



ACCUTEST GULF COAST  
 500 AMBASSADOR CAFFERY PARKWAY  
 SCOTT, LA 70583  
 (337) 237-4775

Case Narrative for:  
**SHAW ENVIRONMENTAL & INFRASTRUCTURE**

Certificate of Analysis Number:

**L0022557**

<p><b>Report To:</b></p> <p><b>SHAW ENVIRONMENTAL &amp; INFRASTRUCTURE</b>  <b>LISA PULTZ</b>  <b>4171 ESSEN LANE</b></p> <p><b>BATON ROUGE</b>  <b>LA</b>  <b>70809-</b>  <b>ph: (225) 932-2500      fax: (225) 987-7300</b></p>	<p><b>Project Name:</b>    147497 LDNR- BAYOU CORNE</p> <p><b>Site:</b>                LDNR/BAYOU CORNE</p> <p><b>Site Address:</b></p> <p><b>PO Number:</b>        812666</p> <p><b>State:</b>                Louisiana</p> <p><b>State Cert. No.:</b>    02048</p> <p><b>Date Reported:</b>    11/26/2012</p>
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Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data for those samples spiked by the laboratory and may be applicable to other samples of similar matrix from the site. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group.

The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process. If insufficient sample is supplied for MS/MSD, a Laboratory Control Sample (LCS) and a Laboratory Control Sample Duplicate (LCSD) are reported with the analytical batch and serve as the batch quality control (QC).

Results are reported on a Wet Weight Basis unless otherwise noted in the sample unit field as -dry.

This report may contain data results from tests performed in the field by non-laboratory personnel. Such data will be indicated within the report using the method code, FIELD, and analyst initials of FT indicating results obtained by a field technician.

The collection of samples using encores, terracores or other field collection devices may result in inconsistent initial sample weights for the parent sample and MS/MSD samples.

The MS/MSD recovery and precision data are calculated based on detected spike concentrations that are adjusted for initial sample weights. As a result of the variability between initial sample weights, the calculated RPD may have increased bias.

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

This report shall not be reproduced except in full, without the written approval of the laboratory. The reported results are only representative of the samples submitted for testing.

Accutest Gulf Coast is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

Cristina Thibeaux  
 Project Manager

Test results meet all requirements of NELAC, unless specified in the narrative.

L0022557 Page 1

11/26/2012

Date



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**SHAW ENVIRONMENTAL & INFRASTRUCTURE**

Certificate of Analysis Number:

**L0022557**

**Report To:** SHAW ENVIRONMENTAL & INFRASTRUCTURE  
 LISA PULTZ  
 4171 ESSEN LANE  
  
 BATON ROUGE  
 LA  
 70809-  
 ph: (225) 932-2500 fax: (225) 987-7300

**Project Name:** 147497 LDNR- BAYOU CORNE  
**Site:** LDNR/BAYOU CORNE  
**Site Address:**  
  
**PO Number:** 812666  
**State:** Louisiana  
**State Cert. No.:** 02048  
**Date Reported:** 11/26/2012

**Fax To:**

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
007-095-111912	L0022557-01	Water	11/19/2012 7:45	11/19/2012 4:45:00 PM		<input type="checkbox"/>
007-095-111912	L0022557-02	Water	11/19/2012 11:05	11/19/2012 4:45:00 PM		<input type="checkbox"/>

*Cristina C. Thibeaux*

Cristina Thibeaux  
 Project Manager

11/26/2012

Date

Ron Benjamin  
 Laboratory Director

Rebecca Haryett  
 Quality Assurance Officer



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Client Sample ID:007-095-111912 Collected: 11/19/2012 7:45 Lab Sample ID: L0022557-01

Site: LDNR/BAYOU CORNE

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
<b>ALKALINITY, BICARBONATE (AS CaCO3)</b>				<b>MCL</b>	<b>M2320 B</b>	<b>Units: mg/L CaCO3</b>	
Alkalinity, Bicarbonate (As CaCO3)	394		5.00	1	11/20/12 15:40	RDH	4805525
<b>ALKALINITY, CARBONATE (AS CaCO3)</b>				<b>MCL</b>	<b>M2320 B</b>	<b>Units: mg/L CaCO3</b>	
Alkalinity, Carbonate (As CaCO3)	ND		5.00	1	11/20/12 15:40	RDH	4805498
<b>ANIONS BY IC USING EPA 300.0</b>				<b>MCL</b>	<b>E300.0</b>	<b>Units: mg/L</b>	
Bromide	ND		25	100	11/20/12 15:46	SM	4806452
Chloride	2450		25	100	11/20/12 15:46	SM	4806452
Sulfate	ND		25	100	11/20/12 15:46	SM	4806452
<b>CHLORIDE BY SM4500</b>				<b>MCL</b>	<b>M4500-CL C</b>	<b>Units: mg/L</b>	
Chloride	2270		50	10	11/20/12 16:00	JMR	4806120
<b>EXTRACTABLE PETROLEUM HYDROCARBONS- RECAP</b>				<b>MCL</b>	<b>MA_VPH_EPH</b>	<b>Units: mg/L</b>	
C10-C12 Aliphatics	ND		0.15	1	11/21/12 15:39	E_G	4808415
C10-C12 Aromatics	ND		0.15	1	11/21/12 15:39	E_G	4808412
C12-C16 Aliphatics	ND		0.15	1	11/21/12 15:39	E_G	4808415
C12-C16 Aromatics	ND		0.15	1	11/21/12 15:39	E_G	4808412
C16-C21 Aromatics	ND		0.15	1	11/21/12 15:39	E_G	4808412
C16-C35 Aliphatics	ND		0.15	1	11/21/12 15:39	E_G	4808415
C21-C35 Aromatics	ND		0.15	1	11/21/12 15:39	E_G	4808412
Surr: 2-Fluorobiphenyl	77.3	%	40-140	1	11/21/12 15:39	E_G	4808412
Surr: Chloro-octadecane	108	%	40-140	1	11/21/12 15:39	E_G	4808415
Surr: o-Terphenyl	64.4	%	40-140	1	11/21/12 15:39	E_G	4808412

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3511	11/20/2012 7:42	DWB	1.00

<b>METALS BY METHOD 6020 (ICP/MS), TOTAL</b>				<b>MCL</b>	<b>SW6020</b>	<b>Units: mg/L</b>	
Calcium	173		2	10	11/20/12 16:07	RJD	4805796
Iron	5.71		1	10	11/20/12 16:07	RJD	4805796
Magnesium	63.1		0.5	10	11/20/12 16:07	RJD	4805796
Manganese	0.336		0.02	10	11/20/12 16:07	RJD	4805796
Potassium	9.37		0.75	10	11/20/12 16:07	RJD	4805796
Sodium	1410		1	10	11/20/12 16:07	RJD	4805796

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	11/19/2012 17:00	LAB	1.00

**Qualifiers:** ND/U - Not Detected at the Reporting Limit >MCL - Result Over Maximum Contamination Limit(MCL)  
 B - Analyte Detected In The Associated Method Blank D - Surrogate Recovery Unreportable due to Dilution  
 \* - Surrogate Recovery Outside Advisable QC Limits MI - Matrix Interference  
 J - Estimated value between MDL and PQL  
 E - Estimated Value exceeds calibration curve  
 TNTC - Too numerous to count

L0022557 Page 3  
 11/26/2012 1:46:11 PM

Client Sample ID:007-095-111912 Collected: 11/19/2012 7:45 Lab Sample ID: L0022557-01

Site: LDNR/BAYOU CORNE

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
<b>RECAP DIESEL RANGE ORGANICS BY METHOD 8015C</b>			<b>MCL</b>	<b>SW8015C</b>	<b>Units: mg/L</b>		
Diesel Range Organics (C10-C28)	ND		0.15	1	11/20/12 15:46	E_G	4806783
Surr: o-Terphenyl	101		% 47-125	1	11/20/12 15:46	E_G	4806783

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3511	11/20/2012 10:45	DGP	1.00

<b>RECAP GASOLINE RANGE ORGANICS</b>			<b>MCL</b>	<b>SW8015C</b>	<b>Units: mg/L</b>		
Gasoline Range Organics (C6-C10)	0.1		0.1	1	11/20/12 16:37	JHP	4807047
Surr: 1,4-Difluorobenzene	84.8		% 70-135	1	11/20/12 16:37	JHP	4807047
Surr: 4-Bromofluorobenzene	104		% 89-126	1	11/20/12 16:37	JHP	4807047

<b>RECAP OIL RANGE ORGANICS</b>			<b>MCL</b>	<b>SW8015C</b>	<b>Units: mg/L</b>		
Oil Range Organics (C28-C35)	ND		0.15	1	11/20/12 15:46	E_G	4806938
Surr: o-Terphenyl	101		% 47-125	1	11/20/12 15:46	E_G	4806938

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3511	11/20/2012 10:45	DGP	1.00

<b>RECAP VOLATILE PETROLEUM HYDROCARBONS BY MA-DE</b>			<b>MCL</b>	<b>MA_VPH_EPH</b>	<b>Units: mg/L</b>		
C6-C8 Aliphatics	0.044		0.03	1	11/20/12 21:04	RVS	4806826
C8-C10 Aliphatics	ND		0.06	1	11/20/12 21:04	RVS	4806826
C8-C10 Aromatics	ND		0.06	1	11/20/12 21:04	RVS	4806808
Surr: 2,5-Dibromotoluene	82.1		% 70-130	1	11/20/12 21:04	RVS	4806826
Surr: 2,5-Dibromotoluene	75.3		% 70-130	1	11/20/12 21:04	RVS	4806808

<b>SPECIFIC CONDUCTANCE @ 25 C - SM2510B</b>			<b>MCL</b>	<b>M2510 B</b>	<b>Units: umhos/cm</b>		
Specific Conductance	7570		10.0	1	11/21/12 8:30	SM	4807138

<b>TOTAL DISSOLVED SOLIDS BY SM2540 C</b>			<b>MCL</b>	<b>M2540 C</b>	<b>Units: mg/L</b>		
Total Dissolved Solids (Residue,filterable)	1310		10	1	11/20/12 14:00	SPM	4808374

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Client Sample ID:007-095-111912      Collected: 11/19/2012 7:45      Lab Sample ID: L0022557-01

Site: LDNR/BAYOU CORNE

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
<b>VOLATILE ORGANICS:METHOD 8260B:BTEX - WATER</b>				<b>MCL</b>	<b>SW8260B</b>	<b>Units: mg/L</b>	
Benzene	ND		0.005	1	11/20/12 13:32	CDP	4806033
Ethylbenzene	ND		0.005	1	11/20/12 13:32	CDP	4806033
Toluene	0.021		0.005	1	11/20/12 13:32	CDP	4806033
m,p-Xylene	ND		0.005	1	11/20/12 13:32	CDP	4806033
o-Xylene	ND		0.005	1	11/20/12 13:32	CDP	4806033
Xylenes, Total	ND		0.005	1	11/20/12 13:32	CDP	4806033
Surr: 1,2-Dichloroethane-d4	114		% 84-124	1	11/20/12 13:32	CDP	4806033
Surr: 4-Bromofluorobenzene	104		% 89-111	1	11/20/12 13:32	CDP	4806033
Surr: Toluene-d8	97.3		% 83-115	1	11/20/12 13:32	CDP	4806033

**Qualifiers:** ND/U - Not Detected at the Reporting Limit      >MCL - Result Over Maximum Contamination Limit(MCL)  
 B - Analyte Detected In The Associated Method Blank      D - Surrogate Recovery Unreportable due to Dilution  
 \* - Surrogate Recovery Outside Advisable QC Limits      MI - Matrix Interference  
 J - Estimated value between MDL and PQL  
 E - Estimated Value exceeds calibration curve  
 TNTC - Too numerous to count

L0022557 Page 5  
 11/26/2012 1:46:25 PM



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Client Sample ID:007-095-111912      Collected: 11/19/2012 11:05      Lab Sample ID: L0022557-02

Site: LDNR/BAYOU CORNE

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
<b>CHLORIDE BY SM4500</b>				<b>MCL</b>	<b>M4500-CL C</b>	<b>Units: mg/L</b>	
Chloride	2320		50	10	11/20/12 16:00	JMR	4806121
<b>SPECIFIC CONDUCTANCE @ 25 C - SM2510B</b>				<b>MCL</b>	<b>M2510 B</b>	<b>Units: umhos/cm</b>	
Specific Conductance	7650		10.0	1	11/21/12 8:30	SM	4807139
<b>TOTAL DISSOLVED SOLIDS BY SM2540 C</b>				<b>MCL</b>	<b>M2540 C</b>	<b>Units: mg/L</b>	
Total Dissolved Solids (Residue,filterable)	3860		10	1	11/20/12 14:00	SPM	4808375

**Qualifiers:** ND/U - Not Detected at the Reporting Limit      >MCL - Result Over Maximum Contamination Limit(MCL)  
 B - Analyte Detected In The Associated Method Blank      D - Surrogate Recovery Unreportable due to Dilution  
 \* - Surrogate Recovery Outside Advisable QC Limits      MI - Matrix Interference  
 J - Estimated value between MDL and PQL  
 E - Estimated Value exceeds calibration curve  
 TNTC - Too numerous to count

L0022557 Page 6  
 11/26/2012 1:46:30 PM

# *Quality Control Documentation*

**Quality Control Report**

**SHAW ENVIRONMENTAL & INFRASTRUCTURE**

147497 LDNR- BAYOU CORNE

**Analysis:** Extractable Petroleum Hydrocarbons- RECAP  
**Method:** MA\_VPH\_EPH

**WorkOrder:** L0022557  
**Lab Batch ID:** 116734

<b>Method Blank</b>		<b>Samples in Analytical Batch:</b>	
RunID: TPHA_121121B-4808414	Units: mg/L	<b>Lab Sample ID</b>	<b>Client Sample ID</b>
Analysis Date: 11/21/2012 15:04	Analyst: E_G	L0022557-01F	007-095-111912
Preparation Date: 11/20/2012 7:42	Prep By: DW Method: SW3511		

Analyte	Result	Rep Limit
C10-C12 Aliphatics	ND	0.15
C12-C16 Aliphatics	ND	0.15
C16-C35 Aliphatics	ND	0.15
Surr: Chloro-octadecane	108.2	40-140

**Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)**

RunID: TPHA\_121121B-4809139 Units: mg/L  
Analysis Date: 11/21/2012 16:37 Analyst: E\_G  
Preparation Date: 11/20/2012 7:42 Prep By: DW Method: SW3511

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
C10-C12 Aliphatics	0.500	0.468	93.5	0.500	0.461	92.1	1.5	25	40	140
C12-C16 Aliphatics	1.00	0.886	88.6	1.00	0.825	82.5	7.2	25	40	140
C16-C35 Aliphatics	4.50	3.67	81.5	4.50	3.75	83.3	2.1	25	40	140
Surr: Chloro-octadecane	0.400	0.369	92.3	0.400	0.360	90.0	2.5	30	40	140

**Qualifiers:** ND/U - Not Detected at the Reporting Limit  
B - Analyte Detected In The Associated Method Blank  
J - Estimated Value Between MDL And PQL  
E - Estimated Value exceeds calibration curve  
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.  
TNTC - Too numerous to count

MI - Matrix Interference  
D - Recovery Unreportable due to Dilution  
\* - Recovery Outside Advisable QC Limits

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

**Quality Control Report**

**SHAW ENVIRONMENTAL & INFRASTRUCTURE**

147497 LDNR- BAYOU CORNE

**Analysis:** Extractable Petroleum Hydrocarbons- RECAP  
**Method:** MA\_VPH\_EPH

**WorkOrder:** L0022557  
**Lab Batch ID:** 116734

**Method Blank**

**Samples in Analytical Batch:**

RunID: TPHA\_121121A-4808411 Units: mg/L  
Analysis Date: 11/21/2012 15:04 Analyst: E\_G  
Preparation Date: 11/20/2012 7:42 Prep By: DW Method: SW3511

**Lab Sample ID**      **Client Sample ID**  
L0022557-01F      007-095-111912

Analyte	Result	Rep Limit
C10-C12 Aromatics	ND	0.15
C12-C16 Aromatics	ND	0.15
C16-C21 Aromatics	ND	0.15
C21-C35 Aromatics	ND	0.15
Surr: 2-Fluorobiphenyl	66.7	40-140
Surr: o-Terphenyl	52.3	40-140

**Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)**

RunID: TPHA\_121121A-4809137 Units: mg/L  
Analysis Date: 11/21/2012 16:37 Analyst: E\_G  
Preparation Date: 11/20/2012 7:42 Prep By: DW Method: SW3511

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
C10-C12 Aromatics	0.500	0.290	58.0	0.500	0.289	57.7	0.6	25	40	140
C12-C16 Aromatics	1.00	0.594	59.4	1.00	0.587	58.7	1.2	25	40	140
C16-C21 Aromatics	2.50	1.39	55.6	2.50	1.39	55.5	0.3	25	40	140
C21-C35 Aromatics	4.00	2.29	57.2	4.00	2.18	54.6	4.7	25	40	140
Surr: 2-Fluorobiphenyl	2.00	1.21	60.7	2.00	1.24	61.9	2.0	30	40	140
Surr: o-Terphenyl	0.400	0.182	45.4	0.400	0.183	45.6	0.6	30	40	140

**Qualifiers:** ND/U - Not Detected at the Reporting Limit      MI - Matrix Interference  
B - Analyte Detected In The Associated Method Blank      D - Recovery Unreportable due to Dilution  
J - Estimated Value Between MDL And PQL      \* - Recovery Outside Advisable QC Limits  
E - Estimated Value exceeds calibration curve  
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.  
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.



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Quality Control Report

SHAW ENVIRONMENTAL & INFRASTRUCTURE

147497 LDNR- BAYOU CORNE

Analysis: RECAP Diesel Range Organics by Method 8015C  
 Method: SW8015C

WorkOrder: L0022557  
 Lab Batch ID: 116759

Method Blank

Samples in Analytical Batch:

RunID: TPHC\_121120A-4806780 Units: mg/L  
 Analysis Date: 11/20/2012 13:43 Analyst: E\_G  
 Preparation Date: 11/20/2012 10:45 Prep By: DGP Method: SW3511

Lab Sample ID: L0022557-01D  
 Client Sample ID: 007-095-111912

Analyte	Result	Rep Limit
Diesel Range Organics (C10-C28)	ND	0.15
Surr: o-Terphenyl	101.4	47-125

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: TPHC\_121120A-4806781 Units: mg/L  
 Analysis Date: 11/20/2012 14:08 Analyst: E\_G  
 Preparation Date: 11/20/2012 10:45 Prep By: DGP Method: SW3511

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Diesel Range Organics (C10-C28)	6.00	3.65	60.8	6.00	3.10	51.7	16.2	26	21	140
Surr: o-Terphenyl	0.100	0.0758	75.8	0.100	0.0629	62.9	18.6	30	47	125

**Qualifiers:** ND/U - Not Detected at the Reporting Limit  
 B - Analyte Detected In The Associated Method Blank  
 J - Estimated Value Between MDL And PQL  
 E - Estimated Value exceeds calibration curve  
 N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.  
 TNTC - Too numerous to count

MI - Matrix Interference  
 D - Recovery Unreportable due to Dilution  
 \* - Recovery Outside Advisable QC Limits

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

L0022557 Page 10

11/26/2012 1:47:05 PM



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Quality Control Report

SHAW ENVIRONMENTAL & INFRASTRUCTURE

147497 LDNR- BAYOU CORNE

Analysis: RECAP Oil Range Organics  
 Method: SW8015C

WorkOrder: L0022557  
 Lab Batch ID: 116760

Method Blank

Samples in Analytical Batch:

RunID: TPHC\_121120B-4806935 Units: mg/L  
 Analysis Date: 11/20/2012 13:43 Analyst: E\_G  
 Preparation Date: 11/20/2012 10:45 Prep By: DGP Method: SW3511

Lab Sample ID: L0022557-01D  
 Client Sample ID: 007-095-111912

Analyte	Result	Rep Limit
Oil Range Organics (C28-C35)	ND	0.15
Surr: o-Terphenyl	101.4	47-125

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: TPHC\_121120B-4806936 Units: mg/L  
 Analysis Date: 11/20/2012 14:57 Analyst: E\_G  
 Preparation Date: 11/20/2012 10:45 Prep By: DGP Method: SW3511

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Oil Range Organics (C28-C35)	2.79	1.25	44.6	2.79	1.26	45.3	1.4	29	40	149
Surr: o-Terphenyl	0.100	0.0543	54.3	0.100	0.0530	53.0	2.4	30	47	125

**Qualifiers:** ND/U - Not Detected at the Reporting Limit  
 B - Analyte Detected In The Associated Method Blank  
 J - Estimated Value Between MDL And PQL  
 E - Estimated Value exceeds calibration curve  
 N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.  
 TNTC - Too numerous to count

MI - Matrix Interference  
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L0022557 Page 11

11/26/2012 1:47:06 PM

**Quality Control Report**

**SHAW ENVIRONMENTAL & INFRASTRUCTURE**

147497 LDNR- BAYOU CORNE

**Analysis:** RECAP Volatile Petroleum Hydrocarbons by MA-DEP  
**Method:** MA\_VPH\_EPH

**WorkOrder:** L0022557  
**Lab Batch ID:** R299061

**Method Blank**

**Samples in Analytical Batch:**

RunID: HPEE\_121120A-4806807 Units: mg/L  
Analysis Date: 11/20/2012 20:33 Analyst: RVS

**Lab Sample ID**      **Client Sample ID**  
L0022557-01E      007-095-111912

Analyte	Result	Rep Limit
C8-C10 Aromatics	ND	0.060
Surr: 2,5-Dibromotoluene	77.7	70-130

**Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)**

RunID: HPEE\_121120A-4806805 Units: mg/L  
Analysis Date: 11/20/2012 19:30 Analyst: RVS

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
C8-C10 Aromatics	0.250	0.186	74.5	0.250	0.206	82.5	10.2	50	70	130
Surr: 2,5-Dibromotoluene	200	153	76.3	200	191	95.3	22.2	30	70	130

**Matrix Spike (MS) / Matrix Spike Duplicate (MSD)**

Sample Spiked: L0022582-01  
RunID: HPEE\_121120A-4806810 Units: mg/L  
Analysis Date: 11/20/2012 22:06 Analyst: RVS

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
C8-C10 Aromatics	ND	25	25.0	100	25	18.2	72.7	31.7	50	70	130
Surr: 2,5-Dibromotoluene	ND	20000	15500	77.6	20000	15200	75.9	2.22	30	70	130

**Qualifiers:** ND/U - Not Detected at the Reporting Limit      MI - Matrix Interference  
B - Analyte Detected In The Associated Method Blank      D - Recovery Unreportable due to Dilution  
J - Estimated Value Between MDL And PQL      \* - Recovery Outside Advisable QC Limits  
E - Estimated Value exceeds calibration curve  
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.  
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

**Quality Control Report**

**SHAW ENVIRONMENTAL & INFRASTRUCTURE**

147497 LDNR- BAYOU CORNE

**Analysis:** RECAP Volatile Petroleum Hydrocarbons by MA-DEP  
**Method:** MA\_VPH\_EPH

**WorkOrder:** L0022557  
**Lab Batch ID:** R299062

Method Blank

Samples in Analytical Batch:

RunID: HPEE\_121120B-4806825 Units: mg/L  
Analysis Date: 11/20/2012 20:33 Analyst: RVS

Lab Sample ID      Client Sample ID  
L0022557-01E      007-095-111912

Analyte	Result	Rep Limit
C6-C8 Aliphatics	ND	0.030
C8-C10 Aliphatics	ND	0.060
Surr: 2,5-Dibromotoluene	87.3	70-130

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: HPEE\_121120B-4806823 Units: mg/L  
Analysis Date: 11/20/2012 19:30 Analyst: RVS

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
C6-C8 Aliphatics	0.150	0.130	86.4	0.150	0.149	99.2	13.7	50	70	130
C8-C10 Aliphatics	0.250	0.228	91.1	0.250	0.275	110	18.8	50	70	130
Surr: 2,5-Dibromotoluene	200	171	85.7	200	210	105	20.3	30	70	130

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: L0022582-01  
RunID: HPEE\_121120B-4806828 Units: mg/L  
Analysis Date: 11/20/2012 22:06 Analyst: RVS

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
C6-C8 Aliphatics	ND	15	12.3	82.1	15	12.1	80.7	1.67	50	70	130
C8-C10 Aliphatics	ND	25	21.4	85.7	25	22.2	88.8	3.48	50	70	130
Surr: 2,5-Dibromotoluene	ND	20000	17500	87.6	20000	17000	85.2	2.77	30	70	130

**Qualifiers:** ND/U - Not Detected at the Reporting Limit      MI - Matrix Interference  
B - Analyte Detected In The Associated Method Blank      D - Recovery Unreportable due to Dilution  
J - Estimated Value Between MDL And PQL      \* - Recovery Outside Advisable QC Limits  
E - Estimated Value exceeds calibration curve  
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.  
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

L0022557 Page 13

11/26/2012 1:47:09 PM



ACCUTEST GULF COAST  
500 AMBASSADOR CAFFERY PARKWAY  
SCOTT, LA 70583  
(337) 237-4775

Quality Control Report

SHAW ENVIRONMENTAL & INFRASTRUCTURE

147497 LDNR- BAYOU CORNE

Analysis: RECAP Volatile Petroleum Hydrocarbons by MA-DEP  
Method: MA\_VPH\_EPH

WorkOrder: L0022557  
Lab Batch ID: R299062

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**Qualifiers:** ND/U - Not Detected at the Reporting Limit  
B - Analyte Detected In The Associated Method Blank  
J - Estimated Value Between MDL And PQL  
E - Estimated Value exceeds calibration curve  
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.  
TNTC - Too numerous to count

MI - Matrix Interference  
D - Recovery Unreportable due to Dilution  
\* - Recovery Outside Advisable QC Limits

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

L0022557 Page 14

11/26/2012 1:47:10 PM

**Quality Control Report**

**SHAW ENVIRONMENTAL & INFRASTRUCTURE**

147497 LDNR- BAYOU CORNE

**Analysis:** RECAP Gasoline Range Organics  
**Method:** SW8015C

**WorkOrder:** L0022557  
**Lab Batch ID:** R299071

Method Blank

RunID: HPAA\_121120A-4807045 Units: mg/L  
Analysis Date: 11/20/2012 15:36 Analyst: JHP

Samples in Analytical Batch:

Lab Sample ID      Client Sample ID  
L0022557-01C      007-095-111912

Analyte	Result	Rep Limit
Gasoline Range Organics (C6-C10)	ND	0.10
Surr: 1,4-Difluorobenzene	84.4	70-135
Surr: 4-Bromofluorobenzene	101.8	89-126

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: HPAA\_121120A-4807043 Units: mg/L  
Analysis Date: 11/20/2012 13:36 Analyst: JHP

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Gasoline Range Organics (C6-C10)	5.00	5.32	106	5.00	5.47	109	2.8	7	77	118
Surr: 1,4-Difluorobenzene	30.0	30.0	100	30.0	30.1	100	0.4	30	70	135
Surr: 4-Bromofluorobenzene	30.0	32.7	109	30.0	33.1	110	1.1	30	89	126

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: L0022542-05  
RunID: HPAA\_121120A-4807049 Units: mg/L  
Analysis Date: 11/20/2012 17:38 Analyst: JHP

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Gasoline Range Organics (C6-C10)	ND	500	529	105	500	540	107	1.96	7	77	118
Surr: 1,4-Difluorobenzene	ND	3000	2990	99.7	3000	3000	100	0.249	30	70	135
Surr: 4-Bromofluorobenzene	ND	3000	3330	111	3000	3300	110	0.956	30	89	126

**Qualifiers:** ND/U - Not Detected at the Reporting Limit      MI - Matrix Interference  
B - Analyte Detected In The Associated Method Blank      D - Recovery Unreportable due to Dilution  
J - Estimated Value Between MDL And PQL      \* - Recovery Outside Advisable QC Limits  
E - Estimated Value exceeds calibration curve  
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.  
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

L0022557 Page 15

11/26/2012 1:47:11 PM



ACCUTEST GULF COAST  
500 AMBASSADOR CAFFERY PARKWAY  
SCOTT, LA 70583  
(337) 237-4775

Quality Control Report

SHAW ENVIRONMENTAL & INFRASTRUCTURE

147497 LDNR- BAYOU CORNE

Analysis: RECAP Gasoline Range Organics  
Method: SW8015C

WorkOrder: L0022557  
Lab Batch ID: R299071

**Qualifiers:** ND/U - Not Detected at the Reporting Limit  
B - Analyte Detected In The Associated Method Blank  
J - Estimated Value Between MDL And PQL  
E - Estimated Value exceeds calibration curve  
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.  
TNTC - Too numerous to count

MI - Matrix Interference  
D - Recovery Unreportable due to Dilution  
\* - Recovery Outside Advisable QC Limits

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

L0022557 Page 16

11/26/2012 1:47:12 PM

Version 2.1 - Modified February 11, 2011

**Quality Control Report**

**SHAW ENVIRONMENTAL & INFRASTRUCTURE**

147497 LDNR- BAYOU CORNE

**Analysis:** Metals by Method 6020 (ICP/MS), Total  
**Method:** SW6020

**WorkOrder:** L0022557  
**Lab Batch ID:** 116750-I

**Method Blank**

**Samples in Analytical Batch:**

RunID: ICPMS\_121120A-4805786 Units: mg/L  
Analysis Date: 11/20/2012 15:30 Analyst: RJD  
Preparation Date: 11/19/2012 17:00 Prep By: LAB Method: SW3010A

**Lab Sample ID** L0022557-01B  
**Client Sample ID** 007-095-111912

Analyte	Result	Rep Limit
Calcium	ND	0.2
Iron	ND	0.1
Magnesium	ND	0.05
Manganese	ND	0.002
Potassium	ND	0.075
Sodium	ND	0.1

**Laboratory Control Sample (LCS)**

RunID: ICPMS\_121120A-4805787 Units: mg/L  
Analysis Date: 11/20/2012 15:33 Analyst: RJD  
Preparation Date: 11/19/2012 17:00 Prep By: LAB Method: SW3010A

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Calcium	5.000	4.680	93.60	80	120
Iron	5.000	4.930	98.61	80	120
Magnesium	5.000	4.786	95.72	80	120
Manganese	0.1000	0.09926	99.26	80	120
Potassium	5.000	5.130	102.6	80	120
Sodium	5.000	4.982	99.64	80	120

**Matrix Spike (MS) / Matrix Spike Duplicate (MSD)**

Sample Spiked: L0022494-15  
RunID: ICPMS\_121120A-4805790 Units: mg/L  
Analysis Date: 11/20/2012 15:43 Analyst: RJD  
Preparation Date: 11/19/2012 17:00 Prep By: LAB Method: SW3010A

**Qualifiers:** ND/U - Not Detected at the Reporting Limit MI - Matrix Interference  
B - Analyte Detected In The Associated Method Blank D - Recovery Unreportable due to Dilution  
J - Estimated Value Between MDL And PQL \* - Recovery Outside Advisable QC Limits  
E - Estimated Value exceeds calibration curve  
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.  
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

**Quality Control Report**

**SHAW ENVIRONMENTAL & INFRASTRUCTURE**

147497 LDNR- BAYOU CORNE

**Analysis:** Metals by Method 6020 (ICP/MS), Total  
**Method:** SW6020

**WorkOrder:** L0022557  
**Lab Batch ID:** 116750-I

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Calcium	63.17	5	70.65	N/C	5	67.24	N/C	N/C	20	75	125
Iron	1.539	5	6.032	89.88	5	6.355	96.33	5.207	20	75	125
Magnesium	24.35	5	29.75	N/C	5	28.69	N/C	N/C	20	75	125
Manganese	0.1777	0.1	0.2779	100.2	0.1	0.2760	98.25	0.6854	20	75	125
Potassium	5.901	5	11.42	110.4	5	11.08	103.6	3.005	20	75	125
Sodium	623.2	5	668.3	N/C	5	638.4	N/C	N/C	20	75	125

**Qualifiers:** ND/U - Not Detected at the Reporting Limit  
 B - Analyte Detected In The Associated Method Blank  
 J - Estimated Value Between MDL And PQL  
 E - Estimated Value exceeds calibration curve  
 N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.  
 TNTC - Too numerous to count

MI - Matrix Interference  
 D - Recovery Unreportable due to Dilution  
 \* - Recovery Outside Advisable QC Limits

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

L0022557 Page 18

11/26/2012 1:47:14 PM

**Quality Control Report**

**SHAW ENVIRONMENTAL & INFRASTRUCTURE**

147497 LDNR- BAYOU CORNE

**Analysis:** Volatile Organics:Method 8260B:BTEX - water  
**Method:** SW8260B

**WorkOrder:** L0022557  
**Lab Batch ID:** R299019

Method Blank

Samples in Analytical Batch:

RunID: GA\_121120A-4806029 Units: ug/L  
Analysis Date: 11/20/2012 11:34 Analyst: CDP

Lab Sample ID      Client Sample ID  
L0022557-01C      007-095-111912

Analyte	Result	Rep Limit
Benzene	ND	5.0
Ethylbenzene	ND	5.0
Toluene	ND	5.0
m,p-Xylene	ND	5.0
o-Xylene	ND	5.0
Xylenes, Total	ND	5.0
Surr: 1,2-Dichloroethane-d4	108.0	84-124
Surr: 4-Bromofluorobenzene	102.4	89-111
Surr: Toluene-d8	97.3	83-115

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: GA\_121120A-4806027 Units: ug/L  
Analysis Date: 11/20/2012 10:36 Analyst: CDP

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Benzene	20.0	19.5	97.3	20.0	19.7	98.7	1.4	10	82	119
Ethylbenzene	20.0	21.2	106	20.0	21.9	109	3.1	10	84	117
Toluene	20.0	20.8	104	20.0	21.0	105	1.0	10	80	121
m,p-Xylene	40.0	44.8	112	40.0	45.5	114	1.5	10	82	121
o-Xylene	20.0	23.2	116	20.0	23.3	116	0.5	10	84	119
Xylenes, Total	60	68	110	60	69	110	1.2	10	81	122
Surr: 1,2-Dichloroethane-d4	50.0	58.3	117	50.0	57.3	115	1.7	30	84	124
Surr: 4-Bromofluorobenzene	50.0	51.2	102	50.0	51.5	103	0.6	30	89	111
Surr: Toluene-d8	50.0	49.5	99.0	50.0	48.8	97.7	1.3	30	83	115

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

**Qualifiers:** ND/U - Not Detected at the Reporting Limit      MI - Matrix Interference  
 B - Analyte Detected In The Associated Method Blank      D - Recovery Unreportable due to Dilution  
 J - Estimated Value Between MDL And PQL      \* - Recovery Outside Advisable QC Limits  
 E - Estimated Value exceeds calibration curve  
 N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.  
 TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

**Quality Control Report**

**SHAW ENVIRONMENTAL & INFRASTRUCTURE**

147497 LDNR- BAYOU CORNE

**Analysis:** Volatile Organics:Method 8260B:BTEX - water  
**Method:** SW8260B

**WorkOrder:** L0022557  
**Lab Batch ID:** R299019

Sample Spiked: L0022450-02  
RunID: GA\_121120A-4806039 Units: ug/L  
Analysis Date: 11/20/2012 14:31 Analyst: CDP

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Benzene	16800	2000	17500	N/C	2000	17400	N/C	N/C	10	82	119
Ethylbenzene	169	2000	2120	97.7	2000	2100	96.4	1.22	10	84	117
Toluene	ND	2000	2030	101	2000	1980	99.2	2.14	10	80	121
m,p-Xylene	1760	4000	5630	96.7	4000	5640	97.0	0.223	10	82	121
o-Xylene	ND	2000	2150	107	2000	2090	104	2.82	10	84	119
Xylenes, Total	1760	6000	7780	100	6000	7730	99.4	0.607	10	81	122
Surr: 1,2-Dichloroethane-d4	ND	5000	5900	118	5000	5890	118	0.178	30	84	124
Surr: 4-Bromofluorobenzene	ND	5000	5110	102	5000	5080	102	0.565	30	89	111
Surr: Toluene-d8	ND	5000	4870	97.3	5000	4890	97.9	0.571	30	83	115

**Qualifiers:** ND/U - Not Detected at the Reporting Limit  
B - Analyte Detected In The Associated Method Blank  
J - Estimated Value Between MDL And PQL  
E - Estimated Value exceeds calibration curve  
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.  
TNTC - Too numerous to count

MI - Matrix Interference  
D - Recovery Unreportable due to Dilution  
\* - Recovery Outside Advisable QC Limits

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

L0022557 Page 20

11/26/2012 1:47:16 PM

Quality Control Report

SHAW ENVIRONMENTAL & INFRASTRUCTURE

147497 LDNR- BAYOU CORNE

Analysis: Alkalinity, Carbonate (as CaCO3)  
 Method: M2320 B

WorkOrder: L0022557  
 Lab Batch ID: R299006

Method Blank

Samples in Analytical Batch:

RunID: WET\_121120L-4805495 Units: mg/L CaCO3  
 Analysis Date: 11/20/2012 15:40 Analyst: RDH

Lab Sample ID: L0022557-01A  
 Client Sample ID: 007-095-111912

Analyte	Result	Rep Limit
Alkalinity, Carbonate (As CaCO3)	ND	5.0

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: WET\_121120L-4805496 Units: mg/L CaCO3  
 Analysis Date: 11/20/2012 15:40 Analyst: RDH

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Alkalinity, Carbonate (As CaCO3)	200.0	188.1	94.05	200.0	188.1	94.05	0.0	20	90	110

Sample Duplicate

Original Sample: L0022557-01  
 RunID: WET\_121120L-4805498 Units: mg/L CaCO3  
 Analysis Date: 11/20/2012 15:40 Analyst: RDH

Analyte	Sample Result	DUP Result	RPD	RPD Limit
Alkalinity, Carbonate (As CaCO3)	ND	ND	0	20

**Qualifiers:** ND/U - Not Detected at the Reporting Limit  
 B - Analyte Detected In The Associated Method Blank  
 J - Estimated Value Between MDL And PQL  
 E - Estimated Value exceeds calibration curve  
 N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.  
 TNTC - Too numerous to count

MI - Matrix Interference  
 D - Recovery Unreportable due to Dilution  
 \* - Recovery Outside Advisable QC Limits

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

Quality Control Report

SHAW ENVIRONMENTAL & INFRASTRUCTURE

147497 LDNR- BAYOU CORNE

Analysis: Alkalinity, Bicarbonate (as CaCO<sub>3</sub>)  
 Method: M2320 B

WorkOrder: L0022557  
 Lab Batch ID: R299007

Method Blank

Samples in Analytical Batch:

RunID: WET\_121120M-4805522 Units: mg/L CaCO<sub>3</sub>  
 Analysis Date: 11/20/2012 15:40 Analyst: RDH

Lab Sample ID      Client Sample ID  
 L0022557-01A      007-095-111912

Analyte	Result	Rep Limit
Alkalinity, Bicarbonate (As CaCO <sub>3</sub> )	ND	5.0

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: WET\_121120M-4805523 Units: mg/L CaCO<sub>3</sub>  
 Analysis Date: 11/20/2012 15:40 Analyst: RDH

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Alkalinity, Bicarbonate (As CaCO <sub>3</sub> )	200.0	188.1	94.05	200.0	188.1	94.05	0.0	20	90	110

Sample Duplicate

Original Sample: L0022557-01  
 RunID: WET\_121120M-4805525 Units: mg/L CaCO<sub>3</sub>  
 Analysis Date: 11/20/2012 15:40 Analyst: RDH

Analyte	Sample Result	DUP Result	RPD	RPD Limit
Alkalinity, Bicarbonate (As CaCO <sub>3</sub> )	394	386.1	2.03	20

**Qualifiers:** ND/U - Not Detected at the Reporting Limit      MI - Matrix Interference  
 B - Analyte Detected In The Associated Method Blank      D - Recovery Unreportable due to Dilution  
 J - Estimated Value Between MDL And PQL      \* - Recovery Outside Advisable QC Limits  
 E - Estimated Value exceeds calibration curve  
 N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.  
 TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

**Quality Control Report**

**SHAW ENVIRONMENTAL & INFRASTRUCTURE**

147497 LDNR- BAYOU CORNE

**Analysis:** Chloride by SM4500  
**Method:** M4500-CL C

**WorkOrder:** L0022557  
**Lab Batch ID:** R299025

Method Blank

RunID: WET\_1211200-4806112 Units: mg/L  
Analysis Date: 11/20/2012 16:00 Analyst: JMR

Samples in Analytical Batch:

<u>Lab Sample ID</u>	<u>Client Sample ID</u>
L0022557-01A	007-095-111912
L0022557-02A	007-095-111912

Analyte	Result	Rep Limit
Chloride	ND	5.0

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: WET\_1211200-4806113 Units: mg/L  
Analysis Date: 11/20/2012 16:00 Analyst: JMR

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Chloride	150.0	149.0	99.33	150.0	147.4	98.28	1.1	10	90	110

Sample Duplicate

Original Sample: L0022582-01  
RunID: WET\_1211200-4806115 Units: mg/L  
Analysis Date: 11/20/2012 16:00 Analyst: JMR

Analyte	Sample Result	DUP Result	RPD	RPD Limit
Chloride	2380	2352	1.32	20

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: L0022582-01  
RunID: WET\_1211200-4806117 Units: mg/L  
Analysis Date: 11/20/2012 16:00 Analyst: JMR

**Qualifiers:** ND/U - Not Detected at the Reporting Limit  
B - Analyte Detected In The Associated Method Blank  
J - Estimated Value Between MDL And PQL  
E - Estimated Value exceeds calibration curve  
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.  
TNTC - Too numerous to count

MI - Matrix Interference  
D - Recovery Unreportable due to Dilution  
\* - Recovery Outside Advisable QC Limits

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.



ACCUTEST GULF COAST  
 500 AMBASSADOR CAFFERY PARKWAY  
 SCOTT, LA 70583  
 (337) 237-4775

Quality Control Report

SHAW ENVIRONMENTAL & INFRASTRUCTURE

147497 LDNR- BAYOU CORNE

Analysis: Chloride by SM4500  
 Method: M4500-CL C

WorkOrder: L0022557  
 Lab Batch ID: R299025

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Chloride	2384	3000	5301	97.24	3000	5364	99.33	1.176	20	80	120

**Qualifiers:** ND/U - Not Detected at the Reporting Limit  
 B - Analyte Detected In The Associated Method Blank  
 J - Estimated Value Between MDL And PQL  
 E - Estimated Value exceeds calibration curve  
 N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.  
 TNTC - Too numerous to count

MI - Matrix Interference  
 D - Recovery Unreportable due to Dilution  
 \* - Recovery Outside Advisable QC Limits

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L0022557 Page 24

11/26/2012 1:47:20 PM

Version 2.1 - Modified February 11, 2011



ACCUTEST GULF COAST  
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Quality Control Report

SHAW ENVIRONMENTAL & INFRASTRUCTURE

147497 LDNR- BAYOU CORNE

Analysis: Anions by IC using EPA 300.0  
 Method: E300.0

WorkOrder: L0022557  
 Lab Batch ID: R299051

Method Blank

Samples in Analytical Batch:

RunID: IC\_121120A-4806446 Units: mg/L  
 Analysis Date: 11/20/2012 14:30 Analyst: SM

Lab Sample ID      Client Sample ID  
 L0022557-01A      007-095-111912

Analyte	Result	Rep Limit
Bromide	ND	0.25
Chloride	ND	0.25
Sulfate	ND	0.25

Laboratory Control Sample (LCS)

RunID: IC\_121120A-4806447 Units: mg/L  
 Analysis Date: 11/20/2012 14:42 Analyst: SM

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Bromide	12.50	13.26	106.1	90	110
Chloride	12.50	12.89	103.1	90	110
Sulfate	12.50	12.84	102.7	90	110

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: L0022259-01  
 RunID: IC\_121120A-4806449 Units: mg/L  
 Analysis Date: 11/20/2012 15:08 Analyst: SM

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Bromide	ND	250	266.5	106.6	250	267.3	106.9	0.2881	15	80	120
Chloride	180.0	250	434.2	101.7	250	433.8	101.5	0.07742	15	80	120
Sulfate	119.4	250	380.8	104.6	250	380.1	104.3	0.2029	15	80	120

**Qualifiers:** ND/U - Not Detected at the Reporting Limit      MI - Matrix Interference  
 B - Analyte Detected In The Associated Method Blank      D - Recovery Unreportable due to Dilution  
 J - Estimated Value Between MDL And PQL      \* - Recovery Outside Advisable QC Limits  
 E - Estimated Value exceeds calibration curve  
 N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.  
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L0022557 Page 25

11/26/2012 1:47:22 PM



ACCUTEST GULF COAST  
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Quality Control Report

SHAW ENVIRONMENTAL & INFRASTRUCTURE

147497 LDNR- BAYOU CORNE

Analysis: Specific Conductance @ 25 C - SM2510B  
 Method: M2510 B

WorkOrder: L0022557  
 Lab Batch ID: R299075

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
L0022557-01G	007-095-111912
L0022557-02A	007-095-111912

Laboratory Control Sample (LCS)

RunID: WET\_121121B-4807155 Units: umhos/cm  
 Analysis Date: 11/21/2012 8:30 Analyst: SM

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Specific Conductance	1409	1399	99.29	90	110

Sample Duplicate

Original Sample: L0022542-02  
 RunID: WET\_121121B-4807142 Units: umhos/cm  
 Analysis Date: 11/21/2012 8:30 Analyst: SM

Analyte	Sample Result	DUP Result	RPD	RPD Limit
Specific Conductance	16000	16020	0.250	20

Sample Duplicate

Original Sample: L0022542-12  
 RunID: WET\_121121B-4807153 Units: umhos/cm  
 Analysis Date: 11/21/2012 8:30 Analyst: SM

Analyte	Sample Result	DUP Result	RPD	RPD Limit
Specific Conductance	184	184	0.271	20

**Qualifiers:** ND/U - Not Detected at the Reporting Limit MI - Matrix Interference  
 B - Analyte Detected In The Associated Method Blank D - Recovery Unreportable due to Dilution  
 J - Estimated Value Between MDL And PQL \* - Recovery Outside Advisable QC Limits  
 E - Estimated Value exceeds calibration curve  
 N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.  
 TNTC - Too numerous to count

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Quality Control Report

SHAW ENVIRONMENTAL & INFRASTRUCTURE

147497 LDNR- BAYOU CORNE

Analysis: Specific Conductance @ 25 C - SM2510B  
Method: M2510 B

WorkOrder: L0022557  
Lab Batch ID: R299075

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**Qualifiers:** ND/U - Not Detected at the Reporting Limit  
B - Analyte Detected In The Associated Method Blank  
J - Estimated Value Between MDL And PQL  
E - Estimated Value exceeds calibration curve  
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.  
TNTC - Too numerous to count

MI - Matrix Interference  
D - Recovery Unreportable due to Dilution  
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L0022557 Page 27

11/26/2012 1:47:23 PM



ACCUTEST GULF COAST  
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Quality Control Report

SHAW ENVIRONMENTAL & INFRASTRUCTURE

147497 LDNR- BAYOU CORNE

Analysis: Total Dissolved Solids by SM2540 C  
 Method: M2540 C

WorkOrder: L0022557  
 Lab Batch ID: R299114

Method Blank

Samples in Analytical Batch:

RunID: WET\_121120T-4808368 Units: mg/L  
 Analysis Date: 11/20/2012 14:00 Analyst: SPM

Lab Sample ID	Client Sample ID
L0022557-01G	007-095-111912
L0022557-02A	007-095-111912

Analyte	Result	Rep Limit
Total Dissolved Solids (Residue,filterable)	ND	10

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: WET\_121120T-4808369 Units: mg/L  
 Analysis Date: 11/20/2012 14:00 Analyst: SPM

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Total Dissolved Solids (Residue,filterable)	200.0	193.0	96.50	200.0	197.0	98.50	2.1	20	90	110

**Qualifiers:** ND/U - Not Detected at the Reporting Limit  
 B - Analyte Detected In The Associated Method Blank  
 J - Estimated Value Between MDL And PQL  
 E - Estimated Value exceeds calibration curve  
 N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.  
 TNTC - Too numerous to count

MI - Matrix Interference  
 D - Recovery Unreportable due to Dilution  
 \* - Recovery Outside Advisable QC Limits

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L0022557 Page 28

11/26/2012 1:47:25 PM

*Sample Receipt Checklist  
And  
Chain of Custody*



**ACCUTEST GULF COAST**  
 500 AMBASSADOR CAFFERY PARKWAY  
 SCOTT, LA 70583  
 (337) 237-4775

**Sample Receipt Checklist**

Workorder:	<b>L0022557</b>	Received By:	<b>GAS</b>
Date and Time Received:	<b>11/19/2012 4:45:00 PM</b>	Carrier name:	<b>Accutest-Delivery</b>
Temperature:	<b>4.5°C</b>	Chilled by:	<b>Water Ice</b>

- |   |   |                             |   |
|---|---|-----------------------------|---|
| <b>1. Shipping container/cooler in good condition?</b>              | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/>            |
| <b>2. Custody seals intact on shipping container/cooler?</b>        | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| <b>3. Custody seals intact on sample bottles?</b>                   | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| <b>4. Chain of custody present?</b>                                 | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| <b>5. Chain of custody signed when relinquished and received?</b>   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| <b>6. Chain of custody agrees with sample labels?</b>               | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| <b>7. Samples in proper container/bottle?</b>                       | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| <b>8. Sample containers intact?</b>                                 | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| <b>9. Sufficient sample volume for indicated test?</b>              | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| <b>10. All samples received within holding time?</b>                | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| <b>11. Container/Temp Blank temperature in compliance?</b>          | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| <b>12. Water - VOA vials have zero headspace?</b>                   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | VOA Vials Not Present <input type="checkbox"/>  |
| <b>13. Water - Preservation checked upon receipt (except VOA*)?</b> | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Applicable <input type="checkbox"/>         |

\*VOA Preservation Checked After Sample Analysis

Accutest Representative:

Contact Date & Time:

Client Name Contacted:

Non Conformance Issues:

Client Instructions:

