

**APPENDIX H**  
**RESIDENTIAL WELL ANALYTICAL DATA**  
**AND VALIDATION REPORT**



**Analytical Resources, Incorporated**  
Analytical Chemists and Consultants

22 October 2012

Heidi Kaiser  
Hydrometrics, Inc.  
5602 Hesper Road  
Billings, MT 59106

RECEIVED  
OCT 26 2012

BY:.....

**RE: Client Project: Idaho Pole**  
**ARI Job No.: VL89**

Dear Heidi:

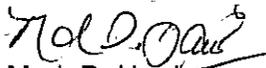
Please find enclosed the original Chain-of-Custody (COC) record and the final results for the samples from the project referenced above. Analytical Resources Inc. (ARI) received thirteen water samples on October 4, 2012. The samples were analyzed for PCP as requested.

There were no anomalies associated with these analyses.

An electronic copy of these reports and all associated raw data will be kept on file at ARI. Should you have any questions regarding these results, please feel free to contact me at your convenience.

Sincerely,

ANALYTICAL RESOURCES, INC.

  
Mark D. Harris  
Project Manager  
206/695-6210  
[markh@arilabs.com](mailto:markh@arilabs.com)

Enclosures

cc: File VL89

MDH/mdh

# Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: **VLS9** Turn-around Requested: **Normal**  
 ARI Client Company: **Hydrometrics** Phone:  
 Client Contact: **Hildi Kaiser**  
 Client Project Name: **Idaho Pole (Fall Site-wide Sampling)**  
 Client Project #: **Samplers: Rebecca Fabich**

Page: **3** of **4**  
 Date: **10/8/12** Ice Present? **yo**  
 No. of Coolers: **5** Cooler Temps: **04-41**

ARI Assigned Number: **VLS9** Turn-around Requested: **Normal**  
 ARI Client Company: **Hydrometrics** Phone:  
 Client Contact: **Hildi Kaiser**  
 Client Project Name: **Idaho Pole (Fall Site-wide Sampling)**  
 Client Project #: **Samplers: Rebecca Fabich**

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested					Notes/Comments		
a4-B	10/8/12	1355	H2O	2	X							
ROS8		1534		2	X							
GM-8		1601		2	X							
a7-B		1629		2	X							
a7-F		1629		2	X							
a8-B	10/9/12	949		2	X							
IP-0409-339		1001		2	X							
IP-0409-335		1024		2	X							
IP-0409-334		1034		2	X							
IP-0409-337		1039		2	X							
Comments/Special Instructions	Reinquisitioned by: (Signature) <i>Rebecca Fabich</i> Printed Name: <b>Rebecca Fabich</b> Company: <b>Idaho Pole</b>				Received by: (Signature) <i>[Signature]</i> Printed Name: <b>A. Volgardsen</b> Company: <b>ARI</b>				Reinquisitioned by: (Signature) _____ Printed Name: _____ Company: _____			
Date & Time: <b>10/3/12 1500</b>					Date & Time: <b>10/4/12 1000</b>					Date & Time: _____		

**Limits of Liability:** ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.

**Sample Retention Policy:** All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

CP 1200 : 090509





# Cooler Receipt Form

ARI Client: HMX

Project Name: Idaho Pole

COC No(s): \_\_\_\_\_ (NA)

Delivered by:  Fed-Ex UPS Courier  Hand Delivered  Other: \_\_\_\_\_

Assigned ARI Job No: VL89

Tracking No: 8 686 4944 2839 7957 4682 9816 NA

**Preliminary Examination Phase:**

Were intact, properly signed and dated custody seals attached to the outside of to cooler? 7957 4682 9805 7957 4682 9790 7957 4682 9827  YES  NO

Were custody papers included with the cooler?  YES  NO

Were custody papers properly filled out (ink, signed, etc.)  YES  NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)..... 1.4 3.8 3.8 4.1 0.4

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: 90837952

Cooler Accepted by: AV Date: 10/4/12 Time: 1000

*Complete custody forms and attach all shipping documents*

**Log-In Phase:**

Was a temperature blank included in the cooler?  YES  NO

What kind of packing material was used? ...  Bubble Wrap  Wet Ice  Gel Packs  Baggies  Foam Block  Paper  Other: \_\_\_\_\_

Was sufficient ice used (if appropriate)?  NA  YES  NO

Were all bottles sealed in individual plastic bags?  YES  NO

Did all bottles arrive in good condition (unbroken)?  YES  NO

Were all bottle labels complete and legible?  YES  NO

Did the number of containers listed on COC match with the number of containers received?  YES  NO

Did all bottle labels and tags agree with custody papers?  YES  NO

Were all bottles used correct for the requested analyses?  YES  NO

Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)...  NA  YES  NO

Were all VOC vials free of air bubbles?  NA  YES  NO

Was sufficient amount of sample sent in each bottle?  YES  NO

Date VOC Trip Blank was made at ARI.....  NA

Was Sample Split by ARI:  NA  YES Date/Time: \_\_\_\_\_ Equipment: \_\_\_\_\_ Split by: \_\_\_\_\_

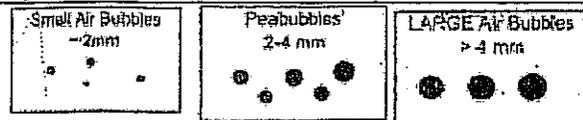
Samples Logged by: JM Date: 10/4/12 Time: 1403

**\*\* Notify Project Manager of discrepancies or concerns \*\***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

**Additional Notes, Discrepancies, & Resolutions:**

By: \_\_\_\_\_ Date: \_\_\_\_\_



Small → "sm"  
Peabubbles → "pb"  
Large → "lg"  
Headspace → "hs"

# Sample ID Cross Reference Report



ARI Job No: VL89  
Client: Hydrometrics Inc.  
Project Event: N/A  
Project Name: Idaho Pole (Fall Sitewide Sampling)

Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1. 24-B	VL89A	12-19190	Water	10/02/12 13:55	10/04/12 10:00
2. Res 8	VL89B	12-19191	Water	10/02/12 15:34	10/04/12 10:00
3. GM-8	VL89C	12-19192	Water	10/02/12 16:01	10/04/12 10:00
4. 27-B	VL89D	12-19193	Water	10/02/12 16:29	10/04/12 10:00
5. 27-F	VL89E	12-19194	Water	10/02/12 16:29	10/04/12 10:00
6. 28-B	VL89F	12-19195	Water	10/03/12 09:49	10/04/12 10:00
7. IP-0409-339	VL89G	12-19196	Water	10/03/12 10:01	10/04/12 10:00
8. IP-0409-335	VL89H	12-19197	Water	10/03/12 10:24	10/04/12 10:00
9. IP-0409-334	VL89I	12-19198	Water	10/03/12 10:34	10/04/12 10:00
10. IP-0409-337	VL89J	12-19199	Water	10/03/12 10:39	10/04/12 10:00
11. IP-0409-333	VL89K	12-19200	Water	10/03/12 11:09	10/04/12 10:00
12. IP-0409-332	VL89L	12-19201	Water	10/03/12 11:18	10/04/12 10:00
13. IP-0409-331	VL89M	12-19202	Water	10/03/12 11:30	10/04/12 10:00



## Data Reporting Qualifiers

Effective 2/14/2011

### Inorganic Data

- U Indicates that the target analyte was not detected at the reported concentration
- \* Duplicate RPD is not within established control limits
- B Reported value is less than the CRDL but  $\geq$  the Reporting Limit
- N Matrix Spike recovery not within established control limits
- NA Not Applicable, analyte not spiked
- H The natural concentration of the spiked element is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible
- L Analyte concentration is  $\leq 5$  times the Reporting Limit and the replicate control limit defaults to  $\pm 1$  RL instead of the normal 20% RPD

### Organic Data

- U Indicates that the target analyte was not detected at the reported concentration
- \* Flagged value is not within established control limits
- B Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.
- J Estimated concentration when the value is less than ARI's established reporting limits
- D The spiked compound was not detected due to sample extract dilution
- E Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.
- Q Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria ( $< 20\%$  RSD,  $< 20\%$  Drift or minimum RRF).



- S Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte
- NA The flagged analyte was not analyzed for
- NR Spiked compound recovery is not reported due to chromatographic interference
- NS The flagged analyte was not spiked into the sample
- M Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses
- M2 The sample contains PCB congeners that do not match any standard Aroclor pattern. The PCBs are identified and quantified as the Aroclor whose pattern most closely matches that of the sample. The reported value is an estimate.
- N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"
- Y The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.
- EMPC Estimated Maximum Possible Concentration (EMPC) defined in EPA Statement of Work DLM02.2 as a value "calculated for 2,3,7,8-substituted isomers for which the quantitation and /or confirmation ion(s) has signal to noise in excess of 2.5, but does not meet identification criteria" **(Dioxin/Furan analysis only)**
- C The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column
- P The analyte was detected on both chromatographic columns but the quantified values differ by  $\geq 40\%$  RPD with no obvious chromatographic interference
- X Analyte signal includes interference from polychlorinated diphenyl ethers. **(Dioxin/Furan analysis only)**
- Z Analyte signal includes interference from the sample matrix or perfluorokerosene ions. **(Dioxin/Furan analysis only)**



## Geotechnical Data

- A The total of all fines fractions. This flag is used to report total fines when only sieve analysis is requested and balances total grain size with sample weight.
- F Samples were frozen prior to particle size determination
- SM Sample matrix was not appropriate for the requested analysis. This normally refers to samples contaminated with an organic product that interferes with the sieving process and/or moisture content, porosity and saturation calculations
- SS Sample did not contain the proportion of "fines" required to perform the pipette portion of the grain size analysis
- W Weight of sample in some pipette aliquots was below the level required for accurate weighting

ORGANICS ANALYSIS DATA SHEET  
PCP by GC/ECD Method SW8041  
Extraction Method: SW3510C  
Page 1 of 1

Sample ID: IP-0409-339  
SAMPLE

Lab Sample ID: VL89G  
LIMS ID: 12-19196  
Matrix: Water  
Data Release Authorized: *AB*  
Reported: 10/18/12

QC Report No: VL89-Hydrometrics Inc.  
Project: Idaho Pole (Fall Sitewide Sampling)  
Date Sampled: 10/03/12  
Date Received: 10/04/12

Date Extracted: 10/08/12  
Date Analyzed: 10/17/12 15:53  
Instrument/Analyst: ECD1/YZ

Sample Amount: 500 mL  
Final Extract Volume: 10 mL  
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	0.05	< 0.05 U

Reported in µg/L (ppb)

Chlorophenol Surrogate Recovery

2,4,6-Tribromophenol	85.6%
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ORGANICS ANALYSIS DATA SHEET  
PCP by GC/ECD Method SW8041  
Extraction Method: SW3510C  
Page 1 of 1

Sample ID: IP-0409-335  
SAMPLE

Lab Sample ID: VL89H  
LIMS ID: 12-19197  
Matrix: Water  
Data Release Authorized:   
Reported: 10/18/12

QC Report No: VL89-Hydrometrics Inc.  
Project: Idaho Pole (Fall Sitewide Sampling)  
Date Sampled: 10/03/12  
Date Received: 10/04/12

Date Extracted: 10/08/12  
Date Analyzed: 10/17/12 16:29  
Instrument/Analyst: ECD1/YZ

Sample Amount: 500 mL  
Final Extract Volume: 10 mL  
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	0.05	< 0.05 U

Reported in µg/L (ppb)

Chlorophenol Surrogate Recovery

2,4,6-Tribromophenol	88.0%
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ORGANICS ANALYSIS DATA SHEET  
PCP by GC/ECD Method SW8041  
Extraction Method: SW3510C  
Page 1 of 1

Sample ID: IP-0409-334  
SAMPLE

Lab Sample ID: VL89I  
LIMS ID: 12-19198  
Matrix: Water  
Data Release Authorized:   
Reported: 10/18/12

QC Report No: VL89-Hydrometrics Inc.  
Project: Idaho Pole (Fall Sitewide Sampling)

Date Sampled: 10/03/12  
Date Received: 10/04/12

Date Extracted: 10/08/12  
Date Analyzed: 10/17/12 17:05  
Instrument/Analyst: ECD1/YZ

Sample Amount: 500 mL  
Final Extract Volume: 10 mL  
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	0.05	< 0.05 U

Reported in µg/L (ppb)

Chlorophenol Surrogate Recovery

2,4,6-Tribromophenol	79.6%
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ORGANICS ANALYSIS DATA SHEET  
PCP by GC/ECD Method SW8041  
Extraction Method: SW3510C  
Page 1 of 1

Sample ID: IP-0409-337  
SAMPLE

Lab Sample ID: VL89J  
LIMS ID: 12-19199  
Matrix: Water  
Data Release Authorized: *AB*  
Reported: 10/18/12

QC Report No: VL89-Hydrometrics Inc.  
Project: Idaho Pole (Fall Sitewide Sampling)  
Date Sampled: 10/03/12  
Date Received: 10/04/12

Date Extracted: 10/08/12.  
Date Analyzed: 10/17/12 17:42  
Instrument/Analyst: ECD1/YZ

Sample Amount: 500 mL  
Final Extract Volume: 10 mL  
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	0.05	< 0.05 U

Reported in µg/L (ppb)

Chlorophenol Surrogate Recovery

2,4,6-Tribromophenol	77.2%
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ORGANICS ANALYSIS DATA SHEET  
PCP by GC/ECD Method SW8041  
Extraction Method: SW3510C  
Page 1 of 1

Sample ID: IP-0409-333  
SAMPLE

Lab Sample ID: VL89K  
LIMS ID: 12-19200  
Matrix: Water  
Data Release Authorized: *AS*  
Reported: 10/18/12

QC Report No: VL89-Hydrometrics Inc.  
Project: Idaho Pole (Fall Sitewide Sampling)  
Date Sampled: 10/03/12  
Date Received: 10/04/12

Date Extracted: 10/08/12  
Date Analyzed: 10/17/12 18:18  
Instrument/Analyst: ECD1/YZ

Sample Amount: 500 mL  
Final Extract Volume: 10 mL  
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	0.05	< 0.05 U

Reported in µg/L (ppb)

Chlorophenol Surrogate Recovery

2,4,6-Tribromophenol	74.8%
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ORGANICS ANALYSIS DATA SHEET  
PCP by GC/ECD Method SW8041  
Extraction Method: SW3510C  
Page 1 of 1

Sample ID: IP-0409-332  
SAMPLE

Lab Sample ID: VL89L  
LIMS ID: 12-19201  
Matrix: Water  
Data Release Authorized:   
Reported: 10/18/12

QC Report No: VL89-Hydrometrics Inc.  
Project: Idaho Pole (Fall Sitewide Sampling)  
Date Sampled: 10/03/12  
Date Received: 10/04/12

Date Extracted: 10/08/12  
Date Analyzed: 10/17/12 18:54  
Instrument/Analyst: ECD1/YZ

Sample Amount: 500 mL  
Final Extract Volume: 10 mL  
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	0.05	< 0.05 U

Reported in µg/L (ppb)

Chlorophenol Surrogate Recovery

2,4,6-Tribromophenol	76.8%
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ORGANICS ANALYSIS DATA SHEET  
PCP by GC/ECD Method SW8041  
Extraction Method: SW3510C  
Page 1 of 1

Sample ID: IP-0409-331  
SAMPLE

Lab Sample ID: VL89M  
LIMS ID: 12-19202  
Matrix: Water  
Data Release Authorized: *[Signature]*  
Reported: 10/18/12

QC Report No: VL89-Hydrometrics Inc.  
Project: Idaho Pole (Fall Sitewide Sampling)  
Date Sampled: 10/03/12  
Date Received: 10/04/12

Date Extracted: 10/08/12  
Date Analyzed: 10/17/12 19:30  
Instrument/Analyst: ECD1/YZ

Sample Amount: 500 mL  
Final Extract Volume: 10 mL  
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	0.05	< 0.05 U

Reported in µg/L (ppb)

Chlorophenol Surrogate Recovery

2,4,6-Tribromophenol	80.8%
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ORGANICS ANALYSIS DATA SHEET  
PCP by GC/ECD Method SW8041  
Extraction Method: SW3510C  
Page 1 of 1

Sample ID: MB-100812  
METHOD BLANK

Lab Sample ID: MB-100812  
LIMS ID: 12-19196  
Matrix: Water  
Data Release Authorized:   
Reported: 10/18/12

QC Report No: VL89-Hydrometrics Inc.  
Project: Idaho Pole (Fall Sitewide Sampling)

Date Sampled: NA  
Date Received: NA

Date Extracted: 10/08/12  
Date Analyzed: 10/17/12 13:27  
Instrument/Analyst: ECD1/YZ

Sample Amount: 500 mL  
Final Extract Volume: 10 mL  
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	0.05	< 0.05 U

Reported in µg/L (ppb)

Chlorophenol Surrogate Recovery

2,4,6-Tribromophenol	69.2%
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SW8041 CHLOROPHENOLICS SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: VL89-Hydrometrics Inc.  
Project: Idaho Pole (Fall Sitewide Sampling)

Client ID	TBP	TOT	OUT
MB-100812	69.2%	0	
LCS-100812	85.6%	0	
LCSD-100812	95.8%	0	
IP-0409-339	85.6%	0	
IP-0409-335	88.0%	0	
IP-0409-334	79.6%	0	
IP-0409-337	77.2%	0	
IP-0409-333	74.8%	0	
IP-0409-332	76.8%	0	
IP-0409-331	80.8%	0	

LCS/MB LIMITS      QC LIMITS

(TBP) = 2,4,6-Tribromophenol

(41-98)

(26-113)

Prep Method: SW3510C  
Log Number Range: 12-19196 to 12-19202

ORGANICS ANALYSIS DATA SHEET  
PCP by GC/ECD Method SW8041  
Extraction Method: SW3510C  
Page 1 of 1

Sample ID: MB-100812  
METHOD BLANK

Lab Sample ID: MB-100812  
LIMS ID: 12-19190  
Matrix: Water  
Data Release Authorized: *MW*  
Reported: 10/22/12

QC Report No: VL89-Hydrometrics Inc.  
Project: Idaho Pole (Fall Sitewide Sampling)  
Date Sampled: NA  
Date Received: NA

Date Extracted: 10/08/12  
Date Analyzed: 10/17/12 21:19  
Instrument/Analyst: ECD1/YZ

Sample Amount: 500 mL  
Final Extract Volume: 50 mL  
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	0.25	< 0.25 U

Reported in µg/L (ppb)

Chlorophenol Surrogate Recovery

2,4,6-Tribromophenol	88.4%
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ORGANICS ANALYSIS DATA SHEET  
 PCP by GC/ECD Method SW8041  
 Extraction Method: SW3510C  
 Page 1 of 1

Sample ID: Res 8  
 SAMPLE

Lab Sample ID: VL89B  
 LIMS ID: 12-19191  
 Matrix: Water  
 Data Release Authorized: *mmw*  
 Reported: 10/22/12

QC Report No: VL89-Hydrometrics Inc.  
 Project: Idaho Pole (Fall Sitewide Sampling)  
 Date Sampled: 10/02/12  
 Date Received: 10/04/12

Date Extracted: 10/08/12  
 Date Analyzed: 10/18/12 00:20  
 Instrument/Analyst: ECD1/YZ

Sample Amount: 500 mL  
 Final Extract Volume: 50 mL  
 Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	0.25	5.2

Reported in µg/L (ppb)

Chlorophenol Surrogate Recovery

2,4,6-Tribromophenol	84.8%
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## ANALYTICAL DATA VERIFICATION CHECKLIST

Project Name: Idaho Pole Company	Laboratory: Analytical Resources, Incorporated, Tukwila, WA					
Project Reference: McFarland Cascade Residential Well Samples	Sample Matrix: Water					
Project No.: 5029, RETEC (MCFR2-03423-414)	Sample Dates: 4/17/2012, 10/2/2012, 10/31/2012					
Verified By/Date Verified: Angela Roddy 2/14/2013	Review Date: 02/17/2011					
Samples Analyzed:						
	Sample ID	Parent Sample	SDG	Date Sampled	Matrix	
	Res-8		UQ99F/ VL89B	4/17/2012/ 10/2/2012	Water	
	IP-0409-331		VL89M	10/2/2012	Water	
	IP-0409-332		VL89L	10/2/2012	Water	
	IP-0409-333		VL89K	10/2/2012	Water	
	IP-0409-334		VL89I	10/2/2012	Water	
	IP-0409-335		VL89H	10/2/2012	Water	
	IP-0409-336		VQ58	10/31/2012	Water	
	IP-0409-337		VL89J	10/2/2012	Water	
	IP-0409-339		VL89G	10/2/2012	Water	
Parameter Validated: Pentachlorophenol by GC/ECD Method SW8041.						
Laboratory Sample Delivery Groups (SDG): UQ99 AND VL89						
<b>PRECISION, ACCURACY, METHOD COMPLIANCE, AND COMPLETENESS ASSESSMENT</b>						
Precision:	<b>X</b>	Acceptable		Unacceptable	AR	Initials
<p>Comments: Precision is the measure of variability of individual sample measurements. Laboratory precision was determined by examination of laboratory duplicate results. Evaluation of laboratory duplicates for precision was done using the Relative Percent Difference (RPD). The RPD is defined as the difference between two duplicate samples divided by the mean and expressed as a percent. Laboratory RPD limits referenced EPA published QC limits. No data require qualification based on laboratory duplicate RPDs, and overall laboratory precision is acceptable. Precision measurements are reviewed in items 17, 20, and 21.</p>						
Accuracy:	<b>X</b>	Acceptable		Unacceptable	AR	Initials
<p>Comments: Laboratory accuracy is a measure of the system bias, and was measured by evaluating laboratory control sample/laboratory control sample duplicate (LCS/LCSD), matrix spike/matrix spike duplicate (MS/MSD), and organic system monitoring compounds (surrogate) percent recoveries (%Rs). LCS/LCSD %Rs, which demonstrated the overall performance of the analysis, were compared to EPA published QC limits. MS/MSD %Rs, which provided information on sample matrix interferences, were compared to EPA published QC limits or laboratory control charted limits. System monitoring compound or surrogate recoveries, which measured system performance and efficiency during organic analysis, were compared to EPA published QC limits. No data required qualification based on laboratory accuracy measurements, and overall laboratory accuracy is acceptable. Accuracy measurements are reviewed in items 12, 14, 15, and 16.</p>						
Method Compliance:	<b>X</b>	Acceptable		Unacceptable	AR	Initials
<p>Comments: For this sample set, method compliance was determined by evaluating sample integrity, holding time, and laboratory blanks against method specified requirements, while applying EPA data validation guidelines. Overall method compliance is acceptable based on the supplied data. Method compliance measurements are reviewed in items 4, 8, 11, 13, 18, 19, and 20.</p>						

Completeness:	<b>X</b>	Acceptable		Unacceptable	AR	Initials
Comments: Completeness is the overall ratio of the number of samples planned versus the number of samples with valid analyses. Completeness goals are set at 90-100%. Determination of completeness included a review of chain of custody records, laboratory analytical methods and detection limits, laboratory case narratives, and project requirements. Completeness also included 100% review of the laboratory sample data results and QC summary reports. All of the data received from the laboratory are useable without qualification. Completeness of the data is calculated to be 100% and is acceptable.						
<b>VERIFICATION CRITERIA CHECK</b>						
There are no data validation flags used in this review.						
1. Was the laboratory narrative free of non-conformances related to the analytical results?	<b>X</b>	Yes		No	AR	Initials
Comments: There were no problems with these analyses noted in the laboratory case narrative.						
2. Were sample Chain-of-Custody forms complete?	<b>X</b>	Yes		No	AR	Initials
Comments: COC records from field to laboratory were complete, and custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt.						
3. Were all the analyses requested for the samples on the COCs completed by the laboratory?	<b>X</b>	Yes		No	AR	Initials
Comments: All requested analyses were completed.						
4. Were samples received in good condition and at the appropriate temperature?	<b>X</b>	Yes		No	AR	Initials
Comments: Samples were received on ice, intact, and in good condition.						
5. Were the requested analytical methods in compliance with QAPP, permit, or COC?	<b>X</b>	Yes		No	AR	Initials
Comments: Reported methods and target analyte lists were in compliance with COC records.						
6. Were detection limits in accordance with QAPP, permit, or method?	<b>X</b>	Yes		No	AR	Initials
Comments: Reported detection limits are achievable by the quoted methods. Some samples required dilution due to high concentrations of target analytes. The reporting limits for diluted results were raised appropriately.						
7. Do the laboratory reports include only those constituents requested to be reported for a specific analytical method?	<b>X</b>	Yes		No	AR	Initials
Comments: Only the requested target analytes were reported.						
8. Were sample holding times met?	<b>X</b>	Yes		No	AR	Initials
Comments: Extraction and analytical holding times were met for all samples and analyses for all samples.						
9. Were correct concentration units reported?	<b>X</b>	Yes		No	AR	Initials
Comments: Correct concentration units were reported.						
10. Were the reporting requirements for flagged data met?	<b>X</b>	Yes		No	AR	Initials
Comments: Data validation qualifiers override any assigned laboratory flags.						
11. Were laboratory blank samples free of target analyte contamination?	<b>X</b>	Yes		No	AR	Initials
Comments: All laboratory blanks were free of target analyte contamination.						
12. Were trip blank, field blank, and/or equipment rinse blank samples free of target analyte contamination?		Yes	<b>X</b>	No	AR	Initials

Comments: Pentachlorophenol was detected in Field Blank 27-F (Batch VL89) with a result of 1.1 ug/L. This sample is flagged with validation qualifier "U" for Blank Exceedance.						
13. Were instrument calibrations within method control limits?	<b>NA</b>	Yes		No	AR	Initials
Comments: Instrument calibration information is not required for this level of data review and was not evaluated as part of this data verification.						
14. Were surrogate recoveries within control limits?	<b>X</b>	Yes		No	AR	Initials
Comments: Surrogate percent recoveries (%Rs) for organic analyses were within data validation QC criteria for all samples.						
15. Were laboratory control sample recoveries within control limits?	<b>X</b>	Yes		No	AR	Initials
Comments: Reported LCS and LCSD %Rs for organic analytes were within data validation QC limits of 70-130% for organics and 80-120% for inorganics, and were within laboratory control charted QC limits for all target analytes. Inorganic standard reference %Rs were within data validation QC limits of 80-120%. In the case narrative the laboratory reports % recoveries for the LCS and LCSD for Method SW8041 were high but were within their QC limits.						
16. Were matrix spike recoveries within control limits?	<b>X</b>	Yes		No	AR	Initials
Comments: Matrix spike recoveries were within data validation or laboratory control-charted QC limits for all target analytes.						
17. Were RPDs within control limits?	<b>X</b>	Yes		No	AR	Initials
Comments: Laboratory RPDs were within data validation QC limits, or RPDs were not applicable due to undetected sample results.						
18. Were organic system performance criteria met?	<b>NA</b>	Yes		No	AR	Initials
Comments: System performance checks are not required for this level of data review and were not evaluated as part of this data verification.						
19. Were internal standards within method criteria for GC/MS sample analyses?	<b>NA</b>	Yes		No	AR	Initials
Comments: Internal standard information is not required for this level of data review and was not evaluated as part of this data verification.						
20. Were inorganic system performance criteria met?	<b>NA</b>	Yes		No	AR	Initials
Comments: There were no inorganic analytes requested for this sample set.						
21. Were blind field duplicates collected? If so, discuss the precision (RPD) of the results.	<b>NA</b>	Yes		No	AR	Initials
Comments: Blind field duplicates are not required for this sample set.						
22. Were 100% of the EDD concentrations and reporting limits compared to the hardcopy data reports?	<b>NA</b>	Yes		No	AR	Initials
Not applicable – electronic data was not received from the laboratory for this project.						
Additional comments:						
Data were evaluated based on validation criteria set forth in the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review; document number EPA540/R-99/008 of October 1999, as they applied to EPA SW-846 methodology.						

**Refer to the table of Qualified Analytical Results for a listing of the samples, analytes, and concentrations qualified (attached at the end of this checklist).**

Sample ID	Matrix	Lab SDG	Method	Analyte	Concentration	Units	Qualifier
27-F	Water	VL89E	8041	Pentachlorophenol	1.1	ug/L	U

**Qualifier definitions:**

U – Blank Exceedance