ecology and environment, inc.
International Specialists in the Environment
1940 Webster Street, Suite 100
Oakland, California 94612
Tel: (510) 893-6700, Fax: (510) 550-2760

June 14, 2012

U.S. Environmental Protection Agency
75 Hawthorne Street
San Francisco, CA 94105

Attention: Mr. Craig Cooper, Superfund Remedial Project Manager

Subject: Estimation of Aroclor 1254 and Aroclor 1260 Concentrations using PCB Congener Data in Yosemite Slough Sediment Sample Data from Yosemite Creek Sediment Removal Assessment Report, May 2011, Ecology and Environment Inc. , Prepared for the United States Environmental Protection Agency

A time-critical removal assessment of Yosemite Slough for the United States Environmental Protection Agency (U.S. EPA) Emergency Response Section was conducted in 2009 by Ecology and Environment, Inc. (E & E) Superfund Technical Assessment and Response Team (START) under Technical Directive Document number TO2-09-08-12-0002. The E & E *Yosemite Creek Sediment, Removal Assessment Report* (E&E 2009) was finalized in May 2011. The report presented analytical data on 191 sediment samples (including duplicates) collected from 36 borehole locations advanced in and near Yosemite Creek, San Francisco, California. At each boring location five samples were typically collected at one-foot intervals between zero and five feet below the sediment surface, for a total of 173 unique sampling locations. In the final report, analytical data on the concentrations of chlorinated pesticides, polychlorinated biphenyls (PCBs) as Aroclors, PCB congeners, metals, organic hydrocarbons and petroleum hydrocarbons was presented in tables and cross-sectional representations. The data presented in this report originated with that removal assessment report.

The data for PCBs as Aroclors were generated in June 2009 by APPL Inc. laboratory following U.S. EPA SW-846 Method 8082A (Method 8082 for Aroclors). The data for 28 of the 209 possible PCB congeners were also generated in June 2009 by APPL Inc. laboratory following U.S. EPA SW-846 Method 8082A (Method 8082 for Congeners). The Aroclor mixtures found in the June 2009 sediment samples proved difficult for the laboratory to positively identify, quantify, and verify following the laboratory's Method 8082 for Aroclors procedure. As a result, for many samples, the laboratory reported the Aroclor concentrations as those of only Aroclor 1254.

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In 2011 and early 2012, a review of the PCB data associated with the site by NewFields Environmental Forensics Practice and E & E START chemists, initiated the conclusion that the June 2009 sediment samples likely contained both Aroclor 1254 and Aroclor 1260 at significantly different ratios than those that were originally reported in the May 2011, *Yosemite Creek Sediment, Removal Assessment Report*.

In March 2012, the U.S. EPA Remedial Project Manager (RPM) Craig Cooper directed the E & E START to estimate the concentrations of polychlorinated biphenyl (PCB) Aroclor 1260 and PCB Aroclor 1254 in the June 2009 sediment samples using data for 28 PCB congeners that were also generated in June 2009 by APPL Inc. laboratory following U.S. EPA SW-846 Method 8082A (Method 8082 for Congeners). To accomplish this, in March 2011, START directed APPL Inc. laboratory to generate three samples with 500 micrograms per liter (µg/L) of Aroclor 1260 and three samples with 500 µg/L of Aroclor 1254. Those six samples were then analyzed following U.S. EPA SW-846 Method 8082A to determine the concentration of the 28 PCB congeners. The PCB congener data generated by APPL Inc. laboratory in March 2012 using Method 8082 for Congeners analysis is presented in Attachment 1.

Using a procedure (Attachment 2) that was developed by Gregory Douglas, Ph.D., a Senior Consultant with NewFields Environmental Forensics Practice (estimation procedure), START calculated the estimated concentration of Aroclor 1254 and Aroclor 1260 based on the concentration of PCB congener 118 to PCB congener 180 data as reported in the June 2009 sediment sample chromatography data. The revised estimated concentrations of Aroclor 1254 and Aroclor 1260 for each of the June 2009 sediment samples are presented in Table 1, Attachment 3. The estimation procedure involves establishing a mixing curve for two selected PCB congeners in a two Aroclor mixture. Using the mixing curve and the ratio of the two PCB congeners in a sample, the concentration of the two Aroclors in a sample is estimated. The estimation procedure also includes a calculation to estimate the percentage of PCB congeners in Aroclor 1254 and Aroclor 1260 that are actually detected when using Method 8082 for congeners. The total PCBs concentration in a sample is then estimated by dividing the sum of the 28 PCB congeners in a sample by the calculated percentage value.

The calculations were then cross-checked by START by estimating the concentration of Aroclor 1254 and Aroclor 1260 based on the concentration of PCB congener 180 to PCB congener 118 as reported in the June 2009 sediment sample chromatography data. To measure variability between the two sets of calculations, the relative percent differences (RPDs) between the two estimated concentrations were calculated. RPDs of less than 5 percent were considered acceptable precision criteria. The calculated RPDs were less the 5 percent, with two exceptions. Two samples, Y-23-4 and Y-31-5, had RPD values which were calculated at 200 percent. Neither PCB congener 118 nor PCB congener 180 were detected in either sample which accounts for the large RPD between these samples. For samples Y-23-4 and Y-31-5, the concentration of the two Aroclors could not be reasonably estimated using the estimation procedure. The data suggests that the low

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concentration of PCBs in sample Y-23-4 and Y-31-5 are neither Aroclor 1254 nor Aroclor 1260.

The estimation procedure was then checked for precision by substituting the concentration of PCB congener 66 in place of PCB congener 118. PCB 66 was selected by START due to its abundance in Aroclor 1254 and its absence in Aroclor 1260. In order to focus on significant data, this precision check was performed only on 2009 sediment data that had estimated total PCB concentrations that were greater than 1,000 micrograms per kilogram. The estimated concentrations of Aroclor 1254 and Aroclor 1260 for the sample set calculated using PCB congener 66 data are presented in Table 2, Attachment 3.

To measure variability between the two sets of data (i.e. PCB congener 118 verses a PCB congener 66 data set), the RPDs between the two sets of estimated concentration data were calculated. The RPDs for the two sets of calculations are presented in Table 3, Attachment 3. The RPD values varied considerably and supported a START conclusion that the calculated Aroclor concentrations are not precise and tend to vary based on which peaks are selected.

As a check of the estimation procedure's ability to accurately estimate Aroclor concentrations, APPL Inc. laboratory prepared a performance evaluation sample using a concentration of 500 µg/L of Aroclor 1260 and 500 µg/L of Aroclor 1254. The performance sample was analyzed by APPL Laboratory Inc. using the EPA Method 8082A for 28 congeners. The resulting congener data was used to calculate and estimate the Aroclor 1254 and Aroclor 1260 concentrations using Dr. Douglas's estimation procedure. The estimated concentrations calculated for the performance evaluation sample were 500 µg/L of Aroclor 1254 and 470 µg/L of Aroclor 1260. The percent difference (PD) between the estimated concentrations and the known concentration is 0 percent and 6.7 percent respectively. The estimated concentrations were also calculated for the performance evaluation sample using the PCB congener 66 in place of PCB congener 118. The resultant calculated concentrations were 539 µg/L of Aroclor 1254 and 422 µg/L of Aroclor 1260. The PD between the estimated concentrations and the known concentration is 7.8 percent and 15.5 percent respectively. The PD values of less than 20 percent difference for both sets of calculations supported a START conclusion that the calculation procedure could accurately estimate the Aroclor 1254 and Aroclor 1260 concentrations in the performance evaluation sample.

The data and calculations used to generate the estimated concentrations reported in Table 1 through Table 3 are presented in Attachment 3. An example calculation and calculation spreadsheet are presented in Attachment 4.

Cross-sectional representations of the revised Aroclor 1254 and Aroclor 1260 concentrations at the Yosemite Slough site, based on these estimates, are presented as Figure 1 and Figure 2 in Attachment 5.

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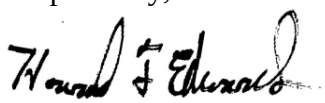
The data presented in this report supports the conclusion by NewFields Environmental Forensics Practice that the Yosemite Slough sediment samples largely contained both Aroclor 1254 and Aroclor 1260 at significantly different ratios than what was originally reported by APPL Inc. laboratory and the E & E *Yosemite Creek Sediment, Removal Assessment Report* finalized in May 2011. However, it does not change the conclusions or recommendations indicated in the assessment report. PCB congener data was generated in order to document the extent of PCB contamination within the slough and is being used in the engineering evaluation/cost analysis (EECA) to estimate the lateral and vertical extent of PCB contamination. The original (E&E 2009) PCB Aroclor data was generated and reported to provide information on Aroclors and to better estimate potential disposal costs . The engineering evaluation/cost analysis (EECA) uses the 2009 data only as an aid for estimating potential disposal costs.

Please contact me if you have any questions regarding this estimation.

Respectfully,



Howard Edwards
List of Attachments:
Attachment 1-Laboratory Analytical Data and Data Validation Reports
Attachment 2-Estimation Procedure
Attachment 3-Tables
Attachment 4-Calculations
Attachment 5-Figures

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Attachment 1

Laboratory Analytical and Data Validation Report Standard Operating Procedures

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Yosemite Creek EE/CA	Location: San Francisco, CA
Project Number: 002693.2107.01RF	TDD No: TO2-09-10-08-0009

Laboratory: APPL, Inc.	Lab Project Number: 67404
Sampling Dates: 04/03/2012	Sample Matrix: Miscellaneous
Analytical Method: *PCB as Congeners by EPA 8082*	Data Reviewer: M. Song

REVIEW AND APPROVAL:

Data Reviewer: Mindy Song Date: 4/11/12
Technical QA Reviewer: Howard Edwards Date: 4/11/12
Project Manager: Brian Milton Date:

SAMPLE IDENTIFICATION:

Sample No.	Sample I.D.	Laboratory I.D.
1	1254-1	AY58416
2	1254-2	AY58417
3	1254-3	AY58418
4	1260-1	AY58419
5	1260-2	AY58420
6	1260-3	AY58421
7	1254 & 1260	AY58422
8		
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16		
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18		
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ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Yosemite Creek EE/CA	Location: San Francisco, CA
Project Number: 002693.2107.01RF	TDD No: TO2-09-10-08-0009

DATA PACKAGE COMPLETENESS CHECKLIST:

Checklist Code:

- X Included: no problems
- * Included: problems noted in review
- O Not Included and/or Not Available
- NR Not Required
- RS Provided As Re-submission

Case Narrative:

- X Case Narrative present

Quality Control Summary Package:

- X Data Summary sheets
- NR Matrix Spike/Spike Duplicate Recoveries
- NR Laboratory Control Sample Recoveries
- NR Method Blank Summaries
- X Initial Calibration Data
- * Continuing Calibration Data
- NR Surrogate Compound Recovery Summary
- NR DDT and Endrin Degradation Check Data
- NR Internal Standard Area Summary

Sample and Blank Data Package Section

- X Chromatograms
- X Quantitation Reports

Raw QC Data Package Section

- X Quantitation Reports for Standards, LCS, and MS/MSD
- X List of Instrument Detection Limits
- X Chain-of-Custody Records
- X Sample Preparation and Analysis Run Logs

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Yosemite Creek EE/CA	Location: San Francisco, CA
Project Number: 002693.2107.01RF	TDD No: TO2-09-10-08-0009

DATA VALIDATION SUMMARY

The data were reviewed following procedures and limits specified in the EPA OSWER directive, *Quality Assurance/Quality Control Guidance for Removal Activities, Sampling QA/QC Plan and Data Validation Procedures* (EPA/540/G-90/004, OSWER Directive 9360.4-01, dated April 1990).

Indicate with a YES or NO whether each item is acceptable without qualification:

1	Holding Times	YES
2	Instrument Performance Criteria	YES
3	Initial Calibrations	YES
4	Continuing Calibrations	YES
5	Laboratory Control Sample	N/A
6	Matrix Spike/Matrix Spike Duplicate	N/A
7	Blanks and Background Samples	N/A
8	Surrogate Compounds	N/A
9	Internal Standards	N/A
10	Duplicate Analyses	YES
11	Analyte Identification	YES
12	Analyte Quantitation	YES
13	Overall Assessment of Data	YES
14	Usability of Data	YES

Comments: N/A: Not Applicable

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Yosemite Creek EE/CA	Location: San Francisco, CA
Project Number: 002693.2107.01RF	TDD No: TO2-09-10-08-0009

1. HOLDING TIMES

__X__ Acceptable
_____ Acceptable with qualification
_____ Unacceptable

Samples were extracted and analyzed within required holding times except as noted under Comments. In addition, no problems were identified with regard to sample preservation or custody unless specified. For those samples analyzed outside holding time requirements, the detected results have been qualified as estimated (J), and the nondetected results have been qualified either as estimated (UJ) or rejected (R) based on the reviewer=s judgement.

Water Samples Extractable analyses: 7 days (from collection) to extraction; 40 days (from extraction) to analysis. Soil or Other Matrices: Extractable analyses: 14 days (from collection) to extraction; 40 days (from extraction) to analysis.

Comments: Analytical holding time was met.

2. INSTRUMENT PERFORMANCE CRITERIA

__N/A__ Raw data has been checked to verify that the DDT retention time is greater than 12 minutes and that there is adequate resolution (>25%) between peaks of the other standard compounds.

__X__ Raw data has been checked to verify that retention time windows are reported and that all standard compounds are within the windows.

__N/A__ Raw data has been checked to verify that the percent breakdown for DDT and endrin does not exceed 20% in the degradation check standard.

__X__ Raw data has been checked to verify that the percent difference in retention time for the surrogate in all standards and samples does not exceed 0.3% (capillary columns) or 1.5% (wide-bore capillary columns).

Comments:

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Yosemite Creek EE/CA	Location: San Francisco, CA
Project Number: 002693.2107.01RF	TDD No: TO2-09-10-08-0009

3. INITIAL CALIBRATIONS

__X__ Acceptable
_____ Acceptable with qualification
_____ Unacceptable

Unless flagged below, a 5-point initial calibration was run. In addition, average Relative Response Factor (RRF), and percent relative Standard Deviation (%RSD) values were within control limits (%RSD <= 20). For analytes which exceeded these control limits, associated detected results are qualified as estimated (J). In cases where the low calibration level was not detected, the nondetected results are qualified (UJ).

Comments: All percent relative standard deviation values for PCB as Congeners were within the control limits.

4. CONTINUING CALIBRATIONS

__X__ Acceptable
_____ Acceptable with qualification
_____ Unacceptable

Unless flagged below, continuing calibrations were performed at the beginning and at the end of any group of samples and at least every 12 hours. In addition, Relative Response Factors (RRF), and Percent Difference (%D) values were within control limits (%D <= 15). For analytes which exceeded these control limits, associated detected results are qualified as estimated (J). In cases where the %D is very high and indicates a severe loss of instrument sensitivity, the associated nondetected results may be qualified as estimated (UJ) or rejected (R) based on the professional judgement of the reviewer.

Comments: Percent Difference (%D) value of PCB-8 was 27%. Qualification was not required since no PCB-8 was detected in the samples.

5. LABORATORY CONTROL SAMPLE

_____ Acceptable
_____ Acceptable with qualification
_____ Unacceptable
___X___ No Laboratory Control Samples Analyzed

Laboratory control sample recoveries are used for a qualitative indication of accuracy (bias) independent of matrix effects. LCS recovery limits should either be specified in the Sampling and Analysis Plan or can be established by the laboratory. For analytes which exceeded these control limits, associated detected results are qualified as estimated (J).

Comments: The standards were not extracted, therefore no LCS was analyzed.

6. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

_____ Acceptable
_____ Acceptable with qualification
_____ Unacceptable
___X___ No Matrix Spike/Matrix Spike Duplicates Analyzed

Matrix spike and matrix spike duplicate recoveries are used for a qualitative indication of accuracy (bias) due to matrix effects. The RPD between the recoveries is used for a qualitative indication of precision. Spike recovery limits of 80% to 120% are specified in EPA/540/G-90/004. For analytes which exceeded these control limits, associated detected results are qualified as estimated (J). At the discretion of the reviewer, other limits may be used only if justification can be provided.

Comments: The standards were not extracted; therefore, there was no MS/MSD analysis.

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Yosemite Creek EE/CA	Location: San Francisco, CA
Project Number: 002693.2107.01RF	TDD No: TO2-09-10-08-0009

7. BLANKS AND BACKGROUND SAMPLES

_____ Acceptable
__X__ No Blank Analyzed

The following blanks were analyzed:
_____ Method (preparation) Blanks
_____ Field Blanks
_____ Instrument Blanks
_____ Rinsate Blanks
_____ Background Samples
_____ VOA Trip Blanks

Preparation (method) blanks were prepared for each batch of samples extracted. A preparation blank was analyzed after every continuing calibration standard, prior to sample analysis unless noted below. Any compound detected in the sample and also detected in any associated blank, must be qualified as non-detect (U) when the sample concentration is less than 5x the blank concentration.

Comments: The standards were not extracted; therefore, there was no blank.

8. SURROGATE COMPOUNDS

_____ Acceptable
_____ Acceptable with qualification
_____ Unacceptable
__X__ No surrogates analyzed

Surrogate compound recoveries for samples analyzed within a sample group must be within the limits specified in the method. If the surrogate recovery is between 10% and the lower limit, the associated detected results are qualified as estimated (J) and the nondetected results are qualified as estimated (UJ). If the surrogate recovery is <10%, the associated detected results are qualified as estimated (J) and the nondetected results are rejected (R). If the surrogate recovery is above the upper limit, the associated detected results are qualified as estimated (J). Surrogate recoveries which exceeded these limits are noted below and the associated results are qualified on the attached sample report forms. If there are no limits specified in the method, laboratory limits based on historical performance may be used at the discretion of the reviewer.

Comments: The standards were not extracted; therefore, there was no surrogate.

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Yosemite Creek EE/CA	Location: San Francisco, CA
Project Number: 002693.2107.01RF	TDD No: TO2-09-10-08-0009

9. INTERNAL STANDARDS

_____ Acceptable
_____ Acceptable with qualification
_____ Unacceptable
___X___ No internal standards analyzed

Internal Standard area counts for samples analyzed within a sample group must be within the range of 50% to 200% of the internal standard area for the continuing calibration. If the internal standard area is between 10% and 50% of this value, the associated detected results are qualified as estimated (J) and the non-detected results are qualified as estimated (UJ). If the internal standard area is <10% of the calibration area, both the detected and non-detected results are rejected (R). If the internal standard area is >200% of the calibration area, the associated detected results are qualified as estimated (J). Internal standards which exceeded these limits are noted below and the associated results are qualified on the attached sample report forms.

Comments: External standards were used.

10. DUPLICATE ANALYSES

___X___ Acceptable
_____ Acceptable with qualification
_____ Unacceptable
_____ No Duplicates Analyzed

Type of duplicates analyzed:
_____ Field Duplicates
___X___ Laboratory Duplicates

Calculate the relative Percent Difference (RPD) between the members of duplicate pairs using the equation indicated below. Qualify the results as estimated (J) for any analyte whose RPD exceeds that specified in the Sampling and Analysis Plan.

$$RPD = \frac{2(\text{Value 1} - \text{Value 2})}{\text{Value 1} + \text{Value 2}} \times 100\%$$

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Yosemite Creek EE/CA	**Location: San Francisco, CA**
Project Number: 002693.2107.01RF	**TDD No: TO2-09-10-08-0009**

Analyte, mg/L	1254-1	1254-2	RPD (%)
PCB-101	0.035	0.037	6
PCB-105	0.014	0.015	7
PCB-114	<0.001	<0.001	0
PCB-118	0.027	0.028	4
PCB-123	<0.001	<0.001	0
PCB-126	<0.001	<0.001	0
PCB-128	<0.001	<0.001	0
PCB-138	0.027	0.027	0
PCB-153	0.019	0.019	0
PCB-156	0.0039	0.0043	10
PCB-157	<0.001	<0.001	0
PCB-167	<0.001	<0.001	0
PCB-169	<0.001	<0.001	0
PCB-170	0.0029	0.0029	0
PCB-18	0.0010	0.0010	0
PCB-180	0.0036	0.0036	0
PCB-187	<0.001	<0.001	0
PCB-189	<0.001	<0.001	0
PCB-195	<0.001	<0.001	0
PCB-206	<0.001	<0.001	0
PCB-209	<0.001	<0.001	0
PCB-28	<0.001	<0.001	0
PCB-44	0.011	0.011	0
PCB-52	0.023	0.023	0
PCB-66	0.026	0.026	0
PCB-77	<0.001	<0.001	0
PCB-8	<0.001	<0.001	0
PCB-81	<0.001	<0.001	0

Comments: 1254-2 was a laboratory duplicate of 1254-1 and all RPDs were within the control limits. (<20%)

11. ANALYTE IDENTIFICATION

Verify that positive results have been confirmed on a dissimilar second column, that the sample chromatograms agree with the correct daily standard chromatograms, and that the retention time windows match. When sample results are confirmed by a second column, the relative percent difference (RPD) between the two results is calculated. If the RPD is less than 40% and there is no evidence of chromatographic problems, the higher result is reported. If the RPD is greater than 40%, the chromatogram is checked for anomalies and results are selected based on the best professional judgment of the reviewer. If there is no evidence of any chromatographic problems, the higher result is reported.

Comments: Reported results were acceptable. When sample results are confirmed by a second column, the relative percent difference (RPD) between the two results is calculated. If RPD is less than 40%, and no evidence of chromatographic problems, the higher result is reported. If RPD is greater than 40%, the chromatogram is checked for anomalies and results are selected based on the best professional judgment. (The flag Y was added by the laboratory) If no evidence of any chromatographic problems, the higher result is reported. However, the lower results were reported for some samples from this SDG due to the presence of matrix interferences in the samples.

12. ANALYTE QUANTITATION

Confirm that analyte quantitation was performed correctly using the following formulas:

Extractable analyses, water samples:

ug/L = (analyte area)(amount of external standard, ng)(total volume of extract, uL) / (external standard area)(volume of sample extracted, mL)(injection volume, uL)

Extractable analyses, soil samples:

ug/kg = (analyte area)(amount of external standard, ng)(total volume of extract, uL) / (external standard area)(weight of sample extracted, g)(fraction solids)(injection volume, uL)

Comments:

Analyte quantitation was acceptable.
Sample 1260-2
PCB-101: (2447474)/ (91970400) (2) = 0.0133 mg/L.
Lab reported 0.013 mg/L.
PCB-180: (11492960) /(111497000) (2) = 0.05154 mg/L
Lab reported 0.052 mg/L.

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Yosemite Creek EE/CA	Location: San Francisco, CA
Project Number: 002693.2107.01RF	TDD No: TO2-09-10-08-0009

13. OVERALL ASSESSMENT OF DATA

On the basis of this review, the following determination has been made with regard to the overall data usability for the specified level.

__X__ **Acceptable**
_____ **Acceptable with Qualification**
_____ **Rejected**

Accepted data meet the minimum requirements for the following EPA data category:
_____ **ERS Screening**
_____ **Non-definitive with 10 % Conformation by Definitive Methodology**
_____ **Definitive, Comprehensive Statistical Error Determination was performed.**
__X__ **Definitive, Comprehensive Statistical Error Determination was not performed.**

Any qualifications to individual sample analysis results are detailed in the appropriate section above or appear under the comments section below. In cases where several QC criteria are out of specification, it may be appropriate to further qualify the data usability. The data reviewer must use professional judgment and express concerns and comments on the data validity for each specific data package.

Comments: Data as reported are valid.

14. USABILITY OF DATA

A. **These data were generated in order to estimate the concentration of Aroclor 1254 and Aroclor 1260 in samples generated under the *SAMPLING AND ANALYSIS PLAN FOR YOSEMITE CREEK SEDIMENT REMOVAL ASSESSMENT, SAN FRANCISCO, CALIFORNIA, JANUARY 16, 2009 (SAP).***

The data was generated to augment the data generated by the EPA method 8082 for 28 PCB congeners.

B. These data meet the quality objectives stated in the START Quality Assurance Project Plan and the *SAP.*

15. DOCUMENTATION OF LABORATORY CORRECTIVE ACTION

Problem: No problems requiring corrective action were found.

Resolution: Not required.

Attached are copies of all data summary sheets, with data (a qualifiers indicated, and a copy of the chain of custody for the samples.

EPA 8082 CONGENER WATER

Ecology & Environment
1940 Webster St, ste 100
Oakland, CA 94612

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Sara Dwight
Project: Yosemite Creek Sediment RA
Sample ID: 1254-1
Sample Collection Date: 04/03/12

ARF: 67404
APPL ID: AY58416
QCG: #882WM-120302A-165532

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
EPA 8082c	PCB-101	0.035	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-105	0.014	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-114	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-118	0.027	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-123	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-126	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-128	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-138	0.027	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-153	0.019	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-156	0.0039	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-157	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-167	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-169	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-170	0.0029	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-18	0.0010	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-180	0.0036	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-187	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-189	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-195	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-206	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-209	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-28	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-44	0.011	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-52	0.023	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-66	0.026	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-77	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-8	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-81	Not detected	0.001	mg/L	03/29/12	03/29/12

4/11/12

Quant Method: CONG314.M
Run #: 0329007
Instrument: Lucy
Sequence: 120329
Dilution Factor: 1
Initials: DA

Printed: 04/04/12 9:01:00 AM
Form 1 - APPL Standard GC - No MC

EPA 8082 CONGENER WATER

Ecology & Environment
1940 Webster St, ste 100
Oakland, CA 94612

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Sara Dwight
Project: Yosemite Creek Sediment RA
Sample ID: 1254-2
Sample Collection Date: 04/03/12

ARF: 67404
APPL ID: AY58417
QCG: #882WM-120302A-165532

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
EPA 8082c	PCB-101	0.037	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-105	0.015	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-114	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-118	0.028	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-123	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-126	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-128	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-138	0.027	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-153	0.019	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-156	0.0043	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-157	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-167	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-169	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-170	0.0029	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-18	0.0010	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-180	0.0036	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-187	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-189	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-195	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-206	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-209	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-28	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-44	0.011	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-52	0.023	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-66	0.026	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-77	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-8	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-81	Not detected	0.001	mg/L	03/29/12	03/29/12

4/11/12

Quant Method: CONG314.M
Run #: 0329008
Instrument: Lucy
Sequence: 120329
Dilution Factor: 1
Initials: DA

Printed: 04/04/12 9:01:00 AM
Form 1 - APPL Standard GC - No MC

EPA 8082 CONGENER WATER

Ecology & Environment
1940 Webster St, ste 100
Oakland, CA 94612

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Sara Dwight
Project: Yosemite Creek Sediment RA
Sample ID: 1254-3
Sample Collection Date: 04/03/12

ARF: 67404
APPL ID: AY58418
QCG: #882WM-120302A-165532

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
EPA 8082c	PCB-101	0.036	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-105	0.015	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-114	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-118	0.028	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-123	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-126	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-128	0.0079	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-138	0.027	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-153	0.019	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-156	0.0042	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-157	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-167	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-169	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-170	0.0030	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-18	0.0010	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-180	0.0037	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-187	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-189	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-195	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-206	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-209	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-28	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-44	0.011	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-52	0.023	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-66	0.027	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-77	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-8	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-81	Not detected	0.001	mg/L	03/29/12	03/29/12

4/11/12

Quant Method: CONG314.M
Run #: 0329009
Instrument: Lucy
Sequence: 120329
Dilution Factor: 1
Initials: DA

Printed: 04/04/12 9:01:00 AM
Form 1 - APPL Standard GC - No MC

EPA 8082 CONGENER WATER

Ecology & Environment
1940 Webster St, ste 100
Oakland, CA 94612

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Sara Dwight
Project: Yosemite Creek Sediment RA
Sample ID: 1260-1
Sample Collection Date: 04/03/12

ARF: 67404
APPL ID: AY58419
QCG: #882WM-120302A-165532

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
EPA 8082c	PCB-101	0.013	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-105	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-114	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-118	0.0019	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-123	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-126	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-128	0.022	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-138	0.027	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-153	0.037	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-156	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-157	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-167	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-169	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-170	0.030	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-18	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-180	0.049	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-187	0.025	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-189	0.0010	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-195	0.0050	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-206	0.0028	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-209	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-28	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-44	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-52	0.0013	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-66	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-77	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-8	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-81	Not detected	0.001	mg/L	03/29/12	03/29/12

4/11/12

Quant Method: CONG314.M
Run #: 0329010
Instrument: Lucy
Sequence: 120329
Dilution Factor: 1
Initials: DA

Printed: 04/04/12 9:01:00 AM
Form 1 - APPL Standard GC - No MC

EPA 8082 CONGENER WATER

Ecology & Environment
1940 Webster St, ste 100
Oakland, CA 94612

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Sara Dwight
Project: Yosemite Creek Sediment RA
Sample ID: 1260-2
Sample Collection Date: 04/03/12

ARF: 67404
APPL ID: AY58420
QCG: #882WM-120302A-165532

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
EPA 8082c	PCB-101	0.013	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-105	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-114	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-118	0.0019	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-123	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-126	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-128	0.023	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-138	0.028	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-153	0.038	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-156	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-157	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-167	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-169	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-170	0.032	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-18	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-180	0.052	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-187	0.026	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-189	0.0011	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-195	0.0052	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-206	0.0030	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-209	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-28	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-44	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-52	0.0013	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-66	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-77	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-8	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-81	Not detected	0.001	mg/L	03/29/12	03/29/12

4/11/12

Quant Method: CONG314.M
Run #: 0329011
Instrument: Lucy
Sequence: 120329
Dilution Factor: 1
Initials: DA

Printed: 04/04/12 9:01:00 AM
Form 1 - APPL Standard GC - No MC

EPA 8082 CONGENER WATER

Ecology & Environment
1940 Webster St, ste 100
Oakland, CA 94612

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Sara Dwight
Project: Yosemite Creek Sediment RA
Sample ID: 1260-3
Sample Collection Date: 04/03/12

ARF: 67404
APPL ID: AY58421
QCG: #882WM-120302A-165532

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
EPA 8082c	PCB-101	0.014	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-105	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-114	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-118	0.0019	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-123	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-126	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-128	0.023	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-138	0.028	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-153	0.038	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-156	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-157	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-167	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-169	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-170	0.032	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-18	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-180	0.053	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-187	0.026	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-189	0.0011	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-195	0.0050	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-208	0.0030	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-209	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-28	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-44	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-52	0.0013	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-66	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-77	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-8	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-81	Not detected	0.001	mg/L	03/29/12	03/29/12

4/11/12

Quant Method: CONG314.M
Run #: 0329012
Instrument: Lucy
Sequence: 120329
Dilution Factor: 1
Initials: DA

Printed: 04/04/12 9:01:00 AM
Form 1 - APPL Standard GC - No MC

EPA 8082 CONGENER WATER

Ecology & Environment
1940 Webster St, ste 100
Oakland, CA 94612

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Sara Dwight
Project: Yosemite Creek Sediment RA
Sample ID: 1254 & 1260
Sample Collection Date: 04/03/12

ARF: 67404
APPL ID: AY58422
QCG: #882WM-120302A-165532

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
EPA 8082c	PCB-101	0.049	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-105	0.015	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-114	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-118	0.030	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-123	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-126	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-128	0.010	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-138	0.053	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-153	0.051	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-156	0.0062	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-157	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-167	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-169	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-170	0.033	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-18	0.0017	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-180	0.053	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-187	0.026	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-189	0.0014	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-195	0.0049	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-206	0.0029	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-209	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-28	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-44	0.011	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-52	0.024	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-66	0.032	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-77	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-8	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-81	Not detected	0.001	mg/L	03/29/12	03/29/12

4/11/12

Quant Method: CONG314.M
Run #: 0329013
Instrument: Lucy
Sequence: 120329
Dilution Factor: 1
Initials: DA

Printed: 04/04/12 9:01:00 AM
Form 1 - APPL Standard GC - No MC

REVIEWED
By EdwardsH at 12:54 pm, 4/11/12

EPA METHOD 8082
CONGENERS

APPL, INC.

REVIEWED
By EdwardsH at 12:54 pm, 4/11/12

Data Validation Package for

EPA METHOD 8082 CONGENERS

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LABORATORY NAME: *APPL, Inc.*

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APPL, INC.

EPA METHOD 8082
CONGENERS
Case Narrative

APPL, INC.

908 North Temperance Ave. ∇ Clovis, CA 93611 ∇ Phone 559-275-2175 ∇ Fax 559-275-4422

EPA Method 8082A
PCBs as Congeners
Case Narrative

ARF: 67404

Project: Yosemite Creek Sediment RA

State Certification Number: CA1312 (DW & WW)

NELAP Certification number: 05233CA (HW)

Results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Sample Table

CLIENT ID	APPL ID	Matrix	Date Sampled	Date Received
1254-1	AY58416	MISC	04/03/12	04/03/12
1254-2	AY58417	MISC	04/03/12	04/03/12
1254-3	AY58418	MISC	04/03/12	04/03/12
1260-1	AY58419	MISC	04/03/12	04/03/12
1260-2	AY58420	MISC	04/03/12	04/03/12
1260-3	AY58421	MISC	04/03/12	04/03/12
1254 & 1260	AY58422	MISC	04/03/12	04/03/12

Sample results are reported with J-values down to the method detection limit.

Sample Preparation:

Three PCB 1254 standards were diluted to mid-level range; three PCB 1260 standards were diluted to mid-level range; and one combined PCB 1254 and PCB 1260 standard was diluted to mid-level range.

Sample Analysis Information:

The samples were analyzed for PCBs as Congeners according to EPA method 8082A using a Hewlett Packard GC equipped with an ECD.

Quality Control/Assurance

Calibrations:

Initial and continuing calibrations were performed according to the method. All acceptance criteria were met.

Blanks:

The standards were not extracted, therefore there is no blank.

Spikes:

The standards were not extracted, therefore there is no lab control spike.

Surrogates

The standards were not extracted, therefore there is no surrogate

Summary:

No problem was encountered. All data were acceptable.

CERTIFICATION

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. These test results meet all requirements of NELAC. Release of the hard copy has been authorized by the Laboratory Manager or her designee, as verified by the following signature.

for SD 4/4/12

Sharon Dehmlow, Laboratory Director / Date

EPA METHOD 8082
CONGENERS
Chain of Custody and ARF

APPL, INC.

APPL - Analysis Request Form

67404

Client: Ecology & Environment
Address: 1940 Webster St, ste 100
Oakland, CA 94612
Attn: Sara Dwight
Phone: 510-893-6700 Fax: 510-550-2760
Job: Yosemite Creek Sediment RA
PO #: project # 002693.2024.01RA05
Chain of Custody (Y/N): N #
RAD Screen (Y/N): Y pH (Y/N): N
Turn Around Type: STD

Received by: RBP
Date Received: 04/03/12 Time: 15:37
Delivered by: IN HOUSE
Shuttle Custody Seals (Y/N): N Time Zone:
Chest Temp(s): IN HOUSE
Color: none
Samples Chilled until Placed in Refrig/Freezer: Y
Project Manager: Cynthia Clark
QC Report Type: DVP4/CA
Due Date: 04/24/12

Comments:
pdf of report on CD
EDD: SEDD 2a and excel
Self Calc Form 1s to MDL

Sample Distribution:
GC: 7-$882WMG

Charges:

Invoice To:
see tasking letter/PO
ref TDD # 09-08-12-0002
ref BOA# 002693-BOA2008

	Client ID	APPL ID	Sampled	Analyses Requested
1.	1254-1	AY58416M	04/03/12 00:01	$882WMG
2.	1254-2	AY58417M	04/03/12 00:01	$882WMG
3.	1254-3	AY58418M	04/03/12 00:01	$882WMG
4.	1260-1	AY58419M	04/03/12 00:01	$882WMG
5.	1260-2	AY58420M	04/03/12 00:01	$882WMG
6.	1260-3	AY58421M	04/03/12 00:01	$882WMG
7.	1254 & 1260	AY58422M	04/03/12 00:01	$882WMG

Note: All times, excluding sample collection times, are Pacific Time Zone unless noted otherwise. Collection times are in:

EPA METHOD 8082
CONGENERS
Sample Data

APPL, INC.

REVIEWED
By EdwardsH at 12:55 pm, 4/11/12

EPA 8082 CONGENER WATER

Ecology & Environment
1940 Webster St, ste 100
Oakland, CA 94612

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Sara Dwight
Project: Yosemite Creek Sediment RA
Sample ID: 1254-1
Sample Collection Date: 04/03/12

ARF: 67404
APPL ID: AY58416
QCG: #882WM-120302A-165532

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
EPA 8082c	PCB-101	0.035	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-105	0.014	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-114	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-118	0.027	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-123	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-126	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-128	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-138	0.027	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-153	0.019	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-156	0.0039	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-157	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-167	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-169	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-170	0.0029	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-18	0.0010	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-180	0.0036	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-187	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-189	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-195	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-206	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-209	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-28	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-44	0.011	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-52	0.023	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-66	0.026	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-77	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-8	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-81	Not detected	0.001	mg/L	03/29/12	03/29/12

Quant Method: CONG314.M
Run #: 0329007
Instrument: Lucy
Sequence: 120329
Dilution Factor: 1
Initials: DA

Printed: 04/04/12 9:01:00 AM
Form 1 - APPL Standard GC - No MC

Quantitation Report (QT Reviewed)

Signal #1 : G:\LUCY\DATA\120329\0329007.D\ECD1A.CH Vial: 7
Signal #2 : G:\LUCY\DATA\120329\0329007.D\ECD2B.CH
Acq On : 3-29-12 11:16:14 Operator: MA
Sample : AR 1254 0.5ug/ml 3/26/12 Inst : Lucy
Misc : WATER Multiplr: 1.00
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Mar 29 11:57 2012 Quant Results File: CONG314.RES

Quant Method : G:\LUCY\DATA\120329\CONG314.M (RTE Integrator)
Title : 508/608/8081
Last Update : Wed Mar 21 09:24:57 2012
Response via : Multiple Level Calibration
DataAcq Meth : EPA8081N.M

Volume Inj. : 2ul
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.32 Signal #2 Info : 0.32

RA 4/3/12

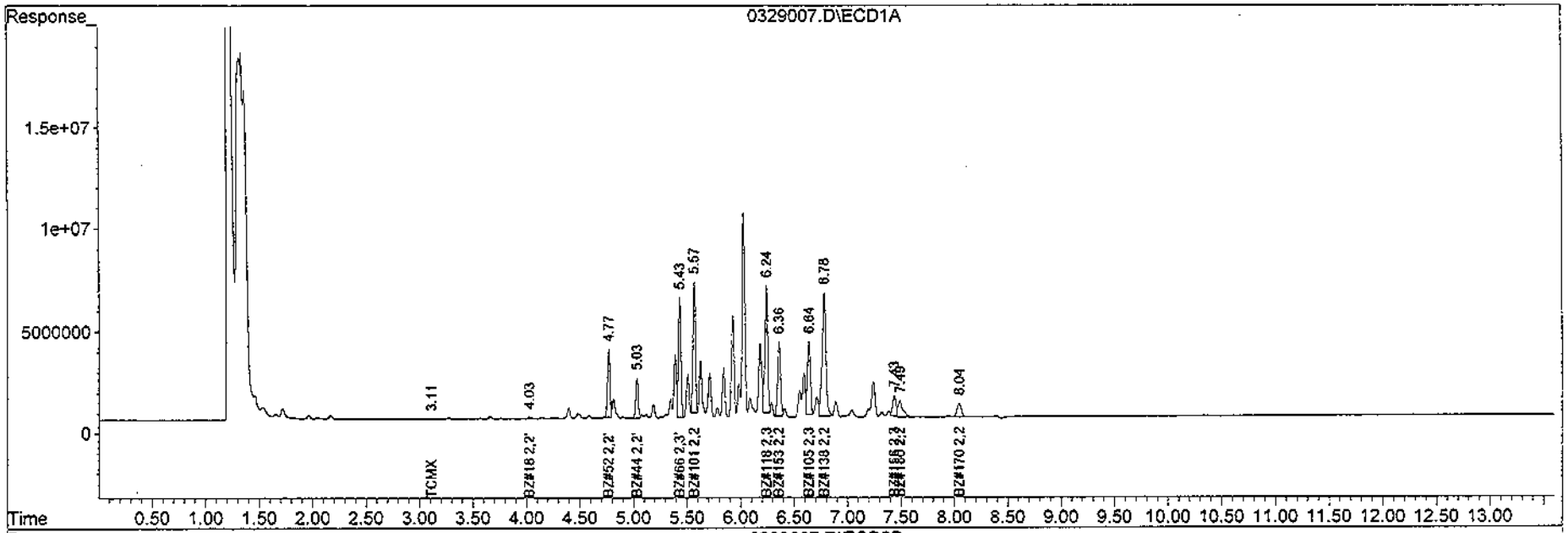
	Compound	RT#1	RT#2	Resp#1	Resp#2	~~ppb~~ ppm	~~ppb~~ ppm
	System Monitoring Compounds						
19) S	TCMX	3.11	3.97	10880	13599	0.0000	0.0000 #
Surrogate Spike	0.100 Range	25 - 150	Recovery	=		0.00%#	0.00%#
	Target Compounds						
2) TM	BZ#18 2,2',5-Tri	4.03	4.66	100820	88614	0.0010	0.0010
4) TM	BZ#44 2,2',3,5'-	5.03	5.68	1953812	1802850	0.0107	0.0112
5) TM	BZ#52 2,2',5,5'-	4.77	5.48	3344940	3241145	0.0230	0.0249
6) TM	BZ#66 2,3',4,4'-	5.43	6.18	5889708	1567857	0.0264	0.0086 #
7) TM	BZ#101 2,2',4,5,	5.57	6.34	6423084	7712749	0.0349	0.0504 #
8) TM	BZ#105 2,3,3',4,	6.64	7.50	3589297	3006748	0.0142	0.0164
9) TM	BZ#118 2,3',4,4'	6.24	7.14	6226553	5621042	0.0270	0.0364 #
11) TM	BZ#138 2,2',3,4,	6.78	7.71	6050335	4808351	0.0268	0.0292
12) TM	BZ#153 2,2',4,4'	6.36	7.31	3678210	2881566	0.0190	0.0110 #
13) TM	BZ#170 2,2',3,3'	8.04	9.18	667858	480395	0.0029	0.0030
14) TM	BZ#180 2,2',3,4,	7.49	8.66	794362	590467	0.0036	0.0035
24) TM	BZ#156 2,3,3',4,	7.43	8.56	998518	781506	0.0039	0.0047
	Target Compounds						
1) TM	BZ#8 2,4'-DiCBP	0.00	0.00	0	0	N.D. d	N.D. d
3) TM	BZ#28 2,4,4'-Tri	0.00	0.00	0	0	N.D. d	N.D. d
10) TM	BZ#128 2,2',3,3'	0.00	0.00	0	0	N.D. d	N.D. d
15) TM	BZ#187 2,2',3,4'	0.00	0.00	0	0	N.D. d	N.D. d
16) TM	BZ#195 2,2',3,3'	0.00	0.00	0	0	N.D. d	N.D. d
17) TM	BZ#206 2,2',3,3'	0.00	0.00	0	0	N.D. d	N.D. d
18) TM	BZ#209 DecaCBP	0.00	0.00	0	0	N.D. d	N.D. d
20) TM	BZ#77 3,3',4,4'-	0.00	0.00	0	0	N.D. d	N.D. d
21) TM	BZ#81 3,4,4',5-T	0.00	0.00	0	0	N.D. d	N.D. d
22) TM	BZ#123 2',3,4,4'	0.00	0.00	0	0	N.D. d	N.D. d
23) TM	BZ#126 3,3',4,4'	0.00	0.00	0	0	N.D. d	N.D. d
25) TM	BZ#157 2,3,3',4,	0.00	0.00	0	0	N.D. d	N.D. d
26) TM	BZ#167 2,3',4,4'	0.00	0.00	0	0	N.D. d	N.D. d
27) TM	BZ#169 3,3',4,4'	0.00	0.00	0	0	N.D. d	N.D. d
28) BM	BZ#189 2,3,3',4,	0.00	0.00	0	0	N.D. d	N.D. d
29) TM	BZ#114 2,3,4,4',	0.00	0.00	0	0	N.D. d	N.D. d

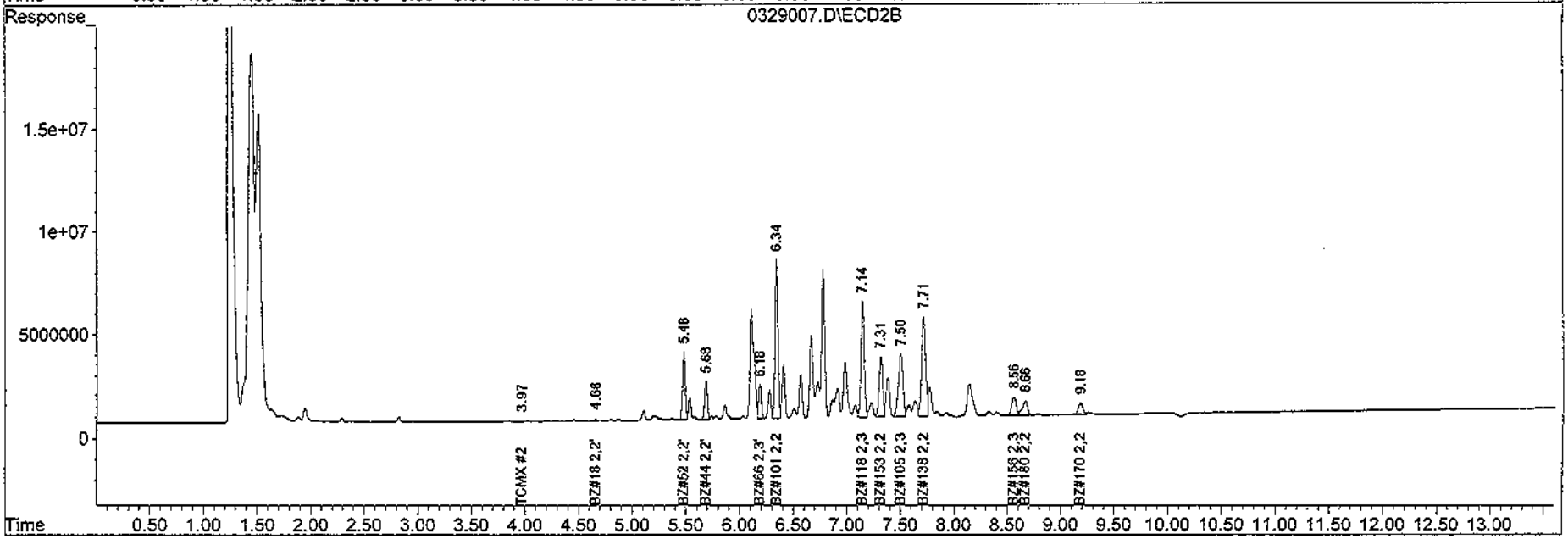
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (QT Reviewed)

Data File : G:\LUCY\DATA\120329\0329007.D
Acq On : 3-29-12 11:16:14
Sample : AR 1254 0.5ug/ml 3/26/12
Misc : WATER
Quant Method : G:\LUCY\DATA\120329\CONG314.M

Vial: 7
Operator: MA
Inst : Lucy
Multiplr: 1.00





REVIEWED
By EdwardsH at 12:55 pm, 4/11/12

EPA 8082 CONGENER WATER

Ecology & Environment
1940 Webster St, ste 100
Oakland, CA 94612

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Sara Dwight
Project: Yosemite Creek Sediment RA
Sample ID: 1254-2
Sample Collection Date: 04/03/12

ARF: 67404
APPL ID: AY58417
QCG: #882WM-120302A-165532

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
EPA 8082c	PCB-101	0.037	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-105	0.015	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-114	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-118	0.028	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-123	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-126	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-128	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-138	0.027	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-153	0.019	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-156	0.0043	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-157	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-167	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-169	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-170	0.0029	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-18	0.0010	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-180	0.0036	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-187	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-189	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-195	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-206	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-209	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-28	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-44	0.011	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-52	0.023	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-66	0.026	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-77	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-8	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-81	Not detected	0.001	mg/L	03/29/12	03/29/12

Quant Method: CONG314.M
Run #: 0329008
Instrument: Lucy
Sequence: 120329
Dilution Factor: 1
Initials: DA

Printed: 04/04/12 9:01:00 AM
Form 1 - APPL Standard GC - No MC

Quantitation Report (QT Reviewed)

Signal #1 : G:\LUCY\DATA\120329\0329008.D\ECD1A.CH Vial: 8
Signal #2 : G:\LUCY\DATA\120329\0329008.D\ECD2B.CH
Acq On : 3-29-12 11:32:28 Operator: MA
Sample : AR 1254 0.5ug/ml 3/26/12 Inst : Lucy
Misc : WATER Multiplr: 1.00
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Mar 29 14:14 2012 Quant Results File: CONG314.RES

Quant Method : G:\LUCY\DATA\120329\CONG314.M (RTE Integrator)
Title : 508/608/8081
Last Update : Wed Mar 21 09:24:57 2012
Response via : Multiple Level Calibration
DataAcq Meth : EPA8081N.M

Volume Inj. : 2ul
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.32 Signal #2 Info : 0.32

TA 4/3/12

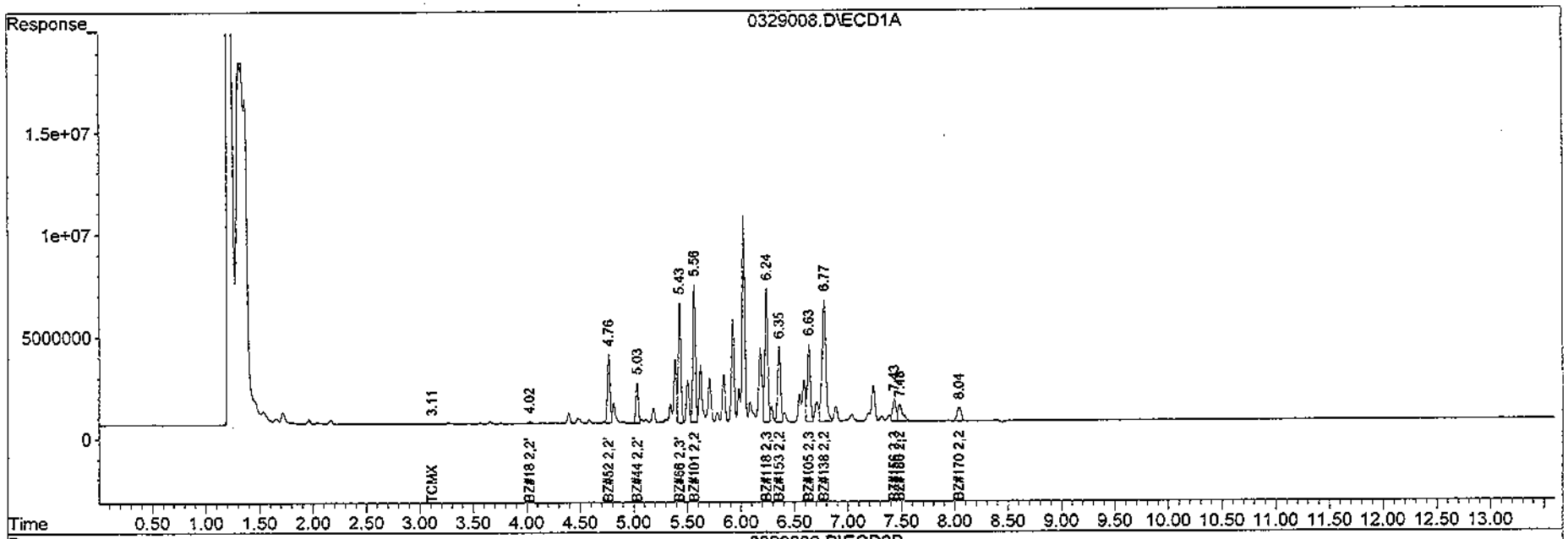
	Compound	RT#1	RT#2	Resp#1	Resp#2	~~ppb~~ ppm	~~ppb~~ ppm
	System Monitoring Compounds						
19) S	TCMX	3.11	3.93	10742	8049	0.0000	0.0000
	Surrogate Spike 0.100 Range 25 - 150 Recovery =					0.00%#	0.00%#
	Target Compounds						
2) TM	BZ#18 2,2',5-Tri	4.02	4.66	100996	85770	0.0010	0.0009
4) TM	BZ#44 2,2',3,5'-	5.03	5.68	2004013	1825695	0.0109	0.0113
5) TM	BZ#52 2,2',5,5'-	4.76	5.48	3399473	3301807	0.0233	0.0254
6) TM	BZ#66 2,3',4,4'-	5.43	6.18	5899072	1580964	0.0265	0.0087 #
7) TM	BZ#101 2,2',4,5,	5.56	6.34	6744723	7902335	0.0367	0.0517 #
8) TM	BZ#105 2,3,3',4,	6.63	7.50	3838582	3061785	0.0152	0.0167
9) TM	BZ#118 2,3',4,4'	6.24	7.14	6548506	5518406	0.0284	0.0357 #
11) TM	BZ#138 2,2',3,4,	6.77	7.71	5982020	4871169	0.0265	0.0296
12) TM	BZ#153 2,2',4,4'	6.35	7.31	3711181	2911681	0.0191	0.0111 #
13) TM	BZ#170 2,2',3,3'	8.04	9.18	670701	459140	0.0029	0.0029
14) TM	BZ#180 2,2',3,4,	7.48	8.66	805296	590597	0.0036	0.0035
24) TM	BZ#156 2,3,3',4,	7.43	8.55	1099877	826402	0.0043	0.0049
	Target Compounds						
1) TM	BZ#8 2,4'-DiCBP	0.00	0.00	0	0	N.D. d	N.D. d
3) TM	BZ#28 2,4,4'-Tri	0.00	0.00	0	0	N.D. d	N.D. d
10) TM	BZ#128 2,2',3,3'	0.00	0.00	0	0	N.D. d	N.D. d
15) TM	BZ#187 2,2',3,4'	0.00	0.00	0	0	N.D. d	N.D. d
16) TM	BZ#195 2,2',3,3'	0.00	0.00	0	0	N.D. d	N.D. d
17) TM	BZ#206 2,2',3,3'	0.00	0.00	0	0	N.D. d	N.D. d
18) TM	BZ#209 DecaCBP	0.00	0.00	0	0	N.D. d	N.D. d
20) TM	BZ#77 3,3',4,4'-	0.00	0.00	0	0	N.D. d	N.D. d
21) TM	BZ#81 3,4,4',5-T	0.00	0.00	0	0	N.D. d	N.D. d
22) TM	BZ#123 2',3,4,4'	0.00	0.00	0	0	N.D. d	N.D. d
23) TM	BZ#126 3,3',4,4'	0.00	0.00	0	0	N.D. d	N.D. d
25) TM	BZ#157 2,3,3',4,	0.00	0.00	0	0	N.D. d	N.D. d
26) TM	BZ#167 2,3',4,4'	0.00	0.00	0	0	N.D. d	N.D. d
27) TM	BZ#169 3,3',4,4'	0.00	0.00	0	0	N.D. d	N.D. d
28) BM	BZ#189 2,3,3',4,	0.00	0.00	0	0	N.D. d	N.D. d
29) TM	BZ#114 2,3,4,4',	0.00	0.00	0	0	N.D. d	N.D. d

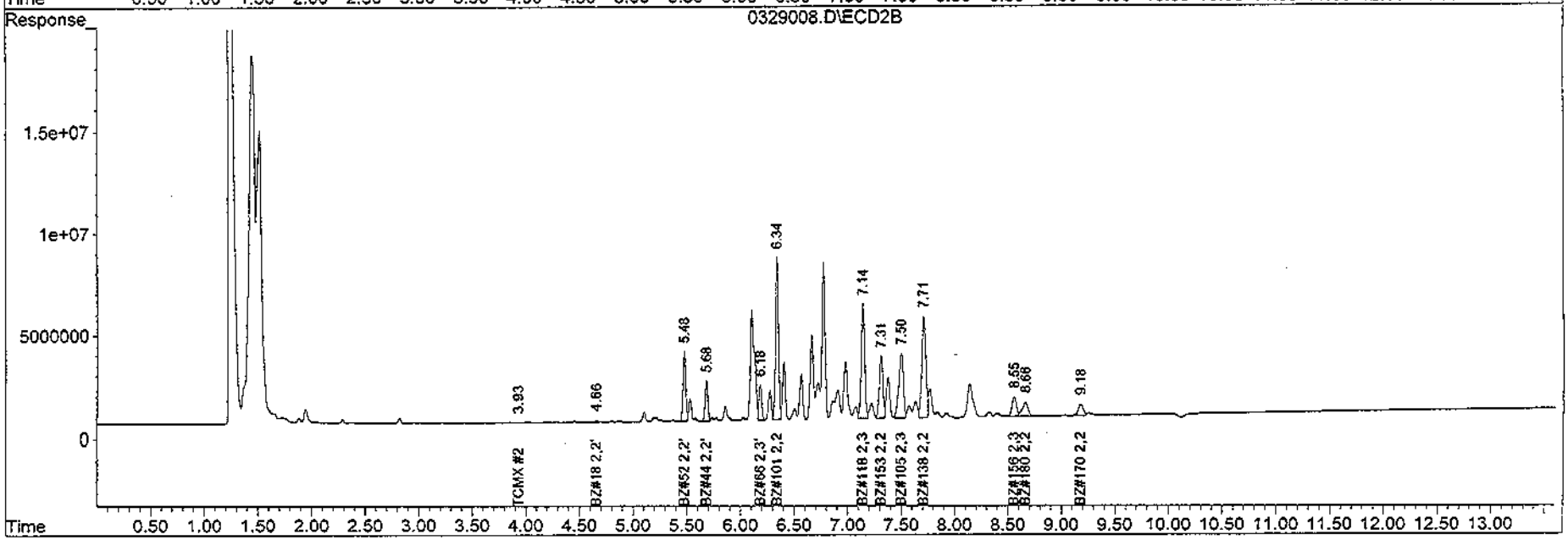
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (QT Reviewed)

Data File : G:\LUCY\DATA\120329\0329008.D
Acq On : 3-29-12 11:32:28
Sample : AR 1254 0.5ug/ml 3/26/12
Misc : WATER
Quant Method : G:\LUCY\DATA\120329\CONG314.M

Vial: 8
Operator: MA
Inst : Lucy
Multiplr: 1.00





REVIEWED
By EdwardsH at 12:55 pm, 4/11/12

EPA 8082 CONGENER WATER

Ecology & Environment
1940 Webster St, ste 100
Oakland, CA 94612

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Sara Dwight
Project: Yosemite Creek Sediment RA
Sample ID: 1254-3
Sample Collection Date: 04/03/12

ARF: 67404
APPL ID: AY58418
QCG: #882WM-120302A-165532

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
EPA 8082c	PCB-101	0.036	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-105	0.015	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-114	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-118	0.028	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-123	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-126	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-128	0.0079	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-138	0.027	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-153	0.019	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-156	0.0042	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-157	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-167	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-169	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-170	0.0030	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-18	0.0010	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-180	0.0037	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-187	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-189	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-195	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-206	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-209	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-28	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-44	0.011	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-52	0.023	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-66	0.027	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-77	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-8	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-81	Not detected	0.001	mg/L	03/29/12	03/29/12

Quant Method: CONG314.M
Run #: 0329009
Instrument: Lucy
Sequence: 120329
Dilution Factor: 1
Initials: DA

Printed: 04/04/12 9:01:00 AM
Form 1 - APPL Standard GC - No MC

Quantitation Report (QT Reviewed)

Signal #1 : G:\LUCY\DATA\120329\0329009.D\ECD1A.CH Vial: 9
Signal #2 : G:\LUCY\DATA\120329\0329009.D\ECD2B.CH
Acq On : 3-29-12 11:48:51 Operator: MA
Sample : AR 1254 0.5ug/ml 3/26/12 Inst : Lucy
Misc : WATER Multiplr: 1.00
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Mar 29 14:13 2012 Quant Results File: CONG314.RES

Quant Method : G:\LUCY\DATA\120329\CONG314.M (RTE Integrator)
Title : 508/608/8081
Last Update : Wed Mar 21 09:24:57 2012
Response via : Multiple Level Calibration
DataAcq Meth : EPA8081N.M

Volume Inj. : 2ul
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.32 Signal #2 Info : 0.32

TA 4/3/12

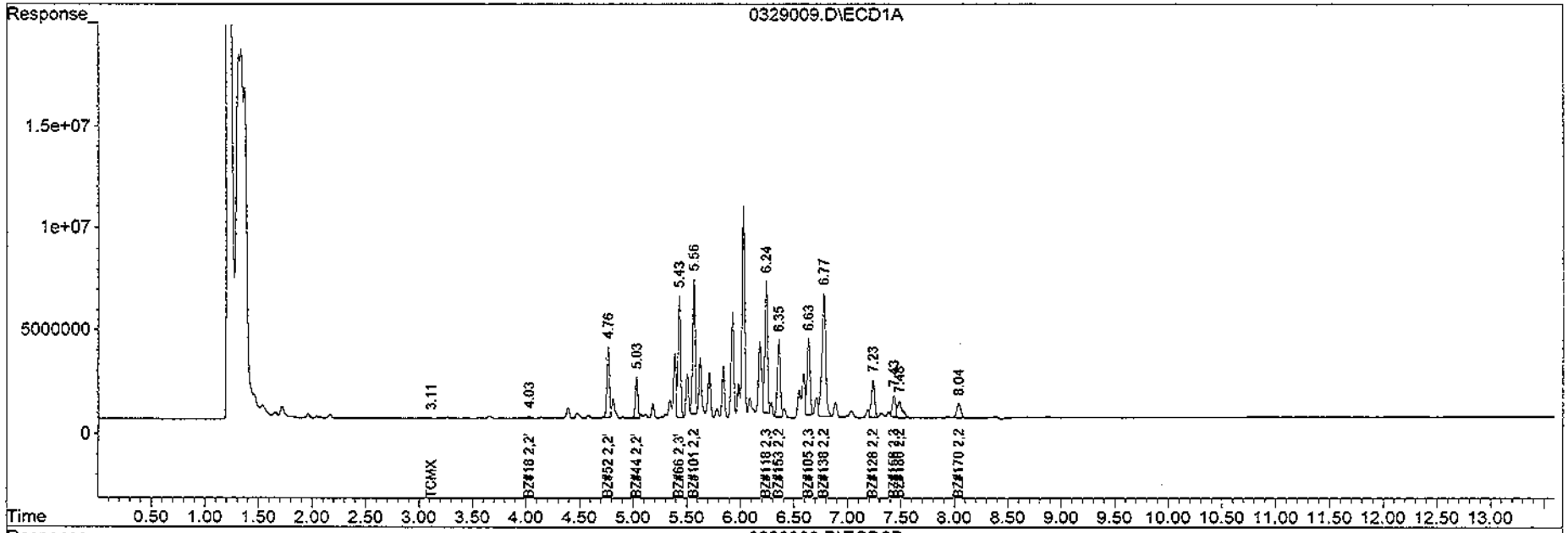
	Compound	RT#1	RT#2	Resp#1	Resp#2	~~ppb~~ ppm	~~ppb~~ ppm
	System Monitoring Compounds						
19) S	TCMX	3.11	3.92	11831	8396	0.0000	0.0000
	Surrogate Spike 0.100 Range 25 - 150 Recovery =					0.00%#	0.00%#
	Target Compounds						
2) TM	BZ#18 2,2',5-Tri	4.03	4.66	104258	85621	0.0010	0.0009
4) TM	BZ#44 2,2',3,5'-	5.03	5.68	1983309	1810143	0.0108	0.0112
5) TM	BZ#52 2,2',5,5'-	4.76	5.48	3420830	3349580	0.0235	0.0258
6) TM	BZ#66 2,3',4,4'-	5.43	6.18	5962005	1621911	0.0268	0.0089 #
7) TM	BZ#101 2,2',4,5,	5.56	6.34	6587749	7728331	0.0358	0.0505 #
8) TM	BZ#105 2,3,3',4,	6.63	7.50	3697050	3059768	0.0146	0.0167
9) TM	BZ#118 2,3',4,4'	6.24	7.14	6454416	5489327	0.0280	0.0356 #
10) TM	BZ#128 2,2',3,3'	7.23	8.14	1784283	1503552	0.0079	0.0095
11) TM	BZ#138 2,2',3,4,	6.77	7.71	6038123	5148707	0.0268	0.0313
12) TM	BZ#153 2,2',4,4'	6.35	7.31	3727414	2975101	0.0192	0.0114 #
13) TM	BZ#170 2,2',3,3'	8.04	9.18	682908	444156	0.0030	0.0028
14) TM	BZ#180 2,2',3,4,	7.48	8.66	815419	613286	0.0037	0.0037
24) TM	BZ#156 2,3,3',4,	7.43	8.55	1072266	878062	0.0042	0.0052 #
	Target Compounds						
1) TM	BZ#8 2,4'-DiCBP	0.00	0.00	0	0	N.D. d	N.D. d
3) TM	BZ#28 2,4,4'-Tri	0.00	0.00	0	0	N.D. d	N.D. d
15) TM	BZ#187 2,2',3,4'	0.00	0.00	0	0	N.D. d	N.D. d
16) TM	BZ#195 2,2',3,3'	0.00	0.00	0	0	N.D. d	N.D. d
17) TM	BZ#206 2,2',3,3'	0.00	0.00	0	0	N.D. d	N.D. d
18) TM	BZ#209 DecaCBP	0.00	0.00	0	0	N.D. d	N.D. d
20) TM	BZ#77 3,3',4,4'-	0.00	0.00	0	0	N.D. d	N.D. d
21) TM	BZ#81 3,4,4',5-T	0.00	0.00	0	0	N.D. d	N.D. d
22) TM	BZ#123 2',3,4,4'	0.00	0.00	0	0	N.D. d	N.D. d
23) TM	BZ#126 3,3',4,4'	0.00	0.00	0	0	N.D. d	N.D. d
25) TM	BZ#157 2,3,3',4,	0.00	0.00	0	0	N.D. d	N.D. d
26) TM	BZ#167 2,3',4,4'	0.00	0.00	0	0	N.D. d	N.D. d
27) TM	BZ#169 3,3',4,4'	0.00	0.00	0	0	N.D. d	N.D. d
28) BM	BZ#189 2,3,3',4,	0.00	0.00	0	0	N.D. d	N.D. d
29) TM	BZ#114 2,3,4,4',	0.00	0.00	0	0	N.D. d	N.D. d

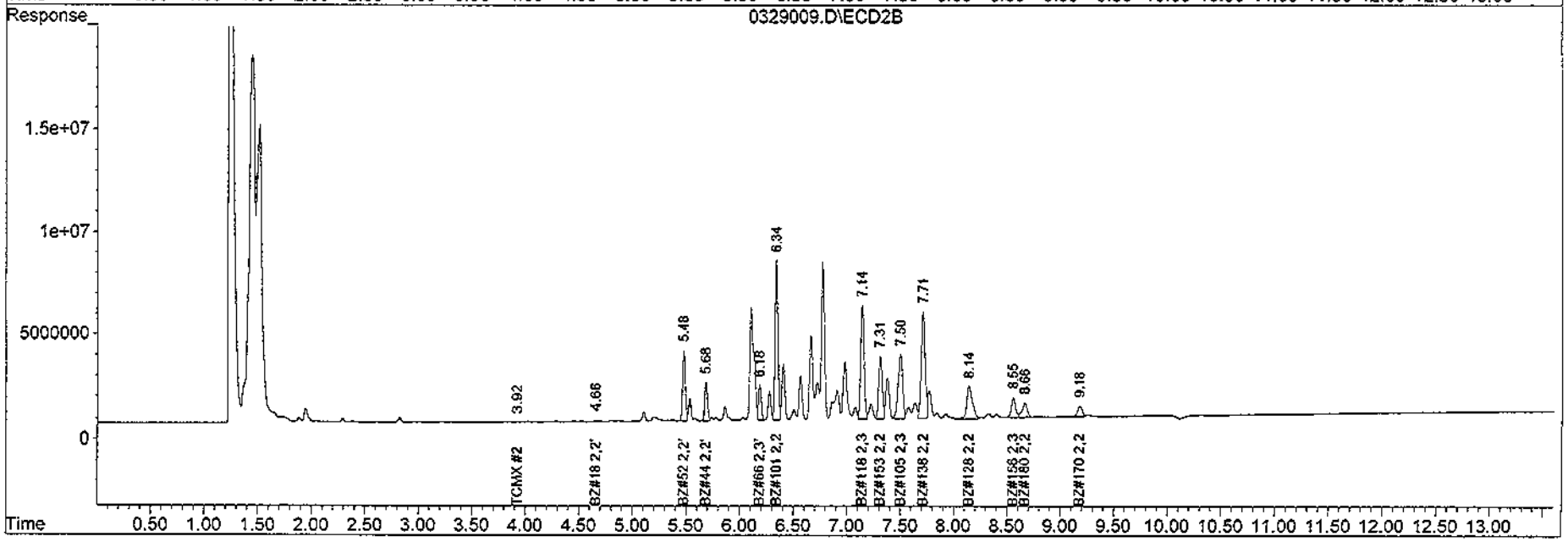
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (QT Reviewed)

Data File : G:\LUCY\DATA\120329\0329009.D
Acq On : 3-29-12 11:48:51
Sample : AR 1254 0.5ug/ml 3/26/12
Misc : WATER
Quant Method : G:\LUCY\DATA\120329\CONG314.M

Vial: 9
Operator: MA
Inst : Lucy
Multiplr: 1.00





REVIEWED
By EdwardsH at 12:56 pm, 4/11/12

EPA 8082 CONGENER WATER

Ecology & Environment
1940 Webster St, ste 100
Oakland, CA 94612

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Sara Dwight
Project: Yosemite Creek Sediment RA
Sample ID: 1260-1
Sample Collection Date: 04/03/12

ARF: 67404
APPL ID: AY58419
QCG: #882WM-120302A-165532

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
EPA 8082c	PCB-101	0.013	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-105	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-114	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-118	0.0019	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-123	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-126	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-128	0.022	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-138	0.027	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-153	0.037	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-156	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-157	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-167	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-169	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-170	0.030	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-18	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-180	0.049	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-187	0.025	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-189	0.0010	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-195	0.0050	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-206	0.0028	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-209	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-28	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-44	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-52	0.0013	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-66	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-77	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-8	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-81	Not detected	0.001	mg/L	03/29/12	03/29/12

Quant Method: CONG314.M
Run #: 0329010
Instrument: Lucy
Sequence: 120329
Dilution Factor: 1
Initials: DA

Printed: 04/04/12 9:01:00 AM
Form 1 - APPL Standard GC - No MC

Quantitation Report (QT Reviewed)

Signal #1 : G:\LUCY\DATA\120329\0329010.D\ECD1A.CH Vial: 10
Signal #2 : G:\LUCY\DATA\120329\0329010.D\ECD2B.CH
Acq On : 3-29-12 12:05:08 Operator: MA
Sample : AR 1260 0.5ug/ml 3/22/12 Inst : Lucy
Misc : WATER Multiplr: 1.00
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Mar 29 14:51 2012 Quant Results File: CONG314.RES

Quant Method : G:\LUCY\DATA\120329\CONG314.M (RTE Integrator)
Title : 508/608/8081
Last Update : Wed Mar 21 09:24:57 2012
Response via : Multiple Level Calibration
DataAcq Meth : EPA8081N.M

Volume Inj. : 2ul
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.32 Signal #2 Info : 0.32

AA 4/5/12

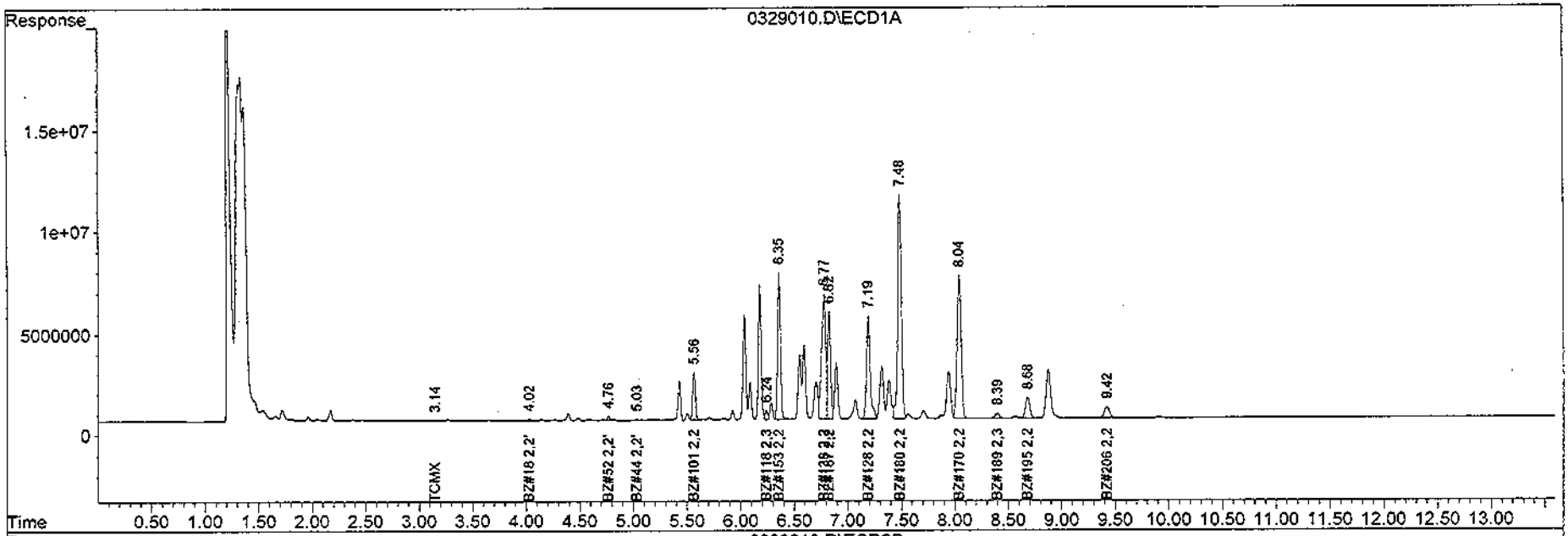
	Compound	RT#1	RT#2	Resp#1	Resp#2	~~ppb~~ ppm	~~ppb~~ ppm
	System Monitoring Compounds						
19)	S TCMX	3.14	3.94	31110	33020	0.0001	0.0001
	Surrogate Spike 0.100 Range 25 - 150 Recovery =					0.10%#	0.10%#
	Target Compounds						
2)	TM BZ#18 2,2',5-Tri	4.02	4.66	73510	49736	0.0007	0.0005 #
4)	TM BZ#44 2,2',3,5'-	5.03	5.68	58413	45604	0.0003	0.0003
5)	TM BZ#52 2,2',5,5'-	4.76	5.48	187040	174715	0.0013	0.0013
7)	TM BZ#101 2,2',4,5,	5.56	6.34	2365550	2163188	0.0129	0.0141
9)	TM BZ#118 2,3',4,4'	6.24	7.14	435966	644996	0.0019	0.0042 #
10)	TM BZ#128 2,2',3,3'	7.19f	8.17	5068770	3818815	0.0224	0.0241
11)	TM BZ#138 2,2',3,4,	6.77	7.71	6129131	6061989	0.0272	0.0368 #
12)	TM BZ#153 2,2',4,4'	6.35	7.31	7173741	5479883	0.0370	0.0209 #
13)	TM BZ#170 2,2',3,3'	8.04	9.18	6971566	4697952	0.0303	0.0294
14)	TM BZ#180 2,2',3,4,	7.48	8.66	11031446	8052909	0.0495	0.0482
15)	TM BZ#187 2,2',3,4'	6.82	7.84	5307068	4203455	0.0252	0.0278
16)	TM BZ#195 2,2',3,3'	8.68	9.92	1013856	844430	0.0050	0.0060
17)	TM BZ#206 2,2',3,3'	9.42	10.95	527970	412536	0.0028	0.0032
28)	BM BZ#189 2,3,3',4,	8.39	9.82	231871	106374	0.0010	0.0007 #
	Target Compounds						
1)	TM BZ#8 2,4'-DiCBP	0.00	0.00	0	0	N.D. d	N.D. d
3)	TM BZ#28 2,4,4'-Tri	0.00	0.00	0	0	N.D. d	N.D. d
6)	TM BZ#66 2,3',4,4'-	0.00	0.00	0	0	N.D. d	N.D. d
8)	TM BZ#105 2,3,3',4,	0.00	0.00	0	0	N.D. d	N.D. d
18)	TM BZ#209 DecaCBP	0.00	0.00	0	0	N.D. d	N.D. d
20)	TM BZ#77 3,3',4,4'-	0.00	0.00	0	0	N.D. d	N.D. d
21)	TM BZ#81 3,4,4',5-T	0.00	0.00	0	0	N.D. d	N.D. d
22)	TM BZ#123 2',3,4,4'	0.00	0.00	0	0	N.D. d	N.D. d
23)	TM BZ#126 3,3',4,4'	0.00	0.00	0	0	N.D. d	N.D. d
24)	TM BZ#156 2,3,3',4,	0.00	0.00	0	0	N.D. d	N.D. d
25)	TM BZ#157 2,3,3',4,	0.00	0.00	0	0	N.D. d	N.D. d
26)	TM BZ#167 2,3',4,4'	0.00	0.00	0	0	N.D. d	N.D. d
27)	TM BZ#169 3,3',4,4'	0.00	0.00	0	0	N.D. d	N.D. d
29)	TM BZ#114 2,3,4,4',	0.00	0.00	0	0	N.D. d	N.D. d

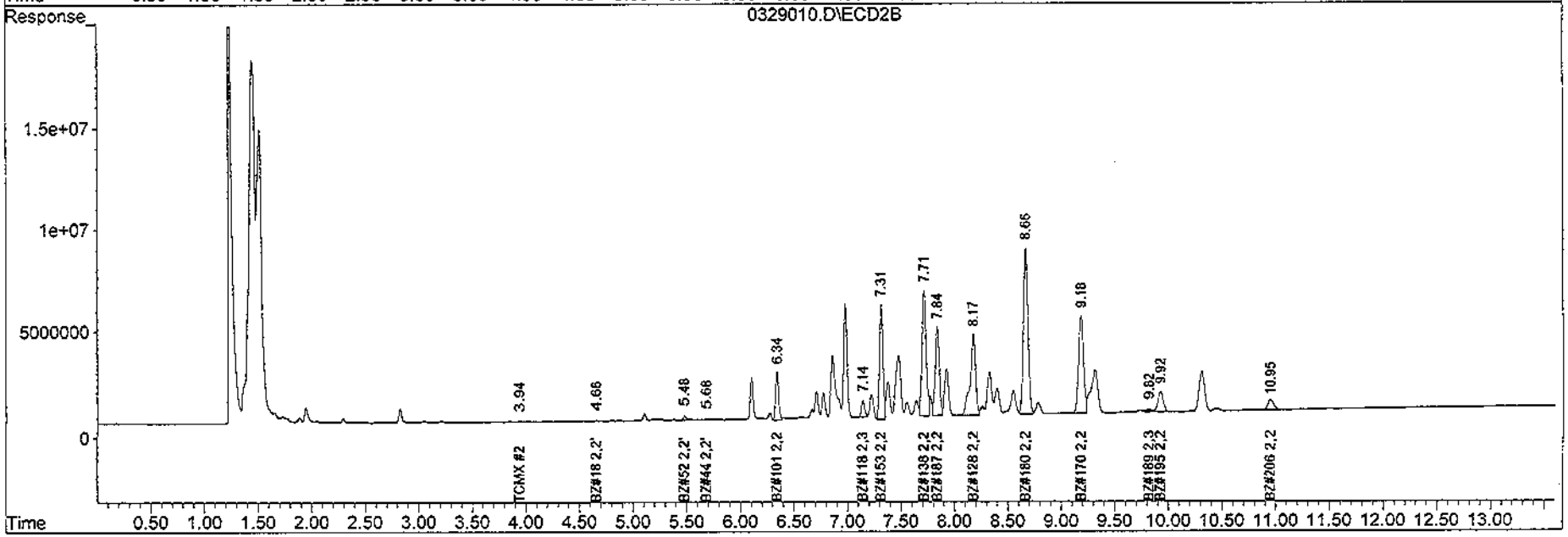
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (QT Reviewed)

Data File : G:\LUCY\DATA\120329\0329010.D
Acq On : 3-29-12 12:05:08
Sample : AR 1260 0.5ug/ml 3/22/12
Misc : WATER
Quant Method : G:\LUCY\DATA\120329\CONG314.M

Vial: 10
Operator: MA
Inst : Lucy
Multiplr: 1.00





REVIEWED
By EdwardsH at 12:56 pm, 4/11/12

EPA 8082 CONGENER WATER

Ecology & Environment
1940 Webster St, ste 100
Oakland, CA 94612

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Sara Dwight
Project: Yosemite Creek Sediment RA
Sample ID: 1260-2
Sample Collection Date: 04/03/12

ARF: 67404
APPL ID: AY58420
QCG: #882WM-120302A-165532

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
EPA 8082c	PCB-101	0.013	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-105	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-114	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-118	0.0019	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-123	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-126	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-128	0.023	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-138	0.028	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-153	0.038	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-156	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-157	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-167	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-169	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-170	0.032	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-18	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-180	0.052	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-187	0.026	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-189	0.0011	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-195	0.0052	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-206	0.0030	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-209	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-28	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-44	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-52	0.0013	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-66	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-77	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-8	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-81	Not detected	0.001	mg/L	03/29/12	03/29/12

Quant Method: CONG314.M
Run #: 0329011
Instrument: Lucy
Sequence: 120329
Dilution Factor: 1
Initials: DA

Printed: 04/04/12 9:01:00 AM
Form 1 - APPL Standard GC - No MC

Quantitation Report (QT Reviewed)

Signal #1 : G:\LUCY\DATA\120329\0329011.D\ECD1A.CH Vial: 11
Signal #2 : G:\LUCY\DATA\120329\0329011.D\ECD2B.CH
Acq On : 3-29-12 12:21:25 Operator: MA
Sample : AR 1260 0.5ug/ml 3/22/12 Inst : Lucy
Misc : WATER Multiplr: 1.00
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Mar 29 14:44 2012 Quant Results File: CONG314.RES

Quant Method : G:\LUCY\DATA\120329\CONG314.M (RTE Integrator)
Title : 508/608/8081
Last Update : Wed Mar 21 09:24:57 2012
Response via : Multiple Level Calibration
DataAcq Meth : EPA8081N.M

Volume Inj. : 2ul
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.32 Signal #2 Info : 0.32

TA 4/13/12

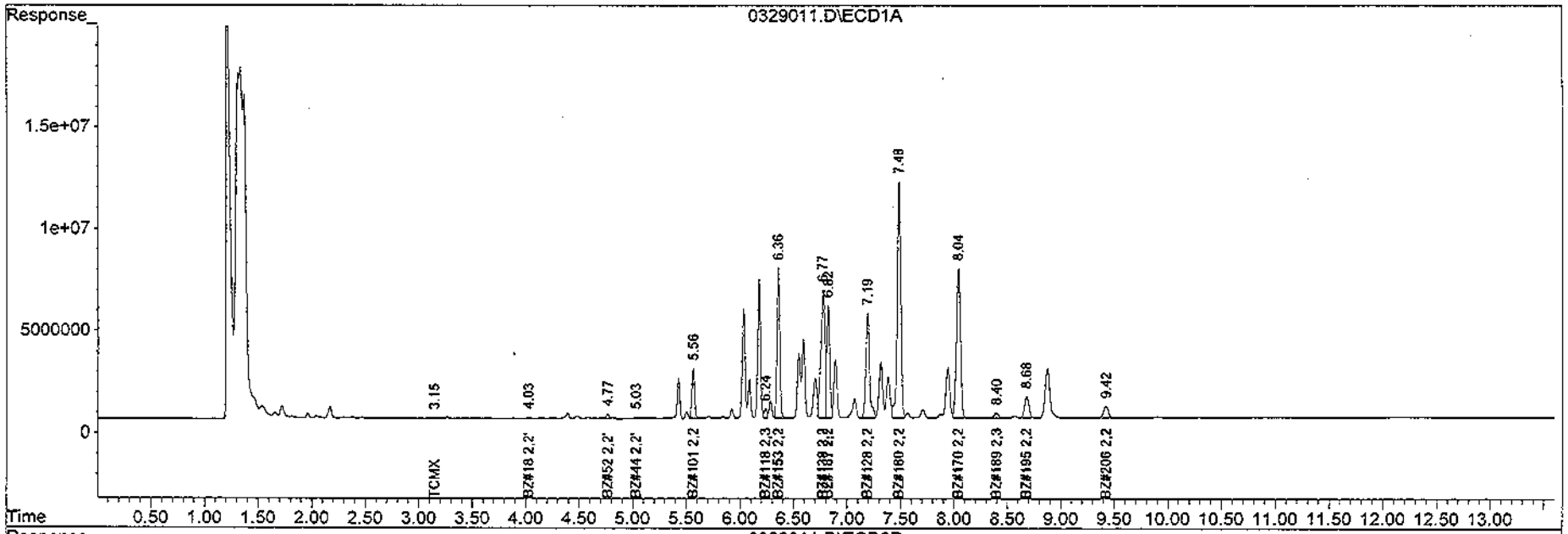
Compound	RT#1	RT#2	Resp#1	Resp#2	~~ppb~~ ppm	~~ppb~~ ppm
System Monitoring Compounds						
19) S TCMX	3.15	3.94	30858	29155	0.0001	0.0001
Surrogate Spike 0.100 Range 25 - 150 Recovery =					0.10%#	0.10%#
Target Compounds						
2) TM BZ#18 2,2',5-Tri	4.03	4.66	75512	51466	0.0008	0.0006 #
4) TM BZ#44 2,2',3,5'-	5.03	5.69	57794	45793	0.0003	0.0003
5) TM BZ#52 2,2',5,5'-	4.77	5.48	195368	178459	0.0013	0.0014
7) TM BZ#101 2,2',4,5,	5.56	6.34	2447474	2183318	0.0133	0.0143
9) TM BZ#118 2,3',4,4'	6.24	7.14	437020	670898	0.0019	0.0043 #
10) TM BZ#128 2,2',3,3'	7.19f	8.18	5111902	3925757	0.0226	0.0247
11) TM BZ#138 2,2',3,4,	6.77	7.71	6267565	6191111	0.0278	0.0376 #
12) TM BZ#153 2,2',4,4'	6.36	7.31	7319579	5582915	0.0377	0.0213 #
13) TM BZ#170 2,2',3,3'	8.04	9.18	7272790	4771696	0.0316	0.0298
14) TM BZ#180 2,2',3,4,	7.48	8.67	11492960	8388513	0.0515	0.0503
15) TM BZ#187 2,2',3,4'	6.82	7.84	5488814	4215717	0.0260	0.0279
16) TM BZ#195 2,2',3,3'	8.68	9.92	1044452	837361	0.0052	0.0059
17) TM BZ#206 2,2',3,3'	9.42	10.95	559506	443795	0.0030	0.0035
28) BM BZ#189 2,3,3',4,	8.40	9.82	245410	107021	0.0011	0.0007 #
Target Compounds						
1) TM BZ#8 2,4'-DiCBP	0.00	0.00	0	0	N.D. d	N.D. d
3) TM BZ#28 2,4,4'-Tri	0.00	0.00	0	0	N.D. d	N.D. d
6) TM BZ#66 2,3',4,4'-	0.00	0.00	0	0	N.D. d	N.D. d
8) TM BZ#105 2,3,3',4,	0.00	0.00	0	0	N.D. d	N.D. d
18) TM BZ#209 DecaCBP	0.00	0.00	0	0	N.D. d	N.D. d
20) TM BZ#77 3,3',4,4'-	0.00	0.00	0	0	N.D. d	N.D. d
21) TM BZ#81 3,4,4',5-T	0.00	0.00	0	0	N.D. d	N.D. d
22) TM BZ#123 2',3,4,4'	0.00	0.00	0	0	N.D. d	N.D. d
23) TM BZ#126 3,3',4,4'	0.00	0.00	0	0	N.D. d	N.D. d
24) TM BZ#156 2,3,3',4,	0.00	0.00	0	0	N.D. d	N.D. d
25) TM BZ#157 2,3,3',4,	0.00	0.00	0	0	N.D. d	N.D. d
26) TM BZ#167 2,3',4,4'	0.00	0.00	0	0	N.D. d	N.D. d
27) TM BZ#169 3,3',4,4'	0.00	0.00	0	0	N.D. d	N.D. d
29) TM BZ#114 2,3,4,4',	0.00	0.00	0	0	N.D. d	N.D. d

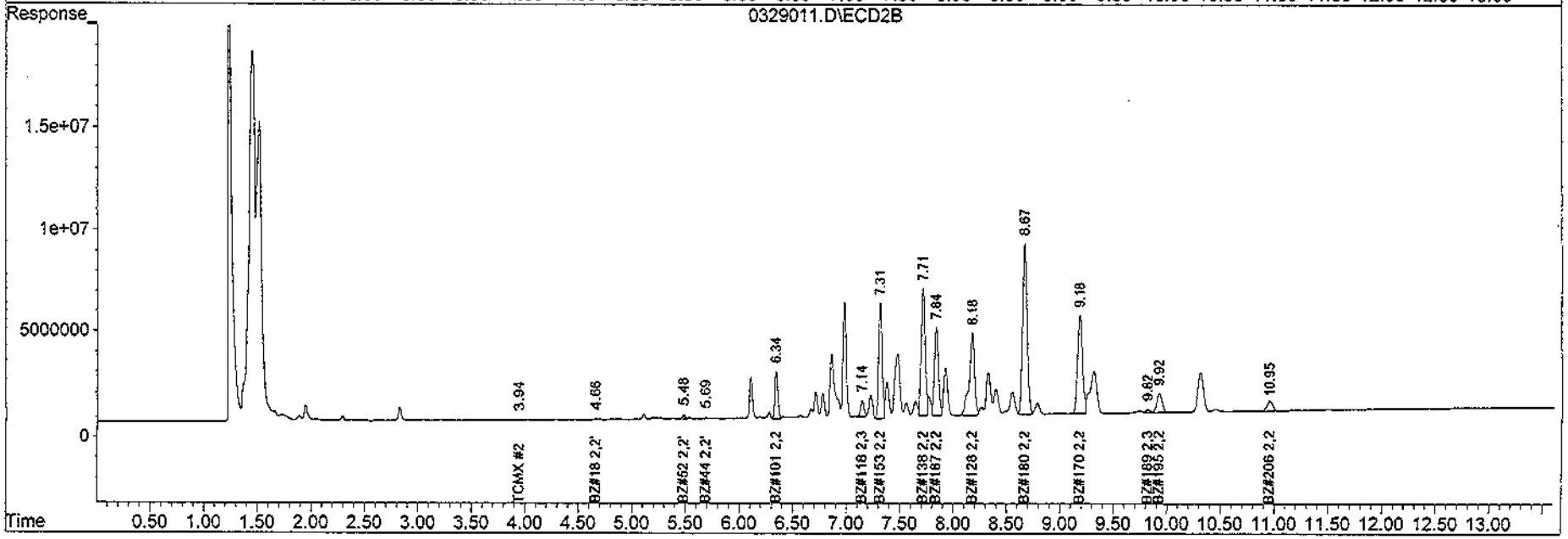
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (QT Reviewed)

Data File : G:\LUCY\DATA\120329\0329011.D
Acq On : 3-29-12 12:21:25
Sample : AR 1260 0.5ug/ml 3/22/12
Misc : WATER
Quant Method : G:\LUCY\DATA\120329\CONG314.M

Vial: 11
Operator: MA
Inst : Lucy
Multiplr: 1.00





REVIEWED
By EdwardsH at 12:56 pm, 4/11/12

EPA 8082 CONGENER WATER

Ecology & Environment
1940 Webster St, ste 100
Oakland, CA 94612

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Sara Dwight
Project: Yosemite Creek Sediment RA
Sample ID: 1260-3
Sample Collection Date: 04/03/12

ARF: 67404
APPL ID: AY58421
QCG: #882WM-120302A-165532

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
EPA 8082c	PCB-101	0.014	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-105	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-114	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-118	0.0019	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-123	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-126	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-128	0.023	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-138	0.028	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-153	0.038	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-156	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-157	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-167	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-169	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-170	0.032	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-18	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-180	0.053	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-187	0.026	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-189	0.0011	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-195	0.0050	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-206	0.0030	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-209	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-28	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-44	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-52	0.0013	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-66	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-77	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-8	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-81	Not detected	0.001	mg/L	03/29/12	03/29/12

Quant Method: CONG314.M
Run #: 0329012
Instrument: Lucy
Sequence: 120329
Dilution Factor: 1
Initials: DA

Printed: 04/04/12 9:01:00 AM
Form 1 - APPL Standard GC - No MC

Quantitation Report (QT Reviewed)

Signal #1 : G:\LUCY\DATA\120329\0329012.D\ECD1A.CH Vial: 12
Signal #2 : G:\LUCY\DATA\120329\0329012.D\ECD2B.CH
Acq On : 3-29-12 12:37:42 Operator: MA
Sample : AR 1260 0.5ug/ml 3/22/12 Inst : Lucy
Misc : WATER Multiplr: 1.00
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Mar 29 14:45 2012 Quant Results File: CONG314.RES

Quant Method : G:\LUCY\DATA\120329\CONG314.M (RTE Integrator)
Title : 508/608/8081
Last Update : Wed Mar 21 09:24:57 2012
Response via : Multiple Level Calibration
DataAcq Meth : EPA8081N.M

Volume Inj. : 2ul
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.32 Signal #2 Info : 0.32

TA 4/13/12

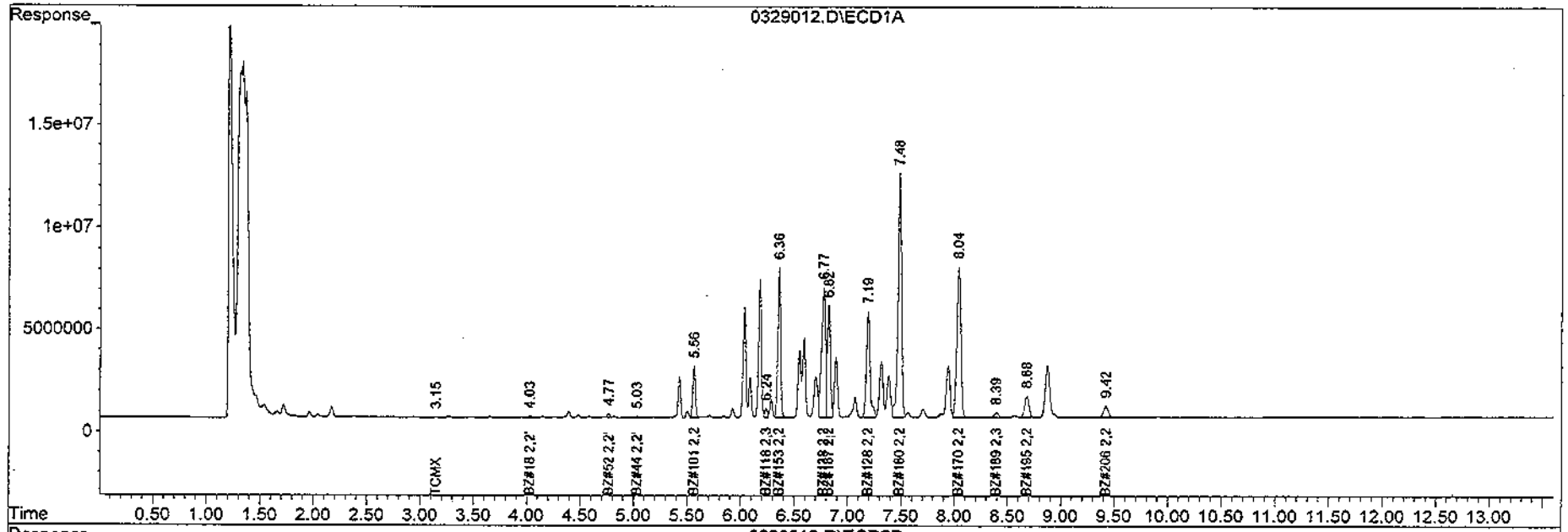
		Compound	RT#1	RT#2	Resp#1	Resp#2	~~ppb~~ ppm	~~ppb~~ ppm
		System Monitoring Compounds						
19)	S	TCMX	3.15	3.94	30338	32302	0.0001	0.0001
		Surrogate Spike 0.100 Range 25 - 150 Recovery =					0.10%#	0.10%#
		Target Compounds						
2)	TM	BZ#18 2,2',5-Tri	4.03	4.66	75392	48455	0.0008	0.0005 #
4)	TM	BZ#44 2,2',3,5'-	5.03	5.68	55654	44289	0.0003	0.0003
5)	TM	BZ#52 2,2',5,5'-	4.77	5.48	188294	182015	0.0013	0.0014
7)	TM	BZ#101 2,2',4,5,	5.56	6.34	2490708	2303295	0.0135	0.0151
9)	TM	BZ#118 2,3',4,4'	6.24	7.14	440992	667389	0.0019	0.0043 #
10)	TM	BZ#128 2,2',3,3'	7.19f	8.17	5160678	3924431	0.0228	0.0247
11)	TM	BZ#138 2,2',3,4,	6.77	7.71	6360174	6082842	0.0282	0.0370 #
12)	TM	BZ#153 2,2',4,4'	6.36	7.31	7346548	5667750	0.0379	0.0217 #
13)	TM	BZ#170 2,2',3,3'	8.04	9.18	7366288	5065709	0.0320	0.0317
14)	TM	BZ#180 2,2',3,4,	7.48	8.66	11874516	8448565	0.0533	0.0506
15)	TM	BZ#187 2,2',3,4'	6.82	7.84	5479323	4258544	0.0260	0.0282
16)	TM	BZ#195 2,2',3,3'	8.68	9.92	1008168	833756	0.0050	0.0059
17)	TM	BZ#206 2,2',3,3'	9.42	10.95	563094	422744	0.0030	0.0033
28)	BM	BZ#189 2,3,3',4,	8.39	9.82	246499	113080	0.0011	0.0007 #
		Target Compounds						
1)	TM	BZ#8 2,4'-DiCBP	0.00	0.00	0	0	N.D. d	N.D. d
3)	TM	BZ#28 2,4,4'-Tri	0.00	0.00	0	0	N.D. d	N.D. d
6)	TM	BZ#66 2,3',4,4'-	0.00	0.00	0	0	N.D. d	N.D. d
8)	TM	BZ#105 2,3,3',4,	0.00	0.00	0	0	N.D. d	N.D. d
18)	TM	BZ#209 DecaCBP	0.00	0.00	0	0	N.D. d	N.D. d
20)	TM	BZ#77 3,3',4,4'-	0.00	0.00	0	0	N.D. d	N.D. d
21)	TM	BZ#81 3,4,4',5-T	0.00	0.00	0	0	N.D. d	N.D. d
22)	TM	BZ#123 2',3,4,4'	0.00	0.00	0	0	N.D. d	N.D. d
23)	TM	BZ#126 3,3',4,4'	0.00	0.00	0	0	N.D. d	N.D. d
24)	TM	BZ#156 2,3,3',4,	0.00	0.00	0	0	N.D. d	N.D. d
25)	TM	BZ#157 2,3,3',4,	0.00	0.00	0	0	N.D. d	N.D. d
26)	TM	BZ#167 2,3',4,4'	0.00	0.00	0	0	N.D. d	N.D. d
27)	TM	BZ#169 3,3',4,4'	0.00	0.00	0	0	N.D. d	N.D. d
29)	TM	BZ#114 2,3,4,4',	0.00	0.00	0	0	N.D. d	N.D. d

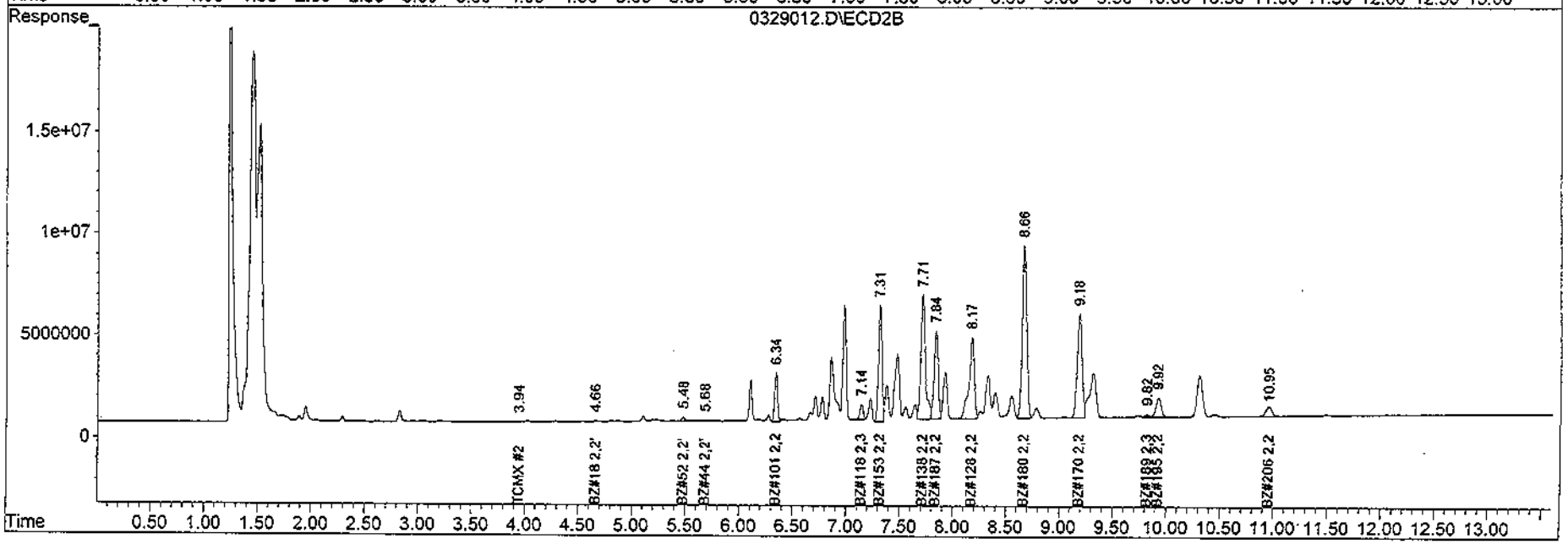
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (QT Reviewed)

Data File : G:\LUCY\DATA\120329\0329012.D
Acq On : 3-29-12 12:37:42
Sample : AR 1260 0.5ug/ml 3/22/12
Misc : WATER
Quant Method : G:\LUCY\DATA\120329\CONG314.M

Vial: 12
Operator: MA
Inst : Lucy
Multiplr: 1.00





REVIEWED
By EdwardsH at 12:56 pm, 4/11/12

EPA 8082 CONGENER WATER

Ecology & Environment
1940 Webster St, ste 100
Oakland, CA 94612

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Sara Dwight
Project: Yosemite Creek Sediment RA
Sample ID: 1254 & 1260
Sample Collection Date: 04/03/12

ARF: 67404
APPL ID: AY58422
QCG: #882WM-120302A-165532

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
EPA 8082c	PCB-101	0.049	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-105	0.015	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-114	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-118	0.030	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-123	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-126	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-128	0.010	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-138	0.053	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-153	0.051	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-156	0.0062	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-157	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-167	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-169	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-170	0.033	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-18	0.0017	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-180	0.053	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-187	0.026	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-189	0.0014	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-195	0.0049	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-206	0.0029	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-209	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-28	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-44	0.011	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-52	0.024	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-66	0.032	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-77	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-8	Not detected	0.001	mg/L	03/29/12	03/29/12
EPA 8082c	PCB-81	Not detected	0.001	mg/L	03/29/12	03/29/12

Quant Method: CONG314.M
Run #: 0329013
Instrument: Lucy
Sequence: 120329
Dilution Factor: 1
Initials: DA

Printed: 04/04/12 9:01:00 AM
Form 1 - APPL Standard GC - No MC

Quantitation Report (QT Reviewed)

Signal #1 : G:\LUCY\DATA\120329\0329013.D\ECD1A.CH Vial: 13
Signal #2 : G:\LUCY\DATA\120329\0329013.D\ECD2B.CH
Acq On : 3-29-12 12:54:07 Operator: MA
Sample : AR 1254/1260 0.5ug/ml 3/29/12 Inst : Lucy
Misc : WATER Multiplr: 1.00
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Mar 29 14:37 2012 Quant Results File: CONG314.RES

Quant Method : G:\LUCY\DATA\120329\CONG314.M (RTE Integrator)
Title : 508/608/8081
Last Update : Wed Mar 21 09:24:57 2012
Response via : Multiple Level Calibration
DataAcq Meth : EPA8081N.M

Volume Inj. : 2ul
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.32 Signal #2 Info : 0.32

TA 4/3/12

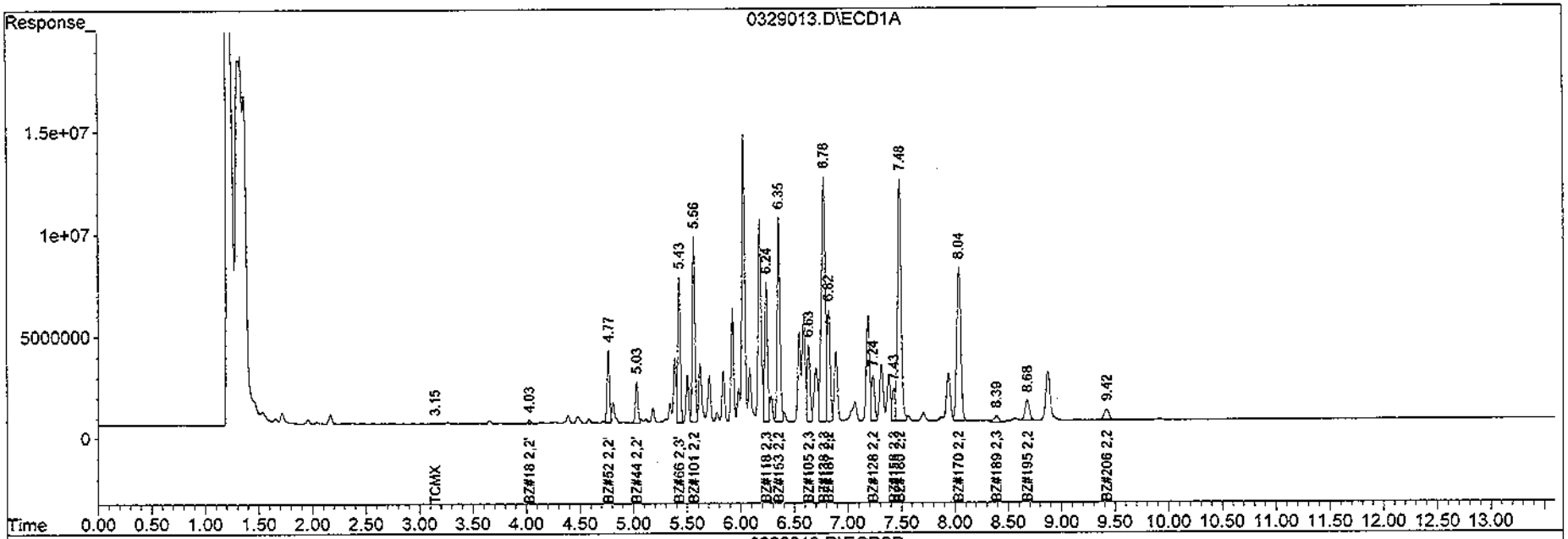
		Compound	RT#1	RT#2	Resp#1	Resp#2	~~ppb~~ ppm	~~ppb~~ ppm	
		System Monitoring Compounds							
19)	S	TCMX	3.15	3.94	30008	31477	0.0001	0.0001	
		Surrogate Spike 0.100 Range 25 - 150 Recovery =					0.10%#	0.10%#	
		Target Compounds							
2)	TM	BZ#18 2,2',5-Tri	4.03	4.66	166846	129090	0.0017	0.0014	
4)	TM	BZ#44 2,2',3,5'-	5.03	5.69	2018607	1841202	0.0110	0.0114	
5)	TM	BZ#52 2,2',5,5'-	4.77	5.48	3556044	3434065	0.0244	0.0264	
6)	TM	BZ#66 2,3',4,4'-	5.43	6.18	7124870	1605178	0.0320	0.0088	#
7)	TM	BZ#101 2,2',4,5,	5.56	6.34	9055855	9469416	0.0492	0.0619	#
8)	TM	BZ#105 2,3,3',4,	6.63	7.49	3741183	4574636	0.0148	0.0250	#
9)	TM	BZ#118 2,3',4,4'	6.24	7.14	6822057	6027877	0.0296	0.0390	#
10)	TM	BZ#128 2,2',3,3'	7.24	8.17	2269445	4404422	0.0100	0.0278	#
11)	TM	BZ#138 2,2',3,4,	6.78	7.71	11932516	10580752	0.0529	0.0643	
12)	TM	BZ#153 2,2',4,4'	6.35	7.31	9979990	7668086	0.0515	0.0293	#
13)	TM	BZ#170 2,2',3,3'	8.04	9.18	7507473	5151754	0.0327	0.0322	
14)	TM	BZ#180 2,2',3,4,	7.48	8.67	11787671	8514767	0.0529	0.0510	
15)	TM	BZ#187 2,2',3,4'	6.82	7.84	5467964	4258661	0.0259	0.0282	
16)	TM	BZ#195 2,2',3,3'	8.68	9.92	994679	825659	0.0049	0.0058	
17)	TM	BZ#206 2,2',3,3'	9.42	10.95	542637	414667	0.0029	0.0032	
24)	TM	BZ#156 2,3,3',4,	7.43	8.55	1607712	1663059	0.0062	0.0099	#
28)	BM	BZ#189 2,3,3',4,	8.39	9.82	322965	126040	0.0014	0.0008	#
		Target Compounds							
1)	TM	BZ#8 2,4'-DiCBP	0.00	0.00	0	0	N.D. d	N.D. d	
3)	TM	BZ#28 2,4,4'-Tri	0.00	0.00	0	0	N.D. d	N.D. d	
18)	TM	BZ#209 DecaCBP	0.00	0.00	0	0	N.D. d	N.D. d	
20)	TM	BZ#77 3,3',4,4'-	0.00	0.00	0	0	N.D. d	N.D. d	
21)	TM	BZ#81 3,4,4',5-T	0.00	0.00	0	0	N.D. d	N.D. d	
22)	TM	BZ#123 2',3,4,4'	0.00	0.00	0	0	N.D. d	N.D. d	
23)	TM	BZ#126 3,3',4,4'	0.00	0.00	0	0	N.D. d	N.D. d	
25)	TM	BZ#157 2,3,3',4,	0.00	0.00	0	0	N.D. d	N.D. d	
26)	TM	BZ#167 2,3',4,4'	0.00	0.00	0	0	N.D. d	N.D. d	
27)	TM	BZ#169 3,3',4,4'	0.00	0.00	0	0	N.D. d	N.D. d	
29)	TM	BZ#114 2,3,4,4',	0.00	0.00	0	0	N.D. d	N.D. d	

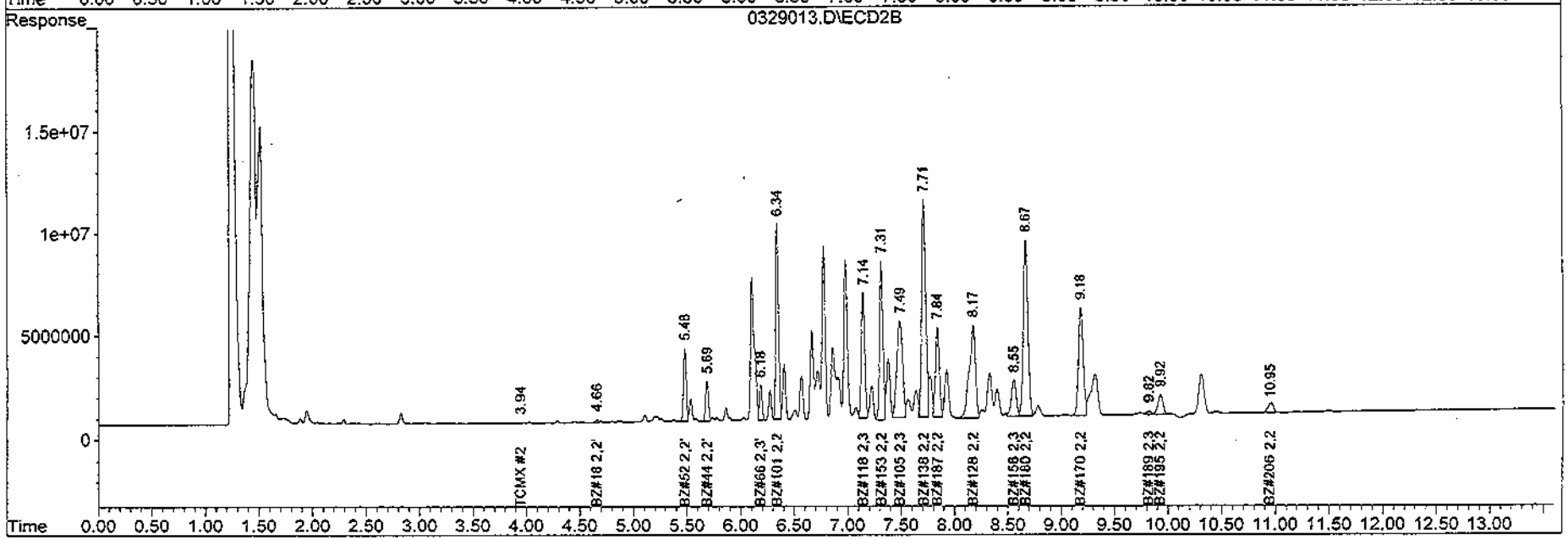
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (QT Reviewed)

Data File : G:\LUCY\DATA\120329\0329013.D
Acq On : 3-29-12 12:54:07
Sample : AR 1254/1260 0.5ug/ml 3/29/12
Misc : WATER
Quant Method : G:\LUCY\DATA\120329\CONG314.M

Vial: 13
Operator: MA
Inst : Lucy
Multiplr: 1.00





EPA METHOD 8082
CONGENERS
Calibration Data

APPL, INC.

PCB Congeners
EPA Method 8082

Form 6
Initial Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: Water

SDG No: 67404
Initial Cal. Date: 03/14/12
Instrument: Lucy

Initials: MA

		Compound	1	2	3	4	5	6	7				Avg	%RSD		
			0314003.D	0314004.D	0314005.D	0314006.D	0314007.D	0314008.D	0314009.D							
1	TML	BZ#8 2,4'-DiCBP	100977000	49169000	48379600	47882400	36661900	33465280	30071840				49515289	48	TML	0.996
2	TM	BZ#18 2,2',5-TriCBP	59616500	57200500	56734700	52053400	45467560	41817050	38819520				50244176	16	TM	
3	TM	BZ#28 2,4,4'-TriCBP	121564000	108924667	115666300	104739800	93142900	94301050	86631390				103567158	12	TM	
4	TM	BZ#44 2,2',3,5'-TetraCBP	108883500	99845167	100809800	93759750	82687320	79628450	74942890				91508125	14	TM	
5	TM	BZ#52 2,2',5,5'-TetraCBP	88364000	81696667	81114100	73978300	64030220	62757640	57994255				72847883	16	TM	
6	TM	BZ#66 2,3',4,4'-TetraCBP	127019500	117485500	122155600	112883800	102542520	103399540	93922825				111344184	11	TM	
7	TM	BZ#101 2,2',4,5,5'-PentaCBP	111725500	99195333	102454800	93174000	82352440	79715470	75174965				91970358	15	TM	
8	TM	BZ#105 2,3,3',4,4'-PentaCBP	143911500	132821000	132175500	127380300	115602260	119858750	112422185				126310214	8.8	TM	
9	TM	BZ#118 2,3',4,4',5-PentaCBP	143650000	123260833	129619300	111106700	104115340	99574780	94872675				115171375	15	TM	
10	TM	BZ#128 2,2',3,3',4,4'-HexaCBP	123227500	117409000	121412200	112033350	108831080	109014760	100062285				113141454	7.2	TM	
11	TM	BZ#138 2,2',3,4,4',5'-HexaCBP	125105500	119871667	122508700	114491550	106398700	105015320	96631710				112860450	9.3	TM	
12	TM	BZ#153 2,2',4,4',5,5'-HexaCBP	123363500	108745500	104134500	96359450	83761760	84978740	77556875				96985761	17	TM	
13	TM	BZ#170 2,2',3,3',4,4',5-HeptaCBP	124342500	116842000	125958600	117492350	108336520	107034290	104594170				114942919	7.4	TM	
14	TM	BZ#180 2,2',3,4,4',5,5'-HeptaCBP	118485000	115824333	122567800	112558550	103298920	105785730	101957460				111496828	7.2	TM	
15	TM	BZ#187 2,2',3,4',5,5',6-HeptaCBP	121985000	108325833	116807600	109193400	97274300	96278910	87761235				105375183	12	TM	
16	TM	BZ#195 2,2',3,3',4,4',5,6-OctaCBP	108353000	103094667	109420400	103034150	95780940	95016040	92062205				101108772	6.6	TM	
17	TM	BZ#206 2,2',3,3',4,4',5,5',6-NonaC	103246000	96806833	102954300	95743250	90511680	84258110	82458790				93711280	8.9	TM	
18	TM	BZ#209 DecaCBP	81577000	79331000	81855200	76597800	69215620	68747880	65296290				74660113	9.1	TM	
19	S	TCMX	183909000	178640000	177526000	172661250	167344980	169640000	161192120				172987621	4.4	S	
20	TM	BZ#77 3,3',4,4'-TetraCBP	96686000	86156333	85829400	78366750	67443480	65369640	59231940				77011935	18	TM	
21	TM	BZ#81 3,4,4',5-TetraCBP	100786000	96012667	98694900	90252650	80357780	78144280	72695415				88134813	13	TM	
22	TM	BZ#123 2',3,4,4',5-PentaCBP	129895000	120100167	127326100	116326800	104098240	104142230	98945420				114404851	11	TM	
23	TM	BZ#126 3,3',4,4',5-PentaCBP	97773500	93523833	95099100	86712200	75634500	76738930	68876815				84908411	13	TM	
24	TM	BZ#156 2,3,3',4,4',5-HexaCBP	132640500	129911000	137677400	128877650	125075660	129211170	119396010				128969913	4.4	TM	
25	TM	BZ#157 2,3,3',4,4',5'-HexaCBP	128404000	121482500	129059300	117167700	112975740	113725450	107165665				118568622	6.9	TM	
26	TM	BZ#167 2,3',4,4',5,5'-HexaCBP	118190000	110303167	115836500	105735450	99277220	95279890	90013005				104947890	10	TM	
27	TM	BZ#169 3,3',4,4',5,5'-HexaCBP	98139500	94463833	99725700	88876150	81011300	79682820	76265875				88309311	11	TM	
28	TM	BZ#189 2,3,3',4,4',5,5'-HeptaCBP	134059500	114162667	117731700	109374300	99333340	104782500	101637515				111583075	11	TM	
29	TM	BZ#114 2,3,4,4',5-PentaCBP	148973000	145581833	151880100	150305200	142168260	145106720	136115140				145732893	3.7	TM	
30		Signal #2														
31																
32																
33																
34																
35																

9.8564162

PCB Congeners
EPA Method 8082

Form 6
Initial Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: Water

SDG No: 67404
Initial Cal. Date: 03/14/12
Instrument: Lucy

Initials: MA

		Compound	1 (0314003.D)	2 (0314004.D)	3 (0314005.D)	4 (0314006.D)	5 (0314007.D)	6 (0314008.D)	7 (0314009.D)				Avg	%RSD		
36	TM	BZ#8 2,4'-DiCBP #2	44979000	44429333	43202800	39037600	34007600	32647100	29012345				38187968	17	TM	
37	TM	BZ#18 2,2',5-TriCBP #2	56358500	50638167	50399500	46825750	40819340	39192040	35824140				45722491	16	TM	
38	TM	BZ#28 2,4,4'-TriCBP #2	98195000	89715167	97803900	89515950	81170140	80893070	78048975				87906029	9.3	TM	
39	TM	BZ#44 2,2',3,5'-TetraCBP #2	96605000	84122167	87639800	82383250	72711140	72826790	67536315				80546352	13	TM	
40	TM	BZ#52 2,2',5,5'-TetraCBP #2	76923000	70291833	72302200	66160400	58153740	57340560	54108780				65040073	13	TM	
41	TM	BZ#66 2,3',4,4'-TetraCBP #2	98842500	94049500	99263000	93227850	86327620	84153260	80070430				90847737	8.2	TM	
42	TM	BZ#101 2,2',4,5,5'-PentaCBP #2	91894000	81148000	84682900	79088250	68782560	67469770	62294555				76480005	14	TM	
43	TM	BZ#105 2,3,3',4,4'-PentaCBP #2	93120500	89845333	99113100	95047550	89493800	87587190	87346150				91650518	4.7	TM	
44	TM	BZ#118 2,3',4,4',5-PentaCBP #2	79989500	78775667	85658100	81446100	74016320	71368670	69098290				77193235	7.7	TM	
45	TM	BZ#128 2,2',3,3',4,4'-HexaCBP #2	89636500	78979167	86637000	82219200	73609720	75281690	68927005				79327183	9.3	TM	
46	TM	BZ#138 2,2',3,4,4',5'-HexaCBP #2	87341500	81850500	90487100	82732350	79557440	78918880	75168015				82293684	6.3	TM	
47	TM	BZ#153 2,2',4,4',5,5'-HexaCBP #2	129111000	132538667	135184200	131518050	125586700	130969810	131090325				130856965	2.3	TM	
48	TM	BZ#170 2,2',3,3',4,4',5-HeptaCBP	81056000	83312167	89998800	79168100	75618760	78301710	72451235				79929539	6.9	TM	
49	TM	BZ#180 2,2',3,4,4',5,5'-HeptaCBP	77485000	86301667	89498100	85743750	85980840	82155840	77003115				83452616	5.7	TM	
50	TM	BZ#187 2,2',3,4',5,5',6-HeptaCBP	80268500	79177667	86104900	76602650	70711140	70803520	65187110				75550784	9.4	TM	
51	TM	BZ#195 2,2',3,3',4,4',5,6-OctaCBP	64948500	73265000	77269900	74528000	69643600	70606100	63806175				70581039	7.0	TM	
52	TM	BZ#206 2,2',3,3',4,4',5,5',6-NonaC	63401500	67552500	69408000	69122350	59102160	60094510	58840885				63931701	7.4	TM	
53	TM	BZ#209 DecaCBP #2	54146000	56591333	61648100	58094750	48796280	47924060	47707320				53558263	10	TM	
54	S	TCMX #2	168181500	165344833	160809500	153691850	154528320	160665670	153538595				159537181	3.7	S	
55	TM	BZ#77 3,3',4,4'-TetraCBP #2	59579000	57268833	63868500	56572750	51342780	50026940	46748240				55058149	11	TM	
56	TM	BZ#81 3,4,4',5-TetraCBP #2	71640500	68186500	70680100	65954800	58896480	58937520	54375945				64095978	10	TM	
57	TM	BZ#123 2',3,4,4',5-PentaCBP #2	90297500	86635500	93717500	85592350	77905740	78307120	72986000				83634530	8.9	TM	
58	TM	BZ#126 3,3',4,4',5-PentaCBP #2	45595000	52920667	52970800	52121700	49327300	50705160	48046120				50240964	5.5	TM	
59	TM	BZ#156 2,3,3',4,4',5-HexaCBP #2	79278500	82367167	88711500	83748950	81692880	88724180	83576790				84014281	4.2	TM	
60	TM	BZ#157 2,3,3',4,4',5'-HexaCBP #2	79074000	86301667	91940500	89597200	85980840	84258780	81280030				85490431	5.2	TM	
61	TM	BZ#167 2,3',4,4',5,5'-HexaCBP #2	89636500	78979167	86637000	82219200	73609720	75281690	68927005				79327183	9.3	TM	
62	TM	BZ#169 3,3',4,4',5,5'-HexaCBP #2	56211500	54981667	61508900	55721350	51689960	50666950	48690105				54210062	7.9	TM	
63	BM	BZ#189 2,3,3',4,4',5,5'-HeptaCBP	74627000	77347000	84272800	79238500	73657200	74232840	70596145				76281926	5.9	BM	
64	TM	BZ#114 2,3,4,4',5-PentaCBP #2	129111000	132538667	135184200	131518050	125586700	130969810	131090325				130856965	2.3	TM	
65																
66																
67																
68																
69																
70																

6.8877034

Quantitation Report (Not Reviewed)

Signal #1 : G:\LUCY\DATA\120314\0314003.D\ECD1A.CH Vial: 3
Signal #2 : G:\LUCY\DATA\120314\0314003.D\ECD2B.CH
Acq On : 3-14-12 10:32:39 Operator: MA
Sample : PCB CONG 1 2/14/12 Inst : Lucy
Misc : WATER Multiplr: 1.00
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Mar 14 13:15 2012 Quant Results File: CONG314.RES

Quant Method : G:\LUCY\DATA\120314\CONG314.M (RTE Integrator)
Title : 508/608/8081
Last Update : Wed Mar 14 13:11:58 2012
Response via : Multiple Level Calibration
DataAcq Meth : EPA8081N.M

Volume Inj. : 2ul
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.32 Signal #2 Info : 0.32

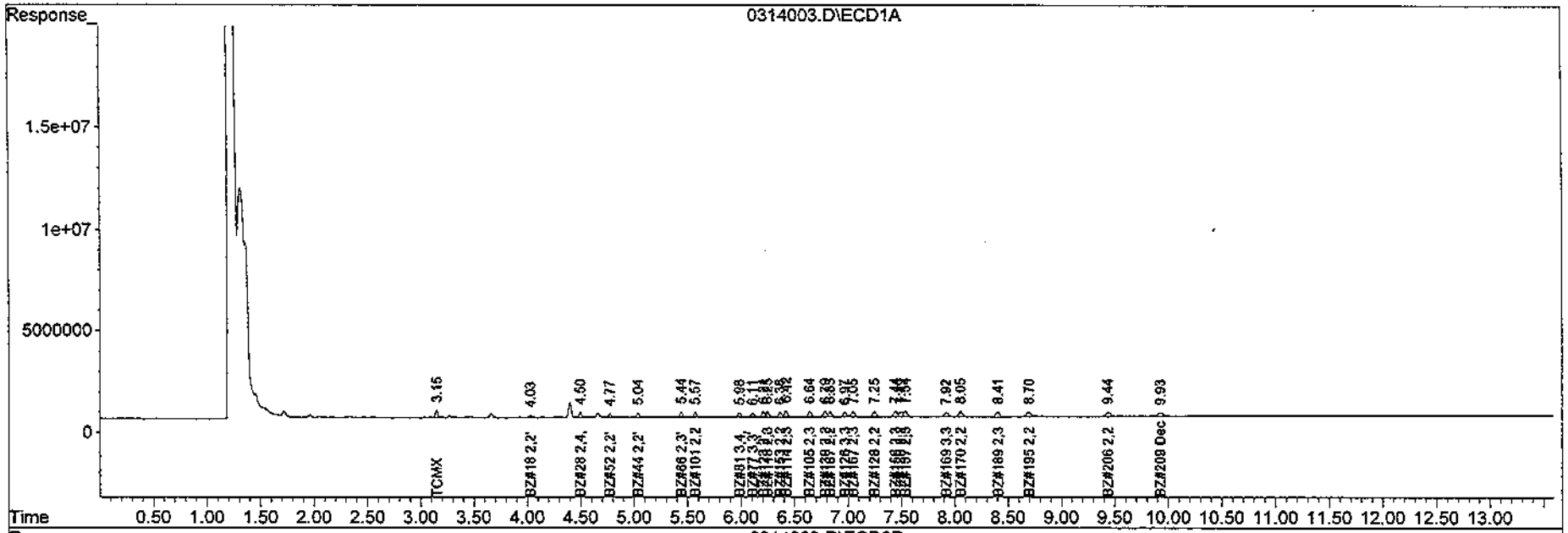
	Compound	RT#1	RT#2	Resp#1	Resp#2	~~ppb~~ ppm	~~ppb~~ ppm
	System Monitoring Compounds						
19)	S TCMX	3.15	3.94	367818	336363	0.0010	0.0009
	Surrogate Spike 5.000 Range 25 - 150 Recovery =					0.02%#	0.02%#
	Target Compounds						
1)	TM BZ#8 2,4'-DiCBP	3.66	4.29	201954	89958	N.D.	0.0011
2)	TM BZ#18 2,2',5-Tri	4.03	4.66	119233	112717	0.0012	0.0011
3)	TM BZ#28 2,4,4'-Tri	4.50	5.22	243128	196390	0.0012	0.0009
4)	TM BZ#44 2,2',3,5'-	5.04	5.68	217767	193210	0.0012	0.0011
5)	TM BZ#52 2,2',5,5'-	4.77	5.48	176728	153846	0.0012	0.0011
6)	TM BZ#66 2,3',4,4'-	5.44	6.18	254039	197685	0.0011	0.0009
7)	TM BZ#101 2,2',4,5,	5.57	6.34	223451	183788	0.0012	0.0010
8)	TM BZ#105 2,3,3',4,	6.64	7.50	287823	186241	0.0011	0.0009
9)	TM BZ#118 2,3',4,4'	6.25	7.14	287300	159979	0.0013	0.0008 #
10)	TM BZ#128 2,2',3,3'	7.25	8.14	246455	179273	0.0011	0.0009
11)	TM BZ#138 2,2',3,4,	6.79	7.71	250211	174683	0.0011	0.0009
12)	TM BZ#153 2,2',4,4'	6.36	7.30	246727	258222	0.0012	0.0008 #
13)	TM BZ#170 2,2',3,3'	8.05	9.18	248685	162112	0.0011	0.0008
14)	TM BZ#180 2,2',3,4,	7.49	8.66	236970	154970	0.0010	0.0007 #
15)	TM BZ#187 2,2',3,4'	6.83	7.84	243970	160537	0.0011	0.0008 #
16)	TM BZ#195 2,2',3,3'	8.70	9.93	216706	129897	0.0010	0.0007 #
17)	TM BZ#206 2,2',3,3'	9.44	10.95	206492	126803	0.0011	0.0008 #
18)	TM BZ#209 DecaCBP	9.93	11.49	163154	108292	0.0011	0.0009
20)	TM BZ#77 3,3',4,4'-	6.11	6.93	193372	119158	0.0012	0.0009 #
21)	TM BZ#81 3,4,4',5-T	5.98	6.81	201572	143281	0.0011	0.0009
22)	TM BZ#123 2',3,4,4'	6.21	7.08	259790	180595	0.0011	0.0009
23)	TM BZ#126 3,3',4,4'	6.97	8.03	195547	91190	0.0011	0.0006 #
24)	TM BZ#156 2,3,3',4,	7.44	8.56	265281	158557	0.0010	0.0007 #
25)	TM BZ#157 2,3,3',4,	7.54	8.64	256808	158148	0.0011	0.0008 #
26)	TM BZ#167 2,3',4,4'	7.05	8.14	236380	179273	0.0011	0.0009
27)	TM BZ#169 3,3',4,4'	7.92	9.29	196279	112423	0.0011	0.0007 #
28)	BM BZ#189 2,3,3',4,	8.41	9.82	268119	149254	0.0011	0.0008 #
29)	TM BZ#114 2,3,4,4',	6.42	7.30	297946	258222	0.0010	0.0008

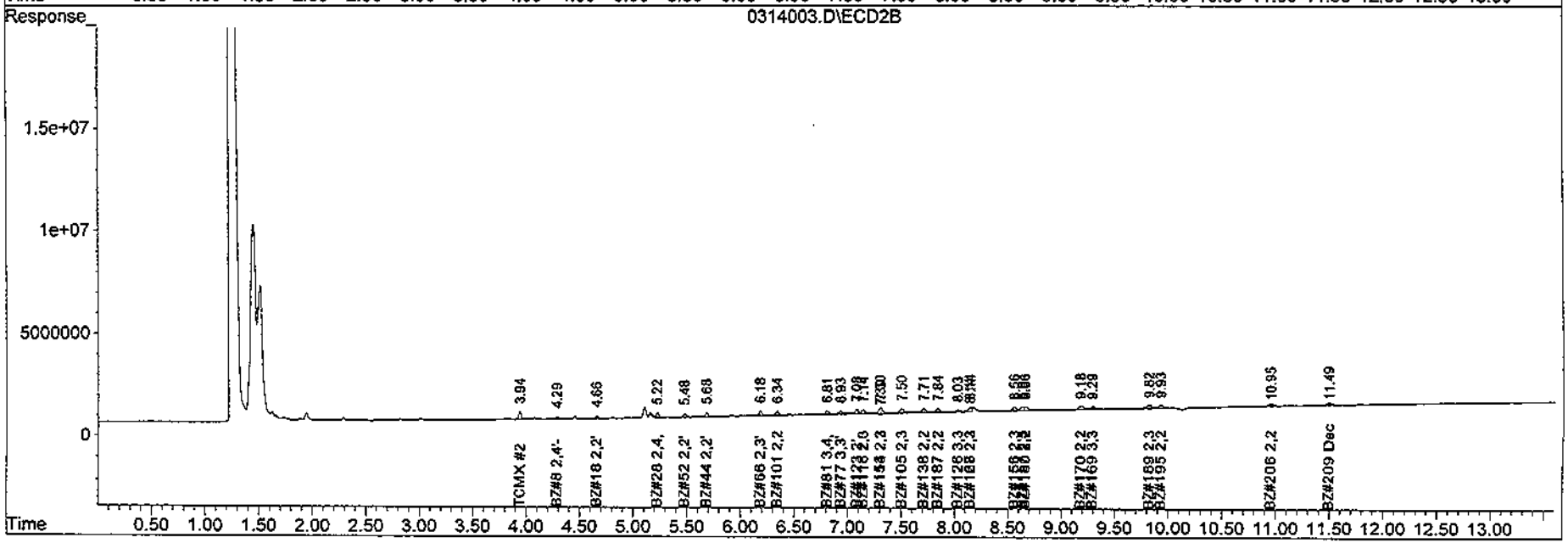
Target Compounds

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Data File : G:\LUCY\DATA\120314\0314003.D
Acq On : 3-14-12 10:32:39
Sample : PCB CONG 1 2/14/12
Misc : WATER
Quant Method : G:\LUCY\DATA\120314\CONG314.M

Vial: 3
Operator: MA
Inst : Lucy
Multiplr: 1.00





Quantitation Report (Not Reviewed)

Signal #1 : G:\LUCY\DATA\120314\0314004.D\ECD1A.CH Vial: 4
Signal #2 : G:\LUCY\DATA\120314\0314004.D\ECD2B.CH
Acq On : 3-14-12 10:48:56 Operator: MA
Sample : PCB CONG 2 Inst : Lucy
Misc : WATER Multiplr: 1.00
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Mar 14 13:15 2012 Quant Results File: CONG314.RES

Quant Method : G:\LUCY\DATA\120314\CONG314.M (RTE Integrator)
Title : 508/608/8081
Last Update : Wed Mar 14 13:11:58 2012
Response via : Multiple Level Calibration
DataAcq Meth : EPA8081N.M

Volume Inj. : 2ul
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.32 Signal #2 Info : 0.32

TA 4/13/12

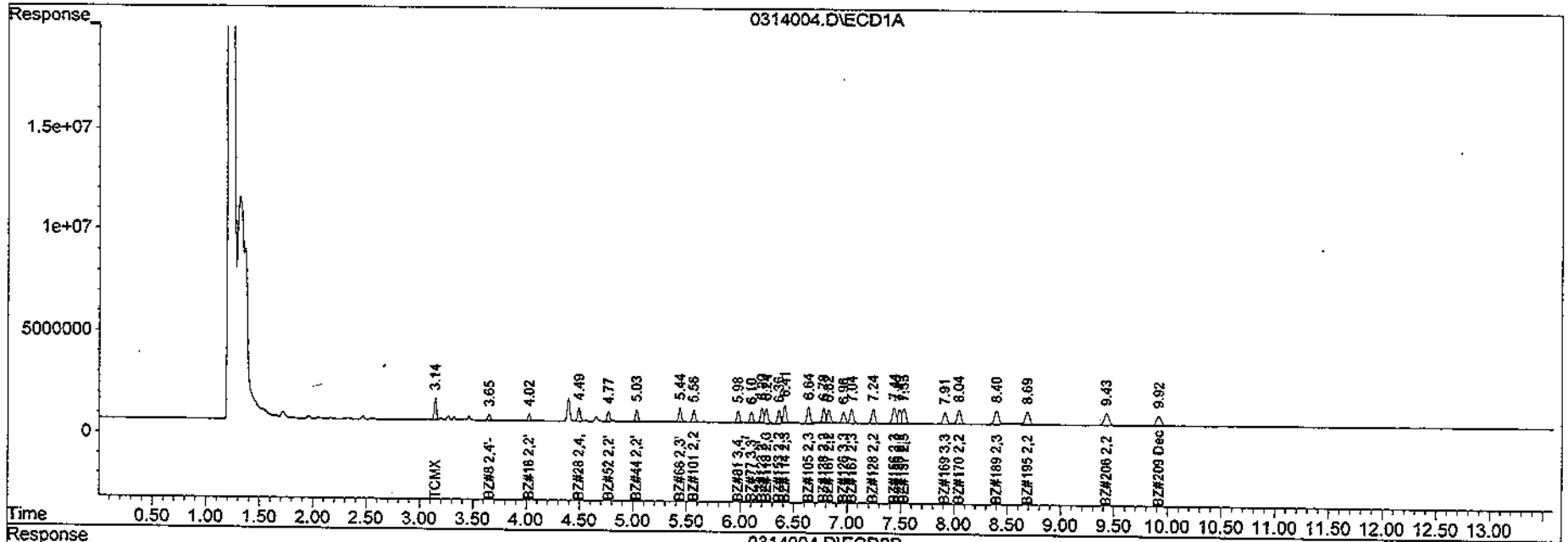
Compound	RT#1	RT#2	Resp#1	Resp#2	~~ppb~~ ppm	~~ppb~~ ppm
System Monitoring Compounds						
19) S TCMX	3.14	3.94	1071840	992069	0.0030	0.0026
Surrogate Spike 5.000 Range 25 - 150 Recovery =					0.06%#	0.05%#
Target Compounds						
1) TM BZ#8 2,4'-DiCBP	3.65	4.29	295014	266576	0.0011	0.0031 #
2) TM BZ#18 2,2',5-Tri	4.02	4.66	343203	303829	0.0034	0.0030
3) TM BZ#28 2,4,4'-Tri	4.49	5.23	653548	538291	0.0031	0.0025
4) TM BZ#44 2,2',3,5'-	5.03	5.68	599071	504733	0.0032	0.0028
5) TM BZ#52 2,2',5,5'-	4.77	5.48	490180	421751	0.0033	0.0029
6) TM BZ#66 2,3',4,4'-	5.44	6.18	704913	564297	0.0031	0.0026
7) TM BZ#101 2,2',4,5,	5.56	6.34	595172	486888	0.0032	0.0028
8) TM BZ#105 2,3,3',4,	6.64	7.50	796926	539072	0.0031	0.0025
9) TM BZ#118 2,3',4,4'	6.24	7.14	739565	472654	0.0032	0.0025
10) TM BZ#128 2,2',3,3'	7.24	8.18	704454	473875	0.0031	0.0023 #
11) TM BZ#138 2,2',3,4,	6.78	7.71	719230	491103	0.0031	0.0025
12) TM BZ#153 2,2',4,4'	6.36	7.30	652473	795232	0.0033	0.0025
13) TM BZ#170 2,2',3,3'	8.04	9.18	701052	499873	0.0030	0.0025
14) TM BZ#180 2,2',3,4,	7.49	8.63	694946	517810	0.0031	0.0025
15) TM BZ#187 2,2',3,4'	6.82	7.84	649955	475066	0.0030	0.0024
16) TM BZ#195 2,2',3,3'	8.69	9.92	618568	439590	0.0030	0.0023
17) TM BZ#206 2,2',3,3'	9.43	10.95	580841	405315	0.0031	0.0025
18) TM BZ#209 DecaCBP	9.92	11.49	475986	339548	0.0031	0.0027
20) TM BZ#77 3,3',4,4'-	6.10	6.94	516938	343613	0.0033	0.0025
21) TM BZ#81 3,4,4',5-T	5.98	6.81	576076	409119	0.0032	0.0026
22) TM BZ#123 2',3,4,4'	6.20	7.08	720601	519813	0.0031	0.0026
23) TM BZ#126 3,3',4,4'	6.96	8.03	561143	317524	0.0033	0.0022 #
24) TM BZ#156 2,3,3',4,	7.44	8.56	779466	494203	0.0030	0.0022 #
25) TM BZ#157 2,3,3',4,	7.53	8.63	728895	517810	0.0030	0.0025
26) TM BZ#167 2,3',4,4'	7.04	8.18	661819	473875	0.0031	0.0024
27) TM BZ#169 3,3',4,4'	7.91	9.29	566783	329890	0.0032	0.0021 #
28) BM BZ#189 2,3,3',4,	8.40	9.82	684976	464082	0.0029	0.0024
29) TM BZ#114 2,3,4,4',	6.41	7.30	873491	795232	0.0030	0.0025

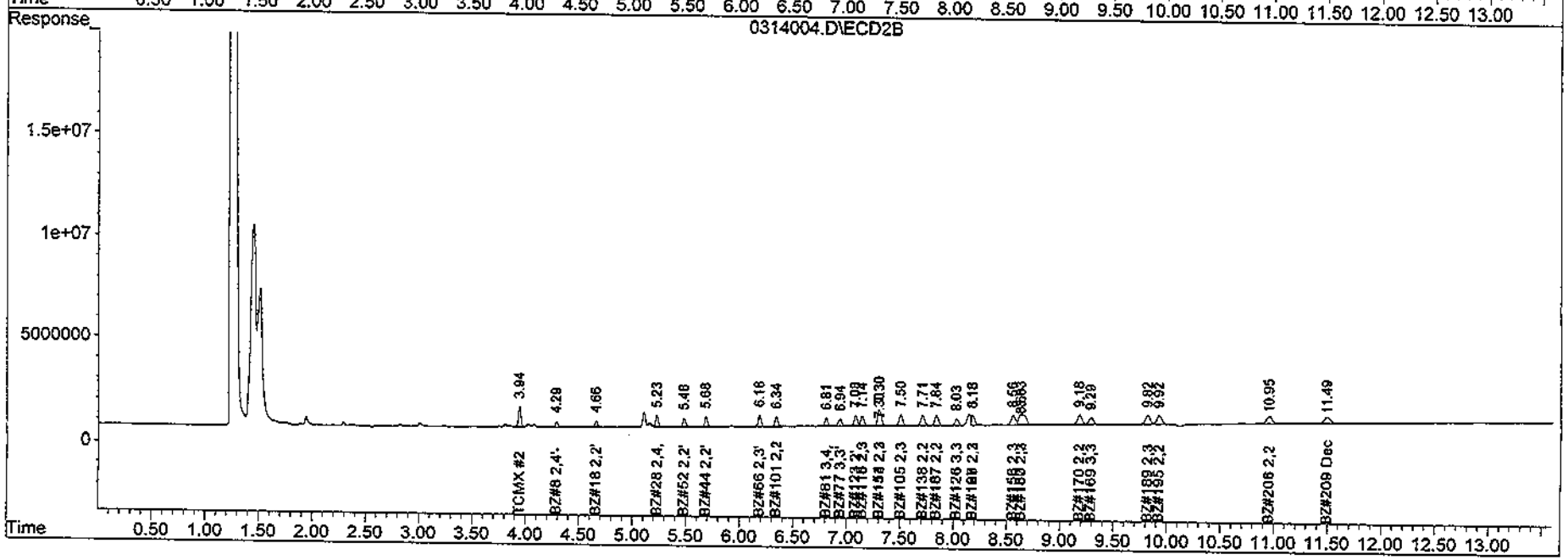
Target Compounds

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Data File : G:\LUCY\DATA\120314\0314004.D
Acq On : 3-14-12 10:48:56
Sample : PCB CONG 2
Misc : WATER
Quant Method : G:\LUCY\DATA\120314\CONG314.M

Vial: 4
Operator: MA
Inst : Lucy
Multiplr: 1.00





Quantitation Report (Not Reviewed)

Signal #1 : G:\LUCY\DATA\120314\0314005.D\ECD1A.CH Vial: 5
Signal #2 : G:\LUCY\DATA\120314\0314005.D\ECD2B.CH
Acq On : 3-14-12 11:05:20 Operator: MA
Sample : PCB CONG 3 Inst : Lucy
Misc : WATER Multiplr: 1.00
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Mar 14 13:15 2012 Quant Results File: CONG314.RES

Quant Method : G:\LUCY\DATA\120314\CONG314.M (RTE Integrator)
Title : 508/608/8081
Last Update : Wed Mar 14 13:11:58 2012
Response via : Multiple Level Calibration
DataAcq Meth : EPA8081N.M

Volume Inj. : 2ul
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.32 Signal #2 Info : 0.32

4/3/12

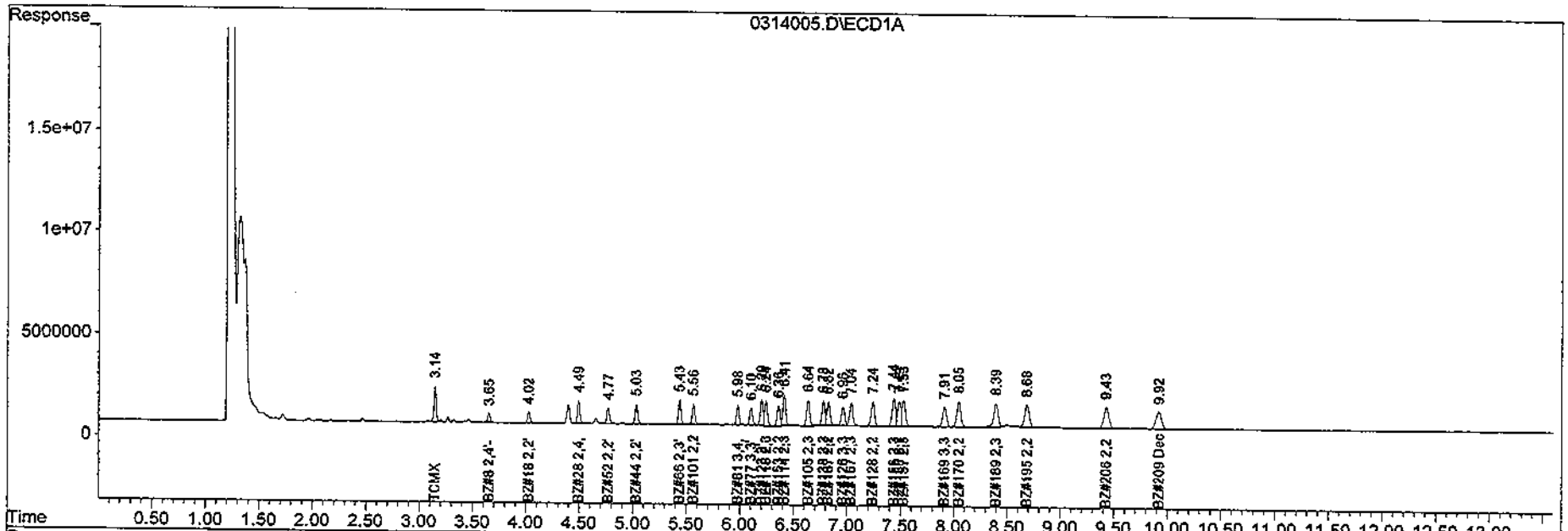
		Compound	RT#1	RT#2	Resp#1	Resp#2	~~ppb~~ ppm	~~ppb~~ ppm	
		System Monitoring Compounds							
19)	S	TCMX	3.14	3.94	1775260	1608095	0.0049	0.0042	
		Surrogate Spike 5.000 Range 25 - 150 Recovery =					0.10%#	0.08%#	
		Target Compounds							
1)	TM	BZ#8 2,4'-DiCBP	3.65	4.29	483796	432028	0.0042	0.0051	
2)	TM	BZ#18 2,2',5-Tri	4.02	4.66	567347	503995	0.0055	0.0050	
3)	TM	BZ#28 2,4,4'-Tri	4.49	5.23	1156663	978039	0.0055	0.0046	
4)	TM	BZ#44 2,2',3,5'-	5.03	5.68	1008098	876398	0.0054	0.0048	
5)	TM	BZ#52 2,2',5,5'-	4.77	5.48	811141	723022	0.0054	0.0049	
6)	TM	BZ#66 2,3',4,4'-	5.43	6.18	1221556	992630	0.0053	0.0046	
7)	TM	BZ#101 2,2',4,5,	5.56	6.34	1024548	846829	0.0055	0.0048	
8)	TM	BZ#105 2,3,3',4,	6.64	7.50	1321755	991131	0.0052	0.0045	
9)	TM	BZ#118 2,3',4,4'	6.24	7.14	1296193	856581	0.0057	0.0045	
10)	TM	BZ#128 2,2',3,3'	7.24	8.17	1214122	866370	0.0053	0.0042	
11)	TM	BZ#138 2,2',3,4,	6.78	7.71	1225087	904871	0.0053	0.0047	
12)	TM	BZ#153 2,2',4,4'	6.36	7.30	1041345	1351842	0.0052	0.0042	
13)	TM	BZ#170 2,2',3,3'	8.05	9.18	1259586	895988	0.0054	0.0045	
14)	TM	BZ#180 2,2',3,4,	7.49	8.66	1225678	894981	0.0054	0.0043	
15)	TM	BZ#187 2,2',3,4'	6.82	7.84	1168076	861049	0.0054	0.0044	
16)	TM	BZ#195 2,2',3,3'	8.68	9.93	1094204	772699	0.0053	0.0041	
17)	TM	BZ#206 2,2',3,3'	9.43	10.95	1029543	694080	0.0054	0.0043	
18)	TM	BZ#209 DecaCBP	9.92	11.49	818552	616481	0.0053	0.0049	
20)	TM	BZ#77 3,3',4,4'-	6.10	6.93	858294	638685	0.0055	0.0047	
21)	TM	BZ#81 3,4,4',5-T	5.98	6.81	986949	706801	0.0054	0.0045	
22)	TM	BZ#123 2',3,4,4'	6.20	7.08	1273261	937175	0.0055	0.0048	
23)	TM	BZ#126 3,3',4,4'	6.96	8.03	950991	529708	0.0055	0.0036	#
24)	TM	BZ#156 2,3,3',4,	7.44	8.55	1376774	887115	0.0052	0.0040	
25)	TM	BZ#157 2,3,3',4,	7.53	8.63	1290593	919405	0.0054	0.0044	
26)	TM	BZ#167 2,3',4,4'	7.04	8.17	1158365	866370	0.0054	0.0043	
27)	TM	BZ#169 3,3',4,4'	7.91	9.29	997257	615089	0.0056	0.0039	#
28)	BM	BZ#189 2,3,3',4,	8.39	9.82	1177317	842728	0.0050	0.0044	
29)	TM	BZ#114 2,3,4,4',	6.41	7.30	1518801	1351842	0.0051	0.0042	

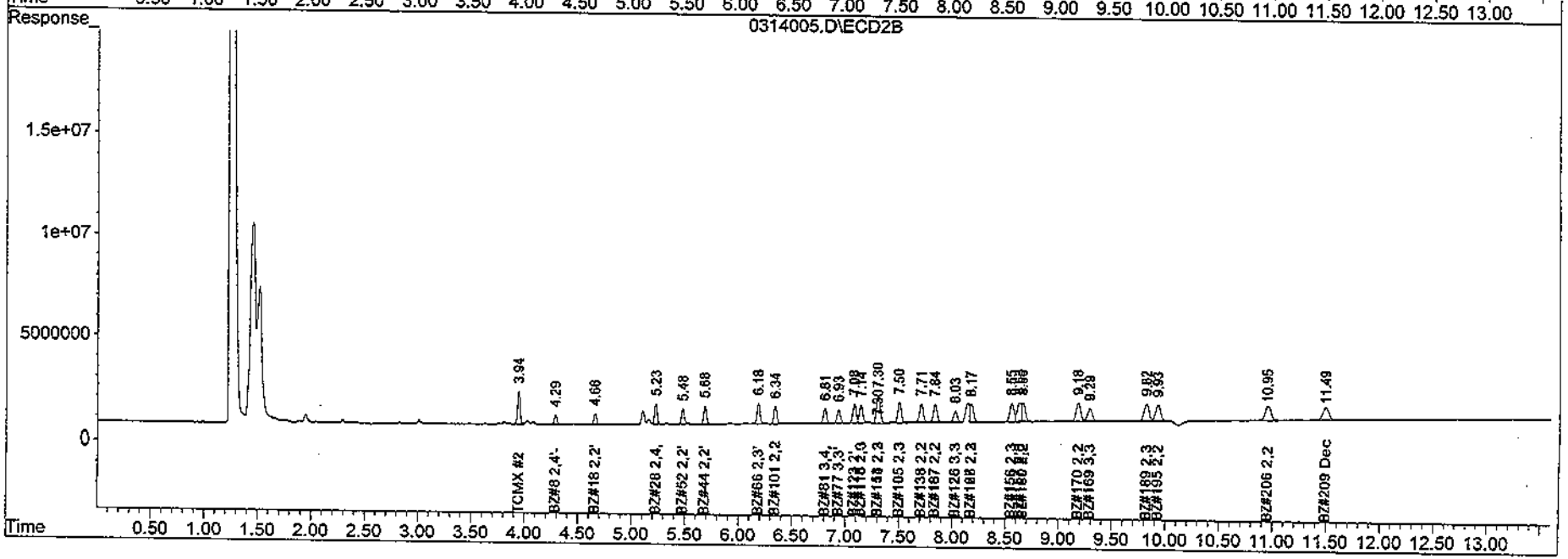
Target Compounds

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Data File : G:\LUCY\DATA\120314\0314005.D
Acq On : 3-14-12 11:05:20
Sample : PCB CONG 3
Misc : WATER
Quant Method : G:\LUCY\DATA\120314\CONG314.M

Vial: 5
Operator: MA
Inst : Lucy
Multiplr: 1.00





Quantitation Report (Not Reviewed)

Signal #1 : G:\LUCY\DATA\120314\0314006.D\ECD1A.CH Vial: 6
Signal #2 : G:\LUCY\DATA\120314\0314006.D\ECD2B.CH
Acq On : 3-14-12 11:21:37 Operator: MA
Sample : PCB CONG 4 Inst : Lucy
Misc : WATER Multiplr: 1.00
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Mar 14 13:15 2012 Quant Results File: CONG314.RES

Quant Method : G:\LUCY\DATA\120314\CONG314.M (RTE Integrator)
Title : 508/608/8081
Last Update : Wed Mar 14 13:11:58 2012
Response via : Multiple Level Calibration
DataAcq Meth : EPA8081N.M

Volume Inj. : 2ul
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.32 Signal #2 Info : 0.32

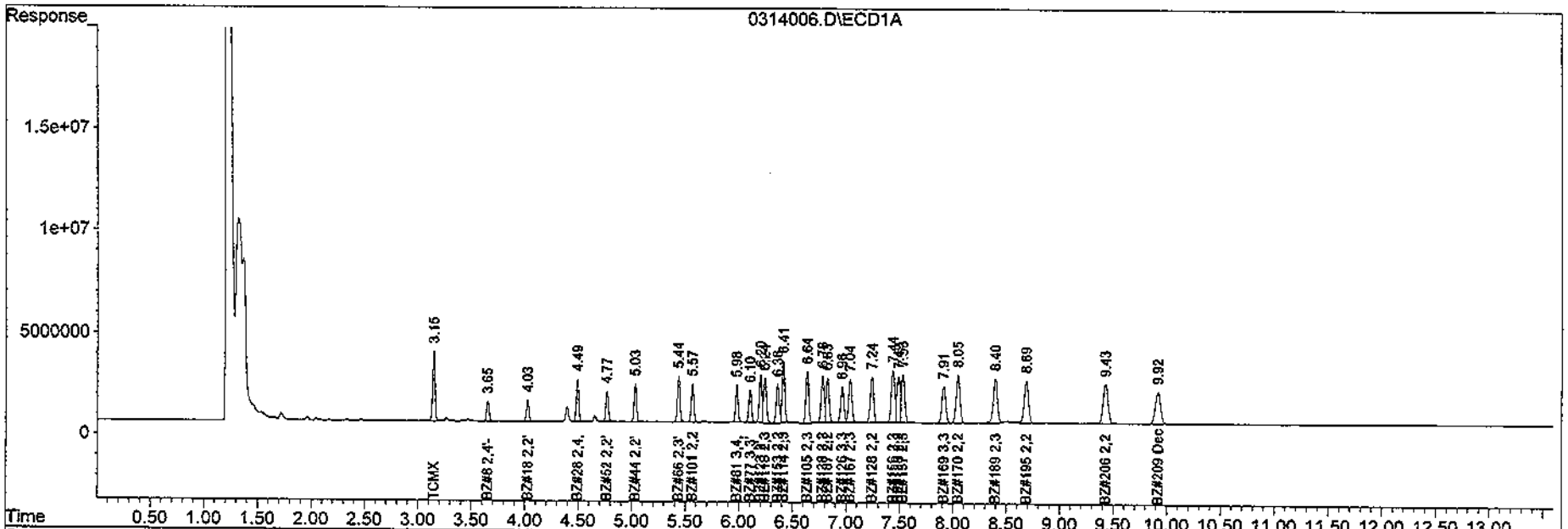
TA 4/3/12

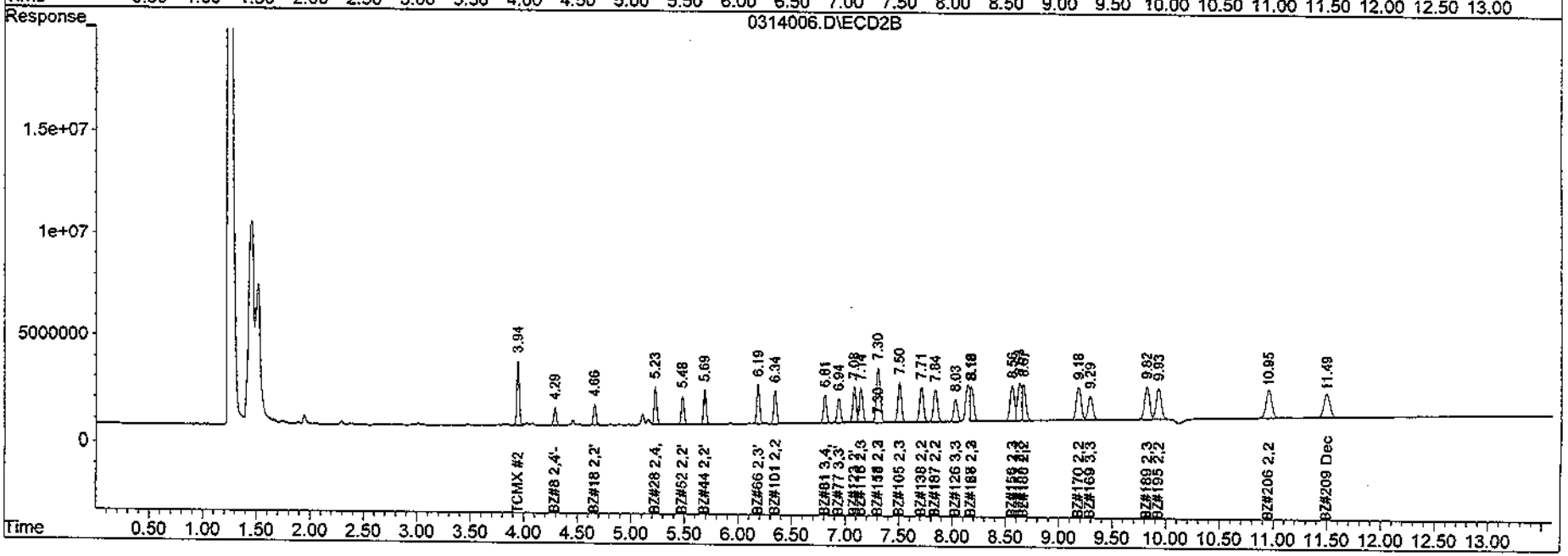
	Compound	RT#1	RT#2	Resp#1	Resp#2	~~ppb~~ ppm	~~ppb~~ ppm
	System Monitoring Compounds						
19)	S TCMX	3.15	3.94	3453225	3073837	0.0096	0.0081
	Surrogate Spike 5.000 Range 25 - 150 Recovery =					0.19%#	0.16%#
	Target Compounds						
1)	TM BZ#8 2,4'-DiCBP	3.65	4.29	957648	780752	0.0119	0.0091
2)	TM BZ#18 2,2',5-Tri	4.03	4.66	1041068	936515	0.0102	0.0092
3)	TM BZ#28 2,4,4'-Tri	4.49	5.23	2094796	1790319	0.0100	0.0084
4)	TM BZ#44 2,2',3,5'-	5.03	5.69	1875195	1647665	0.0100	0.0090
5)	TM BZ#52 2,2',5,5'-	4.77	5.48	1479566	1323208	0.0098	0.0090
6)	TM BZ#66 2,3',4,4'-	5.44	6.19	2257676	1864557	0.0099	0.0086
7)	TM BZ#101 2,2',4,5,	5.57	6.34	1863480	1581765	0.0100	0.0090
8)	TM BZ#105 2,3,3',4,	6.64	7.50	2547606	1900951	0.0100	0.0087
9)	TM BZ#118 2,3',4,4'	6.24	7.14	2222134	1628922	0.0097	0.0085
10)	TM BZ#128 2,2',3,3'	7.24	8.18	2240667	1644384	0.0098	0.0079
11)	TM BZ#138 2,2',3,4,	6.78	7.71	2289831	1654647	0.0100	0.0086
12)	TM BZ#153 2,2',4,4'	6.36	7.30	1927189	2630361	0.0097	0.0082
13)	TM BZ#170 2,2',3,3'	8.05	9.18	2349847	1583362	0.0102	0.0080
14)	TM BZ#180 2,2',3,4,	7.49	8.67	2251171	1714875	0.0099	0.0081
15)	TM BZ#187 2,2',3,4'	6.83	7.84	2183868	1532053	0.0102	0.0078
16)	TM BZ#195 2,2',3,3'	8.69	9.93	2060683	1490560	0.0099	0.0079
17)	TM BZ#206 2,2',3,3'	9.43	10.95	1914865	1382447	0.0101	0.0086
18)	TM BZ#209 DecaCBP	9.92	11.49	1531956	1161895	0.0100	0.0092
20)	TM BZ#77 3,3',4,4'-	6.10	6.94	1567335	1131455	0.0100	0.0084
21)	TM BZ#81 3,4,4',5-T	5.98	6.81	1805053	1319096	0.0099	0.0084
22)	TM BZ#123 2',3,4,4'	6.20	7.08	2326536	1711847	0.0100	0.0087
23)	TM BZ#126 3,3',4,4'	6.96	8.03	1734244	1042434	0.0101	0.0072 #
24)	TM BZ#156 2,3,3',4,	7.44	8.56	2577553	1674979	0.0098	0.0075
25)	TM BZ#157 2,3,3',4,	7.53	8.63	2343354	1791944	0.0098	0.0085
26)	TM BZ#167 2,3',4,4'	7.04	8.18	2114709	1644384	0.0098	0.0082
27)	TM BZ#169 3,3',4,4'	7.91	9.29	1777523	1114427	0.0099	0.0071 #
28)	BM BZ#189 2,3,3',4,	8.40	9.82	2187486	1584770	0.0094	0.0082
29)	TM BZ#114 2,3,4,4',	6.41	7.30	3006104	2630361	0.0102	0.0082
	Target Compounds						

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Data File : G:\LUCY\DATA\120314\0314006.D
Acq On : 3-14-12 11:21:37
Sample : PCB CONG 4
Misc : WATER
Quant Method : G:\LUCY\DATA\120314\CONG314.M

Vial: 6
Operator: MA
Inst : Lucy
Multiplr: 1.00





Quantitation Report (Not Reviewed)

Signal #1 : G:\LUCY\DATA\120314\0314007.D\ECD1A.CH Vial: 7
Signal #2 : G:\LUCY\DATA\120314\0314007.D\ECD2B.CH
Acq On : 3-14-12 11:37:52 Operator: MA
Sample : PCB CONG 5 Inst : Lucy
Misc : WATER Multiplr: 1.00
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Mar 14 13:15 2012 Quant Results File: CONG314.RES

Quant Method : G:\LUCY\DATA\120314\CONG314.M (RTE Integrator)
Title : 508/608/8081
Last Update : Wed Mar 14 13:11:58 2012
Response via : Multiple Level Calibration
DataAcq Meth : EPA8081N.M

Volume Inj. : 2ul
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.32 Signal #2 Info : 0.32

TA 4/3/12

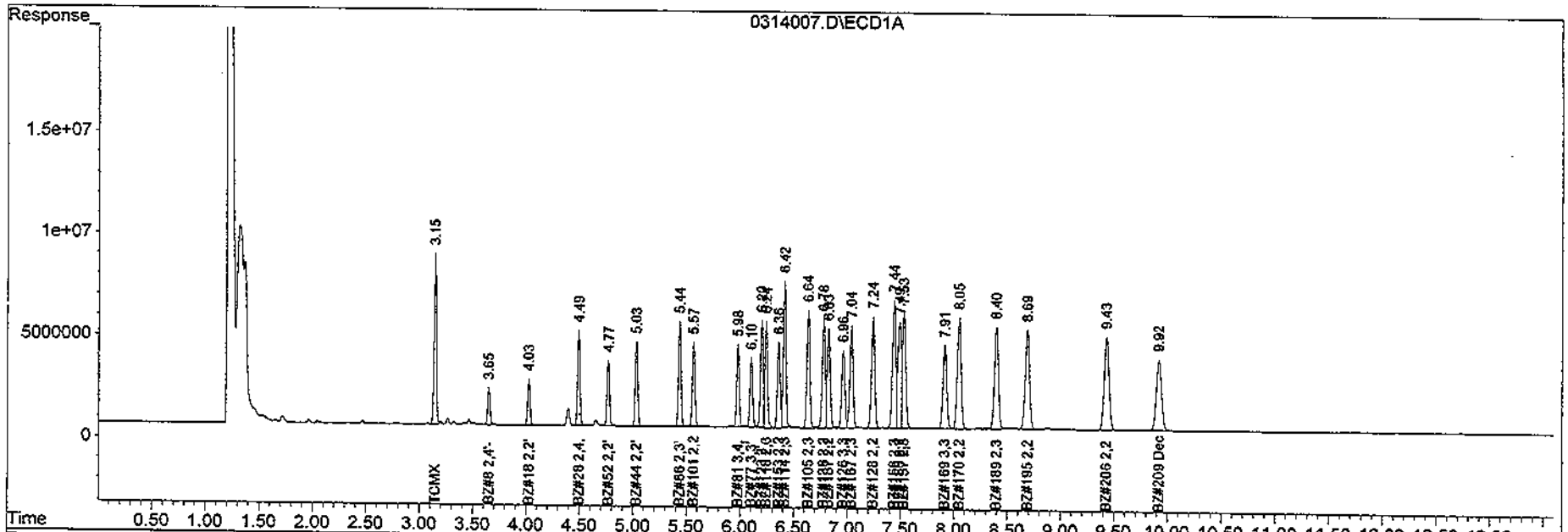
	Compound	RT#1	RT#2	Resp#1	Resp#2	~~ppb~~ ppm	~~ppb~~ ppm	
	System Monitoring Compounds							
19) S	TCMX	3.15	3.95	8367249	7726416	0.0233	0.0202	
	Surrogate Spike 5.000 Range 25 - 150 Recovery =					0.47%#	0.40%#	
	Target Compounds							
1) TM	BZ#8 2,4'-DiCBP	3.65	4.29	1833095	1700380	0.0263	0.0199	
2) TM	BZ#18 2,2',5-Tri	4.03	4.66	2273378	2040967	0.0222	0.0202	
3) TM	BZ#28 2,4,4'-Tri	4.49	5.23	4657145	4058507	0.0222	0.0190	
4) TM	BZ#44 2,2',3,5'-	5.03	5.69	4134366	3635557	0.0221	0.0199	
5) TM	BZ#52 2,2',5,5'-	4.77	5.48	3201511	2907687	0.0213	0.0199	
6) TM	BZ#66 2,3',4,4'-	5.44	6.19	5127126	4316381	0.0224	0.0200	
7) TM	BZ#101 2,2',4,5,	5.57	6.34	4117622	3439128	0.0220	0.0196	
8) TM	BZ#105 2,3,3',4,	6.64	7.51	5780113	4474690	0.0226	0.0205	
9) TM	BZ#118 2,3',4,4'	6.24	7.15	5205767	3700816	0.0227	0.0192	
10) TM	BZ#128 2,2',3,3'	7.24	8.18	5441554	3680486	0.0239	0.0178	#
11) TM	BZ#138 2,2',3,4,	6.78	7.71	5319935	3977872	0.0232	0.0206	
12) TM	BZ#153 2,2',4,4'	6.36	7.30	4188088	6279335	0.0211	0.0197	
13) TM	BZ#170 2,2',3,3'	8.05	9.18	5416826	3780938	0.0234	0.0192	
14) TM	BZ#180 2,2',3,4,	7.49	8.63	5164946	4299042	0.0228	0.0204	
15) TM	BZ#187 2,2',3,4'	6.83	7.84	4863715	3535557	0.0227	0.0181	
16) TM	BZ#195 2,2',3,3'	8.69	9.93	4839047	3482180	0.0233	0.0185	
17) TM	BZ#206 2,2',3,3'	9.43	10.95	4525584	2955108	0.0239	0.0184	
18) TM	BZ#209 DecaCBP	9.92	11.49	3460781	2439814	0.0226	0.0193	
20) TM	BZ#77 3,3',4,4'-	6.10	6.94	3372174	2567139	0.0216	0.0190	
21) TM	BZ#81 3,4,4',5-T	5.98	6.81	4017889	2944824	0.0221	0.0187	
22) TM	BZ#123 2',3,4,4'	6.20	7.08	5204912	3895287	0.0224	0.0198	
23) TM	BZ#126 3,3',4;4'	6.96	8.03	3781725	2466365	0.0219	0.0169	
24) TM	BZ#156 2,3,3',4,	7.44	8.56	6253783	4084644	0.0238	0.0183	
25) TM	BZ#157 2,3,3',4,	7.53	8.63	5648787	4299042	0.0236	0.0204	
26) TM	BZ#167 2,3',4,4'	7.04	8.18	4963861	3680486	0.0230	0.0184	
27) TM	BZ#169 3,3',4,4'	7.91	9.29	4050565	2584498	0.0225	0.0164	#
28) BM	BZ#189 2,3,3',4,	8.40	9.82	4966667	3682860	0.0213	0.0191	
29) TM	BZ#114 2,3,4,4',	6.42	7.30	7108413	6279335	0.0240	0.0197	

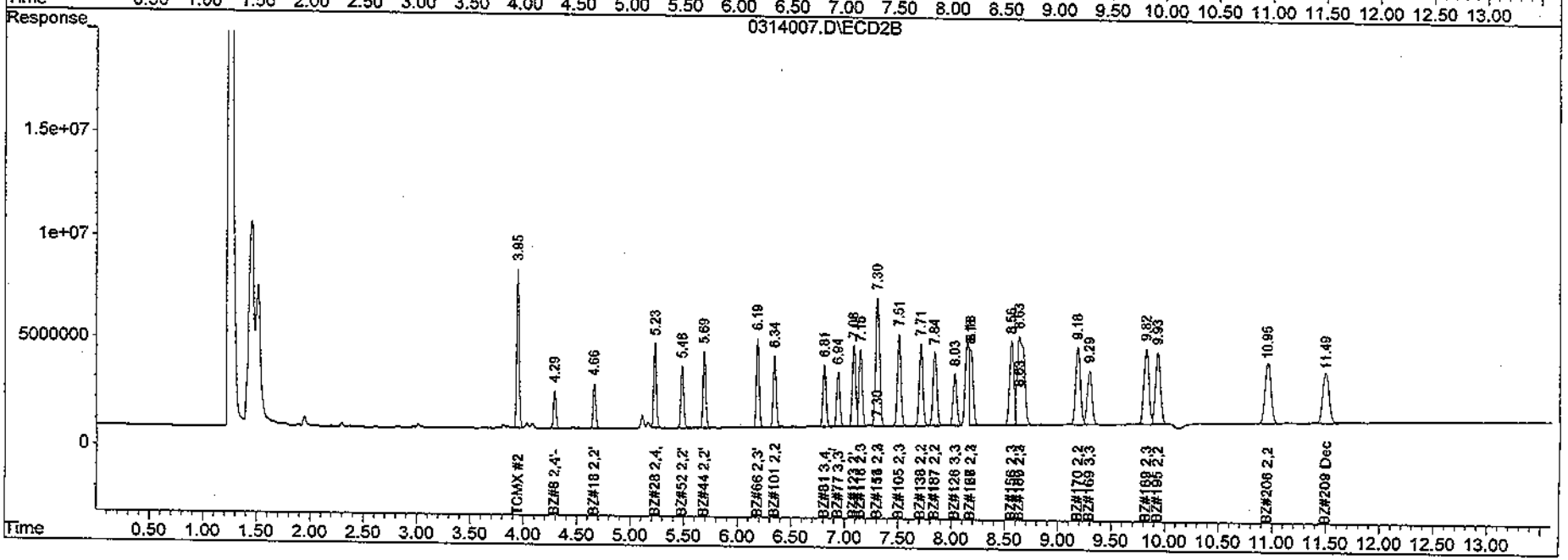
Target Compounds

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Data File : G:\LUCY\DATA\120314\0314007.D
Acq On : 3-14-12 11:37:52
Sample : PCB CONG 5
Misc : WATER
Quant Method : G:\LUCY\DATA\120314\CONG314.M

Vial: 7
Operator: MA
Inst : Lucy
Multiplr: 1.00





Quantitation Report (Not Reviewed)

Signal #1 : G:\LUCY\DATA\120314\0314008.D\ECD1A.CH Vial: 8
Signal #2 : G:\LUCY\DATA\120314\0314008.D\ECD2B.CH
Acq On : 3-14-12 11:54:09 Operator: MA
Sample : PCB CONG 6 Inst : Lucy
Misc : WATER Multiplr: 1.00
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Mar 14 13:15 2012 Quant Results File: CONG314.RES

Quant Method : G:\LUCY\DATA\120314\CONG314.M (RTE Integrator)
Title : 508/608/8081
Last Update : Wed Mar 14 13:11:58 2012
Response via : Multiple Level Calibration
DataAcq Meth : EPA8081N.M

Volume Inj. : 2ul
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.32 Signal #2 Info : 0.32

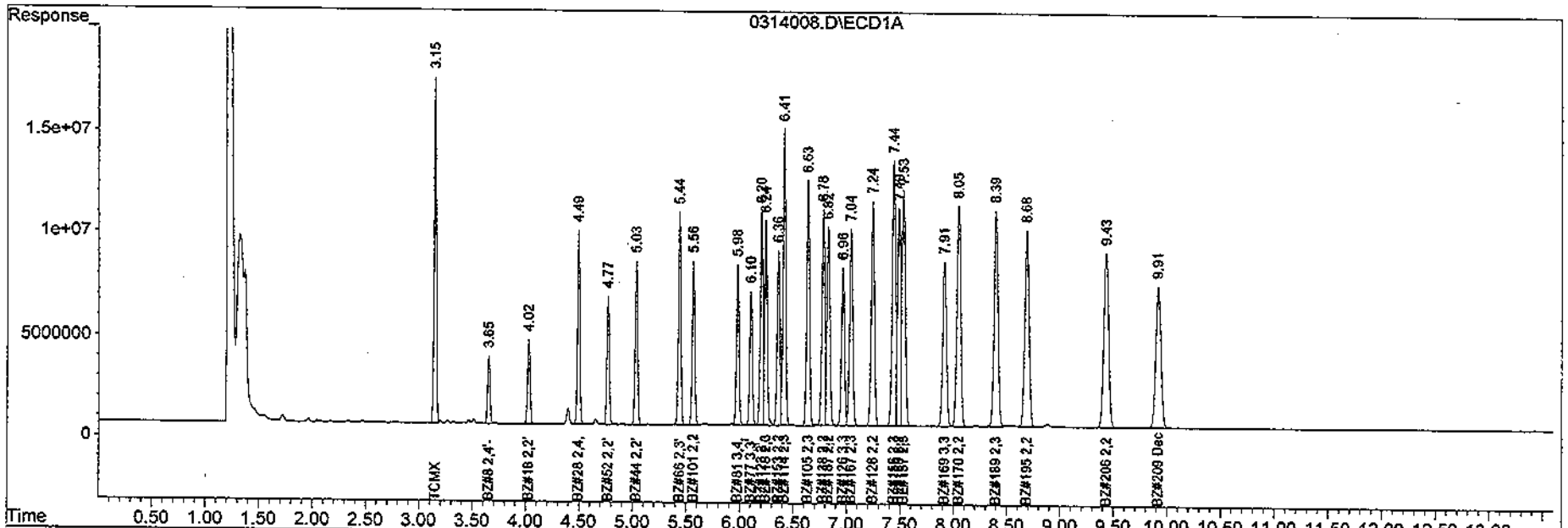
Compound	RT#1	RT#2	Resp#1	Resp#2	~~ppb~~ ppm	~~ppb~~ ppm
System Monitoring Compounds						
19) S TCMX	3.15	3.94	16964000	16066567	0.0472	0.0421
Surrogate Spike 5.000 Range 25 - 150 Recovery =					0.94%#	0.84%#
Target Compounds						
1) TM BZ#8 2,4'-DiCBP	3.65	4.29	3346528	3264710	0.0511	0.0383 #
2) TM BZ#18 2,2',5-Tri	4.02	4.66	4181705	3919204	0.0408	0.0387
3) TM BZ#28 2,4,4'-Tri	4.49	5.23	9430105	8089307	0.0450	0.0378
4) TM BZ#44 2,2',3,5'-	5.03	5.69	7962845	7282679	0.0427	0.0399
5) TM BZ#52 2,2',5,5'-	4.77	5.48	6275764	5734056	0.0418	0.0392
6) TM BZ#66 2,3',4,4'-	5.44	6.18	10339954	8415326	0.0453	0.0389
7) TM BZ#101 2,2',4,5,	5.56	6.34	7971547	6746977	0.0426	0.0384
8) TM BZ#105 2,3,3',4,	6.63	7.51	11985875	8758719	0.0470	0.0401
9) TM BZ#118 2,3',4,4'	6.24	7.15	9957478	7136867	0.0435	0.0371
10) TM BZ#128 2,2',3,3'	7.24	8.18	10901476	7528169	0.0479	0.0363
11) TM BZ#138 2,2',3,4,	6.78	7.71	10501532	7891888	0.0458	0.0409
12) TM BZ#153 2,2',4,4'	6.36	7.30	8497874	13096981	0.0428	0.0411
13) TM BZ#170 2,2',3,3'	8.05	9.18	10703429	7830171	0.0463	0.0397
14) TM BZ#180 2,2',3,4,	7.49	8.66	10578573	8215584	0.0466	0.0390
15) TM BZ#187 2,2',3,4'	6.82	7.84	9627891	7080352	0.0449	0.0362
16) TM BZ#195 2,2',3,3'	8.68	9.93	9501604	7060610	0.0458	0.0376
17) TM BZ#206 2,2',3,3'	9.43	10.95	8425811	6009451	0.0445	0.0375
18) TM BZ#209 DecaCBP	9.91	11.49	6874788	4792406	0.0448	0.0379
20) TM BZ#77 3,3',4,4'-	6.10	6.94	6536964	5002694	0.0419	0.0371
21) TM BZ#81 3,4,4',5-T	5.98	6.81	7814428	5893752	0.0430	0.0373
22) TM BZ#123 2',3,4,4'	6.20	7.08	10414223	7830712	0.0448	0.0398
23) TM BZ#126 3,3',4,4'	6.96	8.03	7673893	5070516	0.0445	0.0348
24) TM BZ#156 2,3,3',4,	7.44	8.56	12921117	8872418	0.0492	0.0397
25) TM BZ#157 2,3,3',4,	7.53	8.63	11372545	8425878	0.0475	0.0400
26) TM BZ#167 2,3',4,4'	7.04	8.18	9527989	7528169	0.0441	0.0376
27) TM BZ#169 3,3',4,4'	7.91	9.29	7968282	5066695	0.0443	0.0322 #
28) BM BZ#189 2,3,3',4,	8.39	9.82	10478250	7423284	0.0449	0.0384
29) TM BZ#114 2,3,4,4',	6.41	7.30	14510672	13096981	0.0491	0.0411

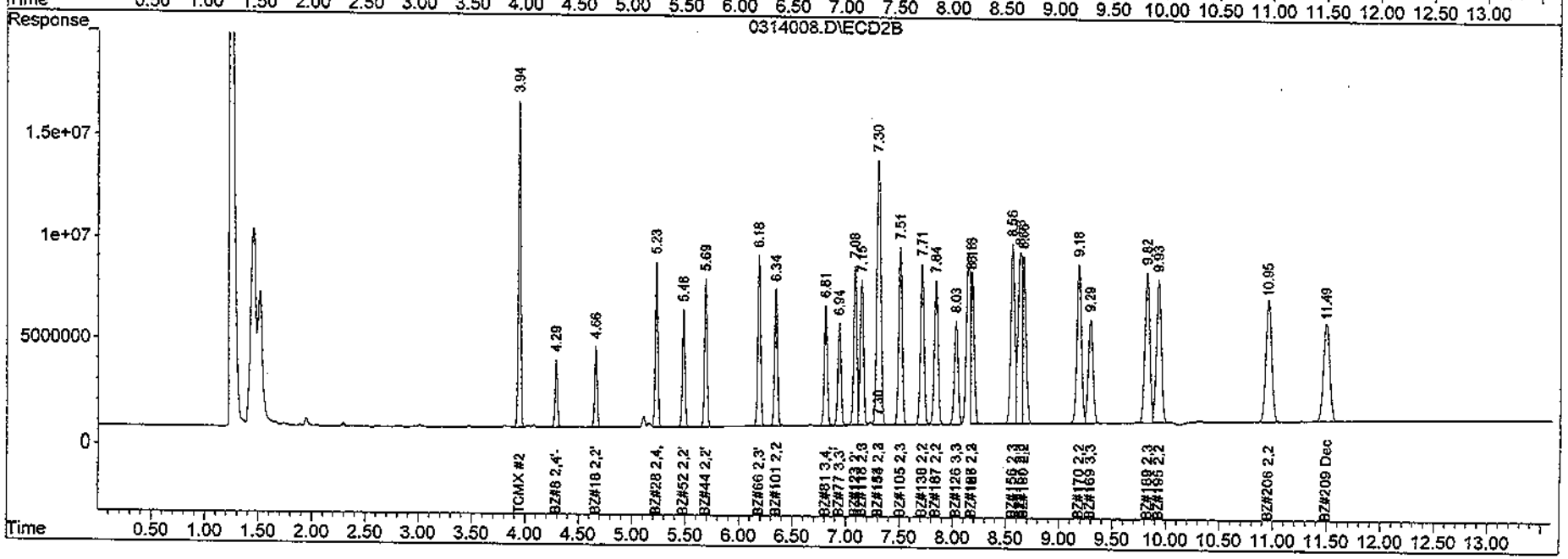
Target Compounds

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Data File : G:\LUCY\DATA\120314\0314008.D
Acq On : 3-14-12 11:54:09
Sample : PCB CONG 6
Misc : WATER
Quant Method : G:\LUCY\DATA\120314\CONG314.M

Vial: 8
Operator: MA
Inst : Lucy
Multiplr: 1.00





Quantitation Report (Not Reviewed)

Signal #1 : G:\LUCY\DATA\120314\0314009.D\ECD1A.CH Vial: 9
Signal #2 : G:\LUCY\DATA\120314\0314009.D\ECD2B.CH
Acq On : 3-14-12 12:10:32 Operator: MA
Sample : PCB CONG 7 Inst : Lucy
Misc : WATER Multiplr: 1.00
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Mar 14 13:15 2012 Quant Results File: CONG314.RES

Quant Method : G:\LUCY\DATA\120314\CONG314.M (RTE Integrator)
Title : 508/608/8081
Last Update : Wed Mar 14 13:11:58 2012
Response via : Multiple Level Calibration
DataAcq Meth : EPA8081N.M

Volume Inj. : 2ul
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.32 Signal #2 Info : 0.32

4/3/12

		Compound	RT#1	RT#2	Resp#1	Resp#2	~~ppb~~ ppm	~~ppb~~ ppm
		System Monitoring Compounds						
19)	S	TCMX	3.15	3.94	32238424	30707719	0.0898	0.0805
		Surrogate Spike 5.000 Range 25 - 150 Recovery =					1.80%#	1.61%#
		Target Compounds						
1)	TM	BZ#8 2,4'-DiCBP	3.65	4.29	6014368	5802469	0.0948	0.0680 #
2)	TM	BZ#18 2,2',5-Tri	4.03	4.66	7763904	7164828	0.0758	0.0708
3)	TM	BZ#28 2,4,4'-Tri	4.49	5.23	17326278	15609795	0.0826	0.0729
4)	TM	BZ#44 2,2',3,5'-	5.03	5.69	14988578	13507263	0.0803	0.0739
5)	TM	BZ#52 2,2',5,5'-	4.77	5.48	11598851	10821756	0.0772	0.0739
6)	TM	BZ#66 2,3',4,4'-	5.44	6.18	18784565	16014086	0.0822	0.0741
7)	TM	BZ#101 2,2',4,5,	5.57	6.34	15034993	12458911	0.0803	0.0710
8)	TM	BZ#105 2,3,3',4,	6.64	7.51	22484437	17469230	0.0881	0.0800
9)	TM	BZ#118 2,3',4,4'	6.24	7.14	18974535	13819658	0.0828	0.0719
10)	TM	BZ#128 2,2',3,3'	7.24	8.18	20012457	13785401	0.0879	0.0665
11)	TM	BZ#138 2,2',3,4,	6.78	7.71	19326342	15033603	0.0844	0.0780
12)	TM	BZ#153 2,2',4,4'	6.36	7.30	15511375	26218065	0.0781	0.0822
13)	TM	BZ#170 2,2',3,3'	8.05	9.18	20918834	14490247	0.0905	0.0735
14)	TM	BZ#180 2,2',3,4,	7.49	8.66	20391492	15400623	0.0899	0.0732
15)	TM	BZ#187 2,2',3,4'	6.83	7.84	17552247	13037422	0.0818	0.0667
16)	TM	BZ#195 2,2',3,3'	8.69	9.93	18412441	12761235	0.0888	0.0679
17)	TM	BZ#206 2,2',3,3'	9.43	10.95	16491758	11768177	0.0871	0.0734
18)	TM	BZ#209 DecaCBP	9.92	11.49	13059258	9541464	0.0851	0.0754
20)	TM	BZ#77 3,3',4,4'-	6.10	6.94	11846388	9349648	0.0759	0.0693
21)	TM	BZ#81 3,4,4',5-T	5.98	6.81	14539083	10875189	0.0800	0.0689
22)	TM	BZ#123 2',3,4,4'	6.20	7.08	19789084	14597200	0.0851	0.0742
23)	TM	BZ#126 3,3',4,4'	6.96	8.03	13775363	9609224	0.0799	0.0660
24)	TM	BZ#156 2,3,3',4,	7.44	8.56	23879202	16715358	0.0909	0.0748
25)	TM	BZ#157 2,3,3',4,	7.53	8.63	21433133	16256006	0.0895	0.0772
26)	TM	BZ#167 2,3',4,4'	7.04	8.18	18002601	13785401	0.0834	0.0689
27)	TM	BZ#169 3,3',4,4'	7.91	9.29	15253175	9738021	0.0849	0.0618 #
28)	BM	BZ#189 2,3,3',4,	8.40	9.82	20327503	14119629	0.0871	0.0731
29)	TM	BZ#114 2,3,4,4',	6.41	7.30	27223028	26218065	0.0920	0.0822

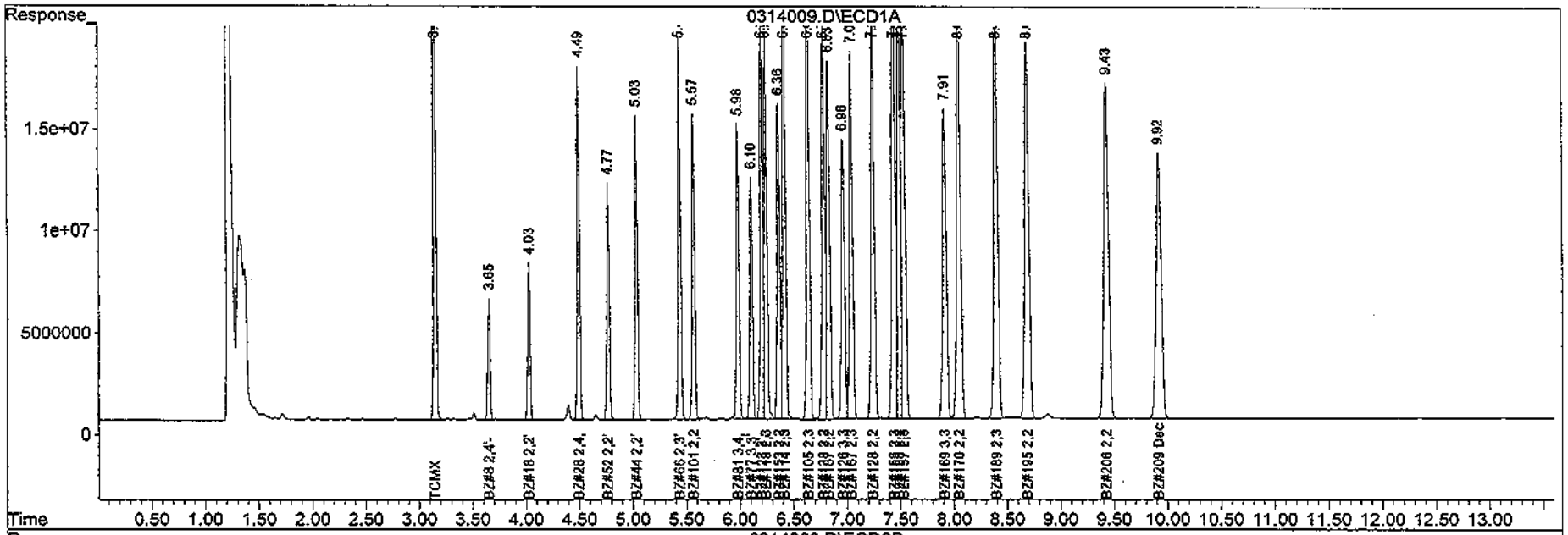
Target Compounds

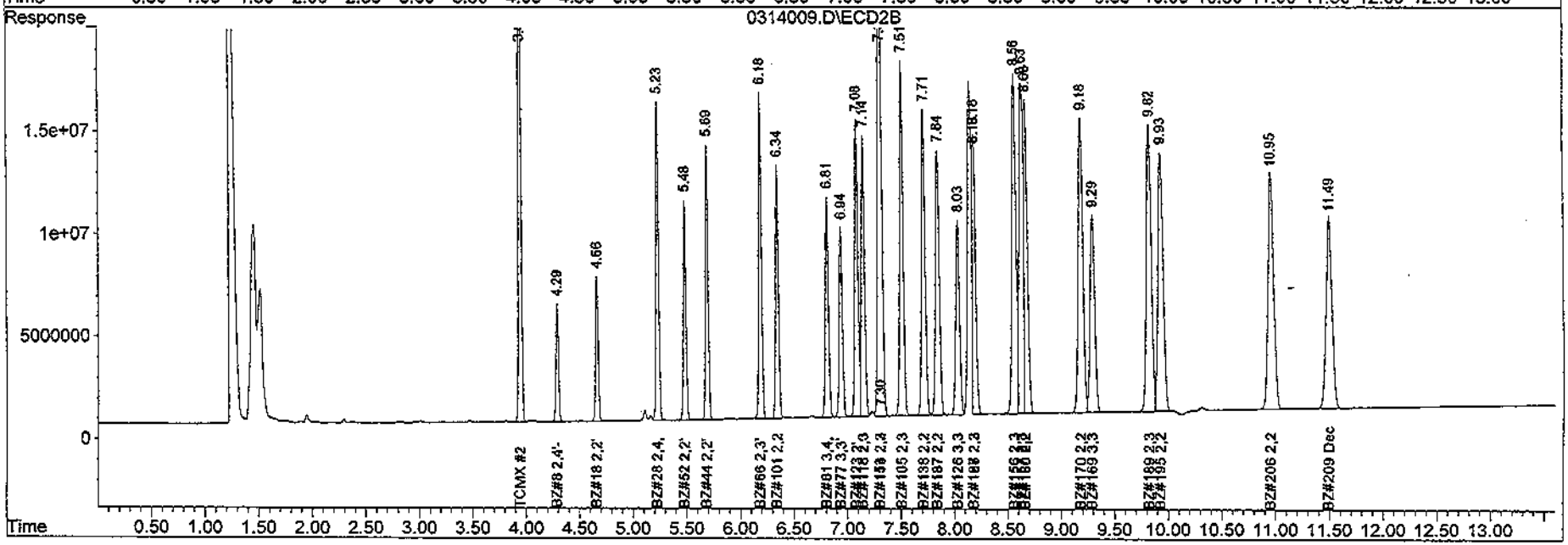
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : G:\LUCY\DATA\120314\0314009.D
Acq On : 3-14-12 12:10:32
Sample : PCB CONG 7
Misc : WATER
Quant Method : G:\LUCY\DATA\120314\CONG314.M

Vial: 9
Operator: MA
Inst : Lucy
Multiplr: 1.00





PCB Congeners
EPA Method 8082

Form 7

Second Source

Lab Name: APPL, Inc.
Case No:
Matrix: Water

SDG No:
Date Analyzed: 03/14/12
Instrument: Lucy
Initial Cal. Date: 03/14/12
Data File: 0314012.D

		Compound	MEAN	CCRF	%D		%Drift
1	TML	BZ#8 2,4'-DiCBP	49515300	39582700	20	TML	7.2
2	TM	BZ#18 2,2',5-TriCBP	50244200	48765200	2.9	TM	
3	TM	BZ#28 2,4,4'-TriCBP	103567000	97659400	5.7	TM	
4	TM	BZ#44 2,2',3,5'-TetraCBP	91508100	89617100	2.1	TM	
5	TM	BZ#52 2,2',5,5'-TetraCBP	72847900	73273900	0.58	TM	
6	TM	BZ#66 2,3',4,4'-TetraCBP	111344000	107522000	3.4	TM	
7	TM	BZ#101 2,2',4,5,5'-PentaCBP	91970400	93602900	1.8	TM	
8	TM	BZ#105 2,3,3',4,4'-PentaCBP	126310000	124984000	1.1	TM	
9	TM	BZ#118 2,3',4,4',5-PentaCBP	115171000	107691000	6.5	TM	
10	TM	BZ#128 2,2',3,3',4,4'-HexaCBP	113141000	116432000	2.9	TM	
11	TM	BZ#138 2,2',3,4,4',5'-HexaCBP	112860000	110646000	2.0	TM	
12	TM	BZ#153 2,2',4,4',5,5'-HexaCBP	96985800	97438300	0.47	TM	
13	TM	BZ#170 2,2',3,3',4,4',5-HeptaCBP	114943000	116446000	1.3	TM	
14	TM	BZ#180 2,2',3,4,4',5,5'-HeptaCBP	111497000	115265000	3.4	TM	
15	TM	BZ#187 2,2',3,4',5,5',6-HeptaCBP	105375000	99907400	5.2	TM	
16	TM	BZ#195 2,2',3,3',4,4',5,6-OctaCBP	101109000	104126000	3.0	TM	
17	TM	BZ#206 2,2',3,3',4,4',5,5',6-NonaCBP	93711300	88841100	5.2	TM	
18	TM	BZ#209 DecaCBP	74660100	77192500	3.4	TM	
19	TM	BZ#77 3,3',4,4'-TetraCBP	77011900	74016400	3.9	TM	
20	TM	BZ#81 3,4,4',5-TetraCBP	88134800	88280500	0.17	TM	
21	TM	BZ#123 2',3,4,4',5-PentaCBP	114405000	111604000	2.4	TM	
22	TM	BZ#126 3,3',4,4',5-PentaCBP	84908400	83505000	1.7	TM	
23	TM	BZ#156 2,3,3',4,4',5-HexaCBP	128970000	128175000	0.62	TM	
24	TM	BZ#157 2,3,3',4,4',5'-HexaCBP	118569000	115654000	2.5	TM	
25	TM	BZ#167 2,3',4,4',5,5'-HexaCBP	104948000	102979000	1.9	TM	
26	TM	BZ#169 3,3',4,4',5,5'-HexaCBP	88309300	87970600	0.38	TM	
27	TM	BZ#189 2,3,3',4,4',5,5'-HeptaCBP	111583000	115672000	3.7	TM	
28	TM	BZ#114 2,3,4,4',5-PentaCBP	145733000	135553000	7.0	TM	
29							
30							
31							
32							
33							
34							
35							
36							
37							
38							
39							
40							
		Average			3.4		

PCB Congeners
EPA Method 8082

Form 7

Second Source

Lab Name: APPL, Inc.
Case No:
Matrix: Water

SDG No:
Date Analyzed: 03/14/12
Instrument: Lucy
Cal. Date: 03/14/12
Data File: 0314012.D

		Compound	MEAN	CCRF	%D		%Drift
41	TM	BZ#8 2,4'-DiCBP	38188000	35168100	7.9	TM	
42	TM	BZ#18 2,2',5-TriCBP	45722500	42863900	6.3	TM	
43	TM	BZ#28 2,4,4'-TriCBP	87906000	86199200	1.9	TM	
44	TM	BZ#44 2,2',3,5'-TetraCBP	80546400	77717900	3.5	TM	
45	TM	BZ#52 2,2',5,5'-TetraCBP	65040100	64064700	1.5	TM	
46	TM	BZ#66 2,3',4,4'-TetraCBP	90847700	86565500	4.7	TM	
47	TM	BZ#101 2,2',4,5,5'-PentaC	76480000	78273300	2.3	TM	
48	TM	BZ#105 2,3,3',4,4'-PentaC	91650500	94942800	3.6	TM	
49	TM	BZ#118 2,3',4,4',5-PentaC	77193200	78836100	2.1	TM	
50	TM	BZ#128 2,2',3,3',4,4'-Hex	79327200	79045300	0.36	TM	
51	TM	BZ#138 2,2',3,4,4',5'-Hex	82293700	82927900	0.77	TM	
52	TM	BZ#153 2,2',4,4',5,5'-Hex	130857000	135256000	3.4	TM	
53	TM	BZ#170 2,2',3,3',4,4',5-H	79929500	85580400	7.1	TM	
54	TM	BZ#180 2,2',3,4,4',5,5'-H	83452600	87117200	4.4	TM	
55	TM	BZ#187 2,2',3,4',5,5',6-H	75550800	77542700	2.6	TM	
56	TM	BZ#195 2,2',3,3',4,4',5,6	70581000	74943600	6.2	TM	
57	TM	BZ#206 2,2',3,3',4,4',5,5	63931700	64441600	0.80	TM	
58	TM	BZ#209 DecaCBP	53558300	56842300	6.1	TM	
59	TM	BZ#77 3,3',4,4'-TetraCBP	55058100	55838500	1.4	TM	
60	TM	BZ#81 3,4,4',5-TetraCBP	64096000	65767700	2.6	TM	
61	TM	BZ#123 2',3,4,4',5-PentaC	83634500	82781400	1.0	TM	
62	TM	BZ#126 3,3',4,4',5-PentaC	50241000	60198500	20	TM	
63	TM	BZ#156 2,3,3',4,4',5-Hexa	84014300	87514000	4.2	TM	
64	TM	BZ#157 2,3,3',4,4',5'-Hex	85490400	87674700	2.6	TM	
65	TM	BZ#167 2,3',4,4',5,5'-Hex	79327200	79045300	0.36	TM	
66	TM	BZ#169 3,3',4,4',5,5'-Hex	54210100	58315400	7.6	TM	
67	BM	BZ#189 2,3,3',4,4',5,5'-H	76281900	77310400	1.3	BM	
68	TM	BZ#114 2,3,4,4',5-PentaCB	130857000	135256000	3.4	TM	
69							
70							
71							
72							
73							
74							
75							
76							
77							
78							
79							
80							
		Average			3.9		

Quantitation Report (QT Reviewed)

Signal #1 : G:\LUCY\DATA\120314\0314012.D\ECD1A.CH Vial: 12
Signal #2 : G:\LUCY\DATA\120314\0314012.D\ECD2B.CH
Acq On : 3-14-12 14:22:57 Operator: MA
Sample : PCB CONG 2ND SRC 2/16/12 #2 Inst : Lucy
Misc : WATER Multiplr: 1.00
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Mar 14 14:41 2012 Quant Results File: CONG314.RES

Quant Method : G:\LUCY\DATA\120314\CONG314.M (RTE Integrator)
Title : 508/608/8081
Last Update : Wed Mar 14 13:16:39 2012
Response via : Multiple Level Calibration
DataAcq Meth : EPA8081N.M

Volume Inj. : 2ul
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.32 Signal #2 Info : 0.32

TA 4/13/12

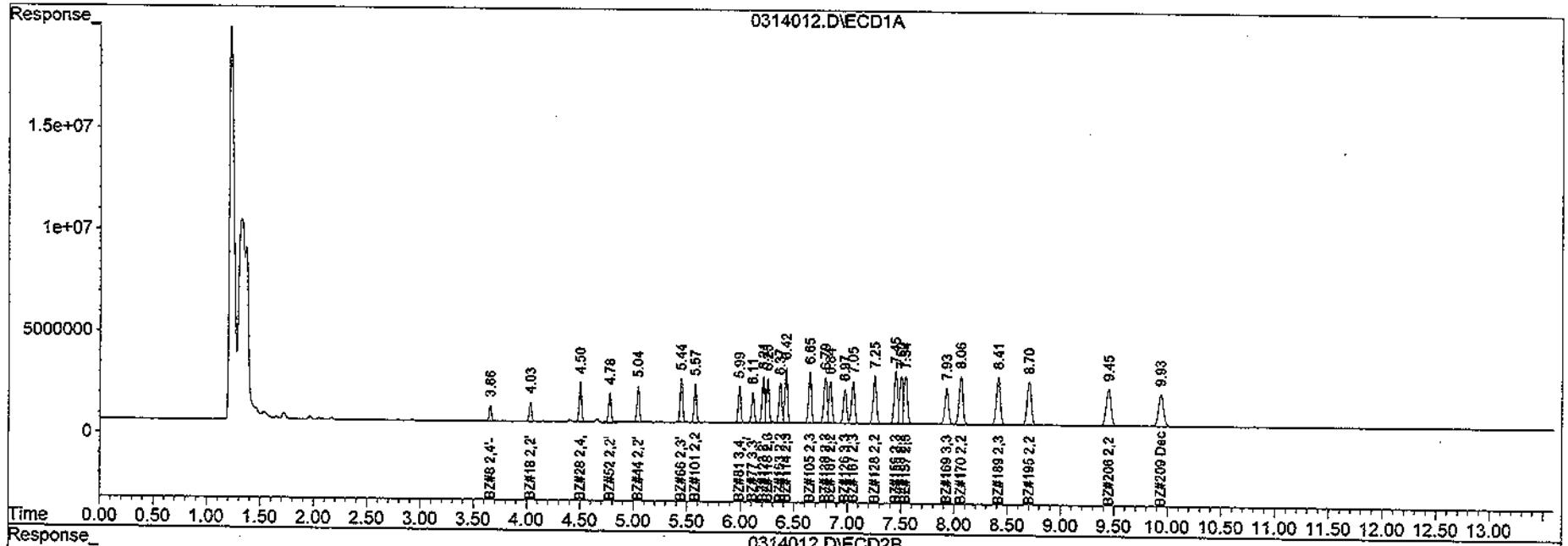
Compound	RT#1	RT#2	Resp#1	Resp#2	~~ppb~~ ppm	~~ppb~~ ppm
System Monitoring Compounds						
19) S TCMX	0.00	0.00	0	0	N.D. d	N.D. d
Surrogate Spike	5.000	Range	25 - 150	Recovery	= 0.00%#	0.00%#
Target Compounds						
1) TM BZ#8 2,4'-DiCBP	3.66	4.29	791654	703362	0.0093	0.0092
2) TM BZ#18 2,2',5-Tri	4.03	4.66	975304	857277	0.0097	0.0094
3) TM BZ#28 2,4,4'-Tri	4.50	5.23	1953188	1723984	0.0094	0.0098
4) TM BZ#44 2,2',3,5'-	5.04	5.69	1792341	1554358	0.0098	0.0096
5) TM BZ#52 2,2',5,5'-	4.78	5.48	1465478	1281294	0.0101	0.0099
6) TM BZ#66 2,3',4,4'-	5.44	6.19	2150439	1731310	0.0097	0.0095
7) TM BZ#101 2,2',4,5,	5.57	6.34	1872057	1565465	0.0102	0.0102
8) TM BZ#105 2,3,3',4,	6.65	7.51	2499671	1898855	0.0099	0.0104
9) TM BZ#118 2,3',4,4'	6.25	7.15	2153827	1576722	0.0094	0.0102
10) TM BZ#128 2,2',3,3'	7.25	8.18	2328637	1580905	0.0103	0.0100
11) TM BZ#138 2,2',3,4,	6.79	7.71	2212920	1658558	0.0098	0.0101
12) TM BZ#153 2,2',4,4'	6.37	7.31	1948766	2705114	0.0100	0.0103
13) TM BZ#170 2,2',3,3'	8.06	9.19	2328911	1711608	0.0101	0.0107
14) TM BZ#180 2,2',3,4,	7.50	8.67	2305293	1742344	0.0103	0.0104
15) TM BZ#187 2,2',3,4'	6.84	7.84	1998147	1550854	0.0095	0.0103
16) TM BZ#195 2,2',3,3'	8.70	9.93	2082517	1498872	0.0103	0.0106
17) TM BZ#206 2,2',3,3'	9.45	10.96	1776821	1288832	0.0095	0.0101
18) TM BZ#209 DecaCBP	9.93	11.50	1543850	1136845	0.0103	0.0106
20) TM BZ#77 3,3',4,4'-	6.11	6.94	1480328	1116769	0.0096	0.0101
21) TM BZ#81 3,4,4',5-T	5.99	6.81	1765610	1315353	0.0100	0.0103
22) TM BZ#123 2',3,4,4'	6.21	7.09	2232081	1655628	0.0098	0.0099
23) TM BZ#126 3,3',4,4'	6.97	8.03	1670100	1203969	0.0098	0.0120
24) TM BZ#156 2,3,3',4,	7.45	8.56	2563492	1750280	0.0099	0.0104
25) TM BZ#157 2,3,3',4,	7.54	8.63	2313071	1753494	0.0098	0.0103
26) TM BZ#167 2,3',4,4'	7.05	8.18	2059579	1580905	0.0098	0.0100
27) TM BZ#169 3,3',4,4'	7.93	9.30	1759411	1166307	0.0100	0.0108
28) BM BZ#189 2,3,3',4,	8.41	9.83	2313440	1546207	0.0104	0.0101
29) TM BZ#114 2,3,4,4',	6.42	7.31	2711068	2705114	0.0093	0.0103

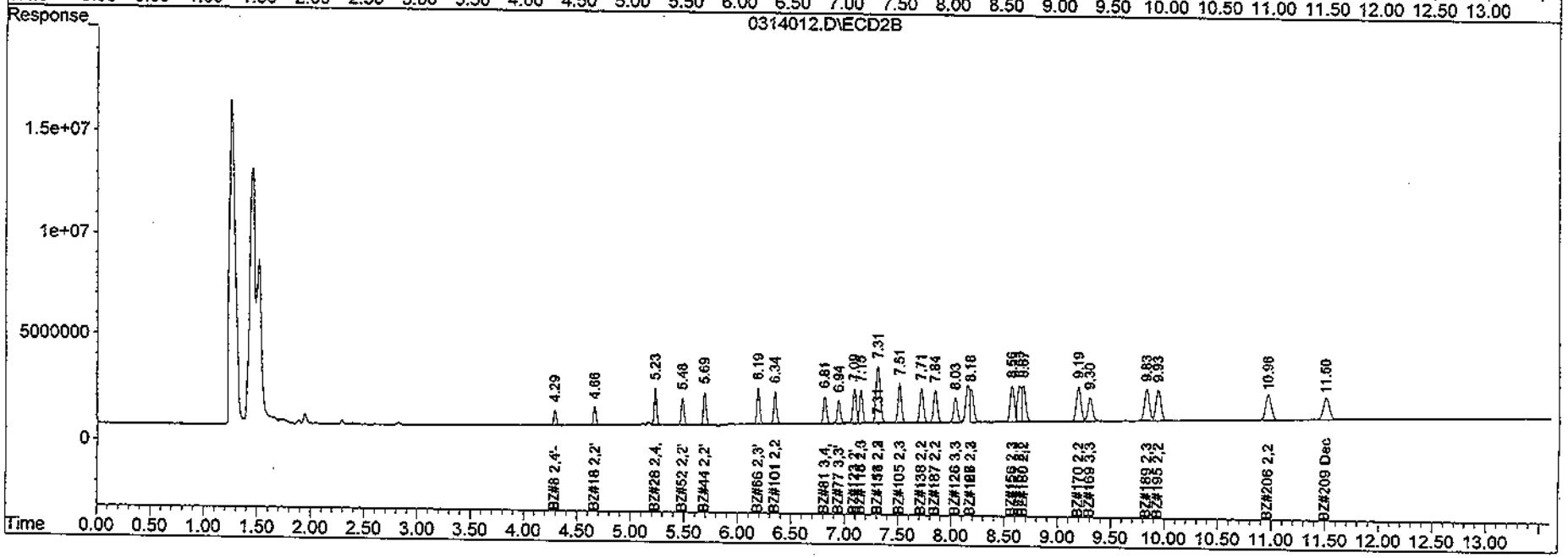
Target Compounds

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Data File : G:\LUCY\DATA\120314\0314012.D
Acq On : 3-14-12 14:22:57
Sample : PCB CONG 2ND SRC 2/16/12 #2
Misc : WATER
Quant Method : G:\LUCY\DATA\120314\CONG314.M

Vial: 12
Operator: MA
Inst : Lucy
Multiplr: 1.00





PCB Congeners
EPA Method 8082

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: Water

SDG No:
Date Analyzed: 03/29/12
Instrument: Lucy
Initial Cal. Date: 03/14/12
Data File: 0329002.D

		Compound	MEAN	CCRF	%D		%Drift
1	TML	BZ#8 2,4'-DiCBP	49515300	35968800	27	TML	5.6
2	TM	BZ#18 2,2',5-TriCBP	50244200	43946600	13	TM	
3	TM	BZ#28 2,4,4'-TriCBP	103567000	90308200	13	TM	
4	TM	BZ#44 2,2',3,5'-TetraCBP	91508100	79915900	13	TM	
5	TM	BZ#52 2,2',5,5'-TetraCBP	72847900	63064900	13	TM	
6	TM	BZ#66 2,3',4,4'-TetraCBP	111344000	98271000	12	TM	
7	TM	BZ#101 2,2',4,5,5'-PentaCBP	91970400	80567800	12	TM	
8	TM	BZ#105 2,3,3',4,4'-PentaCBP	126310000	111908000	11	TM	
9	TM	BZ#118 2,3',4,4',5-PentaCBP	115171000	95732100	17	TM	
10	TM	BZ#128 2,2',3,3',4,4'-HexaCBP	113141000	102885000	9.1	TM	
11	TM	BZ#138 2,2',3,4,4',5'-HexaCBP	112860000	100173000	11	TM	
12	TM	BZ#153 2,2',4,4',5,5'-HexaCBP	96985800	79323900	18	TM	
13	TM	BZ#170 2,2',3,3',4,4',5-HeptaCBP	114943000	101040000	12	TM	
14	TM	BZ#180 2,2',3,4,4',5,5'-HeptaCBP	111497000	96272700	14	TM	
15	TM	BZ#187 2,2',3,4',5,5',6-HeptaCBP	105375000	91736500	13	TM	
16	TM	BZ#195 2,2',3,3',4,4',5,6-OctaCBP	101109000	87588100	13	TM	
17	TM	BZ#206 2,2',3,3',4,4',5,5',6-NonaCBP	93711300	83820200	11	TM	
18	TM	BZ#209 DecaCBP	74660100	67437300	9.7	TM	
19	S	TCMX	172988000	159544000	7.7	S	
20	TM	BZ#77 3,3',4,4'-TetraCBP	77011900	65167200	15	TM	
21	TM	BZ#81 3,4,4',5-TetraCBP	88134800	76894400	13	TM	
22	TM	BZ#123 2',3,4,4',5-PentaCBP	114405000	96823800	15	TM	
23	TM	BZ#126 3,3',4,4',5-PentaCBP	84908400	71231200	16	TM	
24	TM	BZ#156 2,3,3',4,4',5-HexaCBP	128970000	118365000	8.2	TM	
25	TM	BZ#157 2,3,3',4,4',5'-HexaCBP	118569000	104879000	12	TM	
26	TM	BZ#167 2,3',4,4',5,5'-HexaCBP	104948000	90934500	13	TM	
27	TM	BZ#169 3,3',4,4',5,5'-HexaCBP	88309300	77896800	12	TM	
28	TM	BZ#189 2,3,3',4,4',5,5'-HeptaCBP	111583000	100826000	9.6	TM	
29	TM	BZ#114 2,3,4,4',5-PentaCBP	145733000	138718000	4.8	TM	
30							
31							
32							
33							
34							
35							
36							
37							
38							
39							
40							
		Average			12.7		

PCB Congeners
EPA Method 8082

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: Water

SDG No:
Date Analyzed: 03/29/12
Instrument: Lucy
Cal. Date: 03/14/12
Data File: 0329002.D

		Compound	MEAN	CCRF	%D		%Drift
41	TM	BZ#8 2,4'-DiCBP	38188000	36236500	5.1	TM	
42	TM	BZ#18 2,2',5-TriCBP	45722500	43219600	5.5	TM	
43	TM	BZ#28 2,4,4'-TriCBP	87906000	85712100	2.5	TM	
44	TM	BZ#44 2,2',3,5'-TetraCBP	80546400	74265000	7.8	TM	
45	TM	BZ#52 2,2',5,5'-TetraCBP	65040100	60431200	7.1	TM	
46	TM	BZ#66 2,3',4,4'-TetraCBP	90847700	87692200	3.5	TM	
47	TM	BZ#101 2,2',4,5,5'-PentaC	76480000	69641000	8.9	TM	
48	TM	BZ#105 2,3,3',4,4'-PentaC	91650500	90173500	1.6	TM	
49	TM	BZ#118 2,3',4,4',5-PentaC	77193200	73345000	5.0	TM	
50	TM	BZ#128 2,2',3,3',4,4'-Hex	79327200	76689200	3.3	TM	
51	TM	BZ#138 2,2',3,4,4',5'-Hex	82293700	78526700	4.6	TM	
52	TM	BZ#153 2,2',4,4',5,5'-Hex	130857000	124319000	5.0	TM	
53	TM	BZ#170 2,2',3,3',4,4',5-H	79929500	79459200	0.59	TM	
54	TM	BZ#180 2,2',3,4,4',5,5'-H	83452600	82211900	1.5	TM	
55	TM	BZ#187 2,2',3,4',5,5',6-H	75550800	72485600	4.1	TM	
56	TM	BZ#195 2,2',3,3',4,4',5,6	70581000	75173600	6.5	TM	
57	TM	BZ#206 2,2',3,3',4,4',5,5	63931700	65342500	2.2	TM	
58	TM	BZ#209 DecaCBP	53558300	52591200	1.8	TM	
59	S	TCMX	159537000	159817000	0.18	S	
60	TM	BZ#77 3,3',4,4'-TetraCBP	55058100	50725600	7.9	TM	
61	TM	BZ#81 3,4,4',5-TetraCBP	64096000	61296500	4.4	TM	
62	TM	BZ#123 2',3,4,4',5-PentaC	83634500	80231600	4.1	TM	
63	TM	BZ#126 3,3',4,4',5-PentaC	50241000	49553500	1.4	TM	
64	TM	BZ#156 2,3,3',4,4',5-Hexa	84014300	80857100	3.8	TM	
65	TM	BZ#157 2,3,3',4,4',5'-Hex	85490400	86090000	0.70	TM	
66	TM	BZ#167 2,3',4,4',5,5'-Hex	79327200	76689200	3.3	TM	
67	TM	BZ#169 3,3',4,4',5,5'-Hex	54210100	58883900	8.6	TM	
68	BM	BZ#189 2,3,3',4,4',5,5'-H	76281900	74923000	1.8	BM	
69	TM	BZ#114 2,3,4,4',5-PentaCB	130857000	124319000	5.0	TM	
70							
71							
72							
73							
74							
75							
76							
77							
78							
79							
80							
		Average			4.1		

Quantitation Report (Not Reviewed)

Signal #1 : G:\LUCY\DATA\120329\0329002.D\ECD1A.CH Vial: 2
Signal #2 : G:\LUCY\DATA\120329\0329002.D\ECD2B.CH
Acq On : 3-29-12 9:51:26 Operator: MA
Sample : PCB CONG 5 2/14/12 Inst : Lucy
Misc : WATER Multiplr: 1.00
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Mar 29 10:53 2012 Quant Results File: CONG314.RES

Quant Method : G:\LUCY\DATA\120329\CONG314.M (RTE Integrator)
Title : 508/608/8081
Last Update : Wed Mar 21 09:24:57 2012
Response via : Multiple Level Calibration
DataAcq Meth : EPA8081N.M

Volume Inj. : 2ul
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.32 Signal #2 Info : 0.32

DA 4/13/12

	Compound	RT#1	RT#2	Resp#1	Resp#2	~~ppb~~ ppm	~~ppb~~ ppm
	System Monitoring Compounds						
19) S	TCMX	3.15	3.94	7982224	7990854	0.0231	0.0250
	Surrogate Spike 0.100 Range 25 - 150 Recovery =					23.10%#	25.00%
	Target Compounds						
1) TM	BZ#8 2,4'-DiCBP	3.65	4.29	1798442	1811824	0.0264	0.0237
2) TM	BZ#18 2,2',5-Tri	4.02	4.66	2197329	2160980	0.0219	0.0236
3) TM	BZ#28 2,4,4'-Tri	4.49	5.22	4515412	4285605	0.0218	0.0244
4) TM	BZ#44 2,2',3,5'-	5.03	5.68	3995797	3713248	0.0218	0.0231
5) TM	BZ#52 2,2',5,5'-	4.77	5.48	3153243	3021562	0.0216	0.0232
6) TM	BZ#66 2,3',4,4'-	5.43	6.18	4913551	4384609	0.0221	0.0241
7) TM	BZ#101 2,2',4,5,	5.56	6.34	4028390	3482050	0.0219	0.0228
8) TM	BZ#105 2,3,3',4,	6.63	7.50	5595392	4508674	0.0221	0.0246
9) TM	BZ#118 2,3',4,4'	6.24	7.14	4786603	3667251	0.0208	0.0238
10) TM	BZ#128 2,2',3,3'	7.24	8.17	5144238	3834460	0.0227	0.0242
11) TM	BZ#138 2,2',3,4,	6.78	7.71	5008670	3926336	0.0222	0.0239
12) TM	BZ#153 2,2',4,4'	6.36	7.30	3966196	6215970	0.0204	0.0238
13) TM	BZ#170 2,2',3,3'	8.04	9.18	5052022	3972958	0.0220	0.0249
14) TM	BZ#180 2,2',3,4,	7.49	8.66	4813636	4110597	0.0216	0.0246
15) TM	BZ#187 2,2',3,4'	6.82	7.84	4586825	3624281	0.0218	0.0240
16) TM	BZ#195 2,2',3,3'	8.68	9.92	4379405	3758680	0.0217	0.0266
17) TM	BZ#206 2,2',3,3'	9.42	10.95	4191009	3267127	0.0224	0.0256
18) TM	BZ#209 DecaCBP	9.91	11.49	3371866	2629558	0.0226	0.0245
20) TM	BZ#77 3,3',4,4'-	6.10	6.93	3258362	2536279	0.0212	0.0230
21) TM	BZ#81 3,4,4',5-T	5.97	6.80	3844720	3064823	0.0218	0.0239
22) TM	BZ#123 2',3,4,4'	6.20	7.08	4841190	4011580	0.0212	0.0240
23) TM	BZ#126 3,3',4,4'	6.96	8.03	3561561	2477676	0.0210	0.0247
24) TM	BZ#156 2,3,3',4,	7.43	8.55	5918272	4042857	0.0229	0.0241
25) TM	BZ#157 2,3,3',4,	7.52	8.63	5243927	4304501	0.0221	0.0252
26) TM	BZ#167 2,3',4,4'	7.04	8.17	4546724	3834460	0.0217	0.0242
27) TM	BZ#169 3,3',4,4'	7.91	9.28	3894842	2944194	0.0221	0.0272
28) BM	BZ#189 2,3,3',4,	8.39	9.81	5041311	3746152	0.0226	0.0246
29) TM	BZ#114 2,3,4,4',	6.41	7.30	6935919	6215970	0.0238	0.0238

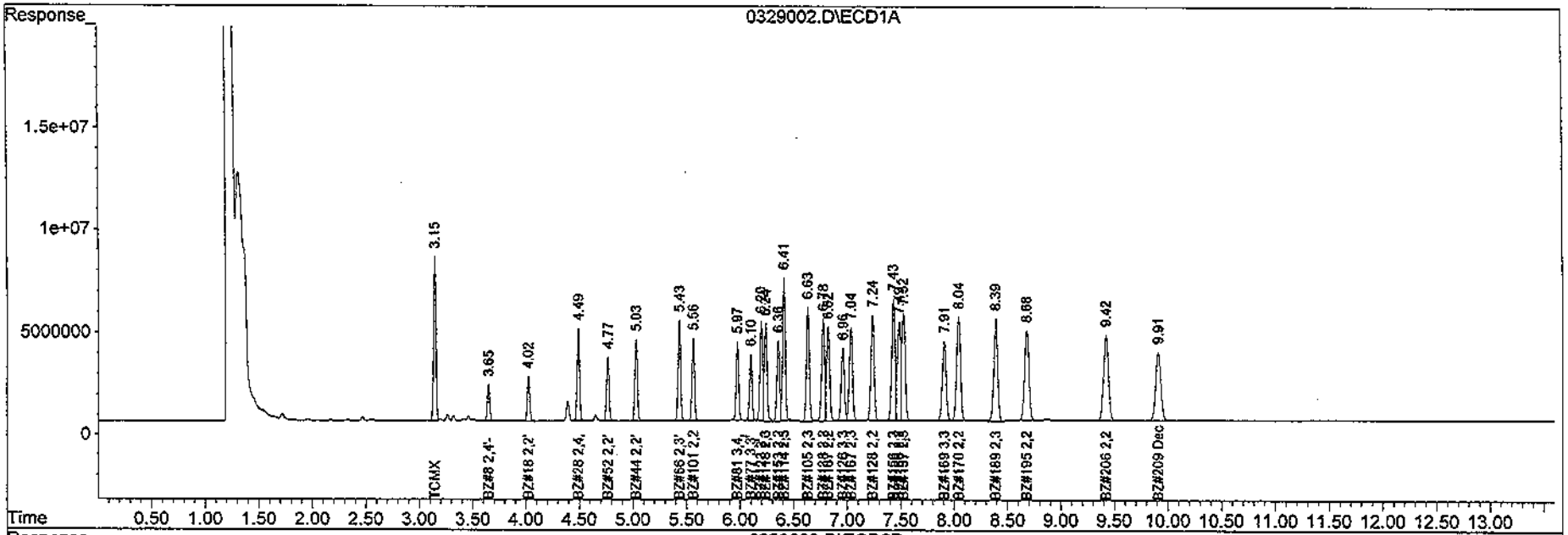
Target Compounds

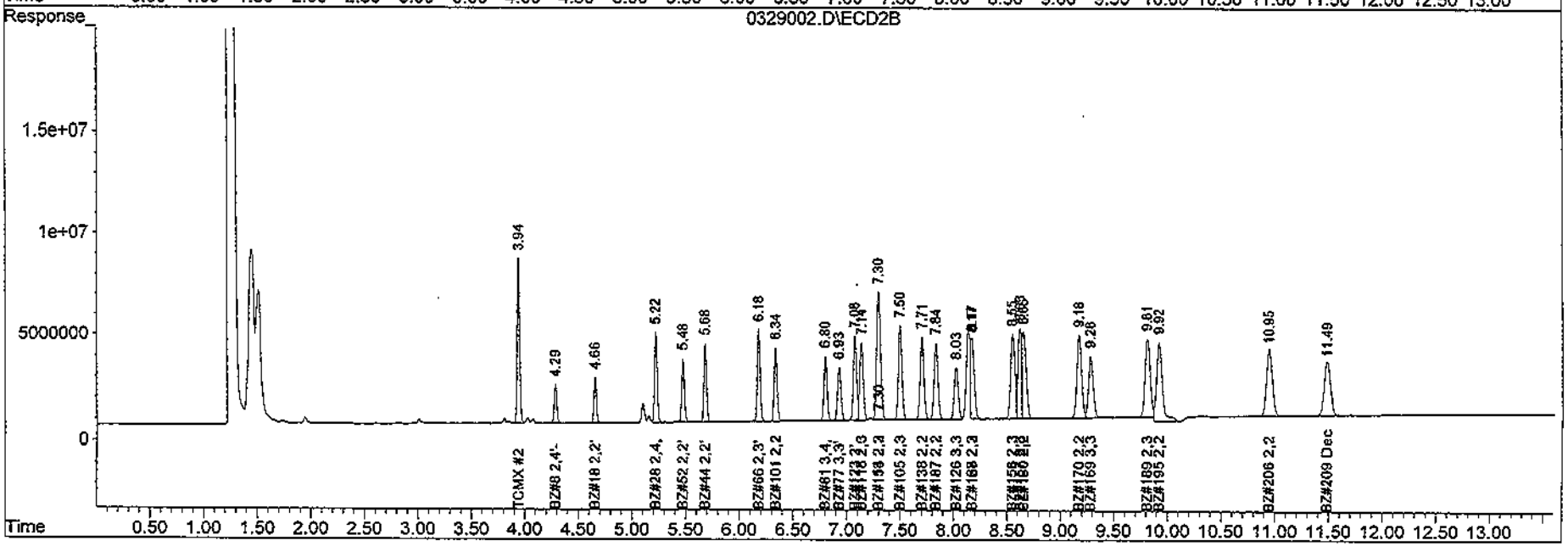
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : G:\LUCY\DATA\120329\0329002.D
Acq On : 3-29-12 9:51:26
Sample : PCB CONG 5 2/14/12
Misc : WATER
Quant Method : G:\LUCY\DATA\120329\CONG314.M

Vial: 2
Operator: MA
Inst : Lucy
Multiplr: 1.00





PCB Congeners
EPA Method 8082

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: Water

SDG No:
Date Analyzed: 03/29/12
Instrument: Lucy
Initial Cal. Date: 03/14/12
Data File: 0329015.D

		Compound	MEAN	CCRF	%D		%Drift
1	TML	BZ#8 2,4'-DiCBP	49515300	36101100	27	TML	6.0
2	TM	BZ#18 2,2',5-TriCBP	50244200	44465200	12	TM	
3	TM	BZ#28 2,4,4'-TriCBP	103567000	93459600	9.8	TM	
4	TM	BZ#44 2,2',3,5'-TetraCBP	91508100	81795100	11	TM	
5	TM	BZ#52 2,2',5,5'-TetraCBP	72847900	63642500	13	TM	
6	TM	BZ#66 2,3',4,4'-TetraCBP	111344000	99786500	10	TM	
7	TM	BZ#101 2,2',4,5,5'-PentaCBP	91970400	80880100	12	TM	
8	TM	BZ#105 2,3,3',4,4'-PentaCBP	126310000	117264000	7.2	TM	
9	TM	BZ#118 2,3',4,4',5-PentaCBP	115171000	100184000	13	TM	
10	TM	BZ#128 2,2',3,3',4,4'-HexaCBP	113141000	104972000	7.2	TM	
11	TM	BZ#138 2,2',3,4,4',5'-HexaCBP	112860000	103306000	8.5	TM	
12	TM	BZ#153 2,2',4,4',5,5'-HexaCBP	96985800	81540700	16	TM	
13	TM	BZ#170 2,2',3,3',4,4',5-HeptaCBP	114943000	106731000	7.1	TM	
14	TM	BZ#180 2,2',3,4,4',5,5'-HeptaCBP	111497000	104754000	6.0	TM	
15	TM	BZ#187 2,2',3,4',5,5',6-HeptaCBP	105375000	94938000	9.9	TM	
16	TM	BZ#195 2,2',3,3',4,4',5,6-OctaCBP	101109000	96176400	4.9	TM	
17	TM	BZ#206 2,2',3,3',4,4',5,5',6-NonaCBP	93711300	89171200	4.8	TM	
18	TM	BZ#209 DecaCBP	74660100	68722800	8.0	TM	
19	S	TCMX	172988000	162778000	5.9	S	
20	TM	BZ#77 3,3',4,4'-TetraCBP	77011900	67122300	13	TM	
21	TM	BZ#81 3,4,4',5-TetraCBP	88134800	78611700	11	TM	
22	TM	BZ#123 2',3,4,4',5-PentaCBP	114405000	103170000	9.8	TM	
23	TM	BZ#126 3,3',4,4',5-PentaCBP	84908400	75412900	11	TM	
24	TM	BZ#156 2,3,3',4,4',5-HexaCBP	128970000	122030000	5.4	TM	
25	TM	BZ#157 2,3,3',4,4',5'-HexaCBP	118569000	108247000	8.7	TM	
26	TM	BZ#167 2,3',4,4',5,5'-HexaCBP	104948000	96835100	7.7	TM	
27	TM	BZ#169 3,3',4,4',5,5'-HexaCBP	88309300	83915500	5.0	TM	
28	TM	BZ#189 2,3,3',4,4',5,5'-HeptaCBP	111583000	102269000	8.3	TM	
29	TM	BZ#114 2,3,4,4',5-PentaCBP	145733000	140081000	3.9	TM	
30							
31							
32							
33							
34							
35							
36							
37							
38							
39							
40							
		Average			9.6		

PCB Congeners
EPA Method 8082

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: Water

SDG No:
Date Analyzed: 03/29/12
Instrument: Lucy
Cal. Date: 03/14/12
Data File: 0329015.D

		Compound	MEAN	CCRF	%D		%Drift
41	TM	BZ#8 2,4'-DiCBP	38188000	36749000	3.8	TM	
42	TM	BZ#18 2,2',5-TriCBP	45722500	43874900	4.0	TM	
43	TM	BZ#28 2,4,4'-TriCBP	87906000	88696400	0.90	TM	
44	TM	BZ#44 2,2',3,5'-TetraCBP	80546400	76694100	4.8	TM	
45	TM	BZ#52 2,2',5,5'-TetraCBP	65040100	62733500	3.5	TM	
46	TM	BZ#66 2,3',4,4'-TetraCBP	90847700	93122700	2.5	TM	
47	TM	BZ#101 2,2',4,5,5'-PentaC	76480000	73161600	4.3	TM	
48	TM	BZ#105 2,3,3',4,4'-PentaC	91650500	95709100	4.4	TM	
49	TM	BZ#118 2,3',4,4',5-PentaC	77193200	83140100	7.7	TM	
50	TM	BZ#128 2,2',3,3',4,4'-Hex	79327200	78981500	0.44	TM	
51	TM	BZ#138 2,2',3,4,4',5'-Hex	82293700	82742300	0.55	TM	
52	TM	BZ#153 2,2',4,4',5,5'-Hex	130857000	129196000	1.3	TM	
53	TM	BZ#170 2,2',3,3',4,4',5-H	79929500	80723900	0.99	TM	
54	TM	BZ#180 2,2',3,4,4',5,5'-H	83452600	84165100	0.85	TM	
55	TM	BZ#187 2,2',3,4',5,5',6-H	75550800	75198500	0.47	TM	
56	TM	BZ#195 2,2',3,3',4,4',5,6	70581000	80773500	14	TM	
57	TM	BZ#206 2,2',3,3',4,4',5,5	63931700	68138800	6.6	TM	
58	TM	BZ#209 DecaCBP	53558300	60054100	12	TM	
59	S	TCMX	159537000	166710000	4.5	S	
60	TM	BZ#77 3,3',4,4'-TetraCBP	55058100	57494600	4.4	TM	
61	TM	BZ#81 3,4,4',5-TetraCBP	64096000	64864100	1.2	TM	
62	TM	BZ#123 2',3,4,4',5-PentaC	83634500	83367900	0.32	TM	
63	TM	BZ#126 3,3',4,4',5-PentaC	50241000	52033300	3.6	TM	
64	TM	BZ#156 2,3,3',4,4',5-Hexa	84014300	85333900	1.6	TM	
65	TM	BZ#157 2,3,3',4,4',5'-Hex	85490400	89186000	4.3	TM	
66	TM	BZ#167 2,3',4,4',5,5'-Hex	79327200	78981500	0.44	TM	
67	TM	BZ#169 3,3',4,4',5,5'-Hex	54210100	60170100	11	TM	
68	BM	BZ#189 2,3,3',4,4',5,5'-H	76281900	82650200	8.3	BM	
69	TM	BZ#114 2,3,4,4',5-PentaCB	130857000	129196000	1.3	TM	
70							
71							
72							
73							
74							
75							
76							
77							
78							
79							
80							
		Average			3.9		

Quantitation Report (Not Reviewed)

Signal #1 : G:\LUCY\DATA\120329\0329015.D\ECD1A.CH Vial: 15
Signal #2 : G:\LUCY\DATA\120329\0329015.D\ECD2B.CH
Acq On : 3-29-12 14:04:13 Operator: MA
Sample : PCB CONG 5 2/14/12 Inst : Lucy
Misc : WATER Multiplr: 1.00
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Mar 29 14:52 2012 Quant Results File: CONG314.RES

Quant Method : G:\LUCY\DATA\120329\CONG314.M (RTE Integrator)
Title : 508/608/8081
Last Update : Wed Mar 21 09:24:57 2012
Response via : Multiple Level Calibration
DataAcq Meth : EPA8081N.M

Volume Inj. : 2ul
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.32 Signal #2 Info : 0.32

TA 4/13/12

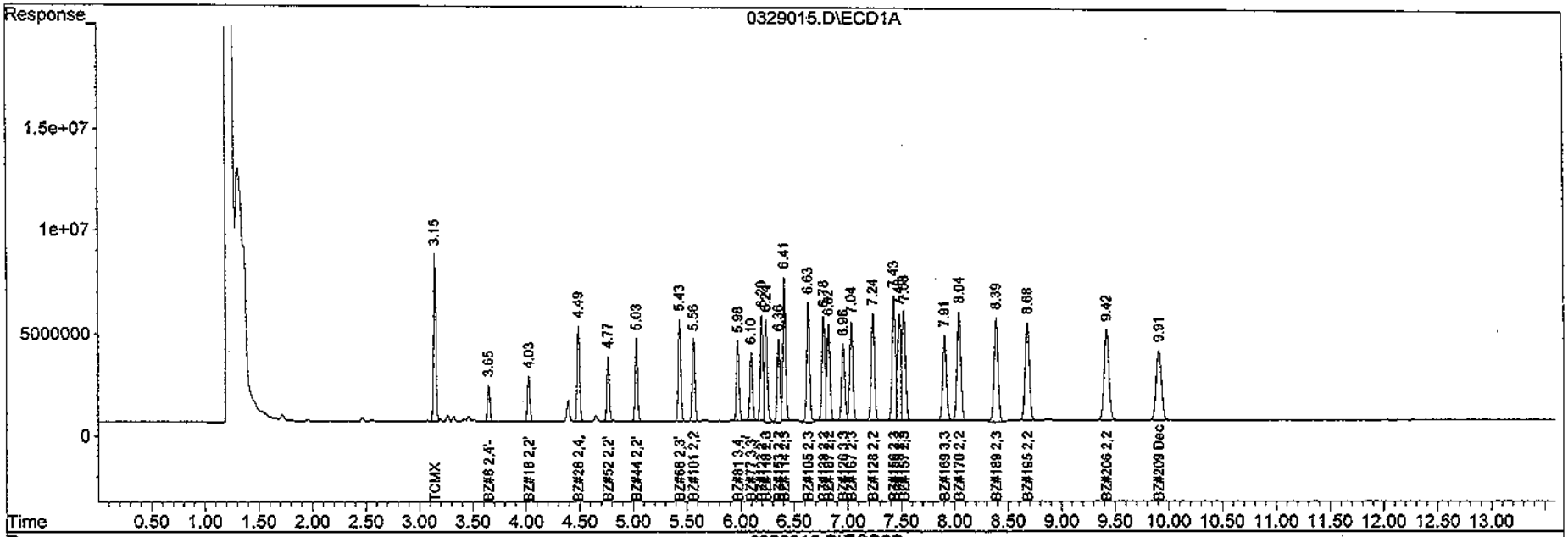
		Compound	RT#1	RT#2	Resp#1	Resp#2	~~ppb~~ ppm	~~ppb~~ ppm
		System Monitoring Compounds						
19)	S	TCMX	3.15	3.94	8138906	8335512	0.0235	0.0261
		Surrogate Spike 0.100 Range 25 - 150 Recovery =					23.50%#	26.10%
		Target Compounds						
1)	TM	BZ#8 2,4'-DiCBP	3.65	4.29	1805055	1837448	0.0265	0.0241
2)	TM	BZ#18 2,2',5-Tri	4.03	4.66	2223259	2193747	0.0221	0.0240
3)	TM	BZ#28 2,4,4'-Tri	4.49	5.23	4672981	4434818	0.0226	0.0252
4)	TM	BZ#44 2,2',3,5'-	5.03	5.69	4089756	3834705	0.0223	0.0238
5)	TM	BZ#52 2,2',5,5'-	4.77	5.48	3182125	3136677	0.0218	0.0241
6)	TM	BZ#66 2,3',4,4'-	5.43	6.18	4989323	4656135	0.0224	0.0256
7)	TM	BZ#101 2,2',4,5,	5.56	6.34	4044007	3658080	0.0220	0.0239
8)	TM	BZ#105 2,3,3',4,	6.63	7.50	5863176	4785453	0.0232	0.0261
9)	TM	BZ#118 2,3',4,4'	6.24	7.14	5009188	4157003	0.0217	0.0269
10)	TM	BZ#128 2,2',3,3'	7.24	8.17	5248620	3949074	0.0232	0.0249
11)	TM	BZ#138 2,2',3,4,	6.78	7.71	5165287	4137113	0.0229	0.0251
12)	TM	BZ#153 2,2',4,4'	6.36	7.30	4077034	6459802	0.0210	0.0247
13)	TM	BZ#170 2,2',3,3'	8.04	9.18	5336568	4036194	0.0232	0.0252
14)	TM	BZ#180 2,2',3,4,	7.48	8.66	5237675	4208256	0.0235	0.0252
15)	TM	BZ#187 2,2',3,4'	6.82	7.84	4746900	3759925	0.0225	0.0249
16)	TM	BZ#195 2,2',3,3'	8.68	9.92	4808820	4038677	0.0238	0.0286
17)	TM	BZ#206 2,2',3,3'	9.42	10.95	4458561	3406938	0.0238	0.0266
18)	TM	BZ#209 DecaCBP	9.91	11.49	3436139	3002706	0.0230	0.0280
20)	TM	BZ#77 3,3',4,4'-	6.10	6.94	3356117	2874729	0.0218	0.0261
21)	TM	BZ#81 3,4,4',5-T	5.98	6.81	3930587	3243203	0.0223	0.0253
22)	TM	BZ#123 2',3,4,4'	6.20	7.08	5158493	4168394	0.0225	0.0249
23)	TM	BZ#126 3,3',4,4'	6.96	8.03	3770647	2601667	0.0222	0.0259
24)	TM	BZ#156 2,3,3',4,	7.43	8.56	6101486	4266697	0.0237	0.0254
25)	TM	BZ#157 2,3,3',4,	7.53	8.63	5412341	4459298	0.0228	0.0261
26)	TM	BZ#167 2,3',4,4'	7.04	8.17	4841755	3949074	0.0231	0.0249
27)	TM	BZ#169 3,3',4,4'	7.91	9.29	4195774	3008507	0.0238	0.0277
28)	BM	BZ#189 2,3,3',4,	8.39	9.82	5113440	4132511	0.0229	0.0271
29)	TM	BZ#114 2,3,4,4',	6.41	7.30	7004068	6459802	0.0240	0.0247

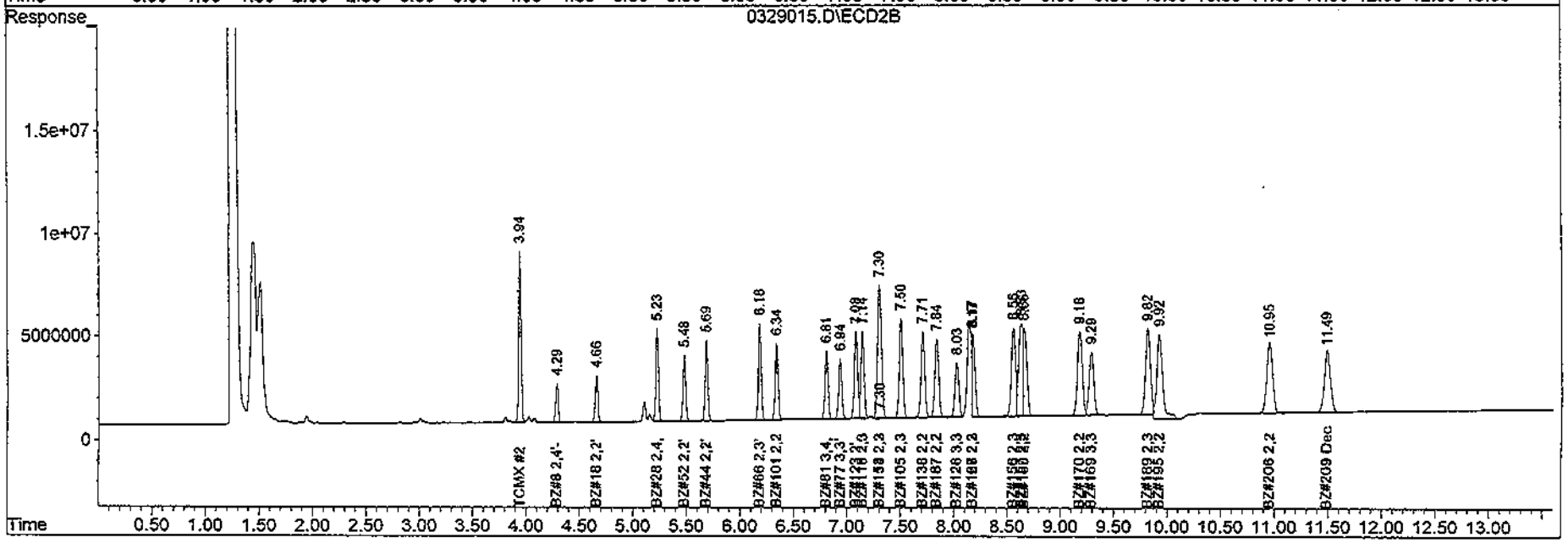
'Target Compounds

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Data File : G:\LUCY\DATA\120329\0329015.D
Acq On : 3-29-12 14:04:13
Sample : PCB CONG 5 2/14/12
Misc : WATER
Quant Method : G:\LUCY\DATA\120329\CONG314.M

Vial: 15
Operator: MA
Inst : Lucy
Multiplr: 1.00





EPA METHOD 8082
CONGENERS
Raw Data

APPL, INC.

STANDARD	INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	LOT #	DATE OBTAINED

PCB CONG STD

Compounds	Init Conc.	Source	Aliquot	Fin. Vol.	Fin. Conc.	Solvent
Various	100µg/ml	O2SI	1000µl	10mL	10µg/ml	Hexane
	Cat:	130116-01				Lot#
	Lot:	167411-28119				010711A
	Op:	02/14/12				
	Exp:	02/14/13				
TCMX	1000µg/ml	Absolute	100µL		10µg/ml	
	Part:	70273				
	Lot:	050509-28200				
	Op:	02/14/12				
	Exp:	02/14/13				

2/14/12 — 2/14/12 EX: 8/14/12

PCB CONG CURVE

Compounds	Init Conc.	Source	Aliquot	Fin. Vol.	Fin. Conc.	Solvent
Various	10µg/ml	Pcb Cong Std	Lvl 3) 5µl	10mL	0.005 µg/ml	Hexane
		Prep: 2/14/12	Lvl 4) 10µl	10mL	0.01 µg/ml	Lot#
		Exp: 8/14/12	Lvl 5) 25µl	10mL	0.025 µg/ml	010711A
			Lvl 6) 25µl	5mL	0.050 µg/ml	
			Lvl 7) 50µl	5mL	0.100 µg/ml	
	0.100 µg/ml	PCB Cong Lvl 7	Lvl 1) 50µl	5mL	0.001 µg/ml	
	0.100 µg/ml	Prep: 2/14/12	Lvl 2) 150µl	5mL	0.003µg/ml	
		Exp: 8/14/12				

2/14/12 — 2/14/12 EX: 8/14/12

PCB Cong 2nd Src Stock

Compounds	Init Conc.	Source	Aliquot	Fin. Vol.	Fin. Conc.	Solvent
Various	100µg/ml	O2SI	500µl	5mL	10µg/ml	Hexane
	Cat:	130116-01-SS				Lot#
	Lot:	167412-28122				010711A
	Op:	02/14/12				
	Exp:	02/14/13				

2/14/12 EX: 8/14/12

PCB Cong 2nd Src

Compounds	Init Conc.	Source	Aliquot	Fin. Vol.	Fin. Conc.	Solvent
Various	10µg/ml	PCB Cong 2nd Src Stk	5µl	5mL	0.01µg/ml	Hexane
	Cat:	130116-01-SS				Lot#
	Lot:	167412				010711A
	Op:	02/14/12				
	Exp:	08/14/12				

PCB CONGENER SURROGATE

TCMX — 1000mg/ml ABSOLUTE — 500ml — 50ml — 10mg/ml HEXANE #010711A — 2/14/12 EX: 5/14/12

PART: 70273
LOT: 050509-28200
OP: 2/14/12
EX: 2/14/13

STANDARD 062	INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	SOLVENT LOT #	DATE / INITIALS

PREP DATE:	03/20/12					
OP 2ND SOURCE						
EXP:	07/15/12					
SUPPLIER	ID#	[µg/mL]	LOT #	DATE	EXP. DATE	µL
	OP 2ND SRC	5		02/29/12	07/15/12	500
VWR	HEXANE		0829118			500
					Final VOL.	1000

3/20/12
EX. 7/15/12

PREP DATE:	03/20/12											
OPF CURVE												
EXP:	07/15/12											
						IA	1	2	3	4	5	6
SUPPLIER	ID#	[µg/mL]	LOT #	DATE	EXP. DATE	µL	µL	µL	µL	µL	µL	µL
	OPF STD	5		03/08/12	07/15/12	2	10	50	200	500	700	1000
	Hexane		0829118			998	990	950	800	500	300	NA
					Final VOL.	1000	1000	1000	1000	1000	1000	1000

3/20/12
EX. 7/15/12

MOTOR OIL CCV 400UG/ML						
STANDARD	INITIAL CONC.	SOURCE DATE	ALIQUOT	FINAL VOL	FINAL CONC.	SOLVENT /LOT#
MOTOR OIL STD	1000UG/ML	O2SI	400µL	1mL	400 µg/ml	MC
		03/06/12	09/06/12			51306

3/22/12
EX. 9/6/12

TOX 2 CCV

Toxaphene	100ng/ml	TOX STD	25ml	10ML	0.25ng/ml	Hexane	3/22/12
		Prep: 3/15/12				#0829113	
		EX: 3/15/12				2	EX: 9/22/12

TOX 3 CCV

Toxaphene	100ng/ml	TOX STD	25ml	25ML	0.5ng/ml	Hexane	3/22/12
		Prep: 3/15/12				#0829113	
		EX: 3/15/13					EX: 9/22/12

AR1260 (20ng/ml) STOCK

AR1260	1000ng/ml	O2SI	200ml	10ML	20ng/ml	HEXANE	3/22/12
		CAT: 030228-04				0829113	EX: 3/22/13
		LOT: 186295-30497					
		OP: ~~3/28/12~~ 3/22/12				3/22/12	
		EX: ~~3/28/13~~ 3/22/13					
		3/22/12					

AR1260 (1ng/ml)

AR1260	20ng/ml	AR1260 STK	500ml	10ML	1ng/ml	HEXANE	3/22/12
		Prep: ~~3/28/12~~ 3/22/12				#0829113	EX. 9/22/12
		EX: ~~3/28/13~~ 3/22/13					
		3/22/12					3/22/12

STANDARD 064	INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	SOLVENT LOT #	DATE INITIALS	STA
		AR1221 (1ng/ml)						
AR1221	20ng/ml	AR1221 stock prep: 9/28/11 EX: 9/28/12	500ml	10ml	1ng/ml	Hexane # 08291113	3/26/12 EX: 9/26/12	
		AR 1232 (1ng/ml)						
AR1232	20ng/ml	AR1232 stock prep: 9/28/11 EX: 9/28/12	500ml	10ml	1ng/ml	Hexane #08291113	3/26/12 EX: 9/26/12	
		AR1242 (1ng/ml)						
AR1242	20ng/ml	AR1242 stock prep: 9/28/11 EX: 9/28/12	500ml	10ml	1ng/ml	Hexane # 08291113	3/26/12 EX: 9/26/12	
		AR 1248 (1ng/ml)						
AR1248	20ng/ml	AR1248 (stock) prep: 9/28/11 EX: 9/28/12	500ml	10ml	1ng/ml	Hexane # 08291113	3/26/12 EX: 9/26/12	
		AR 1254 (1ng/ml)						
AR1254	20ng/ml	AR1254 stock prep: 9/28/11 EX: 9/28/12	500ml	10ml	1ng/ml	Hexane #08291113	3/26/12 EX: 9/26/12	
		Herb 20/100 CCV						
various analytes	various conc.	Herb Std prep: 2/9/12 EX: 8/9/12	200ml	1ml	200ng/ml	MTBE #50223	3/26/12 EX: 8/9/12	
		507 - LPC CHECK						
VARIOUS		ULTRA OP: 3/26/12 EX: 3/26/13	N/A	1ml		N/A	3/26/12 EX: 3/26/13	

NPM-607-1
Lot: CH-0974 – 29461
Exp: 04/30/2014
ULTRA 1 mL
Laboratory Performance Check Solution
6 analyte(s) at various concentrations in methyl tert-butyl ether

STANDARD	INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	SOLVENT LOT #	DATE / INITIALS
							069
AR1254/1260 MIX							
1 µg/mL	AR1254	µg. 3/26/12 Exp: 9/26/12	500 µL	1 mL	0.5 µg/mL	—	HA 3/29/12 Exp 9/22/12
1 µg/mL	AR1260	µg. 3/22/12 Exp. 9/22/12	500 µL	↓	0.5 µg/mL	—	

Injection Log

Directory: G:\LUCY\DATA\120314\

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	3	0314003.D	1	PCB CONG 1 2/14/12	WATER	3-14-12 10:32:39
2	4	0314004.D	1	PCB CONG 2	WATER	3-14-12 10:48:56
3	5	0314005.D	1	PCB CONG 3	WATER	3-14-12 11:05:20
4	6	0314006.D	1	PCB CONG 4	WATER	3-14-12 11:21:37
5	7	0314007.D	1	PCB CONG 5	WATER	3-14-12 11:37:52
6	8	0314008.D	1	PCB CONG 6	WATER	3-14-12 11:54:09
7	9	0314009.D	1	PCB CONG 7	WATER	3-14-12 12:10:32
8	12	0314012.D	1	PCB CONG 2ND SRC 2/16/12 #2	WATER	3-14-12 14:22:57
9	2	0329002.D	1	PCB CONG 5 2/14/12	WATER	3-29-12 9:51:26
10	7	0329007.D	1	AY58416M 0.5ug/ml 3/26/12	STD	3-29-12 11:16:14
11	8	0329008.D	1	AY58417M 0.5ug/ml 3/26/12	STD	3-29-12 11:32:28
12	9	0329009.D	1	AY58418M 0.5ug/ml 3/26/12	STD	3-29-12 11:48:51
13	10	0329010.D	1	AY58419M 0.5ug/ml 3/22/12	STD	3-29-12 12:05:08
14	11	0329011.D	1	AY58420M 0.5ug/ml 3/22/12	STD	3-29-12 12:21:25
15	12	0329012.D	1	AY58421M 0.5ug/ml 3/22/12	STD	3-29-12 12:37:42
16	13	0329013.D	1	AY58422M 0.5ug/ml 3/29/12	Mixed STD	3-29-12 12:54:07
17	15	0329015.D	1	PCB CONG 5 2/14/12	WATER	3-29-12 14:04:13

Attachment 2

Estimation Procedure

Draft Protocol For Determining The Concentration of Ar1254 and Ar1260 In Sediment Samples Based On EPA Method 8082 PCB Congener Data.

1. Introduction:

1.1. This protocol was developed to calculate the concentration of Ar1254 and Ar1260 in environmental samples using EPA Method 8082 PCB congener results. Two types of approaches (Aroclor and congener) are commonly used to measure PCBs in environmental samples. Both approaches are described in EPA Method 8082A [1] Polychlorinated Biphenyls (PCBs) By Gas Chromatography.

2. Quantitation Method

2.1. This protocol assumes that the PCB congener results for each laboratory data package have been thoroughly validated and meet the quality control results defined in EPA Method 8082A and the laboratory's Standard Operating Procedure for the analysis of congener PCBs.

2.2. Identify the two congeners to be used in the Aroclor mixing model. One congener should primarily represent Ar1254 and the second congener should primarily represent Ar1260. PCB118 has been used to represent Ar1254 and PCB180 has been used to represent Ar1260. Other congeners may be selected or provide better results depending on laboratory method performance (resolution or coelution issues). PCB118 and PCB180 will be used in this protocol to illustrate the technical approach (Figure 1).

2.3. Quantify the congeners in the Ar1254 Type 1 (Ar1254) and Ar1260 standards which have been analyzed using the same instrument conditions as the field samples. The standards should be analyzed in triplicate and the confidence limits defined.

2.4. Tabulate the concentrations of PCB118 and PCB180 for each field sample.

2.5. Develop a simple mixing model by calculating the % PCB118 (defined as [PCB118 / (PCB118 + PCB180)] X 100) for standard mixtures of Ar1254 and Ar1260 from 100% Ar1254 to 100% Ar1260 in 10% increments (e.g., 90% Ar1254; 10% Ar1260).

2.6. Plot the results of the mixing model calculation in Excel with the % PCB118 on the X axis and the % Ar1254 on the Y axis.

2.7. Use the polynomial trend line function to fit the data, report the polynomial equation and R^2 value on the graph.

2.8. Using the Aroclor polynomial equation for % PCB118 (X Axis) versus % Ar1254 (Y Axis), calculate the % Ar1254 in the field samples.

2.9. Percent Ar1260 is equal to 100% - % Ar1254 (calculated by mixing model).

2.10. Using the Ar1254 and Ar1260 Standards, calculate the percentage of Ar1254 and Ar1260 defined by the sum of the 29 congeners analyzed by the laboratory.

[1] USEPA Method 8082A, Revision 1, February 2007.

2.11. Take the mean value ((Ar1254 + Ar1260)/2) and define the TPCB correction factor. For example if the mean sum of the 29 congeners is 50%, then the TPCB correction factor (CF) is two (2X).

2.12. Using the correction factor calculate the TPCBs in the sample by multiplying the CF times the sum of PCB congeners ($TPCB_{congeners}$.)

2.13. Calculate the concentration of Ar1254 by multiplying the %Ar1254 in the sample by the $TPCB_{congeners}$.

2.14. Calculate the concentration of Ar1260 by multiplying the %Ar1260 in the sample by the $TPCB_{congeners}$.

3. Method Verification

3.1. The accuracy of these results can be verified using two different approaches.

3.2. Method Verification Approach #1

3.2.1. Select three (3) Ar1254 specific congener peaks in the field sample and calculate the amount of Ar1254 in the sample using the standard Aroclor method relative to the Ar1254 standards run by the laboratory.

3.2.2. Select three (3) Ar1260 specific congener peaks in the field sample and calculate the amount of Ar1260 in the sample using the standard Aroclor method relative to the Ar1260 standards run by the laboratory.

3.2.3. Total $PCBs_{Aroclor}$ at this site are defined as the concentration of Ar1254 + Ar1260.[2]

3.2.4. Plot $TPCB_{congeners}$ versus $TPCB_{Aroclors.}$ Results should plot in the vicinity of the 1:1 line. A small number of samples may be outliers due to presence of a tertiary Aroclor (e.g., Ar1248) or degradation of PCBs in anoxic sediments.

3.3. Method Verification Approach #2

3.3.1. Using the % PCB118 mixing model calculation described above, calculate the $TPCB_{Ar1254}$ and $TPCB_{Ar1260}$ in the Yosemite sediment field samples analyzed by Arthur D. Little (ADL) in 1999.[3] Compare the results of the $TPCB_{congeners}$ versus $TPCB_{Aroclors}$ reported by ADL. Results should plot in the vicinity of the 1:1 line.

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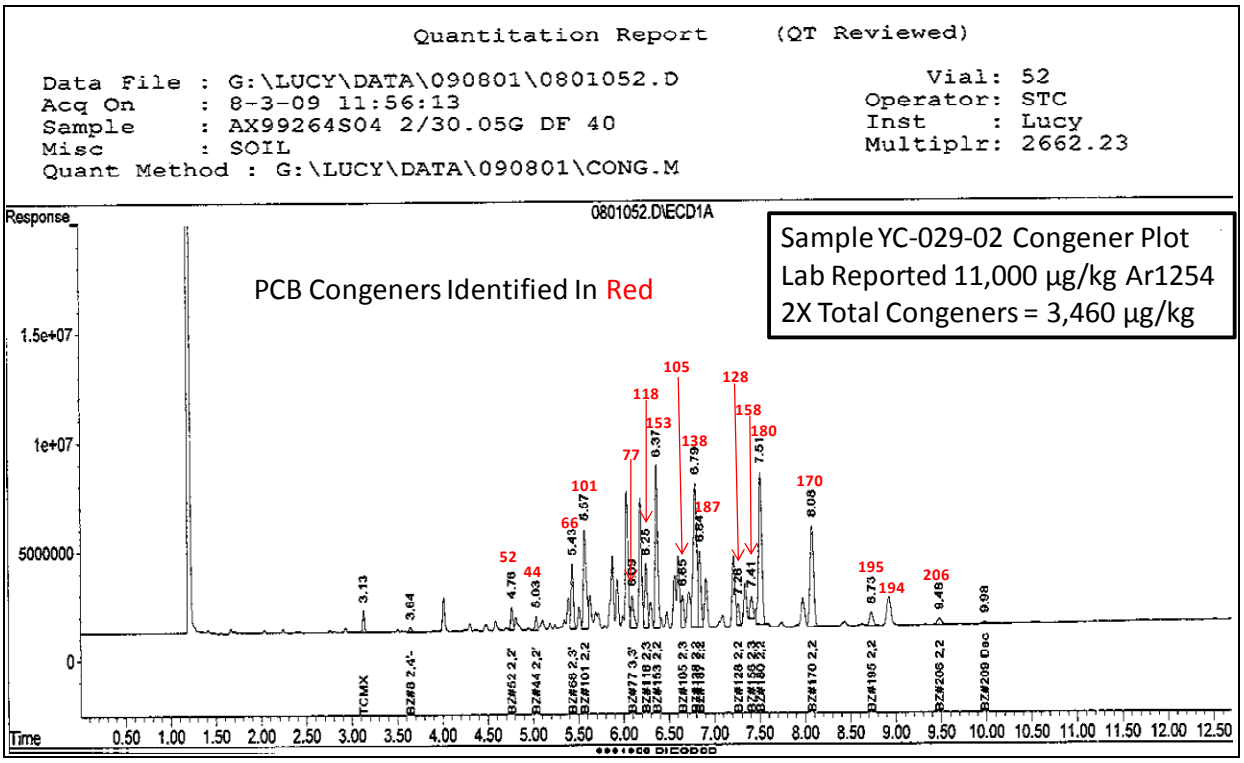
[2] **The majority of the PCBs Aroclors in Yosemite Slough are Ar1254 and Ar1260. Verification outliers may indicate presence of Ar1242/Ar1248, or presence of tetra/penta congeners from the degradation of Ar1254 and Ar1260 under anoxic sediment conditions.**

[3] **ADL analyzed Yosemite Slough sediments for individual congeners and Aroclors for SFPUC in 1999.**

Figure 1. Example of GC/ECD field sample chromatogram with congeners identified



Attachment 3

Tables

Table 1 - Aroclor Concentration Estimations in Sediment
Yosemite Slough Sediment Removal Assessment
San Francisco, San Francisco County, California

Analyte		PCB Congener 118	PCB Congener 180	Total for 28 PCB Congeners	As PCB Mixture Aroclor 1254	As PCB Mixture Aroclor 1260	Total for PCBs[1]
Analytical Method		EPA 8082 for 28 congeners	EPA 8082 for 28 congeners	EPA 8082 for 28 congeners	Estimated concentration based upon PCB congener 118 to PCB congener 180 calculations	Estimated concentration based upon PCB congener 118 to PCB congener 180 calculations	Calculated estimated concentration based upon quantitation of 28 of 209 congener[1]
Yosemite Slough Removal Action Level		NA	NA	NA	NA	NA	**1,240**
Units		ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Sample ID	Sample Date						
YC-001-1	07/01/09	<0.01	2.0	17.2J	<0.01 E	41 E	41 E
YC-001-2	07/01/09	<0.01	<0.01	<0.08	<0.01 E	<0.01 E	0 E
YC-001-3	07/01/09	<0.02	1.1	4.04J	<0.02 E	9.5 E	9.6 E
YC-001-4	07/01/09	4.7J	9.2	100J	120 E	120 E	240 E
YC-002-1	07/01/09	3.9J	4.1	54.2J	86 E	43 E	130 E
YC-002-2	07/01/09	350J	840	6865J	6900 E	9400 E	**16,000** E
YC-002-3	07/01/09	8.2J	15	167J	200 E	200 E	400 E
YC-802-3	07/01/09	9.3J	14	145J	190 E	150 E	340 E
YC-002-4	07/01/09	<0.02	3.1	19.5J	<0.02 E	46 E	46 E
YC-002-5	7/1/2009	<0.01	<0.01	<0.09	<0.01 E	<0.01 E	0 E
YC-003-1	06/29/09	120J	210J	1648J	2000 E	1900 E	**3,900** E
YC-003-2	06/29/09	5.5J	13	94.4J	96 E	130 E	220 E
YC-803-2	06/29/09	8.9J	14	151J	200 E	160 E	360 E
YC-003-3	06/29/09	<0.01	0.50J	1.96J	<0.01 E	4.7 E	4.7 E
YC-003-4	06/29/09	<0.01	<0.01	<0.08	<0.01 E	<0.01 E	0 E
YC-003-5	06/29/09	<0.02	<0.02	<0.11	<0.02 E	<0.02 E	0 E
YC-004-1	07/02/09	21J	25J	279J	420 E	240 E	660 E
YC-004-2	07/02/09	380J	740J	6607J	7600 E	8100 E	**16,000** E
YC-004-3	07/02/09	2.7J	3.4J	28.1J	41 E	26 E	67 E
YC-005-1	07/07/09	410J	280J	4176J	7700 E	2200 E	**9,900** E
YC-005-2	07/07/09	910J	860J	12162J	20000 E	8800 E	**29,000** E
YC-805-2	07/07/09	940J	580J	9157J	17000 E	4300 E	**22,000** E
YC-005-3	07/07/09	21J	19J	244J	410 E	170 E	580 E
YC-005-4	07/07/09	0.78J	<0.01	1.98J	4.7 E	<0.01 E	4.7 E
YC-005-5	07/07/09	<0.02	<0.02	<0.10	<0.02 E	<0.02 E	0 E
YC-006-1	06/29/09	9.9	12J	101J	150 E	90 E	240 E
YC-006-2	06/29/09	110	280J	1755J	1700 E	2500 E	**4,200** E
YC-006-3	06/29/09	8.3	15J	117J	140 E	140 E	280 E
YC-006-4	06/29/09	5.5	10J	75.6J	91 E	89 E	180 E
YC-006-5	06/29/09	<0.01	1.6J	8.16J	<0.01 E	19 E	19 E
YC-007-1	07/07/09	710J	400J	8119J	16000 E	3500 E	**19,000** E
YC-007-2	07/07/09	14J	29J	404J	450 E	510 E	960 E
YC-007-3	07/07/09	1.5J	1.4J	15.8J	26 E	11 E	37 E
YC-807-3	07/07/09	1.9J	1.6J	26.1J	45 E	17 E	62 E
YC-007-4	07/07/09	0.53J	<0.01	2.19J	5.2 E	<0.01 E	5.2 E
YC-007-5	07/07/09	0.67J	<0.01	2.87J	6.8 E	<0.01 E	6.8 E
YC-008-1	07/02/09	17J	23J	205J	290 E	200 E	490 E
YC-008-2	07/02/09	550J	1200J	12865J	14000 E	17000 E	**31,000** E
YC-008-3	07/02/09	190J	490J	4702J	4500 E	6700 E	**11,000** E
YC-008-4	07/02/09	21J	24J	244J	370 E	210 E	580 E
YC-008-5	07/02/09	13J	6.3J	98.8J	200 E	35 E	240 E
YC-009-1	06/25/09	2.7	3.8J	25.8J	35 E	26 E	61 E
YC-009-2	06/25/09	10	11J	161J	250 E	130 E	380 E
YC-009-3	06/25/09	130	100J	3925J	7000 E	2300 E	**9,300** E
YC-009-4	06/25/09	0.29J	0.49J	1.20J	1.5 E	1.3 E	2.9 E
YC-009-5	06/25/09	3.0	3.6J	42.4J	64 E	37 E	100 E
YC-010-1	07/09/09	1300J	1700J	26702J	38000 E	25000 E	**64,000** E
YC-010-2	07/09/09	27J	120J	886J	550 E	1600 E	**2,100** E
YC-010-3	07/09/09	0.83J	2.3J	15.4J	14 E	23 E	37 E
YC-810-3	07/09/09	1.1J	2.0J	17.4J	21 E	20 E	41 E

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San Francisco, San Francisco County, California

Analyte		PCB Congener 118	PCB Congener 180	Total for 28 PCB Congeners	As PCB Mixture Aroclor 1254	As PCB Mixture Aroclor 1260	Total for PCBs[1]
Analytical Method		EPA 8082 for 28 congeners	EPA 8082 for 28 congeners	EPA 8082 for 28 congeners	Estimated concentration based upon PCB congener 118 to PCB congener 180 calculations	Estimated concentration based upon PCB congener 118 to PCB congener 180 calculations	Calculated estimated concentration based upon quantitation of 28 of 209 congener[1]
Yosemite Slough Removal Action Level		NA	NA	NA	NA	NA	**1,240**
Units		ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Sample ID	Sample Date						
YC-010-4	07/09/09	<0.01	<0.01	<0.07	<0.01 E	<0.01 E	0 E
YC-011-1	06/25/09	14	15J	162J	260 E	130 E	390 E
YC-011-2	06/25/09	<0.02	52J	1027J	<0.02 E	2400 E	**2,400** E
YC-811-2	06/25/09	84	42J	685J	1400 E	250 E	**1,600** E
YC-011-3	06/25/09	330J	<0.02	6940J	17000 E	<0.02 E	**17,000** E
YC-011-4	06/25/09	5.1	<0.01	76.9J	180 E	<0.01 E	180 E
YC-011-5	06/25/09	0.82	1.7J	9.92J	11 E	13 E	24 E
YC-012-1	06/25/09	14	45J	631J	500 E	1000 E	**1,500** E
YC-012-2	06/25/09	120	510J	3040J	2000 E	5300 E	**7,200** E
YC-012-3	06/25/09	12	21J	151J	190 E	170 E	360 E
YC-012-4	06/25/09	1.6	2.7J	15.6J	20 E	18 E	37 E
YC-012-5	06/25/09	<0.01	<0.01	<0.07	<0.01 E	<0.01 E	0 E
YC-013-1	06/24/09	38	34J	402J	680 E	280 E	960 E
YC-013-2	06/24/09	570	160J	4018J	8900 E	650 E	**9,600** E
YC-013-3	06/24/09	80	130J	1941J	2500 E	2100 E	**4,600** E
YC-013-4	06/24/09	2.4	11J	60J	36 E	110 E	140 E
YC-813-4	06/24/09	2.0	9.0J	46.1J	28 E	82 E	110 E
YC-013-5	06/24/09	<0.01	1.1J	19.3J	<0.01 E	46 E	46 E
YC-014-1	06/25/09	7.7	12J	90.7J	120 E	100 E	220 E
YC-014-2	06/25/09	96	260J	2419J	2200 E	3500 E	**5,800** E
YC-014-3	06/25/09	12	30J	223J	220 E	310 E	530 E
YC-014-4	06/25/09	1.4	3.4J	28.4J	28 E	39 E	68 E
YC-814-4	06/25/09	1.6	4.7J	32.0J	28 E	48 E	76 E
YC-014-5	06/25/09	<0.01	<0.01	<0.08	<0.01 E	<0.01 E	0 E
YC-015-1	07/07/09	290J	270J	3995J	6600 E	2800 E	**9,500** E
YC-015-2	07/07/09	4000J	1200J	34368J	76000 E	6200 E	**82,000** E
YC-015-3	07/07/09	200J	86J	2327J	4800 E	710 E	**5,500** E
YC-015-4	07/07/09	5.3J	1.6J	45.2J	99 E	8 E	110 E
YC-015-5	07/07/09	3.5J	1.2J	25.3J	55 E	5.6 E	60 E
YC-016-1	07/01/09	31J	150	974J	560 E	1800 E	**2,300** E
YC-016-2	07/01/09	240J	270	2620J	4000 E	2200 E	**6,200** E
YC-016-3	07/01/09	6.6	14	121J	130 E	160 E	290 E
YC-017-1	06/23/09	13J	22J	224J	280 E	250 E	530 E
YC-817-1	06/23/09	8.5J	16J	143J	170 E	170 E	240 E
YC-017-2	06/23/09	20J	23J	279J	430 E	240 E	660 E
YC-017-3	06/23/09	9.4J	59J	401J	180 E	780 E	950 E
YC-017-4	06/23/09	0.96J	5.0J	23.9J	13 E	44 E	57 E
YC-017-5	06/23/09	<0.01	<0.01	<0.08	<0.01 E	<0.01 E	0 E
YC-018-1	06/23/09	20J	19J	229J	380 E	170 E	540 E
YC-018-2	06/23/09	730J	190J	5637J	12500 E	790 E	**13,000** E
YC-018-3	06/23/09	280J	480J	3856J	4800 E	4400 E	**9,200** E
YC-018-4	06/23/09	38J	260J	1396J	560 E	2800 E	**3,300** E
YC-818-4	06/23/09	35J	220J	1218J	540 E	2400 E	**2,900** E
YC-018-5	06/23/09	<0.01	13J	194J	<0.01 E	460 E	460 E
YC-019-1	06/22/09	15J	19J	177J	260 E	160 E	420 E
YC-019-2	06/22/09	83J	110J	1183J	1700 E	1100 E	**2,800** E
YC-019-3	06/22/09	12J	<0.02	185J	440 E	<0.02 E	440 E

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San Francisco, San Francisco County, California

Analyte		PCB Congener 118	PCB Congener 180	Total for 28 PCB Congeners	As PCB Mixture Aroclor 1254	As PCB Mixture Aroclor 1260	Total for PCBs[1]
Analytical Method		EPA 8082 for 28 congeners	EPA 8082 for 28 congeners	EPA 8082 for 28 congeners	Estimated concentration based upon PCB congener 118 to PCB congener 180 calculations	Estimated concentration based upon PCB congener 118 to PCB congener 180 calculations	Calculated estimated concentration based upon quantitation of 28 of 209 congener[1]
Yosemite Slough Removal Action Level		NA	NA	NA	NA	NA	**1,240**
Units		ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Sample ID	Sample Date						
YC-019-4	06/22/09	1.9J	<0.02	29.4J	70 E	<0.02 E	70 E
YC-019-5	06/22/09	0.36J	<0.02	0.36J	0.86 E	<0.02 E	0.86 E
YC-020-1	06/22/09	4.0J	<0.02	42.9J	100 E	<0.02 E	100 E
YC-820-1	06/22/09	5.1J	8.5J	67.7J	86 E	75 E	160 E
YC-020-2	06/22/09	15J	18J	178J	270 E	160 E	420 E
YC-020-3	06/22/09	50J	<0.02	652J	1500 E	<0.02 E	**1,500 E**
YC-020-4	06/22/09	<0.02	19J	72.1J	<0.02 E	170 E	170 E
YC-020-5	06/22/09	<0.01	6.3J	59.5J	<0.01 E	140 E	140 E
YC-021-1	06/22/09	4.7J	6.5J	61.5J	86 E	60 E	150 E
YC-021-2	06/22/09	51J	39J	502J	900 E	300 E	1,200 E
YC-021-3	06/22/09	77J	120J	1068J	1400 E	1100 E	**2,500 E**
YC-021-4	06/22/09	39J	180J	858J	510 E	1500 E	**2,000 E**
YC-021-5	06/22/09	20J	16J	167J	290 E	100 E	400 E
YC-022-1	06/22/09	3.3J	4.8J	41.9J	57 E	42 E	100 E
YC-022-2	06/22/09	6.2J	<0.01	66.2J	160 E	<0.01 E	160 E
YC-022-3	06/22/09	7.0J	<0.02	84.4J	200 E	<0.02 E	200 E
YC-022-4	06/22/09	34J	<0.02	503J	1300 E	<0.02 E	**1,300 E**
YC-022-5	06/22/09	32J	<0.01	419J	1000 E	<0.01 E	1,000 E
YC-023-1	06/18/09	9.7	23J	200J	200 E	270 E	480 E
YC-023-2	06/18/09	91	110J	1097J	1600 E	970 E	**2,600 E**
YC-023-3	06/18/09	9.8	11J	130J	200 E	110 E	310 E
YC-023-4	06/18/09	<0.01	<0.01	0.89J	<0.01 E	<0.01 E	2.1 E
YC-023-5	06/18/09	<0.02	<0.02	<0.09	<0.02 E	<0.02 E	0 E
YC-823-5	06/18/09	<0.02	<0.02	<0.08	<0.02 E	<0.02 E	0 E
YC-024-1	06/22/09	13J	62J	463J	270 E	830 E	1,100 E
YC-024-2	06/22/09	16J	61J	491J	350 E	820 E	1,200 E
YC-024-3	06/22/09	20J	18J	197J	330 E	140 E	470 E
YC-824-3	06/22/09	46J	43J	423J	700 E	300 E	1,000 E
YC-024-4	06/22/09	<0.02	3.1J	25.8J	<0.02 E	61 E	61 E
YC-024-5	06/22/09	<0.02	1.6J	7.01J	<0.02 E	17 E	17 E
YC-025-1	06/18/09	25	52J	515J	570 E	650 E	1,200 E
YC-025-2	06/18/09	72	77J	1175J	1900 E	900 E	**2,800 E**
YC-025-3	06/18/09	45	49J	526J	820 E	430 E	1,300 E
YC-825-3	06/18/09	38	39	496J	800 E	380 E	1,200 E
YC-025-4	06/18/09	3.9	5.0J	48.0J	70 E	44 E	110 E
YC-025-5	06/18/09	0.67J	0.73J	7.82J	12 E	6.4 E	19 E
YC-026-1	06/18/09	86	72J	859J	1500 E	550 E	**2,000 E**
YC-026-2	06/18/09	55	75J	665J	940 E	640 E	**1,600 E**
YC-026-3	06/18/09	4.2	3.1J	40.4J	73 E	23 E	96 E
YC-026-4	06/18/09	4.8	5.1J	57.6J	91 E	46 E	140 E
YC-026-5	06/18/09	0.67J	0.83J	5.75J	8.5 E	5.2 E	14 E
YC-027-1	06/18/09	<0.02	230J	1873J	<0.02 E	4500 E	**4,500 E**
YC-027-2	06/18/09	42	53J	586J	860 E	540 E	**1,400 E**
YC-027-3	06/18/09	2.9	4.4J	35.5J	47 E	37 E	84 E
YC-027-4	06/18/09	<0.02	<0.02	<0.10	<0.02 E	<0.02 E	0 E
YC-027-5	06/18/09	<0.02	<0.02	<0.10	<0.02 E	<0.02 E	0 E
YC-028-1	06/17/09	11J	25J	211J	220 E	280 E	500 E
YC-028-2	06/17/09	130	110J	1163J	2000 E	760 E	**2,800 E**
YC-028-3	06/17/09	20	18J	208J	350 E	140 E	490 E
YC-028-4	06/17/09	3.4	4.9J	38.3J	53 E	39 E	91 E
YC-028-5	06/17/09	1.2	1.6J	10.8J	15 E	10 E	26 E

Table 1 - Aroclor Concentration Estimations in Sediment
Yosemite Slough Sediment Removal Assessment
San Francisco, San Francisco County, California

Analyte		PCB Congener 118	PCB Congener 180	Total for 28 PCB Congeners	As PCB Mixture Aroclor 1254	As PCB Mixture Aroclor 1260	Total for PCBs[1]
Analytical Method		EPA 8082 for 28 congeners	EPA 8082 for 28 congeners	EPA 8082 for 28 congeners	Estimated concentration based upon PCB congener 118 to PCB congener 180 calculations	Estimated concentration based upon PCB congener 118 to PCB congener 180 calculations	Calculated estimated concentration based upon quantitation of 28 of 209 congener[1]
Yosemite Slough Removal Action Level		NA	NA	NA	NA	NA	**1,240**
Units		ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Sample ID	Sample Date						
YC-029-1	07/06/09	16J	46J	343J	300 E	510 E	820 E
YC-029-2	07/06/09	93J	270J	1730J	1500 E	2600 E	**4,100** E
YC-029-3	07/06/09	480J	450J	5616J	9300 E	4000 E	**13,000** E
YC-829-3	07/06/09	530J	500J	6139J	10000 E	4400 E	**15,000** E
YC-029-4	07/06/09	240J	390J	3797J	4900 E	4200 E	**9,000** E
YC-029-5	07/06/09	13J	16J	144J	210 E	130 E	340 E
YC-030-1	07/06/09	22J	54J	724J	720 E	1000 E	**1,700** E
YC-030-2	07/06/09	210J	180J	2090J	3600 E	1400 E	**5,000** E
YC-030-3	07/06/09	1000J	970J	13294J	22000 E	9800 E	**32,000** E
YC-030-4	07/06/09	120J	170J	1747J	2400 E	1700 E	**4,200** E
YC-030-5	07/06/09	5.9J	4.9J	63.7J	110 E	41 E	150 E
YC-031-1	07/07/09	57J	100J	993J	1200 E	1100 E	**2,400** E
YC-031-2	07/07/09	540J	680J	7260J	11000 E	6600 E	**17,000** E
YC-031-3	07/07/09	69J	59J	1961J	3400 E	1300 E	**4,700** E
YC-831-3	07/07/09	54J	53J	2004J	3300 E	1500 E	**4,800** E
YC-031-4	07/07/09	3.0J	3.0J	56.7J	92 E	43 E	130 E
YC-031-5	07/07/09	<0.01	<0.01	8.52J	<0.01 E	<0.01 E	20 E
YC-032-1	07/07/09	1200J	760J	11781J	22000 E	5700 E	**28,000** E
YC-032-2	07/07/09	1700J	3300J	23790J	28000 E	29000 E	**57,000** E
YC-032-3	07/07/09	39J	27J	433J	800 E	230 E	**1,000** E
YC-032-4	07/07/09	4.3J	3.0J	46.0J	85 E	25 E	110 E
YC-032-5	07/07/09	<0.01	<0.01	<0.08	<0.01 E	<0.01 E	0 E
YC-033-1	07/08/09	9.1J	18J	207J	240 E	260 E	490 E
YC-833-1	07/08/09	27J	42J	627J	830 E	670 E	**1,500** E
YC-033-2	07/08/09	41J	38J	793J	1300 E	560 E	**1,900** E
YC-033-3	07/08/09	34J	34J	535J	870 E	400 E	**1,300** E
YC-033-4	07/08/09	50J	83J	1007J	1300 E	1100 E	**2,400** E
YC-033-5	07/08/09	<0.02	1.4J	8.76J	<0.02 E	21 E	21 E
YC-034-1	07/08/09	6.9J	19J	178J	160 E	260 E	420 E
YC-034-2	07/08/09	110J	88J	1804J	3200 E	1100 E	**4,300** E
YC-034-3	07/08/09	180J	440J	8121J	8100 E	11000 E	**19,000** E
YC-034-4	07/08/09	4.7J	7.5J	216J	280 E	230 E	510 E
YC-034-5	07/08/09	<0.02	<0.02	<0.08	<0.02 E	<0.02 E	0 E
YC-035-1	07/08/09	8.2J	16J	157J	180 E	190 E	370 E
YC-035-2	07/08/09	170J	120J	2308J	4200 E	1300 E	**5,500** E
YC-035-3	07/08/09	800J	1000J	17257J	25000 E	16000 E	**41,000** E
YC-035-4	07/08/09	90J	250J	2227J	2000 E	3200 E	**5,300** E
YC-035-5	07/08/09	3.3J	4.1J	73.6J	110 E	67 E	180 E
YC-036-1	07/09/09	890J	460J	10448J	21000 E	4000 E	**25,000** E
YC-036-2	07/09/09	780J	1600J	16104J	18000 E	20000 E	**38,000** E
YC-036-3	07/09/09	40J	97J	869J	870 E	1200 E	**2,100** E
YC-836-3	07/09/09	100J	190J	1680J	2000 E	2000 E	**4,000** E
YC-036-4	07/09/09	2.5J	2.1J	26.6J	46 E	17 E	63 E

Notes:

PCBs = Polychlorinated Biphenyls

ug/kg = micrograms per kilogram

<X = not detected above method detection limit of X

J = Data validation qualifier indicating concentration is estimated.

Concentrations exceeding Yosemite Creek Removal Action Level are shaded and bold.

[1]=Concentration is based on calculation of total congeners using estimation procedure.

E = Estimated by Calculation

Table 2 - Alternative Aroclor Concentration Estimations in Sediment with Total PCBs that Exceeded 1,000 Micrograms per Kilogram
Yosemite Slough Sediment Removal Assessment
San Francisco, San Francisco County, California

Analyte		PCB Congener 66	PCB Congener 180	Total for 28 PCB Congeners	As PCB Mixture Aroclor 1254	As PCB Mixture Aroclor 1260	Total for PCBs[1]
Analytical Method		EPA 8082 for 28 congeners	EPA 8082 for 28 congeners	EPA 8082 for 28 congeners	Estimated concentration based upon PCB congener 66 to PCB congener 180 calculations	Estimated concentration based upon PCB congener 66 to PCB congener 180 calculations	Calculated estimated concentration based upon quantitation of 28 of 209 congener[1]
Yosemite Slough Removal Action Level		NA	NA	NA	NA	NA	**1,240**
Units		ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Sample ID	Sample Date						
YC-002-2	06/29/09	450	840	6865	8,600 E	7,700 E	**16,000** E
YC-003-1	6/29/09	33	210	1,648	910 E	3000 E	**3,900** E
YC-004-2	7/2/09	380	740	6,607	8100 E	7600 E	**16,000** E
YC-005-1	7/7/09	410	280	4,176	7800 E	2100 E	**9,900** E
YC-005-2	7/7/09	970	860	12,162	21000 E	7900 E	**29,000** E
YC-805-2	7/7/09	920	580	9,157	18000 E	4200 E	**22,000** E
YC-006-2	6/24/09	120	280	1,755	1900 E	2200 E	**4,200** E
YC-007-1	7/7/09	800	400	8,119	16000 E	2900 E	**19,000** E
YC-008-2	7/2/09	700	1,200	12,865	17000 E	14000 E	**31,000** E
YC-008-3	7/2/09	260	490	4,702	5900 E	5300 E	**11,000** E
YC-009-3	06/25/09	27	100	3,925	3200 E	6100 E	**9,300** E
YC-010-1	7/9/09	1,600	1,700	26,702	43000 E	20000 E	**64,000** E
YC-010-2	7/9/09	33	120	886	740 E	1400 E	**2,100** E
YC-011-2	06/25/09	110	52	1,027	2100 E	340 E	**2,400** E
YC-811-2	06/25/09	74	42	685	1300 E	280 E	**1,600** E
YC-011-3	06/25/09	560	0	6,940	17000 E	0 E	**17,000** E
YC-012-1	06/25/09	73	45	631	1200 E	280 E	**1,500** E
YC-012-2	06/25/09	190	510	3,040	3100 E	4100 E	**7,200** E
YC-013-2	06/24/09	490	160	4,018	8700 E	800 E	**9,600** E
YC-013-3	06/24/09	100	130	1,941	2900 E	1700 E	**4,600** E
YC-014-2	06/25/09	120	260	2,419	2800 E	3000 E	**5,800** E
YC-015-1	7/7/09	310	270	3,995	7000 E	2500 E	**9,500** E
YC-015-2	7/7/09	4,600	1,200	34,368	77000 E	4900 E	**82,000** E
YC-015-3	7/7/09	240	86	2,327	5000 E	540 E	**5,500** E
YC-016-1	07/01/09	52	150	974	900 E	1400 E	**2,300** E
YC-016-2	07/01/09	260	270	2,620	4300 E	1900 E	**6,200** E
YC-018-2	6/23/09	680	190	5,637	13000 E	890 E	**13,000** E
YC-018-3	6/23/09	380	480	3,856	5800 E	3300 E	**9,200** E
YC-018-4	6/23/09	26	260	1,396	540 E	2800 E	**3,300** E
YC-818-4	6/23/09	96	220	1,218	1400 E	1500 E	**2,900** E
YC-019-2	6/22/09	95	110	1,183	1900 E	960 E	**2,800** E
YC-020-3	6/22/09	64	0	625	1500 E	0 E	**1,500** E
YC-021-2	6/22/09	58	39	502	950 E	250 E	**1,200** E
YC-021-3	6/22/09	93	120	1,068	1600 E	940 E	**2,500** E
YC-021-4	6/22/09	40	180	858	610 E	1400 E	**2,000** E
YC-022-4	6/22/09	38	0	530	1300 E	0 E	**1,300** E
YC-023-2	6/18/09	110	110	1,097	1800 E	790 E	**2,600** E
YC-024-1	6/22/09	33	62	463	580 E	520 E	**1,100** E
YC-024-2	6/22/09	38	61	491	660 E	500 E	**1,200** E
YC-824-3	6/22/09	43	43	423	700 E	300 E	**1,000** E
YC-025-1	6/18/09	41	52	515	780 E	450 E	**1,200** E
YC-025-2	6/18/09	92	77	1,175	2100 E	720 E	**2,800** E
YC-025-3	6/18/09	58	49	526	930 E	330 E	**1,300** E
YC-825-3	6/18/09	45	39	496	870 E	310 E	**1,200** E
YC-026-1	6/18/09	83	72	859	1500 E	540 E	**2,000** E
YC-026-2	6/18/09	57	75	665	990 E	590 E	**1,600** E

Table 2 - Alternative Aroclor Concentration Estimations in Sediment with Total PCBs that Exceeded 1,000 Micrograms per Kilogram
Yosemite Slough Sediment Removal Assessment
San Francisco, San Francisco County, California

Analyte		PCB Congener 66	PCB Congener 180	Total for 28 PCB Congeners	As PCB Mixture Aroclor 1254	As PCB Mixture Aroclor 1260	Total for PCBs[1]
Analytical Method		EPA 8082 for 28 congeners	EPA 8082 for 28 congeners	EPA 8082 for 28 congeners	Estimated concentration based upon PCB congener 66 to PCB congener 180 calculations	Estimated concentration based upon PCB congener 66 to PCB congener 180 calculations	Calculated estimated concentration based upon quantitation of 28 of 209 congener[1]
Yosemite Slough Removal Action Level		NA	NA	NA	NA	NA	**1,240**
Units		ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Sample ID	Sample Date						
YC-027-1	6/18/09	0	230	1,873	0 E	4500 E	**4,500** E
YC-027-2	6/18/09	49	53	586	940 E	450 E	**1,400** E
YC-028-2	6/17/09	120	110	1,163	2000 E	770 E	**2,800** E
YC-029-2	7/6/09	97	270	1,730	1700 E	2400 E	**4,100** E
YC-029-3	7/6/09	480	450	5,616	9500 E	3800 E	**13,000** E
YC-829-3	7/6/09	550	500	6,139	11000 E	4100 E	**15,000** E
YC-029-4	7/6/09	270	390	3,797	5400 E	3600 E	**9,000** E
YC-030-1	7/6/09	31	54	724	940 E	780 E	**1,700** E
YC-030-2	7/6/09	200	180	2,090	3600 E	1400 E	**5,000** E
YC-030-3	7/6/09	1,100	970	13,294	23000 E	8500 E	**32,000** E
YC-030-4	7/6/09	130	170	1,747	2600 E	1600 E	**4,200** E
YC-031-1	7/7/09	61	100	993	1300 E	1000 E	**2,400** E
YC-031-2	7/7/09	650	680	7,260	12000 E	5400 E	**17,000** E
YC-031-3	7/7/09	64	59	1,961	3400 E	1300 E	**4,700** E
YC-831-3	7/7/09	42	53	2,004	3000 E	1700 E	**4,800** E
YC-032-1	7/7/09	1,200	760	11,781	23000 E	5500 E	**28,000** E
YC-032-2	7/7/09	490	3,300	23,790	13000 E	44000 E	**57,000** E
YC-032-3	7/7/09	39	27	433	810 E	220 E	**1,000** E
YC-833-1	7/8/09	26	42	627	850 E	650 E	**1,500** E
YC-033-2	7/8/09	47	38	793	1400 E	470 E	**1,900** E
YC-033-3	7/8/09	42	34	535	1000 E	320 E	**1,300** E
YC-033-4	7/8/09	66	83	1,007	1500 E	870 E	**2,400** E
YC-034-2	7/8/09	150	88	1,804	3500 E	770 E	**4,300** E
YC-034-3	7/8/09	240	440	8,121	10000 E	9000 E	**19,000** E
YC-035-2	7/8/09	190	120	2,308	4400 E	1100 E	**5,500** E
YC-035-3	7/8/09	1,100	1,000	17,257	30000 E	11000 E	**41,000** E
YC-035-4	7/8/09	145	250	2,227	2900 E	2400 E	**5,300** E
YC-036-1	7/9/09	880	460	10,448	21000 E	3900 E	**25,000** E
YC-036-2	7/9/09	1,100	1,600	16,104	23000 E	15000 E	**38,000** E
YC-036-3	7/9/09	33	97	869	830 E	1200 E	**2,100** E
YC-836-3	7/9/09	99	190	1,680	2100 E	1900 E	**4,000** E

Notes:

PCBs = Polychlorinated Biphenyls

ug/kg = micrograms per kilogram

<X = not detected above method detection limit of X

J = Data validation qualifier indicating concentration is estimated.

Concentrations exceeding Yosemite Creek Removal Action Level are shaded and bold.

[1]=Concentration is based on calculation of total congeners using estimation procedure.

E = Estimated by Calculation

Table 3 - Comparision Between Two Aroclor Concentration Estimations in Sediment
Yosemite Creek Sediment Removal Assessment
San Francisco, San Francisco County, California

Analyte		As PCB Mixture Aroclor 1254	As PCB Mixture Aroclor 1260	As PCB Mixture Aroclor 1254	As PCB Mixture Aroclor 1260	Relative Percent Difference	Relative Percent Difference
Analytical Method		Estimated concentration based upon PCB congener 118 to PCB congener 180 calculations	Estimated concentration based upon PCB congener 118 to PCB congener 180 calculations	Estimated concentration based upon PCB congener 66 to PCB congener 180 calculations	Estimated Concentration based upon PCB-66 to PCB-180 calculations	Between two Aroclor 1254 estimates	Between two Aroclor 1260 estimates
Units		ug/kg	ug/kg	ug/kg	ug/kg	%	%
Sample ID	Sample Date						
YC-002-2	07/01/09	6,900 E	9,400 E	8,600 E	7,700 E	21.9	19.9
YC-003-1	06/29/09	2,000 E	1,900 E	910 E	3,000 E	74.9	44.9
YC-004-2	07/02/09	7,600 E	8,100 E	8,100 E	7,600 E	6.4	6.4
YC-005-1	07/07/09	7,700 E	2,200 E	7,800 E	2,100 E	1.3	4.7
YC-005-2	07/07/09	20,000 E	8,800 E	21,000 E	7,900 E	4.9	10.8
YC-805-2	07/07/09	17,000 E	4,300 E	18,000 E	4,200 E	5.7	2.4
YC-006-2	06/24/09	1,700 E	2,500 E	1,900 E	2,200 E	11.1	12.8
YC-007-1	7/7/2009	16,000 E	3,500 E	16,000 E	2,900 E	0.0	18.8
YC-008-2	7/2/2009	14,000 E	17,000 E	17,000 E	14,000 E	19.4	19.4
YC-008-3	7/2/2009	4,500 E	6,700 E	5,900 E	5,300 E	26.9	23.3
YC-009-3	06/25/09	7,000 E	2,300 E	3,200 E	6,100 E	74.5	90.5
YC-010-1	7/9/2009	38,000 E	25,000 E	43,000 E	20,000 E	12.3	22.2
YC-010-2	7/9/2009	550 E	1,600 E	740 E	1,400 E	29.5	13.3
YC-011-2	06/25/09	0 E	2,400 E	2,100 E	340 E	200.0	150.4
YC-811-2	06/25/09	1,400 E	250 E	1,300 E	280 E	7.4	11.3
YC-011-3	06/25/09	17,000 E	0 E	17,000 E	0 E	0.0	0.0
YC-012-1	06/25/09	500 E	1,000 E	1,200 E	280 E	82.4	112.5
YC-012-2	06/25/09	2,000 E	5,300 E	3,100 E	4,100 E	43.1	25.5
YC-013-2	06/24/09	8,900 E	650 E	8,700 E	800 E	2.3	20.7
YC-013-3	06/24/09	2,500 E	2,100 E	2,900 E	1,700 E	14.8	21.1
YC-014-2	06/25/09	2,200 E	3,500 E	2,800 E	3,000 E	24.0	15.4
YC-015-1	7/7/2009	6,600 E	2,800 E	7,000 E	2,500 E	5.9	11.3
YC-015-2	7/7/2009	76,000 E	6,200 E	77,000 E	4,900 E	1.3	23.4
YC-015-3	7/7/2009	4,800 E	710 E	5,000 E	540 E	4.1	27.2
YC-016-1	07/01/09	560 E	1,800 E	900 E	1,400 E	46.6	25.0
YC-016-2	07/01/09	4,000 E	2,200 E	4,300 E	1,900 E	7.2	14.6
YC-018-2	6/23/2009	12,500 E	790 E	13,000 E	890 E	3.9	11.9
YC-018-3	6/23/2009	4,800 E	4,400 E	5,800 E	3,300 E	18.9	28.6
YC-018-4	6/23/2009	560 E	2,800 E	540 E	2,800 E	3.6	0.0
YC-818-4	6/23/2009	540 E	2,400 E	1,400 E	1,500 E	88.7	46.2
YC-019-2	6/22/2009	1,700 E	1,100 E	1,900 E	960 E	11.1	13.6
YC-020-3	6/22/2009	1,500 E	0 E	1,500 E	0 E	0.0	0.0
YC-021-2	6/22/2009	900 E	300 E	950 E	250 E	5.4	18.2
YC-021-3	6/22/2009	1,400 E	1,100 E	1,600 E	940 E	13.3	15.7
YC-021-4	6/22/2009	510 E	1,500 E	610 E	1,400 E	17.9	6.9
YC-022-4	6/22/2009	1,300 E	0 E	1,300 E	0 E	0.0	0.0
YC-023-2	6/18/2009	1,600 E	970 E	1,800 E	790 E	11.8	20.5
YC-024-1	6/22/2009	270 E	830 E	580 E	520 E	72.9	45.9
YC-024-2	6/22/2009	350 E	820 E	660 E	500 E	61.4	48.5
YC-824-3	6/22/2009	700 E	300 E	700 E	300 E	0.0	0.0
YC-025-1	6/18/2009	570 E	650 E	780 E	450 E	31.1	36.4
YC-025-2	6/18/2009	1,900 E	900 E	2,100 E	720 E	10.0	22.2
YC-025-3	6/18/2009	820 E	430 E	930 E	330 E	12.6	26.3
YC-825-3	6/18/2009	800 E	380 E	870 E	310 E	8.4	20.3
YC-026-1	6/18/2009	1,500 E	550 E	1,500 E	540 E	0.0	1.8
YC-026-2	6/18/2009	940 E	640 E	990 E	590 E	5.2	8.1
YC-027-1	6/18/2009	0 E	4,500 E	0 E	4,500 E	0.0	0.0
YC-027-2	6/18/2009	860 E	540 E	940 E	450 E	8.9	18.2
YC-028-2	6/17/2009	2,000 E	760 E	2,000 E	770 E	0.0	1.3
YC-029-2	7/6/2009	1,500 E	2,600 E	1,700 E	2,400 E	12.5	8.0
YC-029-3	7/6/2009	9,300 E	4,000 E	9,500 E	3,800 E	2.1	5.1

Table 3 - Comparision Between Two Aroclor Concentration Estimations in Sediment
Yosemite Creek Sediment Removal Assessment
San Francisco, San Francisco County, California

Analyte		As PCB Mixture Aroclor 1254	As PCB Mixture Aroclor 1260	As PCB Mixture Aroclor 1254	As PCB Mixture Aroclor 1260	Relative Percent Difference	Relative Percent Difference
Analytical Method		Estimated concentration based upon PCB congener 118 to PCB congener 180 calculations	Estimated concentration based upon PCB congener 118 to PCB congener 180 calculations	Estimated concentration based upon PCB congener 66 to PCB congener 180 calculations	Estimated Concentration based upon PCB-66 to PCB-180 calculations	Between two Aroclor 1254 estimates	Between two Aroclor 1260 estimates
Units		ug/kg	ug/kg	ug/kg	ug/kg	%	%
Sample ID	Sample Date						
YC-829-3	7/6/2009	10,000 E	4,400 E	11,000 E	4,100 E	9.5	7.1
YC-029-4	7/6/2009	4,900 E	4,200 E	5,400 E	3,600 E	9.7	15.4
YC-030-1	7/6/2009	720 E	1,000 E	940 E	780 E	26.5	24.7
YC-030-2	7/6/2009	3,600 E	1,400 E	3,600 E	1,400 E	0.0	0.0
YC-030-3	7/6/2009	22,000 E	9,800 E	23,000 E	8,500 E	4.4	14.2
YC-030-4	7/6/2009	2,400 E	1,700 E	2,600 E	1,600 E	8.0	6.1
YC-031-1	7/7/2009	1,200 E	1,100 E	1,300 E	1,000 E	8.0	9.5
YC-031-2	7/7/2009	11,000 E	6,600 E	12,000 E	5,400 E	8.7	20.0
YC-031-3	7/7/2009	3,400 E	1,300 E	3,400 E	1,300 E	0.0	0.0
YC-831-3	7/7/2009	3,300 E	1,500 E	3,000 E	1,700 E	9.5	12.5
YC-032-1	7/7/2009	22,000 E	5,700 E	23,000 E	5,500 E	4.4	3.6
YC-032-2	7/7/2009	28,000 E	29,000 E	13,000 E	44,000 E	73.2	41.1
YC-032-3	7/7/2009	800 E	230 E	810 E	220 E	1.2	4.4
YC-833-1	7/8/2009	830 E	670 E	850 E	650 E	2.4	3.0
YC-033-2	7/8/2009	1,300 E	560 E	1,400 E	470 E	7.4	17.5
YC-033-3	7/8/2009	870 E	400 E	1,000 E	320 E	13.9	22.2
YC-033-4	7/8/2009	1,300 E	1,100 E	1,500 E	870 E	14.3	23.4
YC-034-2	7/8/2009	3,200 E	1,100 E	3,500 E	770 E	9.0	35.3
YC-034-3	7/8/2009	8,100 E	11,000 E	10,000 E	9,000 E	21.0	20.0
YC-035-2	7/8/2009	4,200 E	1,300 E	4,400 E	1,100 E	4.7	16.7
YC-035-3	7/8/2009	25,000 E	16,000 E	30,000 E	11,000 E	18.2	37.0
YC-035-4	7/8/2009	2,000 E	3,200 E	2,900 E	2,400 E	36.7	28.6
YC-036-1	7/9/2009	21,000 E	4,000 E	21,000 E	3,900 E	0.0	2.5
YC-036-2	7/9/2009	18,000 E	20,000 E	23,000 E	15,000 E	24.4	28.6
YC-036-3	7/9/2009	870 E	1,200 E	830 E	1,200 E	4.7	0.0
YC-836-3	7/9/2009	2,000 E	2,000 E	2,100 E	1,900 E	4.9	5.1

Notes:
PCBs = Polychlorinated Biphenyls
E = Estimated by Calculation
ug/kg = micrograms per kilogram
for marine sediment (Buchman 2008, Screening Quick Reference Tables [SQuiRTs])
J = Data validation qualifier indicating concentration is estimated.
<X = not detected above method detection limit of X
Shade data has RPD greater that 40 percent.

Attachment 4

Calculations

Example Calculation

Estimation of Concentration of Aroclors Mixture using Polychlorinated Biphenyls (PCB) Congener Data

1 Original Congener Data from 2009 Removal Assessment for Sample YC-002-1[1]

Analyte	PCB congener 8	PCB congener 18	PCB congener 28	PCB congener 44	PCB congener 52	PCB congener 66	PCB congener 77	PCB congener 81	PCB congener 101	PCB congener 105	PCB congener 114	**PCB congener 118**	PCB congener 123	PCB congener 126
Sample	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	**ug/Kg**	ug/Kg	ug/Kg
YC-002- 1	<0.12	<0.10	<0.05	<0.02	<0.02	<0.02	<0.14	7.6J	7.1J	<0.02	<0.02	**3.9J**	2.6	<0.12

Analyte	PCB congener 128	PCB congener 138	PCB congener 153	PCB congener 156	PCB congener 157	PCB congener 167	PCB congener 169	PCB congener 170	**PCB congener 180**	PCB congener 187	PCB congener 189	PCB congener 195	PCB congener 206	PCB congener 209	**Total for 28 congeners**
Sample	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	**ug/Kg**	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	**ug/Kg**
YC-002-1	<0.02	7.7J	9.9J	3.9	<0.12	<0.12	<0.14	2.6	**4.1**	4.8	<0.12	<0.02	<0.02	<0.02	**54.2J**

2 New Data on the Congener Concentrations of Aroclor 1254 and Aroclor 1260[2]

Analyte	PCB congener 8	PCB congener 18	PCB congener 28	PCB congener 44	PCB congener 52	PCB congener 66	PCB congener 77	PCB congener 81	PCB congener 101	PCB congener 105	PCB congener 114	**PCB congener 118**	PCB congener 123	PCB congener 126
Sample	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	**mg/L**	mg/L	mg/L
Aroclor 1254	<0.01	0.001	<0.01	0.011	0.023	0.0263	<0.01	<0.01	0.036	0.0147	<0.01	**0.0273**	<0.01	<0.01
Aroclor 1260	<0.01	<0.01	<0.01	<0.01	0.0013	<0.01	<0.01	<0.01	0.0133	<0.01	<0.01	**0.0019**	<0.01	<0.01

Analyte	PCB congener 128	PCB congener 138	PCB congener 153	PCB congener 156	PCB congener 157	PCB congener 167	PCB congener 169	PCB congener 170	PCB congener 180	PCB congener 187	PCB congener 189	PCB congener 195	PCB congener 206	PCB congener 209	**Total for 28 congeners**
Sample	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	**mg/L**
Aroclor 1254	0.0227	0.0277	0.0377	<0.01	<0.01	<0.01	<0.01	0.0313	0.0513	0.0257	0.00107	0.00507	0.0029	<0.01	**0.1985**
Aroclor 1260	0.02267	0.02767	<0.01	<0.01	<0.01	<0.01	0.0313	0.0513	0.0257	0.00107	0.00507	0.00293	0.03767	<0.01	**0.2219**

PCBs = Polychlorinated Biphenyls
ug/kg = micrograms per kilogram
mg/L = milligrams per liter
<X = not detected above method detection limit of X

[1]=Reference data from the 2009 Yosemite Creek Removal Assessment Report
[2]= Reference data from the 2012 APPL Inc Laboratory Report
Bold= Data used in the example calculation

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PAN No: 002693.7008.01SO

3 Calculate Ratio Percent

Using the totals of Aroclor 1254 and Aroclor 1260 from the 2012 APPL Inc. Laboratory Report which is found in the data table from Step 2, calculate the ratio percentage of total detected PCB congeners to the known PCB concentrations for both Aroclor 1254 and Aroclor 1260. The known concentration is 0.500 milligrams per liter of both Aroclor 1254 and Aroclor 1260. Then calculate the average.

Aroclor 1254: 0.1985 mg/L /0.500 mg/L = 39.70%
Aroclor 1260: 0.2219 mg/L /0.500 mg/L = 44.39%
Average: (39.7% + 44.4%)/2 = 42.04%

4 Calculation of Total PCBs in Sample YC-002-1[1]

Convert the "Total for 28 congeners" concentration in sample YC-002-1 from the table in Step 1 to "Total PCBs" concentration by dividing the concentration by the average percentage calculated in Step 3.

Total PCBs: 54.2 ug/Kg /42.04% = 128.9 ug/Kg

5 Mixing Matrix Table

Using the Aroclor standard data for PCB congener 118 and PCB congener 180 from the table in Step 2, generate a Mixing Matrix Table (attached)

Percent of 1254 in Mixture	Percent of 1260 in Mixture	PCB Congener 118	PCB Congener 118	Mixture Total PCB Congener 118	% PCB Congener 118 in Mixture
		Contributed by 1254	contributed by 1260		
		ug/l	ug/l	ug/l	
100	0	27.3	0.00	27.3	88.27
90	10	24.60	0.19	24.79	74.68
80	20	21.87	0.38	22.25	62.81
70	30	19.13	0.57	19.70	52.34
60	40	16.40	0.76	17.16	43.04
50	50	13.67	0.95	14.62	34.72
40	60	10.93	1.14	12.07	27.24
30	70	8.20	1.33	9.53	20.47
20	80	5.47	1.52	6.99	14.32
10	90	2.73	1.71	4.44	8.71
0	100	0.00	1.90	1.90	3.57

6 Mixing Curve

Using the data from the Mixing Matrix Table, generate a Mixing Curve (attached) and mixing equation (second order linear regression equation). For the Mixing Matrix Table data the mixing equation is:

($y = -0.0074x^2 + 1.8404x - 5.3475$)

7. Calculate the percentage of PCB congener 118 to the sum of PCB congener 118 and PCB congener 180 for sample.

0.39/ (0.39+0.41) X 100 = 48.75 %

8. Using the calculated value from Step 7, calculate the % Aroclor 1254 using mixing equation from Step 6 .

$Y = (-0.0074)(48.75)^2 + (1.8404)(48.75) - (5.3475)$
Y = 66.785 % = % Aroclor 1254 in sample.

9. Calculate the % Aroclor 1260 in sample for sample YC-002-1

100 % - 66.785% = % Aroclor 1254 in sample = 33.215 %

10. Calculate the concentration of Aroclor 1254 for sample YC-002-1

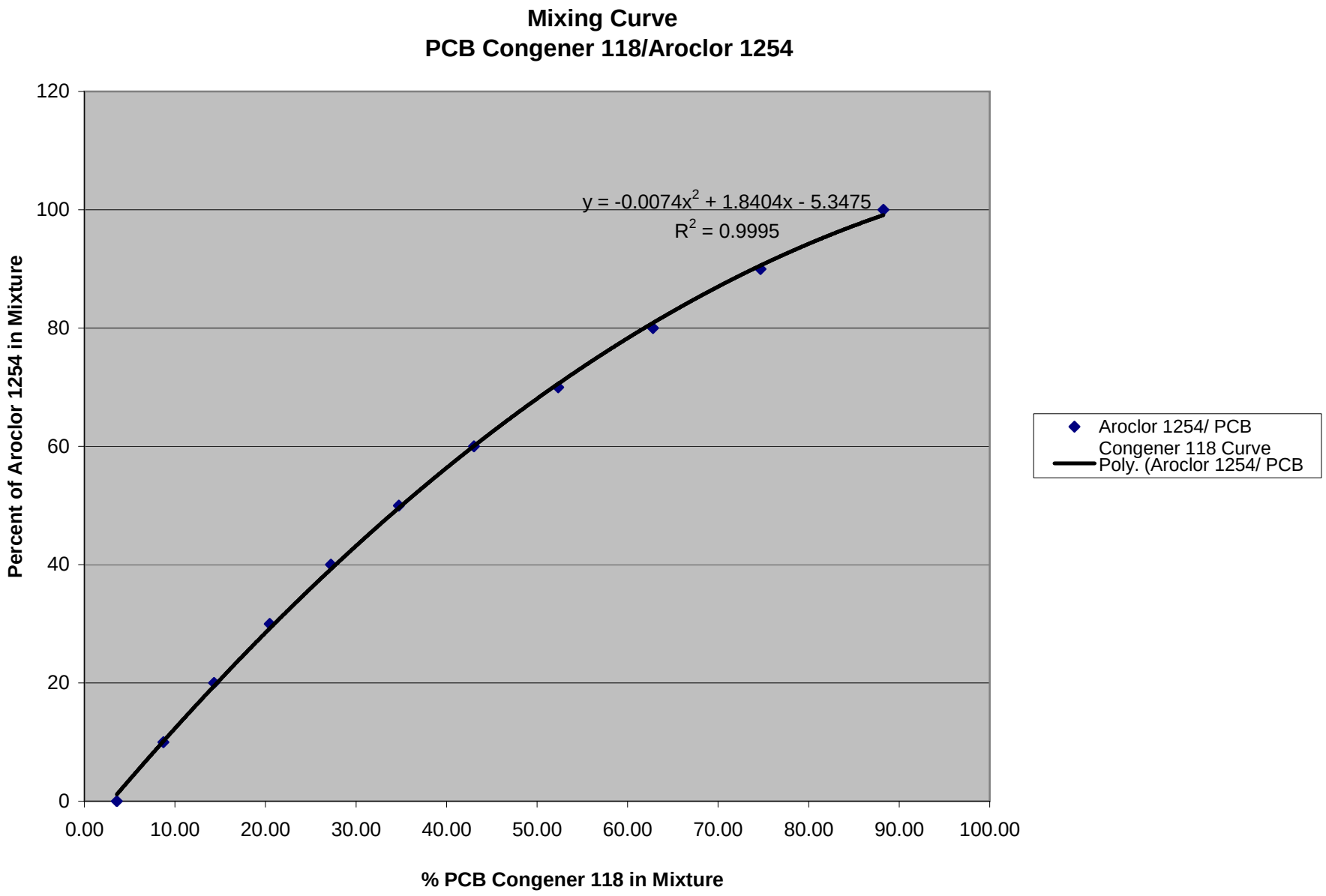
Take the total for PCBs calculated in step 4 and multiplied by % Aroclor 1254 in sample.

(128.9 ug/Kg) (66.8%) = 86.1 ug/Kg

11. Calculate the concentration of Aroclor 1260 for sample YC-002-1

Total for PCBs multiplied by the % Aroclor 1260 in sample

(128.9 ug/Kg) (33.2%) = 42.8 ug/Kg ug/Kg


Mixing Curve
PCB Congener 118/Aroclor 1254
y = -0.0074x2 + 1.8404x - 5.3475
R2 = 0.9995
Percent of Aroclor 1254 in Mixture
% PCB Congener 118 in Mixture
0
20
40
60
80
100
120
0.00
10.00
20.00
30.00
40.00
50.00
60.00
70.00
80.00
90.00
100.00
Aroclor 1254/ PCB Congener 118 Curve
Poly. (Aroclor 1254/ PCB

Attachment 5

Figures

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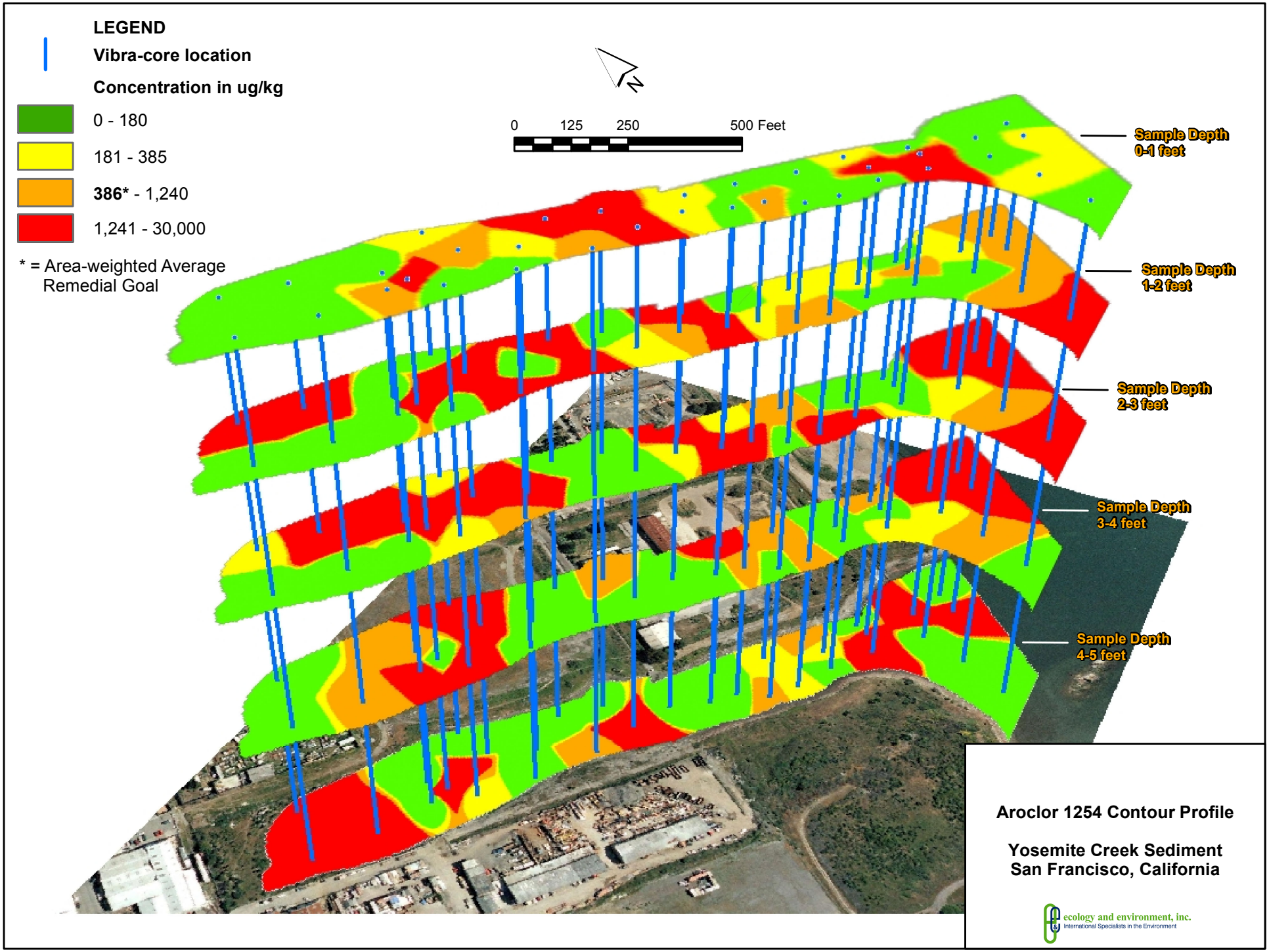
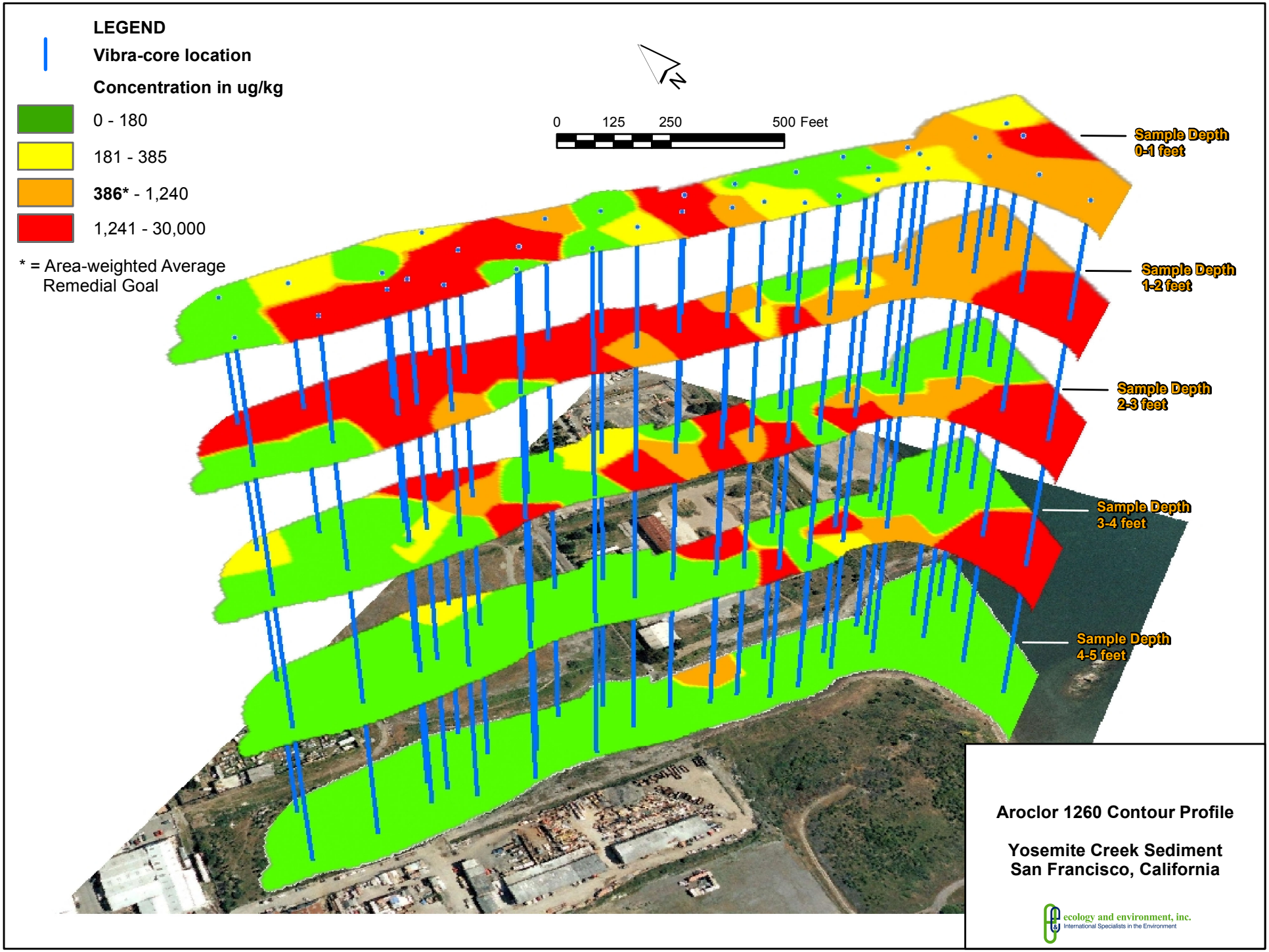
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