.9 *
Tert-butyl ethyl ether	20.0	20.0	28.5 *	28.3 *
tert-Butylbenzene	20.0	20.0	21.9	20.8
Tetrachloroethene	20.0	20.0	22.3	20.5
Tetrahydrofuran	200	200	202	196
Toluene	20.0	20.0	21.4	20.0
trans-1,2-Dichloroethene	20.0	20.0	20.9	19.7
trans-1,3-Dichloropropene	20.0	20.0	20.9	20.0
Trichloroethene	20.0	20.0	21.8	19.9
Trichlorofluoromethane	20.0	20.0	20.1	18.0
Vinyl chloride	20.0	20.0	21.3	19.6
1,1,2-Trichloro-1,2,2-trifluoroethane	20.0	20.0	20.0	18.2
2,4,4-Trimethyl-1-pentene	20.0	20.0	25.8	23.7
2,4,4-Trimethyl-2-pentene	20.0	20.0	24.5	20.7
Cyclohexane	20.0	20.0	20.2	18.7
Methyl acetate	200	200	205	203
Methylcyclohexane	20.0	20.0	21.9	20.5

OC-SW-MMB-SW/SD-1-XXY +DJP

Quality Control Results

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 360-75118

Method: 8260C
Preparation: 5030C

MS Lab Sample ID:	360-34253-5	Analysis Batch:	360-75118	Instrument ID:	Agilent#2 GC/MS
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	V18777.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	06/13/2011 2237			Final Weight/Volume:	5 mL
Prep Date:	06/13/2011 2237				
Leach Date:	N/A				

MSD Lab Sample ID:	360-34253-5	Analysis Batch:	360-75118	Instrument ID:	Agilent#2 GC/MS
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	V18778.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	06/13/2011 2259			Final Weight/Volume:	5 mL
Prep Date:	06/13/2011 2259				
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
1,1,1,2-Tetrachloroethane	118	110	70 - 130	7	20		
1,1,1-Trichloroethane	111	102	70 - 130	8	20		
1,1,2,2-Tetrachloroethane	96	89	70 - 130	8	20		
1,1,2-Trichloroethane	103	96	70 - 130	7	20		
1,1-Dichloroethane	106	99	70 - 130	7	20		
1,1-Dichloroethene	114	102	70 - 130	11	20		
1,1-Dichloropropene	106	95	70 - 130	10	20		
1,2,3-Trichlorobenzene	94	86	70 - 130	9	20		
1,2,3-Trichloropropane	97	90	70 - 130	8	20		
1,2,4-Trichlorobenzene	98	87	70 - 130	12	20		
1,2,4-Trimethylbenzene	114	103	70 - 130	10	20		
1,2-Dibromo-3-Chloropropane	106	99	70 - 130	7	20		
1,2-Dichlorobenzene	102	94	70 - 130	8	20		
1,2-Dichloroethane	98	92	70 - 130	6	20		
1,2-Dichloropropane	105	96	70 - 130	9	20		
1,3,5-Trimethylbenzene	103	93	70 - 130	10	20		
1,3-Dichlorobenzene	111	100	70 - 130	10	20		
1,3-Dichloropropane	104	97	70 - 130	7	20		
1,4-Dichlorobenzene	102	94	70 - 130	8	20		
1,4-Dioxane	85	81	70 - 130	6	20		
2,2-Dichloropropane	108	100	70 - 130	8	20		
2-Butanone (MEK)	96	86	70 - 130	11	20		
2-Chlorotoluene	101	90	70 - 130	11	20		
2-Hexanone	98	90	70 - 130	8	20		
4-Chlorotoluene	99	91	70 - 130	8	20		
4-Isopropyltoluene	121	106	70 - 130	13	20		
4-Methyl-2-pentanone (MIBK)	101	93	70 - 130	9	20		
Acetone	99	91	70 - 130	8	20		
Benzene	109	99	70 - 130	9	20		
Bromobenzene	98	92	70 - 130	6	20		
Bromoform	132	122	70 - 130	8	20		F
Bromomethane	120	107	70 - 130	11	20	ND	
Carbon disulfide	124	112	70 - 130	10	20		

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 360-75118

Method: 8260C
Preparation: 5030C

MS Lab Sample ID:	360-34253-5	Analysis Batch:	360-75118	Instrument ID:	Agilent#2 GC/MS
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	V18777.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	06/13/2011 2237			Final Weight/Volume:	5 mL
Prep Date:	06/13/2011 2237				
Leach Date:	N/A				

MSD Lab Sample ID:	360-34253-5	Analysis Batch:	360-75118	Instrument ID:	Agilent#2 GC/MS
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	V18778.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	06/13/2011 2259			Final Weight/Volume:	5 mL
Prep Date:	06/13/2011 2259				
Leach Date:	N/A				

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Carbon tetrachloride	128	117	70 - 130	9	20		
Chlorobenzene	104	94	70 - 130	10	20		
Chlorobromomethane	107	102	70 - 130	5	20		
Chlorodibromomethane	110	102	70 - 130	7	20		
Chloroethane	115	101	70 - 130	13	20		
Chloroform	101	94	70 - 130	7	20		
Chloromethane	95	85	70 - 130	11	20		
cis-1,2-Dichloroethene	105	98	70 - 130	7	20		
cis-1,3-Dichloropropene	100	93	70 - 130	7	20		
Dibromomethane	107	100	70 - 130	6	20		
Dichlorobromomethane	105	97	70 - 130	8	20		
Dichlorodifluoromethane	81	72	70 - 130	12	20		
Ethyl ether	108	100	70 - 130	8	20		
Ethylbenzene	103	94	70 - 130	9	20		
Ethylene Dibromide	105	98	70 - 130	7	20		
Hexachlorobutadiene	96	84	70 - 130	13	20		
Isopropyl ether	109	102	70 - 130	6	20		
Isopropylbenzene	104	93	70 - 130	11	20		
m-Xylene & p-Xylene	103	93	70 - 130	10	20		
Methyl tert-butyl ether	141	130	70 - 130	8	20 ND	F	
Methylene Chloride	122	118	70 - 130	4	20		
n-Butylbenzene	99	88	70 - 130	12	20		
N-Propylbenzene	103	94	70 - 130	9	20		
Naphthalene	95	88	70 - 130	8	20		
o-Xylene	101	91	70 - 130	10	20		
sec-Butylbenzene	116	103	70 - 130	12	20		
Styrene	94	84	70 - 130	11	20		
Tert-amyl methyl ether	154	143	70 - 130	7	20 ND	F	F
Tert-butyl ethyl ether	155	141	70 - 130	9	20 ND	F	F
tert-Butylbenzene	115	104	70 - 130	10	20		
Tetrachloroethene	111	100	70 - 130	10	20		
Tetrahydrofuran	96	90	70 - 130	7	20		
Toluene	108	99	70 - 130	9	20		

Quality Control Results

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 360-75118

Method: 8260C
Preparation: 5030C

MS Lab Sample ID:	360-34253-5	Units: ug/L	
Client Matrix:	Water		
Dilution:	1.0		
Analysis Date:	06/13/2011 2237		
Prep Date:	06/13/2011 2237		
Leach Date:	N/A		

MSD Lab Sample ID:	360-34253-5
Client Matrix:	Water
Dilution:	1.0
Analysis Date:	06/13/2011 2259
Prep Date:	06/13/2011 2259
Leach Date:	N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual		MSD Result/Qual	
Dichlorobromomethane	ND	20.0	20.0	21.0		19.4	
Dichlorodifluoromethane	ND	20.0	20.0	16.2		14.3	
Ethyl ether	ND	20.0	20.0	21.5		19.9	
Ethylbenzene	ND	20.0	20.0	20.6		18.8	
Ethylene Dibromide	ND	20.0	20.0	21.0		19.5	
Hexachlorobutadiene	ND	20.0	20.0	19.2		16.8	
Isopropyl ether	ND	20.0	20.0	21.7		20.4	
Isopropylbenzene	ND	20.0	20.0	20.7		18.6	
m-Xylene & p-Xylene	ND	40.0	40.0	41.1		37.2	
Methyl tert-butyl ether	ND	20.0	20.0	28.1	F	26.0	
Methylene Chloride	ND	20.0	20.0	24.4		23.5	
n-Butylbenzene	ND	20.0	20.0	19.7		17.5	
N-Propylbenzene	ND	20.0	20.0	20.6		18.8	
Naphthalene	ND	20.0	20.0	19.0		17.5	
o-Xylene	ND	20.0	20.0	20.2		18.2	
sec-Butylbenzene	ND	20.0	20.0	23.2		20.6	
Styrene	ND	20.0	20.0	18.8		16.8	
Tert-amyl methyl ether	ND	20.0	20.0	30.7	F	28.5	F
Tert-butyl ethyl ether	ND	20.0	20.0	31.0	F	28.2	F
tert-Butylbenzene	ND	20.0	20.0	22.9		20.7	
Tetrachloroethene	ND	20.0	20.0	22.1		19.9	
Tetrahydrofuran	ND	200	200	192		179	
Toluene	ND	20.0	20.0	21.6		19.7	
trans-1,2-Dichloroethene	ND	20.0	20.0	21.2		19.3	
trans-1,3-Dichloropropene	ND	20.0	20.0	19.7		17.9	
Trichloroethene	ND	20.0	20.0	21.6		19.5	
Trichlorofluoromethane	ND	20.0	20.0	20.4		18.0	
Vinyl chloride	ND	20.0	20.0	22.2		19.5	
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	20.0	20.0	18.8		17.1	
2,4,4-Trimethyl-1-pentene	ND	20.0	20.0	22.6		19.0	
2,4,4-Trimethyl-2-pentene	ND	20.0	20.0	17.4		14.8	
Cyclohexane	ND	20.0	20.0	19.7		17.4	
Methyl acetate	ND	200	200	178		162	
Methylcyclohexane	ND	20.0	20.0	21.2		18.5	

$\frac{28.1}{20} \times 100 = 140.5$

Quality Control Results

Client: Olin Corporation

Job Number: 360-34253-1
Sdg Number: 360-34253-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 360-75486

Method: MAVPH
Preparation: 5030B

MS Lab Sample ID:	360-34253-2	Analysis Batch:	360-75486	Instrument ID:	Inst. G
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	G26508.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	06/18/2011 0339			Final Weight/Volume:	5 mL
Prep Date:	06/18/2011 0339			Injection Volume:	
Leach Date:	N/A			Column ID:	PRIMARY

MSD Lab Sample ID:	360-34253-2	Analysis Batch:	360-75486	Instrument ID:	Inst. G
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	G26509.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	06/18/2011 0413			Final Weight/Volume:	5 mL
Prep Date:	06/18/2011 0413			Injection Volume:	
Leach Date:	N/A			Column ID:	PRIMARY

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Benzene	99	95	70 - 130	4	50		
Ethylbenzene	104	97	70 - 130	7	50		
m-Xylene & p-Xylene	102	97	70 - 130	5	50		
Methyl tert-butyl ether	97	97	70 - 130	0	50		
Naphthalene	131	128	70 - 130	2	50	ND	F
o-Xylene	102	97	70 - 130	5	50		
Toluene	101	96	70 - 130	5	50		
C5-C8 Aliphatics (unadjusted)	107	102	70 - 130	4	50		
C9-C12 Aliphatics (unadjusted)	103	80	70 - 130	25	50		
C9-C10 Aromatics	110	104	70 - 130	5	50		
Butylcyclohexane	96	77	70 - 130	23	50		
1,2,4-Trimethylbenzene	109	104	70 - 130	5	50		
2-Methylpentane	111	107	70 - 130	4	50		
Pentane	105	101	70 - 130	4	50		
n-Nonane	94	75	30 - 130	23	50		
n-Decane	103	75	70 - 130	32	50		
Isooctane	110	101	70 - 130	9	50		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
2,5-Dibromotoluene (fid)	117	117	70 - 130
2,5-Dibromotoluene (pid)	92	88	70 - 130

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Westfield | Job No.: 360-34253-1

SDG No.: 360-34253-1

Client Sample ID: OC-SW-ISCO-1-XXX | Lab Sample ID: 360-34253-2

Matrix: Water | Lab File ID: V18760.D

Analysis Method: 8260C | Date Collected: 06/06/2011 14:35

Sample wt/vol: 5(mL) | Date Analyzed: 06/13/2011 16:25

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: RTX-VMS ID: 0.25(um)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 75118 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
630-20-6	1,1,1,2-Tetrachloroethane	ND		1.0	0.20
71-55-6	1,1,1-Trichloroethane	ND		1.0	0.20
79-34-5	1,1,2,2-Tetrachloroethane	ND		0.50	0.20
79-00-5	1,1,2-Trichloroethane	ND		1.0	0.20
75-34-3	1,1-Dichloroethane	ND		1.0	0.20
75-35-4	1,1-Dichloroethene	ND		1.0	0.20
563-58-6	1,1-Dichloropropene	ND		1.0	0.20
87-61-6	1,2,3-Trichlorobenzene	ND		1.0	0.20
96-18-4	1,2,3-Trichloropropane	ND		1.0	0.20
120-82-1	1,2,4-Trichlorobenzene	ND		1.0	0.20
95-63-6	1,2,4-Trimethylbenzene	ND		1.0	0.20
96-12-8	1,2-Dibromo-3-Chloropropane	ND		5.0	0.20
95-50-1	1,2-Dichlorobenzene	ND		1.0	0.20
107-06-2	1,2-Dichloroethane	ND		1.0	0.20
78-87-5	1,2-Dichloropropane	ND		1.0	0.20
108-67-8	1,3,5-Trimethylbenzene	ND		1.0	0.20
541-73-1	1,3-Dichlorobenzene	ND		1.0	0.20
142-28-9	1,3-Dichloropropane	ND		1.0	0.20
106-46-7	1,4-Dichlorobenzene	ND		1.0	0.20
123-91-1	1,4-Dioxane	ND		50	22
594-20-7	2,2-Dichloropropane	ND		1.0	0.20
78-93-3	2-Butanone (MEK)	ND		10	1.3
95-49-8	2-Chlorotoluene	ND		1.0	0.20
591-78-6	2-Hexanone	ND		10	2.0
106-43-4	4-Chlorotoluene	ND		1.0	0.20
99-87-6	4-Isopropyltoluene	ND		1.0	0.20
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		10	2.0
67-64-1	Acetone	ND		50	20
71-43-2	Benzene	ND		1.0	0.20
108-86-1	Bromobenzene	ND		1.0	0.20
75-25-2	Bromoform	ND	*	1.0	0.20
74-83-9	Bromomethane	ND		2.0	0.20
75-15-0	Carbon disulfide	0.21	J *	10	0.20
56-23-5	Carbon tetrachloride	ND		1.0	0.20
108-90-7	Chlorobenzene	ND		1.0	0.20
74-97-5	Chlorobromomethane	ND		1.0	0.20

Report Date: 17-Jun-2011 13:33:54 Chrom Revision: 1.2 03-Jun-2011 08:44:02

TestAmerica Laboratories
Target Compound Quantitation Report

Data File:	\\wessvr06\chromdata\AGILGCMS2.i\20110613-5839.b\V18760.D		
Lims ID:	360-34253-A-2	Client ID:	OC-SW-ISCO-1-XXX
Inject. Date:	13-Jun-2011 16:25:30	Dil. Factor:	1.0000
Sample Type:	Client		
Sample ID:	360-34253-A-2		
Misc. Info.:			
Operator:	TPH	Instrument ID:	Agilent#2 GC/MS
Vol. Injected:	1.0000	ALS Bottle#:	9
Lims Batch ID:	75118	Lims Sample ID:	8
Detector 1 :	MS SCAN		
Detector 2 :	MS SIM		
Method:	\\wessvr06\chromdata\AGILGCMS2.i\20110613-5839.b\WES2UNPR.m		
Last Update:	15-Jun-2011 17:00:41	Calib Date:	18-May-2011 21:50:30
Quant Method:	Internal Standard	Quant By:	Initial Calibration
Last ICal File:	\\wessvr06\chromdata\AGILGCMS2.i\20110519-5598.b\V18208.D		
Limit Group:	VMS - 8260C VOA Calibration MCP		
Integrator:	RTE	ID Type:	RT Order ID
Process Host:	WESSEMIDTRDR		

First Level Reviewer: hartmannt Date: 17-Jun-2011 13:33:54

Compound	Det	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
1 Dichlorodifluoromethane	1	85		1.682					
2 Chloromethane	1	50		1.848					
3 Vinyl chloride (SIM)	2	62	1.929	1.929	0.0	0	118	0	
4 Vinyl chloride	1	62		1.931					
5 Bromomethane	1	94		2.227					
6 Chloroethane	1	64		2.346					
7 Trichlorofluoromethane	1	101		2.476					
8 Dichlorofluoromethane	1	67		2.523					
9 Ethyl ether	1	59		2.760					
10 Ethanol	1	45		2.891					
11 1,2-Dichloro-1,1,2-trifluoroethane	1	117		2.962					
12 1,1-Dichloroethene	1	96		2.974					
13 Carbon disulfide	1	76	3.009	3.021	-0.012	35	2272	0.2113	
14 1,1,2-Trichloro-1,2,2-trifluoroethane	1	151		3.033					
15 Acrolein	1	56		3.329					
16 Isopropyl alcohol	1	45		3.495					
17 Methylene Chloride	1	84		3.614					
18 Acetone	1	43	3.673	3.661	0.012	95	6510	4.04	
20 trans-1,2-Dichloroethene	1	61		3.815					
19 Methyl acetate	1	43		3.815					
21 Hexane	1	57		3.910					
22 Methyl tert-butyl ether	1	73		3.934					
23 2-Methyl-2-propanol	1	59		4.029					
24 Isopropyl ether	1	45		4.396					
25 1,1-Dichloroethane	1	63		4.538					
26 Acrylonitrile	1	53		4.586					
27 Halothane	1	117		4.609					
S 28 1,2-Dichloroethene, Total	1	1		4.749					7
29 Tert-butyl ethyl ether	1	59		4.823					
30 Vinyl acetate	1	43		4.834					

$\frac{(2272)(20)}{(389207)(.5526)} = \frac{45440}{215075.7882} = 0.211$

Report Date: 17-Jun-2011 13:33:54 Chrom Revision: 1.2 03-Jun-2011 08:44:02
Data File: \\wessvr06\chromdata\AGILGCMS2.i\20110613-5839.b\V18760.D

Compound	Det	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
31 cis-1,2-Dichloroethene	1	61		5.178					
32 2,2-Dichloropropane	1	77		5.320					
33 Chlorobromomethane	1	130		5.415					
34 Cyclohexane	1	56		5.439					
35 Chloroform	1	83		5.510					
36 Ethyl acetate	1	43		5.652					
37 Carbon tetrachloride	1	117		5.676					
38 Tetrahydrofuran	1	42		5.688					
39 sec-Butyl Alcohol	1	59		5.700					
$ 40 Dibromofluoromethane	1	113	5.723	5.723	0.0	54	139211	21.0	
41 1,1,1-Trichloroethane	1	97		5.759					
42 2-Butanone (MEK)	1	43	5.865	5.866	-0.001	69	1330	0.4578	
43 1,1-Dichloropropene	1	75		5.913					
44 n-Heptane	1	43		6.185					
45 Benzene	1	78		6.209					
46 Tert-amyl methyl ether	1	73		6.351					
* 47 1,2-Dichloroethane-d4 ISTD	1	102	6.363	6.363	0.0	0	31125	20.0	
48 1,2-Dichloroethane	1	62		6.446					
* 49 Fluorobenzene	1	96	6.707	6.707	0.0	99	389207	20.0	
50 Isopropyl acetate	1	43		6.766					
51 2,4,4-Trimethyl-1-pentene	1	55		6.766					
52 Methylcyclohexane	1	83		6.921					
53 Trichloroethene	1	95		6.921					
54 2,4,4-Trimethyl-2-pentene	1	55		6.980					
55 Dibromomethane	1	93		7.442					
57 1,2-Dichloropropane	1	63		7.585					
S 56 1,3-Dichloropropene, Total	1	1		7.662					7
58 Dichlorobromomethane	1	83		7.680					
59 Methyl methacrylate	1	69		7.929					
61 1,4-Dioxane	1	88		7.964					
60 1,4-Dioxane (SIM)	2	88		7.974					
62 n-Propyl acetate	1	43		8.154					
63 2-Chloroethyl vinyl ether	1	63		8.593					
64 cis-1,3-Dichloropropene	1	75		8.676					
$ 65 Toluene-d8 (Surr)	1	98	9.020	9.020	0.0	92	364709	20.2	
66 Toluene	1	92		9.114					
S 67 Xylenes, Total	1	1		9.443					7
68 sec-Butyl acetate	1	43		9.506					
69 Tetrachloroethene	1	166		9.755					
70 4-Methyl-2-pentanone (MIBK)	1	43		9.755					
71 trans-1,3-Dichloropropene	1	75		9.802					
72 Isobutyl acetate	1	43		9.980					
73 1,1,2-Trichloroethane	1	83		10.039					
74 Chlorodibromomethane	1	129		10.277					
75 1,3-Dichloropropane	1	76		10.419					
76 Ethylene Dibromide	1	107		10.585					
77 n-Butyl acetate	1	43		10.834					
78 2-Hexanone	1	43		10.929					
* 79 Chlorobenzene-d5	1	117	11.249	11.249	0.0	82	284243	20.0	
80 Chlorobenzene	1	112		11.273					
81 Ethylbenzene	1	91		11.320					
82 1,1,1,2-Tetrachloroethane	1	131		11.356					

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Westfield | Job No.: 360-34253-1

SDG No.: 360-34253-1

Client Sample ID: OC-SW-PZ-16RR-XXX | Lab Sample ID: 360-34253-7

Matrix: Water | Lab File ID: V18765.D

Analysis Method: 8260C | Date Collected: 06/06/2011 13:05

Sample wt/vol: 5(mL) | Date Analyzed: 06/13/2011 18:13

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: RTX-VMS ID: 0.25(um)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 75118 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
630-20-6	1,1,1,2-Tetrachloroethane	ND		1.0	0.20
71-55-6	1,1,1-Trichloroethane	ND		1.0	0.20
79-34-5	1,1,2,2-Tetrachloroethane	ND		0.50	0.20
79-00-5	1,1,2-Trichloroethane	ND		1.0	0.20
75-34-3	1,1-Dichloroethane	ND		1.0	0.20
75-35-4	1,1-Dichloroethene	ND		1.0	0.20
563-58-6	1,1-Dichloropropene	ND		1.0	0.20
87-61-6	1,2,3-Trichlorobenzene	ND		1.0	0.20
96-18-4	1,2,3-Trichloropropane	ND		1.0	0.20
120-82-1	1,2,4-Trichlorobenzene	ND		1.0	0.20
95-63-6	1,2,4-Trimethylbenzene	ND		1.0	0.20
96-12-8	1,2-Dibromo-3-Chloropropane	ND		5.0	0.20
95-50-1	1,2-Dichlorobenzene	ND		1.0	0.20
107-06-2	1,2-Dichloroethane	ND		1.0	0.20
78-87-5	1,2-Dichloropropane	ND		1.0	0.20
108-67-8	1,3,5-Trimethylbenzene	ND		1.0	0.20
541-73-1	1,3-Dichlorobenzene	0.30	J	1.0	0.20
142-28-9	1,3-Dichloropropane	ND		1.0	0.20
106-46-7	1,4-Dichlorobenzene	ND		1.0	0.20
123-91-1	1,4-Dioxane	ND		50	22
594-20-7	2,2-Dichloropropane	ND		1.0	0.20
78-93-3	2-Butanone (MEK)	ND		10	1.3
95-49-8	2-Chlorotoluene	ND		1.0	0.20
591-78-6	2-Hexanone	ND		10	2.0
106-43-4	4-Chlorotoluene	ND		1.0	0.20
99-87-6	4-Isopropyltoluene	ND		1.0	0.20
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		10	2.0
67-64-1	Acetone	ND		50	20
71-43-2	Benzene	ND		1.0	0.20
108-86-1	Bromobenzene	ND		1.0	0.20
74-83-9	Bromomethane	ND		2.0	0.20
75-15-0	Carbon disulfide	ND	*	10	0.20
56-23-5	Carbon tetrachloride	ND		1.0	0.20
108-90-7	Chlorobenzene	ND		1.0	0.20
74-97-5	Chlorobromomethane	ND		1.0	0.20
124-48-1	Chlorodibromomethane	0.48	J	0.50	0.20

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Westfield
Job No.: 360-34253-1
SDG No.: 360-34253-1
Client Sample ID: OC-SW-PZ-16RR-XXX
Lab Sample ID: 360-34253-7
Matrix: Water
Lab File ID: V18765.D
Analysis Method: 8260C
Date Collected: 06/06/2011 13:05
Sample wt/vol: 5(mL)
Date Analyzed: 06/13/2011 18:13
Soil Aliquot Vol:
Dilution Factor: 1
Soil Extract Vol.:
GC Column: RTX-VMS ID: 0.25(um)
% Moisture:
Level: (low/med) Low
Analysis Batch No.: 75118
Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
75-00-3	Chloroethane	ND		2.0	0.21
67-66-3	Chloroform	0.49	J	1.0	0.20
74-87-3	Chloromethane	ND		2.0	0.20
156-59-2	cis-1,2-Dichloroethene	ND		1.0	0.20
10061-01-5	cis-1,3-Dichloropropene	ND		0.40	0.20
74-95-3	Dibromomethane	0.57	J	1.0	0.20
75-27-4	Dichlorobromomethane	0.21	J	0.50	0.20
75-71-8	Dichlorodifluoromethane	ND		1.0	0.20
60-29-7	Ethyl ether	ND		10	0.20
100-41-4	Ethylbenzene	ND		1.0	0.20
106-93-4	Ethylene Dibromide	ND		1.0	0.20
87-68-3	Hexachlorobutadiene	ND		0.40	0.20
108-20-3	Isopropyl ether	ND		10	0.20
98-82-8	Isopropylbenzene	ND		1.0	0.20
179601-23-1	m-Xylene & p-Xylene	ND		2.0	0.50
1634-04-4	Methyl tert-butyl ether	ND	*	1.0	0.20
75-09-2	Methylene Chloride	ND		2.0	1.0
104-51-8	n-Butylbenzene	ND		1.0	0.20
103-65-1	N-Propylbenzene	ND		1.0	0.20
91-20-3	Naphthalene	ND		5.0	2.0
95-47-6	o-Xylene	ND		1.0	0.20
135-98-8	sec-Butylbenzene	ND		1.0	0.20
100-42-5	Styrene	ND		1.0	0.20
994-05-8	Tert-amyl methyl ether	ND	*	5.0	0.20
637-92-3	Tert-butyl ethyl ether	ND	*	5.0	0.20
98-06-6	tert-Butylbenzene	ND		1.0	0.20
127-18-4	Tetrachloroethene	ND		1.0	0.20
109-99-9	Tetrahydrofuran	ND		10	0.44
108-88-3	Toluene	ND		1.0	0.20
156-60-5	trans-1,2-Dichloroethene	ND		1.0	0.20
10061-02-6	trans-1,3-Dichloropropene	ND		0.40	0.20
79-01-6	Trichloroethene	ND		1.0	0.33
75-69-4	Trichlorofluoromethane	ND		1.0	0.20
75-01-4	Vinyl chloride	ND		0.50	0.20
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.20
107-39-1	2,4,4-Trimethyl-1-pentene	5.6		1.0	0.20

Report Date: 17-Jun-2011 13:41:49 Chrom Revision: 1.2 03-Jun-2011 08:44:02

TestAmerica Laboratories
Target Compound Quantitation Report

Data File: \\wessvr06\chromdata\AGILGCMS2.i\20110613-5839.b\V18765.D
Lims ID: 360-34253-A-7 Client ID: OC-SW-PZ-16RR-XXX
Inject. Date: 13-Jun-2011 18:13:30 Dil. Factor: 1.0000
Sample Type: Client
Sample ID: 360-34253-A-7
Misc. Info.:
Operator: TPH Instrument ID: Agilent#2 GC/MS
Vol. Injected: 1.0000 ALS Bottle#: 14
Lims Batch ID: 75118 Lims Sample ID: 13
Detector 1 : MS SCAN
Detector 2 : MS SIM

Method: \\wessvr06\chromdata\AGILGCMS2.i\20110613-5839.b\WES2UNPR.m
Last Update: 15-Jun-2011 17:00:41 Calib Date: 18-May-2011 21:50:30
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\wessvr06\chromdata\AGILGCMS2.i\20110519-5598.b\V18208.D
Limit Group: VMS - 8260C VOA Calibration MCP
Integrator: RTE ID Type: RT Order ID
Process Host: WESSEMIDTRDR

First Level Reviewer: hartmannt Date: 17-Jun-2011 13:41:48

Compound	Det	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
1 Dichlorodifluoromethane	1	85		1.682					
2 Chloromethane	1	50		1.848					
3 Vinyl chloride (SIM)	2	62	1.929	1.929	0.0	0	118	0	
4 Vinyl chloride	1	62		1.931					
5 Bromomethane	1	94		2.227					
6 Chloroethane	1	64		2.346					
7 Trichlorofluoromethane	1	101		2.476					
8 Dichlorofluoromethane	1	67		2.523					
9 Ethyl ether	1	59		2.760					
10 Ethanol	1	45		2.891					
11 1,2-Dichloro-1,1,2-trifluoroethane	1	117		2.962					
12 1,1-Dichloroethene	1	96		2.974					
13 Carbon disulfide	1	76		3.021					
14 1,1,2-Trichloro-1,2,2-trifluoroethane	1	151		3.033					
15 Acrolein	1	56		3.329					
16 Isopropyl alcohol	1	45		3.495					
17 Methylene Chloride	1	84		3.614					
18 Acetone	1	43	3.661	3.661	0.0	90	9064	5.62	
20 trans-1,2-Dichloroethene	1	61		3.815					
19 Methyl acetate	1	43		3.815					
21 Hexane	1	57		3.910					
22 Methyl tert-butyl ether	1	73		3.934					
23 2-Methyl-2-propanol	1	59		4.029					
24 Isopropyl ether	1	45		4.396					
25 1,1-Dichloroethane	1	63		4.538					
26 Acrylonitrile	1	53		4.586					
27 Halothane	1	117		4.609					
S 28 1,2-Dichloroethene, Total	1	1		4.749					7
29 Tert-butyl ethyl ether	1	59		4.823					
30 Vinyl acetate	1	43		4.834					

Report Date: 17-Jun-2011 13:41:49 Chrom Revision: 1.2 03-Jun-2011 08:44:02
Data File: \\wessvr06\chromdata\AGILGCMS2.i\20110613-5839.b\V18765.D

Compound	Det	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
31 cis-1,2-Dichloroethene	1	61		5.178					
32 2,2-Dichloropropane	1	77		5.320					
33 Chlorobromomethane	1	130		5.415					
34 Cyclohexane	1	56		5.439					
35 Chloroform	1	83	5.510	5.510	0.0	67	4386	0.4877	
36 Ethyl acetate	1	43		5.652					
37 Carbon tetrachloride	1	117		5.676					
38 Tetrahydrofuran	1	42		5.688					
39 sec-Butyl Alcohol	1	59		5.700					
$ 40 Dibromofluoromethane	1	113	5.723	5.723	0.0	56	137926	21.8	
41 1,1,1-Trichloroethane	1	97		5.759					
42 2-Butanone (MEK)	1	43	5.877	5.866	0.011	88	2847	0.9800	
43 1,1-Dichloropropene	1	75		5.913					
44 n-Heptane	1	43		6.185					
45 Benzene	1	78		6.209					
46 Tert-amyl methyl ether	1	73		6.351					
* 47 1,2-Dichloroethane-d4 ISTD	1	102	6.363	6.363	0.0	0	31123	20.0	
48 1,2-Dichloroethane	1	62		6.446					
* 49 Fluorobenzene	1	96	6.707	6.707	0.0	99	372970	20.0	
50 Isopropyl acetate	1	43		6.766					
51 2,4,4-Trimethyl-1-pentene	1	55	6.778	6.766	0.012	95	9377	5.63	
52 Methylcyclohexane	1	83		6.921					
53 Trichloroethene	1	95		6.921					
54 2,4,4-Trimethyl-2-pentene	1	55	6.992	6.980	0.012	65	5652	1.22	
55 Dibromomethane	1	93	7.442	7.442	0.0	73	1568	0.5687	
57 1,2-Dichloropropane	1	63		7.585			$\frac{(1568)(20)}{372970\ (.1478)} = \frac{31360}{55124.966}$	= 0.56888	
S 56 1,3-Dichloropropene, Total	1	1		7.662					7
58 Dichlorobromomethane	1	83	7.680	7.680	0.0	1	958	0.2067	
59 Methyl methacrylate	1	69		7.929					
61 1,4-Dioxane	1	88		7.964					
60 1,4-Dioxane (SIM)	2	88		7.974			$\left[\frac{958/372970}{.2486}\right] \times 20 = 0.2066$		
62 n-Propyl acetate	1	43		8.154					
63 2-Chloroethyl vinyl ether	1	63		8.593					
64 cis-1,3-Dichloropropene	1	75		8.676					
$ 65 Toluene-d8 (Surr)	1	98	9.020	9.020	0.0	92	349906	20.2	
66 Toluene	1	92		9.114					
S 67 Xylenes, Total	1	1		9.443					7
68 sec-Butyl acetate	1	43		9.506					
69 Tetrachloroethene	1	166		9.755					
70 4-Methyl-2-pentanone (MIBK)	1	43		9.755					
71 trans-1,3-Dichloropropene	1	75		9.802			$\left[\frac{1684/372970}{0.1899}\right] \times 20 = 0.4755$		
72 Isobutyl acetate	1	43		9.980					
73 1,1,2-Trichloroethane	1	83		10.039					
74 Chlorodibromomethane	1	129	10.277	10.277	0.0	18	1684	0.4754	
75 1,3-Dichloropropane	1	76		10.419					
76 Ethylene Dibromide	1	107		10.585					
77 n-Butyl acetate	1	43		10.834					
78 2-Hexanone	1	43		10.929					
* 79 Chlorobenzene-d5	1	117	11.249	11.249	0.0	82	275404	20.0	
80 Chlorobenzene	1	112		11.273					
81 Ethylbenzene	1	91		11.320					
82 1,1,1,2-Tetrachloroethane	1	131		11.356					

Report Date: 17-Jun-2011 13:41:49 Chrom Revision: 1.2 03-Jun-2011 08:44:02
Data File: \\wessvr06\chromdata\AGILGCMS2.i\20110613-5839.b\V18765.D

Compound	Det	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
83 m-Xylene & p-Xylene	1	91		11.498					
84 o-Xylene	1	91		11.984					
85 Styrene	1	104		12.044					
86 Bromoform	1	173	12.056	12.055	0.001	79	4581	2.25	
87 Isopropylbenzene	1	105		12.340					
$ 89 4-Bromofluorobenzene	1	95	12.613	12.613	0.0	90	133451	19.8	
$ 88 BFB	1	95	12.613	12.613	0.0	90	133451	0	
90 Bromobenzene	1	77		12.720					
91 N-Propylbenzene	1	91		12.767					
92 1,1,2,2-Tetrachloroethane	1	83		12.838					
93 2-Chlorotoluene	1	91		12.909					
94 1,2,3-Trichloropropane	1	110		12.969					
95 1,3,5-Trimethylbenzene	1	105		12.969					
96 trans-1,4-Dichloro-2-butene	1	53		13.016					
97 4-Chlorotoluene	1	91		13.075					
98 tert-Butylbenzene	1	119		13.277					
99 1,2,4-Trimethylbenzene	1	105		13.348					
100 sec-Butylbenzene	1	105		13.455					
101 4-Isopropyltoluene	1	119		13.597					
102 1,3-Dichlorobenzene	1	146	13.645	13.645	0.0	51	2295	0.2979	
* 103 1,4-Dichlorobenzene-d4	1	152	13.716	13.716	0.0	94	137999	20.0	
104 1,4-Dichlorobenzene	1	146		13.739					M
105 n-Butylbenzene	1	91		13.988					
106 1,2-Dichlorobenzene	1	146		14.131					
107 1,2-Dibromo-3-Chloropropane	1	157		14.842					
108 1,3,5-Trichlorobenzene	1	180		14.878					
109 Hexachlorobutadiene	1	225		15.412					
110 1,2,4-Trichlorobenzene	1	180		15.435					
111 Naphthalene	1	128		15.720					
112 1,2,3-Trichlorobenzene	1	180		15.898					

QC Flag Legend

Processing Flags
7 - Failed Limit of Detection

Review Flags
M - Manually Integrated

$$\left[\frac{(2295 / 275404)}{0.5595}\right] \times 20 = 0.2978$$

$$= 0.3$$

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Westfield | Job No.: 360-34253-1

SDG No.: 360-34253-1

Client Sample ID: OC-SW-PZ-16RR-XXX RA | Lab Sample ID: 360-34253-7 RA

Matrix: Water | Lab File ID: V14004.D

Analysis Method: 8260C | Date Collected: 06/06/2011 13:05

Sample wt/vol: 5(mL) | Date Analyzed: 06/19/2011 18:30

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: RTX-VMS ID: 0.25(um)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 75528 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
75-25-2	Bromoform	1.8		1.0	0.20

CAS NO.	SURROGATE	%REC	Q	LIMITS
460-00-4	4-Bromofluorobenzene	95		70-130
2037-26-5	Toluene-d8 (Surr)	97		70-130
1868-53-7	Dibromofluoromethane	95		70-130

Report Date: 20-Jun-2011 09:56:19 Chrom Revision: 1.2 03-Jun-2011 08:44:02
Data File: \\wessvr06\chromdata\HPGCMS3.i\20110620-5914.b\V14004.D

Compound	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
84 Bromoform	173	9.905	9.900	0.005	89	14426	1.82	
85 Isopropylbenzene	105		10.104					
$ 86 BFB	95	10.344	10.345	-0.001	97	242598	0	
$ 87 4-Bromofluorobenzene	95	10.344	10.345	-0.001	98	242091	18.9	
88 Bromobenzene	77		10.434					
89 N-Propylbenzene	91		10.455					
90 1,1,2,2-Tetrachloroethane	83		10.507					
91 2-Chlorotoluene	91		10.585					
92 1,3,5-Trimethylbenzene	105		10.611					
93 1,2,3-Trichloropropane	75		10.617					
94 trans-1,4-Dichloro-2-butene	53		10.648					
95 4-Chlorotoluene	91		10.721					
96 tert-Butylbenzene	119		10.878					
97 1,2,4-Trimethylbenzene	105		10.936					
98 sec-Butylbenzene	105		11.024					
99 4-Isopropyltoluene	119		11.139					
100 1,3-Dichlorobenzene	146	11.212	11.207	0.005	71	5513	0.3171	
* 101 1,4-Dichlorobenzene-d4	152	11.270	11.270	0.0	92	270382	20.0	
102 1,4-Dichlorobenzene	146		11.281					M
103 n-Butylbenzene	91		11.484					
104 1,2-Dichlorobenzene	146		11.631					
105 1,2-Dibromo-3-Chloropropane	157		12.274					
106 1,3,5-Trichlorobenzene	180	12.305	12.305	0.0	41	665	0	
107 Hexachlorobutadiene	225		12.807					
108 1,2,4-Trichlorobenzene	180		12.828					
109 Naphthalene	128		13.095					
110 1,2,3-Trichlorobenzene	180		13.257					

QC Flag Legend

Processing Flags
7 - Failed Limit of Detection

Review Flags
M - Manually Integrated

$$\frac{(14426)(20)}{(270382)(.5863)} = \frac{288520}{158524.9666} = 1.82$$

Linear Regression and Correlation Script

Please enter a list of data to which you want to fit a line, & determine the correlation coefficient-- data for the x axis goes in the left column, and data for the y axis goes in the right.:

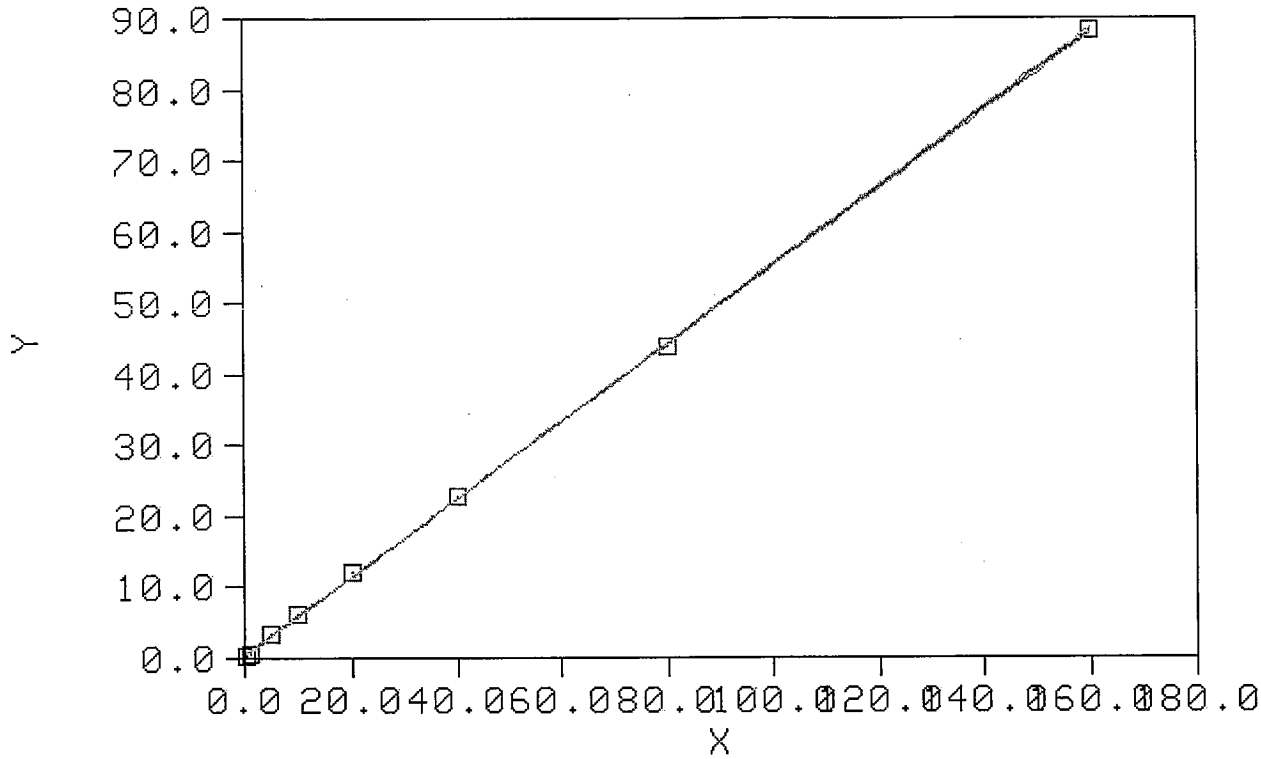
(You should press return after entering each number)

1,3-DICHLOROBENZENE

0.5	.2935
1	.5921
5	3.247
10	6.061
20	12.103
40	22.734
80	43.803
160	88.238

Calculate

Here are your results:



The blue line is the least squares best fit to the data (points).

The pink lines have slopes 1 sigma away from the best fit. They intersect at the mean of x and y for the data.

number of events entered:	**8**
slope:	**0.548 +/- 0.003**
y intercept:	**0.44 +/- 0.20**
dispersion:	**0.45**
correlation coefficient (r):	**1.00**
r^2:	**1.00**
chi ^ 2 (degrees of freedom):	**0.467 (6)**

1,3-DICHLORO BENZENE

Return to the main Tool Page

FORM VI
GC/MS VOA INITIAL CALIBRATION DATA
INTERNAL STANDARD CURVE EVALUTION

Lab Name: TestAmerica Westfield Job No.: 360-34253-1 Analy Batch No.: 73830

SDG No.: 360-34253-1

Instrument ID: Agilent#2 GC/MS GC Column: RTX-VMS ID: 0.25(um) Heated Purge: (Y/N) N

Calibration Start Date: 05/18/2011 18:35 Calibration End Date: 05/18/2011 21:50 Calibration ID: 13685

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD01 360-73830/3	V18199.D
Level 2	STD03 360-73830/4	V18200.D
Level 3	STD05 360-73830/5	V18201.D
Level 4	STD1 360-73830/6	V18202.D
Level 5	STD5 360-73830/7	V18203.D
Level 6	STD10 360-73830/8	V18204.D
Level 7	STD20 360-73830/9	V18205.D
Level 8	STD40 360-73830/10	V18206.D
Level 9	STD80 360-73830/11	V18207.D
Level 10	STD160 360-73830/12	V18208.D

0.5158 − 0.5526)² = 0.00135424
0.4878 " = 0.00419904
0.6040 " = 0.00244196
0.5551 " = 0.00000625
0.5919 " = 0.00154449
0.5533 " = 0.00060049
0.5444 " = 0.00006724
0.5689 " = 0.00026569
4.4212/8 = 0.55265 0.6100794/9 = √0.00143994 = 0.0379/0.5526 x100 = 6.9

ANALYTE	RRF LVL 1 LVL 6	RRF LVL 2 LVL 7	RRF LVL 3 LVL 8	RRF LVL 4 LVL 9	RRF LVL 5 LVL 10	CURVE TYPE	COEFFICIENT B	COEFFICIENT M1	COEFFICIENT M2	#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
Dichlorodifluoromethane	+++++	+++++	0.2220	0.2037	0.2379	Lin1F		0.2446							0.9970		0.9900
	0.2266	0.2588	0.2165	0.2482	0.2497												
Chloromethane	+++++	+++++	0.3627	0.3463	0.3559	Ave		0.3532			0.1000	2.9		15.0			
	0.3394	0.3613	0.3415	0.3670	0.3512												
Vinyl chloride	+++++	+++++	0.2639	0.2421	0.2445	Ave		0.2391			0.1000	6.3		15.0			
	0.2308	0.2523	0.2141	0.2339	0.2313												
Bromomethane	+++++	+++++	0.2376	0.1559	0.1638	Lin1F		0.1316							0.9940		0.9900
	0.1415	0.1565	0.1292	0.1342	0.1257												
Trichlorofluoromethane	+++++	+++++	0.2526	0.2523	0.2811	Lin1F		0.2890							0.9980		0.9900
	0.2713	0.3137	0.2607	0.2956	0.2914												
Chloroethane	+++++	+++++	0.1046	0.1182	0.1315	Ave		0.1218			0.1000	7.7		15.0			
	0.1225	0.1347	0.1169	0.1256	0.1207												
Ethyl ether	+++++	+++++	0.2320	0.2038	0.2137	Ave		0.2036				6.6		15.0			
	0.1992	0.1999	0.1927	0.1930	0.1948												
1,1-Dichloroethene	+++++	+++++	0.2683	0.2361	0.2298	Lin1F		0.2047							0.9990		0.9900
	0.2048	0.2204	0.2063	0.1988	0.2040												
Carbon disulfide AVG	+++++	+++++	0.5158	0.4878	0.6040	Ave		0.5526			0.1000	6.9		15.0			
	0.5551	0.5919	0.5533	0.5444	0.5689												
1,1,2-Trichloro-1,2,2-trifluoroethane	+++++	+++++	0.1387	0.1138	0.1315	Ave		0.1254				7.8		15.0			
	0.1191	0.1217	0.1169	0.1224	0.1392												
Methylene Chloride	+++++	+++++	0.5111	0.3507	0.2891	Lin1F		0.2460							0.9960		0.9900
	0.2585	0.2592	0.2477	0.2408	0.2429												
Acetone	+++++	+++++	1.9358	1.4072	1.0657	Lin1F		1.0362							0.9950		0.9900
	1.0202	0.9730	1.1019	1.1052	0.9882												
trans-1,2-Dichloroethene	+++++	+++++	0.3373	0.3368	0.3719	Ave		0.3456			0.1000	3.8		15.0			
	0.3480	0.3573	0.3374	0.3342	0.3418												

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS VOA INITIAL CALIBRATION DATA
INTERNAL STANDARD CURVE EVALUTION

Lab Name: TestAmerica Westfield Job No.: 360-34253-1 Analy Batch No.: 73830

SDG No.: 360-34253-1

Instrument ID: Agilent#2 GC/MS GC Column: RTX-VMS ID: 0.25(um) Heated Purge: (Y/N) N

Calibration Start Date: 05/18/2011 18:35 Calibration End Date: 05/18/2011 21:50 Calibration ID: 13685

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5 LVL 10		B	M1	M2								
2,4,4-Trimethyl-1-pentene	+++++ 0.1098	+++++ 0.1071	0.1590 0.0870	0.1662 0.0752	0.1237 0.0685	QuaF		0.0902	0						0.9960		0.9900
Methylcyclohexane	+++++ 0.3029	+++++ 0.3091	0.3003 0.3056	0.2707 0.2771	0.3163 0.2693	Ave		0.2939				6.3		15.0			
Trichloroethene	+++++ 0.2117	+++++ 0.2172	0.2241 0.2074	0.2138 0.2047	0.2277 0.2142	Ave		0.2151			0.2000	3.6		15.0			
2,4,4-Trimethyl-2-pentene	+++++ 0.2470	+++++ 0.2528	0.2490 0.2223	0.2269 0.2044	0.2530 0.1601	QuaF		0.2490	-0.001						1.0000		0.9900
Dibromomethane	+++++ 0.1470	+++++ 0.1495	0.1435 0.1451	0.1488 0.1463	0.1542 0.1483	Ave		0.1478				2.2		15.0			
1,2-Dichloropropane	+++++ 0.1908	+++++ 0.1974	0.2106 0.1932	0.2002 0.1938	0.2027 0.1996	Ave		0.1985			0.1000	3.2		15.0			
Dichlorobromomethane	+++++ 0.2235	+++++ 0.2336	0.2019 0.2368	0.1995 0.2458	0.2293 0.2573	Lin1F		0.2486							0.9980		0.9900
cis-1,3-Dichloropropene	+++++ 0.2944	0.2770 0.3023	0.2887 0.3067	0.2802 0.3138	0.3075 0.3312	Ave		0.3002			0.2000	5.7		15.0			
1,1,2-Trichloroethane	+++++ 0.1623	+++++ 0.1646	0.1648 0.1602	0.1598 0.1594	0.1705 0.1624	Ave		0.1630			0.1000	2.3		15.0			
Toluene	+++++ 0.4482	+++++ 0.4633	0.4586 0.4158	0.4278 0.4444	0.4676 0.4653	Ave		0.4489			0.4000	4.2		15.0			
Chlorodibromomethane	+++++ 0.1493	+++++ 0.1596	0.1126 0.1763	0.1182 0.1874	0.1446 0.2031	Lin1F		0.1899							0.9920		0.9900
Tetrachloroethene	+++++ 0.2107	+++++ 0.2233	0.2340 0.2059	0.2029 0.2042	0.2257 0.2114	Ave		0.2148			0.2000	5.4		15.0			
4-Methyl-2-pentanone (MIBK)	+++++ 2.5933	+++++ 2.8450	2.4375 2.8356	2.4634 2.8443	2.5534 2.7018	Ave		2.6593			0.1000	6.4		15.0			
trans-1,3-Dichloropropene	+++++ 0.2771	0.2638 0.2833	0.2701 0.2832	0.2479 0.2889	0.2851 0.3052	Ave		0.2783			0.1000	5.9		15.0			
1,1,1,2-Tetrachloroethane	+++++ 0.2155	+++++ 0.2250	0.2092 0.2311	0.2039 0.2344	0.2179 0.2507	Ave		0.2235				6.8		15.0			
1,3-Dichloropropane	+++++ 0.2962	+++++ 0.3057	0.3072 0.3014	0.2963 0.3017	0.3081 0.3130	Ave		0.3037				1.9		15.0			
Ethylene Dibromide	+++++ 0.2134	+++++ 0.2204	0.2158 0.2120	0.2000 0.2151	0.2223 0.2213	Ave		0.2150				3.3		15.0			
Bromoform	+++++ 0.2590	+++++ 0.2785	0.1813 0.3347	0.2044 0.3790	0.2336 0.4536	QuaF		0.2934	0.0010		0.1000				1.0000		0.9900
2-Hexanone	+++++ 2.0275	+++++ 2.1724	1.8815 2.0816	1.9401 2.1117	2.0190 2.0914	Ave		2.0407			0.1000	4.6		15.0			
Chlorobenzene	+++++ 0.7458	+++++ 0.7732	0.8173 0.7443	0.7714 0.7369	0.8167 0.7745	Ave		0.7725			0.5000	4.0		15.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS VOA INITIAL CALIBRATION DATA
INTERNAL STANDARD CURVE EVALUTION

Lab Name: TestAmerica Westfield Job No.: 360-34253-1 Analy Batch No.: 73830

SDG No.: 360-34253-1

Instrument ID: Agilent#2 GC/MS GC Column: RTX-VMS ID: 0.25(um) Heated Purge: (Y/N) N

Calibration Start Date: 05/18/2011 18:35 Calibration End Date: 05/18/2011 21:50 Calibration ID: 13685

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5 LVL 10		B	M1	M2								
Ethylbenzene	+++++ 1.2001	+++++ 1.2358	1.1985 1.1724	1.1429 1.1607	1.2829 1.2407	Ave		1.2043			0.1000	3.9		15.0			
m-Xylene & p-Xylene	+++++ 0.9201	+++++ 0.9465	0.9397 0.8981	0.9023 0.8977	0.9863 0.9580	Ave		0.9311			0.1000	3.5		15.0			
1,2,3-Trichloropropane	+++++ 0.1186	+++++ 0.1198	0.1287 0.1183	0.1157 0.1121	0.1283 0.1102	Ave		0.1189				5.7		15.0			
o-Xylene	+++++ 0.9296	+++++ 0.9290	0.9824 0.9096	0.9233 0.8913	0.9852 0.9339	Ave		0.9355			0.3000	3.5		15.0			
Styrene	+++++ 0.7578	+++++ 0.7784	0.7868 0.7645	0.7605 0.7511	0.7967 0.7721	Ave		0.7710			0.3000	2.0		15.0			
Isopropylbenzene	+++++ 1.1149	+++++ 1.1315	1.1590 1.0793	1.1134 1.0618	1.1849 1.1014	Ave		1.1183			0.1000	3.6		15.0			
Bromobenzene	+++++ 0.4965	+++++ 0.5127	0.4892 0.4973	0.5105 0.4773	0.5215 0.4807	Ave		0.4982				3.2		15.0			
N-Propylbenzene	+++++ 1.3925	+++++ 1.4021	1.3804 1.2988	1.3297 1.2525	1.4540 1.2730	Ave		1.3479				5.2		15.0			
1;1,2,2-Tetrachloroethane	+++++ 0.7959	+++++ 0.7960	0.8341 0.8061	0.7997 0.7965	0.7984 0.8350	Ave		0.8077			0.3000	2.1		15.0			
2-Chlorotoluene	+++++ 0.8503	+++++ 0.8228	0.8985 0.7832	0.8344 0.7639	0.9149 0.7869	Ave		0.8319				6.5		15.0			
1,3,5-Trimethylbenzene	+++++ 0.8929	+++++ 0.8917	0.9215 0.8256	0.9115 0.8098	0.9526 0.8236	Ave		0.8786				6.0		15.0			
4-Chlorotoluene	+++++ 0.9010	+++++ 0.8927	0.9338 0.8654	0.8920 0.8258	0.9611 0.8322	Ave		0.8880				5.2		15.0			
tert-Butylbenzene	+++++ 0.7371	+++++ 0.7372	0.7957 0.6596	0.7817 0.6410	0.7894 0.6619	Lin1F		0.6661							0.9980		0.9900
1,2,4-Trimethylbenzene	+++++ 0.8934	+++++ 0.9154	0.9476 0.8248	0.9303 0.8013	0.9786 0.8023	Lin1F		0.8183							0.9980		0.9900
sec-Butylbenzene	+++++ 1.1143	+++++ 1.1043	1.1754 0.9993	1.1477 0.9553	1.2195 0.9666	Lin1F		0.9862							0.9970		0.9900
4-Isopropyltoluene	+++++ 0.9321	+++++ 0.9269	1.0063 0.8274	0.9468 0.7889	0.9957 0.8048	Lin1F		0.8191							0.9970		0.9900
1,3-Dichlorobenzene LIN F	+++++ 0.6061	+++++ 0.6052	0.5870 0.5684	0.5921 0.5475	0.6495 0.5515	Lin1F		0.5595							0.9990		0.9900
1,4-Dichlorobenzene	+++++ 1.1927	+++++ 1.2060	1.1381 1.1740	1.1552 1.1637	1.2181 1.2320	Ave		1.1850			0.5000	2.8		15.0			
n-Butylbenzene	+++++ 1.7889	+++++ 1.8212	1.7234 1.6540	1.6779 1.6271	1.8301 1.7272	Ave		1.7312				4.4		15.0			
1,2-Dichlorobenzene	+++++ 1.0490	+++++ 1.0661	1.0581 1.0389	1.0476 1.0370	1.0845 1.1207	Ave		1.0627			0.4000	2.6		15.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS VOA INITIAL CALIBRATION DATA
INTERNAL STANDARD RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Westfield Job No.: 360-34253-1 Analy Batch No.: 73830

SDG No.: 360-34253-1

Instrument ID: Agilent#2 GC/MS GC Column: RTX-VMS ID: 0.25(um) Heated Purge: (Y/N) N

Calibration Start Date: 05/18/2011 18:35 Calibration End Date: 05/18/2011 21:50 Calibration ID: 13685

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD01 360-73830/3	V18199.D
Level 2	STD03 360-73830/4	V18200.D
Level 3	STD05 360-73830/5	V18201.D
Level 4	STD1 360-73830/6	V18202.D
Level 5	STD5 360-73830/7	V18203.D
Level 6	STD10 360-73830/8	V18204.D
Level 7	STD20 360-73830/9	V18205.D
Level 8	STD40 360-73830/10	V18206.D
Level 9	STD80 360-73830/11	V18207.D
Level 10	STD160 360-73830/12	V18208.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/L)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5 LVL 10	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5 LVL 10
Dichlorodifluoromethane	FB	Lin1F	+++++	+++++	2802	5140	29809	+++++	+++++	0.500	1.00	5.00
			58596	131668	224770	516088	1034937	10.0	20.0	40.0	80.0	160
Chloromethane	FB	Ave	+++++	+++++	4579	8738	44602	+++++	+++++	0.500	1.00	5.00
			87755	183774	354638	763074	1455319	10.0	20.0	40.0	80.0	160
Vinyl chloride	FB	Ave	+++++	+++++	3331	6109	30641	+++++	+++++	0.500	1.00	5.00
			59666	128346	222323	486300	958463	10.0	20.0	40.0	80.0	160
Bromomethane	FB	Lin1F	+++++	+++++	3000	3934	20530	+++++	+++++	0.500	1.00	5.00
			36579	79588	134184	278942	520769	10.0	20.0	40.0	80.0	160
Trichlorofluoromethane	FB	Lin1F	+++++	+++++	3189	6368	35226	+++++	+++++	0.500	1.00	5.00
			70155	159564	270665	614654	1207736	10.0	20.0	40.0	80.0	160
Chloroethane	FB	Ave	+++++	+++++	1321	2983	16485	+++++	+++++	0.500	1.00	5.00
			31666	68539	121357	261255	500028	10.0	20.0	40.0	80.0	160
Ethyl ether	FB	Ave	+++++	+++++	2929	5144	26780	+++++	+++++	0.500	1.00	5.00
			51511	101694	200036	401227	807247	10.0	20.0	40.0	80.0	160
1,1-Dichloroethene	FB	Lin1F	+++++	+++++	3387	5959	28795	+++++	+++++	0.500	1.00	5.00
			52947	112095	214175	413438	845505	10.0	20.0	40.0	80.0	160
Carbon disulfide MG	FB	Ave	+++++	+++++	6511	12310	75697	+++++	+++++	0.500	1.00	5.00
			143512	301095	574529	1131892	2357643	10.0	20.0	40.0	80.0	160
1,1,2-Trichloro-1,2,2-trifluoroetha ne	FB	Ave	+++++	+++++	1751	2871	16485	+++++	+++++	0.500	1.00	5.00
			30792	61891	121404	254493	576842	10.0	20.0	40.0	80.0	160
Methylene Chloride	FB	Lin1F	+++++	+++++	6452	8849	36233	+++++	+++++	0.500	1.00	5.00
			66830	131853	257245	500587	1006353	10.0	20.0	40.0	80.0	160
Acetone	12DCE	Lin1F	+++++	+++++	19368	28517	103953	+++++	+++++	5.00	10.0	50.0
			206571	379929	894798	1799721	3245834	100	200	400	800	1600
trans-1,2-Dichloroethene	FB	Ave	+++++	+++++	4258	8498	46605	+++++	+++++	0.500	1.00	5.00
			89977	181759	350337	694958	1416389	10.0	20.0	40.0	80.0	160
Methyl acetate	FB	Ave	+++++	+++++	33975	65956	331292	+++++	+++++	5.00	10.0	50.0
			648619	1157049	2708273	5541355	10529817	100	200	400	800	1600

FORM VI
GC/MS VOA INITIAL CALIBRATION DATA
INTERNAL STANDARD RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Westfield Job No.: 360-34253-1 Analy Batch No.: 73830

SDG No.: 360-34253-1

Instrument ID: Agilent#2 GC/MS GC Column: RTX-VMS ID: 0.25(um) Heated Purge: (Y/N) N

Calibration Start Date: 05/18/2011 18:35 Calibration End Date: 05/18/2011 21:50 Calibration ID: 13685

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/L)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5 LVL 10	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5 LVL 10
Methyl tert-butyl ether	FB	Ave	+++++ 82938	+++++ 178330	4460 343189	8231 718058	43816 1699513	+++++ 10.0	+++++ 20.0	0.500 40.0	1.00 80.0	5.00 160
Halothane	FB	Ave	+++++ 42932	+++++ 94632	1968 184308	4084 375386	21249 767885	+++++ 10.0	+++++ 20.0	0.500 40.0	1.00 80.0	5.00 160
Isopropyl ether	FB	Ave	+++++ 158283	+++++ 327033	7958 628442	15729 1281810	83221 2588282	+++++ 10.0	+++++ 20.0	0.500 40.0	1.00 80.0	5.00 160
1,1-Dichloroethane	FB	Ave	+++++ 113911	+++++ 229015	6108 446419	11323 876381	60001 1803770	+++++ 10.0	+++++ 20.0	0.500 40.0	1.00 80.0	5.00 160
1,4-Dioxane	DCB	Lin1F	+++++ 6651	+++++ 13681	+++++ 28711	+++++ 57887	2869 111297	+++++ 100	+++++ 200	+++++ 400	+++++ 800	50.0 1600
Tert-butyl ethyl ether	FB	Lin1F	+++++ 73539	+++++ 154592	4176 270421	8057 501510	40104 1102404	+++++ 10.0	+++++ 20.0	0.500 40.0	1.00 80.0	5.00 160
cis-1,2-Dichloroethene	FB	Ave	+++++ 89904	+++++ 178908	4469 348134	8675 688527	45974 1416943	+++++ 10.0	+++++ 20.0	0.500 40.0	1.00 80.0	5.00 160
2,2-Dichloropropane	FB	Lin1F	+++++ 61261	+++++ 120390	3183 225775	5996 423290	32186 816424	+++++ 10.0	+++++ 20.0	0.500 40.0	1.00 80.0	5.00 160
Chlorobromomethane	FB	Ave	+++++ 50146	+++++ 97523	2544 199315	4896 392957	26142 799563	+++++ 10.0	+++++ 20.0	0.500 40.0	1.00 80.0	5.00 160
Cyclohexane	FB	Ave	+++++ 83630	+++++ 165831	4783 344019	8217 659432	42590 1320073	+++++ 10.0	+++++ 20.0	0.500 40.0	1.00 80.0	5.00 160
Chloroform	FB	Ave	+++++ 121620	+++++ 239111	6871 478834	12552 933005	63160 1915169	+++++ 10.0	+++++ 20.0	0.500 40.0	1.00 80.0	5.00 160
Carbon tetrachloride	FB	Lin1F	+++++ 50278	+++++ 112741	2433 218040	4518 451216	26007 977393	+++++ 10.0	+++++ 20.0	0.500 40.0	1.00 80.0	5.00 160
Tetrahydrofuran	FB	Ave	+++++ 312475	+++++ 611468	15973 1238642	31799 2508235	159212 4966227	+++++ 100	+++++ 200	5.00 400	10.0 800	50.0 1600
1,1,1-Trichloroethane	FB	Ave	+++++ 81456	+++++ 167022	4093 313812	7614 611682	42838 1252698	+++++ 10.0	+++++ 20.0	0.500 40.0	1.00 80.0	5.00 160
2-Butanone (MEK)	12DCE	Ave	+++++ 374847	+++++ 752101	17174 1566016	35529 3228780	180192 6336465	+++++ 100	+++++ 200	5.00 400	10.0 800	50.0 1600
1,1-Dichloropropene	FB	Ave	+++++ 86472	+++++ 179723	4231 340492	8060 667897	45522 1409595	+++++ 10.0	+++++ 20.0	0.500 40.0	1.00 80.0	5.00 160
Benzene	FB	Ave	+++++ 242530	+++++ 488607	12485 953214	24300 1906713	125757 4010311	+++++ 10.0	+++++ 20.0	0.500 40.0	1.00 80.0	5.00 160
Tert-amyl methyl ether	FB	Lin1F	+++++ 71717	+++++ 150202	4637 256883	8390 461165	38352 982895	+++++ 10.0	+++++ 20.0	0.500 40.0	1.00 80.0	5.00 160
1,2-Dichloroethane	FB	Ave	+++++ 88166	+++++ 173905	4674 346937	9043 687245	45333 1399825	+++++ 10.0	+++++ 20.0	0.500 40.0	1.00 80.0	5.00 160
2,4,4-Trimethyl-1-pentene	FB	QuaF	+++++ 28398	+++++ 54498	2007 90343	4194 156356	15507 284024	+++++ 10.0	+++++ 20.0	0.500 40.0	1.00 80.0	5.00 160
Methylcyclohexane	FB	Ave	+++++ 78325	+++++ 157265	3791 317358	6831 576136	39637 1116093	+++++ 10.0	+++++ 20.0	0.500 40.0	1.00 80.0	5.00 160

FORM VI
GC/MS VOA INITIAL CALIBRATION DATA
INTERNAL STANDARD RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Westfield Job No.: 360-34253-1 Analy Batch No.: 73830

SDG No.: 360-34253-1

Instrument ID: Agilent#2 GC/MS GC Column: RTX-VMS ID: 0.25(um) Heated Purge: (Y/N) N

Calibration Start Date: 05/18/2011 18:35 Calibration End Date: 05/18/2011 21:50 Calibration ID: 13685

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/L)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5 LVL 10	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5 LVL 10
Trichloroethene	FB	Ave	+++++	+++++	2829	5394	28538	+++++	+++++	0.500	1.00	5.00
			54725	110475	215309	425659	887647	10.0	20.0	40.0	80.0	160
2,4,4-Trimethyl-2-pentene	FB	QuaF	+++++	+++++	3143	5725	31708	+++++	+++++	0.500	1.00	5.00
			63868	128592	230818	424962	663473	10.0	20.0	40.0	80.0	160
Dibromomethane	FB	Ave	+++++	+++++	1812	3756	19320	+++++	+++++	0.500	1.00	5.00
			37998	76045	150711	304178	614487	10.0	20.0	40.0	80.0	160
1,2-Dichloropropane	FB	Ave	+++++	+++++	2659	5053	25402	+++++	+++++	0.500	1.00	5.00
			49340	100418	200557	402895	826927	10.0	20.0	40.0	80.0	160
Dichlorobromomethane	FB	Lin1F	+++++	+++++	2549	5035	28737	+++++	+++++	0.500	1.00	5.00
			57794	118855	245892	511158	1066414	10.0	20.0	40.0	80.0	160
cis-1,3-Dichloropropene	FB	Ave	+++++	2061	3644	7072	38540	+++++	0.300	0.500	1.00	5.00
			76107	153779	318471	652459	1372370	10.0	20.0	40.0	80.0	160
1,1,2-Trichloroethane	FB	Ave	+++++	+++++	2081	4032	21366	+++++	+++++	0.500	1.00	5.00
			41963	83718	166332	331368	672975	10.0	20.0	40.0	80.0	160
Toluene	FB	Ave	+++++	+++++	5789	10795	58600	+++++	+++++	0.500	1.00	5.00
			115889	235698	431726	923950	1928204	10.0	20.0	40.0	80.0	160
Chlorodibromomethane	FB	Lin1F	+++++	+++++	1421	2983	18125	+++++	+++++	0.500	1.00	5.00
			38602	81189	183024	389716	841488	10.0	20.0	40.0	80.0	160
Tetrachloroethene	FB	Ave	+++++	+++++	2954	5119	28290	+++++	+++++	0.500	1.00	5.00
			54475	113614	213818	424505	875870	10.0	20.0	40.0	80.0	160
4-Methyl-2-pentanone (MIBK)	12DCE	Ave	+++++	+++++	24388	49919	249068	+++++	+++++	5.00	10.0	50.0
			525069	1110927	2302648	4631946	8874353	100	200	400	800	1600
trans-1,3-Dichloropropene	FB	Ave	+++++	1963	3410	6256	35732	+++++	0.300	0.500	1.00	5.00
			71654	144108	294023	600741	1264860	10.0	20.0	40.0	80.0	160
1,1,1,2-Tetrachloroethane	CBZ	Ave	+++++	+++++	1860	3668	19249	+++++	+++++	0.500	1.00	5.00
			39761	81880	168085	343296	707163	10.0	20.0	40.0	80.0	160
1,3-Dichloropropane	FB	Ave	+++++	+++++	3878	7478	38609	+++++	+++++	0.500	1.00	5.00
			76581	155503	312920	627381	1296939	10.0	20.0	40.0	80.0	160
Ethylene Dibromide	FB	Ave	+++++	+++++	2724	5047	27853	+++++	+++++	0.500	1.00	5.00
			55164	112104	220105	447283	916913	10.0	20.0	40.0	80.0	160
Bromoform	DCB	QuaF	+++++	+++++	843	1917	10984	+++++	+++++	0.500	1.00	5.00
			24444	51900	121296	267619	583256	10.0	20.0	40.0	80.0	160
2-Hexanone	12DCE	Ave	+++++	+++++	18825	39316	196946	+++++	+++++	5.00	10.0	50.0
			410520	848313	1690348	3438814	6869232	100	200	400	800	1600
Chlorobenzene	CBZ	Ave	+++++	+++++	7268	13880	72139	+++++	+++++	0.500	1.00	5.00
			137588	281338	541365	1079493	2184240	10.0	20.0	40.0	80.0	160
Ethylbenzene	CBZ	Ave	+++++	+++++	10657	20564	113320	+++++	+++++	0.500	1.00	5.00
			221393	449636	852768	1700242	3499046	10.0	20.0	40.0	80.0	160
m-Xylene & p-Xylene	CBZ	Ave	+++++	+++++	16712	32469	174236	+++++	+++++	1.00	2.00	10.0
			339484	688778	1306450	2630073	5403302	20.0	40.0	80.0	160	320
1,2,3-Trichloropropane	CBZ	Ave	+++++	+++++	1144	2081	11330	+++++	+++++	0.500	1.00	5.00
			21881	43572	86048	164265	310665	10.0	20.0	40.0	80.0	160

FORM VI
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Lab Name: TestAmerica Westfield Job No.: 360-34253-1 Analy Batch No.: 73830

SDG No.: 360-34253-1

Instrument ID: Agilent#2 GC/MS GC Column: RTX-VMS ID: 0.25(um) Heated Purge: (Y/N) N

Calibration Start Date: 05/18/2011 18:35 Calibration End Date: 05/18/2011 21:50 Calibration ID: 13685

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/L)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5 LVL 10	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5 LVL 10
o-Xylene	CBZ	Ave	+++++	+++++	8736	16613	87027	+++++	+++++	0.500	1.00	5.00
			171489	337991	661575	1305595	2633845	10.0	20.0	40.0	80.0	160
Styrene	CBZ	Ave	+++++	+++++	6996	13683	70376	+++++	+++++	0.500	1.00	5.00
			139791	283223	556043	1100237	2177530	10.0	20.0	40.0	80.0	160
Isopropylbenzene	CBZ	Ave	+++++	+++++	10306	20034	104665	+++++	+++++	0.500	1.00	5.00
			205670	411686	785015	1555365	3106126	10.0	20.0	40.0	80.0	160
Bromobenzene	CBZ	Ave	+++++	+++++	4350	9185	46067	+++++	+++++	0.500	1.00	5.00
			91590	186524	361691	699209	1355610	10.0	20.0	40.0	80.0	160
N-Propylbenzene	CBZ	Ave	+++++	+++++	12275	23926	128428	+++++	+++++	0.500	1.00	5.00
			256886	510143	944673	1834690	3590132	10.0	20.0	40.0	80.0	160
1,1,2,2-Tetrachloroethane	DCB	Ave	+++++	+++++	3879	7500	37542	+++++	+++++	0.500	1.00	5.00
			75114	148308	292119	562424	1073806	10.0	20.0	40.0	80.0	160
2-Chlorotoluene	CBZ	Ave	+++++	+++++	7990	15013	80811	+++++	+++++	0.500	1.00	5.00
			156868	299376	569690	1118967	2219299	10.0	20.0	40.0	80.0	160
1,3,5-Trimethylbenzene	CBZ	Ave	+++++	+++++	8194	16400	84143	+++++	+++++	0.500	1.00	5.00
			164715	324432	600473	1186265	2322844	10.0	20.0	40.0	80.0	160
4-Chlorotoluene	CBZ	Ave	+++++	+++++	8304	16050	84894	+++++	+++++	0.500	1.00	5.00
			166217	324787	629472	1209605	2346941	10.0	20.0	40.0	80.0	160
tert-Butylbenzene	CBZ	Lin1F	+++++	+++++	7076	14066	69729	+++++	+++++	0.500	1.00	5.00
			135979	268211	479786	939003	1866618	10.0	20.0	40.0	80.0	160
1,2,4-Trimethylbenzene	CBZ	Lin1F	+++++	+++++	8426	16739	86442	+++++	+++++	0.500	1.00	5.00
			164810	333073	599887	1173847	2262584	10.0	20.0	40.0	80.0	160
sec-Butylbenzene	CBZ	Lin1F	+++++	+++++	10452	20651	107720	+++++	+++++	0.500	1.00	5.00
			205559	401798	726852	1399343	2726083	10.0	20.0	40.0	80.0	160
4-Isopropyltoluene	CBZ	Lin1F	+++++	+++++	8948	17036	87947	+++++	+++++	0.500	1.00	5.00
			171958	337259	601787	1155576	2269688	10.0	20.0	40.0	80.0	160
1,3-Dichlorobenzene LIN1F	CBZ	Lin1F	+++++	+++++	5220	10653	57366	+++++	+++++	0.500	1.00	5.00
			111803	220179	413393	802067	1555308	10.0	20.0	40.0	80.0	160
1,4-Dichlorobenzene	DCB	Ave	+++++	+++++	5293	10834	57276	+++++	+++++	0.500	1.00	5.00
			112568	224713	425467	821673	1584334	10.0	20.0	40.0	80.0	160
n-Butylbenzene	DCB	Ave	+++++	+++++	8015	15736	86052	+++++	+++++	0.500	1.00	5.00
			168830	339340	599420	1148848	2221084	10.0	20.0	40.0	80.0	160
1,2-Dichlorobenzene	DCB	Ave	+++++	+++++	4921	9825	50995	+++++	+++++	0.500	1.00	5.00
			99005	198645	376485	732212	1441199	10.0	20.0	40.0	80.0	160
1,2-Dibromo-3-Chloropropane	DCB	QuaF	+++++	+++++	636	1238	6601	+++++	+++++	0.500	1.00	5.00
			14694	29481	60916	126951	259760	10.0	20.0	40.0	80.0	160
Hexachlorobutadiene	DCB	Lin1F	+++++	1343	1890	3049	18369	+++++	0.300	0.500	1.00	5.00
			34580	69225	121158	240383	482607	10.0	20.0	40.0	80.0	160
1,2,4-Trichlorobenzene	DCB	Ave	+++++	+++++	3251	6576	33335	+++++	+++++	0.500	1.00	5.00
			68096	136762	253690	510911	1050857	10.0	20.0	40.0	80.0	160
Naphthalene	DCB	Ave	+++++	+++++	7836	16686	85993	+++++	+++++	0.500	1.00	5.00
			172092	349284	658765	1324138	2599922	10.0	20.0	40.0	80.0	160

Report Date: 19-May-2011 15:43:13 Chrom Revision: 1.2 17-May-2011 14:46:34

TestAmerica Laboratories
Target Compound Quantitation Report

Data File:	\\wessvr06\chromdata\AGILGCMS2.i\20110519-5598.b\V18201.D		
Lims ID:	STD05	Client ID:	
Inject. Date:	18-May-2011 19:18:30	Dil. Factor:	1.0000
Sample Type:	IC	Calib Level:	3
Sample ID:	STD05		
Misc. Info.:			
Operator:	TPH	Instrument ID:	Agilent#2 GC/MS
Vol. Injected:	1.0000	ALS Bottle#:	7
Lims Batch ID:	73830	Lims Sample ID:	5
Sublist:	chrom-WES2UNPR*sub20		
Detector 1 :	MS SCAN		
Detector 2 :	MS SIM		
Method:	\\wessvr06\chromdata\AGILGCMS2.i\20110519-5598.b\WES2UNPR.m		
Last Update:	19-May-2011 15:43:12	Calib Date:	18-May-2011 21:50:30
Quant Method:	Internal Standard	Quant By:	Initial Calibration
Last ICal File:	\\wessvr06\chromdata\AGILGCMS2.i\20110519-5598.b\V18208.D		
Limit Group:	VMS - 8260C VOA Calibration MCP		
Integrator:	RTE	ID Type:	RT Order ID
Process Host:	WESSEMIDTRDR		

First Level Reviewer: hartmannt Date: 19-May-2011 15:15:56

Compound	Det	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
1 Dichlorodifluoromethane	1	85	1.682	1.682	0.0	72	2802	0.4537	
2 Chloromethane	1	50	1.848	1.836	0.012	80	4579	0.5135	
4 Vinyl chloride	1	62	1.919	1.919	0.0	27	3331	0.5518	
3 Vinyl chloride (SIM)	2	62	1.929	1.929	0.0	0	3655	0	
5 Bromomethane	1	94	2.227	2.227	0.0	72	3000	0.9030	
6 Chloroethane	1	64	2.346	2.346	0.0	76	1321	0.4294	
7 Trichlorofluoromethane	1	101	2.476	2.476	0.0	74	3189	0.4370	
8 Dichlorofluoromethane	1	67	2.524	2.523	0.001	69	4646	0	
9 Ethyl ether	1	59	2.761	2.760	0.001	83	2929	0.5697	
10 Ethanol	1	45	2.879	2.879	0.0	88	5311	0	
11 1,2-Dichloro-1,1,2-trifluoroethane	1	117	2.962	2.962	0.0	45	2859	0	
12 1,1-Dichloroethene	1	96	2.974	2.974	0.0	90	3387	0.6555	
13 Carbon disulfide	1	76	3.021	3.021	0.0	53	6511	0.4666	
14 1,1,2-Trichloro-1,2,2-trifluoroethane	1	151	3.021	3.033	-0.012	1	1751	0.5530	
15 Acrolein	1	56	3.329	3.329	0.0	95	27205	0	
16 Isopropyl alcohol	1	45	3.495	3.495	0.0	89	17328	0	
17 Methylene Chloride	1	84	3.614	3.614	0.0	80	6452	1.04	
18 Acetone	1	43	3.661	3.661	0.0	93	19368	9.34	
20 trans-1,2-Dichloroethene	1	61	3.815	3.803	0.012	22	4258	0.4880	
19 Methyl acetate	1	43	3.815	3.815	0.0	97	33975	5.24	
21 Hexane	1	57	3.910	3.910	0.0	53	4219	0	
22 Methyl tert-butyl ether	1	73	3.934	3.934	0.0	49	4460	0.5072	
23 2-Methyl-2-propanol	1	59	4.029	4.029	0.0	34	7970	0	
24 Isopropyl ether	1	45	4.396	4.384	0.012	92	7958	0.5024	
25 1,1-Dichloroethane	1	63	4.538	4.538	0.0	47	6108	0.5393	
26 Acrylonitrile	1	53	4.598	4.586	0.012	80	1822	0	
27 Halothane	1	117	4.598	4.609	-0.011	22	1968	0.4510	
S 28 1,2-Dichloroethene, Total	1	1				0		1.00	
29 Tert-butyl ethyl ether	1	59	4.835	4.823	0.012	18	4176	0.6286	

$\frac{(6511)(20)}{(504954)(0.5)} = 0.5158$

Report Date: 19-May-2011 15:43:13 Chrom Revision: 1.2 17-May-2011 14:46:34
Data File: \\wessvr06\chromdata\AGILGCMS2.i\20110519-5598.b\V18201.D

Compound	Det	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
30 Vinyl acetate	1	43	4.835	4.834	0.001	97	54090	0	
31 cis-1,2-Dichloroethene	1	61	5.178	5.178	0.0	50	4469	0.5108	
32 2,2-Dichloropropane	1	77	5.320	5.320	0.0	66	3183	0.6115	
33 Chlorobromomethane	1	130	5.415	5.415	0.0	68	2544	0.5155	
34 Cyclohexane	1	56	5.439	5.427	0.012	77	4783	0.5696	
35 Chloroform	1	83	5.510	5.510	0.0	47	6871	0.5643	
36 Ethyl acetate	1	43	5.652	5.652	0.0	98	40008	0	
37 Carbon tetrachloride	1	117	5.688	5.676	0.012	8	2433	0.4284	
38 Tetrahydrofuran	1	42	5.688	5.688	0.0	77	15973	5.16	
39 sec-Butyl Alcohol	1	59	5.700	5.700	0.0	48	4034	0	
$ 40 Dibromofluoromethane	1	113	5.723	5.723	0.0	73	173891	20.3	
41 1,1,1-Trichloroethane	1	97	5.771	5.759	0.012	5	4093	0.5167	
42 2-Butanone (MEK)	1	43	5.877	5.866	0.011	97	17174	4.60	
43 1,1-Dichloropropene	1	75	5.913	5.913	0.0	73	4231	0.4975	
44 n-Heptane	1	43	6.186	6.185	0.001	75	3409	0	
45 Benzene	1	78	6.209	6.209	0.0	88	12485	0.5167	
46 Tert-amyl methyl ether	1	73	6.352	6.351	0.001	30	4637	0.7617	
* 47 1,2-Dichloroethane-d4 ISTD	1	102	6.363	6.363	0.0	0	40021	20.0	
48 1,2-Dichloroethane	1	62	6.446	6.446	0.0	1	4674	0.5336	
* 49 Fluorobenzene	1	96	6.707	6.707	0.0	99	504954	20.0	
50 Isopropyl acetate	1	43	6.766	6.766	0.0	83	48183	0	
51 2,4,4-Trimethyl-1-pentene	1	55	6.766	6.766	0.0	39	2007	0.8829	
52 Methylcyclohexane	1	83	6.921	6.921	0.0	70	3791	0.5108	
53 Trichloroethene	1	95	6.921	6.921	0.0	66	2829	0.5210	
54 2,4,4-Trimethyl-2-pentene	1	55	6.992	6.980	0.012	50	3143	0.5006	
55 Dibromomethane	1	93	7.454	7.442	0.012	75	1812	0.4854	
57 1,2-Dichloropropane	1	63	7.597	7.585	0.012	41	2659	0.5305	
S 56 1,3-Dichloropropene, Total	1	1				0		0.9661	
58 Dichlorobromomethane	1	83	7.680	7.680	0.0	52	2549	0.4062	
59 Methyl methacrylate	1	69	7.929	7.929	0.0	66	2160	0	
61 1,4-Dioxane	1	88		7.976					
60 1,4-Dioxane (SIM)	2	88	7.986	7.986	0.0	0	352	0	
62 n-Propyl acetate	1	43	8.154	8.154	0.0	98	34922	0	
63 2-Chloroethyl vinyl ether	1	63	8.593	8.593	0.0	85	13618	0	
64 cis-1,3-Dichloropropene	1	75	8.676	8.676	0.0	39	3644	0.4808	
$ 65 Toluene-d8 (Surr)	1	98	9.020	9.020	0.0	93	458073	19.5	
66 Toluene	1	92	9.115	9.114	0.001	66	5789	0.5108	
S 67 Xylenes, Total	1	1				0		1.53	
68 sec-Butyl acetate	1	43	9.506	9.518	-0.012	98	51008	0	
69 Tetrachloroethene	1	166	9.743	9.755	-0.012	22	2954	0.5448	
70 4-Methyl-2-pentanone (MIBK)	1	43	9.767	9.767	0.0	94	24388	4.58	
71 trans-1,3-Dichloropropene	1	75	9.802	9.802	0.0	50	3410	0.4853	
72 Isobutyl acetate	1	43	9.980	9.980	0.0	95	51235	0	
73 1,1,2-Trichloroethane	1	83	10.040	10.039	0.001	31	2081	0.5057	
74 Chlorodibromomethane	1	129	10.289	10.288	0.001	1	1421	0.2963	
75 1,3-Dichloropropane	1	76	10.419	10.419	0.0	70	3878	0.5058	
76 Ethylene Dibromide	1	107	10.585	10.585	0.0	53	2724	0.5018	
77 n-Butyl acetate	1	43	10.834	10.834	0.0	98	37582	0	
78 2-Hexanone	1	43	10.929	10.929	0.0	91	18825	4.61	
* 79 Chlorobenzene-d5	1	117	11.249	11.249	0.0	84	355690	20.0	
80 Chlorobenzene	1	112	11.273	11.273	0.0	40	7268	0.5290	
81 Ethylbenzene	1	91	11.320	11.320	0.0	7	10657	0.4976	

Report Date: 19-May-2011 15:43:13 Chrom Revision: 1.2 17-May-2011 14:46:34
Data File: \\wessvr06\chromdata\AGILGCMS2.i\20110519-5598.b\V18201.D

Compound	Det	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
82 1,1,1,2-Tetrachloroethane	1	131	11.356	11.356	0.0	25	1860	0.4680	
83 m-Xylene & p-Xylene	1	91	11.498	11.510	-0.012	0	16712	1.01	
84 o-Xylene	1	91	11.984	11.984	0.0	84	8736	0.5251	
85 Styrene	1	104	12.044	12.044	0.0	49	6996	0.5102	
86 Bromoform	1	173	12.056	12.055	0.001	1	843	0.3086	
87 Isopropylbenzene	1	105	12.340	12.340	0.0	80	10306	0.5182	
$ 89 4-Bromofluorobenzene	1	95	12.613	12.613	0.0	87	180823	20.8	
$ 88 BFB	1	95	12.613	12.613	0.0	87	180823	0	
90 Bromobenzene	1	77	12.720	12.720	0.0	72	4350	0.4910	
91 N-Propylbenzene	1	91	12.767	12.767	0.0	72	12275	0.5121	
92 1,1,2,2-Tetrachloroethane	1	83	12.838	12.838	0.0	56	3879	0.5163	
93 2-Chlorotoluene	1	91	12.909	12.909	0.0	83	7990	0.5401	
94 1,2,3-Trichloropropane	1	110	12.969	12.969	0.0	25	1144	0.5408	
95 1,3,5-Trimethylbenzene	1	105	12.969	12.969	0.0	66	8194	0.5244	
96 trans-1,4-Dichloro-2-butene	1	53	13.016	13.016	0.0	1	882	0	
97 4-Chlorotoluene	1	91	13.075	13.075	0.0	81	8304	0.5258	
98 tert-Butylbenzene	1	119	13.277	13.289	-0.012	78	7076	0.5974	
99 1,2,4-Trimethylbenzene	1	105	13.348	13.348	0.0	74	8426	0.5790	
100 sec-Butylbenzene	1	105	13.455	13.455	0.0	78	10452	0.5960	
101 4-Isopropyltoluene	1	119	13.597	13.597	0.0	83	8948	0.6142	
102 1,3-Dichlorobenzene	1	146	13.657	13.656	0.0	65	5220	0.5246	
* 103 1,4-Dichlorobenzene-d4	1	152	13.716	13.728	-0.012	95	186029	20.0	
104 1,4-Dichlorobenzene	1	146	13.740	13.739	0.001	37	5293	0.4802	
105 n-Butylbenzene	1	91	13.989	13.988	0.001	87	8015	0.4977	
106 1,2-Dichlorobenzene	1	146	14.131	14.131	0.0	82	4921	0.4978	
107 1,2-Dibromo-3-Chloropropane	1	157	14.842	14.842	0.0	25	636	0.4369	
108 1,3,5-Trichlorobenzene	1	180	14.878	14.878	0.0	81	3683	0	
109 Hexachlorobutadiene	1	225	15.412	15.412	0.0	56	1890	0.5628	
110 1,2,4-Trichlorobenzene	1	180	15.435	15.435	0.0	77	3251	0.4816	
111 Naphthalene	1	128	15.720	15.720	0.0	83	7836	0.4583	
112 1,2,3-Trichlorobenzene	1	180	15.898	15.898	0.0	75	3229	0.5182	

$$\frac{(5220)(20)}{355690} = 0.2935$$

Report Date: 19-May-2011 15:43:02 Chrom Revision: 1.2 17-May-2011 14:46:34

TestAmerica Laboratories
Target Compound Quantitation Report

Data File:	\\wessvr06\chromdata\AGILGCMS2.i\20110519-5598.b\V18202.D		
Lims ID:	STD1	Client ID:	
Inject. Date:	18-May-2011 19:40:30	Dil. Factor:	1.0000
Sample Type:	IC	Calib Level:	4
Sample ID:	STD1		
Misc. Info.:			
Operator:	TPH	Instrument ID:	Agilent#2 GC/MS
Vol. Injected:	1.0000	ALS Bottle#:	8
Lims Batch ID:	73830	Lims Sample ID:	6
Sublist:	chrom-WES2UNPR*sub20		
Detector 1 :	MS SCAN		
Detector 2 :	MS SIM		
Method:	\\wessvr06\chromdata\AGILGCMS2.i\20110519-5598.b\WES2UNPR.m		
Last Update:	19-May-2011 15:43:01	Calib Date:	18-May-2011 21:50:30
Quant Method:	Internal Standard	Quant By:	Initial Calibration
Last ICal File:	\\wessvr06\chromdata\AGILGCMS2.i\20110519-5598.b\V18208.D		
Limit Group:	VMS - 8260C VOA Calibration MCP		
Integrator:	RTE	ID Type:	RT Order ID
Process Host:	WESSEMIDTRDR		

First Level Reviewer: hartmannt Date: 19-May-2011 15:17:31

Compound	Det	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
1 Dichlorodifluoromethane	1	85	1.682	1.682	0.0	85	5140	0.8327	
2 Chloromethane	1	50	1.836	1.836	0.0	86	8738	0.9805	
4 Vinyl chloride	1	62	1.919	1.919	0.0	68	6109	1.01	
3 Vinyl chloride (SIM)	2	62	1.929	1.929	0.0	0	5559	0	
5 Bromomethane	1	94	2.227	2.227	0.0	90	3934	1.18	
6 Chloroethane	1	64	2.346	2.346	0.0	88	2983	0.9701	
7 Trichlorofluoromethane	1	101	2.476	2.476	0.0	83	6368	0.8731	
8 Dichlorofluoromethane	1	67	2.524	2.523	0.001	73	7895	0	
9 Ethyl ether	1	59	2.761	2.760	0.001	92	5144	1.00	
10 Ethanol	1	45	2.879	2.879	0.0	87	8262	0	
11 1,2-Dichloro-1,1,2-trifluoroethane	1	117	2.962	2.962	0.0	68	4789	0	
12 1,1-Dichloroethene	1	96	2.974	2.974	0.0	87	5959	1.15	
13 Carbon disulfide	1	76	3.021	3.021	0.0	50	12310	0.8827	$\frac{(12310)(20)}{(504701)(1)}$
14 1,1,2-Trichloro-1,2,2-trifluoroethane	1	151	3.033	3.033	0.0	1	2871	0.9072	
15 Acrolein	1	56	3.329	3.329	0.0	96	58108	0	
16 Isopropyl alcohol	1	45	3.495	3.495	0.0	98	30772	0	$= 0.4878$
17 Methylene Chloride	1	84	3.614	3.614	0.0	83	8849	1.43	
18 Acetone	1	43	3.661	3.661	0.0	95	28517	13.6	
20 trans-1,2-Dichloroethene	1	61	3.815	3.803	0.012	29	8498	0.9744	
19 Methyl acetate	1	43	3.815	3.815	0.0	98	65956	10.2	
21 Hexane	1	57	3.910	3.910	0.0	54	9509	0	
22 Methyl tert-butyl ether	1	73	3.934	3.934	0.0	51	8231	0.9365	
23 2-Methyl-2-propanol	1	59	4.029	4.029	0.0	53	17435	0	
24 Isopropyl ether	1	45	4.384	4.384	0.0	94	15729	0.99	
25 1,1-Dichloroethane	1	63	4.538	4.538	0.0	63	11323	1.00	
26 Acrylonitrile	1	53	4.586	4.586	0.0	81	3555	0	
27 Halothane	1	117	4.598	4.609	-0.011	55	4084	0.9364	
S 28 1,2-Dichloroethene, Total	1	1				0		1.97	
29 Tert-butyl ethyl ether	1	59	4.823	4.823	0.0	29	8057	1.21	

Report Date: 19-May-2011 15:43:02 Chrom Revision: 1.2 17-May-2011 14:46:34
Data File: \\wessvr06\chromdata\AGILGCMS2.i\20110519-5598.b\V18202.D

Compound	Det	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
30 Vinyl acetate	1	43	4.835	4.834	0.001	97	107843	0	
31 cis-1,2-Dichloroethene	1	61	5.178	5.178	0.0	60	8675	0.99	
32 2,2-Dichloropropane	1	77	5.320	5.320	0.0	70	5996	1.15	
33 Chlorobromomethane	1	130	5.415	5.415	0.0	76	4896	0.99	
34 Cyclohexane	1	56	5.439	5.427	0.012	81	8217	0.9790	
35 Chloroform	1	83	5.510	5.510	0.0	58	12552	1.03	
36 Ethyl acetate	1	43	5.652	5.652	0.0	99	79015	0	
37 Carbon tetrachloride	1	117	5.676	5.676	0.0	13	4518	0.7960	
38 Tetrahydrofuran	1	42	5.688	5.688	0.0	75	31799	10.3	
39 sec-Butyl Alcohol	1	59	5.700	5.700	0.0	64	9045	0	
$ 40 Dibromofluoromethane	1	113	5.723	5.723	0.0	72	174886	20.4	
41 1,1,1-Trichloroethane	1	97	5.759	5.759	0.0	1	7614	0.9617	
42 2-Butanone (MEK)	1	43	5.877	5.866	0.011	99	35529	9.39	
43 1,1-Dichloropropene	1	75	5.913	5.913	0.0	84	8060	0.9482	
44 n-Heptane	1	43	6.186	6.185	0.001	72	5673	0	
45 Benzene	1	78	6.209	6.209	0.0	94	24300	1.01	
46 Tert-amyl methyl ether	1	73	6.351	6.351	0.0	35	8390	1.38	
* 47 1,2-Dichloroethane-d4 ISTD	1	102	6.363	6.363	0.0	0	40529	20.0	
48 1,2-Dichloroethane	1	62	6.446	6.446	0.0	13	9043	1.03	
* 49 Fluorobenzene	1	96	6.707	6.707	0.0	99	504701	20.0	
50 Isopropyl acetate	1	43	6.766	6.766	0.0	95	93618	0	
51 2,4,4-Trimethyl-1-pentene	1	55	6.766	6.766	0.0	39	4194	1.85	
52 Methylcyclohexane	1	83	6.909	6.921	-0.012	72	6831	0.9210	
53 Trichloroethene	1	95	6.921	6.921	0.0	73	5394	0.99	
54 2,4,4-Trimethyl-2-pentene	1	55	6.980	6.980	0.0	49	5725	0.9131	
55 Dibromomethane	1	93	7.442	7.442	0.0	84	3756	1.01	
57 1,2-Dichloropropane	1	63	7.585	7.585	0.0	63	5053	1.01	
S 56 1,3-Dichloropropene, Total	1	1				0		1.82	
58 Dichlorobromomethane	1	83	7.680	7.680	0.0	65	5035	0.8027	
59 Methyl methacrylate	1	69	7.929	7.929	0.0	74	3899	0	
61 1,4-Dioxane	1	88		7.976					
60 1,4-Dioxane (SIM)	2	88	7.974	7.986	-0.012	0	864	0	
62 n-Propyl acetate	1	43	8.154	8.154	0.0	98	66896	0	
63 2-Chloroethyl vinyl ether	1	63	8.593	8.593	0.0	87	27883	0	
64 cis-1,3-Dichloropropene	1	75	8.676	8.676	0.0	43	7072	0.9335	
$ 65 Toluene-d8 (Surr)	1	98	9.020	9.020	0.0	93	469226	20.0	
66 Toluene	1	92	9.115	9.114	0.001	70	10795	0.9530	
S 67 Xylenes, Total	1	1				0		2.93	
68 sec-Butyl acetate	1	43	9.506	9.518	-0.012	98	97138	0	
69 Tetrachloroethene	1	166	9.755	9.755	0.0	23	5119	0.9446	
70 4-Methyl-2-pentanone (MIBK)	1	43	9.767	9.767	0.0	96	49919	9.26	
71 trans-1,3-Dichloropropene	1	75	9.802	9.802	0.0	43	6256	0.8908	
72 Isobutyl acetate	1	43	9.980	9.980	0.0	95	100427	0	
73 1,1,2-Trichloroethane	1	83	10.040	10.039	0.001	56	4032	0.9803	
74 Chlorodibromomethane	1	129	10.277	10.288	-0.011	39	2983	0.6223	
75 1,3-Dichloropropane	1	76	10.419	10.419	0.0	76	7478	0.9758	
76 Ethylene Dibromide	1	107	10.585	10.585	0.0	69	5047	0.9302	
77 n-Butyl acetate	1	43	10.834	10.834	0.0	98	75905	0	
78 2-Hexanone	1	43	10.929	10.929	0.0	90	39316	9.51	
* 79 Chlorobenzene-d5	1	117	11.249	11.249	0.0	84	359861	20.0	
80 Chlorobenzene	1	112	11.273	11.273	0.0	45	13880	1.00	
81 Ethylbenzene	1	91	11.320	11.320	0.0	8	20564	0.9490	

Report Date: 19-May-2011 15:43:02 Chrom Revision: 1.2 17-May-2011 14:46:34
Data File: \\wessvr06\chromdata\AGILGCMS2.i\20110519-5598.b\V18202.D

Compound	Det	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
82 1,1,1,2-Tetrachloroethane	1	131	11.356	11.356	0.0	46	3668	0.9123	
83 m-Xylene & p-Xylene	1	91	11.498	11.510	-0.012	0	32469	1.94	
84 o-Xylene	1	91	11.984	11.984	0.0	94	16613	0.9869	
85 Styrene	1	104	12.044	12.044	0.0	52	13683	0.9864	
86 Bromoform	1	173	12.056	12.055	0.001	3	1917	0.6950	
87 Isopropylbenzene	1	105	12.340	12.340	0.0	92	20034	1.00	
$ 89 4-Bromofluorobenzene	1	95	12.613	12.613	0.0	87	183174	20.8	
$ 88 BFB	1	95	12.613	12.613	0.0	87	183174	0	
90 Bromobenzene	1	77	12.720	12.720	0.0	72	9185	1.02	
91 N-Propylbenzene	1	91	12.767	12.767	0.0	73	23926	0.9865	
92 1,1,2,2-Tetrachloroethane	1	83	12.838	12.838	0.0	76	7500	0.99	
93 2-Chlorotoluene	1	91	12.909	12.909	0.0	90	15013	1.00	M
94 1,2,3-Trichloropropane	1	110	12.969	12.969	0.0	33	2081	0.9724	
95 1,3,5-Trimethylbenzene	1	105	12.969	12.969	0.0	70	16400	1.04	
96 trans-1,4-Dichloro-2-butene	1	53	13.016	13.016	0.0	1	1640	0	
97 4-Chlorotoluene	1	91	13.075	13.075	0.0	90	16050	1.00	
98 tert-Butylbenzene	1	119	13.277	13.289	-0.012	86	14066	1.17	
99 1,2,4-Trimethylbenzene	1	105	13.348	13.348	0.0	73	16739	1.14	
100 sec-Butylbenzene	1	105	13.455	13.455	0.0	87	20651	1.16	
101 4-Isopropyltoluene	1	119	13.597	13.597	0.0	93	17036	1.16	
102 1,3-Dichlorobenzene	1	146	13.657	13.656	0.0	78	10653	1.06	
* 103 1,4-Dichlorobenzene-d4	1	152	13.716	13.728	-0.012	95	187572	20.0	
104 1,4-Dichlorobenzene	1	146	13.740	13.739	0.001	43	10834	0.9749	
105 n-Butylbenzene	1	91	13.989	13.988	0.001	95	15736	0.9692	
106 1,2-Dichlorobenzene	1	146	14.131	14.131	0.0	91	9825	0.9858	
107 1,2-Dibromo-3-Chloropropane	1	157	14.842	14.842	0.0	55	1238	0.8427	
108 1,3,5-Trichlorobenzene	1	180	14.878	14.878	0.0	88	6773	0	
109 Hexachlorobutadiene	1	225	15.412	15.412	0.0	69	3049	0.9005	
110 1,2,4-Trichlorobenzene	1	180	15.435	15.435	0.0	90	6576	0.9662	
111 Naphthalene	1	128	15.720	15.720	0.0	95	16686	0.9679	
112 1,2,3-Trichlorobenzene	1	180	15.898	15.898	0.0	87	5964	0.9492	

QC Flag Legend

Review Flags
M - Manually Integrated

$\frac{(10653)(20)}{359861} = 0.5921$

Report Date: 19-May-2011 15:42:49 Chrom Revision: 1.2 17-May-2011 14:46:34

TestAmerica Laboratories
Target Compound Quantitation Report

Data File:	\\wessvr06\chromdata\AGILGCMS2.i\20110519-5598.b\V18203.D		
Lims ID:	STD5	Client ID:	
Inject. Date:	18-May-2011 20:02:30	Dil. Factor:	1.0000
Sample Type:	IC	Calib Level:	5
Sample ID:	STD5		
Misc. Info.:			
Operator:	TPH	Instrument ID:	Agilent#2 GC/MS
Vol. Injected:	1.0000	ALS Bottle#:	9
Lims Batch ID:	73830	Lims Sample ID:	7
Sublist:	chrom-WES2UNPR*sub20		
Detector 1 :	MS SCAN		
Detector 2 :	MS SIM		
Method:	\\wessvr06\chromdata\AGILGCMS2.i\20110519-5598.b\WES2UNPR.m		
Last Update:	19-May-2011 15:42:48	Calib Date:	18-May-2011 21:50:30
Quant Method:	Internal Standard	Quant By:	Initial Calibration
Last ICal File:	\\wessvr06\chromdata\AGILGCMS2.i\20110519-5598.b\V18208.D		
Limit Group:	VMS - 8260C VOA Calibration MCP		
Integrator:	RTE	ID Type:	RT Order ID
Process Host:	WESSEMIDTRDR		

First Level Reviewer: hartmannt Date: 19-May-2011 15:21:26

Compound	Det	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
1 Dichlorodifluoromethane	1	85	1.682	1.682	0.0	87	29809	4.86	
2 Chloromethane	1	50	1.836	1.836	0.0	89	44602	5.04	
4 Vinyl chloride	1	62	1.919	1.919	0.0	60	30641	5.11	
3 Vinyl chloride (SIM)	2	62	1.929	1.929	0.0	0	30793	0	
5 Bromomethane	1	94	2.227	2.227	0.0	90	20530	6.22	
6 Chloroethane	1	64	2.346	2.346	0.0	95	16485	5.40	
7 Trichlorofluoromethane	1	101	2.476	2.476	0.0	85	35226	4.86	
8 Dichlorofluoromethane	1	67	2.523	2.523	0.0	71	45182	0	
9 Ethyl ether	1	59	2.760	2.760	0.0	89	26780	5.25	
10 Ethanol	1	45	2.879	2.879	0.0	92	19167	0	
11 1,2-Dichloro-1,1,2-trifluoroethane	1	117	2.962	2.962	0.0	75	20385	0	
12 1,1-Dichloroethene	1	96	2.974	2.974	0.0	90	28795	5.61	
13 Carbon disulfide	1	76	3.021	3.021	0.0	97	75697	5.46 (75697)(20)	
14 1,1,2-Trichloro-1,2,2-trifluoroethane	1	151	3.021	3.033	-0.012	3	16485	5.24 (501286)(5)	
15 Acrolein	1	56	3.329	3.329	0.0	96	291008	0	
16 Isopropyl alcohol	1	45	3.483	3.495	-0.012	98	125119	0 0.6040	
17 Methylene Chloride	1	84	3.614	3.614	0.0	86	36233	5.88	
18 Acetone	1	43	3.661	3.661	0.0	100	103953	51.4	
20 trans-1,2-Dichloroethene	1	61	3.803	3.803	0.0	38	46605	5.38	
19 Methyl acetate	1	43	3.815	3.815	0.0	98	331292	51.5	
21 Hexane	1	57	3.910	3.910	0.0	58	49707	0	
22 Methyl tert-butyl ether	1	73	3.934	3.934	0.0	62	43816	5.02	
23 2-Methyl-2-propanol	1	59	4.029	4.029	0.0	48	83870	0	
24 Isopropyl ether	1	45	4.384	4.384	0.0	94	83221	5.29	
25 1,1-Dichloroethane	1	63	4.538	4.538	0.0	84	60001	5.34	
26 Acrylonitrile	1	53	4.586	4.586	0.0	94	15440	0	
27 Halothane	1	117	4.609	4.609	0.0	77	21249	4.91	
S 28 1,2-Dichloroethene, Total	1	1				0		10.7	
29 Tert-butyl ethyl ether	1	59	4.823	4.823	0.0	29	40104	6.08	

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Compound	Det	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
30 Vinyl acetate	1	43	4.834	4.834	0.0	97	562898	0	
31 cis-1,2-Dichloroethene	1	61	5.178	5.178	0.0	66	45974	5.29	
32 2,2-Dichloropropane	1	77	5.308	5.320	-0.012	84	32186	6.23	
33 Chlorobromomethane	1	130	5.415	5.415	0.0	78	26142	5.34	
34 Cyclohexane	1	56	5.427	5.427	0.0	86	42590	5.11	
35 Chloroform	1	83	5.510	5.510	0.0	64	63160	5.23	
36 Ethyl acetate	1	43	5.652	5.652	0.0	99	409579	0	
37 Carbon tetrachloride	1	117	5.676	5.676	0.0	23	26007	4.61	
38 Tetrahydrofuran	1	42	5.688	5.688	0.0	75	159212	51.8	
39 sec-Butyl Alcohol	1	59	5.700	5.700	0.0	85	46999	0	
$ 40 Dibromofluoromethane	1	113	5.723	5.723	0.0	75	171419	20.1	
41 1,1,1-Trichloroethane	1	97	5.759	5.759	0.0	32	42838	5.45	
42 2-Butanone (MEK)	1	43	5.866	5.866	0.0	100	180192	49.5	
43 1,1-Dichloropropene	1	75	5.913	5.913	0.0	96	45522	5.39	
44 n-Heptane	1	43	6.174	6.185	-0.011	91	36667	0	
45 Benzene	1	78	6.209	6.209	0.0	95	125757	5.24	
46 Tert-amyl methyl ether	1	73	6.351	6.351	0.0	49	38352	6.35	
* 47 1,2-Dichloroethane-d4 ISTD	1	102	6.363	6.363	0.0	0	39018	20.0	
48 1,2-Dichloroethane	1	62	6.446	6.446	0.0	55	45333	5.21	
* 49 Fluorobenzene	1	96	6.707	6.707	0.0	99	501286	20.0	
50 Isopropyl acetate	1	43	6.766	6.766	0.0	98	494056	0	
51 2,4,4-Trimethyl-1-pentene	1	55	6.766	6.766	0.0	43	15507	6.94	
52 Methylcyclohexane	1	83	6.921	6.921	0.0	79	39637	5.38	
53 Trichloroethene	1	95	6.921	6.921	0.0	85	28538	5.29	
54 2,4,4-Trimethyl-2-pentene	1	55	6.980	6.980	0.0	62	31708	5.14	
55 Dibromomethane	1	93	7.442	7.442	0.0	88	19320	5.21	
57 1,2-Dichloropropane	1	63	7.585	7.585	0.0	82	25402	5.10	
S 56 1,3-Dichloropropene, Total	1	1				0		10.2	
58 Dichlorobromomethane	1	83	7.679	7.680	-0.001	80	28737	4.61	
59 Methyl methacrylate	1	69	7.929	7.929	0.0	87	19509	0	
61 1,4-Dioxane	1	88	7.964	7.976	-0.012	34	2869	36.9	
60 1,4-Dioxane (SIM)	2	88	7.974	7.986	-0.012	0	4063	0	M
62 n-Propyl acetate	1	43	8.154	8.154	0.0	98	362870	0	
63 2-Chloroethyl vinyl ether	1	63	8.593	8.593	0.0	90	140534	0	
64 cis-1,3-Dichloropropene	1	75	8.676	8.676	0.0	56	38540	5.12	
$ 65 Toluene-d8 (Surr)	1	98	9.020	9.020	0.0	93	459515	19.7	
66 Toluene	1	92	9.114	9.114	0.0	79	58600	5.21	
S 67 Xylenes, Total	1	1				0		15.9	
68 sec-Butyl acetate	1	43	9.506	9.518	-0.012	99	522905	0	
69 Tetrachloroethene	1	166	9.755	9.755	0.0	32	28290	5.26	
70 4-Methyl-2-pentanone (MIBK)	1	43	9.767	9.767	0.0	95	249068	48.0	
71 trans-1,3-Dichloropropene	1	75	9.802	9.802	0.0	80	35732	5.12	
72 Isobutyl acetate	1	43	9.980	9.980	0.0	96	550937	0	
73 1,1,2-Trichloroethane	1	83	10.039	10.039	0.0	69	21366	5.23	
74 Chlorodibromomethane	1	129	10.277	10.288	-0.011	83	18125	3.81	
75 1,3-Dichloropropane	1	76	10.419	10.419	0.0	88	38609	5.07	
76 Ethylene Dibromide	1	107	10.585	10.585	0.0	97	27853	5.17	
77 n-Butyl acetate	1	43	10.834	10.834	0.0	98	415714	0	
78 2-Hexanone	1	43	10.929	10.929	0.0	90	196946	49.5	
* 79 Chlorobenzene-d5	1	117	11.249	11.249	0.0	84	353320	20.0	
80 Chlorobenzene	1	112	11.273	11.273	0.0	84	72139	5.29	
81 Ethylbenzene	1	91	11.320	11.320	0.0	35	113320	5.33	

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Compound	Det	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
82 1,1,1,2-Tetrachloroethane	1	131	11.356	11.356	0.0	77	19249	4.88	
83 m-Xylene & p-Xylene	1	91	11.498	11.510	-0.012	0	174236	10.6	
84 o-Xylene	1	91	11.984	11.984	0.0	97	87027	5.27	
85 Styrene	1	104	12.044	12.044	0.0	63	70376	5.17	
86 Bromoform	1	173	12.055	12.055	0.0	20	10984	3.93	
87 Isopropylbenzene	1	105	12.340	12.340	0.0	95	104665	5.30	
$ 89 4-Bromofluorobenzene	1	95	12.613	12.613	0.0	87	177626	20.5	
$ 88 BFB	1	95	12.613	12.613	0.0	87	177626	0	
90 Bromobenzene	1	77	12.720	12.720	0.0	86	46067	5.23	
91 N-Propylbenzene	1	91	12.767	12.767	0.0	77	128428	5.39	
92 1,1,2,2-Tetrachloroethane	1	83	12.838	12.838	0.0	81	37542	4.94	
93 2-Chlorotoluene	1	91	12.909	12.909	0.0	92	80811	5.50	
94 1,2,3-Trichloropropane	1	110	12.969	12.969	0.0	39	11330	5.39	
95 1,3,5-Trimethylbenzene	1	105	12.969	12.969	0.0	72	84143	5.42	
96 trans-1,4-Dichloro-2-butene	1	53	13.016	13.016	0.0	1	9126	0	
97 4-Chlorotoluene	1	91	13.075	13.075	0.0	93	84894	5.41	
98 tert-Butylbenzene	1	119	13.277	13.289	-0.012	91	69729	5.93	
99 1,2,4-Trimethylbenzene	1	105	13.348	13.348	0.0	77	86442	5.97	
100 sec-Butylbenzene	1	105	13.455	13.455	0.0	94	107720	6.18	
101 4-Isopropyltoluene	1	119	13.597	13.597	0.0	95	87947	6.08	
102 1,3-Dichlorobenzene	1	146	13.656	13.656	0.0	88	57366	5.80	
* 103 1,4-Dichlorobenzene-d4	1	152	13.728	13.728	0.0	91	188085	20.0	
104 1,4-Dichlorobenzene	1	146	13.739	13.739	0.0	76	57276	5.14	
105 n-Butylbenzene	1	91	13.988	13.988	0.0	96	86052	5.29	
106 1,2-Dichlorobenzene	1	146	14.131	14.131	0.0	98	50995	5.10	
107 1,2-Dibromo-3-Chloropropane	1	157	14.842	14.842	0.0	76	6601	4.45	
108 1,3,5-Trichlorobenzene	1	180	14.878	14.878	0.0	96	37157	0	
109 Hexachlorobutadiene	1	225	15.412	15.412	0.0	83	18369	5.41	
110 1,2,4-Trichlorobenzene	1	180	15.435	15.435	0.0	93	33335	4.88	
111 Naphthalene	1	128	15.720	15.720	0.0	96	85993	4.97	
112 1,2,3-Trichlorobenzene	1	180	15.898	15.898	0.0	93	31071	4.93	

QC Flag Legend

Review Flags
M - Manually Integrated

$\frac{(57366)(20)}{35332} = 3.247$

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TestAmerica Laboratories
Target Compound Quantitation Report

Data File:	\\wessvr06\chromdata\AGILGCMS2.i\20110519-5598.b\V18204.D		
Lims ID:	STD10	Client ID:	
Inject. Date:	18-May-2011 20:23:30	Dil. Factor:	1.0000
Sample Type:	IC	Calib Level:	6
Sample ID:	STD10		
Misc. Info.:			
Operator:	TPH	Instrument ID:	Agilent#2 GC/MS
Vol. Injected:	1.0000	ALS Bottle#:	10
Lims Batch ID:	73830	Lims Sample ID:	8
Sublist:	chrom-WES2UNPR*sub20		
Detector 1 :	MS SCAN		
Detector 2 :	MS SIM		
Method:	\\wessvr06\chromdata\AGILGCMS2.i\20110519-5598.b\WES2UNPR.m		
Last Update:	19-May-2011 15:42:36	Calib Date:	18-May-2011 21:50:30
Quant Method:	Internal Standard	Quant By:	Initial Calibration
Last ICal File:	\\wessvr06\chromdata\AGILGCMS2.i\20110519-5598.b\V18208.D		
Limit Group:	VMS - 8260C VOA Calibration MCP		
Integrator:	RTE	ID Type:	RT Order ID
Process Host:	WESSEMIDTRDR		

First Level Reviewer: hartmannt Date: 19-May-2011 15:24:00

Compound	Det	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
1 Dichlorodifluoromethane	1	85	1.682	1.682	0.0	85	58596	9.26	
2 Chloromethane	1	50	1.836	1.836	0.0	88	87755	9.61	
4 Vinyl chloride	1	62	1.919	1.919	0.0	73	59666	9.65	
3 Vinyl chloride (SIM)	2	62	1.929	1.929	0.0	0	60211	0	
5 Bromomethane	1	94	2.227	2.227	0.0	90	36579	10.8	
6 Chloroethane	1	64	2.346	2.346	0.0	95	31666	10.1	
7 Trichlorofluoromethane	1	101	2.476	2.476	0.0	86	70155	9.39	
8 Dichlorofluoromethane	1	67	2.523	2.523	0.0	75	83720	0	
9 Ethyl ether	1	59	2.760	2.760	0.0	89	51511	9.78	
10 Ethanol	1	45	2.879	2.879	0.0	93	40620	0	
11 1,2-Dichloro-1,1,2-trifluoroethane	1	117	2.962	2.962	0.0	80	44584	0	
12 1,1-Dichloroethene	1	96	2.974	2.974	0.0	90	52947	10.0	
13 Carbon disulfide	1	76	3.021	3.021	0.0	97	143512	10.0 (143512)(20)	
14 1,1,2-Trichloro-1,2,2-trifluoroethane	1	151	3.021	3.021	0.0	3	30792	9.50 (517096)(10)	
15 Acrolein	1	56	3.329	3.329	0.0	96	608224	0	
16 Isopropyl alcohol	1	45	3.483	3.483	0.0	98	250742	0 0.5551	
17 Methylene Chloride	1	84	3.614	3.614	0.0	85	66830	10.5	
18 Acetone	1	43	3.661	3.661	0.0	100	206571	98.5	
20 trans-1,2-Dichloroethene	1	61	3.803	3.803	0.0	37	89977	10.1	
19 Methyl acetate	1	43	3.815	3.815	0.0	97	648619	97.7	
21 Hexane	1	57	3.910	3.910	0.0	58	95845	0	
22 Methyl tert-butyl ether	1	73	3.934	3.934	0.0	61	82938	9.21	
23 2-Methyl-2-propanol	1	59	4.017	4.017	0.0	12	171824	0	
24 Isopropyl ether	1	45	4.384	4.384	0.0	94	158283	9.76	
25 1,1-Dichloroethane	1	63	4.538	4.538	0.0	84	113911	9.82	
26 Acrylonitrile	1	53	4.585	4.585	0.0	96	29338	0	
27 Halothane	1	117	4.597	4.597	0.0	84	42932	9.61	
S 28 1,2-Dichloroethene, Total	1	1				0		20.1	
29 Tert-butyl ethyl ether	1	59	4.822	4.822	0.0	28	73539	10.8	

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Compound	Det	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
30 Vinyl acetate	1	43	4.834	4.834	0.0	97	1177549	0	
31 cis-1,2-Dichloroethene	1	61	5.178	5.178	0.0	68	89904	10.0	
32 2,2-Dichloropropane	1	77	5.308	5.308	0.0	62	61261	11.5	
33 Chlorobromomethane	1	130	5.415	5.415	0.0	79	50146	9.92	
34 Cyclohexane	1	56	5.427	5.427	0.0	86	83630	9.73	
35 Chloroform	1	83	5.510	5.510	0.0	64	121620	9.75	
36 Ethyl acetate	1	43	5.652	5.652	0.0	99	810030	0	
37 Carbon tetrachloride	1	117	5.676	5.676	0.0	24	50278	8.65	
38 Tetrahydrofuran	1	42	5.688	5.688	0.0	76	312475	98.6	
39 sec-Butyl Alcohol	1	59	5.699	5.699	0.0	87	89751	0	
$ 40 Dibromofluoromethane	1	113	5.723	5.723	0.0	74	176420	20.1	
41 1,1,1-Trichloroethane	1	97	5.759	5.759	0.0	32	81456	10.0	
42 2-Butanone (MEK)	1	43	5.865	5.865	0.0	100	374847	99.2	
43 1,1-Dichloropropene	1	75	5.913	5.913	0.0	97	86472	9.93	
44 n-Heptane	1	43	6.185	6.185	0.0	84	75097	0	
45 Benzene	1	78	6.209	6.209	0.0	95	242530	9.80	
46 Tert-amyl methyl ether	1	73	6.351	6.351	0.0	64	71717	11.5	
* 47 1,2-Dichloroethane-d4 ISTD	1	102	6.363	6.363	0.0	0	40495	20.0	
48 1,2-Dichloroethane	1	62	6.446	6.446	0.0	57	88166	9.83	
* 49 Fluorobenzene	1	96	6.707	6.707	0.0	99	517096	20.0	
50 Isopropyl acetate	1	43	6.766	6.766	0.0	99	981304	0	
51 2,4,4-Trimethyl-1-pentene	1	55	6.766	6.766	0.0	40	28398	12.4	
52 Methylcyclohexane	1	83	6.920	6.920	0.0	79	78325	10.3	
53 Trichloroethene	1	95	6.920	6.920	0.0	83	54725	9.84	
54 2,4,4-Trimethyl-2-pentene	1	55	6.980	6.980	0.0	61	63868	10.2	
55 Dibromomethane	1	93	7.442	7.442	0.0	90	37998	9.94	
57 1,2-Dichloropropane	1	63	7.584	7.584	0.0	81	49340	9.61	
S 56 1,3-Dichloropropene, Total	1	1				0		19.8	
58 Dichlorobromomethane	1	83	7.679	7.679	0.0	79	57794	8.99	
59 Methyl methacrylate	1	69	7.928	7.928	0.0	88	39103	0	
61 1,4-Dioxane	1	88	7.964	7.964	0.0	54	6651	85.2	
60 1,4-Dioxane (SIM)	2	88	7.974	7.974	0.0	0	7727	0	M
62 n-Propyl acetate	1	43	8.154	8.154	0.0	98	718778	0	
63 2-Chloroethyl vinyl ether	1	63	8.593	8.593	0.0	90	293266	0	
64 cis-1,3-Dichloropropene	1	75	8.676	8.676	0.0	56	76107	9.81	
$ 65 Toluene-d8 (Surr)	1	98	9.019	9.019	0.0	93	479722	20.0	
66 Toluene	1	92	9.114	9.114	0.0	84	115889	9.99	
S 67 Xylenes, Total	1	1				0		29.7	
68 sec-Butyl acetate	1	43	9.506	9.506	0.0	99	1031674	0	
69 Tetrachloroethene	1	166	9.743	9.743	0.0	38	54475	9.81	
70 4-Methyl-2-pentanone (MIBK)	1	43	9.767	9.767	0.0	95	525069	97.5	
71 trans-1,3-Dichloropropene	1	75	9.802	9.802	0.0	79	71654	9.96	
72 Isobutyl acetate	1	43	9.980	9.980	0.0	96	1074361	0	
73 1,1,2-Trichloroethane	1	83	10.039	10.039	0.0	85	41963	9.96	
74 Chlorodibromomethane	1	129	10.276	10.276	0.0	86	38602	7.86	
75 1,3-Dichloropropane	1	76	10.419	10.419	0.0	89	76581	9.75	
76 Ethylene Dibromide	1	107	10.585	10.585	0.0	98	55164	9.92	
77 n-Butyl acetate	1	43	10.834	10.834	0.0	99	816855	0	
78 2-Hexanone	1	43	10.929	10.929	0.0	91	410520	99.4	
* 79 Chlorobenzene-d5	1	117	11.249	11.249	0.0	84	368955	20.0	
80 Chlorobenzene	1	112	11.273	11.273	0.0	95	137588	9.65	
81 Ethylbenzene	1	91	11.320	11.320	0.0	48	221393	9.97	

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Compound	Det	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
82 1,1,1,2-Tetrachloroethane	1	131	11.356	11.356	0.0	83	39761	9.65	
83 m-Xylene & p-Xylene	1	91	11.498	11.498	0.0	0	339484	19.8	
84 o-Xylene	1	91	11.984	11.984	0.0	97	171489	9.94	
85 Styrene	1	104	12.043	12.043	0.0	63	139791	9.83	
86 Bromoform	1	173	12.055	12.055	0.0	24	24444	8.58	
87 Isopropylbenzene	1	105	12.340	12.340	0.0	95	205670	9.97	
$ 89 4-Bromofluorobenzene	1	95	12.613	12.613	0.0	86	182512	20.2	
$ 88 BFB	1	95	12.613	12.613	0.0	86	182512	0	
90 Bromobenzene	1	77	12.719	12.719	0.0	87	91590	9.97	
91 N-Propylbenzene	1	91	12.767	12.767	0.0	78	256886	10.3	
92 1,1,2,2-Tetrachloroethane	1	83	12.838	12.838	0.0	81	75114	9.85	
93 2-Chlorotoluene	1	91	12.909	12.909	0.0	93	156868	10.2	
94 1,2,3-Trichloropropane	1	110	12.968	12.968	0.0	39	21881	9.97	
95 1,3,5-Trimethylbenzene	1	105	12.968	12.968	0.0	71	164715	10.2	
96 trans-1,4-Dichloro-2-butene	1	53	13.016	13.016	0.0	1	17099	0	
97 4-Chlorotoluene	1	91	13.075	13.075	0.0	93	166217	10.1	
98 tert-Butylbenzene	1	119	13.277	13.277	0.0	92	135979	11.1	
99 1,2,4-Trimethylbenzene	1	105	13.348	13.348	0.0	77	164810	10.9	
100 sec-Butylbenzene	1	105	13.455	13.455	0.0	94	205559	11.3	
101 4-Isopropyltoluene	1	119	13.597	13.597	0.0	96	171958	11.4	
102 1,3-Dichlorobenzene	1	146	13.656	13.656	0.0	89	111803	10.8	
* 103 1,4-Dichlorobenzene-d4	1	152	13.727	13.727	0.0	91	188757	20.0	
104 1,4-Dichlorobenzene	1	146	13.739	13.739	0.0	89	112568	10.1	
105 n-Butylbenzene	1	91	13.988	13.988	0.0	97	168830	10.3	
106 1,2-Dichlorobenzene	1	146	14.131	14.131	0.0	98	99005	9.87	
107 1,2-Dibromo-3-Chloropropane	1	157	14.842	14.842	0.0	83	14694	9.78	
108 1,3,5-Trichlorobenzene	1	180	14.878	14.878	0.0	97	67057	0	
109 Hexachlorobutadiene	1	225	15.411	15.411	0.0	84	34580	10.1	
110 1,2,4-Trichlorobenzene	1	180	15.435	15.435	0.0	93	68096	9.94	
111 Naphthalene	1	128	15.720	15.720	0.0	97	172092	9.92	
112 1,2,3-Trichlorobenzene	1	180	15.898	15.898	0.0	94	62156	9.83	

QC Flag Legend

Review Flags
M - Manually Integrated

$$\frac{(111803)(20)}{368955} = 6.061$$

Report Date: 19-May-2011 15:45:06 Chrom Revision: 1.2 17-May-2011 14:46:34

TestAmerica Laboratories
Target Compound Quantitation Report

Data File:	\\wessvr06\chromdata\AGILGCMS2.i\20110519-5598.b\V18205.D		
Lims ID:	STD20	Client ID:	
Inject. Date:	18-May-2011 20:45:30	Dil. Factor:	1.0000
Sample Type:	ICIS	Calib Level:	7
Sample ID:	STD20		
Misc. Info.:			
Operator:	TPH	Instrument ID:	Agilent#2 GC/MS
Vol. Injected:	1.0000	ALS Bottle#:	11
Lims Batch ID:	73830	Lims Sample ID:	9
Sublist:	chrom-WES2UNPR*sub20		
Detector 1 :	MS SCAN		
Detector 2 :	MS SIM		
Method:	\\wessvr06\chromdata\AGILGCMS2.i\20110519-5598.b\WES2UNPR.m		
Last Update:	19-May-2011 15:45:05	Calib Date:	18-May-2011 21:50:30
Quant Method:	Internal Standard	Quant By:	Initial Calibration
Last ICal File:	\\wessvr06\chromdata\AGILGCMS2.i\20110519-5598.b\V18208.D		
Limit Group:	VMS - 8260C VOA Calibration MCP		
Integrator:	RTE	ID Type:	RT Order ID
Process Host:	WESSEMIDTRDR		

First Level Reviewer: hartmannt Date: 19-May-2011 15:37:53

Compound	Det	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
1 Dichlorodifluoromethane	1	85	1.682	1.682	0.0	86	131668	21.2	
2 Chloromethane	1	50	1.836	1.836	0.0	89	183774	20.5	
4 Vinyl chloride	1	62	1.919	1.919	0.0	68	128346	21.1	
3 Vinyl chloride (SIM)	2	62	1.929	1.929	0.0	0	131857	0	
5 Bromomethane	1	94	2.227	2.227	0.0	90	79588	23.8	
6 Chloroethane	1	64	2.346	2.346	0.0	95	68539	22.1	
7 Trichlorofluoromethane	1	101	2.476	2.476	0.0	85	159564	21.7	
8 Dichlorofluoromethane	1	67	2.523	2.523	0.0	75	176453	0	
9 Ethyl ether	1	59	2.760	2.760	0.0	89	101694	19.6	
10 Ethanol	1	45	2.879	2.879	0.0	93	78460	0	
11 1,2-Dichloro-1,1,2-trifluoroethane	1	117	2.962	2.962	0.0	76	93278	0	
12 1,1-Dichloroethene	1	96	2.974	2.974	0.0	90	112095	21.5	
13 Carbon disulfide	1	76	3.021	3.021	0.0	98	301095	21.4 (301095)(20)	
14 1,1,2-Trichloro-1,2,2-trifluoroethane	1	151	3.033	3.033	0.0	40	61891	19.4	
15 Acrolein	1	56	3.329	3.329	0.0	98	1175218	0 (588704)(20)	
16 Isopropyl alcohol	1	45	3.495	3.495	0.0	98	456289	0	
17 Methylene Chloride	1	84	3.614	3.614	0.0	85	131853	21.1 0.5919	
18 Acetone	1	43	3.661	3.661	0.0	100	379929	187.8	
20 trans-1,2-Dichloroethene	1	61	3.803	3.803	0.0	39	181759	20.7	
19 Methyl acetate	1	43	3.815	3.815	0.0	97	1157049	177.1	
21 Hexane	1	57	3.910	3.910	0.0	58	196171	0	
22 Methyl tert-butyl ether	1	73	3.934	3.934	0.0	61	178330	20.1	
23 2-Methyl-2-propanol	1	59	4.029	4.029	0.0	12	349085	0	
24 Isopropyl ether	1	45	4.384	4.384	0.0	94	327033	20.5	
25 1,1-Dichloroethane	1	63	4.538	4.538	0.0	84	229015	20.1	
26 Acrylonitrile	1	53	4.586	4.586	0.0	95	58480	0	
27 Halothane	1	117	4.609	4.609	0.0	85	94632	21.5	
S 28 1,2-Dichloroethene, Total	1	1				0		41.0	
29 Tert-butyl ethyl ether	1	59	4.823	4.823	0.0	29	154592	23.1	

Report Date: 19-May-2011 15:45:06 Chrom Revision: 1.2 17-May-2011 14:46:34
Data File: \\wessvr06\chromdata\AGILGCMS2.i\20110519-5598.b\V18205.D

Compound	Det	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
30 Vinyl acetate	1	43	4.834	4.834	0.0	97	2382294	0	
31 cis-1,2-Dichloroethene	1	61	5.178	5.178	0.0	68	178908	20.3	
32 2,2-Dichloropropane	1	77	5.320	5.320	0.0	87	120390	23.0	
33 Chlorobromomethane	1	130	5.415	5.415	0.0	77	97523	19.6	
34 Cyclohexane	1	56	5.427	5.427	0.0	82	165831	19.6	
35 Chloroform	1	83	5.510	5.510	0.0	64	239111	19.5	
36 Ethyl acetate	1	43	5.652	5.652	0.0	99	1605149	0	
37 Carbon tetrachloride	1	117	5.676	5.676	0.0	24	112741	19.7	
38 Tetrahydrofuran	1	42	5.688	5.688	0.0	75	611468	196.2	
39 sec-Butyl Alcohol	1	59	5.700	5.700	0.0	85	185589	0	
$ 40 Dibromofluoromethane	1	113	5.723	5.723	0.0	71	174062	20.1	
41 1,1,1-Trichloroethane	1	97	5.759	5.759	0.0	34	167022	20.9	
42 2-Butanone (MEK)	1	43	5.866	5.866	0.0	100	752101	206.3	
43 1,1-Dichloropropene	1	75	5.913	5.913	0.0	96	179723	21.0	
44 n-Heptane	1	43	6.185	6.185	0.0	86	155954	0	
45 Benzene	1	78	6.209	6.209	0.0	95	488607	20.1	
46 Tert-amyl methyl ether	1	73	6.351	6.351	0.0	96	150202	24.5	
* 47 1,2-Dichloroethane-d4 ISTD	1	102	6.363	6.363	0.0	0	39049	20.0	
48 1,2-Dichloroethane	1	62	6.446	6.446	0.0	75	173905	19.7	
* 49 Fluorobenzene	1	96	6.707	6.707	0.0	99	508704	20.0	
50 Isopropyl acetate	1	43	6.766	6.766	0.0	99	1949609	0	
51 2,4,4-Trimethyl-1-pentene	1	55	6.766	6.766	0.0	41	54498	24.7	
52 Methylcyclohexane	1	83	6.921	6.921	0.0	80	157265	21.0	
53 Trichloroethene	1	95	6.921	6.921	0.0	83	110475	20.2	
54 2,4,4-Trimethyl-2-pentene	1	55	6.980	6.980	0.0	63	128592	21.3	
55 Dibromomethane	1	93	7.442	7.442	0.0	91	76045	20.2	
57 1,2-Dichloropropane	1	63	7.585	7.585	0.0	86	100418	19.9	
S 56 1,3-Dichloropropene, Total	1	1				0		40.5	
58 Dichlorobromomethane	1	83	7.680	7.680	0.0	80	118855	18.8	
59 Methyl methacrylate	1	69	7.929	7.929	0.0	89	79091	0	
61 1,4-Dioxane	1	88	7.976	7.976	0.0	71	13681	177.6	
60 1,4-Dioxane (SIM)	2	88	7.986	7.986	0.0	0	14367	0	
62 n-Propyl acetate	1	43	8.154	8.154	0.0	98	1472168	0	
63 2-Chloroethyl vinyl ether	1	63	8.593	8.593	0.0	90	637582	0	
64 cis-1,3-Dichloropropene	1	75	8.676	8.676	0.0	56	153779	20.1	
$ 65 Toluene-d8 (Surr)	1	98	9.020	9.020	0.0	93	478060	20.2	
66 Toluene	1	92	9.114	9.114	0.0	93	235698	20.6	
S 67 Xylenes, Total	1	1				0		60.5	
68 sec-Butyl acetate	1	43	9.518	9.518	0.0	98	2113359	0	
69 Tetrachloroethene	1	166	9.755	9.755	0.0	33	113614	20.8	
70 4-Methyl-2-pentanone (MIBK)	1	43	9.767	9.767	0.0	95	1110927	214.0	
71 trans-1,3-Dichloropropene	1	75	9.802	9.802	0.0	82	144108	20.4	
72 Isobutyl acetate	1	43	9.980	9.980	0.0	96	2168308	0	
73 1,1,2-Trichloroethane	1	83	10.039	10.039	0.0	85	83718	20.2	
74 Chlorodibromomethane	1	129	10.288	10.288	0.0	87	81189	16.8	
75 1,3-Dichloropropane	1	76	10.419	10.419	0.0	89	155503	20.1	
76 Ethylene Dibromide	1	107	10.585	10.585	0.0	98	112104	20.5	
77 n-Butyl acetate	1	43	10.834	10.834	0.0	98	1678180	0	
78 2-Hexanone	1	43	10.929	10.929	0.0	90	848313	212.9	
* 79 Chlorobenzene-d5	1	117	11.249	11.249	0.0	84	363840	20.0	
80 Chlorobenzene	1	112	11.273	11.273	0.0	95	281338	20.0	
81 Ethylbenzene	1	91	11.320	11.320	0.0	63	449636	20.5	

Report Date: 19-May-2011 15:45:06 Chrom Revision: 1.2 17-May-2011 14:46:34
Data File: \\wessvr06\chromdata\AGILGCMS2.i\20110519-5598.b\V18205.D

Compound	Det	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
82 1,1,1,2-Tetrachloroethane	1	131	11.356	11.356	0.0	86	81880	20.1	
83 m-Xylene & p-Xylene	1	91	11.510	11.510	0.0	0	688778	40.7	
84 o-Xylene	1	91	11.984	11.984	0.0	97	337991	19.9	
85 Styrene	1	104	12.044	12.044	0.0	74	283223	20.2	
86 Bromoform	1	173	12.055	12.055	0.0	25	51900	17.9	
87 Isopropylbenzene	1	105	12.340	12.340	0.0	95	411686	20.2	
$ 89 4-Bromofluorobenzene	1	95	12.613	12.613	0.0	86	179459	20.1	
$ 88 BFB	1	95	12.613	12.613	0.0	86	179459	0	
90 Bromobenzene	1	77	12.720	12.720	0.0	87	186524	20.6	
91 N-Propylbenzene	1	91	12.767	12.767	0.0	78	510143	20.8	
92 1,1,2,2-Tetrachloroethane	1	83	12.838	12.838	0.0	81	148308	19.7	
93 2-Chlorotoluene	1	91	12.909	12.909	0.0	93	299376	19.8	
94 1,2,3-Trichloropropane	1	110	12.969	12.969	0.0	40	43572	20.1	
95 1,3,5-Trimethylbenzene	1	105	12.969	12.969	0.0	71	324432	20.3	
96 trans-1,4-Dichloro-2-butene	1	53	13.016	13.016	0.0	1	33362	0	
97 4-Chlorotoluene	1	91	13.075	13.075	0.0	93	324787	20.1	
98 tert-Butylbenzene	1	119	13.289	13.289	0.0	91	268211	22.1	
99 1,2,4-Trimethylbenzene	1	105	13.348	13.348	0.0	76	333073	22.4	
100 sec-Butylbenzene	1	105	13.455	13.455	0.0	94	401798	22.4	
101 4-Isopropyltoluene	1	119	13.597	13.597	0.0	96	337259	22.6	
102 1,3-Dichlorobenzene	1	146	13.656	13.656	0.0	89	220179	21.6	
* 103 1,4-Dichlorobenzene-d4	1	152	13.728	13.728	0.0	91	186325	20.0	
104 1,4-Dichlorobenzene	1	146	13.739	13.739	0.0	93	224713	20.4	
105 n-Butylbenzene	1	91	13.988	13.988	0.0	97	339340	21.0	
106 1,2-Dichlorobenzene	1	146	14.131	14.131	0.0	98	198645	20.1	
107 1,2-Dibromo-3-Chloropropane	1	157	14.842	14.842	0.0	84	29481	19.5	
108 1,3,5-Trichlorobenzene	1	180	14.878	14.878	0.0	96	139462	0	
109 Hexachlorobutadiene	1	225	15.412	15.412	0.0	83	69225	20.6	
110 1,2,4-Trichlorobenzene	1	180	15.435	15.435	0.0	93	136762	20.2	
111 Naphthalene	1	128	15.720	15.720	0.0	97	349284	20.4	
112 1,2,3-Trichlorobenzene	1	180	15.898	15.898	0.0	94	123844	19.8	

$$\frac{(220179)(20)}{363840} = 12.103$$

Report Date: 19-May-2011 15:42:23 Chrom Revision: 1.2 17-May-2011 14:46:34

TestAmerica Laboratories
Target Compound Quantitation Report

Data File: \\wessvr06\chromdata\AGILGCMS2.i\20110519-5598.b\V18206.D
Lims ID: STD40 Client ID:
Inject. Date: 18-May-2011 21:07:30 Dil. Factor: 1.0000
Sample Type: IC Calib Level: 8
Sample ID: STD40
Misc. Info.:
Operator: TPH Instrument ID: Agilent#2 GC/MS
Vol. Injected: 1.0000 ALS Bottle#: 12
Lims Batch ID: 73830 Lims Sample ID: 10
Sublist: chrom-WES2UNPR*sub20
Detector 1 : MS SCAN
Detector 2 : MS SIM

Method: \\wessvr06\chromdata\AGILGCMS2.i\20110519-5598.b\WES2UNPR.m
Last Update: 19-May-2011 15:42:22 Calib Date: 18-May-2011 21:50:30
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\wessvr06\chromdata\AGILGCMS2.i\20110519-5598.b\V18208.D
Limit Group: VMS - 8260C VOA Calibration MCP
Integrator: RTE ID Type: RT Order ID
Process Host: WESSEMIDTRDR

First Level Reviewer: hartmannt Date: 19-May-2011 15:28:40

Compound	Det	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
1 Dichlorodifluoromethane	1	85	1.682	1.682	0.0	86	224770	35.4	
2 Chloromethane	1	50	1.836	1.836	0.0	89	354638	38.7	
4 Vinyl chloride	1	62	1.919	1.919	0.0	65	222323	35.8	
3 Vinyl chloride (SIM)	2	62	1.929	1.929	0.0	0	229955	0	
5 Bromomethane	1	94	2.227	2.227	0.0	90	134184	39.3	
6 Chloroethane	1	64	2.346	2.346	0.0	95	121357	38.4	
7 Trichlorofluoromethane	1	101	2.476	2.476	0.0	86	270665	36.1	
8 Dichlorofluoromethane	1	67	2.523	2.523	0.0	79	341685	0	
9 Ethyl ether	1	59	2.760	2.760	0.0	89	200036	37.8	
10 Ethanol	1	45	2.879	2.879	0.0	94	181626	0	
11 1,2-Dichloro-1,1,2-trifluoroethane	1	117	2.962	2.962	0.0	82	178947	0	
12 1,1-Dichloroethene	1	96	2.974	2.974	0.0	90	214175	40.3	
13 Carbon disulfide	1	76	3.021	3.021	0.0	96	574529	40.0 (574529)(20)	
14 1,1,2-Trichloro-1,2,2-trifluoroethane	1	151	3.021	3.033	-0.012	39	121404	37.3 (519167)(40)	
15 Acrolein	1	56	3.329	3.329	0.0	98	2683134	0	
16 Isopropyl alcohol	1	45	3.495	3.495	0.0	98	1082243	0	
17 Methylene Chloride	1	84	3.614	3.614	0.0	85	257245	40.3 0.5533	
18 Acetone	1	43	3.661	3.661	0.0	100	894798	425.4	
20 trans-1,2-Dichloroethene	1	61	3.803	3.803	0.0	37	350337	39.1	
19 Methyl acetate	1	43	3.815	3.815	0.0	98	2708273	406.2	
21 Hexane	1	57	3.910	3.910	0.0	58	402834	0	
22 Methyl tert-butyl ether	1	73	3.934	3.934	0.0	66	343189	38.0	
23 2-Methyl-2-propanol	1	59	4.028	4.029	-0.001	51	802983	0	
24 Isopropyl ether	1	45	4.384	4.384	0.0	94	628442	38.6	
25 1,1-Dichloroethane	1	63	4.538	4.538	0.0	85	446419	38.3	
26 Acrylonitrile	1	53	4.585	4.586	-0.001	96	115921	0	
27 Halothane	1	117	4.609	4.609	0.0	85	184308	41.1	
S 28 1,2-Dichloroethene, Total	1	1				0		77.8	
29 Tert-butyl ethyl ether	1	59	4.823	4.823	-0.001	28	270421	39.6	

Report Date: 19-May-2011 15:42:23 Chrom Revision: 1.2 17-May-2011 14:46:34
Data File: \\wessvr06\chromdata\AGILGCMS2.i\20110519-5598.b\V18206.D

Compound	Det	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
30 Vinyl acetate	1	43	4.834	4.834	0.0	97	5165121	0	
31 cis-1,2-Dichloroethene	1	61	5.178	5.178	0.0	67	348134	38.7	
32 2,2-Dichloropropane	1	77	5.320	5.320	0.0	62	225775	42.2	
33 Chlorobromomethane	1	130	5.415	5.415	0.0	79	199315	39.3	
34 Cyclohexane	1	56	5.427	5.427	0.0	87	344019	39.8	
35 Chloroform	1	83	5.510	5.510	0.0	64	478834	38.2	
36 Ethyl acetate	1	43	5.652	5.652	0.0	99	3410802	0	
37 Carbon tetrachloride	1	117	5.676	5.676	0.0	24	218040	37.3	
38 Tetrahydrofuran	1	42	5.688	5.688	0.0	75	1238642	389.4	
39 sec-Butyl Alcohol	1	59	5.700	5.700	0.0	89	386504	0	
$ 40 Dibromofluoromethane	1	113	5.723	5.723	0.0	46	177137	20.1	
41 1,1,1-Trichloroethane	1	97	5.759	5.759	0.0	34	313812	38.5	
42 2-Butanone (MEK)	1	43	5.865	5.866	-0.001	100	1566016	413.2	
43 1,1-Dichloropropene	1	75	5.913	5.913	0.0	97	340492	38.9	
44 n-Heptane	1	43	6.185	6.185	0.0	89	312009	0	
45 Benzene	1	78	6.209	6.209	0.0	95	953214	38.4	
46 Tert-amyl methyl ether	1	73	6.351	6.351	0.0	98	256883	41.0	
* 47 1,2-Dichloroethane-d4 ISTD	1	102	6.363	6.363	0.0	0	40602	20.0	
48 1,2-Dichloroethane	1	62	6.446	6.446	0.0	76	346937	38.5	
* 49 Fluorobenzene	1	96	6.707	6.707	0.0	99	519167	20.0	
50 Isopropyl acetate	1	43	6.766	6.766	0.0	98	4203474	0	
51 2,4,4-Trimethyl-1-pentene	1	55	6.766	6.766	0.0	40	90343	41.2	
52 Methylcyclohexane	1	83	6.920	6.921	-0.001	80	317358	41.6	
53 Trichloroethene	1	95	6.920	6.921	-0.001	81	215309	38.6	
54 2,4,4-Trimethyl-2-pentene	1	55	6.980	6.980	0.0	61	230818	39.1	
55 Dibromomethane	1	93	7.442	7.442	0.0	88	150711	39.3	
57 1,2-Dichloropropane	1	63	7.585	7.585	0.0	85	200557	38.9	
S 56 1,3-Dichloropropene, Total	1	1				0		81.6	
58 Dichlorobromomethane	1	83	7.679	7.680	-0.001	84	245892	38.1	
59 Methyl methacrylate	1	69	7.928	7.929	-0.001	88	157953	0	
61 1,4-Dioxane	1	88	7.964	7.976	-0.012	55	28711	383.1	
60 1,4-Dioxane (SIM)	2	88	7.974	7.986	-0.012	0	30117	0	M
62 n-Propyl acetate	1	43	8.154	8.154	0.0	98	3112334	0	
63 2-Chloroethyl vinyl ether	1	63	8.593	8.593	0.0	90	1258060	0	
64 cis-1,3-Dichloropropene	1	75	8.676	8.676	0.0	56	318471	40.9	
$ 65 Toluene-d8 (Surr)	1	98	9.019	9.020	-0.001	93	484223	20.1	
66 Toluene	1	92	9.102	9.114	-0.012	94	431726	37.1	
S 67 Xylenes, Total	1	1				0		116.1	
68 sec-Butyl acetate	1	43	9.506	9.518	-0.012	99	4434660	0	
69 Tetrachloroethene	1	166	9.755	9.755	0.0	31	213818	38.4	
70 4-Methyl-2-pentanone (MIBK)	1	43	9.767	9.767	0.0	95	2302648	426.5	
71 trans-1,3-Dichloropropene	1	75	9.802	9.802	0.0	86	294023	40.7	
72 Isobutyl acetate	1	43	9.980	9.980	0.0	96	4617760	0	
73 1,1,2-Trichloroethane	1	83	10.039	10.039	0.0	85	166332	39.3	
74 Chlorodibromomethane	1	129	10.288	10.288	0.0	87	183024	37.1	
75 1,3-Dichloropropane	1	76	10.419	10.419	0.0	88	312920	39.7	
76 Ethylene Dibromide	1	107	10.585	10.585	0.0	99	220105	39.4	
77 n-Butyl acetate	1	43	10.834	10.834	0.0	99	3458486	0	
78 2-Hexanone	1	43	10.929	10.929	0.0	91	1690348	408.0	
* 79 Chlorobenzene-d5	1	117	11.249	11.249	0.0	83	363673	20.0	
80 Chlorobenzene	1	112	11.273	11.273	0.0	95	541365	38.5	
81 Ethylbenzene	1	91	11.320	11.320	0.0	63	852768	38.9	

Report Date: 19-May-2011 15:42:23 Chrom Revision: 1.2 17-May-2011 14:46:34
Data File: \\wessvr06\chromdata\AGILGCMS2.i\20110519-5598.b\V18206.D

Compound	Det	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
82 1,1,1,2-Tetrachloroethane	1	131	11.356	11.356	0.0	88	168085	41.4	
83 m-Xylene & p-Xylene	1	91	11.498	11.510	-0.012	0	1306450	77.2	
84 o-Xylene	1	91	11.984	11.984	0.0	97	661575	38.9	
85 Styrene	1	104	12.044	12.044	0.0	63	556043	39.7	
86 Bromoform	1	173	12.055	12.055	0.0	28	121296	40.1	
87 Isopropylbenzene	1	105	12.340	12.340	0.0	95	785015	38.6	
$ 89 4-Bromofluorobenzene	1	95	12.613	12.613	0.0	86	177628	20.0	
$ 88 BFB	1	95	12.613	12.613	0.0	86	177628	0	
90 Bromobenzene	1	77	12.719	12.720	-0.001	87	361691	39.9	
91 N-Propylbenzene	1	91	12.767	12.767	0.0	78	944673	38.5	
92 1,1,2,2-Tetrachloroethane	1	83	12.838	12.838	0.0	81	292119	39.9	
93 2-Chlorotoluene	1	91	12.909	12.909	0.0	93	569690	37.7	M
94 1,2,3-Trichloropropane	1	110	12.969	12.969	-0.001	40	86048	39.8	
95 1,3,5-Trimethylbenzene	1	105	12.969	12.969	-0.001	67	600473	37.6	
96 trans-1,4-Dichloro-2-butene	1	53	13.016	13.016	0.0	1	66209	0	
97 4-Chlorotoluene	1	91	13.075	13.075	0.0	93	629472	39.0	
98 tert-Butylbenzene	1	119	13.289	13.289	0.0	91	479786	39.6	
99 1,2,4-Trimethylbenzene	1	105	13.348	13.348	0.0	76	599887	39.7	
100 sec-Butylbenzene	1	105	13.455	13.455	0.0	94	726852	40.5	
101 4-Isopropyltoluene	1	119	13.597	13.597	0.0	97	601787	40.4	
102 1,3-Dichlorobenzene	1	146	13.656	13.656	0.0	88	413393	40.6	
* 103 1,4-Dichlorobenzene-d4	1	152	13.727	13.728	-0.001	88	181202	20.0	
104 1,4-Dichlorobenzene	1	146	13.739	13.739	0.0	94	425467	39.6	
105 n-Butylbenzene	1	91	13.988	13.988	0.0	97	599420	38.2	
106 1,2-Dichlorobenzene	1	146	14.131	14.131	0.0	98	376485	39.1	
107 1,2-Dibromo-3-Chloropropane	1	157	14.842	14.842	0.0	85	60916	40.1	
108 1,3,5-Trichlorobenzene	1	180	14.878	14.878	0.0	96	283243	0	
109 Hexachlorobutadiene	1	225	15.411	15.412	-0.001	84	121158	37.0	
110 1,2,4-Trichlorobenzene	1	180	15.435	15.435	0.0	94	253690	38.6	
111 Naphthalene	1	128	15.720	15.720	0.0	97	658765	39.6	
112 1,2,3-Trichlorobenzene	1	180	15.898	15.898	0.0	94	234006	38.6	

$\frac{(413393)(20)}{363673} = 22.734$

QC Flag Legend

Review Flags
M - Manually Integrated

Report Date: 19-May-2011 15:42:10 Chrom Revision: 1.2 17-May-2011 14:46:34

TestAmerica Laboratories
Target Compound Quantitation Report

Data File:	\\wessvr06\chromdata\AGILGCMS2.i\20110519-5598.b\V18207.D		
Lims ID:	STD80	Client ID:	
Inject. Date:	18-May-2011 21:29:30	Dil. Factor:	1.0000
Sample Type:	IC	Calib Level:	9
Sample ID:	STD80		
Misc. Info.:			
Operator:	TPH	Instrument ID:	Agilent#2 GC/MS
Vol. Injected:	1.0000	ALS Bottle#:	13
Lims Batch ID:	73830	Lims Sample ID:	11
Sublist:	chrom-WES2UNPR*sub20		
Detector 1 :	MS SCAN		
Detector 2 :	MS SIM		

Method:	\\wessvr06\chromdata\AGILGCMS2.i\20110519-5598.b\WES2UNPR.m		
Last Update:	19-May-2011 15:42:09	Calib Date:	18-May-2011 21:50:30
Quant Method:	Internal Standard	Quant By:	Initial Calibration
Last ICal File:	\\wessvr06\chromdata\AGILGCMS2.i\20110519-5598.b\V18208.D		
Limit Group:	VMS - 8260C VOA Calibration MCP		
Integrator:	RTE	ID Type:	RT Order ID
Process Host:	WESSEMIDTRDR		

First Level Reviewer: hartmannt Date: 19-May-2011 15:35:23

Compound	Det	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
1 Dichlorodifluoromethane	1	85	1.682	1.682	0.0	87	516088	81.2	
2 Chloromethane	1	50	1.848	1.836	0.012	88	763074	83.1	
4 Vinyl chloride	1	62	1.919	1.919	0.0	65	486300	78.3	
3 Vinyl chloride (SIM)	2	62	1.929	1.929	0.0	0	503488	0	
5 Bromomethane	1	94	2.227	2.227	0.0	90	278942	81.6	
6 Chloroethane	1	64	2.346	2.346	0.0	95	261255	82.5	
7 Trichlorofluoromethane	1	101	2.476	2.476	0.0	84	614654	81.8	
8 Dichlorofluoromethane	1	67	2.523	2.523	0.0	79	681747	0	
9 Ethyl ether	1	59	2.760	2.760	0.0	88	401227	75.8	
10 Ethanol	1	45	2.891	2.879	0.012	93	359898	0	
11 1,2-Dichloro-1,1,2-trifluoroethane	1	117	2.962	2.962	0.0	82	362652	0	
12 1,1-Dichloroethene	1	96	2.974	2.974	0.0	90	413438	77.7	
13 Carbon disulfide	1	76	3.021	3.021	0.0	97	1131892	78.8 (1131892)(20)	
14 1,1,2-Trichloro-1,2,2-trifluoroethane	1	151	3.021	3.033	-0.012	40	254493	78.1 (519214)(80)	
15 Acrolein	1	56	3.329	3.329	0.0	96	5437052	0	
16 Isopropyl alcohol	1	45	3.495	3.495	0.0	99	2159163	0 0.5444	
17 Methylene Chloride	1	84	3.614	3.614	0.0	82	500587	78.3	
18 Acetone	1	43	3.661	3.661	0.0	100	1799721	853.2	
20 trans-1,2-Dichloroethene	1	61	3.803	3.803	0.0	36	694958	77.4	
19 Methyl acetate	1	43	3.815	3.815	0.0	98	5541355	830.2	
21 Hexane	1	57	3.910	3.910	0.0	58	789048	0	
22 Methyl tert-butyl ether	1	73	3.934	3.934	0.0	62	718058	79.3	
23 2-Methyl-2-propanol	1	59	4.029	4.029	0.0	71	1666566	0	
24 Isopropyl ether	1	45	4.384	4.384	0.0	94	1281810	78.6	
25 1,1-Dichloroethane	1	63	4.538	4.538	0.0	84	876381	75.2	
26 Acrylonitrile	1	53	4.586	4.586	0.0	96	233756	0	
27 Halothane	1	117	4.609	4.609	0.0	86	375386	83.6	
S 28 1,2-Dichloroethene, Total	1	1				0		153.8	
29 Tert-butyl ethyl ether	1	59	4.823	4.823	0.0	27	501510	73.3	

Report Date: 19-May-2011 15:42:10 Chrom Revision: 1.2 17-May-2011 14:46:34
Data File: \\wessvr06\chromdata\AGILGCMS2.i\20110519-5598.b\V18207.D

Compound	Det	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
30 Vinyl acetate	1	43	4.834	4.834	0.0	97	10600723	0	
31 cis-1,2-Dichloroethene	1	61	5.178	5.178	0.0	68	688527	76.4	
32 2,2-Dichloropropane	1	77	5.320	5.320	0.0	83	423290	79.0	
33 Chlorobromomethane	1	130	5.415	5.415	0.0	80	392957	77.4	
34 Cyclohexane	1	56	5.427	5.427	0.0	86	659432	76.3	
35 Chloroform	1	83	5.510	5.510	0.0	64	933005	74.4	
36 Ethyl acetate	1	43	5.652	5.652	0.0	99	7101425	0	
37 Carbon tetrachloride	1	117	5.676	5.676	0.0	23	451216	77.2	
38 Tetrahydrofuran	1	42	5.688	5.688	0.0	74	2508235	787.5	
39 sec-Butyl Alcohol	1	59	5.711	5.700	0.011	94	811122	0	
$ 40 Dibromofluoromethane	1	113	5.723	5.723	0.0	25	174964	19.8	
41 1,1,1-Trichloroethane	1	97	5.759	5.759	0.0	32	611682	75.0	
42 2-Butanone (MEK)	1	43	5.865	5.866	-0.001	100	3228780	849.6	
43 1,1-Dichloropropene	1	75	5.913	5.913	0.0	95	667897	76.3	
44 n-Heptane	1	43	6.185	6.185	0.0	89	607417	0	
45 Benzene	1	78	6.209	6.209	0.0	95	1906713	76.7	
46 Tert-amyl methyl ether	1	73	6.351	6.351	0.0	98	461165	73.6	
* 47 1,2-Dichloroethane-d4 ISTD	1	102	6.363	6.363	0.0	0	40712	20.0	
48 1,2-Dichloroethane	1	62	6.446	6.446	0.0	78	687245	76.2	
* 49 Fluorobenzene	1	96	6.707	6.707	0.0	99	519814	20.0	
50 Isopropyl acetate	1	43	6.766	6.766	0.0	98	8453979	0	
51 2,4,4-Trimethyl-1-pentene	1	55	6.766	6.766	0.0	40	156356	75.4	
52 Methylcyclohexane	1	83	6.920	6.921	-0.001	82	576136	75.4	
53 Trichloroethene	1	95	6.920	6.921	-0.001	86	425659	76.1	
54 2,4,4-Trimethyl-2-pentene	1	55	6.980	6.980	0.0	61	424962	79.9	
55 Dibromomethane	1	93	7.442	7.442	0.0	88	304178	79.2	
57 1,2-Dichloropropane	1	63	7.585	7.585	0.0	88	402895	78.1	
S 56 1,3-Dichloropropene, Total	1	1				0		166.7	
58 Dichlorobromomethane	1	83	7.679	7.680	-0.001	84	511158	79.1	
59 Methyl methacrylate	1	69	7.928	7.929	-0.001	89	330710	0	
61 1,4-Dioxane	1	88	7.976	7.976	0.0	89	57887	793.0	
60 1,4-Dioxane (SIM)	2	88	7.974	7.986	-0.012	0	60531	0	
62 n-Propyl acetate	1	43	8.154	8.154	0.0	98	6493866	0	
63 2-Chloroethyl vinyl ether	1	63	8.593	8.593	0.0	89	2606566	0	
64 cis-1,3-Dichloropropene	1	75	8.676	8.676	0.0	58	652459	83.6	
$ 65 Toluene-d8 (Surr)	1	98	9.020	9.020	0.0	93	490694	20.3	
66 Toluene	1	92	9.114	9.114	0.0	97	923950	79.2	
S 67 Xylenes, Total	1	1				0		230.5	
68 sec-Butyl acetate	1	43	9.518	9.518	0.0	98	8823635	0	
69 Tetrachloroethene	1	166	9.755	9.755	0.0	32	424505	76.1	
70 4-Methyl-2-pentanone (MIBK)	1	43	9.767	9.767	0.0	95	4631946	855.7	
71 trans-1,3-Dichloropropene	1	75	9.814	9.802	0.012	83	600741	83.1	
72 Isobutyl acetate	1	43	9.980	9.980	0.0	96	9177843	0	
73 1,1,2-Trichloroethane	1	83	10.039	10.039	0.0	85	331368	78.2	
74 Chlorodibromomethane	1	129	10.288	10.288	0.0	87	389716	78.9	
75 1,3-Dichloropropane	1	76	10.419	10.419	0.0	88	627381	79.5	
76 Ethylene Dibromide	1	107	10.585	10.585	0.0	98	447283	80.0	
77 n-Butyl acetate	1	43	10.846	10.834	0.012	99	6973079	0	
78 2-Hexanone	1	43	10.929	10.929	0.0	89	3438814	827.8	
* 79 Chlorobenzene-d5	1	117	11.249	11.249	0.0	83	366214	20.0	
80 Chlorobenzene	1	112	11.273	11.273	0.0	96	1079493	76.3	
81 Ethylbenzene	1	91	11.332	11.320	0.012	52	1700242	77.1	

Report Date: 19-May-2011 15:42:10 Chrom Revision: 1.2 17-May-2011 14:46:34
Data File: \\wessvr06\chromdata\AGILGCMS2.i\20110519-5598.b\V18207.D

Compound	Det	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
82 1,1,1,2-Tetrachloroethane	1	131	11.356	11.356	0.0	70	343296	83.9	
83 m-Xylene & p-Xylene	1	91	11.510	11.510	0.0	0	2630073	154.3	
84 o-Xylene	1	91	11.984	11.984	0.0	97	1305595	76.2	
85 Styrene	1	104	12.044	12.044	0.0	63	1100237	77.9	
86 Bromoform	1	173	12.055	12.055	0.0	30	267619	80.9	
87 Isopropylbenzene	1	105	12.340	12.340	0.0	95	1555365	76.0	
$ 89 4-Bromofluorobenzene	1	95	12.613	12.613	0.0	87	172087	19.2	
$ 88 BFB	1	95	12.613	12.613	0.0	87	172087	0	
90 Bromobenzene	1	77	12.720	12.720	0.0	87	699209	76.6	
91 N-Propylbenzene	1	91	12.767	12.767	0.0	77	1834690	74.3	
92 1,1,2,2-Tetrachloroethane	1	83	12.838	12.838	0.0	80	562424	78.9	
93 2-Chlorotoluene	1	91	12.909	12.909	0.0	93	1118967	73.5	
94 1,2,3-Trichloropropane	1	110	12.969	12.969	0.0	41	164265	75.4	
95 1,3,5-Trimethylbenzene	1	105	12.969	12.969	0.0	71	1186265	73.7	
96 trans-1,4-Dichloro-2-butene	1	53	13.016	13.016	0.0	1	133486	0	
97 4-Chlorotoluene	1	91	13.075	13.075	0.0	93	1209605	74.4	
98 tert-Butylbenzene	1	119	13.289	13.289	0.0	91	939003	77.0	
99 1,2,4-Trimethylbenzene	1	105	13.348	13.348	0.0	76	1173847	75.2	
100 sec-Butylbenzene	1	105	13.455	13.455	0.0	94	1399343	77.5	
101 4-Isopropyltoluene	1	119	13.597	13.597	0.0	96	1155576	77.0	
102 1,3-Dichlorobenzene	1	146	13.656	13.656	0.0	96	802067	78.3	
* 103 1,4-Dichlorobenzene-d4	1	152	13.728	13.728	0.0	76	176522	20.0	
104 1,4-Dichlorobenzene	1	146	13.739	13.739	0.0	94	821673	78.6	
105 n-Butylbenzene	1	91	13.988	13.988	0.0	97	1148848	75.2	
106 1,2-Dichlorobenzene	1	146	14.131	14.131	0.0	99	732212	78.1	
107 1,2-Dibromo-3-Chloropropane	1	157	14.842	14.842	0.0	86	126951	80.2	
108 1,3,5-Trichlorobenzene	1	180	14.878	14.878	0.0	96	555515	0	
109 Hexachlorobutadiene	1	225	15.411	15.412	-0.001	84	240383	75.4	
110 1,2,4-Trichlorobenzene	1	180	15.435	15.435	0.0	93	510911	79.8	
111 Naphthalene	1	128	15.720	15.720	0.0	97	1324138	81.6	
112 1,2,3-Trichlorobenzene	1	180	15.898	15.898	0.0	94	469823	79.5	

$$\frac{(802067)(20)}{366214} = 43.803$$

Report Date: 19-May-2011 15:41:49 Chrom Revision: 1.2 17-May-2011 14:46:34

TestAmerica Laboratories
Target Compound Quantitation Report

Data File:	\\wessvr06\chromdata\AGILGCMS2.i\20110519-5598.b\V18208.D		
Lims ID:	STD160	Client ID:	
Inject. Date:	18-May-2011 21:50:30	Dil. Factor:	1.0000
Sample Type:	IC	Calib Level:	10
Sample ID:	STD160		
Misc. Info.:			
Operator:	TPH	Instrument ID:	Agilent#2 GC/MS
Vol. Injected:	1.0000	ALS Bottle#:	14
Lims Batch ID:	73830	Lims Sample ID:	12
Sublist:	chrom-WES2UNPR*sub20		
Detector 1 :	MS SCAN		
Detector 2 :	MS SIM		
Method:	\\wessvr06\chromdata\AGILGCMS2.i\20110519-5598.b\WES2UNPR.m		
Last Update:	19-May-2011 15:41:49	Calib Date:	18-May-2011 21:50:30
Quant Method:	Internal Standard	Quant By:	Initial Calibration
Last ICal File:	\\wessvr06\chromdata\AGILGCMS2.i\20110519-5598.b\V18208.D		
Limit Group:	VMS - 8260C VOA Calibration MCP		
Integrator:	RTE	ID Type:	RT Order ID
Process Host:	WESSEMIDTRDR		

First Level Reviewer: hartmannt Date: 19-May-2011 15:41:49

Compound	Det	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
1 Dichlorodifluoromethane	1	85	1.682	1.682	0.0	86	1034937	163.4	
2 Chloromethane	1	50	1.836	1.836	0.0	88	1455319	159.1	
4 Vinyl chloride	1	62	1.919	1.919	0.0	56	958463	154.8	
3 Vinyl chloride (SIM)	2	62	1.929	1.929	0.0	0	982243	0	
5 Bromomethane	1	94	2.215	2.227	-0.012	90	520769	152.8	
6 Chloroethane	1	64	2.334	2.346	-0.012	95	500028	158.4	
7 Trichlorofluoromethane	1	101	2.476	2.476	0.0	84	1207736	161.3	
8 Dichlorofluoromethane	1	67	2.523	2.523	0.0	75	1376154	0	
9 Ethyl ether	1	59	2.760	2.760	0.0	87	807247	153.1	
10 Ethanol	1	45	2.879	2.879	0.0	93	650267	0	
11 1,2-Dichloro-1,1,2-trifluoroethane	1	117	2.950	2.962	-0.012	84	740461	0	
12 1,1-Dichloroethene	1	96	2.974	2.974	0.0	90	845505	159.5	
13 Carbon disulfide	1	76	3.009	3.021	-0.012	97	2357643	164.7 (2357643)(20)	
14 1,1,2-Trichloro-1,2,2-trifluoroethane	1	151	3.021	3.033	-0.012	42	576842	177.6	
15 Acrolein	1	56	3.317	3.329	-0.012	98	9985071	0 (517991)(160)	
16 Isopropyl alcohol	1	45	3.495	3.495	0.0	99	3763561	0	
17 Methylene Chloride	1	84	3.614	3.614	0.0	81	1006353	158.0 0.5689	
18 Acetone	1	43	3.661	3.661	0.0	100	3245834	1525.9	
20 trans-1,2-Dichloroethene	1	61	3.803	3.803	0.0	37	1416389	158.2	
19 Methyl acetate	1	43	3.803	3.815	-0.012	98	10529817	1583.0	
21 Hexane	1	57	3.910	3.910	0.0	58	1691718	0	
22 Methyl tert-butyl ether	1	73	3.934	3.934	0.0	72	1699513	188.4	
23 2-Methyl-2-propanol	1	59	4.029	4.029	0.0	49	3091588	0	
24 Isopropyl ether	1	45	4.384	4.384	0.0	95	2588282	159.3	
25 1,1-Dichloroethane	1	63	4.538	4.538	0.0	84	1803770	155.2	
26 Acrylonitrile	1	53	4.586	4.586	0.0	96	460775	0	
27 Halothane	1	117	4.597	4.609	-0.012	86	767885	171.5	
S 28 1,2-Dichloroethene, Total	1	1				0		316.1	
29 Tert-butyl ethyl ether	1	59	4.823	4.823	0.0	28	1102404	161.8	

Report Date: 19-May-2011 15:41:49 Chrom Revision: 1.2 17-May-2011 14:46:34
Data File: \\wessvr06\chromdata\AGILGCMS2.i\20110519-5598.b\V18208.D

Compound	Det	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
30 Vinyl acetate	1	43	4.834	4.834	0.0	97	20457735	0	
31 cis-1,2-Dichloroethene	1	61	5.178	5.178	0.0	68	1416943	157.9	
32 2,2-Dichloropropane	1	77	5.308	5.320	-0.012	65	816424	152.9	
33 Chlorobromomethane	1	130	5.415	5.415	0.0	85	799563	157.9	
34 Cyclohexane	1	56	5.427	5.427	0.0	87	1320073	153.2	
35 Chloroform	1	83	5.510	5.510	0.0	64	1915169	153.3	
36 Ethyl acetate	1	43	5.652	5.652	0.0	99	13900889	0	
37 Carbon tetrachloride	1	117	5.676	5.676	0.0	24	977393	167.8	
38 Tetrahydrofuran	1	42	5.688	5.688	0.0	76	4966227	1564.6	
39 sec-Butyl Alcohol	1	59	5.711	5.700	0.011	94	1527724	0	
$ 40 Dibromofluoromethane	1	113	5.723	5.723	0.0	19	168649	19.2	
41 1,1,1-Trichloroethane	1	97	5.759	5.759	0.0	34	1252698	154.2	
42 2-Butanone (MEK)	1	43	5.865	5.866	-0.001	100	6336465	1653.4	
43 1,1-Dichloropropene	1	75	5.913	5.913	0.0	96	1409595	161.6	
44 n-Heptane	1	43	6.174	6.185	-0.011	93	1306557	0	
45 Benzene	1	78	6.209	6.209	0.0	95	4010311	161.8	
46 Tert-amyl methyl ether	1	73	6.351	6.351	0.0	98	982895	157.4	
* 47 1,2-Dichloroethane-d4 ISTD	1	102	6.363	6.363	0.0	0	41057	20.0	
48 1,2-Dichloroethane	1	62	6.446	6.446	0.0	86	1399825	155.8	
* 49 Fluorobenzene	1	96	6.707	6.707	0.0	99	517991	20.0	
50 Isopropyl acetate	1	43	6.766	6.766	0.0	98	16088527	0	
51 2,4,4-Trimethyl-1-pentene	1	55	6.778	6.766	0.012	41	284024	161.4	
52 Methylcyclohexane	1	83	6.920	6.921	-0.001	82	1116093	146.6	
53 Trichloroethene	1	95	6.920	6.921	-0.001	93	887647	159.3	
54 2,4,4-Trimethyl-2-pentene	1	55	6.992	6.980	0.012	58	663473	160.1	
55 Dibromomethane	1	93	7.442	7.442	0.0	89	614487	160.5	
57 1,2-Dichloropropane	1	63	7.585	7.585	0.0	89	826927	160.8	
S 56 1,3-Dichloropropene, Total	1	1				0		352.0	
58 Dichlorobromomethane	1	83	7.679	7.680	-0.001	84	1066414	165.7	
59 Methyl methacrylate	1	69	7.929	7.929	-0.001	88	685527	0	
61 1,4-Dioxane	1	88	7.976	7.976	0.0	87	111297	1674.2	
60 1,4-Dioxane (SIM)	2	88	7.974	7.986	-0.012	0	115116	0	
62 n-Propyl acetate	1	43	8.154	8.154	0.0	98	12938969	0	
63 2-Chloroethyl vinyl ether	1	63	8.604	8.593	0.011	90	5340558	0	
64 cis-1,3-Dichloropropene	1	75	8.687	8.676	0.011	61	1372370	176.5	
$ 65 Toluene-d8 (Surr)	1	98	9.020	9.020	0.0	92	483503	20.1	
66 Toluene	1	92	9.114	9.114	0.0	98	1928204	165.9	
S 67 Xylenes, Total	1	1				0		489.0	
68 sec-Butyl acetate	1	43	9.518	9.518	0.0	98	16720179	0	
69 Tetrachloroethene	1	166	9.755	9.755	0.0	33	875870	157.5	
70 4-Methyl-2-pentanone (MIBK)	1	43	9.767	9.767	0.0	95	8874353	1625.6	
71 trans-1,3-Dichloropropene	1	75	9.814	9.802	0.012	84	1264860	175.5	
72 Isobutyl acetate	1	43	9.992	9.980	0.012	95	17312486	0	
73 1,1,2-Trichloroethane	1	83	10.039	10.039	0.0	85	672975	159.4	
74 Chlorodibromomethane	1	129	10.288	10.288	0.0	87	841488	171.1	
75 1,3-Dichloropropane	1	76	10.419	10.419	0.0	88	1296939	164.9	
76 Ethylene Dibromide	1	107	10.585	10.585	0.0	98	916913	164.7	
77 n-Butyl acetate	1	43	10.846	10.834	0.012	99	13593171	0	
78 2-Hexanone	1	43	10.941	10.929	0.012	80	6869232	1639.8	
* 79 Chlorobenzene-d5	1	117	11.249	11.249	0.0	82	352525	20.0	
80 Chlorobenzene	1	112	11.273	11.273	0.0	96	2184240	160.4	
81 Ethylbenzene	1	91	11.332	11.320	0.012	67	3499046	164.8	

Report Date: 19-May-2011 15:41:49 Chrom Revision: 1.2 17-May-2011 14:46:34
Data File: \\wessvr06\chromdata\AGILGCMS2.i\20110519-5598.b\V18208.D

Compound	Det	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
82 1,1,1,2-Tetrachloroethane	1	131	11.356	11.356	0.0	89	707163	179.5	
83 m-Xylene & p-Xylene	1	91	11.510	11.510	0.0	0	5403302	329.2	
84 o-Xylene	1	91	11.984	11.984	0.0	97	2633845	159.7	
85 Styrene	1	104	12.044	12.044	0.0	62	2177530	160.2	
86 Bromoform	1	173	12.055	12.055	0.0	38	583256	159.8	
87 Isopropylbenzene	1	105	12.340	12.340	0.0	95	3106126	157.6	
$ 89 4-Bromofluorobenzene	1	95	12.613	12.613	0.0	86	158783	18.4	
$ 88 BFB	1	95	12.613	12.613	0.0	0	158783	0	
90 Bromobenzene	1	77	12.720	12.720	0.0	87	1355610	154.4	
91 N-Propylbenzene	1	91	12.767	12.767	0.0	75	3590132	151.1	
92 1,1,2,2-Tetrachloroethane	1	83	12.838	12.838	0.0	80	1073806	165.4	
93 2-Chlorotoluene	1	91	12.909	12.909	0.0	93	2219299	151.4	
94 1,2,3-Trichloropropane	1	110	12.969	12.969	0.0	41	310665	148.2	
95 1,3,5-Trimethylbenzene	1	105	12.969	12.969	0.0	70	2322844	150.0	
96 trans-1,4-Dichloro-2-butene	1	53	13.016	13.016	0.0	1	272758	0	
97 4-Chlorotoluene	1	91	13.075	13.075	0.0	93	2346941	149.9	
98 tert-Butylbenzene	1	119	13.289	13.289	0.0	91	1866618	159.0	
99 1,2,4-Trimethylbenzene	1	105	13.348	13.348	0.0	76	2262584	144.0	
100 sec-Butylbenzene	1	105	13.455	13.455	0.0	94	2726083	156.8	
101 4-Isopropyltoluene	1	119	13.597	13.597	0.0	96	2269688	157.2	
102 1,3-Dichlorobenzene	1	146	13.656	13.656	0.0	96	1555308	157.7	
* 103 1,4-Dichlorobenzene-d4	1	152	13.728	13.728	0.0	60	160747	20.0	
104 1,4-Dichlorobenzene	1	146	13.739	13.739	0.0	95	1584334	166.3	
105 n-Butylbenzene	1	91	13.988	13.988	0.0	97	2221084	159.6	
106 1,2-Dichlorobenzene	1	146	14.131	14.131	0.0	99	1441199	168.7	
107 1,2-Dibromo-3-Chloropropane	1	157	14.842	14.842	0.0	86	259760	160.0	
108 1,3,5-Trichlorobenzene	1	180	14.878	14.878	0.0	95	1061120	0	
109 Hexachlorobutadiene	1	225	15.412	15.412	0.0	84	482607	166.3	
110 1,2,4-Trichlorobenzene	1	180	15.435	15.435	0.0	93	1050857	180.2	
111 Naphthalene	1	128	15.720	15.720	0.0	97	2599922	176.0	
112 1,2,3-Trichlorobenzene	1	180	15.898	15.898	0.0	94	944154	175.3	

$\frac{(1555308)(20)}{352525}$ 88.238

FORM VI
GC/MS VOA INITIAL CALIBRATION DATA
INTERNAL STANDARD CURVE EVALUTION

Lab Name: TestAmerica Westfield Job No.: 360-34253-1 Analy Batch No.: 69936

SDG No.: 360-34253-1

Instrument ID: HP #3 GC/MS GC Column: RTX-VMS ID: 0.25(um) Heated Purge: (Y/N) N

Calibration Start Date: 02/28/2011 12:57 Calibration End Date: 02/28/2011 16:00 Calibration ID: 11977

ANALYTE	RRF LVL 1 LVL 6	RRF LVL 2 LVL 7	RRF LVL 3 LVL 8	RRF LVL 4 LVL 9	RRF LVL 5	CURVE TYPE	COEFFICIENT B	COEFFICIENT M1	COEFFICIENT M2	#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
m-Xylene & p-Xylene	1.1887	1.1001 1.1066	0.9978 1.1144	1.0647 1.1371	1.0985	Ave		1.1010			0.1000	5.0		15.0			
o-Xylene	1.1935	1.1562 1.1398	0.9245 1.1352	1.1046 1.1644	1.1069	Ave		1.1156			0.3000	7.4		15.0			
Styrene	0.9593	0.8893 0.9257	0.8156 0.9332	0.8655 0.9575	0.8960	Ave		0.9053			0.3000	5.4		15.0			
Bromoform	0.6019	0.5571 0.5834	0.5776 0.6311	0.5692 0.6052	0.5649	Ave		0.5863			0.1000	4.2		15.0			
Isopropylbenzene	1.3729	1.1820 1.3121	1.1220 1.3388	1.2880 1.3426	1.3056	Ave		1.2830			0.1000	6.7		15.0			
BFB						None											
Bromobenzene	0.6894	0.6022 0.6658	0.6116 0.6363	0.6586 0.6554	0.6958	Ave		0.6519				5.2		15.0			
N-Propylbenzene	1.7163	1.5088 1.6351	1.4667 1.5772	1.6095 1.5907	1.6598	Ave		1.5955				5.0		15.0			
1,1,2,2-Tetrachloroethane	0.9110	0.9349 0.8704	0.9161 0.9016	0.9570 0.8488	0.8819	Ave		0.9027			0.3000	3.9		15.0			
2-Chlorotoluene	1.1445	1.0792 1.0615	1.0642 1.0540	1.0838 1.1187	1.1493	Ave		1.0944				3.5		15.0			
1,3,5-Trimethylbenzene	1.1597	0.9279 1.0987	0.9697 1.0611	1.0690 1.1330	1.1370	Ave		1.0695				7.7		15.0			
1,2,3-Trichloropropane	0.4815	0.4533 0.4229	0.4665 0.4399	0.4676 0.4190	0.4648	Ave		0.4519				5.0		15.0			
4-Chlorotoluene	1.1156	1.0120 1.0296	0.9033 1.0527	1.0213 1.0265	1.0908	Ave		1.0315				6.1		15.0			
tert-Butylbenzene	0.9052	0.8490 0.8427	0.7812 0.8495	0.8383 0.8839	0.8683	Ave		0.8523				4.3		15.0			
1,2,4-Trimethylbenzene	1.2110	0.9404 1.1060	0.9608 1.1115	1.0974 1.1619	1.1307	Ave		1.0900				8.6		15.0			
sec-Butylbenzene	1.3359	1.1612 1.2316	1.0605 1.2339	1.2345 1.2924	1.2989	Ave		1.2311				7.1		15.0			
4-Isopropyltoluene	1.0722	0.8559 0.9772	0.7908 0.9835	0.9628 1.0941	1.0363	Lin1F		1.0448							0.9970		0.9900
1,3-Dichlorobenzene	0.7570	0.6857 0.6995	0.6418 0.7052	0.6968 0.7249	0.7133	Ave		0.7030			0.6000	4.7		15.0			
1,4-Dichlorobenzene	1.3654	1.3737 1.2830	1.3211 1.3327	1.3513 1.3441	1.2957	Ave		1.3334			0.5000	2.4		15.0			
n-Butylbenzene	1.7060	1.5840 1.5984	1.4787 1.7509	1.5764 1.7272	1.6339	Ave		1.6319				5.6		15.0			

0.5571 − 0.5863)² = 0.00085264
0.5776 = 0.00007569
0.5692 = 0.00029241
0.5649 = 0.00045796
0.6019 = 0.00024336
0.5834 = 0.00000841
0.6311 = 0.00200704
0.6052 = 0.00035721
4.6904/8 = 0.5863 0.00429472/7 = √0.000613531 = 0.02479567 / 0.5863 ×100 = 4.2%

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

07/08/2011

FORM VI 8260C

FORM VI
GC/MS VOA INITIAL CALIBRATION DATA
INTERNAL STANDARD RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Westfield Job No.: 360-34253-1 Analy Batch No.: 69936

SDG No.: 360-34253-1

Instrument ID: HP #3 GC/MS GC Column: RTX-VMS ID: 0.25(um) Heated Purge: (Y/N) N

Calibration Start Date: 02/28/2011 12:57 Calibration End Date: 02/28/2011 16:00 Calibration ID: 11977

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/L)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5	LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5
Bromoform	DCB	Ave	126378	2561 249883	5444 542001	27905 1113961	55736	20.0	0.500 40.0	1.00 80.0	5.00 160	10.0
Isopropylbenzene	CBZ	Ave	502947	9953 985423	18946 2108152	109734 4385721	220983	20.0	0.500 40.0	1.00 80.0	5.00 160	10.0
BFB		None	121936	109103 120314	108696 125021	115568 125458	113698	20.0	20.0 20.0	20.0 20.0	20.0 20.0	20.0
Bromobenzene	CBZ	Ave	252540	5071 500013	10328 1001941	56111 2141031	117761	20.0	0.500 40.0	1.00 80.0	5.00 160	10.0
N-Propylbenzene	CBZ	Ave	628745	12705 1228005	24766 2483481	137129 5196127	280934	20.0	0.500 40.0	1.00 80.0	5.00 160	10.0
1,1,2,2-Tetrachloroethane	DCB	Ave	191296	4298 372799	8634 774298	46915 1562314	87020	20.0	0.500 40.0	1.00 80.0	5.00 160	10.0
2-Chlorotoluene	CBZ	Ave	419256	9088 797205	17970 1659602	92339 3654171	194526	20.0	0.500 40.0	1.00 80.0	5.00 160	10.0
1,3,5-Trimethylbenzene	CBZ	Ave	424819	7814 825135	16375 1670765	91077 3700822	192444	20.0	0.500 40.0	1.00 80.0	5.00 160	10.0
1,2,3-Trichloropropane	CBZ	Ave	176401	3817 317589	7878 692670	39836 1368783	78675	20.0	0.500 40.0	1.00 80.0	5.00 160	10.0
4-Chlorotoluene	CBZ	Ave	408667	8522 773240	15253 1657614	87017 3352968	184629	20.0	0.500 40.0	1.00 80.0	5.00 160	10.0
tert-Butylbenzene	CBZ	Ave	331599	7149 632905	13192 1337687	71426 2887264	146960	20.0	0.500 40.0	1.00 80.0	5.00 160	10.0
1,2,4-Trimethylbenzene	CBZ	Ave	443635	7919 830596	16224 1750160	93500 3795415	191379	20.0	0.500 40.0	1.00 80.0	5.00 160	10.0
sec-Butylbenzene	CBZ	Ave	489374	9778 924966	17907 1942857	105179 4221704	219841	20.0	0.500 40.0	1.00 80.0	5.00 160	10.0
4-Isopropyltoluene	CBZ	Lin1F	392793	7207 733884	13353 1548581	82027 3574023	175392	20.0	0.500 40.0	1.00 80.0	5.00 160	10.0
1,3-Dichlorobenzene	CBZ	Ave	277325	5774 525329	10838 1110419	59366 2367820	120728	20.0	0.500 40.0	1.00 80.0	5.00 160	10.0
1,4-Dichlorobenzene	DCB	Ave	286704	6315 549553	12451 1144502	66241 2473880	127851	20.0	0.500 40.0	1.00 80.0	5.00 160	10.0
n-Butylbenzene	DCB	Ave	358217	7282 684651	13937 1503641	77278 3178962	161215	20.0	0.500 40.0	1.00 80.0	5.00 160	10.0
1,2-Dichlorobenzene	DCB	Ave	258922	5927 502757	10812 1043580	57585 2263433	118354	20.0	0.500 40.0	1.00 80.0	5.00 160	10.0
1,2-Dibromo-3-Chloropropane	DCB	Ave	41696	1039 86358	1912 178505	8980 375035	19015	20.0	0.500 40.0	1.00 80.0	5.00 160	10.0
Hexachlorobutadiene	DCB	Ave	1246 63049	1549 120914	2803 257624	13973 540940	28768	0.400 20.0	0.500 40.0	1.00 80.0	5.00 160	10.0
1,2,4-Trichlorobenzene	DCB	Ave	168546	3848 331841	7157 725784	37642 1514104	75907	20.0	0.500 40.0	1.00 80.0	5.00 160	10.0

Report Date: 01-Mar-2011 11:48:41 Chrom Revision: 1.2 17-Feb-2011 18:05:56

TestAmerica Laboratories
Target Compound Quantitation Report

Data File:	\\wessvr06\chromdata\HPGCMS3.i\20110228-4857.b\V12160.D		
Lims ID:	STD05	Client ID:	
Inject. Date:	28-Feb-2011 13:20:30	Dil. Factor:	1.0000
Sample Type:	IC	Calib Level:	2
Sample ID:	STD05		
Misc. Info.:			
Operator:	TP	Instrument ID:	HP #3 GC/MS
Vol. Injected:	1.0000	ALS Bottle#:	5
Lims Batch ID:	69936	Lims Sample ID:	4
Sublist:	chrom-WES3UNPR*sub12		
Detector:	MS SCAN		
Method:	\\wessvr06\chromdata\HPGCMS3.i\20110228-4857.b\WES3UNPR.m		
Last Update:	01-Mar-2011 11:48:39	Calib Date:	28-Feb-2011 16:00:30
Quant Method:	Internal Standard	Quant By:	Initial Calibration
Last ICal File:	\\wessvr06\chromdata\HPGCMS3.i\20110228-4857.b\V12167.D		
Limit Group:	VMS - 8260C VOA Calibration MCP		
Integrator:	RTE	ID Type:	Deconvolution ID
Process Host:	WESSEMIDTRDR		

First Level Reviewer: hartmannt Date: 01-Mar-2011 11:48:39

Compound	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
1 Dichlorodifluoromethane	85	1.662	1.661	0.001	86	2273	0.4375	
2 Chloromethane	50	1.804	1.808	-0.004	86	3310	0.5266	
3 Vinyl chloride	62	1.882	1.881	0.001	81	3274	0.5184	
4 Bromomethane	94	2.170	2.163	0.007	90	2800	0.6173	
5 Chloroethane	64	2.279	2.278	0.001	92	1725	0.5844	
6 Trichlorofluoromethane	101	2.405	2.409	-0.004	99	4132	0.5043	
7 Dichlorofluoromethane	67	2.441	2.440	0.001	0	5361	0	
8 Ethyl ether	59	2.666	2.670	-0.004	84	2515	0.5284	
9 Ethanol	45	2.792	2.796	-0.004	54	1533	0	
10 1,2-Dichloro-1,1,2-trifluoroethane	117	2.844	2.848	-0.004	0	2488	0	
11 1,1-Dichloroethene	61	2.860	2.864	-0.004	83	4505	0.5470	
12 Carbon disulfide	76	2.901	2.900	0.001	86	8160	0.5311	
13 1,1,2-Trichloro-1,2,2-trifluoroethane	151	2.917	2.921	-0.004	45	1983	0.5279	
14 Acrolein	56	3.189	3.193	-0.004	97	30890	0	
15 Isopropyl alcohol	45	3.351	3.355	-0.004	99	13342	0	
16 Methylene Chloride	84	3.435	3.439	-0.004	89	4052	0.7102	
17 Acetone	43	3.492	3.491	0.001	99	26299	11.1	
18 trans-1,2-Dichloroethene	61	3.607	3.611	-0.004	43	4606	0.5519	
19 Methyl acetate	43	3.623	3.627	-0.004	98	27153	5.04	
20 Hexane	57	3.686	3.687	-0.001	49	2542	0	
21 Methyl tert-butyl ether	73	3.738	3.737	0.001	23	7510	0.4915	
22 2-Methyl-2-propanol	59	3.832	3.826	0.006	33	3816	0	
23 Isopropyl ether	45	4.130	4.124	0.006	91	8488	0.5060	
24 1,1-Dichloroethane	63	4.250	4.249	0.001	97	5913	0.5597	
25 Halothane	117	4.297	4.296	0.001	0	2698	0.5179	
26 Acrylonitrile	53	4.287	4.296	-0.009	51	1808	0	
27 Tert-butyl ethyl ether	59	4.512	4.516	-0.004	27	8264	0.5237	
28 Vinyl acetate	43	4.512	4.521	-0.009	97	47341	0	
S 29 1,2-Dichloroethene, Total	1				0		1.10	
30 cis-1,2-Dichloroethene	61	4.815	4.819	-0.004	58	4424	0.5444	

Report Date: 01-Mar-2011 11:48:41 Chrom Revision: 1.2 17-Feb-2011 18:05:56
Data File: \\wessvr06\chromdata\HPGCMS3.i\20110228-4857.b\V12160.D

Compound	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
31 2,2-Dichloropropane	77	4.940	4.939	0.001	89	3915	0.7692	
32 Chlorobromomethane	130	5.024	5.033	-0.009	81	2290	0.5202	
33 Cyclohexane	56	5.045	5.049	-0.004	83	3380	0.4472	
34 Chloroform	83	5.108	5.106	0.002	77	6238	0.5724	
35 Ethyl acetate	43	5.259	5.263	-0.004	97	27721	0	
36 Carbon tetrachloride	117	5.275	5.279	-0.004	28	4201	0.5560	
$ 37 Dibromofluoromethane	113	5.301	5.305	-0.004	82	153404	20.7	
38 Tetrahydrofuran	42	5.317	5.310	0.007	33	13847	5.46	
39 sec-Butyl Alcohol	45	5.322	5.316	0.006	20	14247	0	
40 1,1,1-Trichloroethane	97	5.343	5.347	-0.004	66	4557	0.5476	
41 2-Butanone (MEK)	43	5.458	5.452	0.006	90	17186	4.45	
42 1,1-Dichloropropene	75	5.479	5.478	0.001	80	4097	0.5373	
43 n-Heptane	43	5.704	5.713	-0.009	87	2138	0	
44 Benzene	78	5.745	5.750	-0.005	80	11386	0.5265	
* 45 1,2-Dichloroethane-d4 ISTD	102	5.887	5.885	0.002	0	23943	20.0	
46 Tert-amyl methyl ether	73	5.902	5.896	0.006	34	6960	0.4919	
47 1,2-Dichloroethane	62	5.965	5.964	0.001	36	4207	0.5413	
* 48 Fluorobenzene	96	6.211	6.210	0.001	99	456992	20.0	
49 2,4,4-Trimethyl-1-pentene	55	6.211	6.248	-0.037	1	2369	0.8203	
50 Isopropyl acetate	43	6.274	6.272	0.002	96	52808	0	
51 Methylcyclohexane	83	6.394	6.403	-0.009	82	3228	0.4562	
52 Trichloroethene	95	6.399	6.403	-0.004	88	4048	0.6232	
53 2,4,4-Trimethyl-2-pentene	97	6.456	6.461	-0.005	57	3666	0.4775	
54 Dibromomethane	93	6.859	6.863	-0.004	92	2439	0.5421	
55 1,2-Dichloropropane	63	6.969	6.973	-0.004	88	3246	0.5362	
56 Dichlorobromomethane	83	7.032	7.036	-0.004	96	4184	0.5223	
57 Methyl methacrylate	69	7.235	7.234	0.001	68	2508	0	
58 1,4-Dioxane	88		7.276					
59 n-Propyl acetate	43	7.377	7.381	-0.004	98	36458	0	
60 2-Chloroethyl vinyl ether	63	7.633	7.637	-0.004	91	14896	0	
S 61 1,3-Dichloropropene, Total	1				0		0.8136	
62 cis-1,3-Dichloropropene	75	7.690	7.694	-0.004	90	3935	0.4201	
$ 63 Toluene-d8 (Surr)	98	7.879	7.877	0.002	93	452740	19.9	
64 Toluene	92	7.931	7.930	0.001	97	6194	0.5017	
65 sec-Butyl acetate	43	8.140	8.139	0.001	99	55246	0	
66 4-Methyl-2-pentanone (MIBK)	43	8.297	8.296	0.001	97	30095	4.38	
67 Tetrachloroethene	164	8.302	8.301	0.001	34	2320	0.5034	
68 trans-1,3-Dichloropropene	75	8.312	8.316	-0.004	66	3486	0.3934	
69 Isobutyl acetate	43	8.422	8.421	0.001	98	63051	0	
70 1,1,2-Trichloroethane	83	8.464	8.463	0.001	74	2333	0.4842	
71 Chlorodibromomethane	129	8.626	8.630	-0.004	87	3163	0.4723	
72 1,3-Dichloropropane	76	8.710	8.714	-0.004	85	4029	0.5201	
73 Ethylene Dibromide	107	8.835	8.839	-0.004	98	3154	0.5237	
74 n-Butyl acetate	43	8.982	8.980	0.002	95	46638	0	
75 2-Hexanone	43	9.055	9.054	0.001	98	24495	4.76	
* 76 Chlorobenzene-d5	117	9.301	9.299	0.002	82	336833	20.0	
77 Chlorobenzene	112	9.311	9.315	-0.004	26	7425	0.5001	
78 Ethylbenzene	91	9.337	9.341	-0.004	63	12687	0.5267	
79 1,1,1,2-Tetrachloroethane	131	9.368	9.373	-0.005	69	2944	0.5311	
S 80 Xylenes, Total	1				0		1.52	
81 m-Xylene & p-Xylene	91	9.468	9.467	0.001	0	18528	1.00	
82 o-Xylene	91	9.834	9.838	-0.004	97	9736	0.5182	

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Data File: \\wessvr06\chromdata\HPGCMS3.i\20110228-4857.b\V12160.D

Compound	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
83 Styrene	104	9.876	9.880	-0.004	85	7489	0.4912	
84 Bromoform	173	9.902	9.901	0.001	81	2561	0.4751	
85 Isopropylbenzene	105	10.100	10.104	-0.004	96	9953	0.4606	
$ 86 BFB	95	10.341	10.340	0.001	96	171492	0	
$ 87 4-Bromofluorobenzene	95	10.341	10.340	0.001	96	171492	19.7	
88 Bromobenzene	77	10.425	10.429	-0.004	88	5071	0.4619	
89 N-Propylbenzene	91	10.451	10.449	0.002	99	12705	0.4728	
90 1,1,2,2-Tetrachloroethane	83	10.498	10.502	-0.004	80	4298	0.5178	
91 2-Chlorotoluene	91	10.576	10.585	-0.009	97	9088	0.4931	
92 1,3,5-Trimethylbenzene	105	10.608	10.612	-0.004	92	7814	0.4338	
93 1,2,3-Trichloropropane	75	10.613	10.617	-0.004	66	3817	0.5015	
94 trans-1,4-Dichloro-2-butene	53	10.649	10.648	0.001	35	1138	0	M
95 4-Chlorotoluene	91	10.717	10.721	-0.004	98	8522	0.4906	
96 tert-Butylbenzene	119	10.874	10.878	-0.004	92	7149	0.4981	
97 1,2,4-Trimethylbenzene	105	10.932	10.936	-0.004	67	7919	0.4314	
98 sec-Butylbenzene	105	11.021	11.025	-0.004	94	9778	0.4716	
99 4-Isopropyltoluene	119	11.141	11.140	0.001	81	7207	0.4096	
100 1,3-Dichlorobenzene	146	11.209	11.213	-0.004	95	5774	0.4877	
* 101 1,4-Dichlorobenzene-d4	152	11.266	11.270	-0.004	94	183889	20.0	
102 1,4-Dichlorobenzene	146	11.277	11.281	-0.004	29	6315	0.5151	
103 n-Butylbenzene	91	11.481	11.485	-0.004	99	7282	0.4853	
104 1,2-Dichlorobenzene	146	11.622	11.631	-0.009	94	5927	0.5337	
105 1,2-Dibromo-3-Chloropropane	157	12.275	12.274	0.001	83	1039	0.5592	
106 1,3,5-Trichlorobenzene	180	12.301	12.305	-0.004	83	4076	0	
107 Hexachlorobutadiene	225	12.809	12.807	0.002	77	1549	0.5572	
108 1,2,4-Trichlorobenzene	180	12.829	12.833	-0.004	86	3848	0.5249	
109 Naphthalene	128	13.096	13.100	-0.004	98	9397	0.4293	
110 1,2,3-Trichlorobenzene	180	13.253	13.257	-0.004	92	3982	0.5547	

QC Flag Legend

Review Flags
M - Manually Integrated

$\frac{(2561)(20)}{(183889)(.5)}$ = ~~0.3041~~ 0.5571

Report Date: 01-Mar-2011 11:48:51 Chrom Revision: 1.2 17-Feb-2011 18:05:56

TestAmerica Laboratories
Target Compound Quantitation Report

Data File:	\\wessvr06\chromdata\HPGCMS3.i\20110228-4857.b\V12161.D		
Lims ID:	STD1	Client ID:	
Inject. Date:	28-Feb-2011 13:43:30	Dil. Factor:	1.0000
Sample Type:	IC	Calib Level:	3
Sample ID:	STD1		
Misc. Info.:			
Operator:	TP	Instrument ID:	HP #3 GC/MS
Vol. Injected:	1.0000	ALS Bottle#:	6
Lims Batch ID:	69936	Lims Sample ID:	5
Sublist:	chrom-WES3UNPR*sub12		
Detector:	MS SCAN		
Method:	\\wessvr06\chromdata\HPGCMS3.i\20110228-4857.b\WES3UNPR.m		
Last Update:	01-Mar-2011 11:48:49	Calib Date:	28-Feb-2011 16:00:30
Quant Method:	Internal Standard	Quant By:	Initial Calibration
Last ICal File:	\\wessvr06\chromdata\HPGCMS3.i\20110228-4857.b\V12167.D		
Limit Group:	VMS - 8260C VOA Calibration MCP		
Integrator:	RTE	ID Type:	Deconvolution ID
Process Host:	WESSEMIDTRDR		

First Level Reviewer: hartmannt Date: 01-Mar-2011 11:48:49

Compound	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
1 Dichlorodifluoromethane	85	1.657	1.661	-0.004	41	5367	1.03	
2 Chloromethane	50	1.803	1.808	-0.005	99	6373	1.01	
3 Vinyl chloride	62	1.881	1.881	0.0	99	6324	1.00	
4 Bromomethane	94	2.164	2.163	0.001	81	5394	1.19	
5 Chloroethane	64	2.268	2.278	-0.010	93	3334	1.13	
6 Trichlorofluoromethane	101	2.409	2.409	0.0	85	8100	0.9857	
7 Dichlorofluoromethane	67	2.441	2.440	0.001	0	9290	0	
8 Ethyl ether	59	2.671	2.670	0.001	95	4873	1.02	
9 Ethanol	45	2.791	2.796	-0.005	74	2807	0	
10 1,2-Dichloro-1,1,2-trifluoroethane	117	2.843	2.848	-0.005	0	4732	0	
11 1,1-Dichloroethene	61	2.854	2.864	-0.010	97	8169	0.9890	
12 Carbon disulfide	76	2.896	2.900	-0.004	96	14665	0.9517	
13 1,1,2-Trichloro-1,2,2-trifluoroethane	151	2.917	2.921	-0.005	46	3701	0.9824	
14 Acrolein	56	3.188	3.193	-0.005	98	67735	0	
15 Isopropyl alcohol	45	3.356	3.355	0.001	97	21935	0	
16 Methylene Chloride	84	3.429	3.439	-0.010	90	6903	1.21	
17 Acetone	43	3.492	3.491	0.001	98	41172	17.3	
18 trans-1,2-Dichloroethene	61	3.601	3.611	-0.010	62	7905	0.9444	
19 Methyl acetate	43	3.622	3.627	-0.005	98	52810	9.77	
20 Hexane	57	3.690	3.687	0.003	55	4954	0	M
21 Methyl tert-butyl ether	73	3.732	3.737	-0.005	86	15087	0.9844	
22 2-Methyl-2-propanol	59	3.826	3.826	0.0	21	7701	0	
23 Isopropyl ether	45	4.124	4.124	0.0	95	16176	0.9615	
24 1,1-Dichloroethane	63	4.244	4.249	-0.005	95	10528	0.99	
25 Halothane	117	4.297	4.296	0.001	0	5176	0.99	
26 Acrylonitrile	53	4.297	4.296	0.001	64	2756	0	
27 Tert-butyl ethyl ether	59	4.506	4.516	-0.010	27	14606	0.9229	
28 Vinyl acetate	43	4.516	4.521	-0.005	97	99576	0	
S 29 1,2-Dichloroethene, Total	1				0		1.89	
30 cis-1,2-Dichloroethene	61	4.809	4.819	-0.010	71	7738	0.9495	

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Data File: \\wessvr06\chromdata\HPGCMS3.i\20110228-4857.b\V12161.D

Compound	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
31 2,2-Dichloropropane	77	4.929	4.939	-0.010	92	5383	1.05	
32 Chlorobromomethane	130	5.023	5.033	-0.010	90	4402	1.00	
33 Cyclohexane	56	5.034	5.049	-0.015	91	7079	0.9339	
34 Chloroform	83	5.102	5.106	-0.004	86	10894	1.00	
35 Ethyl acetate	43	5.259	5.263	-0.004	99	55197	0	
36 Carbon tetrachloride	117	5.280	5.279	0.001	16	7012	0.9253	
$ 37 Dibromofluoromethane	113	5.300	5.305	-0.005	83	154309	20.8	
38 Tetrahydrofuran	42	5.316	5.310	0.006	51	25078	9.86	
39 sec-Butyl Alcohol	45	5.316	5.316	0.0	24	28634	0	
40 1,1,1-Trichloroethane	97	5.342	5.347	-0.005	64	8531	1.02	
41 2-Butanone (MEK)	43	5.452	5.452	0.0	97	39417	10.2	
42 1,1-Dichloropropene	75	5.468	5.478	-0.010	55	7170	0.9376	
43 n-Heptane	43	5.708	5.713	-0.005	79	4183	0	
44 Benzene	78	5.740	5.750	-0.010	94	20611	0.9503	
* 45 1,2-Dichloroethane-d4 ISTD	102	5.881	5.885	-0.004	0	22879	20.0	
46 Tert-amyl methyl ether	73	5.902	5.896	0.006	43	12744	0.8981	
47 1,2-Dichloroethane	62	5.959	5.964	-0.005	37	8048	1.03	
* 48 Fluorobenzene	96	6.205	6.210	-0.005	99	458341	20.0	
49 2,4,4-Trimethyl-1-pentene	55	6.242	6.248	-0.006	40	2892	1.00	
50 Isopropyl acetate	43	6.268	6.272	-0.004	97	104644	0	
51 Methylcyclohexane	83	6.393	6.403	-0.010	83	6434	0.9066	
52 Trichloroethene	95	6.398	6.403	-0.005	97	5643	0.8662	
53 2,4,4-Trimethyl-2-pentene	97	6.451	6.461	-0.010	80	5970	0.7754	
54 Dibromomethane	93	6.858	6.863	-0.005	97	4547	1.01	
55 1,2-Dichloropropane	63	6.968	6.973	-0.005	85	6073	1.00	
56 Dichlorobromomethane	83	7.031	7.036	-0.005	97	7745	0.9640	
57 Methyl methacrylate	69	7.230	7.234	-0.004	90	3292	0	
58 1,4-Dioxane	88		7.276					
59 n-Propyl acetate	43	7.376	7.381	-0.005	99	77533	0	
60 2-Chloroethyl vinyl ether	63	7.632	7.637	-0.005	91	32439	0	
S 61 1,3-Dichloropropene, Total	1				0		1.61	
62 cis-1,3-Dichloropropene	75	7.684	7.694	-0.010	77	7466	0.7948	
$ 63 Toluene-d8 (Surr)	98	7.878	7.877	0.001	93	452095	19.8	
64 Toluene	92	7.925	7.930	-0.005	98	11652	0.9410	
65 sec-Butyl acetate	43	8.139	8.139	0.0	99	117276	0	
66 4-Methyl-2-pentanone (MIBK)	43	8.291	8.296	-0.005	98	66566	9.65	
67 Tetrachloroethene	164	8.296	8.301	-0.005	31	4292	0.9285	
68 trans-1,3-Dichloropropene	75	8.317	8.316	0.001	93	7256	0.8165	
69 Isobutyl acetate	43	8.416	8.421	-0.005	98	130563	0	
70 1,1,2-Trichloroethane	83	8.458	8.463	-0.005	68	4757	0.9843	
71 Chlorodibromomethane	129	8.631	8.630	0.001	85	6418	0.9556	
72 1,3-Dichloropropane	76	8.709	8.714	-0.005	82	7465	0.9608	
73 Ethylene Dibromide	107	8.835	8.839	-0.004	94	5817	0.9630	
74 n-Butyl acetate	43	8.976	8.980	-0.004	96	95898	0	
75 2-Hexanone	43	9.054	9.054	0.0	96	51843	10.0	
* 76 Chlorobenzene-d5	117	9.300	9.299	0.001	82	337718	20.0	
77 Chlorobenzene	112	9.310	9.315	-0.005	30	14460	0.9714	
78 Ethylbenzene	91	9.336	9.341	-0.005	62	21628	0.8956	
79 1,1,1,2-Tetrachloroethane	131	9.368	9.373	-0.005	58	5621	1.01	
S 80 Xylenes, Total	1				0		2.64	
81 m-Xylene & p-Xylene	91	9.467	9.467	0.0	0	33698	1.81	
82 o-Xylene	91	9.833	9.838	-0.005	95	15611	0.8287	

Report Date: 01-Mar-2011 11:48:51 Chrom Revision: 1.2 17-Feb-2011 18:05:56
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Compound	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
83 Styrene	104	9.880	9.880	0.0	72	13772	0.9009	
84 Bromoform	173	9.896	9.901	-0.005	83	5444	0.9852	
85 Isopropylbenzene	105	10.100	10.104	-0.004	95	18946	0.8745	
$ 86 BFB	95	10.340	10.340	0.0	94	170020	0	
$ 87 4-Bromofluorobenzene	95	10.340	10.340	0.0	94	170020	19.4	
88 Bromobenzene	77	10.429	10.429	0.0	86	10328	0.9383	
89 N-Propylbenzene	91	10.450	10.449	0.001	99	24766	0.9192	
90 1,1,2,2-Tetrachloroethane	83	10.497	10.502	-0.005	82	8634	1.01	
91 2-Chlorotoluene	91	10.581	10.585	-0.004	97	17970	0.9724	
92 1,3,5-Trimethylbenzene	105	10.612	10.612	0.0	92	16375	0.9067	
93 1,2,3-Trichloropropane	75	10.612	10.617	-0.005	61	7878	1.03	
94 trans-1,4-Dichloro-2-butene	53	10.649	10.648	0.001	12	2059	0	
95 4-Chlorotoluene	91	10.717	10.721	-0.004	96	15253	0.8757	
96 tert-Butylbenzene	119	10.874	10.878	-0.004	92	13192	0.9167	
97 1,2,4-Trimethylbenzene	105	10.931	10.936	-0.005	50	16224	0.8815	
98 sec-Butylbenzene	105	11.025	11.025	0.0	93	17907	0.8614	
99 4-Isopropyltoluene	119	11.135	11.140	-0.005	97	13353	0.7569	
100 1,3-Dichlorobenzene	146	11.208	11.213	-0.005	96	10838	0.9130	
* 101 1,4-Dichlorobenzene-d4	152	11.266	11.270	-0.004	94	188500	20.0	
102 1,4-Dichlorobenzene	146	11.281	11.281	0.0	36	12451	0.99	
103 n-Butylbenzene	91	11.485	11.485	0.0	96	13937	0.9061	
104 1,2-Dichlorobenzene	146	11.626	11.631	-0.005	98	10812	0.9498	
105 1,2-Dibromo-3-Chloropropane	157	12.264	12.274	-0.010	78	1912	1.00	
106 1,3,5-Trichlorobenzene	180	12.306	12.305	0.001	95	7632	0	
107 Hexachlorobutadiene	225	12.808	12.807	0.001	75	2803	0.9837	
108 1,2,4-Trichlorobenzene	180	12.829	12.833	-0.004	88	7157	0.9524	
109 Naphthalene	128	13.101	13.100	0.001	98	17466	0.7784	
110 1,2,3-Trichlorobenzene	180	13.257	13.257	0.0	93	6702	0.9107	

QC Flag Legend

Review Flags
M - Manually Integrated

$$\frac{(5444)(20)}{(188500)(1)} = 0.5776$$

Report Date: 01-Mar-2011 11:48:57 Chrom Revision: 1.2 17-Feb-2011 18:05:56

TestAmerica Laboratories
Target Compound Quantitation Report

Data File:	\\wessvr06\chromdata\HPGCMS3.i\20110228-4857.b\V12162.D		
Lims ID:	STD5	Client ID:	
Inject. Date:	28-Feb-2011 14:05:30	Dil. Factor:	1.0000
Sample Type:	IC	Calib Level:	4
Sample ID:	STD5		
Misc. Info.:			
Operator:	TP	Instrument ID:	HP #3 GC/MS
Vol. Injected:	1.0000	ALS Bottle#:	7
Lims Batch ID:	69936	Lims Sample ID:	6
Sublist:	chrom-WES3UNPR*sub12		
Detector:	MS SCAN		
Method:	\\wessvr06\chromdata\HPGCMS3.i\20110228-4857.b\WES3UNPR.m		
Last Update:	01-Mar-2011 11:48:56	Calib Date:	28-Feb-2011 16:00:30
Quant Method:	Internal Standard	Quant By:	Initial Calibration
Last ICal File:	\\wessvr06\chromdata\HPGCMS3.i\20110228-4857.b\V12167.D		
Limit Group:	VMS - 8260C VOA Calibration MCP		
Integrator:	RTE	ID Type:	Deconvolution ID
Process Host:	WESSEMIDTRDR		

First Level Reviewer: hartmannt Date: 01-Mar-2011 11:48:56

Compound	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
1 Dichlorodifluoromethane	85	1.661	1.661	0.0	98	27846	5.23	
2 Chloromethane	50	1.808	1.808	0.0	100	31751	4.93	
3 Vinyl chloride	62	1.881	1.881	0.0	81	32880	5.08	
4 Bromomethane	94	2.168	2.163	0.005	90	23503	5.05	
5 Chloroethane	64	2.278	2.278	0.0	99	16118	5.33	
6 Trichlorofluoromethane	101	2.409	2.409	0.0	84	41618	4.95	
7 Dichlorofluoromethane	67	2.440	2.440	0.0	0	49968	0	
8 Ethyl ether	59	2.665	2.670	-0.005	98	24080	4.93	
9 Ethanol	45	2.791	2.796	-0.006	71	13619	0	
10 1,2-Dichloro-1,1,2-trifluoroethane	117	2.848	2.848	0.0	0	22939	0	
11 1,1-Dichloroethene	61	2.864	2.864	0.0	98	42610	5.05	
12 Carbon disulfide	76	2.895	2.900	-0.005	99	82423	5.23	
13 1,1,2-Trichloro-1,2,2-trifluoroethane	151	2.916	2.921	-0.005	38	19403	5.04	
14 Acrolein	56	3.188	3.193	-0.005	98	321113	0	
15 Isopropyl alcohol	45	3.355	3.355	0.0	98	108926	0	
16 Methylene Chloride	84	3.434	3.439	-0.005	95	30661	5.24	
17 Acetone	43	3.491	3.491	0.0	99	131217	53.8	
18 trans-1,2-Dichloroethene	61	3.606	3.611	-0.005	49	42810	5.00	
19 Methyl acetate	43	3.622	3.627	-0.005	99	273597	49.5	
20 Hexane	57	3.684	3.687	-0.003	55	32578	0	
21 Methyl tert-butyl ether	73	3.737	3.737	0.0	67	75912	4.85	
22 2-Methyl-2-propanol	59	3.826	3.826	0.0	60	35123	0	
23 Isopropyl ether	45	4.124	4.124	0.0	92	83694	4.87	
24 1,1-Dichloroethane	63	4.244	4.249	-0.005	97	53933	4.98	
25 Halothane	117	4.291	4.296	-0.005	0	25399	4.76	
26 Acrylonitrile	53	4.291	4.296	-0.005	69	13251	0	
27 Tert-butyl ethyl ether	59	4.516	4.516	0.0	25	76881	4.75	
28 Vinyl acetate	43	4.516	4.521	-0.005	97	499385	0	
S 29 1,2-Dichloroethene, Total	1				0		10.1	
30 cis-1,2-Dichloroethene	61	4.814	4.819	-0.005	83	42331	5.08	

Report Date: 01-Mar-2011 11:48:57 Chrom Revision: 1.2 17-Feb-2011 18:05:56
Data File: \\wessvr06\chromdata\HPGCMS3.i\20110228-4857.b\V12162.D

Compound	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
31 2,2-Dichloropropane	77	4.939	4.939	0.0	76	30910	5.92	
32 Chlorobromomethane	130	5.023	5.033	-0.010	96	22969	5.09	
33 Cyclohexane	56	5.049	5.049	0.0	93	39373	5.08	
34 Chloroform	83	5.107	5.106	0.0	81	56328	5.04	
35 Ethyl acetate	43	5.258	5.263	-0.005	99	291493	0	
36 Carbon tetrachloride	117	5.274	5.279	-0.005	36	39466	5.10	
$ 37 Dibromofluoromethane	113	5.300	5.305	-0.005	80	154020	20.3	
38 Tetrahydrofuran	42	5.310	5.310	0.0	58	114226	43.9	
39 sec-Butyl Alcohol	45	5.310	5.316	-0.006	55	152806	0	
40 1,1,1-Trichloroethane	97	5.342	5.347	-0.005	45	41249	4.84	
41 2-Butanone (MEK)	43	5.452	5.452	0.0	98	187830	47.5	
42 1,1-Dichloropropene	75	5.472	5.478	-0.006	69	38714	4.95	
43 n-Heptane	43	5.713	5.713	0.0	94	20249	0	
44 Benzene	78	5.744	5.750	-0.006	95	108419	4.89	
* 45 1,2-Dichloroethane-d4 ISTD	102	5.885	5.885	0.0	0	23727	20.0	
46 Tert-amyl methyl ether	73	5.901	5.896	0.005	89	70916	4.89	
47 1,2-Dichloroethane	62	5.964	5.964	0.0	79	39152	4.91	
* 48 Fluorobenzene	96	6.210	6.210	0.0	99	468510	20.0	
49 2,4,4-Trimethyl-1-pentene	55	6.257	6.248	0.009	42	14256	4.81	
50 Isopropyl acetate	43	6.272	6.272	0.0	98	549095	0	
51 Methylcyclohexane	83	6.393	6.403	-0.010	88	35908	4.95	
52 Trichloroethene	95	6.398	6.403	-0.005	95	33326	5.00	
53 2,4,4-Trimethyl-2-pentene	97	6.455	6.461	-0.006	81	39640	5.04	
54 Dibromomethane	93	6.858	6.863	-0.005	97	23166	5.02	
55 1,2-Dichloropropane	63	6.968	6.973	-0.005	93	29387	4.74	
56 Dichlorobromomethane	83	7.036	7.036	0.0	98	39702	4.83	
57 Methyl methacrylate	69	7.229	7.234	-0.005	90	18131	0	
58 1,4-Dioxane	88	7.281	7.276	0.005	37	3051	56.2	
59 n-Propyl acetate	43	7.381	7.381	0.0	99	397862	0	
60 2-Chloroethyl vinyl ether	63	7.632	7.637	-0.005	91	169223	0	
S 61 1,3-Dichloropropene, Total	1				0		8.49	
62 cis-1,3-Dichloropropene	75	7.689	7.694	-0.005	81	42040	4.38	
$ 63 Toluene-d8 (Surr)	98	7.877	7.877	0.0	93	461359	19.8	
64 Toluene	92	7.924	7.930	-0.006	98	60942	4.81	
65 sec-Butyl acetate	43	8.139	8.139	0.0	99	627531	0	
66 4-Methyl-2-pentanone (MIBK)	43	8.296	8.296	0.0	98	337020	47.8	
67 Tetrachloroethene	164	8.296	8.301	-0.005	31	22028	4.66	
68 trans-1,3-Dichloropropene	75	8.317	8.316	0.0	93	37369	4.11	
69 Isobutyl acetate	43	8.416	8.421	-0.005	98	701955	0	
70 1,1,2-Trichloroethane	83	8.458	8.463	-0.005	74	24774	5.01	
71 Chlorodibromomethane	129	8.625	8.630	-0.005	89	32664	4.76	
72 1,3-Dichloropropane	76	8.714	8.714	0.0	93	36733	4.63	
73 Ethylene Dibromide	107	8.834	8.839	-0.005	99	29568	4.79	
74 n-Butyl acetate	43	8.980	8.980	0.0	97	506586	0	
75 2-Hexanone	43	9.054	9.054	0.0	98	251814	47.7	
* 76 Chlorobenzene-d5	117	9.299	9.299	0.0	83	340797	20.0	
77 Chlorobenzene	112	9.315	9.315	0.0	83	73183	4.87	
78 Ethylbenzene	91	9.336	9.341	-0.005	98	121562	4.99	
79 1,1,1,2-Tetrachloroethane	131	9.373	9.373	0.0	71	27568	4.92	
S 80 Xylenes, Total	1				0		14.6	
81 m-Xylene & p-Xylene	91	9.467	9.467	0.0	0	181431	9.67	
82 o-Xylene	91	9.838	9.838	0.0	97	94110	4.95	

Report Date: 01-Mar-2011 11:48:57 Chrom Revision: 1.2 17-Feb-2011 18:05:56
Data File: \\wessvr06\chromdata\HPGCMS3.i\20110228-4857.b\V12162.D

Compound	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
83 Styrene	104	9.880	9.880	0.0	71	73740	4.78	
84 Bromoform	173	9.895	9.901	-0.006	83	27905	4.85	
85 Isopropylbenzene	105	10.104	10.104	0.0	96	109734	5.02	
$ 86 BFB	95	10.340	10.340	0.0	93	185921	0	
$ 87 4-Bromofluorobenzene	95	10.340	10.340	0.0	93	185921	21.1	
88 Bromobenzene	77	10.429	10.429	0.0	88	56111	5.05	
89 N-Propylbenzene	91	10.450	10.449	0.001	99	137129	5.04	
90 1,1,2,2-Tetrachloroethane	83	10.502	10.502	0.0	94	46915	5.30	
91 2-Chlorotoluene	91	10.585	10.585	0.0	97	92339	4.95	
92 1,3,5-Trimethylbenzene	105	10.612	10.612	0.0	90	91077	5.00	
93 1,2,3-Trichloropropane	75	10.617	10.617	0.0	63	39836	5.17	
94 trans-1,4-Dichloro-2-butene	53	10.643	10.648	-0.005	7	9697	0	
95 4-Chlorotoluene	91	10.716	10.721	-0.005	97	87017	4.95	
96 tert-Butylbenzene	119	10.878	10.878	0.0	92	71426	4.92	
97 1,2,4-Trimethylbenzene	105	10.930	10.936	-0.006	64	93500	5.03	
98 sec-Butylbenzene	105	11.025	11.025	0.0	94	105179	5.01	
99 4-Isopropyltoluene	119	11.140	11.140	0.0	98	82027	4.61	
100 1,3-Dichlorobenzene	146	11.208	11.213	-0.005	98	59366	4.96	
* 101 1,4-Dichlorobenzene-d4	152	11.265	11.270	-0.005	94	196084	20.0	
102 1,4-Dichlorobenzene	146	11.281	11.281	0.0	76	66241	5.07	
103 n-Butylbenzene	91	11.485	11.485	0.0	97	77278	4.83	
104 1,2-Dichlorobenzene	146	11.626	11.631	-0.005	99	57585	4.86	
105 1,2-Dibromo-3-Chloropropane	157	12.274	12.274	0.0	81	8980	4.53	
106 1,3,5-Trichlorobenzene	180	12.305	12.305	0.0	96	38039	0	
107 Hexachlorobutadiene	225	12.807	12.807	0.0	78	13973	4.71	
108 1,2,4-Trichlorobenzene	180	12.828	12.833	-0.005	93	37642	4.82	
109 Naphthalene	128	13.095	13.100	-0.005	97	102221	4.38	
110 1,2,3-Trichlorobenzene	180	13.252	13.257	-0.005	95	37199	4.86	

$$\frac{(27905)(20)}{(196084)(5)} = 0.5692$$

Report Date: 01-Mar-2011 11:49:05 Chrom Revision: 1.2 17-Feb-2011 18:05:56

TestAmerica Laboratories
Target Compound Quantitation Report

Data File: \\wessvr06\chromdata\HPGCMS3.i\20110228-4857.b\V12163.D
Lims ID: STD10 Client ID:
Inject. Date: 28-Feb-2011 14:28:30 Dil. Factor: 1.0000
Sample Type: IC Calib Level: 5
Sample ID: STD10
Misc. Info.:
Operator: TP Instrument ID: HP #3 GC/MS
Vol. Injected: 1.0000 ALS Bottle#: 8
Lims Batch ID: 69936 Lims Sample ID: 7
Sublist: chrom-WES3UNPR*sub12
Detector: MS SCAN

Method: \\wessvr06\chromdata\HPGCMS3.i\20110228-4857.b\WES3UNPR.m
Last Update: 01-Mar-2011 11:49:04 Calib Date: 28-Feb-2011 16:00:30
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\wessvr06\chromdata\HPGCMS3.i\20110228-4857.b\V12167.D
Limit Group: VMS - 8260C VOA Calibration MCP
Integrator: RTE ID Type: Deconvolution ID
Process Host: WESSEMIDTRDR

First Level Reviewer: hartmannt Date: 01-Mar-2011 11:49:04

Compound	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
1 Dichlorodifluoromethane	85	1.662	1.661	0.001	99	58042	11.0	
2 Chloromethane	50	1.803	1.808	-0.005	88	69660	10.9	
3 Vinyl chloride	62	1.882	1.881	0.001	81	69811	10.9	
4 Bromomethane	94	2.164	2.163	0.001	88	51402	11.1	
5 Chloroethane	64	2.274	2.278	-0.004	98	33658	11.2	
6 Trichlorofluoromethane	101	2.410	2.409	0.001	84	92182	11.1	
7 Dichlorofluoromethane	67	2.436	2.440	-0.004	0	106971	0	
8 Ethyl ether	59	2.666	2.670	-0.004	98	47264	9.76	
9 Ethanol	45	2.791	2.796	-0.005	95	34239	0	
10 1,2-Dichloro-1,1,2-trifluoroethane	117	2.844	2.848	-0.004	0	48235	0	
11 1,1-Dichloroethene	61	2.865	2.864	0.001	97	86901	10.4	
12 Carbon disulfide	76	2.896	2.900	-0.004	98	162972	10.4	
13 1,1,2-Trichloro-1,2,2-trifluoroethane	151	2.917	2.921	-0.004	61	39883	10.4	
14 Acrolein	56	3.189	3.193	-0.004	98	695530	0	
15 Isopropyl alcohol	45	3.351	3.355	-0.004	98	221223	0	
16 Methylene Chloride	84	3.434	3.439	-0.005	91	61484	10.6	
17 Acetone	43	3.487	3.491	-0.004	99	239291	98.8	
18 trans-1,2-Dichloroethene	61	3.607	3.611	-0.004	41	86411	10.2	
19 Methyl acetate	43	3.623	3.627	-0.004	99	533953	97.4	
20 Hexane	57	3.685	3.687	-0.002	56	66511	0	
21 Methyl tert-butyl ether	73	3.732	3.737	-0.005	64	155755	10.0	
22 2-Methyl-2-propanol	59	3.816	3.826	-0.010	33	70970	0	
23 Isopropyl ether	45	4.119	4.124	-0.005	93	169362	9.92	
24 1,1-Dichloroethane	63	4.240	4.249	-0.009	82	109324	10.2	
25 Halothane	117	4.292	4.296	-0.004	0	57436	10.8	
26 Acrylonitrile	53	4.292	4.296	-0.004	60	25713	0	
27 Tert-butyl ethyl ether	59	4.511	4.516	-0.005	25	158419	9.86	
28 Vinyl acetate	43	4.511	4.521	-0.010	97	1101690	0	
S 29 1,2-Dichloroethene, Total	1				0		20.3	
30 cis-1,2-Dichloroethene	61	4.815	4.819	-0.004	81	84098	10.2	

Report Date: 01-Mar-2011 11:49:05 Chrom Revision: 1.2 17-Feb-2011 18:05:56
Data File: \\wessvr06\chromdata\HPGCMS3.i\20110228-4857.b\V12163.D

Compound	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
31 2,2-Dichloropropane	77	4.940	4.939	0.001	89	63402	12.2	
32 Chlorobromomethane	130	5.024	5.033	-0.009	95	45278	10.1	
33 Cyclohexane	56	5.045	5.049	-0.004	91	78367	10.2	
34 Chloroform	83	5.102	5.106	-0.004	78	108683	9.80	
35 Ethyl acetate	43	5.259	5.263	-0.004	99	685891	0	
36 Carbon tetrachloride	117	5.270	5.279	-0.009	33	77655	10.1	
$ 37 Dibromofluoromethane	113	5.296	5.305	-0.009	75	152794	20.3	
38 Tetrahydrofuran	42	5.306	5.310	-0.004	55	237596	92.1	
39 sec-Butyl Alcohol	45	5.311	5.316	-0.005	64	294168	0	
40 1,1,1-Trichloroethane	97	5.337	5.347	-0.010	45	86496	10.2	
41 2-Butanone (MEK)	43	5.452	5.452	0.0	98	392341	99.9	
42 1,1-Dichloropropene	75	5.473	5.478	-0.005	78	76157	9.81	
43 n-Heptane	43	5.709	5.713	-0.004	95	43802	0	
44 Benzene	78	5.745	5.750	-0.005	96	221555	10.1	
* 45 1,2-Dichloroethane-d4 ISTD	102	5.881	5.885	-0.004	0	24695	20.0	
46 Tert-amyl methyl ether	73	5.892	5.896	-0.004	96	145765	10.1	
47 1,2-Dichloroethane	62	5.960	5.964	-0.004	97	77766	9.83	
* 48 Fluorobenzene	96	6.211	6.210	0.001	99	465118	20.0	
49 2,4,4-Trimethyl-1-pentene	55	6.258	6.248	0.010	40	29433	10.0	
50 Isopropyl acetate	43	6.268	6.272	-0.004	99	1142323	0	
51 Methylcyclohexane	83	6.394	6.403	-0.009	85	75589	10.5	
52 Trichloroethene	95	6.399	6.403	-0.004	96	64829	9.81	
53 2,4,4-Trimethyl-2-pentene	97	6.456	6.461	-0.005	84	73556	9.41	M
54 Dibromomethane	93	6.854	6.863	-0.009	97	44275	9.67	
55 1,2-Dichloropropane	63	6.969	6.973	-0.004	88	58604	9.51	
56 Dichlorobromomethane	83	7.037	7.036	0.001	98	80546	9.88	
57 Methyl methacrylate	69	7.225	7.234	-0.009	89	36151	0	
58 1,4-Dioxane	88	7.288	7.276	0.012	25	5202	92.1	
59 n-Propyl acetate	43	7.376	7.381	-0.005	99	804652	0	
60 2-Chloroethyl vinyl ether	63	7.633	7.637	-0.004	91	368404	0	
S 61 1,3-Dichloropropene, Total	1				0		17.5	
62 cis-1,3-Dichloropropene	75	7.690	7.694	-0.004	80	83343	8.74	
$ 63 Toluene-d8 (Surr)	98	7.878	7.877	0.001	94	463143	20.0	
64 Toluene	92	7.925	7.930	-0.005	97	123841	9.86	
65 sec-Butyl acetate	43	8.140	8.139	0.001	99	1299354	0	
66 4-Methyl-2-pentanone (MIBK)	43	8.291	8.296	-0.005	98	728067	104.0	
67 Tetrachloroethene	164	8.302	8.301	0.001	27	47035	10.0	
68 trans-1,3-Dichloropropene	75	8.317	8.316	0.001	92	79023	8.76	
69 Isobutyl acetate	43	8.417	8.421	-0.004	98	1423761	0	
70 1,1,2-Trichloroethane	83	8.464	8.463	0.001	76	45781	9.33	
71 Chlorodibromomethane	129	8.626	8.630	-0.004	88	67592	9.92	
72 1,3-Dichloropropane	76	8.715	8.714	0.001	93	73886	9.37	
73 Ethylene Dibromide	107	8.835	8.839	-0.004	98	57122	9.32	
74 n-Butyl acetate	43	8.976	8.980	-0.004	97	1003624	0	
75 2-Hexanone	43	9.055	9.054	0.001	98	539426	103.0	
* 76 Chlorobenzene-d5	117	9.300	9.299	0.001	83	338506	20.0	
77 Chlorobenzene	112	9.316	9.315	0.001	94	148239	9.94	
78 Ethylbenzene	91	9.342	9.341	0.001	98	242750	10.0	
79 1,1,1,2-Tetrachloroethane	131	9.373	9.373	0.0	76	54474	9.78	
S 80 Xylenes, Total	1				0		29.9	
81 m-Xylene & p-Xylene	91	9.468	9.467	0.001	0	371856	20.0	
82 o-Xylene	91	9.839	9.838	0.001	97	187347	9.92	

Report Date: 01-Mar-2011 11:49:05 Chrom Revision: 1.2 17-Feb-2011 18:05:56
Data File: \\wessvr06\chromdata\HPGCMS3.i\20110228-4857.b\V12163.D

Compound	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
83 Styrene	104	9.881	9.880	0.001	81	151647	9.90	
84 Bromoform	173	9.902	9.901	0.001	84	55736	9.63	
85 Isopropylbenzene	105	10.105	10.104	0.001	96	220983	10.2	
$ 86 BFB	95	10.341	10.340	0.001	92	182547	0	
$ 87 4-Bromofluorobenzene	95	10.341	10.340	0.001	92	182547	20.8	
88 Bromobenzene	77	10.430	10.429	0.001	90	117761	10.7	
89 N-Propylbenzene	91	10.450	10.449	0.001	99	280934	10.4	
90 1,1,2,2-Tetrachloroethane	83	10.503	10.502	0.001	85	87020	9.77	
91 2-Chlorotoluene	91	10.586	10.585	0.001	96	194526	10.5	
92 1,3,5-Trimethylbenzene	105	10.613	10.612	0.001	92	192444	10.6	
93 1,2,3-Trichloropropane	75	10.618	10.617	0.001	59	78675	10.3	
94 trans-1,4-Dichloro-2-butene	53	10.649	10.648	0.001	91	18824	0	M
95 4-Chlorotoluene	91	10.722	10.721	0.001	97	184629	10.6	
96 tert-Butylbenzene	119	10.879	10.878	0.001	91	146960	10.2	
97 1,2,4-Trimethylbenzene	105	10.937	10.936	0.001	63	191379	10.4	
98 sec-Butylbenzene	105	11.026	11.025	0.001	95	219841	10.6	
99 4-Isopropyltoluene	119	11.141	11.140	0.001	97	175392	9.92	
100 1,3-Dichlorobenzene	146	11.209	11.213	-0.005	99	120728	10.1	
* 101 1,4-Dichlorobenzene-d4	152	11.271	11.270	0.001	93	197343	20.0	
102 1,4-Dichlorobenzene	146	11.282	11.281	0.001	92	127851	9.72	
103 n-Butylbenzene	91	11.486	11.485	0.001	96	161215	10.0	
104 1,2-Dichlorobenzene	146	11.627	11.631	-0.004	98	118354	9.93	
105 1,2-Dibromo-3-Chloropropane	157	12.275	12.274	0.001	79	19015	9.54	
106 1,3,5-Trichlorobenzene	180	12.306	12.305	0.001	97	82237	0	
107 Hexachlorobutadiene	225	12.808	12.807	0.001	81	28768	9.64	
108 1,2,4-Trichlorobenzene	180	12.829	12.833	-0.004	92	75907	9.65	
109 Naphthalene	128	13.101	13.100	0.001	97	211164	8.99	
110 1,2,3-Trichlorobenzene	180	13.258	13.257	0.001	95	74615	9.69	

QC Flag Legend

Review Flags
M - Manually Integrated

$$\frac{(55736)(20)}{(197343)(10)} = 0.5649$$

Report Date: 01-Mar-2011 11:49:14 Chrom Revision: 1.2 17-Feb-2011 18:05:56

TestAmerica Laboratories
Target Compound Quantitation Report

Data File: \\wessvr06\chromdata\HPGCMS3.i\20110228-4857.b\V12164.D
Lims ID: STD20 Client ID:
Inject. Date: 28-Feb-2011 14:51:30 Dil. Factor: 1.0000
Sample Type: ICIS Calib Level: 6
Sample ID: STD20
Misc. Info.:
Operator: TP Instrument ID: HP #3 GC/MS
Vol. Injected: 1.0000 ALS Bottle#: 9
Lims Batch ID: 69936 Lims Sample ID: 8
Sublist: chrom-WES3UNPR*sub12
Detector: MS SCAN

Method: \\wessvr06\chromdata\HPGCMS3.i\20110228-4857.b\WES3UNPR.m
Last Update: 01-Mar-2011 11:49:12 Calib Date: 28-Feb-2011 16:00:30
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\wessvr06\chromdata\HPGCMS3.i\20110228-4857.b\V12167.D
Limit Group: VMS - 8260C VOA Calibration MCP
Integrator: RTE ID Type: Deconvolution ID
Process Host: WESSEMIDTRDR

First Level Reviewer: hartmannt Date: 01-Mar-2011 11:49:12

Compound	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
1 Dichlorodifluoromethane	85	1.658	1.661	-0.003	100	124118	21.8	
2 Chloromethane	50	1.805	1.808	-0.004	87	145003	21.1	
3 Vinyl chloride	62	1.878	1.881	-0.003	81	146408	21.2	
4 Bromomethane	94	2.160	2.163	-0.003	89	106064	21.3	
5 Chloroethane	64	2.275	2.278	-0.003	98	70239	21.7	
6 Trichlorofluoromethane	101	2.406	2.409	-0.003	85	189118	21.1	
7 Dichlorofluoromethane	67	2.437	2.440	-0.003	0	215902	0	
8 Ethyl ether	59	2.667	2.670	-0.003	96	106623	20.4	
9 Ethanol	45	2.787	2.796	-0.009	72	75308	0	
10 1,2-Dichloro-1,1,2-trifluoroethane	117	2.840	2.848	-0.008	0	96031	0	
11 1,1-Dichloroethene	61	2.861	2.864	-0.003	88	187409	20.8	
12 Carbon disulfide	76	2.897	2.900	-0.003	99	355100	21.1	
13 1,1,2-Trichloro-1,2,2-trifluoroethane	151	2.913	2.921	-0.008	33	87137	21.2	
14 Acrolein	56	3.185	3.193	-0.008	98	1428724	0	
15 Isopropyl alcohol	45	3.352	3.355	-0.003	98	462607	0	
16 Methylene Chloride	84	3.430	3.439	-0.009	91	136277	21.8	
17 Acetone	43	3.488	3.491	-0.003	99	484979	186.1	
18 trans-1,2-Dichloroethene	61	3.603	3.611	-0.008	49	187554	20.5	
19 Methyl acetate	43	3.619	3.627	-0.008	99	1192784	202.0	
20 Hexane	57	3.687	3.687	0.0	55	133080	0	
21 Methyl tert-butyl ether	73	3.728	3.737	-0.009	82	344004	20.5	
22 2-Methyl-2-propanol	59	3.817	3.826	-0.009	58	161808	0	
23 Isopropyl ether	45	4.121	4.124	-0.004	93	375616	20.4	
24 1,1-Dichloroethane	63	4.241	4.249	-0.008	96	237824	20.5	
25 Halothane	117	4.293	4.296	-0.003	0	115806	20.3	
26 Acrylonitrile	53	4.288	4.296	-0.008	71	57645	0	
27 Tert-butyl ethyl ether	59	4.507	4.516	-0.009	26	362281	21.0	
28 Vinyl acetate	43	4.513	4.521	-0.008	97	2346845	0	
S 29 1,2-Dichloroethene, Total	1				0		41.1	
30 cis-1,2-Dichloroethene	61	4.811	4.819	-0.008	66	183664	20.6	

Report Date: 01-Mar-2011 11:49:14 Chrom Revision: 1.2 17-Feb-2011 18:05:56
Data File: \\wessvr06\chromdata\HPGCMS3.i\20110228-4857.b\V12164.D

Compound	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
31 2,2-Dichloropropane	77	4.936	4.939	-0.003	90	120054	21.5	
32 Chlorobromomethane	130	5.020	5.033	-0.013	96	99280	20.6	
33 Cyclohexane	56	5.041	5.049	-0.008	90	174255	21.0	
34 Chloroform	83	5.103	5.106	-0.003	93	239675	20.1	
35 Ethyl acetate	43	5.255	5.263	-0.008	99	1575670	0	
36 Carbon tetrachloride	117	5.271	5.279	-0.008	25	171080	20.7	
$ 37 Dibromofluoromethane	113	5.297	5.305	-0.008	31	159862	19.7	
38 Tetrahydrofuran	42	5.302	5.310	-0.008	58	557762	200.8	
39 sec-Butyl Alcohol	45	5.312	5.316	-0.004	64	685966	0	
40 1,1,1-Trichloroethane	97	5.339	5.347	-0.008	45	187089	20.5	
41 2-Butanone (MEK)	43	5.448	5.452	-0.004	98	842534	199.3	
42 1,1-Dichloropropene	75	5.475	5.478	-0.003	92	175987	21.1	
43 n-Heptane	43	5.715	5.713	0.002	94	93088	0	
44 Benzene	78	5.741	5.750	-0.009	95	499128	21.1	
* 45 1,2-Dichloroethane-d4 ISTD	102	5.877	5.885	-0.008	0	25686	20.0	
46 Tert-amyl methyl ether	73	5.893	5.896	-0.003	97	326181	21.0	
47 1,2-Dichloroethane	62	5.961	5.964	-0.003	97	170003	20.0	
* 48 Fluorobenzene	96	6.206	6.210	-0.004	99	500683	20.0	
49 2,4,4-Trimethyl-1-pentene	55	6.248	6.248	0.0	47	65636	20.7	
50 Isopropyl acetate	43	6.269	6.272	-0.003	99	2520237	0	
51 Methylcyclohexane	83	6.389	6.403	-0.014	88	166894	21.5	
52 Trichloroethene	95	6.400	6.403	-0.003	97	144061	20.2	
53 2,4,4-Trimethyl-2-pentene	97	6.452	6.461	-0.009	87	169710	20.2	
54 Dibromomethane	93	6.855	6.863	-0.008	99	101289	20.5	
55 1,2-Dichloropropane	63	6.965	6.973	-0.008	93	134635	20.3	
56 Dichlorobromomethane	83	7.038	7.036	0.002	100	181718	20.7	
57 Methyl methacrylate	69	7.226	7.234	-0.008	91	87886	0	
58 1,4-Dioxane	88	7.278	7.276	0.002	45	12964	220.7	
59 n-Propyl acetate	43	7.378	7.381	-0.003	99	1902632	0	
60 2-Chloroethyl vinyl ether	63	7.634	7.637	-0.003	90	831498	0	
S 61 1,3-Dichloropropene, Total	1				0		39.5	
62 cis-1,3-Dichloropropene	75	7.691	7.694	-0.003	80	202629	19.7	
$ 63 Toluene-d8 (Surr)	98	7.874	7.877	-0.003	93	493484	19.8	
64 Toluene	92	7.926	7.930	-0.004	97	287656	21.3	
65 sec-Butyl acetate	43	8.136	8.139	-0.003	99	2971636	0	
66 4-Methyl-2-pentanone (MIBK)	43	8.292	8.296	-0.004	97	1547421	205.4	
67 Tetrachloroethene	164	8.298	8.301	-0.003	27	106920	21.2	
68 trans-1,3-Dichloropropene	75	8.313	8.316	-0.003	94	191457	19.7	
69 Isobutyl acetate	43	8.418	8.421	-0.003	98	3130081	0	
70 1,1,2-Trichloroethane	83	8.460	8.463	-0.003	74	112029	21.2	
71 Chlorodibromomethane	129	8.627	8.630	-0.003	88	154732	21.1	
72 1,3-Dichloropropane	76	8.711	8.714	-0.003	93	178664	21.1	
73 Ethylene Dibromide	107	8.836	8.839	-0.003	98	137717	20.9	
74 n-Butyl acetate	43	8.977	8.980	-0.003	97	2281254	0	
75 2-Hexanone	43	9.056	9.054	0.002	98	1112957	197.4	
* 76 Chlorobenzene-d5	117	9.301	9.299	0.002	83	366329	20.0	
77 Chlorobenzene	112	9.317	9.315	0.002	94	341768	21.2	
78 Ethylbenzene	91	9.338	9.341	-0.003	98	545584	20.8	
79 1,1,1,2-Tetrachloroethane	131	9.369	9.373	-0.004	85	124248	20.6	
S 80 Xylenes, Total	1				0		64.6	
81 m-Xylene & p-Xylene	91	9.469	9.467	0.002	0	870877	43.2	
82 o-Xylene	91	9.840	9.838	0.002	97	437211	21.4	

Report Date: 01-Mar-2011 11:49:14 Chrom Revision: 1.2 17-Feb-2011 18:05:56

Data File: \\wessvr06\chromdata\HPGCMS3.i\20110228-4857.b\V12164.D

Compound	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
83 Styrene	104	9.882	9.880	0.002	82	351434	21.2	
84 Bromoform	173	9.903	9.901	0.002	85	126378	20.5	
85 Isopropylbenzene	105	10.107	10.104	0.003	96	502947	21.4	
$ 86 BFB	95	10.342	10.340	0.002	93	191682	0	
$ 87 4-Bromofluorobenzene	95	10.342	10.340	0.002	93	191682	20.2	
88 Bromobenzene	77	10.431	10.429	0.002	88	252540	21.2	
89 N-Propylbenzene	91	10.452	10.449	0.003	99	628745	21.5	
90 1,1,2,2-Tetrachloroethane	83	10.504	10.502	0.002	95	191296	20.2	
91 2-Chlorotoluene	91	10.582	10.585	-0.003	96	419256	20.9	
92 1,3,5-Trimethylbenzene	105	10.614	10.612	0.002	91	424819	21.7	
93 1,2,3-Trichloropropane	75	10.614	10.617	-0.003	57	176401	21.3	
94 trans-1,4-Dichloro-2-butene	53	10.650	10.648	0.002	8	45938	0	
95 4-Chlorotoluene	91	10.718	10.721	-0.003	98	408667	21.6	
96 tert-Butylbenzene	119	10.880	10.878	0.002	92	331599	21.2	
97 1,2,4-Trimethylbenzene	105	10.933	10.936	-0.003	64	443635	22.2	
98 sec-Butylbenzene	105	11.021	11.025	-0.004	95	489374	21.7	
99 4-Isopropyltoluene	119	11.136	11.140	-0.004	97	392793	20.5	
100 1,3-Dichlorobenzene	146	11.210	11.213	-0.003	99	277325	21.5	
* 101 1,4-Dichlorobenzene-d4	152	11.267	11.270	-0.003	93	209977	20.0	
102 1,4-Dichlorobenzene	146	11.283	11.281	0.002	95	286704	20.5	
103 n-Butylbenzene	91	11.482	11.485	-0.003	97	358217	20.9	
104 1,2-Dichlorobenzene	146	11.628	11.631	-0.003	98	258922	20.4	
105 1,2-Dibromo-3-Chloropropane	157	12.276	12.274	0.002	88	41696	19.7	
106 1,3,5-Trichlorobenzene	180	12.302	12.305	-0.003	97	174399	0	
107 Hexachlorobutadiene	225	12.804	12.807	-0.003	84	63049	19.9	
108 1,2,4-Trichlorobenzene	180	12.830	12.833	-0.003	93	168546	20.1	
109 Naphthalene	128	13.097	13.100	-0.003	97	477444	19.1	
110 1,2,3-Trichlorobenzene	180	13.254	13.257	-0.003	95	163694	20.0	

$$\frac{(126378)(20)}{(209977)(20)} = 0.6019$$

Report Date: 01-Mar-2011 11:49:22 Chrom Revision: 1.2 17-Feb-2011 18:05:56

TestAmerica Laboratories
Target Compound Quantitation Report

Data File: \\wessvr06\chromdata\HPGCMS3.i\20110228-4857.b\V12165.D
Lims ID: STD40 Client ID:
Inject. Date: 28-Feb-2011 15:14:30 Dil. Factor: 1.0000
Sample Type: IC Calib Level: 7
Sample ID: STD40
Misc. Info.:
Operator: TP Instrument ID: HP #3 GC/MS
Vol. Injected: 1.0000 ALS Bottle#: 10
Lims Batch ID: 69936 Lims Sample ID: 9
Sublist: chrom-WES3UNPR*sub12
Detector: MS SCAN

Method: \\wessvr06\chromdata\HPGCMS3.i\20110228-4857.b\WES3UNPR.m
Last Update: 01-Mar-2011 11:49:20 Calib Date: 28-Feb-2011 16:00:30
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\wessvr06\chromdata\HPGCMS3.i\20110228-4857.b\V12167.D
Limit Group: VMS - 8260C VOA Calibration MCP
Integrator: RTE ID Type: Deconvolution ID
Process Host: WESSEMIDTRDR

First Level Reviewer: hartmannt Date: 01-Mar-2011 11:49:20

Compound	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
1 Dichlorodifluoromethane	85	1.662	1.661	0.001	99	222602	38.7	
2 Chloromethane	50	1.808	1.808	0.0	88	269532	38.7	
3 Vinyl chloride	62	1.887	1.881	0.006	99	273993	39.2	
4 Bromomethane	94	2.164	2.163	0.001	90	210837	42.0	
5 Chloroethane	64	2.279	2.278	0.001	98	134762	41.2	
6 Trichlorofluoromethane	101	2.409	2.409	0.0	99	348921	38.4	
7 Dichlorofluoromethane	67	2.441	2.440	0.001	0	432330	0	
8 Ethyl ether	59	2.671	2.670	0.001	96	206395	39.1	
9 Ethanol	45	2.796	2.796	0.0	73	137357	0	
10 1,2-Dichloro-1,1,2-trifluoroethane	117	2.849	2.848	0.001	0	198081	0	
11 1,1-Dichloroethene	61	2.864	2.864	0.0	98	346413	38.0	
12 Carbon disulfide	76	2.901	2.900	0.001	99	654314	38.4	
13 1,1,2-Trichloro-1,2,2-trifluoroethane	151	2.922	2.921	0.001	50	157812	37.9	
14 Acrolein	56	3.194	3.193	0.001	98	3016992	0	
15 Isopropyl alcohol	45	3.356	3.355	0.001	99	958987	0	
16 Methylene Chloride	84	3.434	3.439	-0.005	93	254816	40.3	
17 Acetone	43	3.497	3.491	0.006	99	1016605	385.8	
18 trans-1,2-Dichloroethene	61	3.607	3.611	-0.004	52	358381	38.8	
19 Methyl acetate	43	3.628	3.627	0.001	99	2525151	423.1	
20 Hexane	57	3.690	3.687	0.003	56	267265	0	M
21 Methyl tert-butyl ether	73	3.737	3.737	0.0	84	690431	40.8	
22 2-Methyl-2-propanol	59	3.826	3.826	0.0	57	315537	0	
23 Isopropyl ether	45	4.124	4.124	0.0	94	751791	40.5	
24 1,1-Dichloroethane	63	4.250	4.249	0.001	97	447806	38.3	
25 Halothane	117	4.297	4.296	0.001	0	235011	40.7	
26 Acrylonitrile	53	4.297	4.296	0.001	66	113474	0	
27 Tert-butyl ethyl ether	59	4.516	4.516	0.0	25	714293	40.9	
28 Vinyl acetate	43	4.522	4.521	0.001	97	4961947	0	
S 29 1,2-Dichloroethene, Total	1				0		77.2	
30 cis-1,2-Dichloroethene	61	4.820	4.819	0.001	81	345896	38.4	

Report Date: 01-Mar-2011 11:49:22 Chrom Revision: 1.2 17-Feb-2011 18:05:56

Data File: \\wessvr06\chromdata\HPGCMS3.i\20110228-4857.b\V12165.D

Compound	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
31 2,2-Dichloropropane	77	4.940	4.939	0.001	91	236781	42.0	
32 Chlorobromomethane	130	5.029	5.033	-0.004	95	190241	39.0	
33 Cyclohexane	56	5.050	5.049	0.001	91	346052	41.3	
34 Chloroform	83	5.112	5.106	0.006	94	472328	39.1	
35 Ethyl acetate	43	5.259	5.263	-0.004	99	3355453	0	
36 Carbon tetrachloride	117	5.280	5.279	0.001	37	319845	38.2	
$ 37 Dibromofluoromethane	113	5.306	5.305	0.001	15	164296	20.0	
38 Tetrahydrofuran	42	5.311	5.310	0.001	60	1066838	379.8	
39 sec-Butyl Alcohol	45	5.316	5.316	0.0	64	1502651	0	
40 1,1,1-Trichloroethane	97	5.348	5.347	0.001	45	354315	38.4	
41 2-Butanone (MEK)	43	5.452	5.452	0.0	98	1795567	420.1	
42 1,1-Dichloropropene	75	5.478	5.478	0.0	87	325738	38.6	
43 n-Heptane	43	5.714	5.713	0.001	95	178671	0	
44 Benzene	78	5.750	5.750	0.0	95	919895	38.4	
* 45 1,2-Dichloroethane-d4 ISTD	102	5.886	5.885	0.001	0	26056	20.0	
46 Tert-amyl methyl ether	73	5.896	5.896	0.0	97	629882	40.2	
47 1,2-Dichloroethane	62	5.964	5.964	0.0	97	336683	39.1	
* 48 Fluorobenzene	96	6.215	6.210	0.005	99	506208	20.0	
49 2,4,4-Trimethyl-1-pentene	55	6.257	6.248	0.009	42	123846	38.7	
50 Isopropyl acetate	43	6.273	6.272	0.001	99	5428266	0	
51 Methylcyclohexane	83	6.398	6.403	-0.005	87	317523	40.5	
52 Trichloroethene	95	6.409	6.403	0.006	99	277376	38.5	
53 2,4,4-Trimethyl-2-pentene	97	6.461	6.461	0.0	82	313745	36.9	
54 Dibromomethane	93	6.864	6.863	0.001	99	195946	39.3	
55 1,2-Dichloropropane	63	6.973	6.973	0.0	90	261319	39.0	
56 Dichlorobromomethane	83	7.041	7.036	0.005	100	353489	39.8	
57 Methyl methacrylate	69	7.230	7.234	-0.004	90	182627	0	
58 1,4-Dioxane	88	7.282	7.276	0.006	29	22155	371.8	M
59 n-Propyl acetate	43	7.381	7.381	0.0	99	4091787	0	
60 2-Chloroethyl vinyl ether	63	7.637	7.637	0.0	90	1770353	0	
S 61 1,3-Dichloropropene, Total	1				0		78.3	
62 cis-1,3-Dichloropropene	75	7.695	7.694	0.001	80	413500	39.9	
$ 63 Toluene-d8 (Surr)	98	7.883	7.877	0.006	93	513460	20.4	
64 Toluene	92	7.930	7.930	0.0	97	536451	39.2	
65 sec-Butyl acetate	43	8.145	8.139	0.006	100	6224005	0	
66 4-Methyl-2-pentanone (MIBK)	43	8.296	8.296	0.0	97	3295398	432.7	
67 Tetrachloroethene	164	8.301	8.301	0.0	31	205625	40.3	
68 trans-1,3-Dichloropropene	75	8.317	8.316	0.001	92	377606	38.5	
69 Isobutyl acetate	43	8.422	8.421	0.001	97	6603871	0	
70 1,1,2-Trichloroethane	83	8.463	8.463	0.0	69	217283	40.7	
71 Chlorodibromomethane	129	8.631	8.630	0.001	89	305209	41.1	
72 1,3-Dichloropropane	76	8.714	8.714	0.0	93	341458	39.8	
73 Ethylene Dibromide	107	8.840	8.839	0.001	96	267826	40.1	
74 n-Butyl acetate	43	8.981	8.980	0.001	98	4833917	0	
75 2-Hexanone	43	9.054	9.054	0.0	98	2313633	405.9	
* 76 Chlorobenzene-d5	117	9.305	9.299	0.006	82	375506	20.0	
77 Chlorobenzene	112	9.316	9.315	0.001	94	653516	39.5	
78 Ethylbenzene	91	9.342	9.341	0.001	98	1060013	39.5	
79 1,1,1,2-Tetrachloroethane	131	9.373	9.373	0.0	96	239352	38.7	
S 80 Xylenes, Total	1				0		121.3	
81 m-Xylene & p-Xylene	91	9.472	9.467	0.005	0	1662163	80.4	
82 o-Xylene	91	9.838	9.838	0.0	98	855987	40.9	

Report Date: 01-Mar-2011 11:49:22 Chrom Revision: 1.2 17-Feb-2011 18:05:56
Data File: \\wessvr06\chromdata\HPGCMS3.i\20110228-4857.b\V12165.D

Compound	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
83 Styrene	104	9.885	9.880	0.005	70	695178	40.9	
84 Bromoform	173	9.901	9.901	0.0	84	249883	39.8	
85 Isopropylbenzene	105	10.105	10.104	0.001	96	985423	40.9	
$ 86 BFB	95	10.346	10.340	0.006	97	194682	0	
$ 87 4-Bromofluorobenzene	95	10.346	10.340	0.006	97	194682	20.0	
88 Bromobenzene	77	10.434	10.429	0.005	87	500013	40.9	
89 N-Propylbenzene	91	10.450	10.449	0.001	99	1228005	41.0	
90 1,1,2,2-Tetrachloroethane	83	10.502	10.502	0.0	85	372799	38.6	
91 2-Chlorotoluene	91	10.586	10.585	0.001	96	797205	38.8	
92 1,3,5-Trimethylbenzene	105	10.612	10.612	0.0	92	825135	41.1	
93 1,2,3-Trichloropropane	75	10.617	10.617	0.0	58	317589	37.4	
94 trans-1,4-Dichloro-2-butene	53	10.649	10.648	0.001	24	93773	0	
95 4-Chlorotoluene	91	10.722	10.721	0.001	97	773240	39.9	
96 tert-Butylbenzene	119	10.879	10.878	0.001	91	632905	39.6	
97 1,2,4-Trimethylbenzene	105	10.936	10.936	0.0	65	830596	40.6	
98 sec-Butylbenzene	105	11.025	11.025	0.0	94	924966	40.0	
99 4-Isopropyltoluene	119	11.140	11.140	0.0	97	733884	37.4	
100 1,3-Dichlorobenzene	146	11.208	11.213	-0.005	99	525329	39.8	
* 101 1,4-Dichlorobenzene-d4	152	11.271	11.270	0.001	92	214165	20.0	
102 1,4-Dichlorobenzene	146	11.281	11.281	0.0	95	549553	38.5	
103 n-Butylbenzene	91	11.485	11.485	0.0	97	684651	39.2	
104 1,2-Dichlorobenzene	146	11.626	11.631	-0.005	98	502757	38.9	
105 1,2-Dibromo-3-Chloropropane	157	12.275	12.274	0.001	84	86358	39.9	
106 1,3,5-Trichlorobenzene	180	12.306	12.305	0.001	97	359037	0	
107 Hexachlorobutadiene	225	12.808	12.807	0.001	82	120914	37.3	
108 1,2,4-Trichlorobenzene	180	12.829	12.833	-0.004	93	331841	38.9	
109 Naphthalene	128	13.095	13.100	-0.005	98	1003573	39.4	
110 1,2,3-Trichlorobenzene	180	13.258	13.257	0.001	95	331743	39.7	

QC Flag Legend

Review Flags
M - Manually Integrated

$$\frac{(249883)(20)}{(214165)(40)} = 0.5834$$

Report Date: 01-Mar-2011 11:49:31 Chrom Revision: 1.2 17-Feb-2011 18:05:56

TestAmerica Laboratories
Target Compound Quantitation Report

Data File: \\wessvr06\chromdata\HPGCMS3.i\20110228-4857.b\V12166.D
Lims ID: STD80 Client ID:
Inject. Date: 28-Feb-2011 15:37:30 Dil. Factor: 1.0000
Sample Type: IC Calib Level: 8
Sample ID: STD80
Misc. Info.:
Operator: TP Instrument ID: HP #3 GC/MS
Vol. Injected: 1.0000 ALS Bottle#: 11
Lims Batch ID: 69936 Lims Sample ID: 10
Sublist: chrom-WES3UNPR*sub12
Detector: MS SCAN

Method: \\wessvr06\chromdata\HPGCMS3.i\20110228-4857.b\WES3UNPR.m
Last Update: 01-Mar-2011 11:49:29 Calib Date: 28-Feb-2011 16:00:30
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\wessvr06\chromdata\HPGCMS3.i\20110228-4857.b\V12167.D
Limit Group: VMS - 8260C VOA Calibration MCP
Integrator: RTE ID Type: Deconvolution ID
Process Host: WESSEMIDTRDR

First Level Reviewer: hartmannt Date: 01-Mar-2011 11:49:29

Compound	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
1 Dichlorodifluoromethane	85	1.658	1.661	-0.003	100	444023	72.0	
2 Chloromethane	50	1.805	1.808	-0.003	88	540014	72.4	
3 Vinyl chloride	62	1.883	1.881	0.002	81	528404	70.5	
4 Bromomethane	94	2.160	2.163	-0.003	90	419718	78.0	
5 Chloroethane	64	2.270	2.278	-0.008	97	265647	75.9	
6 Trichlorofluoromethane	101	2.411	2.409	0.002	86	698824	71.9	
7 Dichlorofluoromethane	67	2.437	2.440	-0.003	0	871555	0	
8 Ethyl ether	59	2.662	2.670	-0.008	96	431112	76.3	
9 Ethanol	45	2.793	2.796	-0.003	51	258962	0	
10 1,2-Dichloro-1,1,2-trifluoroethane	117	2.840	2.848	-0.008	0	410766	0	
11 1,1-Dichloroethene	61	2.856	2.864	-0.008	98	701401	71.8	
12 Carbon disulfide	76	2.897	2.900	-0.003	98	1313503	72.1	
13 1,1,2-Trichloro-1,2,2-trifluoroethane	151	2.913	2.921	-0.008	39	325627	73.1	
14 Acrolein	56	3.185	3.193	-0.008	98	6337616	0	
15 Isopropyl alcohol	45	3.347	3.355	-0.008	98	1812451	0	
16 Methylene Chloride	84	3.431	3.439	-0.008	93	517099	76.4	
17 Acetone	43	3.488	3.491	-0.003	100	2328193	824.9	
18 trans-1,2-Dichloroethene	61	3.603	3.611	-0.008	41	733854	74.1	
19 Methyl acetate	43	3.619	3.627	-0.008	99	5044124	789.0	
20 Hexane	57	3.682	3.687	-0.005	55	526850	0	
21 Methyl tert-butyl ether	73	3.729	3.737	-0.008	80	1433263	79.1	
22 2-Methyl-2-propanol	59	3.818	3.826	-0.008	21	647951	0	
23 Isopropyl ether	45	4.121	4.124	-0.003	94	1574392	79.1	
24 1,1-Dichloroethane	63	4.241	4.249	-0.008	96	920217	73.4	
25 Halothane	117	4.293	4.296	-0.003	0	467707	75.7	
26 Acrylonitrile	53	4.288	4.296	-0.008	71	238366	0	
27 Tert-butyl ethyl ether	59	4.508	4.516	-0.008	25	1516453	81.0	
28 Vinyl acetate	43	4.513	4.521	-0.008	97	10905086	0	
S 29 1,2-Dichloroethene, Total	1				0		150.3	
30 cis-1,2-Dichloroethene	61	4.816	4.819	-0.003	66	734751	76.2	

Report Date: 01-Mar-2011 11:49:31 Chrom Revision: 1.2 17-Feb-2011 18:05:56
Data File: \\wessvr06\chromdata\HPGCMS3.i\20110228-4857.b\V12166.D

Compound	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
31 2,2-Dichloropropane	77	4.936	4.939	-0.003	90	466948	77.3	
32 Chlorobromomethane	130	5.025	5.033	-0.008	94	396831	76.0	
33 Cyclohexane	56	5.046	5.049	-0.003	90	690481	77.0	
34 Chloroform	83	5.104	5.106	-0.002	82	951131	73.6	
35 Ethyl acetate	43	5.255	5.263	-0.008	99	7036718	0	
36 Carbon tetrachloride	117	5.271	5.279	-0.008	32	664590	74.1	
$ 37 Dibromofluoromethane	113	5.302	5.305	-0.003	9	170140	19.3	
38 Tetrahydrofuran	42	5.302	5.310	-0.008	80	2610553	867.7	
39 sec-Butyl Alcohol	45	5.313	5.316	-0.003	68	2859092	0	
40 1,1,1-Trichloroethane	97	5.344	5.347	-0.003	45	721021	73.0	
41 2-Butanone (MEK)	43	5.449	5.452	-0.003	98	3886384	848.9	
42 1,1-Dichloropropene	75	5.475	5.478	-0.003	86	696659	77.0	
43 n-Heptane	43	5.710	5.713	-0.003	95	383064	0	
44 Benzene	78	5.747	5.750	-0.003	95	1973552	76.9	
* 45 1,2-Dichloroethane-d4 ISTD	102	5.888	5.885	0.003	0	26806	20.0	
46 Tert-amyl methyl ether	73	5.893	5.896	-0.003	97	1355609	80.8	
47 1,2-Dichloroethane	62	5.961	5.964	-0.003	97	706915	76.7	
* 48 Fluorobenzene	96	6.212	6.210	0.002	99	542184	20.0	
49 2,4,4-Trimethyl-1-pentene	55	6.259	6.248	0.011	38	254621	74.3	
50 Isopropyl acetate	43	6.269	6.272	-0.003	99	10944963	0	
51 Methylcyclohexane	83	6.395	6.403	-0.008	87	644159	76.7	
52 Trichloroethene	95	6.400	6.403	-0.003	99	573968	74.5	
53 2,4,4-Trimethyl-2-pentene	97	6.458	6.461	-0.003	83	694912	76.3	
54 Dibromomethane	93	6.860	6.863	-0.003	99	410172	76.8	
55 1,2-Dichloropropane	63	6.970	6.973	-0.003	92	568292	79.1	
56 Dichlorobromomethane	83	7.038	7.036	0.002	100	749296	78.8	
57 Methyl methacrylate	69	7.231	7.234	-0.003	90	410581	0	
58 1,4-Dioxane	88	7.273	7.276	-0.003	55	44473	725.4	M
59 n-Propyl acetate	43	7.378	7.381	-0.003	98	8523552	0	
60 2-Chloroethyl vinyl ether	63	7.634	7.637	-0.003	91	4086138	0	
S 61 1,3-Dichloropropene, Total	1				0		157.3	
62 cis-1,3-Dichloropropene	75	7.691	7.694	-0.003	80	881323	79.3	
$ 63 Toluene-d8 (Surr)	98	7.880	7.877	0.003	93	541060	20.1	
64 Toluene	92	7.927	7.930	-0.003	97	1183093	80.8	
65 sec-Butyl acetate	43	8.141	8.139	0.002	99	12192721	0	
66 4-Methyl-2-pentanone (MIBK)	43	8.293	8.296	-0.003	97	6860885	841.0	
67 Tetrachloroethene	164	8.303	8.301	0.002	27	425869	77.9	
68 trans-1,3-Dichloropropene	75	8.319	8.316	0.003	93	819703	78.0	
69 Isobutyl acetate	43	8.418	8.421	-0.003	96	12631270	0	
70 1,1,2-Trichloroethane	83	8.465	8.463	0.002	76	455170	79.6	
71 Chlorodibromomethane	129	8.627	8.630	-0.003	88	649391	81.7	
72 1,3-Dichloropropane	76	8.716	8.714	0.002	92	751337	81.7	
73 Ethylene Dibromide	107	8.842	8.839	0.003	99	581673	81.4	
74 n-Butyl acetate	43	8.983	8.980	0.003	98	9396883	0	
75 2-Hexanone	43	9.056	9.054	0.002	97	5073864	831.0	
* 76 Chlorobenzene-d5	117	9.302	9.299	0.003	83	393655	20.0	
77 Chlorobenzene	112	9.317	9.315	0.002	94	1371769	79.1	
78 Ethylbenzene	91	9.344	9.341	0.003	98	2210917	78.5	
79 1,1,1,2-Tetrachloroethane	131	9.375	9.373	0.002	89	501017	77.3	
S 80 Xylenes, Total	1				0		243.4	
81 m-Xylene & p-Xylene	91	9.469	9.467	0.002	0	3509533	161.9	
82 o-Xylene	91	9.840	9.838	0.002	97	1787546	81.4	

Report Date: 01-Mar-2011 11:49:31 Chrom Revision: 1.2 17-Feb-2011 18:05:56
Data File: \\wessvr06\chromdata\HPGCMS3.i\20110228-4857.b\V12166.D

Compound	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
83 Styrene	104	9.882	9.880	0.002	81	1469478	82.5	
84 Bromoform	173	9.903	9.901	0.002	75	542001	86.1	
85 Isopropylbenzene	105	10.107	10.104	0.003	96	2108152	83.5	
$ 86 BFB	95	10.342	10.340	0.002	91	199194	0	
$ 87 4-Bromofluorobenzene	95	10.342	10.340	0.002	91	199194	19.5	
88 Bromobenzene	77	10.431	10.429	0.002	89	1001941	78.1	
89 N-Propylbenzene	91	10.452	10.449	0.003	99	2483481	79.1	
90 1,1,2,2-Tetrachloroethane	83	10.504	10.502	0.002	94	774298	79.9	
91 2-Chlorotoluene	91	10.588	10.585	0.003	97	1659602	77.0	
92 1,3,5-Trimethylbenzene	105	10.614	10.612	0.002	92	1670765	79.4	
93 1,2,3-Trichloropropane	75	10.619	10.617	0.002	59	692670	77.9	
94 trans-1,4-Dichloro-2-butene	53	10.651	10.648	0.003	66	196284	0	M
95 4-Chlorotoluene	91	10.724	10.721	0.003	96	1657614	81.6	
96 tert-Butylbenzene	119	10.881	10.878	0.003	91	1337687	79.7	
97 1,2,4-Trimethylbenzene	105	10.938	10.936	0.002	63	1750160	81.6	
98 sec-Butylbenzene	105	11.027	11.025	0.002	94	1942857	80.2	
99 4-Isopropyltoluene	119	11.142	11.140	0.002	97	1548581	75.3	
100 1,3-Dichlorobenzene	146	11.210	11.213	-0.003	99	1110419	80.2	
* 101 1,4-Dichlorobenzene-d4	152	11.273	11.270	0.003	93	214692	20.0	
102 1,4-Dichlorobenzene	146	11.283	11.281	0.002	94	1144502	80.0	
103 n-Butylbenzene	91	11.487	11.485	0.002	97	1503641	85.8	
104 1,2-Dichlorobenzene	146	11.628	11.631	-0.003	98	1043580	80.5	
105 1,2-Dibromo-3-Chloropropane	157	12.276	12.274	0.002	85	178505	82.3	
106 1,3,5-Trichlorobenzene	180	12.308	12.305	0.003	97	728413	0	
107 Hexachlorobutadiene	225	12.810	12.807	0.003	83	257624	79.4	
108 1,2,4-Trichlorobenzene	180	12.831	12.833	-0.002	92	725784	84.8	
109 Naphthalene	128	13.102	13.100	0.002	97	2075526	81.2	
110 1,2,3-Trichlorobenzene	180	13.259	13.257	0.002	95	688921	82.2	

QC Flag Legend

Review Flags
M - Manually Integrated

$$\frac{(542001)(20)}{(214692)(80)} = 0.6311$$

Report Date: 01-Mar-2011 11:49:40 Chrom Revision: 1.2 17-Feb-2011 18:05:56

TestAmerica Laboratories
Target Compound Quantitation Report

Data File: \\wessvr06\chromdata\HPGCMS3.i\20110228-4857.b\V12167.D
Lims ID: STD160 Client ID:
Inject. Date: 28-Feb-2011 16:00:30 Dil. Factor: 1.0000
Sample Type: IC Calib Level: 9
Sample ID: STD160
Misc. Info.:
Operator: TP Instrument ID: HP #3 GC/MS
Vol. Injected: 1.0000 ALS Bottle#: 12
Lims Batch ID: 69936 Lims Sample ID: 11
Sublist: chrom-WES3UNPR*sub12
Detector: MS SCAN

Method: \\wessvr06\chromdata\HPGCMS3.i\20110228-4857.b\WES3UNPR.m
Last Update: 01-Mar-2011 11:49:39 Calib Date: 28-Feb-2011 16:00:30
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\wessvr06\chromdata\HPGCMS3.i\20110228-4857.b\V12167.D
Limit Group: VMS - 8260C VOA Calibration MCP
Integrator: RTE ID Type: Deconvolution ID
Process Host: WESSEMIDTRDR

First Level Reviewer: hartmannt Date: 01-Mar-2011 11:49:39

Compound	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
1 Dichlorodifluoromethane	85	1.661	1.661	0.0	87	1017010	159.1	
2 Chloromethane	50	1.807	1.808	-0.001	99	1158292	149.7	
3 Vinyl chloride	62	1.891	1.881	0.010	99	1175051	151.2	
4 Bromomethane	94	2.157	2.163	-0.006	89	877510	157.2	
5 Chloroethane	64	2.272	2.278	-0.006	98	579261	159.5	
6 Trichlorofluoromethane	101	2.408	2.409	-0.001	99	1606769	159.3	
7 Dichlorofluoromethane	67	2.440	2.440	0.0	0	1815988	0	
8 Ethyl ether	59	2.664	2.670	-0.006	96	941741	160.8	
9 Ethanol	45	2.795	2.796	-0.001	52	548247	0	
10 1,2-Dichloro-1,1,2-trifluoroethane	117	2.842	2.848	-0.006	0	916111	0	
11 1,1-Dichloroethene	61	2.858	2.864	-0.006	99	1598098	157.7	
12 Carbon disulfide	76	2.894	2.900	-0.006	99	2967030	156.9	
13 1,1,2-Trichloro-1,2,2-trifluoroethane	151	2.915	2.921	-0.006	67	732675	158.5	
14 Acrolein	56	3.187	3.193	-0.006	97	12278010	0	
15 Isopropyl alcohol	45	3.360	3.355	0.005	99	3871952	0	
16 Methylene Chloride	84	3.433	3.439	-0.006	93	1125157	160.2	
17 Acetone	43	3.490	3.491	-0.001	100	4647672	1587.3	
18 trans-1,2-Dichloroethene	61	3.605	3.611	-0.006	44	1664743	162.1	
19 Methyl acetate	43	3.621	3.627	-0.006	98	10573548	1594.4	
20 Hexane	57	3.684	3.687	-0.003	55	1247360	0	M
21 Methyl tert-butyl ether	73	3.731	3.737	-0.006	59	3088664	164.2	
22 2-Methyl-2-propanol	59	3.825	3.826	-0.001	21	1382109	0	
23 Isopropyl ether	45	4.123	4.124	-0.001	94	3430872	166.2	
24 1,1-Dichloroethane	63	4.243	4.249	-0.006	81	2024609	155.7	
25 Halothane	117	4.296	4.296	0.0	0	985173	153.7	
26 Acrylonitrile	53	4.290	4.296	-0.006	71	495885	0	
27 Tert-butyl ethyl ether	59	4.515	4.516	-0.001	27	3142272	161.8	
28 Vinyl acetate	43	4.515	4.521	-0.006	98	19747668	0	
S 29 1,2-Dichloroethene, Total	1				0		319.5	
30 cis-1,2-Dichloroethene	61	4.818	4.819	-0.001	81	1574075	157.4	

Report Date: 01-Mar-2011 11:49:40 Chrom Revision: 1.2 17-Feb-2011 18:05:56
Data File: \\wessvr06\chromdata\HPGCMS3.i\20110228-4857.b\V12167.D

Compound	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
31 2,2-Dichloropropane	77	4.939	4.939	0.0	89	975076	155.7	
32 Chlorobromomethane	130	5.027	5.033	-0.006	95	849033	156.7	
33 Cyclohexane	56	5.048	5.049	-0.001	92	1619671	174.1	
34 Chloroform	83	5.106	5.106	0.0	67	2080704	155.1	
35 Ethyl acetate	43	5.263	5.263	0.0	98	14682709	0	
36 Carbon tetrachloride	117	5.278	5.279	-0.001	35	1515091	162.9	
$ 37 Dibromofluoromethane	113	5.305	5.305	0.0	6	173156	19.0	
38 Tetrahydrofuran	42	5.305	5.310	-0.005	81	5415430	1735.2	
39 sec-Butyl Alcohol	45	5.320	5.316	0.004	67	6251887	0	
40 1,1,1-Trichloroethane	97	5.346	5.347	-0.001	45	1629264	159.1	
41 2-Butanone (MEK)	43	5.456	5.452	0.004	98	7858819	1654.8	
42 1,1-Dichloropropene	75	5.477	5.478	-0.001	82	1554749	165.7	
43 n-Heptane	43	5.712	5.713	-0.001	95	935829	0	
44 Benzene	78	5.749	5.750	-0.001	96	4416842	165.9	
* 45 1,2-Dichloroethane-d4 ISTD	102	5.895	5.885	0.010	0	28052	20.0	
46 Tert-amyl methyl ether	73	5.895	5.896	-0.001	98	2958346	169.9	
47 1,2-Dichloroethane	62	5.963	5.964	-0.001	97	1508227	157.7	
* 48 Fluorobenzene	96	6.214	6.210	0.004	99	562440	20.0	
49 2,4,4-Trimethyl-1-pentene	55	6.267	6.248	0.018	39	590370	166.1	
50 Isopropyl acetate	43	6.272	6.272	0.0	97	21354449	0	
51 Methylcyclohexane	83	6.397	6.403	-0.006	87	1523316	174.9	
52 Trichloroethene	95	6.408	6.403	0.005	99	1278146	159.9	
53 2,4,4-Trimethyl-2-pentene	97	6.460	6.461	-0.001	83	1581966	167.4	
54 Dibromomethane	93	6.863	6.863	-0.001	99	855834	154.6	
55 1,2-Dichloropropane	63	6.972	6.973	-0.001	93	1252704	168.1	
56 Dichlorobromomethane	83	7.045	7.036	0.009	100	1609435	163.2	
57 Methyl methacrylate	69	7.234	7.234	0.0	90	901503	0	
58 1,4-Dioxane	88	7.276	7.276	0.0	42	104171	1623.7	M
59 n-Propyl acetate	43	7.380	7.381	-0.001	95	16932616	0	
60 2-Chloroethyl vinyl ether	63	7.641	7.637	0.004	91	8389616	0	
S 61 1,3-Dichloropropene, Total	1				0		329.7	
62 cis-1,3-Dichloropropene	75	7.694	7.694	0.0	80	1882699	163.3	
$ 63 Toluene-d8 (Surr)	98	7.882	7.877	0.005	82	561217	20.1	
64 Toluene	92	7.929	7.930	-0.001	97	2561513	168.6	
65 sec-Butyl acetate	43	8.133	8.139	-0.006	98	19390922	0	
66 4-Methyl-2-pentanone (MIBK)	43	8.300	8.296	0.004	95	13580257	1604.7	
67 Tetrachloroethene	164	8.305	8.301	0.004	34	989822	174.5	
68 trans-1,3-Dichloropropene	75	8.321	8.316	0.005	92	1813820	166.3	
69 Isobutyl acetate	43	8.415	8.421	-0.006	87	19123861	0	
70 1,1,2-Trichloroethane	83	8.467	8.463	0.004	75	984063	165.9	
71 Chlorodibromomethane	129	8.630	8.630	0.0	88	1386748	168.3	
72 1,3-Dichloropropane	76	8.713	8.714	-0.001	92	1628710	170.8	
73 Ethylene Dibromide	107	8.839	8.839	0.0	98	1227517	165.6	
74 n-Butyl acetate	43	8.975	8.980	-0.005	97	16307966	0	
75 2-Hexanone	43	9.058	9.054	0.004	95	10325856	1630.3	
* 76 Chlorobenzene-d5	117	9.304	9.299	0.005	42	408317	20.0	
77 Chlorobenzene	112	9.320	9.315	0.005	94	2956299	164.3	
78 Ethylbenzene	91	9.341	9.341	0.0	98	4861787	166.5	
79 1,1,1,2-Tetrachloroethane	131	9.372	9.373	-0.001	92	1075296	160.0	
S 80 Xylenes, Total	1				0		497.5	
81 m-Xylene & p-Xylene	91	9.471	9.467	0.004	0	7428522	330.5	
82 o-Xylene	91	9.837	9.838	-0.001	97	3803575	167.0	

Report Date: 01-Mar-2011 11:49:40 Chrom Revision: 1.2 17-Feb-2011 18:05:56
Data File: \\wessvr06\chromdata\HPGCMS3.i\20110228-4857.b\V12167.D

Compound	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
83 Styrene	104	9.884	9.880	0.004	70	3127622	169.2	
84 Bromoform	173	9.900	9.901	-0.001	85	~~1113961~~	165.2	
85 Isopropylbenzene	105	10.104	10.104	0.0	96	4385721	167.4	
$ 86 BFB	95	10.339	10.340	-0.001	90	204562	0	
$ 87 4-Bromofluorobenzene	95	10.339	10.340	-0.001	90	203838	19.3	
88 Bromobenzene	77	10.428	10.429	-0.001	90	2141031	160.9	
89 N-Propylbenzene	91	10.449	10.449	0.0	99	5196127	159.5	
90 1,1,2,2-Tetrachloroethane	83	10.501	10.502	-0.001	95	1562314	150.4	
91 2-Chlorotoluene	91	10.585	10.585	0.0	97	3654171	163.5	
92 1,3,5-Trimethylbenzene	105	10.611	10.612	-0.001	92	3700822	169.5	
93 1,2,3-Trichloropropane	75	10.616	10.617	-0.001	57	1368783	148.3	
94 trans-1,4-Dichloro-2-butene	53	10.648	10.648	0.0	22	412532	0	
95 4-Chlorotoluene	91	10.721	10.721	0.0	97	3352968	159.2	
96 tert-Butylbenzene	119	10.878	10.878	0.0	91	2887264	165.9	
97 1,2,4-Trimethylbenzene	105	10.935	10.936	-0.001	66	3795415	170.6	
98 sec-Butylbenzene	105	11.024	11.025	-0.001	94	4221704	168.0	
99 4-Isopropyltoluene	119	11.139	11.140	-0.001	97	3574023	167.6	
100 1,3-Dichlorobenzene	146	11.207	11.213	-0.006	98	2367820	165.0	
* 101 1,4-Dichlorobenzene-d4	152	11.270	11.270	0.0	93	230071	20.0	
102 1,4-Dichlorobenzene	146	11.280	11.281	-0.001	95	2473880	161.3	
103 n-Butylbenzene	91	11.484	11.485	-0.001	97	3178962	169.3	
104 1,2-Dichlorobenzene	146	11.625	11.631	-0.006	98	2263433	162.9	
105 1,2-Dibromo-3-Chloropropane	157	12.273	12.274	-0.001	86	375035	161.3	
106 1,3,5-Trichlorobenzene	180	12.305	12.305	0.0	97	1559314	0	
107 Hexachlorobutadiene	225	12.807	12.807	0.0	82	540940	155.5	
108 1,2,4-Trichlorobenzene	180	12.828	12.833	-0.005	93	1514104	165.1	
109 Naphthalene	128	13.094	13.100	-0.006	98	4442818	162.2	
110 1,2,3-Trichlorobenzene	180	13.256	13.257	-0.001	95	1467999	163.4	

QC Flag Legend

Review Flags
M - Manually Integrated

$$\frac{(1113961)(20)}{(230071)(160)} = 0.6052$$

Report Date: 15-Jun-2011 17:00:42 Chrom Revision: 1.2 03-Jun-2011 08:44:02

TestAmerica Laboratories
Target Compound Quantitation Report

Data File:	\\wessvr06\chromdata\AGILGCMS2.i\20110613-5839.b\V18754.D		
Lims ID:	CCVIS	Client ID:	
Inject. Date:	13-Jun-2011 13:40:30	Dil. Factor:	1.0000
Sample Type:	CCVIS		
Sample ID:	CCVIS		
Misc. Info.:			
Operator:	TPH	Instrument ID:	Agilent#2 GC/MS
Vol. Injected:	1.0000	ALS Bottle#:	3
Lims Batch ID:	75118	Lims Sample ID:	2
Sublist:	chrom-WES2UNPR*sub20		
Detector 1 :	MS SCAN		
Detector 2 :	MS SIM		
Method:	\\wessvr06\chromdata\AGILGCMS2.i\20110613-5839.b\WES2UNPR.m		
Last Update:	15-Jun-2011 17:00:41	Calib Date:	18-May-2011 21:50:30
Quant Method:	Internal Standard	Quant By:	Initial Calibration
Last ICal File:	\\wessvr06\chromdata\AGILGCMS2.i\20110519-5598.b\V18208.D		
Limit Group:	VMS - 8260C VOA Calibration MCP		
Integrator:	RTE	ID Type:	RT Order ID
Process Host:	WESSEMIDTRDR		

First Level Reviewer: hartmannt Date: 15-Jun-2011 17:00:41

Compound	Det	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
1 Dichlorodifluoromethane	1	85	1.682	1.682	0.0	86	97188	19.9	
2 Chloromethane	1	50	1.848	1.848	0.0	88	140673	19.9	
3 Vinyl chloride (SIM)	2	62	1.929	1.929	0.0	0	101680	0	
4 Vinyl chloride	1	62	1.931	1.931	0.0	65	98858	20.7	
5 Bromomethane	1	94	2.227	2.227	0.0	90	64765	24.6	
6 Chloroethane	1	64	2.346	2.346	0.0	95	55458	22.8	
7 Trichlorofluoromethane	1	101	2.476	2.476	0.0	86	128890	22.3	
8 Dichlorofluoromethane	1	67	2.523	2.523	0.0	75	143226	0	
9 Ethyl ether	1	59	2.760	2.760	0.0	88	81464	20.0	
10 Ethanol	1	45	2.891	2.891	0.0	94	71742	0	
11 1,2-Dichloro-1,1,2-trifluoroethane	1	117	2.962	2.962	0.0	81	76156	0	
12 1,1-Dichloroethene	1	96	2.974	2.974	0.0	90	93860	22.9	
13 Carbon disulfide	1	76	3.021	3.021	0.0	96	264482	23.9	(264482)(20) / (399974)(.5526)
14 1,1,2-Trichloro-1,2,2-trifluoroethane	1	151	3.033	3.033	0.0	7	57913	23.1	
15 Acrolein	1	56	3.329	3.329	0.0	97	1095882	0	
16 Isopropyl alcohol	1	45	3.495	3.495	0.0	99	446206	0	
17 Methylene Chloride	1	84	3.614	3.614	0.0	78	109646	22.3	
18 Acetone	1	43	3.661	3.661	0.0	99	348998	208.4	5289640 / 221025.6324
20 trans-1,2-Dichloroethene	1	61	3.815	3.815	0.0	35	148275	21.5	
19 Methyl acetate	1	43	3.815	3.815	0.0	97	1092800	212.8	= 23.9
21 Hexane	1	57	3.910	3.910	0.0	57	189098	0	
22 Methyl tert-butyl ether	1	73	3.934	3.934	0.0	60	182404	26.2	
23 2-Methyl-2-propanol	1	59	4.029	4.029	0.0	26	380651	0	
24 Isopropyl ether	1	45	4.396	4.396	0.0	94	263435	21.0	
25 1,1-Dichloroethane	1	63	4.538	4.538	0.0	84	185554	20.7	
26 Acrylonitrile	1	53	4.586	4.586	0.0	97	49515	0	
27 Halothane	1	117	4.609	4.609	0.0	84	82488	23.9	
S 28 1,2-Dichloroethene, Total	1	1				0		41.8	
29 Tert-butyl ethyl ether	1	59	4.823	4.823	0.0	30	144041	27.4	

Report Date: 15-Jun-2011 17:00:42 Chrom Revision: 1.2 03-Jun-2011 08:44:02
Data File: \\wessvr06\chromdata\AGILGCMS2.i\20110613-5839.b\V18754.D

Compound	Det	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
30 Vinyl acetate	1	43	4.834	4.834	0.0	97	1924192	0	
31 cis-1,2-Dichloroethene	1	61	5.178	5.178	0.0	66	141235	20.4	
32 2,2-Dichloropropane	1	77	5.320	5.320	0.0	82	91261	22.1	
33 Chlorobromomethane	1	130	5.415	5.415	0.0	76	83261	21.3	
34 Cyclohexane	1	56	5.439	5.439	0.0	84	149160	22.4	
35 Chloroform	1	83	5.510	5.510	0.0	64	192615	20.0	
36 Ethyl acetate	1	43	5.652	5.652	0.0	99	1387483	0	
37 Carbon tetrachloride	1	117	5.676	5.676	0.0	26	118586	26.4	
38 Tetrahydrofuran	1	42	5.688	5.688	0.0	75	494130	201.6	
39 sec-Butyl Alcohol	1	59	5.700	5.700	0.0	87	156381	0	
$ 40 Dibromofluoromethane	1	113	5.723	5.723	0.0	61	139853	20.6	
41 1,1,1-Trichloroethane	1	97	5.759	5.759	0.0	32	137658	21.9	
42 2-Butanone (MEK)	1	43	5.866	5.866	0.0	99	604534	200.4	
43 1,1-Dichloropropene	1	75	5.913	5.913	0.0	97	145244	21.6	
44 n-Heptane	1	43	6.185	6.185	0.0	89	132674	0	
45 Benzene	1	78	6.209	6.209	0.0	95	412952	21.6	
46 Tert-amyl methyl ether	1	73	6.351	6.351	0.0	99	135726	28.1	
* 47 1,2-Dichloroethane-d4 ISTD	1	102	6.363	6.363	0.0	0	32317	20.0	
48 1,2-Dichloroethane	1	62	6.446	6.446	0.0	72	132785	19.1	
* 49 Fluorobenzene	1	96	6.707	6.707	0.0	99	399974	20.0	
50 Isopropyl acetate	1	43	6.766	6.766	0.0	98	1671151	0	
51 2,4,4-Trimethyl-1-pentene	1	55	6.766	6.766	0.0	41	44487	25.7	
52 Methylcyclohexane	1	83	6.921	6.921	0.0	86	141066	24.0	
53 Trichloroethene	1	95	6.921	6.921	0.0	81	92118	21.4	
54 2,4,4-Trimethyl-2-pentene	1	55	6.980	6.980	0.0	62	108390	22.9	
55 Dibromomethane	1	93	7.442	7.442	0.0	90	61240	20.7	
57 1,2-Dichloropropane	1	63	7.585	7.585	0.0	86	82088	20.7	
S 56 1,3-Dichloropropene, Total	1	1				0		43.4	
58 Dichlorobromomethane	1	83	7.680	7.680	0.0	84	108569	21.8	
59 Methyl methacrylate	1	69	7.929	7.929	0.0	87	63190	0	
61 1,4-Dioxane	1	88	7.964	7.964	0.0	74	11472	192.7	M
60 1,4-Dioxane (SIM)	2	88	7.974	7.974	0.0	0	11128	0	
62 n-Propyl acetate	1	43	8.154	8.154	0.0	97	1265851	0	
63 2-Chloroethyl vinyl ether	1	63	8.593	8.593	0.0	89	536011	0	
64 cis-1,3-Dichloropropene	1	75	8.676	8.676	0.0	57	133085	22.2	
$ 65 Toluene-d8 (Surr)	1	98	9.020	9.020	0.0	92	378963	20.4	
66 Toluene	1	92	9.114	9.114	0.0	93	192062	21.4	
S 67 Xylenes, Total	1	1				0		60.5	
68 sec-Butyl acetate	1	43	9.506	9.506	0.0	98	1747725	0	
69 Tetrachloroethene	1	166	9.755	9.755	0.0	32	93616	21.8	
70 4-Methyl-2-pentanone (MIBK)	1	43	9.755	9.755	0.0	95	842181	196.0	
71 trans-1,3-Dichloropropene	1	75	9.802	9.802	0.0	77	118262	21.2	
72 Isobutyl acetate	1	43	9.980	9.980	0.0	95	1830220	0	
73 1,1,2-Trichloroethane	1	83	10.039	10.039	0.0	83	67147	20.6	
74 Chlorodibromomethane	1	129	10.277	10.277	0.0	88	91278	24.0	
75 1,3-Dichloropropane	1	76	10.419	10.419	0.0	87	124520	20.5	
76 Ethylene Dibromide	1	107	10.585	10.585	0.0	97	90427	21.0	
77 n-Butyl acetate	1	43	10.834	10.834	0.0	99	1359884	0	
78 2-Hexanone	1	43	10.929	10.929	0.0	90	642763	194.9	
* 79 Chlorobenzene-d5	1	117	11.249	11.249	0.0	83	286037	20.0	
80 Chlorobenzene	1	112	11.273	11.273	0.0	96	225758	20.4	
81 Ethylbenzene	1	91	11.320	11.320	0.0	62	348811	20.3	

Report Date: 15-Jun-2011 17:00:42 Chrom Revision: 1.2 03-Jun-2011 08:44:02
Data File: \\wessvr06\chromdata\AGILGCMS2.i\20110613-5839.b\V18754.D

Compound	Det	Sig	RT	ADJ RT	DLT RT	Q	Response	On-Col Amt ug/L	Flags
82 1,1,1,2-Tetrachloroethane	1	131	11.356	11.356	0.0	89	73893	23.1	
83 m-Xylene & p-Xylene	1	91	11.498	11.498	0.0	0	541481	40.7	
84 o-Xylene	1	91	11.984	11.984	0.0	97	265876	19.9	
85 Styrene	1	104	12.044	12.044	0.0	63	218745	19.8	
86 Bromoform	1	173	12.055	12.055	0.0	46	71076	30.5	
87 Isopropylbenzene	1	105	12.340	12.340	0.0	95	315885	19.8	
$ 89 4-Bromofluorobenzene	1	95	12.613	12.613	0.0	88	135684	19.4	
$ 88 BFB	1	95	12.613	12.613	0.0	88	135684	0	
90 Bromobenzene	1	77	12.720	12.720	0.0	84	137534	19.3	
91 N-Propylbenzene	1	91	12.767	12.767	0.0	77	383338	19.9	
92 1,1,2,2-Tetrachloroethane	1	83	12.838	12.838	0.0	80	112817	19.4	
93 2-Chlorotoluene	1	91	12.909	12.909	0.0	95	230485	19.4	
94 1,2,3-Trichloropropane	1	110	12.969	12.969	0.0	37	32420	19.1	
95 1,3,5-Trimethylbenzene	1	105	12.969	12.969	0.0	71	253371	20.2	
96 trans-1,4-Dichloro-2-butene	1	53	13.016	13.016	0.0	1	25010	0	
97 4-Chlorotoluene	1	91	13.075	13.075	0.0	93	246104	19.4	
98 tert-Butylbenzene	1	119	13.277	13.277	0.0	92	208717	21.9	
99 1,2,4-Trimethylbenzene	1	105	13.348	13.348	0.0	85	260547	22.3	
100 sec-Butylbenzene	1	105	13.455	13.455	0.0	93	323908	23.0	
101 4-Isopropyltoluene	1	119	13.597	13.597	0.0	96	268210	22.9	
102 1,3-Dichlorobenzene	1	146	13.645	13.645	0.0	89	171598	21.4	
* 103 1,4-Dichlorobenzene-d4	1	152	13.716	13.716	0.0	82	143945	20.0	
104 1,4-Dichlorobenzene	1	146	13.739	13.739	0.0	93	173483	20.3	
105 n-Butylbenzene	1	91	13.988	13.988	0.0	94	257787	20.7	
106 1,2-Dichlorobenzene	1	146	14.131	14.131	0.0	98	156332	20.4	
107 1,2-Dibromo-3-Chloropropane	1	157	14.842	14.842	0.0	85	25136	21.5	
108 1,3,5-Trichlorobenzene	1	180	14.878	14.878	0.0	95	121610	0	
109 Hexachlorobutadiene	1	225	15.412	15.412	0.0	82	55216	21.3	
110 1,2,4-Trichlorobenzene	1	180	15.435	15.435	0.0	93	102649	19.7	
111 Naphthalene	1	128	15.720	15.720	0.0	97	254111	19.2	
112 1,2,3-Trichlorobenzene	1	180	15.898	15.898	0.0	95	93136	19.3	

QC Flag Legend

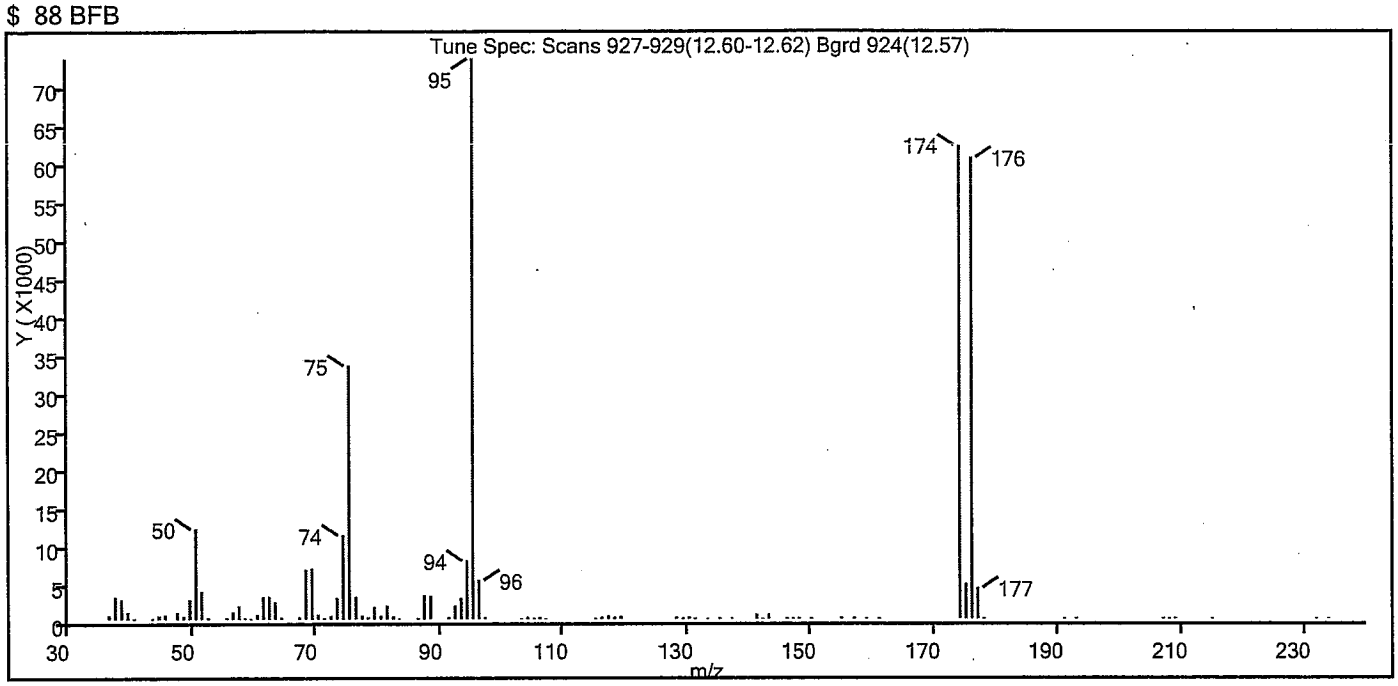
Review Flags
M - Manually Integrated

Report Date: 19-May-2011 15:12:31 Chrom Revision: 1.2 17-May-2011 14:46:34

MS Tune Report

Data File: \\wessvr06\chromdata\AGILGCMS2.i\20110519-5598.b\V18198.D
Injection Date: 18-May-2011 18:13:30 Limit Group: VMS - 8260C VOA Calibration MCP
Client ID: Instrument ID: Agilent#2 GC/MS
Lims Batch ID: 73830 Lims Sample ID: 2
Operator ID: TPH
Tune Method: BFB Method 8260

$ 88 BFB



m/z	Ion Abundance Criteria	% Relative Abundance
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	16.13
75	30.00 - 60.00% of mass 95	45.22✓
96	5.00 - 9.00% of mass 95	6.91
173	Less than 2.00% of mass 174	0.00 (0.00)
174	Greater than 50.00% of mass 95	84.45
175	5.00 - 9.00% of mass 174	6.26 (7.41)
176	95.00 - 101.00% of mass 174	82.23 (97.37)
177	5.00 - 9.00% of mass 176	5.53 (6.73)

Report Date: 19-May-2011 15:12:31 Chrom Revision: 1.2 17-May-2011 14:46:34

Data File: \\wessvr06\chromdata\AGILGCMS2.i\20110519-5598.b\V18198.D\WES2UNPR.rslt\spectra.d
Injection Date: 18-May-2011 18:13:30
Spectrum: Tune Spec: Scans 927-929(12.60-12.62) Bgrd 924(12.57)
Base Peak: 95.00
Minimum % Base Peak: 0
Number of Points: 92

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	537	64.00	243	93.00	2721	142.00	34
37.00	2961	67.00	264	94.00	7661	143.00	594
38.00	2520	68.00	6440	95.00	73480	146.00	90
39.00	906	69.00	6592	96.00	5080	147.00	41
40.00	48	70.00	615	97.00	186	148.00	147
43.00	43	71.00	91	103.00	34	150.00	37
44.00	436	72.00	387	104.00	278	155.00	189
45.00	580	73.00	2769	105.00	105	157.00	128
47.00	837	74.00	11001	106.00	246	159.00	89
48.00	377	75.00	33224	107.00	36	161.00	40
49.00	2548	76.00	2911	115.00	100	174.00	62056
50.00	11855	77.00	454	116.00	237	175.00	4599
51.00	3647	78.00	245	117.00	438	176.00	60424
52.00	184	79.00	1628	118.00	257	177.00	4066
55.00	176	80.00	438	119.00	372	178.00	58
56.00	945	81.00	1728	128.00	254	191.00	33
57.00	1681	82.00	331	129.00	113	193.00	121
58.00	133	83.00	41	130.00	238	207.00	90
59.00	31	86.00	81	131.00	102	208.00	9
60.00	579	87.00	3082	133.00	6	209.00	121
61.00	2865	88.00	2989	135.00	105	215.00	24
62.00	2971	91.00	269	137.00	102	232.00	3
63.00	2203	92.00	1762	141.00	586	234.00	34

$\frac{33224}{73480} \times 100 = 45.22$

VOLATILE ORGANICS

REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifications: REGION I Organics Guideline (1996)

TIER I / (II) / III (circle one)

SITE: Olin Chemical Project #: 6107110016-12 SDG #: 360-34288-1

LAB #: TAL-WFD

Sample IDs: Attach tracking sheet and/or sample listing.

This checklist is designed to be used with USEPA Region I Validation Guidelines Part II (12/1996). During Level III validation, calculation and transcription checks are completed for instrument tuning, surrogates, target compounds, spike recoveries, calibration data, and internal standards as specified in the guideline. These checks are documented on attached validation notes.

YES	NO	NA		
			Data completeness	Contact lab if missing data. Lab to respond with 24 hours.
☑	☐	☐	All data summaries, QC forms and raw data available from hard copy or electronic data package	
☑	☐	☐	Data summaries match EDD	ok
			Holding Times and Preservation	
☑	☐	☐	Hold times met (14 days with preservation)	ok
☑	☐	☐	Preserved (waters HCL, soils methanol)	
			Instrument Performance Check (Tune)	
☑	☐	☐	Tune available for each 12-hour period samples were analyzed	
☑	☐	☐	Appropriate number of significant figures reported (at least 2)	ok
☑	☐	☐	Mass/Charge list (m/z) criteria met	
			Initial Calibration	
☑	☐	☐	%RSD less than or equal to 30%	ok
☑	☐	☐	RRF greater than or equal to 0.05	
			Continuing Calibration	
☐	☑	☐	%D less than or equal to 25%	SEE ATTACHED
☑	☐	☐	RRF greater than or equal to 0.05.	
			Blank Contamination	Evaluate all blanks for contamination. Highest contaminant level used for action level.
☐	☑	☐	Method blank contamination	
☐	☑	☐	Trip blank contamination	
☐	☐	☑	Equipment/Rinseate blank contamination	ok

VOLATILE ORGANICS

REGION I VALIDATION CHECKLIST for OLIN CHEMICAL SUPERFUND SITE

Criteria and Qualifications: REGION I Organics Guideline (1996)

TIER I / (II) / III (circle one)

Surrogate Recoveries ☑ ☐ ☐ Surrogates percent recovery criteria met (water and soil: 70%-130%)	ok
Matrix Spikes and Laboratory Control Samples ☐ ☑ ☐ MS/MSD percent recovery criteria met (water and soil: 70%-130%) ☑ ☐ ☐ MS/MSD RPD criteria met (water and soil <30%) ☐ ☑ ☐ LCS percent recovery criteria (water and soil: 70%-130%)	SEE ATTACHED All NO – NO QUALS SEE ATTACHED
Field Duplicates ☐ ☐ ☑ RPD criteria (water <30%, soils <50%) met	NA
Internal Standard ☑ ☐ ☐ Area counts within -50 to +100 percent of calib. std. ☑ ☐ ☐ Retention Time within 30 seconds of calib. std.	ok
Target Compounds ☑ ☐ ☐ Reviewed narrative for anomalies	ok
Tentatively Identified Compounds (TICs) ☐ ☑ ☐ TCL compounds reported as TICs	ok

Validator's Signature: [signature]

Date: 8/22/11

Reference:

MACTEC, Quality Assurance Project Plan for Remedial Investigation/Feasibility Study – Olin Chemical Superfund Site, Wilmington Property, 51 Eames Street, Wilmington, MA", MACTEC Engineering and Consulting. Draft .October 2008.

SAMPLE SUMMARY

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
360-34288-1	~~OC-PE-HG5929-HG~~	Water	06/07/2011 1300	06/08/2011 1019
360-34288-2	~~OC-PE-IS0662-METAL~~	Water	06/07/2011 1300	06/08/2011 1019
360-34288-3	~~OC-PE-S80479-SVOC~~	Water	06/07/2011 1300	06/08/2011 1019
360-34288-4	~~OC-PE-V80736-VOC~~	Water	06/07/2011 1300	06/08/2011 1019
360-34288-5	OC-SW-LB-1-XXX	Water	06/07/2011 1340	06/08/2011 1019
360-34288-6	OC-SW-LB-2-XXX	Water	06/07/2011 1250	06/08/2011 1019
360-34288-7	OC-SW-LB-3-XXX	Water	06/07/2011 1115	06/08/2011 1019
360-34288-8	OC-SW-MMB-SW/SD-10-XXX	Water	06/06/2011 1520	06/08/2011 1019
360-34288-9	OC-SW-MMB-SW/SD-4-XXX	Water	06/06/2011 1400	06/08/2011 1019
360-34288-10	OC-SW-MMB-SW/SD-5-XXX	Water	06/07/2011 0930	06/08/2011 1019
360-34288-11	OC-SW-MMB-SW/SD-8-XXX	Water	06/07/2011 1010	06/08/2011 1019
360-34288-12	OC-SW-OPWD-1-XXX	Water	06/07/2011 0900	06/08/2011 1019
360-34288-13	OC-SW-OPWD-2-XXX	Water	06/07/2011 1005	06/08/2011 1019
360-34288-14	OC-SW-OPWD-SD/SO/SW-S-XXX	Water	06/07/2011 0835	06/08/2011 1019
360-34288-15	OC-SW-SDBK-002-XXX	Water	06/07/2011 1430	06/08/2011 1019
360-34288-16	OC-TBK-079	Water	06/07/2011 1530	06/08/2011 1019
360-34288-17	~~OC-PE-MS03400-METAL~~	Water	06/07/2011 1300	06/08/2011 1019
360-34288-18	~~OC-PE-MS03456-METAL~~	Water	06/07/2011 1300	06/08/2011 1019

11 -
1 - TB
~~1 - PE~~

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-LB-1-XXX**

Lab Sample ID: 360-34288-5
Client Matrix: Water

Date Sampled: 06/07/2011 1340
Date Received: 06/08/2011 1019

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75271	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18822.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2011 0144			Final Weight/Volume:	5 mL
Prep Date:	06/15/2011 0144				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND		0.20	1.0
1,1,1-Trichloroethane	ND		0.20	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	0.50
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	ND		0.20	1.0
1,1-Dichloroethene	ND		0.20	1.0
1,1-Dichloropropene	ND		0.20	1.0
1,2,3-Trichlorobenzene	ND		0.20	1.0
1,2,3-Trichloropropane	ND		0.20	1.0
1,2,4-Trichlorobenzene	ND		0.20	1.0
1,2,4-Trimethylbenzene	ND		0.20	1.0
1,2-Dibromo-3-Chloropropane	ND		0.20	5.0
1,2-Dichlorobenzene	ND		0.20	1.0
1,2-Dichloroethane	ND		0.20	1.0
1,2-Dichloropropane	ND		0.20	1.0
1,3,5-Trimethylbenzene	ND		0.20	1.0
1,3-Dichlorobenzene	ND		0.20	1.0
1,3-Dichloropropane	ND		0.20	1.0
1,4-Dichlorobenzene	ND		0.20	1.0
1,4-Dioxane	ND		22	50
2,2-Dichloropropane	ND		0.20	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chlorotoluene	ND		0.20	1.0
2-Hexanone	ND		2.0	10
4-Chlorotoluene	ND		0.20	1.0
4-Isopropyltoluene	ND		0.20	1.0
4-Methyl-2-pentanone (MIBK)	ND		2.0	10
Acetone	ND		20	50
Benzene	ND		0.20	1.0
Bromobenzene	ND		0.20	1.0
Bromoform	ND	J	0.20	1.0
Bromomethane	ND		0.20	2.0
Carbon disulfide	0.43	J	0.20	10
Carbon tetrachloride	ND	J	0.20	1.0
Chlorobenzene	ND		0.20	1.0
Chlorobromomethane	ND		0.20	1.0
Chlorodibromomethane	ND		0.20	0.50
Chloroethane	ND		0.21	2.0
Chloroform	ND		0.20	1.0
Chloromethane	ND		0.20	2.0
cis-1,2-Dichloroethene	ND		0.20	1.0
cis-1,3-Dichloropropene	ND		0.20	0.40
Dibromomethane	ND		0.20	1.0
Dichlorobromomethane	ND		0.20	0.50
Dichlorodifluoromethane	ND		0.20	1.0
Ethyl ether	ND		0.20	10

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-LB-1-XXX**

Lab Sample ID: 360-34288-5
Client Matrix: Water

Date Sampled: 06/07/2011 1340
Date Received: 06/08/2011 1019

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75271	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18822.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2011 0144			Final Weight/Volume:	5 mL
Prep Date:	06/15/2011 0144				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Ethylbenzene	ND		0.20	1.0
Ethylene Dibromide	ND		0.20	1.0
Hexachlorobutadiene	ND		0.20	0.40
Isopropyl ether	ND		0.20	10
Isopropylbenzene	ND		0.20	1.0
m-Xylene & p-Xylene	ND		0.50	2.0
Methyl tert-butyl ether	0.20	J	0.20	1.0
Methylene Chloride	ND	J	1.0	2.0
n-Butylbenzene	ND		0.20	1.0
N-Propylbenzene	ND		0.20	1.0
Naphthalene	ND		2.0	5.0
o-Xylene	ND		0.20	1.0
sec-Butylbenzene	ND		0.20	1.0
Styrene	ND		0.20	1.0
Tert-amyl methyl ether	ND	J	0.20	5.0
Tert-butyl ethyl ether	ND	J	0.20	5.0
tert-Butylbenzene	ND		0.20	1.0
Tetrachloroethene	ND		0.20	1.0
Tetrahydrofuran	ND		0.44	10
Toluene	0.36	J	0.20	1.0
trans-1,2-Dichloroethene	ND		0.20	1.0
trans-1,3-Dichloropropene	ND		0.20	0.40
Trichloroethene	ND		0.33	1.0
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.20	0.50
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.20	1.0
2,4,4-Trimethyl-1-pentene	ND	J	0.20	1.0
2,4,4-Trimethyl-2-pentene	ND		0.20	1.0
Cyclohexane	ND		0.20	10
Methyl acetate	ND		2.0	20
Methylcyclohexane	ND		0.20	10

8/11/11

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	96		70 - 130
Toluene-d8 (Surr)	100		70 - 130
Dibromofluoromethane	106		70 - 130

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-LB-2-XXX**

Lab Sample ID: 360-34288-6
Client Matrix: Water

Date Sampled: 06/07/2011 1250
Date Received: 06/08/2011 1019

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75271	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18823.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2011 0206			Final Weight/Volume:	5 mL
Prep Date:	06/15/2011 0206				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND		0.20	1.0
1,1,1-Trichloroethane	ND		0.20	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	0.50
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	ND		0.20	1.0
1,1-Dichloroethene	ND		0.20	1.0
1,1-Dichloropropene	ND		0.20	1.0
1,2,3-Trichlorobenzene	ND		0.20	1.0
1,2,3-Trichloropropane	ND		0.20	1.0
1,2,4-Trichlorobenzene	ND		0.20	1.0
1,2,4-Trimethylbenzene	ND		0.20	1.0
1,2-Dibromo-3-Chloropropane	ND		0.20	5.0
1,2-Dichlorobenzene	ND		0.20	1.0
1,2-Dichloroethane	ND		0.20	1.0
1,2-Dichloropropane	ND		0.20	1.0
1,3,5-Trimethylbenzene	ND		0.20	1.0
1,3-Dichlorobenzene	ND		0.20	1.0
1,3-Dichloropropane	ND		0.20	1.0
1,4-Dichlorobenzene	ND		0.20	1.0
1,4-Dioxane	ND		22	50
2,2-Dichloropropane	ND		0.20	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chlorotoluene	ND		0.20	1.0
2-Hexanone	ND		2.0	10
4-Chlorotoluene	ND		0.20	1.0
4-Isopropyltoluene	ND		0.20	1.0
4-Methyl-2-pentanone (MIBK)	ND		2.0	10
Acetone	ND		20	50
Benzene	ND		0.20	1.0
Bromobenzene	ND		0.20	1.0
Bromoform	ND	J	0.20	1.0
Bromomethane	ND		0.20	2.0
Carbon disulfide	ND	J	0.20	10
Carbon tetrachloride	ND	J	0.20	1.0
Chlorobenzene	ND		0.20	1.0
Chlorobromomethane	ND		0.20	1.0
Chlorodibromomethane	ND		0.20	0.50
Chloroethane	ND		0.21	2.0
Chloroform	ND		0.20	1.0
Chloromethane	ND		0.20	2.0
cis-1,2-Dichloroethene	ND		0.20	1.0
cis-1,3-Dichloropropene	ND		0.20	0.40
Dibromomethane	ND		0.20	1.0
Dichlorobromomethane	ND		0.20	0.50
Dichlorodifluoromethane	ND		0.20	1.0
Ethyl ether	ND		0.20	10

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-LB-2-XXX**

Lab Sample ID: 360-34288-6
Client Matrix: Water

Date Sampled: 06/07/2011 1250
Date Received: 06/08/2011 1019

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75271	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18823.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2011 0206			Final Weight/Volume:	5 mL
Prep Date:	06/15/2011 0206				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Ethylbenzene	ND		0.20	1.0
Ethylene Dibromide	ND		0.20	1.0
Hexachlorobutadiene	ND		0.20	0.40
Isopropyl ether	ND		0.20	10
Isopropylbenzene	ND		0.20	1.0
m-Xylene & p-Xylene	ND		0.50	2.0
Methyl tert-butyl ether	0.47	J	0.20	1.0
Methylene Chloride	ND	J	1.0	2.0
n-Butylbenzene	ND		0.20	1.0
N-Propylbenzene	ND		0.20	1.0
Naphthalene	ND		2.0	5.0
o-Xylene	ND		0.20	1.0
sec-Butylbenzene	ND		0.20	1.0
Styrene	ND		0.20	1.0
Tert-amyl methyl ether	ND	J	0.20	5.0
Tert-butyl ethyl ether	ND	J	0.20	5.0
tert-Butylbenzene	ND		0.20	1.0
Tetrachloroethene	ND		0.20	1.0
Tetrahydrofuran	ND		0.44	10
Toluene	ND		0.20	1.0
trans-1,2-Dichloroethene	ND		0.20	1.0
trans-1,3-Dichloropropene	ND		0.20	0.40
Trichloroethene	ND		0.33	1.0
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.20	0.50
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.20	1.0
2,4,4-Trimethyl-1-pentene	ND	J	0.20	1.0
2,4,4-Trimethyl-2-pentene	ND		0.20	1.0
Cyclohexane	ND		0.20	10
Methyl acetate	ND		2.0	20
Methylcyclohexane	ND		0.20	10

8/11/11

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	98		70 - 130
Toluene-d8 (Surr)	99		70 - 130
Dibromofluoromethane	104		70 - 130

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-LB-3-XXX**

Lab Sample ID: 360-34288-7
Client Matrix: Water

Date Sampled: 06/07/2011 1115
Date Received: 06/08/2011 1019

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75271	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18814.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/14/2011 2250			Final Weight/Volume:	5 mL
Prep Date:	06/14/2011 2250				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND		0.20	1.0
1,1,1-Trichloroethane	ND		0.20	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	0.50
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	ND		0.20	1.0
1,1-Dichloroethene	ND		0.20	1.0
1,1-Dichloropropene	ND		0.20	1.0
1,2,3-Trichlorobenzene	ND		0.20	1.0
1,2,3-Trichloropropane	ND		0.20	1.0
1,2,4-Trichlorobenzene	ND		0.20	1.0
1,2,4-Trimethylbenzene	ND		0.20	1.0
1,2-Dibromo-3-Chloropropane	ND		0.20	5.0
1,2-Dichlorobenzene	ND		0.20	1.0
1,2-Dichloroethane	ND		0.20	1.0
1,2-Dichloropropane	ND		0.20	1.0
1,3,5-Trimethylbenzene	ND		0.20	1.0
1,3-Dichlorobenzene	ND		0.20	1.0
1,3-Dichloropropane	ND		0.20	1.0
1,4-Dichlorobenzene	ND		0.20	1.0
1,4-Dioxane	ND		22	50
2,2-Dichloropropane	ND		0.20	1.0
2-Butanone (MEK)	1.4	J	1.3	10
2-Chlorotoluene	ND		0.20	1.0
2-Hexanone	ND		2.0	10
4-Chlorotoluene	ND		0.20	1.0
4-Isopropyltoluene	0.25	J	0.20	1.0
4-Methyl-2-pentanone (MIBK)	ND		2.0	10
Acetone	ND		20	50
Benzene	ND		0.20	1.0
Bromobenzene	ND		0.20	1.0
Bromoform	ND	J	0.20	1.0
Bromomethane	ND		0.20	2.0
Carbon disulfide	ND	J	0.20	10
Carbon tetrachloride	ND	J	0.20	1.0
Chlorobenzene	ND		0.20	1.0
Chlorobromomethane	ND		0.20	1.0
Chlorodibromomethane	ND		0.20	0.50
Chloroethane	ND		0.21	2.0
Chloroform	ND		0.20	1.0
Chloromethane	ND		0.20	2.0
cis-1,2-Dichloroethene	ND		0.20	1.0
cis-1,3-Dichloropropene	ND		0.20	0.40
Dibromomethane	ND		0.20	1.0
Dichlorobromomethane	ND		0.20	0.50
Dichlorodifluoromethane	ND		0.20	1.0
Ethyl ether	ND		0.20	10

Blank

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-LB-3-XXX**

Lab Sample ID: 360-34288-7
Client Matrix: Water

Date Sampled: 06/07/2011 1115
Date Received: 06/08/2011 1019

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75271	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18814.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/14/2011 2250			Final Weight/Volume:	5 mL
Prep Date:	06/14/2011 2250				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Ethylbenzene	ND		0.20	1.0
Ethylene Dibromide	ND		0.20	1.0
Hexachlorobutadiene	ND		0.20	0.40
Isopropyl ether	ND		0.20	10
Isopropylbenzene	ND		0.20	1.0
m-Xylene & p-Xylene	ND		0.50	2.0
Methyl tert-butyl ether	0.35	J	0.20	1.0
Methylene Chloride	ND	J	1.0	2.0
n-Butylbenzene	ND		0.20	1.0
N-Propylbenzene	ND		0.20	1.0
Naphthalene	ND		2.0	5.0
o-Xylene	ND		0.20	1.0
sec-Butylbenzene	ND		0.20	1.0
Styrene	ND		0.20	1.0
Tert-amyl methyl ether	ND	J	0.20	5.0
Tert-butyl ethyl ether	ND	J	0.20	5.0
tert-Butylbenzene	ND		0.20	1.0
Tetrachloroethene	ND		0.20	1.0
Tetrahydrofuran	ND		0.44	10
Toluene	4.6		0.20	1.0
trans-1,2-Dichloroethene	ND		0.20	1.0
trans-1,3-Dichloropropene	ND		0.20	0.40
Trichloroethene	ND		0.33	1.0
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.20	0.50
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.20	1.0
2,4,4-Trimethyl-1-pentene	ND	J	0.20	1.0
2,4,4-Trimethyl-2-pentene	ND		0.20	1.0
Cyclohexane	ND		0.20	10
Methyl acetate	ND		2.0	20
Methylcyclohexane	ND		0.20	10

8/11/11 [illegible]

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	95		70 - 130
Toluene-d8 (Surr)	101		70 - 130
Dibromofluoromethane	107		70 - 130

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-MMB-SW/SD-10-XXX**

Lab Sample ID: 360-34288-8
Client Matrix: Water

Date Sampled: 06/06/2011 1520
Date Received: 06/08/2011 1019

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75271	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18815.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/14/2011 2312			Final Weight/Volume:	5 mL
Prep Date:	06/14/2011 2312				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND		0.20	1.0
1,1,1-Trichloroethane	ND		0.20	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	0.50
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	ND		0.20	1.0
1,1-Dichloroethene	ND		0.20	1.0
1,1-Dichloropropene	ND		0.20	1.0
1,2,3-Trichlorobenzene	ND		0.20	1.0
1,2,3-Trichloropropane	ND		0.20	1.0
1,2,4-Trichlorobenzene	ND		0.20	1.0
1,2,4-Trimethylbenzene	ND		0.20	1.0
1,2-Dibromo-3-Chloropropane	ND		0.20	5.0
1,2-Dichlorobenzene	ND		0.20	1.0
1,2-Dichloroethane	ND		0.20	1.0
1,2-Dichloropropane	ND		0.20	1.0
1,3,5-Trimethylbenzene	ND		0.20	1.0
1,3-Dichlorobenzene	ND		0.20	1.0
1,3-Dichloropropane	ND		0.20	1.0
1,4-Dichlorobenzene	ND		0.20	1.0
1,4-Dioxane	ND		22	50
2,2-Dichloropropane	ND		0.20	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chlorotoluene	ND		0.20	1.0
2-Hexanone	ND		2.0	10
4-Chlorotoluene	ND		0.20	1.0
4-Isopropyltoluene	ND		0.20	1.0
4-Methyl-2-pentanone (MIBK)	ND		2.0	10
Acetone	ND		20	50
Benzene	ND		0.20	1.0
Bromobenzene	ND		0.20	1.0
Bromoform	ND	J	0.20	1.0
Bromomethane	ND		0.20	2.0
Carbon disulfide	ND	J	0.20	10
Carbon tetrachloride	ND	J	0.20	1.0
Chlorobenzene	ND		0.20	1.0
Chlorobromomethane	ND		0.20	1.0
Chlorodibromomethane	ND		0.20	0.50
Chloroethane	ND		0.21	2.0
Chloroform	ND		0.20	1.0
Chloromethane	ND		0.20	2.0
cis-1,2-Dichloroethene	ND		0.20	1.0
cis-1,3-Dichloropropene	ND		0.20	0.40
Dibromomethane	ND		0.20	1.0
Dichlorobromomethane	ND		0.20	0.50
Dichlorodifluoromethane	ND		0.20	1.0
Ethyl ether	ND		0.20	10

8/11/11

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-MMB-SW/SD-10-XXX**

Lab Sample ID: 360-34288-8
Client Matrix: Water

Date Sampled: 06/06/2011 1520
Date Received: 06/08/2011 1019

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75271	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18815.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/14/2011 2312			Final Weight/Volume:	5 mL
Prep Date:	06/14/2011 2312				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Ethylbenzene	ND		0.20	1.0
Ethylene Dibromide	ND		0.20	1.0
Hexachlorobutadiene	ND		0.20	0.40
Isopropyl ether	ND		0.20	10
Isopropylbenzene	ND		0.20	1.0
m-Xylene & p-Xylene	ND		0.50	2.0
Methyl tert-butyl ether	ND	J	0.20	1.0
Methylene Chloride	ND	J	1.0	2.0
n-Butylbenzene	ND		0.20	1.0
N-Propylbenzene	ND		0.20	1.0
Naphthalene	ND		2.0	5.0
o-Xylene	ND		0.20	1.0
sec-Butylbenzene	ND		0.20	1.0
Styrene	ND		0.20	1.0
Tert-amyl methyl ether	ND	J	0.20	5.0
Tert-butyl ethyl ether	ND	J	0.20	5.0
tert-Butylbenzene	ND		0.20	1.0
Tetrachloroethene	ND		0.20	1.0
Tetrahydrofuran	ND		0.44	10
Toluene	ND		0.20	1.0
trans-1,2-Dichloroethene	ND		0.20	1.0
trans-1,3-Dichloropropene	ND		0.20	0.40
Trichloroethene	ND		0.33	1.0
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.20	0.50
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.20	1.0
2,4,4-Trimethyl-1-pentene	ND	J	0.20	1.0
2,4,4-Trimethyl-2-pentene	ND		0.20	1.0
Cyclohexane	ND		0.20	10
Methyl acetate	ND		2.0	20
Methylcyclohexane	ND		0.20	10

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	96		70 - 130
Toluene-d8 (Surr)	102		70 - 130
Dibromofluoromethane	106		70 - 130

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-MMB-SW/SD-4-XXX**

Lab Sample ID: 360-34288-9
Client Matrix: Water

Date Sampled: 06/06/2011 1400
Date Received: 06/08/2011 1019

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75271	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18816.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/14/2011 2334			Final Weight/Volume:	5 mL
Prep Date:	06/14/2011 2334				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND		0.20	1.0
1,1,1-Trichloroethane	ND		0.20	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	0.50
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	ND		0.20	1.0
1,1-Dichloroethene	ND		0.20	1.0
1,1-Dichloropropene	ND		0.20	1.0
1,2,3-Trichlorobenzene	ND		0.20	1.0
1,2,3-Trichloropropane	ND		0.20	1.0
1,2,4-Trichlorobenzene	ND		0.20	1.0
1,2,4-Trimethylbenzene	ND		0.20	1.0
1,2-Dibromo-3-Chloropropane	ND		0.20	5.0
1,2-Dichlorobenzene	ND		0.20	1.0
1,2-Dichloroethane	ND		0.20	1.0
1,2-Dichloropropane	ND		0.20	1.0
1,3,5-Trimethylbenzene	ND		0.20	1.0
1,3-Dichlorobenzene	ND		0.20	1.0
1,3-Dichloropropane	ND		0.20	1.0
1,4-Dichlorobenzene	ND		0.20	1.0
1,4-Dioxane	ND		22	50
2,2-Dichloropropane	ND		0.20	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chlorotoluene	ND		0.20	1.0
2-Hexanone	ND		2.0	10
4-Chlorotoluene	ND		0.20	1.0
4-Isopropyltoluene	ND		0.20	1.0
4-Methyl-2-pentanone (MIBK)	ND		2.0	10
Acetone	ND		20	50
Benzene	ND		0.20	1.0
Bromobenzene	ND		0.20	1.0
Bromoform	ND	J	0.20	1.0
Bromomethane	ND		0.20	2.0
Carbon disulfide	ND	J	0.20	10
Carbon tetrachloride	ND	J	0.20	1.0
Chlorobenzene	ND		0.20	1.0
Chlorobromomethane	ND		0.20	1.0
Chlorodibromomethane	ND		0.20	0.50
Chloroethane	ND		0.21	2.0
Chloroform	ND		0.20	1.0
Chloromethane	ND		0.20	2.0
cis-1,2-Dichloroethene	ND		0.20	1.0
cis-1,3-Dichloropropene	ND		0.20	0.40
Dibromomethane	ND		0.20	1.0
Dichlorobromomethane	ND		0.20	0.50
Dichlorodifluoromethane	ND		0.20	1.0
Ethyl ether	ND		0.20	10

8/11/11 BAW

Analytical Data

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-MMB-SW/SD-4-XXX**

Lab Sample ID: 360-34288-9
Client Matrix: Water

Date Sampled: 06/06/2011 1400
Date Received: 06/08/2011 1019

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75271	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18816.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/14/2011 2334			Final Weight/Volume:	5 mL
Prep Date:	06/14/2011 2334				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Ethylbenzene	ND		0.20	1.0
Ethylene Dibromide	ND		0.20	1.0
Hexachlorobutadiene	ND		0.20	0.40
Isopropyl ether	ND		0.20	10
Isopropylbenzene	ND		0.20	1.0
m-Xylene & p-Xylene	ND		0.50	2.0
Methyl tert-butyl ether	ND	J	0.20	1.0
Methylene Chloride	ND	J	1.0	2.0
n-Butylbenzene	ND		0.20	1.0
N-Propylbenzene	ND		0.20	1.0
Naphthalene	ND		2.0	5.0
o-Xylene	ND		0.20	1.0
sec-Butylbenzene	ND		0.20	1.0
Styrene	ND		0.20	1.0
Tert-amyl methyl ether	ND	J	0.20	5.0
Tert-butyl ethyl ether	ND	J	0.20	5.0
tert-Butylbenzene	ND		0.20	1.0
Tetrachloroethene	ND		0.20	1.0
Tetrahydrofuran	ND		0.44	10
Toluene	ND		0.20	1.0
trans-1,2-Dichloroethene	ND		0.20	1.0
trans-1,3-Dichloropropene	ND		0.20	0.40
Trichloroethene	ND		0.33	1.0
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.20	0.50
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.20	1.0
2,4,4-Trimethyl-1-pentene	ND	J	0.20	1.0
2,4,4-Trimethyl-2-pentene	ND		0.20	1.0
Cyclohexane	ND		0.20	10
Methyl acetate	ND		2.0	20
Methylcyclohexane	ND		0.20	10

8/11/11 [illegible]

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	95		70 - 130
Toluene-d8 (Surr)	103		70 - 130
Dibromofluoromethane	104		70 - 130

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-MMB-SW/SD-5-XXX**

Lab Sample ID: 360-34288-10
Client Matrix: Water

Date Sampled: 06/07/2011 0930
Date Received: 06/08/2011 1019

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75271	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18817.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/14/2011 2355			Final Weight/Volume:	5 mL
Prep Date:	06/14/2011 2355				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND		0.20	1.0
1,1,1-Trichloroethane	ND		0.20	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	0.50
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	ND		0.20	1.0
1,1-Dichloroethene	ND		0.20	1.0
1,1-Dichloropropene	ND		0.20	1.0
1,2,3-Trichlorobenzene	ND		0.20	1.0
1,2,3-Trichloropropane	ND		0.20	1.0
1,2,4-Trichlorobenzene	ND		0.20	1.0
1,2,4-Trimethylbenzene	ND		0.20	1.0
1,2-Dibromo-3-Chloropropane	ND		0.20	5.0
1,2-Dichlorobenzene	ND		0.20	1.0
1,2-Dichloroethane	ND		0.20	1.0
1,2-Dichloropropane	ND		0.20	1.0
1,3,5-Trimethylbenzene	ND		0.20	1.0
1,3-Dichlorobenzene	ND		0.20	1.0
1,3-Dichloropropane	ND		0.20	1.0
1,4-Dichlorobenzene	ND		0.20	1.0
1,4-Dioxane	ND		22	50
2,2-Dichloropropane	ND		0.20	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chlorotoluene	ND		0.20	1.0
2-Hexanone	ND		2.0	10
4-Chlorotoluene	ND		0.20	1.0
4-Isopropyltoluene	ND		0.20	1.0
4-Methyl-2-pentanone (MIBK)	ND		2.0	10
Acetone	ND		20	50
Benzene	ND		0.20	1.0
Bromobenzene	ND		0.20	1.0
Bromoform	ND	J	0.20	1.0
Bromomethane	ND		0.20	2.0
Carbon disulfide	ND	J	0.20	10
Carbon tetrachloride	ND	J	0.20	1.0
Chlorobenzene	ND		0.20	1.0
Chlorobromomethane	ND		0.20	1.0
Chlorodibromomethane	ND		0.20	0.50
Chloroethane	ND		0.21	2.0
Chloroform	ND		0.20	1.0
Chloromethane	ND		0.20	2.0
cis-1,2-Dichloroethene	ND		0.20	1.0
cis-1,3-Dichloropropene	ND		0.20	0.40
Dibromomethane	ND		0.20	1.0
Dichlorobromomethane	ND		0.20	0.50
Dichlorodifluoromethane	ND		0.20	1.0
Ethyl ether	ND		0.20	10

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Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-MMB-SW/SD-5-XXX**

Lab Sample ID: 360-34288-10
Client Matrix: Water

Date Sampled: 06/07/2011 0930
Date Received: 06/08/2011 1019

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75271	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18817.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/14/2011 2355			Final Weight/Volume:	5 mL
Prep Date:	06/14/2011 2355				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Ethylbenzene	ND		0.20	1.0
Ethylene Dibromide	ND		0.20	1.0
Hexachlorobutadiene	ND		0.20	0.40
Isopropyl ether	ND		0.20	10
Isopropylbenzene	ND		0.20	1.0
m-Xylene & p-Xylene	ND		0.50	2.0
Methyl tert-butyl ether	ND	J	0.20	1.0
Methylene Chloride	ND	J	1.0	2.0
n-Butylbenzene	ND		0.20	1.0
N-Propylbenzene	ND		0.20	1.0
Naphthalene	ND		2.0	5.0
o-Xylene	ND		0.20	1.0
sec-Butylbenzene	ND		0.20	1.0
Styrene	ND		0.20	1.0
Tert-amyl methyl ether	ND	J	0.20	5.0
Tert-butyl ethyl ether	ND	J	0.20	5.0
tert-Butylbenzene	ND		0.20	1.0
Tetrachloroethene	ND		0.20	1.0
Tetrahydrofuran	ND		0.44	10
Toluene	ND		0.20	1.0
trans-1,2-Dichloroethene	ND		0.20	1.0
trans-1,3-Dichloropropene	ND		0.20	0.40
Trichloroethene	ND		0.33	1.0
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.20	0.50
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.20	1.0
2,4,4-Trimethyl-1-pentene	ND	J	0.20	1.0
2,4,4-Trimethyl-2-pentene	ND		0.20	1.0
Cyclohexane	ND		0.20	10
Methyl acetate	ND		2.0	20
Methylcyclohexane	ND		0.20	10

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	96		70 - 130
Toluene-d8 (Surr)	101		70 - 130
Dibromofluoromethane	104		70 - 130

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-MMB-SW/SD-8-XXX**

Lab Sample ID: 360-34288-11
Client Matrix: Water

Date Sampled: 06/07/2011 1010
Date Received: 06/08/2011 1019

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75271	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18818.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2011 0017			Final Weight/Volume:	5 mL
Prep Date:	06/15/2011 0017				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND		0.20	1.0
1,1,1-Trichloroethane	ND		0.20	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	0.50
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	ND		0.20	1.0
1,1-Dichloroethene	ND		0.20	1.0
1,1-Dichloropropene	ND		0.20	1.0
1,2,3-Trichlorobenzene	ND		0.20	1.0
1,2,3-Trichloropropane	ND		0.20	1.0
1,2,4-Trichlorobenzene	ND		0.20	1.0
1,2,4-Trimethylbenzene	ND		0.20	1.0
1,2-Dibromo-3-Chloropropane	ND		0.20	5.0
1,2-Dichlorobenzene	ND		0.20	1.0
1,2-Dichloroethane	ND		0.20	1.0
1,2-Dichloropropane	ND		0.20	1.0
1,3,5-Trimethylbenzene	ND		0.20	1.0
1,3-Dichlorobenzene	ND		0.20	1.0
1,3-Dichloropropane	ND		0.20	1.0
1,4-Dichlorobenzene	ND		0.20	1.0
1,4-Dioxane	ND		22	50
2,2-Dichloropropane	ND		0.20	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chlorotoluene	ND		0.20	1.0
2-Hexanone	ND		2.0	10
4-Chlorotoluene	ND		0.20	1.0
4-Isopropyltoluene	ND		0.20	1.0
4-Methyl-2-pentanone (MIBK)	ND		2.0	10
Acetone	ND		20	50
Benzene	ND		0.20	1.0
Bromobenzene	ND		0.20	1.0
Bromoform	ND	J	0.20	1.0
Bromomethane	ND		0.20	2.0
Carbon disulfide	ND	J	0.20	10
Carbon tetrachloride	ND	J	0.20	1.0
Chlorobenzene	ND		0.20	1.0
Chlorobromomethane	ND		0.20	1.0
Chlorodibromomethane	ND		0.20	0.50
Chloroethane	ND		0.21	2.0
Chloroform	ND		0.20	1.0
Chloromethane	ND		0.20	2.0
cis-1,2-Dichloroethene	ND		0.20	1.0
cis-1,3-Dichloropropene	ND		0.20	0.40
Dibromomethane	ND		0.20	1.0
Dichlorobromomethane	ND		0.20	0.50
Dichlorodifluoromethane	ND		0.20	1.0
Ethyl ether	ND		0.20	10

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Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-MMB-SW/SD-8-XXX**

Lab Sample ID: 360-34288-11
Client Matrix: Water

Date Sampled: 06/07/2011 1010
Date Received: 06/08/2011 1019

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75271	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18818.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2011 0017			Final Weight/Volume:	5 mL
Prep Date:	06/15/2011 0017				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Ethylbenzene	ND		0.20	1.0
Ethylene Dibromide	ND		0.20	1.0
Hexachlorobutadiene	ND		0.20	0.40
Isopropyl ether	ND		0.20	10
Isopropylbenzene	ND		0.20	1.0
m-Xylene & p-Xylene	ND		0.50	2.0
Methyl tert-butyl ether	ND	J	0.20	1.0
Methylene Chloride	ND	J	1.0	2.0
n-Butylbenzene	ND		0.20	1.0
N-Propylbenzene	ND		0.20	1.0
Naphthalene	ND		2.0	5.0
o-Xylene	ND		0.20	1.0
sec-Butylbenzene	ND		0.20	1.0
Styrene	ND		0.20	1.0
Tert-amyl methyl ether	ND	J	0.20	5.0
Tert-butyl ethyl ether	ND	J	0.20	5.0
tert-Butylbenzene	ND		0.20	1.0
Tetrachloroethene	ND		0.20	1.0
Tetrahydrofuran	ND		0.44	10
Toluene	ND		0.20	1.0
trans-1,2-Dichloroethene	ND		0.20	1.0
trans-1,3-Dichloropropene	ND		0.20	0.40
Trichloroethene	ND		0.33	1.0
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.20	0.50
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.20	1.0
2,4,4-Trimethyl-1-pentene	ND	J	0.20	1.0
2,4,4-Trimethyl-2-pentene	ND		0.20	1.0
Cyclohexane	ND		0.20	10
Methyl acetate	ND		2.0	20
Methylcyclohexane	ND		0.20	10

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	97		70 - 130
Toluene-d8 (Surr)	100		70 - 130
Dibromofluoromethane	105		70 - 130

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-OPWD-1-XXX**

Lab Sample ID: 360-34288-12
Client Matrix: Water

Date Sampled: 06/07/2011 0900
Date Received: 06/08/2011 1019

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75271	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18819.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2011 0039			Final Weight/Volume:	5 mL
Prep Date:	06/15/2011 0039				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND		0.20	1.0
1,1,1-Trichloroethane	ND		0.20	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	0.50
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	ND		0.20	1.0
1,1-Dichloroethene	ND		0.20	1.0
1,1-Dichloropropene	ND		0.20	1.0
1,2,3-Trichlorobenzene	ND		0.20	1.0
1,2,3-Trichloropropane	ND		0.20	1.0
1,2,4-Trichlorobenzene	ND		0.20	1.0
1,2,4-Trimethylbenzene	ND		0.20	1.0
1,2-Dibromo-3-Chloropropane	ND		0.20	5.0
1,2-Dichlorobenzene	ND		0.20	1.0
1,2-Dichloroethane	ND		0.20	1.0
1,2-Dichloropropane	ND		0.20	1.0
1,3,5-Trimethylbenzene	ND		0.20	1.0
1,3-Dichlorobenzene	ND		0.20	1.0
1,3-Dichloropropane	ND		0.20	1.0
1,4-Dichlorobenzene	ND		0.20	1.0
1,4-Dioxane	ND		22	50
2,2-Dichloropropane	ND		0.20	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chlorotoluene	ND		0.20	1.0
2-Hexanone	ND		2.0	10
4-Chlorotoluene	ND		0.20	1.0
4-Isopropyltoluene	ND		0.20	1.0
4-Methyl-2-pentanone (MIBK)	ND		2.0	10
Acetone	ND		20	50
Benzene	ND		0.20	1.0
Bromobenzene	ND		0.20	1.0
Bromoform	ND	J	0.20	1.0
Bromomethane	ND		0.20	2.0
Carbon disulfide	ND	J	0.20	10
Carbon tetrachloride	ND	J	0.20	1.0
Chlorobenzene	ND		0.20	1.0
Chlorobromomethane	ND		0.20	1.0
Chlorodibromomethane	ND		0.20	0.50
Chloroethane	ND		0.21	2.0
Chloroform	ND		0.20	1.0
Chloromethane	ND		0.20	2.0
cis-1,2-Dichloroethene	ND		0.20	1.0
cis-1,3-Dichloropropene	ND		0.20	0.40
Dibromomethane	ND		0.20	1.0
Dichlorobromomethane	ND		0.20	0.50
Dichlorodifluoromethane	ND		0.20	1.0
Ethyl ether	ND		0.20	10

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Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-OPWD-1-XXX**

Lab Sample ID: 360-34288-12
Client Matrix: Water

Date Sampled: 06/07/2011 0900
Date Received: 06/08/2011 1019

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75271	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18819.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2011 0039			Final Weight/Volume:	5 mL
Prep Date:	06/15/2011 0039				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Ethylbenzene	ND		0.20	1.0
Ethylene Dibromide	ND		0.20	1.0
Hexachlorobutadiene	ND		0.20	0.40
Isopropyl ether	ND		0.20	10
Isopropylbenzene	ND		0.20	1.0
m-Xylene & p-Xylene	ND		0.50	2.0
Methyl tert-butyl ether	ND	J	0.20	1.0
Methylene Chloride	ND	J	1.0	2.0
n-Butylbenzene	ND		0.20	1.0
N-Propylbenzene	ND		0.20	1.0
Naphthalene	ND		2.0	5.0
o-Xylene	ND		0.20	1.0
sec-Butylbenzene	ND		0.20	1.0
Styrene	ND		0.20	1.0
Tert-amyl methyl ether	ND	J	0.20	5.0
Tert-butyl ethyl ether	ND	J	0.20	5.0
tert-Butylbenzene	ND		0.20	1.0
Tetrachloroethene	ND		0.20	1.0
Tetrahydrofuran	ND		0.44	10
Toluene	ND		0.20	1.0
trans-1,2-Dichloroethene	ND		0.20	1.0
trans-1,3-Dichloropropene	ND		0.20	0.40
Trichloroethene	ND		0.33	1.0
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.20	0.50
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.20	1.0
2,4,4-Trimethyl-1-pentene	ND	J	0.20	1.0
2,4,4-Trimethyl-2-pentene	ND		0.20	1.0
Cyclohexane	ND		0.20	10
Methyl acetate	ND		2.0	20
Methylcyclohexane	ND		0.20	10

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	95		70 - 130
Toluene-d8 (Surr)	99		70 - 130
Dibromofluoromethane	105		70 - 130

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-OPWD-2-XXX**

Lab Sample ID: 360-34288-13
Client Matrix: Water

Date Sampled: 06/07/2011 1005
Date Received: 06/08/2011 1019

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75271	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18824.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2011 0227			Final Weight/Volume:	5 mL
Prep Date:	06/15/2011 0227				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND		0.20	1.0
1,1,1-Trichloroethane	ND		0.20	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	0.50
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	ND		0.20	1.0
1,1-Dichloroethene	ND		0.20	1.0
1,1-Dichloropropene	ND		0.20	1.0
1,2,3-Trichlorobenzene	ND		0.20	1.0
1,2,3-Trichloropropane	ND		0.20	1.0
1,2,4-Trichlorobenzene	ND		0.20	1.0
1,2,4-Trimethylbenzene	ND		0.20	1.0
1,2-Dibromo-3-Chloropropane	ND		0.20	5.0
1,2-Dichlorobenzene	ND		0.20	1.0
1,2-Dichloroethane	ND		0.20	1.0
1,2-Dichloropropane	ND		0.20	1.0
1,3,5-Trimethylbenzene	ND		0.20	1.0
1,3-Dichlorobenzene	ND		0.20	1.0
1,3-Dichloropropane	ND		0.20	1.0
1,4-Dichlorobenzene	ND		0.20	1.0
1,4-Dioxane	ND		22	50
2,2-Dichloropropane	ND		0.20	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chlorotoluene	ND		0.20	1.0
2-Hexanone	ND		2.0	10
4-Chlorotoluene	ND		0.20	1.0
4-Isopropyltoluene	ND		0.20	1.0
4-Methyl-2-pentanone (MIBK)	ND		2.0	10
Acetone	ND		20	50
Benzene	ND		0.20	1.0
Bromobenzene	ND		0.20	1.0
Bromoform	ND	J	0.20	1.0
Bromomethane	ND		0.20	2.0
Carbon disulfide	2.5	J	0.20	10
Carbon tetrachloride	ND	J	0.20	1.0
Chlorobenzene	ND		0.20	1.0
Chlorobromomethane	ND		0.20	1.0
Chlorodibromomethane	ND		0.20	0.50
Chloroethane	ND		0.21	2.0
Chloroform	ND		0.20	1.0
Chloromethane	ND		0.20	2.0
cis-1,2-Dichloroethene	ND		0.20	1.0
cis-1,3-Dichloropropene	ND		0.20	0.40
Dibromomethane	ND		0.20	1.0
Dichlorobromomethane	ND		0.20	0.50
Dichlorodifluoromethane	ND		0.20	1.0
Ethyl ether	ND		0.20	10

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Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-OPWD-2-XXX**

Lab Sample ID: 360-34288-13
Client Matrix: Water

Date Sampled: 06/07/2011 1005
Date Received: 06/08/2011 1019

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75271	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18824.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2011 0227			Final Weight/Volume:	5 mL
Prep Date:	06/15/2011 0227				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Ethylbenzene	ND		0.20	1.0
Ethylene Dibromide	ND		0.20	1.0
Hexachlorobutadiene	ND		0.20	0.40
Isopropyl ether	ND		0.20	10
Isopropylbenzene	ND		0.20	1.0
m-Xylene & p-Xylene	ND		0.50	2.0
Methyl tert-butyl ether	ND	J	0.20	1.0
Methylene Chloride	ND	J	1.0	2.0
n-Butylbenzene	ND		0.20	1.0
N-Propylbenzene	ND		0.20	1.0
Naphthalene	ND		2.0	5.0
o-Xylene	ND		0.20	1.0
sec-Butylbenzene	ND		0.20	1.0
Styrene	ND		0.20	1.0
Tert-amyl methyl ether	ND	J	0.20	5.0
Tert-butyl ethyl ether	ND	J	0.20	5.0
tert-Butylbenzene	ND		0.20	1.0
Tetrachloroethene	ND		0.20	1.0
Tetrahydrofuran	ND		0.44	10
Toluene	0.50	J	0.20	1.0
trans-1,2-Dichloroethene	ND		0.20	1.0
trans-1,3-Dichloropropene	ND		0.20	0.40
Trichloroethene	ND		0.33	1.0
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.20	0.50
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.20	1.0
2,4,4-Trimethyl-1-pentene	7.1	J	0.20	1.0
2,4,4-Trimethyl-2-pentene	1.9		0.20	1.0
Cyclohexane	ND		0.20	10
Methyl acetate	ND		2.0	20
Methylcyclohexane	ND		0.20	10

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	95		70 - 130
Toluene-d8 (Surr)	100		70 - 130
Dibromofluoromethane	103		70 - 130

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-OPWD-2-XXX**

Lab Sample ID: 360-34288-13
Client Matrix: Water

Date Sampled: 06/07/2011 1005
Date Received: 06/08/2011 1019

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75271	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18824.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2011 0227			Final Weight/Volume:	5 mL
Prep Date:	06/15/2011 0227				

Tentatively Identified Compounds **Number TIC's Found:** 1

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
	Unknown	11.83	7.6	~~J~~ N

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Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-OPWD-SD/SO/SW-S-XXX**

Lab Sample ID: 360-34288-14
Client Matrix: Water

Date Sampled: 06/07/2011 0835
Date Received: 06/08/2011 1019

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75271	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18820.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2011 0100			Final Weight/Volume:	5 mL
Prep Date:	06/15/2011 0100				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND		0.20	1.0
1,1,1-Trichloroethane	ND		0.20	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	0.50
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	ND		0.20	1.0
1,1-Dichloroethene	ND		0.20	1.0
1,1-Dichloropropene	ND		0.20	1.0
1,2,3-Trichlorobenzene	ND		0.20	1.0
1,2,3-Trichloropropane	ND		0.20	1.0
1,2,4-Trichlorobenzene	ND		0.20	1.0
1,2,4-Trimethylbenzene	ND		0.20	1.0
1,2-Dibromo-3-Chloropropane	ND		0.20	5.0
1,2-Dichlorobenzene	ND		0.20	1.0
1,2-Dichloroethane	ND		0.20	1.0
1,2-Dichloropropane	ND		0.20	1.0
1,3,5-Trimethylbenzene	ND		0.20	1.0
1,3-Dichlorobenzene	ND		0.20	1.0
1,3-Dichloropropane	ND		0.20	1.0
1,4-Dichlorobenzene	ND		0.20	1.0
1,4-Dioxane	ND		22	50
2,2-Dichloropropane	ND		0.20	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chlorotoluene	ND		0.20	1.0
2-Hexanone	ND		2.0	10
4-Chlorotoluene	ND		0.20	1.0
4-Isopropyltoluene	ND		0.20	1.0
4-Methyl-2-pentanone (MIBK)	ND		2.0	10
Acetone	ND		20	50
Benzene	ND		0.20	1.0
Bromobenzene	ND		0.20	1.0
Bromoform	ND	J	0.20	1.0
Bromomethane	ND		0.20	2.0
Carbon disulfide	ND	J	0.20	10
Carbon tetrachloride	ND	J	0.20	1.0
Chlorobenzene	ND		0.20	1.0
Chlorobromomethane	ND		0.20	1.0
Chlorodibromomethane	ND		0.20	0.50
Chloroethane	ND		0.21	2.0
Chloroform	ND		0.20	1.0
Chloromethane	ND		0.20	2.0
cis-1,2-Dichloroethene	ND		0.20	1.0
cis-1,3-Dichloropropene	ND		0.20	0.40
Dibromomethane	ND		0.20	1.0
Dichlorobromomethane	ND		0.20	0.50
Dichlorodifluoromethane	ND		0.20	1.0
Ethyl ether	ND		0.20	10

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Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-OPWD-SD/SO/SW-S-XXX**

Lab Sample ID: 360-34288-14
Client Matrix: Water

Date Sampled: 06/07/2011 0835
Date Received: 06/08/2011 1019

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75271	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18820.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2011 0100			Final Weight/Volume:	5 mL
Prep Date:	06/15/2011 0100				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Ethylbenzene	ND		0.20	1.0
Ethylene Dibromide	ND		0.20	1.0
Hexachlorobutadiene	ND		0.20	0.40
Isopropyl ether	ND		0.20	10
Isopropylbenzene	ND		0.20	1.0
m-Xylene & p-Xylene	ND		0.50	2.0
Methyl tert-butyl ether	ND	J	0.20	1.0
Methylene Chloride	ND	J	1.0	2.0
n-Butylbenzene	ND		0.20	1.0
N-Propylbenzene	ND		0.20	1.0
Naphthalene	ND		2.0	5.0
o-Xylene	ND		0.20	1.0
sec-Butylbenzene	ND		0.20	1.0
Styrene	ND		0.20	1.0
Tert-amyl methyl ether	ND	J	0.20	5.0
Tert-butyl ethyl ether	ND	J	0.20	5.0
tert-Butylbenzene	ND		0.20	1.0
Tetrachloroethene	ND		0.20	1.0
Tetrahydrofuran	ND		0.44	10
Toluene	ND		0.20	1.0
trans-1,2-Dichloroethene	ND		0.20	1.0
trans-1,3-Dichloropropene	ND		0.20	0.40
Trichloroethene	ND		0.33	1.0
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.20	0.50
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.20	1.0
2,4,4-Trimethyl-1-pentene	ND	J	0.20	1.0
2,4,4-Trimethyl-2-pentene	ND		0.20	1.0
Cyclohexane	ND		0.20	10
Methyl acetate	ND		2.0	20
Methylcyclohexane	ND		0.20	10

Blank

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	97		70 - 130
Toluene-d8 (Surr)	101		70 - 130
Dibromofluoromethane	106		70 - 130

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-SDBK-002-XXX**

Lab Sample ID: 360-34288-15
Client Matrix: Water

Date Sampled: 06/07/2011 1430
Date Received: 06/08/2011 1019

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75271	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18821.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2011 0122			Final Weight/Volume:	5 mL
Prep Date:	06/15/2011 0122				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND		0.20	1.0
1,1,1-Trichloroethane	ND		0.20	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	0.50
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	ND		0.20	1.0
1,1-Dichloroethene	ND		0.20	1.0
1,1-Dichloropropene	ND		0.20	1.0
1,2,3-Trichlorobenzene	ND		0.20	1.0
1,2,3-Trichloropropane	ND		0.20	1.0
1,2,4-Trichlorobenzene	ND		0.20	1.0
1,2,4-Trimethylbenzene	ND		0.20	1.0
1,2-Dibromo-3-Chloropropane	ND		0.20	5.0
1,2-Dichlorobenzene	ND		0.20	1.0
1,2-Dichloroethane	ND		0.20	1.0
1,2-Dichloropropane	ND		0.20	1.0
1,3,5-Trimethylbenzene	ND		0.20	1.0
1,3-Dichlorobenzene	ND		0.20	1.0
1,3-Dichloropropane	ND		0.20	1.0
1,4-Dichlorobenzene	ND		0.20	1.0
1,4-Dioxane	ND		22	50
2,2-Dichloropropane	ND		0.20	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chlorotoluene	ND		0.20	1.0
2-Hexanone	ND		2.0	10
4-Chlorotoluene	ND		0.20	1.0
4-Isopropyltoluene	ND		0.20	1.0
4-Methyl-2-pentanone (MIBK)	ND		2.0	10
Acetone	ND		20	50
Benzene	ND		0.20	1.0
Bromobenzene	ND		0.20	1.0
Bromoform	ND	J	0.20	1.0
Bromomethane	ND		0.20	2.0
Carbon disulfide	ND	J	0.20	10
Carbon tetrachloride	ND	J	0.20	1.0
Chlorobenzene	ND		0.20	1.0
Chlorobromomethane	ND		0.20	1.0
Chlorodibromomethane	ND		0.20	0.50
Chloroethane	ND		0.21	2.0
Chloroform	ND		0.20	1.0
Chloromethane	ND		0.20	2.0
cis-1,2-Dichloroethene	ND		0.20	1.0
cis-1,3-Dichloropropene	ND		0.20	0.40
Dibromomethane	ND		0.20	1.0
Dichlorobromomethane	ND		0.20	0.50
Dichlorodifluoromethane	ND		0.20	1.0
Ethyl ether	ND		0.20	10

8/11/11 BAK

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-SW-SDBK-002-XXX**

Lab Sample ID: 360-34288-15
Client Matrix: Water

Date Sampled: 06/07/2011 1430
Date Received: 06/08/2011 1019

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75271	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18821.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2011 0122			Final Weight/Volume:	5 mL
Prep Date:	06/15/2011 0122				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Ethylbenzene	ND		0.20	1.0
Ethylene Dibromide	ND		0.20	1.0
Hexachlorobutadiene	ND		0.20	0.40
Isopropyl ether	ND		0.20	10
Isopropylbenzene	ND		0.20	1.0
m-Xylene & p-Xylene	ND		0.50	2.0
Methyl tert-butyl ether	ND	J	0.20	1.0
Methylene Chloride	ND	J	1.0	2.0
n-Butylbenzene	ND		0.20	1.0
N-Propylbenzene	ND		0.20	1.0
Naphthalene	ND		2.0	5.0
o-Xylene	ND		0.20	1.0
sec-Butylbenzene	ND		0.20	1.0
Styrene	ND		0.20	1.0
Tert-amyl methyl ether	ND	J	0.20	5.0
Tert-butyl ethyl ether	ND	J	0.20	5.0
tert-Butylbenzene	ND		0.20	1.0
Tetrachloroethene	ND		0.20	1.0
Tetrahydrofuran	ND		0.44	10
Toluene	ND		0.20	1.0
trans-1,2-Dichloroethene	ND		0.20	1.0
trans-1,3-Dichloropropene	ND		0.20	0.40
Trichloroethene	ND		0.33	1.0
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.20	0.50
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.20	1.0
2,4,4-Trimethyl-1-pentene	ND	J	0.20	1.0
2,4,4-Trimethyl-2-pentene	ND		0.20	1.0
Cyclohexane	ND		0.20	10
Methyl acetate	ND		2.0	20
Methylcyclohexane	ND		0.20	10

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	98		70 - 130
Toluene-d8 (Surr)	101		70 - 130
Dibromofluoromethane	104		70 - 130

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-TBK-079**

Lab Sample ID: 360-34288-16
Client Matrix: Water

Date Sampled: 06/07/2011 1530
Date Received: 06/08/2011 1019

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75271	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18813.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/14/2011 2228			Final Weight/Volume:	5 mL
Prep Date:	06/14/2011 2228				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND		0.20	1.0
1,1,1-Trichloroethane	ND		0.20	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	0.50
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	ND		0.20	1.0
1,1-Dichloroethene	ND		0.20	1.0
1,1-Dichloropropene	ND		0.20	1.0
1,2,3-Trichlorobenzene	ND		0.20	1.0
1,2,3-Trichloropropane	ND		0.20	1.0
1,2,4-Trichlorobenzene	ND		0.20	1.0
1,2,4-Trimethylbenzene	ND		0.20	1.0
1,2-Dibromo-3-Chloropropane	ND		0.20	5.0
1,2-Dichlorobenzene	ND		0.20	1.0
1,2-Dichloroethane	ND		0.20	1.0
1,2-Dichloropropane	ND		0.20	1.0
1,3,5-Trimethylbenzene	ND		0.20	1.0
1,3-Dichlorobenzene	ND		0.20	1.0
1,3-Dichloropropane	ND		0.20	1.0
1,4-Dichlorobenzene	ND		0.20	1.0
1,4-Dioxane	ND		22	50
2,2-Dichloropropane	ND		0.20	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chlorotoluene	ND		0.20	1.0
2-Hexanone	ND		2.0	10
4-Chlorotoluene	ND		0.20	1.0
4-Isopropyltoluene	ND		0.20	1.0
4-Methyl-2-pentanone (MIBK)	ND		2.0	10
Acetone	ND		20	50
Benzene	ND		0.20	1.0
Bromobenzene	ND		0.20	1.0
Bromoform	ND		0.20	1.0
Bromomethane	ND		0.20	2.0
Carbon disulfide	ND		0.20	10
Carbon tetrachloride	ND		0.20	1.0
Chlorobenzene	ND		0.20	1.0
Chlorobromomethane	ND		0.20	1.0
Chlorodibromomethane	ND		0.20	0.50
Chloroethane	ND		0.21	2.0
Chloroform	ND		0.20	1.0
Chloromethane	ND		0.20	2.0
cis-1,2-Dichloroethene	ND		0.20	1.0
cis-1,3-Dichloropropene	ND		0.20	0.40
Dibromomethane	ND		0.20	1.0
Dichlorobromomethane	ND		0.20	0.50
Dichlorodifluoromethane	ND		0.20	1.0
Ethyl ether	ND		0.20	10

8/11/11

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-TBK-079**

Lab Sample ID: 360-34288-16
Client Matrix: Water

Date Sampled: 06/07/2011 1530
Date Received: 06/08/2011 1019

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75271	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18813.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/14/2011 2228			Final Weight/Volume:	5 mL
Prep Date:	06/14/2011 2228				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Ethylbenzene	ND		0.20	1.0
Ethylene Dibromide	ND		0.20	1.0
Hexachlorobutadiene	ND		0.20	0.40
Isopropyl ether	ND		0.20	10
Isopropylbenzene	ND		0.20	1.0
m-Xylene & p-Xylene	ND		0.50	2.0
Methyl tert-butyl ether	ND		0.20	1.0
Methylene Chloride	ND		1.0	2.0
n-Butylbenzene	ND		0.20	1.0
N-Propylbenzene	ND		0.20	1.0
Naphthalene	ND		2.0	5.0
o-Xylene	ND		0.20	1.0
sec-Butylbenzene	ND		0.20	1.0
Styrene	ND		0.20	1.0
Tert-amyl methyl ether	ND		0.20	5.0
Tert-butyl ethyl ether	ND		0.20	5.0
tert-Butylbenzene	ND		0.20	1.0
Tetrachloroethene	ND		0.20	1.0
Tetrahydrofuran	ND		0.44	10
Toluene	ND		0.20	1.0
trans-1,2-Dichloroethene	ND		0.20	1.0
trans-1,3-Dichloropropene	ND		0.20	0.40
Trichloroethene	ND		0.33	1.0
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.20	0.50
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.20	1.0
2,4,4-Trimethyl-1-pentene	ND		0.20	1.0
2,4,4-Trimethyl-2-pentene	ND		0.20	1.0
Cyclohexane	ND		0.20	10
Methyl acetate	ND		2.0	20
Methylcyclohexane	ND		0.20	10

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	94		70 - 130
Toluene-d8 (Surr)	101		70 - 130
Dibromofluoromethane	104		70 - 130

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 360-75271

Method: 8260C
Preparation: 5030C

LCS Lab Sample ID:	LCS 360-75271/3	Analysis Batch:	360-75271	Instrument ID:	Agilent#2 GC/MS
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	V18809.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	06/14/2011 2101	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	06/14/2011 2101				
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 360-75271/4	Analysis Batch:	360-75271	Instrument ID:	Agilent#2 GC/MS
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	V18810.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	06/14/2011 2123	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	06/14/2011 2123				
Leach Date:	N/A				

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
1,1,1,2-Tetrachloroethane	113	110	70 - 130	3	20		
1,1,1-Trichloroethane	105	101	70 - 130	4	20		
1,1,2,2-Tetrachloroethane	88	88	70 - 130	0	20		
1,1,2-Trichloroethane	97	97	70 - 130	1	20		
1,1-Dichloroethane	101	96	70 - 130	5	20		
1,1-Dichloroethene	109	103	70 - 130	6	20		
1,1-Dichloropropene	103	97	70 - 130	6	20		
1,2,3-Trichlorobenzene	97	95	70 - 130	2	20		
1,2,3-Trichloropropane	90	92	70 - 130	2	20		
1,2,4-Trichlorobenzene	99	95	70 - 130	4	20		
1,2,4-Trimethylbenzene	109	107	70 - 130	1	20		
1,2-Dibromo-3-Chloropropane	100	104	70 - 130	3	20		
1,2-Dichlorobenzene	98	96	70 - 130	2	20		
1,2-Dichloroethane	92	90	70 - 130	2	20		
1,2-Dichloropropane	99	95	70 - 130	4	20		
1,3,5-Trimethylbenzene	99	94	70 - 130	5	20		
1,3-Dichlorobenzene	105	102	70 - 130	3	20		
1,3-Dichloropropane	98	97	70 - 130	1	20		
1,4-Dichlorobenzene	98	97	70 - 130	1	20		
1,4-Dioxane	94	94	70 - 130	0	20		
2,2-Dichloropropane	101	97	70 - 130	5	20		
2-Butanone (MEK)	92	97	70 - 130	5	20		
2-Chlorotoluene	95	92	70 - 130	4	20		
2-Hexanone	92	92	70 - 130	0	20		
4-Chlorotoluene	94	91	70 - 130	4	20		
4-Isopropyltoluene	115	110	70 - 130	4	20		
4-Methyl-2-pentanone (MIBK)	96	97	70 - 130	1	20		
Acetone	96	99	70 - 130	3	20		
Benzene	103	99	70 - 130	3	20		
Bromobenzene	93	91	70 - 130	2	20		
Bromoform	133	134	70 - 130	0	20 ND	*	*
Bromomethane	108	100	70 - 130	8	20		
Carbon disulfide	140	132	70 - 130	6	20 LCS-H		* 5, 13
Carbon tetrachloride	127	117	70 - 130	8	20		
Chlorobenzene	97	95	70 - 130	2	20		
Chlorobromomethane	102	100	70 - 130	2	20		

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 360-75271

Method: 8260C
Preparation: 5030C

LCS Lab Sample ID:	LCS 360-75271/3	Analysis Batch:	360-75271	Instrument ID:	Agilent#2 GC/MS
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	V18809.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	06/14/2011 2101	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	06/14/2011 2101				
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 360-75271/4	Analysis Batch:	360-75271	Instrument ID:	Agilent#2 GC/MS
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	V18810.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	06/14/2011 2123	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	06/14/2011 2123				
Leach Date:	N/A				

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Chlorodibromomethane	107	105	70 - 130	1	20		
Chloroethane	103	98	70 - 130	5	20		
Chloroform	95	92	70 - 130	3	20		
Chloromethane	88	85	70 - 130	3	20		
cis-1,2-Dichloroethene	98	95	70 - 130	4	20		
cis-1,3-Dichloropropene	98	96	70 - 130	2	20		
Dibromomethane	100	100	70 - 130	0	20		
Dichlorobromomethane	99	99	70 - 130	1	20		
Dichlorodifluoromethane	81	76	70 - 130	6	20		
Ethyl ether	98	98	70 - 130	0	20		
Ethylbenzene	97	94	70 - 130	4	20		
Ethylene Dibromide	99	98	70 - 130	1	20		
Hexachlorobutadiene	100	96	70 - 130	4	20		
Isopropyl ether	102	100	70 - 130	2	20		
Isopropylbenzene	99	95	70 - 130	4	20		
m-Xylene & p-Xylene	97	93	70 - 130	4	20		
Methyl tert-butyl ether	131	129	70 - 130	2	20	LCS-H 5,4,7	
Methylene Chloride	129	126	70 - 130	2	20		
n-Butylbenzene	98	95	70 - 130	4	20		
N-Propylbenzene	98	96	70 - 130	3	20		
Naphthalene	93	92	70 - 130	1	20		
o-Xylene	96	94	70 - 130	3	20		
sec-Butylbenzene	111	106	70 - 130	5	20		
Styrene	96	94	70 - 130	3	20		
Tert-amyl methyl ether	142	138	70 - 130	3	20	ND *	*
Tert-butyl ethyl ether	144	137	70 - 130	5	20	*	*
tert-Butylbenzene	110	104	70 - 130	6	20		
Tetrachloroethene	107	103	70 - 130	4	20		
Tetrahydrofuran	90	90	70 - 130	1	20		
Toluene	102	98	70 - 130	4	20		
trans-1,2-Dichloroethene	100	95	70 - 130	5	20		
trans-1,3-Dichloropropene	96	95	70 - 130	2	20		
Trichloroethene	103	100	70 - 130	3	20		
Trichlorofluoromethane	101	93	70 - 130	8	20		
Vinyl chloride	104	99	70 - 130	4	20		
1,1,2-Trichloro-1,2,2-trifluoroethane	96	89	70 - 130	7	20		

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 360-75271

Method: 8260C
Preparation: 5030C

MS Lab Sample ID:	360-34288-8	Analysis Batch:	360-75271	Instrument ID:	Agilent#2 GC/MS
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	V18832.D
Dilution:	10	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2011 0521			Final Weight/Volume:	5 mL
Prep Date:	06/15/2011 0521				
Leach Date:	N/A				

MSD Lab Sample ID:	360-34288-8	Analysis Batch:	360-75271	Instrument ID:	Agilent#2 GC/MS
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	V18833.D
Dilution:	10	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2011 0543			Final Weight/Volume:	5 mL
Prep Date:	06/15/2011 0543				
Leach Date:	N/A				

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Carbon tetrachloride	126	119	70 - 130	6	20		
Chlorobenzene	99	95	70 - 130	4	20		
Chlorobromomethane	104	101	70 - 130	3	20		
Chlorodibromomethane	102	98	70 - 130	4	20		
Chloroethane	107	100	70 - 130	7	20		
Chloroform	97	91	70 - 130	6	20		
Chloromethane	90	84	70 - 130	7	20		
cis-1,2-Dichloroethene	99	95	70 - 130	4	20		
cis-1,3-Dichloropropene	94	89	70 - 130	5	20		
Dibromomethane	104	100	70 - 130	4	20		
Dichlorobromomethane	99	97	70 - 130	3	20		
Dichlorodifluoromethane	84	76	70 - 130	10	20		
Ethyl ether	99	100	70 - 130	1	20		
Ethylbenzene	99	94	70 - 130	5	20		
Ethylene Dibromide	102	99	70 - 130	3	20		
Hexachlorobutadiene	97	94	70 - 130	4	20		
Isopropyl ether	101	98	70 - 130	3	20		
Isopropylbenzene	98	93	70 - 130	5	20		
m-Xylene & p-Xylene	99	94	70 - 130	5	20		
Methyl tert-butyl ether	134	132	70 - 130	1	20	F	F
Methylene Chloride	124	121	70 - 130	3	20		
n-Butylbenzene	96	92	70 - 130	5	20		
N-Propylbenzene	98	93	70 - 130	5	20		
Naphthalene	87	90	70 - 130	3	20		
o-Xylene	98	93	70 - 130	5	20		
sec-Butylbenzene	112	106	70 - 130	5	20		
Styrene	93	92	70 - 130	1	20		
Tert-amyl methyl ether	142	140	70 - 130	1	20	F	F
Tert-butyl ethyl ether	145	141	70 - 130	3	20	F	F
tert-Butylbenzene	107	106	70 - 130	1	20		
Tetrachloroethene	110	102	70 - 130	7	20		
Tetrahydrofuran	93	90	70 - 130	3	20		
Toluene	105	100	70 - 130	5	20		

All ND
No amer

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Westfield Job No.: 360-34288-1

SDG No.: 360-34288-1

Lab Sample ID: CCVIS 360-75271/2 Calibration Date: 06/14/2011 20:40

Instrument ID: Agilent#2 GC/MS Calib Start Date: 05/18/2011 18:35

GC Column: RTX-VMS ID: 0.25(um) Calib End Date: 05/18/2011 21:50

Lab File ID: V18808.D Conc. Units: ug/L Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Dichlorodifluoromethane	Lin1F		0.2305	0.1000	18.8	20.0	-6.0	20.0
Chloromethane	Ave	0.3532	0.3293	0.1000	18.6	20.0	-6.8	20.0
Vinyl chloride	Ave	0.2391	0.2413	0.1000	20.2	20.0	0.9	20.0
Bromomethane	Lin1F		0.1538	0.1000	23.4	20.0	17.0	20.0
Chloroethane	Ave	0.1218	0.1273	0.1000	20.9	20.0	4.5	20.0
Trichlorofluoromethane	Lin1F		0.3138	0.1000	21.7	20.0	8.5	20.0
Ethyl ether	Ave	0.2036	0.2126		20.9	20.0	4.4	20.0
1,1-Dichloroethene	Lin1F		0.2476	0.1000	24.2	20.0	21.0*	20.0
Carbon disulfide	Ave	0.5526	0.7004	0.1000	25.3	20.0	26.7*	20.0
1,1,2-Trichloro-1,2,2-trifluoroethane	Ave	0.1254	0.1474		23.5	20.0	17.5	20.0
Methylene Chloride	Lin1F		0.3429	0.1000	27.9	20.0	39.5*	20.0
Acetone	Lin1F		1.008	0.1000	195	200	-2.8	20.0
Methyl acetate	Ave	0.2568	0.2546		198	200	-0.9	20.0
trans-1,2-Dichloroethene	Ave	0.3456	0.3841	0.1000	22.2	20.0	11.1	20.0
Methyl tert-butyl ether	Ave	0.3483	0.4774	0.1000	27.4	20.0	37.0*	20.0
Isopropyl ether	Ave	0.6274	0.6752		21.5	20.0	7.6	20.0
1,1-Dichloroethane	Ave	0.4486	0.4750	0.2000	21.2	20.0	5.9	20.0
Halothane	Ave	0.1728	0.2085		24.1	20.0	20.7*	20.0
Tert-butyl ethyl ether	Lin1F		0.3811		29.0	20.0	45.0*	20.0
cis-1,2-Dichloroethene	Ave	0.3466	0.3683	0.1000	21.3	20.0	6.3	20.0
2,2-Dichloropropane	Lin1F		0.2342		22.7	20.0	13.5	20.0
Chlorobromomethane	Ave	0.1955	0.2226		22.8	20.0	13.9	20.0
Cyclohexane	Ave	0.3326	0.3601		21.7	20.0	8.3	20.0
Chloroform	Ave	0.4823	0.5027	0.2000	20.8	20.0	4.2	20.0
Carbon tetrachloride	Lin1F		0.3090	0.1000	27.5	20.0	37.5*	20.0
Tetrahydrofuran	Ave	0.1226	0.1155		188	200	-5.8	20.0
1,1,1-Trichloroethane	Ave	0.3137	0.3652	0.1000	23.3	20.0	16.4	20.0
2-Butanone (MEK)	Ave	1.867	1.671	0.1000	179	200	-10.5	20.0
1,1-Dichloropropene	Ave	0.3369	0.3750		22.3	20.0	11.3	20.0
Benzene	Ave	0.9571	1.076	0.5000	22.5	20.0	12.5	20.0
Tert-amyl methyl ether	Lin1F		0.3556		29.5	20.0	47.5*	20.0
1,2-Dichloroethane	Ave	0.3470	0.3455	0.1000	19.9	20.0	-0.4	20.0
2,4,4-Trimethyl-1-pentene	QuaF		0.1178		27.3	20.0	36.5*	20.0
Methylcyclohexane	Ave	0.2939	0.3399		23.1	20.0	15.6	20.0
Trichloroethene	Ave	0.2151	0.2468	0.2000	22.9	20.0	14.7	20.0
2,4,4-Trimethyl-2-pentene	QuaF		0.2916		24.8	20.0	24.0*	20.0
Dibromomethane	Ave	0.1478	0.1601		21.7	20.0	8.3	20.0
1,2-Dichloropropane	Ave	0.1985	0.2109	0.1000	21.2	20.0	6.2	20.0
Dichlorobromomethane	Lin1F		0.2758	0.2000	22.2	20.0	11.0	20.0
1,4-Dioxane	Lin1F		0.0080		193	200	-3.5	20.0

CCV %D

FORM VII 8260C

07/13/2011

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Westfield Job No.: 360-34288-1

SDG No.: 360-34288-1

Lab Sample ID: CCVIS 360-75271/2 Calibration Date: 06/14/2011 20:40

Instrument ID: Agilent#2 GC/MS Calib Start Date: 05/18/2011 18:35

GC Column: RTX-VMS ID: 0.25(um) Calib End Date: 05/18/2011 21:50

Lab File ID: V18808.D Conc. Units: ug/L Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
cis-1,3-Dichloropropene	Ave	0.3002	0.3262	0.2000	21.7	20.0	8.7	20.0
Toluene	Ave	0.4489	0.4990	0.4000	22.2	20.0	11.2	20.0
4-Methyl-2-pentanone (MIBK)	Ave	2.659	2.469	0.1000	186	200	-7.2	20.0
Tetrachloroethene	Ave	0.2148	0.2479	0.2000	23.1	20.0	15.4	20.0
trans-1,3-Dichloropropene	Ave	0.2783	0.2902	0.1000	20.9	20.0	4.3	20.0
1,1,2-Trichloroethane	Ave	0.1630	0.1734	0.1000	21.3	20.0	6.4	20.0
Chlorodibromomethane	Lin1F		0.2302	0.1000	24.2	20.0	21.0*	20.0
1,3-Dichloropropane	Ave	0.3037	0.3156		20.8	20.0	3.9	20.0
Ethylene Dibromide	Ave	0.2150	0.2306		21.5	20.0	7.3	20.0
2-Hexanone	Ave	2.041	1.812	0.1000	178	200	-11.2	20.0
Chlorobenzene	Ave	0.7725	0.8385	0.5000	21.7	20.0	8.5	20.0
Ethylbenzene	Ave	1.204	1.284	0.1000	21.3	20.0	6.6	20.0
1,1,1,2-Tetrachloroethane	Ave	0.2235	0.2727		24.4	20.0	22.0*	20.0
m-Xylene & p-Xylene	Ave	0.9311	0.9906	0.1000	42.6	40.0	6.4	20.0
o-Xylene	Ave	0.9355	0.9662	0.3000	20.7	20.0	3.3	20.0
Styrene	Ave	0.7710	0.8145	0.3000	21.1	20.0	5.6	20.0
Bromoform	QuaF		0.4881	0.1000	30.2	20.0	51.0*	20.0
Isopropylbenzene	Ave	1.118	1.197	0.1000	21.4	20.0	7.0	20.0
Bromobenzene	Ave	0.4982	0.4980		20.0	20.0	-0.0	20.0
N-Propylbenzene	Ave	1.348	1.403		20.8	20.0	4.1	20.0
1,1,2,2-Tetrachloroethane	Ave	0.8077	0.7771	0.3000	19.2	20.0	-3.8	20.0
2-Chlorotoluene	Ave	0.8319	0.8580		20.6	20.0	3.1	20.0
1,2,3-Trichloropropane	Ave	0.1189	0.1183		19.9	20.0	-0.5	20.0
1,3,5-Trimethylbenzene	Ave	0.8786	0.9253		21.1	20.0	5.3	20.0
4-Chlorotoluene	Ave	0.8880	0.9207		20.7	20.0	3.7	20.0
tert-Butylbenzene	Lin1F		0.7682		23.1	20.0	15.5	20.0
1,2,4-Trimethylbenzene	Lin1F		0.9469		23.1	20.0	15.5	20.0
sec-Butylbenzene	Lin1F		1.185		24.0	20.0	20.0	20.0
4-Isopropyltoluene	Lin1F		0.9930		24.2	20.0	21.0*	20.0
1,3-Dichlorobenzene	Lin1F		0.6349	0.6000	22.7	20.0	13.5	20.0
1,4-Dichlorobenzene	Ave	1.185	1.278	0.5000	21.6	20.0	7.8	20.0
n-Butylbenzene	Ave	1.731	1.836		21.2	20.0	6.0	20.0
1,2-Dichlorobenzene	Ave	1.063	1.147	0.4000	21.6	20.0	7.9	20.0
1,2-Dibromo-3-Chloropropane	QuaF		0.1777	0.0500	21.9	20.0	9.5	20.0
Hexachlorobutadiene	Lin1F		0.4037		22.4	20.0	12.0	20.0
1,2,4-Trichlorobenzene	Ave	0.7257	0.7535	0.2000	20.8	20.0	3.8	20.0
Naphthalene	Ave	1.838	1.859		20.2	20.0	1.1	20.0
1,2,3-Trichlorobenzene	Ave	0.6699	0.7011		20.9	20.0	4.7	20.0
Dibromofluoromethane	Ave	0.3399	0.3460		20.4	20.0	1.8	20.0
Toluene-d8 (Surr)	Ave	0.9289	0.9451		20.3	20.0	1.7	20.0
4-Bromofluorobenzene	Ave	0.4896	0.4708		19.2	20.0	-3.8	20.0

CCV%D

FORM VII 8260C

07/13/2011

VOLATILE ORGANICS

REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifications: REGION I Organics Guideline (1996)

TIER I / (II) III (circle one)

SITE: Olin Chemical Project #: 6107110016-12 SDG #: 360-34315-1

LAB #: TAL-WFD

Sample IDs: Attach tracking sheet and/or sample listing.

This checklist is designed to be used with USEPA Region I Validation Guidelines Part II (12/1996). During Level III validation, calculation and transcription checks are completed for instrument tuning, surrogates, target compounds, spike recoveries, calibration data, and internal standards as specified in the guideline. These checks are documented on attached validation notes.

YES	NO	NA		
			Data completeness	
☑	☐	☐	All data summaries, QC forms and raw data available from hard copy or electronic data package	Contact lab if missing data. Lab to respond with 24 hours.
☑	☐	☐	Data summaries match EDD	ok
			Holding Times and Preservation	
☑	☐	☐	Hold times met (14 days with preservation)	ok
☑	☐	☐	Preserved (waters HCL, soils methanol)	
			Instrument Performance Check (Tune)	
☑	☐	☐	Tune available for each 12-hour period samples were analyzed	
☑	☐	☐	Appropriate number of significant figures reported (at least 2)	ok
☑	☐	☐	Mass/Charge list (m/z) criteria met	
			Initial Calibration	
☑	☐	☐	%RSD less than or equal to 30%	ok
☑	☐	☐	RRF greater than or equal to 0.05	
			Continuing Calibration	
☐	☑	☐	%D less than or equal to 25%	SEE ATTACHED
☑	☐	☐	RRF greater than or equal to 0.05.	
			Blank Contamination	
☑	☐	☐	Method blank contamination	Evaluate all blanks for contamination. Highest contaminant level used for action level.
☐	☑	☐	Trip blank contamination	METHYLENE CHLORIDE — ALL SAMPLES NO
☐	☐	☑	Equipment/Rinseate blank contamination	NO QUAL — SEE ATTACHED

VOLATILE ORGANICS

REGION I VALIDATION CHECKLIST for OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifications: REGION I Organics Guideline (1996)

TIER I / II / III (circle one)

Surrogate Recoveries ☑ ☐ ☐ Surrogates percent recovery criteria met (water and soil: 70%-130%)	OK
Matrix Spikes and Laboratory Control Samples ☐ ☑ ☐ MS/MSD percent recovery criteria met (water and soil: 70%-130%) ☑ ☐ ☐ MS/MSD RPD criteria met (water and soil <30%) ☐ ☑ ☐ LCS percent recovery criteria (water and soil: 70%-130%)	SEE ATTACHED SEE ATTACHED
Field Duplicates ☐ ☐ ☑ RPD criteria (water <30%, soils <50%) met	NA
Internal Standard ☑ ☐ ☐ Area counts within -50 to +100 percent of calib. std. ☑ ☐ ☐ Retention Time within 30 seconds of calib. std.	OK
Target Compounds ☑ ☐ ☐ Reviewed narrative for anomalies	OK
Tentatively Identified Compounds (TICs) ☐ ☑ ☐ TCL compounds reported as TICs	OK

Validator's Signature: Bradley B. [illegible]

Date: 8/22/11

Reference:

MACTEC, Quality Assurance Project Plan for Remedial Investigation/Feasibility Study – Olin Chemical Superfund Site, Wilmington Property, 51 Eames Street, Wilmington, MA", MACTEC Engineering and Consulting. Draft .October 2008.

SAMPLE SUMMARY

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
360-34315-1	OC-SW-SDBK-001-XXX	Water	06/08/2011 1130	06/08/2011 1750
360-34315-2	OC-SW-SDBK-004-XXX	Water	06/08/2011 1220	06/08/2011 1750
360-34315-3	OC-SW-SD-EDSD/SW0-XXX	Water	06/08/2011 1045	06/08/2011 1750
360-34315-4	OC-SW-EDSD/SW1(EDBS5)-XXX	Water	06/08/2011 1000	06/08/2011 1750
360-34315-5	OC-SW-EDSD/SW2(EDBS6)-XXX	Water	06/08/2011 0900	06/08/2011 1750
360-34315-6	OC-SW-EDSD/SW5(EDBS11)-XXX	Water	06/08/2011 0815	06/08/2011 1750
360-34315-7	OC-SW-MMB-SW/SD-11-XXX	Water	06/07/2011 1500	06/08/2011 1750
360-34315-8	OC-SW-MMB-SW/SD-2-XXX	Water	06/08/2011 1050	06/08/2011 1750
360-34315-9	OC-SW-MMB-SW/SD-3-XXX	Water	06/08/2011 0915	06/08/2011 1750
360-34315-10	OC-SW-MMB-SW/SD-6-XXX	Water	06/08/2011 1155	06/08/2011 1750
360-34315-11	OC-SW-MMB-SW/SD-8A-XXX	Water	06/08/2011 1330	06/08/2011 1750
360-34315-12	OC-TBK-080	Water	06/07/2011 1500	06/08/2011 1750
360-34315-13	~~OC-EBK-010~~	Water	06/08/2011 1315	06/08/2011 1750

11

1 - TB

Analytical Data

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Client Sample ID: **OC-SW-SDBK-001-XXX**

Lab Sample ID: 360-34315-1
Client Matrix: Water

Date Sampled: 06/08/2011 1130
Date Received: 06/08/2011 1750

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75276	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18845.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2011 1743			Final Weight/Volume:	5 mL
Prep Date:	06/15/2011 1743				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND		0.20	1.0
1,1,1-Trichloroethane	ND		0.20	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	0.50
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	ND		0.20	1.0
1,1-Dichloroethene	ND		0.20	1.0
1,1-Dichloropropene	ND		0.20	1.0
1,2,3-Trichlorobenzene	ND		0.20	1.0
1,2,3-Trichloropropane	ND		0.20	1.0
1,2,4-Trichlorobenzene	ND		0.20	1.0
1,2,4-Trimethylbenzene	ND		0.20	1.0
1,2-Dibromo-3-Chloropropane	ND		0.20	5.0
1,2-Dichlorobenzene	ND		0.20	1.0
1,2-Dichloroethane	ND		0.20	1.0
1,2-Dichloropropane	ND		0.20	1.0
1,3,5-Trimethylbenzene	ND		0.20	1.0
1,3-Dichlorobenzene	ND		0.20	1.0
1,3-Dichloropropane	ND		0.20	1.0
1,4-Dichlorobenzene	ND		0.20	1.0
1,4-Dioxane	ND		22	50
2,2-Dichloropropane	ND		0.20	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chlorotoluene	ND		0.20	1.0
2-Hexanone	ND		2.0	10
4-Chlorotoluene	ND		0.20	1.0
4-Isopropyltoluene	ND		0.20	1.0
4-Methyl-2-pentanone (MIBK)	ND		2.0	10
Acetone	ND		20	50
Benzene	ND		0.20	1.0
Bromobenzene	ND		0.20	1.0
Bromoform	ND	J	0.20	1.0
Bromomethane	ND		0.20	2.0
Carbon disulfide	0.40	J	0.20	10
Carbon tetrachloride	ND	J	0.20	1.0
Chlorobenzene	ND		0.20	1.0
Chlorobromomethane	ND		0.20	1.0
Chlorodibromomethane	ND		0.20	0.50
Chloroethane	ND		0.21	2.0
Chloroform	ND		0.20	1.0
Chloromethane	ND		0.20	2.0
cis-1,2-Dichloroethene	ND		0.20	1.0
cis-1,3-Dichloropropene	ND		0.20	0.40
Dibromomethane	ND		0.20	1.0
Dichlorobromomethane	ND		0.20	0.50
Dichlorodifluoromethane	ND		0.20	1.0
Ethyl ether	ND		0.20	10

8/11/11

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Client Sample ID: **OC-SW-SDBK-001-XXX**

Lab Sample ID: 360-34315-1
Client Matrix: Water

Date Sampled: 06/08/2011 1130
Date Received: 06/08/2011 1750

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75276	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18845.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2011 1743			Final Weight/Volume:	5 mL
Prep Date:	06/15/2011 1743				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Ethylbenzene	ND		0.20	1.0
Ethylene Dibromide	ND		0.20	1.0
Hexachlorobutadiene	ND		0.20	0.40
Isopropyl ether	ND		0.20	10
Isopropylbenzene	ND		0.20	1.0
m-Xylene & p-Xylene	ND		0.50	2.0
Methyl tert-butyl ether	ND	J	0.20	1.0
Methylene Chloride	ND		1.0	2.0
n-Butylbenzene	ND		0.20	1.0
N-Propylbenzene	ND		0.20	1.0
Naphthalene	ND		2.0	5.0
o-Xylene	ND		0.20	1.0
sec-Butylbenzene	ND		0.20	1.0
Styrene	ND		0.20	1.0
Tert-amyl methyl ether	ND	J	0.20	5.0
Tert-butyl ethyl ether	ND	J	0.20	5.0
tert-Butylbenzene	ND		0.20	1.0
Tetrachloroethene	ND		0.20	1.0
Tetrahydrofuran	ND		0.44	10
Toluene	1.3		0.20	1.0
trans-1,2-Dichloroethene	ND		0.20	1.0
trans-1,3-Dichloropropene	ND		0.20	0.40
Trichloroethene	ND		0.33	1.0
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.20	0.50
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.20	1.0
2,4,4-Trimethyl-1-pentene	ND	J	0.20	1.0
2,4,4-Trimethyl-2-pentene	ND		0.20	1.0
Cyclohexane	ND		0.20	10
Methyl acetate	ND		2.0	20
Methylcyclohexane	ND		0.20	10

8/11/11

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	96		70 - 130
Toluene-d8 (Surr)	100		70 - 130
Dibromofluoromethane	106		70 - 130

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Client Sample ID: **OC-SW-SDBK-004-XXX**

Lab Sample ID: 360-34315-2
Client Matrix: Water

Date Sampled: 06/08/2011 1220
Date Received: 06/08/2011 1750

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75276	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18846.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2011 1805			Final Weight/Volume:	5 mL
Prep Date:	06/15/2011 1805				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND		0.20	1.0
1,1,1-Trichloroethane	ND		0.20	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	0.50
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	ND		0.20	1.0
1,1-Dichloroethene	ND		0.20	1.0
1,1-Dichloropropene	ND		0.20	1.0
1,2,3-Trichlorobenzene	ND		0.20	1.0
1,2,3-Trichloropropane	ND		0.20	1.0
1,2,4-Trichlorobenzene	ND		0.20	1.0
1,2,4-Trimethylbenzene	ND		0.20	1.0
1,2-Dibromo-3-Chloropropane	ND		0.20	5.0
1,2-Dichlorobenzene	ND		0.20	1.0
1,2-Dichloroethane	ND		0.20	1.0
1,2-Dichloropropane	ND		0.20	1.0
1,3,5-Trimethylbenzene	ND		0.20	1.0
1,3-Dichlorobenzene	ND		0.20	1.0
1,3-Dichloropropane	ND		0.20	1.0
1,4-Dichlorobenzene	ND		0.20	1.0
1,4-Dioxane	ND		22	50
2,2-Dichloropropane	ND		0.20	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chlorotoluene	ND		0.20	1.0
2-Hexanone	ND		2.0	10
4-Chlorotoluene	ND		0.20	1.0
4-Isopropyltoluene	ND		0.20	1.0
4-Methyl-2-pentanone (MIBK)	ND		2.0	10
Acetone	ND		20	50
Benzene	ND		0.20	1.0
Bromobenzene	ND		0.20	1.0
Bromoform	ND	J	0.20	1.0
Bromomethane	ND		0.20	2.0
Carbon disulfide	ND		0.20	10
Carbon tetrachloride	ND	J	0.20	1.0
Chlorobenzene	ND		0.20	1.0
Chlorobromomethane	ND		0.20	1.0
Chlorodibromomethane	ND		0.20	0.50
Chloroethane	ND		0.21	2.0
Chloroform	ND		0.20	1.0
Chloromethane	ND		0.20	2.0
cis-1,2-Dichloroethene	ND		0.20	1.0
cis-1,3-Dichloropropene	ND		0.20	0.40
Dibromomethane	ND		0.20	1.0
Dichlorobromomethane	ND		0.20	0.50
Dichlorodifluoromethane	ND		0.20	1.0
Ethyl ether	ND		0.20	10

8/11/11

Analytical Data

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Client Sample ID: **OC-SW-SDBK-004-XXX**

Lab Sample ID: 360-34315-2
Client Matrix: Water

Date Sampled: 06/08/2011 1220
Date Received: 06/08/2011 1750

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75276	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18846.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2011 1805			Final Weight/Volume:	5 mL
Prep Date:	06/15/2011 1805				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Ethylbenzene	ND		0.20	1.0
Ethylene Dibromide	ND		0.20	1.0
Hexachlorobutadiene	ND		0.20	0.40
Isopropyl ether	ND		0.20	10
Isopropylbenzene	ND		0.20	1.0
m-Xylene & p-Xylene	ND		0.50	2.0
Methyl tert-butyl ether	ND	J	0.20	1.0
Methylene Chloride	ND		1.0	2.0
n-Butylbenzene	ND		0.20	1.0
N-Propylbenzene	ND		0.20	1.0
Naphthalene	ND		2.0	5.0
o-Xylene	ND		0.20	1.0
sec-Butylbenzene	ND		0.20	1.0
Styrene	ND		0.20	1.0
Tert-amyl methyl ether	ND	J	0.20	5.0
Tert-butyl ethyl ether	ND	J	0.20	5.0
tert-Butylbenzene	ND		0.20	1.0
Tetrachloroethene	ND		0.20	1.0
Tetrahydrofuran	ND		0.44	10
Toluene	ND		0.20	1.0
trans-1,2-Dichloroethene	ND		0.20	1.0
trans-1,3-Dichloropropene	ND		0.20	0.40
Trichloroethene	ND		0.33	1.0
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.20	0.50
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.20	1.0
2,4,4-Trimethyl-1-pentene	ND	J	0.20	1.0
2,4,4-Trimethyl-2-pentene	ND		0.20	1.0
Cyclohexane	ND		0.20	10
Methyl acetate	ND		2.0	20
Methylcyclohexane	ND		0.20	10

8/11/11 BBG

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	97		70 - 130
Toluene-d8 (Surr)	101		70 - 130
Dibromofluoromethane	108		70 - 130

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Client Sample ID: **OC-SW-SD-EDSD/SW0-XXX**

Lab Sample ID: 360-34315-3
Client Matrix: Water

Date Sampled: 06/08/2011 1045
Date Received: 06/08/2011 1750

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75276	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18847.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2011 1826			Final Weight/Volume:	5 mL
Prep Date:	06/15/2011 1826				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND		0.20	1.0
1,1,1-Trichloroethane	ND		0.20	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	0.50
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	ND		0.20	1.0
1,1-Dichloroethene	ND		0.20	1.0
1,1-Dichloropropene	ND		0.20	1.0
1,2,3-Trichlorobenzene	ND		0.20	1.0
1,2,3-Trichloropropane	ND		0.20	1.0
1,2,4-Trichlorobenzene	ND		0.20	1.0
1,2,4-Trimethylbenzene	ND		0.20	1.0
1,2-Dibromo-3-Chloropropane	ND		0.20	5.0
1,2-Dichlorobenzene	ND		0.20	1.0
1,2-Dichloroethane	ND		0.20	1.0
1,2-Dichloropropane	ND		0.20	1.0
1,3,5-Trimethylbenzene	ND		0.20	1.0
1,3-Dichlorobenzene	ND		0.20	1.0
1,3-Dichloropropane	ND		0.20	1.0
1,4-Dichlorobenzene	ND		0.20	1.0
1,4-Dioxane	ND		22	50
2,2-Dichloropropane	ND		0.20	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chlorotoluene	ND		0.20	1.0
2-Hexanone	ND		2.0	10
4-Chlorotoluene	ND		0.20	1.0
4-Isopropyltoluene	ND		0.20	1.0
4-Methyl-2-pentanone (MIBK)	ND		2.0	10
Acetone	ND		20	50
Benzene	ND		0.20	1.0
Bromobenzene	ND		0.20	1.0
Bromoform	ND	J	0.20	1.0
Bromomethane	ND		0.20	2.0
Carbon disulfide	ND	J	0.20	10
Carbon tetrachloride	ND		0.20	1.0
Chlorobenzene	ND		0.20	1.0
Chlorobromomethane	ND		0.20	1.0
Chlorodibromomethane	ND		0.20	0.50
Chloroethane	ND		0.21	2.0
Chloroform	ND		0.20	1.0
Chloromethane	ND		0.20	2.0
cis-1,2-Dichloroethene	ND		0.20	1.0
cis-1,3-Dichloropropene	ND		0.20	0.40
Dibromomethane	ND		0.20	1.0
Dichlorobromomethane	ND		0.20	0.50
Dichlorodifluoromethane	ND		0.20	1.0
Ethyl ether	ND		0.20	10

8/11/11 [illegible]

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Client Sample ID: **OC-SW-SD-EDSD/SW0-XXX**

Lab Sample ID: 360-34315-3
Client Matrix: Water

Date Sampled: 06/08/2011 1045
Date Received: 06/08/2011 1750

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75276	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18847.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2011 1826			Final Weight/Volume:	5 mL
Prep Date:	06/15/2011 1826				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Ethylbenzene	ND		0.20	1.0
Ethylene Dibromide	ND		0.20	1.0
Hexachlorobutadiene	ND		0.20	0.40
Isopropyl ether	ND		0.20	10
Isopropylbenzene	ND		0.20	1.0
m-Xylene & p-Xylene	ND		0.50	2.0
Methyl tert-butyl ether	ND	J	0.20	1.0
Methylene Chloride	ND		1.0	2.0
n-Butylbenzene	ND		0.20	1.0
N-Propylbenzene	ND		0.20	1.0
Naphthalene	ND		2.0	5.0
o-Xylene	ND		0.20	1.0
sec-Butylbenzene	ND		0.20	1.0
Styrene	ND		0.20	1.0
Tert-amyl methyl ether	ND	J	0.20	5.0
Tert-butyl ethyl ether	ND	J	0.20	5.0
tert-Butylbenzene	ND		0.20	1.0
Tetrachloroethene	ND		0.20	1.0
Tetrahydrofuran	ND		0.44	10
Toluene	ND		0.20	1.0
trans-1,2-Dichloroethene	ND		0.20	1.0
trans-1,3-Dichloropropene	ND		0.20	0.40
Trichloroethene	ND		0.33	1.0
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.20	0.50
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.20	1.0
2,4,4-Trimethyl-1-pentene	ND	J	0.20	1.0
2,4,4-Trimethyl-2-pentene	ND		0.20	1.0
Cyclohexane	ND		0.20	10
Methyl acetate	ND		2.0	20
Methylcyclohexane	ND		0.20	10

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Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	97		70 - 130
Toluene-d8 (Surr)	100		70 - 130
Dibromofluoromethane	104		70 - 130

Analytical Data

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Client Sample ID: **OC-SW-EDSD/SW1(EDBS5)-XXX**

Lab Sample ID: 360-34315-4
Client Matrix: Water

Date Sampled: 06/08/2011 1000
Date Received: 06/08/2011 1750

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75276	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18848.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2011 1848			Final Weight/Volume:	5 mL
Prep Date:	06/15/2011 1848				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND		0.20	1.0
1,1,1-Trichloroethane	1.8		0.20	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	0.50
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	0.33	J	0.20	1.0
1,1-Dichloroethene	0.78	J	0.20	1.0
1,1-Dichloropropene	ND		0.20	1.0
1,2,3-Trichlorobenzene	ND		0.20	1.0
1,2,3-Trichloropropane	ND		0.20	1.0
1,2,4-Trichlorobenzene	ND		0.20	1.0
1,2,4-Trimethylbenzene	ND		0.20	1.0
1,2-Dibromo-3-Chloropropane	ND		0.20	5.0
1,2-Dichlorobenzene	ND		0.20	1.0
1,2-Dichloroethane	ND		0.20	1.0
1,2-Dichloropropane	ND		0.20	1.0
1,3,5-Trimethylbenzene	ND		0.20	1.0
1,3-Dichlorobenzene	ND		0.20	1.0
1,3-Dichloropropane	ND		0.20	1.0
1,4-Dichlorobenzene	ND		0.20	1.0
1,4-Dioxane	ND		22	50
2,2-Dichloropropane	ND		0.20	1.0
2-Butanone (MEK)	2.9	J	1.3	10
2-Chlorotoluene	ND		0.20	1.0
2-Hexanone	ND		2.0	10
4-Chlorotoluene	ND		0.20	1.0
4-Isopropyltoluene	ND		0.20	1.0
4-Methyl-2-pentanone (MIBK)	ND		2.0	10
Acetone	ND		20	50
Benzene	ND		0.20	1.0
Bromobenzene	ND		0.20	1.0
Bromoform	ND	J	0.20	1.0
Bromomethane	ND		0.20	2.0
Carbon disulfide	ND	J	0.20	10
Carbon tetrachloride	ND		0.20	1.0
Chlorobenzene	ND		0.20	1.0
Chlorobromomethane	ND		0.20	1.0
Chlorodibromomethane	ND		0.20	0.50
Chloroethane	2.6		0.21	2.0
Chloroform	ND		0.20	1.0
Chloromethane	ND		0.20	2.0
cis-1,2-Dichloroethene	ND		0.20	1.0
cis-1,3-Dichloropropene	ND		0.20	0.40
Dibromomethane	ND		0.20	1.0
Dichlorobromomethane	ND		0.20	0.50
Dichlorodifluoromethane	ND		0.20	1.0
Ethyl ether	ND		0.20	10

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Client Sample ID: **OC-SW-EDSD/SW1(EDBS5)-XXX**

Lab Sample ID: 360-34315-4
Client Matrix: Water

Date Sampled: 06/08/2011 1000
Date Received: 06/08/2011 1750

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75276	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18848.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2011 1848			Final Weight/Volume:	5 mL
Prep Date:	06/15/2011 1848				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Ethylbenzene	ND		0.20	1.0
Ethylene Dibromide	ND		0.20	1.0
Hexachlorobutadiene	ND		0.20	0.40
Isopropyl ether	ND		0.20	10
Isopropylbenzene	ND		0.20	1.0
m-Xylene & p-Xylene	0.52	J	0.50	2.0
Methyl tert-butyl ether	0.22	J	0.20	1.0
Methylene Chloride	ND		1.0	2.0
n-Butylbenzene	ND		0.20	1.0
N-Propylbenzene	ND		0.20	1.0
Naphthalene	ND		2.0	5.0
o-Xylene	0.24	J	0.20	1.0
sec-Butylbenzene	ND		0.20	1.0
Styrene	ND		0.20	1.0
Tert-amyl methyl ether	ND	J	0.20	5.0
Tert-butyl ethyl ether	ND	J	0.20	5.0
tert-Butylbenzene	ND		0.20	1.0
Tetrachloroethene	ND		0.20	1.0
Tetrahydrofuran	ND		0.44	10
Toluene	1.0		0.20	1.0
trans-1,2-Dichloroethene	ND		0.20	1.0
trans-1,3-Dichloropropene	ND		0.20	0.40
Trichloroethene	0.48	J	0.33	1.0
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.20	0.50
1,1,2-Trichloro-1,2,2-trifluoroethane	1.1		0.20	1.0
2,4,4-Trimethyl-1-pentene	ND	J	0.20	1.0
2,4,4-Trimethyl-2-pentene	ND		0.20	1.0
Cyclohexane	ND		0.20	10
Methyl acetate	ND		2.0	20
Methylcyclohexane	ND		0.20	10

8/11/11

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	96		70 - 130
Toluene-d8 (Surr)	101		70 - 130
Dibromofluoromethane	107		70 - 130

Analytical Data

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Client Sample ID: **OC-SW-EDSD/SW2(EDBS6)-XXX**

Lab Sample ID: 360-34315-5
Client Matrix: Water

Date Sampled: 06/08/2011 0900
Date Received: 06/08/2011 1750

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75276	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18849.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2011 1910			Final Weight/Volume:	5 mL
Prep Date:	06/15/2011 1910				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND		0.20	1.0
1,1,1-Trichloroethane	ND		0.20	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	0.50
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	ND		0.20	1.0
1,1-Dichloroethene	ND		0.20	1.0
1,1-Dichloropropene	ND		0.20	1.0
1,2,3-Trichlorobenzene	ND		0.20	1.0
1,2,3-Trichloropropane	ND		0.20	1.0
1,2,4-Trichlorobenzene	ND		0.20	1.0
1,2,4-Trimethylbenzene	ND		0.20	1.0
1,2-Dibromo-3-Chloropropane	ND		0.20	5.0
1,2-Dichlorobenzene	ND		0.20	1.0
1,2-Dichloroethane	ND		0.20	1.0
1,2-Dichloropropane	ND		0.20	1.0
1,3,5-Trimethylbenzene	ND		0.20	1.0
1,3-Dichlorobenzene	ND		0.20	1.0
1,3-Dichloropropane	ND		0.20	1.0
1,4-Dichlorobenzene	ND		0.20	1.0
1,4-Dioxane	ND		22	50
2,2-Dichloropropane	ND		0.20	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chlorotoluene	ND		0.20	1.0
2-Hexanone	ND		2.0	10
4-Chlorotoluene	ND		0.20	1.0
4-Isopropyltoluene	ND		0.20	1.0
4-Methyl-2-pentanone (MIBK)	ND		2.0	10
Acetone	ND		20	50
Benzene	ND		0.20	1.0
Bromobenzene	ND		0.20	1.0
Bromoform	ND	J	0.20	1.0
Bromomethane	ND		0.20	2.0
Carbon disulfide	ND	J	0.20	10
Carbon tetrachloride	ND		0.20	1.0
Chlorobenzene	ND		0.20	1.0
Chlorobromomethane	ND		0.20	1.0
Chlorodibromomethane	ND		0.20	0.50
Chloroethane	0.44	J	0.21	2.0
Chloroform	ND		0.20	1.0
Chloromethane	ND		0.20	2.0
cis-1,2-Dichloroethene	ND		0.20	1.0
cis-1,3-Dichloropropene	ND		0.20	0.40
Dibromomethane	ND		0.20	1.0
Dichlorobromomethane	ND		0.20	0.50
Dichlorodifluoromethane	ND		0.20	1.0
Ethyl ether	ND		0.20	10

8/11/11 BBK

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Client Sample ID: **OC-SW-EDSD/SW2(EDBS6)-XXX**

Lab Sample ID: 360-34315-5
Client Matrix: Water

Date Sampled: 06/08/2011 0900
Date Received: 06/08/2011 1750

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75276	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18849.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2011 1910			Final Weight/Volume:	5 mL
Prep Date:	06/15/2011 1910				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Ethylbenzene	ND		0.20	1.0
Ethylene Dibromide	ND		0.20	1.0
Hexachlorobutadiene	ND		0.20	0.40
Isopropyl ether	ND		0.20	10
Isopropylbenzene	ND		0.20	1.0
m-Xylene & p-Xylene	ND		0.50	2.0
Methyl tert-butyl ether	ND	J	0.20	1.0
Methylene Chloride	ND		1.0	2.0
n-Butylbenzene	ND		0.20	1.0
N-Propylbenzene	ND		0.20	1.0
Naphthalene	ND		2.0	5.0
o-Xylene	ND		0.20	1.0
sec-Butylbenzene	ND		0.20	1.0
Styrene	ND		0.20	1.0
Tert-amyl methyl ether	ND	J	0.20	5.0
Tert-butyl ethyl ether	ND	J	0.20	5.0
tert-Butylbenzene	ND		0.20	1.0
Tetrachloroethene	ND		0.20	1.0
Tetrahydrofuran	ND		0.44	10
Toluene	ND		0.20	1.0
trans-1,2-Dichloroethene	ND		0.20	1.0
trans-1,3-Dichloropropene	ND		0.20	0.40
Trichloroethene	ND		0.33	1.0
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.20	0.50
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.20	1.0
2,4,4-Trimethyl-1-pentene	3.9	J	0.20	1.0
2,4,4-Trimethyl-2-pentene	0.57	J	0.20	1.0
Cyclohexane	ND		0.20	10
Methyl acetate	ND		2.0	20
Methylcyclohexane	ND		0.20	10

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	95		70 - 130
Toluene-d8 (Surr)	101		70 - 130
Dibromofluoromethane	103		70 - 130

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Client Sample ID: **OC-SW-EDSD/SW2(EDBS6)-XXX**

Lab Sample ID: 360-34315-5
Client Matrix: Water

Date Sampled: 06/08/2011 0900
Date Received: 06/08/2011 1750

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75276	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18849.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2011 1910			Final Weight/Volume:	5 mL
Prep Date:	06/15/2011 1910				

Tentatively Identified Compounds **Number TIC's Found:** 0

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
	Tentatively Identified Compound		None	

Analytical Data

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Client Sample ID: **OC-SW-EDSD/SW5(EDBS11)-XXX**

Lab Sample ID: 360-34315-6
Client Matrix: Water

Date Sampled: 06/08/2011 0815
Date Received: 06/08/2011 1750

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75276	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18850.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2011 1932			Final Weight/Volume:	5 mL
Prep Date:	06/15/2011 1932				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND		0.20	1.0
1,1,1-Trichloroethane	ND		0.20	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	0.50
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	ND		0.20	1.0
1,1-Dichloroethene	ND		0.20	1.0
1,1-Dichloropropene	ND		0.20	1.0
1,2,3-Trichlorobenzene	ND		0.20	1.0
1,2,3-Trichloropropane	ND		0.20	1.0
1,2,4-Trichlorobenzene	ND		0.20	1.0
1,2,4-Trimethylbenzene	ND		0.20	1.0
1,2-Dibromo-3-Chloropropane	ND		0.20	5.0
1,2-Dichlorobenzene	ND		0.20	1.0
1,2-Dichloroethane	ND		0.20	1.0
1,2-Dichloropropane	ND		0.20	1.0
1,3,5-Trimethylbenzene	ND		0.20	1.0
1,3-Dichlorobenzene	ND		0.20	1.0
1,3-Dichloropropane	ND		0.20	1.0
1,4-Dichlorobenzene	ND		0.20	1.0
1,4-Dioxane	ND		22	50
2,2-Dichloropropane	ND		0.20	1.0
2-Butanone (MEK)	1.3	J	1.3	10
2-Chlorotoluene	ND		0.20	1.0
2-Hexanone	ND		2.0	10
4-Chlorotoluene	ND		0.20	1.0
4-Isopropyltoluene	ND		0.20	1.0
4-Methyl-2-pentanone (MIBK)	ND		2.0	10
Acetone	ND		20	50
Benzene	ND		0.20	1.0
Bromobenzene	ND		0.20	1.0
Bromoform	ND	J	0.20	1.0
Bromomethane	ND		0.20	2.0
Carbon disulfide	ND		0.20	10
Carbon tetrachloride	ND	J	0.20	1.0
Chlorobenzene	ND		0.20	1.0
Chlorobromomethane	ND		0.20	1.0
Chlorodibromomethane	ND		0.20	0.50
Chloroethane	ND		0.21	2.0
Chloroform	ND		0.20	1.0
Chloromethane	ND		0.20	2.0
cis-1,2-Dichloroethene	6.1		0.20	1.0
cis-1,3-Dichloropropene	ND		0.20	0.40
Dibromomethane	ND		0.20	1.0
Dichlorobromomethane	ND		0.20	0.50
Dichlorodifluoromethane	ND		0.20	1.0
Ethyl ether	ND		0.20	10

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Client Sample ID: **OC-SW-EDSD/SW5(EDBS11)-XXX**

Lab Sample ID: 360-34315-6
Client Matrix: Water

Date Sampled: 06/08/2011 0815
Date Received: 06/08/2011 1750

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75276	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18850.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2011 1932			Final Weight/Volume:	5 mL
Prep Date:	06/15/2011 1932				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Ethylbenzene	ND		0.20	1.0
Ethylene Dibromide	ND		0.20	1.0
Hexachlorobutadiene	ND		0.20	0.40
Isopropyl ether	ND		0.20	10
Isopropylbenzene	ND		0.20	1.0
m-Xylene & p-Xylene	ND		0.50	2.0
Methyl tert-butyl ether	ND	J	0.20	1.0
Methylene Chloride	ND		1.0	2.0
n-Butylbenzene	ND		0.20	1.0
N-Propylbenzene	ND		0.20	1.0
Naphthalene	ND		2.0	5.0
o-Xylene	ND		0.20	1.0
sec-Butylbenzene	ND		0.20	1.0
Styrene	ND		0.20	1.0
Tert-amyl methyl ether	ND	J	0.20	5.0
Tert-butyl ethyl ether	ND	J	0.20	5.0
tert-Butylbenzene	ND		0.20	1.0
Tetrachloroethene	0.26	J	0.20	1.0
Tetrahydrofuran	ND		0.44	10
Toluene	0.74	J	0.20	1.0
trans-1,2-Dichloroethene	ND		0.20	1.0
trans-1,3-Dichloropropene	ND		0.20	0.40
Trichloroethene	3.4		0.33	1.0
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	0.52		0.20	0.50
1,1,2-Trichloro-1,2,2-trifluoroethane	3.1		0.20	1.0
2,4,4-Trimethyl-1-pentene	ND	J	0.20	1.0
2,4,4-Trimethyl-2-pentene	ND		0.20	1.0
Cyclohexane	ND		0.20	10
Methyl acetate	ND		2.0	20
Methylcyclohexane	ND		0.20	10

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	97		70 - 130
Toluene-d8 (Surr)	101		70 - 130
Dibromofluoromethane	102		70 - 130

Analytical Data

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Client Sample ID: **OC-SW-MMB-SW/SD-11-XXX**

Lab Sample ID: 360-34315-7
Client Matrix: Water

Date Sampled: 06/07/2011 1500
Date Received: 06/08/2011 1750

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75276	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18851.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2011 1953			Final Weight/Volume:	5 mL
Prep Date:	06/15/2011 1953				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND		0.20	1.0
1,1,1-Trichloroethane	ND		0.20	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	0.50
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	ND		0.20	1.0
1,1-Dichloroethene	ND		0.20	1.0
1,1-Dichloropropene	ND		0.20	1.0
1,2,3-Trichlorobenzene	ND		0.20	1.0
1,2,3-Trichloropropane	ND		0.20	1.0
1,2,4-Trichlorobenzene	ND		0.20	1.0
1,2,4-Trimethylbenzene	ND		0.20	1.0
1,2-Dibromo-3-Chloropropane	ND		0.20	5.0
1,2-Dichlorobenzene	ND		0.20	1.0
1,2-Dichloroethane	ND		0.20	1.0
1,2-Dichloropropane	ND		0.20	1.0
1,3,5-Trimethylbenzene	ND		0.20	1.0
1,3-Dichlorobenzene	ND		0.20	1.0
1,3-Dichloropropane	ND		0.20	1.0
1,4-Dichlorobenzene	ND		0.20	1.0
1,4-Dioxane	ND		22	50
2,2-Dichloropropane	ND		0.20	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chlorotoluene	ND		0.20	1.0
2-Hexanone	ND		2.0	10
4-Chlorotoluene	ND		0.20	1.0
4-Isopropyltoluene	ND		0.20	1.0
4-Methyl-2-pentanone (MIBK)	ND		2.0	10
Acetone	ND		20	50
Benzene	ND		0.20	1.0
Bromobenzene	ND		0.20	1.0
Bromoform	ND	J	0.20	1.0
Bromomethane	ND		0.20	2.0
Carbon disulfide	ND		0.20	10
Carbon tetrachloride	ND	J	0.20	1.0
Chlorobenzene	ND		0.20	1.0
Chlorobromomethane	ND		0.20	1.0
Chlorodibromomethane	ND		0.20	0.50
Chloroethane	ND		0.21	2.0
Chloroform	ND		0.20	1.0
Chloromethane	ND		0.20	2.0
cis-1,2-Dichloroethene	ND		0.20	1.0
cis-1,3-Dichloropropene	ND		0.20	0.40
Dibromomethane	ND		0.20	1.0
Dichlorobromomethane	ND		0.20	0.50
Dichlorodifluoromethane	ND		0.20	1.0
Ethyl ether	ND		0.20	10

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Analytical Data

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Client Sample ID: **OC-SW-MMB-SW/SD-11-XXX**

Lab Sample ID: 360-34315-7
Client Matrix: Water

Date Sampled: 06/07/2011 1500
Date Received: 06/08/2011 1750

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75276	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18851.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2011 1953			Final Weight/Volume:	5 mL
Prep Date:	06/15/2011 1953				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Ethylbenzene	ND		0.20	1.0
Ethylene Dibromide	ND		0.20	1.0
Hexachlorobutadiene	ND		0.20	0.40
Isopropyl ether	ND		0.20	10
Isopropylbenzene	ND		0.20	1.0
m-Xylene & p-Xylene	ND		0.50	2.0
Methyl tert-butyl ether	ND	J	0.20	1.0
Methylene Chloride	ND		1.0	2.0
n-Butylbenzene	ND		0.20	1.0
N-Propylbenzene	ND		0.20	1.0
Naphthalene	ND		2.0	5.0
o-Xylene	ND		0.20	1.0
sec-Butylbenzene	ND		0.20	1.0
Styrene	ND		0.20	1.0
Tert-amyl methyl ether	ND	J	0.20	5.0
Tert-butyl ethyl ether	ND	J	0.20	5.0
tert-Butylbenzene	ND		0.20	1.0
Tetrachloroethene	ND		0.20	1.0
Tetrahydrofuran	ND		0.44	10
Toluene	ND		0.20	1.0
trans-1,2-Dichloroethene	ND		0.20	1.0
trans-1,3-Dichloropropene	ND		0.20	0.40
Trichloroethene	ND		0.33	1.0
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.20	0.50
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.20	1.0
2,4,4-Trimethyl-1-pentene	ND	J	0.20	1.0
2,4,4-Trimethyl-2-pentene	ND		0.20	1.0
Cyclohexane	ND		0.20	10
Methyl acetate	ND		2.0	20
Methylcyclohexane	ND		0.20	10

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	97		70 - 130
Toluene-d8 (Surr)	101		70 - 130
Dibromofluoromethane	104		70 - 130

Analytical Data

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Client Sample ID: **OC-SW-MMB-SW/SD-2-XXX**

Lab Sample ID: 360-34315-8
Client Matrix: Water

Date Sampled: 06/08/2011 1050
Date Received: 06/08/2011 1750

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75276	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18852.D
Dilution:	1.0			initial Weight/Volume:	5 mL
Analysis Date:	06/15/2011 2015			Final Weight/Volume:	5 mL
Prep Date:	06/15/2011 2015				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND		0.20	1.0
1,1,1-Trichloroethane	ND		0.20	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	0.50
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	ND		0.20	1.0
1,1-Dichloroethene	ND		0.20	1.0
1,1-Dichloropropene	ND		0.20	1.0
1,2,3-Trichlorobenzene	ND		0.20	1.0
1,2,3-Trichloropropane	ND		0.20	1.0
1,2,4-Trichlorobenzene	ND		0.20	1.0
1,2,4-Trimethylbenzene	ND		0.20	1.0
1,2-Dibromo-3-Chloropropane	ND		0.20	5.0
1,2-Dichlorobenzene	ND		0.20	1.0
1,2-Dichloroethane	ND		0.20	1.0
1,2-Dichloropropane	ND		0.20	1.0
1,3,5-Trimethylbenzene	ND		0.20	1.0
1,3-Dichlorobenzene	ND		0.20	1.0
1,3-Dichloropropane	ND		0.20	1.0
1,4-Dichlorobenzene	ND		0.20	1.0
1,4-Dioxane	ND		22	50
2,2-Dichloropropane	ND		0.20	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chlorotoluene	ND		0.20	1.0
2-Hexanone	ND		2.0	10
4-Chlorotoluene	ND		0.20	1.0
4-Isopropyltoluene	ND		0.20	1.0
4-Methyl-2-pentanone (MIBK)	ND		2.0	10
Acetone	ND		20	50
Benzene	ND		0.20	1.0
Bromobenzene	ND		0.20	1.0
Bromoform	ND	J	0.20	1.0
Bromomethane	ND		0.20	2.0
Carbon disulfide	ND		0.20	10
Carbon tetrachloride	ND	J	0.20	1.0
Chlorobenzene	ND		0.20	1.0
Chlorobromomethane	ND		0.20	1.0
Chlorodibromomethane	ND		0.20	0.50
Chloroethane	ND		0.21	2.0
Chloroform	ND		0.20	1.0
Chloromethane	ND		0.20	2.0
cis-1,2-Dichloroethene	0.20	J	0.20	1.0
cis-1,3-Dichloropropene	ND		0.20	0.40
Dibromomethane	ND		0.20	1.0
Dichlorobromomethane	ND		0.20	0.50
Dichlorodifluoromethane	ND		0.20	1.0
Ethyl ether	ND		0.20	10

8/1/11 BAW

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Client Sample ID: **OC-SW-MMB-SW/SD-2-XXX**

Lab Sample ID: 360-34315-8
Client Matrix: Water

Date Sampled: 06/08/2011 1050
Date Received: 06/08/2011 1750

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75276	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18852.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2011 2015			Final Weight/Volume:	5 mL
Prep Date:	06/15/2011 2015				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Ethylbenzene	ND		0.20	1.0
Ethylene Dibromide	ND		0.20	1.0
Hexachlorobutadiene	ND		0.20	0.40
Isopropyl ether	ND		0.20	10
Isopropylbenzene	ND		0.20	1.0
m-Xylene & p-Xylene	ND		0.50	2.0
Methyl tert-butyl ether	0.20	J	0.20	1.0
Methylene Chloride	ND		1.0	2.0
n-Butylbenzene	ND		0.20	1.0
N-Propylbenzene	ND		0.20	1.0
Naphthalene	ND		2.0	5.0
o-Xylene	ND		0.20	1.0
sec-Butylbenzene	ND		0.20	1.0
Styrene	ND		0.20	1.0
Tert-amyl methyl ether	ND	J	0.20	5.0
Tert-butyl ethyl ether	ND	J	0.20	5.0
tert-Butylbenzene	ND		0.20	1.0
Tetrachloroethene	ND		0.20	1.0
Tetrahydrofuran	ND		0.44	10
Toluene	ND		0.20	1.0
trans-1,2-Dichloroethene	ND		0.20	1.0
trans-1,3-Dichloropropene	ND		0.20	0.40
Trichloroethene	ND		0.33	1.0
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.20	0.50
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.20	1.0
2,4,4-Trimethyl-1-pentene	ND	J	0.20	1.0
2,4,4-Trimethyl-2-pentene	ND		0.20	1.0
Cyclohexane	ND		0.20	10
Methyl acetate	ND		2.0	20
Methylcyclohexane	ND		0.20	10

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	95		70 - 130
Toluene-d8 (Surr)	100		70 - 130
Dibromofluoromethane	104		70 - 130

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Client Sample ID: **OC-SW-MMB-SW/SD-3-XXX**

Lab Sample ID: 360-34315-9
Client Matrix: Water

Date Sampled: 06/08/2011 0915
Date Received: 06/08/2011 1750

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75276	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18853.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2011 2037			Final Weight/Volume:	5 mL
Prep Date:	06/15/2011 2037				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND		0.20	1.0
1,1,1-Trichloroethane	ND		0.20	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	0.50
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	ND		0.20	1.0
1,1-Dichloroethene	ND		0.20	1.0
1,1-Dichloropropene	ND		0.20	1.0
1,2,3-Trichlorobenzene	ND		0.20	1.0
1,2,3-Trichloropropane	ND		0.20	1.0
1,2,4-Trichlorobenzene	ND		0.20	1.0
1,2,4-Trimethylbenzene	ND		0.20	1.0
1,2-Dibromo-3-Chloropropane	ND		0.20	5.0
1,2-Dichlorobenzene	ND		0.20	1.0
1,2-Dichloroethane	ND		0.20	1.0
1,2-Dichloropropane	ND		0.20	1.0
1,3,5-Trimethylbenzene	ND		0.20	1.0
1,3-Dichlorobenzene	ND		0.20	1.0
1,3-Dichloropropane	ND		0.20	1.0
1,4-Dichlorobenzene	ND		0.20	1.0
1,4-Dioxane	ND		22	50
2,2-Dichloropropane	ND		0.20	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chlorotoluene	ND		0.20	1.0
2-Hexanone	ND		2.0	10
4-Chlorotoluene	ND		0.20	1.0
4-Isopropyltoluene	ND		0.20	1.0
4-Methyl-2-pentanone (MIBK)	ND		2.0	10
Acetone	ND		20	50
Benzene	ND		0.20	1.0
Bromobenzene	ND		0.20	1.0
Bromoform	ND	J	0.20	1.0
Bromomethane	ND		0.20	2.0
Carbon disulfide	0.27	J	0.20	10
Carbon tetrachloride	ND	J	0.20	1.0
Chlorobenzene	ND		0.20	1.0
Chlorobromomethane	ND		0.20	1.0
Chlorodibromomethane	ND		0.20	0.50
Chloroethane	ND		0.21	2.0
Chloroform	ND		0.20	1.0
Chloromethane	ND		0.20	2.0
cis-1,2-Dichloroethene	ND		0.20	1.0
cis-1,3-Dichloropropene	ND		0.20	0.40
Dibromomethane	ND		0.20	1.0
Dichlorobromomethane	ND		0.20	0.50
Dichlorodifluoromethane	ND		0.20	1.0
Ethyl ether	ND		0.20	10

8/11/11

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Client Sample ID: **OC-SW-MMB-SW/SD-3-XXX**

Lab Sample ID: 360-34315-9
Client Matrix: Water

Date Sampled: 06/08/2011 0915
Date Received: 06/08/2011 1750

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75276	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18853.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2011 2037			Final Weight/Volume:	5 mL
Prep Date:	06/15/2011 2037				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Ethylbenzene	ND		0.20	1.0
Ethylene Dibromide	ND		0.20	1.0
Hexachlorobutadiene	ND		0.20	0.40
Isopropyl ether	ND		0.20	10
Isopropylbenzene	ND		0.20	1.0
m-Xylene & p-Xylene	ND		0.50	2.0
Methyl tert-butyl ether	0.20	J	0.20	1.0
Methylene Chloride	ND		1.0	2.0
n-Butylbenzene	ND		0.20	1.0
N-Propylbenzene	ND		0.20	1.0
Naphthalene	ND		2.0	5.0
o-Xylene	ND		0.20	1.0
sec-Butylbenzene	ND		0.20	1.0
Styrene	ND		0.20	1.0
Tert-amyl methyl ether	ND	J	0.20	5.0
Tert-butyl ethyl ether	ND	J	0.20	5.0
tert-Butylbenzene	ND		0.20	1.0
Tetrachloroethene	ND		0.20	1.0
Tetrahydrofuran	ND		0.44	10
Toluene	0.75	J	0.20	1.0
trans-1,2-Dichloroethene	ND		0.20	1.0
trans-1,3-Dichloropropene	ND		0.20	0.40
Trichloroethene	ND		0.33	1.0
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.20	0.50
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.20	1.0
2,4,4-Trimethyl-1-pentene	ND	J	0.20	1.0
2,4,4-Trimethyl-2-pentene	ND		0.20	1.0
Cyclohexane	ND		0.20	10
Methyl acetate	ND		2.0	20
Methylcyclohexane	ND		0.20	10

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	96		70 - 130
Toluene-d8 (Surr)	100		70 - 130
Dibromofluoromethane	104		70 - 130

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Client Sample ID: **OC-SW-MMB-SW/SD-6-XXX**

Lab Sample ID: 360-34315-10
Client Matrix: Water

Date Sampled: 06/08/2011 1155
Date Received: 06/08/2011 1750

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75276	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18854.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2011 2059			Final Weight/Volume:	5 mL
Prep Date:	06/15/2011 2059				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND		0.20	1.0
1,1,1-Trichloroethane	ND		0.20	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	0.50
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	ND		0.20	1.0
1,1-Dichloroethene	ND		0.20	1.0
1,1-Dichloropropene	ND		0.20	1.0
1,2,3-Trichlorobenzene	ND		0.20	1.0
1,2,3-Trichloropropane	ND		0.20	1.0
1,2,4-Trichlorobenzene	ND		0.20	1.0
1,2,4-Trimethylbenzene	ND		0.20	1.0
1,2-Dibromo-3-Chloropropane	ND		0.20	5.0
1,2-Dichlorobenzene	ND		0.20	1.0
1,2-Dichloroethane	ND		0.20	1.0
1,2-Dichloropropane	ND		0.20	1.0
1,3,5-Trimethylbenzene	ND		0.20	1.0
1,3-Dichlorobenzene	ND		0.20	1.0
1,3-Dichloropropane	ND		0.20	1.0
1,4-Dichlorobenzene	ND		0.20	1.0
1,4-Dioxane	ND		22	50
2,2-Dichloropropane	ND		0.20	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chlorotoluene	ND		0.20	1.0
2-Hexanone	ND		2.0	10
4-Chlorotoluene	ND		0.20	1.0
4-Isopropyltoluene	ND		0.20	1.0
4-Methyl-2-pentanone (MIBK)	ND		2.0	10
Acetone	ND		20	50
Benzene	ND		0.20	1.0
Bromobenzene	ND		0.20	1.0
Bromoform	ND	J	0.20	1.0
Bromomethane	ND		0.20	2.0
Carbon disulfide	0.29	J	0.20	10
Carbon tetrachloride	ND	J	0.20	1.0
Chlorobenzene	ND		0.20	1.0
Chlorobromomethane	ND		0.20	1.0
Chlorodibromomethane	ND		0.20	0.50
Chloroethane	ND		0.21	2.0
Chloroform	ND		0.20	1.0
Chloromethane	ND		0.20	2.0
cis-1,2-Dichloroethene	ND		0.20	1.0
cis-1,3-Dichloropropene	ND		0.20	0.40
Dibromomethane	ND		0.20	1.0
Dichlorobromomethane	ND		0.20	0.50
Dichlorodifluoromethane	ND		0.20	1.0
Ethyl ether	ND		0.20	10

8/11/11 BBK

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Client Sample ID: **OC-SW-MMB-SW/SD-6-XXX**

Lab Sample ID: 360-34315-10
Client Matrix: Water

Date Sampled: 06/08/2011 1155
Date Received: 06/08/2011 1750

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75276	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18854.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2011 2059			Final Weight/Volume:	5 mL
Prep Date:	06/15/2011 2059				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Ethylbenzene	ND		0.20	1.0
Ethylene Dibromide	ND		0.20	1.0
Hexachlorobutadiene	ND		0.20	0.40
Isopropyl ether	ND		0.20	10
Isopropylbenzene	ND		0.20	1.0
m-Xylene & p-Xylene	ND		0.50	2.0
Methyl tert-butyl ether	ND	J	0.20	1.0
Methylene Chloride	ND		1.0	2.0
n-Butylbenzene	ND		0.20	1.0
N-Propylbenzene	ND		0.20	1.0
Naphthalene	ND		2.0	5.0
o-Xylene	ND		0.20	1.0
sec-Butylbenzene	ND		0.20	1.0
Styrene	ND		0.20	1.0
Tert-amyl methyl ether	ND	J	0.20	5.0
Tert-butyl ethyl ether	ND	J	0.20	5.0
tert-Butylbenzene	ND		0.20	1.0
Tetrachloroethene	ND		0.20	1.0
Tetrahydrofuran	ND		0.44	10
Toluene	0.40	J	0.20	1.0
trans-1,2-Dichloroethene	ND		0.20	1.0
trans-1,3-Dichloropropene	ND		0.20	0.40
Trichloroethene	ND		0.33	1.0
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.20	0.50
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.20	1.0
2,4,4-Trimethyl-1-pentene	ND	J	0.20	1.0
2,4,4-Trimethyl-2-pentene	ND		0.20	1.0
Cyclohexane	ND		0.20	10
Methyl acetate	ND		2.0	20
Methylcyclohexane	ND		0.20	10

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	96		70 - 130
Toluene-d8 (Surr)	97		70 - 130
Dibromofluoromethane	107		70 - 130

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Client Sample ID: **OC-SW-MMB-SW/SD-8A-XXX**

Lab Sample ID: 360-34315-11
Client Matrix: Water

Date Sampled: 06/08/2011 1330
Date Received: 06/08/2011 1750

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75276	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18855.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2011 2120			Final Weight/Volume:	5 mL
Prep Date:	06/15/2011 2120				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND		0.20	1.0
1,1,1-Trichloroethane	ND		0.20	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	0.50
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	ND		0.20	1.0
1,1-Dichloroethene	ND		0.20	1.0
1,1-Dichloropropene	ND		0.20	1.0
1,2,3-Trichlorobenzene	ND		0.20	1.0
1,2,3-Trichloropropane	ND		0.20	1.0
1,2,4-Trichlorobenzene	ND		0.20	1.0
1,2,4-Trimethylbenzene	ND		0.20	1.0
1,2-Dibromo-3-Chloropropane	ND		0.20	5.0
1,2-Dichlorobenzene	ND		0.20	1.0
1,2-Dichloroethane	ND		0.20	1.0
1,2-Dichloropropane	ND		0.20	1.0
1,3,5-Trimethylbenzene	ND		0.20	1.0
1,3-Dichlorobenzene	ND		0.20	1.0
1,3-Dichloropropane	ND		0.20	1.0
1,4-Dichlorobenzene	ND		0.20	1.0
1,4-Dioxane	ND		22	50
2,2-Dichloropropane	ND		0.20	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chlorotoluene	ND		0.20	1.0
2-Hexanone	ND		2.0	10
4-Chlorotoluene	ND		0.20	1.0
4-Isopropyltoluene	ND		0.20	1.0
4-Methyl-2-pentanone (MIBK)	ND		2.0	10
Acetone	ND		20	50
Benzene	ND		0.20	1.0
Bromobenzene	ND		0.20	1.0
Bromoform	ND	J	0.20	1.0
Bromomethane	ND		0.20	2.0
Carbon disulfide	0.28	J	0.20	10
Carbon tetrachloride	ND	J	0.20	1.0
Chlorobenzene	ND		0.20	1.0
Chlorobromomethane	ND		0.20	1.0
Chlorodibromomethane	ND		0.20	0.50
Chloroethane	ND		0.21	2.0
Chloroform	ND		0.20	1.0
Chloromethane	ND		0.20	2.0
cis-1,2-Dichloroethene	ND		0.20	1.0
cis-1,3-Dichloropropene	ND		0.20	0.40
Dibromomethane	ND		0.20	1.0
Dichlorobromomethane	ND		0.20	0.50
Dichlorodifluoromethane	ND		0.20	1.0
Ethyl ether	ND		0.20	10

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Client Sample ID: **OC-SW-MMB-SW/SD-8A-XXX**

Lab Sample ID: 360-34315-11
Client Matrix: Water

Date Sampled: 06/08/2011 1330
Date Received: 06/08/2011 1750

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75276	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18855.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2011 2120			Final Weight/Volume:	5 mL
Prep Date:	06/15/2011 2120				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Ethylbenzene	ND		0.20	1.0
Ethylene Dibromide	ND		0.20	1.0
Hexachlorobutadiene	ND		0.20	0.40
Isopropyl ether	ND		0.20	10
Isopropylbenzene	ND		0.20	1.0
m-Xylene & p-Xylene	ND		0.50	2.0
Methyl tert-butyl ether	ND	J	0.20	1.0
Methylene Chloride	ND		1.0	2.0
n-Butylbenzene	ND		0.20	1.0
N-Propylbenzene	ND		0.20	1.0
Naphthalene	ND		2.0	5.0
o-Xylene	ND		0.20	1.0
sec-Butylbenzene	ND		0.20	1.0
Styrene	ND		0.20	1.0
Tert-amyl methyl ether	ND	J	0.20	5.0
Tert-butyl ethyl ether	ND	J	0.20	5.0
tert-Butylbenzene	ND		0.20	1.0
Tetrachloroethene	ND		0.20	1.0
Tetrahydrofuran	ND		0.44	10
Toluene	0.34	J	0.20	1.0
trans-1,2-Dichloroethene	ND		0.20	1.0
trans-1,3-Dichloropropene	ND		0.20	0.40
Trichloroethene	ND		0.33	1.0
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.20	0.50
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.20	1.0
2,4,4-Trimethyl-1-pentene	ND	J	0.20	1.0
2,4,4-Trimethyl-2-pentene	ND		0.20	1.0
Cyclohexane	ND		0.20	10
Methyl acetate	ND		2.0	20
Methylcyclohexane	ND		0.20	10

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	95		70 - 130
Toluene-d8 (Surr)	101		70 - 130
Dibromofluoromethane	106		70 - 130

Analytical Data

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Client Sample ID: **OC-TBK-080**

Lab Sample ID: 360-34315-12
Client Matrix: Water

Date Sampled: 06/07/2011 1500
Date Received: 06/08/2011 1750

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75276	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18856.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2011 2142			Final Weight/Volume:	5 mL
Prep Date:	06/15/2011 2142				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND		0.20	1.0
1,1,1-Trichloroethane	ND		0.20	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	0.50
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	ND		0.20	1.0
1,1-Dichloroethene	ND		0.20	1.0
1,1-Dichloropropene	ND		0.20	1.0
1,2,3-Trichlorobenzene	ND		0.20	1.0
1,2,3-Trichloropropane	ND		0.20	1.0
1,2,4-Trichlorobenzene	ND		0.20	1.0
1,2,4-Trimethylbenzene	ND		0.20	1.0
1,2-Dibromo-3-Chloropropane	ND		0.20	5.0
1,2-Dichlorobenzene	ND		0.20	1.0
1,2-Dichloroethane	ND		0.20	1.0
1,2-Dichloropropane	ND		0.20	1.0
1,3,5-Trimethylbenzene	ND		0.20	1.0
1,3-Dichlorobenzene	ND		0.20	1.0
1,3-Dichloropropane	ND		0.20	1.0
1,4-Dichlorobenzene	ND		0.20	1.0
1,4-Dioxane	ND		22	50
2,2-Dichloropropane	ND		0.20	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chlorotoluene	ND		0.20	1.0
2-Hexanone	ND		2.0	10
4-Chlorotoluene	ND		0.20	1.0
4-Isopropyltoluene	ND		0.20	1.0
4-Methyl-2-pentanone (MIBK)	ND		2.0	10
Acetone	ND		20	50
Benzene	ND		0.20	1.0
Bromobenzene	ND		0.20	1.0
Bromoform	ND		0.20	1.0
Bromomethane	ND		0.20	2.0
Carbon disulfide	ND		0.20	10
Carbon tetrachloride	ND		0.20	1.0
Chlorobenzene	ND		0.20	1.0
Chlorobromomethane	ND		0.20	1.0
Chlorodibromomethane	ND		0.20	0.50
Chloroethane	ND		0.21	2.0
Chloroform	ND		0.20	1.0
Chloromethane	ND		0.20	2.0
cis-1,2-Dichloroethene	ND		0.20	1.0
cis-1,3-Dichloropropene	ND		0.20	0.40
Dibromomethane	ND		0.20	1.0
Dichlorobromomethane	ND		0.20	0.50
Dichlorodifluoromethane	ND		0.20	1.0
Ethyl ether	ND		0.20	10

8/4/11 BBK

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Client Sample ID: **OC-TBK-080**

Lab Sample ID: 360-34315-12
Client Matrix: Water

Date Sampled: 06/07/2011 1500
Date Received: 06/08/2011 1750

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	360-75276	Instrument ID:	Agilent#2 GC/MS
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	V18856.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2011 2142			Final Weight/Volume:	5 mL
Prep Date:	06/15/2011 2142				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Ethylbenzene	ND		0.20	1.0
Ethylene Dibromide	ND		0.20	1.0
Hexachlorobutadiene	ND		0.20	0.40
Isopropyl ether	ND		0.20	10
Isopropylbenzene	ND		0.20	1.0
m-Xylene & p-Xylene	ND		0.50	2.0
Methyl tert-butyl ether	ND		0.20	1.0
Methylene Chloride	ND		1.0	2.0
n-Butylbenzene	ND		0.20	1.0
N-Propylbenzene	ND		0.20	1.0
Naphthalene	ND		2.0	5.0
o-Xylene	ND		0.20	1.0
sec-Butylbenzene	ND		0.20	1.0
Styrene	ND		0.20	1.0
Tert-amyl methyl ether	ND		0.20	5.0
Tert-butyl ethyl ether	ND		0.20	5.0
tert-Butylbenzene	ND		0.20	1.0
Tetrachloroethene	ND		0.20	1.0
Tetrahydrofuran	ND		0.44	10
Toluene	ND		0.20	1.0
trans-1,2-Dichloroethene	ND		0.20	1.0
trans-1,3-Dichloropropene	ND		0.20	0.40
Trichloroethene	ND		0.33	1.0
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.20	0.50
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.20	1.0
2,4,4-Trimethyl-1-pentene	ND		0.20	1.0
2,4,4-Trimethyl-2-pentene	ND		0.20	1.0
Cyclohexane	ND		0.20	10
Methyl acetate	ND		2.0	20
Methylcyclohexane	ND		0.20	10

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	94		70 - 130
Toluene-d8 (Surr)	101		70 - 130
Dibromofluoromethane	104		70 - 130

Quality Control Results

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Method Blank - Batch: 360-75276

Method: 8260C
Preparation: 5030C

Lab Sample ID:	MB 360-75276/6	Analysis Batch:	360-75276	Instrument ID:	Agilent#2 GC/MS
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	V18840.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2011 1522	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	06/15/2011 1522				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Ethyl ether	ND		0.20	10
Ethylbenzene	ND		0.20	1.0
Ethylene Dibromide	ND		0.20	1.0
Hexachlorobutadiene	ND		0.20	0.40
Isopropyl ether	ND		0.20	10
Isopropylbenzene	ND		0.20	1.0
m-Xylene & p-Xylene	ND		0.50	2.0
Methyl tert-butyl ether	ND		0.20	1.0
Methylene Chloride	2.25		1.0	2.0 all ND
n-Butylbenzene	ND		0.20	1.0
N-Propylbenzene	ND		0.20	1.0
Naphthalene	ND		2.0	5.0
o-Xylene	ND		0.20	1.0
sec-Butylbenzene	ND		0.20	1.0
Styrene	ND		0.20	1.0
Tert-amyl methyl ether	ND		0.20	5.0
Tert-butyl ethyl ether	ND		0.20	5.0
tert-Butylbenzene	ND		0.20	1.0
Tetrachloroethene	ND		0.20	1.0
Tetrahydrofuran	ND		0.44	10
Toluene	ND		0.20	1.0
trans-1,2-Dichloroethene	ND		0.20	1.0
trans-1,3-Dichloropropene	ND		0.20	0.40
Trichloroethene	ND		0.33	1.0
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.20	0.50
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.20	1.0
2,4,4-Trimethyl-1-pentene	ND		0.20	1.0
2,4,4-Trimethyl-2-pentene	ND		0.20	1.0
Cyclohexane	ND		0.20	10
Methyl acetate	ND		2.0	20
Methylcyclohexane	ND		0.20	10

Surrogate	% Rec	Acceptance Limits
4-Bromofluorobenzene	96	70 - 130
Toluene-d8 (Surr)	102	70 - 130
Dibromofluoromethane	105	70 - 130

Method Blank TICs- Batch: 360-75276

Cas Number	Analyte	RT	Est. Result	Qual
	Tentatively Identified Compound		None	

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 360-75276

Method: 8260C
Preparation: 5030C

LCS Lab Sample ID:	LCS 360-75276/3	Analysis Batch:	360-75276	Instrument ID:	Agilent#2 GC/MS
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	V18837.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2011 1416	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	06/15/2011 1416				
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 360-75276/4	Analysis Batch:	360-75276	Instrument ID:	Agilent#2 GC/MS
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	V18838.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2011 1438	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	06/15/2011 1438				
Leach Date:	N/A				

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
1,1,1,2-Tetrachloroethane	112	108	70 - 130	4	20		
1,1,1-Trichloroethane	107	98	70 - 130	8	20		
1,1,2,2-Tetrachloroethane	89	86	70 - 130	3	20		
1,1,2-Trichloroethane	98	96	70 - 130	2	20		
1,1-Dichloroethane	101	95	70 - 130	6	20		
1,1-Dichloroethene	109	100	70 - 130	9	20		
1,1-Dichloropropene	103	98	70 - 130	5	20		
1,2,3-Trichlorobenzene	97	99	70 - 130	2	20		
1,2,3-Trichloropropane	93	90	70 - 130	4	20		
1,2,4-Trichlorobenzene	99	99	70 - 130	1	20		
1,2,4-Trimethylbenzene	111	111	70 - 130	0	20		
1,2-Dibromo-3-Chloropropane	103	103	70 - 130	0	20		
1,2-Dichlorobenzene	97	97	70 - 130	0	20		
1,2-Dichloroethane	92	88	70 - 130	4	20		
1,2-Dichloropropane	100	95	70 - 130	5	20		
1,3,5-Trimethylbenzene	100	98	70 - 130	3	20		
1,3-Dichlorobenzene	107	103	70 - 130	4	20		
1,3-Dichloropropane	98	95	70 - 130	3	20		
1,4-Dichlorobenzene	99	96	70 - 130	3	20		
1,4-Dioxane	93	94	70 - 130	1	20		
2,2-Dichloropropane	109	101	70 - 130	8	20		
2-Butanone (MEK)	96	93	70 - 130	3	20		
2-Chlorotoluene	95	93	70 - 130	3	20		
2-Hexanone	97	93	70 - 130	5	20		
4-Chlorotoluene	97	90	70 - 130	8	20		
4-Isopropyltoluene	120	115	70 - 130	4	20		
4-Methyl-2-pentanone (MIBK)	101	93	70 - 130	8	20		
Acetone	104	98	70 - 130	6	20		
Benzene	104	98	70 - 130	6	20		
Bromobenzene	93	89	70 - 130	4	20		
Bromoform	130	124	70 - 130	5	20		
Bromomethane	112	112	70 - 130	0	20		
Carbon disulfide	137	124	70 - 130	10	20	*LCS-H	1,9,10,11
Carbon tetrachloride	126	118	70 - 130	7	20		
Chlorobenzene	99	95	70 - 130	5	20		
Chlorobromomethane	103	99	70 - 130	3	20		

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 360-75276

Method: 8260C
Preparation: 5030C

LCS Lab Sample ID:	LCS 360-75276/3	Analysis Batch:	360-75276	Instrument ID:	Agilent#2 GC/MS
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	V18837.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2011 1416	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	06/15/2011 1416				
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 360-75276/4	Analysis Batch:	360-75276	Instrument ID:	Agilent#2 GC/MS
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	V18838.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2011 1438	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	06/15/2011 1438				
Leach Date:	N/A				

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Chlorodibromomethane	107	102	70 - 130	5	20		
Chloroethane	109	105	70 - 130	4	20		
Chloroform	95	89	70 - 130	6	20		
Chloromethane	90	87	70 - 130	3	20		
cis-1,2-Dichloroethene	99	93	70 - 130	6	20		
cis-1,3-Dichloropropene	99	96	70 - 130	4	20		
Dibromomethane	100	98	70 - 130	3	20		
Dichlorobromomethane	100	95	70 - 130	5	20		
Dichlorodifluoromethane	83	79	70 - 130	4	20		
Ethyl ether	99	97	70 - 130	2	20		
Ethylbenzene	99	95	70 - 130	4	20		
Ethylene Dibromide	100	98	70 - 130	2	20		
Hexachlorobutadiene	102	102	70 - 130	0	20		
Isopropyl ether	101	96	70 - 130	5	20		
Isopropylbenzene	101	96	70 - 130	6	20		
m-Xylene & p-Xylene	99	94	70 - 130	5	20		
Methyl tert-butyl ether	138	135	70 - 130	2	20	LCS-H	* 4,8,9
Methylene Chloride	122	116	70 - 130	5	20		
n-Butylbenzene	100	97	70 - 130	3	20		
N-Propylbenzene	99	97	70 - 130	3	20		
Naphthalene	93	96	70 - 130	3	20		
o-Xylene	99	96	70 - 130	3	20		
sec-Butylbenzene	113	113	70 - 130	0	20		
Styrene	98	93	70 - 130	5	20		
Tert-amyl methyl ether	149	143	70 - 130	4	20	ND *	*
Tert-butyl ethyl ether	150	143	70 - 130	4	20	*	*
tert-Butylbenzene	111	108	70 - 130	3	20		
Tetrachloroethene	110	102	70 - 130	7	20		
Tetrahydrofuran	96	92	70 - 130	4	20		
Toluene	103	98	70 - 130	5	20		
trans-1,2-Dichloroethene	100	94	70 - 130	7	20		
trans-1,3-Dichloropropene	97	95	70 - 130	3	20		
Trichloroethene	105	100	70 - 130	5	20		
Trichlorofluoromethane	102	97	70 - 130	5	20		
Vinyl chloride	102	95	70 - 130	7	20		
1,1,2-Trichloro-1,2,2-trifluoroethane	100	93	70 - 130	8	20		

Quality Control Results

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 360-75276

Method: 8260C
Preparation: 5030C

LCS Lab Sample ID:	LCS 360-75276/3	Analysis Batch:	360-75276	Instrument ID:	Agilent#2 GC/MS
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	V18837.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2011 1416	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	06/15/2011 1416				
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 360-75276/4	Analysis Batch:	360-75276	Instrument ID:	Agilent#2 GC/MS
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	V18838.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2011 1438	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	06/15/2011 1438				
Leach Date:	N/A				

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
2,4,4-Trimethyl-1-pentene	133	125	70 - 130	6	20	LCS-H	5
2,4,4-Trimethyl-2-pentene	130	119	70 - 130	9	20		
Cyclohexane	104	95	70 - 130	9	20		
Methyl acetate	98	92	70 - 130	6	20		
Methylcyclohexane	113	106	70 - 130	7	20		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
4-Bromofluorobenzene	95	96	70 - 130
Toluene-d8 (Surr)	101	102	70 - 130
Dibromofluoromethane	102	102	70 - 130

Quality Control Results

Client: Olin Corporation

Job Number: 360-34315-1
Sdg Number: 360-34315-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 360-75276

Method: 8260C
Preparation: 5030C

MS Lab Sample ID:	360-34315-8	Analysis Batch:	360-75276	Instrument ID:	Agilent#2 GC/MS
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	V18862.D
Dilution:	10	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2011 2352			Final Weight/Volume:	5 mL
Prep Date:	06/15/2011 2352				
Leach Date:	N/A				

MSD Lab Sample ID:	360-34315-8	Analysis Batch:	360-75276	Instrument ID:	Agilent#2 GC/MS
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	V18863.D
Dilution:	10	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	06/16/2011 0014			Final Weight/Volume:	5 mL
Prep Date:	06/16/2011 0014				
Leach Date:	N/A				

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Carbon tetrachloride	130	122	70 - 130	6	20		
Chlorobenzene	102	99	70 - 130	3	20		
Chlorobromomethane	109	107	70 - 130	1	20		
Chlorodibromomethane	105	99	70 - 130	6	20		
Chloroethane	116	105	70 - 130	10	20		
Chloroform	98	96	70 - 130	3	20		
Chloromethane	94	89	70 - 130	5	20		
cis-1,2-Dichloroethene	102	98	70 - 130	4	20		
cis-1,3-Dichloropropene	98	94	70 - 130	4	20		
Dibromomethane	104	105	70 - 130	1	20		
Dichlorobromomethane	103	98	70 - 130	4	20		
Dichlorodifluoromethane	87	80	70 - 130	8	20		
Ethyl ether	104	104	70 - 130	0	20		
Ethylbenzene	102	100	70 - 130	2	20		
Ethylene Dibromide	103	102	70 - 130	0	20		
Hexachlorobutadiene	101	97	70 - 130	5	20		
Isopropyl ether	104	102	70 - 130	2	20		
Isopropylbenzene	103	97	70 - 130	6	20		
m-Xylene & p-Xylene	101	98	70 - 130	3	20		
Methyl tert-butyl ether	140	137	70 - 130	3	20 MS-H	F	F 8
Methylene Chloride	151	147	70 - 130	2	20 NO	F	F
n-Butylbenzene	96	92	70 - 130	4	20		
N-Propylbenzene	100	97	70 - 130	3	20		
Naphthalene	91	90	70 - 130	1	20		
o-Xylene	100	96	70 - 130	5	20		
sec-Butylbenzene	115	110	70 - 130	4	20		
Styrene	98	96	70 - 130	2	20		
Tert-amyl methyl ether	149	147	70 - 130	1	20 ND	F	F
Tert-butyl ethyl ether	150	147	70 - 130	2	20	F	F
tert-Butylbenzene	114	109	70 - 130	5	20		
Tetrachloroethene	111	107	70 - 130	4	20		
Tetrahydrofuran	92	93	70 - 130	1	20		
Toluene	107	102	70 - 130	4	20		

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Westfield Job No.: 360-34315-1

SDG No.: 360-34315-1

Lab Sample ID: CCVIS 360-75276/2 Calibration Date: 06/15/2011 13:55

Instrument ID: Agilent#2 GC/MS Calib Start Date: 05/18/2011 18:35

GC Column: RTX-VMS ID: 0.25(um) Calib End Date: 05/18/2011 21:50

Lab File ID: V18836.D Conc. Units: ug/L Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Dichlorodifluoromethane	Lin1F		0.2309	0.1000	18.9	20.0	-5.5	20.0
Chloromethane	Ave	0.3532	0.3087	0.1000	17.5	20.0	-12.6	20.0
Vinyl chloride	Ave	0.2391	0.2184	0.1000	18.3	20.0	-8.6	20.0
Bromomethane	Lin1F		0.1450	0.1000	22.0	20.0	10.0	20.0
Chloroethane	Ave	0.1218	0.1265	0.1000	20.8	20.0	3.8	20.0
Trichlorofluoromethane	Lin1F		0.3036	0.1000	21.0	20.0	5.0	20.0
Ethyl ether	Ave	0.2036	0.2091		20.5	20.0	2.7	20.0
1,1-Dichloroethene	Lin1F		0.2359	0.1000	23.0	20.0	15.0	20.0
1,1,2-Trichloro-1,2,2-trifluoroethane	Ave	0.1254	0.1512		24.1	20.0	20.6*	20.0
Carbon disulfide	Ave	0.5526	0.6485	0.1000	23.5	20.0	17.3	20.0
Methylene Chloride	Lin1F		0.3006	0.1000	24.4	20.0	22.0*	20.0
Acetone	Lin1F		1.034	0.1000	200	200	-0.2	20.0
Methyl acetate	Ave	0.2568	0.2437		190	200	-5.1	20.0
trans-1,2-Dichloroethene	Ave	0.3456	0.3701	0.1000	21.4	20.0	7.1	20.0
Methyl tert-butyl ether	Ave	0.3483	0.4904	0.1000	28.2	20.0	40.8*	20.0
Isopropyl ether	Ave	0.6274	0.6614		21.1	20.0	5.4	20.0
1,1-Dichloroethane	Ave	0.4486	0.4636	0.2000	20.7	20.0	3.3	20.0
Halothane	Ave	0.1728	0.1989		23.0	20.0	15.1	20.0
Tert-butyl ethyl ether	Lin1F		0.3999		30.4	20.0	52.0*	20.0
cis-1,2-Dichloroethene	Ave	0.3466	0.3590	0.1000	20.7	20.0	3.6	20.0
2,2-Dichloropropane	Lin1F		0.2316		22.5	20.0	12.5	20.0
Chlorobromomethane	Ave	0.1955	0.2157		22.1	20.0	10.3	20.0
Cyclohexane	Ave	0.3326	0.3484		20.9	20.0	4.7	20.0
Chloroform	Ave	0.4823	0.4934	0.2000	20.5	20.0	2.3	20.0
Carbon tetrachloride	Lin1F		0.2987	0.1000	26.6	20.0	33.0*	20.0
Tetrahydrofuran	Ave	0.1226	0.1204		197	200	-1.8	20.0
1,1,1-Trichloroethane	Ave	0.3137	0.3462	0.1000	22.1	20.0	10.3	20.0
2-Butanone (MEK)	Ave	1.867	1.742	0.1000	187	200	-6.7	20.0
1,1-Dichloropropene	Ave	0.3369	0.3680		21.9	20.0	9.3	20.0
Benzene	Ave	0.9571	1.053	0.5000	22.0	20.0	10.0	20.0
Tert-amyl methyl ether	Lin1F		0.3776		31.3	20.0	56.5*	20.0
1,2-Dichloroethane	Ave	0.3470	0.3372	0.1000	19.4	20.0	-2.8	20.0
2,4,4-Trimethyl-1-pentene	QuaF		0.1136		26.3	20.0	31.5*	20.0
Methylcyclohexane	Ave	0.2939	0.3308		22.5	20.0	12.5	20.0
Trichloroethene	Ave	0.2151	0.2341	0.2000	21.8	20.0	8.8	20.0
2,4,4-Trimethyl-2-pentene	QuaF		0.2929		24.9	20.0	24.5*	20.0
Dibromomethane	Ave	0.1478	0.1568		21.2	20.0	6.1	20.0
1,2-Dichloropropane	Ave	0.1985	0.2053	0.1000	20.7	20.0	3.4	20.0
Dichlorobromomethane	Lin1F		0.2662	0.2000	21.4	20.0	7.0	20.0
1,4-Dioxane	Lin1F		0.0090		218	200	8.9	20.0

CCV%D

FORM VII 8260C

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Westfield Job No.: 360-34315-1

SDG No.: 360-34315-1

Lab Sample ID: CCVIS 360-75276/2 Calibration Date: 06/15/2011 13:55

Instrument ID: Agilent#2 GC/MS Calib Start Date: 05/18/2011 18:35

GC Column: RTX-VMS ID: 0.25(um) Calib End Date: 05/18/2011 21:50

Lab File ID: V18836.D Conc. Units: ug/L Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
cis-1,3-Dichloropropene	Ave	0.3002	0.3267	0.2000	21.8	20.0	8.8	20.0
Toluene	Ave	0.4489	0.4948	0.4000	22.0	20.0	10.2	20.0
Tetrachloroethene	Ave	0.2148	0.2509	0.2000	23.4	20.0	16.8	20.0
4-Methyl-2-pentanone (MIBK)	Ave	2.659	2.564	0.1000	193	200	-3.6	20.0
trans-1,3-Dichloropropene	Ave	0.2783	0.2930	0.1000	21.1	20.0	5.3	20.0
1,1,2-Trichloroethane	Ave	0.1630	0.1744	0.1000	21.4	20.0	7.0	20.0
Chlorodibromomethane	Lin1F		0.2230	0.1000	23.5	20.0	17.5	20.0
1,3-Dichloropropane	Ave	0.3037	0.3150		20.7	20.0	3.7	20.0
Ethylene Dibromide	Ave	0.2150	0.2298		21.4	20.0	6.9	20.0
2-Hexanone	Ave	2.041	1.888	0.1000	185	200	-7.5	20.0
Chlorobenzene	Ave	0.7725	0.8245	0.5000	21.3	20.0	6.7	20.0
Ethylbenzene	Ave	1.204	1.285	0.1000	21.3	20.0	6.7	20.0
1,1,1,2-Tetrachloroethane	Ave	0.2235	0.2609		23.3	20.0	16.7	20.0
m-Xylene & p-Xylene	Ave	0.9311	0.995	0.1000	42.8	40.0	6.9	20.0
o-Xylene	Ave	0.9355	0.9580	0.3000	20.5	20.0	2.4	20.0
Styrene	Ave	0.7710	0.8019	0.3000	20.8	20.0	4.0	20.0
Bromoform	QuaF		0.4729	0.1000	29.3	20.0	46.5	20.0
Isopropylbenzene	Ave	1.118	1.168	0.1000	20.9	20.0	4.4	20.0
Bromobenzene	Ave	0.4982	0.4848		19.5	20.0	-2.7	20.0
N-Propylbenzene	Ave	1.348	1.418		21.0	20.0	5.2	20.0
1,1,2,2-Tetrachloroethane	Ave	0.8077	0.8259	0.3000	20.5	20.0	2.3	20.0
2-Chlorotoluene	Ave	0.8319	0.8675		20.9	20.0	4.3	20.0
1,2,3-Trichloropropane	Ave	0.1189	0.1159		19.5	20.0	-2.6	20.0
1,3,5-Trimethylbenzene	Ave	0.8786	0.9321		21.2	20.0	6.1	20.0
4-Chlorotoluene	Ave	0.8880	0.9111		20.5	20.0	2.6	20.0
tert-Butylbenzene	Lin1F		0.7774		23.3	20.0	16.5	20.0
1,2,4-Trimethylbenzene	Lin1F		0.9653		23.6	20.0	18.0	20.0
sec-Butylbenzene	Lin1F		1.171		23.8	20.0	19.0	20.0
4-Isopropyltoluene	Lin1F		1.007		24.6	20.0	23.0*	20.0
1,3-Dichlorobenzene	Lin1F		0.6439	0.6000	23.0	20.0	15.0	20.0
1,4-Dichlorobenzene	Ave	1.185	1.283	0.5000	21.7	20.0	8.3	20.0
n-Butylbenzene	Ave	1.731	1.904		22.0	20.0	10.0	20.0
1,2-Dichlorobenzene	Ave	1.063	1.165	0.4000	21.9	20.0	9.6	20.0
1,2-Dibromo-3-Chloropropane	QuaF		0.1782	0.0500	21.9	20.0	9.5	20.0
Hexachlorobutadiene	Lin1F		0.4317		23.9	20.0	19.5	20.0
1,2,4-Trichlorobenzene	Ave	0.7257	0.7730	0.2000	21.3	20.0	6.5	20.0
Naphthalene	Ave	1.838	1.889		20.6	20.0	2.8	20.0
1,2,3-Trichlorobenzene	Ave	0.6699	0.7377		22.0	20.0	10.1	20.0
Dibromofluoromethane	Ave	0.3399	0.3401		20.0	20.0	0.0	20.0
Toluene-d8 (Surr)	Ave	0.9289	0.9529		20.5	20.0	2.6	20.0
4-Bromofluorobenzene	Ave	0.4896	0.4602		18.8	20.0	-6.0	20.0

CCV %D

OLIN CORPORATION
LEVEL I DATA QUALITY EVALUATION
STANDARD OPERATING PROCEDURE AND CHECKLIST
VOLATILE PETROLEUM HYDROCARBONS BY METHOD MADEP

Reviewer/Date BRADLEY D. LAFOREST 8/22/11
Sr. Review/Date
Lab Report # 360-34253-1
Project # 6107110016-12

1.0 Laboratory Deliverable Requirements

1.1 Laboratory Information: Was all of the following provided in the laboratory report? Yes [✓] No [ ] N/A [ ] Comments:
Check items received.

☐ *Name of Laboratory* ☐ *Certification ID #* ☐ *Address* ☐ *Project ID* ☐ *Phone #* ☐ *Sample identification – Field and Laboratory*

Client Information: ☐ *Name* ☐ *Address* ☐ *Client Contact* *(IDs must be cross-referenced)*

ACTION: If no, contact lab for submission of missing or illegible information.

1.2 Laboratory Report Certification Statement *Yes [✓] No [ ] N/A [ ] Comments:*

Does the laboratory report include a completed Analytical Report Certification in the required format?

***ACTION**: If no, contact lab for submission of missing certification or certification with correct format.*

1.3 Laboratory Case Narrative: *Yes [✓] No [ ] N/A [ ] Comments:*

☐ *Narrative serves as an exception report for the project and method QA/QC performance.* ☐ *Narrative includes an explanation of each discrepancy on the Certification Statement.*

***ACTION**: If no, contact lab for submission of missing or illegible information.*

1.4 Chain of Custody (COC) Yes [✓] No [ ] N/A [ ] Comments:

Does the laboratory report include a copy of the completed Chain of Custody forms containing all samples in this SDG?

NOTE: Olin receives and maintains the *original* COC.

ACTION: If no, contact lab for submission of completed COC.

1.5 Sample Receipt Information (*Cooler Receipt Form*): Were each of the following tasks completed and recorded upon receipt of the sample(s) into the laboratory? **Yes [✓]** No [ ] N/A [ ] Comments:

☐ Sample temperature confirmed: must be 1° – 10° C. (If samples were sent by courier and delivered on the same day as collection, temperature requirement does not apply).

☐ Container type noted ☐ Condition observed ☐ Field and lab IDs cross referenced

ACTION: If no, contact lab for submission of missing or incomplete documentation.

1.5.1 Were the correct bottles and preservatives used? **Yes [✓]** No [ ] N/A [ ] Comments:

Water - 40 mL VOA vial/HCL to pH<2, cool to 4°C
Soil - 5 gram Encore™/cool to 4°C or 40 mL VOA vial with field preservation of sodium bisulfate (low-level) or methanol (high-level) or field preservation in water if soils are reactive to sodium bisulfate (i.e. alkaline conditions, excessive humic acid content, etc.)

ACTION: If no, inform senior chemist. Document justification for change in container/volume (if applicable); qualify both positive data and non-detect data (J) if cooler temperature exceeds 10°C. Rejection of data requires professional judgment

ACTION: If each VOA vial for a sample contains air bubbles or the VOA vial analyzed contained air bubbles, flag positives (J) and reject nondetects (R).

1.5.2 Were all samples delivered to the laboratory without breakage? **Yes [✓]** No [ ] N/A [ ] Comments:

1.5.3 Does the *Cooler Receipt Form* or Lab Narrative indicate other problems with sample receipt, condition of the samples, analytical problems or special circumstances affecting the quality of the data? Yes [ ] **No [✓]** N/A [ ] Comments:

1.6 Sample Results Section: *Was the following information supplied in the laboratory report for each sample?* **Yes [✓]** No [ ] N/A [ ] Comments:

☐ Field ID and Lab ID ☐ *Date and time collected* ☐ Analyst Initials ☐ *Dilution Factor* ☐ % moisture or solids ☐ *Reporting limits*

☐ Analysis method ☐ *Preparation method* ☐ *Date of preparation/extraction/digestion clean-up and analysis, where applicable* ☐ Matrix ☐ Target analytes and concentrations ☐ Units (soils must be reported in dry weight)

ACTION: If no, contact lab for submission of missing or incomplete information.

1.7 QA/QC Information: Was the following information provided in the laboratory report for each sample batch? **Yes** [✓] No [ ] N/A [ ] Comments:

☐ Method blank results ☐ LCS recoveries ☐ MS/MSD recoveries and RPDs ☐ Surrogate recoveries

ACTION: If no, contact lab for submission of missing or incomplete information.

2.0 Holding Times

Have any technical holding times, determined from date of collection to date of analysis, been exceeded? Yes [ ] **No** [✓] N/A [ ] Comments:

For water samples, the holding time is 7 days from sampling for unpreserved samples and 14 days for preserved samples.

For soil samples, methanol preservation required with a holding time of 14 days. If an Encore™ sampler was used, the lab must ***preserve*** the sample within 48 hours. Analytical holding time from time of preservation is 14 days.

NOTE: List samples that exceed hold time with # of days exceeded on checklist

ACTION: If technical holding times are exceeded, qualify all positive results (J). Use professional judgment to reject (R) data for grossly exceeded.

3.0 Laboratory Method

3.1 Was the correct laboratory method used? **Yes** [✓] No [ ] N/A [ ] Comments:

Purge and Trap Water: 5030B . Soil: 5035
Volatile Petroleum Hydrocarbons MADEP VPH 98-1

ACTION: If no, contact lab to provide justification for method change compared to the requested method. Contact senior chemist to inform Client of change or to request variance.

3.2 Are the practical quantitation limits the same as those specified by the ☐ SOW ☐ QAPP ☐ Lab ☐ MADEP — **Yes** [✓] No [ ] N/A [ ] Comments:

NOTE: *The MADEP QA/QC Guidelines provides PQLs for volatile petroleum hydrocarbons. See MADEP PQLs vs. the PQLs listed in the QAPP.*

ACTION: If no, evaluate change with respect to sample matrix, preparation, dilution, moisture, etc. If sample PQL is indeterminate, contact lab for explanation.

3.3 Are the appropriate parameter results present for each sample in the SDG? — **Yes** [✓] No [ ] N/A [ ] Comments:

NOTE: *The MADEP QA/QC Guidelines requires a minimum compound reporting list for volatile organic compounds.*

3.4 If *dilutions were required, were dilution factors reported?* — **Yes** [ ] No [ ] N/A [✓] Comments:

NOTE: *MADEP guidance states that if a diluted and an undiluted analysis is performed, the laboratory should report results for the lowest dilution within the valid calibration range for each analyte.*

ACTION: If no, contact the lab for submission.

4.0 Method Blanks

4.1 Are the Method Blank Summaries present? — **Yes** [✓] No [ ] N/A [ ] Comments:

ACTION: If no, call the laboratory for submission of missing data.

4.2 Was a method blank analyzed for each analytical batch of 20 samples or less? — **Yes** [✓] No [ ] N/A [ ] Comments:

ACTION: If no, document discrepancy in case narrative and contact lab for justification. Consult senior chemist for action needed.

4.3 Is the method blank less than the PQL? (See attached table for PQLs). **Yes** [✓] No [ ] N/A [ ] Comments:

4.4 Do any method blanks have positive results for VPH parameters? Qualify data according to the following: Yes [ ] **No** [✓] N/A [ ] Comments:

For VPH contaminants:

Review blank and sample chromatograms to evaluate the nature of the detection in the blank and associated samples. Use professional judgment. The following actions may be applied:

If the sample concentration is < 5 × blank value, flag sample result non-detect "U" at the PQL or the concentration reported if greater than the PQL.

If the sample concentration is > 5 × blank value, no qualification is needed..

ACTION: If any blank has positive results, list all the concentrations detected and flagging level (flagging level = 10x or 5 × blank value) on the checklist. List all affected samples and their qualifiers.

5.0 Laboratory Control Standard

5.1 Was a laboratory control standard (LCS) run with each analytical batch of 20 samples or less? **Yes** [✓] No [ ] N/A [ ] Comments:

ACTION: Call laboratory for LCS form submittal. If data are not available, reject (R) data associated with that batch.

5.2 Is a LCS Summary Form present? **Yes** [✓] No [ ] N/A [ ] Comments:

ACTION: If no, contact lab for resubmission of missing data.

5.3 Is the recovery of any analyte outside of control limits of 70-130% in the QAPP? Yes [ ] **No [✓]** N/A [ ] Comments:

NOTE: *A full target, second source LCS is required by MADEP.*

NOTE: *MADEP guidelines list LCS recovery limits as 70-130 except for naphthalene. The laboratory must identify any other analytes that routinely exceed 70-130 percent.*

ACTION: If recovery is above the upper limit, qualify all positive sample results within the batch as (J). If recovery is below the lower limit but > 10%, qualify all positive and no-detect results within the batch as (J). If LCS recovery is <10%, positive and non-detect results are rejected (R) unless the QC limit for that compound is below 10% (flag as above).

5.4 Are 80% of LCS recoveries within laboratory control limits? **Yes [✓]** No [ ] N/A [ ] Comments:

ACTION: If 80% of LCS recoveries are not within limits, use professional judgment and consult Senior Chemist. If more than half of the recoveries are above control limits, qualify all positive results as (J). If more than half of the recoveries are below control limits, batch may require rejection and reanalysis

6.0 Matrix Spikes

6.1 Were project-specific MS/MSDs collected? List project samples that were spiked. **Yes [✓]** No [ ] N/A [ ] Comments:

ACTION: If no, contact senior chemist to see if any were specified.

6.2 Is the MS/MSD Recovery Form present? **Yes [✓]** No [ ] N/A [ ] Comments:

ACTION: If no, contact lab for resubmission of missing data.

6.3 Were matrix spikes analyzed at the required frequency of 1 per 20 samples per matrix? **Yes [✓]** No [ ] N/A [ ] Comments:

ACTION: If any matrix spike data are missing, call lab for resubmission.

6.4 Are any VPH spike recoveries outside of the QC limits of 70-130%? Yes [✓] **No** [ ] N/A [ ] Comments:

NAPHTHALENE 131% ALL SAMPLES ND
NO QUALS — SEE ATTACHED

NOTE: $\%R = \frac{(SSR-SR)}{SA} \times 100\%$ Where: SSR = Spiked sample result
SR = Sample result
SA = Spike added

NOTE: *A full target, second source MS/MSD is required by MADEP.*

NOTE: *MADEP guidelines list MS/MSD recovery limits as 70-130 except for naphthalene.*

NOTES: 1) If only one of the recoveries for an MS/MSD pair is outside of the control limits, no qualification is necessary. Use professional judgment for the MS/MSD flags.
2) If the MS/MSD was performed by the laboratory on a non-project sample, no qualification is required.

ACTION: MS/MSD flags only apply to the sample spiked. If the recoveries of the MS and MSD exceed the upper control limit, qualify positive results as estimated (J). If the recoveries of the MS and MSD are lower than the lower control limit but > 30%, qualify both positive results and non-detects (J). If the MS/MSD recovery is < 30% and the sample is non-detect, the results are considered unusable and flagged (R).

ACTION: Laboratory control limits apply when spiked sample results fall within the normal calibration range. If dilutions are required due to high sample concentrations, the data is evaluated, but no flags are applied.

6.5 Are any RPDs for MS/MSD recoveries outside of the QC limits of 50 (water and soil)? Yes [ ] **No** [✓] N/A [ ] Comments:

NOTE: $RPD = \frac{S-D}{(S+D)/2} \times 100\%$ Where: S = MS sample result
D = MSD sample result

NOTE: *MADEP guidelines list MS/MSD RPD limits for both water and soils as ≤ 50.*

ACTION: If the RPD exceeds the control limit, qualify positive results and non-detects (J).

ACTION: Laboratory control limits apply when spiked sample results fall within the normal calibration range. If dilutions are required due to high sample concentrations, the data are evaluated, but no flags are applied.

7.0 Surrogate Recoveries

Were VPH surrogate recoveries outside of the QAPP limits of 70-130% for any sample or method blank? If yes, were samples re-analyzed? Yes [ ] **No** [✓] N/A [ ] Comments:

NOTE: %R = QD x 100% Where: S = MS sample result
D = MSD sample result

NOTE: *MADEP guidelines list surrogate limits for both water and soils as 70-130% for both detectors.*

ACTION: If recoveries are >10%, but fail to meet QC criteria: (1) For recoveries below the QC limit, qualify non-detects and positives (J), and (2) For recoveries above the QC limit, qualify only positives (J). If any surrogate recovery is <10% (unless the QC limits are below 10%, in which case, results are flagged as stated above), flag positives (J) and reject nondetects (R).

NOTE: If surrogate recoveries fail due to dilution, results are not flagged. Document on checklist and in the case narrative.

8.0 Sampling Accuracy

8.1 Were trip blanks shipped with VOC samples and analyzed? **Yes** [✓] No [ ] N/A [ ] Comments:

NOTE: *MADEP requires trip blanks per the following frequency:*

	Soil/Sediment	*Aqueous*	*Drinking Water*
Option 1	*Not Required*	*Not Required*	*1 per cooler VOAs/VPH*
Option 3	*1 per 10 samples*	*1 per 10 samples*	*1 per 10 samples*

8.2 Do any trip blanks have positive results? Yes [ ] **No** [✓] N/A [ ] Comments:

ACTION: Prepare a list of samples shipped in the same cooler as the contaminated blank.

ACTION: Evaluate trip blank results against method blank results to determine if contaminant may be laboratory-derived. If results are not lab-related, qualify according to the table below.

If the sample concentration is < 5 × blank value, flag sample result non-detect "U" at the PQL or the concentration reported if greater than the PQL.

If the sample concentration is > 5 × blank value, no qualification is needed.

8.3 Were ambient blanks shipped with VPH samples and analyzed? **Yes** [ ] No [ ] N/A [✓] Comments:

NOTE: *MADEP requires ambient (field) blanks per the following frequency:*

	Soil/Sediment	*Aqueous*	*Drinking Water*
Option 1	*Not Required*	*Not Required*	*Not Required*
Option 3	*1 per 10 samples*	*1 per 10 samples*	*1 per 10 samples*

8.4 Do any ambient blanks have positive results? Yes [ ] **No** [ ] N/A [✓] Comments:

ACTION: Prepare a list of samples associated with the contaminated blank (all collected from the site on that day).

ACTION: Evaluate ambient blank results against method and trip blank results to determine if contaminant may be laboratory- and/or shipment-derived. If results are not lab- and/or shipment-related, qualify according to the table above (8.2).

8.5 Were rinsate blanks collected? Prior to evaluating rinsate blanks, obtain a list of the associated samples from the senior chemist. **Yes** [ ] No [ ] N/A [✓] Comments:

NOTE: *MADEP does not specify the collection of rinsate blanks.*

8.6 Do any rinsate blanks have positive results? Yes [ ] **No** [ ] N/A [✓] Comments:

ACTION: Evaluate rinsate results against blank results to determine if contaminant may be laboratory-, ambient-, or shipment-derived. If results are not lab-, ambient-, or shipment-related, qualify according to the table above (8.2).

9.0 Field Duplicates

9.1 Were field duplicate samples collected? Obtain a list of samples and their associated field duplicates. **Yes** [✓] No [ ] N/A [ ] Comments:

9.2 Were field duplicates collected per the required frequency? **Yes** [✓] No [ ] N/A [ ] Comments:

☐ SOW ☐ QAPP ☐ *MADEP Option 1(1 per 20)* ☐ *MADEP Option 3 (1 per 10)*

9.3 Was the RPD ≤ 50% for soils or ≤ 30% waters? Calculate the RPD for all results and attach to this review. **Yes** [✓] No [ ] N/A [ ] Comments:

ACTION: RPD must be ≤50% for soil or ≤ 30% waters. Qualify data (J) for both sample results if the RPD is exceeded.

10.0 Application of Validation Qualifiers

Was any of the data qualified? **Yes** [ ] No [✓] N/A [ ] Comments:

If so, apply data qualifiers directly to the DQE copy of laboratory report and **flag pages** for entry in database.

REFERENCES

MACTEC, Quality Assurance Project Plan for Remedial Investigation/Feasibility Study – Olin Chemical Superfund Site, Wilmington Property, 51 Eames Street, Wilmington, MA", MACTEC Engineering and Consulting. Draft .October 2008.

Massachusetts Department of Environmental Protection (MADEP), 1998. "Method for the Determination of Volatile Petroleum Hydrocarbons (VPH)"; Division of Environmental Analysis; Office of Research and Standards; Bureau of Waste Site Cleanup; January 1998.