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White Sands Missile Range-
Rhodes Canyon Landfill

Data Review

WHITE SANDS MISSLE RANGE, NEW MEXICO

Volatiles, Semivolatiles, GRO, Metals and
Miscellaneous Analyses

SDG #1108118

Analyses Performed By:
DHL Analytical, Inc.
Round Rock, Texas

Report #14702R
Review Level: Tier II
Project: GP08WSMR.0MON.2011F

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) #1108118 for samples collected in association with the Rhodes Canyon Landfill Site. The review was conducted as a Tier II evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis				
					VOC	SVOC	MET	GRO	MISC
RCRC-0114-RMW-001-0811	1108118-01	Water	8/10/2011		X	X	X	X	X
RCRC-0114-RMW-TB-0811	1108118-02	Water	8/10/2011		X				
RCRC-0114-RMW-003-0811	1108118-03	Water	8/10/2011		X	X	X	X	X

Note:

1. Matrix spike/matrix spike duplicate (MS/MSD) was performed on sample location RCRC-0114-RMW-001-0811.
2. Miscellaneous analyses include Total Dissolved Solids, Sulfate, Alkalinity, and pH.

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of QA or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

QA - Quality Assurance

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Method 8260B, 8270C, and 8015. Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

  B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.

- Quantitation (Q) Qualifiers

  E The compound was quantitated above the calibration range.

  D Concentration is based on a diluted sample analysis.

- Validation Qualifiers

  J The compound was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.

  UB Compound considered non-detect at the listed value due to associated blank contamination.

  R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8260	Water	14 days from collection to analysis	Cool to 4°C±2°C; preserved to a pH of less than 2 s.u.
	Soil	48 hours from collection to extraction and 14 days from extraction to analysis	Cool to 4°C±2°C.

s.u. Standard units

All samples were analyzed within the specified holding time criteria.

Please Note: 2-Chloroethyl vinyl ether degrades in the presence of acid. Since the samples were preserved with acid to a pH of less than 2, all sample results for 2-chloroethyl vinyl ether are rejected.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination with which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were detected in the associated QA blanks; however, the associated sample results were greater than the BAL and/or were non-detect. No qualification of the sample results was required.

3. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

Sample locations associated with the MS/MSD exhibiting recoveries outside of the control limits are presented in the following table.

Sample Locations	Compound	MS Recovery	MSD Recovery
RCRC-0114-RMW-001-0811	2-Chloroethylvinylether	0%	0%

AC Acceptable

The criteria used to evaluate the MS/MSD recoveries are presented in the following table. In the case of an MS/MSD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
Parent sample concentration > four times the MS/MSD spiking solution concentration.	Detect	No Action
	Non-detect	

5. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

Sample locations associated with LCS analysis exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Compound	LCS Recovery
RCRC-0114-RMW-001-0811 RCRC-0114-RMW-TB-0811 RCRC-0114-RMW-003-0811	2,2-Dichloropropane	>UL

The criteria used to evaluate the LCS recoveries are presented in the following table. In the case of an LCS deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ

Control Limit	Sample Result	Qualification
	Detect	J
< 10%	Non-detect	R
	Detect	J

6. Field Duplicate Analysis

Field duplicate analysis is used to assess the precision and accuracy of the field sampling procedures and analytical method. A control limit of 40% for water matrices and 70% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

A field duplicate was not included with this SDG.

7. Compound Identification

Compounds are identified on the GC/MS by laboratory personnel using the analytes relative retention time and ion spectra. These identifications were not reviewed by the data validator.

8. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: SW-846 8260B	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
C. Trip blanks		X		X	
Laboratory Control Sample (LCS)		X	X		
Laboratory Control Sample Duplicate(LCSD)					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS)		X	X		
Matrix Spike Duplicate(MSD)		X	X		
MS/MSD Precision (RPD)		X		X	
Field/Lab Duplicate (RPD)					X
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	
Moisture Content					X

%R Percent recovery
RPD Relative percent difference

SEMI-VOLATILE VOLATILE ORGANIC COMPOUND (SVOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8270	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cooled @ 4°C ± 2°C
	Soil	14 days from collection to extraction and 40 days from extraction to analysis	Cooled @ 4°C ± 2°C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. SVOC analysis requires that two of the three SVOC surrogate compounds within each fraction exhibit recoveries within the laboratory-established acceptance limits.

Sample locations associated with surrogates exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Surrogate	Recovery
RCRC-0114-RMW-001-0811	Phenol-d6	AC
	2-Fluorophenol	AC
	2,4,6-Tribromophenol	AC
	Nitrobenzene-d5	>UL
	2-Fluorobiphenyl	AC

Sample Locations	Surrogate	Recovery
	Terphenyl-d14	AC

UL Upper control limit
AC Acceptable

The criteria used to evaluate the surrogate recoveries are presented in the following table. In the case of a surrogate deviation, the sample results associated with the deviant fraction are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL	Non-detect	No Action
	Detect	J
< LL but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
	Detect	

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

The MS/MSD exhibited acceptable recoveries and RPD between the MS/MSD recoveries.

5. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

6. Field Duplicate Analysis

Field duplicate analysis is used to assess the precision and accuracy of the field sampling procedures and analytical method. A control limit of 100% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of three times the RL is applied for soil matrices.

A field duplicate was not included with this SDG.

7. Compound Identification

Compounds are identified on the GC/MS by laboratory personnel using the analytes relative retention time and ion spectra. These identifications were not reviewed by the data validator.

8. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR SVOCs

SVOCs: SW-846 8270C	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate (LCSD) %R					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate(MSD) %R		X		X	
MS/MSD Precision (RPD)		X		X	
Field/Lab Duplicate (RPD)					X
Surrogate Spike Recoveries		X	X		
Dilution Factor		X		X	
Moisture Content					X

%R Percent recovery
RPD Relative percent difference

GAS RANGE ORGANICS (GRO) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8015	Soil	14 days from collection to extraction and 40 days from extraction to analysis	Cool to 4°C±2°C
	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to 4°C±2°C

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the reporting limit (RL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. The analysis requires surrogate compounds exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

The MS/MSD exhibited acceptable recoveries and RPD between the MS/MSD recoveries.

5. Laboratory Control Sample (LCS) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS/LCSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

6. Field Duplicate Analysis

Field duplicate analysis is used to assess the precision and accuracy of the field sampling procedures and analytical method. A control limit of 40% for water matrices and 70% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

A field duplicate was not included with this SDG.

7. Compound Identification

Compounds are identified on the GC by laboratory personnel using the analytes relative retention time. These identifications were not reviewed by the data validator.

8. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR GRO

GRO; SW-846 8015	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY (GC/FID)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate(LCSD) %R					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate(MSD) %R		X		X	
MS/MSD Precision (RPD)		X		X	
Field/Lab Duplicate (RPD)					X
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	
Moisture Content					X

%RSD – relative standard deviation, %R - percent recovery, RPD - relative percent difference, %D – difference

INORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Methods 6020, EPA 300.0, and Standard Methods 2320, 2540C, and 4500-H. Data were reviewed in accordance with USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review of July 2002.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and that it was already subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with the USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The analyte was analyzed for but not detected. The associated value is the analyte instrument detection limit.

  B The reported value was obtained from a reading less than the contract-required detection limit (CRDL), but greater than or equal to the instrument detection limit (IDL).

- Quantitation (Q) Qualifiers

  E The reported value is estimated due to the presence of interference.

  N Spiked sample recovery is not within control limits.

  * Duplicate analysis is not within control limits.

- Validation Qualifiers

  J The analyte was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The analyte was not detected above the reported sample detection limit. However, the reported limit is approximate and may or may not represent the actual limit of detection.

  UB Analyte considered non-detect at the listed value due to associated blank contamination.

  R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

METALS ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 6020	Soil	180 days from collection to analysis	Cooled @ 4 °C.

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Analytes were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Matrix Spike/Matrix Spike Duplicate (MS/MSD)/Laboratory Duplicate Analysis

MS/MSD and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

3.1 MS/MSD Analysis

All metal analytes must exhibit a percent recovery within the established acceptance limits of 75% to 125%. The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the analyte's concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater. In instance where this is true, the data will not be qualified even if the percent recovery does not meet the control limits and the laboratory qualifier "N" will be removed.

The MS/MSD analyses exhibited recoveries within the control limits.

3.2 Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the CRDL. A control limit of 20% for water matrices and 35% for soil matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the CRDL, a control limit of one times the CRDL is applied for water matrices and two times the CRDL for soil matrices.

MS/MSD analysis was performed in replacement of the laboratory duplicate analysis. The MS/MSD recoveries exhibited acceptable RPD.

4. Field Duplicate Analysis

Field duplicate analysis is used to assess the precision and accuracy of the field sampling procedures and analytical method. A control limit of 40% for water matrices and 70% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

A field duplicate was not included with this SDG.

5. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS/LCSD analysis must exhibit a percent recovery between the control limits of 80% and 120%.

The LCS/LCSD analysis exhibited recoveries within and RPD between the control limits.

6. Furnace Analysis QC

No furnace analyses were performed on the samples.

7. Method of Standard Additions (MSA)

No samples were analyzed following the method of standard additions.

8. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR METALS

METALS; SW-846 6020	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Inductively Coupled Plasma-Atomic Emission Spectrometry (ICP) Atomic Absorption – Manual Cold Vapor (CV)					
Tier II Validation					
Holding Times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Instrument Blanks					X
B. Method Blanks		X		X	
C. Equipment/Field Blanks					X
Laboratory Control Sample (LCS)		X		X	
Laboratory Control Sample Duplicate (LCSD)		X		X	
LCS/LCSD RPD		X		X	
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate (MSD) %R		X		X	
MS/MSD Precision (RPD)		X		X	
Field/Lab Duplicate (RPD)		X		X	
Reporting Limit Verification		X		X	
Moisture Content					X

%R Percent recovery
RPD Relative percent difference

GENERAL CHEMISTRY ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
Sulfate by EPA 300.0	Water	28 days from collection to analysis	Cool to 4°C±2°C.
Total Dissolved Solids By SM 2540C	Water	7 days from collection to analysis	Cool to 4°C±2°C.
pH by SM4500	Water	ASAP	None
SM2320 B (Alkalinity)	Water	14 days from collection to analysis	Cool to 4°C±2°C.

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Analytes were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Matrix Spike/Matrix Spike Duplicate (MS/MSD)/Laboratory Duplicate Analysis

MS/MSD and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

3.1 MS/MSD Analysis

All metal analytes must exhibit a percent recovery within the established acceptance limits of 75% to 125%. The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the analyte's concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater. In instance where this is true, the data will not be qualified even if the percent recovery does not meet the control limits and the laboratory qualifier "N" will be removed.

The MS/MSD analyses exhibited recoveries within the control limits.

3.2 Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the CRDL. A control limit of 20% for water matrices and 35% for soil matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the CRDL, a control limit of one times the CRDL is applied for water matrices and two times the CRDL for soil matrices.

The laboratory duplicate sample results exhibited RPD within the control limit.

4. Field Duplicate Analysis

Field duplicate analysis is used to assess the precision and accuracy of the field sampling procedures and analytical method. A control limit of 50% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A field duplicate was not included with this SDG.

5. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS analysis must exhibit a percent recovery between the control limits of 80% and 120%.

The LCS analysis exhibited recoveries within the control limits.

6. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR GENERAL CHEMISTRY

General Chemistry: EPA 300.0, SM2320, SM2540C, SM4500-H	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Miscellaneous Instrumentation					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate(LCSD) %R		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate(MSD) %R		X		X	
MS/MSD Precision (RPD)		X		X	
Field/Lab Duplicate (RPD)		X		X	
Dilution Factor		X		X	
Moisture Content					X

%RSD – relative standard deviation, %R - percent recovery, RPD - relative percent difference, %D – difference

VALIDATION PERFORMED BY: Jeffrey L. Davin

SIGNATURE:

DATE: September 14, 2011

PEER REVIEW: Dennis Capria

DATE: October 10, 2011

CHAIN OF CUSTODY/
CORRECTED SAMPLE ANALYSIS DATA SHEETS

DHL Analytical

Date: 09/12/11

CLIENT: Zia Engineering & Environmental
Project: Rhodes Canyon
Project No:
Lab Order: 1108118

Client Sample ID: RCRC-0114-RMW-001-0811
Lab ID: 1108118-01
Collection Date: 08/10/11 10:10 AM
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Method 8015 Gasoline (GRO)		**M8015V**					**Analyst: DEW**
Gasoline Range Organics	<0.0600	0.0600	0.100		mg/L	1	08/12/11 12:26 PM
Surr: Tetrachlorethene	87.1	0	74 - 138		%REC	1	08/12/11 12:26 PM
Trace Metals: ICP-MS - Water		**SW6020**					**Analyst: AJR**
Lead	<0.000300	0.000300	0.00100		mg/L	1	08/16/11 04:00 PM
Semivolatiles by GC/MS - Water		**SW8270C**					**Analyst: DO**
1,2,4,5-Tetrachlorobenzene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
1,2,4-Trichlorobenzene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
1,2-Dichlorobenzene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
1,2-Diphenylhydrazine	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
1,3-Dichlorobenzene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
1,4-Dichlorobenzene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
1-Chloronaphthalene	<0.000200	0.000200	0.000800	N	mg/L	1	09/09/11 05:00 PM
1-Methylnaphthalene	<0.000200	0.000200	0.000800	N	mg/L	1	08/28/11 11:08 PM
1-Naphthylamine	<0.000200	0.000200	0.000800		mg/L	1	09/09/11 05:00 PM
2,4,5-Trichlorophenol	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
2,4,6-Trichlorophenol	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
2,4-Dichlorophenol	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
2,4-Dimethylphenol	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
2,4-Dinitrophenol	<0.00100	0.00100	0.00400		mg/L	1	08/28/11 11:08 PM
2,4-Dinitrotoluene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
2,6-Dichlorophenol	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
2,6-Dinitrotoluene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
2-Chloronaphthalene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
2-Chlorophenol	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
2-Methylnaphthalene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
2-Methylphenol	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
2-Naphthylamine	<0.000200	0.000200	0.000800		mg/L	1	09/09/11 05:00 PM
2-Nitroaniline	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
2-Nitrophenol	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
2-Picoline	<0.000200	0.000200	0.000800		mg/L	1	09/09/11 05:00 PM
3,3'-Dichlorobenzidine	<0.00100	0.00100	0.00400		mg/L	1	08/28/11 11:08 PM
3-Methylcholanthrene	<0.000200	0.000200	0.000800		mg/L	1	09/09/11 05:00 PM
3-Nitroaniline	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
4,6-Dinitro-2-methylphenol	<0.000600	0.000600	0.00200		mg/L	1	08/28/11 11:08 PM
4-Aminobiphenyl	<0.000200	0.000200	0.000800		mg/L	1	09/09/11 05:00 PM
4-Bromophenyl phenyl ether	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
4-Chloro-3-methylphenol	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
4-Chloroaniline	<0.000600	0.000600	0.00200		mg/L	1	08/28/11 11:08 PM
4-Chlorophenyl phenyl ether	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
4-Methylphenol	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
4-Nitroaniline	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
4-Nitrophenol	<0.00100	0.00100	0.00400		mg/L	1	08/28/11 11:08 PM
7,12-Dimethylbenz(a)anthracene	<0.000200	0.000200	0.000800		mg/L	1	09/09/11 05:00 PM
Acenaphthene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

CLIENT: Zia Engineering & Environmental
Project: Rhodes Canyon
Project No:
Lab Order: 1108118

Client Sample ID: RCRC-0114-RMW-001-0811
Lab ID: 1108118-01
Collection Date: 08/10/11 10:10 AM
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Acenaphthylene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
Acetophenone	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
Aniline	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
Anthracene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
Benzidine	<0.00200	0.00200	0.00600		mg/L	1	08/28/11 11:08 PM
Benzo[a]anthracene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
Benzo[a]pyrene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
Benzo[b]fluoranthene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
Benzo[g,h,i]perylene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
Benzo[k]fluoranthene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
Benzoic acid	0.0127	0.00200	0.00600		mg/L	1	08/28/11 11:08 PM
Benzyl alcohol	<0.000600	0.000600	0.00200		mg/L	1	08/28/11 11:08 PM
Biphenyl	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
Bis(2-chloroethoxy)methane	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
Bis(2-chloroethyl)ether	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
Bis(2-chloroisopropyl)ether	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
Bis(2-ethylhexyl)phthalate	<0.00100	0.00100	0.00300		mg/L	1	08/28/11 11:08 PM
Butyl benzyl phthalate	<0.00200	0.00200	0.00600		mg/L	1	08/28/11 11:08 PM
Carbazole	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
Chrysene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
Di-n-butyl phthalate	<0.00200	0.00200	0.00600		mg/L	1	08/28/11 11:08 PM
Di-n-octyl phthalate	<0.00200	0.00200	0.00600		mg/L	1	08/28/11 11:08 PM
Dibenz(a,j)acridine	<0.00100	0.00100	0.00400	N	mg/L	1	09/09/11 05:00 PM
Dibenz[a,h]anthracene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
Dibenzofuran	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
Diethyl phthalate	<0.00200	0.00200	0.00600		mg/L	1	08/28/11 11:08 PM
Dimethyl phthalate	<0.00200	0.00200	0.00600		mg/L	1	08/28/11 11:08 PM
Dimethylphenethylamine	<0.00200	0.00200	0.00600		mg/L	1	09/09/11 05:00 PM
Diphenylamine	<0.000200	0.000200	0.000800		mg/L	1	09/09/11 05:00 PM
Ethyl methanesulfonate	<0.000200	0.000200	0.000800		mg/L	1	09/09/11 05:00 PM
Fluoranthene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
Fluorene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
Hexachlorobenzene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
Hexachlorobutadiene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
Hexachlorocyclopentadiene	<0.000600	0.000600	0.00200		mg/L	1	08/28/11 11:08 PM
Hexachloroethane	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
Indeno[1,2,3-cd]pyrene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
Isophorone	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
Methyl methanesulfonate	<0.000200	0.000200	0.000800		mg/L	1	09/09/11 05:00 PM
N-Nitrosodi-n-propylamine	<0.000100	0.000100	0.000800		mg/L	1	08/28/11 11:08 PM
N-Nitrosodimethylamine	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
N-Nitrosodiphenylamine	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
N-Nitrosopiperidine	<0.000200	0.000200	0.000800		mg/L	1	09/09/11 05:00 PM
Naphthalene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
Nitrobenzene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

CLIENT: Zia Engineering & Environmental
Project: Rhodes Canyon
Project No:
Lab Order: 1108118

Client Sample ID: RCRC-0114-RMW-001-0811
Lab ID: 1108118-01
Collection Date: 08/10/11 10:10 AM
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
p-Dimethylaminoazobenzene	<0.000200	0.000200	0.000800	N	mg/L	1	09/09/11 05:00 PM
Pentachlorobenzene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
Pentachloronitrobenzene	<0.000200	0.000200	0.000800		mg/L	1	09/09/11 05:00 PM
Pentachlorophenol	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
Phenacetin	<0.000200	0.000200	0.000800		mg/L	1	09/09/11 05:00 PM
Phenanthrene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
Phenol	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
Pronamide	<0.000200	0.000200	0.000800		mg/L	1	09/09/11 05:00 PM
Pyrene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:08 PM
Pyridine	<0.000800	0.000800	0.00200		mg/L	1	08/28/11 11:08 PM
Surr: 2,4,6-Tribromophenol	108	0	42 - 124		%REC	1	08/28/11 11:08 PM
Surr: 2,4,6-Tribromophenol	119	0	42 - 124		%REC	1	09/09/11 05:00 PM
Surr: 2-Fluorobiphenyl	85.0	0	50 - 110		%REC	1	08/28/11 11:08 PM
Surr: 2-Fluorobiphenyl	77.8	0	50 - 110		%REC	1	09/09/11 05:00 PM
Surr: 2-Fluorophenol	61.5	0	20 - 110		%REC	1	08/28/11 11:08 PM
Surr: 2-Fluorophenol	74.5	0	20 - 110		%REC	1	09/09/11 05:00 PM
Surr: 4-Terphenyl-d14	91.0	0	51 - 135		%REC	1	09/09/11 05:00 PM
Surr: 4-Terphenyl-d14	91.2	0	51 - 135		%REC	1	08/28/11 11:08 PM
Surr: Nitrobenzene-d5	87.5	0	41 - 110		%REC	1	08/28/11 11:08 PM
Surr: Nitrobenzene-d5	111	0	41 - 110	S	%REC	1	09/09/11 05:00 PM
Surr: Phenol-d6	39.5	0	20 - 115		%REC	1	08/28/11 11:08 PM
Surr: Phenol-d6	45.0	0	20 - 115		%REC	1	09/09/11 05:00 PM
8260 Water Volatiles by GC/MS		**SW8260C**					**Analyst: KL**
1,1,1,2-Tetrachloroethane	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:27 PM
1,1,1-Trichloroethane	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:27 PM
1,1,2,2-Tetrachloroethane	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:27 PM
1,1,2-Trichloroethane	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:27 PM
1,1-Dichloroethane	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:27 PM
1,1-Dichloroethene	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:27 PM
1,1-Dichloropropene	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:27 PM
1,2,3-Trichlorobenzene	<0.00150	0.00150	0.00500		mg/L	1	08/18/11 12:27 PM
1,2,3-Trichloropropane	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 12:27 PM
1,2,4-Trichlorobenzene	<0.00150	0.00150	0.00500		mg/L	1	08/18/11 12:27 PM
1,2,4-Trimethylbenzene	<0.00150	0.00150	0.00500		mg/L	1	08/18/11 12:27 PM
1,2-Dibromo-3-chloropropane	<0.00300	0.00300	0.0100		mg/L	1	08/18/11 12:27 PM
1,2-Dibromoethane	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:27 PM
1,2-Dichlorobenzene	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 12:27 PM
1,2-Dichloroethane	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 12:27 PM
1,2-Dichloropropane	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:27 PM
1,3,5-Trimethylbenzene	<0.00150	0.00150	0.00500		mg/L	1	08/18/11 12:27 PM
1,3-Dichlorobenzene	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 12:27 PM
1,3-Dichloropropane	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:27 PM
1,4-Dichloro-2-butene	<0.00200	0.00200	0.00200		mg/L	1	08/18/11 12:27 PM
1,4-Dichlorobenzene	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 12:27 PM
2,2-Dichloropropane	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:27 PM

Qualifiers:

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B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

DHL Analytical

Date: 09/12/11

CLIENT: Zia Engineering & Environmental
Project: Rhodes Canyon
Project No:
Lab Order: 1108118

Client Sample ID: RCRC-0114-RMW-001-0811
Lab ID: 1108118-01
Collection Date: 08/10/11 10:10 AM
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
2-Butanone	<0.00500	0.00500	0.0150		mg/L	1	08/18/11 12:27 PM
2-Chloroethylvinylether	~~<0.00500~~	~~0.00500~~	~~0.0150~~	R	mg/L	1	08/18/11 12:27 PM
2-Chlorotoluene	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 12:27 PM
2-Hexanone	<0.00500	0.00500	0.0150		mg/L	1	08/18/11 12:27 PM
4-Chlorotoluene	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 12:27 PM
4-Methyl-2-pentanone	<0.00500	0.00500	0.0150		mg/L	1	08/18/11 12:27 PM
Acetone	<0.00500	0.00500	0.0150		mg/L	1	08/18/11 12:27 PM
Acrylonitrile	<0.00100	0.00100	0.00300		mg/L	1	08/18/11 12:27 PM
Benzene	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:27 PM
Bromobenzene	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:27 PM
Bromochloromethane	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:27 PM
Bromodichloromethane	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:27 PM
Bromoform	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:27 PM
Bromomethane	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 12:27 PM
Carbon disulfide	<0.00500	0.00500	0.0150		mg/L	1	08/18/11 12:27 PM
Carbon tetrachloride	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:27 PM
Chlorobenzene	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:27 PM
Chloroethane	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 12:27 PM
Chloroform	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 12:27 PM
Chloromethane	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 12:27 PM
cis-1,2-Dichloroethene	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:27 PM
cis-1,3-Dichloropropene	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:27 PM
Dibromochloromethane	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:27 PM
Dibromomethane	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:27 PM
Dichlorodifluoromethane	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:27 PM
Ethylbenzene	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 12:27 PM
Hexachlorobutadiene	<0.00100	0.00100	0.00300		mg/L	1	08/18/11 12:27 PM
Iodomethane	<0.00500	0.00500	0.0150		mg/L	1	08/18/11 12:27 PM
Isopropylbenzene	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:27 PM
m,p-Xylene	<0.000600	0.000600	0.00200		mg/L	1	08/18/11 12:27 PM
Methyl tert-butyl ether	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 12:27 PM
Methylene chloride	<0.00250	0.00250	0.00250		mg/L	1	08/18/11 12:27 PM
n-Butylbenzene	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 12:27 PM
n-Propylbenzene	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 12:27 PM
Naphthalene	<0.00500	0.00500	0.0150		mg/L	1	08/18/11 12:27 PM
o-Xylene	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 12:27 PM
p-Isopropyltoluene	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 12:27 PM
sec-Butylbenzene	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 12:27 PM
Styrene	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:27 PM
tert-Butylbenzene	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 12:27 PM
Tetrachloroethene	<0.000600	0.000600	0.00200		mg/L	1	08/18/11 12:27 PM
Toluene	<0.000600	0.000600	0.00200		mg/L	1	08/18/11 12:27 PM
trans-1,2-Dichloroethene	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:27 PM
trans-1,3-Dichloropropene	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:27 PM
Trichloroethene	<0.000600	0.000600	0.00200		mg/L	1	08/18/11 12:27 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

CLIENT: Zia Engineering & Environmental
Project: Rhodes Canyon
Project No:
Lab Order: 1108118

Client Sample ID: RCRC-0114-RMW-001-0811
Lab ID: 1108118-01
Collection Date: 08/10/11 10:10 AM
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trichlorofluoromethane	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:27 PM
Vinyl chloride	<0.000100	0.000100	0.00100		mg/L	1	08/18/11 12:27 PM
Surr: 1,2-Dichloroethane-d4	110	0	70 - 120		%REC	1	08/18/11 12:27 PM
Surr: 4-Bromofluorobenzene	104	0	75 - 120		%REC	1	08/18/11 12:27 PM
Surr: Dibromofluoromethane	108	0	85 - 115		%REC	1	08/18/11 12:27 PM
Surr: Toluene-d8	98.2	0	85 - 120		%REC	1	08/18/11 12:27 PM
Anions by IC method - Water		**E300**					**Analyst: JBC**
Sulfate	1200	100	300		mg/L	100	08/11/11 02:27 PM
Alkalinity		**M2320 B**					**Analyst: JBC**
Alkalinity, Bicarbonate (As CaCO3)	103	10.0	20.0		mg/L	1	08/12/11 01:51 PM
Alkalinity, Carbonate (As CaCO3)	<10.0	10.0	20.0		mg/L	1	08/12/11 01:51 PM
Alkalinity, Hydroxide (As CaCO3)	<10.0	10.0	20.0		mg/L	1	08/12/11 01:51 PM
Alkalinity, Total (As CaCO3)	103	10.0	20.0		mg/L	1	08/12/11 01:51 PM
pH		**M4500-H+ B**					**Analyst: JBC**
pH	6.76	0	0		pH Units	1	08/11/11 01:34 PM
Total Dissolved Solids		**M2540C**					**Analyst: JCG**
Total Dissolved Solids (Residue, Filterable)	5740	50.0	50.0		mg/L	1	08/16/11 04:35 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

CLIENT: Zia Engineering & Environmental
Project: Rhodes Canyon
Project No:
Lab Order: 1108118

Client Sample ID: RCRC-0114-RMW-TB-0811
Lab ID: 1108118-02
Collection Date: 08/10/11 10:10 AM
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
8260 Water Volatiles by GC/MS		**SW8260C**					**Analyst: KL**
1,1,1,2-Tetrachloroethane	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:51 PM
1,1,1-Trichloroethane	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:51 PM
1,1,2,2-Tetrachloroethane	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:51 PM
1,1,2-Trichloroethane	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:51 PM
1,1-Dichloroethane	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:51 PM
1,1-Dichloroethene	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:51 PM
1,1-Dichloropropene	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:51 PM
1,2,3-Trichlorobenzene	<0.00150	0.00150	0.00500		mg/L	1	08/18/11 12:51 PM
1,2,3-Trichloropropane	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 12:51 PM
1,2,4-Trichlorobenzene	<0.00150	0.00150	0.00500		mg/L	1	08/18/11 12:51 PM
1,2,4-Trimethylbenzene	<0.00150	0.00150	0.00500		mg/L	1	08/18/11 12:51 PM
1,2-Dibromo-3-chloropropane	<0.00300	0.00300	0.0100		mg/L	1	08/18/11 12:51 PM
1,2-Dibromoethane	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:51 PM
1,2-Dichlorobenzene	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 12:51 PM
1,2-Dichloroethane	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 12:51 PM
1,2-Dichloropropane	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:51 PM
1,3,5-Trimethylbenzene	<0.00150	0.00150	0.00500		mg/L	1	08/18/11 12:51 PM
1,3-Dichlorobenzene	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 12:51 PM
1,3-Dichloropropane	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:51 PM
1,4-Dichloro-2-butene	<0.00200	0.00200	0.00200		mg/L	1	08/18/11 12:51 PM
1,4-Dichlorobenzene	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 12:51 PM
2,2-Dichloropropane	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:51 PM
2-Butanone	<0.00500	0.00500	0.0150		mg/L	1	08/18/11 12:51 PM
2-Chloroethylvinylether	~~<0.00500~~	~~0.00500~~	~~0.0150~~	R	mg/L	1	08/18/11 12:51 PM
2-Chlorotoluene	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 12:51 PM
2-Hexanone	<0.00500	0.00500	0.0150		mg/L	1	08/18/11 12:51 PM
4-Chlorotoluene	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 12:51 PM
4-Methyl-2-pentanone	<0.00500	0.00500	0.0150		mg/L	1	08/18/11 12:51 PM
Acetone	0.0101	0.00500	0.0150	J	mg/L	1	08/18/11 12:51 PM
Acrylonitrile	<0.00100	0.00100	0.00300		mg/L	1	08/18/11 12:51 PM
Benzene	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:51 PM
Bromobenzene	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:51 PM
Bromochloromethane	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:51 PM
Bromodichloromethane	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:51 PM
Bromoform	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:51 PM
Bromomethane	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 12:51 PM
Carbon disulfide	<0.00500	0.00500	0.0150		mg/L	1	08/18/11 12:51 PM
Carbon tetrachloride	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:51 PM
Chlorobenzene	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:51 PM
Chloroethane	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 12:51 PM
Chloroform	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 12:51 PM
Chloromethane	0.000830	0.000300	0.00100	J	mg/L	1	08/18/11 12:51 PM
cis-1,2-Dichloroethene	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:51 PM
cis-1,3-Dichloropropene	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:51 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

CLIENT: Zia Engineering & Environmental
Project: Rhodes Canyon
Project No:
Lab Order: 1108118

Client Sample ID: RCRC-0114-RMW-TB-0811
Lab ID: 1108118-02
Collection Date: 08/10/11 10:10 AM
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Dibromochloromethane	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:51 PM
Dibromomethane	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:51 PM
Dichlorodifluoromethane	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:51 PM
Ethylbenzene	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 12:51 PM
Hexachlorobutadiene	<0.00100	0.00100	0.00300		mg/L	1	08/18/11 12:51 PM
Iodomethane	<0.00500	0.00500	0.0150		mg/L	1	08/18/11 12:51 PM
Isopropylbenzene	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:51 PM
m,p-Xylene	<0.000600	0.000600	0.00200		mg/L	1	08/18/11 12:51 PM
Methyl tert-butyl ether	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 12:51 PM
Methylene chloride	<0.00250	0.00250	0.00250		mg/L	1	08/18/11 12:51 PM
n-Butylbenzene	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 12:51 PM
n-Propylbenzene	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 12:51 PM
Naphthalene	<0.00500	0.00500	0.0150		mg/L	1	08/18/11 12:51 PM
o-Xylene	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 12:51 PM
p-Isopropyltoluene	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 12:51 PM
sec-Butylbenzene	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 12:51 PM
Styrene	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:51 PM
tert-Butylbenzene	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 12:51 PM
Tetrachloroethene	<0.000600	0.000600	0.00200		mg/L	1	08/18/11 12:51 PM
Toluene	<0.000600	0.000600	0.00200		mg/L	1	08/18/11 12:51 PM
trans-1,2-Dichloroethene	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:51 PM
trans-1,3-Dichloropropene	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:51 PM
Trichloroethene	<0.000600	0.000600	0.00200		mg/L	1	08/18/11 12:51 PM
Trichlorofluoromethane	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 12:51 PM
Vinyl chloride	<0.000100	0.000100	0.00100		mg/L	1	08/18/11 12:51 PM
Surr: 1,2-Dichloroethane-d4	110	0	70 - 120		%REC	1	08/18/11 12:51 PM
Surr: 4-Bromofluorobenzene	104	0	75 - 120		%REC	1	08/18/11 12:51 PM
Surr: Dibromofluoromethane	108	0	85 - 115		%REC	1	08/18/11 12:51 PM
Surr: Toluene-d8	98.7	0	85 - 120		%REC	1	08/18/11 12:51 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

CLIENT: Zia Engineering & Environmental
Project: Rhodes Canyon
Project No:
Lab Order: 1108118

Client Sample ID: RCRC-0114-RMW-003-0811
Lab ID: 1108118-03
Collection Date: 08/10/11 11:45 AM
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Method 8015 Gasoline (GRO)		**M8015V**					**Analyst: DEW**
Gasoline Range Organics	<0.0600	0.0600	0.100		mg/L	1	08/12/11 12:52 PM
Surr: Tetrachlorethene	87.1	0	74 - 138		%REC	1	08/12/11 12:52 PM
Trace Metals: ICP-MS - Water		**SW6020**					**Analyst: AJR**
Lead	0.000339	0.000300	0.00100	J	mg/L	1	08/16/11 04:18 PM
Semivolatiles by GC/MS - Water		**SW8270C**					**Analyst: DO**
1,2,4,5-Tetrachlorobenzene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
1,2,4-Trichlorobenzene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
1,2-Dichlorobenzene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
1,2-Diphenylhydrazine	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
1,3-Dichlorobenzene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
1,4-Dichlorobenzene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
1-Chloronaphthalene	<0.000200	0.000200	0.000800	N	mg/L	1	09/09/11 05:23 PM
1-Methylnaphthalene	<0.000200	0.000200	0.000800	N	mg/L	1	08/28/11 11:31 PM
1-Naphthylamine	<0.000200	0.000200	0.000800		mg/L	1	09/09/11 05:23 PM
2,4,5-Trichlorophenol	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
2,4,6-Trichlorophenol	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
2,4-Dichlorophenol	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
2,4-Dimethylphenol	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
2,4-Dinitrophenol	<0.00100	0.00100	0.00400		mg/L	1	08/28/11 11:31 PM
2,4-Dinitrotoluene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
2,6-Dichlorophenol	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
2,6-Dinitrotoluene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
2-Chloronaphthalene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
2-Chlorophenol	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
2-Methylnaphthalene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
2-Methylphenol	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
2-Naphthylamine	<0.000200	0.000200	0.000800		mg/L	1	09/09/11 05:23 PM
2-Nitroaniline	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
2-Nitrophenol	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
2-Picoline	<0.000200	0.000200	0.000800		mg/L	1	09/09/11 05:23 PM
3,3'-Dichlorobenzidine	<0.00100	0.00100	0.00400		mg/L	1	08/28/11 11:31 PM
3-Methylcholanthrene	<0.000200	0.000200	0.000800		mg/L	1	09/09/11 05:23 PM
3-Nitroaniline	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
4,6-Dinitro-2-methylphenol	<0.000600	0.000600	0.00200		mg/L	1	08/28/11 11:31 PM
4-Aminobiphenyl	<0.000200	0.000200	0.000800		mg/L	1	09/09/11 05:23 PM
4-Bromophenyl phenyl ether	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
4-Chloro-3-methylphenol	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
4-Chloroaniline	<0.000600	0.000600	0.00200		mg/L	1	08/28/11 11:31 PM
4-Chlorophenyl phenyl ether	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
4-Methylphenol	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
4-Nitroaniline	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
4-Nitrophenol	<0.00100	0.00100	0.00400		mg/L	1	08/28/11 11:31 PM
7,12-Dimethylbenz(a)anthracene	<0.000200	0.000200	0.000800		mg/L	1	09/09/11 05:23 PM
Acenaphthene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

CLIENT: Zia Engineering & Environmental
Project: Rhodes Canyon
Project No:
Lab Order: 1108118

Client Sample ID: RCRC-0114-RMW-003-0811
Lab ID: 1108118-03
Collection Date: 08/10/11 11:45 AM
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Acenaphthylene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
Acetophenone	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
Aniline	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
Anthracene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
Benzidine	<0.00200	0.00200	0.00600		mg/L	1	08/28/11 11:31 PM
Benzo[a]anthracene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
Benzo[a]pyrene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
Benzo[b]fluoranthene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
Benzo[g,h,i]perylene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
Benzo[k]fluoranthene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
Benzoic acid	<0.00200	0.00200	0.00600		mg/L	1	08/28/11 11:31 PM
Benzyl alcohol	<0.000600	0.000600	0.00200		mg/L	1	08/28/11 11:31 PM
Biphenyl	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
Bis(2-chloroethoxy)methane	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
Bis(2-chloroethyl)ether	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
Bis(2-chloroisopropyl)ether	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
Bis(2-ethylhexyl)phthalate	<0.00100	0.00100	0.00300		mg/L	1	08/28/11 11:31 PM
Butyl benzyl phthalate	<0.00200	0.00200	0.00600		mg/L	1	08/28/11 11:31 PM
Carbazole	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
Chrysene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
Di-n-butyl phthalate	<0.00200	0.00200	0.00600		mg/L	1	08/28/11 11:31 PM
Di-n-octyl phthalate	<0.00200	0.00200	0.00600		mg/L	1	08/28/11 11:31 PM
Dibenz(a,j)acridine	<0.00100	0.00100	0.00400	N	mg/L	1	09/09/11 05:23 PM
Dibenz[a,h]anthracene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
Dibenzofuran	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
Diethyl phthalate	<0.00200	0.00200	0.00600		mg/L	1	08/28/11 11:31 PM
Dimethyl phthalate	<0.00200	0.00200	0.00600		mg/L	1	08/28/11 11:31 PM
Dimethylphenethylamine	<0.00200	0.00200	0.00600		mg/L	1	09/09/11 05:23 PM
Diphenylamine	<0.000200	0.000200	0.000800		mg/L	1	09/09/11 05:23 PM
Ethyl methanesulfonate	<0.000200	0.000200	0.000800		mg/L	1	09/09/11 05:23 PM
Fluoranthene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
Fluorene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
Hexachlorobenzene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
Hexachlorobutadiene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
Hexachlorocyclopentadiene	<0.000600	0.000600	0.00200		mg/L	1	08/28/11 11:31 PM
Hexachloroethane	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
Indeno[1,2,3-cd]pyrene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
Isophorone	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
Methyl methanesulfonate	<0.000200	0.000200	0.000800		mg/L	1	09/09/11 05:23 PM
N-Nitrosodi-n-propylamine	<0.000100	0.000100	0.000800		mg/L	1	08/28/11 11:31 PM
N-Nitrosodimethylamine	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
N-Nitrosodiphenylamine	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
N-Nitrosopiperidine	<0.000200	0.000200	0.000800		mg/L	1	09/09/11 05:23 PM
Naphthalene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
Nitrobenzene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

CLIENT: Zia Engineering & Environmental
Project: Rhodes Canyon
Project No:
Lab Order: 1108118

Client Sample ID: RCRC-0114-RMW-003-0811
Lab ID: 1108118-03
Collection Date: 08/10/11 11:45 AM
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
p-Dimethylaminoazobenzene	<0.000200	0.000200	0.000800	N	mg/L	1	09/09/11 05:23 PM
Pentachlorobenzene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
Pentachloronitrobenzene	<0.000200	0.000200	0.000800		mg/L	1	09/09/11 05:23 PM
Pentachlorophenol	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
Phenacetin	<0.000200	0.000200	0.000800		mg/L	1	09/09/11 05:23 PM
Phenanthrene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
Phenol	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
Pronamide	<0.000200	0.000200	0.000800		mg/L	1	09/09/11 05:23 PM
Pyrene	<0.000200	0.000200	0.000800		mg/L	1	08/28/11 11:31 PM
Pyridine	<0.000800	0.000800	0.00200		mg/L	1	08/28/11 11:31 PM
Surr: 2,4,6-Tribromophenol	110	0	42 - 124		%REC	1	08/28/11 11:31 PM
Surr: 2,4,6-Tribromophenol	108	0	42 - 124		%REC	1	09/09/11 05:23 PM
Surr: 2-Fluorobiphenyl	89.2	0	50 - 110		%REC	1	08/28/11 11:31 PM
Surr: 2-Fluorobiphenyl	72.5	0	50 - 110		%REC	1	09/09/11 05:23 PM
Surr: 2-Fluorophenol	68.0	0	20 - 110		%REC	1	08/28/11 11:31 PM
Surr: 2-Fluorophenol	68.8	0	20 - 110		%REC	1	09/09/11 05:23 PM
Surr: 4-Terphenyl-d14	79.8	0	51 - 135		%REC	1	09/09/11 05:23 PM
Surr: 4-Terphenyl-d14	97.5	0	51 - 135		%REC	1	08/28/11 11:31 PM
Surr: Nitrobenzene-d5	95.5	0	41 - 110		%REC	1	08/28/11 11:31 PM
Surr: Nitrobenzene-d5	101	0	41 - 110		%REC	1	09/09/11 05:23 PM
Surr: Phenol-d6	43.8	0	20 - 115		%REC	1	08/28/11 11:31 PM
Surr: Phenol-d6	40.0	0	20 - 115		%REC	1	09/09/11 05:23 PM
8260 Water Volatiles by GC/MS		**SW8260C**					**Analyst: KL**
1,1,1,2-Tetrachloroethane	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 01:15 PM
1,1,1-Trichloroethane	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 01:15 PM
1,1,2,2-Tetrachloroethane	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 01:15 PM
1,1,2-Trichloroethane	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 01:15 PM
1,1-Dichloroethane	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 01:15 PM
1,1-Dichloroethene	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 01:15 PM
1,1-Dichloropropene	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 01:15 PM
1,2,3-Trichlorobenzene	<0.00150	0.00150	0.00500		mg/L	1	08/18/11 01:15 PM
1,2,3-Trichloropropane	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 01:15 PM
1,2,4-Trichlorobenzene	<0.00150	0.00150	0.00500		mg/L	1	08/18/11 01:15 PM
1,2,4-Trimethylbenzene	<0.00150	0.00150	0.00500		mg/L	1	08/18/11 01:15 PM
1,2-Dibromo-3-chloropropane	<0.00300	0.00300	0.0100		mg/L	1	08/18/11 01:15 PM
1,2-Dibromoethane	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 01:15 PM
1,2-Dichlorobenzene	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 01:15 PM
1,2-Dichloroethane	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 01:15 PM
1,2-Dichloropropane	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 01:15 PM
1,3,5-Trimethylbenzene	<0.00150	0.00150	0.00500		mg/L	1	08/18/11 01:15 PM
1,3-Dichlorobenzene	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 01:15 PM
1,3-Dichloropropane	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 01:15 PM
1,4-Dichloro-2-butene	<0.00200	0.00200	0.00200		mg/L	1	08/18/11 01:15 PM
1,4-Dichlorobenzene	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 01:15 PM
2,2-Dichloropropane	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 01:15 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

DHL Analytical

Date: 09/12/11

CLIENT: Zia Engineering & Environmental
Project: Rhodes Canyon
Project No:
Lab Order: 1108118

Client Sample ID: RCRC-0114-RMW-003-0811
Lab ID: 1108118-03
Collection Date: 08/10/11 11:45 AM
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
2-Butanone	<0.00500	0.00500	0.0150		mg/L	1	08/18/11 01:15 PM
2-Chloroethylvinylether	~~<0.00500~~	~~0.00500~~	~~0.0150~~	R	mg/L	1	08/18/11 01:15 PM
2-Chlorotoluene	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 01:15 PM
2-Hexanone	<0.00500	0.00500	0.0150		mg/L	1	08/18/11 01:15 PM
4-Chlorotoluene	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 01:15 PM
4-Methyl-2-pentanone	<0.00500	0.00500	0.0150		mg/L	1	08/18/11 01:15 PM
Acetone	<0.00500	0.00500	0.0150		mg/L	1	08/18/11 01:15 PM
Acrylonitrile	<0.00100	0.00100	0.00300		mg/L	1	08/18/11 01:15 PM
Benzene	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 01:15 PM
Bromobenzene	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 01:15 PM
Bromochloromethane	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 01:15 PM
Bromodichloromethane	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 01:15 PM
Bromoform	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 01:15 PM
Bromomethane	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 01:15 PM
Carbon disulfide	<0.00500	0.00500	0.0150		mg/L	1	08/18/11 01:15 PM
Carbon tetrachloride	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 01:15 PM
Chlorobenzene	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 01:15 PM
Chloroethane	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 01:15 PM
Chloroform	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 01:15 PM
Chloromethane	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 01:15 PM
cis-1,2-Dichloroethene	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 01:15 PM
cis-1,3-Dichloropropene	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 01:15 PM
Dibromochloromethane	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 01:15 PM
Dibromomethane	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 01:15 PM
Dichlorodifluoromethane	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 01:15 PM
Ethylbenzene	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 01:15 PM
Hexachlorobutadiene	<0.00100	0.00100	0.00300		mg/L	1	08/18/11 01:15 PM
Iodomethane	<0.00500	0.00500	0.0150		mg/L	1	08/18/11 01:15 PM
Isopropylbenzene	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 01:15 PM
m,p-Xylene	<0.000600	0.000600	0.00200		mg/L	1	08/18/11 01:15 PM
Methyl tert-butyl ether	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 01:15 PM
Methylene chloride	<0.00250	0.00250	0.00250		mg/L	1	08/18/11 01:15 PM
n-Butylbenzene	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 01:15 PM
n-Propylbenzene	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 01:15 PM
Naphthalene	<0.00500	0.00500	0.0150		mg/L	1	08/18/11 01:15 PM
o-Xylene	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 01:15 PM
p-Isopropyltoluene	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 01:15 PM
sec-Butylbenzene	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 01:15 PM
Styrene	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 01:15 PM
tert-Butylbenzene	<0.000300	0.000300	0.00100		mg/L	1	08/18/11 01:15 PM
Tetrachloroethene	<0.000600	0.000600	0.00200		mg/L	1	08/18/11 01:15 PM
Toluene	<0.000600	0.000600	0.00200		mg/L	1	08/18/11 01:15 PM
trans-1,2-Dichloroethene	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 01:15 PM
trans-1,3-Dichloropropene	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 01:15 PM
Trichloroethene	<0.000600	0.000600	0.00200		mg/L	1	08/18/11 01:15 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

CLIENT: Zia Engineering & Environmental
Project: Rhodes Canyon
Project No:
Lab Order: 1108118

Client Sample ID: RCRC-0114-RMW-003-0811
Lab ID: 1108118-03
Collection Date: 08/10/11 11:45 AM
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trichlorofluoromethane	<0.000200	0.000200	0.00100		mg/L	1	08/18/11 01:15 PM
Vinyl chloride	<0.000100	0.000100	0.00100		mg/L	1	08/18/11 01:15 PM
Surr: 1,2-Dichloroethane-d4	110	0	70 - 120		%REC	1	08/18/11 01:15 PM
Surr: 4-Bromofluorobenzene	105	0	75 - 120		%REC	1	08/18/11 01:15 PM
Surr: Dibromofluoromethane	107	0	85 - 115		%REC	1	08/18/11 01:15 PM
Surr: Toluene-d8	99.8	0	85 - 120		%REC	1	08/18/11 01:15 PM
Anions by IC method - Water		**E300**					**Analyst: JBC**
Sulfate	1460	100	300		mg/L	100	08/11/11 03:23 PM
Alkalinity		**M2320 B**					**Analyst: JBC**
Alkalinity, Bicarbonate (As CaCO3)	159	10.0	20.0		mg/L	1	08/12/11 01:59 PM
Alkalinity, Carbonate (As CaCO3)	<10.0	10.0	20.0		mg/L	1	08/12/11 01:59 PM
Alkalinity, Hydroxide (As CaCO3)	<10.0	10.0	20.0		mg/L	1	08/12/11 01:59 PM
Alkalinity, Total (As CaCO3)	159	10.0	20.0		mg/L	1	08/12/11 01:59 PM
pH		**M4500-H+ B**					**Analyst: JBC**
pH	6.93	0	0		pH Units	1	08/11/11 01:36 PM
Total Dissolved Solids		**M2540C**					**Analyst: JCG**
Total Dissolved Solids (Residue, Filterable)	6660	50.0	50.0		mg/L	1	08/16/11 04:35 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

DHL ANALYTICAL

2300 Double Creek Dr. ■ Round Rock, TX 78664
Phone (512) 388-8222 ■ FAX (512) 388-8229
Web: www.dhlanalytical.com
E-Mail: login@dhlanalytical.com

№ 51771
CHAIN-OF-CUSTODY

CLIENT: EEA ENGINEERING / ARCADIS
ADDRESS: 755 S. TELSHOR SUITE Q201
PHONE: 575-532-1596 FAX/E-MAIL:
DATA REPORTED TO:
ADDITIONAL REPORT COPIES TO:

DATE: PAGE 1 OF 1
PO #: DHL WORK ORDER #: 1108113
PROJECT LOCATION OR NAME: Rhodes Canyon
CLENT PROJECT #: COLLECTOR:

Authorize 5% surcharge for TRRP Report? ☐ Yes ☐ No

S=SOIL W=WATER A=AIR L=LIQUID P=PAINT SL=SLUDGE O=OTHER SO=SOLID

Field Sample I.D.	DHL Lab #	Date	Time	Matrix	Container Type	# of Containers	PRESERVATION HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	BTEX ☐ MTBE ☐	TPH 1005 ☐ TPH 1006 ☐	GRO (METHOD 8021) ☐ HOLD 1006 ☐	DRO (METHOD 8015) ☐	VOC 8260/5035 ☐	SVOC 8270 ☐	VOC 624 ☐ VOC 8260 ☐	PAH 8270 ☐ HOLD PAH ☐ SVOC 625 ☐	8081 PEST ☐ 608 PEST/PCB ☐ 8270 PEST ☐	8270 O-P PEST ☐ 8082 PCB ☐ 8270 PCB ☐	8321 HERB ☐ 8330 EXPL ☐ PERCHLORATE ☐	METALS 6020 ☐ METALS 200.8 ☐ DISS. METALS ☐	RCRA ☐ TX11 ☐	PH ☐ HEX CHROM ☐ ANIONS ☐	CHLORIDE ☐ ALKALINITY ☐	VOC ☐ PEST ☐ HERB ☐	TCLP METALS ☐ RCRA 8 ☐ TX-11 ☐ Pb ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	METALS SW846-6010B	WATER QUALITY	FIELD NOTES
RCRC-0114-RMW-001-0811	01	8-10-11	1010	WATER		10								X	X	X															X	X		
RCRC-0114-RMW-001-0811-MS/MSD	02	8-10-11	1010	WATER		10								X	X	X															X	X		
RCRC-0114-RMW-TB-0811	03	8-10-11	1010	WATER		2									X																			
RCRC-0114-RMW-003-0811	04	8-10-11	1145	WATER		10								X	X	X															X	X		
TOTAL																																		

RELINQUISHED BY: (Signature) DATE/TIME 8-10-11 1340 RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature) DATE/TIME 8/10/11 1000 RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature) DATE/TIME RECEIVED BY: (Signature)

☐ DHL DISPOSAL @ $5.00 each ☐ Return

TURN AROUND TIME
RUSH ☐ CALL FIRST
1 DAY ☐ CALL FIRST
2 DAY ☐
NORMAL ☐
OTHER ☐

LABORATORY USE ONLY:
RECEIVING TEMP: 2.6 THERM #: 57
CUSTODY SEALS: ☐ BROKEN ☒ INTACT ☐ NOT USED
☒ CARRIER BILL #:
☐ APC DELIVERY
☐ HAND DELIVERED