PBW

PASTOR, BEHLING & WHEELER, LLC
ENGINEERING & ENVIRONMENTAL CONSULTING SERVICES

11231 Richmond Avenue
Suite D104
Houston, TX 77082
Tel (832) 916-3690

September 13, 2017
Project No. 4012

Mr. Gary Miller
USEPA Region 6
1445 Ross Avenue, Suite 1200
Mail Code: 6SF
Dallas, Texas 75202

SUBJECT: POST-HARVEY SAMPLING EVENT
GULFCO MARINE MAINTENANCE SUPERFUND SITE

Dear Mr. Miller:

Pastor, Behling & Wheeler, LLC (PBW), on behalf of the Gulfco Restoration Group, is providing the analytical data for the sampling event conducted on September 11, 2017 at the Gulfco Marine Maintenance Superfund Site (the "Site") in Freeport, Texas. The objective of the sampling event was to provide data on Site conditions after Hurricane Harvey as requested by U. S. Environmental Protection Agency (EPA). This letter provides a summary of the sampling protocols and the analytical data.

Sampling Protocol

Two groundwater and two sediment samples were collected at the Site on September 11, 2017 under EPA oversight. Figure 1 shows the sample locations.

Groundwater samples were collected from ND4MW03 and NE4MW33 using a peristaltic pump. Samples were collected from the first draw water pumped out of the well and placed in three acid preserved volatile organic analysis (VOA) vials.

Sediment samples were collected at the two locations shown on Figure 1 using decontaminated hand trowels. The samples were identified using the nearest monitoring well. Samples were collected using SW-846 Method 5035 protocols; approximately 5 grams of sediment were placed in each VOA vial. Two vials were unpreserved and one vial was preserved with methanol. Extra sample volume was collected for moisture determination. Photographs 1 and 2 show the sediment sample locations.

Samples were placed on ice for transportation to the analytical laboratory. Samples were delivered to the analytical laboratory, SGS Accutest (Houston, Texas), the evening of September 11, 2017 under chain-of-custody. Samples were accompanied by a laboratory-supplied trip blank.

Analytical Data

Samples were analyzed for the Site-specific chemicals of interest (COIs) listed in the Record of Decision (September 2011) as shown on Table 1.

Table 2 compares the Post-Harvey groundwater data to historical data. 1,2-Dichloroethane was detected in ND4MW03 at a concentration of 0.0013 milligram per liter (mg/L). This concentration is less than 20% of the 2015 concentration of 0.007 mg/L. In addition, this concentration is over two orders of magnitude lower than the Class 3 groundwater standard of 0.50 mg/L.

No COIs were detected in groundwater collected from NE4MW33.

Table 3 summarizes the sediment data. No COIs were detected in the sediment samples.

Please do not hesitate to contact me at (832) 916-3691 if you have any questions or comments on this letter report.

Sincerely,
PASTOR, BEHLING & WHEELER, LLC

Brenda Basile

Brenda P. Basile, Ph.D.
Senior Consulting Scientist

cc: Gulfco Restoration Group

Attachments: Figure 1 – Sample Location Map
Photographs 1 and 2: Collection of Sediment Samples
Table 1 Chemicals of Interest
Table 2 Groundwater Data Summary for ND4MW03 and NE4MW33
Table 3 Data Summary for ND2MW01 Sediment and NE1MW04 Sediment
Analytical Laboratory Report

Mr. Gary Miller
September 13, 2017

ATTACHMENTS

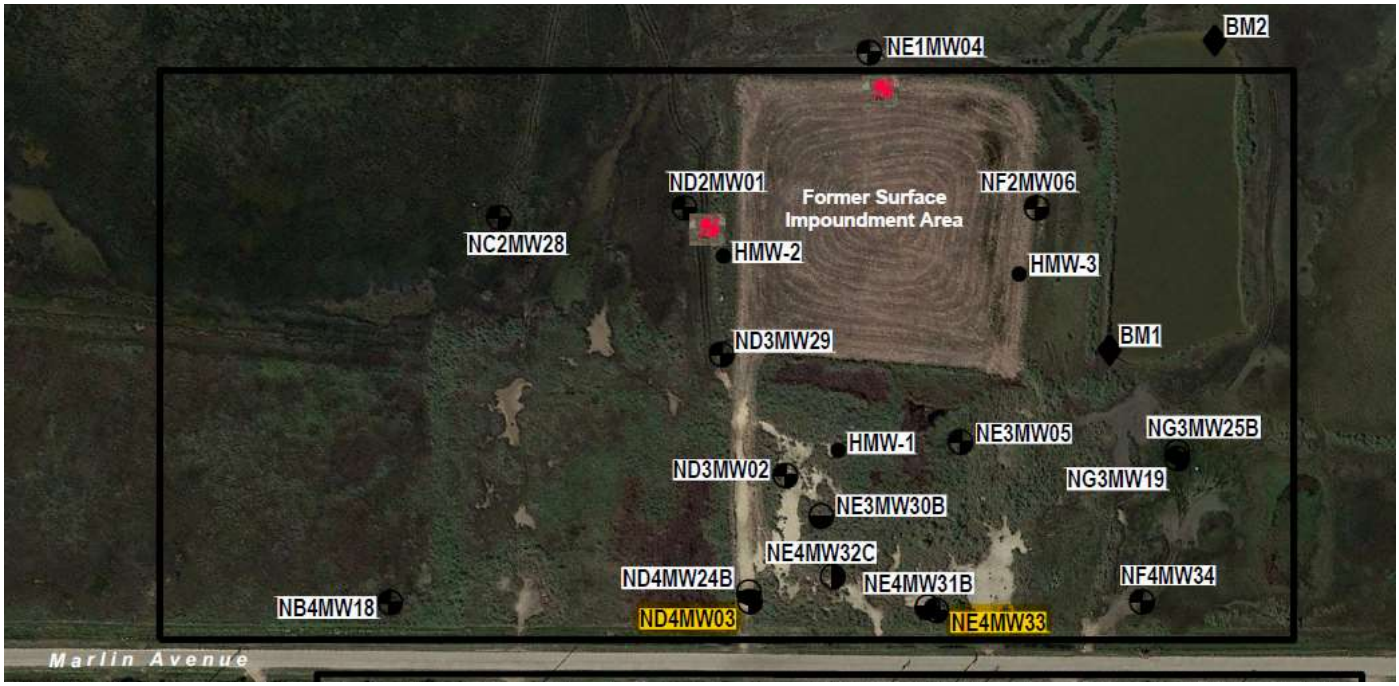

Figure 1 Post-Harvey Sample Locations
(Monitor wells ND4MW03 and NE4MW33)
(Sediment samples ND2MW01 and NE1MW04 marked in red)

PBW

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Gulfco Restoration Group	Gulfco Marine Maintenance Superfund Site	4012

Photo No.	Date:
1	9/11/17

Description:

Collecting sediment sample with a hand trowel at toe of cap near monitoring well ND2MW01. Sample field identification is ND2MW01 Sediment.

Photo No.	Date:
2	9/11/17

Description:

Collecting sediment sample with a hand trowel at toe of cap near monitoring well NE1MW04. Sample field identification is NE1MW04 Sediment

Table 1 - Chemicals of Interest
Gulfco Marine Maintenance Superfund Site
Freeport, Brazoria County, Texas

Parameter	Analyte	Method	Commercial / Industrial $^{GW}GW_{Class\ 3}$ (mg/L)	Saltwater Chronic Criteria (mg/L)	Method Quantitation Limit (mg/L)
Volatile Organic Compounds	1,1,1-Trichloroethane	SW 8260B	2.0E+01	7.10E+00	1.0E-03
	1,1-Dichloroethene		7.0E-01	2.50E+01	1.0E-03
	1,2,3-Trichloropropane		6.8E-03	No Value	1.0E-03
	1,2-Dichloroethane		5.0E-01	1.15E+01	1.0E-03
	Benzene		5.0E-01	1.09E+00	1.0E-03
	cis-1,2-Dichloroethene		7.0E+00	1.12E+00	1.0E-03
	Methylene chloride		5.0E-01	1.09E+01	1.0E-03
	Tetrachloroethene		5.0E-01	5.00E-01	1.0E-03
	Trichloroethene		5.0E-01	1.60E+00	1.0E-03
	Vinyl chloride		2.0E-01	No Value	1.0E-03

mg/L – milligram per liter

SW – EPA Test Methods for Evaluating Solid Waste - Physical/Chemical Methods", EPA Publication SW-846, 3rd Edition

$^{GW}GW_{Class\ 3}$ - Protective Concentration Level; Texas Risk Reduction Program, March 2017.
http://www.tceq.state.tx.us/remediation/trrp/trrppcls.html.

Saltwater Chronic Criteria - Aquatic Life Risk-Based Exposure Limits. January 2017.
http://www.tceq.state.tx.us/remediation/trrp/trrppcls.html

Table 2 - Groundwater Data Summary for ND4MW03 and NE4MW33
Gulfco Marine Maintenance Superfund Site
Freeport, Brazoria County, Texas

COI	CAS RN	Commercial / Industrial $^{GW}GW_{Class\ 3}$	ND4MW03 8/2/2006	ND4MW03 11/8/2007	ND4MW03 6/17/2008	ND4MW03 **6/9/2015**	ND4MW03 **9/11/2017**	NE4MW33 **2/4/2016**	NE4MW33 **9/11/2017**
1,1,1-Trichloroethane	71-55-6	20	0.000173 U	0.000773 U	0.000155 U	0.00043 U	0.00030 U	0.00052 U	0.00030 U
1,1-Dichloroethene	75-35-4	0.70	0.000229 U	0.00113 U	0.000226 U	0.00045 U	0.00030 U	0.00063 U	0.00030 U
1,2,3-Trichloropropane	96-18-4	0.0068	0.000462 UJ	0.000757 U	0.000151 U	0.00046 U	0.00038 U	0.00061 U	0.00038 U
1,2-Dichloroethane	107-06-2	0.50	**0.156**	**0.089**	**0.0841**	**0.007**	**0.0013**	0.00061 U	0.00030 U
Benzene	71-43-2	0.50	0.000225 U	0.000921 U	0.000184 U	0.00034 U	0.00030 U	0.00047 U	0.00030 U
cis-1,2-Dichloroethene	156-59-2	7.0	0.000163 U	0.000768 U	0.000154 U	0.0004 U	0.00030 U	0.00052 U	0.00030 U
Methylene chloride	75-09-2	0.50	0.00598 U	0.033 U	0.000104 U	0.0016 U	0.0013 U	0.00087 U	0.0013 U
Tetrachloroethene	127-18-4	0.50	0.000227 U	0.000403 U	0.000081 U	0.00046 U	0.00030 U	0.00038 U	0.00030 U
Trichloroethene	79-01-6	0.50	0.00027 U	0.000614 U	0.000123 U	0.00049 U	0.00030 U	**0.0007**	0.00030 U
Vinyl chloride	75-01-4	0.20	0.000089 U	0.000817 U	0.000163 U	0.00079 U	0.00030 U	0.00057 U	0.00030 U

Bold - Analyte detected above the reported sample detection limit.

mg/L – milligram per liter

J - The result is an estimated quantity. The associated numerical value is the approximately concentration or sample detection limit in the sample.

U - The analyte was analyzed for but was not detected above the reported sample detection limit.

$^{GW}GW_{Class\ 3}$ - Protective Concentration Level; Texas Risk Reduction Program, March 2017. http://www.tceq.state.tx.us/remediation/trrp/trrppcls.html.

Table 3 - Data Summary for ND2MW01 Sediment and NE1MW04 Sediment
Gulfco Marine Maintenance Superfund Site
Freeport, Brazoria County, Texas

COI	CAS RN	ND2MW01 9/11/2017	NE1MW04 9/11/2017
1,1,1-Trichloroethane	71-55-6	0.0013 U	0.0017 U
1,1-Dichloroethene	75-35-4	0.0012 U	0.0016 U
1,2,3-Trichloropropane	96-18-4	0.0025 U	0.0031 U
1,2-Dichloroethane	107-06-2	0.0018 U	0.0023 U
Benzene	71-43-2	0.0014 U	0.0017 U
cis-1,2-Dichloroethene	156-59-2	0.0015 U	0.0020 U
Methylene chloride	75-09-2	0.0025 U	0.0032 U
Tetrachloroethene	127-18-4	0.0014 U	0.0017 U
Trichloroethene	79-01-6	0.0014 U	0.0017 U
Vinyl chloride	75-01-4	0.0018 U	0.0023 U

Bold - Analyte detected above the reported sample detection limit.

mg/Kg – milligram per kilogram; all data in mg/kg

J - The result is an estimated quantity. The associated numerical value is the approximately concentration or sample detection limit in the sample.

U - The analyte was analyzed for but was not detected above the reported sample detection limit.

$^{GW}GW_{Class\ 3}$ - Protective Concentration Level; Texas

Analytical Report

Data Usability Summary

To:	Eric Pastor	**Date:**	September 15, 2017
From:	Brenda Basile	**File:**	Gulfco Post-Harvey Data DUS.doc
RE:	Usability of Post-Hurricane Harvey Data	**cc:**	

PBW reviewed one data package from SGS Accutest Laboratories (Houston, Texas) reporting the analyses of sediment and groundwater samples collected September 11, 2017 at the Gulfco Marine Maintenance Superfund Site (Gulfco) in Freeport, Brazoria County, Texas. Data were reviewed using the guidance in the Contract Laboratory Program (CLP) National Functional Guidelines (NFG) Guidelines for Superfund Organic Methods Data Review (August 2014) and the acceptance criteria in the Gulfco Groundwater Sampling and Analysis Plan (SAP) (June 3, 2015). The purpose of these laboratory analyses was to provide data on Site conditions after Hurricane Harvey.

Introduction

Sediment, groundwater and associated quality control samples were analyzed for the volatile organic compounds listed in the Record of Decision (September 2011). Groundwater samples were analyzed using SW-846 8260B - Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS). SGS Accutest is accredited under Texas certificate T104704220-17-27 for the matrices, methods, and analytes reported for this sampling event.

Table 1 lists the sample identifications cross-referenced to laboratory identifications and the analyses performed for each sample. No data were qualified due to quality control exceedances.

Data Review Results

Quality control and method deviations are documented by the laboratory on the laboratory review checklists (LRCs) and exception reports.

PRESERVATION AND HOLDING TIMES

Samples were received by the laboratory at a temperature less than 6°C. Samples were analyzed within the holding times specified in the method.

BLANKS

No analytes were detected in field and laboratory blanks.

SURROGATE RECOVERIES AND INTERNAL STANDARD AREAS

Surrogate recoveries were within the CLP NFG acceptance criterion. According to the LRCs, internal standard areas were acceptable.

LABORATORY CONTROL SAMPLES

Laboratory control sample (LCS) were within the SAP acceptance criteria.

MATRIX SPIKE/MATRIX SPIKE DUPLICATES

Batch, or non-project, matrix spike/matrix spike duplicate (MS/MSD) data were not evaluated. Project samples were not spiked.

FIELD PRECISION

Field duplicate samples were not collected.

SUMMARY

Analytical data are useable for the purposes of determining COC concentrations in sediment and groundwater samples collected at the Site.

Table 1

Cross-Reference Field Sample Identifications and Laboratory Identifications

Field Identification	Laboratory Identification	8260 VOCs	Comment
NE4MW33-170911	TD8826-01	X	
ND4MW01-170911	TD8826-02	X	
ND2MW01-SED-170911	TD8826-03	X	
NE1MW04-SED 170911	TD8826-04	X	
TB 170911	TD8826-05	X	Trip Blank

e-Hardcopy 2.0
Automated Report

Technical Report for

Pastor,Behling & Wheeler, LLC

Gulfco SF

SGS Accutest Job Number: TD8826

Sampling Date: 09/11/17

Report to:

Pastor,Behling & Wheeler, LLC
11231 Richmond Ave Suite D104
Houston, TX 77082
Brenda.Basile@pbwllc.com

ATTN: Brenda Basile

Total number of pages in report: 32

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Richard Rodriguez
Laboratory Director

Client Service contact: Sylvia Garza 713-271-4700

Certifications: TX (T104704220-17-27) AR (14-016-0) AZ (AZ0769) FL (E87628) KS (E-10366) LA (85695/04004) NJ (TX010) OK (2017-002) VA (8999)

Sections: 1 2 3 4 5 6

Table of Contents

Sample Summary

Pastor, Behling & Wheeler, LLC

Job No: TD8826

Gulfco SF

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
TD8826-1	09/11/17	16:35		09/11/17	AQ	Ground Water	NE4MW33 170911
TD8826-2	09/11/17	16:45		09/11/17	AQ	Ground Water	ND4MW03 170911
TD8826-3	09/11/17	17:00		09/11/17	SO	Sediment	ND2MW01-SED 170911
TD8826-4	09/11/17	17:10		09/11/17	SO	Sediment	NE1MW04-SED 170911
TD8826-5	09/11/17	17:15		09/11/17	AQ	Trip Blank Water	TB 170911

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Pastor,Behling & Wheeler, LLC **Job No** TD8826

Site: Gulfco SF **Report Date** 9/13/2017 2:19:29 PM

4 Samples were collected on 09/11/2017 and received intact at Accutest on 09/11/2017 and properly preserved in 1 cooler at 1.7 Deg C. The samples received an Accutest job number of TD8826. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SW846 8260C

Matrix: AQ **Batch ID:** VG2450

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) TD8617-1MS, TD8617-1MSD were used as the QC samples indicated.

Matrix: SO **Batch ID:** VY4556

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) TD8821-1MS, TD8821-1MSD were used as the QC samples indicated.

Wet Chemistry By Method SM 2540 G

Matrix: SO **Batch ID:** GN84469

- Sample(s) TD8815-1DUP were used as the QC samples for Solids, Percent.

SGS Accutest Laboratories Gulf Coast (ALGC) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALGC and as stated on the COC. ALGC certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the ALGC Quality Manual except as noted above. This report is to be used in its entirety. ALGC is not responsible for any assumptions of data quality if partial data packages are used.

Summary of Hits

Job Number: TD8826
Account: Pastor,Behling & Wheeler, LLC
Project: Gulfco SF
Collected: 09/11/17

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	MQL	SDL	Units	Method
TD8826-1	**NE4MW33 170911**					
No hits reported in this sample.						
TD8826-2	**ND4MW03 170911**					
1,2-Dichloroethane		0.0013	0.0010	0.00030	mg/l	SW846 8260C
TD8826-3	**ND2MW01-SED 170911**					
No hits reported in this sample.						
TD8826-4	**NE1MW04-SED 170911**					
No hits reported in this sample.						
TD8826-5	**TB 170911**					
No hits reported in this sample.						

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	NE4MW33 170911		
Lab Sample ID:	TD8826-1	**Date Sampled:**	09/11/17
Matrix:	AQ - Ground Water	**Date Received:**	09/11/17
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	Gulfco SF		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	G0276219.D	1	09/12/17 17:09	EM	n/a	n/a	VG2450
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
71-43-2	Benzene	0.00030 U	0.0010	0.00030	mg/l	
75-35-4	1,1-Dichloroethylene	0.00030 U	0.0010	0.00030	mg/l	
107-06-2	1,2-Dichloroethane	0.00030 U	0.0010	0.00030	mg/l	
156-59-2	cis-1,2-Dichloroethylene	0.00030 U	0.0010	0.00030	mg/l	
75-09-2	Methylene chloride	0.0013 U	0.0050	0.0013	mg/l	
71-55-6	1,1,1-Trichloroethane	0.00030 U	0.0010	0.00030	mg/l	
96-18-4	1,2,3-Trichloropropane	0.00038 U	0.0010	0.00038	mg/l	
127-18-4	Tetrachloroethylene	0.00030 U	0.0010	0.00030	mg/l	
79-01-6	Trichloroethylene	0.00030 U	0.0010	0.00030	mg/l	
75-01-4	Vinyl chloride	0.00030 U	0.0010	0.00030	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		72-122%
17060-07-0	1,2-Dichloroethane-D4	101%		68-124%
2037-26-5	Toluene-D8	102%		80-119%
460-00-4	4-Bromofluorobenzene	99%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	ND4MW03 170911		
Lab Sample ID:	TD8826-2	**Date Sampled:**	09/11/17
Matrix:	AQ - Ground Water	**Date Received:**	09/11/17
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	Gulfco SF		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	G0276218.D	1	09/12/17 16:45	EM	n/a	n/a	VG2450
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
71-43-2	Benzene	0.00030 U	0.0010	0.00030	mg/l	
75-35-4	1,1-Dichloroethylene	0.00030 U	0.0010	0.00030	mg/l	
107-06-2	1,2-Dichloroethane	0.0013	0.0010	0.00030	mg/l	
156-59-2	cis-1,2-Dichloroethylene	0.00030 U	0.0010	0.00030	mg/l	
75-09-2	Methylene chloride	0.0013 U	0.0050	0.0013	mg/l	
71-55-6	1,1,1-Trichloroethane	0.00030 U	0.0010	0.00030	mg/l	
96-18-4	1,2,3-Trichloropropane	0.00038 U	0.0010	0.00038	mg/l	
127-18-4	Tetrachloroethylene	0.00030 U	0.0010	0.00030	mg/l	
79-01-6	Trichloroethylene	0.00030 U	0.0010	0.00030	mg/l	
75-01-4	Vinyl chloride	0.00030 U	0.0010	0.00030	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		72-122%
17060-07-0	1,2-Dichloroethane-D4	100%		68-124%
2037-26-5	Toluene-D8	103%		80-119%
460-00-4	4-Bromofluorobenzene	100%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: ND2MW01-SED 170911
Lab Sample ID: TD8826-3
Matrix: SO - Sediment
Method: SW846 8260C
Project: Gulfco SF

Date Sampled: 09/11/17
Date Received: 09/11/17
Percent Solids: 74.9

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Y1091584.D	1	09/12/17 13:47	FI	n/a	n/a	VY4556
Run #2							

	Initial Weight	Final Volume
Run #1	6.60 g	5.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
71-43-2	Benzene	0.0014 U	0.0040	0.0014	mg/kg	
75-35-4	1,1-Dichloroethylene	0.0012 U	0.0040	0.0012	mg/kg	
107-06-2	1,2-Dichloroethane	0.0018 U	0.0040	0.0018	mg/kg	
156-59-2	cis-1,2-Dichloroethylene	0.0015 U	0.0040	0.0015	mg/kg	
75-09-2	Methylene chloride	0.0025 U	0.010	0.0025	mg/kg	
71-55-6	1,1,1-Trichloroethane	0.0013 U	0.0040	0.0013	mg/kg	
96-18-4	1,2,3-Trichloropropane	0.0025 U	0.0040	0.0025	mg/kg	
127-18-4	Tetrachloroethylene	0.0014 U	0.0040	0.0014	mg/kg	
79-01-6	Trichloroethylene	0.0014 U	0.0040	0.0014	mg/kg	
75-01-4	Vinyl chloride	0.0018 U	0.0040	0.0018	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	110%		59-126%
2037-26-5	Toluene-D8	110%		70-139%
460-00-4	4-Bromofluorobenzene	91%		63-138%
17060-07-0	1,2-Dichloroethane-D4	114%		54-123%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	NE1MW04-SED 170911		
Lab Sample ID:	TD8826-4	**Date Sampled:**	09/11/17
Matrix:	SO - Sediment	**Date Received:**	09/11/17
Method:	SW846 8260C	**Percent Solids:**	68.2
Project:	Gulfco SF		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Y1091585.D	1	09/12/17 14:14	FI	n/a	n/a	VY4556
Run #2							

	Initial Weight	Final Volume
Run #1	5.71 g	5.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
71-43-2	Benzene	0.0017 U	0.0051	0.0017	mg/kg	
75-35-4	1,1-Dichloroethylene	0.0016 U	0.0051	0.0016	mg/kg	
107-06-2	1,2-Dichloroethane	0.0023 U	0.0051	0.0023	mg/kg	
156-59-2	cis-1,2-Dichloroethylene	0.0020 U	0.0051	0.0020	mg/kg	
75-09-2	Methylene chloride	0.0032 U	0.013	0.0032	mg/kg	
71-55-6	1,1,1-Trichloroethane	0.0017 U	0.0051	0.0017	mg/kg	
96-18-4	1,2,3-Trichloropropane	0.0031 U	0.0051	0.0031	mg/kg	
127-18-4	Tetrachloroethylene	0.0017 U	0.0051	0.0017	mg/kg	
79-01-6	Trichloroethylene	0.0017 U	0.0051	0.0017	mg/kg	
75-01-4	Vinyl chloride	0.0023 U	0.0051	0.0023	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		59-126%
2037-26-5	Toluene-D8	116%		70-139%
460-00-4	4-Bromofluorobenzene	96%		63-138%
17060-07-0	1,2-Dichloroethane-D4	107%		54-123%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB 170911		
Lab Sample ID:	TD8826-5	**Date Sampled:**	09/11/17
Matrix:	AQ - Trip Blank Water	**Date Received:**	09/11/17
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	Gulfco SF		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	G0276217.D	1	09/12/17 16:20	EM	n/a	n/a	VG2450
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
71-43-2	Benzene	0.00030 U	0.0010	0.00030	mg/l	
75-35-4	1,1-Dichloroethylene	0.00030 U	0.0010	0.00030	mg/l	
107-06-2	1,2-Dichloroethane	0.00030 U	0.0010	0.00030	mg/l	
156-59-2	cis-1,2-Dichloroethylene	0.00030 U	0.0010	0.00030	mg/l	
75-09-2	Methylene chloride	0.0013 U	0.0050	0.0013	mg/l	
71-55-6	1,1,1-Trichloroethane	0.00030 U	0.0010	0.00030	mg/l	
96-18-4	1,2,3-Trichloropropane	0.00038 U	0.0010	0.00038	mg/l	
127-18-4	Tetrachloroethylene	0.00030 U	0.0010	0.00030	mg/l	
79-01-6	Trichloroethylene	0.00030 U	0.0010	0.00030	mg/l	
75-01-4	Vinyl chloride	0.00030 U	0.0010	0.00030	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		72-122%
17060-07-0	1,2-Dichloroethane-D4	100%		68-124%
2037-26-5	Toluene-D8	104%		80-119%
460-00-4	4-Bromofluorobenzene	98%		72-126%

U = Not detected SDL = Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form

SGS ACCUTEST

CHAIN OF CUSTODY

PAGE 1 OF 1

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL. 713-271-4700 FAX: 713-271-4770
www.accutest.com

FED-EX Tracking # | Bottle Order Control #
SGS Accutest Quote # | SGS Accutest Job # TD8826

Client / Reporting Information

Company Name: Pastor, Behling, Wheeler, LLC
Street Address: 11231 Richmond Ave, Suite D104
City: Houston State: TX Zip: 77094
Project Contact: Brenda Basile E-mail:
Phone # Fax #
Sampler(s) Name(s) Phone #

Project Information

Project Name: Gulfco Superfund
Street
City State
Project # Client Purchase Order #
Project Manager: Brenda Basile

Billing Information (if different from Report to)

Company Name
Street Address
City State Zip
Attention:

Requested Analyses

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank

SGS Accutest Sample #	Field ID / Point of Collection	Collection Date	Time	Sampled By	Matrix	# of bottles	HCl	NaOH	ZnAcNaOH	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	NaHSO4	ENCORE	OTHER	VOA (8260SL)	Moisture	LAB USE ONLY
1	NE4MW33 170911	9-11-17	16:35	PLP	GW	3	3												X		
2	ND4MW03 170911	9-11-17	16:45	PLP	GW	3	3												X		
3	ND2MW01-SED 170911	9-11-17	17:00	JG	SED	4							121						X	X	
4	NE1MW04-SED 170911	9-11-17	17:10	JG	SED	4							121						X	X	
5	TB 170911	9-11-17	17:15	JG	WW	2	2												X		

Turnaround Time (Business days)

- [ ] Standard
- [ ] 5 Day *RUSH*
- [ ] 4 Day *RUSH*
- [ ] 3 Day *RUSH*
- [x] 2 Day *RUSH*
- [ ] 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (SGS Accutest PM): / Date:

RUSH!

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULT1 (Level 3+4)
- [ ] REDT1 (Level 3+4)
- [ ] Commercial "C"
- [ ] TRRP
- [x] EDD Format
- [ ] Other___

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

Comments / Special Instructions

Form: SM021-0

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler:	Date Time:	Received By:	Date Time:	Relinquished By:	Date Time:	Received By:	Date Time:
1	[signature]	9-11-17 1840	1 [signature]	9/11/17 1840	2		2	
3			3		4		4	
5			5		Custody Seal #	☐ Intact ☐ Not intact	Preserved where applicable ☐	On Ice ☐ Cooler Temp.

5.1 5

TD8826: Chain of Custody
Page 1 of 4

ACCUTEST

COOLER TEMP FORM

TC#

Delivered by (circle one): FedEx/UPS ALGC Driver Client

Date: 9-11-17

Client: Postal, Behling, Wheeler, LLC

Cooler Number: 1841

Thermometer ID: IR-4 CF, °C 0.0 Corrected Temp, °C 1.7

SAMPLES CONTAINED IN COOLER

ACCUTEST

Client: MASTER BEHLING & WHEELER

Project: COLFAX

Attn: BRENDA BASILE

Cooler: 1 of 1

Form: SM027-06 Rev 10/24/2016

5.1

5

TD8826: Chain of Custody
Page 2 of 4

SGS Accutest Sample Receipt Summary

Job Number: TD8826 **Client:** PASTOR,BEHLING,WHEELER **Project:** GULFCO SUPERFUND

Date / Time Received: **Delivery Method:** **Airbill #'s:**

No. Coolers: 1 **Therm ID:** IR-4; **Temp Adjustment Factor:** 0;

Cooler Temps (Initial/Adjusted): #1: (1.7/1.7);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:			
3. Cooler media:	Ice (Bag)		

Quality Control Preservation	Y	or	N	N/A	WTB	STB
1. Trip Blank present / cooler:	☑		☐	☐	☑	☐
2. Trip Blank listed on COC:	☑		☐	☐		
3. Samples preserved properly:	☑		☐			
4. VOCs headspace free:	☑		☐	☐		

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

TD8826: Chain of Custody
Page 3 of 4

Sample Receipt Log

Job #: TD8826 **Date / Time Received:** 9/11/2017 6:40:00 PM **Initials:** BG

Client: PASTOR,BEHLING,WHEELER

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
	TD8826-1	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD8826-1	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD8826-1	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD8826-2	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD8826-2	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD8826-2	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
1	TD8826-3	2oz	1	2-101	N/P	Note #2 - Preservative check not applicable.	IR-4	1.7	0	1.7
1	TD8826-3	40ml	2	VR	MeOH		IR-4	1.7	0	1.7
1	TD8826-3	40ml	3	VR	DI H2O	Note #2 - Preservative check not applicable.	IR-4	1.7	0	1.7
1	TD8826-3	40ml	4	VR	DI H2O	Note #2 - Preservative check not applicable.	IR-4	1.7	0	1.7
1	TD8826-4	2oz	1	2-101	N/P	Note #2 - Preservative check not applicable.	IR-4	1.7	0	1.7
1	TD8826-4	40ml	2	VR	MeOH		IR-4	1.7	0	1.7
1	TD8826-4	40ml	3	VR	DI H2O	Note #2 - Preservative check not applicable.	IR-4	1.7	0	1.7
1	TD8826-4	40ml	4	VR	DI H2O	Note #2 - Preservative check not applicable.	IR-4	1.7	0	1.7
	TD8826-5	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD8826-5	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				

Appendix A Laboratory Data Package Cover Page

TD8826 This data package consists of

□□□ This signature page, the laboratory review checklist, and the following reportable data:

□□□ 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 5.13 or ISO/IEC 17025 Section 5.10

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

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

□□□ 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 Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by
[ ]

[X] TCEQ or [ ] _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Richard Rodriguez		Laboratory Director	9/13/2017

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA

Laboratory Name:		**Accutest Gulf Coast**	LRC Date:	**9/13/2017**					
Project Name:		**Gulfco SF**	Laboratory Project Number:	**TD8826**					
Reviewer	Name:	**Sylvia Garza**	Prep Batch Number(s):	**GN84469, VG2450, VY4556**					
#[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 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 TIC's 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 required frequency?		X					
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		X					
		Does the detectablility 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			**4**	
		Were the 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		X					
		Are unadjusted MQLs and DCSs included in the laboratory data package?			X			**2**	
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		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				**3**	

Laboratory Name:		Accutest Gulf Coast	LRC Date:	9/13/2017				
Project Name:		Gulfco SF	Laboratory Project Number:	TD8826				
Reviewer	Name:	Sylvia Garza	Prep Batch Number(s):	GN84469, VG2450, VY4556				
#[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**						
		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 source?		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 documentated, 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				

LABORATORY REVIEW CHECKLIST (continued): Exception Reports

Laboratory Name:	**Accutest Gulf Coast**	LRC Date:	**9/13/2017**
Project Name:	**Gulfco SF**	Laboratory Project Number:	**TD8826**
Reviewer Name:	**Sylvia Garza**	Prep Batch Number(s):	**GN84469, VG2450, VY4556**

ER#[1]	Description
1	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.
2	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.
3	The laboratory is NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package for analytes that are listed in the Texas Fields of Accreditation.
4	All anomalies are discussed in the case narrative.

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

DCS Method SW846 8260C
For Quarter 2 2017

Analyte	Spike Amount	DCS Results	Units	MDL	Date
1,1,1,2-Tetrachloroethane	0.5	1.98605	ug/kg	1.80	06/22/2017
1,1,1-Trichloroethane	0.5	2.03215	ug/kg	1.30	06/22/2017
1,1,2,2-Tetrachloroethane	0.5	1.89467	ug/kg	2.00	06/22/2017
1,1,2-Trichloroethane	0.5	1.92693	ug/kg	2.00	06/22/2017
1,1-Dichloroethane	0.5	1.99519	ug/kg	1.40	06/22/2017
1,1-Dichloroethylene	0.5	1.96236	ug/kg	1.20	06/22/2017
1,1-Dichloropropene	0.5	2.28873	ug/kg	1.30	06/22/2017
1,2,3-Trichlorobenzene	0.5	2.17653	ug/kg	1.90	06/22/2017
1,2,3-Trichloropropane	2.5	1.84639	ug/kg	2.40	06/22/2017
1,2,4-Trichlorobenzene	0.5	2.19715	ug/kg	1.60	06/22/2017
1,2,4-Trimethylbenzene	0.5	2.11525	ug/kg	1.60	06/22/2017
1,2-Dibromo-3-chloropropane	2.5	1.55690	ug/kg	2.30	06/22/2017
1,2-Dibromoethane	0.5	1.93521	ug/kg	1.90	06/22/2017
1,2-Dichloroethane	0.5	2.04969	ug/kg	1.80	06/22/2017
1,2-Dichloropropane	0.5	2.11843	ug/kg	1.70	06/22/2017
1,3,5-Trimethylbenzene	0.5	2.08676	ug/kg	1.70	06/22/2017
1,3-Butadiene	0.5	1.72652	ug/kg	1.10	06/22/2017
1,3-Dichloropropane	0.5	2.03447	ug/kg	1.80	06/22/2017
1,4-Dioxane	25	7.66737	ug/kg	71.00	06/22/2017
1-Bromo-2-chloroethane	0.5	2.15971	ug/kg	1.80	06/22/2017
1-Chlorohexane	0.5	2.14498	ug/kg	1.30	06/22/2017
2,2,4-Trimethylpentane	0.5	2.25996	ug/kg	1.00	06/22/2017
2,2-Dichloropropane	0.5	2.04458	ug/kg	1.20	06/22/2017
2-Chloroethyl vinyl ether	2.5	9.95612	ug/kg	9.40	06/22/2017
2-Hexanone	2.5	10.42803	ug/kg	9.90	06/22/2017
2-Nitropropane	2.5	7.06602	ug/kg	11.00	06/22/2017
4-Methyl-2-pentanone	2.5	10.13336	ug/kg	11.00	06/22/2017
Acetone	2.5	13.38874	ug/kg	13.00	06/22/2017
Acetonitrile	2.5	9.23278	ug/kg	25.00	06/22/2017
Acrolein	2.5	9.44985	ug/kg	7.50	06/22/2017
Acrylonitrile	2.5	10.46544	ug/kg	9.20	06/22/2017
Allyl chloride	0.5	1.79117	ug/kg	1.60	06/22/2017
Alpha-methylstyrene	0.5	1.92169	ug/kg	1.60	06/22/2017
Benzene	0.5	2.18903	ug/kg	1.30	06/22/2017
Benzyl Chloride	0.5	1.53338	ug/kg	1.60	06/22/2017
Bromobenzene	0.5	2.04339	ug/kg	2.00	06/22/2017
Bromochloromethane	0.5	2.17327	ug/kg	1.90	06/22/2017
Bromodichloromethane	0.5	1.74079	ug/kg	1.90	06/22/2017
Bromoform	0.5	1.50611	ug/kg	2.00	06/22/2017

Butyl Acetate	0.5	5.08477	ug/kg	5.10	06/22/2017
Carbon disulfide	0.5	1.62794	ug/kg	1.50	06/22/2017
Carbon tetrachloride	0.5	2.00186	ug/kg	1.20	06/22/2017
Chlorobenzene	2	2.19813	ug/kg	1.60	06/22/2017
Chloroethane	2	2.01368	ug/kg	2.10	06/22/2017
Chloroform	0.5	2.11251	ug/kg	1.30	06/22/2017
Chloroprene	0.5	1.92767	ug/kg	1.20	06/22/2017
cis-1,2-Dichloroethylene	0.5	2.09018	ug/kg	1.50	06/22/2017
cis-1,3-Dichloropropene	0.5	1.89353	ug/kg	1.70	06/22/2017
Crotonaldehyde	12.5	11.48126	ug/kg	10.00	06/22/2017
Cyclohexane	0.5	2.12202	ug/kg	3.10	06/22/2017
Cyclohexanone	12.5	10.07721	ug/kg	14.00	06/22/2017
Di-Isopropyl ether	0.5	2.11703	ug/kg	1.60	06/22/2017
Dibromochloromethane	0.5	1.54683	ug/kg	2.00	06/22/2017
Dichlorodifluoromethane	0.5	1.92283	ug/kg	2.40	06/22/2017
Dicyclopentadiene	0.5	2.22446	ug/kg	1.50	06/22/2017
Epichlorohydrin	12.5	9.79980	ug/kg	12.00	06/22/2017
Ethyl Acetate	2.5	5.09166	ug/kg	5.40	06/22/2017
Ethyl Ether	0.5	1.60649	ug/kg	1.60	06/22/2017
Ethyl methacrylate	0.5	1.83652	ug/kg	1.90	06/22/2017
Ethyl tert-Butyl Ether	0.5	1.92962	ug/kg	1.60	06/22/2017
Ethylbenzene	0.5	2.18178	ug/kg	1.60	06/22/2017
Ethylene oxide	25	92.80835	ug/kg	100.00	06/22/2017
Freon 113	0.5	2.16372	ug/kg	1.20	06/22/2017
Hexachlorobutadiene	0.5	2.20170	ug/kg	1.70	06/22/2017
Hexachloroethane	0.5	1.55637	ug/kg	1.40	06/22/2017
Hexane	0.5	2.24488	ug/kg	0.86	06/22/2017
Isobutyl alcohol	12.5	18.73041	ug/kg	22.00	06/22/2017
Isopropyl Alcohol	12.5	0.61361	ug/kg	45.00	06/22/2017
Isopropylbenzene	0.5	2.05979	ug/kg	1.50	06/22/2017
m,p-Xylene	1	4.38571	ug/kg	3.30	06/22/2017
m-Dichlorobenzene	0.5	2.13563	ug/kg	2.10	06/22/2017
m-Diethylbenzene	0.5	2.05055	ug/kg	1.60	06/22/2017
Methacrylonitrile	2.5	9.90593	ug/kg	9.70	06/22/2017
Methyl acetate	2.5	10.74672	ug/kg	10.00	06/22/2017
Methyl bromide	0.5	2.11241	ug/kg	1.50	06/22/2017
Methyl chloride	0.5	2.32440	ug/kg	0.99	06/22/2017
Methyl ethyl ketone	2.5	10.18515	ug/kg	10.00	06/22/2017
Methyl iodide	0.5	2.01938	ug/kg	1.50	06/22/2017
Methyl methacrylate	0.5	1.88312	ug/kg	1.90	06/22/2017
Methyl Tert Butyl Ether	0.5	2.04086	ug/kg	1.60	06/22/2017
Methylcyclohexane	0.5	2.10931	ug/kg	1.20	06/22/2017
Methylene bromide	0.5	1.91029	ug/kg	1.70	06/22/2017
Methylene chloride	0.5	2.36868	ug/kg	2.50	06/22/2017
n-Butyl Alcohol	12.5	37.88918	ug/kg	28.00	06/22/2017
n-Butylbenzene	0.5	2.14063	ug/kg	1.70	06/22/2017
n-Propylbenzene	0.5	2.08976	ug/kg	1.70	06/22/2017
Naphthalene	0.5	2.31556	ug/kg	1.80	06/22/2017
o-Chlorotoluene	0.5	2.05742	ug/kg	1.80	06/22/2017
o-Dichlorobenzene	0.5	2.10489	ug/kg	1.90	06/22/2017
o-Xylene	0.5	2.15215	ug/kg	1.80	06/22/2017
p-Chlorotoluene	0.5	2.06639	ug/kg	1.80	06/22/2017

p-Dichlorobenzene	0.5	2.29550	ug/kg	1.90	06/22/2017
p-Diethylbenzene	0.5	2.14862	ug/kg	1.70	06/22/2017
p-Isopropyltoluene	0.5	2.08100	ug/kg	1.20	06/22/2017
Pentachloroethane	0.5	1.62465	ug/kg	1.70	06/22/2017
Propionitrile	6.2	8.66397	ug/kg	13.00	06/22/2017
Propylene oxide	5	0.67234	ug/kg	3.00	06/22/2017
sec-Butylbenzene	2	2.07725	ug/kg	1.40	06/22/2017
Styrene	2	1.94310	ug/kg	1.90	06/22/2017
Tert Butyl Alcohol	5	19.59136	ug/kg	23.00	06/22/2017
Tert-Amyl Methyl Ether	0.5	2.04046	ug/kg	1.80	06/22/2017
tert-Butylbenzene	0.5	2.05609	ug/kg	1.50	06/22/2017
Tetrachloroethylene	0.5	2.37833	ug/kg	1.40	06/22/2017
Tetrahydrofuran	1.25	2.12321	ug/kg	3.40	06/22/2017
Toluene	0.5	2.22330	ug/kg	1.50	06/22/2017
trans-1,2-Dichloroethylene	0.5	2.00590	ug/kg	1.40	06/22/2017
trans-1,3-Dichloropropene	0.5	1.67649	ug/kg	1.70	06/22/2017
Trans-1,4-Dichloro-2-Butene	1.25	1.72054	ug/kg	2.20	06/22/2017
Trichloroethylene	0.5	2.03979	ug/kg	1.30	06/22/2017
Trichlorofluoromethane	0.5	1.87729	ug/kg	2.80	06/22/2017
Vinyl Acetate	2.5	4.90243	ug/kg	4.00	06/22/2017
Vinyl Bromide	0.5	1.92500	ug/kg	1.40	06/22/2017
Vinyl chloride	0.5	2.20280	ug/kg	1.80	06/22/2017

DCS Method SW846 8260C
For Quarter 2 2017

Analyte	Spike Amount	DCS Results	Units	MDL	Date
1,1,1,2-Tetrachloroethane	0.5	0.52967	ug/L	0.30	06/28/2017
1,1,1-Trichloroethane	0.5	0.52670	ug/L	0.30	06/28/2017
1,1,2,2-Tetrachloroethane	0.5	0.56087	ug/L	0.30	06/28/2017
1,1,2-Trichloroethane	0.5	0.56386	ug/L	0.30	06/28/2017
1,1-Dichloroethane	0.5	0.52743	ug/L	0.30	06/28/2017
1,1-Dichloroethylene	0.5	0.53436	ug/L	0.30	06/28/2017
1,1-Dichloropropene	0.5	0.57067	ug/L	0.30	06/28/2017
1,2,3-Trichlorobenzene	0.5	0.55531	ug/L	0.30	06/28/2017
1,2,3-Trichloropropane	0.5	0.59765	ug/L	0.38	06/28/2017
1,2,4-Trichlorobenzene	0.5	0.50030	ug/L	0.30	06/28/2017
1,2,4-Trimethylbenzene	0.5	0.46034	ug/L	0.30	06/28/2017
1,2-Dibromo-3-chloropropane	0.5	0.39711	ug/L	0.33	06/28/2017
1,2-Dibromoethane	0.5	0.49544	ug/L	0.30	06/28/2017
1,2-Dichloroethane	0.5	0.67003	ug/L	0.30	06/28/2017
1,2-Dichloropropane	0.5	0.53046	ug/L	0.30	06/28/2017
1,3,5-Trimethylbenzene	0.5	0.43233	ug/L	0.30	06/28/2017
1,3-Butadiene	0.5	0.58185	ug/L	0.30	06/28/2017
1,3-Dichloropropane	0.5	0.51355	ug/L	0.30	06/28/2017
1,4-Dioxane	20	3.66982	ug/L	25.00	06/28/2017
1-Bromo-2-chloroethane	0.5	0.41895	ug/L	0.57	06/28/2017
1-Chlorohexane	0.5	0.65847	ug/L	0.30	06/28/2017
2,2,4-Trimethylpentane	0.5	0.47725	ug/L	0.32	06/28/2017

2,2-Dichloropropane	0.5	0.43000	ug/L	0.30	06/28/2017
2-Chloroethyl vinyl ether	2.5	2.16715	ug/L	1.10	06/28/2017
2-Hexanone	2.5	2.25239	ug/L	1.20	06/28/2017
2-Nitropropane	1.25	2.26589	ug/L	4.00	06/28/2017
4-Methyl-2-pentanone	2.5	2.37108	ug/L	2.30	06/28/2017
Acetone	2.5	4.41572	ug/L	10.00	06/28/2017
Acetonitrile	2.5	3.37329	ug/L	20.00	06/28/2017
Acrolein	2.5	2.13522	ug/L	2.90	06/28/2017
Acrylonitrile	2.5	2.30067	ug/L	1.20	06/28/2017
Allyl chloride	0.5	0.22160	ug/L	0.38	06/28/2017
Alpha-methylstyrene	0.5	0.43630	ug/L	0.30	06/28/2017
Benzene	0.5	0.54716	ug/L	0.30	06/28/2017
Benzyl Chloride	0.5	0.35819	ug/L	0.30	06/28/2017
Bromobenzene	0.5	0.56179	ug/L	0.30	06/28/2017
Bromochloromethane	0.5	0.55177	ug/L	0.30	06/28/2017
Bromodichloromethane	0.5	0.56113	ug/L	0.30	06/28/2017
Bromoform	0.5	0.51691	ug/L	0.30	06/28/2017
Butyl Acetate	1.25	1.17945	ug/L	1.00	06/28/2017
Carbon disulfide	0.5	0.85119	ug/L	0.75	06/28/2017
Carbon tetrachloride	0.5	0.58318	ug/L	0.54	06/28/2017
Chlorobenzene	0.5	0.56319	ug/L	0.30	06/28/2017
Chloroethane	0.5	0.39120	ug/L	0.33	06/28/2017
Chloroform	0.5	0.55663	ug/L	0.30	06/28/2017
Chloroprene	0.5	0.41820	ug/L	0.30	06/28/2017
cis-1,2-Dichloroethylene	0.5	0.49522	ug/L	0.30	06/28/2017
cis-1,3-Dichloropropene	0.5	0.43471	ug/L	0.30	06/28/2017
Crotonaldehyde	2.5	3.25169	ug/L	3.30	06/28/2017
Cyclohexanone	5	2.00231	ug/L	2.00	06/28/2017
Di-Isopropyl ether	0.5	0.46512	ug/L	0.30	06/28/2017
Dibromochloromethane	0.5	0.51831	ug/L	0.30	06/28/2017
Dichlorodifluoromethane	0.5	0.52196	ug/L	0.51	06/28/2017
Dicyclopentadiene	0.5	0.47597	ug/L	0.30	06/28/2017
Epichlorohydrin	2.5	2.49988	ug/L	2.40	06/28/2017
Ethyl Acetate	1.25	1.28463	ug/L	1.00	06/28/2017
Ethyl Alcohol	10	4.78313	ug/L	20.00	06/28/2017
Ethyl Ether	0.5	0.54673	ug/L	0.34	06/28/2017
Ethyl methacrylate	0.5	0.35642	ug/L	0.36	06/28/2017
Ethyl tert-Butyl Ether	0.5	0.40042	ug/L	0.30	06/28/2017
Ethylbenzene	0.5	0.53414	ug/L	0.30	06/28/2017
Ethylene oxide	25	30.28672	ug/L	17.00	06/28/2017
Freon 113	0.5	0.47638	ug/L	0.44	06/28/2017
Hexachlorobutadiene	0.5	0.60248	ug/L	0.40	06/28/2017
Hexachloroethane	0.5	0.39484	ug/L	0.30	06/28/2017
Hexane	0.5	0.45827	ug/L	1.10	06/28/2017
Isobutyl alcohol	5	1.94822	ug/L	20.00	06/28/2017
Isopropyl Alcohol	5	5.36343	ug/L	20.00	06/28/2017
Isopropylbenzene	0.5	0.42840	ug/L	0.30	06/28/2017
m,p-Xylene	1	1.00487	ug/L	0.44	06/28/2017
m-Dichlorobenzene	0.5	0.56927	ug/L	0.30	06/28/2017
m-Diethylbenzene	0.5	0.42952	ug/L	0.30	06/28/2017
Methacrylonitrile	2.5	2.25110	ug/L	1.20	06/28/2017
Methyl Acetate	2.5	2.69420	ug/L	1.30	06/28/2017

Methyl bromide	0.5	0.57720	ug/L	0.49	06/28/2017
Methyl chloride	0.5	0.59499	ug/L	0.30	06/28/2017
Methyl ethyl ketone	2.5	2.66638	ug/L	2.60	06/28/2017
Methyl iodide	0.5	0.52980	ug/L	0.30	06/28/2017
Methyl methacrylate	0.5	0.43118	ug/L	0.81	06/28/2017
Methyl Tert Butyl Ether	0.5	0.43291	ug/L	0.30	06/28/2017
Methylcyclohexane	0.5	0.45744	ug/L	0.31	06/28/2017
Methylene bromide	0.5	0.54264	ug/L	0.30	06/28/2017
Methylene chloride	0.5	1.00977	ug/L	1.20	06/28/2017
n-Butyl Alcohol	5	1.65416	ug/L	40.00	06/28/2017
n-Butylbenzene	0.5	0.48453	ug/L	0.30	06/28/2017
n-Propylbenzene	0.5	0.48661	ug/L	0.30	06/28/2017
Naphthalene	0.5	0.41672	ug/L	0.50	06/28/2017
o-Chlorotoluene	0.5	0.50382	ug/L	0.30	06/28/2017
o-Dichlorobenzene	0.5	0.54877	ug/L	0.31	06/28/2017
o-Xylene	0.5	0.48415	ug/L	0.30	06/28/2017
p-Chlorotoluene	0.5	0.49197	ug/L	0.30	06/28/2017
p-Dichlorobenzene	0.5	0.61263	ug/L	0.30	06/28/2017
p-Diethylbenzene	0.5	0.44563	ug/L	0.30	06/28/2017
p-Isopropyltoluene	0.5	0.43339	ug/L	0.30	06/28/2017
Pentachloroethane	0.5	0.48482	ug/L	0.50	06/28/2017
Propionitrile	2.5	2.45372	ug/L	5.60	06/28/2017
sec-Butylbenzene	0.5	0.46223	ug/L	0.30	06/28/2017
Styrene	0.5	0.42031	ug/L	0.30	06/28/2017
Tert Butyl Alcohol	5	4.35266	ug/L	3.00	06/28/2017
Tert-Amyl Methyl Ether	0.5	0.42940	ug/L	0.30	06/28/2017
tert-Butylbenzene	0.5	0.46138	ug/L	0.30	06/28/2017
Tetrachloroethylene	0.5	0.60397	ug/L	0.30	06/28/2017
Tetrahydrofuran	0.5	0.36425	ug/L	0.87	06/28/2017
Toluene	0.5	0.55679	ug/L	0.30	06/28/2017
trans-1,2-Dichloroethylene	0.5	0.53150	ug/L	0.30	06/28/2017
trans-1,3-Dichloropropene	0.5	0.40492	ug/L	0.30	06/28/2017
Trans-1,4-Dichloro-2-Butene	1	0.43160	ug/L	0.50	06/28/2017
Trichloroethylene	0.5	0.52789	ug/L	0.30	06/28/2017
Trichlorofluoromethane	0.5	0.54003	ug/L	0.30	06/28/2017
Vinyl Acetate	2.5	1.06449	ug/L	0.50	06/28/2017
Vinyl Bromide	0.5	0.53248	ug/L	0.38	06/28/2017
Vinyl chloride	0.5	0.55758	ug/L	0.30	06/28/2017

MS Volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD8826
Account: PBWTXH Pastor,Behling & Wheeler, LLC
Project: Gulfco SF

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VG2450-MB	G0276201.D	1	09/12/17	EM	n/a	n/a	VG2450

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD8826-1, TD8826-2, TD8826-5

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.30	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.30	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.30	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.30	ug/l	
75-09-2	Methylene chloride	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.30	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	1.0	0.38	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.30	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.30	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.30	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	101%	72-122%
17060-07-0	1,2-Dichloroethane-D4	100%	68-124%
2037-26-5	Toluene-D8	103%	80-119%
460-00-4	4-Bromofluorobenzene	99%	72-126%

Method Blank Summary

Job Number: TD8826
Account: PBWTXH Pastor,Behling & Wheeler, LLC
Project: Gulfco SF

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VY4556-MB	Y1091575.D	1	09/12/17	FI	n/a	n/a	VY4556

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD8826-3, TD8826-4

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	4.0	1.3	ug/kg	
75-35-4	1,1-Dichloroethylene	ND	4.0	1.2	ug/kg	
107-06-2	1,2-Dichloroethane	ND	4.0	1.8	ug/kg	
156-59-2	cis-1,2-Dichloroethylene	ND	4.0	1.5	ug/kg	
75-09-2	Methylene chloride	ND	10	2.5	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	4.0	1.3	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	4.0	2.5	ug/kg	
127-18-4	Tetrachloroethylene	ND	4.0	1.4	ug/kg	
79-01-6	Trichloroethylene	ND	4.0	1.3	ug/kg	
75-01-4	Vinyl chloride	ND	4.0	1.8	ug/kg	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	107%	59-126%
2037-26-5	Toluene-D8	108%	70-139%
460-00-4	4-Bromofluorobenzene	88%	63-138%
17060-07-0	1,2-Dichloroethane-D4	106%	54-123%

Blank Spike Summary

Job Number: TD8826
Account: PBWTXH Pastor,Behling & Wheeler, LLC
Project: Gulfco SF

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VY4556-BS	Y1091571.D	1	09/12/17	FI	n/a	n/a	VY4556

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD8826-3, TD8826-4

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	44.1	88	58-124
75-35-4	1,1-Dichloroethylene	50	45.9	92	60-131
107-06-2	1,2-Dichloroethane	50	45.3	91	69-121
156-59-2	cis-1,2-Dichloroethylene	50	44.2	88	70-119
75-09-2	Methylene chloride	50	42.0	84	50-134
71-55-6	1,1,1-Trichloroethane	50	45.1	90	63-126
96-18-4	1,2,3-Trichloropropane	50	45.0	90	68-118
127-18-4	Tetrachloroethylene	50	56.3	113	64-130
79-01-6	Trichloroethylene	50	47.4	95	70-122
75-01-4	Vinyl chloride	50	45.2	90	43-120

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	100%	59-126%
2037-26-5	Toluene-D8	101%	70-139%
460-00-4	4-Bromofluorobenzene	99%	63-138%
17060-07-0	1,2-Dichloroethane-D4	100%	54-123%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: TD8826
Account: PBWTXH Pastor,Behling & Wheeler, LLC
Project: Gulfco SF

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VG2450-BS	G0276199.D	1	09/12/17	EM	n/a	n/a	VG2450

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD8826-1, TD8826-2, TD8826-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	25	25.6	102	68-119
75-35-4	1,1-Dichloroethylene	25	28.4	114	67-140
107-06-2	1,2-Dichloroethane	25	24.4	98	68-121
156-59-2	cis-1,2-Dichloroethylene	25	25.6	102	72-117
75-09-2	Methylene chloride	25	24.4	98	60-125
71-55-6	1,1,1-Trichloroethane	25	27.6	110	72-129
96-18-4	1,2,3-Trichloropropane	25	25.1	100	61-124
127-18-4	Tetrachloroethylene	25	27.5	110	72-132
79-01-6	Trichloroethylene	25	26.6	106	73-121
75-01-4	Vinyl chloride	25	25.1	100	54-126

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	99%	72-122%
17060-07-0	1,2-Dichloroethane-D4	99%	68-124%
2037-26-5	Toluene-D8	102%	80-119%
460-00-4	4-Bromofluorobenzene	100%	72-126%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD8826
Account: PBWTXH Pastor,Behling & Wheeler, LLC
Project: Gulfco SF

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD8821-1MS	Y1091578.D	1	09/12/17	FI	n/a	n/a	VY4556
TD8821-1MSD	Y1091579.D	1	09/12/17	FI	n/a	n/a	VY4556
TD8821-1	Y1091576.D	1	09/12/17	FI	n/a	n/a	VY4556

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD8826-3, TD8826-4

CAS No.	Compound	TD8821-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		23100	20900	90	23100	20200	87	3	58-124/26
75-35-4	1,1-Dichloroethylene	ND		23100	14100	61	23100	13200	57*	7	60-131/31
107-06-2	1,2-Dichloroethane	ND		23100	20700	89	23100	20600	89	0	69-121/24
156-59-2	cis-1,2-Dichloroethylene	ND		23100	21200	92	23100	20500	89	3	70-119/25
75-09-2	Methylene chloride	ND		23100	13200	57	23100	13300	57	1	50-134/35
71-55-6	1,1,1-Trichloroethane	ND		23100	21400	92	23100	20000	86	7	63-126/27
96-18-4	1,2,3-Trichloropropane	ND		23100	21200	92	23100	20900	90	1	68-118/31
127-18-4	Tetrachloroethylene	ND		23100	22100	95	23100	21200	92	4	64-130/28
79-01-6	Trichloroethylene	ND		23100	22400	97	23100	21100	91	6	70-122/27
75-01-4	Vinyl chloride	ND		23100	23400	101	23100	21700	94	8	43-120/38

CAS No.	Surrogate Recoveries	MS	MSD	TD8821-1	Limits
1868-53-7	Dibromofluoromethane	99%	99%	103%	59-126%
2037-26-5	Toluene-D8	99%	99%	109%	70-139%
460-00-4	4-Bromofluorobenzene	99%	99%	93%	63-138%
17060-07-0	1,2-Dichloroethane-D4	100%	99%	105%	54-123%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD8826
Account: PBWTXH Pastor,Behling & Wheeler, LLC
Project: Gulfco SF

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD8617-1MS	G0276214.D	10	09/12/17	EM	n/a	n/a	VG2450
TD8617-1MSD	G0276215.D	10	09/12/17	EM	n/a	n/a	VG2450
TD8617-1	G0276213.D	10	09/12/17	EM	n/a	n/a	VG2450

The QC reported here applies to the following samples: **Method:** SW846 8260C

TD8826-1, TD8826-2, TD8826-5

CAS No.	Compound	TD8617-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	738		250	988	100	250	1030	117	4	68-119/12
75-35-4	1,1-Dichloroethylene	ND		250	282	113	250	286	114	1	67-140/18
107-06-2	1,2-Dichloroethane	ND		250	239	96	250	247	99	3	68-121/12
156-59-2	cis-1,2-Dichloroethylene	ND		250	258	103	250	265	106	3	72-117/13
75-09-2	Methylene chloride	ND		250	236	94	250	242	97	3	60-125/16
71-55-6	1,1,1-Trichloroethane	ND		250	263	105	250	273	109	4	72-129/14
96-18-4	1,2,3-Trichloropropane	ND		250	233	93	250	249	100	7	61-124/16
127-18-4	Tetrachloroethylene	ND		250	502	201*	250	514	206*	2	72-132/14
79-01-6	Trichloroethylene	ND		250	477	191*	250	494	198*	4	73-121/13
75-01-4	Vinyl chloride	ND		250	310	124	250	326	130*	5	54-126/17

CAS No.	Surrogate Recoveries	MS	MSD	TD8617-1	Limits
1868-53-7	Dibromofluoromethane	95%	95%	95%	72-122%
17060-07-0	1,2-Dichloroethane-D4	100%	100%	100%	68-124%
2037-26-5	Toluene-D8	102%	102%	102%	80-119%
460-00-4	4-Bromofluorobenzene	99%	101%	99%	72-126%

* = Outside of Control Limits.