



Data Usability Summary Test America Work Orders: 280-51308-1

Sample Dates:	January 17, 2014	Project No.:	1302086
Laboratory:	Test America (Houston TLAP Certification T104704223) (Denver TLAP Certification T104704183-13-8)	Client:	Exide Technologies Inc.
Work Orders:	Work Orders: 280-51308-1		
Intended Use	Affected Property Assessment Report (APAR)		
Site:	Exide Former Operating Plant (FOP), 7471 5 th Street, Frisco, TX		

TESTS/ METHODS

Perfluorinated Compounds (PFCs) by TestAmerica Proprietary Method – Liquid Chromatography (LC)/MS (DV-LC-0012). The analyses were performed by the TestAmerica Denver, CO laboratory.

SAMPLES

1 groundwater sample, 1 field blank, and 1 field MS/MSD pair. See Table 1 for a complete cross-referenced listing of samples.

Golder completed a review of the above chemical analysis data for conformance with the requirements of the Texas Risk Reduction Program (TRRP) guidance document, Review and Reporting of COC Concentration Data (RGG-366/TRRP-13 Revised May 2010) and for adherence to project objectives. The results of the review are discussed in this data usability summary (DUS).

Golder completed the review using the following laboratory and project submittals:

- Laboratory reportable data as defined in TRRP-13;
- Laboratory review checklists (LRC) with the associated exception reports;
- Laboratory Electronic Data Deliverable (EDD); and
- Project field notes from the sampling event.

The review of the reportable data included the quality control (QC) parameters listed below, as required per TRRP-13, using the applicable analytical method and project requirements:

- Data Completeness
- Chain-of-Custody Procedures
- Sample Condition - Holding Time, Preservation, and Containers
- Field Procedures
- Results Reporting Procedures



- Laboratory and Field QC Blanks
- Laboratory Control Spike and Matrix Spike Recoveries
- Surrogate Recoveries
- Laboratory and Field Duplicate Precision

Additionally, Golder used the LRC to evaluate the following QC parameters:

- Method Quantitation Limits (MQLs)
- Method Detection Limits (MDLs)
- Instrument Tuning, Calibration, and Performance
- Internal Standards

Criteria used for this data usability review are as follows:

- Organics: 60-140% spike recovery (and not less than 10% or data is rejected) and \pm MQL difference or 40% RPD (for laboratory duplicates) as recommended in TRRP-13
- Aqueous Samples: \pm 2x MQL difference (if either result is less than 5x MQL) or 30% RPD (for field duplicates) as recommended in TRRP-13

If an item was found outside of the review criteria, the reviewer applied a data qualifier (DQ) and bias code to the results for the affected samples in accordance with TRRP-13. A list of all qualified results and definitions of the qualifier and bias codes are given in Table 2.

GLOSSARY OF TERMS

The following definitions apply for terms related to analyte reporting limits:

MDL (Method Detection Limit) – the minimum concentration of an analyte that the laboratory can measure and report with 99% confidence that the analyte concentration is greater than zero. The MDL is determined by the laboratory for each analyte in a given reagent matrix (water or soil) generally using the procedures specified in 40 CFR Part 136, Appendix B. It is a measure of the concentration an instrument can detect or ‘see’ in a given reagent matrix. TRRP-13 requires that the laboratory routinely check the MDL for reasonableness.

SDL (Sample Detection Limit) – the MDL adjusted to reflect sample-specific actions, such as dilution or use of smaller aliquot sizes than prescribed in the analytical method, and taking into account sample characteristics, sample preparation, and analytical adjustments including dry-weight adjustments. It is a measure of the concentration an instrument can detect or ‘see’ in a given sample. For TRRP, non-detects are reported using the SDL. This term was originally called the SQL (Sample Quantitation Limit) before the TRRP rule revisions effective March 19, 2007.



Unadjusted MQL (Method Quantitation Limit) – the lowest non-zero concentration standard in the laboratory's initial calibration curve calculated using the normal aliquot sizes and final volumes prescribed in the analytical method. The unadjusted MQL is reported by the laboratory for each analyte in a given matrix (water or soil). It is a measure of the concentration an instrument can accurately measure in a typical sample. Per TRRP, the Unadjusted MQLs should be below the Levels of Required Performance (LORPs) for purposes of assessment as well as demonstration of conformance with critical Protective Concentration Levels (PCLs).

MQL – the unadjusted MQL adjusted to reflect sample-specific actions, such as dilution or use of smaller aliquot sizes than prescribed in the analytical method, and takes into account sample characteristics, sample preparation, and analytical adjustments including dry-weight adjustments. It is a measure of the concentration an instrument can accurately measure in a given sample. Analytes with concentrations above the SDL but below the MQL, though present in the sample, may not be accurately measured and are thus flagged as estimated (J).

LABORATORY CERTIFICATION

At the time the laboratory data were generated for this project, the laboratory was NELAC accredited under the Texas Laboratory Accreditation Program (TLAP) for the matrices, methods and parameters of analysis requested on the chain-of-custody forms. A copy of the applicable pages of the laboratory's National Environmental Laboratory Accreditation Program (NELAP) certificate valid during the period in which the laboratory generated the data in this report is included in Appendix 10.5 to this DUS.

USABILITY SUMMARY

1. Usability of Unqualified Non-Detects – Non-detects are reported at the sample detection limit (SDL) as required per TRRP. Additionally, according to the LRC, an MDL study was performed for each analyte and the MDLs were checked for reasonableness for each applicable analyte. The levels of required performance (LORPs) have been established by Golder/PBW as the Residential Assessment Levels (RALs), which are the minimum of the TRRP residential Tier 1 $^{GW}GW_{Ing}$ PCLs or $^{GW}GW_{Inh-v}$ applicable for Class 1/Class 2 groundwater. However Tier 1 PCLs have not been developed for PFCs, and thus, the laboratory MQL is acceptable as the LORP. The analytical methods are appropriate and the results can be used to demonstrate conformance with the criteria.
2. Usability of Qualified Data – There are no major QC deficiencies, and thus all data is usable as qualified for the intended use. No qualifications were made by the reviewer in this data package.

Reviewer: Jing Song Xi 3/10/14



QUALITY CONTROL PARAMETERS AND OUTCOMES

Data Completeness

The laboratory data packages contain all necessary data (i.e., the laboratory reportable data per TRRP-13) and the EDD contain all sample results in acceptable format.

Chain-of-Custody

Proper sample custody procedures were used, which confirms that the integrity of the samples was maintained. Additionally, the information on the custody records is complete and agrees with that in the field notes and laboratory reports.

Sample Condition

Samples were collected in appropriate containers, properly preserved in the field, and prepared and analyzed within the holding times as required in the analytical methods, which ensures that the samples were not affected by analyte degradation:

- For 280-51308-1, the temperature of the cooler at receipt was 2.8°C.

Field Procedures

The samples were collected and placed immediately into sterilized jars provided by the laboratory and then into a cooler with ice for overnight delivery to the laboratory.

One site-specific MS/MSD sample and one field blank were collected with the investigative sample.

Results Reporting Procedures

Because PFCs are not regulated by TRRP, a TRRP package was not provided. The laboratory indicated the Reporting Limit (RL) is equivalent to the MQL and the MDL is equivalent the SDL. Equis format EDDs were provided.

Results are reported in mg/L. Non-detects are reported using the SDL as specified per TRRP and detects between the SDL and MQL are reported with a laboratory J-flag. The concentration reported for detects between the SDL and MQL is below the calibration range and thus is considered estimated.

MQLs- The LORPs have been established by Golder/PBW as the Resident Assessment Levels (RALs), which are the minimum of the TRRP residential Tier 1 ^{GW}GW_{Ing} PCLs or ^{GW}GW_{Inh-v} applicable for Class 1/Class 2 groundwater. However Tier 1 PCLs have not been developed for PFCs, and thus, the laboratory MQL is acceptable as the LORP.



MDLs- According to the LRC, an MDL study was performed for each analyte, and the MDLs were checked for reasonableness and either adjusted or supported by the analysis of detectability check standards (DCS) for each applicable analyte as required per TRRP-13. Results for the DCS are included in the data packages.

Laboratory Blanks – Results for samples prepared in the same QC batch as a contaminated method blank may be affected by laboratory contamination. There were no detections in laboratory blanks for this work order.

Field QC Blanks

One field blank was collected to document ambient conditions and if potential contaminants were present in the area of sampling. No analytes were detected in the field QC blank, thus there is no effect on data quality.

Laboratory Control Sample

The laboratory prepared one laboratory control sample (LCS) for each analytical batch and reported recoveries for all of the analytes for each test. The LCS recoveries are within the TRRP recommended criteria, which indicates good accuracy for the preparation and analysis technique on a sample, free of matrix effects.

Matrix Spike Recovery

The laboratory prepared one or more matrix spike (MS) and matrix spike duplicate (MSD) with each analytical batch. MS/MSD recoveries are reported for the same analytes as the LCS for MS/MSD prepared using a sample from the site, which includes 1 MS/MSD for PFCs, as shown in Table 1.

The MS/MSD recoveries are within the TRRP recommended criteria, which indicates good accuracy for the preparation and analysis technique on a sample free of matrix effects.

Surrogate Recovery

Surrogate recoveries are within the TRRP recommended criteria, which indicates good accuracy for the extraction of surrogates from the samples.

Laboratory Duplicate Precision

The laboratory prepared one or more Matrix Spike Duplicate (MSD) with each analytical batch for each test. RPDs are reported for the same analytes as the LCS for MSD/MD prepared using a sample from the site, which includes 1 MSD and MD for PFCs, as shown in Table 1.



The MSD and MD RPDs are within the TRRP recommended criteria, which indicates good precision for the preparation and analysis technique for the given sample matrix.

Field Duplicate Precision

No field duplicates were collected with the sample for this work order.

Instrument Tuning

According to the LRC, instrument tuning met method requirements for the samples, which indicates the GC/MS instrument was properly set up to identify analytes.

Instrument Calibration

According to the LRC, initial and continuing calibration data met method requirements for all reported results, which indicates the instruments were properly calibrated to measure analyte concentrations.

Instrument Performance

According to the LRC, the serial dilution and ICP interference check samples met method requirements, which indicates that no significant matrix interference exists.

Internal Standards

According to the LRC, area counts and retention times were within method requirements.

TABLE 1
CROSS REFERENCE OF FIELD SAMPLE IDENTIFICATIONS AND LABORATORY IDENTIFICATIONS

Lab Sample ID	Field Sample ID	Prep Batch/ Analysis Batch	Sample Date	Matrix	Comments
280-51308-1	MW-43	209118,209253/ 209567,209694	1/17/2014	Water	site-specific MS/MSD
280-51308-2	Field Blank	209118,209253/ 209567,209694	1/17/2014	Water	Field Blank

TABLE 2 - QUALIFIED DATA

Lab Sample ID	Field Sample ID	Analyte	Result	Units	Qualifier	Explanation
No samples affected						

Note:

Detected results between the SDL and MQL (i.e., results with a laboratory J-flag) have been included in the above table since the reported concentration is below the calibration range.

J Estimated data; The analyte was detected and identified. The associated numerical value (i.e., the reported sample concentration) is the approximate concentration of the analyte in the sample.

NJ Tentatively identified, estimated data; The analysis indicates the presence of the analyte for which there is presumptive evidence to make a tentative identification and the associated numerical value represents its approximate concentration.

NS Not selected; Another result (from a secondary dilution, different analytical method, re-sampling, etc.) is selected for use based on QC outcomes and/or reported concentrations.

R Rejected data; The data is unusable. Serious QC deficiencies make it impossible to verify the absence or presence of this analyte.

U Not detected; The analyte was not detected >5x (10x for common contaminants) the level in an associated blank and thus should be considered not detected above the level of the associated numerical value (i.e., the reported sample concentration).

UJ Estimated data; The analyte was not detected above the reported sample detection limit (SDL). The numerical value of the SDL is estimated and may be inaccurate.

H Bias in sample result is likely to be high

L Bias in sample result is likely to be low

TABLE 3 - FIELD DUPLICATE PRECISION CALCULATIONS

Duplicate and Parent Sample Field Identification	Analyte	Sample Result	Duplicate Result	RPD ^a	Accept or Reject	Qualifier Added
No Field Duplicates Collected						

^a $RPD = ((SR - DR) * 200) / (SR + DR)$

A - Acceptable Data

NA - Not Analyzed

The RPD test (<50%) applies if both results are greater than 5x MQL. Otherwise, the absolute difference test (< 3x MQL) applies.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Denver

4955 Yarrow Street

Arvada, CO 80002

Tel: (303)736-0100

TestAmerica Job ID: 280-51308-1

Client Project/Site: Exide Recycling Center PFC

For:

Golder Associates Inc.

500 Century Plaza Drive

Suite 190

Houston, Texas 77073

Attn: Christina Higginbotham

Dean A. Joiner

Authorized for release by:

1/31/2014 6:43:47 PM

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center PFC

TestAmerica Job ID: 280-51308-1

Job ID: 280-51308-1

Laboratory: TestAmerica Denver

Narrative

Job Narrative
280-51308-1

Comments

No additional comments.

Receipt

The samples were received on 1/18/2014 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.8° C.

LCMS

No analytical or quality issues were noted.

Organic Prep

No analytical or quality issues were noted.

Definitions/Glossary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center PFC

TestAmerica Job ID: 280-51308-1

Qualifiers

LCMS

Qualifier	Qualifier Description
U	Analyte was not detected at or above the SDL.
J	Result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Detection Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center PFC

TestAmerica Job ID: 280-51308-1

Client Sample ID: MW-43

Lab Sample ID: 280-51308-1

No Detections.

Client Sample ID: FIELD BLANK

Lab Sample ID: 280-51308-2

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Denver

Method Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center PFC

TestAmerica Job ID: 280-51308-1

Method	Method Description	Protocol	Laboratory
DV-LC-0012	Perfluorinated Hydrocarbons	TAL-DEN	TAL DEN
PFC -FOSA	FOSA in Water (LC/MS/MS)	TAL-DEN	TAL DEN

Protocol References:

TAL-DEN = TestAmerica Laboratories, Denver, Facility Standard Operating Procedure.

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center PFC

TestAmerica Job ID: 280-51308-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-51308-1	MW-43	Water	01/17/14 09:45	01/18/14 09:00
280-51308-2	FIELD BLANK	Water	01/17/14 09:50	01/18/14 09:00

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center PFC

TestAmerica Job ID: 280-51308-1

Method: DV-LC-0012 - Perfluorinated Hydrocarbons

Client Sample ID: MW-43

Date Collected: 01/17/14 09:45

Date Received: 01/18/14 09:00

Lab Sample ID: 280-51308-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutane Sulfonate	0.00000847	U	0.0000206	0.0000084	mg/L		01/19/14 11:07	01/22/14 19:27	1
				7					
Perfluorobutyric acid	0.0000101	U	0.0000206	0.0000101	mg/L		01/19/14 11:07	01/22/14 19:27	1
Perfluorodecane Sulfonate	0.00000941	U	0.0000206	0.0000094	mg/L		01/19/14 11:07	01/22/14 19:27	1
				1					
Perfluorodecanoic acid	0.00000804	U	0.0000206	0.0000080	mg/L		01/19/14 11:07	01/22/14 19:27	1
				4					
Perfluorododecanoic acid	0.0000153	U	0.0000309	0.0000153	mg/L		01/19/14 11:07	01/22/14 19:27	1
Perfluoroheptanoic acid	0.0000136	U	0.0000309	0.0000136	mg/L		01/19/14 11:07	01/22/14 19:27	1
Perfluorohexane Sulfonate	0.00000717	U	0.0000309	0.0000071	mg/L		01/19/14 11:07	01/22/14 19:27	1
				7					
Perfluorohexanoic acid	0.00000299	U	0.0000206	0.0000029	mg/L		01/19/14 11:07	01/22/14 19:27	1
				9					
Perfluorononanoic acid	0.0000179	U	0.0000411	0.0000179	mg/L		01/19/14 11:07	01/22/14 19:27	1
Perfluorooctanoic acid	0.0000101	U	0.0000206	0.0000101	mg/L		01/19/14 11:07	01/22/14 19:27	1
Perfluorooctanoic Sulfonate	0.0000137	U	0.0000309	0.0000137	mg/L		01/19/14 11:07	01/22/14 19:27	1
Perfluoropentanoic acid	0.0000112	U	0.0000309	0.0000112	mg/L		01/19/14 11:07	01/22/14 19:27	1
Perfluorotetradecanoic acid	0.0000151	U	0.0000309	0.0000151	mg/L		01/19/14 11:07	01/22/14 19:27	1
Perfluorotridecanoic acid	0.0000182	U	0.0000411	0.0000182	mg/L		01/19/14 11:07	01/22/14 19:27	1
Perfluoroundecanoic acid	0.00000709	U	0.0000206	0.0000070	mg/L		01/19/14 11:07	01/22/14 19:27	1
				9					
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 PFOA	106		60 - 155				01/19/14 11:07	01/22/14 19:27	1
13C8 PFOS	103		45 - 130				01/19/14 11:07	01/22/14 19:27	1

Client Sample ID: FIELD BLANK

Date Collected: 01/17/14 09:50

Date Received: 01/18/14 09:00

Lab Sample ID: 280-51308-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutane Sulfonate	0.00000815	U	0.0000198	0.0000081	mg/L		01/19/14 11:07	01/22/14 20:04	1
				5					
Perfluorobutyric acid	0.00000969	U	0.0000198	0.0000096	mg/L		01/19/14 11:07	01/22/14 20:04	1
				9					
Perfluorodecane Sulfonate	0.00000905	U	0.0000198	0.0000090	mg/L		01/19/14 11:07	01/22/14 20:04	1
				5					
Perfluorodecanoic acid	0.00000773	U	0.0000198	0.0000077	mg/L		01/19/14 11:07	01/22/14 20:04	1
				3					
Perfluorododecanoic acid	0.0000147	U	0.0000297	0.0000147	mg/L		01/19/14 11:07	01/22/14 20:04	1
Perfluoroheptanoic acid	0.0000131	U	0.0000297	0.0000131	mg/L		01/19/14 11:07	01/22/14 20:04	1
Perfluorohexane Sulfonate	0.00000689	U	0.0000297	0.0000068	mg/L		01/19/14 11:07	01/22/14 20:04	1
				9					
Perfluorohexanoic acid	0.00000288	U	0.0000198	0.0000028	mg/L		01/19/14 11:07	01/22/14 20:04	1
				8					
Perfluorononanoic acid	0.0000172	U	0.0000396	0.0000172	mg/L		01/19/14 11:07	01/22/14 20:04	1
Perfluorooctanoic acid	0.00000968	U	0.0000198	0.0000096	mg/L		01/19/14 11:07	01/22/14 20:04	1
				8					
Perfluorooctanoic Sulfonate	0.0000132	U	0.0000297	0.0000132	mg/L		01/19/14 11:07	01/22/14 20:04	1
Perfluoropentanoic acid	0.0000108	U	0.0000297	0.0000108	mg/L		01/19/14 11:07	01/22/14 20:04	1
Perfluorotetradecanoic acid	0.0000145	U	0.0000297	0.0000145	mg/L		01/19/14 11:07	01/22/14 20:04	1
Perfluorotridecanoic acid	0.0000175	U	0.0000396	0.0000175	mg/L		01/19/14 11:07	01/22/14 20:04	1
Perfluoroundecanoic acid	0.00000681	U	0.0000198	0.0000068	mg/L		01/19/14 11:07	01/22/14 20:04	1
				1					

TestAmerica Denver

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center PFC

TestAmerica Job ID: 280-51308-1

Method: DV-LC-0012 - Perfluorinated Hydrocarbons (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOA	107		60 - 155	01/19/14 11:07	01/22/14 20:04	1
13C8 PFOS	103		45 - 130	01/19/14 11:07	01/22/14 20:04	1

Method: PFC -FOSA - FOSA in Water (LC/MS/MS)

Client Sample ID: MW-43

Date Collected: 01/17/14 09:45

Date Received: 01/18/14 09:00

Lab Sample ID: 280-51308-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctane Sulfonamide	0.00000573	U	0.0000502	0.00000573	mg/L	—	01/20/14 18:06	01/22/14 01:14	1

Client Sample ID: FIELD BLANK

Date Collected: 01/17/14 09:50

Date Received: 01/18/14 09:00

Lab Sample ID: 280-51308-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctane Sulfonamide	0.00000560	U	0.0000490	0.00000560	mg/L	—	01/20/14 18:06	01/22/14 01:51	1

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center PFC

TestAmerica Job ID: 280-51308-1

Method: DV-LC-0012 - Perfluorinated Hydrocarbons

Lab Sample ID: MB 280-209118/1-A

Matrix: Water

Analysis Batch: 209694

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 209118

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutane Sulfonate	0.00000824	U	0.0000200	0.00000824	mg/L		01/19/14 11:07	01/22/14 19:03	1
Perfluorobutyric acid	0.00000980	U	0.0000200	0.00000980	mg/L		01/19/14 11:07	01/22/14 19:03	1
Perfluorodecane Sulfonate	0.00000915	U	0.0000200	0.00000915	mg/L		01/19/14 11:07	01/22/14 19:03	1
Perfluorodecanoic acid	0.00000782	U	0.0000200	0.00000782	mg/L		01/19/14 11:07	01/22/14 19:03	1
Perfluorododecanoic acid	0.0000149	U	0.0000300	0.0000149	mg/L		01/19/14 11:07	01/22/14 19:03	1
Perfluoroheptanoic acid	0.0000132	U	0.0000300	0.0000132	mg/L		01/19/14 11:07	01/22/14 19:03	1
Perfluorohexane Sulfonate	0.00000697	U	0.0000300	0.00000697	mg/L		01/19/14 11:07	01/22/14 19:03	1
Perfluorohexanoic acid	0.00000291	U	0.0000200	0.00000291	mg/L		01/19/14 11:07	01/22/14 19:03	1
Perfluorononanoic acid	0.0000174	U	0.0000400	0.0000174	mg/L		01/19/14 11:07	01/22/14 19:03	1
Perfluorooctanoic acid	0.00000979	U	0.0000200	0.00000979	mg/L		01/19/14 11:07	01/22/14 19:03	1
Perfluorooctanoic Sulfonate	0.0000133	U	0.0000300	0.0000133	mg/L		01/19/14 11:07	01/22/14 19:03	1
Perfluoropentanoic acid	0.0000109	U	0.0000300	0.0000109	mg/L		01/19/14 11:07	01/22/14 19:03	1
Perfluorotetradecanoic acid	0.0000147	U	0.0000300	0.0000147	mg/L		01/19/14 11:07	01/22/14 19:03	1
Perfluorotridecanoic acid	0.0000177	U	0.0000400	0.0000177	mg/L		01/19/14 11:07	01/22/14 19:03	1
Perfluoroundecanoic acid	0.00000689	U	0.0000200	0.00000689	mg/L		01/19/14 11:07	01/22/14 19:03	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 PFOA	100		60 - 155				01/19/14 11:07	01/22/14 19:03	1
13C8 PFOS	94		45 - 130				01/19/14 11:07	01/22/14 19:03	1

Lab Sample ID: LCS 280-209118/2-A

Matrix: Water

Analysis Batch: 209694

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 209118

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutane Sulfonate	0.000177	0.0001684		mg/L		95	70 - 134
Perfluorobutyric acid	0.000200	0.0002000		mg/L		100	70 - 130
Perfluorodecane Sulfonate	0.000193	0.0001532		mg/L		79	34 - 130
Perfluorodecanoic acid	0.000200	0.0001983		mg/L		99	70 - 130
Perfluorododecanoic acid	0.000200	0.0001975		mg/L		99	66 - 133
Perfluoroheptanoic acid	0.000200	0.0002052		mg/L		103	70 - 135
Perfluorohexane Sulfonate	0.000189	0.0001796		mg/L		95	70 - 132
Perfluorohexanoic acid	0.000200	0.0001957		mg/L		98	70 - 130
Perfluorononanoic acid	0.000200	0.0001925		mg/L		96	69 - 143
Perfluorooctanoic acid	0.000200	0.0002094		mg/L		105	70 - 130
Perfluorooctanoic Sulfonate	0.000191	0.0001960		mg/L		103	70 - 130
Perfluoropentanoic acid	0.000200	0.0002065		mg/L		103	66 - 134
Perfluorotetradecanoic acid	0.000200	0.0001678		mg/L		84	23 - 149
Perfluorotridecanoic acid	0.000200	0.0001572		mg/L		79	26 - 136
Perfluoroundecanoic acid	0.000200	0.0002096		mg/L		105	70 - 130

TestAmerica Denver

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center PFC

TestAmerica Job ID: 280-51308-1

Method: DV-LC-0012 - Perfluorinated Hydrocarbons (Continued)

Lab Sample ID: LCS 280-209118/2-A

Matrix: Water

Analysis Batch: 209694

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 209118

Surrogate	LCS %Recovery	LCS Qualifier	Limits
13C8 PFOA	107		60 - 155
13C8 PFOS	101		45 - 130

Lab Sample ID: 280-51308-1 MS

Matrix: Water

Analysis Batch: 209694

Client Sample ID: MW-43

Prep Type: Total/NA

Prep Batch: 209118

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutane Sulfonate	0.00000847	U	0.000178	0.0001943		mg/L		109	70 - 134
Perfluorobutyric acid	0.0000101	U	0.000201	0.0002025		mg/L		101	70 - 130
Perfluorodecane Sulfonate	0.00000941	U	0.000194	0.0001970		mg/L		102	34 - 130
Perfluorodecanoic acid	0.00000804	U	0.000201	0.0002100		mg/L		105	70 - 130
Perfluorododecanoic acid	0.0000153	U	0.000201	0.0002005		mg/L		100	66 - 133
Perfluoroheptanoic acid	0.0000136	U	0.000201	0.0002255		mg/L		112	70 - 135
Perfluorohexane Sulfonate	0.00000717	U	0.000190	0.0001753		mg/L		92	70 - 132
Perfluorohexanoic acid	0.00000299	U	0.000201	0.0001948		mg/L		97	70 - 130
Perfluorononanoic acid	0.0000179	U	0.000201	0.0002161		mg/L		108	69 - 143
Perfluorooctanoic acid	0.0000101	U	0.000201	0.0002170		mg/L		108	70 - 130
Perfluorooctanoic Sulfonate	0.0000137	U	0.000192	0.0002263		mg/L		118	70 - 130
Perfluoropentanoic acid	0.0000112	U	0.000201	0.0002014		mg/L		100	66 - 134
Perfluorotetradecanoic acid	0.0000151	U	0.000201	0.0002286		mg/L		114	23 - 149
Perfluorotridecanoic acid	0.0000182	U	0.000201	0.0002268		mg/L		113	26 - 136
Perfluoroundecanoic acid	0.00000709	U	0.000201	0.0002181		mg/L		109	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
13C8 PFOA	107		60 - 155
13C8 PFOS	106		45 - 130

Lab Sample ID: 280-51308-1 MSD

Matrix: Water

Analysis Batch: 209694

Client Sample ID: MW-43

Prep Type: Total/NA

Prep Batch: 209118

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutane Sulfonate	0.00000847	U	0.000178	0.0001820		mg/L		102	70 - 134	7	30
Perfluorobutyric acid	0.0000101	U	0.000202	0.0002090		mg/L		104	70 - 130	3	30
Perfluorodecane Sulfonate	0.00000941	U	0.000195	0.0001659		mg/L		85	34 - 130	17	30
Perfluorodecanoic acid	0.00000804	U	0.000202	0.0002197		mg/L		109	70 - 130	4	30
Perfluorododecanoic acid	0.0000153	U	0.000202	0.0001992		mg/L		99	66 - 133	1	30
Perfluoroheptanoic acid	0.0000136	U	0.000202	0.0002050		mg/L		102	70 - 135	10	30
Perfluorohexane Sulfonate	0.00000717	U	0.000191	0.0001907		mg/L		100	70 - 132	8	30
Perfluorohexanoic acid	0.00000299	U	0.000202	0.0002050		mg/L		102	70 - 130	5	30
Perfluorononanoic acid	0.0000179	U	0.000202	0.0001965		mg/L		97	69 - 143	9	30
Perfluorooctanoic acid	0.0000101	U	0.000202	0.0001996		mg/L		99	70 - 130	8	20
Perfluorooctanoic Sulfonate	0.0000137	U	0.000193	0.0002076		mg/L		108	70 - 130	9	20
Perfluoropentanoic acid	0.0000112	U	0.000202	0.0001996		mg/L		99	66 - 134	1	30
Perfluorotetradecanoic acid	0.0000151	U	0.000202	0.0002338		mg/L		116	23 - 149	2	30
Perfluorotridecanoic acid	0.0000182	U	0.000202	0.0002272		mg/L		113	26 - 136	0	30
Perfluoroundecanoic acid	0.00000709	U	0.000202	0.0002224		mg/L		110	70 - 130	2	30

TestAmerica Denver

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center PFC

TestAmerica Job ID: 280-51308-1

Method: DV-LC-0012 - Perfluorinated Hydrocarbons (Continued)

Lab Sample ID: 280-51308-1 MSD

Matrix: Water

Analysis Batch: 209694

Client Sample ID: MW-43

Prep Type: Total/NA

Prep Batch: 209118

Surrogate	MSD %Recovery	MSD Qualifier	Limits
13C8 PFOA	100		60 - 155
13C8 PFOS	103		45 - 130

Lab Sample ID: DLCK 280-209694/14

Matrix: Water

Analysis Batch: 209694

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	DLCK Result	DLCK Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutane Sulfonate	0.443	0.4726	J	ug/L		107	70 - 130
Perfluorobutyric acid	0.500	0.4997	J	ug/L		100	70 - 130
Perfluorodecane Sulfonate	0.483	0.4717	J	ug/L		98	70 - 130
Perfluorodecanoic acid	0.500	0.4452	J	ug/L		89	70 - 130
Perfluorododecanoic acid	0.500	0.746	U	ug/L		97	70 - 130
Perfluoroheptanoic acid	0.500	0.658	U	ug/L		96	70 - 130
Perfluorohexane Sulfonate	0.473	0.5207	J	ug/L		110	70 - 130
Perfluorohexanoic acid	0.500	0.4851	J	ug/L		97	70 - 130
Perfluorononanoic acid	0.500	0.872	U	ug/L		98	70 - 130
Perfluorooctanoic acid	0.500	0.5474	J	ug/L		109	70 - 130
Perfluorooctanoic Sulfonate	0.478	0.666	U	ug/L		108	70 - 130
Perfluoropentanoic acid	0.500	0.547	U	ug/L		106	70 - 130
Perfluorotetradecanoic acid	0.500	0.728	U	ug/L		126	70 - 130
Perfluorotridecanoic acid	0.500	0.886	U	ug/L		107	70 - 130
Perfluoroundecanoic acid	0.500	0.5267	J	ug/L		105	70 - 130

Surrogate	DLCK %Recovery	DLCK Qualifier	Limits
13C8 PFOA	104		60 - 155
13C8 PFOS	83		45 - 130

Method: PFC -FOSA - FOSA in Water (LC/MS/MS)

Lab Sample ID: DLCK 280-207250/13

Matrix: Water

Analysis Batch: 207250

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	DLCK Result	DLCK Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorooctane Sulfonamide	0.500	0.4335	J	ug/L		87	70 - 130

Lab Sample ID: MB 280-209253/1-A

Matrix: Water

Analysis Batch: 209567

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 209253

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctane Sulfonamide	0.00000571	U	0.0000500	0.0000057	mg/L		01/20/14 18:06	01/22/14 00:37	1

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center PFC

TestAmerica Job ID: 280-51308-1

Method: PFC -FOSA - FOSA in Water (LC/MS/MS) (Continued)

Lab Sample ID: LCS 280-209253/2-A

Matrix: Water

Analysis Batch: 209567

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 209253

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorooctane Sulfonamide	0.000200	0.0002426		mg/L		121	57 - 133

Lab Sample ID: 280-51308-1 MS

Matrix: Water

Analysis Batch: 209567

Client Sample ID: MW-43

Prep Type: Total/NA

Prep Batch: 209253

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorooctane Sulfonamide	0.00000573	U	0.000199	0.0002482		mg/L		125	57 - 133

Lab Sample ID: 280-51308-1 MSD

Matrix: Water

Analysis Batch: 209567

Client Sample ID: MW-43

Prep Type: Total/NA

Prep Batch: 209253

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorooctane Sulfonamide	0.00000573	U	0.000196	0.0002381		mg/L		122	57 - 133	4	30

QC Association Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center PFC

TestAmerica Job ID: 280-51308-1

LCMS

Analysis Batch: 207250

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
DLCK 280-207250/13	Lab Control Sample	Total/NA	Water	PFC -FOSA	

Prep Batch: 209118

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-51308-1	MW-43	Total/NA	Water	3535	
280-51308-1 MS	MW-43	Total/NA	Water	3535	
280-51308-1 MSD	MW-43	Total/NA	Water	3535	
280-51308-2	FIELD BLANK	Total/NA	Water	3535	
LCS 280-209118/2-A	Lab Control Sample	Total/NA	Water	3535	
MB 280-209118/1-A	Method Blank	Total/NA	Water	3535	

Prep Batch: 209253

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-51308-1	MW-43	Total/NA	Water	3535	
280-51308-1 MS	MW-43	Total/NA	Water	3535	
280-51308-1 MSD	MW-43	Total/NA	Water	3535	
280-51308-2	FIELD BLANK	Total/NA	Water	3535	
LCS 280-209253/2-A	Lab Control Sample	Total/NA	Water	3535	
MB 280-209253/1-A	Method Blank	Total/NA	Water	3535	

Analysis Batch: 209567

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-51308-1	MW-43	Total/NA	Water	PFC -FOSA	209253
280-51308-1 MS	MW-43	Total/NA	Water	PFC -FOSA	209253
280-51308-1 MSD	MW-43	Total/NA	Water	PFC -FOSA	209253
280-51308-2	FIELD BLANK	Total/NA	Water	PFC -FOSA	209253
LCS 280-209253/2-A	Lab Control Sample	Total/NA	Water	PFC -FOSA	209253
MB 280-209253/1-A	Method Blank	Total/NA	Water	PFC -FOSA	209253

Analysis Batch: 209694

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-51308-1	MW-43	Total/NA	Water	DV-LC-0012	209118
280-51308-1 MS	MW-43	Total/NA	Water	DV-LC-0012	209118
280-51308-1 MSD	MW-43	Total/NA	Water	DV-LC-0012	209118
280-51308-2	FIELD BLANK	Total/NA	Water	DV-LC-0012	209118
DLCK 280-209694/14	Lab Control Sample	Total/NA	Water	DV-LC-0012	
LCS 280-209118/2-A	Lab Control Sample	Total/NA	Water	DV-LC-0012	209118
MB 280-209118/1-A	Method Blank	Total/NA	Water	DV-LC-0012	209118

TestAmerica Denver

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center PFC

TestAmerica Job ID: 280-51308-1

Client Sample ID: MW-43

Date Collected: 01/17/14 09:45

Date Received: 01/18/14 09:00

Lab Sample ID: 280-51308-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			249 mL	5 mL	209253	01/20/14 18:06	CDC	TAL DEN
Total/NA	Analysis	PFC -FOSA		1	249 mL	5 mL	209567	01/22/14 01:14	MK	TAL DEN
Total/NA	Prep	3535			243.1 mL	5 mL	209118	01/19/14 11:07	CDC	TAL DEN
Total/NA	Analysis	DV-LC-0012		1	243.1 mL	5 mL	209694	01/22/14 19:27	MK	TAL DEN

Client Sample ID: FIELD BLANK

Date Collected: 01/17/14 09:50

Date Received: 01/18/14 09:00

Lab Sample ID: 280-51308-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			254.9 mL	5 mL	209253	01/20/14 18:06	CDC	TAL DEN
Total/NA	Analysis	PFC -FOSA		1	254.9 mL	5 mL	209567	01/22/14 01:51	MK	TAL DEN
Total/NA	Prep	3535			252.8 mL	5 mL	209118	01/19/14 11:07	CDC	TAL DEN
Total/NA	Analysis	DV-LC-0012		1	252.8 mL	5 mL	209694	01/22/14 20:04	MK	TAL DEN

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 280-51308-1

Login Number: 51308

List Source: TestAmerica Denver

List Number: 1

Creator: O'Tormey, Stephanie R

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Laboratory Review Checklist: Reportable Data							
Laboratory Name: TestAmerica Denver				LRC Date: 1/31/14			
Project Name: Golder Associates, Exide Recycling Center, Frisco TX				Laboratory Job Number: 280-51308-1			
Reviewer Name: Teresa Williams				Prep Batch Number(s): 209253, 20918			
# ¹	A ²	Description	Yes	No	NA ³	NR ⁴	ER# ⁵
R1	OI	Chain-of-custody (C-O-C)					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?	X				
R2	OI	Sample and quality control (QC) identification					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	Test reports					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results <MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample quantitation limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		If required for the project, TICs reported?			X		
R4	O	Surrogate recovery data					
		Were surrogates added prior to extraction?	X				
		Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
R5	OI	Test reports/summary forms for blank samples					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	Laboratory control samples (LCS):					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	X				
		Was the LCSD RPD within QC limits?	X				
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
		Were MS/MSD RPDs within laboratory QC limits?	X				
R8	OI	Analytical duplicate data					
		Were appropriate analytical duplicates analyzed for each matrix?			X		
		Were analytical duplicates analyzed at the appropriate frequency?			X		
		Were RPDs or relative standard deviations within the laboratory QC limits?			X		
R9	OI	Practical quantitation limits (MQLs):					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs included in the laboratory data package?	X				
R10	OI	Other problems/anomalies					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Were all necessary corrective actions performed for the reported data?	X				
		Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	X				

1 Items identified by the letter "R" must be included in the laboratory data package submitted in the required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.

2 O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3 NA = Not applicable;

4 NR = Not Reviewed;

5 ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on the LRC).

Laboratory Review Checklist: Reportable Data							
Laboratory Name: TestAmerica Denver				LRC Date: 1/31/14			
Project Name: Golder Associates, Exide Recycling Center, Frisco TX				Laboratory Job Number: 280-51308-1			
Reviewer Name: Teresa Williams				Prep Batch Number(s): 209253, 20918			
# ¹	A ²	Description	Yes	No	NA ³	NR ⁴	ER# ⁵
S1	OI	Initial calibration (ICAL)					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	Initial and continuing calibration verification (ICCV and CCV) and continuing calibration					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
S3	O	Mass spectral tuning:					
		Was the appropriate compound for the method used for tuning?	X				
		Were ion abundance data within the method-required QC limits?	X				
S4	O	Internal standards (IS):					
		Were IS area counts and retention times within the method-required QC limits?	X				
S5	OI	Raw data (NELAC Section 1 Appendix A glossary, and Section 5.12 or ISO/IEC 17025 Section 4.12.2) (Only use data for epa level 3 qa/qc review, if raw data not applicable, then change appropriately)					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	Dual column confirmation					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	Tentatively identified compounds (TICs):					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	Interference Check Sample (ICS) results:					
		Were percent recoveries within method QC limits?			X		
S9	I	Serial dilutions, post digestion spikes, and method of standard additions					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
S10	OI	Method detection limit (MDL) studies					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSSs?	X				
S11	OI	Proficiency test reports:					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	Standards documentation					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	Compound/analyte identification procedures					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	Demonstration of analyst competency (DOC)					
		Was DOC conducted consistent with NELAC Chapter 5C or ISO/IEC 4?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	Verification/validation documentation for methods (NELAC Chap 5 or ISO/IEC 17025 Section 5)					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	Laboratory standard operating procedures (SOPs)					
		Are laboratory SOPs current and on file for each method performed?	X				

¹ Items identified by the letter "R" must be included in the laboratory data package submitted in the required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.

² O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

³ NA = Not applicable;

⁴ NR = Not Reviewed;

⁵ ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on the LRC).

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Appendix A (cont'd): Laboratory Review Checklist: Exception Reports	
Laboratory Name: TestAmerica Denver	LRC Date: 1/31/14
Project Name: Golder Associates, Exide Recycling Center, Frisco TX	Laboratory Job Number: 280-51308-1
Reviewer Name: Teresa Williams	Prep Batch Number(s): 209253, 20918

ER# ¹	Description

¹ER# = Exception Report identification number (an exception Report should be completed for an item if "NR" or "No" is checked on the LRC).

Matrix: Water
Method: PFC_FOSA
Prep Method: 3535
Date Analyzed: 12/10/2013
Job #: 280-49946-1
TALS Batch: 204567
Units: ug/L

Analyte	Instrument #	MDL	DCS Spike	Measured Result	MQL
Perfluorooctane Sulfonamide	LC_LCMS5	0.006	0.015	0.012	0.05

Matrix: Water
Method: PFC
Prep Method: 3535
Date Analyzed: 12/12/2013
Job #: 280-49946-1
TALS Batch: 205162
Units: ug/L

Analyte	Instrument #	MDL	DCS Spike	Measured Result	MQL
Perfluorobutane Sulfonate	LC_LCMS5	0.008	0.018	0.017	0.02
Perfluorobutyric acid	LC_LCMS5	0.010	0.020	0.022	0.02
Perfluorodecane Sulfonate	LC_LCMS5	0.009	0.019	0.018	0.02
Perfluorodecanoic acid	LC_LCMS5	0.008	0.008	0.010	0.02
Perfluorododecanoic acid	LC_LCMS5	0.015	0.020	0.019	0.03
Perfluoroheptanoic acid	LC_LCMS5	0.013	0.020	0.021	0.03
Perfluorohexane Sulfonate	LC_LCMS5	0.007	0.008	0.011	0.03
Perfluorohexanoic acid	LC_LCMS5	0.003	0.008	0.010	0.02
Perfluorononanoic acid	LC_LCMS5	0.017	0.020	0.020	0.04
Perfluorooctanoic acid	LC_LCMS5	0.010	0.020	0.022	0.02
Perfluorooctanoic Sulfonate	LC_LCMS5	0.013	0.019	0.022	0.03
Perfluoropentanoic acid	LC_LCMS5	0.011	0.020	0.016	0.03
Perfluorotetradecanoic acid	LC_LCMS5	0.015	0.020	0.016	0.03
Perfluorotridecanoic acid	LC_LCMS5	0.018	0.020	0.018	0.04
Perfluoroundecanoic acid	LC_LCMS5	0.007	0.008	0.009	0.02



Data Usability Summary Test America Work Orders: 280-51308-1

Sample Dates:	January 17, 2014	Project No.:	1302086
Laboratory:	Test America (Houston TLAP Certification T104704223) (Denver TLAP Certification T104704183-13-8)	Client:	Exide Technologies Inc.
Work Orders:	Work Orders: 280-51308-1		
Intended Use	Affected Property Assessment Report (APAR)		
Site:	Exide Former Operating Plant (FOP), 7471 5 th Street, Frisco, TX		

TESTS/ METHODS

Perfluorinated Compounds (PFCs) by TestAmerica Proprietary Method – Liquid Chromatography (LC)/MS (DV-LC-0012). The analyses were performed by the TestAmerica Denver, CO laboratory.

SAMPLES

1 groundwater sample, 1 field blank, and 1 field MS/MSD pair. See Table 1 for a complete cross-referenced listing of samples.

Golder completed a review of the above chemical analysis data for conformance with the requirements of the Texas Risk Reduction Program (TRRP) guidance document, Review and Reporting of COC Concentration Data (RGG-366/TRRP-13 Revised May 2010) and for adherence to project objectives. The results of the review are discussed in this data usability summary (DUS).

Golder completed the review using the following laboratory and project submittals:

- Laboratory reportable data as defined in TRRP-13;
- Laboratory review checklists (LRC) with the associated exception reports;
- Laboratory Electronic Data Deliverable (EDD); and
- Project field notes from the sampling event.

The review of the reportable data included the quality control (QC) parameters listed below, as required per TRRP-13, using the applicable analytical method and project requirements:

- Data Completeness
- Chain-of-Custody Procedures
- Sample Condition - Holding Time, Preservation, and Containers
- Field Procedures
- Results Reporting Procedures



- Laboratory and Field QC Blanks
- Laboratory Control Spike and Matrix Spike Recoveries
- Surrogate Recoveries
- Laboratory and Field Duplicate Precision

Additionally, Golder used the LRC to evaluate the following QC parameters:

- Method Quantitation Limits (MQLs)
- Method Detection Limits (MDLs)
- Instrument Tuning, Calibration, and Performance
- Internal Standards

Criteria used for this data usability review are as follows:

- Organics: 60-140% spike recovery (and not less than 10% or data is rejected) and \pm MQL difference or 40% RPD (for laboratory duplicates) as recommended in TRRP-13
- Aqueous Samples: \pm 2x MQL difference (if either result is less than 5x MQL) or 30% RPD (for field duplicates) as recommended in TRRP-13

If an item was found outside of the review criteria, the reviewer applied a data qualifier (DQ) and bias code to the results for the affected samples in accordance with TRRP-13. A list of all qualified results and definitions of the qualifier and bias codes are given in Table 2.

GLOSSARY OF TERMS

The following definitions apply for terms related to analyte reporting limits:

MDL (Method Detection Limit) – the minimum concentration of an analyte that the laboratory can measure and report with 99% confidence that the analyte concentration is greater than zero. The MDL is determined by the laboratory for each analyte in a given reagent matrix (water or soil) generally using the procedures specified in 40 CFR Part 136, Appendix B. It is a measure of the concentration an instrument can detect or ‘see’ in a given reagent matrix. TRRP-13 requires that the laboratory routinely check the MDL for reasonableness.

SDL (Sample Detection Limit) – the MDL adjusted to reflect sample-specific actions, such as dilution or use of smaller aliquot sizes than prescribed in the analytical method, and taking into account sample characteristics, sample preparation, and analytical adjustments including dry-weight adjustments. It is a measure of the concentration an instrument can detect or ‘see’ in a given sample. For TRRP, non-detects are reported using the SDL. This term was originally called the SQL (Sample Quantitation Limit) before the TRRP rule revisions effective March 19, 2007.



Unadjusted MQL (Method Quantitation Limit) – the lowest non-zero concentration standard in the laboratory's initial calibration curve calculated using the normal aliquot sizes and final volumes prescribed in the analytical method. The unadjusted MQL is reported by the laboratory for each analyte in a given matrix (water or soil). It is a measure of the concentration an instrument can accurately measure in a typical sample. Per TRRP, the Unadjusted MQLs should be below the Levels of Required Performance (LORPs) for purposes of assessment as well as demonstration of conformance with critical Protective Concentration Levels (PCLs).

MQL – the unadjusted MQL adjusted to reflect sample-specific actions, such as dilution or use of smaller aliquot sizes than prescribed in the analytical method, and takes into account sample characteristics, sample preparation, and analytical adjustments including dry-weight adjustments. It is a measure of the concentration an instrument can accurately measure in a given sample. Analytes with concentrations above the SDL but below the MQL, though present in the sample, may not be accurately measured and are thus flagged as estimated (J).

LABORATORY CERTIFICATION

At the time the laboratory data were generated for this project, the laboratory was NELAC accredited under the Texas Laboratory Accreditation Program (TLAP) for the matrices, methods and parameters of analysis requested on the chain-of-custody forms. A copy of the applicable pages of the laboratory's National Environmental Laboratory Accreditation Program (NELAP) certificate valid during the period in which the laboratory generated the data in this report is included in Appendix 10.5 to this DUS.

USABILITY SUMMARY

1. Usability of Unqualified Non-Detects – Non-detects are reported at the sample detection limit (SDL) as required per TRRP. Additionally, according to the LRC, an MDL study was performed for each analyte and the MDLs were checked for reasonableness for each applicable analyte. The levels of required performance (LORPs) have been established by Golder/PBW as the Residential Assessment Levels (RALs), which are the minimum of the TRRP residential Tier 1 ^{GW}GW_{Ing} PCLs or ^{GW}GW_{Inh-v} applicable for Class 1/Class 2 groundwater. However Tier 1 PCLs have not been developed for PFCs, and thus, the laboratory MQL is acceptable as the LORP. The analytical methods are appropriate and the results can be used to demonstrate conformance with the criteria.
2. Usability of Qualified Data – There are no major QC deficiencies, and thus all data is usable as qualified for the intended use. No qualifications were made by the reviewer in this data package.

Reviewer: Jing Song Xi 3/10/14



QUALITY CONTROL PARAMETERS AND OUTCOMES

Data Completeness

The laboratory data packages contain all necessary data (i.e., the laboratory reportable data per TRRP-13) and the EDD contain all sample results in acceptable format.

Chain-of-Custody

Proper sample custody procedures were used, which confirms that the integrity of the samples was maintained. Additionally, the information on the custody records is complete and agrees with that in the field notes and laboratory reports.

Sample Condition

Samples were collected in appropriate containers, properly preserved in the field, and prepared and analyzed within the holding times as required in the analytical methods, which ensures that the samples were not affected by analyte degradation:

- For 280-51308-1, the temperature of the cooler at receipt was 2.8°C.

Field Procedures

The samples were collected and placed immediately into sterilized jars provided by the laboratory and then into a cooler with ice for overnight delivery to the laboratory.

One site-specific MS/MSD sample and one field blank were collected with the investigative sample.

Results Reporting Procedures

Because PFCs are not regulated by TRRP, a TRRP package was not provided. The laboratory indicated the Reporting Limit (RL) is equivalent to the MQL and the MDL is equivalent the SDL. Equis format EDDs were provided.

Results are reported in mg/L. Non-detects are reported using the SDL as specified per TRRP and detects between the SDL and MQL are reported with a laboratory J-flag. The concentration reported for detects between the SDL and MQL is below the calibration range and thus is considered estimated.

MQLs- The LORPs have been established by Golder/PBW as the Resident Assessment Levels (RALs), which are the minimum of the TRRP residential Tier 1 ^{GW}GW_{Ing} PCLs or ^{GW}GW_{Inh-v} applicable for Class 1/Class 2 groundwater. However Tier 1 PCLs have not been developed for PFCs, and thus, the laboratory MQL is acceptable as the LORP.



MDLs- According to the LRC, an MDL study was performed for each analyte, and the MDLs were checked for reasonableness and either adjusted or supported by the analysis of detectability check standards (DCS) for each applicable analyte as required per TRRP-13. Results for the DCS are included in the data packages.

Laboratory Blanks – Results for samples prepared in the same QC batch as a contaminated method blank may be affected by laboratory contamination. There were no detections in laboratory blanks for this work order.

Field QC Blanks

One field blank was collected to document ambient conditions and if potential contaminants were present in the area of sampling. No analytes were detected in the field QC blank, thus there is no effect on data quality.

Laboratory Control Sample

The laboratory prepared one laboratory control sample (LCS) for each analytical batch and reported recoveries for all of the analytes for each test. The LCS recoveries are within the TRRP recommended criteria, which indicates good accuracy for the preparation and analysis technique on a sample, free of matrix effects.

Matrix Spike Recovery

The laboratory prepared one or more matrix spike (MS) and matrix spike duplicate (MSD) with each analytical batch. MS/MSD recoveries are reported for the same analytes as the LCS for MS/MSD prepared using a sample from the site, which includes 1 MS/MSD for PFCs, as shown in Table 1.

The MS/MSD recoveries are within the TRRP recommended criteria, which indicates good accuracy for the preparation and analysis technique on a sample free of matrix effects.

Surrogate Recovery

Surrogate recoveries are within the TRRP recommended criteria, which indicates good accuracy for the extraction of surrogates from the samples.

Laboratory Duplicate Precision

The laboratory prepared one or more Matrix Spike Duplicate (MSD) with each analytical batch for each test. RPDs are reported for the same analytes as the LCS for MSD/MD prepared using a sample from the site, which includes 1 MSD and MD for PFCs, as shown in Table 1.



The MSD and MD RPDs are within the TRRP recommended criteria, which indicates good precision for the preparation and analysis technique for the given sample matrix.

Field Duplicate Precision

No field duplicates were collected with the sample for this work order.

Instrument Tuning

According to the LRC, instrument tuning met method requirements for the samples, which indicates the GC/MS instrument was properly set up to identify analytes.

Instrument Calibration

According to the LRC, initial and continuing calibration data met method requirements for all reported results, which indicates the instruments were properly calibrated to measure analyte concentrations.

Instrument Performance

According to the LRC, the serial dilution and ICP interference check samples met method requirements, which indicates that no significant matrix interference exists.

Internal Standards

According to the LRC, area counts and retention times were within method requirements.

TABLE 1
CROSS REFERENCE OF FIELD SAMPLE IDENTIFICATIONS AND LABORATORY IDENTIFICATIONS

Lab Sample ID	Field Sample ID	Prep Batch/ Analysis Batch	Sample Date	Matrix	Comments
600-85797-1	MW-38	125474/125593 125529/125606	1/16/2014	Water	site-specific MS/MSD
600-85797-2	MW-41	125474/125593 125529	1/17/2014	Water	
600-85797-3	MW-42	125474/125593 125529	1/17/2014	Water	
600-85797-4	MW-43	125734 125621/126089 125473/125559	1/17/2014	Water	site-specific MS/MSD
600-85797-5	Field Blank	125734	1/17/2014	Water	
600-85797-6	MW-45	125474/125593 125529	1/17/2014	Water	
600-85797-7	B4R	125474/125593 125529/125606	1/17/2014	Water	
600-85797-8	DUP-1	125734 125473/125559	1/17/2014	Water	Duplicate of MW-43
600-85797-9	DUP-2	125474/125593 125529/125606	1/16/2014	Water	Duplicate of MW-38
600-85830-1	Dup-1	125713/126158	1/17/2014	Water	Duplicate of MW-43
600-85830-2	MW-40	125474/125757 125474/125773 125529/125606	1/17/2014	Water	
600-85830-3	MW-39	125474/125757 125474/125773 125529/125606	1/17/2014	Water	

TABLE 2 - QUALIFIED DATA

Lab Sample ID	Field Sample ID	Analyte	Result	Units	Qualifier	Explanation
600-85797-4	MW-43	Acetone	<0.00227	mg/L	UJ	CCV outside control limits
		Benzidine	<0.0179	mg/L	R	LCS recovery below 10%; MS/MSD recovery below 10% (non-detected results)
		4-chloroaniline	<0.000110	mg/L	UJ	LCS recovery and MS/MSD recovery below specifications, >10%
		2-chloronaphthalene	<0.000190	mg/L	UJ	MS/MSD recovery below specifications, >10%
		1,2-dichlorobenzene	<0.000210	mg/L	UJ	MS/MSD recovery below specifications, >10%
		1,3-dichlorobenzene	<0.000100	mg/L	UJ	MS/MSD recovery below specifications, >10%
		1,4-dichlorobenzene	<0.000160	mg/L	UJ	MS/MSD recovery below specifications, >10%
		3,3'-Dichlorobenzidine	<0.000320	mg/L	UJ	MS/MSD recovery below specifications, >10%
		Hexachlorocyclopentadiene	<0.000250	mg/L	UJ	LCS recovery and MS recovery below specifications, >10%
		Hexachloroethane	<0.000170	mg/L	UJ	MS/MSD recovery below specifications, >10%
		Hexachlorobutadiene	<0.000190	mg/L	UJ	MS/MSD recovery below specifications, >10%
		2-Nitroaniline	<0.000350	mg/L	UJ	MS/MSD recovery below specifications, >10%
		N-Nitrosodimethylamine	<0.000160	mg/L	UJ	MS/MSD recovery below specifications, >10%
		1,2,4-Trichlorobenzene	<0.000160	mg/L	UJ	MS/MSD recovery below specifications, >10%
		4,6-Dinitro-2-methylphenol	<0.000160	mg/L	UJ	MS/MSD recovery below specifications, >10%
		2,4-dinitrophenol	<0.000330	mg/L	UJ	MS/MSD recovery below specifications, >10%
		Phenol	<0.000140	mg/L	UJ	MS/MSD recovery below specifications, >10%
		Pentachlorophenol	<0.000960	mg/L	UJ	LCS recovery below specifications, CCV outside control limits
		2,4,6-trichlorophenol	<0.000330	mg/L	UJ	MS/MSD recovery below specifications, >10%
600-85797-5	Field Blank	Acetone	<0.00227	mg/L	UJ	CCV outside control limits
600-85797-8	Dup-1	Acetone	<0.00227	mg/L	UJ	CCV outside control limits
600-85830-1	Dup-1	Benzidine	<0.0179	mg/L	R	LCS/LCSD recovery below 10%, CCV outside control limits (non-detected results)
		4,6-Dinitro-2-methylphenol	<0.000160	mg/L	UJ	CCV outside control limits
		bis (2-chloroisopropyl) ether	<0.000180	mg/L	UJ	CCV outside control limits
		Acenaphthene	<0.00016	mg/L	UJ	LCS/LCSD RPD above specifications
		Acenaphthylene	<0.00016	mg/L	UJ	LCS/LCSD RPD above specifications
		Anthracene	<0.00044	mg/L	UJ	LCS/LCSD RPD above specifications
		Benzo[a]anthracene	<0.00025	mg/L	UJ	LCS/LCSD RPD above specifications
		Benzo[b]fluoranthene	<0.00018	mg/L	UJ	LCS/LCSD RPD above specifications
		Benzo[k]fluoranthene	<0.00016	mg/L	UJ	LCS/LCSD RPD above specifications
		Benzo[a,h]perylene	<0.00035	mg/L	UJ	LCS/LCSD RPD above specifications
		Benzo[a]pyrene	<0.00013	mg/L	UJ	LCS/LCSD RPD above specifications
		Bis(2-chloroethoxy)methane	<0.00019	mg/L	UJ	LCS/LCSD RPD above specifications
		Bis(2-chloroethoxy)ether	<0.00018	mg/L	UJ	LCS/LCSD RPD above specifications
		Bis(2-ethoxyethyl) phthalate	<0.00059	mg/L	UJ	LCS/LCSD RPD above specifications
		4-Bromophenyl phenyl ether	<0.00025	mg/L	UJ	LCS/LCSD RPD above specifications
		Butyl benzyl phthalate	<0.00085	mg/L	UJ	LCS/LCSD RPD above specifications
		4-Chloroaniline	<0.00011	mg/L	UJ	LCS/LCSD RPD above specifications
		2-Chloronaphthalene	<0.00019	mg/L	UJ	LCS/LCSD RPD above specifications
		4-Chlorophenyl phenyl ether	<0.00023	mg/L	UJ	LCS/LCSD RPD above specifications
		Carbazole	<0.00035	mg/L	UJ	LCS/LCSD RPD above specifications
		Chrysene	<0.00024	mg/L	UJ	LCS/LCSD RPD above specifications
		Di-n-butyl phthalate	<0.00187	mg/L	UJ	LCS/LCSD RPD above specifications
		Dibenz[a,h]anthracene	<0.00029	mg/L	UJ	LCS/LCSD RPD above specifications
		Dibenzofuran	<0.00016	mg/L	UJ	LCS/LCSD RPD above specifications
		1,2-Dichlorobenzene	<0.00021	mg/L	UJ	LCS/LCSD RPD above specifications
		1,3-Dichlorobenzene	<0.0001	mg/L	UJ	LCS/LCSD RPD above specifications
		1,4-Dichlorobenzene	<0.00016	mg/L	UJ	LCS/LCSD RPD above specifications
		3,3'-Dichlorobenzidine	<0.00032	mg/L	UJ	LCS/LCSD RPD above specifications
		Diethyl phthalate	<0.00419	mg/L	UJ	LCS/LCSD RPD above specifications
		Dimethyl phthalate	<0.00018	mg/L	UJ	LCS/LCSD RPD above specifications
		2,4-Dinitrotoluene	<0.00032	mg/L	UJ	LCS/LCSD RPD above specifications
		Di-n-octyl phthalate	<0.00016	mg/L	UJ	LCS/LCSD RPD above specifications
		Fluoranthene	<0.00031	mg/L	UJ	LCS/LCSD RPD above specifications
		Fluorene	<0.00012	mg/L	UJ	LCS/LCSD RPD above specifications
		Hexachlorobenzene	<0.00025	mg/L	UJ	LCS/LCSD RPD above specifications
		Hexachlorocyclopentadiene	<0.00015	mg/L	UJ	LCS/LCSD RPD above specifications
		Hexachloroethane	<0.00017	mg/L	UJ	LCS/LCSD RPD above specifications
		Hexachlorobutadiene	<0.00019	mg/L	UJ	LCS/LCSD RPD above specifications
		Indeno[1,2,3-cd]pyrene	<0.00029	mg/L	UJ	LCS/LCSD RPD above specifications
		Isophorone	<0.00015	mg/L	UJ	LCS/LCSD RPD above specifications
		2-Methylnaphthalene	<0.00014	mg/L	UJ	LCS/LCSD RPD above specifications
		Naphthalene	<0.00016	mg/L	UJ	LCS/LCSD RPD above specifications
		2-Nitroaniline	<0.00035	mg/L	UJ	LCS/LCSD RPD above specifications
		4-Nitroaniline	<0.00023	mg/L	UJ	LCS/LCSD RPD above specifications
		Nitrobenzene	<0.0002	mg/L	UJ	LCS/LCSD RPD above specifications
		N-Nitrosodimethylamine	<0.00016	mg/L	UJ	LCS/LCSD RPD above specifications
		N-Nitrosodiphenylamine	<0.00033	mg/L	UJ	LCS/LCSD RPD above specifications
		N-Nitrosodi-n-propylamine	<0.00024	mg/L	UJ	LCS/LCSD RPD above specifications
		Phenanthrene	<0.00029	mg/L	UJ	LCS/LCSD RPD above specifications
		Pyrene	<0.00033	mg/L	UJ	LCS/LCSD RPD above specifications

Note:

Detected results between the SDL and MQL (i.e., results with a laboratory J-flag) have been included in the above table since the reported concentration is below the calibration range.

J Estimated data: The analyte was detected and identified. The associated numerical value (i.e., the reported sample concentration) is the approximate concentration of the analyte in the sample.

UJ Tentatively identified, estimated data: The analysis indicates the presence of the analyte for which there is presumptive evidence to make a tentative identification and the associated numerical value represents its approximate concentration.

NS Not selected: Another result (from a secondary dilution, different analytical method, re-sampling, etc.) is selected for use based on QC outcomes and/or reported concentrations.

R Rejected data: The data is unusable. Serious QC deficiencies make it impossible to verify the absence or presence of this analyte.

U Not detected: The analyte was not detected >5x (10x for common contaminants) the level in an associated blank and thus should be considered not detected above the level of the associated numerical value (i.e., the reported sample concentration).

UJ Estimated data: The analyte was not detected above the reported sample detection limit (SDL). The numerical value of the SDL is estimated and may be inaccurate.

H Bias in sample result is likely to be high

L Bias in sample result is likely to be low

TABLE 3 - FIELD DUPLICATE PRECISION CALCULATIONS

Duplicate and Parent Sample Field Identification	Analyte	Sample Result	Duplicate Result	RPD ^a	Accept or Reject	Qualifier Added
DUP-1/MW-43	No Analytes Detected			-	A	-
DUP-2/MW-38*	Selenium	0.00603	0.00630	4.4	A	-

* DUP-2/MW-38 parent and duplicate sample concentrations were "J" flagged according to lab analysis

^a RPD = ((SR - DR)*200)/(SR + DR)

A - Acceptable Data

NA - Not Analyzed

The RPD test (<50%) applies if both results are greater than 5x MQL. Otherwise, the absolute difference test (< 3x MQL) applies.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Houston

6310 Rothway Street

Houston, TX 77040

Tel: (713)690-4444

TestAmerica Job ID: 600-85797-1

Client Project/Site: Exide Recycling Center

For:

Golder Associates Inc.

500 Century Plaza Drive

Suite 190

Houston, Texas 77073

Attn: Christina Higginbotham



Authorized for release by:

1/30/2014 11:30:43 AM

Sophia Shah, Project Management Assistant I

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Designee for

Dean Joiner, Project Manager II

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Appendix A

Laboratory Data Package Cover Page - Page 1 of 4

This data package is for TestAmerica Houston job number 600-85797-1 and consists of:

- ☒ R1 - Field chain-of-custody documentation;
- ☒ R2 - Sample identification cross-reference;
- ☒ R3 - Test reports (analytical data sheets) for each environmental sample that includes:
 - a. Items consistent with NELAC Chapter 5,
 - b. dilution factors,
 - c. preparation methods,
 - d. cleanup methods, and
 - e. if required for the project, tentatively identified compounds (TICs).
- ☒ R4 - Surrogate recovery data including:
 - a. Calculated recovery (%R), and
 - b. The laboratory's surrogate QC limits.
- ☒ R5 - Test reports/summary forms for blank samples;
- ☒ R6 - Test reports/summary forms for laboratory control samples (LCSs) including:
 - a. LCS spiking amounts,
 - b. Calculated %R for each analyte, and
 - c. The laboratory's LCS QC limits.
- ☒ R7 - Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
 - a. Samples associated with the MS/MSD clearly identified,
 - b. MS/MSD spiking amounts,
 - c. Concentration of each MS/MSD analyte measured in the parent and spiked samples,
 - d. Calculated %Rs and relative percent differences (RPDs), and
 - e. The laboratory's MS/MSD QC limits
- ☒ R8 - Laboratory analytical duplicate (if applicable) recovery and precision:
 - a. The amount of analyte measured in the duplicate,
 - b. The calculated RPD, and
 - c. The laboratory's QC limits for analytical duplicates.
- ☒ R9 - List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
- ☒ R10 - Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.



Sophia Shah
Name (printed)

Signature

1/30/2014
Date

Project Management Assistant
Official Title (printed)

Laboratory Review Checklist: Reportable Data - Page 2 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	1/30/2014
Project Name:	Exide Recycling Center	Laboratory Job Number:	600-85797-1
Reviewer Name:	Dean A Joiner		

# ¹	A ²	Description	Yes	No	NA ³	NR ⁴	ER# ⁵
R1	OI	Chain-of-custody (C-O-C)					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?	X				
R2	OI	Sample and quality control (QC) identification					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	Test reports					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, are TICs reported?			X		
R4	O	Surrogate recovery data					
		Were surrogates added prior to extraction?	X				
		Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
R5	OI	Test reports/summary forms for blank samples					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	Laboratory control samples (LCS):					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		X			R06D
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?	X				
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			R07C
		Were MS/MSD RPDs within laboratory QC limits?		X			R07D
R8	OI	Analytical duplicate data					
		Were appropriate analytical duplicates analyzed for each matrix?	X				
		Were analytical duplicates analyzed at the appropriate frequency?	X				
		Were RPDs or relative standard deviations within the laboratory QC limits?	X				
R9	OI	Method quantitation limits (MQLs):					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	Other problems/anomalies					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				

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2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review checklist: Supporting Data - Page 3 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	1/30/2014
Project Name:	Exide Recycling Center	Laboratory Job Number:	600-85797-1
Reviewer Name:	Dean A Joiner		

# ¹	A ²	Description	Yes	No	NA ³	NR ⁴	ER# ⁵
S1	OI	Initial calibration (ICAL)					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	Initial and continuing calibration verification (ICV and CCV) and continuing calibration blank (CCB):					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?		X			S02D
S3	O	Mass spectral tuning					
		Was the appropriate compound for the method used for tuning?	X				
		Were ion abundance data within the method-required QC limits?	X				
S4	O	Internal standards (IS)					
		Were IS area counts and retention times within the method-required QC limits?	X				
S5	OI	Raw data (NELAC Section 5.5.10)					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	Dual column confirmation					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	Tentatively identified compounds (TICs)					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	Interference Check Sample (ICS) results					
		Were percent recoveries within method QC limits?	X				
S9	I	Serial dilutions, post digestion spikes, and method of standard additions					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
S10	OI	Method detection limit (MDL) studies					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSS?	X				
S11	OI	Proficiency test reports					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	Standards documentation					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	Compound/analyte identification procedures					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	Demonstration of analyst competency (DOC)					
		Was DOC conducted consistent with NELAC Chapter 5?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	Verification/validation documentation for methods (NELAC Chapter 5)					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	Laboratory standard operating procedures (SOPs)					
		Are laboratory SOPs current and on file for each method performed?	X				
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Laboratory Review Checklist: Exception Reports - Page 4 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	1/30/2014
Project Name:	Exide Recycling Center	Laboratory Job Number:	600-85797-1
Reviewer Name:	Dean A Joiner		

ER # ¹	Description
R06D	Method 8270C LL: The laboratory control sample (LCS) associated with batch 125621 was biased low for Benzidine and high for Aniline. Aniline and Benzidine have been identified as poor performing analytes when analyzed using this method; therefore, re-extraction/re-analyses were not performed.
R07C	Method 8260B: The matrix spike duplicate (MSD) recoveries and precision for batch 600-125734 were outside control limits. Sample matrix interference are suspected. Method 8270C LL: The matrix spike (MS) and matrix spike duplicate (MSD) recoveries associated with batch 125621 were biased low for Benzidine. MSD was also biased low for various analytes. Matrix interference is suspected. The matrix spike duplicate (MSD) precision for batch 125621 was outside control limits for various analytes. Non-homogeneity of the sample matrix is suspected.
R07D	Method 6010B: 600-85797-1 DU failed the RPD criteria for the following analyte(s): Selenium, Selenium, Dissolved. Non-homogeneity is suspected. Method 8260B: 600-85797-4 MSD failed the RPD criteria for the following analyte(s): Acetone. Matrix interference is suspected. Method 8270C LL: 600-85797-4 MSD failed the RPD criteria for the following analyte(s): 2,4,6-Trichlorophenol, 2-Nitroaniline, 4-Chloroaniline, Hexachlorocyclopentadiene. Matrix interference is suspected.
S02D	Method 8260B: The continuing calibration verification (CCV) associated with batch 600-125734 recovered above the upper control limit for Acetone. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: CCVIS 600-125734/2. Method 8270C LL: The continuing calibration verification (CCV) for analytical batch 126089 was biased high for CCC analyte Pentachlorophenol (52.0%) All oather target analytes has drif lower than 20% exept, but biased high, for 4-Nitroaniline, 3-Nitroaniline and 4-Chloroaniline; Benzidine was biased low. 4-Nitroaniline, 3-Nitroaniline and 4-Chloroaniline and Benzidine have been identified as poor performing analytes when analyzed using this method; none of these analytes were found in samples; therefore, re-extraction/re-analyses were not performed. The data have been qualified and reported.
Misc	COC filled out in pencil.
<ol style="list-style-type: none"> Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable); NA = Not applicable; NR = Not reviewed; ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked). 	

Detection Check Standard

Matrix: Water
Method: 200.7/6010
Preparation: 200.7P/3010
Date Analyzed: 12/31/2013
Date Prepared: 12/27/2013
Instrument: Spectro01
TALs Batches: 124030, 123788p
Units: mg/L

Analyte	MDL	DCS Spike	Measured Result	MQL
Aluminum	0.006	0.02	0.028176	0.5
Antimony	0.0063	0.01	0.010016	0.05
Arsenic	0.0033	0.01	0.008253	0.01
Barium	0.0022	0.005	0.004098	0.02
Beryllium	0.00134	0.002	0.004019	0.005
Boron	0.0077	0.02	0.019829	0.2
Cadmium	0.00073	0.001	0.001	0.005
Calcium	0.022	0.05	0.060829	1
Chromium	0.0016	0.002	0.003835	0.01
Cobalt	0.00063	0.001	0.000965	0.01
Copper	0.0014	0.002	0.002451	0.01
Iron	0.087	0.1	0.002258	0.4
Lithium	0.0024	0.005	0.006107	0.2
Lead	0.0029	0.005	0.005478	0.01
Selenium	0.0042	0.01	0.009953	0.04
Manganese	0.00084	0.002	0.001988	0.01
Molybdenum	0.0027	0.005	0.005867	0.01
Nickel	0.00179	0.005	0.005669	0.01
Silver	0.0012	0.0025	0.001901	0.01
Sodium	0.02	0.05	0.088115	1
Strontium	0.0005	0.001	0.000897	0.005
Thallium	0.0078	0.02	0.021503	0.03
Tin	0.0028	0.005	0.005708	0.01
Titanium	0.0011	0.002	0.001905	0.01
Vanadium	0.0017	0.002	0.003578	0.01
Zinc	0.0022	0.005	0.004189	0.01

Matrix: Water
Method: 8260B_LL
Date Analyzed: 12/10/2013
TALS Batch: 122598
Units: ug/L

Analyte	MDL	DCS Spike	Measured Result	MQL
1,1,1,2-Tetrachloroethane	0.180	0.500	0.411	1
1,1,1-Trichloroethane	0.150	0.500	0.475	1
1,1,2,2-Tetrachloroethane	0.220	0.500	0.515	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.000	0.250	0.276	1
1,1,2-Trichloroethane	0.280	0.500	0.507	1
1,1-Dichloroethane	0.110	0.250	0.300	1
1,1-Dichloroethene	0.190	0.500	0.439	1
1,1-Dichloropropene	0.210	0.500	0.431	1
1,2,3-Trichlorobenzene	0.570	0.500	0.950	1
1,2,3-Trichloropropane	0.290	0.500	0.568	1
1,2,3-Trimethylbenzene	0.130	0.500	0.449	1
1,2,4-Trichlorobenzene	0.310	0.500	0.713	1
1,2,4-Trimethylbenzene	0.140	0.500	0.434	1
1,2-Dibromo-3-Chloropropane	0.810	0.500	0.665	1
1,2-Dichlorobenzene	0.100	0.250	0.349	1
1,2-Dichloroethane	0.140	0.500	0.500	1
1,2-Dichloroethene, Total	0.300	1.000	0.970	1
1,2-Dichloropropane	0.160	0.500	0.474	1
1,3,5-Trichlorobenzene	1.000	0.500	0.578	1
1,3,5-Trimethylbenzene	0.100	0.250	0.262	1
1,3-Dichlorobenzene	0.130	0.500	0.530	1
1,3-Dichloropropane	0.220	0.500	0.531	1
1,4-Dichlorobenzene	0.110	0.250	0.336	1
1,4-Dioxane	30.790	10.000	11.352	50
1-Chlorohexane	0.260	0.250	0.279	1
2,2-Dichloropropane	0.130	0.500	0.452	1
2-Butanone (MEK)	0.760	1.000	0.963	2
2-Chloro-1,3-butadiene	0.330	0.500	0.406	1
2-Chloroethyl vinyl ether	0.500	1.000	0.798	2
2-Chlorotoluene	0.130	0.500	0.439	1
2-Hexanone	0.350	1.000	0.789	2
3-Chloro-1-propene	0.240	0.500	0.425	2
4-Chlorotoluene	0.140	0.500	0.490	1
4-Isopropyltoluene	0.100	0.250	0.279	1
4-Methyl-2-pentanone (MIBK)	0.450	1.000	0.931	2
Acetone	0.990	1.000	1.452	5
Acrolein	1.630	2.500	2.455	5
Acrylonitrile	0.520	2.500	2.614	5
Benzene	0.080	0.250	0.304	1
Benzyl chloride	0.240	0.500	0.977	1
Bromobenzene	0.190	0.500	0.523	1
Bromoform	0.190	0.500	0.410	1
Bromomethane	0.250	0.500	0.468	2
Butadiene	0.210	0.500	0.496	1
Carbon disulfide	0.240	0.500	0.478	2
Carbon tetrachloride	0.150	0.500	0.378	1
Chlorobenzene	0.120	0.250	0.317	1
Chlorobromomethane	0.180	0.500	0.480	1

DCS = Detection Check Standard
 MQL = Method Quantitation Limit

Matrix: Water
Method: 8260B_LL
Date Analyzed: 12/10/2013
TALS Batch: 122598
Units: ug/L

Analyte	MDL	DCS Spike	Measured Result	MQL
Chlorodibromomethane	0.150	0.500	0.403	1
Chloroethane	0.080	0.250	0.313	2
Chloroform	0.130	0.500	0.471	1
Chloromethane	0.180	0.500	0.516	2
cis-1,2-Dichloroethene	0.060	0.250	0.324	1
cis-1,3-Dichloropropene	0.180	0.500	0.371	1
Cyclohexane	0.160	0.500	0.410	1
Cyclohexanone	8.640	25.000	30.305	50
Dibromomethane	0.520	0.500	0.962	1
Dichlorobromomethane	0.160	0.500	0.403	1
Dichlorodifluoromethane	0.120	0.250	0.245	1
Dichlorofluoromethane	1.000	0.500	0.472	1
Ethyl acetate	0.410	1.000	1.448	2
Ethyl acrylate	0.340	0.500	0.640	2
Ethyl ether	0.150	0.500	0.480	1
Ethyl methacrylate	0.260	0.500	0.415	2
Ethylbenzene	0.110	0.250	0.006	1
Ethylene Dibromide	0.180	0.500	0.474	1
Hexachlorobutadiene	0.170	0.500	0.620	1
Hexane	0.160	0.500	0.404	1
Iodomethane	0.158	0.500	0.484	2
Isobutyl alcohol	3.320	12.500	13.826	10
Isooctane	0.330	0.500	1.097	1
Isopropyl alcohol	3.720	5.000	5.417	10
Isopropyl ether	0.090	0.250	0.271	1
Isopropylbenzene	0.180	0.500	0.427	1
Methyl acetate	0.550	1.250	1.371	2
Methyl methacrylate	0.330	1.000	0.835	1
Methyl tert-butyl ether	0.120	0.250	0.287	1
Methylcyclohexane	0.100	0.250	0.292	1
Methylene Chloride	0.150	0.500	0.488	5
m-Xylene & p-Xylene	0.170	0.500	0.442	1
Naphthalene	0.320	0.500	0.776	2
n-Butyl acetate	0.190	0.500	0.384	1
n-Butylbenzene	0.160	0.500	0.423	1
N-Propylbenzene	0.150	0.500	0.418	1
o-Xylene	0.120	0.250	0.265	1
Propionitrile	0.660	2.500	2.335	2
sec-Butylbenzene	0.120	0.250	0.266	1
Styrene	0.070	0.250	0.230	1
tert-Butylbenzene	0.080	0.250	0.290	1
Tetrachloroethene	0.130	0.500	0.598	1
Toluene	0.150	0.500	0.503	1
trans-1,2-Dichloroethene	0.090	0.250	0.287	1
trans-1,3-Dichloropropene	0.210	0.500	0.763	1
Trichloroethene	0.180	0.500	0.481	1
Trichlorofluoromethane	0.080	0.250	0.234	1
Trihalomethanes, Total	1.000	2.000	1.680	5

DCS = Detection Check Standard
 MQL = Method Quantitation Limit

Matrix: Water
Method: 8260B_LL
Date Analyzed: 12/10/2013
TALS Batch: 122598
Units: ug/L

Analyte	MDL	DCS Spike	Measured Result	MQL
Vinyl acetate	0.210	0.500	0.428	2
Vinyl chloride	0.110	0.250	0.293	2
Xylenes, Total	0.260	1.000	0.900	1

Matrix: Water
Method: 8270C
Prep Method: 3510C
Date Analyzed: 1/10/2014
Job #: 600-85250
TALS Batch: 124708
Units: ug/L

Analyte	MDL	DCS Spike	Measured Result	MQL
1,1'-Biphenyl	1.120	2.500	2.599	10
1,2,4,5-Tetrachlorobenzene	1.680	2.500	2.619	10
1,2,4-Trichlorobenzene	1.140	2.500	2.512	10
1,2-Dichlorobenzene	1.090	2.500	2.475	10
1,2-Dinitrobenzene	1.020	2.500	2.003	10
1,2-Diphenylhydrazine	0.900	2.500	2.890	10
1,3-Dichlorobenzene	1.150	2.500	2.580	10
1,3-Dinitrobenzene	3.470	5.000	4.860	10
1,4-Dichlorobenzene	1.260	2.500	2.580	10
1-Methylnaphthalene	0.530	2.500	2.645	10
2,2'-oxybis[1-chloropropane]	1.700	2.500	2.849	10
2,3,4,6-Tetrachlorophenol	0.830	2.500	1.973	10
2,4,5-Trichlorophenol	1.260	2.500	2.284	10
2,4,6-Trichlorophenol	0.920	2.500	2.319	10
2,4-Dichlorophenol	1.540	2.500	2.415	10
2,4-Dimethylphenol	1.340	2.500	2.781	10
2,4-Dinitrophenol	0.890	5.000	8.242	50
2,4-Dinitrotoluene	0.950	2.500	2.491	10
2,6-Dimethylphenol	1.030	2.500	2.249	10
2,6-Dinitrotoluene	0.640	2.500	2.481	10
2-Chloronaphthalene	1.000	2.500	2.695	10
2-Chlorophenol	0.670	2.500	2.420	10
2-Methylnaphthalene	1.100	2.500	2.692	10
2-Methylphenol	1.010	2.500	2.530	10
2-Nitroaniline	1.130	2.500	2.804	50
2-Nitrophenol	0.630	2.500	2.493	10
3 & 4 Methylphenol	1.880	2.500	2.655	20
3,3'-Dichlorobenzidine	0.580	2.500	4.823	20
3-Nitroaniline	0.510	2.500	2.477	50
4,6-Dinitro-2-methylphenol	1.880	5.000	3.164	50
4-Bromophenyl phenyl ether	0.680	2.500	2.519	10
4-Chloro-3-methylphenol	0.820	2.500	2.796	10
4-Chloroaniline	0.980	2.500	2.228	10
4-Chlorophenyl phenyl ether	0.790	2.500	2.875	10
4-Nitroaniline	1.010	2.500	2.276	50
4-Nitrophenol	0.990	5.000	3.057	50
Acenaphthene	0.530	2.500	2.607	10
Acenaphthylene	0.900	2.500	2.580	10
Acetophenone	1.020	2.500	2.738	10
Aniline	1.620	2.500	1.999	10
Anthracene	0.670	2.500	2.528	10
Azobenzene	10	2.500	2.890	10
Benzidine	0.610	25.000	2.670	50
Benzo[a]anthracene	0.580	2.500	2.537	10
Benzo[a]pyrene	0.570	2.500	2.311	10
Benzo[b]fluoranthene	1.050	2.500	2.564	10

DCS = Detection Check Standard
 MQL = Method Quantitation Limit

Matrix: Water
Method: 8270C
Prep Method: 3510C
Date Analyzed: 1/10/2014
Job #: 600-85250
TALS Batch: 124708
Units: ug/L

Analyte	MDL	DCS Spike	Measured Result	MQL
Benzo[g,h,i]perylene	0.830	2.500	2.142	10
Benzo[k]fluoranthene	0.930	2.500	2.470	10
Benzoic acid	2.510	5.000	2.420	50
Benzyl alcohol	1.180	2.500	2.395	10
Bis(2-chloroethoxy)methane	1.240	2.500	2.776	10
Bis(2-chloroethyl)ether	1.190	2.500	2.577	10
Bis(2-ethylhexyl) phthalate	0.520	2.500	2.735	10
Butyl benzyl phthalate	0.610	2.500	2.781	10
Caprolactam	2.320	5.000	4.190	10
Carbazole	1.140	2.500	2.630	10
Chrysene	0.600	2.500	2.639	10
Dibenz(a,h)anthracene	0.720	2.500	2.244	10
Dibenzofuran	0.990	2.500	2.671	10
Diethyl phthalate	1.140	2.500	2.795	10
Dimethyl phthalate	0.520	2.500	2.597	10
Di-n-butyl phthalate	1.040	2.500	2.836	10
Di-n-octyl phthalate	0.690	2.500	2.335	10
Fluoranthene	0.520	2.500	2.616	10
Fluorene	1.420	2.500	2.748	10
Hexachlorobenzene	0.900	2.500	2.763	10
Hexachlorobutadiene	1.110	2.500	2.591	10
Hexachlorocyclopentadiene	0.580	2.500	1.623	10
Hexachloroethane	1.160	2.500	2.427	10
Indeno[1,2,3-cd]pyrene	0.670	2.500	1.627	10
Isophorone	0.730	2.500	2.806	10
Naphthalene	0.510	2.500	2.664	10
Nitrobenzene	1.180	2.500	3.061	10
N-Nitrosodimethylamine	1.930	2.500	1.988	10
N-Nitrosodi-n-propylamine	0.660	2.500	2.808	10
N-Nitrosodiphenylamine	1.030	2.500	2.590	10
Pentachlorophenol	0.890	5.000	2.274	50
Phenanthrene	0.790	2.500	2.579	10
Phenol	0.950	2.500	2.010	10
Pyrene	1.120	2.500	2.619	10
Pyridine	1.040	2.500	0.536	10
Total Cresols	1.880	5.000	5.200	50

Detection Check Standard

Matrix: Water
Method: TX1005
Preparation: Raymond
Date Analyzed: 10/7/2013
Date Prepared: 10/4/2013
Data File: FID-07.i\A100413B.b\B100413_031.d
Units: mg/L

Analyte	MDL	DCS Spike	Measured Result	MQL
C6-C12	0.83	1	0.633	10
>C12-C28	0.96	1	0.738	10
Total C6-C35	1.56	2	1.37	10

Case Narrative

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-85797-1

Job ID: 600-85797-1

Laboratory: TestAmerica Houston

Narrative

Job Narrative
600-85797-1

Comments

No additional comments.

Receipt

The samples were received on 1/18/2014 11:09 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.5° C.

Method Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-85797-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL HOU
8270C LL	Semivolatile Organic Compounds by GCMS - Low Levels	SW846	TAL HOU
TX 1005	Texas - Total Petroleum Hydrocarbon (GC)	TCEQ	TAL HOU
6010B	Metals (ICP)	SW846	TAL HOU

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TCEQ = Texas Commission of Environmental Quality

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Sample Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-85797-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
600-85797-1	MW-38	Water	01/16/14 15:25	01/18/14 11:09
600-85797-2	MW-41	Water	01/17/14 12:30	01/18/14 11:09
600-85797-3	MW-42	Water	01/17/14 11:35	01/18/14 11:09
600-85797-4	MW-43	Water	01/17/14 09:45	01/18/14 11:09
600-85797-5	Field Blank	Water	01/17/14 09:50	01/18/14 11:09
600-85797-6	MW-45	Water	01/17/14 13:20	01/18/14 11:09
600-85797-7	B4R	Water	01/17/14 08:35	01/18/14 11:09
600-85797-8	DUP-1	Water	01/17/14 00:00	01/18/14 11:09
600-85797-9	DUP-2	Water	01/16/14 00:00	01/18/14 11:09

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-85797-1

Client Sample ID: MW-38

Date Collected: 01/16/14 15:25

Date Received: 01/18/14 11:09

Lab Sample ID: 600-85797-1

Matrix: Water

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00328	U	0.0100	0.00328	mg/L		01/21/14 13:26	01/22/14 15:10	1
Cadmium	0.000350	U	0.00500	0.000350	mg/L		01/21/14 13:26	01/22/14 15:10	1
Lead	0.00290	U	0.0100	0.00290	mg/L		01/21/14 13:26	01/22/14 15:10	1
Selenium	0.00603	J	0.0400	0.00417	mg/L		01/21/14 13:26	01/22/14 15:10	1

Method: 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic, Dissolved	0.00328	U	0.0100	0.00328	mg/L		01/22/14 08:29	01/22/14 18:09	1
Cadmium, Dissolved	0.000350	U	0.00500	0.000350	mg/L		01/22/14 08:29	01/22/14 18:09	1
Lead, Dissolved	0.00290	U	0.0100	0.00290	mg/L		01/22/14 08:29	01/22/14 18:09	1
Selenium, Dissolved	0.00470	J	0.0400	0.00417	mg/L		01/22/14 08:29	01/22/14 18:09	1

Client Sample ID: MW-41

Date Collected: 01/17/14 12:30

Date Received: 01/18/14 11:09

Lab Sample ID: 600-85797-2

Matrix: Water

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000350	U	0.00500	0.000350	mg/L		01/21/14 13:26	01/22/14 15:19	1
Lead	0.00699	J	0.0100	0.00290	mg/L		01/21/14 13:26	01/22/14 15:19	1

Client Sample ID: MW-42

Date Collected: 01/17/14 11:35

Date Received: 01/18/14 11:09

Lab Sample ID: 600-85797-3

Matrix: Water

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000350	U	0.00500	0.000350	mg/L		01/21/14 13:26	01/22/14 15:26	1
Lead	0.00369	J	0.0100	0.00290	mg/L		01/21/14 13:26	01/22/14 15:26	1

Client Sample ID: MW-43

Date Collected: 01/17/14 09:45

Date Received: 01/18/14 11:09

Lab Sample ID: 600-85797-4

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	0.00227	U	0.0100	0.00227	mg/L			01/23/14 19:38	1
Benzene	0.000560	U	0.00500	0.000560	mg/L			01/23/14 19:38	1
Chlorobromomethane	0.000810	U	0.00500	0.000810	mg/L			01/23/14 19:38	1
Bromoform	0.000770	U	0.00500	0.000770	mg/L			01/23/14 19:38	1
Bromomethane	0.00215	U	0.0100	0.00215	mg/L			01/23/14 19:38	1
2-Butanone (MEK)	0.00157	U	0.0100	0.00157	mg/L			01/23/14 19:38	1
Carbon disulfide	0.00170	U	0.00500	0.00170	mg/L			01/23/14 19:38	1
Carbon tetrachloride	0.000920	U	0.00500	0.000920	mg/L			01/23/14 19:38	1
Dibromochloromethane	0.000920	U	0.00500	0.000920	mg/L			01/23/14 19:38	1
Chlorobenzene	0.000820	U	0.00500	0.000820	mg/L			01/23/14 19:38	1
Chloroethane	0.00173	U	0.0100	0.00173	mg/L			01/23/14 19:38	1
Chloroform	0.000820	U	0.00500	0.000820	mg/L			01/23/14 19:38	1
Chloromethane	0.000850	U	0.0100	0.000850	mg/L			01/23/14 19:38	1
1,1-Dichloroethane	0.000500	U	0.00500	0.000500	mg/L			01/23/14 19:38	1

TestAmerica Houston

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-85797-1

Client Sample ID: MW-43

Lab Sample ID: 600-85797-4

Date Collected: 01/17/14 09:45

Matrix: Water

Date Received: 01/18/14 11:09

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	0.00101	U	0.00500	0.00101	mg/L			01/23/14 19:38	1
1,1-Dichloroethene	0.000760	U	0.00500	0.000760	mg/L			01/23/14 19:38	1
cis-1,2-Dichloroethene	0.000560	U	0.00500	0.000560	mg/L			01/23/14 19:38	1
trans-1,2-Dichloroethene	0.000880	U	0.00500	0.000880	mg/L			01/23/14 19:38	1
1,2-Dichloropropane	0.00141	U	0.00500	0.00141	mg/L			01/23/14 19:38	1
cis-1,3-Dichloropropene	0.000970	U	0.00500	0.000970	mg/L			01/23/14 19:38	1
trans-1,3-Dichloropropene	0.000590	U	0.00500	0.000590	mg/L			01/23/14 19:38	1
Ethylbenzene	0.00129	U	0.00500	0.00129	mg/L			01/23/14 19:38	1
2-Hexanone	0.00142	U	0.0100	0.00142	mg/L			01/23/14 19:38	1
Methylene Chloride	0.00143	U	0.0100	0.00143	mg/L			01/23/14 19:38	1
4-Methyl-2-pentanone (MIBK)	0.00111	U	0.0100	0.00111	mg/L			01/23/14 19:38	1
Styrene	0.000560	U	0.00500	0.000560	mg/L			01/23/14 19:38	1
1,1,2,2-Tetrachloroethane	0.000800	U	0.00500	0.000800	mg/L			01/23/14 19:38	1
Tetrachloroethene	0.00124	U	0.00500	0.00124	mg/L			01/23/14 19:38	1
Toluene	0.000550	U	0.00500	0.000550	mg/L			01/23/14 19:38	1
1,1,1-Trichloroethane	0.000980	U	0.00500	0.000980	mg/L			01/23/14 19:38	1
1,1,2-Trichloroethane	0.000530	U	0.00500	0.000530	mg/L			01/23/14 19:38	1
Trichloroethene	0.00158	U	0.00500	0.00158	mg/L			01/23/14 19:38	1
Vinyl acetate	0.000600	U	0.0100	0.000600	mg/L			01/23/14 19:38	1
Vinyl chloride	0.000850	U	0.00500	0.000850	mg/L			01/23/14 19:38	1
o-Xylene	0.000930	U	0.00500	0.000930	mg/L			01/23/14 19:38	1
m-Xylene & p-Xylene	0.00126	U	0.0100	0.00126	mg/L			01/23/14 19:38	1
Xylenes, Total	0.00198	U	0.00500	0.00198	mg/L			01/23/14 19:38	1
Bromodichloromethane	0.000760	U	0.00500	0.000760	mg/L			01/23/14 19:38	1
1,2-Dichloroethene, Total	0.000840	U	0.0100	0.000840	mg/L			01/23/14 19:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	75		70 - 130		01/23/14 19:38	1
Dibromofluoromethane	70		62 - 130		01/23/14 19:38	1
4-Bromofluorobenzene	101		67 - 139		01/23/14 19:38	1
1,2-Dichloroethane-d4 (Surr)	77		50 - 134		01/23/14 19:38	1

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.000160	U	0.000500	0.000160	mg/L		01/22/14 16:35	01/25/14 01:38	1
Acenaphthylene	0.000160	U	0.000500	0.000160	mg/L		01/22/14 16:35	01/25/14 01:38	1
Anthracene	0.000440	U	0.000500	0.000440	mg/L		01/22/14 16:35	01/25/14 01:38	1
Benzidine	0.0179	U *	0.0500	0.0179	mg/L		01/22/14 16:35	01/25/14 01:38	1
Benzo[a]anthracene	0.000250	U	0.000500	0.000250	mg/L		01/22/14 16:35	01/25/14 01:38	1
Benzo[b]fluoranthene	0.000180	U	0.000500	0.000180	mg/L		01/22/14 16:35	01/25/14 01:38	1
Benzo[k]fluoranthene	0.000160	U	0.000500	0.000160	mg/L		01/22/14 16:35	01/25/14 01:38	1
Benzo[g,h,i]perylene	0.000350	U	0.000500	0.000350	mg/L		01/22/14 16:35	01/25/14 01:38	1
Benzo[a]pyrene	0.000130	U	0.000500	0.000130	mg/L		01/22/14 16:35	01/25/14 01:38	1
Bis(2-chloroethoxy)methane	0.000190	U	0.000500	0.000190	mg/L		01/22/14 16:35	01/25/14 01:38	1
Bis(2-chloroethyl)ether	0.000180	U	0.000500	0.000180	mg/L		01/22/14 16:35	01/25/14 01:38	1
Bis(2-ethylhexyl) phthalate	0.000590	U	0.00150	0.000590	mg/L		01/22/14 16:35	01/25/14 01:38	1
4-Bromophenyl phenyl ether	0.000250	U	0.000500	0.000250	mg/L		01/22/14 16:35	01/25/14 01:38	1
Butyl benzyl phthalate	0.000850	U	0.00250	0.000850	mg/L		01/22/14 16:35	01/25/14 01:38	1
4-Chloroaniline	0.000110	U	0.000500	0.000110	mg/L		01/22/14 16:35	01/25/14 01:38	1
2-Chloronaphthalene	0.000190	U	0.000500	0.000190	mg/L		01/22/14 16:35	01/25/14 01:38	1

TestAmerica Houston

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-85797-1

Client Sample ID: MW-43

Lab Sample ID: 600-85797-4

Date Collected: 01/17/14 09:45

Matrix: Water

Date Received: 01/18/14 11:09

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels (Continued)

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorophenyl phenyl ether	0.000230	U	0.000500	0.000230	mg/L		01/22/14 16:35	01/25/14 01:38	1
Carbazole	0.000350	U	0.000500	0.000350	mg/L		01/22/14 16:35	01/25/14 01:38	1
Chrysene	0.000240	U	0.000500	0.000240	mg/L		01/22/14 16:35	01/25/14 01:38	1
Di-n-butyl phthalate	0.00187	U	0.00500	0.00187	mg/L		01/22/14 16:35	01/25/14 01:38	1
Dibenz(a,h)anthracene	0.000290	U	0.000500	0.000290	mg/L		01/22/14 16:35	01/25/14 01:38	1
Dibenzofuran	0.000160	U	0.000500	0.000160	mg/L		01/22/14 16:35	01/25/14 01:38	1
1,2-Dichlorobenzene	0.000210	U	0.000500	0.000210	mg/L		01/22/14 16:35	01/25/14 01:38	1
1,3-Dichlorobenzene	0.000100	U	0.000500	0.000100	mg/L		01/22/14 16:35	01/25/14 01:38	1
1,4-Dichlorobenzene	0.000160	U	0.000500	0.000160	mg/L		01/22/14 16:35	01/25/14 01:38	1
3,3'-Dichlorobenzidine	0.000320	U	0.000500	0.000320	mg/L		01/22/14 16:35	01/25/14 01:38	1
Diethyl phthalate	0.00419	U	0.00500	0.00419	mg/L		01/22/14 16:35	01/25/14 01:38	1
Dimethyl phthalate	0.000180	U	0.00500	0.000180	mg/L		01/22/14 16:35	01/25/14 01:38	1
2,4-Dinitrotoluene	0.000320	U	0.000500	0.000320	mg/L		01/22/14 16:35	01/25/14 01:38	1
Di-n-octyl phthalate	0.000160	U	0.00500	0.000160	mg/L		01/22/14 16:35	01/25/14 01:38	1
Fluoranthene	0.000310	U	0.000500	0.000310	mg/L		01/22/14 16:35	01/25/14 01:38	1
Fluorene	0.000120	U	0.000500	0.000120	mg/L		01/22/14 16:35	01/25/14 01:38	1
Hexachlorobenzene	0.000250	U	0.000500	0.000250	mg/L		01/22/14 16:35	01/25/14 01:38	1
Hexachlorocyclopentadiene	0.000150	U	0.000500	0.000150	mg/L		01/22/14 16:35	01/25/14 01:38	1
Hexachloroethane	0.000170	U	0.000500	0.000170	mg/L		01/22/14 16:35	01/25/14 01:38	1
Hexachlorobutadiene	0.000190	U	0.000500	0.000190	mg/L		01/22/14 16:35	01/25/14 01:38	1
Indeno[1,2,3-cd]pyrene	0.000290	U	0.000500	0.000290	mg/L		01/22/14 16:35	01/25/14 01:38	1
Isophorone	0.000150	U	0.000500	0.000150	mg/L		01/22/14 16:35	01/25/14 01:38	1
2-Methylnaphthalene	0.000140	U	0.000500	0.000140	mg/L		01/22/14 16:35	01/25/14 01:38	1
Naphthalene	0.000160	U	0.000500	0.000160	mg/L		01/22/14 16:35	01/25/14 01:38	1
2-Nitroaniline	0.000350	U	0.000500	0.000350	mg/L		01/22/14 16:35	01/25/14 01:38	1
3-Nitroaniline	0.000130	U	0.000500	0.000130	mg/L		01/22/14 16:35	01/25/14 01:38	1
4-Nitroaniline	0.000230	U	0.000500	0.000230	mg/L		01/22/14 16:35	01/25/14 01:38	1
Nitrobenzene	0.000200	U	0.000500	0.000200	mg/L		01/22/14 16:35	01/25/14 01:38	1
N-Nitrosodimethylamine	0.000160	U	0.000500	0.000160	mg/L		01/22/14 16:35	01/25/14 01:38	1
N-Nitrosodiphenylamine	0.000330	U	0.000500	0.000330	mg/L		01/22/14 16:35	01/25/14 01:38	1
N-Nitrosodi-n-propylamine	0.000240	U	0.000500	0.000240	mg/L		01/22/14 16:35	01/25/14 01:38	1
Phenanthrene	0.000290	U	0.000500	0.000290	mg/L		01/22/14 16:35	01/25/14 01:38	1
Pyrene	0.000330	U	0.000500	0.000330	mg/L		01/22/14 16:35	01/25/14 01:38	1
1,2,4-Trichlorobenzene	0.000160	U	0.000500	0.000160	mg/L		01/22/14 16:35	01/25/14 01:38	1
Benzyl alcohol	0.000510	U	0.000500	0.000510	mg/L		01/22/14 16:35	01/25/14 01:38	1
4-Chloro-3-methylphenol	0.000250	U	0.000500	0.000250	mg/L		01/22/14 16:35	01/25/14 01:38	1
2-Chlorophenol	0.000220	U	0.000500	0.000220	mg/L		01/22/14 16:35	01/25/14 01:38	1
2-Methylphenol	0.000190	U	0.000500	0.000190	mg/L		01/22/14 16:35	01/25/14 01:38	1
3 & 4 Methylphenol	0.000160	U	0.00100	0.000160	mg/L		01/22/14 16:35	01/25/14 01:38	1
2,4-Dichlorophenol	0.000260	U	0.000500	0.000260	mg/L		01/22/14 16:35	01/25/14 01:38	1
2,4-Dimethylphenol	0.000180	U	0.000500	0.000180	mg/L		01/22/14 16:35	01/25/14 01:38	1
4,6-Dinitro-2-methylphenol	0.000160	U	0.00100	0.000160	mg/L		01/22/14 16:35	01/25/14 01:38	1
2,4-Dinitrophenol	0.000400	U	0.00100	0.000400	mg/L		01/22/14 16:35	01/25/14 01:38	1
2-Nitrophenol	0.000220	U	0.000500	0.000220	mg/L		01/22/14 16:35	01/25/14 01:38	1
4-Nitrophenol	0.000330	U	0.00100	0.000330	mg/L		01/22/14 16:35	01/25/14 01:38	1
Pentachlorophenol	0.000960	U	0.00100	0.000960	mg/L		01/22/14 16:35	01/25/14 01:38	1
Phenol	0.000140	U	0.000500	0.000140	mg/L		01/22/14 16:35	01/25/14 01:38	1
2,4,5-Trichlorophenol	0.000290	U	0.000500	0.000290	mg/L		01/22/14 16:35	01/25/14 01:38	1
2,4,6-Trichlorophenol	0.000330	U	0.000500	0.000330	mg/L		01/22/14 16:35	01/25/14 01:38	1

TestAmerica Houston

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-85797-1

Client Sample ID: MW-43

Lab Sample ID: 600-85797-4

Date Collected: 01/17/14 09:45

Matrix: Water

Date Received: 01/18/14 11:09

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels (Continued)

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,6-Dinitrotoluene	0.000290	U	0.000500	0.000290	mg/L		01/22/14 16:35	01/25/14 01:38	1
bis (2-Chloroisopropyl) ether	0.000180	U	0.000500	0.000180	mg/L		01/22/14 16:35	01/25/14 01:38	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	83		33 - 141				01/22/14 16:35	01/25/14 01:38	1
Nitrobenzene-d5	65		47 - 120				01/22/14 16:35	01/25/14 01:38	1
2-Fluorophenol	59		18 - 120				01/22/14 16:35	01/25/14 01:38	1
2-Fluorobiphenyl	61		43 - 120				01/22/14 16:35	01/25/14 01:38	1
2,4,6-Tribromophenol	60		44 - 123				01/22/14 16:35	01/25/14 01:38	1
Phenol-d5 (Surr)	54		12 - 128				01/22/14 16:35	01/25/14 01:38	1

Method: TX 1005 - Texas - Total Petroleum Hydrocarbon (GC)

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C6-C12	0.797	U	4.80	0.797	mg/L		01/21/14 13:18	01/21/14 20:07	1
>C12-C28	0.922	U	4.80	0.922	mg/L		01/21/14 13:18	01/21/14 20:07	1
>C28-C35	0.922	U	4.80	0.922	mg/L		01/21/14 13:18	01/21/14 20:07	1
C6-C35	1.50	U	4.80	1.50	mg/L		01/21/14 13:18	01/21/14 20:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	101		70 - 130				01/21/14 13:18	01/21/14 20:07	1

Client Sample ID: Field Blank

Lab Sample ID: 600-85797-5

Date Collected: 01/17/14 09:50

Matrix: Water

Date Received: 01/18/14 11:09

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	0.00227	U	0.0100	0.00227	mg/L			01/23/14 20:02	1
Benzene	0.000560	U	0.00500	0.000560	mg/L			01/23/14 20:02	1
Chlorobromomethane	0.000810	U	0.00500	0.000810	mg/L			01/23/14 20:02	1
Bromoform	0.000770	U	0.00500	0.000770	mg/L			01/23/14 20:02	1
Bromomethane	0.00215	U	0.0100	0.00215	mg/L			01/23/14 20:02	1
2-Butanone (MEK)	0.00157	U	0.0100	0.00157	mg/L			01/23/14 20:02	1
Carbon disulfide	0.00170	U	0.00500	0.00170	mg/L			01/23/14 20:02	1
Carbon tetrachloride	0.000920	U	0.00500	0.000920	mg/L			01/23/14 20:02	1
Dibromochloromethane	0.000920	U	0.00500	0.000920	mg/L			01/23/14 20:02	1
Chlorobenzene	0.000820	U	0.00500	0.000820	mg/L			01/23/14 20:02	1
Chloroethane	0.00173	U	0.0100	0.00173	mg/L			01/23/14 20:02	1
Chloroform	0.000820	U	0.00500	0.000820	mg/L			01/23/14 20:02	1
Chloromethane	0.000850	U	0.0100	0.000850	mg/L			01/23/14 20:02	1
1,1-Dichloroethane	0.000500	U	0.00500	0.000500	mg/L			01/23/14 20:02	1
1,2-Dichloroethane	0.00101	U	0.00500	0.00101	mg/L			01/23/14 20:02	1
1,1-Dichloroethene	0.000760	U	0.00500	0.000760	mg/L			01/23/14 20:02	1
cis-1,2-Dichloroethene	0.000560	U	0.00500	0.000560	mg/L			01/23/14 20:02	1
trans-1,2-Dichloroethene	0.000880	U	0.00500	0.000880	mg/L			01/23/14 20:02	1
1,2-Dichloropropane	0.00141	U	0.00500	0.00141	mg/L			01/23/14 20:02	1
cis-1,3-Dichloropropene	0.000970	U	0.00500	0.000970	mg/L			01/23/14 20:02	1
trans-1,3-Dichloropropene	0.000590	U	0.00500	0.000590	mg/L			01/23/14 20:02	1
Ethylbenzene	0.00129	U	0.00500	0.00129	mg/L			01/23/14 20:02	1
2-Hexanone	0.00142	U	0.0100	0.00142	mg/L			01/23/14 20:02	1

TestAmerica Houston

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-85797-1

Client Sample ID: Field Blank

Lab Sample ID: 600-85797-5

Date Collected: 01/17/14 09:50

Matrix: Water

Date Received: 01/18/14 11:09

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	0.00143	U	0.0100	0.00143	mg/L			01/23/14 20:02	1
4-Methyl-2-pentanone (MIBK)	0.00111	U	0.0100	0.00111	mg/L			01/23/14 20:02	1
Styrene	0.000560	U	0.00500	0.000560	mg/L			01/23/14 20:02	1
1,1,2,2-Tetrachloroethane	0.000800	U	0.00500	0.000800	mg/L			01/23/14 20:02	1
Tetrachloroethene	0.00124	U	0.00500	0.00124	mg/L			01/23/14 20:02	1
Toluene	0.000550	U	0.00500	0.000550	mg/L			01/23/14 20:02	1
1,1,1-Trichloroethane	0.000980	U	0.00500	0.000980	mg/L			01/23/14 20:02	1
1,1,2-Trichloroethane	0.000530	U	0.00500	0.000530	mg/L			01/23/14 20:02	1
Trichloroethene	0.00158	U	0.00500	0.00158	mg/L			01/23/14 20:02	1
Vinyl acetate	0.000600	U	0.0100	0.000600	mg/L			01/23/14 20:02	1
Vinyl chloride	0.000850	U	0.00500	0.000850	mg/L			01/23/14 20:02	1
o-Xylene	0.000930	U	0.00500	0.000930	mg/L			01/23/14 20:02	1
m-Xylene & p-Xylene	0.00126	U	0.0100	0.00126	mg/L			01/23/14 20:02	1
Xylenes, Total	0.00198	U	0.00500	0.00198	mg/L			01/23/14 20:02	1
Bromodichloromethane	0.000760	U	0.00500	0.000760	mg/L			01/23/14 20:02	1
1,2-Dichloroethene, Total	0.000840	U	0.0100	0.000840	mg/L			01/23/14 20:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	79		70 - 130		01/23/14 20:02	1
Dibromofluoromethane	68		62 - 130		01/23/14 20:02	1
4-Bromofluorobenzene	106		67 - 139		01/23/14 20:02	1
1,2-Dichloroethane-d4 (Surr)	80		50 - 134		01/23/14 20:02	1

Client Sample ID: MW-45

Lab Sample ID: 600-85797-6

Date Collected: 01/17/14 13:20

Matrix: Water

Date Received: 01/18/14 11:09

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00328	U	0.0100	0.00328	mg/L		01/21/14 13:26	01/22/14 15:28	1
Cadmium	0.000350	U	0.00500	0.000350	mg/L		01/21/14 13:26	01/22/14 15:28	1
Lead	0.00461	J	0.0100	0.00290	mg/L		01/21/14 13:26	01/22/14 15:28	1
Selenium	0.00417	U	0.0400	0.00417	mg/L		01/21/14 13:26	01/22/14 15:28	1

Client Sample ID: B4R

Lab Sample ID: 600-85797-7

Date Collected: 01/17/14 08:35

Matrix: Water

Date Received: 01/18/14 11:09

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000500	J	0.00500	0.000350	mg/L		01/22/14 08:29	01/22/14 18:19	1
Lead	0.00290	U	0.0100	0.00290	mg/L		01/22/14 08:29	01/22/14 18:19	1

Method: 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic, Dissolved	0.00328	U	0.0100	0.00328	mg/L		01/21/14 13:26	01/22/14 15:30	1
Cadmium, Dissolved	0.000350	U	0.00500	0.000350	mg/L		01/21/14 13:26	01/22/14 15:30	1
Lead, Dissolved	0.00569	J	0.0100	0.00290	mg/L		01/21/14 13:26	01/22/14 15:30	1
Selenium, Dissolved	0.00417	U	0.0400	0.00417	mg/L		01/21/14 13:26	01/22/14 15:30	1

TestAmerica Houston

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-85797-1

Client Sample ID: DUP-1

Lab Sample ID: 600-85797-8

Date Collected: 01/17/14 00:00

Matrix: Water

Date Received: 01/18/14 11:09

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	0.00227	U	0.0100	0.00227	mg/L			01/23/14 20:26	1
Benzene	0.000560	U	0.00500	0.000560	mg/L			01/23/14 20:26	1
Chlorobromomethane	0.000810	U	0.00500	0.000810	mg/L			01/23/14 20:26	1
Bromoform	0.000770	U	0.00500	0.000770	mg/L			01/23/14 20:26	1
Bromomethane	0.00215	U	0.0100	0.00215	mg/L			01/23/14 20:26	1
2-Butanone (MEK)	0.00157	U	0.0100	0.00157	mg/L			01/23/14 20:26	1
Carbon disulfide	0.00170	U	0.00500	0.00170	mg/L			01/23/14 20:26	1
Carbon tetrachloride	0.000920	U	0.00500	0.000920	mg/L			01/23/14 20:26	1
Dibromochloromethane	0.000920	U	0.00500	0.000920	mg/L			01/23/14 20:26	1
Chlorobenzene	0.000820	U	0.00500	0.000820	mg/L			01/23/14 20:26	1
Chloroethane	0.00173	U	0.0100	0.00173	mg/L			01/23/14 20:26	1
Chloroform	0.000820	U	0.00500	0.000820	mg/L			01/23/14 20:26	1
Chloromethane	0.000850	U	0.0100	0.000850	mg/L			01/23/14 20:26	1
1,1-Dichloroethane	0.000500	U	0.00500	0.000500	mg/L			01/23/14 20:26	1
1,2-Dichloroethane	0.00101	U	0.00500	0.00101	mg/L			01/23/14 20:26	1
1,1-Dichloroethene	0.000760	U	0.00500	0.000760	mg/L			01/23/14 20:26	1
cis-1,2-Dichloroethene	0.000560	U	0.00500	0.000560	mg/L			01/23/14 20:26	1
trans-1,2-Dichloroethene	0.000880	U	0.00500	0.000880	mg/L			01/23/14 20:26	1
1,2-Dichloropropane	0.00141	U	0.00500	0.00141	mg/L			01/23/14 20:26	1
cis-1,3-Dichloropropene	0.000970	U	0.00500	0.000970	mg/L			01/23/14 20:26	1
trans-1,3-Dichloropropene	0.000590	U	0.00500	0.000590	mg/L			01/23/14 20:26	1
Ethylbenzene	0.00129	U	0.00500	0.00129	mg/L			01/23/14 20:26	1
2-Hexanone	0.00142	U	0.0100	0.00142	mg/L			01/23/14 20:26	1
Methylene Chloride	0.00143	U	0.0100	0.00143	mg/L			01/23/14 20:26	1
4-Methyl-2-pentanone (MIBK)	0.00111	U	0.0100	0.00111	mg/L			01/23/14 20:26	1
Styrene	0.000560	U	0.00500	0.000560	mg/L			01/23/14 20:26	1
1,1,2,2-Tetrachloroethane	0.000800	U	0.00500	0.000800	mg/L			01/23/14 20:26	1
Tetrachloroethene	0.00124	U	0.00500	0.00124	mg/L			01/23/14 20:26	1
Toluene	0.000550	U	0.00500	0.000550	mg/L			01/23/14 20:26	1
1,1,1-Trichloroethane	0.000980	U	0.00500	0.000980	mg/L			01/23/14 20:26	1
1,1,2-Trichloroethane	0.000530	U	0.00500	0.000530	mg/L			01/23/14 20:26	1
Trichloroethene	0.00158	U	0.00500	0.00158	mg/L			01/23/14 20:26	1
Vinyl acetate	0.000600	U	0.0100	0.000600	mg/L			01/23/14 20:26	1
Vinyl chloride	0.000850	U	0.00500	0.000850	mg/L			01/23/14 20:26	1
o-Xylene	0.000930	U	0.00500	0.000930	mg/L			01/23/14 20:26	1
m-Xylene & p-Xylene	0.00126	U	0.0100	0.00126	mg/L			01/23/14 20:26	1
Xylenes, Total	0.00198	U	0.00500	0.00198	mg/L			01/23/14 20:26	1
Bromodichloromethane	0.000760	U	0.00500	0.000760	mg/L			01/23/14 20:26	1
1,2-Dichloroethene, Total	0.000840	U	0.0100	0.000840	mg/L			01/23/14 20:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	75		70 - 130		01/23/14 20:26	1
Dibromofluoromethane	66		62 - 130		01/23/14 20:26	1
4-Bromofluorobenzene	98		67 - 139		01/23/14 20:26	1
1,2-Dichloroethane-d4 (Surr)	75		50 - 134		01/23/14 20:26	1

Method: TX 1005 - Texas - Total Petroleum Hydrocarbon (GC)

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C6-C12	0.809	U	4.87	0.809	mg/L		01/21/14 13:18	01/21/14 21:44	1
>C12-C28	0.936	U	4.87	0.936	mg/L		01/21/14 13:18	01/21/14 21:44	1

TestAmerica Houston

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-85797-1

Client Sample ID: DUP-1

Date Collected: 01/17/14 00:00

Date Received: 01/18/14 11:09

Lab Sample ID: 600-85797-8

Matrix: Water

Method: TX 1005 - Texas - Total Petroleum Hydrocarbon (GC) (Continued)

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C28-C35	0.936	U	4.87	0.936	mg/L	—	01/21/14 13:18	01/21/14 21:44	1
C6-C35	1.52	U	4.87	1.52	mg/L	—	01/21/14 13:18	01/21/14 21:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	105		70 - 130				01/21/14 13:18	01/21/14 21:44	1

Client Sample ID: DUP-2

Date Collected: 01/16/14 00:00

Date Received: 01/18/14 11:09

Lab Sample ID: 600-85797-9

Matrix: Water

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00328	U	0.0100	0.00328	mg/L	—	01/21/14 13:26	01/22/14 15:32	1
Cadmium	0.000350	U	0.00500	0.000350	mg/L	—	01/21/14 13:26	01/22/14 15:32	1
Lead	0.00290	U	0.0100	0.00290	mg/L	—	01/21/14 13:26	01/22/14 15:32	1
Selenium	0.00630	J	0.0400	0.00417	mg/L	—	01/21/14 13:26	01/22/14 15:32	1

Method: 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic, Dissolved	0.00328	U	0.0100	0.00328	mg/L	—	01/22/14 08:29	01/22/14 18:29	1
Cadmium, Dissolved	0.000350	U	0.00500	0.000350	mg/L	—	01/22/14 08:29	01/22/14 18:29	1
Lead, Dissolved	0.00290	U	0.0100	0.00290	mg/L	—	01/22/14 08:29	01/22/14 18:29	1
Selenium, Dissolved	0.00417	U	0.0400	0.00417	mg/L	—	01/22/14 08:29	01/22/14 18:29	1

TestAmerica Houston

Definitions/Glossary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-85797-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Analyte was not detected at or above the SDL.
N	MS, MSD: Spike recovery exceeds upper or lower control limits.
N	RPD of the MS and MSD exceeds the control limits

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Analyte was not detected at or above the SDL.
*	LCS or LCSD exceeds the control limits
N	MS, MSD: Spike recovery exceeds upper or lower control limits.
N	RPD of the MS and MSD exceeds the control limits
J	Result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value.

GC Semi VOA

Qualifier	Qualifier Description
U	Analyte was not detected at or above the SDL.

Metals

Qualifier	Qualifier Description
U	Analyte was not detected at or above the SDL.
J	Result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Surrogate Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-85797-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (70-130)	DBFM (62-130)	BFB (67-139)	12DCE (50-134)
600-85797-4	MW-43	75	70	101	77
600-85797-4 MS	MW-43	78	74	109	85
600-85797-4 MSD	MW-43	74	71	97	83
600-85797-5	Field Blank	79	68	106	80
600-85797-8	DUP-1	75	66	98	75
LCS 600-125734/3	Lab Control Sample	84	76	106	79
MB 600-125734/4	Method Blank	81	70	103	78

Surrogate Legend

TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane
BFB = 4-Bromofluorobenzene
12DCE = 1,2-Dichloroethane-d4 (Surr)

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TPH (33-141)	NBZ (47-120)	2FP (18-120)	FBP (43-120)	TBP (44-123)	PHL (12-128)
600-85797-4	MW-43	83	65	59	61	60	54
600-85797-4 MS	MW-43	96	76	72	75	88	68
600-85797-4 MSD	MW-43	96	68	69	65	82	65
LCS 600-125621/17-A	Lab Control Sample	95	89	82	81	99	73
LCS 600-125621/2-A	Lab Control Sample	101	94	92	91	97	82
LCSD 600-125621/18-A	Lab Control Sample Dup	95	94	89	80	102	80
MB 600-125621/1-A	Method Blank	91	95	80	91	76	66

Surrogate Legend

TPH = Terphenyl-d14
NBZ = Nitrobenzene-d5
2FP = 2-Fluorophenol
FBP = 2-Fluorobiphenyl
TBP = 2,4,6-Tribromophenol
PHL = Phenol-d5 (Surr)

Method: TX 1005 - Texas - Total Petroleum Hydrocarbon (GC)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		OTPH (70-130)	
600-85797-4	MW-43	101	
600-85797-4 MS	MW-43	105	
600-85797-4 MSD	MW-43	105	
600-85797-8	DUP-1	105	
LCS 600-125473/2-A	Lab Control Sample	105	
MB 600-125473/1-A	Method Blank	99	


Surrogate Legend

TestAmerica Houston

Surrogate Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-85797-1

 OTPH = o-Terphenyl

1

2

3

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QC Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-85797-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 600-125734/4

Matrix: Water

Analysis Batch: 125734

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	0.00227	U	0.0100	0.00227	mg/L			01/23/14 13:51	1
Benzene	0.000560	U	0.00500	0.000560	mg/L			01/23/14 13:51	1
Chlorobromomethane	0.000810	U	0.00500	0.000810	mg/L			01/23/14 13:51	1
Bromoform	0.000770	U	0.00500	0.000770	mg/L			01/23/14 13:51	1
Bromomethane	0.00215	U	0.0100	0.00215	mg/L			01/23/14 13:51	1
2-Butanone (MEK)	0.00157	U	0.0100	0.00157	mg/L			01/23/14 13:51	1
Carbon disulfide	0.00170	U	0.00500	0.00170	mg/L			01/23/14 13:51	1
Carbon tetrachloride	0.000920	U	0.00500	0.000920	mg/L			01/23/14 13:51	1
Dibromochloromethane	0.000920	U	0.00500	0.000920	mg/L			01/23/14 13:51	1
Chlorobenzene	0.000820	U	0.00500	0.000820	mg/L			01/23/14 13:51	1
Chloroethane	0.00173	U	0.0100	0.00173	mg/L			01/23/14 13:51	1
Chloroform	0.000820	U	0.00500	0.000820	mg/L			01/23/14 13:51	1
Chloromethane	0.000850	U	0.0100	0.000850	mg/L			01/23/14 13:51	1
1,1-Dichloroethane	0.000500	U	0.00500	0.000500	mg/L			01/23/14 13:51	1
1,2-Dichloroethane	0.00101	U	0.00500	0.00101	mg/L			01/23/14 13:51	1
1,1-Dichloroethene	0.000760	U	0.00500	0.000760	mg/L			01/23/14 13:51	1
cis-1,2-Dichloroethene	0.000560	U	0.00500	0.000560	mg/L			01/23/14 13:51	1
trans-1,2-Dichloroethene	0.000880	U	0.00500	0.000880	mg/L			01/23/14 13:51	1
1,2-Dichloropropane	0.00141	U	0.00500	0.00141	mg/L			01/23/14 13:51	1
cis-1,3-Dichloropropene	0.000970	U	0.00500	0.000970	mg/L			01/23/14 13:51	1
trans-1,3-Dichloropropene	0.000590	U	0.00500	0.000590	mg/L			01/23/14 13:51	1
Ethylbenzene	0.00129	U	0.00500	0.00129	mg/L			01/23/14 13:51	1
2-Hexanone	0.00142	U	0.0100	0.00142	mg/L			01/23/14 13:51	1
Methylene Chloride	0.00143	U	0.0100	0.00143	mg/L			01/23/14 13:51	1
4-Methyl-2-pentanone (MIBK)	0.00111	U	0.0100	0.00111	mg/L			01/23/14 13:51	1
Styrene	0.000560	U	0.00500	0.000560	mg/L			01/23/14 13:51	1
1,1,2,2-Tetrachloroethane	0.000800	U	0.00500	0.000800	mg/L			01/23/14 13:51	1
Tetrachloroethene	0.00124	U	0.00500	0.00124	mg/L			01/23/14 13:51	1
Toluene	0.000550	U	0.00500	0.000550	mg/L			01/23/14 13:51	1
1,1,1-Trichloroethane	0.000980	U	0.00500	0.000980	mg/L			01/23/14 13:51	1
1,1,2-Trichloroethane	0.000530	U	0.00500	0.000530	mg/L			01/23/14 13:51	1
Trichloroethene	0.00158	U	0.00500	0.00158	mg/L			01/23/14 13:51	1
Vinyl acetate	0.000600	U	0.0100	0.000600	mg/L			01/23/14 13:51	1
Vinyl chloride	0.000850	U	0.00500	0.000850	mg/L			01/23/14 13:51	1
o-Xylene	0.000930	U	0.00500	0.000930	mg/L			01/23/14 13:51	1
m-Xylene & p-Xylene	0.00126	U	0.0100	0.00126	mg/L			01/23/14 13:51	1
Xylenes, Total	0.00198	U	0.00500	0.00198	mg/L			01/23/14 13:51	1
Bromodichloromethane	0.000760	U	0.00500	0.000760	mg/L			01/23/14 13:51	1
1,2-Dichloroethene, Total	0.000840	U	0.0100	0.000840	mg/L			01/23/14 13:51	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	81		70 - 130		01/23/14 13:51	1
Dibromofluoromethane	70		62 - 130		01/23/14 13:51	1
4-Bromofluorobenzene	103		67 - 139		01/23/14 13:51	1
1,2-Dichloroethane-d4 (Surr)	78		50 - 134		01/23/14 13:51	1

TestAmerica Houston

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-85797-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 600-125734/3

Matrix: Water

Analysis Batch: 125734

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	0.100	0.1043		mg/L		104	21 - 148
Benzene	0.0500	0.05335		mg/L		107	70 - 131
Chlorobromomethane	0.0500	0.04343		mg/L		87	70 - 130
Bromoform	0.0500	0.05539		mg/L		111	67 - 134
Bromomethane	0.0500	0.04740		mg/L		95	45 - 150
2-Butanone (MEK)	0.100	0.1252		mg/L		125	34 - 140
Carbon disulfide	0.0500	0.04635		mg/L		93	60 - 146
Carbon tetrachloride	0.0500	0.04489		mg/L		90	68 - 140
Dibromochloromethane	0.0500	0.04535		mg/L		91	70 - 130
Chlorobenzene	0.0500	0.04745		mg/L		95	70 - 130
Chloroethane	0.0500	0.04998		mg/L		100	65 - 138
Chloroform	0.0500	0.05051		mg/L		101	70 - 131
Chloromethane	0.0500	0.03586		mg/L		72	15 - 150
1,1-Dichloroethane	0.0500	0.05268		mg/L		105	70 - 137
1,2-Dichloroethane	0.0500	0.04979		mg/L		100	62 - 144
1,1-Dichloroethene	0.0500	0.04299		mg/L		86	67 - 134
cis-1,2-Dichloroethene	0.0500	0.04925		mg/L		98	70 - 130
trans-1,2-Dichloroethene	0.0500	0.05011		mg/L		100	70 - 130
1,2-Dichloropropane	0.0500	0.05265		mg/L		105	70 - 133
cis-1,3-Dichloropropene	0.0500	0.05712		mg/L		114	66 - 130
trans-1,3-Dichloropropene	0.0500	0.06106		mg/L		122	70 - 138
Ethylbenzene	0.0500	0.04810		mg/L		96	70 - 130
2-Hexanone	0.100	0.07266		mg/L		73	46 - 139
Methylene Chloride	0.0500	0.05007		mg/L		100	67 - 130
4-Methyl-2-pentanone (MIBK)	0.100	0.07311		mg/L		73	39 - 150
Styrene	0.0500	0.04880		mg/L		98	70 - 130
1,1,2,2-Tetrachloroethane	0.0500	0.04857		mg/L		97	62 - 130
Tetrachloroethene	0.0500	0.04191		mg/L		84	57 - 130
Toluene	0.0500	0.05231		mg/L		105	70 - 130
1,1,1-Trichloroethane	0.0500	0.04685		mg/L		94	67 - 139
1,1,2-Trichloroethane	0.0500	0.05057		mg/L		101	70 - 130
Trichloroethene	0.0500	0.04151		mg/L		83	70 - 130
Vinyl acetate	0.100	0.09280		mg/L		93	22 - 150
Vinyl chloride	0.0500	0.04042		mg/L		81	55 - 150
o-Xylene	0.0500	0.04563		mg/L		91	69 - 130
m-Xylene & p-Xylene	0.0500	0.04559		mg/L		91	70 - 130
Xylenes, Total	0.100	0.09122		mg/L		91	70 - 130
Bromodichloromethane	0.0500	0.04998		mg/L		100	70 - 130
1,2-Dichloroethene, Total	0.100	0.09936		mg/L		99	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	84		70 - 130
Dibromofluoromethane	76		62 - 130
4-Bromofluorobenzene	106		67 - 139
1,2-Dichloroethane-d4 (Surr)	79		50 - 134

TestAmerica Houston

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-85797-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 600-85797-4 MS

Matrix: Water

Analysis Batch: 125734

Client Sample ID: MW-43

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	0.00227	U	0.100	0.1146		mg/L		115	21 - 148
Benzene	0.000560	U	0.0500	0.05043		mg/L		101	70 - 131
Chlorobromomethane	0.000810	U	0.0500	0.03720		mg/L		74	70 - 130
Bromoform	0.000770	U	0.0500	0.04642		mg/L		93	67 - 134
Bromomethane	0.00215	U	0.0500	0.04982		mg/L		100	45 - 150
2-Butanone (MEK)	0.00157	U	0.100	0.1389		mg/L		139	34 - 140
Carbon disulfide	0.00170	U	0.0500	0.04239		mg/L		85	60 - 146
Carbon tetrachloride	0.000920	U	0.0500	0.03766		mg/L		75	68 - 140
Dibromochloromethane	0.000920	U	0.0500	0.03499		mg/L		70	70 - 130
Chlorobenzene	0.000820	U	0.0500	0.03925		mg/L		78	70 - 130
Chloroethane	0.00173	U	0.0500	0.05472		mg/L		109	65 - 138
Chloroform	0.000820	U	0.0500	0.04695		mg/L		94	70 - 131
Chloromethane	0.000850	U	0.0500	0.04617		mg/L		92	15 - 150
1,1-Dichloroethane	0.000500	U	0.0500	0.04951		mg/L		99	70 - 137
1,2-Dichloroethane	0.00101	U	0.0500	0.04882		mg/L		98	62 - 144
1,1-Dichloroethene	0.000760	U	0.0500	0.03979		mg/L		80	67 - 134
cis-1,2-Dichloroethene	0.000560	U	0.0500	0.04499		mg/L		90	70 - 130
trans-1,2-Dichloroethene	0.000880	U	0.0500	0.04396		mg/L		88	70 - 130
1,2-Dichloropropane	0.00141	U	0.0500	0.05152		mg/L		103	70 - 133
cis-1,3-Dichloropropene	0.000970	U	0.0500	0.04772		mg/L		95	66 - 130
trans-1,3-Dichloropropene	0.000590	U	0.0500	0.05235		mg/L		105	70 - 138
Ethylbenzene	0.00129	U	0.0500	0.03982		mg/L		80	70 - 130
2-Hexanone	0.00142	U	0.100	0.07595		mg/L		76	46 - 139
Methylene Chloride	0.00143	U	0.0500	0.04494		mg/L		90	67 - 130
4-Methyl-2-pentanone (MIBK)	0.00111	U	0.100	0.07947		mg/L		79	39 - 150
Styrene	0.000560	U	0.0500	0.04117		mg/L		82	70 - 130
1,1,2,2-Tetrachloroethane	0.000800	U	0.0500	0.04786		mg/L		96	62 - 130
Tetrachloroethene	0.00124	U	0.0500	0.03170		mg/L		63	57 - 130
Toluene	0.000550	U	0.0500	0.04410		mg/L		88	70 - 130
1,1,1-Trichloroethane	0.000980	U	0.0500	0.04024		mg/L		80	67 - 139
1,1,2-Trichloroethane	0.000530	U	0.0500	0.04322		mg/L		86	70 - 130
Trichloroethene	0.00158	U	0.0500	0.03551		mg/L		71	70 - 130
Vinyl acetate	0.000600	U	0.100	0.08838		mg/L		88	22 - 150
Vinyl chloride	0.000850	U	0.0500	0.04726		mg/L		95	55 - 150
o-Xylene	0.000930	U	0.0500	0.03809		mg/L		76	69 - 130
m-Xylene & p-Xylene	0.00126	U	0.0500	0.03740		mg/L		75	70 - 130
Xylenes, Total	0.00198	U	0.100	0.07549		mg/L		75	70 - 130
Bromodichloromethane	0.000760	U	0.0500	0.04765		mg/L		95	70 - 130
1,2-Dichloroethene, Total	0.000840	U	0.100	0.08895		mg/L		89	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
Toluene-d8 (Surr)	78		70 - 130
Dibromofluoromethane	74		62 - 130
4-Bromofluorobenzene	109		67 - 139
1,2-Dichloroethane-d4 (Surr)	85		50 - 134

TestAmerica Houston

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-85797-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 600-85797-4 MSD

Matrix: Water

Analysis Batch: 125734

Client Sample ID: MW-43

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	0.00227	U	0.100	0.1503	N	mg/L		150	21 - 148	27	25
Benzene	0.000560	U	0.0500	0.05270		mg/L		105	70 - 131	4	21
Chlorobromomethane	0.000810	U	0.0500	0.03958		mg/L		79	70 - 130	6	25
Bromoform	0.000770	U	0.0500	0.04604		mg/L		92	67 - 134	1	25
Bromomethane	0.00215	U	0.0500	0.05481		mg/L		110	45 - 150	10	25
2-Butanone (MEK)	0.00157	U	0.100	0.1485	N	mg/L		149	34 - 140	7	25
Carbon disulfide	0.00170	U	0.0500	0.04583		mg/L		92	60 - 146	8	25
Carbon tetrachloride	0.000920	U	0.0500	0.04097		mg/L		82	68 - 140	8	25
Dibromochloromethane	0.000920	U	0.0500	0.03689		mg/L		74	70 - 130	5	25
Chlorobenzene	0.000820	U	0.0500	0.04184		mg/L		84	70 - 130	6	21
Chloroethane	0.00173	U	0.0500	0.06274		mg/L		125	65 - 138	14	25
Chloroform	0.000820	U	0.0500	0.04950		mg/L		99	70 - 131	5	25
Chloromethane	0.000850	U	0.0500	0.05399		mg/L		108	15 - 150	16	25
1,1-Dichloroethane	0.000500	U	0.0500	0.05401		mg/L		108	70 - 137	9	25
1,2-Dichloroethane	0.00101	U	0.0500	0.05267		mg/L		105	62 - 144	8	25
1,1-Dichloroethene	0.000760	U	0.0500	0.04241		mg/L		85	67 - 134	6	22
cis-1,2-Dichloroethene	0.000560	U	0.0500	0.04743		mg/L		95	70 - 130	5	25
trans-1,2-Dichloroethene	0.000880	U	0.0500	0.04742		mg/L		95	70 - 130	8	25
1,2-Dichloropropane	0.00141	U	0.0500	0.05452		mg/L		109	70 - 133	6	25
cis-1,3-Dichloropropene	0.000970	U	0.0500	0.05130		mg/L		103	66 - 130	7	25
trans-1,3-Dichloropropene	0.000590	U	0.0500	0.05542		mg/L		111	70 - 138	6	25
Ethylbenzene	0.00129	U	0.0500	0.04338		mg/L		87	70 - 130	9	25
2-Hexanone	0.00142	U	0.100	0.07804		mg/L		78	46 - 139	3	25
Methylene Chloride	0.00143	U	0.0500	0.04824		mg/L		96	67 - 130	7	25
4-Methyl-2-pentanone (MIBK)	0.00111	U	0.100	0.08372		mg/L		84	39 - 150	5	25
Styrene	0.000560	U	0.0500	0.04514		mg/L		90	70 - 130	9	25
1,1,2,2-Tetrachloroethane	0.000800	U	0.0500	0.05090		mg/L		102	62 - 130	6	25
Tetrachloroethene	0.00124	U	0.0500	0.03563		mg/L		71	57 - 130	12	25
Toluene	0.000550	U	0.0500	0.04678		mg/L		94	70 - 130	6	21
1,1,1-Trichloroethane	0.000980	U	0.0500	0.04488		mg/L		90	67 - 139	11	25
1,1,2-Trichloroethane	0.000530	U	0.0500	0.04686		mg/L		94	70 - 130	8	25
Trichloroethene	0.00158	U	0.0500	0.03848		mg/L		77	70 - 130	8	24
Vinyl acetate	0.000600	U	0.100	0.09643		mg/L		96	22 - 150	9	25
Vinyl chloride	0.000850	U	0.0500	0.05679		mg/L		114	55 - 150	18	25
o-Xylene	0.000930	U	0.0500	0.04145		mg/L		83	69 - 130	8	25
m-Xylene & p-Xylene	0.00126	U	0.0500	0.04148		mg/L		83	70 - 130	10	25
Xylenes, Total	0.00198	U	0.100	0.08293		mg/L		83	70 - 130	9	25
Bromodichloromethane	0.000760	U	0.0500	0.04823		mg/L		96	70 - 130	1	25
1,2-Dichloroethene, Total	0.000840	U	0.100	0.09485		mg/L		95	70 - 130	6	25

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Toluene-d8 (Surr)	74		70 - 130
Dibromofluoromethane	71		62 - 130
4-Bromofluorobenzene	97		67 - 139
1,2-Dichloroethane-d4 (Surr)	83		50 - 134

TestAmerica Houston

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-85797-1

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Lab Sample ID: MB 600-125621/1-A

Matrix: Water

Analysis Batch: 126089

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 125621

Analyte	MB Result	MB Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.000160	U	0.000500	0.000160	mg/L		01/22/14 16:16	01/24/14 19:00	1
Acenaphthylene	0.000160	U	0.000500	0.000160	mg/L		01/22/14 16:16	01/24/14 19:00	1
Anthracene	0.000440	U	0.000500	0.000440	mg/L		01/22/14 16:16	01/24/14 19:00	1
Benzidine	0.0179	U	0.0500	0.0179	mg/L		01/22/14 16:16	01/24/14 19:00	1
Benzo[a]anthracene	0.000250	U	0.000500	0.000250	mg/L		01/22/14 16:16	01/24/14 19:00	1
Benzo[b]fluoranthene	0.000180	U	0.000500	0.000180	mg/L		01/22/14 16:16	01/24/14 19:00	1
Benzo[k]fluoranthene	0.000160	U	0.000500	0.000160	mg/L		01/22/14 16:16	01/24/14 19:00	1
Benzo[g,h,i]perylene	0.000350	U	0.000500	0.000350	mg/L		01/22/14 16:16	01/24/14 19:00	1
Benzo[a]pyrene	0.000130	U	0.000500	0.000130	mg/L		01/22/14 16:16	01/24/14 19:00	1
Bis(2-chloroethoxy)methane	0.000190	U	0.000500	0.000190	mg/L		01/22/14 16:16	01/24/14 19:00	1
Bis(2-chloroethyl)ether	0.000180	U	0.000500	0.000180	mg/L		01/22/14 16:16	01/24/14 19:00	1
Bis(2-ethylhexyl) phthalate	0.000590	U	0.00150	0.000590	mg/L		01/22/14 16:16	01/24/14 19:00	1
4-Bromophenyl phenyl ether	0.000250	U	0.000500	0.000250	mg/L		01/22/14 16:16	01/24/14 19:00	1
Butyl benzyl phthalate	0.001383	J	0.00250	0.000850	mg/L		01/22/14 16:16	01/24/14 19:00	1
4-Chloroaniline	0.000110	U	0.000500	0.000110	mg/L		01/22/14 16:16	01/24/14 19:00	1
2-Chloronaphthalene	0.000190	U	0.000500	0.000190	mg/L		01/22/14 16:16	01/24/14 19:00	1
4-Chlorophenyl phenyl ether	0.000230	U	0.000500	0.000230	mg/L		01/22/14 16:16	01/24/14 19:00	1
Carbazole	0.000350	U	0.000500	0.000350	mg/L		01/22/14 16:16	01/24/14 19:00	1
Chrysene	0.000240	U	0.000500	0.000240	mg/L		01/22/14 16:16	01/24/14 19:00	1
Di-n-butyl phthalate	0.00187	U	0.00500	0.00187	mg/L		01/22/14 16:16	01/24/14 19:00	1
Dibenz(a,h)anthracene	0.000290	U	0.000500	0.000290	mg/L		01/22/14 16:16	01/24/14 19:00	1
Dibenzofuran	0.000160	U	0.000500	0.000160	mg/L		01/22/14 16:16	01/24/14 19:00	1
1,2-Dichlorobenzene	0.000210	U	0.000500	0.000210	mg/L		01/22/14 16:16	01/24/14 19:00	1
1,3-Dichlorobenzene	0.000100	U	0.000500	0.000100	mg/L		01/22/14 16:16	01/24/14 19:00	1
1,4-Dichlorobenzene	0.000160	U	0.000500	0.000160	mg/L		01/22/14 16:16	01/24/14 19:00	1
3,3'-Dichlorobenzidine	0.000320	U	0.000500	0.000320	mg/L		01/22/14 16:16	01/24/14 19:00	1
Diethyl phthalate	0.00419	U	0.00500	0.00419	mg/L		01/22/14 16:16	01/24/14 19:00	1
Dimethyl phthalate	0.000180	U	0.00500	0.000180	mg/L		01/22/14 16:16	01/24/14 19:00	1
2,4-Dinitrotoluene	0.000320	U	0.000500	0.000320	mg/L		01/22/14 16:16	01/24/14 19:00	1
Di-n-octyl phthalate	0.0001817	J	0.00500	0.000160	mg/L		01/22/14 16:16	01/24/14 19:00	1
Fluoranthene	0.000310	U	0.000500	0.000310	mg/L		01/22/14 16:16	01/24/14 19:00	1
Fluorene	0.000120	U	0.000500	0.000120	mg/L		01/22/14 16:16	01/24/14 19:00	1
Hexachlorobenzene	0.000250	U	0.000500	0.000250	mg/L		01/22/14 16:16	01/24/14 19:00	1
Hexachlorocyclopentadiene	0.000150	U	0.000500	0.000150	mg/L		01/22/14 16:16	01/24/14 19:00	1
Hexachloroethane	0.000170	U	0.000500	0.000170	mg/L		01/22/14 16:16	01/24/14 19:00	1
Hexachlorobutadiene	0.000190	U	0.000500	0.000190	mg/L		01/22/14 16:16	01/24/14 19:00	1
Indeno[1,2,3-cd]pyrene	0.000290	U	0.000500	0.000290	mg/L		01/22/14 16:16	01/24/14 19:00	1
Isophorone	0.000150	U	0.000500	0.000150	mg/L		01/22/14 16:16	01/24/14 19:00	1
2-Methylnaphthalene	0.000140	U	0.000500	0.000140	mg/L		01/22/14 16:16	01/24/14 19:00	1
Naphthalene	0.000160	U	0.000500	0.000160	mg/L		01/22/14 16:16	01/24/14 19:00	1
2-Nitroaniline	0.000350	U	0.000500	0.000350	mg/L		01/22/14 16:16	01/24/14 19:00	1
3-Nitroaniline	0.000130	U	0.000500	0.000130	mg/L		01/22/14 16:16	01/24/14 19:00	1
4-Nitroaniline	0.000230	U	0.000500	0.000230	mg/L		01/22/14 16:16	01/24/14 19:00	1
Nitrobenzene	0.000200	U	0.000500	0.000200	mg/L		01/22/14 16:16	01/24/14 19:00	1
N-Nitrosodimethylamine	0.000160	U	0.000500	0.000160	mg/L		01/22/14 16:16	01/24/14 19:00	1
N-Nitrosodiphenylamine	0.000330	U	0.000500	0.000330	mg/L		01/22/14 16:16	01/24/14 19:00	1
N-Nitrosodi-n-propylamine	0.000240	U	0.000500	0.000240	mg/L		01/22/14 16:16	01/24/14 19:00	1
Phenanthrene	0.000290	U	0.000500	0.000290	mg/L		01/22/14 16:16	01/24/14 19:00	1

TestAmerica Houston

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-85797-1

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels (Continued)

Lab Sample ID: MB 600-125621/1-A

Matrix: Water

Analysis Batch: 126089

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 125621

Analyte	MB Result	MB Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pyrene	0.000330	U	0.000500	0.000330	mg/L		01/22/14 16:16	01/24/14 19:00	1
1,2,4-Trichlorobenzene	0.000160	U	0.000500	0.000160	mg/L		01/22/14 16:16	01/24/14 19:00	1
Benzyl alcohol	0.000510	U	0.000500	0.000510	mg/L		01/22/14 16:16	01/24/14 19:00	1
4-Chloro-3-methylphenol	0.000250	U	0.000500	0.000250	mg/L		01/22/14 16:16	01/24/14 19:00	1
2-Chlorophenol	0.000220	U	0.000500	0.000220	mg/L		01/22/14 16:16	01/24/14 19:00	1
2-Methylphenol	0.000190	U	0.000500	0.000190	mg/L		01/22/14 16:16	01/24/14 19:00	1
3 & 4 Methylphenol	0.000160	U	0.00100	0.000160	mg/L		01/22/14 16:16	01/24/14 19:00	1
2,4-Dichlorophenol	0.000260	U	0.000500	0.000260	mg/L		01/22/14 16:16	01/24/14 19:00	1
2,4-Dimethylphenol	0.000180	U	0.000500	0.000180	mg/L		01/22/14 16:16	01/24/14 19:00	1
4,6-Dinitro-2-methylphenol	0.000160	U	0.00100	0.000160	mg/L		01/22/14 16:16	01/24/14 19:00	1
2,4-Dinitrophenol	0.000400	U	0.00100	0.000400	mg/L		01/22/14 16:16	01/24/14 19:00	1
2-Nitrophenol	0.000220	U	0.000500	0.000220	mg/L		01/22/14 16:16	01/24/14 19:00	1
4-Nitrophenol	0.000330	U	0.00100	0.000330	mg/L		01/22/14 16:16	01/24/14 19:00	1
Pentachlorophenol	0.000960	U	0.00100	0.000960	mg/L		01/22/14 16:16	01/24/14 19:00	1
Phenol	0.000140	U	0.000500	0.000140	mg/L		01/22/14 16:16	01/24/14 19:00	1
2,4,5-Trichlorophenol	0.000290	U	0.000500	0.000290	mg/L		01/22/14 16:16	01/24/14 19:00	1
2,4,6-Trichlorophenol	0.000330	U	0.000500	0.000330	mg/L		01/22/14 16:16	01/24/14 19:00	1
2,6-Dinitrotoluene	0.000290	U	0.000500	0.000290	mg/L		01/22/14 16:16	01/24/14 19:00	1
bis (2-Chloroisopropyl) ether	0.000180	U	0.000500	0.000180	mg/L		01/22/14 16:16	01/24/14 19:00	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	91		33 - 141	01/22/14 16:16	01/24/14 19:00	1
Nitrobenzene-d5	95		47 - 120	01/22/14 16:16	01/24/14 19:00	1
2-Fluorophenol	80		18 - 120	01/22/14 16:16	01/24/14 19:00	1
2-Fluorobiphenyl	91		43 - 120	01/22/14 16:16	01/24/14 19:00	1
2,4,6-Tribromophenol	76		44 - 123	01/22/14 16:16	01/24/14 19:00	1
Phenol-d5 (Surr)	66		12 - 128	01/22/14 16:16	01/24/14 19:00	1

Lab Sample ID: LCS 600-125621/17-A

Matrix: Water

Analysis Batch: 126089

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 125621

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14	95		33 - 141
Nitrobenzene-d5	89		47 - 120
2-Fluorophenol	82		18 - 120
2-Fluorobiphenyl	81		43 - 120
2,4,6-Tribromophenol	99		44 - 123
Phenol-d5 (Surr)	73		12 - 128

Lab Sample ID: LCS 600-125621/2-A

Matrix: Water

Analysis Batch: 126089

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 125621

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	0.00800	0.005987		mg/L		75	47 - 145
Acenaphthylene	0.00800	0.005903		mg/L		74	35 - 135
Anthracene	0.00800	0.006557		mg/L		82	53 - 124

TestAmerica Houston

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-85797-1

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels (Continued)

Lab Sample ID: LCS 600-125621/2-A

Matrix: Water

Analysis Batch: 126089

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 125621

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzidine	0.0400	0.0179	U *	mg/L		0	10 - 120
Benzo[a]anthracene	0.00800	0.006958		mg/L		87	53 - 122
Benzo[b]fluoranthene	0.00800	0.006493		mg/L		81	53 - 131
Benzo[k]fluoranthene	0.00800	0.006904		mg/L		86	46 - 130
Benzo[g,h,i]perylene	0.00800	0.007260		mg/L		91	46 - 133
Benzo[a]pyrene	0.00800	0.006496		mg/L		81	50 - 124
Bis(2-chloroethoxy)methane	0.00800	0.006317		mg/L		79	42 - 119
Bis(2-chloroethyl)ether	0.00800	0.006095		mg/L		76	40 - 112
Bis(2-ethylhexyl) phthalate	0.00800	0.007689		mg/L		96	47 - 132
4-Bromophenyl phenyl ether	0.00800	0.006111		mg/L		76	46 - 129
Butyl benzyl phthalate	0.00800	0.007785		mg/L		97	50 - 126
4-Chloroaniline	0.00800	0.004592		mg/L		57	19 - 129
2-Chloronaphthalene	0.00800	0.005779		mg/L		72	43 - 120
4-Chlorophenyl phenyl ether	0.00800	0.005877		mg/L		73	48 - 125
Carbazole	0.00800	0.007344		mg/L		92	42 - 169
Chrysene	0.00800	0.006308		mg/L		79	49 - 124
Di-n-butyl phthalate	0.00800	0.006707		mg/L		84	54 - 138
Dibenz(a,h)anthracene	0.00800	0.007257		mg/L		91	42 - 134
Dibenzofuran	0.00800	0.005993		mg/L		75	46 - 123
1,2-Dichlorobenzene	0.00800	0.005775		mg/L		72	40 - 121
1,3-Dichlorobenzene	0.00800	0.005855		mg/L		73	39 - 122
1,4-Dichlorobenzene	0.00800	0.005653		mg/L		71	45 - 124
3,3'-Dichlorobenzidine	0.00800	0.005494		mg/L		69	38 - 168
Diethyl phthalate	0.00800	0.006790		mg/L		85	51 - 123
Dimethyl phthalate	0.00800	0.006531		mg/L		82	49 - 121
2,4-Dinitrotoluene	0.00800	0.006360		mg/L		80	43 - 128
Di-n-octyl phthalate	0.00800	0.007007		mg/L		88	27 - 157
Fluoranthene	0.00800	0.006630		mg/L		83	53 - 127
Fluorene	0.00800	0.006058		mg/L		76	48 - 127
Hexachlorobenzene	0.00800	0.005921		mg/L		74	46 - 129
Hexachlorocyclopentadiene	0.00800	0.002857		mg/L		36	21 - 126
Hexachloroethane	0.00800	0.005504		mg/L		69	43 - 118
Hexachlorobutadiene	0.00800	0.005262		mg/L		66	32 - 143
Indeno[1,2,3-cd]pyrene	0.00800	0.007174		mg/L		90	45 - 124
Isophorone	0.00800	0.006128		mg/L		77	42 - 116
2-Methylnaphthalene	0.00800	0.006035		mg/L		75	40 - 121
Naphthalene	0.00800	0.006075		mg/L		76	39 - 120
2-Nitroaniline	0.00800	0.006807		mg/L		85	42 - 130
3-Nitroaniline	0.00800	0.008774		mg/L		110	47 - 138
4-Nitroaniline	0.00800	0.008107		mg/L		101	32 - 139
Nitrobenzene	0.00800	0.006139		mg/L		77	42 - 119
N-Nitrosodimethylamine	0.00800	0.005729		mg/L		72	26 - 104
N-Nitrosodiphenylamine	0.00800	0.006899		mg/L		86	43 - 107
N-Nitrosodi-n-propylamine	0.00800	0.006602		mg/L		83	39 - 124
Phenanthrene	0.00800	0.006034		mg/L		75	52 - 121
Pyrene	0.00800	0.006734		mg/L		84	49 - 121
1,2,4-Trichlorobenzene	0.00800	0.005551		mg/L		69	38 - 118
Benzyl alcohol	0.00800	0.005596		mg/L		70	39 - 115

TestAmerica Houston

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-85797-1

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels (Continued)

Lab Sample ID: LCS 600-125621/2-A

Matrix: Water

Analysis Batch: 126089

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 125621

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
4-Chloro-3-methylphenol	0.00800	0.006153		mg/L		77	44 - 131
2-Chlorophenol	0.00800	0.006704		mg/L		84	23 - 134
2-Methylphenol	0.00800	0.007075		mg/L		88	34 - 109
3 & 4 Methylphenol	0.00800	0.007242		mg/L		91	27 - 113
2,4-Dichlorophenol	0.00800	0.006603		mg/L		83	39 - 118
2,4-Dimethylphenol	0.00800	0.006888		mg/L		86	36 - 109
4,6-Dinitro-2-methylphenol	0.0160	0.01099		mg/L		69	24 - 122
2,4-Dinitrophenol	0.0160	0.01016		mg/L		63	23 - 130
2-Nitrophenol	0.00800	0.006045		mg/L		76	40 - 121
4-Nitrophenol	0.0160	0.01327		mg/L		83	14 - 132
Pentachlorophenol	0.0160	0.008932		mg/L		56	9 - 147
Phenol	0.00800	0.005397		mg/L		67	11 - 112
2,4,5-Trichlorophenol	0.00800	0.006426		mg/L		80	38 - 145
2,4,6-Trichlorophenol	0.00800	0.006735		mg/L		84	39 - 123
2,6-Dinitrotoluene	0.00800	0.006365		mg/L		80	45 - 122
bis (2-Chloroisopropyl) ether	0.00800	0.006647		mg/L		83	41 - 111

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14	101		33 - 141
Nitrobenzene-d5	94		47 - 120
2-Fluorophenol	92		18 - 120
2-Fluorobiphenyl	91		43 - 120
2,4,6-Tribromophenol	97		44 - 123
Phenol-d5 (Surr)	82		12 - 128

Lab Sample ID: LCSD 600-125621/18-A

Matrix: Water

Analysis Batch: 126089

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 125621

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Terphenyl-d14	95		33 - 141
Nitrobenzene-d5	94		47 - 120
2-Fluorophenol	89		18 - 120
2-Fluorobiphenyl	80		43 - 120
2,4,6-Tribromophenol	102		44 - 123
Phenol-d5 (Surr)	80		12 - 128

Lab Sample ID: 600-85797-4 MS

Matrix: Water

Analysis Batch: 126089

Client Sample ID: MW-43

Prep Type: Total/NA

Prep Batch: 125621

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	0.000160	U	0.00800	0.004841		mg/L		61	46 - 118
Acenaphthylene	0.000160	U	0.00800	0.004996		mg/L		62	38 - 115
Anthracene	0.000440	U	0.00800	0.005329		mg/L		67	35 - 116
Benzidine	0.0179	U *	0.0400	0.0179	U	mg/L		0	0 - 150
Benzo[a]anthracene	0.000250	U	0.00800	0.006761		mg/L		85	24 - 126
Benzo[b]fluoranthene	0.000180	U	0.00800	0.006775		mg/L		85	31 - 119

TestAmerica Houston

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-85797-1

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels (Continued)

Lab Sample ID: 600-85797-4 MS

Matrix: Water

Analysis Batch: 126089

Client Sample ID: MW-43

Prep Type: Total/NA

Prep Batch: 125621

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzo[k]fluoranthene	0.000160	U	0.00800	0.006676		mg/L		83	29 - 117
Benzo[g,h,i]perylene	0.000350	U	0.00800	0.006643		mg/L		83	10 - 123
Benzo[a]pyrene	0.000130	U	0.00800	0.006662		mg/L		83	60 - 140
Bis(2-chloroethoxy)methane	0.000190	U	0.00800	0.005349		mg/L		67	42 - 101
Bis(2-chloroethyl)ether	0.000180	U	0.00800	0.005090		mg/L		64	20 - 107
Bis(2-ethylhexyl) phthalate	0.000590	U	0.00800	0.007216		mg/L		90	14 - 123
4-Bromophenyl phenyl ether	0.000250	U	0.00800	0.005527		mg/L		69	50 - 113
Butyl benzyl phthalate	0.000850	U	0.00800	0.006971		mg/L		87	36 - 144
4-Chloroaniline	0.000110	U	0.00800	0.004228		mg/L		53	49 - 151
2-Chloronaphthalene	0.000190	U	0.00800	0.004713		mg/L		59	42 - 100
4-Chlorophenyl phenyl ether	0.000230	U	0.00800	0.005229		mg/L		65	41 - 116
Carbazole	0.000350	U	0.00800	0.007235		mg/L		90	30 - 130
Chrysene	0.000240	U	0.00800	0.006636		mg/L		83	23 - 128
Di-n-butyl phthalate	0.00187	U	0.00800	0.006937		mg/L		87	31 - 137
Dibenz(a,h)anthracene	0.000290	U	0.00800	0.006888		mg/L		86	62 - 138
Dibenzofuran	0.000160	U	0.00800	0.005120		mg/L		64	46 - 110
1,2-Dichlorobenzene	0.000210	U	0.00800	0.004461		mg/L		56	42 - 96
1,3-Dichlorobenzene	0.000100	U	0.00800	0.004752		mg/L		59	40 - 95
1,4-Dichlorobenzene	0.000160	U	0.00800	0.004318		mg/L		54	36 - 99
3,3'-Dichlorobenzidine	0.000320	U	0.00800	0.003967		mg/L		50	33 - 167
Diethyl phthalate	0.00419	U	0.00800	0.006062		mg/L		76	60 - 140
Dimethyl phthalate	0.000180	U	0.00800	0.005780		mg/L		72	51 - 120
2,4-Dinitrotoluene	0.000320	U	0.00800	0.005846		mg/L		73	41 - 125
Di-n-octyl phthalate	0.000160	U	0.00800	0.006955		mg/L		87	30 - 170
Fluoranthene	0.000310	U	0.00800	0.006489		mg/L		81	14 - 145
Fluorene	0.000120	U	0.00800	0.005414		mg/L		68	44 - 112
Hexachlorobenzene	0.000250	U	0.00800	0.005361		mg/L		67	29 - 126
Hexachlorocyclopentadiene	0.000150	U	0.00800	0.001990		mg/L		25	10 - 109
Hexachloroethane	0.000170	U	0.00800	0.004079		mg/L		51	35 - 101
Hexachlorobutadiene	0.000190	U	0.00800	0.003896		mg/L		49	36 - 101
Indeno[1,2,3-cd]pyrene	0.000290	U	0.00800	0.006566		mg/L		82	60 - 140
Isophorone	0.000150	U	0.00800	0.005019		mg/L		63	45 - 109
2-Methylnaphthalene	0.000140	U	0.00800	0.004855		mg/L		61	36 - 111
Naphthalene	0.000160	U	0.00800	0.004972		mg/L		62	34 - 99
2-Nitroaniline	0.000350	U	0.00800	0.005525		mg/L		69	30 - 130
3-Nitroaniline	0.000130	U	0.00800	0.005156		mg/L		64	30 - 130
4-Nitroaniline	0.000230	U	0.00800	0.006744		mg/L		84	46 - 154
Nitrobenzene	0.000200	U	0.00800	0.005258		mg/L		66	37 - 104
N-Nitrosodimethylamine	0.000160	U	0.00800	0.004371		mg/L		55	30 - 130
N-Nitrosodiphenylamine	0.000330	U	0.00800	0.006341		mg/L		79	58 - 142
N-Nitrosodi-n-propylamine	0.000240	U	0.00800	0.005355		mg/L		67	44 - 110
Phenanthrene	0.000290	U	0.00800	0.006154		mg/L		77	41 - 117
Pyrene	0.000330	U	0.00800	0.006721		mg/L		84	28 - 133
1,2,4-Trichlorobenzene	0.000160	U	0.00800	0.004264		mg/L		53	39 - 98
Benzyl alcohol	0.000510	U	0.00800	0.005484		mg/L		69	17 - 111
4-Chloro-3-methylphenol	0.000250	U	0.00800	0.005342		mg/L		67	67 - 133
2-Chlorophenol	0.000220	U	0.00800	0.005636		mg/L		70	36 - 96
2-Methylphenol	0.000190	U	0.00800	0.005406		mg/L		68	22 - 94

TestAmerica Houston

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-85797-1

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels (Continued)

Lab Sample ID: 600-85797-4 MS

Matrix: Water

Analysis Batch: 126089

Client Sample ID: MW-43

Prep Type: Total/NA

Prep Batch: 125621

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
3 & 4 Methylphenol	0.000160	U	0.00800	0.005176		mg/L		65	12 - 111
2,4-Dichlorophenol	0.000260	U	0.00800	0.005449		mg/L		68	40 - 106
2,4-Dimethylphenol	0.000180	U	0.00800	0.005906		mg/L		74	25 - 85
4,6-Dinitro-2-methylphenol	0.000160	U	0.0160	0.007514		mg/L		47	28 - 128
2,4-Dinitrophenol	0.000400	U	0.0160	0.006622		mg/L		41	40 - 140
2-Nitrophenol	0.000220	U	0.00800	0.004958		mg/L		62	48 - 100
4-Nitrophenol	0.000330	U	0.0160	0.01104		mg/L		69	10 - 100
Pentachlorophenol	0.000960	U	0.0160	0.01115		mg/L		70	45 - 155
Phenol	0.000140	U	0.00800	0.004469		mg/L		56	10 - 62
2,4,5-Trichlorophenol	0.000290	U	0.00800	0.005642		mg/L		71	45 - 116
2,4,6-Trichlorophenol	0.000330	U	0.00800	0.005712		mg/L		71	62 - 107
2,6-Dinitrotoluene	0.000290	U	0.00800	0.005624		mg/L		70	47 - 118
bis (2-Chloroisopropyl) ether	0.000180	U	0.00800	0.005775		mg/L		72	41 - 111

Surrogate	MS %Recovery	MS Qualifier	Limits
Terphenyl-d14	96		33 - 141
Nitrobenzene-d5	76		47 - 120
2-Fluorophenol	72		18 - 120
2-Fluorobiphenyl	75		43 - 120
2,4,6-Tribromophenol	88		44 - 123
Phenol-d5 (Surr)	68		12 - 128

Lab Sample ID: 600-85797-4 MSD

Matrix: Water

Analysis Batch: 126089

Client Sample ID: MW-43

Prep Type: Total/NA

Prep Batch: 125621

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Acenaphthene	0.000160	U	0.00800	0.004355		mg/L		54	46 - 118	11	20
Acenaphthylene	0.000160	U	0.00800	0.004474		mg/L		56	38 - 115	11	20
Anthracene	0.000440	U	0.00800	0.005172		mg/L		65	35 - 116	3	20
Benzidine	0.0179	U *	0.0400	0.0179	U	mg/L		0	0 - 150	NC	40
Benzo[a]anthracene	0.000250	U	0.00800	0.006364		mg/L		80	24 - 126	6	20
Benzo[b]fluoranthene	0.000180	U	0.00800	0.006415		mg/L		80	31 - 119	5	20
Benzo[k]fluoranthene	0.000160	U	0.00800	0.007474		mg/L		93	29 - 117	11	20
Benzo[g,h,i]perylene	0.000350	U	0.00800	0.006391		mg/L		80	10 - 123	4	20
Benzo[a]pyrene	0.000130	U	0.00800	0.006174		mg/L		77	60 - 140	8	20
Bis(2-chloroethoxy)methane	0.000190	U	0.00800	0.004893		mg/L		61	42 - 101	9	20
Bis(2-chloroethyl)ether	0.000180	U	0.00800	0.004524		mg/L		57	20 - 107	12	20
Bis(2-ethylhexyl) phthalate	0.000590	U	0.00800	0.006905		mg/L		86	14 - 123	4	20
4-Bromophenyl phenyl ether	0.000250	U	0.00800	0.004947		mg/L		62	50 - 113	11	20
Butyl benzyl phthalate	0.000850	U	0.00800	0.006729		mg/L		84	36 - 144	4	20
4-Chloroaniline	0.000110	U	0.00800	0.003257	N	mg/L		41	49 - 151	26	20
2-Chloronaphthalene	0.000190	U	0.00800	0.004215		mg/L		53	42 - 100	11	20
4-Chlorophenyl phenyl ether	0.000230	U	0.00800	0.004468		mg/L		56	41 - 116	16	20
Carbazole	0.000350	U	0.00800	0.006927		mg/L		87	30 - 130	4	20
Chrysene	0.000240	U	0.00800	0.006360		mg/L		79	23 - 128	4	20
Di-n-butyl phthalate	0.00187	U	0.00800	0.006637		mg/L		83	31 - 137	4	20
Dibenz(a,h)anthracene	0.000290	U	0.00800	0.006386		mg/L		80	62 - 138	8	20

TestAmerica Houston

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-85797-1

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels (Continued)

Lab Sample ID: 600-85797-4 MSD

Matrix: Water

Analysis Batch: 126089

Client Sample ID: MW-43

Prep Type: Total/NA

Prep Batch: 125621

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Dibenzofuran	0.000160	U	0.00800	0.004518		mg/L		56	46 - 110	13	20
1,2-Dichlorobenzene	0.000210	U	0.00800	0.004198		mg/L		52	42 - 96	6	20
1,3-Dichlorobenzene	0.000100	U	0.00800	0.004420		mg/L		55	40 - 95	7	20
1,4-Dichlorobenzene	0.000160	U	0.00800	0.004067		mg/L		51	36 - 99	6	20
3,3'-Dichlorobenzidine	0.000320	U	0.00800	0.003387		mg/L		42	33 - 167	16	20
Diethyl phthalate	0.00419	U	0.00800	0.005625		mg/L		70	60 - 140	7	20
Dimethyl phthalate	0.000180	U	0.00800	0.005158		mg/L		64	51 - 120	11	20
2,4-Dinitrotoluene	0.000320	U	0.00800	0.005251		mg/L		66	41 - 125	11	20
Di-n-octyl phthalate	0.000160	U	0.00800	0.006672		mg/L		83	30 - 170	4	20
Fluoranthene	0.000310	U	0.00800	0.006214		mg/L		78	14 - 145	4	20
Fluorene	0.000120	U	0.00800	0.004713		mg/L		59	44 - 112	14	20
Hexachlorobenzene	0.000250	U	0.00800	0.004874		mg/L		61	29 - 126	10	20
Hexachlorocyclopentadiene	0.000150	U	0.00800	0.001534	N	mg/L		19	10 - 109	26	20
Hexachloroethane	0.000170	U	0.00800	0.003862		mg/L		48	35 - 101	5	20
Hexachlorobutadiene	0.000190	U	0.00800	0.003543		mg/L		44	36 - 101	9	20
Indeno[1,2,3-cd]pyrene	0.000290	U	0.00800	0.006318		mg/L		79	60 - 140	4	20
Isophorone	0.000150	U	0.00800	0.004563		mg/L		57	45 - 109	10	20
2-Methylnaphthalene	0.000140	U	0.00800	0.004464		mg/L		56	36 - 111	8	20
Naphthalene	0.000160	U	0.00800	0.004524		mg/L		57	34 - 99	9	20
2-Nitroaniline	0.000350	U	0.00800	0.004197	N	mg/L		52	30 - 130	27	20
3-Nitroaniline	0.000130	U	0.00800	0.004675		mg/L		58	30 - 130	10	20
4-Nitroaniline	0.000230	U	0.00800	0.006113		mg/L		76	46 - 154	10	20
Nitrobenzene	0.000200	U	0.00800	0.004906		mg/L		61	37 - 104	7	20
N-Nitrosodimethylamine	0.000160	U	0.00800	0.004053		mg/L		51	30 - 130	8	20
N-Nitrosodiphenylamine	0.000330	U	0.00800	0.005962		mg/L		75	58 - 142	6	20
N-Nitrosodi-n-propylamine	0.000240	U	0.00800	0.004900		mg/L		61	44 - 110	9	20
Phenanthrene	0.000290	U	0.00800	0.005755		mg/L		72	41 - 117	7	20
Pyrene	0.000330	U	0.00800	0.006268		mg/L		78	28 - 133	7	20
1,2,4-Trichlorobenzene	0.000160	U	0.00800	0.003904		mg/L		49	39 - 98	9	20
Benzyl alcohol	0.000510	U	0.00800	0.005250		mg/L		66	17 - 111	4	20
4-Chloro-3-methylphenol	0.000250	U	0.00800	0.004852	N	mg/L		61	67 - 133	10	20
2-Chlorophenol	0.000220	U	0.00800	0.005160		mg/L		65	36 - 96	9	20
2-Methylphenol	0.000190	U	0.00800	0.005135		mg/L		64	22 - 94	5	20
3 & 4 Methylphenol	0.000160	U	0.00800	0.005359		mg/L		67	12 - 111	3	20
2,4-Dichlorophenol	0.000260	U	0.00800	0.005038		mg/L		63	40 - 106	8	20
2,4-Dimethylphenol	0.000180	U	0.00800	0.005337		mg/L		67	25 - 85	10	20
4,6-Dinitro-2-methylphenol	0.000160	U	0.0160	0.006713		mg/L		42	28 - 128	11	20
2,4-Dinitrophenol	0.000400	U	0.0160	0.005986	N	mg/L		37	40 - 140	10	20
2-Nitrophenol	0.000220	U	0.00800	0.004664		mg/L		58	48 - 100	6	20
4-Nitrophenol	0.000330	U	0.0160	0.01174		mg/L		73	10 - 100	6	20
Pentachlorophenol	0.000960	U	0.0160	0.01178		mg/L		74	45 - 155	5	20
Phenol	0.000140	U	0.00800	0.004321		mg/L		54	10 - 62	3	20
2,4,5-Trichlorophenol	0.000290	U	0.00800	0.005116		mg/L		64	45 - 116	10	20
2,4,6-Trichlorophenol	0.000330	U	0.00800	0.004589	N	mg/L		57	62 - 107	22	20
2,6-Dinitrotoluene	0.000290	U	0.00800	0.004961		mg/L		62	47 - 118	13	20
bis (2-Chloroisopropyl) ether	0.000180	U	0.00800	0.005590		mg/L		70	41 - 111	3	20

TestAmerica Houston

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-85797-1

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels (Continued)

Lab Sample ID: 600-85797-4 MSD

Matrix: Water

Analysis Batch: 126089

Client Sample ID: MW-43

Prep Type: Total/NA

Prep Batch: 125621

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Terphenyl-d14	96		33 - 141
Nitrobenzene-d5	68		47 - 120
2-Fluorophenol	69		18 - 120
2-Fluorobiphenyl	65		43 - 120
2,4,6-Tribromophenol	82		44 - 123
Phenol-d5 (Surr)	65		12 - 128

Method: TX 1005 - Texas - Total Petroleum Hydrocarbon (GC)

Lab Sample ID: MB 600-125473/1-A

Matrix: Water

Analysis Batch: 125559

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 125473

Analyte	MB Result	MB Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C6-C12	0.830	U	5.00	0.830	mg/L		01/21/14 13:18	01/21/14 17:59	1
>C12-C28	0.960	U	5.00	0.960	mg/L		01/21/14 13:18	01/21/14 17:59	1
>C28-C35	0.960	U	5.00	0.960	mg/L		01/21/14 13:18	01/21/14 17:59	1
C6-C35	1.56	U	5.00	1.56	mg/L		01/21/14 13:18	01/21/14 17:59	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	99		70 - 130	01/21/14 13:18	01/21/14 17:59	1

Lab Sample ID: LCS 600-125473/2-A

Matrix: Water

Analysis Batch: 125559

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 125473

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C6-C12	33.3	33.12		mg/L		99	75 - 125
>C12-C28	33.3	30.46		mg/L		91	75 - 125
C6-C35	66.7	63.58		mg/L		95	75 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
o-Terphenyl	105		70 - 130

Lab Sample ID: 600-85797-4 MS

Matrix: Water

Analysis Batch: 125559

Client Sample ID: MW-43

Prep Type: Total/NA

Prep Batch: 125473

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
C6-C12	0.797	U	32.0	32.35		mg/L		101	75 - 125
>C12-C28	0.922	U	32.0	29.78		mg/L		93	75 - 125
C6-C35	1.50	U	64.1	62.13		mg/L		97	75 - 125

Surrogate	MS %Recovery	MS Qualifier	Limits
o-Terphenyl	105		70 - 130

TestAmerica Houston

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-85797-1

Method: TX 1005 - Texas - Total Petroleum Hydrocarbon (GC) (Continued)

Lab Sample ID: 600-85797-4 MSD

Matrix: Water

Analysis Batch: 125559

Client Sample ID: MW-43

Prep Type: Total/NA

Prep Batch: 125473

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C6-C12	0.797	U	32.6	33.19		mg/L		102	75 - 125	3	20
>C12-C28	0.922	U	32.6	30.47		mg/L		94	75 - 125	2	20
C6-C35	1.50	U	65.1	63.66		mg/L		98	75 - 125	2	20
MSD MSD											
Surrogate	%Recovery	Qualifier	Limits								
<i>o</i> -Terphenyl	105		70 - 130								

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 600-125474/1-A

Matrix: Water

Analysis Batch: 125593

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 125474

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00328	U	0.0100	0.00328	mg/L		01/21/14 13:26	01/22/14 14:44	1
Arsenic, Dissolved	0.00328	U	0.0100	0.00328	mg/L		01/21/14 13:26	01/22/14 14:44	1
Cadmium	0.000350	U	0.00500	0.000350	mg/L		01/21/14 13:26	01/22/14 14:44	1
Cadmium, Dissolved	0.000350	U	0.00500	0.000350	mg/L		01/21/14 13:26	01/22/14 14:44	1
Lead	0.00290	U	0.0100	0.00290	mg/L		01/21/14 13:26	01/22/14 14:44	1
Lead, Dissolved	0.00290	U	0.0100	0.00290	mg/L		01/21/14 13:26	01/22/14 14:44	1
Selenium	0.00417	U	0.0400	0.00417	mg/L		01/21/14 13:26	01/22/14 14:44	1
Selenium, Dissolved	0.00417	U	0.0400	0.00417	mg/L		01/21/14 13:26	01/22/14 14:44	1

Lab Sample ID: LCS 600-125474/2-A

Matrix: Water

Analysis Batch: 125593

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 125474

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	1.00	1.083		mg/L		108	80 - 120
Antimony, Dissolved	1.00	1.083		mg/L		108	80 - 120
Arsenic	1.00	1.017		mg/L		102	80 - 120
Arsenic, Dissolved	1.00	1.017		mg/L		102	80 - 120
Cadmium	0.500	0.5041		mg/L		101	80 - 120
Cadmium, Dissolved	0.500	0.5041		mg/L		101	80 - 120
Lead	1.00	1.022		mg/L		102	80 - 120
Lead, Dissolved	1.00	1.022		mg/L		102	80 - 120
Selenium	1.00	1.017		mg/L		102	80 - 120
Selenium, Dissolved	1.00	1.017		mg/L		102	80 - 120

Lab Sample ID: 600-85797-1 MS

Matrix: Water

Analysis Batch: 125593

Client Sample ID: MW-38

Prep Type: Total/NA

Prep Batch: 125474

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.00630		1.00	1.029		mg/L		103	75 - 125
Arsenic	0.00328	U	1.00	1.064		mg/L		106	75 - 125
Cadmium	0.000350	U	0.500	0.4780		mg/L		96	75 - 125
Lead	0.00290	U	1.00	0.9621		mg/L		96	75 - 125

TestAmerica Houston

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-85797-1

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: 600-85797-1 MS

Matrix: Water

Analysis Batch: 125593

Client Sample ID: MW-38

Prep Type: Total/NA

Prep Batch: 125474

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Selenium	0.00603	J	1.00	1.066		mg/L		106	75 - 125

Lab Sample ID: 600-85797-1 MSD

Matrix: Water

Analysis Batch: 125593

Client Sample ID: MW-38

Prep Type: Total/NA

Prep Batch: 125474

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.00630		1.00	1.039		mg/L		104	75 - 125	1	20
Arsenic	0.00328	U	1.00	1.011		mg/L		101	75 - 125	5	20
Cadmium	0.000350	U	0.500	0.4537		mg/L		91	75 - 125	5	20
Lead	0.00290	U	1.00	0.9103		mg/L		91	75 - 125	6	20
Selenium	0.00603	J	1.00	1.017		mg/L		101	75 - 125	5	20

Lab Sample ID: 600-85797-1 DU

Matrix: Water

Analysis Batch: 125593

Client Sample ID: MW-38

Prep Type: Total/NA

Prep Batch: 125474

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	0.00328	U	0.00328	U	mg/L		NC	20
Arsenic, Dissolved	0.00328		0.00328	U	mg/L		NC	20
Cadmium	0.000350	U	0.000350	U	mg/L		NC	20
Cadmium, Dissolved	0.000350		0.000350	U	mg/L		NC	20
Lead	0.00290	U	0.00290	U	mg/L		NC	20
Lead, Dissolved	0.00290		0.00290	U	mg/L		NC	20
Selenium	0.00603	J	0.004727	J	mg/L		24	20
Selenium, Dissolved	0.00603		0.004727	J	mg/L		24	20

Lab Sample ID: 600-85797-1 MS

Matrix: Water

Analysis Batch: 125606

Client Sample ID: MW-38

Prep Type: Dissolved

Prep Batch: 125529

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony, Dissolved	0.00630		1.00	1.056		mg/L		106	75 - 125
Arsenic, Dissolved	0.00328	U	1.00	0.9991		mg/L		100	75 - 125
Cadmium, Dissolved	0.000350	U	0.500	0.5229		mg/L		105	75 - 125
Lead, Dissolved	0.00290	U	1.00	0.9746		mg/L		97	75 - 125
Selenium, Dissolved	0.00470	J	1.00	1.074		mg/L		107	75 - 125

Lab Sample ID: 600-85797-1 MSD

Matrix: Water

Analysis Batch: 125606

Client Sample ID: MW-38

Prep Type: Dissolved

Prep Batch: 125529

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony, Dissolved	0.00630		1.00	1.065		mg/L		107	75 - 125	1	20
Arsenic, Dissolved	0.00328	U	1.00	0.9927		mg/L		99	75 - 125	1	20
Cadmium, Dissolved	0.000350	U	0.500	0.5230		mg/L		105	75 - 125	0	20
Lead, Dissolved	0.00290	U	1.00	0.9749		mg/L		97	75 - 125	0	20
Selenium, Dissolved	0.00470	J	1.00	1.073		mg/L		107	75 - 125	0	20

TestAmerica Houston

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-85797-1

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: 600-85797-1 DU

Matrix: Water

Analysis Batch: 125606

Client Sample ID: MW-38

Prep Type: Dissolved

Prep Batch: 125529

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Arsenic	0.00328		0.00328	U	mg/L		NC	20
Arsenic, Dissolved	0.00328	U	0.00328	U	mg/L		NC	20
Cadmium	0.000350		0.000350	U	mg/L		NC	20
Cadmium, Dissolved	0.000350	U	0.000350	U	mg/L		NC	20
Lead	0.00290		0.00290	U	mg/L		NC	20
Lead, Dissolved	0.00290	U	0.00290	U	mg/L		NC	20
Selenium	0.00470		0.004300	J	mg/L		9	20
Selenium, Dissolved	0.00470	J	0.004300	J	mg/L		9	20

QC Association Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-85797-1

GC/MS VOA

Analysis Batch: 125734

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-85797-4	MW-43	Total/NA	Water	8260B	
600-85797-4 MS	MW-43	Total/NA	Water	8260B	
600-85797-4 MSD	MW-43	Total/NA	Water	8260B	
600-85797-5	Field Blank	Total/NA	Water	8260B	
600-85797-8	DUP-1	Total/NA	Water	8260B	
LCS 600-125734/3	Lab Control Sample	Total/NA	Water	8260B	
MB 600-125734/4	Method Blank	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 125621

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-85797-4	MW-43	Total/NA	Water	3510C	
600-85797-4 MS	MW-43	Total/NA	Water	3510C	
600-85797-4 MSD	MW-43	Total/NA	Water	3510C	
LCS 600-125621/17-A	Lab Control Sample	Total/NA	Water	3510C	
LCS 600-125621/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 600-125621/18-A	Lab Control Sample Dup	Total/NA	Water	3510C	
MB 600-125621/1-A	Method Blank	Total/NA	Water	3510C	

Analysis Batch: 126089

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-85797-4	MW-43	Total/NA	Water	8270C LL	125621
600-85797-4 MS	MW-43	Total/NA	Water	8270C LL	125621
600-85797-4 MSD	MW-43	Total/NA	Water	8270C LL	125621
LCS 600-125621/17-A	Lab Control Sample	Total/NA	Water	8270C LL	125621
LCS 600-125621/2-A	Lab Control Sample	Total/NA	Water	8270C LL	125621
LCSD 600-125621/18-A	Lab Control Sample Dup	Total/NA	Water	8270C LL	125621
MB 600-125621/1-A	Method Blank	Total/NA	Water	8270C LL	125621

GC Semi VOA

Prep Batch: 125473

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-85797-4	MW-43	Total/NA	Water	TX_1005_W_Pr ep	
600-85797-4 MS	MW-43	Total/NA	Water	TX_1005_W_Pr ep	
600-85797-4 MSD	MW-43	Total/NA	Water	TX_1005_W_Pr ep	
600-85797-8	DUP-1	Total/NA	Water	TX_1005_W_Pr ep	
LCS 600-125473/2-A	Lab Control Sample	Total/NA	Water	TX_1005_W_Pr ep	
MB 600-125473/1-A	Method Blank	Total/NA	Water	TX_1005_W_Pr ep	

Analysis Batch: 125559

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-85797-4	MW-43	Total/NA	Water	TX 1005	125473
600-85797-4 MS	MW-43	Total/NA	Water	TX 1005	125473
600-85797-4 MSD	MW-43	Total/NA	Water	TX 1005	125473

TestAmerica Houston

QC Association Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-85797-1

GC Semi VOA (Continued)

Analysis Batch: 125559 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-85797-8	DUP-1	Total/NA	Water	TX 1005	125473
LCS 600-125473/2-A	Lab Control Sample	Total/NA	Water	TX 1005	125473
MB 600-125473/1-A	Method Blank	Total/NA	Water	TX 1005	125473

Metals

Prep Batch: 125474

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-85797-1	MW-38	Total/NA	Water	3010A	
600-85797-1 DU	MW-38	Total/NA	Water	3010A	
600-85797-1 MS	MW-38	Total/NA	Water	3010A	
600-85797-1 MSD	MW-38	Total/NA	Water	3010A	
600-85797-2	MW-41	Total/NA	Water	3010A	
600-85797-3	MW-42	Total/NA	Water	3010A	
600-85797-6	MW-45	Total/NA	Water	3010A	
600-85797-7	B4R	Dissolved	Water	3010A	
600-85797-9	DUP-2	Total/NA	Water	3010A	
LCS 600-125474/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 600-125474/1-A	Method Blank	Total/NA	Water	3010A	

Prep Batch: 125529

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-85797-1	MW-38	Dissolved	Water	3010A	
600-85797-1 DU	MW-38	Dissolved	Water	3010A	
600-85797-1 MS	MW-38	Dissolved	Water	3010A	
600-85797-1 MSD	MW-38	Dissolved	Water	3010A	
600-85797-7	B4R	Total/NA	Water	3010A	
600-85797-9	DUP-2	Dissolved	Water	3010A	

Analysis Batch: 125593

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-85797-1	MW-38	Total/NA	Water	6010B	125474
600-85797-1 DU	MW-38	Total/NA	Water	6010B	125474
600-85797-1 MS	MW-38	Total/NA	Water	6010B	125474
600-85797-1 MSD	MW-38	Total/NA	Water	6010B	125474
600-85797-2	MW-41	Total/NA	Water	6010B	125474
600-85797-3	MW-42	Total/NA	Water	6010B	125474
600-85797-6	MW-45	Total/NA	Water	6010B	125474
600-85797-7	B4R	Dissolved	Water	6010B	125474
600-85797-9	DUP-2	Total/NA	Water	6010B	125474
LCS 600-125474/2-A	Lab Control Sample	Total/NA	Water	6010B	125474
MB 600-125474/1-A	Method Blank	Total/NA	Water	6010B	125474

Analysis Batch: 125606

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-85797-1	MW-38	Dissolved	Water	6010B	125529
600-85797-1 DU	MW-38	Dissolved	Water	6010B	125529
600-85797-1 MS	MW-38	Dissolved	Water	6010B	125529
600-85797-1 MSD	MW-38	Dissolved	Water	6010B	125529
600-85797-7	B4R	Total/NA	Water	6010B	125529

TestAmerica Houston

QC Association Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-85797-1

Metals (Continued)

Analysis Batch: 125606 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-85797-9	DUP-2	Dissolved	Water	6010B	125529

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-85797-1

Client Sample ID: MW-38

Date Collected: 01/16/14 15:25

Date Received: 01/18/14 11:09

Lab Sample ID: 600-85797-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	125474	01/21/14 13:26	NER	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	125593	01/22/14 15:10	DCL	TAL HOU
Dissolved	Prep	3010A			50 mL	50 mL	125529	01/22/14 08:29	NER	TAL HOU
Dissolved	Analysis	6010B		1	50 mL	50 mL	125606	01/22/14 18:09	DCL	TAL HOU

Client Sample ID: MW-41

Date Collected: 01/17/14 12:30

Date Received: 01/18/14 11:09

Lab Sample ID: 600-85797-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	125474	01/21/14 13:26	NER	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	125593	01/22/14 15:19	DCL	TAL HOU

Client Sample ID: MW-42

Date Collected: 01/17/14 11:35

Date Received: 01/18/14 11:09

Lab Sample ID: 600-85797-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	125474	01/21/14 13:26	NER	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	125593	01/22/14 15:26	DCL	TAL HOU

Client Sample ID: MW-43

Date Collected: 01/17/14 09:45

Date Received: 01/18/14 11:09

Lab Sample ID: 600-85797-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	125734	01/23/14 19:38	KLV	TAL HOU
Total/NA	Prep	3510C			250 mL	1.0 mL	125621	01/22/14 16:35	MRA	TAL HOU
Total/NA	Analysis	8270C LL		1	250 mL	1.0 mL	126089	01/25/14 01:38	MBB	TAL HOU
Total/NA	Prep	TX_1005_W_Prep			31.25 mL	3.00 mL	125473	01/21/14 13:18	NVP	TAL HOU
Total/NA	Analysis	TX 1005		1	31.25 mL	3.00 mL	125559	01/21/14 20:07	RJV	TAL HOU

Client Sample ID: Field Blank

Date Collected: 01/17/14 09:50

Date Received: 01/18/14 11:09

Lab Sample ID: 600-85797-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	125734	01/23/14 20:02	KLV	TAL HOU

TestAmerica Houston

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-85797-1

Client Sample ID: MW-45

Date Collected: 01/17/14 13:20

Date Received: 01/18/14 11:09

Lab Sample ID: 600-85797-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	125474	01/21/14 13:26	NER	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	125593	01/22/14 15:28	DCL	TAL HOU

Client Sample ID: B4R

Date Collected: 01/17/14 08:35

Date Received: 01/18/14 11:09

Lab Sample ID: 600-85797-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3010A			50 mL	50 mL	125474	01/21/14 13:26	NER	TAL HOU
Dissolved	Analysis	6010B		1	50 mL	50 mL	125593	01/22/14 15:30	DCL	TAL HOU
Total/NA	Prep	3010A			50 mL	50 mL	125529	01/22/14 08:29	NER	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	125606	01/22/14 18:19	DCL	TAL HOU

Client Sample ID: DUP-1

Date Collected: 01/17/14 00:00

Date Received: 01/18/14 11:09

Lab Sample ID: 600-85797-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	125734	01/23/14 20:26	KLV	TAL HOU
Total/NA	Prep	TX_1005_W_Prep			30.77 mL	3.00 mL	125473	01/21/14 13:18	NVP	TAL HOU
Total/NA	Analysis	TX 1005		1	30.77 mL	3.00 mL	125559	01/21/14 21:44	RJV	TAL HOU

Client Sample ID: DUP-2

Date Collected: 01/16/14 00:00

Date Received: 01/18/14 11:09

Lab Sample ID: 600-85797-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	125474	01/21/14 13:26	NER	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	125593	01/22/14 15:32	DCL	TAL HOU
Dissolved	Prep	3010A			50 mL	50 mL	125529	01/22/14 08:29	NER	TAL HOU
Dissolved	Analysis	6010B		1	50 mL	50 mL	125606	01/22/14 18:29	DCL	TAL HOU

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Certification Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-85797-1

Laboratory: TestAmerica Houston

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

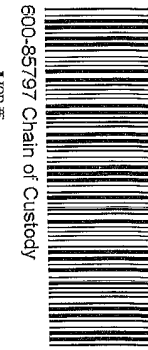
Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0759	08-04-14
Louisiana	NELAP	6	30643	06-30-14
Oklahoma	State Program	6	1309	08-31-14
Texas	NELAP	6	T104704223	10-31-14
USDA	Federal		P330-08-00217	04-01-14
Utah	NELAP	8	TX00083	10-31-14

TestAmerica Houston

6310 Rothway Street
Houston, TX 77040
Phone (713) 690-4444 Fax (713) 690-5646

Chain of Custody Record

Client Information	Sampler: <u>JOSEPH Xi</u>	Lab PM: <u>Joiner, Dean A</u>	Carrier Tracking No(s):
Client Contact: <u>Christina Higginbotham</u>	Phone: <u>832-416-3888</u>	E-Mail: <u>dean.joiner@testamericainc.com</u>	
Company: <u>Golder Associates Inc.</u>			



600-85797 Chain of Custody

Address: <u>500 Century Plaza Drive Suite 190</u>	Due Date Requested:	Analysis Requested	
City: <u>Houston</u>	TAT Requested (days): <u>5 WD TRRP</u>		
State, Zip: <u>TX, 77073</u>	PO #: <u>Purchase Order Requested</u>		
Phone: <u>281-821-6868(Tel) 281-821-6870(Fax)</u>	WO #: <u></u>		
Email: <u>Christina.Higginbotham@golder.com</u>	Project #: <u>60004831</u>		
Project Name: <u>Exide Recycling Center - Water</u>	SSOW#: <u></u>		
Site: <u></u>			

Relinquished by: <u>CHRIS TREVINO</u>	Date/Time: <u>01/17/14 - 1500</u>	Company: <u>Golder</u>	Received by: <u>DEAN JOINER</u>	Date/Time: <u>01/17/14 1500</u>	Company: <u>TH</u>
Relinquished by: <u>McClaner</u>	Date/Time: <u>01/17/14 1700</u>	Company: <u>TH</u>	Received by: <u>DEAN JOINER</u>	Date/Time: <u>01/17/14 1101</u>	Company: <u>TH</u>

Relinquished by: <u>McClaner</u>	Date/Time: <u>01/17/14 1700</u>	Company: <u>TH</u>	Received by: <u>DEAN JOINER</u>	Date/Time: <u>01/17/14 1101</u>	Company: <u>TH</u>
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Relinquished by: <u>McClaner</u>	Date/Time: <u>01/17/14 1700</u>	Company: <u>TH</u>	Received by: <u>DEAN JOINER</u>	Date/Time: <u>01/17/14 1101</u>	Company: <u>TH</u>
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Relinquished by: <u>McClaner</u>	Date/Time: <u>01/17/14 1700</u>	Company: <u>TH</u>	Received by: <u>DEAN JOINER</u>	Date/Time: <u>01/17/14 1101</u>	Company: <u>TH</u>
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Relinquished by: <u>McClaner</u>	Date/Time: <u>01/17/14 1700</u>	Company: <u>TH</u>	Received by: <u>DEAN JOINER</u>	Date/Time: <u>01/17/14 1101</u>	Company: <u>TH</u>
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Relinquished by: <u>McClaner</u>	Date/Time: <u>01/17/14 1700</u>	Company: <u>TH</u>	Received by: <u>DEAN JOINER</u>	Date/Time: <u>01/17/14 1101</u>	Company: <u>TH</u>
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COC No:
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by Lab ArchiveFor

Method of Shipment:

Date/Time: _____

Date/Time:

	Date/Time:
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1/30/2014

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-85797-1

Login Number: 85797

List Source: TestAmerica Houston

List Number: 1

Creator: Capps, Dana R

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.5
COC is present.	True	
COC is filled out in ink and legible.	False	Refer to Job Narrative for details.
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Houston

6310 Rothway Street

Houston, TX 77040

Tel: (713)690-4444

TestAmerica Job ID: 600-85830-1

Client Project/Site: Exide Recycling Center

For:

Golder Associates Inc.

500 Century Plaza Drive

Suite 190

Houston, Texas 77073

Attn: Christina Higginbotham



Authorized for release by:

1/30/2014 11:30:04 AM

Sophia Shah, Project Management Assistant I

sophia.shah@testamericainc.com

Designee for

Dean Joiner, Project Manager II

(713)690-4444

dean.joiner@testamericainc.com

LINKS

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Visit us at:

www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Appendix A

Laboratory Data Package Cover Page - Page 1 of 4

This data package is for TestAmerica Houston job number 600-85830-1 and consists of:

- ☒ R1 - Field chain-of-custody documentation;
- ☒ R2 - Sample identification cross-reference;
- ☒ R3 - Test reports (analytical data sheets) for each environmental sample that includes:
 - a. Items consistent with NELAC Chapter 5,
 - b. dilution factors,
 - c. preparation methods,
 - d. cleanup methods, and
 - e. if required for the project, tentatively identified compounds (TICs).
- ☒ R4 - Surrogate recovery data including:
 - a. Calculated recovery (%R), and
 - b. The laboratory's surrogate QC limits.
- ☒ R5 - Test reports/summary forms for blank samples;
- ☒ R6 - Test reports/summary forms for laboratory control samples (LCSs) including:
 - a. LCS spiking amounts,
 - b. Calculated %R for each analyte, and
 - c. The laboratory's LCS QC limits.
- ☐ R7 - Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
 - a. Samples associated with the MS/MSD clearly identified,
 - b. MS/MSD spiking amounts,
 - c. Concentration of each MS/MSD analyte measured in the parent and spiked samples,
 - d. Calculated %Rs and relative percent differences (RPDs), and
 - e. The laboratory's MS/MSD QC limits
- ☐ R8 - Laboratory analytical duplicate (if applicable) recovery and precision:
 - a. The amount of analyte measured in the duplicate,
 - b. The calculated RPD, and
 - c. The laboratory's QC limits for analytical duplicates.
- ☒ R9 - List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
- ☒ R10 - Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Sophia Shah

Name (printed)



Signature

1/30/2014

Date

Project Management Assistant

Official Title (printed)

Laboratory Review Checklist: Reportable Data - Page 2 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	1/30/2014
Project Name:	Exide Recycling Center	Laboratory Job Number:	600-85830-1
Reviewer Name:	Dean A Joiner		

# ¹	A ²	Description	Yes	No	NA ³	NR ⁴	ER# ⁵
R1	OI	Chain-of-custody (C-O-C)					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?	X				
R2	OI	Sample and quality control (QC) identification					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	Test reports					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, are TICs reported?			X		
R4	O	Surrogate recovery data					
		Were surrogates added prior to extraction?	X				
		Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
R5	OI	Test reports/summary forms for blank samples					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	Laboratory control samples (LCS):					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		X			R06D
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?		X			R06F
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data					
		Were the project/method specified analytes included in the MS and MSD?			X		
		Were MS/MSD analyzed at the appropriate frequency?			X		
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
		Were MS/MSD RPDs within laboratory QC limits?			X		
R8	OI	Analytical duplicate data					
		Were appropriate analytical duplicates analyzed for each matrix?			X		
		Were analytical duplicates analyzed at the appropriate frequency?			X		
		Were RPDs or relative standard deviations within the laboratory QC limits?			X		
R9	OI	Method quantitation limits (MQLs):					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	Other problems/anomalies					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review checklist: Supporting Data - Page 3 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	1/30/2014
Project Name:	Exide Recycling Center	Laboratory Job Number:	600-85830-1
Reviewer Name:	Dean A Joiner		

# ¹	A ²	Description	Yes	No	NA ³	NR ⁴	ER# ⁵
S1	OI	Initial calibration (ICAL)					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	Initial and continuing calibration verification (ICV and CCV) and continuing calibration blank (CCB):					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?		X			S02D
S3	O	Mass spectral tuning					
		Was the appropriate compound for the method used for tuning?	X				
		Were ion abundance data within the method-required QC limits?	X				
S4	O	Internal standards (IS)					
		Were IS area counts and retention times within the method-required QC limits?	X				
S5	OI	Raw data (NELAC Section 5.5.10)					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	Dual column confirmation					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	Tentatively identified compounds (TICs)					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	Interference Check Sample (ICS) results					
		Were percent recoveries within method QC limits?		X			S08A
S9	I	Serial dilutions, post digestion spikes, and method of standard additions					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
S10	OI	Method detection limit (MDL) studies					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSS?	X				
S11	OI	Proficiency test reports					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	Standards documentation					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	Compound/analyte identification procedures					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	Demonstration of analyst competency (DOC)					
		Was DOC conducted consistent with NELAC Chapter 5?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	Verification/validation documentation for methods (NELAC Chapter 5)					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	Laboratory standard operating procedures (SOPs)					
		Are laboratory SOPs current and on file for each method performed?	X				
1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period. 2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable); 3. NA = Not applicable; 4. NR = Not reviewed; 5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).							

Laboratory Review Checklist: Exception Reports - Page 4 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	1/30/2014
Project Name:	Exide Recycling Center	Laboratory Job Number:	600-85830-1
Reviewer Name:	Dean A Joiner		

ER # ¹	Description
R06D	Method 8270C LL: The laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) associated with batch 125713 were biased low for Benzidine. Benzidine has been identified as poor performing analyte when analyzed using this method; therefore, re-extraction/re-analyses were not performed. These results have been reported and qualified
R06F	Method 8270C LL: The %RPD of the laboratory control sample (LCS) and laboratory control standard duplicate (LCSD) for preparation batch 125713 recovered outside control limits for all analytes. The LCSD was double spiked during preparation. The RPD is calculated based on raw results instead of recoveries; as the raw results of the LCS and LCSD were very different, the RPDs were above the acceptance limits.
S02D	Method 8270C LL: The continuing calibration verification (CCV) for analytical batch 126158 recovered outside control limits for Benzidine (-91.9%), 4,6-Dinitro-2-methylphenol (55.8%) and 2,2'-oxybis[1-Chloropropane] (50.7%). The SOP makes allowance for up to four non-CCC analytes to have a %drift greater than the acceptable limit. The data have been qualified and reported.
S08A	Method 6010B: The interference check standard solution (ICSA) associated with batch 125757 had results for one or more elements at a level greater than 2 times the limit of detection (LOD). Since this analyte was not detected in the client sample, no corrective action was required. Any samples which did show detects of this analyte were reanalyzed in another batch.
<ol style="list-style-type: none"> Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable); NA = Not applicable; NR = Not reviewed; ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked). 	

Detection Check Standard

Matrix: Water
Method: 200.7/6010
Preparation: 200.7P/3010
Date Analyzed: 12/31/2013
Date Prepared: 12/27/2013
Instrument: Spectro01
TALs Batches: 124030, 123788p
Units: mg/L

Analyte	MDL	DCS Spike	Measured Result	MQL
Aluminum	0.006	0.02	0.028176	0.5
Antimony	0.0063	0.01	0.010016	0.05
Arsenic	0.0033	0.01	0.008253	0.01
Barium	0.0022	0.005	0.004098	0.02
Beryllium	0.00134	0.002	0.004019	0.005
Boron	0.0077	0.02	0.019829	0.2
Cadmium	0.00073	0.001	0.001	0.005
Calcium	0.022	0.05	0.060829	1
Chromium	0.0016	0.002	0.003835	0.01
Cobalt	0.00063	0.001	0.000965	0.01
Copper	0.0014	0.002	0.002451	0.01
Iron	0.087	0.1	0.002258	0.4
Lithium	0.0024	0.005	0.006107	0.2
Lead	0.0029	0.005	0.005478	0.01
Selenium	0.0042	0.01	0.009953	0.04
Manganese	0.00084	0.002	0.001988	0.01
Molybdenum	0.0027	0.005	0.005867	0.01
Nickel	0.00179	0.005	0.005669	0.01
Silver	0.0012	0.0025	0.001901	0.01
Sodium	0.02	0.05	0.088115	1
Strontium	0.0005	0.001	0.000897	0.005
Thallium	0.0078	0.02	0.021503	0.03
Tin	0.0028	0.005	0.005708	0.01
Titanium	0.0011	0.002	0.001905	0.01
Vanadium	0.0017	0.002	0.003578	0.01
Zinc	0.0022	0.005	0.004189	0.01

Matrix: Water
Method: 8270C
Prep Method: 3510C
Date Analyzed: 1/10/2014
Job #: 600-85250
TALS Batch: 124708
Units: ug/L

Analyte	MDL	DCS Spike	Measured Result	MQL
1,1'-Biphenyl	1.120	2.500	2.599	10
1,2,4,5-Tetrachlorobenzene	1.680	2.500	2.619	10
1,2,4-Trichlorobenzene	1.140	2.500	2.512	10
1,2-Dichlorobenzene	1.090	2.500	2.475	10
1,2-Dinitrobenzene	1.020	2.500	2.003	10
1,2-Diphenylhydrazine	0.900	2.500	2.890	10
1,3-Dichlorobenzene	1.150	2.500	2.580	10
1,3-Dinitrobenzene	3.470	5.000	4.860	10
1,4-Dichlorobenzene	1.260	2.500	2.580	10
1-Methylnaphthalene	0.530	2.500	2.645	10
2,2'-oxybis[1-chloropropane]	1.700	2.500	2.849	10
2,3,4,6-Tetrachlorophenol	0.830	2.500	1.973	10
2,4,5-Trichlorophenol	1.260	2.500	2.284	10
2,4,6-Trichlorophenol	0.920	2.500	2.319	10
2,4-Dichlorophenol	1.540	2.500	2.415	10
2,4-Dimethylphenol	1.340	2.500	2.781	10
2,4-Dinitrophenol	0.890	5.000	8.242	50
2,4-Dinitrotoluene	0.950	2.500	2.491	10
2,6-Dimethylphenol	1.030	2.500	2.249	10
2,6-Dinitrotoluene	0.640	2.500	2.481	10
2-Chloronaphthalene	1.000	2.500	2.695	10
2-Chlorophenol	0.670	2.500	2.420	10
2-Methylnaphthalene	1.100	2.500	2.692	10
2-Methylphenol	1.010	2.500	2.530	10
2-Nitroaniline	1.130	2.500	2.804	50
2-Nitrophenol	0.630	2.500	2.493	10
3 & 4 Methylphenol	1.880	2.500	2.655	20
3,3'-Dichlorobenzidine	0.580	2.500	4.823	20
3-Nitroaniline	0.510	2.500	2.477	50
4,6-Dinitro-2-methylphenol	1.880	5.000	3.164	50
4-Bromophenyl phenyl ether	0.680	2.500	2.519	10
4-Chloro-3-methylphenol	0.820	2.500	2.796	10
4-Chloroaniline	0.980	2.500	2.228	10
4-Chlorophenyl phenyl ether	0.790	2.500	2.875	10
4-Nitroaniline	1.010	2.500	2.276	50
4-Nitrophenol	0.990	5.000	3.057	50
Acenaphthene	0.530	2.500	2.607	10
Acenaphthylene	0.900	2.500	2.580	10
Acetophenone	1.020	2.500	2.738	10
Aniline	1.620	2.500	1.999	10
Anthracene	0.670	2.500	2.528	10
Azobenzene	10	2.500	2.890	10
Benzidine	0.610	25.000	2.670	50
Benzo[a]anthracene	0.580	2.500	2.537	10
Benzo[a]pyrene	0.570	2.500	2.311	10
Benzo[b]fluoranthene	1.050	2.500	2.564	10

DCS = Detection Check Standard
 MQL = Method Quantitation Limit

Matrix: Water
Method: 8270C
Prep Method: 3510C
Date Analyzed: 1/10/2014
Job #: 600-85250
TALS Batch: 124708
Units: ug/L

Analyte	MDL	DCS Spike	Measured Result	MQL
Benzo[g,h,i]perylene	0.830	2.500	2.142	10
Benzo[k]fluoranthene	0.930	2.500	2.470	10
Benzoic acid	2.510	5.000	2.420	50
Benzyl alcohol	1.180	2.500	2.395	10
Bis(2-chloroethoxy)methane	1.240	2.500	2.776	10
Bis(2-chloroethyl)ether	1.190	2.500	2.577	10
Bis(2-ethylhexyl) phthalate	0.520	2.500	2.735	10
Butyl benzyl phthalate	0.610	2.500	2.781	10
Caprolactam	2.320	5.000	4.190	10
Carbazole	1.140	2.500	2.630	10
Chrysene	0.600	2.500	2.639	10
Dibenz(a,h)anthracene	0.720	2.500	2.244	10
Dibenzofuran	0.990	2.500	2.671	10
Diethyl phthalate	1.140	2.500	2.795	10
Dimethyl phthalate	0.520	2.500	2.597	10
Di-n-butyl phthalate	1.040	2.500	2.836	10
Di-n-octyl phthalate	0.690	2.500	2.335	10
Fluoranthene	0.520	2.500	2.616	10
Fluorene	1.420	2.500	2.748	10
Hexachlorobenzene	0.900	2.500	2.763	10
Hexachlorobutadiene	1.110	2.500	2.591	10
Hexachlorocyclopentadiene	0.580	2.500	1.623	10
Hexachloroethane	1.160	2.500	2.427	10
Indeno[1,2,3-cd]pyrene	0.670	2.500	1.627	10
Isophorone	0.730	2.500	2.806	10
Naphthalene	0.510	2.500	2.664	10
Nitrobenzene	1.180	2.500	3.061	10
N-Nitrosodimethylamine	1.930	2.500	1.988	10
N-Nitrosodi-n-propylamine	0.660	2.500	2.808	10
N-Nitrosodiphenylamine	1.030	2.500	2.590	10
Pentachlorophenol	0.890	5.000	2.274	50
Phenanthrene	0.790	2.500	2.579	10
Phenol	0.950	2.500	2.010	10
Pyrene	1.120	2.500	2.619	10
Pyridine	1.040	2.500	0.536	10
Total Cresols	1.880	5.000	5.200	50

Case Narrative

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-85830-1

Job ID: 600-85830-1

Laboratory: TestAmerica Houston

Narrative

Job Narrative
600-85830-1

Comments

No additional comments.

Receipt

The samples were received on 1/20/2014 3:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.1° C.

Method Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-85830-1

Method	Method Description	Protocol	Laboratory
8270C LL	Semivolatile Organic Compounds by GCMS - Low Levels	SW846	TAL HOU
6010B	Metals (ICP)	SW846	TAL HOU

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Sample Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-85830-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
600-85830-1	Dup-1	Water	01/17/14 00:00	01/20/14 15:00
600-85830-2	MW-40	Water	01/17/14 15:25	01/20/14 15:00
600-85830-3	MW-39	Water	01/17/14 16:15	01/20/14 15:00

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-85830-1

Client Sample ID: Dup-1

Date Collected: 01/17/14 00:00

Date Received: 01/20/14 15:00

Lab Sample ID: 600-85830-1

Matrix: Water

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.000160	U *	0.000500	0.000160	mg/L		01/23/14 14:29	01/29/14 10:36	1
Acenaphthylene	0.000160	U *	0.000500	0.000160	mg/L		01/23/14 14:29	01/29/14 10:36	1
Anthracene	0.000440	U *	0.000500	0.000440	mg/L		01/23/14 14:29	01/29/14 10:36	1
Benzidine	0.0179	U *	0.0500	0.0179	mg/L		01/23/14 14:29	01/29/14 10:36	1
Benzo[a]anthracene	0.000250	U *	0.000500	0.000250	mg/L		01/23/14 14:29	01/29/14 10:36	1
Benzo[b]fluoranthene	0.000180	U *	0.000500	0.000180	mg/L		01/23/14 14:29	01/29/14 10:36	1
Benzo[k]fluoranthene	0.000160	U *	0.000500	0.000160	mg/L		01/23/14 14:29	01/29/14 10:36	1
Benzo[g,h,i]perylene	0.000350	U *	0.000500	0.000350	mg/L		01/23/14 14:29	01/29/14 10:36	1
Benzo[a]pyrene	0.000130	U *	0.000500	0.000130	mg/L		01/23/14 14:29	01/29/14 10:36	1
Bis(2-chloroethoxy)methane	0.000190	U *	0.000500	0.000190	mg/L		01/23/14 14:29	01/29/14 10:36	1
Bis(2-chloroethyl)ether	0.000180	U *	0.000500	0.000180	mg/L		01/23/14 14:29	01/29/14 10:36	1
Bis(2-ethylhexyl) phthalate	0.000590	U *	0.00150	0.000590	mg/L		01/23/14 14:29	01/29/14 10:36	1
4-Bromophenyl phenyl ether	0.000250	U *	0.000500	0.000250	mg/L		01/23/14 14:29	01/29/14 10:36	1
Butyl benzyl phthalate	0.000850	U *	0.00250	0.000850	mg/L		01/23/14 14:29	01/29/14 10:36	1
4-Chloroaniline	0.000110	U *	0.000500	0.000110	mg/L		01/23/14 14:29	01/29/14 10:36	1
2-Chloronaphthalene	0.000190	U *	0.000500	0.000190	mg/L		01/23/14 14:29	01/29/14 10:36	1
4-Chlorophenyl phenyl ether	0.000230	U *	0.000500	0.000230	mg/L		01/23/14 14:29	01/29/14 10:36	1
Carbazole	0.000350	U *	0.000500	0.000350	mg/L		01/23/14 14:29	01/29/14 10:36	1
Chrysene	0.000240	U *	0.000500	0.000240	mg/L		01/23/14 14:29	01/29/14 10:36	1
Di-n-butyl phthalate	0.00187	U *	0.00500	0.00187	mg/L		01/23/14 14:29	01/29/14 10:36	1
Dibenz(a,h)anthracene	0.000290	U *	0.000500	0.000290	mg/L		01/23/14 14:29	01/29/14 10:36	1
Dibenzofuran	0.000160	U *	0.000500	0.000160	mg/L		01/23/14 14:29	01/29/14 10:36	1
1,2-Dichlorobenzene	0.000210	U *	0.000500	0.000210	mg/L		01/23/14 14:29	01/29/14 10:36	1
1,3-Dichlorobenzene	0.000100	U *	0.000500	0.000100	mg/L		01/23/14 14:29	01/29/14 10:36	1
1,4-Dichlorobenzene	0.000160	U *	0.000500	0.000160	mg/L		01/23/14 14:29	01/29/14 10:36	1
3,3'-Dichlorobenzidine	0.000320	U *	0.000500	0.000320	mg/L		01/23/14 14:29	01/29/14 10:36	1
Diethyl phthalate	0.00419	U *	0.00500	0.00419	mg/L		01/23/14 14:29	01/29/14 10:36	1
Dimethyl phthalate	0.000180	U *	0.00500	0.000180	mg/L		01/23/14 14:29	01/29/14 10:36	1
2,4-Dinitrotoluene	0.000320	U *	0.000500	0.000320	mg/L		01/23/14 14:29	01/29/14 10:36	1
Di-n-octyl phthalate	0.000160	U *	0.00500	0.000160	mg/L		01/23/14 14:29	01/29/14 10:36	1
Fluoranthene	0.000310	U *	0.000500	0.000310	mg/L		01/23/14 14:29	01/29/14 10:36	1
Fluorene	0.000120	U *	0.000500	0.000120	mg/L		01/23/14 14:29	01/29/14 10:36	1
Hexachlorobenzene	0.000250	U *	0.000500	0.000250	mg/L		01/23/14 14:29	01/29/14 10:36	1
Hexachlorocyclopentadiene	0.000150	U *	0.000500	0.000150	mg/L		01/23/14 14:29	01/29/14 10:36	1
Hexachloroethane	0.000170	U *	0.000500	0.000170	mg/L		01/23/14 14:29	01/29/14 10:36	1
Hexachlorobutadiene	0.000190	U *	0.000500	0.000190	mg/L		01/23/14 14:29	01/29/14 10:36	1
Indeno[1,2,3-cd]pyrene	0.000290	U *	0.000500	0.000290	mg/L		01/23/14 14:29	01/29/14 10:36	1
Isophorone	0.000150	U *	0.000500	0.000150	mg/L		01/23/14 14:29	01/29/14 10:36	1
2-Methylnaphthalene	0.000140	U *	0.000500	0.000140	mg/L		01/23/14 14:29	01/29/14 10:36	1
Naphthalene	0.000160	U *	0.000500	0.000160	mg/L		01/23/14 14:29	01/29/14 10:36	1
2-Nitroaniline	0.000350	U *	0.000500	0.000350	mg/L		01/23/14 14:29	01/29/14 10:36	1
3-Nitroaniline	0.000130	U	0.000500	0.000130	mg/L		01/23/14 14:29	01/29/14 10:36	1
4-Nitroaniline	0.000230	U *	0.000500	0.000230	mg/L		01/23/14 14:29	01/29/14 10:36	1
Nitrobenzene	0.000200	U *	0.000500	0.000200	mg/L		01/23/14 14:29	01/29/14 10:36	1
N-Nitrosodimethylamine	0.000160	U *	0.000500	0.000160	mg/L		01/23/14 14:29	01/29/14 10:36	1
N-Nitrosodiphenylamine	0.000330	U *	0.000500	0.000330	mg/L		01/23/14 14:29	01/29/14 10:36	1
N-Nitrosodi-n-propylamine	0.000240	U *	0.000500	0.000240	mg/L		01/23/14 14:29	01/29/14 10:36	1
Phenanthrene	0.000290	U *	0.000500	0.000290	mg/L		01/23/14 14:29	01/29/14 10:36	1
Pyrene	0.000330	U *	0.000500	0.000330	mg/L		01/23/14 14:29	01/29/14 10:36	1

TestAmerica Houston

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-85830-1

Client Sample ID: Dup-1

Lab Sample ID: 600-85830-1

Date Collected: 01/17/14 00:00

Matrix: Water

Date Received: 01/20/14 15:00

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels (Continued)

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	0.000160	U *	0.000500	0.000160	mg/L		01/23/14 14:29	01/29/14 10:36	1
Benzyl alcohol	0.000510	U *	0.000500	0.000510	mg/L		01/23/14 14:29	01/29/14 10:36	1
4-Chloro-3-methylphenol	0.000250	U *	0.000500	0.000250	mg/L		01/23/14 14:29	01/29/14 10:36	1
2-Chlorophenol	0.000220	U *	0.000500	0.000220	mg/L		01/23/14 14:29	01/29/14 10:36	1
2-Methylphenol	0.000190	U *	0.000500	0.000190	mg/L		01/23/14 14:29	01/29/14 10:36	1
3 & 4 Methylphenol	0.000160	U *	0.00100	0.000160	mg/L		01/23/14 14:29	01/29/14 10:36	1
2,4-Dichlorophenol	0.000260	U *	0.000500	0.000260	mg/L		01/23/14 14:29	01/29/14 10:36	1
2,4-Dimethylphenol	0.000180	U *	0.000500	0.000180	mg/L		01/23/14 14:29	01/29/14 10:36	1
4,6-Dinitro-2-methylphenol	0.000160	U *	0.00100	0.000160	mg/L		01/23/14 14:29	01/29/14 10:36	1
2,4-Dinitrophenol	0.000400	U *	0.00100	0.000400	mg/L		01/23/14 14:29	01/29/14 10:36	1
2-Nitrophenol	0.000220	U *	0.000500	0.000220	mg/L		01/23/14 14:29	01/29/14 10:36	1
4-Nitrophenol	0.000330	U *	0.00100	0.000330	mg/L		01/23/14 14:29	01/29/14 10:36	1
Pentachlorophenol	0.000960	U *	0.00100	0.000960	mg/L		01/23/14 14:29	01/29/14 10:36	1
Phenol	0.000140	U *	0.000500	0.000140	mg/L		01/23/14 14:29	01/29/14 10:36	1
2,4,5-Trichlorophenol	0.000290	U *	0.000500	0.000290	mg/L		01/23/14 14:29	01/29/14 10:36	1
2,4,6-Trichlorophenol	0.000330	U *	0.000500	0.000330	mg/L		01/23/14 14:29	01/29/14 10:36	1
2,6-Dinitrotoluene	0.000290	U *	0.000500	0.000290	mg/L		01/23/14 14:29	01/29/14 10:36	1
bis (2-Chloroisopropyl) ether	0.000180	U *	0.000500	0.000180	mg/L		01/23/14 14:29	01/29/14 10:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	68		33 - 141	01/23/14 14:29	01/29/14 10:36	1
Nitrobenzene-d5	75		47 - 120	01/23/14 14:29	01/29/14 10:36	1
2-Fluorophenol	66		18 - 120	01/23/14 14:29	01/29/14 10:36	1
2-Fluorobiphenyl	65		43 - 120	01/23/14 14:29	01/29/14 10:36	1
2,4,6-Tribromophenol	60		44 - 123	01/23/14 14:29	01/29/14 10:36	1
Phenol-d5 (Surr)	57		12 - 128	01/23/14 14:29	01/29/14 10:36	1

Client Sample ID: MW-40

Lab Sample ID: 600-85830-2

Date Collected: 01/17/14 15:25

Matrix: Water

Date Received: 01/20/14 15:00

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000350	U	0.00500	0.000350	mg/L		01/21/14 13:26	01/23/14 13:50	1
Lead	0.00290	U	0.0100	0.00290	mg/L		01/21/14 13:26	01/24/14 12:01	1

Method: 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium, Dissolved	0.000350	U	0.00500	0.000350	mg/L		01/22/14 08:29	01/22/14 18:31	1
Lead, Dissolved	0.00290	U	0.0100	0.00290	mg/L		01/22/14 08:29	01/22/14 18:31	1

Client Sample ID: MW-39

Lab Sample ID: 600-85830-3

Date Collected: 01/17/14 16:15

Matrix: Water

Date Received: 01/20/14 15:00

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000350	U	0.00500	0.000350	mg/L		01/21/14 13:26	01/23/14 13:57	1
Cadmium	0.000350	U	0.00500	0.000350	mg/L		01/21/14 13:26	01/24/14 12:03	1
Lead	0.00290	U	0.0100	0.00290	mg/L		01/21/14 13:26	01/23/14 13:57	1

TestAmerica Houston

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-85830-1

Client Sample ID: MW-39

Date Collected: 01/17/14 16:15

Date Received: 01/20/14 15:00

Lab Sample ID: 600-85830-3

Matrix: Water

Method: 6010B - Metals (ICP) (Continued)

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.00290	U	0.0100	0.00290	mg/L		01/21/14 13:26	01/24/14 12:03	1

Method: 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium, Dissolved	0.000350	U	0.00500	0.000350	mg/L		01/22/14 08:29	01/22/14 18:34	1
Lead, Dissolved	0.00440	J	0.0100	0.00290	mg/L		01/22/14 08:29	01/22/14 18:34	1

Definitions/Glossary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-85830-1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
*	RPD of the LCS and LCSD exceeds the control limits
U	Analyte was not detected at or above the SDL.
*	LCS or LCSD exceeds the control limits

Metals

Qualifier	Qualifier Description
U	Analyte was not detected at or above the SDL.
J	Result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Surrogate Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-85830-1

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TPH (33-141)	NBZ (47-120)	2FP (18-120)	FBP (43-120)	TBP (44-123)	PHL (12-128)
600-85830-1	Dup-1	68	75	66	65	60	57
LCS 600-125713/2-A	Lab Control Sample	82	94	88	82	79	79
LCSD 600-125713/13-A	Lab Control Sample Dup	76	80	77	79	64	58
LCSD 600-125713/3-A	Lab Control Sample Dup	87	117	88	75	76	79
MB 600-125713/1-A	Method Blank	70	88	64	67	57	41

Surrogate Legend

TPH = Terphenyl-d14

NBZ = Nitrobenzene-d5

2FP = 2-Fluorophenol

FBP = 2-Fluorobiphenyl

TBP = 2,4,6-Tribromophenol

PHL = Phenol-d5 (Surr)

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-85830-1

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Lab Sample ID: MB 600-125713/1-A

Matrix: Water

Analysis Batch: 126158

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 125713

Analyte	MB Result	MB Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.000160	U	0.000500	0.000160	mg/L		01/23/14 14:29	01/29/14 08:23	1
Acenaphthylene	0.000160	U	0.000500	0.000160	mg/L		01/23/14 14:29	01/29/14 08:23	1
Anthracene	0.000440	U	0.000500	0.000440	mg/L		01/23/14 14:29	01/29/14 08:23	1
Benzidine	0.0179	U	0.0500	0.0179	mg/L		01/23/14 14:29	01/29/14 08:23	1
Benzo[a]anthracene	0.000250	U	0.000500	0.000250	mg/L		01/23/14 14:29	01/29/14 08:23	1
Benzo[b]fluoranthene	0.000180	U	0.000500	0.000180	mg/L		01/23/14 14:29	01/29/14 08:23	1
Benzo[k]fluoranthene	0.000160	U	0.000500	0.000160	mg/L		01/23/14 14:29	01/29/14 08:23	1
Benzo[g,h,i]perylene	0.000350	U	0.000500	0.000350	mg/L		01/23/14 14:29	01/29/14 08:23	1
Benzo[a]pyrene	0.000130	U	0.000500	0.000130	mg/L		01/23/14 14:29	01/29/14 08:23	1
Bis(2-chloroethoxy)methane	0.000190	U	0.000500	0.000190	mg/L		01/23/14 14:29	01/29/14 08:23	1
Bis(2-chloroethyl)ether	0.000180	U	0.000500	0.000180	mg/L		01/23/14 14:29	01/29/14 08:23	1
Bis(2-ethylhexyl) phthalate	0.000590	U	0.00150	0.000590	mg/L		01/23/14 14:29	01/29/14 08:23	1
4-Bromophenyl phenyl ether	0.000250	U	0.000500	0.000250	mg/L		01/23/14 14:29	01/29/14 08:23	1
Butyl benzyl phthalate	0.000850	U	0.00250	0.000850	mg/L		01/23/14 14:29	01/29/14 08:23	1
4-Chloroaniline	0.000110	U	0.000500	0.000110	mg/L		01/23/14 14:29	01/29/14 08:23	1
2-Chloronaphthalene	0.000190	U	0.000500	0.000190	mg/L		01/23/14 14:29	01/29/14 08:23	1
4-Chlorophenyl phenyl ether	0.000230	U	0.000500	0.000230	mg/L		01/23/14 14:29	01/29/14 08:23	1
Carbazole	0.000350	U	0.000500	0.000350	mg/L		01/23/14 14:29	01/29/14 08:23	1
Chrysene	0.000240	U	0.000500	0.000240	mg/L		01/23/14 14:29	01/29/14 08:23	1
Di-n-butyl phthalate	0.008833		0.00500	0.00187	mg/L		01/23/14 14:29	01/29/14 08:23	1
Dibenz(a,h)anthracene	0.000290	U	0.000500	0.000290	mg/L		01/23/14 14:29	01/29/14 08:23	1
Dibenzofuran	0.000160	U	0.000500	0.000160	mg/L		01/23/14 14:29	01/29/14 08:23	1
1,2-Dichlorobenzene	0.000210	U	0.000500	0.000210	mg/L		01/23/14 14:29	01/29/14 08:23	1
1,3-Dichlorobenzene	0.000100	U	0.000500	0.000100	mg/L		01/23/14 14:29	01/29/14 08:23	1
1,4-Dichlorobenzene	0.000160	U	0.000500	0.000160	mg/L		01/23/14 14:29	01/29/14 08:23	1
3,3'-Dichlorobenzidine	0.000320	U	0.000500	0.000320	mg/L		01/23/14 14:29	01/29/14 08:23	1
Diethyl phthalate	0.00419	U	0.00500	0.00419	mg/L		01/23/14 14:29	01/29/14 08:23	1
Dimethyl phthalate	0.000180	U	0.00500	0.000180	mg/L		01/23/14 14:29	01/29/14 08:23	1
2,4-Dinitrotoluene	0.000320	U	0.000500	0.000320	mg/L		01/23/14 14:29	01/29/14 08:23	1
Di-n-octyl phthalate	0.000160	U	0.00500	0.000160	mg/L		01/23/14 14:29	01/29/14 08:23	1
Fluoranthene	0.000310	U	0.000500	0.000310	mg/L		01/23/14 14:29	01/29/14 08:23	1
Fluorene	0.000120	U	0.000500	0.000120	mg/L		01/23/14 14:29	01/29/14 08:23	1
Hexachlorobenzene	0.000250	U	0.000500	0.000250	mg/L		01/23/14 14:29	01/29/14 08:23	1
Hexachlorocyclopentadiene	0.000150	U	0.000500	0.000150	mg/L		01/23/14 14:29	01/29/14 08:23	1
Hexachloroethane	0.000170	U	0.000500	0.000170	mg/L		01/23/14 14:29	01/29/14 08:23	1
Hexachlorobutadiene	0.000190	U	0.000500	0.000190	mg/L		01/23/14 14:29	01/29/14 08:23	1
Indeno[1,2,3-cd]pyrene	0.000290	U	0.000500	0.000290	mg/L		01/23/14 14:29	01/29/14 08:23	1
Isophorone	0.000150	U	0.000500	0.000150	mg/L		01/23/14 14:29	01/29/14 08:23	1
2-Methylnaphthalene	0.000140	U	0.000500	0.000140	mg/L		01/23/14 14:29	01/29/14 08:23	1
Naphthalene	0.000160	U	0.000500	0.000160	mg/L		01/23/14 14:29	01/29/14 08:23	1
2-Nitroaniline	0.000350	U	0.000500	0.000350	mg/L		01/23/14 14:29	01/29/14 08:23	1
3-Nitroaniline	0.000130	U	0.000500	0.000130	mg/L		01/23/14 14:29	01/29/14 08:23	1
4-Nitroaniline	0.000230	U	0.000500	0.000230	mg/L		01/23/14 14:29	01/29/14 08:23	1
Nitrobenzene	0.000200	U	0.000500	0.000200	mg/L		01/23/14 14:29	01/29/14 08:23	1
N-Nitrosodimethylamine	0.000160	U	0.000500	0.000160	mg/L		01/23/14 14:29	01/29/14 08:23	1
N-Nitrosodiphenylamine	0.000330	U	0.000500	0.000330	mg/L		01/23/14 14:29	01/29/14 08:23	1
N-Nitrosodi-n-propylamine	0.000240	U	0.000500	0.000240	mg/L		01/23/14 14:29	01/29/14 08:23	1
Phenanthrene	0.000290	U	0.000500	0.000290	mg/L		01/23/14 14:29	01/29/14 08:23	1

TestAmerica Houston

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-85830-1

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels (Continued)

Lab Sample ID: MB 600-125713/1-A

Matrix: Water

Analysis Batch: 126158

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 125713

Analyte	MB Result	MB Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pyrene	0.000330	U	0.000500	0.000330	mg/L		01/23/14 14:29	01/29/14 08:23	1
1,2,4-Trichlorobenzene	0.000160	U	0.000500	0.000160	mg/L		01/23/14 14:29	01/29/14 08:23	1
Benzyl alcohol	0.000510	U	0.000500	0.000510	mg/L		01/23/14 14:29	01/29/14 08:23	1
4-Chloro-3-methylphenol	0.000250	U	0.000500	0.000250	mg/L		01/23/14 14:29	01/29/14 08:23	1
2-Chlorophenol	0.000220	U	0.000500	0.000220	mg/L		01/23/14 14:29	01/29/14 08:23	1
2-Methylphenol	0.000190	U	0.000500	0.000190	mg/L		01/23/14 14:29	01/29/14 08:23	1
3 & 4 Methylphenol	0.000160	U	0.00100	0.000160	mg/L		01/23/14 14:29	01/29/14 08:23	1
2,4-Dichlorophenol	0.000260	U	0.000500	0.000260	mg/L		01/23/14 14:29	01/29/14 08:23	1
2,4-Dimethylphenol	0.000180	U	0.000500	0.000180	mg/L		01/23/14 14:29	01/29/14 08:23	1
4,6-Dinitro-2-methylphenol	0.000160	U	0.00100	0.000160	mg/L		01/23/14 14:29	01/29/14 08:23	1
2,4-Dinitrophenol	0.000400	U	0.00100	0.000400	mg/L		01/23/14 14:29	01/29/14 08:23	1
2-Nitrophenol	0.000220	U	0.000500	0.000220	mg/L		01/23/14 14:29	01/29/14 08:23	1
4-Nitrophenol	0.000330	U	0.00100	0.000330	mg/L		01/23/14 14:29	01/29/14 08:23	1
Pentachlorophenol	0.000960	U	0.00100	0.000960	mg/L		01/23/14 14:29	01/29/14 08:23	1
Phenol	0.000140	U	0.000500	0.000140	mg/L		01/23/14 14:29	01/29/14 08:23	1
2,4,5-Trichlorophenol	0.000290	U	0.000500	0.000290	mg/L		01/23/14 14:29	01/29/14 08:23	1
2,4,6-Trichlorophenol	0.000330	U	0.000500	0.000330	mg/L		01/23/14 14:29	01/29/14 08:23	1
2,6-Dinitrotoluene	0.000290	U	0.000500	0.000290	mg/L		01/23/14 14:29	01/29/14 08:23	1
bis (2-Chloroisopropyl) ether	0.000180	U	0.000500	0.000180	mg/L		01/23/14 14:29	01/29/14 08:23	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	70		33 - 141	01/23/14 14:29	01/29/14 08:23	1
Nitrobenzene-d5	88		47 - 120	01/23/14 14:29	01/29/14 08:23	1
2-Fluorophenol	64		18 - 120	01/23/14 14:29	01/29/14 08:23	1
2-Fluorobiphenyl	67		43 - 120	01/23/14 14:29	01/29/14 08:23	1
2,4,6-Tribromophenol	57		44 - 123	01/23/14 14:29	01/29/14 08:23	1
Phenol-d5 (Surr)	41		12 - 128	01/23/14 14:29	01/29/14 08:23	1

Lab Sample ID: LCS 600-125713/2-A

Matrix: Water

Analysis Batch: 126158

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 125713

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	0.00800	0.005653		mg/L		71	47 - 145
Acenaphthylene	0.00800	0.005385		mg/L		67	35 - 135
Anthracene	0.00800	0.004988		mg/L		62	53 - 124
Benzidine	0.0400	0.0179	U *	mg/L		0	10 - 120
Benzo[a]anthracene	0.00800	0.005792		mg/L		72	53 - 122
Benzo[b]fluoranthene	0.00800	0.005373		mg/L		67	53 - 131
Benzo[k]fluoranthene	0.00800	0.005292		mg/L		66	46 - 130
Benzo[g,h,i]perylene	0.00800	0.005672		mg/L		71	46 - 133
Benzo[a]pyrene	0.00800	0.005065		mg/L		63	50 - 124
Bis(2-chloroethoxy)methane	0.00800	0.005501		mg/L		69	42 - 119
Bis(2-chloroethyl)ether	0.00800	0.005307		mg/L		66	40 - 112
Bis(2-ethylhexyl) phthalate	0.00800	0.005812		mg/L		73	47 - 132
4-Bromophenyl phenyl ether	0.00800	0.004865		mg/L		61	46 - 129
Butyl benzyl phthalate	0.00800	0.005334		mg/L		67	50 - 126
4-Chloroaniline	0.00800	0.004081		mg/L		51	19 - 129

TestAmerica Houston

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-85830-1

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels (Continued)

Lab Sample ID: LCS 600-125713/2-A

Matrix: Water

Analysis Batch: 126158

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 125713

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Chloronaphthalene	0.00800	0.005610		mg/L		70	43 - 120
4-Chlorophenyl phenyl ether	0.00800	0.005335		mg/L		67	48 - 125
Carbazole	0.00800	0.006393		mg/L		80	42 - 169
Chrysene	0.00800	0.005184		mg/L		65	49 - 124
Di-n-butyl phthalate	0.00800	0.005976		mg/L		75	54 - 138
Dibenz(a,h)anthracene	0.00800	0.005666		mg/L		71	42 - 134
Dibenzofuran	0.00800	0.005510		mg/L		69	46 - 123
1,2-Dichlorobenzene	0.00800	0.005762		mg/L		72	40 - 121
1,3-Dichlorobenzene	0.00800	0.006026		mg/L		75	39 - 122
1,4-Dichlorobenzene	0.00800	0.004581		mg/L		57	45 - 124
3,3'-Dichlorobenzidine	0.00800	0.005758		mg/L		72	38 - 168
Diethyl phthalate	0.00800	0.005789		mg/L		72	51 - 123
Dimethyl phthalate	0.00800	0.005576		mg/L		70	49 - 121
2,4-Dinitrotoluene	0.00800	0.005580		mg/L		70	43 - 128
Di-n-octyl phthalate	0.00800	0.005532		mg/L		69	27 - 157
Fluoranthene	0.00800	0.004834		mg/L		60	53 - 127
Fluorene	0.00800	0.005525		mg/L		69	48 - 127
Hexachlorobenzene	0.00800	0.004970		mg/L		62	46 - 129
Hexachlorocyclopentadiene	0.00800	0.003973		mg/L		50	21 - 126
Hexachloroethane	0.00800	0.005781		mg/L		72	43 - 118
Hexachlorobutadiene	0.00800	0.005122		mg/L		64	32 - 143
Indeno[1,2,3-cd]pyrene	0.00800	0.005610		mg/L		70	45 - 124
Isophorone	0.00800	0.005505		mg/L		69	42 - 116
2-Methylnaphthalene	0.00800	0.005482		mg/L		69	40 - 121
Naphthalene	0.00800	0.005475		mg/L		68	39 - 120
2-Nitroaniline	0.00800	0.006080		mg/L		76	42 - 130
3-Nitroaniline	0.00800	0.007833		mg/L		98	47 - 138
4-Nitroaniline	0.00800	0.007502		mg/L		94	32 - 139
Nitrobenzene	0.00800	0.005752		mg/L		72	42 - 119
N-Nitrosodimethylamine	0.00800	0.006104		mg/L		76	26 - 104
N-Nitrosodiphenylamine	0.00800	0.005555		mg/L		69	43 - 107
N-Nitrosodi-n-propylamine	0.00800	0.005582		mg/L		70	39 - 124
Phenanthrene	0.00800	0.005410		mg/L		68	52 - 121
Pyrene	0.00800	0.005265		mg/L		66	49 - 121
1,2,4-Trichlorobenzene	0.00800	0.004888		mg/L		61	38 - 118
Benzyl alcohol	0.00800	0.004922		mg/L		62	39 - 115
4-Chloro-3-methylphenol	0.00800	0.005563		mg/L		70	44 - 131
2-Chlorophenol	0.00800	0.005892		mg/L		74	23 - 134
2-Methylphenol	0.00800	0.006174		mg/L		77	34 - 109
3 & 4 Methylphenol	0.00800	0.006328		mg/L		79	27 - 113
2,4-Dichlorophenol	0.00800	0.005500		mg/L		69	39 - 118
2,4-Dimethylphenol	0.00800	0.006002		mg/L		75	36 - 109
4,6-Dinitro-2-methylphenol	0.0160	0.01601		mg/L		100	24 - 122
2,4-Dinitrophenol	0.0160	0.01271		mg/L		79	23 - 130
2-Nitrophenol	0.00800	0.005678		mg/L		71	40 - 121
4-Nitrophenol	0.0160	0.01314		mg/L		82	14 - 132
Pentachlorophenol	0.0160	0.01069		mg/L		67	9 - 147
Phenol	0.00800	0.005345		mg/L		67	11 - 112

TestAmerica Houston

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-85830-1

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels (Continued)

Lab Sample ID: LCS 600-125713/2-A

Matrix: Water

Analysis Batch: 126158

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 125713

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,4,5-Trichlorophenol	0.00800	0.004576		mg/L		57	38 - 145
2,4,6-Trichlorophenol	0.00800	0.005831		mg/L		73	39 - 123
2,6-Dinitrotoluene	0.00800	0.005272		mg/L		66	45 - 122
bis (2-Chloroisopropyl) ether	0.00800	0.008690		mg/L		109	41 - 111

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14	82		33 - 141
Nitrobenzene-d5	94		47 - 120
2-Fluorophenol	88		18 - 120
2-Fluorobiphenyl	82		43 - 120
2,4,6-Tribromophenol	79		44 - 123
Phenol-d5 (Surr)	79		12 - 128

Lab Sample ID: LCSD 600-125713/13-A

Matrix: Water

Analysis Batch: 126158

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 125713

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Terphenyl-d14	76		33 - 141
Nitrobenzene-d5	80		47 - 120
2-Fluorophenol	77		18 - 120
2-Fluorobiphenyl	79		43 - 120
2,4,6-Tribromophenol	64		44 - 123
Phenol-d5 (Surr)	58		12 - 128

Lab Sample ID: LCSD 600-125713/3-A

Matrix: Water

Analysis Batch: 126158

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 125713

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acenaphthene	0.0160	0.01040	*	mg/L		65	47 - 145	59	20
Acenaphthylene	0.0160	0.009815	*	mg/L		61	35 - 135	58	20
Anthracene	0.0160	0.01036	*	mg/L		65	53 - 124	70	20
Benzidine	0.0800	0.0179	U *	mg/L		0	10 - 120	NC	40
Benzo[a]anthracene	0.0160	0.01117	*	mg/L		70	53 - 122	63	20
Benzo[b]fluoranthene	0.0160	0.009450	*	mg/L		59	53 - 131	55	20
Benzo[k]fluoranthene	0.0160	0.01316	*	mg/L		82	46 - 130	85	20
Benzo[g,h,i]perylene	0.0160	0.01122	*	mg/L		70	46 - 133	66	20
Benzo[a]pyrene	0.0160	0.01043	*	mg/L		65	50 - 124	69	20
Bis(2-chloroethoxy)methane	0.0160	0.01124	*	mg/L		70	42 - 119	69	20
Bis(2-chloroethyl)ether	0.0160	0.009540	*	mg/L		60	40 - 112	57	20
Bis(2-ethylhexyl) phthalate	0.0160	0.01141	*	mg/L		71	47 - 132	65	20
4-Bromophenyl phenyl ether	0.0160	0.01109	*	mg/L		69	46 - 129	78	20
Butyl benzyl phthalate	0.0160	0.01064	*	mg/L		66	50 - 126	66	20
4-Chloroaniline	0.0160	0.008324	*	mg/L		52	19 - 129	68	20
2-Chloronaphthalene	0.0160	0.01018	*	mg/L		64	43 - 120	58	20
4-Chlorophenyl phenyl ether	0.0160	0.01009	*	mg/L		63	48 - 125	62	20
Carbazole	0.0160	0.01366	*	mg/L		85	42 - 169	73	20

TestAmerica Houston

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-85830-1

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels (Continued)

Lab Sample ID: LCSD 600-125713/3-A

Matrix: Water

Analysis Batch: 126158

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 125713

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chrysene	0.0160	0.01033	*	mg/L		65	49 - 124	66	20
Di-n-butyl phthalate	0.0160	0.009550	*	mg/L		60	54 - 138	46	20
Dibenz(a,h)anthracene	0.0160	0.01109	*	mg/L		69	42 - 134	65	20
Dibenzofuran	0.0160	0.01002	*	mg/L		63	46 - 123	58	20
1,2-Dichlorobenzene	0.0160	0.01050	*	mg/L		66	40 - 121	58	20
1,3-Dichlorobenzene	0.0160	0.01196	*	mg/L		75	39 - 122	66	20
1,4-Dichlorobenzene	0.0160	0.009307	*	mg/L		58	45 - 124	68	20
3,3'-Dichlorobenzidine	0.0160	0.01033	*	mg/L		65	38 - 168	57	20
Diethyl phthalate	0.0160	0.01032	*	mg/L		64	51 - 123	56	20
Dimethyl phthalate	0.0160	0.01033	*	mg/L		65	49 - 121	60	20
2,4-Dinitrotoluene	0.0160	0.009750	*	mg/L		61	43 - 128	54	20
Di-n-octyl phthalate	0.0160	0.01037	*	mg/L		65	27 - 157	61	20
Fluoranthene	0.0160	0.009497	*	mg/L		59	53 - 127	65	20
Fluorene	0.0160	0.009822	*	mg/L		61	48 - 127	56	20
Hexachlorobenzene	0.0160	0.01107	*	mg/L		69	46 - 129	76	20
Hexachlorocyclopentadiene	0.0160	0.008813	*	mg/L		55	21 - 126	76	20
Hexachloroethane	0.0160	0.01203	*	mg/L		75	43 - 118	70	20
Hexachlorobutadiene	0.0160	0.01073	*	mg/L		67	32 - 143	71	20
Indeno[1,2,3-cd]pyrene	0.0160	0.01108	*	mg/L		69	45 - 124	66	20
Isophorone	0.0160	0.01115	*	mg/L		70	42 - 116	68	20
2-Methylnaphthalene	0.0160	0.01182	*	mg/L		74	40 - 121	73	20
Naphthalene	0.0160	0.01089	*	mg/L		68	39 - 120	66	20
2-Nitroaniline	0.0160	0.01250	*	mg/L		78	42 - 130	69	20
3-Nitroaniline	0.0160	0.008057	*	mg/L		50	47 - 138	3	20
4-Nitroaniline	0.0160	0.01183	*	mg/L		74	32 - 139	45	20
Nitrobenzene	0.0160	0.01285	*	mg/L		80	42 - 119	76	20
N-Nitrosodimethylamine	0.0160	0.01219	*	mg/L		76	26 - 104	67	20
N-Nitrosodiphenylamine	0.0160	0.01128	*	mg/L		70	43 - 107	68	20
N-Nitrosodi-n-propylamine	0.0160	0.01193	*	mg/L		75	39 - 124	73	20
Phenanthrene	0.0160	0.01101	*	mg/L		69	52 - 121	68	20
Pyrene	0.0160	0.01028	*	mg/L		64	49 - 121	65	20
1,2,4-Trichlorobenzene	0.0160	0.01019	*	mg/L		64	38 - 118	70	20
Benzyl alcohol	0.0160	0.01060	*	mg/L		66	39 - 115	73	20
4-Chloro-3-methylphenol	0.0160	0.01221	*	mg/L		76	44 - 131	75	20
2-Chlorophenol	0.0160	0.01199	*	mg/L		75	23 - 134	68	20
2-Methylphenol	0.0160	0.01235	*	mg/L		77	34 - 109	67	20
3 & 4 Methylphenol	0.0160	0.01331	*	mg/L		83	27 - 113	71	20
2,4-Dichlorophenol	0.0160	0.01245	*	mg/L		78	39 - 118	77	20
2,4-Dimethylphenol	0.0160	0.01434	*	mg/L		90	36 - 109	82	20
4,6-Dinitro-2-methylphenol	0.0320	0.02913	*	mg/L		91	24 - 122	58	20
2,4-Dinitrophenol	0.0320	0.02531	*	mg/L		79	23 - 130	66	20
2-Nitrophenol	0.0160	0.01166	*	mg/L		73	40 - 121	69	20
4-Nitrophenol	0.0320	0.02281	*	mg/L		71	14 - 132	54	20
Pentachlorophenol	0.0320	0.02196	*	mg/L		69	9 - 147	69	20
Phenol	0.0160	0.01101	*	mg/L		69	11 - 112	69	20
2,4,5-Trichlorophenol	0.0160	0.01063	*	mg/L		66	38 - 145	80	20
2,4,6-Trichlorophenol	0.0160	0.01143	*	mg/L		71	39 - 123	65	20
2,6-Dinitrotoluene	0.0160	0.01045	*	mg/L		65	45 - 122	66	20

TestAmerica Houston

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-85830-1

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels (Continued)

Lab Sample ID: LCSD 600-125713/3-A

Matrix: Water

Analysis Batch: 126158

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 125713

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
bis (2-Chloroisopropyl) ether	0.0160	0.01751	*	mg/L		109	41 - 111	67	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Terphenyl-d14	87		33 - 141
Nitrobenzene-d5	117		47 - 120
2-Fluorophenol	88		18 - 120
2-Fluorobiphenyl	75		43 - 120
2,4,6-Tribromophenol	76		44 - 123
Phenol-d5 (Surr)	79		12 - 128

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 600-125474/1-A

Matrix: Water

Analysis Batch: 125757

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 125474

Analyte	MB Result	MB Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000350	U	0.00500	0.000350	mg/L		01/21/14 13:26	01/23/14 13:33	1

Lab Sample ID: MB 600-125474/1-A

Matrix: Water

Analysis Batch: 125773

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 125474

Analyte	MB Result	MB Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000350	U	0.00500	0.000350	mg/L		01/21/14 13:26	01/24/14 11:47	1
Lead	0.00290	U	0.0100	0.00290	mg/L		01/21/14 13:26	01/24/14 11:47	1

Lab Sample ID: LCS 600-125474/2-A

Matrix: Water

Analysis Batch: 125757

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 125474

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	0.500	0.4690		mg/L		94	80 - 120

Lab Sample ID: LCS 600-125474/2-A

Matrix: Water

Analysis Batch: 125773

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 125474

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	0.500	0.4903		mg/L		98	80 - 120
Lead	1.00	0.9483		mg/L		95	80 - 120

TestAmerica Houston

QC Association Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-85830-1

GC/MS Semi VOA

Prep Batch: 125713

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-85830-1	Dup-1	Total/NA	Water	3510C	
LCS 600-125713/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 600-125713/13-A	Lab Control Sample Dup	Total/NA	Water	3510C	
LCSD 600-125713/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
MB 600-125713/1-A	Method Blank	Total/NA	Water	3510C	

Analysis Batch: 126158

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-85830-1	Dup-1	Total/NA	Water	8270C LL	125713
LCS 600-125713/2-A	Lab Control Sample	Total/NA	Water	8270C LL	125713
LCSD 600-125713/13-A	Lab Control Sample Dup	Total/NA	Water	8270C LL	125713
LCSD 600-125713/3-A	Lab Control Sample Dup	Total/NA	Water	8270C LL	125713
MB 600-125713/1-A	Method Blank	Total/NA	Water	8270C LL	125713

Metals

Prep Batch: 125474

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-85830-2	MW-40	Total/NA	Water	3010A	
600-85830-3	MW-39	Total/NA	Water	3010A	
LCS 600-125474/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 600-125474/1-A	Method Blank	Total/NA	Water	3010A	

Prep Batch: 125529

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-85830-2	MW-40	Dissolved	Water	3010A	
600-85830-3	MW-39	Dissolved	Water	3010A	

Analysis Batch: 125606

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-85830-2	MW-40	Dissolved	Water	6010B	125529
600-85830-3	MW-39	Dissolved	Water	6010B	125529

Analysis Batch: 125757

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-85830-2	MW-40	Total/NA	Water	6010B	125474
600-85830-3	MW-39	Total/NA	Water	6010B	125474
LCS 600-125474/2-A	Lab Control Sample	Total/NA	Water	6010B	125474
MB 600-125474/1-A	Method Blank	Total/NA	Water	6010B	125474

Analysis Batch: 125773

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-85830-2	MW-40	Total/NA	Water	6010B	125474
600-85830-3	MW-39	Total/NA	Water	6010B	125474
LCS 600-125474/2-A	Lab Control Sample	Total/NA	Water	6010B	125474
MB 600-125474/1-A	Method Blank	Total/NA	Water	6010B	125474

TestAmerica Houston

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-85830-1

Client Sample ID: Dup-1

Date Collected: 01/17/14 00:00

Date Received: 01/20/14 15:00

Lab Sample ID: 600-85830-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			250 mL	1.0 mL	125713	01/23/14 14:29	RLK	TAL HOU
Total/NA	Analysis	8270C LL		1	250 mL	1.0 mL	126158	01/29/14 10:36	MBB	TAL HOU

Client Sample ID: MW-40

Date Collected: 01/17/14 15:25

Date Received: 01/20/14 15:00

Lab Sample ID: 600-85830-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3010A			50 mL	50 mL	125529	01/22/14 08:29	NER	TAL HOU
Dissolved	Analysis	6010B		1	50 mL	50 mL	125606	01/22/14 18:31	DCL	TAL HOU
Total/NA	Prep	3010A			50 mL	50 mL	125474	01/21/14 13:26	NER	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	125757	01/23/14 13:50	DCL	TAL HOU
Total/NA	Prep	3010A			50 mL	50 mL	125474	01/21/14 13:26	NER	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	125773	01/24/14 12:01	DCL	TAL HOU

Client Sample ID: MW-39

Date Collected: 01/17/14 16:15

Date Received: 01/20/14 15:00

Lab Sample ID: 600-85830-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3010A			50 mL	50 mL	125529	01/22/14 08:29	NER	TAL HOU
Dissolved	Analysis	6010B		1	50 mL	50 mL	125606	01/22/14 18:34	DCL	TAL HOU
Total/NA	Prep	3010A			50 mL	50 mL	125474	01/21/14 13:26	NER	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	125757	01/23/14 13:57	DCL	TAL HOU
Total/NA	Prep	3010A			50 mL	50 mL	125474	01/21/14 13:26	NER	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	125773	01/24/14 12:03	DCL	TAL HOU

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Certification Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-85830-1

Laboratory: TestAmerica Houston

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0759	08-04-14
Louisiana	NELAP	6	30643	06-30-14
Oklahoma	State Program	6	1309	08-31-14
Texas	NELAP	6	T104704223	10-31-14
USDA	Federal		P330-08-00217	04-01-14
Utah	NELAP	8	TX00083	10-31-14

TestAmerica Houston

6310 Rothway Street
Houston, TX 77040
Phone (713) 690-4444 Fax (713) 690-5646

Chain of Custody Record

[illegible]

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-85830-1

Login Number: 85830

List Source: TestAmerica Houston

List Number: 1

Creator: Capps, Dana R

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.1
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.



Data Usability Summary

Test America Work Orders: 600-86073-1, 600-86073-2, 600-87211-1, 600-87304-1, 600-87306-1, 600-87311-1, 600-87313-1, 600-87356-1, 600-89514-1, 600-89551-1 and 600-89523-1

Sample Dates:	January 22, 2014; February 14 and 17, 2014; March 27-28, 2014	Project No.:	1302086
Laboratory:	(Houston TLAP Certification T104704223) (Savannah TLAP Certification T104704185-08-TX)	Client:	Exide Technologies Inc.
Work Orders:	Work Orders: 600-86073-1, 600-86073-2, 600-87211-1, 600-87304-1, 600-87306-1, 600-87311-1, 600-87313-1, 600-87356-1, 600-89514-1, 600-89523-1, 600-89551-1		
Intended Use	Affected Property Assessment Report (APAR)		
Site:	Exide Former Operating Plant (FOP), 7471 5 th Street, Frisco, TX		

TESTS/ METHODS

Total and Dissolved Metals by SW-846 6010B - Inductively Coupled Plasma-Atomic Emission Spectrometry (ICP) completed by Test America – Houston laboratory

Dissolved Metals by SW-846 6020A - Inductively Coupled Plasma-Mass Spectrometry (ICP-MS); completed by Test America- Savannah, GA laboratory

SAMPLES

24 groundwater samples, 2 field duplicates, and 3 MS/MSD pairs were collected. See Table 1 for a complete cross-referenced listing of samples.

Golder completed a review of the above chemical analysis data for conformance with the requirements of the Texas Risk Reduction Program (TRRP) guidance document, Review and Reporting of COC Concentration Data (RGG-366/TRRP-13 Revised May 2010) and for adherence to project objectives. The results of the review are discussed in this data usability summary (DUS).

Golder completed the review using the following laboratory and project submittals:

- Laboratory reportable data as defined in TRRP-13;
- Laboratory review checklists (LRC) with the associated exception reports;
- Laboratory Electronic Data Deliverable (EDD); and
- Project field notes from the sampling event.

The review of the reportable data included the quality control (QC) parameters listed below, as required per TRRP-13, using the applicable analytical method and project requirements:

- Data Completeness
- Chain-of-Custody Procedures



Data Usability Summary

Test America Work Orders: 600-86073-1, 600-86073-2, 600-87211-1, 600-87304-1, 600-87306-1, 600-87311-1, 600-87313-1, 600-87356-1, 600-89514-1, 600-89551-1 and 600-89523-1

- Sample Condition - Holding Time, Preservation, and Containers
- Field Procedures
- Results Reporting Procedures
- Laboratory and Field QC Blanks
- Laboratory Control Spike and Matrix Spike Recoveries
- Surrogate Recoveries
- Laboratory and Field Duplicate Precision

Additionally, Golder used the LRC to evaluate the following QC parameters:

- Method Quantitation Limits (MQLs)
- Method Detection Limits (MDLs)
- Instrument Tuning, Calibration, and Performance
- Internal Standards

Criteria used for this data usability review are as follows:

- Inorganics: 70-130% spike recovery (and not less than 10% or data is rejected) and \pm MQL difference or 30% RPD (for laboratory duplicates) as recommended in TRRP-13
- Aqueous Samples: \pm 2x MQL difference (if either result is less than 5x MQL) or 30% RPD (for field duplicates) as recommended in TRRP-13

If an item was found outside of the review criteria, the reviewer applied a data qualifier (DQ) and bias code to the results for the affected samples in accordance with TRRP-13. A list of all qualified results and definitions of the qualifier and bias codes are given in Table 2.

GLOSSARY OF TERMS

The following definitions apply for terms related to analyte reporting limits:

MDL (Method Detection Limit) – the minimum concentration of an analyte that the laboratory can measure and report with 99% confidence that the analyte concentration is greater than zero. The MDL is determined by the laboratory for each analyte in a given reagent matrix (water or soil) generally using the procedures specified in 40 CFR Part 136, Appendix B. It is a measure of the concentration an instrument can detect or ‘see’ in a given reagent matrix. TRRP-13 requires that the laboratory routinely check the MDL for reasonableness.

SDL (Sample Detection Limit) – the MDL adjusted to reflect sample-specific actions, such as dilution or use of smaller aliquot sizes than prescribed in the analytical method, and taking into account sample



Data Usability Summary

Test America Work Orders: 600-86073-1, 600-86073-2, 600-87211-1, 600-87304-1, 600-87306-1, 600-87311-1, 600-87313-1, 600-87356-1, 600-89514-1, 600-89551-1 and 600-89523-1

characteristics, sample preparation, and analytical adjustments including dry-weight adjustments. It is a measure of the concentration an instrument can detect or 'see' in a given sample. For TRRP, non-detects are reported using the SDL. This term was originally called the SQL (Sample Quantitation Limit) before the TRRP rule revisions effective March 19, 2007.

Unadjusted MQL (Method Quantitation Limit) – the lowest non-zero concentration standard in the laboratory's initial calibration curve calculated using the normal aliquot sizes and final volumes prescribed in the analytical method. The unadjusted MQL is reported by the laboratory for each analyte in a given matrix (water or soil). It is a measure of the concentration an instrument can accurately measure in a typical sample. Per TRRP, the Unadjusted MQLs should be below the Levels of Required Performance (LORPs) for purposes of assessment as well as demonstration of conformance with critical Protective Concentration Levels (PCLs).

MQL – the unadjusted MQL adjusted to reflect sample-specific actions, such as dilution or use of smaller aliquot sizes than prescribed in the analytical method, and takes into account sample characteristics, sample preparation, and analytical adjustments including dry-weight adjustments. It is a measure of the concentration an instrument can accurately measure in a given sample. Analytes with concentrations above the SDL but below the MQL, though present in the sample, may not be accurately measured and are thus flagged as estimated (J).

LABORATORY CERTIFICATION

At the time the laboratory data were generated for this project, the laboratory was NELAC accredited under the Texas Laboratory Accreditation Program (TLAP) for the matrices, methods and parameters of analysis requested on the chain-of-custody forms. A copy of the applicable pages of the laboratory's National Environmental Laboratory Accreditation Program (NELAP) certificate valid during the period in which the laboratory generated the data in this report is included in Appendix 10.5.

1.0 USABILITY SUMMARY

1. Usability of Unqualified Non-Detects – Non-detects are reported at the sample detection limit (SDL) as required per TRRP. Additionally, according to the LRC, an MDL study was performed for each analyte and the MDLs were checked for reasonableness for each applicable analyte. The levels of required performance (LORPs) have been established by Golder/PBW as the Residential Assessment Levels (RALs) including TRRP residential Tier 1 ^{GW}GW_{ing} PCLs and/or ecological criteria for monitoring wells located along Stewart Creek. As needed per TRRP, the unadjusted MQL stated by the laboratory is at or below the LORP for each applicable analyte, except for dissolved metals in groundwater run by Method 6010B where the groundwater to surface water pathway applies. Further analysis by Method 6020A was completed in an effort to meet applicable ecological



Data Usability Summary

Test America Work Orders: 600-86073-1, 600-86073-2, 600-87211-1, 600-87304-1, 600-87306-1, 600-87311-1, 600-87313-1, 600-87356-1, 600-89514-1, 600-89551-1 and 600-89523-1

criteria for dissolved metals. Thus the analytical methods are appropriate and the results can be used to demonstrate conformance with the criteria.

2. Usability of Qualified Data – There are no major QC deficiencies, and thus all data is usable as qualified for the intended use, except for total metals analyses in the 4 groundwater samples collected as part of data package 600-86073-1. The 4 samples were not properly field filtered for total metals and therefore results were rejected. Samples were recollected and results are included as data packages 600-87306-1, 600-87311-1, and 600-87356-1. As shown in Table 2, the reviewer qualified some detects as estimated (J) due to minor QC deficiencies. Detects that are biased high can be used; however, the reported concentration may be high. Detects that are estimated may be either low or high. Results with a laboratory J-flag (i.e., at a concentration between the SDL and MQL) should be considered estimates. The actual value is not expected to exceed the sample MQL.

Reviewer: Jing Song Xi 4/23/14

QUALITY CONTROL PARAMETERS AND OUTCOMES

Data Completeness

The laboratory data packages contain all necessary data (i.e., the laboratory reportable data per TRRP-13) and the EDD contain all sample results in acceptable format.

Chain-of-Custody

Proper sample custody procedures were used, which confirms that the integrity of the samples was maintained. Additionally, the information on the custody records is complete and agrees with that in the field notes and laboratory reports, except:

- For sample 600-86073 (MW-32) was listed on the COC, but was not logged in for dissolved metals analysis since a filtered sample was not received.
- For sample 600-87211-1, the COC indicated dissolved metals analyses while the bottle indicated total metals. Per further correspondence with the laboratory, total metals were analyzed and reported.

Sample Condition

Samples were collected in appropriate containers, properly preserved in the field, and prepared and analyzed within the holding times as required in the analytical methods, which ensures that the samples were not affected by analyte degradation.

- For 600-86073, the temperature of the cooler at receipt was 1.5°C. This is marginally lower the recommended EPA temperature range of 4 +/- 2°C, but is not believed to affect data quality.
- For 600-87211, the temperature of the cooler at receipt was 3.2°C.



Data Usability Summary

Test America Work Orders: 600-86073-1, 600-86073-2, 600-87211-1, 600-87304-1, 600-87306-1, 600-87311-1, 600-87313-1, 600-87356-1, 600-89514-1, 600-89551-1 and 600-89523-1

- For 600-87304, the temperature of the cooler at receipt was 0.6°C. This is lower the recommended EPA temperature range of 4 +/- 2°C, but is not believed to affect data quality.
- For 600-87306, the temperature of the cooler at receipt was 0.6°C. This is lower the recommended EPA temperature range of 4 +/- 2°C, but is not believed to affect data quality.
- For 600-87311, the temperature of the cooler at receipt was 3.1°C.
- For 600-87313, the temperature of the cooler at receipt was 3.1°C.
- For 600-87356, the temperature of the cooler at receipt was 1.4°C. This is marginally lower the recommended EPA temperature range of 4 +/- 2°C, but is not believed to affect data quality.
- For 600-89514-1, the temperature of the cooler at receipt was 3.5°C.
- For 600-89523-1, the temperature of the cooler at receipt was 1°C. This is marginally lower the recommended EPA temperature range of 4 +/- 2°C, but is not believed to affect data quality.
- For 600-89551-1, the temperature of the cooler at receipt was 2.2°C.

Field Procedures

The samples were collected and placed immediately into sterilized jars provided by the laboratory and then into a cooler with ice for overnight delivery to the laboratory.

According to the Work Plan, groundwater samples with turbidity greater than 10 NTU would be field filtered with a 10 micron filter for analyses of total metals. For dissolved metals, samples would be field filtered with a 0.45 micron filter. Total metals analyses for the 4 monitoring wells in data package 600-86073-1 were rejected as reflected in Table 2 because they were not properly field filtered.

600-86073-3 (MW-44) was properly field filtered with a 0.45 micron filter for dissolved metals analyses by 6010B. Remaining aliquot was submitted to the Savannah, GA lab for re-analysis by Method 6020A in an effort to meet lower detection limits applicable for ecological criteria.

The dissolved metal concentration is not always at or below the total metal concentration in the samples analyzed. However in these cases, the difference between dissolved and total does not exceed the inherent analytical method error (i.e., + 2x MQL difference (if either result is less than 5x MQL) or 30% RPD).

Results Reporting Procedures

The hardcopy analytical results include a Result, MQL (adjusted), and SDL. Equis format EDDs were provided, which includes the MDL, SDL (under the SQL column per previously used terminology) and the MQL, which is not adjusted for sample specific factors.



Data Usability Summary

Test America Work Orders: 600-86073-1, 600-86073-2, 600-87211-1, 600-87304-1, 600-87306-1, 600-87311-1, 600-87313-1, 600-87356-1, 600-89514-1, 600-89551-1 and 600-89523-1

Results are reported in mg/L. Non-detects are reported using the SDL as specified per TRRP and detects between the SDL and MQL are reported with a laboratory J-flag. The concentration reported for detects between the SDL and MQL is below the calibration range and thus is considered estimated.

MQLs- The LORPs have been established by Golder/PBW as the Resident Assessment Levels (RALs), which are the minimum of the TRRP residential Tier 1 ^{GW}GW_{Ing} PCLs and/or ecological criteria for monitoring wells located along Stewart Creek. As needed per TRRP, the Unadjusted MQL stated by the laboratory is at or below the LORP for each applicable analyte, except for dissolved metals run by Method 6010B. Further analysis by Method 6020A was completed in an effort to meet applicable ecological criteria for dissolved metals. The Unadjusted MQLs for the laboratory are at or below the LORPs for each applicable analyte.

MDLs- According to the LRC, an MDL study was performed for each analyte, and the MDLs were checked for reasonableness and either adjusted or supported by the analysis of detectability check standards (DCS) for each applicable analyte as required per TRRP-13. Results for the DCS are included in the data packages.

Laboratory Blanks

Results for samples prepared in the same QC batch as a contaminated method blank may be affected by laboratory contamination. There were no detections in laboratory blanks for these work orders.

Field QC Blanks

No field QC blanks were collected as part of this work order.

Laboratory Control Sample

The laboratory prepared one laboratory control sample (LCS) for each analytical batch and reported recoveries for all of the analytes for each test. The LCS recoveries are within the TRRP recommended criteria, which indicates good accuracy for the preparation and analysis technique on a sample, free of matrix effects.

Matrix Spike Recovery

The laboratory prepared one or more matrix spike (MS) and matrix spike duplicate (MSD) with each analytical batch. MS/MSD recoveries are reported for the same analytes as the LCS for MS/MSD prepared using a sample from the site, which includes 3 MS/MSD for metals, as shown in Table 1.



Data Usability Summary

Test America Work Orders: 600-86073-1, 600-86073-2, 600-87211-1, 600-87304-1, 600-87306-1, 600-87311-1, 600-87313-1, 600-87356-1, 600-89514-1, 600-89551-1 and 600-89523-1

The MS/MSD recoveries are within the TRRP recommended criteria, which indicates good accuracy for the preparation and analysis technique on a sample free of matrix effects. According to the LRC, MS/MSDs were run for each batch, but data packages that analyzed MS/MSD samples not derived directly from field samples did not include MS/MSD QA/QC information. Site-specific MS/MSD samples were collected approximately once per 10 field samples.

Surrogate Recovery

Since organic analyses were not requested for these data packages, surrogate recoveries were not evaluated.

Laboratory Duplicate Precision

The laboratory prepared one or more Matrix Spike Duplicate (MSD) with each analytical batch for each test. RPDs are reported for the same analytes as the LCS for MSD/MD prepared using a sample from the site, which includes 2 MSD for metals, as shown in Table 1.

The MSD RPDs are within the TRRP recommended criteria, which indicates good precision for the preparation and analysis technique for the given sample matrix.

Field Duplicate Precision

Two field duplicates were collected with the sample for these work orders. RPD for dissolved lead was outside TRRP recommended criteria; however, if aqueous results were less than 5 times the MQL but not greater than twice the MQL, no qualifications were made.

Instrument Tuning

According to the LRC, instrument tuning met method requirements for the samples, which indicates the GC/MS instrument was properly set up to identify analytes.

Instrument Calibration

According to the LRC, initial and continuing calibration data met method requirements for all reported results, which indicates the instruments were properly calibrated to measure analyte concentrations.

Instrument Performance

According to the LRC, the serial dilution and ICP interference check samples met method requirements, which indicates that no significant matrix interference exists.



Data Usability Summary

Test America Work Orders: 600-86073-1, 600-86073-2, 600-87211-1, 600-87304-1, 600-87306-1, 600-87311-1, 600-87313-1, 600-87356-1, 600-89514-1, 600-89551-1 and 600-89523-1

Internal Standards

According to the LRC, area counts and retention times were within method requirements.

TABLE 1
CROSS REFERENCE OF FIELD SAMPLE IDENTIFICATIONS AND LABORATORY IDENTIFICATIONS

Lab Sample ID	Field Sample ID	Prep Batch/ Analysis Batch (Houston)	Prep Batch/ Analysis Batch (Savannah)	Sample Date	Matrix	Comments
600-86073-1	MW-33	125831/126162		1/22/2014	Water	site-specific MS/MSD
600-86073-2	MW-46	125831/126162		1/22/2014	Water	
600-86073-3	MW-44	125831/126162	316222/315533	1/22/2014	Water	
600-86073-4	MW-32	125831/126162		1/22/2014	Water	
600-87211-1	MW-34	127600/127679		2/15/2014	Water	
600-87211-2	MW-41	127600/127679		2/15/2014	Water	
600-87211-3	MW-42	127600/127679		2/15/2014	Water	
600-87304-1	MW-14		316319/317159	2/17/2014	Water	MS/MSD (lab selected)
600-87304-2	MW-27		316319/317159	2/17/2014	Water	
600-87304-3	MW-26		316319/317159	2/17/2014	Water	
600-87304-4	MW-29		316319/317159	2/17/2014	Water	
600-87304-5	MW-17		316319/317159	2/17/2014	Water	
600-87306-1	MW-44		316408/316657	2/17/2014	Water	
600-87306-2	MW-46		316408/316657	2/17/2014	Water	
600-87311-1	MW-33	127792/127896		2/17/2014	Water	
600-87313-1	MW-34	127792/127896		2/17/2014	Water	
600-87356-1	MW-32		316930/317160	2/14/2014	Water	
600-87356-2	MW-37		316930/317160	2/13/2014	Water	
600-87356-3	MW-16		316930/317160	2/14/2014	Water	site-specific MS/MSD
600-87356-4	MW-16S		316930/317160	2/14/2014	Water	
600-87356-5	Dup-1		316930/317160	2/14/2014	Water	field duplicate of MW-16
600-89523-1	MW-46		321870/322175	3/27/2014	Water	site specific MS/MSD
600-89523-2	DUP-8		321870/322175	3/27/2014	Water	field duplicate of MW-46
600-89514-1	MW-45	130744/130786		3/27/2014	Water	
600-89551-1	MW-37		322068/322507	3/28/2014	Water	
600-89551-2	MW-11		322068/322507	3/28/2014	Water	

TABLE 2 - QUALIFIED DATA

Lab Sample ID	Field Sample ID	Analyte	Result	Units	Qualifier	Explanation
600-86073-1	MW-33	Total cadmium	0.00370 J	mg/L	R	Total metals were not properly field filtered and results are rejected.
		Total lead	0.0645	mg/L	R	Total metals were not properly field filtered and results are rejected.
600-86073-2	MW-46	Total cadmium	0.00170 J	mg/L	R	Total metals were not properly field filtered and results are rejected.
		Total lead	0.0304	mg/L	R	Total metals were not properly field filtered and results are rejected.
600-86073-3	MW-44	Total cadmium	0.00100 J	mg/L	R	Total metals were not properly field filtered and results are rejected.
		Total lead	0.00290 U	mg/L	R	Total metals were not properly field filtered and results are rejected.
600-86073-4	MW-32	Total cadmium	0.00430 J	mg/L	R	Total metals were not properly field filtered and results are rejected.
		Total lead	0.0285	mg/L	R	Total metals were not properly field filtered and results are rejected.
600-87306-1	MW-44	Total Cadmium	0.000109 J	mg/L	J	Estimated value between SDL and MQL.
		Dissolved Cadmium	0.000131 J	mg/L	J	Estimated value between SDL and MQL.
600-87304-1	MW-14	Total Lead	0.000302 J	mg/L	J	Estimated value between SDL and MQL.
		Dissolved Cadmium	0.000120 J	mg/L	J	Estimated value between SDL and MQL.
600-87304-2	MW-27	Total Lead	0.000718 J	mg/L	J	Estimated value between SDL and MQL.
		Total Cadmium	0.000354 J	mg/L	J	Estimated value between SDL and MQL.
		Dissolved Lead	0.000743 J	mg/L	J	Estimated value between SDL and MQL.
		Dissolved Cadmium	0.000410 J	mg/L	J	Estimated value between SDL and MQL.
600-87304-3	MW-26	Total Lead	0.000287 J	mg/L	J	Estimated value between SDL and MQL.
		Total Cadmium	0.000311 J	mg/L	J	Estimated value between SDL and MQL.
		Dissolved Lead	0.000327 J	mg/L	J	Estimated value between SDL and MQL.
		Dissolved Cadmium	0.000302 J	mg/L	J	Estimated value between SDL and MQL.
600-87304-4	MW-29	Total Lead	0.000433 J	mg/L	J	Estimated value between SDL and MQL.
		Dissolved Lead	0.000937 J	mg/L	J	Estimated value between SDL and MQL.
600-87304-5	MW-17	Total Cadmium	0.000182 J	mg/L	J	Estimated value between SDL and MQL.
		Dissolved Cadmium	0.000130 J	mg/L	J	Estimated value between SDL and MQL.
600-89523-1	MW-46	Dissolved Lead	0.00302	mg/L	J	Field Duplicate RPD outside specifications.

Note:

Detected results between the SDL and MQL (i.e., results with a laboratory J-flag) have been included in the above table since the reported concentration is below the calibration range.

J Estimated data; The analyte was detected and identified. The associated numerical value (i.e., the reported sample concentration) is the approximate concentration of the analyte in the sample.

NJ Tentatively identified, estimated data; The analysis indicates the presence of the analyte for which there is presumptive evidence to make a tentative identification and the associated numerical value represents its approximate concentration.

NS Not selected; Another result (from a secondary dilution, different analytical method, re-sampling, etc.) is selected for use based on QC outcomes and/or reported concentrations.

R Rejected data; The data is unusable. Serious QC deficiencies make it impossible to verify the absence or presence of this analyte.

U Not detected; The analyte was not detected >5x (10x for common contaminants) the level in an associated blank and thus should be considered not detected above the level of the associated numerical value (i.e., the reported sample concentration).

UJ Estimated data; The analyte was not detected above the reported sample detection limit (SDL). The numerical value of the SDL is estimated and may be inaccurate.

H Bias in sample result is likely to be high

L Bias in sample result is likely to be low

TABLE 3 - FIELD DUPLICATE PRECISION CALCULATIONS

Duplicate and Parent Sample Field Identification	Analyte	Sample Result	Duplicate Result	RPD ^a	Accept or Reject	Qualifier Added
DUP-1/MW-16*	Total Lead	0.00409	0.00463	12.4	A	-
	Dissolved Lead	0.0022	0.00036	143.8	A	-
DUP-8/MW-46	Total Lead	0.00546	0.00513	6.2	A	-
	Dissolved Lead	0.00302	0.00540	56.5	A	J
	Total Cadmium	0.000794	0.000805	1.4	A	-
	Dissolved Cadmium	0.000797	0.000745	6.7	A	-

* Dissolved Lead for Dup-1 was "J" flagged according to lab analysis

^a RPD = ((SR - DR)*200)/(SR + DR)

A - Acceptable Data

NA - Not Analyzed

The RPD test (<30%) applies if both results are greater than 5x MQL. Otherwise, the absolute difference test (< 2x MQL) applies.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Houston

6310 Rothway Street

Houston, TX 77040

Tel: (713)690-4444

TestAmerica Job ID: 600-86073-1

Client Project/Site: Exide Recycling Center

For:

Golder Associates Inc.

500 Century Plaza Drive

Suite 190

Houston, Texas 77073

Attn: Christina Higginbotham



Authorized for release by:

2/6/2014 10:44:26 AM

Cathy Upton, Project Management Assistant II

(713)690-4444

cathy.upton@testamericainc.com

Designee for

Dean Joiner, Project Manager II

(713)690-4444

dean.joiner@testamericainc.com

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Appendix A

Laboratory Data Package Cover Page - Page 1 of 4

This data package is for TestAmerica Houston job number 600-86073-1 and consists of:

- ☒ R1 - Field chain-of-custody documentation;
- ☒ R2 - Sample identification cross-reference;
- ☒ R3 - Test reports (analytical data sheets) for each environmental sample that includes:
 - a. Items consistent with NELAC Chapter 5,
 - b. dilution factors,
 - c. preparation methods,
 - d. cleanup methods, and
 - e. if required for the project, tentatively identified compounds (TICs).
- ☐ R4 - Surrogate recovery data including:
 - a. Calculated recovery (%R), and
 - b. The laboratory's surrogate QC limits.
- ☒ R5 - Test reports/summary forms for blank samples;
- ☒ R6 - Test reports/summary forms for laboratory control samples (LCSs) including:
 - a. LCS spiking amounts,
 - b. Calculated %R for each analyte, and
 - c. The laboratory's LCS QC limits.
- ☐ R7 - Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
 - a. Samples associated with the MS/MSD clearly identified,
 - b. MS/MSD spiking amounts,
 - c. Concentration of each MS/MSD analyte measured in the parent and spiked samples,
 - d. Calculated %Rs and relative percent differences (RPDs), and
 - e. The laboratory's MS/MSD QC limits
- ☐ R8 - Laboratory analytical duplicate (if applicable) recovery and precision:
 - a. The amount of analyte measured in the duplicate,
 - b. The calculated RPD, and
 - c. The laboratory's QC limits for analytical duplicates.
- ☒ R9 - List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
- ☒ R10 - Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Cathy Upton

Name (printed)



Signature

2/6/2014

Date

Project Management Asst II

Official Title (printed)

Laboratory Review Checklist: Reportable Data - Page 2 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	2/6/2014
Project Name:	Exide Recycling Center	Laboratory Job Number:	600-86073-1
Reviewer Name:	Dean A Joiner		

# ¹	A ²	Description	Yes	No	NA ³	NR ⁴	ER# ⁵
R1	OI	Chain-of-custody (C-O-C)					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?		X			R01A
		Were all departures from standard conditions described in an exception report?	X				
R2	OI	Sample and quality control (QC) identification					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	Test reports					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, are TICs reported?			X		
R4	O	Surrogate recovery data					
		Were surrogates added prior to extraction?			X		
		Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
R5	OI	Test reports/summary forms for blank samples					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	Laboratory control samples (LCS):					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?			X		
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data					
		Were the project/method specified analytes included in the MS and MSD?			X		
		Were MS/MSD analyzed at the appropriate frequency?			X		
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
		Were MS/MSD RPDs within laboratory QC limits?			X		
R8	OI	Analytical duplicate data					
		Were appropriate analytical duplicates analyzed for each matrix?			X		
		Were analytical duplicates analyzed at the appropriate frequency?			X		
		Were RPDs or relative standard deviations within the laboratory QC limits?			X		
R9	OI	Method quantitation limits (MQLs):					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	Other problems/anomalies					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review checklist: Supporting Data - Page 3 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	2/6/2014
Project Name:	Exide Recycling Center	Laboratory Job Number:	600-86073-1
Reviewer Name:	Dean A Joiner		

# ¹	A ²	Description	Yes	No	NA ³	NR ⁴	ER# ⁵
S1	OI	Initial calibration (ICAL)					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	Initial and continuing calibration verification (ICV and CCV) and continuing calibration blank (CCB):					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	Mass spectral tuning					
		Was the appropriate compound for the method used for tuning?			X		
		Were ion abundance data within the method-required QC limits?			X		
S4	O	Internal standards (IS)					
		Were IS area counts and retention times within the method-required QC limits?			X		
S5	OI	Raw data (NELAC Section 5.5.10)					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	Dual column confirmation					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	Tentatively identified compounds (TICs)					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	Interference Check Sample (ICS) results					
		Were percent recoveries within method QC limits?	X				
S9	I	Serial dilutions, post digestion spikes, and method of standard additions					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
S10	OI	Method detection limit (MDL) studies					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSS?	X				
S11	OI	Proficiency test reports					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	Standards documentation					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	Compound/analyte identification procedures					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	Demonstration of analyst competency (DOC)					
		Was DOC conducted consistent with NELAC Chapter 5?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	Verification/validation documentation for methods (NELAC Chapter 5)					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	Laboratory standard operating procedures (SOPs)					
		Are laboratory SOPs current and on file for each method performed?	X				
1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period. 2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable); 3. NA = Not applicable; 4. NR = Not reviewed; 5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).							

Laboratory Review Checklist: Exception Reports - Page 4 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	2/6/2014
Project Name:	Exide Recycling Center	Laboratory Job Number:	600-86073-1
Reviewer Name:	Dean A Joiner		

ER # ¹	Description
R01A	The following sample(s) was listed on the Chain of Custody (COC); however, no sample(s) was received: 600-86073-1, 600-86073-2, 600-86073-3, and 600-86073-4. Per chain of custody (attached) Sample 600-86073 (MW-32) was not logged in for dissolved metals analysis. A filtered sample was not received.
	<ol style="list-style-type: none"> Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable); NA = Not applicable; NR = Not reviewed; ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Detection Check Standard

Matrix: Water
Method: 200.7/6010
Preparation: 200.7P/3010
Date Analyzed: 12/31/2013
Date Prepared: 12/27/2013
Instrument: Spectro01
TALs Batches: 124030, 123788p
Units: mg/L

Analyte	MDL	DCS Spike	Measured Result	MQL
Aluminum	0.006	0.02	0.028176	0.5
Antimony	0.0063	0.01	0.010016	0.05
Arsenic	0.0033	0.01	0.008253	0.01
Barium	0.0022	0.005	0.004098	0.02
Beryllium	0.00134	0.002	0.004019	0.005
Boron	0.0077	0.02	0.019829	0.2
Cadmium	0.00073	0.001	0.001	0.005
Calcium	0.022	0.05	0.060829	1
Chromium	0.0016	0.002	0.003835	0.01
Cobalt	0.00063	0.001	0.000965	0.01
Copper	0.0014	0.002	0.002451	0.01
Iron	0.087	0.1	0.002258	0.4
Lithium	0.0024	0.005	0.006107	0.2
Lead	0.0029	0.005	0.005478	0.01
Selenium	0.0042	0.01	0.009953	0.04
Manganese	0.00084	0.002	0.001988	0.01
Molybdenum	0.0027	0.005	0.005867	0.01
Nickel	0.00179	0.005	0.005669	0.01
Silver	0.0012	0.0025	0.001901	0.01
Sodium	0.02	0.05	0.088115	1
Strontium	0.0005	0.001	0.000897	0.005
Thallium	0.0078	0.02	0.021503	0.03
Tin	0.0028	0.005	0.005708	0.01
Titanium	0.0011	0.002	0.001905	0.01
Vanadium	0.0017	0.002	0.003578	0.01
Zinc	0.0022	0.005	0.004189	0.01

Case Narrative

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-86073-1

Job ID: 600-86073-1

Laboratory: TestAmerica Houston

Narrative

Job Narrative 600-86073-1

Comments

No additional comments.

Receipt

The samples were received on 1/24/2014 11:42 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.5° C.

Except:

The following sample(s) was listed on the Chain of Custody (COC); however, no sample(s) was received: . Per chain of custody (attached) Sample 600-86073 (MW-32) was not logged in for dissolved metals analysis. A filtered sample was not received.

Method Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-86073-1

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	TAL HOU

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Sample Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-86073-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
600-86073-1	MW-33	Water	01/22/14 09:45	01/24/14 11:42
600-86073-2	MW-46	Water	01/22/14 11:35	01/24/14 11:42
600-86073-3	WM-44	Water	01/22/14 13:25	01/24/14 11:42
600-86073-4	WM-32	Water	01/22/14 16:25	01/24/14 11:42

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-86073-1

Client Sample ID: MW-33

Date Collected: 01/22/14 09:45

Date Received: 01/24/14 11:42

Lab Sample ID: 600-86073-1

Matrix: Water

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.00370	J	0.00500	0.000350	mg/L	—	01/24/14 16:48	01/29/14 17:05	1
Lead	0.0645		0.0100	0.00290	mg/L	—	01/24/14 16:48	01/29/14 17:05	1

Method: 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium, Dissolved	0.00360	J	0.00500	0.000350	mg/L	—	01/24/14 16:48	01/29/14 17:22	1
Lead, Dissolved	0.0557		0.0100	0.00290	mg/L	—	01/24/14 16:48	01/29/14 17:22	1

Client Sample ID: MW-46

Date Collected: 01/22/14 11:35

Date Received: 01/24/14 11:42

Lab Sample ID: 600-86073-2

Matrix: Water

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.00170	J	0.00500	0.000350	mg/L	—	01/24/14 16:48	01/29/14 17:07	1
Lead	0.0304		0.0100	0.00290	mg/L	—	01/24/14 16:48	01/29/14 17:07	1

Method: 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium, Dissolved	0.00190	J	0.00500	0.000350	mg/L	—	01/24/14 16:48	01/29/14 17:24	1
Lead, Dissolved	0.0259		0.0100	0.00290	mg/L	—	01/24/14 16:48	01/29/14 17:24	1

Client Sample ID: WM-44

Date Collected: 01/22/14 13:25

Date Received: 01/24/14 11:42

Lab Sample ID: 600-86073-3

Matrix: Water

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.00100	J	0.00500	0.000350	mg/L	—	01/24/14 16:48	01/29/14 17:10	1
Lead	0.00290	U	0.0100	0.00290	mg/L	—	01/24/14 16:48	01/29/14 17:10	1

Method: 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium, Dissolved	0.00100	J	0.00500	0.000350	mg/L	—	01/24/14 16:48	01/29/14 17:27	1
Lead, Dissolved	0.00290	U	0.0100	0.00290	mg/L	—	01/24/14 16:48	01/29/14 17:27	1

Client Sample ID: WM-32

Date Collected: 01/22/14 16:25

Date Received: 01/24/14 11:42

Lab Sample ID: 600-86073-4

Matrix: Water

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.00430	J	0.00500	0.000350	mg/L	—	01/24/14 16:48	01/29/14 17:13	1
Lead	0.0285		0.0100	0.00290	mg/L	—	01/24/14 16:48	01/29/14 17:13	1

TestAmerica Houston

Definitions/Glossary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-86073-1

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value.
U	Analyte was not detected at or above the SDL.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-86073-1

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 600-125831/1-A
Matrix: Water
Analysis Batch: 126162

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 125831

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000350	U	0.00500	0.000350	mg/L		01/24/14 16:48	01/29/14 16:51	1
Cadmium, Dissolved	0.000350	U	0.00500	0.000350	mg/L		01/24/14 16:48	01/29/14 16:51	1
Lead	0.00290	U	0.0100	0.00290	mg/L		01/24/14 16:48	01/29/14 16:51	1
Lead, Dissolved	0.00290	U	0.0100	0.00290	mg/L		01/24/14 16:48	01/29/14 16:51	1

Lab Sample ID: LCS 600-125831/2-A
Matrix: Water
Analysis Batch: 126162

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 125831

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	0.500	0.5163		mg/L		103	80 - 120
Cadmium, Dissolved	0.500	0.5163		mg/L		103	80 - 120
Lead	1.00	1.036		mg/L		104	80 - 120
Lead, Dissolved	1.00	1.036		mg/L		104	80 - 120

Unadjusted Detection Limits

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-86073-1

Method: 6010B - Metals (ICP)

Analyte	MQL	MDL	Units	Method
Cadmium	0.00500	0.000350	mg/L	6010B
Lead	0.0100	0.00290	mg/L	6010B

Method: 6010B - Metals (ICP) - Dissolved

Analyte	MQL	MDL	Units	Method
Cadmium, Dissolved	0.00500	0.000350	mg/L	6010B
Lead, Dissolved	0.0100	0.00290	mg/L	6010B

QC Association Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-86073-1

Metals

Prep Batch: 125831

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86073-1	MW-33	Dissolved	Water	3010A	
600-86073-1	MW-33	Total/NA	Water	3010A	
600-86073-2	MW-46	Dissolved	Water	3010A	
600-86073-2	MW-46	Total/NA	Water	3010A	
600-86073-3	WM-44	Dissolved	Water	3010A	
600-86073-3	WM-44	Total/NA	Water	3010A	
600-86073-4	WM-32	Total/NA	Water	3010A	
LCS 600-125831/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 600-125831/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 126162

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86073-1	MW-33	Dissolved	Water	6010B	125831
600-86073-1	MW-33	Total/NA	Water	6010B	125831
600-86073-2	MW-46	Dissolved	Water	6010B	125831
600-86073-2	MW-46	Total/NA	Water	6010B	125831
600-86073-3	WM-44	Dissolved	Water	6010B	125831
600-86073-3	WM-44	Total/NA	Water	6010B	125831
600-86073-4	WM-32	Total/NA	Water	6010B	125831
LCS 600-125831/2-A	Lab Control Sample	Total/NA	Water	6010B	125831
MB 600-125831/1-A	Method Blank	Total/NA	Water	6010B	125831

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-86073-1

Client Sample ID: MW-33

Date Collected: 01/22/14 09:45

Date Received: 01/24/14 11:42

Lab Sample ID: 600-86073-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	125831	01/24/14 16:48	NER	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	126162	01/29/14 17:05	DCL	TAL HOU
Dissolved	Prep	3010A			50 mL	50 mL	125831	01/24/14 16:48	NER	TAL HOU
Dissolved	Analysis	6010B		1	50 mL	50 mL	126162	01/29/14 17:22	DCL	TAL HOU

Client Sample ID: MW-46

Date Collected: 01/22/14 11:35

Date Received: 01/24/14 11:42

Lab Sample ID: 600-86073-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	125831	01/24/14 16:48	NER	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	126162	01/29/14 17:07	DCL	TAL HOU
Dissolved	Prep	3010A			50 mL	50 mL	125831	01/24/14 16:48	NER	TAL HOU
Dissolved	Analysis	6010B		1	50 mL	50 mL	126162	01/29/14 17:24	DCL	TAL HOU

Client Sample ID: WM-44

Date Collected: 01/22/14 13:25

Date Received: 01/24/14 11:42

Lab Sample ID: 600-86073-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	125831	01/24/14 16:48	NER	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	126162	01/29/14 17:10	DCL	TAL HOU
Dissolved	Prep	3010A			50 mL	50 mL	125831	01/24/14 16:48	NER	TAL HOU
Dissolved	Analysis	6010B		1	50 mL	50 mL	126162	01/29/14 17:27	DCL	TAL HOU

Client Sample ID: WM-32

Date Collected: 01/22/14 16:25

Date Received: 01/24/14 11:42

Lab Sample ID: 600-86073-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	125831	01/24/14 16:48	NER	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	126162	01/29/14 17:13	DCL	TAL HOU

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Certification Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center

TestAmerica Job ID: 600-86073-1

Laboratory: TestAmerica Houston

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0759	08-04-14
Louisiana	NELAP	6	30643	06-30-14
Oklahoma	State Program	6	1309	08-31-14
Texas	NELAP	6	T104704223	10-31-14
USDA	Federal		P330-08-00217	04-01-14
Utah	NELAP	8	TX00083	10-31-14

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Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

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2/6/2014

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-86073-1

Login Number: 86073

List Source: TestAmerica Houston

List Number: 1

Creator: Sundquist, Sean V

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	False	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	True	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Houston

6310 Rothway Street

Houston, TX 77040

Tel: (713)690-4444

TestAmerica Job ID: 600-86073-2

Client Project/Site: Exide Recycling Center 6020

For:

Golder Associates Inc.

500 Century Plaza Drive

Suite 190

Houston, Texas 77073

Attn: Christina Higginbotham



Authorized for release by:

2/21/2014 1:55:07 PM

Cathy Upton, Project Management Assistant II

(713)690-4444

cathy.upton@testamericainc.com

Designee for

Dean Joiner, Project Manager II

(713)690-4444

dean.joiner@testamericainc.com

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Appendix A

Laboratory Data Package Cover Page - Page 1 of 4

This data package is for TestAmerica Houston job number 600-86073-2 and consists of:

- ☒ R1 - Field chain-of-custody documentation;
- ☒ R2 - Sample identification cross-reference;
- ☒ R3 - Test reports (analytical data sheets) for each environmental sample that includes:
 - a. Items consistent with NELAC Chapter 5,
 - b. dilution factors,
 - c. preparation methods,
 - d. cleanup methods, and
 - e. if required for the project, tentatively identified compounds (TICs).
- ☐ R4 - Surrogate recovery data including:
 - a. Calculated recovery (%R), and
 - b. The laboratory's surrogate QC limits.
- ☒ R5 - Test reports/summary forms for blank samples;
- ☒ R6 - Test reports/summary forms for laboratory control samples (LCSs) including:
 - a. LCS spiking amounts,
 - b. Calculated %R for each analyte, and
 - c. The laboratory's LCS QC limits.
- ☐ R7 - Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
 - a. Samples associated with the MS/MSD clearly identified,
 - b. MS/MSD spiking amounts,
 - c. Concentration of each MS/MSD analyte measured in the parent and spiked samples,
 - d. Calculated %Rs and relative percent differences (RPDs), and
 - e. The laboratory's MS/MSD QC limits
- ☐ R8 - Laboratory analytical duplicate (if applicable) recovery and precision:
 - a. The amount of analyte measured in the duplicate,
 - b. The calculated RPD, and
 - c. The laboratory's QC limits for analytical duplicates.
- ☒ R9 - List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
- ☒ R10 - Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Cathy Upton

Name (printed)



Signature

2/21/2014

Date

Project Management Asst II

Official Title (printed)

Laboratory Review Checklist: Reportable Data - Page 2 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	2/21/2014
Project Name:	Exide Recycling Center 6020	Laboratory Job Number:	600-86073-2
Reviewer Name:	Cathy Upton		

# ¹	A ²	Description	Yes	No	NA ³	NR ⁴	ER# ⁵
R1	OI	Chain-of-custody (C-O-C)					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?		X			R01A
		Were all departures from standard conditions described in an exception report?	X				
R2	OI	Sample and quality control (QC) identification					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	Test reports					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, are TICs reported?			X		
R4	O	Surrogate recovery data					
		Were surrogates added prior to extraction?			X		
		Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
R5	OI	Test reports/summary forms for blank samples					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	Laboratory control samples (LCS):					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?			X		
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data					
		Were the project/method specified analytes included in the MS and MSD?			X		
		Were MS/MSD analyzed at the appropriate frequency?			X		
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
		Were MS/MSD RPDs within laboratory QC limits?			X		
R8	OI	Analytical duplicate data					
		Were appropriate analytical duplicates analyzed for each matrix?			X		
		Were analytical duplicates analyzed at the appropriate frequency?			X		
		Were RPDs or relative standard deviations within the laboratory QC limits?			X		
R9	OI	Method quantitation limits (MQLs):					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	Other problems/anomalies					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review checklist: Supporting Data - Page 3 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	2/21/2014
Project Name:	Exide Recycling Center 6020	Laboratory Job Number:	600-86073-2
Reviewer Name:	Cathy Upton		

# ¹	A ²	Description	Yes	No	NA ³	NR ⁴	ER# ⁵
S1	OI	Initial calibration (ICAL)					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	Initial and continuing calibration verification (ICV and CCV) and continuing calibration blank (CCB):					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	Mass spectral tuning					
		Was the appropriate compound for the method used for tuning?			X		
		Were ion abundance data within the method-required QC limits?			X		
S4	O	Internal standards (IS)					
		Were IS area counts and retention times within the method-required QC limits?			X		
S5	OI	Raw data (NELAC Section 5.5.10)					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	Dual column confirmation					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	Tentatively identified compounds (TICs)					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	Interference Check Sample (ICS) results					
		Were percent recoveries within method QC limits?	X				
S9	I	Serial dilutions, post digestion spikes, and method of standard additions					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
S10	OI	Method detection limit (MDL) studies					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSS?	X				
S11	OI	Proficiency test reports					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	Standards documentation					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	Compound/analyte identification procedures					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	Demonstration of analyst competency (DOC)					
		Was DOC conducted consistent with NELAC Chapter 5?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	Verification/validation documentation for methods (NELAC Chapter 5)					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	Laboratory standard operating procedures (SOPs)					
		Are laboratory SOPs current and on file for each method performed?	X				
1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period. 2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable); 3. NA = Not applicable; 4. NR = Not reviewed; 5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).							

Laboratory Review Checklist: Exception Reports - Page 4 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	2/21/2014
Project Name:	Exide Recycling Center 6020	Laboratory Job Number:	600-86073-2
Reviewer Name:	Cathy Upton		

ER # ¹	Description
R01A	The following sample(s) was listed on the Chain of Custody (COC); however, no sample(s) was received: 600-86073-4. Per chain of custody (attached) Sample 600-86073 (MW-32) was not logged in for dissolved metals analysis. A filtered sample was not received.
	<ol style="list-style-type: none"> Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable); NA = Not applicable; NR = Not reviewed; ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Dept	Matrix	Client Sample ID	Analyte	Result	Unit	Spike Amount	MDL	RL	Percent Recovery	Prep Method	Analysis Method	Instrument ID	CAS	Prep Batch	Analysis Batch
ME	Water	Q4 2013 AQ MDLV ICPMSC	Aluminum	56.4	ug/L	50	23	5	113	3005A	6020A	ICPMS	7429-90-5	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Antimony	2.875	ug/L	2.5	2.3	5	115	3005A	6020A	ICPMS	7440-36-0	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Arsenic	2.375	ug/L	2	1.3	2.5	119	3005A	6020A	ICPMS	7440-38-2	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Barium	1.965	ug/L	2	1.3	5	98	3005A	6020A	ICPMS	7440-39-3	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Beryllium	0.52	ug/L	0.5	0.25	0.5	104	3005A	6020A	ICPMS	7440-41-7	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Boron	51.24	ug/L	50	40	100	102	3005A	6020A	ICPMS	7440-42-8	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Cadmium	0.195	ug/L	0.2	0.095	0.5	98	3005A	6020A	ICPMS	7440-43-9	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Calcium	294.73	ug/L	250	130	250	118	3005A	6020A	ICPMS	7440-70-2	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Chromium	5.49	ug/L	5	2.5	5	110	3005A	6020A	ICPMS	7440-47-3	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Cobalt	0.21	ug/L	0.2	0.15	0.5	105	3005A	6020A	ICPMS	7440-48-4	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Copper	2.02	ug/L	2	1.1	5	101	3005A	6020A	ICPMS	7440-50-8	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Iron	54.13	ug/L	50	33	100	108	3005A	6020A	ICPMS	7439-89-6	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Lead	0.355	ug/L	0.3	0.2	1.5	118	3005A	6020A	ICPMS	7439-92-1	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Magnesium	78.42	ug/L	80	43	250	98	3005A	6020A	ICPMS	7439-95-4	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Manganese	1.955	ug/L	2	1	5	98	3005A	6020A	ICPMS	7439-96-5	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Mercury	0.625	ug/L	0.5	0.4	0.8	125	3005A	6020A	ICPMS	7439-97-6	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Molybdenum	2.205	ug/L	2	1.5	5	110	3005A	6020A	ICPMS	7439-98-7	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Nickel	4.86	ug/L	4	2	5	122	3005A	6020A	ICPMS	7440-02-0	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Potassium	219.45	ug/L	200	170	500	110	3005A	6020A	ICPMS	9777440	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Selenium	1.855	ug/L	2	1	2.5	93	3005A	6020A	ICPMS	7782-49-2	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Silver	0.435	ug/L	0.4	0.25	1	109	3005A	6020A	ICPMS	7440-22-4	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Sodium	457.985	ug/L	400	250	500	114	3005A	6020A	ICPMS	7440-23-5	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Strontium	0.945	ug/L	1	0.5	1	95	3005A	6020A	ICPMS	7440-24-6	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Thallium	0.98	ug/L	1	0.5	1	98	3005A	6020A	ICPMS	7440-28-0	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Tin	2.47	ug/L	2	1.3	5	124	3005A	6020A	ICPMS	7440-31-5	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Titanium	3.17	ug/L	2.5	1.3	5	127	3005A	6020A	ICPMS	7440-32-6	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Vanadium	5.55	ug/L	5	3.8	10	111	3005A	6020A	ICPMS	7440-62-2	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Zinc	10.095	ug/L	10	8.3	20	101	3005A	6020A	ICPMS	7440-66-6	680-297813	680-298498

Case Narrative

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center 6020

TestAmerica Job ID: 600-86073-2

Job ID: 600-86073-2

Laboratory: TestAmerica Houston

Narrative

Job Narrative 600-86073-2

Comments

No additional comments.

Receipt

The samples were received on 1/24/2014 11:42 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.5° C.

Except:

The following sample(s) was listed on the Chain of Custody (COC); however, no sample(s) was received: 600-86073 (MW-32) . Per chain of custody (attached) Sample 600-86073 (MW-32) was not logged in for dissolved metals analysis. A filtered sample was not received.

Method Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center 6020

TestAmerica Job ID: 600-86073-2

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL SAV

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Sample Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center 6020

TestAmerica Job ID: 600-86073-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
600-86073-3	MW-44	Water	01/22/14 13:25	01/24/14 11:42

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center 6020

TestAmerica Job ID: 600-86073-2

Client Sample ID: MW-44

Date Collected: 01/22/14 13:25

Date Received: 01/24/14 11:42

Lab Sample ID: 600-86073-3

Matrix: Water

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000495	J	0.000500	0.0000950	mg/L		02/19/14 10:07	02/20/14 05:58	1
Lead	0.00148	J	0.00150	0.000200	mg/L		02/19/14 10:07	02/20/14 05:58	1

Definitions/Glossary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center 6020

TestAmerica Job ID: 600-86073-2

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value.
U	Analyte was not detected at or above the SDL.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center 6020

TestAmerica Job ID: 600-86073-2

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 680-316222/1-A
Matrix: Water
Analysis Batch: 316533

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 316222

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		02/19/14 10:07	02/20/14 05:10	1
Lead	0.000200	U	0.00150	0.000200	mg/L		02/19/14 10:07	02/20/14 05:10	1

Lab Sample ID: LCS 680-316222/2-A
Matrix: Water
Analysis Batch: 316533

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 316222

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	0.0500	0.05150		mg/L		103	75 - 125
Lead	0.0500	0.05175		mg/L		104	75 - 125

Unadjusted Detection Limits

Client: Golder Associates Inc.

TestAmerica Job ID: 600-86073-2

Project/Site: Exide Recycling Center 6020

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	MQL	MDL	Units	Method
Cadmium	0.000500	0.0000950	mg/L	6020A
Lead	0.00150	0.000200	mg/L	6020A

QC Association Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center 6020

TestAmerica Job ID: 600-86073-2

Metals

Prep Batch: 316222

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86073-3	MW-44	Dissolved	Water	3005A	
LCS 680-316222/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-316222/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 316533

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86073-3	MW-44	Dissolved	Water	6020A	316222
LCS 680-316222/2-A	Lab Control Sample	Total Recoverable	Water	6020A	316222
MB 680-316222/1-A	Method Blank	Total Recoverable	Water	6020A	316222

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center 6020

TestAmerica Job ID: 600-86073-2

Client Sample ID: MW-44

Date Collected: 01/22/14 13:25

Date Received: 01/24/14 11:42

Lab Sample ID: 600-86073-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	250 mL	316222	02/19/14 10:07	BJB	TAL SAV
Dissolved	Analysis	6020A		1	50 mL	250 mL	316533	02/20/14 05:58	BWR	TAL SAV

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Certification Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center 6020

TestAmerica Job ID: 600-86073-2

Laboratory: TestAmerica Houston

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0759	08-04-14
Louisiana	NELAP	6	30643	06-30-14
Oklahoma	State Program	6	1309	08-31-14
Texas	NELAP	6	T104704223	10-31-14
USDA	Federal		P330-08-00217	04-01-14
Utah	NELAP	8	TX00083	10-31-14

Laboratory: TestAmerica Savannah

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
	AFCEE		SAVLAB	
A2LA	DoD ELAP		399.01	02-28-15
A2LA	ISO/IEC 17025		399.01	02-28-15
Alabama	State Program	4	41450	06-30-14
Arkansas DEQ	State Program	6	88-0692	01-31-15
California	NELAP	9	3217CA	07-31-14
Colorado	State Program	8	N/A	12-31-14
Connecticut	State Program	1	PH-0161	03-31-15
Florida	NELAP	4	E87052	06-30-14
GA Dept. of Agriculture	State Program	4	N/A	06-30-14
Georgia	State Program	4	N/A	06-30-14
Georgia	State Program	4	803	06-30-14
Guam	State Program	9	09-005r	04-17-14
Hawaii	State Program	9	N/A	06-30-14
Illinois	NELAP	5	200022	11-30-14
Indiana	State Program	5	N/A	06-30-14
Iowa	State Program	7	353	07-01-15
Kentucky (DW)	State Program	4	90084	12-31-14
Kentucky (UST)	State Program	4	18	06-30-14
Louisiana	NELAP	6	LA100015	12-31-14
Maine	State Program	1	GA00006	08-16-14
Maryland	State Program	3	250	12-31-14
Massachusetts	State Program	1	M-GA006	06-30-14
Michigan	State Program	5	9925	06-30-14
Mississippi	State Program	4	N/A	06-30-14
Montana	State Program	8	CERT0081	01-01-15
Nebraska	State Program	7	TestAmerica-Savannah	06-30-14
New Jersey	NELAP	2	GA769	06-30-14
New Mexico	State Program	6	N/A	06-30-14
New York	NELAP	2	10842	03-31-14
North Carolina DENR	State Program	4	269	12-31-14
North Carolina DHHS	State Program	4	13701	07-31-14
Oklahoma	State Program	6	9984	08-31-14
Pennsylvania	NELAP	3	68-00474	06-30-14
Puerto Rico	State Program	2	GA00006	01-01-14 *
South Carolina	State Program	4	98001	06-30-14
Tennessee	State Program	4	TN02961	06-30-14
Texas	NELAP	6	T104704185-08-TX	11-30-14
USDA	Federal		SAV 3-04	04-07-14

* Expired certification is currently pending renewal and is considered valid.

TestAmerica Houston

Certification Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center 6020

TestAmerica Job ID: 600-86073-2

Laboratory: TestAmerica Savannah (Continued)

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Virginia	NELAP	3	460161	06-14-14
Washington	State Program	10	C1794	06-10-14
West Virginia DEP	State Program	3	94	06-30-14
West Virginia DHHR	State Program	3	9950C	12-31-13 *
Wisconsin	State Program	5	999819810	08-31-14
Wyoming	State Program	8	8TMS-L	06-30-14

* Expired certification is currently pending renewal and is considered valid.

TestAmerica Houston

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Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

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Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-86073-2

Login Number: 86073

List Source: TestAmerica Houston

List Number: 1

Creator: Sundquist, Sean V

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	False	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	True	

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-86073-2

Login Number: 86073

List Source: TestAmerica Savannah

List Number: 1

List Creation: 02/18/14 12:11 PM

Creator: Conner, Keaton

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Houston

6310 Rothway Street

Houston, TX 77040

Tel: (713)690-4444

TestAmerica Job ID: 600-87211-1

Client Project/Site: Exide Recycling Center, Frisco TX Project

For:

Golder Associates Inc.

500 Century Plaza Drive

Suite 190

Houston, Texas 77073

Attn: Christina Higginbotham



Authorized for release by:

2/28/2014 2:38:08 PM

Cathy Upton, Project Management Assistant II

(713)690-4444

cathy.upton@testamericainc.com

Designee for

Dean Joiner, Project Manager II

(713)690-4444

dean.joiner@testamericainc.com

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Appendix A

Laboratory Data Package Cover Page - Page 1 of 4

This data package is for TestAmerica Houston job number 600-87211-1 and consists of:

- ☒ R1 - Field chain-of-custody documentation;
- ☒ R2 - Sample identification cross-reference;
- ☒ R3 - Test reports (analytical data sheets) for each environmental sample that includes:
 - a. Items consistent with NELAC Chapter 5,
 - b. dilution factors,
 - c. preparation methods,
 - d. cleanup methods, and
 - e. if required for the project, tentatively identified compounds (TICs).
- ☐ R4 - Surrogate recovery data including:
 - a. Calculated recovery (%R), and
 - b. The laboratory's surrogate QC limits.
- ☒ R5 - Test reports/summary forms for blank samples;
- ☒ R6 - Test reports/summary forms for laboratory control samples (LCSs) including:
 - a. LCS spiking amounts,
 - b. Calculated %R for each analyte, and
 - c. The laboratory's LCS QC limits.
- ☐ R7 - Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
 - a. Samples associated with the MS/MSD clearly identified,
 - b. MS/MSD spiking amounts,
 - c. Concentration of each MS/MSD analyte measured in the parent and spiked samples,
 - d. Calculated %Rs and relative percent differences (RPDs), and
 - e. The laboratory's MS/MSD QC limits
- ☐ R8 - Laboratory analytical duplicate (if applicable) recovery and precision:
 - a. The amount of analyte measured in the duplicate,
 - b. The calculated RPD, and
 - c. The laboratory's QC limits for analytical duplicates.
- ☒ R9 - List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
- ☒ R10 - Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Cathy Upton

Name (printed)



Signature

2/25/2014

Date

Project Management Asst II

Official Title (printed)

Laboratory Review Checklist: Reportable Data - Page 2 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	2/25/2014
Project Name:	Exide Recycling Center, Frisco TX Projec	Laboratory Job Number:	600-87211-1
Reviewer Name:	Cathy Upton		

# ¹	A ²	Description	Yes	No	NA ³	NR ⁴	ER# ⁵
R1	OI	Chain-of-custody (C-O-C)					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?		X			R01A
		Were all departures from standard conditions described in an exception report?	X				
R2	OI	Sample and quality control (QC) identification					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	Test reports					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, are TICs reported?			X		
R4	O	Surrogate recovery data					
		Were surrogates added prior to extraction?			X		
		Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
R5	OI	Test reports/summary forms for blank samples					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	Laboratory control samples (LCS):					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?			X		
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data					
		Were the project/method specified analytes included in the MS and MSD?			X		
		Were MS/MSD analyzed at the appropriate frequency?			X		
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
		Were MS/MSD RPDs within laboratory QC limits?			X		
R8	OI	Analytical duplicate data					
		Were appropriate analytical duplicates analyzed for each matrix?			X		
		Were analytical duplicates analyzed at the appropriate frequency?			X		
		Were RPDs or relative standard deviations within the laboratory QC limits?			X		
R9	OI	Method quantitation limits (MQLs):					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	Other problems/anomalies					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review checklist: Supporting Data - Page 3 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	2/25/2014
Project Name:	Exide Recycling Center, Frisco TX Projec	Laboratory Job Number:	600-87211-1
Reviewer Name:	Cathy Upton		

# ¹	A ²	Description	Yes	No	NA ³	NR ⁴	ER# ⁵
S1	OI	Initial calibration (ICAL)					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	Initial and continuing calibration verification (ICV and CCV) and continuing calibration blank (CCB):					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	Mass spectral tuning					
		Was the appropriate compound for the method used for tuning?			X		
		Were ion abundance data within the method-required QC limits?			X		
S4	O	Internal standards (IS)					
		Were IS area counts and retention times within the method-required QC limits?			X		
S5	OI	Raw data (NELAC Section 5.5.10)					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	Dual column confirmation					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	Tentatively identified compounds (TICs)					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	Interference Check Sample (ICS) results					
		Were percent recoveries within method QC limits?	X				
S9	I	Serial dilutions, post digestion spikes, and method of standard additions					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
S10	OI	Method detection limit (MDL) studies					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSS?	X				
S11	OI	Proficiency test reports					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	Standards documentation					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	Compound/analyte identification procedures					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	Demonstration of analyst competency (DOC)					
		Was DOC conducted consistent with NELAC Chapter 5?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	Verification/validation documentation for methods (NELAC Chapter 5)					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	Laboratory standard operating procedures (SOPs)					
		Are laboratory SOPs current and on file for each method performed?	X				
1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period. 2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable); 3. NA = Not applicable; 4. NR = Not reviewed; 5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).							

Laboratory Review Checklist: Exception Reports - Page 4 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	2/25/2014
Project Name:	Exide Recycling Center, Frisco TX Projec	Laboratory Job Number:	600-87211-1
Reviewer Name:	Cathy Upton		

ER # ¹	Description
R01A	The Chain-of-Custody (COC) was incomplete as received and/or improperly completed. The COC says dissolved while the bottle says Total. Per client's email, run as Total.
	<ol style="list-style-type: none"> Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable); NA = Not applicable; NR = Not reviewed; ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Detection Check Standard

Matrix: Water
Method: 200.7/6010
Preparation: 200.7P/3010
Date Analyzed: 12/31/2013
Date Prepared: 12/27/2013
Instrument: Spectro01
TALs Batches: 124030, 123788p
Units: mg/L

Analyte	MDL	DCS Spike	Measured Result	MQL
Aluminum	0.006	0.02	0.028176	0.5
Antimony	0.0063	0.01	0.010016	0.05
Arsenic	0.0033	0.01	0.008253	0.01
Barium	0.0022	0.005	0.004098	0.02
Beryllium	0.00134	0.002	0.004019	0.005
Boron	0.0077	0.02	0.019829	0.2
Cadmium	0.00073	0.001	0.001	0.005
Calcium	0.022	0.05	0.060829	1
Chromium	0.0016	0.002	0.003835	0.01
Cobalt	0.00063	0.001	0.000965	0.01
Copper	0.0014	0.002	0.002451	0.01
Iron	0.087	0.1	0.002258	0.4
Lithium	0.0024	0.005	0.006107	0.2
Lead	0.0029	0.005	0.005478	0.01
Selenium	0.0042	0.01	0.009953	0.04
Manganese	0.00084	0.002	0.001988	0.01
Molybdenum	0.0027	0.005	0.005867	0.01
Nickel	0.00179	0.005	0.005669	0.01
Silver	0.0012	0.0025	0.001901	0.01
Sodium	0.02	0.05	0.088115	1
Strontium	0.0005	0.001	0.000897	0.005
Thallium	0.0078	0.02	0.021503	0.03
Tin	0.0028	0.005	0.005708	0.01
Titanium	0.0011	0.002	0.001905	0.01
Vanadium	0.0017	0.002	0.003578	0.01
Zinc	0.0022	0.005	0.004189	0.01

Case Narrative

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-87211-1

Job ID: 600-87211-1

Laboratory: TestAmerica Houston

Narrative

Job Narrative
600-87211-1

Comments

No additional comments.

Receipt

The samples were received on 2/15/2014 11:21 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.2° C.

Except:

The Chain-of-Custody (COC) was incomplete as received and/or improperly completed. The COC says dissolved while the bottle says Total. Per client's email, run as Total.

Method Summary

Client: Golder Associates Inc.

TestAmerica Job ID: 600-87211-1

Project/Site: Exide Recycling Center, Frisco TX Projec

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	TAL HOU

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Sample Summary

Client: Golder Associates Inc.

TestAmerica Job ID: 600-87211-1

Project/Site: Exide Recycling Center, Frisco TX Projec

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
600-87211-1	MW-34	Water	02/14/14 16:40	02/15/14 11:21
600-87211-2	MW-41	Water	02/14/14 09:45	02/15/14 11:21
600-87211-3	MW-42	Water	02/14/14 10:35	02/15/14 11:21

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-87211-1

Client Sample ID: MW-34

Date Collected: 02/14/14 16:40

Date Received: 02/15/14 11:21

Lab Sample ID: 600-87211-1

Matrix: Water

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.0346		0.00500	0.000350	mg/L		02/18/14 13:09	02/19/14 16:24	1
Lead	0.0357		0.0100	0.00290	mg/L		02/18/14 13:09	02/19/14 16:24	1

Client Sample ID: MW-41

Date Collected: 02/14/14 09:45

Date Received: 02/15/14 11:21

Lab Sample ID: 600-87211-2

Matrix: Water

Method: 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic, Dissolved	0.00328	U	0.0100	0.00328	mg/L		02/18/14 13:09	02/19/14 16:27	1
Cadmium, Dissolved	0.000350	U	0.00500	0.000350	mg/L		02/18/14 13:09	02/19/14 16:27	1
Lead, Dissolved	0.00290	U	0.0100	0.00290	mg/L		02/18/14 13:09	02/19/14 16:27	1
Selenium, Dissolved	0.00417	U	0.0400	0.00417	mg/L		02/18/14 13:09	02/19/14 16:27	1

Client Sample ID: MW-42

Date Collected: 02/14/14 10:35

Date Received: 02/15/14 11:21

Lab Sample ID: 600-87211-3

Matrix: Water

Method: 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic, Dissolved	0.00328	U	0.0100	0.00328	mg/L		02/18/14 13:09	02/19/14 16:29	1
Cadmium, Dissolved	0.000350	U	0.00500	0.000350	mg/L		02/18/14 13:09	02/19/14 16:29	1
Lead, Dissolved	0.00290	U	0.0100	0.00290	mg/L		02/18/14 13:09	02/19/14 16:29	1
Selenium, Dissolved	0.00417	U	0.0400	0.00417	mg/L		02/18/14 13:09	02/19/14 16:29	1

Definitions/Glossary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Project

TestAmerica Job ID: 600-87211-1

Qualifiers

Metals

Qualifier	Qualifier Description
U	Analyte was not detected at or above the SDL.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Project

TestAmerica Job ID: 600-87211-1

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 600-127600/1-A

Matrix: Water

Analysis Batch: 127679

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 127600

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic, Dissolved	0.00328	U	0.0100	0.00328	mg/L		02/18/14 13:09	02/19/14 14:25	1
Cadmium	0.000350	U	0.00500	0.000350	mg/L		02/18/14 13:09	02/19/14 14:25	1
Cadmium, Dissolved	0.000350	U	0.00500	0.000350	mg/L		02/18/14 13:09	02/19/14 14:25	1
Lead	0.00290	U	0.0100	0.00290	mg/L		02/18/14 13:09	02/19/14 14:25	1
Lead, Dissolved	0.00290	U	0.0100	0.00290	mg/L		02/18/14 13:09	02/19/14 14:25	1
Selenium, Dissolved	0.00417	U	0.0400	0.00417	mg/L		02/18/14 13:09	02/19/14 14:25	1

Lab Sample ID: LCS 600-127600/2-A

Matrix: Water

Analysis Batch: 127679

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 127600

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic, Dissolved	1.00	1.068		mg/L		107	80 - 120
Cadmium	0.500	0.5195		mg/L		104	80 - 120
Cadmium, Dissolved	0.500	0.5195		mg/L		104	80 - 120
Lead	1.00	1.027		mg/L		103	80 - 120
Lead, Dissolved	1.00	1.027		mg/L		103	80 - 120
Selenium, Dissolved	1.00	1.068		mg/L		107	80 - 120

Unadjusted Detection Limits

Client: Golder Associates Inc.

TestAmerica Job ID: 600-87211-1

Project/Site: Exide Recycling Center, Frisco TX Project

Method: 6010B - Metals (ICP)

Analyte	MQL	MDL	Units	Method
Cadmium	0.00500	0.000350	mg/L	6010B
Lead	0.0100	0.00290	mg/L	6010B

Method: 6010B - Metals (ICP) - Dissolved

Analyte	MQL	MDL	Units	Method
Arsenic, Dissolved	0.0100	0.00328	mg/L	6010B
Cadmium, Dissolved	0.00500	0.000350	mg/L	6010B
Lead, Dissolved	0.0100	0.00290	mg/L	6010B
Selenium, Dissolved	0.0400	0.00417	mg/L	6010B

QC Association Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-87211-1

Metals

Prep Batch: 127600

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-87211-1	MW-34	Total/NA	Water	3010A	
600-87211-2	MW-41	Dissolved	Water	3010A	
600-87211-3	MW-42	Dissolved	Water	3010A	
LCS 600-127600/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 600-127600/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 127679

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-87211-1	MW-34	Total/NA	Water	6010B	127600
600-87211-2	MW-41	Dissolved	Water	6010B	127600
600-87211-3	MW-42	Dissolved	Water	6010B	127600
LCS 600-127600/2-A	Lab Control Sample	Total/NA	Water	6010B	127600
MB 600-127600/1-A	Method Blank	Total/NA	Water	6010B	127600

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-87211-1

Client Sample ID: MW-34

Date Collected: 02/14/14 16:40

Date Received: 02/15/14 11:21

Lab Sample ID: 600-87211-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	127600	02/18/14 13:09	NER	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	127679	02/19/14 16:24	DCL	TAL HOU

Client Sample ID: MW-41

Date Collected: 02/14/14 09:45

Date Received: 02/15/14 11:21

Lab Sample ID: 600-87211-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3010A			50 mL	50 mL	127600	02/18/14 13:09	NER	TAL HOU
Dissolved	Analysis	6010B		1	50 mL	50 mL	127679	02/19/14 16:27	DCL	TAL HOU

Client Sample ID: MW-42

Date Collected: 02/14/14 10:35

Date Received: 02/15/14 11:21

Lab Sample ID: 600-87211-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3010A			50 mL	50 mL	127600	02/18/14 13:09	NER	TAL HOU
Dissolved	Analysis	6010B		1	50 mL	50 mL	127679	02/19/14 16:29	DCL	TAL HOU

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Certification Summary

Client: Golder Associates Inc.

TestAmerica Job ID: 600-87211-1

Project/Site: Exide Recycling Center, Frisco TX Projec

Laboratory: TestAmerica Houston

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0759	08-04-14
Louisiana	NELAP	6	30643	06-30-14
Oklahoma	State Program	6	1309	08-31-14
Texas	NELAP	6	T104704223	10-31-14
USDA	Federal		P330-08-00217	04-01-14
Utah	NELAP	8	TX00083	10-31-14

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☐


TestAmerica

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TL-4124 (1007)

Client Golder Associates Inc.		Project Manager Christina Higginbottom		Date 02/14/14		Chain of Custody Number 255251	
Address 500 Century Plaza Drive, Ste. 190		Telephone Number (Area Code)/Fax Number (281) 821-6868		Lab Number		Page 1 of 1	
City Houston		State TX		Zip Code 77073			
Project Name and Location (State) Exide Friso		Carrier/Weight Number		Lab Contact		Analysis (Attach list if more space is needed)	
Contract/Purchase Order/Quote No. 130-2086						Special Instructions/ Conditions of Receipt	

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix			Containers & Preservatives					Total Metals Pb, Cd - 6010	Dissolved Metals Pb, Cd - 6010	Total Metals Pb, Cd, As, Se - 6010	Dissolved Metals Pb, Cd, As, Se - 6010	Filtered sample	Special Instructions/ Conditions of Receipt	
			Air	Aqueous	Sed.	Soil	Unpres.	H2SO4	HNO3	HCl							NaOH
MMW-34	02/14/14	1640	X									X					Filtered for dissolved
MMW-41	02/14/14	0945	X									X					Filtered for dissolve
MMW-42	02/14/14	1035	X									X					Filtered for dissolved
in accordance w/ MSAR																	



600-87211 Chain of Custody

Possible Hazard Identification		Sample Disposal		(A fee may be assessed if samples are retained longer than 1 month)	
<input type="checkbox"/> Non-Hazard	<input type="checkbox"/> Flammable	<input type="checkbox"/> Skin Irritant	<input type="checkbox"/> Poison B	<input checked="" type="checkbox"/> Unknown	<input type="checkbox"/> Return To Client
Turn Around Time Required		Disposal By Lab		Archive For _____ Months	
<input type="checkbox"/> 24 Hours	<input type="checkbox"/> 48 Hours	<input type="checkbox"/> 7 Days	<input type="checkbox"/> 14 Days	<input type="checkbox"/> 21 Days	<input checked="" type="checkbox"/> Other 5-day
1. Relinquished By [Signature]		Date 2-14-14	Time 1945	1. Received By	
2. Relinquished By		Date	Time	2. Received By	
3. Relinquished By		Date	Time	3. Received By [Signature]	
Comments		Date 2/15/14 Time 1112			

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

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Upton, Cathy

From: Joiner, Dean
Sent: Monday, February 17, 2014 10:02 PM
To: Upton, Cathy
Subject: FW: Sample Cooler Saturdy Delivery Exide Battery Plant Frisco
Follow Up Flag: Follow up
Flag Status: Red
[Cathy, Can you check this? Thanks!](#)

From: Schmitz, Randy [mailto:Randy_Schmitz@golder.com]
Sent: Monday, February 17, 2014 5:04 PM
To: Joiner, Dean
Cc: Faeth-Boyd, Anne; Trevino, Christopher
Subject: RE: Sample Cooler Saturdy Delivery Exide Battery Plant Frisco

Dean,

I am not able to get through to you on the phone. We need to ensure that the sample on COC 255251 for MW-34 is run as labeled on the bottle for Total Metals 6010 for Pb and Cd only rather than for dissolved.

Randy

Sent from my Verizon Wireless 4G LTE smartphone

----- Original message -----

From: "Joiner, Dean"
Date: 02/16/2014 12:36 PM (GMT-06:00)
To: "Schmitz, Randy"
Subject: RE: Sample Cooler Saturdy Delivery Exide Battery Plant Frisco

[Thanks!](#)

From: Schmitz, Randy [mailto:Randy_Schmitz@golder.com]
Sent: Friday, February 14, 2014 10:01 PM
To: Joiner, Dean
Cc: Higginbotham, Christina; Faeth-Boyd, Anne
Subject: Sample Cooler Saturdy Delivery Exide Battery Plant Frisco

Hello Dean,

I wanted to let you know that we shipped two coolers with samples tonight to be delivered Saturday morning (FedEx Saturday delivery priority overnight); one to the Savannah lab, and one to the Houston lab. I have listed the FedEx tracking number and COC Number below:

Savannah: FedEx – 805043183223 COC # - 255250

Houston: FedEx – 805043182960 COC # - 255251

Please contact me if you have any questions and thank you.

Randy

Randy Schmitz | Staff Scientist | **Golder Associates Inc. (Dallas-Fort Worth Office)**
9289 Huntington Square, Ste. 100, North Richland Hills, TX, USA 76182
T: +1 (817) 281-0510 | **F:** +1 (817) 281-0559 | **C:** +1 (817) 807-1316
E: RSchmitz@golder.com | www.golder.com

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Please consider the environment before printing this email.

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-87211-1

Login Number: 87211

List Source: TestAmerica Houston

List Number: 1

Creator: Lopez, Sandro R

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.2
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

TestAmerica

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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Houston

6310 Rothway Street

Houston, TX 77040

Tel: (713)690-4444

TestAmerica Job ID: 600-87304-1

Client Project/Site: Exide Recycling Center, Frisco TX Project

For:

Golder Associates Inc.

500 Century Plaza Drive

Suite 190

Houston, Texas 77073

Attn: Christina Higginbotham



Authorized for release by:

2/28/2014 2:50:52 PM

Cathy Upton, Project Management Assistant II

(713)690-4444

cathy.upton@testamericainc.com

Designee for

Dean Joiner, Project Manager II

(713)690-4444

dean.joiner@testamericainc.com

LINKS

Review your project
results through

TotalAccess

Have a Question?



Visit us at:

www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Appendix A

Laboratory Data Package Cover Page - Page 1 of 4

This data package is for TestAmerica Houston job number 600-87304-1 and consists of:

- ☒ R1 - Field chain-of-custody documentation;
- ☒ R2 - Sample identification cross-reference;
- ☒ R3 - Test reports (analytical data sheets) for each environmental sample that includes:
 - a. Items consistent with NELAC Chapter 5,
 - b. dilution factors,
 - c. preparation methods,
 - d. cleanup methods, and
 - e. if required for the project, tentatively identified compounds (TICs).
- ☐ R4 - Surrogate recovery data including:
 - a. Calculated recovery (%R), and
 - b. The laboratory's surrogate QC limits.
- ☒ R5 - Test reports/summary forms for blank samples;
- ☒ R6 - Test reports/summary forms for laboratory control samples (LCSs) including:
 - a. LCS spiking amounts,
 - b. Calculated %R for each analyte, and
 - c. The laboratory's LCS QC limits.
- ☒ R7 - Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
 - a. Samples associated with the MS/MSD clearly identified,
 - b. MS/MSD spiking amounts,
 - c. Concentration of each MS/MSD analyte measured in the parent and spiked samples,
 - d. Calculated %Rs and relative percent differences (RPDs), and
 - e. The laboratory's MS/MSD QC limits
- ☐ R8 - Laboratory analytical duplicate (if applicable) recovery and precision:
 - a. The amount of analyte measured in the duplicate,
 - b. The calculated RPD, and
 - c. The laboratory's QC limits for analytical duplicates.
- ☒ R9 - List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
- ☒ R10 - Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Cathy Upton

Name (printed)



Signature

2/25/2014

Date

Project Management Asst II

Official Title (printed)

Laboratory Review Checklist: Reportable Data - Page 2 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	2/25/2014
Project Name:	Exide Recycling Center, Frisco TX Projec	Laboratory Job Number:	600-87304-1
Reviewer Name:	Cathy Upton		

# ¹	A ²	Description	Yes	No	NA ³	NR ⁴	ER# ⁵
R1	OI	Chain-of-custody (C-O-C)					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?	X				
R2	OI	Sample and quality control (QC) identification					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	Test reports					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, are TICs reported?			X		
R4	O	Surrogate recovery data					
		Were surrogates added prior to extraction?			X		
		Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
R5	OI	Test reports/summary forms for blank samples					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	Laboratory control samples (LCS):					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?			X		
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
		Were MS/MSD RPDs within laboratory QC limits?	X				
R8	OI	Analytical duplicate data					
		Were appropriate analytical duplicates analyzed for each matrix?			X		
		Were analytical duplicates analyzed at the appropriate frequency?			X		
		Were RPDs or relative standard deviations within the laboratory QC limits?			X		
R9	OI	Method quantitation limits (MQLs):					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	Other problems/anomalies					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review checklist: Supporting Data - Page 3 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	2/25/2014
Project Name:	Exide Recycling Center, Frisco TX Projec	Laboratory Job Number:	600-87304-1
Reviewer Name:	Cathy Upton		

# ¹	A ²	Description	Yes	No	NA ³	NR ⁴	ER# ⁵
S1	OI	Initial calibration (ICAL)					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	Initial and continuing calibration verification (ICV and CCV) and continuing calibration blank (CCB):					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	Mass spectral tuning					
		Was the appropriate compound for the method used for tuning?			X		
		Were ion abundance data within the method-required QC limits?			X		
S4	O	Internal standards (IS)					
		Were IS area counts and retention times within the method-required QC limits?			X		
S5	OI	Raw data (NELAC Section 5.5.10)					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	Dual column confirmation					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	Tentatively identified compounds (TICs)					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	Interference Check Sample (ICS) results					
		Were percent recoveries within method QC limits?	X				
S9	I	Serial dilutions, post digestion spikes, and method of standard additions					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
S10	OI	Method detection limit (MDL) studies					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSS?	X				
S11	OI	Proficiency test reports					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	Standards documentation					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	Compound/analyte identification procedures					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	Demonstration of analyst competency (DOC)					
		Was DOC conducted consistent with NELAC Chapter 5?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	Verification/validation documentation for methods (NELAC Chapter 5)					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	Laboratory standard operating procedures (SOPs)					
		Are laboratory SOPs current and on file for each method performed?	X				
1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period. 2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable); 3. NA = Not applicable; 4. NR = Not reviewed; 5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).							

Laboratory Review Checklist: Exception Reports - Page 4 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	2/25/2014
Project Name:	Exide Recycling Center, Frisco TX Projec	Laboratory Job Number:	600-87304-1
Reviewer Name:	Cathy Upton		

ER # ¹	Description
	<div>1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.</div> <div>2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);</div> <div>3. NA = Not applicable;</div> <div>4. NR = Not reviewed;</div> <div>5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).</div>

Dept	Matrix	Client Sample ID	Analyte	Result	Unit	Spike Amount	MDL	RL	Percent Recovery	Prep Method	Analysis Method	Instrument ID	CAS	Prep Batch	Analysis Batch
ME	Water	Q4 2013 AQ MDLV ICPMSC	Aluminum	56.4	ug/L	50	23	5	113	3005A	6020A	ICPMS	7429-90-5	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Antimony	2.875	ug/L	2.5	2.3	5	115	3005A	6020A	ICPMS	7440-36-0	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Arsenic	2.375	ug/L	2	1.3	2.5	119	3005A	6020A	ICPMS	7440-38-2	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Barium	1.965	ug/L	2	1.3	5	98	3005A	6020A	ICPMS	7440-39-3	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Beryllium	0.52	ug/L	0.5	0.25	0.5	104	3005A	6020A	ICPMS	7440-41-7	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Boron	51.24	ug/L	50	40	100	102	3005A	6020A	ICPMS	7440-42-8	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Cadmium	0.195	ug/L	0.2	0.095	0.5	98	3005A	6020A	ICPMS	7440-43-9	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Calcium	294.73	ug/L	250	130	250	118	3005A	6020A	ICPMS	7440-70-2	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Chromium	5.49	ug/L	5	2.5	5	110	3005A	6020A	ICPMS	7440-47-3	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Cobalt	0.21	ug/L	0.2	0.15	0.5	105	3005A	6020A	ICPMS	7440-48-4	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Copper	2.02	ug/L	2	1.1	5	101	3005A	6020A	ICPMS	7440-50-8	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Iron	54.13	ug/L	50	33	100	108	3005A	6020A	ICPMS	7439-89-6	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Lead	0.355	ug/L	0.3	0.2	1.5	118	3005A	6020A	ICPMS	7439-92-1	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Magnesium	78.42	ug/L	80	43	250	98	3005A	6020A	ICPMS	7439-95-4	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Manganese	1.955	ug/L	2	1	5	98	3005A	6020A	ICPMS	7439-96-5	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Mercury	0.625	ug/L	0.5	0.4	0.8	125	3005A	6020A	ICPMS	7439-97-6	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Molybdenum	2.205	ug/L	2	1.5	5	110	3005A	6020A	ICPMS	7439-98-7	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Nickel	4.86	ug/L	4	2	5	122	3005A	6020A	ICPMS	7440-02-0	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Potassium	219.45	ug/L	200	170	500	110	3005A	6020A	ICPMS	9777440	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Selenium	1.855	ug/L	2	1	2.5	93	3005A	6020A	ICPMS	7782-49-2	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Silver	0.435	ug/L	0.4	0.25	1	109	3005A	6020A	ICPMS	7440-22-4	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Sodium	457.985	ug/L	400	250	500	114	3005A	6020A	ICPMS	7440-23-5	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Strontium	0.945	ug/L	1	0.5	1	95	3005A	6020A	ICPMS	7440-24-6	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Thallium	0.98	ug/L	1	0.5	1	98	3005A	6020A	ICPMS	7440-28-0	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Tin	2.47	ug/L	2	1.3	5	124	3005A	6020A	ICPMS	7440-31-5	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Titanium	3.17	ug/L	2.5	1.3	5	127	3005A	6020A	ICPMS	7440-32-6	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Vanadium	5.55	ug/L	5	3.8	10	111	3005A	6020A	ICPMS	7440-62-2	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Zinc	10.095	ug/L	10	8.3	20	101	3005A	6020A	ICPMS	7440-66-6	680-297813	680-298498

Case Narrative

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-87304-1

Job ID: 600-87304-1

Laboratory: TestAmerica Houston

Narrative

Job Narrative
600-87304-1

Comments

No additional comments.

Receipt

The samples were received on 2/18/2014 10:09 AM; the samples arrived in good condition, properly preserved and, where required, on ice.

Method Summary

Client: Golder Associates Inc.

TestAmerica Job ID: 600-87304-1

Project/Site: Exide Recycling Center, Frisco TX Projec

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL SAV

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Sample Summary

Client: Golder Associates Inc.

TestAmerica Job ID: 600-87304-1

Project/Site: Exide Recycling Center, Frisco TX Projec

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
600-87304-1	MW-14	Water	02/17/14 11:10	02/18/14 10:09
600-87304-2	MW-27	Water	02/17/14 12:55	02/18/14 10:09
600-87304-3	MW-26	Water	02/17/14 14:15	02/18/14 10:09
600-87304-4	MW-29	Water	02/17/14 13:35	02/18/14 10:09
600-87304-5	MW-17	Water	02/17/14 15:05	02/18/14 10:09

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-87304-1

Client Sample ID: MW-14

Date Collected: 02/17/14 11:10

Date Received: 02/18/14 10:09

Lab Sample ID: 600-87304-1

Matrix: Water

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L	—	02/19/14 14:36	02/24/14 22:58	1
Lead	0.000302	J	0.00150	0.000200	mg/L	—	02/19/14 14:36	02/24/14 22:58	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000120	J	0.000500	0.0000950	mg/L	—	02/19/14 14:36	02/24/14 23:31	1
Lead	0.00433	J	0.00150	0.000200	mg/L	—	02/19/14 14:36	02/24/14 23:31	1

Client Sample ID: MW-27

Date Collected: 02/17/14 12:55

Date Received: 02/18/14 10:09

Lab Sample ID: 600-87304-2

Matrix: Water

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000354	J	0.000500	0.0000950	mg/L	—	02/19/14 14:36	02/24/14 23:38	1
Lead	0.000718	J	0.00150	0.000200	mg/L	—	02/19/14 14:36	02/24/14 23:38	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000410	J	0.000500	0.0000950	mg/L	—	02/19/14 14:36	02/24/14 23:59	1
Lead	0.000743	J	0.00150	0.000200	mg/L	—	02/19/14 14:36	02/24/14 23:59	1

Client Sample ID: MW-26

Date Collected: 02/17/14 14:15

Date Received: 02/18/14 10:09

Lab Sample ID: 600-87304-3

Matrix: Water

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000311	J	0.000500	0.0000950	mg/L	—	02/19/14 14:36	02/25/14 00:06	1
Lead	0.000287	J	0.00150	0.000200	mg/L	—	02/19/14 14:36	02/25/14 00:06	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000302	J	0.000500	0.0000950	mg/L	—	02/19/14 14:36	02/25/14 00:12	1
Lead	0.000327	J	0.00150	0.000200	mg/L	—	02/19/14 14:36	02/25/14 00:12	1

Client Sample ID: MW-29

Date Collected: 02/17/14 13:35

Date Received: 02/18/14 10:09

Lab Sample ID: 600-87304-4

Matrix: Water

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000765	J	0.000500	0.0000950	mg/L	—	02/19/14 14:36	02/25/14 00:53	1
Lead	0.000433	J	0.00150	0.000200	mg/L	—	02/19/14 14:36	02/25/14 00:53	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000865	J	0.000500	0.0000950	mg/L	—	02/19/14 14:36	02/25/14 01:00	1
Lead	0.000937	J	0.00150	0.000200	mg/L	—	02/19/14 14:36	02/25/14 01:00	1

TestAmerica Houston

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-87304-1

Client Sample ID: MW-17

Date Collected: 02/17/14 15:05

Date Received: 02/18/14 10:09

Lab Sample ID: 600-87304-5

Matrix: Water

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000182	J	0.000500	0.0000950	mg/L	—	02/19/14 14:36	02/25/14 00:19	1
Lead	0.000200	U	0.00150	0.000200	mg/L	—	02/19/14 14:36	02/25/14 00:19	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000130	J	0.000500	0.0000950	mg/L	—	02/19/14 14:36	02/25/14 00:26	1
Lead	0.000200	U	0.00150	0.000200	mg/L	—	02/19/14 14:36	02/25/14 00:26	1

Definitions/Glossary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Project

TestAmerica Job ID: 600-87304-1

Qualifiers

Metals

Qualifier	Qualifier Description
U	Analyte was not detected at or above the SDL.
J	Result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-87304-1

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 680-316319/1-A

Matrix: Water

Analysis Batch: 317159

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 316319

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		02/19/14 14:36	02/24/14 18:18	1
Lead	0.000200	U	0.00150	0.000200	mg/L		02/19/14 14:36	02/24/14 18:18	1

Lab Sample ID: LCS 680-316319/2-A

Matrix: Water

Analysis Batch: 317159

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 316319

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	0.0500	0.05090		mg/L		102	75 - 125
Lead	0.0500	0.05215		mg/L		104	75 - 125

Lab Sample ID: 600-87304-1 MS

Matrix: Water

Analysis Batch: 317159

Client Sample ID: MW-14

Prep Type: Total Recoverable

Prep Batch: 316319

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	0.0000950	U	0.0500	0.05035		mg/L		101	75 - 125
Lead	0.000302	J	0.0500	0.04958		mg/L		99	75 - 125

Lab Sample ID: 600-87304-1 MSD

Matrix: Water

Analysis Batch: 317159

Client Sample ID: MW-14

Prep Type: Total Recoverable

Prep Batch: 316319

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cadmium	0.0000950	U	0.0500	0.05150		mg/L		103	75 - 125	2	20
Lead	0.000302	J	0.0500	0.05005		mg/L		99	75 - 125	1	20

Unadjusted Detection Limits

Client: Golder Associates Inc.

TestAmerica Job ID: 600-87304-1

Project/Site: Exide Recycling Center, Frisco TX Projec

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	MQL	MDL	Units	Method
Cadmium	0.000500	0.0000950	mg/L	6020A
Lead	0.00150	0.000200	mg/L	6020A

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	MQL	MDL	Units	Method
Cadmium	0.000500	0.0000950	mg/L	6020A
Lead	0.00150	0.000200	mg/L	6020A

QC Association Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-87304-1

Metals

Prep Batch: 316319

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-87304-1	MW-14	Dissolved	Water	3005A	
600-87304-1	MW-14	Total Recoverable	Water	3005A	
600-87304-1 MS	MW-14	Total Recoverable	Water	3005A	
600-87304-1 MSD	MW-14	Total Recoverable	Water	3005A	
600-87304-2	MW-27	Dissolved	Water	3005A	
600-87304-2	MW-27	Total Recoverable	Water	3005A	
600-87304-3	MW-26	Dissolved	Water	3005A	
600-87304-3	MW-26	Total Recoverable	Water	3005A	
600-87304-4	MW-29	Dissolved	Water	3005A	
600-87304-4	MW-29	Total Recoverable	Water	3005A	
600-87304-5	MW-17	Dissolved	Water	3005A	
600-87304-5	MW-17	Total Recoverable	Water	3005A	
LCS 680-316319/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-316319/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 317159

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-87304-1	MW-14	Dissolved	Water	6020A	316319
600-87304-1	MW-14	Total Recoverable	Water	6020A	316319
600-87304-1 MS	MW-14	Total Recoverable	Water	6020A	316319
600-87304-1 MSD	MW-14	Total Recoverable	Water	6020A	316319
600-87304-2	MW-27	Dissolved	Water	6020A	316319
600-87304-2	MW-27	Total Recoverable	Water	6020A	316319
600-87304-3	MW-26	Dissolved	Water	6020A	316319
600-87304-3	MW-26	Total Recoverable	Water	6020A	316319
600-87304-4	MW-29	Dissolved	Water	6020A	316319
600-87304-4	MW-29	Total Recoverable	Water	6020A	316319
600-87304-5	MW-17	Dissolved	Water	6020A	316319
600-87304-5	MW-17	Total Recoverable	Water	6020A	316319
LCS 680-316319/2-A	Lab Control Sample	Total Recoverable	Water	6020A	316319
MB 680-316319/1-A	Method Blank	Total Recoverable	Water	6020A	316319

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-87304-1

Client Sample ID: MW-14

Date Collected: 02/17/14 11:10

Date Received: 02/18/14 10:09

Lab Sample ID: 600-87304-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	250 mL	316319	02/19/14 14:36	BJB	TAL SAV
Total Recoverable	Analysis	6020A		1	50 mL	250 mL	317159	02/24/14 22:58	CME	TAL SAV
Dissolved	Prep	3005A			50 mL	250 mL	316319	02/19/14 14:36	BJB	TAL SAV
Dissolved	Analysis	6020A		1	50 mL	250 mL	317159	02/24/14 23:31	CME	TAL SAV

Client Sample ID: MW-27

Date Collected: 02/17/14 12:55

Date Received: 02/18/14 10:09

Lab Sample ID: 600-87304-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	250 mL	316319	02/19/14 14:36	BJB	TAL SAV
Total Recoverable	Analysis	6020A		1	50 mL	250 mL	317159	02/24/14 23:38	CME	TAL SAV
Dissolved	Prep	3005A			50 mL	250 mL	316319	02/19/14 14:36	BJB	TAL SAV
Dissolved	Analysis	6020A		1	50 mL	250 mL	317159	02/24/14 23:59	CME	TAL SAV

Client Sample ID: MW-26

Date Collected: 02/17/14 14:15

Date Received: 02/18/14 10:09

Lab Sample ID: 600-87304-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	250 mL	316319	02/19/14 14:36	BJB	TAL SAV
Total Recoverable	Analysis	6020A		1	50 mL	250 mL	317159	02/25/14 00:06	CME	TAL SAV
Dissolved	Prep	3005A			50 mL	250 mL	316319	02/19/14 14:36	BJB	TAL SAV
Dissolved	Analysis	6020A		1	50 mL	250 mL	317159	02/25/14 00:12	CME	TAL SAV

Client Sample ID: MW-29

Date Collected: 02/17/14 13:35

Date Received: 02/18/14 10:09

Lab Sample ID: 600-87304-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	250 mL	316319	02/19/14 14:36	BJB	TAL SAV
Total Recoverable	Analysis	6020A		1	50 mL	250 mL	317159	02/25/14 00:53	CME	TAL SAV
Dissolved	Prep	3005A			50 mL	250 mL	316319	02/19/14 14:36	BJB	TAL SAV
Dissolved	Analysis	6020A		1	50 mL	250 mL	317159	02/25/14 01:00	CME	TAL SAV

Client Sample ID: MW-17

Date Collected: 02/17/14 15:05

Date Received: 02/18/14 10:09

Lab Sample ID: 600-87304-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	250 mL	316319	02/19/14 14:36	BJB	TAL SAV
Total Recoverable	Analysis	6020A		1	50 mL	250 mL	317159	02/25/14 00:19	CME	TAL SAV
Dissolved	Prep	3005A			50 mL	250 mL	316319	02/19/14 14:36	BJB	TAL SAV

TestAmerica Houston

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-87304-1

Client Sample ID: MW-17

Date Collected: 02/17/14 15:05

Date Received: 02/18/14 10:09

Lab Sample ID: 600-87304-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	6020A		1	50 mL	250 mL	317159	02/25/14 00:26	CME	TAL SAV

Laboratory References:
TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Certification Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-87304-1

Laboratory: TestAmerica Houston

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Texas	NELAP	6	T104704223	10-31-14

Laboratory: TestAmerica Savannah

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
	AFCEE		SAVLAB	
A2LA	DoD ELAP		399.01	02-28-15
A2LA	ISO/IEC 17025		399.01	02-28-15
Alabama	State Program	4	41450	06-30-14
Arkansas DEQ	State Program	6	88-0692	01-31-15
California	NELAP	9	3217CA	07-31-14
Colorado	State Program	8	N/A	12-31-14
Connecticut	State Program	1	PH-0161	03-31-15
Florida	NELAP	4	E87052	06-30-14
GA Dept. of Agriculture	State Program	4	N/A	06-30-14
Georgia	State Program	4	N/A	06-30-14
Georgia	State Program	4	803	06-30-14
Guam	State Program	9	09-005r	04-17-14
Hawaii	State Program	9	N/A	06-30-14
Illinois	NELAP	5	200022	11-30-14
Indiana	State Program	5	N/A	06-30-14
Iowa	State Program	7	353	07-01-15
Kentucky (DW)	State Program	4	90084	12-31-14
Kentucky (UST)	State Program	4	18	06-30-14
Louisiana	NELAP	6	LA100015	12-31-14
Maine	State Program	1	GA00006	08-16-14
Maryland	State Program	3	250	12-31-14
Massachusetts	State Program	1	M-GA006	06-30-14
Michigan	State Program	5	9925	06-30-14
Mississippi	State Program	4	N/A	06-30-14
Montana	State Program	8	CERT0081	01-01-15
Nebraska	State Program	7	TestAmerica-Savannah	06-30-14
New Jersey	NELAP	2	GA769	06-30-14
New Mexico	State Program	6	N/A	06-30-14
New York	NELAP	2	10842	03-31-14
North Carolina DENR	State Program	4	269	12-31-14
North Carolina DHHS	State Program	4	13701	07-31-14
Oklahoma	State Program	6	9984	08-31-14
Pennsylvania	NELAP	3	68-00474	06-30-14
Puerto Rico	State Program	2	GA00006	12-31-14
South Carolina	State Program	4	98001	06-30-14
Tennessee	State Program	4	TN02961	06-30-14
Texas	NELAP	6	T104704185-08-TX	11-30-14
USDA	Federal		SAV 3-04	04-07-14
Virginia	NELAP	3	460161	06-14-14
Washington	State Program	10	C1794	06-10-14
West Virginia DEP	State Program	3	94	06-30-14
West Virginia DHHR	State Program	3	9950C	12-31-14
Wisconsin	State Program	5	999819810	08-31-14

TestAmerica Houston

Certification Summary

Client: Golder Associates Inc.

TestAmerica Job ID: 600-87304-1

Project/Site: Exide Recycling Center, Frisco TX Projec

Laboratory: TestAmerica Savannah (Continued)

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Wyoming	State Program	8	8TMS-L	06-30-14

[illegible]

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-87304-1

Login Number: 87304

List Source: TestAmerica Houston

List Number: 1

Creator: Allen, Jodi L

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	0.6
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Houston

6310 Rothway Street

Houston, TX 77040

Tel: (713)690-4444

TestAmerica Job ID: 600-87306-1

Client Project/Site: Exide Recycling Center, Frisco TX Project

For:

Golder Associates Inc.

500 Century Plaza Drive

Suite 190

Houston, Texas 77073

Attn: Christina Higginbotham



Authorized for release by:

2/28/2014 2:54:37 PM

Cathy Upton, Project Management Assistant II

(713)690-4444

cathy.upton@testamericainc.com

Designee for

Dean Joiner, Project Manager II

(713)690-4444

dean.joiner@testamericainc.com

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Appendix A

Laboratory Data Package Cover Page - Page 1 of 4

This data package is for TestAmerica Houston job number 600-87306-1 and consists of:

- ☒ R1 - Field chain-of-custody documentation;
- ☒ R2 - Sample identification cross-reference;
- ☒ R3 - Test reports (analytical data sheets) for each environmental sample that includes:
 - a. Items consistent with NELAC Chapter 5,
 - b. dilution factors,
 - c. preparation methods,
 - d. cleanup methods, and
 - e. if required for the project, tentatively identified compounds (TICs).
- ☐ R4 - Surrogate recovery data including:
 - a. Calculated recovery (%R), and
 - b. The laboratory's surrogate QC limits.
- ☒ R5 - Test reports/summary forms for blank samples;
- ☒ R6 - Test reports/summary forms for laboratory control samples (LCSs) including:
 - a. LCS spiking amounts,
 - b. Calculated %R for each analyte, and
 - c. The laboratory's LCS QC limits.
- ☐ R7 - Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
 - a. Samples associated with the MS/MSD clearly identified,
 - b. MS/MSD spiking amounts,
 - c. Concentration of each MS/MSD analyte measured in the parent and spiked samples,
 - d. Calculated %Rs and relative percent differences (RPDs), and
 - e. The laboratory's MS/MSD QC limits
- ☐ R8 - Laboratory analytical duplicate (if applicable) recovery and precision:
 - a. The amount of analyte measured in the duplicate,
 - b. The calculated RPD, and
 - c. The laboratory's QC limits for analytical duplicates.
- ☒ R9 - List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
- ☒ R10 - Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Cathy Upton

Name (printed)



Signature

2/21/2014

Date

Project Management Asst II

Official Title (printed)

Laboratory Review Checklist: Reportable Data - Page 2 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	2/21/2014
Project Name:	Exide Recycling Center, Frisco TX Projec	Laboratory Job Number:	600-87306-1
Reviewer Name:	Cathy Upton		

# ¹	A ²	Description	Yes	No	NA ³	NR ⁴	ER# ⁵
R1	OI	Chain-of-custody (C-O-C)					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?	X				
R2	OI	Sample and quality control (QC) identification					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	Test reports					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, are TICs reported?			X		
R4	O	Surrogate recovery data					
		Were surrogates added prior to extraction?			X		
		Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
R5	OI	Test reports/summary forms for blank samples					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	Laboratory control samples (LCS):					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?			X		
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data					
		Were the project/method specified analytes included in the MS and MSD?			X		
		Were MS/MSD analyzed at the appropriate frequency?			X		
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
		Were MS/MSD RPDs within laboratory QC limits?			X		
R8	OI	Analytical duplicate data					
		Were appropriate analytical duplicates analyzed for each matrix?			X		
		Were analytical duplicates analyzed at the appropriate frequency?			X		
		Were RPDs or relative standard deviations within the laboratory QC limits?			X		
R9	OI	Method quantitation limits (MQLs):					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	Other problems/anomalies					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review checklist: Supporting Data - Page 3 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	2/21/2014
Project Name:	Exide Recycling Center, Frisco TX Projec	Laboratory Job Number:	600-87306-1
Reviewer Name:	Cathy Upton		

# ¹	A ²	Description	Yes	No	NA ³	NR ⁴	ER# ⁵
S1	OI	Initial calibration (ICAL)					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	Initial and continuing calibration verification (ICV and CCV) and continuing calibration blank (CCB):					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	Mass spectral tuning					
		Was the appropriate compound for the method used for tuning?			X		
		Were ion abundance data within the method-required QC limits?			X		
S4	O	Internal standards (IS)					
		Were IS area counts and retention times within the method-required QC limits?			X		
S5	OI	Raw data (NELAC Section 5.5.10)					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	Dual column confirmation					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	Tentatively identified compounds (TICs)					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	Interference Check Sample (ICS) results					
		Were percent recoveries within method QC limits?	X				
S9	I	Serial dilutions, post digestion spikes, and method of standard additions					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
S10	OI	Method detection limit (MDL) studies					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSS?	X				
S11	OI	Proficiency test reports					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	Standards documentation					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	Compound/analyte identification procedures					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	Demonstration of analyst competency (DOC)					
		Was DOC conducted consistent with NELAC Chapter 5?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	Verification/validation documentation for methods (NELAC Chapter 5)					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	Laboratory standard operating procedures (SOPs)					
		Are laboratory SOPs current and on file for each method performed?	X				
1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period. 2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable); 3. NA = Not applicable; 4. NR = Not reviewed; 5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).							

Laboratory Review Checklist: Exception Reports - Page 4 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	2/21/2014
Project Name:	Exide Recycling Center, Frisco TX Projec	Laboratory Job Number:	600-87306-1
Reviewer Name:	Cathy Upton		

ER # ¹	Description
	<div>1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.</div> <div>2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);</div> <div>3. NA = Not applicable;</div> <div>4. NR = Not reviewed;</div> <div>5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).</div>

Dept	Matrix	Client Sample ID	Analyte	Result	Unit	Spike Amount	MDL	RL	Percent Recovery	Prep Method	Analysis Method	Instrument ID	CAS	Prep Batch	Analysis Batch
ME	Water	Q4 2013 AQ MDLV ICPMSC	Aluminum	56.4	ug/L	50	23	5	113	3005A	6020A	ICPMS	7429-90-5	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Antimony	2.875	ug/L	2.5	2.3	5	115	3005A	6020A	ICPMS	7440-36-0	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Arsenic	2.375	ug/L	2	1.3	2.5	119	3005A	6020A	ICPMS	7440-38-2	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Barium	1.965	ug/L	2	1.3	5	98	3005A	6020A	ICPMS	7440-39-3	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Beryllium	0.52	ug/L	0.5	0.25	0.5	104	3005A	6020A	ICPMS	7440-41-7	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Boron	51.24	ug/L	50	40	100	102	3005A	6020A	ICPMS	7440-42-8	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Cadmium	0.195	ug/L	0.2	0.095	0.5	98	3005A	6020A	ICPMS	7440-43-9	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Calcium	294.73	ug/L	250	130	250	118	3005A	6020A	ICPMS	7440-70-2	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Chromium	5.49	ug/L	5	2.5	5	110	3005A	6020A	ICPMS	7440-47-3	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Cobalt	0.21	ug/L	0.2	0.15	0.5	105	3005A	6020A	ICPMS	7440-48-4	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Copper	2.02	ug/L	2	1.1	5	101	3005A	6020A	ICPMS	7440-50-8	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Iron	54.13	ug/L	50	33	100	108	3005A	6020A	ICPMS	7439-89-6	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Lead	0.355	ug/L	0.3	0.2	1.5	118	3005A	6020A	ICPMS	7439-92-1	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Magnesium	78.42	ug/L	80	43	250	98	3005A	6020A	ICPMS	7439-95-4	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Manganese	1.955	ug/L	2	1	5	98	3005A	6020A	ICPMS	7439-96-5	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Mercury	0.625	ug/L	0.5	0.4	0.8	125	3005A	6020A	ICPMS	7439-97-6	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Molybdenum	2.205	ug/L	2	1.5	5	110	3005A	6020A	ICPMS	7439-98-7	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Nickel	4.86	ug/L	4	2	5	122	3005A	6020A	ICPMS	7440-02-0	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Potassium	219.45	ug/L	200	170	500	110	3005A	6020A	ICPMS	9777440	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Selenium	1.855	ug/L	2	1	2.5	93	3005A	6020A	ICPMS	7782-49-2	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Silver	0.435	ug/L	0.4	0.25	1	109	3005A	6020A	ICPMS	7440-22-4	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Sodium	457.985	ug/L	400	250	500	114	3005A	6020A	ICPMS	7440-23-5	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Strontium	0.945	ug/L	1	0.5	1	95	3005A	6020A	ICPMS	7440-24-6	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Thallium	0.98	ug/L	1	0.5	1	98	3005A	6020A	ICPMS	7440-28-0	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Tin	2.47	ug/L	2	1.3	5	124	3005A	6020A	ICPMS	7440-31-5	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Titanium	3.17	ug/L	2.5	1.3	5	127	3005A	6020A	ICPMS	7440-32-6	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Vanadium	5.55	ug/L	5	3.8	10	111	3005A	6020A	ICPMS	7440-62-2	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Zinc	10.095	ug/L	10	8.3	20	101	3005A	6020A	ICPMS	7440-66-6	680-297813	680-298498

Case Narrative

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-87306-1

Job ID: 600-87306-1

Laboratory: TestAmerica Houston

Narrative

Job Narrative
600-87306-1

Comments

No additional comments.

Receipt

The samples were received on 2/18/2014 10:18 AM; the samples arrived in good condition, properly preserved and, where required, on ice.

Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Method Summary

Client: Golder Associates Inc.

TestAmerica Job ID: 600-87306-1

Project/Site: Exide Recycling Center, Frisco TX Projec

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL SAV

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Sample Summary

Client: Golder Associates Inc.

TestAmerica Job ID: 600-87306-1

Project/Site: Exide Recycling Center, Frisco TX Projec

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
600-87306-1	MW-44	Water	02/17/14 11:55	02/18/14 10:18
600-87306-2	MW-46	Water	02/17/14 09:40	02/18/14 10:18

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-87306-1

Client Sample ID: MW-44

Date Collected: 02/17/14 11:55

Date Received: 02/18/14 10:18

Lab Sample ID: 600-87306-1

Matrix: Water

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000109	J	0.000500	0.0000950	mg/L	—	02/20/14 09:01	02/20/14 21:15	1
Lead	0.00611		0.00150	0.000200	mg/L	—	02/20/14 09:01	02/20/14 21:15	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000131	J	0.000500	0.0000950	mg/L	—	02/20/14 09:01	02/20/14 21:22	1
Lead	0.00192		0.00150	0.000200	mg/L	—	02/20/14 09:01	02/20/14 21:22	1

Client Sample ID: MW-46

Date Collected: 02/17/14 09:40

Date Received: 02/18/14 10:18

Lab Sample ID: 600-87306-2

Matrix: Water

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000812		0.000500	0.0000950	mg/L	—	02/20/14 09:01	02/20/14 21:29	1
Lead	0.00185		0.00150	0.000200	mg/L	—	02/20/14 09:01	02/20/14 21:29	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000834		0.000500	0.0000950	mg/L	—	02/20/14 09:01	02/20/14 21:37	1
Lead	0.00488		0.00150	0.000200	mg/L	—	02/20/14 09:01	02/20/14 21:37	1

TestAmerica Houston

Definitions/Glossary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Project

TestAmerica Job ID: 600-87306-1

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value.
U	Analyte was not detected at or above the SDL.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Project

TestAmerica Job ID: 600-87306-1

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 680-316408/1-A
Matrix: Water
Analysis Batch: 316657

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 316408

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		02/20/14 09:01	02/20/14 19:46	1
Lead	0.000200	U	0.00150	0.000200	mg/L		02/20/14 09:01	02/20/14 19:46	1

Lab Sample ID: LCS 680-316408/2-A
Matrix: Water
Analysis Batch: 316657

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 316408

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	0.0500	0.05320		mg/L		106	75 - 125
Lead	0.0500	0.05255		mg/L		105	75 - 125

Unadjusted Detection Limits

Client: Golder Associates Inc.

TestAmerica Job ID: 600-87306-1

Project/Site: Exide Recycling Center, Frisco TX Projec

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	MQL	MDL	Units	Method
Cadmium	0.000500	0.0000950	mg/L	6020A
Lead	0.00150	0.000200	mg/L	6020A

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	MQL	MDL	Units	Method
Cadmium	0.000500	0.0000950	mg/L	6020A
Lead	0.00150	0.000200	mg/L	6020A

QC Association Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Project

TestAmerica Job ID: 600-87306-1

Metals

Prep Batch: 316408

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-87306-1	MW-44	Dissolved	Water	3005A	
600-87306-1	MW-44	Total Recoverable	Water	3005A	
600-87306-2	MW-46	Dissolved	Water	3005A	
600-87306-2	MW-46	Total Recoverable	Water	3005A	
LCS 680-316408/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-316408/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 316657

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-87306-1	MW-44	Dissolved	Water	6020A	316408
600-87306-1	MW-44	Total Recoverable	Water	6020A	316408
600-87306-2	MW-46	Dissolved	Water	6020A	316408
600-87306-2	MW-46	Total Recoverable	Water	6020A	316408
LCS 680-316408/2-A	Lab Control Sample	Total Recoverable	Water	6020A	316408
MB 680-316408/1-A	Method Blank	Total Recoverable	Water	6020A	316408

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Project

TestAmerica Job ID: 600-87306-1

Client Sample ID: MW-44

Date Collected: 02/17/14 11:55

Date Received: 02/18/14 10:18

Lab Sample ID: 600-87306-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	250 mL	316408	02/20/14 09:01	BJB	TAL SAV
Total Recoverable	Analysis	6020A		1	50 mL	250 mL	316657	02/20/14 21:15	BWR	TAL SAV
Dissolved	Prep	3005A			50 mL	250 mL	316408	02/20/14 09:01	BJB	TAL SAV
Dissolved	Analysis	6020A		1	50 mL	250 mL	316657	02/20/14 21:22	BWR	TAL SAV

Client Sample ID: MW-46

Date Collected: 02/17/14 09:40

Date Received: 02/18/14 10:18

Lab Sample ID: 600-87306-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	250 mL	316408	02/20/14 09:01	BJB	TAL SAV
Total Recoverable	Analysis	6020A		1	50 mL	250 mL	316657	02/20/14 21:29	BWR	TAL SAV
Dissolved	Prep	3005A			50 mL	250 mL	316408	02/20/14 09:01	BJB	TAL SAV
Dissolved	Analysis	6020A		1	50 mL	250 mL	316657	02/20/14 21:37	BWR	TAL SAV

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Certification Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-87306-1

Laboratory: TestAmerica Houston

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Texas	NELAP	6	T104704223	10-31-14

Laboratory: TestAmerica Savannah

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
	AFCEE		SAVLAB	
A2LA	DoD ELAP		399.01	02-28-15
A2LA	ISO/IEC 17025		399.01	02-28-15
Alabama	State Program	4	41450	06-30-14
Arkansas DEQ	State Program	6	88-0692	01-31-15
California	NELAP	9	3217CA	07-31-14
Colorado	State Program	8	N/A	12-31-14
Connecticut	State Program	1	PH-0161	03-31-15
Florida	NELAP	4	E87052	06-30-14
GA Dept. of Agriculture	State Program	4	N/A	06-30-14
Georgia	State Program	4	N/A	06-30-14
Georgia	State Program	4	803	06-30-14
Guam	State Program	9	09-005r	04-17-14
Hawaii	State Program	9	N/A	06-30-14
Illinois	NELAP	5	200022	11-30-14
Indiana	State Program	5	N/A	06-30-14
Iowa	State Program	7	353	07-01-15
Kentucky (DW)	State Program	4	90084	12-31-14
Kentucky (UST)	State Program	4	18	06-30-14
Louisiana	NELAP	6	LA100015	12-31-14
Maine	State Program	1	GA00006	08-16-14
Maryland	State Program	3	250	12-31-14
Massachusetts	State Program	1	M-GA006	06-30-14
Michigan	State Program	5	9925	06-30-14
Mississippi	State Program	4	N/A	06-30-14
Montana	State Program	8	CERT0081	01-01-15
Nebraska	State Program	7	TestAmerica-Savannah	06-30-14
New Jersey	NELAP	2	GA769	06-30-14
New Mexico	State Program	6	N/A	06-30-14
New York	NELAP	2	10842	03-31-14
North Carolina DENR	State Program	4	269	12-31-14
North Carolina DHHS	State Program	4	13701	07-31-14
Oklahoma	State Program	6	9984	08-31-14
Pennsylvania	NELAP	3	68-00474	06-30-14
Puerto Rico	State Program	2	GA00006	01-01-14 *
South Carolina	State Program	4	98001	06-30-14
Tennessee	State Program	4	TN02961	06-30-14
Texas	NELAP	6	T104704185-08-TX	11-30-14
USDA	Federal		SAV 3-04	04-07-14
Virginia	NELAP	3	460161	06-14-14
Washington	State Program	10	C1794	06-10-14
West Virginia DEP	State Program	3	94	06-30-14
West Virginia DHHR	State Program	3	9950C	12-31-13 *
Wisconsin	State Program	5	999819810	08-31-14

* Expired certification is currently pending renewal and is considered valid.

TestAmerica Houston

Certification Summary

Client: Golder Associates Inc.

TestAmerica Job ID: 600-87306-1

Project/Site: Exide Recycling Center, Frisco TX Projec

Laboratory: TestAmerica Savannah (Continued)

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Wyoming	State Program	8	8TMS-L	06-30-14

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-87306-1

Login Number: 87306

List Source: TestAmerica Houston

List Number: 1

Creator: Allen, Jodi L

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.6
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Houston
6310 Rothway Street
Houston, TX 77040
Tel: (713)690-4444

TestAmerica Job ID: 600-87311-1

Client Project/Site: Exide Recycling Center, Frisco TX Project

For:

Golder Associates Inc.
500 Century Plaza Drive
Suite 190
Houston, Texas 77073

Attn: Christina Higginbotham



Authorized for release by:

3/9/2014 9:16:06 PM

Cathy Upton, Project Management Assistant II
(713)690-4444

cathy.upton@testamericainc.com

Designee for

Dean Joiner, Project Manager II
(713)690-4444

dean.joiner@testamericainc.com

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Appendix A

Laboratory Data Package Cover Page - Page 1 of 4

This data package is for TestAmerica Houston job number 600-87311-1 and consists of:

- ☒ R1 - Field chain-of-custody documentation;
- ☒ R2 - Sample identification cross-reference;
- ☒ R3 - Test reports (analytical data sheets) for each environmental sample that includes:
 - a. Items consistent with NELAC Chapter 5,
 - b. dilution factors,
 - c. preparation methods,
 - d. cleanup methods, and
 - e. if required for the project, tentatively identified compounds (TICs).
- ☐ R4 - Surrogate recovery data including:
 - a. Calculated recovery (%R), and
 - b. The laboratory's surrogate QC limits.
- ☒ R5 - Test reports/summary forms for blank samples;
- ☒ R6 - Test reports/summary forms for laboratory control samples (LCSs) including:
 - a. LCS spiking amounts,
 - b. Calculated %R for each analyte, and
 - c. The laboratory's LCS QC limits.
- ☐ R7 - Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
 - a. Samples associated with the MS/MSD clearly identified,
 - b. MS/MSD spiking amounts,
 - c. Concentration of each MS/MSD analyte measured in the parent and spiked samples,
 - d. Calculated %Rs and relative percent differences (RPDs), and
 - e. The laboratory's MS/MSD QC limits
- ☐ R8 - Laboratory analytical duplicate (if applicable) recovery and precision:
 - a. The amount of analyte measured in the duplicate,
 - b. The calculated RPD, and
 - c. The laboratory's QC limits for analytical duplicates.
- ☒ R9 - List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
- ☒ R10 - Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Cathy Upton

Name (printed)



Signature

2/25/2014

Date

Project Management Asst II

Official Title (printed)

Laboratory Review Checklist: Reportable Data - Page 2 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	2/23/2014
Project Name:	Exide Recycling Center, Frisco TX Projec	Laboratory Job Number:	600-87311-1
Reviewer Name:	Cathy Upton		

# ¹	A ²	Description	Yes	No	NA ³	NR ⁴	ER# ⁵
R1	OI	Chain-of-custody (C-O-C)					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?	X				
R2	OI	Sample and quality control (QC) identification					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	Test reports					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, are TICs reported?			X		
R4	O	Surrogate recovery data					
		Were surrogates added prior to extraction?			X		
		Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
R5	OI	Test reports/summary forms for blank samples					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	Laboratory control samples (LCS):					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?			X		
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data					
		Were the project/method specified analytes included in the MS and MSD?			X		
		Were MS/MSD analyzed at the appropriate frequency?			X		
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
		Were MS/MSD RPDs within laboratory QC limits?			X		
R8	OI	Analytical duplicate data					
		Were appropriate analytical duplicates analyzed for each matrix?			X		
		Were analytical duplicates analyzed at the appropriate frequency?			X		
		Were RPDs or relative standard deviations within the laboratory QC limits?			X		
R9	OI	Method quantitation limits (MQLs):					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	Other problems/anomalies					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review checklist: Supporting Data - Page 3 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	2/23/2014
Project Name:	Exide Recycling Center, Frisco TX Projec	Laboratory Job Number:	600-87311-1
Reviewer Name:	Cathy Upton		

# ¹	A ²	Description	Yes	No	NA ³	NR ⁴	ER# ⁵
S1	OI	Initial calibration (ICAL)					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	Initial and continuing calibration verification (ICV and CCV) and continuing calibration blank (CCB):					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	Mass spectral tuning					
		Was the appropriate compound for the method used for tuning?			X		
		Were ion abundance data within the method-required QC limits?			X		
S4	O	Internal standards (IS)					
		Were IS area counts and retention times within the method-required QC limits?			X		
S5	OI	Raw data (NELAC Section 5.5.10)					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	Dual column confirmation					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	Tentatively identified compounds (TICs)					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	Interference Check Sample (ICS) results					
		Were percent recoveries within method QC limits?	X				
S9	I	Serial dilutions, post digestion spikes, and method of standard additions					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
S10	OI	Method detection limit (MDL) studies					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSS?	X				
S11	OI	Proficiency test reports					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	Standards documentation					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	Compound/analyte identification procedures					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	Demonstration of analyst competency (DOC)					
		Was DOC conducted consistent with NELAC Chapter 5?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	Verification/validation documentation for methods (NELAC Chapter 5)					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	Laboratory standard operating procedures (SOPs)					
		Are laboratory SOPs current and on file for each method performed?	X				
1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period. 2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable); 3. NA = Not applicable; 4. NR = Not reviewed; 5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).							

Laboratory Review Checklist: Exception Reports - Page 4 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	2/23/2014
Project Name:	Exide Recycling Center, Frisco TX Projec	Laboratory Job Number:	600-87311-1
Reviewer Name:	Cathy Upton		

ER # ¹	Description
	<div>1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.</div> <div>2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);</div> <div>3. NA = Not applicable;</div> <div>4. NR = Not reviewed;</div> <div>5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).</div>

Detection Check Standard

Matrix: Water
Method: 200.7/6010
Preparation: 200.7P/3010
Date Analyzed: 12/31/2013
Date Prepared: 12/27/2013
Instrument: Spectro01
TALs Batches: 124030, 123788p
Units: mg/L

Analyte	MDL	DCS Spike	Measured Result	MQL
Aluminum	0.006	0.02	0.028176	0.5
Antimony	0.0063	0.01	0.010016	0.05
Arsenic	0.0033	0.01	0.008253	0.01
Barium	0.0022	0.005	0.004098	0.02
Beryllium	0.00134	0.002	0.004019	0.005
Boron	0.0077	0.02	0.019829	0.2
Cadmium	0.00073	0.001	0.001	0.005
Calcium	0.022	0.05	0.060829	1
Chromium	0.0016	0.002	0.003835	0.01
Cobalt	0.00063	0.001	0.000965	0.01
Copper	0.0014	0.002	0.002451	0.01
Iron	0.087	0.1	0.002258	0.4
Lithium	0.0024	0.005	0.006107	0.2
Lead	0.0029	0.005	0.005478	0.01
Selenium	0.0042	0.01	0.009953	0.04
Manganese	0.00084	0.002	0.001988	0.01
Molybdenum	0.0027	0.005	0.005867	0.01
Nickel	0.00179	0.005	0.005669	0.01
Silver	0.0012	0.0025	0.001901	0.01
Sodium	0.02	0.05	0.088115	1
Strontium	0.0005	0.001	0.000897	0.005
Thallium	0.0078	0.02	0.021503	0.03
Tin	0.0028	0.005	0.005708	0.01
Titanium	0.0011	0.002	0.001905	0.01
Vanadium	0.0017	0.002	0.003578	0.01
Zinc	0.0022	0.005	0.004189	0.01

Case Narrative

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-87311-1

Job ID: 600-87311-1

Laboratory: TestAmerica Houston

Narrative

Job Narrative
600-87311-1

Comments

No additional comments.

Receipt

The sample was received on 2/18/2014 9:50 AM; the sample arrived in good condition, properly preserved and, where required, on ice.
The temperature of the cooler at receipt was 3.1° C.

Method Summary

Client: Golder Associates Inc.

TestAmerica Job ID: 600-87311-1

Project/Site: Exide Recycling Center, Frisco TX Projec

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	TAL HOU

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Sample Summary

Client: Golder Associates Inc.

TestAmerica Job ID: 600-87311-1

Project/Site: Exide Recycling Center, Frisco TX Projec

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
600-87311-1	MW-33	Water	02/17/14 10:25	02/18/14 09:50

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Project

TestAmerica Job ID: 600-87311-1

Client Sample ID: MW-33

Date Collected: 02/17/14 10:25

Date Received: 02/18/14 09:50

Lab Sample ID: 600-87311-1

Matrix: Water

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.00715		0.00500	0.000350	mg/L		02/20/14 13:37	02/21/14 13:01	1
Lead	0.694		0.0100	0.00290	mg/L		02/20/14 13:37	02/21/14 13:01	1

Method: 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium, Dissolved	0.00414	J	0.00500	0.000350	mg/L		02/20/14 13:37	02/21/14 13:03	1
Cadmium, Dissolved	0.00414	J	0.00500	0.000350	mg/L		02/20/14 13:37	02/21/14 13:03	1
Lead, Dissolved	0.101		0.0100	0.00290	mg/L		02/20/14 13:37	02/21/14 13:03	1
Lead, Dissolved	0.101		0.0100	0.00290	mg/L		02/20/14 13:37	02/21/14 13:03	1

Definitions/Glossary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Project

TestAmerica Job ID: 600-87311-1

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value.
U	Analyte was not detected at or above the SDL.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-87311-1

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 600-127792/1-A
Matrix: Water
Analysis Batch: 127896

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 127792

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000350	U	0.00500	0.000350	mg/L		02/20/14 13:37	02/21/14 12:57	1
Cadmium, Dissolved	0.000350	U	0.00500	0.000350	mg/L		02/20/14 13:37	02/21/14 12:57	1
Lead	0.00290	U	0.0100	0.00290	mg/L		02/20/14 13:37	02/21/14 12:57	1
Lead, Dissolved	0.00290	U	0.0100	0.00290	mg/L		02/20/14 13:37	02/21/14 12:57	1

Lab Sample ID: LCS 600-127792/2-A
Matrix: Water
Analysis Batch: 127896

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 127792

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	0.500	0.5072		mg/L		101	80 - 120
Cadmium, Dissolved	0.500	0.5072		mg/L		101	80 - 120
Lead	1.00	1.024		mg/L		102	80 - 120
Lead, Dissolved	1.00	1.024		mg/L		102	80 - 120

Unadjusted Detection Limits

Client: Golder Associates Inc.

TestAmerica Job ID: 600-87311-1

Project/Site: Exide Recycling Center, Frisco TX Projec

Method: 6010B - Metals (ICP)

Analyte	MQL	MDL	Units	Method
Cadmium	0.00500	0.000350	mg/L	6010B
Lead	0.0100	0.00290	mg/L	6010B

Method: 6010B - Metals (ICP) - Dissolved

Analyte	MQL	MDL	Units	Method
Cadmium, Dissolved	0.00500	0.000350	mg/L	6010B
Lead, Dissolved	0.0100	0.00290	mg/L	6010B

QC Association Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-87311-1

Metals

Prep Batch: 127792

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-87311-1	MW-33	Dissolved	Water	3010A	
600-87311-1	MW-33	Total/NA	Water	3010A	
LCS 600-127792/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 600-127792/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 127896

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-87311-1	MW-33	Dissolved	Water	6010B	127792
600-87311-1	MW-33	Total/NA	Water	6010B	127792
LCS 600-127792/2-A	Lab Control Sample	Total/NA	Water	6010B	127792
MB 600-127792/1-A	Method Blank	Total/NA	Water	6010B	127792

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-87311-1

Client Sample ID: MW-33

Date Collected: 02/17/14 10:25

Date Received: 02/18/14 09:50

Lab Sample ID: 600-87311-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	127792	02/20/14 13:37	NER	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	127896	02/21/14 13:01	DCL	TAL HOU
Dissolved	Analysis	6010B		1	50 mL	50 mL	127896	02/21/14 13:03	DCL	TAL HOU
Dissolved	Prep	3010A			50 mL	50 mL	127792	02/20/14 13:37	NER	TAL HOU

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Certification Summary

Client: Golder Associates Inc.

TestAmerica Job ID: 600-87311-1

Project/Site: Exide Recycling Center, Frisco TX Projec

Laboratory: TestAmerica Houston

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Texas	NELAP	6	T104704223	10-31-14

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-87311-1

Login Number: 87311

List Source: TestAmerica Houston

List Number: 1

Creator: Lopez, Sandro R

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.1
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Houston

6310 Rothway Street

Houston, TX 77040

Tel: (713)690-4444

TestAmerica Job ID: 600-87313-1

Client Project/Site: Exide Recycling Center, Frisco TX Project

For:

Golder Associates Inc.

500 Century Plaza Drive

Suite 190

Houston, Texas 77073

Attn: Christina Higginbotham



Authorized for release by:

2/28/2014 3:11:46 PM

Cathy Upton, Project Management Assistant II

(713)690-4444

cathy.upton@testamericainc.com

Designee for

Dean Joiner, Project Manager II

(713)690-4444

dean.joiner@testamericainc.com

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Appendix A

Laboratory Data Package Cover Page - Page 1 of 4

This data package is for TestAmerica Houston job number 600-87313-1 and consists of:

- ☒ R1 - Field chain-of-custody documentation;
- ☒ R2 - Sample identification cross-reference;
- ☒ R3 - Test reports (analytical data sheets) for each environmental sample that includes:
 - a. Items consistent with NELAC Chapter 5,
 - b. dilution factors,
 - c. preparation methods,
 - d. cleanup methods, and
 - e. if required for the project, tentatively identified compounds (TICs).
- ☐ R4 - Surrogate recovery data including:
 - a. Calculated recovery (%R), and
 - b. The laboratory's surrogate QC limits.
- ☒ R5 - Test reports/summary forms for blank samples;
- ☒ R6 - Test reports/summary forms for laboratory control samples (LCSs) including:
 - a. LCS spiking amounts,
 - b. Calculated %R for each analyte, and
 - c. The laboratory's LCS QC limits.
- ☐ R7 - Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
 - a. Samples associated with the MS/MSD clearly identified,
 - b. MS/MSD spiking amounts,
 - c. Concentration of each MS/MSD analyte measured in the parent and spiked samples,
 - d. Calculated %Rs and relative percent differences (RPDs), and
 - e. The laboratory's MS/MSD QC limits
- ☐ R8 - Laboratory analytical duplicate (if applicable) recovery and precision:
 - a. The amount of analyte measured in the duplicate,
 - b. The calculated RPD, and
 - c. The laboratory's QC limits for analytical duplicates.
- ☒ R9 - List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
- ☒ R10 - Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Cathy Upton

Name (printed)



Signature

2/25/2014

Date

Project Management Asst II

Official Title (printed)

Laboratory Review Checklist: Reportable Data - Page 2 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	2/23/2014
Project Name:	Exide Recycling Center, Frisco TX Projec	Laboratory Job Number:	600-87313-1
Reviewer Name:	Cathy Upton		

# ¹	A ²	Description	Yes	No	NA ³	NR ⁴	ER# ⁵
R1	OI	Chain-of-custody (C-O-C)					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?	X				
R2	OI	Sample and quality control (QC) identification					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	Test reports					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, are TICs reported?			X		
R4	O	Surrogate recovery data					
		Were surrogates added prior to extraction?			X		
		Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
R5	OI	Test reports/summary forms for blank samples					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	Laboratory control samples (LCS):					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?			X		
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data					
		Were the project/method specified analytes included in the MS and MSD?			X		
		Were MS/MSD analyzed at the appropriate frequency?			X		
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
		Were MS/MSD RPDs within laboratory QC limits?			X		
R8	OI	Analytical duplicate data					
		Were appropriate analytical duplicates analyzed for each matrix?			X		
		Were analytical duplicates analyzed at the appropriate frequency?			X		
		Were RPDs or relative standard deviations within the laboratory QC limits?			X		
R9	OI	Method quantitation limits (MQLs):					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	Other problems/anomalies					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review checklist: Supporting Data - Page 3 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	2/23/2014
Project Name:	Exide Recycling Center, Frisco TX Projec	Laboratory Job Number:	600-87313-1
Reviewer Name:	Cathy Upton		

# ¹	A ²	Description	Yes	No	NA ³	NR ⁴	ER# ⁵
S1	OI	Initial calibration (ICAL)					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	Initial and continuing calibration verification (ICV and CCV) and continuing calibration blank (CCB):					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	Mass spectral tuning					
		Was the appropriate compound for the method used for tuning?			X		
		Were ion abundance data within the method-required QC limits?			X		
S4	O	Internal standards (IS)					
		Were IS area counts and retention times within the method-required QC limits?			X		
S5	OI	Raw data (NELAC Section 5.5.10)					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	Dual column confirmation					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	Tentatively identified compounds (TICs)					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	Interference Check Sample (ICS) results					
		Were percent recoveries within method QC limits?	X				
S9	I	Serial dilutions, post digestion spikes, and method of standard additions					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
S10	OI	Method detection limit (MDL) studies					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSS?	X				
S11	OI	Proficiency test reports					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	Standards documentation					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	Compound/analyte identification procedures					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	Demonstration of analyst competency (DOC)					
		Was DOC conducted consistent with NELAC Chapter 5?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	Verification/validation documentation for methods (NELAC Chapter 5)					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	Laboratory standard operating procedures (SOPs)					
		Are laboratory SOPs current and on file for each method performed?	X				
1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period. 2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable); 3. NA = Not applicable; 4. NR = Not reviewed; 5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).							

Laboratory Review Checklist: Exception Reports - Page 4 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	2/23/2014
Project Name:	Exide Recycling Center, Frisco TX Projec	Laboratory Job Number:	600-87313-1
Reviewer Name:	Cathy Upton		

ER # ¹	Description
	<div>1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.</div> <div>2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);</div> <div>3. NA = Not applicable;</div> <div>4. NR = Not reviewed;</div> <div>5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).</div>

Detection Check Standard

Matrix: Water
Method: 200.7/6010
Preparation: 200.7P/3010
Date Analyzed: 12/31/2013
Date Prepared: 12/27/2013
Instrument: Spectro01
TALs Batches: 124030, 123788p
Units: mg/L

Analyte	MDL	DCS Spike	Measured Result	MQL
Aluminum	0.006	0.02	0.028176	0.5
Antimony	0.0063	0.01	0.010016	0.05
Arsenic	0.0033	0.01	0.008253	0.01
Barium	0.0022	0.005	0.004098	0.02
Beryllium	0.00134	0.002	0.004019	0.005
Boron	0.0077	0.02	0.019829	0.2
Cadmium	0.00073	0.001	0.001	0.005
Calcium	0.022	0.05	0.060829	1
Chromium	0.0016	0.002	0.003835	0.01
Cobalt	0.00063	0.001	0.000965	0.01
Copper	0.0014	0.002	0.002451	0.01
Iron	0.087	0.1	0.002258	0.4
Lithium	0.0024	0.005	0.006107	0.2
Lead	0.0029	0.005	0.005478	0.01
Selenium	0.0042	0.01	0.009953	0.04
Manganese	0.00084	0.002	0.001988	0.01
Molybdenum	0.0027	0.005	0.005867	0.01
Nickel	0.00179	0.005	0.005669	0.01
Silver	0.0012	0.0025	0.001901	0.01
Sodium	0.02	0.05	0.088115	1
Strontium	0.0005	0.001	0.000897	0.005
Thallium	0.0078	0.02	0.021503	0.03
Tin	0.0028	0.005	0.005708	0.01
Titanium	0.0011	0.002	0.001905	0.01
Vanadium	0.0017	0.002	0.003578	0.01
Zinc	0.0022	0.005	0.004189	0.01

Case Narrative

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-87313-1

Job ID: 600-87313-1

Laboratory: TestAmerica Houston

Narrative

Job Narrative
600-87313-1

Comments

No additional comments.

Receipt

The sample was received on 2/18/2014 9:50 AM; the sample arrived in good condition, properly preserved and, where required, on ice.
The temperature of the cooler at receipt was 3.1° C.

Method Summary

Client: Golder Associates Inc.

TestAmerica Job ID: 600-87313-1

Project/Site: Exide Recycling Center, Frisco TX Projec

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	TAL HOU

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Sample Summary

Client: Golder Associates Inc.

TestAmerica Job ID: 600-87313-1

Project/Site: Exide Recycling Center, Frisco TX Projec

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
600-87313-1	MW-34	Water	02/17/14 17:10	02/18/14 09:50

Client Sample Results

Client: Golder Associates Inc.

TestAmerica Job ID: 600-87313-1

Project/Site: Exide Recycling Center, Frisco TX Projec

Client Sample ID: MW-34

Lab Sample ID: 600-87313-1

Date Collected: 02/17/14 17:10

Matrix: Water

Date Received: 02/18/14 09:50

Method: 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium, Dissolved	0.0386		0.00500	0.000350	mg/L		02/20/14 13:37	02/21/14 13:11	1
Lead, Dissolved	0.0575		0.0100	0.00290	mg/L		02/20/14 13:37	02/21/14 13:11	1

Definitions/Glossary

Client: Golder Associates Inc.

Project/Site: Exide Recycling Center, Frisco TX Project

TestAmerica Job ID: 600-87313-1

Qualifiers

Metals

Qualifier	Qualifier Description
U	Analyte was not detected at or above the SDL.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-87313-1

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 600-127792/1-A
Matrix: Water
Analysis Batch: 127896

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 127792

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium, Dissolved	0.000350	U	0.00500	0.000350	mg/L		02/20/14 13:37	02/21/14 12:57	1
Lead, Dissolved	0.00290	U	0.0100	0.00290	mg/L		02/20/14 13:37	02/21/14 12:57	1

Lab Sample ID: LCS 600-127792/2-A
Matrix: Water
Analysis Batch: 127896

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 127792

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium, Dissolved	0.500	0.5072		mg/L		101	80 - 120
Lead, Dissolved	1.00	1.024		mg/L		102	80 - 120

Unadjusted Detection Limits

Client: Golder Associates Inc.

TestAmerica Job ID: 600-87313-1

Project/Site: Exide Recycling Center, Frisco TX Projec

Method: 6010B - Metals (ICP) - Dissolved

Analyte	MQL	MDL	Units	Method
Cadmium, Dissolved	0.00500	0.000350	mg/L	6010B
Lead, Dissolved	0.0100	0.00290	mg/L	6010B

QC Association Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-87313-1

Metals

Prep Batch: 127792

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-87313-1	MW-34	Dissolved	Water	3010A	
LCS 600-127792/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 600-127792/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 127896

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-87313-1	MW-34	Dissolved	Water	6010B	127792
LCS 600-127792/2-A	Lab Control Sample	Total/NA	Water	6010B	127792
MB 600-127792/1-A	Method Blank	Total/NA	Water	6010B	127792

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-87313-1

Client Sample ID: MW-34
Date Collected: 02/17/14 17:10
Date Received: 02/18/14 09:50

Lab Sample ID: 600-87313-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3010A			50 mL	50 mL	127792	02/20/14 13:37	NER	TAL HOU
Dissolved	Analysis	6010B		1	50 mL	50 mL	127896	02/21/14 13:11	DCL	TAL HOU

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Certification Summary

Client: Golder Associates Inc.

TestAmerica Job ID: 600-87313-1

Project/Site: Exide Recycling Center, Frisco TX Projec

Laboratory: TestAmerica Houston

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0759	08-04-14
Louisiana	NELAP	6	30643	06-30-14
Oklahoma	State Program	6	1309	08-31-14
Texas	NELAP	6	T104704223	10-31-14
USDA	Federal		P330-08-00217	04-01-14
Utah	NELAP	8	TX00083	10-31-14

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-87313-1

Login Number: 87313

List Source: TestAmerica Houston

List Number: 1

Creator: Lopez, Sandro R

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.1
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Houston

6310 Rothway Street

Houston, TX 77040

Tel: (713)690-4444

TestAmerica Job ID: 600-87356-1

Client Project/Site: Exide Recycling Center, Frisco TX Project

For:

Golder Associates Inc.

500 Century Plaza Drive

Suite 190

Houston, Texas 77073

Attn: Christina Higginbotham



Authorized for release by:

3/9/2014 9:10:27 PM

Cathy Upton, Project Management Assistant II

(713)690-4444

cathy.upton@testamericainc.com

Designee for

Dean Joiner, Project Manager II

(713)690-4444

dean.joiner@testamericainc.com

LINKS

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www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Appendix A

Laboratory Data Package Cover Page - Page 1 of 4

This data package is for TestAmerica Houston job number 600-87356-1 and consists of:

- ☒ R1 - Field chain-of-custody documentation;
- ☒ R2 - Sample identification cross-reference;
- ☒ R3 - Test reports (analytical data sheets) for each environmental sample that includes:
 - a. Items consistent with NELAC Chapter 5,
 - b. dilution factors,
 - c. preparation methods,
 - d. cleanup methods, and
 - e. if required for the project, tentatively identified compounds (TICs).
- ☐ R4 - Surrogate recovery data including:
 - a. Calculated recovery (%R), and
 - b. The laboratory's surrogate QC limits.
- ☒ R5 - Test reports/summary forms for blank samples;
- ☒ R6 - Test reports/summary forms for laboratory control samples (LCSs) including:
 - a. LCS spiking amounts,
 - b. Calculated %R for each analyte, and
 - c. The laboratory's LCS QC limits.
- ☒ R7 - Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
 - a. Samples associated with the MS/MSD clearly identified,
 - b. MS/MSD spiking amounts,
 - c. Concentration of each MS/MSD analyte measured in the parent and spiked samples,
 - d. Calculated %Rs and relative percent differences (RPDs), and
 - e. The laboratory's MS/MSD QC limits
- ☐ R8 - Laboratory analytical duplicate (if applicable) recovery and precision:
 - a. The amount of analyte measured in the duplicate,
 - b. The calculated RPD, and
 - c. The laboratory's QC limits for analytical duplicates.
- ☒ R9 - List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
- ☒ R10 - Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Cathy Upton

Name (printed)



Signature

3/9/2014

Date

Project Management Asst II

Official Title (printed)

Laboratory Review Checklist: Reportable Data - Page 2 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	3/4/2014
Project Name:	Exide Recycling Center, Frisco TX Projec	Laboratory Job Number:	600-87356-1
Reviewer Name:	Dean A Joiner		

# ¹	A ²	Description	Yes	No	NA ³	NR ⁴	ER# ⁵
R1	OI	Chain-of-custody (C-O-C)					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?	X				
R2	OI	Sample and quality control (QC) identification					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	Test reports					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, are TICs reported?			X		
R4	O	Surrogate recovery data					
		Were surrogates added prior to extraction?			X		
		Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
R5	OI	Test reports/summary forms for blank samples					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	Laboratory control samples (LCS):					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?			X		
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
		Were MS/MSD RPDs within laboratory QC limits?	X				
R8	OI	Analytical duplicate data					
		Were appropriate analytical duplicates analyzed for each matrix?			X		
		Were analytical duplicates analyzed at the appropriate frequency?			X		
		Were RPDs or relative standard deviations within the laboratory QC limits?			X		
R9	OI	Method quantitation limits (MQLs):					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	Other problems/anomalies					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review checklist: Supporting Data - Page 3 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	3/4/2014
Project Name:	Exide Recycling Center, Frisco TX Projec	Laboratory Job Number:	600-87356-1
Reviewer Name:	Dean A Joiner		

# ¹	A ²	Description	Yes	No	NA ³	NR ⁴	ER# ⁵
S1	OI	Initial calibration (ICAL)					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	Initial and continuing calibration verification (ICV and CCV) and continuing calibration blank (CCB):					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	Mass spectral tuning					
		Was the appropriate compound for the method used for tuning?			X		
		Were ion abundance data within the method-required QC limits?			X		
S4	O	Internal standards (IS)					
		Were IS area counts and retention times within the method-required QC limits?			X		
S5	OI	Raw data (NELAC Section 5.5.10)					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	Dual column confirmation					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	Tentatively identified compounds (TICs)					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	Interference Check Sample (ICS) results					
		Were percent recoveries within method QC limits?	X				
S9	I	Serial dilutions, post digestion spikes, and method of standard additions					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
S10	OI	Method detection limit (MDL) studies					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSS?	X				
S11	OI	Proficiency test reports					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	Standards documentation					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	Compound/analyte identification procedures					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	Demonstration of analyst competency (DOC)					
		Was DOC conducted consistent with NELAC Chapter 5?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	Verification/validation documentation for methods (NELAC Chapter 5)					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	Laboratory standard operating procedures (SOPs)					
		Are laboratory SOPs current and on file for each method performed?	X				
1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period. 2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable); 3. NA = Not applicable; 4. NR = Not reviewed; 5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).							

Laboratory Review Checklist: Exception Reports - Page 4 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	3/4/2014
Project Name:	Exide Recycling Center, Frisco TX Projec	Laboratory Job Number:	600-87356-1
Reviewer Name:	Dean A Joiner		

ER # ¹	Description
	<div>1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.</div> <div>2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);</div> <div>3. NA = Not applicable;</div> <div>4. NR = Not reviewed;</div> <div>5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).</div>

TestAmerica - Corpus Christi

TRRP DCS EVALUATION SPREADSHEET - WATER MATRIX

MDLV STUDY INFO	
DATE COMPLETED:	10/01/2013 - 3Q13
METHOD NUMBER:	6020/200.8
METHOD DESCRIPTION:	ICPMS
PREP METHOD:	3010A
INSTRUMENT:	Agilent ICPMS

		SPIKE RANGE				
ANALYTE	CURRENT MDL (ug/L)	MINIMUM (ug/L)	MAXIMUM (ug/L)	SPIKE (ug/L)	MEAS VALUE (ug/L)	ANALYTE IS DETECTED
Aluminum	22.5	22.5	67.5	100	52.2	yes
Antimony	1.61	1.61	4.83	4	1.98	yes
Arsenic	1.09	1.09	3.27	4	1.63	yes
Barium	0.81	0.81	2.43	4	3.19	yes
Beryllium	1.24	1.24	3.72	5	2.17	yes
Boron	70	70	210	100	109	yes
Cadmium	0.854	0.854	2.562	4	1.36	yes
Calcium	198	198	594	400	265	yes
Chromium	1.4	1.4	4.2	5	2.52	yes
Cobalt	1.36	1.36	4.08	4	1.62	yes
Copper	2	2	6	4	37.5	yes
Iron	101	101	303	200	169	yes
Lead	0.733	0.733	2.199	4	1.66	yes
Lithium	2.26	2.26	6.78	5	2.48	yes
Magnesium	113	113	339	200	142	yes
Manganese	11.6	11.6	34.8	40	25.4	yes
Molybdenum	1.4	1.4	4.2	4	1.75	yes
Nickel	2.17	2.17	6.51	4	7.11	yes
Phosphorus	18.1	18.1	54.3	40	35.2	yes
Potassium	407	407	1221	1000	632	yes
Selenium	1.08	1.08	3.24	2	1.61	yes
Silicon	62.8	62.8	188.4	200	2070	yes
Silver	0.941	0.941	2.823	4	1.9	yes
Sodium	727	727	2181	2000	1730	yes
Strontium	0.768	0.768	2.304	4	1.84	yes
Thallium	0.693	0.693	2.079	2	1.51	yes
Tin	5.08	5.08	15.24	10	6.42	yes
Titanium	1.53	1.53	4.59	4	1.68	yes
Vanadium	1.44	1.44	4.32	4	3.67	yes
Zinc	3.55	3.55	10.65	4	8.92	yes

Case Narrative

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-87356-1

Job ID: 600-87356-1

Laboratory: TestAmerica Houston

Narrative

Job Narrative
600-87356-1

Comments

No additional comments.

Receipt

The samples were received on 2/15/2014 9:28 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.4° C.

Method Summary

Client: Golder Associates Inc.

TestAmerica Job ID: 600-87356-1

Project/Site: Exide Recycling Center, Frisco TX Projec

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL SAV

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Sample Summary

Client: Golder Associates Inc.

TestAmerica Job ID: 600-87356-1

Project/Site: Exide Recycling Center, Frisco TX Projec

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
600-87356-1	MW-32	Water	02/14/14 17:00	02/15/14 09:28
600-87356-2	MW-37	Water	02/13/14 15:50	02/15/14 09:28
600-87356-3	MW-16	Water	02/14/14 11:25	02/15/14 09:28
600-87356-4	MW-16S	Water	02/14/14 12:05	02/15/14 09:28
600-87356-5	DUP-1	Water	02/14/14 00:00	02/15/14 09:28

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-87356-1

Client Sample ID: MW-32

Date Collected: 02/14/14 17:00

Date Received: 02/15/14 09:28

Lab Sample ID: 600-87356-1

Matrix: Water

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.00639		0.000500	0.0000950	mg/L		02/24/14 11:13	02/24/14 18:29	1
Lead	0.0164		0.00150	0.000200	mg/L		02/24/14 11:13	02/24/14 18:29	1

Client Sample ID: MW-37

Date Collected: 02/13/14 15:50

Date Received: 02/15/14 09:28

Lab Sample ID: 600-87356-2

Matrix: Water

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		02/24/14 11:13	02/24/14 18:39	1
Cadmium	0.000375	J	0.000500	0.0000950	mg/L		02/24/14 11:13	02/24/14 18:39	1
Lead	0.00173		0.00150	0.000200	mg/L		02/24/14 11:13	02/24/14 18:39	1
Selenium	0.00100	U	0.00250	0.00100	mg/L		02/24/14 11:13	02/24/14 18:39	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00132	J	0.00250	0.00130	mg/L		02/24/14 11:13	02/24/14 18:34	1
Cadmium	0.000350	J	0.000500	0.0000950	mg/L		02/24/14 11:13	02/24/14 18:34	1
Lead	0.00132	J	0.00150	0.000200	mg/L		02/24/14 11:13	02/24/14 18:34	1
Selenium	0.00193	J	0.00250	0.00100	mg/L		02/24/14 11:13	02/24/14 18:34	1

Client Sample ID: MW-16

Date Collected: 02/14/14 11:25

Date Received: 02/15/14 09:28

Lab Sample ID: 600-87356-3

Matrix: Water

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		02/24/14 11:13	02/24/14 18:45	1
Lead	0.00409		0.00150	0.000200	mg/L		02/24/14 11:13	02/24/14 18:45	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		02/24/14 11:13	02/24/14 19:22	1
Lead	0.00220		0.00150	0.000200	mg/L		02/24/14 11:13	02/24/14 19:22	1

Client Sample ID: MW-16S

Date Collected: 02/14/14 12:05

Date Received: 02/15/14 09:28

Lab Sample ID: 600-87356-4

Matrix: Water

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.00240		0.000500	0.0000950	mg/L		02/24/14 11:13	02/24/14 19:53	1
Lead	0.00602		0.00150	0.000200	mg/L		02/24/14 11:13	02/24/14 19:53	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		02/24/14 11:13	02/24/14 19:48	1
Lead	0.000430	J	0.00150	0.000200	mg/L		02/24/14 11:13	02/24/14 19:48	1

TestAmerica Houston

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Project

TestAmerica Job ID: 600-87356-1

Client Sample ID: DUP-1

Date Collected: 02/14/14 00:00

Date Received: 02/15/14 09:28

Lab Sample ID: 600-87356-5

Matrix: Water

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.0000950	J	0.000500	0.0000950	mg/L	—	02/24/14 11:13	02/24/14 19:43	1
Lead	0.00463		0.00150	0.000200	mg/L		02/24/14 11:13	02/24/14 19:43	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L	—	02/24/14 11:13	02/24/14 19:37	1
Lead	0.000360	J	0.00150	0.000200	mg/L		02/24/14 11:13	02/24/14 19:37	1

Definitions/Glossary

Client: Golder Associates Inc.

TestAmerica Job ID: 600-87356-1

Project/Site: Exide Recycling Center, Frisco TX Project

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value.
U	Analyte was not detected at or above the SDL.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-87356-1

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 680-316930/1-A

Matrix: Water

Analysis Batch: 317160

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 316930

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		02/24/14 11:13	02/24/14 18:18	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		02/24/14 11:13	02/24/14 18:18	1
Lead	0.000200	U	0.00150	0.000200	mg/L		02/24/14 11:13	02/24/14 18:18	1
Selenium	0.00100	U	0.00250	0.00100	mg/L		02/24/14 11:13	02/24/14 18:18	1

Lab Sample ID: LCS 680-316930/2-A

Matrix: Water

Analysis Batch: 317160

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 316930

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.0500	0.05428		mg/L		109	75 - 125
Arsenic	0.100	0.1053		mg/L		105	75 - 125
Cadmium	0.0500	0.05202		mg/L		104	75 - 125
Lead	0.0500	0.05191		mg/L		104	75 - 125
Selenium	0.100	0.1093		mg/L		109	75 - 125

Lab Sample ID: 600-87356-3 MS

Matrix: Water

Analysis Batch: 317160

Client Sample ID: MW-16 MS

Prep Type: Total Recoverable

Prep Batch: 316930

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.00230		0.0500	0.05534		mg/L		111	75 - 125
Arsenic	0.00188		0.100	0.1028		mg/L		101	75 - 125
Cadmium	0.0000950	U	0.0500	0.05109		mg/L		102	75 - 125
Lead	0.00409		0.0500	0.05473		mg/L		101	75 - 125
Selenium	0.0309		0.100	0.1284		mg/L		97	75 - 125

Lab Sample ID: 600-87356-3 MSD

Matrix: Water

Analysis Batch: 317160

Client Sample ID: MW-16 MSD

Prep Type: Total Recoverable

Prep Batch: 316930

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.00230		0.0500	0.05566		mg/L		111	75 - 125	1	20
Arsenic	0.00188		0.100	0.1046		mg/L		103	75 - 125	2	20
Cadmium	0.0000950	U	0.0500	0.05135		mg/L		103	75 - 125	0	20
Lead	0.00409		0.0500	0.05436		mg/L		101	75 - 125	1	20
Selenium	0.0309		0.100	0.1356		mg/L		105	75 - 125	5	20

Lab Sample ID: 600-87356-3 MS

Matrix: Water

Analysis Batch: 317160

Client Sample ID: MW-16 MS

Prep Type: Dissolved

Prep Batch: 316930

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.00230		0.0500	0.05472		mg/L		109	75 - 125
Arsenic	0.00188		0.100	0.1039		mg/L		102	75 - 125
Cadmium	0.0000950	U	0.0500	0.05178		mg/L		104	75 - 125
Lead	0.00220		0.0500	0.05069		mg/L		97	75 - 125
Selenium	0.0323		0.100	0.1367		mg/L		104	75 - 125

TestAmerica Houston

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-87356-1

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 600-87356-3 MSD

Matrix: Water

Analysis Batch: 317160

Client Sample ID: MW-16 MSD

Prep Type: Dissolved

Prep Batch: 316930

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.00230		0.0500	0.06174		mg/L		123	75 - 125	12	20
Arsenic	0.00188		0.100	0.1180		mg/L		116	75 - 125	13	20
Cadmium	0.0000950	U	0.0500	0.05740		mg/L		115	75 - 125	10	20
Lead	0.00220		0.0500	0.05687		mg/L		109	75 - 125	11	20
Selenium	0.0323		0.100	0.1496		mg/L		117	75 - 125	9	20

Unadjusted Detection Limits

Client: Golder Associates Inc.

TestAmerica Job ID: 600-87356-1

Project/Site: Exide Recycling Center, Frisco TX Projec

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	MQL	MDL	Units	Method
Arsenic	0.00250	0.00130	mg/L	6020A
Cadmium	0.000500	0.0000950	mg/L	6020A
Lead	0.00150	0.000200	mg/L	6020A
Selenium	0.00250	0.00100	mg/L	6020A

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	MQL	MDL	Units	Method
Arsenic	0.00250	0.00130	mg/L	6020A
Cadmium	0.000500	0.0000950	mg/L	6020A
Lead	0.00150	0.000200	mg/L	6020A
Selenium	0.00250	0.00100	mg/L	6020A

QC Association Summary

Client: Golder Associates Inc.

TestAmerica Job ID: 600-87356-1

Project/Site: Exide Recycling Center, Frisco TX Project

Metals

Prep Batch: 316930

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-87356-1	MW-32	Dissolved	Water	3005A	
600-87356-2	MW-37	Dissolved	Water	3005A	
600-87356-2	MW-37	Total Recoverable	Water	3005A	
600-87356-3	MW-16	Dissolved	Water	3005A	
600-87356-3	MW-16	Total Recoverable	Water	3005A	
600-87356-3 MS	MW-16 MS	Dissolved	Water	3005A	
600-87356-3 MS	MW-16 MS	Total Recoverable	Water	3005A	
600-87356-3 MSD	MW-16 MSD	Dissolved	Water	3005A	
600-87356-3 MSD	MW-16 MSD	Total Recoverable	Water	3005A	
600-87356-4	MW-16S	Dissolved	Water	3005A	
600-87356-4	MW-16S	Total Recoverable	Water	3005A	
600-87356-5	DUP-1	Dissolved	Water	3005A	
600-87356-5	DUP-1	Total Recoverable	Water	3005A	
LCS 680-316930/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-316930/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 317160

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-87356-1	MW-32	Dissolved	Water	6020A	316930
600-87356-2	MW-37	Dissolved	Water	6020A	316930
600-87356-2	MW-37	Total Recoverable	Water	6020A	316930
600-87356-3	MW-16	Dissolved	Water	6020A	316930
600-87356-3	MW-16	Total Recoverable	Water	6020A	316930
600-87356-3 MS	MW-16 MS	Dissolved	Water	6020A	316930
600-87356-3 MS	MW-16 MS	Total Recoverable	Water	6020A	316930
600-87356-3 MSD	MW-16 MSD	Dissolved	Water	6020A	316930
600-87356-3 MSD	MW-16 MSD	Total Recoverable	Water	6020A	316930
600-87356-4	MW-16S	Dissolved	Water	6020A	316930
600-87356-4	MW-16S	Total Recoverable	Water	6020A	316930
600-87356-5	DUP-1	Dissolved	Water	6020A	316930
600-87356-5	DUP-1	Total Recoverable	Water	6020A	316930
LCS 680-316930/2-A	Lab Control Sample	Total Recoverable	Water	6020A	316930
MB 680-316930/1-A	Method Blank	Total Recoverable	Water	6020A	316930

TestAmerica Houston

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-87356-1

Client Sample ID: MW-32

Date Collected: 02/14/14 17:00

Date Received: 02/15/14 09:28

Lab Sample ID: 600-87356-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	250 mL	316930	02/24/14 11:13	BJB	TAL SAV
Dissolved	Analysis	6020A		1	50 mL	250 mL	317160	02/24/14 18:29	BWR	TAL SAV

Client Sample ID: MW-37

Date Collected: 02/13/14 15:50

Date Received: 02/15/14 09:28

Lab Sample ID: 600-87356-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	250 mL	316930	02/24/14 11:13	BJB	TAL SAV
Dissolved	Analysis	6020A		1	50 mL	250 mL	317160	02/24/14 18:34	BWR	TAL SAV
Total Recoverable	Prep	3005A			50 mL	250 mL	316930	02/24/14 11:13	BJB	TAL SAV
Total Recoverable	Analysis	6020A		1	50 mL	250 mL	317160	02/24/14 18:39	BWR	TAL SAV

Client Sample ID: MW-16

Date Collected: 02/14/14 11:25

Date Received: 02/15/14 09:28

Lab Sample ID: 600-87356-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	250 mL	316930	02/24/14 11:13	BJB	TAL SAV
Total Recoverable	Analysis	6020A		1	50 mL	250 mL	317160	02/24/14 18:45	BWR	TAL SAV
Dissolved	Prep	3005A			50 mL	250 mL	316930	02/24/14 11:13	BJB	TAL SAV
Dissolved	Analysis	6020A		1	50 mL	250 mL	317160	02/24/14 19:22	BWR	TAL SAV

Client Sample ID: MW-16S

Date Collected: 02/14/14 12:05

Date Received: 02/15/14 09:28

Lab Sample ID: 600-87356-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	250 mL	316930	02/24/14 11:13	BJB	TAL SAV
Dissolved	Analysis	6020A		1	50 mL	250 mL	317160	02/24/14 19:48	BWR	TAL SAV
Total Recoverable	Prep	3005A			50 mL	250 mL	316930	02/24/14 11:13	BJB	TAL SAV
Total Recoverable	Analysis	6020A		1	50 mL	250 mL	317160	02/24/14 19:53	BWR	TAL SAV

Client Sample ID: DUP-1

Date Collected: 02/14/14 00:00

Date Received: 02/15/14 09:28

Lab Sample ID: 600-87356-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	250 mL	316930	02/24/14 11:13	BJB	TAL SAV
Dissolved	Analysis	6020A		1	50 mL	250 mL	317160	02/24/14 19:37	BWR	TAL SAV
Total Recoverable	Prep	3005A			50 mL	250 mL	316930	02/24/14 11:13	BJB	TAL SAV
Total Recoverable	Analysis	6020A		1	50 mL	250 mL	317160	02/24/14 19:43	BWR	TAL SAV

TestAmerica Houston

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-87356-1

Laboratory References:
TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

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Certification Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-87356-1

Laboratory: TestAmerica Houston

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Texas	NELAP	6	T104704223	10-31-14

Laboratory: TestAmerica Savannah

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
	AFCEE		SAVLAB	
A2LA	DoD ELAP		399.01	02-28-15
A2LA	ISO/IEC 17025		399.01	02-28-15
Alabama	State Program	4	41450	06-30-14
Arkansas DEQ	State Program	6	88-0692	01-31-15
California	NELAP	9	3217CA	07-31-14
Colorado	State Program	8	N/A	12-31-14
Connecticut	State Program	1	PH-0161	03-31-15
Florida	NELAP	4	E87052	06-30-14
GA Dept. of Agriculture	State Program	4	N/A	06-30-14
Georgia	State Program	4	N/A	06-30-14
Georgia	State Program	4	803	06-30-14
Guam	State Program	9	09-005r	04-17-14 *
Hawaii	State Program	9	N/A	06-30-14
Illinois	NELAP	5	200022	11-30-14
Indiana	State Program	5	N/A	06-30-14
Iowa	State Program	7	353	07-01-15
Kentucky (DW)	State Program	4	90084	12-31-14
Kentucky (UST)	State Program	4	18	06-30-14
Louisiana	NELAP	6	LA100015	12-31-14
Maine	State Program	1	GA00006	08-16-14
Maryland	State Program	3	250	12-31-14
Massachusetts	State Program	1	M-GA006	06-30-14
Michigan	State Program	5	9925	06-30-14
Mississippi	State Program	4	N/A	06-30-14
Montana	State Program	8	CERT0081	01-01-15
Nebraska	State Program	7	TestAmerica-Savannah	06-30-14
New Jersey	NELAP	2	GA769	06-30-14
New Mexico	State Program	6	N/A	06-30-14
New York	NELAP	2	10842	03-31-14 *
North Carolina DENR	State Program	4	269	12-31-14
North Carolina DHHS	State Program	4	13701	07-31-14
Oklahoma	State Program	6	9984	08-31-14
Pennsylvania	NELAP	3	68-00474	06-30-14
Puerto Rico	State Program	2	GA00006	12-31-14
South Carolina	State Program	4	98001	06-30-14
Tennessee	State Program	4	TN02961	06-30-14
Texas	NELAP	6	T104704185-08-TX	11-30-14
USDA	Federal		SAV 3-04	04-07-14 *
Virginia	NELAP	3	460161	06-14-14
Washington	State Program	10	C1794	06-10-14
West Virginia DEP	State Program	3	94	06-30-14
West Virginia DHHR	State Program	3	9950C	12-31-14
Wisconsin	State Program	5	999819810	08-31-14

* Expired certification is currently pending renewal and is considered valid.

TestAmerica Houston

Certification Summary

Client: Golder Associates Inc.

TestAmerica Job ID: 600-87356-1

Project/Site: Exide Recycling Center, Frisco TX Projec

Laboratory: TestAmerica Savannah (Continued)

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Wyoming	State Program	8	8TMS-L	06-30-14

Chain of Custody Record

THE LEADER IN ENVIRONMENTAL TESTING

Drinking Water? Yes ☐ No ☐

TAL-4124 (1007)

Client						Project Manager		Date		Chain of Custody Number		
Golden Associates Inc.						Christina Higginbotham		02/14/14		255250		
Address 500 Century Plaza Drive, Ste. 190						Telephone Number (Area Code)/Fax Number (281) 821-6868		Lab Number				
City Houston		State TX		Zip Code 77073		Site Contact		Lab Contact		Page 1 of 1		
Project Name and Location (State) Exide Frisco						Special Instructions/ Conditions of Receipt						
Contract/Purchase Order/Quote No. 130-2086												
Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix			Containers & Preservatives			Analysis (Attach list if more space is needed)			
MW-32	02/14/14	1700	Air	Sed	Soil	Unpres.	H ₂ SO ₄	HNO ₃	HCl	NaOH	ZnAc/NaOH	
MW-37	02/13/14	1550	X	X	X	X	X	X	X	X	X	Filtered sample
MW-16	02/14/14	1125	X	X	X	X	X	X	X	X	X	Filtered for dissol
MW-16 MS	02/14/14	1125	X	X	X	X	X	X	X	X	X	Filtered for dissol
MW-16 MSD	02/14/14	1125	X	X	X	X	X	X	X	X	X	Filtered for dissol
MW-16 S	02/14/14	1205	X	X	X	X	X	X	X	X	X	Filtered for dissol
DUP-1	02/14/14											Filtered for dissol
						in acid jar						
						6004794						
						600-						
						1.4°C						
Possible Hazard Identification						(A fee may be assessed if samples are retained longer than 1 month)						
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input checked="" type="checkbox"/> Unknown						<input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months _____						
Turn Around Time Required						GC Requirements (Specify)						
<input type="checkbox"/> 24 Hours <input type="checkbox"/> 48 Hours <input type="checkbox"/> 7 Days <input type="checkbox"/> 14 Days <input type="checkbox"/> 21 Days <input checked="" type="checkbox"/> Other 5-day												
1. Relinquished By [Signature]						1. Received By _____ Date 2-14-14 Time 1945						
2. Relinquished By [Signature]						2. Received By _____ Date _____ Time _____						
3. Relinquished By _____						3. Received By [Signature] Date 02/15/14 Time 0928						

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-87356-1

Login Number: 87356

List Source: TestAmerica Houston

List Number: 1

Creator: Allen, Jodi L

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.4
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-87356-1

Login Number: 87356

List Source: TestAmerica Savannah

List Number: 1

List Creation: 02/24/14 09:21 AM

Creator: Banda, Christy S

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	Received only 1 sample for -1 (MW-32)
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Houston

6310 Rothway Street

Houston, TX 77040

Tel: (713)690-4444

TestAmerica Job ID: 600-89514-1

Client Project/Site: Exide Recycling Center, Frisco TX

For:

Golder Associates Inc.

500 Century Plaza Drive

Suite 190

Houston, Texas 77073

Attn: Christina Higginbotham



Authorized for release by:

4/2/2014 5:32:38 PM

Cathy Upton, Project Management Assistant II

(713)690-4444

cathy.upton@testamericainc.com

Designee for

Dean Joiner, Project Manager II

(713)690-4444

dean.joiner@testamericainc.com

LINKS

Review your project
results through

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Have a Question?



Visit us at:

www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Appendix A

Laboratory Data Package Cover Page - Page 1 of 4

This data package is for TestAmerica Houston job number 600-89514-1 and consists of:

- ☒ R1 - Field chain-of-custody documentation;
- ☒ R2 - Sample identification cross-reference;
- ☒ R3 - Test reports (analytical data sheets) for each environmental sample that includes:
 - a. Items consistent with NELAC Chapter 5,
 - b. dilution factors,
 - c. preparation methods,
 - d. cleanup methods, and
 - e. if required for the project, tentatively identified compounds (TICs).
- ☐ R4 - Surrogate recovery data including:
 - a. Calculated recovery (%R), and
 - b. The laboratory's surrogate QC limits.
- ☒ R5 - Test reports/summary forms for blank samples;
- ☒ R6 - Test reports/summary forms for laboratory control samples (LCSs) including:
 - a. LCS spiking amounts,
 - b. Calculated %R for each analyte, and
 - c. The laboratory's LCS QC limits.
- ☐ R7 - Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
 - a. Samples associated with the MS/MSD clearly identified,
 - b. MS/MSD spiking amounts,
 - c. Concentration of each MS/MSD analyte measured in the parent and spiked samples,
 - d. Calculated %Rs and relative percent differences (RPDs), and
 - e. The laboratory's MS/MSD QC limits
- ☐ R8 - Laboratory analytical duplicate (if applicable) recovery and precision:
 - a. The amount of analyte measured in the duplicate,
 - b. The calculated RPD, and
 - c. The laboratory's QC limits for analytical duplicates.
- ☒ R9 - List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
- ☒ R10 - Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Cathy L Upton

Name (printed)



Signature

4/2/2014

Date

Project Management Assistant II

Official Title (printed)

Laboratory Review Checklist: Reportable Data - Page 2 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	4/2/2014
Project Name:	Exide Recycling Center, Frisco TX	Laboratory Job Number:	600-89514-1
Reviewer Name:	Dean A Joiner		

# ¹	A ²	Description	Yes	No	NA ³	NR ⁴	ER# ⁵
R1	OI	Chain-of-custody (C-O-C)					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?	X				
R2	OI	Sample and quality control (QC) identification					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	Test reports					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, are TICs reported?			X		
R4	O	Surrogate recovery data					
		Were surrogates added prior to extraction?			X		
		Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
R5	OI	Test reports/summary forms for blank samples					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	Laboratory control samples (LCS):					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?			X		
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data					
		Were the project/method specified analytes included in the MS and MSD?			X		
		Were MS/MSD analyzed at the appropriate frequency?			X		
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
		Were MS/MSD RPDs within laboratory QC limits?			X		
R8	OI	Analytical duplicate data					
		Were appropriate analytical duplicates analyzed for each matrix?			X		
		Were analytical duplicates analyzed at the appropriate frequency?			X		
		Were RPDs or relative standard deviations within the laboratory QC limits?			X		
R9	OI	Method quantitation limits (MQLs):					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	Other problems/anomalies					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review checklist: Supporting Data - Page 3 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	4/2/2014
Project Name:	Exide Recycling Center, Frisco TX	Laboratory Job Number:	600-89514-1
Reviewer Name:	Dean A Joiner		

# ¹	A ²	Description	Yes	No	NA ³	NR ⁴	ER# ⁵
S1	OI	Initial calibration (ICAL)					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	Initial and continuing calibration verification (ICV and CCV) and continuing calibration blank (CCB):					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	Mass spectral tuning					
		Was the appropriate compound for the method used for tuning?			X		
		Were ion abundance data within the method-required QC limits?			X		
S4	O	Internal standards (IS)					
		Were IS area counts and retention times within the method-required QC limits?			X		
S5	OI	Raw data (NELAC Section 5.5.10)					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	Dual column confirmation					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	Tentatively identified compounds (TICs)					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	Interference Check Sample (ICS) results					
		Were percent recoveries within method QC limits?	X				
S9	I	Serial dilutions, post digestion spikes, and method of standard additions					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
S10	OI	Method detection limit (MDL) studies					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSS?	X				
S11	OI	Proficiency test reports					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	Standards documentation					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	Compound/analyte identification procedures					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	Demonstration of analyst competency (DOC)					
		Was DOC conducted consistent with NELAC Chapter 5?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	Verification/validation documentation for methods (NELAC Chapter 5)					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	Laboratory standard operating procedures (SOPs)					
		Are laboratory SOPs current and on file for each method performed?	X				
1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period. 2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable); 3. NA = Not applicable; 4. NR = Not reviewed; 5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).							

Laboratory Review Checklist: Exception Reports - Page 4 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	4/2/2014
Project Name:	Exide Recycling Center, Frisco TX	Laboratory Job Number:	600-89514-1
Reviewer Name:	Dean A Joiner		

ER # ¹	Description
	<div>1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.</div> <div>2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);</div> <div>3. NA = Not applicable;</div> <div>4. NR = Not reviewed;</div> <div>5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).</div>

Detection Check Standard

Matrix: Water
Method: 200.7/6010
Preparation: 200.7P/3010
Date Analyzed: 12/31/2013
Date Prepared: 12/27/2013
Instrument: Spectro01
TALs Batches: 124030, 123788p
Units: mg/L

Analyte	MDL	DCS Spike	Measured Result	MQL
Aluminum	0.006	0.02	0.028176	0.5
Antimony	0.0063	0.01	0.010016	0.05
Arsenic	0.0033	0.01	0.008253	0.01
Barium	0.0022	0.005	0.004098	0.02
Beryllium	0.00134	0.002	0.004019	0.005
Boron	0.0077	0.02	0.019829	0.2
Cadmium	0.00073	0.001	0.001	0.005
Calcium	0.022	0.05	0.060829	1
Chromium	0.0016	0.002	0.003835	0.01
Cobalt	0.00063	0.001	0.000965	0.01
Copper	0.0014	0.002	0.002451	0.01
Iron	0.087	0.1	0.002258	0.4
Lithium	0.0024	0.005	0.006107	0.2
Lead	0.0029	0.005	0.005478	0.01
Selenium	0.0042	0.01	0.009953	0.04
Manganese	0.00084	0.002	0.001988	0.01
Molybdenum	0.0027	0.005	0.005867	0.01
Nickel	0.00179	0.005	0.005669	0.01
Silver	0.0012	0.0025	0.001901	0.01
Sodium	0.02	0.05	0.088115	1
Strontium	0.0005	0.001	0.000897	0.005
Thallium	0.0078	0.02	0.021503	0.03
Tin	0.0028	0.005	0.005708	0.01
Titanium	0.0011	0.002	0.001905	0.01
Vanadium	0.0017	0.002	0.003578	0.01
Zinc	0.0022	0.005	0.004189	0.01

Case Narrative

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX

TestAmerica Job ID: 600-89514-1

Job ID: 600-89514-1

Laboratory: TestAmerica Houston

Narrative

Job Narrative
600-89514-1

Comments

No additional comments.

Receipt

The sample was received on 3/28/2014 11:50 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.5° C.

Method Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX

TestAmerica Job ID: 600-89514-1

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	TAL HOU

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Sample Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX

TestAmerica Job ID: 600-89514-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
600-89514-1	MW-45	Water	03/27/14 11:50	03/28/14 11:50

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX

TestAmerica Job ID: 600-89514-1

Client Sample ID: MW-45

Date Collected: 03/27/14 11:50

Date Received: 03/28/14 11:50

Lab Sample ID: 600-89514-1

Matrix: Water

Method: 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic, Dissolved	0.00328	U	0.0100	0.00328	mg/L		03/30/14 09:45	03/31/14 11:55	1
Cadmium, Dissolved	0.000350	U	0.00500	0.000350	mg/L		03/30/14 09:45	03/31/14 11:55	1
Lead, Dissolved	0.00290	U	0.0100	0.00290	mg/L		03/30/14 09:45	03/31/14 11:55	1
Selenium, Dissolved	0.00417	U	0.0400	0.00417	mg/L		03/30/14 09:45	03/31/14 11:55	1

Definitions/Glossary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX

TestAmerica Job ID: 600-89514-1

Qualifiers

Metals

Qualifier	Qualifier Description
U	Analyte was not detected at or above the SDL.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX

TestAmerica Job ID: 600-89514-1

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 600-130744/1-A
Matrix: Water
Analysis Batch: 130786

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 130744

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic, Dissolved	0.00328	U	0.0100	0.00328	mg/L		03/30/14 09:45	03/31/14 11:03	1
Cadmium, Dissolved	0.000350	U	0.00500	0.000350	mg/L		03/30/14 09:45	03/31/14 11:03	1
Lead, Dissolved	0.00290	U	0.0100	0.00290	mg/L		03/30/14 09:45	03/31/14 11:03	1
Selenium, Dissolved	0.00417	U	0.0400	0.00417	mg/L		03/30/14 09:45	03/31/14 11:03	1

Lab Sample ID: LCS 600-130744/2-A
Matrix: Water
Analysis Batch: 130786

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 130744

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic, Dissolved	1.00	0.9903		mg/L		99	80 - 120
Cadmium, Dissolved	0.500	0.5156		mg/L		103	80 - 120
Lead, Dissolved	1.00	0.9718		mg/L		97	80 - 120
Selenium, Dissolved	1.00	1.004		mg/L		100	80 - 120

Unadjusted Detection Limits

Client: Golder Associates Inc.

TestAmerica Job ID: 600-89514-1

Project/Site: Exide Recycling Center, Frisco TX

Method: 6010B - Metals (ICP) - Dissolved

Analyte	MQL	MDL	Units	Method
Arsenic, Dissolved	0.0100	0.00328	mg/L	6010B
Cadmium, Dissolved	0.00500	0.000350	mg/L	6010B
Lead, Dissolved	0.0100	0.00290	mg/L	6010B
Selenium, Dissolved	0.0400	0.00417	mg/L	6010B

QC Association Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX

TestAmerica Job ID: 600-89514-1

Metals

Prep Batch: 130744

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-89514-1	MW-45	Dissolved	Water	3010A	
LCS 600-130744/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 600-130744/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 130786

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-89514-1	MW-45	Dissolved	Water	6010B	130744
LCS 600-130744/2-A	Lab Control Sample	Total/NA	Water	6010B	130744
MB 600-130744/1-A	Method Blank	Total/NA	Water	6010B	130744

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX

TestAmerica Job ID: 600-89514-1

Client Sample ID: MW-45

Date Collected: 03/27/14 11:50

Date Received: 03/28/14 11:50

Lab Sample ID: 600-89514-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3010A			50 mL	50 mL	130744	03/30/14 09:45	DCL	TAL HOU
Dissolved	Analysis	6010B		1	50 mL	50 mL	130786	03/31/14 11:55	DCL	TAL HOU

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Certification Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX

TestAmerica Job ID: 600-89514-1

Laboratory: TestAmerica Houston

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Texas	NELAP	6	T104704223	10-31-14

Phone (713) 690-4444 Fax (713) 690-5646

TestAmerica

THE UNIVERSITY OF CHICAGO PRESS

4/2/2014

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-89514-1

Login Number: 89514

List Source: TestAmerica Houston

List Number: 1

Creator: Lockett, DuJuan D

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.5
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Houston

6310 Rothway Street

Houston, TX 77040

Tel: (713)690-4444

TestAmerica Job ID: 600-89523-1

Client Project/Site: Exide Recycling Center, Frisco TX Project

For:

Golder Associates Inc.

500 Century Plaza Drive

Suite 190

Houston, Texas 77073

Attn: Christina Higginbotham



Authorized for release by:

4/1/2014 3:59:55 PM

Cathy Upton, Project Management Assistant II

(713)690-4444

cathy.upton@testamericainc.com

Designee for

Dean Joiner, Project Manager II

(713)690-4444

dean.joiner@testamericainc.com

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Appendix A

Laboratory Data Package Cover Page - Page 1 of 4

This data package is for TestAmerica Houston job number 600-89523-1 and consists of:

- ☒ R1 - Field chain-of-custody documentation;
- ☒ R2 - Sample identification cross-reference;
- ☒ R3 - Test reports (analytical data sheets) for each environmental sample that includes:
 - a. Items consistent with NELAC Chapter 5,
 - b. dilution factors,
 - c. preparation methods,
 - d. cleanup methods, and
 - e. if required for the project, tentatively identified compounds (TICs).
- ☐ R4 - Surrogate recovery data including:
 - a. Calculated recovery (%R), and
 - b. The laboratory's surrogate QC limits.
- ☒ R5 - Test reports/summary forms for blank samples;
- ☒ R6 - Test reports/summary forms for laboratory control samples (LCSs) including:
 - a. LCS spiking amounts,
 - b. Calculated %R for each analyte, and
 - c. The laboratory's LCS QC limits.
- ☒ R7 - Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
 - a. Samples associated with the MS/MSD clearly identified,
 - b. MS/MSD spiking amounts,
 - c. Concentration of each MS/MSD analyte measured in the parent and spiked samples,
 - d. Calculated %Rs and relative percent differences (RPDs), and
 - e. The laboratory's MS/MSD QC limits
- ☐ R8 - Laboratory analytical duplicate (if applicable) recovery and precision:
 - a. The amount of analyte measured in the duplicate,
 - b. The calculated RPD, and
 - c. The laboratory's QC limits for analytical duplicates.
- ☒ R9 - List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
- ☒ R10 - Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Cathy Upton

Name (printed)



Signature

4/1/2014

Date

Project Management Asst II

Official Title (printed)

Laboratory Review Checklist: Reportable Data - Page 2 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	4/1/2014
Project Name:	Exide Recycling Center, Frisco TX Projec	Laboratory Job Number:	600-89523-1
Reviewer Name:	Dean A Joiner		

# ¹	A ²	Description	Yes	No	NA ³	NR ⁴	ER# ⁵
R1	OI	Chain-of-custody (C-O-C)					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?	X				
R2	OI	Sample and quality control (QC) identification					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	Test reports					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, are TICs reported?			X		
R4	O	Surrogate recovery data					
		Were surrogates added prior to extraction?			X		
		Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
R5	OI	Test reports/summary forms for blank samples					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	Laboratory control samples (LCS):					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?	X				
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
		Were MS/MSD RPDs within laboratory QC limits?	X				
R8	OI	Analytical duplicate data					
		Were appropriate analytical duplicates analyzed for each matrix?			X		
		Were analytical duplicates analyzed at the appropriate frequency?			X		
		Were RPDs or relative standard deviations within the laboratory QC limits?			X		
R9	OI	Method quantitation limits (MQLs):					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	Other problems/anomalies					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review checklist: Supporting Data - Page 3 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	4/1/2014
Project Name:	Exide Recycling Center, Frisco TX Projec	Laboratory Job Number:	600-89523-1
Reviewer Name:	Dean A Joiner		

# ¹	A ²	Description	Yes	No	NA ³	NR ⁴	ER# ⁵
S1	OI	Initial calibration (ICAL)					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	Initial and continuing calibration verification (ICV and CCV) and continuing calibration blank (CCB):					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	Mass spectral tuning					
		Was the appropriate compound for the method used for tuning?			X		
		Were ion abundance data within the method-required QC limits?			X		
S4	O	Internal standards (IS)					
		Were IS area counts and retention times within the method-required QC limits?			X		
S5	OI	Raw data (NELAC Section 5.5.10)					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	Dual column confirmation					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	Tentatively identified compounds (TICs)					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	Interference Check Sample (ICS) results					
		Were percent recoveries within method QC limits?	X				
S9	I	Serial dilutions, post digestion spikes, and method of standard additions					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
S10	OI	Method detection limit (MDL) studies					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSS?	X				
S11	OI	Proficiency test reports					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	Standards documentation					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	Compound/analyte identification procedures					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	Demonstration of analyst competency (DOC)					
		Was DOC conducted consistent with NELAC Chapter 5?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	Verification/validation documentation for methods (NELAC Chapter 5)					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	Laboratory standard operating procedures (SOPs)					
		Are laboratory SOPs current and on file for each method performed?	X				
1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period. 2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable); 3. NA = Not applicable; 4. NR = Not reviewed; 5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).							

Laboratory Review Checklist: Exception Reports - Page 4 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	4/1/2014
Project Name:	Exide Recycling Center, Frisco TX Projec	Laboratory Job Number:	600-89523-1
Reviewer Name:	Dean A Joiner		

ER # ¹	Description
	<div>1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.</div> <div>2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);</div> <div>3. NA = Not applicable;</div> <div>4. NR = Not reviewed;</div> <div>5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).</div>

Dept	Matrix	Client Sample ID	Analyte	Result	Unit	Spike Amount	MDL	RL	Percent Recovery	Prep Method	Analysis Method	Instrument ID	CAS	Prep Batch	Analysis Batch
ME	Water	Q4 2013 AQ MDLV ICPMSC	Aluminum	56.4	ug/L	50	23	5	113	3005A	6020A	ICPMS	7429-90-5	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Antimony	2.875	ug/L	2.5	2.3	5	115	3005A	6020A	ICPMS	7440-36-0	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Arsenic	2.375	ug/L	2	1.3	2.5	119	3005A	6020A	ICPMS	7440-38-2	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Barium	1.965	ug/L	2	1.3	5	98	3005A	6020A	ICPMS	7440-39-3	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Beryllium	0.52	ug/L	0.5	0.25	0.5	104	3005A	6020A	ICPMS	7440-41-7	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Boron	51.24	ug/L	50	40	100	102	3005A	6020A	ICPMS	7440-42-8	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Cadmium	0.195	ug/L	0.2	0.095	0.5	98	3005A	6020A	ICPMS	7440-43-9	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Calcium	294.73	ug/L	250	130	250	118	3005A	6020A	ICPMS	7440-70-2	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Chromium	5.49	ug/L	5	2.5	5	110	3005A	6020A	ICPMS	7440-47-3	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Cobalt	0.21	ug/L	0.2	0.15	0.5	105	3005A	6020A	ICPMS	7440-48-4	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Copper	2.02	ug/L	2	1.1	5	101	3005A	6020A	ICPMS	7440-50-8	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Iron	54.13	ug/L	50	33	100	108	3005A	6020A	ICPMS	7439-89-6	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Lead	0.355	ug/L	0.3	0.2	1.5	118	3005A	6020A	ICPMS	7439-92-1	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Magnesium	78.42	ug/L	80	43	250	98	3005A	6020A	ICPMS	7439-95-4	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Manganese	1.955	ug/L	2	1	5	98	3005A	6020A	ICPMS	7439-96-5	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Mercury	0.625	ug/L	0.5	0.4	0.8	125	3005A	6020A	ICPMS	7439-97-6	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Molybdenum	2.205	ug/L	2	1.5	5	110	3005A	6020A	ICPMS	7439-98-7	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Nickel	4.86	ug/L	4	2	5	122	3005A	6020A	ICPMS	7440-02-0	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Potassium	219.45	ug/L	200	170	500	110	3005A	6020A	ICPMS	9777440	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Selenium	1.855	ug/L	2	1	2.5	93	3005A	6020A	ICPMS	7782-49-2	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Silver	0.435	ug/L	0.4	0.25	1	109	3005A	6020A	ICPMS	7440-22-4	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Sodium	457.985	ug/L	400	250	500	114	3005A	6020A	ICPMS	7440-23-5	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Strontium	0.945	ug/L	1	0.5	1	95	3005A	6020A	ICPMS	7440-24-6	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Thallium	0.98	ug/L	1	0.5	1	98	3005A	6020A	ICPMS	7440-28-0	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Tin	2.47	ug/L	2	1.3	5	124	3005A	6020A	ICPMS	7440-31-5	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Titanium	3.17	ug/L	2.5	1.3	5	127	3005A	6020A	ICPMS	7440-32-6	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Vanadium	5.55	ug/L	5	3.8	10	111	3005A	6020A	ICPMS	7440-62-2	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Zinc	10.095	ug/L	10	8.3	20	101	3005A	6020A	ICPMS	7440-66-6	680-297813	680-298498

Case Narrative

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-89523-1

Job ID: 600-89523-1

Laboratory: TestAmerica Houston

Narrative

Job Narrative
600-89523-1

Comments

No additional comments.

Receipt

The samples were received on 3/28/2014 10:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.0° C.

Method Summary

Client: Golder Associates Inc.

TestAmerica Job ID: 600-89523-1

Project/Site: Exide Recycling Center, Frisco TX Projec

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL SAV

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Sample Summary

Client: Golder Associates Inc.

TestAmerica Job ID: 600-89523-1

Project/Site: Exide Recycling Center, Frisco TX Projec

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
600-89523-1	MW-46	Water	03/27/14 13:17	03/28/14 10:15
600-89523-2	DUP-8	Water	03/27/14 00:00	03/28/14 10:15

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-89523-1

Client Sample ID: MW-46

Date Collected: 03/27/14 13:17

Date Received: 03/28/14 10:15

Lab Sample ID: 600-89523-1

Matrix: Water

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000794		0.000500	0.0000950	mg/L		03/28/14 16:22	03/31/14 12:56	1
Lead	0.00546		0.00150	0.000200	mg/L		03/28/14 16:22	03/31/14 12:56	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000797		0.000500	0.0000950	mg/L		03/28/14 16:22	03/31/14 12:18	1
Lead	0.00302		0.00150	0.000200	mg/L		03/28/14 16:22	03/31/14 12:18	1

Client Sample ID: DUP-8

Date Collected: 03/27/14 00:00

Date Received: 03/28/14 10:15

Lab Sample ID: 600-89523-2

Matrix: Water

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000805		0.000500	0.0000950	mg/L		03/28/14 16:22	03/31/14 13:40	1
Lead	0.00513		0.00150	0.000200	mg/L		03/28/14 16:22	03/31/14 13:40	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000745		0.000500	0.0000950	mg/L		03/28/14 16:22	03/31/14 13:33	1
Lead	0.00540		0.00150	0.000200	mg/L		03/28/14 16:22	03/31/14 13:33	1

TestAmerica Houston

Definitions/Glossary

Client: Golder Associates Inc.

TestAmerica Job ID: 600-89523-1

Project/Site: Exide Recycling Center, Frisco TX Projec

Qualifiers

Metals

Qualifier	Qualifier Description
U	Analyte was not detected at or above the SDL.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Project

TestAmerica Job ID: 600-89523-1

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 680-321870/1-A

Matrix: Water

Analysis Batch: 322175

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 321870

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		03/28/14 16:22	03/31/14 11:56	1
Lead	0.000200	U	0.00150	0.000200	mg/L		03/28/14 16:22	03/31/14 11:56	1

Lab Sample ID: LCS 680-321870/2-A

Matrix: Water

Analysis Batch: 322175

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 321870

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	0.0500	0.05195		mg/L		104	75 - 125
Lead	0.0500	0.05465		mg/L		109	75 - 125

Lab Sample ID: LCSD 680-321870/14-A

Matrix: Water

Analysis Batch: 322175

Client Sample ID: Lab Control Sample Dup

Prep Type: Total Recoverable

Prep Batch: 321870

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cadmium	0.0500	0.05170		mg/L		103	75 - 125	0	20
Lead	0.0500	0.05305		mg/L		106	75 - 125	3	20

Lab Sample ID: 600-89523-1 MS

Matrix: Water

Analysis Batch: 322175

Client Sample ID: MW-46 MS

Prep Type: Total Recoverable

Prep Batch: 321870

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	0.000794		0.0500	0.05300		mg/L		104	75 - 125
Lead	0.00546		0.0500	0.05815		mg/L		105	75 - 125

Lab Sample ID: 600-89523-1 MSD

Matrix: Water

Analysis Batch: 322175

Client Sample ID: MW-46 MSD

Prep Type: Total Recoverable

Prep Batch: 321870

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cadmium	0.000794		0.0500	0.05185		mg/L		102	75 - 125	2	20
Lead	0.00546		0.0500	0.05600		mg/L		101	75 - 125	4	20

Lab Sample ID: 600-89523-1 MS

Matrix: Water

Analysis Batch: 322175

Client Sample ID: MW-46 MS

Prep Type: Dissolved

Prep Batch: 321870

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	0.000797		0.0500	0.04911		mg/L		97	75 - 125
Lead	0.00302		0.0500	0.05195		mg/L		98	75 - 125

Lab Sample ID: 600-89523-1 MSD

Matrix: Water

Analysis Batch: 322175

Client Sample ID: MW-46 MSD

Prep Type: Dissolved

Prep Batch: 321870

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cadmium	0.000797		0.0500	0.05280		mg/L		104	75 - 125	7	20

TestAmerica Houston

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-89523-1

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 600-89523-1 MSD

Matrix: Water

Analysis Batch: 322175

Client Sample ID: MW-46 MSD

Prep Type: Dissolved

Prep Batch: 321870

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	0.00302		0.0500	0.05535		mg/L		105	75 - 125	6	20

Unadjusted Detection Limits

Client: Golder Associates Inc.

TestAmerica Job ID: 600-89523-1

Project/Site: Exide Recycling Center, Frisco TX Projec

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	MQL	MDL	Units	Method
Cadmium	0.000500	0.0000950	mg/L	6020A
Lead	0.00150	0.000200	mg/L	6020A

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	MQL	MDL	Units	Method
Cadmium	0.000500	0.0000950	mg/L	6020A
Lead	0.00150	0.000200	mg/L	6020A

QC Association Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-89523-1

Metals

Prep Batch: 321870

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-89523-1	MW-46	Dissolved	Water	3005A	
600-89523-1	MW-46	Total Recoverable	Water	3005A	
600-89523-1 MS	MW-46 MS	Dissolved	Water	3005A	
600-89523-1 MS	MW-46 MS	Total Recoverable	Water	3005A	
600-89523-1 MSD	MW-46 MSD	Dissolved	Water	3005A	
600-89523-1 MSD	MW-46 MSD	Total Recoverable	Water	3005A	
600-89523-2	DUP-8	Dissolved	Water	3005A	
600-89523-2	DUP-8	Total Recoverable	Water	3005A	
LCS 680-321870/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 680-321870/14-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	
MB 680-321870/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 322175

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-89523-1	MW-46	Dissolved	Water	6020A	321870
600-89523-1	MW-46	Total Recoverable	Water	6020A	321870
600-89523-1 MS	MW-46 MS	Dissolved	Water	6020A	321870
600-89523-1 MS	MW-46 MS	Total Recoverable	Water	6020A	321870
600-89523-1 MSD	MW-46 MSD	Dissolved	Water	6020A	321870
600-89523-1 MSD	MW-46 MSD	Total Recoverable	Water	6020A	321870
600-89523-2	DUP-8	Dissolved	Water	6020A	321870
600-89523-2	DUP-8	Total Recoverable	Water	6020A	321870
LCS 680-321870/2-A	Lab Control Sample	Total Recoverable	Water	6020A	321870
LCSD 680-321870/14-A	Lab Control Sample Dup	Total Recoverable	Water	6020A	321870
MB 680-321870/1-A	Method Blank	Total Recoverable	Water	6020A	321870

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Project

TestAmerica Job ID: 600-89523-1

Client Sample ID: MW-46

Date Collected: 03/27/14 13:17

Date Received: 03/28/14 10:15

Lab Sample ID: 600-89523-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	250 mL	321870	03/28/14 16:22	BJB	TAL SAV
Dissolved	Analysis	6020A		1	50 mL	250 mL	322175	03/31/14 12:18	BWR	TAL SAV
Total Recoverable	Prep	3005A			50 mL	250 mL	321870	03/28/14 16:22	BJB	TAL SAV
Total Recoverable	Analysis	6020A		1	50 mL	250 mL	322175	03/31/14 12:56	BWR	TAL SAV

Client Sample ID: DUP-8

Date Collected: 03/27/14 00:00

Date Received: 03/28/14 10:15

Lab Sample ID: 600-89523-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	250 mL	321870	03/28/14 16:22	BJB	TAL SAV
Dissolved	Analysis	6020A		1	50 mL	250 mL	322175	03/31/14 13:33	BWR	TAL SAV
Total Recoverable	Prep	3005A			50 mL	250 mL	321870	03/28/14 16:22	BJB	TAL SAV
Total Recoverable	Analysis	6020A		1	50 mL	250 mL	322175	03/31/14 13:40	BWR	TAL SAV

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Certification Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-89523-1

Laboratory: TestAmerica Houston

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0759	08-04-14
Louisiana	NELAP	6	30643	06-30-14
Oklahoma	State Program	6	1309	08-31-14
Texas	NELAP	6	T104704223	10-31-14
USDA	Federal		P330-08-00217	04-01-14 *
Utah	NELAP	8	TX00083	10-31-14

Laboratory: TestAmerica Savannah

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
	AFCEE		SAVLAB	
A2LA	DoD ELAP		399.01	02-28-15
A2LA	ISO/IEC 17025		399.01	02-28-15
Alabama	State Program	4	41450	06-30-14
Arkansas DEQ	State Program	6	88-0692	01-31-15
California	NELAP	9	3217CA	07-31-14
Colorado	State Program	8	N/A	12-31-14
Connecticut	State Program	1	PH-0161	03-31-15
Florida	NELAP	4	E87052	06-30-14
GA Dept. of Agriculture	State Program	4	N/A	06-30-14
Georgia	State Program	4	N/A	06-30-14
Georgia	State Program	4	803	06-30-14
Guam	State Program	9	09-005r	04-17-14 *
Hawaii	State Program	9	N/A	06-30-14
Illinois	NELAP	5	200022	11-30-14
Indiana	State Program	5	N/A	06-30-14
Iowa	State Program	7	353	07-01-15
Kentucky (DW)	State Program	4	90084	12-31-14
Kentucky (UST)	State Program	4	18	06-30-14
Louisiana	NELAP	6	LA100015	12-31-14
Maine	State Program	1	GA00006	08-16-14
Maryland	State Program	3	250	12-31-14
Massachusetts	State Program	1	M-GA006	06-30-14
Michigan	State Program	5	9925	06-30-14
Mississippi	State Program	4	N/A	06-30-14
Montana	State Program	8	CERT0081	01-01-15
Nebraska	State Program	7	TestAmerica-Savannah	06-30-14
New Jersey	NELAP	2	GA769	06-30-14
New Mexico	State Program	6	N/A	06-30-14
New York	NELAP	2	10842	03-31-14 *
North Carolina DENR	State Program	4	269	12-31-14
North Carolina DHHS	State Program	4	13701	07-31-14
Oklahoma	State Program	6	9984	08-31-14
Pennsylvania	NELAP	3	68-00474	06-30-14
Puerto Rico	State Program	2	GA00006	12-31-14
South Carolina	State Program	4	98001	06-30-14
Tennessee	State Program	4	TN02961	06-30-14
Texas	NELAP	6	T104704185-08-TX	11-30-14
USDA	Federal		SAV 3-04	04-07-14 *

* Expired certification is currently pending renewal and is considered valid.

TestAmerica Houston

Certification Summary

Client: Golder Associates Inc.

TestAmerica Job ID: 600-89523-1

Project/Site: Exide Recycling Center, Frisco TX Projec

Laboratory: TestAmerica Savannah (Continued)

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Virginia	NELAP	3	460161	06-14-14
Washington	State Program	10	C1794	06-10-14
West Virginia DEP	State Program	3	94	06-30-14
West Virginia DHHR	State Program	3	9950C	12-31-14
Wisconsin	State Program	5	999819810	08-31-14
Wyoming	State Program	8	8TMS-L	06-30-14

Chain of Custody Record

Client Information Client Contact: Christina Higginbotham Company: Golder Associates Inc. Address: 500 Century Plaza Drive Suite 190 City: Houston State, Zip: TX, 77073 Phone: 281-821-6868(Tel) 281-821-6870(Fax) Email: Christina_Higginbotham@golder.com Project Name: Exide Recycling Center, Frisco TX Site: Exide Frisco		Sampler: Chris Trevino Phone: 817-281-0510 E-Mail: dean.joiner@testamericainc.com		Lab P/Nr: Joiner, Dean A Carrier Tracking No(s):		COC No: 600-27100-9382.2 Page: 1 of 1 Job #: 1302086	
Analysis Requested Due Date Requested: TAT Requested: 24 hours PO #: Purchase Order Requested WO #: Project #: 60004831 SSOW#:		Special Instructions/Note: Golders: Ship Directly to: TestAmerica Savannah 5102 LaRoch Avenue Savannah, GA 31404 Phone (912) 364-7858 Attn: Sample Receiving TA SAVANNAH LOGIN: Analytical subbed through TA Houston Please E-mail copy of Chain of Custody and request TA Houston Job #					
Sample Identification MW-46 MW-46 MS MW-46 MSD DAP-8		Sample Date 03-27-14 03-27-14 03-27-14 03-27-14		Sample Time 1317 1317 1317 -		Sample Type (C=comp, G=grab) G G G G	
Matrix (W=water, S=solid, Q=soil, BT=tissue, A=air)		Water Water Water Water Water		6020A - Dissolved Metals - Pb, Cd X X X X		6020A - Total Metals - Pb, Cd X X X X	
Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:		Total Number of Containers: 2 2 2 2					
Special Instructions/Note: Golders: Ship Directly to: TestAmerica Savannah 5102 LaRoch Avenue Savannah, GA 31404 Phone (912) 364-7858 Attn: Sample Receiving TA SAVANNAH LOGIN: Analytical subbed through TA Houston Please E-mail copy of Chain of Custody and request TA Houston Job #		Special Instructions/Note: Golders: Ship Directly to: TestAmerica Savannah 5102 LaRoch Avenue Savannah, GA 31404 Phone (912) 364-7858 Attn: Sample Receiving TA SAVANNAH LOGIN: Analytical subbed through TA Houston Please E-mail copy of Chain of Custody and request TA Houston Job #					

Login Sample Summary

			<u>Status</u>	<u>Location</u>
Login No:	89523	Login Date: 03/28/2014 10:15	Active	600 TestAmerica Houston
Project:	60004831	VTSR: NO	Active	600 TestAmerica Houston
Prj Mgr:	Joiner, Dean A	Prj Mgr Asst:		
Site is not assigned to Project				

Login Group: 1 6020

<u>Method</u>	<u>Description</u>
6020A	Metals (ICP/MS)
3005A	Preparation, Total Recoverable or Dissolved Metals
6020A	Metals (ICP/MS)
3005A	Preparation, Total Recoverable or Dissolved Metals
FIELD_FL	Sample Filtration, Field

Sample Distribution

<u>Sample #</u>	<u>Customer Sample ID</u>	<u>Matrix</u>	<u>Sample Date</u>	<u>Received Date</u>	<u>Login Group</u>
1	MW-46	Water	03/27/2014 -13:17	03/28/2014 -10:15	1
1 MS	MW-46	Water	03/27/2014 -13:17	03/28/2014 -10:15	1
1 MSD	MW-46	Water	03/27/2014 -13:17	03/28/2014 -10:15	1
2	DUP-8	Water	03/27/2014	03/28/2014 -10:15	1

Loc: 600
89523

600-89523 Login
PM: Joiner, Dean A
Company: Golder Associates Inc.



Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-89523-1

Login Number: 89523

List Source: TestAmerica Houston

List Number: 1

Creator: Conner, Keaton

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-89523-1

Login Number: 89523

List Number: 1

Creator: Conner, Keaton

List Source: TestAmerica Savannah

List Creation: 03/28/14 01:12 PM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Houston

6310 Rothway Street

Houston, TX 77040

Tel: (713)690-4444

TestAmerica Job ID: 600-89551-1

Client Project/Site: Exide Frisco

Revision: 1

For:

Golder Associates Inc.

500 Century Plaza Drive

Suite 190

Houston, Texas 77073

Attn: Christina Higginbotham



Authorized for release by:

4/14/2014 10:51:12 AM

Cathy Upton, Project Management Assistant II

(713)690-4444

cathy.upton@testamericainc.com

Designee for

Dean Joiner, Project Manager II

(713)690-4444

dean.joiner@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Have a Question?



Visit us at:

www.testamericainc.com

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Appendix A

Laboratory Data Package Cover Page - Page 1 of 4

This data package is for TestAmerica Houston job number 600-89551-1 and consists of:

- ☒ R1 - Field chain-of-custody documentation;
- ☒ R2 - Sample identification cross-reference;
- ☒ R3 - Test reports (analytical data sheets) for each environmental sample that includes:
 - a. Items consistent with NELAC Chapter 5,
 - b. dilution factors,
 - c. preparation methods,
 - d. cleanup methods, and
 - e. if required for the project, tentatively identified compounds (TICs).
- ☐ R4 - Surrogate recovery data including:
 - a. Calculated recovery (%R), and
 - b. The laboratory's surrogate QC limits.
- ☒ R5 - Test reports/summary forms for blank samples;
- ☒ R6 - Test reports/summary forms for laboratory control samples (LCSs) including:
 - a. LCS spiking amounts,
 - b. Calculated %R for each analyte, and
 - c. The laboratory's LCS QC limits.
- ☐ R7 - Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
 - a. Samples associated with the MS/MSD clearly identified,
 - b. MS/MSD spiking amounts,
 - c. Concentration of each MS/MSD analyte measured in the parent and spiked samples,
 - d. Calculated %Rs and relative percent differences (RPDs), and
 - e. The laboratory's MS/MSD QC limits
- ☐ R8 - Laboratory analytical duplicate (if applicable) recovery and precision:
 - a. The amount of analyte measured in the duplicate,
 - b. The calculated RPD, and
 - c. The laboratory's QC limits for analytical duplicates.
- ☒ R9 - List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
- ☒ R10 - Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Cathy L Upton

Name (printed)



Signature

4/14/2014

Date

Project Management Assistant II

Official Title (printed)

Laboratory Review Checklist: Reportable Data - Page 2 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	4/2/2014
Project Name:	Exide Frisco	Laboratory Job Number:	600-89551-1
Reviewer Name:	Dean A Joiner		

# ¹	A ²	Description	Yes	No	NA ³	NR ⁴	ER# ⁵
R1	OI	Chain-of-custody (C-O-C)					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?	X				
R2	OI	Sample and quality control (QC) identification					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	Test reports					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, are TICs reported?			X		
R4	O	Surrogate recovery data					
		Were surrogates added prior to extraction?			X		
		Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
R5	OI	Test reports/summary forms for blank samples					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	Laboratory control samples (LCS):					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?			X		
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?				X	R07C
		Were MS/MSD RPDs within laboratory QC limits?				X	R07D
R8	OI	Analytical duplicate data					
		Were appropriate analytical duplicates analyzed for each matrix?	X				
		Were analytical duplicates analyzed at the appropriate frequency?	X				
		Were RPDs or relative standard deviations within the laboratory QC limits?				X	R08C
R9	OI	Method quantitation limits (MQLs):					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	Other problems/anomalies					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review checklist: Supporting Data - Page 3 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	4/2/2014
Project Name:	Exide Frisco	Laboratory Job Number:	600-89551-1
Reviewer Name:	Dean A Joiner		

# ¹	A ²	Description	Yes	No	NA ³	NR ⁴	ER# ⁵
S1	OI	Initial calibration (ICAL)					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	Initial and continuing calibration verification (ICV and CCV) and continuing calibration blank (CCB):					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	Mass spectral tuning					
		Was the appropriate compound for the method used for tuning?			X		
		Were ion abundance data within the method-required QC limits?			X		
S4	O	Internal standards (IS)					
		Were IS area counts and retention times within the method-required QC limits?			X		
S5	OI	Raw data (NELAC Section 5.5.10)					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	Dual column confirmation					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	Tentatively identified compounds (TICs)					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	Interference Check Sample (ICS) results					
		Were percent recoveries within method QC limits?	X				
S9	I	Serial dilutions, post digestion spikes, and method of standard additions					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?				X	S09A
S10	OI	Method detection limit (MDL) studies					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSS?	X				
S11	OI	Proficiency test reports					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	Standards documentation					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	Compound/analyte identification procedures					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	Demonstration of analyst competency (DOC)					
		Was DOC conducted consistent with NELAC Chapter 5?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	Verification/validation documentation for methods (NELAC Chapter 5)					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	Laboratory standard operating procedures (SOPs)					
		Are laboratory SOPs current and on file for each method performed?	X				
1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period. 2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable); 3. NA = Not applicable; 4. NR = Not reviewed; 5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).							

Laboratory Review Checklist: Exception Reports - Page 4 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	4/2/2014
Project Name:	Exide Frisco	Laboratory Job Number:	600-89551-1
Reviewer Name:	Dean A Joiner		

ER # ¹	Description
R07C/ R07D/ R08C/ S09A	The laboratory selected a sample from another client to perform as the MS/MSD/DUP/PDS/SD.
<ol style="list-style-type: none"> Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable); NA = Not applicable; NR = Not reviewed; ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked). 	

Dept	Matrix	Client Sample ID	Analyte	Result	Unit	Spike Amount	MDL	RL	Percent Recovery	Prep Method	Analysis Method	Instrument ID	CAS	Prep Batch	Analysis Batch
ME	Water	Q4 2013 AQ MDLV ICPMSC	Aluminum	56.4	ug/L	50	23	5	113	3005A	6020A	ICPMS	7429-90-5	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Antimony	2.875	ug/L	2.5	2.3	5	115	3005A	6020A	ICPMS	7440-36-0	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Arsenic	2.375	ug/L	2	1.3	2.5	119	3005A	6020A	ICPMS	7440-38-2	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Barium	1.965	ug/L	2	1.3	5	98	3005A	6020A	ICPMS	7440-39-3	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Beryllium	0.52	ug/L	0.5	0.25	0.5	104	3005A	6020A	ICPMS	7440-41-7	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Boron	51.24	ug/L	50	40	100	102	3005A	6020A	ICPMS	7440-42-8	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Cadmium	0.195	ug/L	0.2	0.095	0.5	98	3005A	6020A	ICPMS	7440-43-9	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Calcium	294.73	ug/L	250	130	250	118	3005A	6020A	ICPMS	7440-70-2	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Chromium	5.49	ug/L	5	2.5	5	110	3005A	6020A	ICPMS	7440-47-3	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Cobalt	0.21	ug/L	0.2	0.15	0.5	105	3005A	6020A	ICPMS	7440-48-4	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Copper	2.02	ug/L	2	1.1	5	101	3005A	6020A	ICPMS	7440-50-8	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Iron	54.13	ug/L	50	33	100	108	3005A	6020A	ICPMS	7439-89-6	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Lead	0.355	ug/L	0.3	0.2	1.5	118	3005A	6020A	ICPMS	7439-92-1	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Magnesium	78.42	ug/L	80	43	250	98	3005A	6020A	ICPMS	7439-95-4	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Manganese	1.955	ug/L	2	1	5	98	3005A	6020A	ICPMS	7439-96-5	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Mercury	0.625	ug/L	0.5	0.4	0.8	125	3005A	6020A	ICPMS	7439-97-6	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Molybdenum	2.205	ug/L	2	1.5	5	110	3005A	6020A	ICPMS	7439-98-7	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Nickel	4.86	ug/L	4	2	5	122	3005A	6020A	ICPMS	7440-02-0	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Potassium	219.45	ug/L	200	170	500	110	3005A	6020A	ICPMS	9777440	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Selenium	1.855	ug/L	2	1	2.5	93	3005A	6020A	ICPMS	7782-49-2	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Silver	0.435	ug/L	0.4	0.25	1	109	3005A	6020A	ICPMS	7440-22-4	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Sodium	457.985	ug/L	400	250	500	114	3005A	6020A	ICPMS	7440-23-5	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Strontium	0.945	ug/L	1	0.5	1	95	3005A	6020A	ICPMS	7440-24-6	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Thallium	0.98	ug/L	1	0.5	1	98	3005A	6020A	ICPMS	7440-28-0	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Tin	2.47	ug/L	2	1.3	5	124	3005A	6020A	ICPMS	7440-31-5	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Titanium	3.17	ug/L	2.5	1.3	5	127	3005A	6020A	ICPMS	7440-32-6	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Vanadium	5.55	ug/L	5	3.8	10	111	3005A	6020A	ICPMS	7440-62-2	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Zinc	10.095	ug/L	10	8.3	20	101	3005A	6020A	ICPMS	7440-66-6	680-297813	680-298498

Case Narrative

Client: Golder Associates Inc.
Project/Site: Exide Frisco

TestAmerica Job ID: 600-89551-1

Job ID: 600-89551-1

Laboratory: TestAmerica Houston

Narrative

Job Narrative
600-89551-1

Comments

The report was revised on 04/14/14 to update the TRRP checklist, replacing the final report generated on 04/02/14. No changes to data/edds.

Receipt

The samples were received on 3/30/2014 9:40 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.2° C.

Method Summary

Client: Golder Associates Inc.
Project/Site: Exide Frisco

TestAmerica Job ID: 600-89551-1

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL SAV

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Sample Summary

Client: Golder Associates Inc.
Project/Site: Exide Frisco

TestAmerica Job ID: 600-89551-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
600-89551-1	MW-37	Water	03/28/14 11:20	03/30/14 09:40
600-89551-2	MW-11	Water	03/28/14 16:06	03/30/14 09:40

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Frisco

TestAmerica Job ID: 600-89551-1

Client Sample ID: MW-37

Date Collected: 03/28/14 11:20

Date Received: 03/30/14 09:40

Lab Sample ID: 600-89551-1

Matrix: Water

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L	—	03/31/14 10:56	04/02/14 01:24	1

Client Sample ID: MW-11

Date Collected: 03/28/14 16:06

Date Received: 03/30/14 09:40

Lab Sample ID: 600-89551-2

Matrix: Water

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L	—	03/31/14 10:56	04/02/14 01:30	1

Definitions/Glossary

Client: Golder Associates Inc.
Project/Site: Exide Frisco

TestAmerica Job ID: 600-89551-1

Qualifiers

Metals

Qualifier	Qualifier Description
U	Analyte was not detected at or above the SDL.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Frisco

TestAmerica Job ID: 600-89551-1

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 680-322068/1-A
Matrix: Water
Analysis Batch: 322507

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 322068

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		03/31/14 10:56	04/01/14 23:12	1

Lab Sample ID: LCS 680-322068/2-A
Matrix: Water
Analysis Batch: 322507

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 322068

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	0.0500	0.05821		mg/L		116	75 - 125

Unadjusted Detection Limits

Client: Golder Associates Inc.
Project/Site: Exide Frisco

TestAmerica Job ID: 600-89551-1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	MQL	MDL	Units	Method
Cadmium	0.000500	0.0000950	mg/L	6020A

QC Association Summary

Client: Golder Associates Inc.
Project/Site: Exide Frisco

TestAmerica Job ID: 600-89551-1

Metals

Prep Batch: 322068

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-89551-1	MW-37	Dissolved	Water	3005A	
600-89551-2	MW-11	Dissolved	Water	3005A	
LCS 680-322068/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-322068/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 322507

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-89551-1	MW-37	Dissolved	Water	6020A	322068
600-89551-2	MW-11	Dissolved	Water	6020A	322068
LCS 680-322068/2-A	Lab Control Sample	Total Recoverable	Water	6020A	322068
MB 680-322068/1-A	Method Blank	Total Recoverable	Water	6020A	322068

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Exide Frisco

TestAmerica Job ID: 600-89551-1

Client Sample ID: MW-37

Date Collected: 03/28/14 11:20

Date Received: 03/30/14 09:40

Lab Sample ID: 600-89551-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	250 mL	322068	03/31/14 10:56	BJB	TAL SAV
Dissolved	Analysis	6020A		1	50 mL	250 mL	322507	04/02/14 01:24	BWR	TAL SAV

Client Sample ID: MW-11

Date Collected: 03/28/14 16:06

Date Received: 03/30/14 09:40

Lab Sample ID: 600-89551-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	250 mL	322068	03/31/14 10:56	BJB	TAL SAV
Dissolved	Analysis	6020A		1	50 mL	250 mL	322507	04/02/14 01:30	BWR	TAL SAV

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Certification Summary

Client: Golder Associates Inc.
Project/Site: Exide Frisco

TestAmerica Job ID: 600-89551-1

Laboratory: TestAmerica Houston

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Texas	NELAP	6	T104704223	10-31-14

Laboratory: TestAmerica Savannah

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
	AFCEE		SAVLAB	
A2LA	DoD ELAP		399.01	02-28-15
A2LA	ISO/IEC 17025		399.01	02-28-15
Alabama	State Program	4	41450	06-30-14
Arkansas DEQ	State Program	6	88-0692	01-31-15
California	NELAP	9	3217CA	07-31-14
Colorado	State Program	8	N/A	12-31-14
Connecticut	State Program	1	PH-0161	03-31-15
Florida	NELAP	4	E87052	06-30-14
GA Dept. of Agriculture	State Program	4	N/A	06-30-14
Georgia	State Program	4	N/A	06-30-14
Georgia	State Program	4	803	06-30-14
Guam	State Program	9	09-005r	04-17-14 *
Hawaii	State Program	9	N/A	06-30-14
Illinois	NELAP	5	200022	11-30-14
Indiana	State Program	5	N/A	06-30-14
Iowa	State Program	7	353	07-01-15
Kentucky (DW)	State Program	4	90084	12-31-14
Kentucky (UST)	State Program	4	18	06-30-14
Louisiana	NELAP	6	LA100015	12-31-14
Maine	State Program	1	GA00006	08-16-14
Maryland	State Program	3	250	12-31-14
Massachusetts	State Program	1	M-GA006	06-30-14
Michigan	State Program	5	9925	06-30-14
Mississippi	State Program	4	N/A	06-30-14
Montana	State Program	8	CERT0081	01-01-15
Nebraska	State Program	7	TestAmerica-Savannah	06-30-14
New Jersey	NELAP	2	GA769	06-30-14
New Mexico	State Program	6	N/A	06-30-14
New York	NELAP	2	10842	03-31-14 *
North Carolina DENR	State Program	4	269	12-31-14
North Carolina DHHS	State Program	4	13701	07-31-14
Oklahoma	State Program	6	9984	08-31-14
Pennsylvania	NELAP	3	68-00474	06-30-14
Puerto Rico	State Program	2	GA00006	12-31-14
South Carolina	State Program	4	98001	06-30-14
Tennessee	State Program	4	TN02961	06-30-14
Texas	NELAP	6	T104704185-08-TX	11-30-14
USDA	Federal		SAV 3-04	04-07-14 *
Virginia	NELAP	3	460161	06-14-14
Washington	State Program	10	C1794	06-10-14
West Virginia DEP	State Program	3	94	06-30-14
West Virginia DHHR	State Program	3	9950C	12-31-14
Wisconsin	State Program	5	999819810	08-31-14

* Expired certification is currently pending renewal and is considered valid.

TestAmerica Houston

Certification Summary

Client: Golder Associates Inc.
Project/Site: Exide Frisco

TestAmerica Job ID: 600-89551-1

Laboratory: TestAmerica Savannah (Continued)

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Wyoming	State Program	8	8TMS-L	06-30-14

[illegible]

Login Sample Summary

				Status	Location
Login No:	89551	Login Date:	03/30/2014 9:40	Active	600 TestAmerica Houston
Project:	60004831			Active	600 TestAmerica Houston
Prj Mgr:	Joiner, Dean A	Prj Mgr Asst:	Site is not assigned to Project		

Login Group: 1 6020

<u>Method</u>	<u>Description</u>
6020A	Metals (ICP/MS)
3005A	Preparation, Total Recoverable or Dissolved Metals
FIELD_FL	Sample Filtration, Field

Sample Distribution

Sample #	Customer Sample ID	Matrix	Sample Date	Received Date	Login Group
1	MW-37	Water	03/28/2014 -11:20	03/30/2014 -09:40	1
2	MW-11	Water	03/28/2014 -16:06	03/30/2014 -09:40	1

600-89551 Login
PM: Joiner, Dean A
Company: Golder Associates Inc.Loc: 600
89551

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-89551-1

Login Number: 89551

List Source: TestAmerica Houston

List Number: 1

Creator: Conner, Keaton

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-89551-1

Login Number: 89551

List Number: 1

Creator: Conner, Keaton

List Source: TestAmerica Savannah

List Creation: 03/30/14 10:15 AM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
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Cooler Temperature is recorded.	True	
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Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
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Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	