AECOM
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314 429 0100 tel
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May 23, 2017

Ms. Joyce Munie, P.E.
Manager, Permit Section
Illinois Environmental Protection Agency
Bureau of Land
1021 North Grand Avenue East
Springfield, Illinois 62794

Submittal of Corrected Information
Addendum to Monitoring Well and Vapor Monitoring Point Installation Report – Supplemental Investigation Activities
Roxana, Illinois
1191150002 – Madison County
Equilon Enterprises LLC d/b/a Shell Oil Products US
Log No. B-43R

Dear Ms. Munie:

On behalf of Shell Oil Products US (SOPUS), AECOM Technical Services, Inc. (AECOM) hereby submits the enclosed addendum to the above-referenced report (the Report).

AECOM collects a variety of samples for SOPUS as part of the work performed in connection with the above-referenced site including the samples referenced and utilized in the Report. AECOM contracts with independent laboratories to analyze the samples collected. As noted in SOPUS' initial disclosure letter and our subsequent communications, Accutest Laboratories (Accutest) issued revised laboratory analyses in response to an internal evaluation performed of its process. Please note, the majority of the corrected analyses were issued only to include a revised footnote and the numeric value of the analytical results reported remained unchanged. If any numeric values of analytical results presented in the Report were updated by Accutest, the updated results are presented as part of the information included in the Report addendum. Moreover, based upon our evaluation of the Report and the revised information received from Accutest, the conclusion(s) of the Report as originally issued are unaffected.

The information provided within and the format of this addendum is as discussed during our meeting with IEPA on March 23, 2017. This addendum includes the following information:

- IEPA LPC form
- Data Review Addendum Table (summarizing changed information)
- Revised analytical results table
- Revised laboratory reports (on CD)

If you have any questions during your review, please contact Kevin Dyer, SOPUS Senior Principal Program Manager, at kevin.dyer@shell.com (618/288-7237), or Bob Billman at bob.billman@aecom.com (314/743-4108).

Sincerely,

AECOM, on behalf of Shell Oil Products US

Robert Billman, PG
Senior Project Manager

Robert E. Mooshegian, CHMM
Senior Program Manager

Enclosures: 2 copies

cc: Kevin Dyer, SOPUS
Shannon Haney, Greensfelder, Hemker & Gale P.C
Repositories – Village Hall, Roxana Public Library, website
Project File

Illinois Environmental Protection Agency

Bureau of Land • 1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276

ILLINOIS EPA RCRA CORRECTIVE ACTION CERTIFICATION

This certification must accompany any document submitted to Illinois EPA in accordance with the corrective action requirements set forth in a facility's RCRA permit. The original and two copies of all documents submitted must be provided.

1.0 FACILITY IDENTIFICATION

Name: WRB Refining LP Wood River Refinery

County: Madison

Street Address: 900 South Central Ave.

Site No. (IEPA): 1191150002

City: Roxana

Site No. (USEPA): ILD 080 012 305

2.0 OWNER INFORMATION

Name: Not Applicable

Mailing Address:

3.0 OPERATOR INFORMATION

Equilon Enterprises LLC dba Shell Oil Products US (SOPUS)

17 Junction Drive, PMB #399

Glen Carbon, IL 62034

Contact Name: Kevin Dyer

Contact Title: Senior Principal Program Manager

Phone No.: 618-288-7237

4.0 TYPE OF SUBMISSION (check applicable item and provide requested information, as applicable)

☐ RFI Phase I Workplan/Report
☐ RFI Phase II Workplan/Report
☐ CMP Report; Phase _____
☒ Other (describe):
Multiple Document Addenda (see attached report list)
Date of Submittal May 2017

IEPA Permit Log No. B-43R
Date of Last IEPA Letter on Project January 18, 2017
Log No. of Last IEPA Letter on Project B-43R-CA-59, -60, -69
Does this submittal include groundwater information: ☒ Yes ☐ No

5.0 DESCRIPTION OF SUBMITTAL: (briefly describe what is being submitted and its purpose)

Addenda to multiple documents. List of documents is provided on the Attachment 1. Addenda being issued due to revised laboratory reports.

6.0 DOCUMENTS SUBMITTED (identify all documents in submittal, including cover letter; give dates of all documents)

Cover letter, RCRA Corrective Action Certification, Addenda to multiple documents identified on the attached list.

7.0 CERTIFICATION STATEMENT - ***(This statement is part of the overall certification being provided by the owner/operator, professional and laboratory in Items 7.1, 7.2 and 7.3 below).*** The activities described in the subject submittals have been carried out in accordance with procedures approved by Illinois EPA. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

7.1 OWNER/OPERATOR CERTIFICATION (Must be completed for all submittals. Certification and signature requirements are set forth in 35 IAC 702.126.) All submittals pertaining to the corrective action requirements set forth in a RCRA Permit must be signed by the person designated below (or by a duly authorized representative of that person):

1. For a Corporation, by a principal executive officer of at least the level of vice-president.
2. For a Partnership or Sole Proprietorship, by a general partner or the proprietor, respectively.
3. For a Governmental Entity, by either a principal executive officer or a ranking elected official.

A person is a duly authorized representative only if:

1. the authorization is made in writing by a person described above; and
2. the written authorization is provided with this submittal (a copy of a previously submitted authorization can be used).

Owner Signature: _____ _____ (Date)

Title: _____

Operator Signature: [signature] 5/17/18 (Date)

Title: Senior Principal Program Manager

7.2 PROFESSIONAL CERTIFICATION *(if necessary)* - Work carried out in this submittal or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. No one is relieved from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Professional's Signature: [signature] 5/17/17 Date

Professional's Name: Robert B. Billman

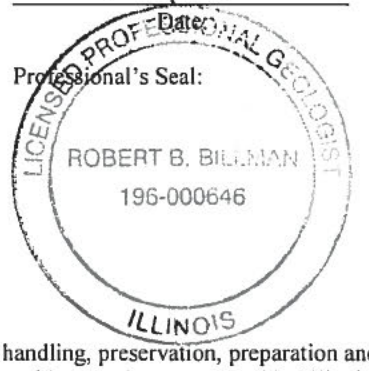
Professional's Address: AECOM Technical Services, Inc.

1001 Highlands Plaza Drive West, Suite 300

St. Louis, MO 63110

Professional's Phone No.: 314-429-0100

Professional's Seal:



7.3 LABORATORY CERTIFICATION *(if necessary)* - The sample collection, handling, preservation, preparation and analysis efforts for which this laboratory was responsible were carried out in accordance with procedures approved by Illinois EPA.

Name of Laboratory: See Attachment 2

_____ Signature of Laboratory Responsible Officer Date

Mailing Address of Laboratory:

_____ Name and Title of Laboratory Responsible Officer

_____

_____

_____

Attachment 1
List of Documents

Submittal	Date of Submittal
Roxana 3Q12 Groundwater Monitoring Report	10/15/2012
Roxana 4Q12 Groundwater Monitoring Report	1/15/2013
Roxana 4Q13 Soil Vapor Report	1/31/2014
Roxana 1Q14 Soil Vapor Report	4/30/2014
Roxana 2Q14 Soil Vapor Report	7/30/2014
Roxana 3Q14 Soil Vapor Report	10/30/2014
Roxana 2Q15 Soil Vapor Report	7/29/2015
GWP-28 Installation Plan	11/27/2012
Public Work Yard Soil Sampling Report	3/13/2013
GW Monitoring Well and Vapor Monitoring Point Installation Report	4/3/2013
April 30, 2013-Groundwater Profile Delineation Report	4/30/2013
Addendum to Monitoring Well & Vapor Monitoring Point Installation Report - Supplemental Investigation Activities	5/22/2013
SVE Expansion-Construction Completion Rpt Addendum 2	1/9/2014
SVE System Construction Completion Rpt Addendum 3	3/4/2015

Note: Highlighted row represents subject Addendum

ATTACHMENT 2

LABORATORY CERTIFICATION

Revisions to previously reported laboratory data were required following a laboratory quality review. These revisions were performed in accordance with industry standards for testing laboratories accredited by the National Environmental Laboratory Accreditation Conference (NELAC). I certify the information contained in the revised and reissued laboratory reports are, to the best of my knowledge and belief, true, accurate and complete.

Name of Laboratory: SGS Accutest

5.17.17

Signature of Laboratory Responsible Officer — Date

HOSSAIN (BABU) MADAJAN

Name and Title of Laboratory Responsible Officer

LAB Director

Mailing Address of Laboratory:

50 D'Angelo Drive

495 Technology Center West, Building I

Marlboro, MA 01752

LEGAL REVIEWED
BY: MD
DATE: 5.17.17

Laboratory Report (Sample Delivery Group[SDG])			
mc12669	mc23880	mc17144	mc18856
mc12784	mc26889	mc17324	mc18890
mc12833	mc27073	mc17401	mc18895
mc12905	mc23933	mc16336	mc18752
mc12941	mc32497	mc16445	mc24546
mc12942	mc32521	mc16475	mc32549
mc13051	mc38153	mc16587	mc32591
mc15232	mc38192	mc16644	mc32628
mc15892	mc14777	mc16798	mc32660
mc16960	mc14814	mc16889	mc32763
mc23682	mc16999	mc17501	mc33045

May 16, 2017

Analytical Method	Sample ID	Lab Sample ID	Sample Date	Analyte	Original Result	Corrected Result	Laboratory Qualifier	Units	Laboratory Footnote	AECOM Qualifier
SW846 8260B	MW-24-12	MC18752-1	03/07/2013	Acetone	0.0560	0.0560		mg/kg	Ana: Initial Calibration Verification outside of acceptance criteria. Sample result may be biased high.	J

AECOM QUALIFIERS:

J = The result is estimated.

Table 1
Summary of Supplemental Soil Analytical Detections

Location	Sample ID	Depth	Sample Date	Benzene			Ethylbenzene			Toluene		
				Result (mg/kg)	Lab Quals	AECOM Quals	Result (mg/kg)	Lab Quals	AECOM Quals	Result (mg/kg)	Lab Quals	AECOM Quals
MW-24	MW-24-12	12 ft	3/7/2013	< 0.00059	U		< 0.0024	U		< 0.0059	U	
	MW-24-25	25 ft	3/7/2013	0.0012			0.0023	J		0.0028	J	
	MW-24-47	47 ft	3/7/2013	0.0014			0.0021	J		0.0026	J	
	MW-24-47-DUP	47 ft	3/7/2013	0.0012			0.0013	J		0.0018	J	

Location	Sample ID	Depth	Sample Date	Acetone			Carbon disulfide			Chloroform			Dichloromethane (Methylene chloride)		
				Result (mg/kg)	Lab Quals	AECOM Quals	Result (mg/kg)	Lab Quals	AECOM Quals	Result (mg/kg)	Lab Quals	AECOM Quals	Result (mg/kg)	Lab Quals	AECOM Quals
MW-24	MW-24-12	12 ft	3/7/2013	< 0.056		UJ	< 0.0059	U		0.0012	J		< 0.0031		U
	MW-24-25	25 ft	3/7/2013	< 0.006	U	UJ	0.0058	J		< 0.0024	U		< 0.0037		U
	MW-24-47	47 ft	3/7/2013	< 0.0057	U	UJ	< 0.0057	U		< 0.0023	U		< 0.0023	U	
	MW-24-47-DUP	47 ft	3/7/2013	< 0.0057	U	UJ	< 0.0057	U		< 0.0023	U		< 0.0032		U

NOTES:

Lab Qualifiers

J = Estimated value; results between the MDL and RL

U = Compound analyzed for but not detected above the RL

URS Qualifiers

R = Indicates analyte result was rejected

J = Estimated detection

UJ = Estimated non-detect

U = Non-detect, e.g. blank contamination

e-Hardcopy 2.0
Automated Report

Technical Report for

Shell Oil

URSMOSTL: Roxana Drilling, Roxana, IL

21562850.15000

SGS Accutest Job Number: MC18752

Sampling Date: 03/07/13

Report to:

AECOM, INC.

Melissa.mansker@aecom.com

ATTN: Melissa Mansker

Total number of pages in report: 102

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.

H. (Brad) Madadian
Lab Director

Client Service contact: Jeremy Vienneau 508-481-6200

Certifications: MA (M-MA136,SW846 NELAC) CT (PH-0109) NH (250210) RI (00071) FL (E87579) NY (11791) NJ (MA926) PA (6801121) ND (R-188) CO (MA00136) MN (11546AA) NC (653) IL (002337) WI (399080220) DoD ELAP (L-A-B L2235)

SGS ACCUTEST

October 20, 2016

AECOM
1001 Highlands Plaza Drive West Suite 300
St. Louis, MO 63110

RE: SGS Accutest Job # MC18752

Dear Elizabeth Kunkel

As you are aware, SGS Accutest Inc. - Marlborough has been conducting an extensive review of data associated with some historical Gas Chromatography-Mass Spectroscopy volatiles analyses. As a result of this review it was determined that some revisions of the original test report for this job were needed. These corrections have been incorporated into the revised report.

Please be assured that corrective actions have been put in place to address this matter and prevent a recurrence.

We apologize for any inconvenience that this issue may have caused. Please don't hesitate to contact us if we can be of further assistance.

Sincerely,

H. (Brad) Madadian

Regional Laboratory Director
SGS Accutest Inc. - Marlborough

Sections: 1 2 3 4 5 6 7 8

Table of Contents

Sample Summary

Shell Oil

Job No: MC18752

URSMOSTL: Roxana Drilling, Roxana, IL
Project No: 21562850.15000

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
MC18752-1	03/07/13	09:55	MMM	03/08/13	SO	Soil	MW-24-12
MC18752-2	03/07/13	11:15	MMM	03/08/13	SO	Soil	MW-24-25
MC18752-2D	03/07/13	11:15	MMM	03/08/13	SO	Soil Dup/MSD	MW-24-25
MC18752-2S	03/07/13	11:15	MMM	03/08/13	SO	Soil Matrix Spike	MW-24-25
MC18752-3	03/07/13	12:15	MMM	03/08/13	SO	Soil	MW-24-47
MC18752-4	03/07/13	12:15	MMM	03/08/13	SO	Soil	MW-24-47DUP
MC18752-5	03/07/13	13:15	MMM	03/08/13	AQ	Equipment Blank	MW-24-47-EB
MC18752-6	03/07/13	08:00	MMM	03/08/13	AQ	Trip Blank Water	TB-030713-01

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

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: She O **Job No** MC 8752

Site: URSMOSTL: Roxana Dr ng, Roxana, IL **Report Date** 0/24/20 6 4:08:34 P

5 Samp e(s), Tr p B ank(s) and 0 F e d B ank(s) were co ected on 03/07/20 3 and were rece ved at SGS Accutest New Eng and on 03/08/20 3 proper y preserved, at 2 Deg C and ntact These Samp es rece ved a job number of MC 8752 A st ng of the Laboratory Samp e ID, C ent Samp e ID and dates of co ect on are presented n the Resu ts Summary Sect on of th s repo t -Ch orohexane was searched n the brary search and reported on y f detect ons were found
-Ch orohexane was searched n the brary search and reported on y f detect ons were found

Except as noted be ow, a method spec f ed ca brat ons and qua ty contro performance cr ter a were met for th s job For more nformat on, p ease refer to QC summary pages

Volatiles by GCMS By Method SW846 8260B

Matrix: AQ **Batch ID:** MSG4957

- A samp es were ana yzed w th n the recommended method ho d ng t me
- Samp e(s) MC 8723-2MS, MC 8723-2MSD were used as the QC samp es nd cated
- A method b anks for th s batch meet method spec f c cr ter a
- B ank Sp ke Recove y(s) for 2-Butanone (MEK), 2-Ch oroethy v ny ether, 2-Hexanone, Acetone, Acro e n are outs de contro m ts
- Matr x Sp ke Recovery(s) for 2-Ch oroethy v ny ether, 4-Methy -2-pentanone (MIBK), Acro e n are outs de contro m ts Outs de contro m ts due to poss b e matr x nterference
- Matr x Sp ke Dup cate Recovery(s) for 2-Ch oroethy v ny ether, 4-Methy -2-pentanone (MIBK), Acro e n are outs de contro m ts Probab e cause due to matr x nterference
- MC 8752-5, MC 8752-6 for Acro e n, V ny Acetate: In t a Ca brat on Ver f cat on outs de of acceptance cr ter a Samp e resu t may be b ased ow
- In t a ca brat on Ver f cat on standard for Acetone, 2-hexanone b ased h gh Assoc ated samp es are non-detect for these compounds

Matrix: SO **Batch ID:** MSK2225

- A samp es were ana yzed w th n the recommended method ho d ng t me
- Samp e(s) MC 8768-6MS, MC 8768-6MSD were used as the QC samp es nd cated
- A method b anks for th s batch meet method spec f c cr ter a

Matrix: SO **Batch ID:** MSM 869

- A samp es were ana yzed w th n the recommended method ho d ng t me
- Samp e(s) MC 8752-2MS, MC 8752-2MSD were used as the QC samp es nd cated
- A method b anks for th s batch meet method spec f c cr ter a
- Matr x Sp ke Recovery(s) for ,2,3-Tr ch oropropane, ,4-D oxane, 2-Ch oroethy v ny ether, 2-Hexanone, 4-Methy -2-pentanone (MIBK), Acetone, D ch orod f uoromethane are outs de contro m ts Outs de contro m ts due to poss b e matr x nterference
- Matr x Sp ke Dup cate Recovery(s) for ,2-D ch orobenzene, ,3-D ch orobenzene, ,4-D oxane, 2-Ch oroethy v ny ether, 2-Hexanone, 4-Methy -2-pentanone (MIBK), Acetone, ,2,3-Tr ch orobenzene, ,2,4-Tr ch orobenzene, Hexach orobutad ene, n-Buty benzene, sec-Buty benzene are outs de contro m ts H gh RPD due to poss b e matr x nte ference and/or samp e non-homogene ty
- RPD(s) for MSD for ,2,3-Tr ch orobenzene, ,2,4-Tr ch orobenzene, Hexach orobutad ene, n-Buty benzene, Naphtha ene, p-Isopropy to uene, sec-Buty benzene are outs de contro m ts for samp e MC 8752-2MSD H gh RPD due to poss b e matr x nterference and/or samp e non-homogene ty
- MC 8752- for Acetone: In t a Ca brat on Ver f cat on outs de of acceptance cr ter a Samp e resu t may be b ased h gh

Matrix: SO **Batch ID:** MSM 87

- A samp es were ana yzed w th n the recommended method ho d ng t me
- Samp e(s) MC 8887-3MS, MC 8887-3MSD were used as the QC samp es nd cated

Volatiles by GCMS By Method SW846 8260B

Matrix: SO **Batch ID:** MSM 87

- A method b anks for th s batch meet method spec f c cr ter a
- B ank Sp ke Recove y(s) for Acetone, V ny Acetate are outs de contro m ts B ank Sp ke Dup Recovery(s) for V ny Acetate are outs de contro m ts
- Matr x Sp ke Recovery(s) for ,2,3-Tr ch orobenzene, ,2,4-Tr ch orobenzene, ,2,4-Tr methy benzene, ,2-D ch orobenzene, ,3,5-Tr methy benzene, ,3-D ch orobenzene, ,4-D ch orobenzene, Hexach orobutad ene, Isopropy benzene, n-Buty benzene, n-Propy benzene, Naphtha ene, p-Isopropy to uene, sec-Buty benzene, tert-Buty benzene are outs de contro m ts Outs de contro m ts due to poss b e matr x nterference
- Matr x Sp ke Dup cate Recovery(s) for ,2,4-Tr methy benzene, ,2-D ch orobenzene, ,3,5-Tr methy benzene, ,3-D ch orobenzene, ,4-D ch orobenzene, Acetone, Acro e n, Bromobenzene, Ch orobenzene, Ethy benzene, Hexach orobutad ene, Isopropy benzene, m,p-Xy ene, n-Buty benzene, n-Propy benzene, Naphtha ene, o-Ch oroto uene, o-Xy ene, p-Ch oroto uene, p-Isopropy to uene, sec-Buty benzene, Styrene, tert-Buty benzene, V ny Acetate, Xy ene (tota), ,2,3-Tr ch orobenzene, ,2,4-Tr ch orobenzene are outs de contro m ts H gh RPD due to poss b e matr x nte ference and/or samp e non-homogene ty
- RPD(s) for MSD for ,2,3-Tr ch orobenzene, ,2,4-Tr ch orobenzene are outs de contro m ts for samp e MC 8887-3MSD H gh RPD due to poss b e matr x nterference and/or samp e non-homogene ty

Volatiles by GC By Method SW846 8011

Matrix: AQ **Batch ID:** OP322 2

- A samp es were extracted&ana yzed w th n the recommended method ho d ng t me
- A method b anks for th s batch meet method spec f c cr ter a
- Samp e(s) MC 8700- 0MS, MC 8700- 0MSD were used as the QC samp es nd cated
- B ank Sp ke Recove y(s) for ,2-D bromo-3-ch oropropane are outs de contro m ts
- Matr x Sp ke, Matr x Sp ke Dup cate Recovery(s) for ,2-D bromo-3-ch oropropane, ,2-D bromoethane are outs de contro m ts Probab e cause due to matr x nterference
- Samp e(s) OP32247-MB, OP322 2-MS, MC 8752- , MC 8752-2, MC 8752-3, MC 8752-4, OP32247-MS, OP32247-MSD, OP32247-BS, OP32247-BSD have surrogates outs de contro m ts Probab e cause due to matr x nterference
- OP322 2-MS for Bromof uorobenzene (S): Outs de contro m ts Assoc ated samp es are non-detect for target ana yte
- OP322 2-BS for ,2-D bromo-3-ch oropropane: Outs de contro m ts Assoc ated samp es are non-detect for target ana yte

Matrix: SO **Batch ID:** OP32247

- A samp es were extracted & ana yzed w th n the recommended method ho d ng t me
- Samp e(s) MC 8752-2MS, MC 8752-2MSD were used as the QC samp es nd cated
- A method b anks for th s batch meet method spec f c cr ter a
- Samp e(s) OP32247-MB, OP322 2-MS, MC 8752- , MC 8752-2, MC 8752-3, MC 8752-4, OP32247-MS, OP32247-MSD, OP32247-BS, OP32247-BSD have surrogates outs de contro m ts Probab e cause due to matr x nterference
- OP32247-BS/BSD for Bromof uorobenzene (S): Outs de contro m ts Targets recovery sat sfactory
- OP32247-MB, OP32247-MS/MSD for Bromof uorobenzene (S): Outs de contro m ts Sp ke recovery sat sfacto y
- MC 8752- ,MC 8752-2, MC 8752-3, MC 8752-4 for Bromof uorobenzene (S): Outs de contro m ts Samp e non-detect for target ana ytes

Wet Chemistry By Method SM21 2540 B MOD.

Matrix: SO **Batch ID:** GN4 959

- Samp e(s) MC 8752-2DUP were used as the QC samp es for So ds, Percent

SGS Accutest New Eng and ce t f es that a ana ys s were performed w th n method spec f cat on It s further recommended that th s report to be used n ts ent rety The Laborato y D rector for SGS Accutest New Eng and or ass gnee as ver f ed by the s gnature on the cover page has author zed the re ease of th s report(MC 8752)

Summary of Hits

Job Number: MC18752
Account: Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL
Collected: 03/07/13

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
MC18752-1	MW-24-12					
Acetone [a]		0.0560	0.0059	0.0015	mg/kg	SW846 8260B
Chloroform		0.0012 J	0.0024	0.00061	mg/kg	SW846 8260B
Methylene chloride		0.0031	0.0024	0.0014	mg/kg	SW846 8260B
MC18752-2	MW-24-25					
Benzene		0.0012	0.00060	0.00035	mg/kg	SW846 8260B
Carbon disulfide		0.0058 J	0.0060	0.00020	mg/kg	SW846 8260B
Ethylbenzene		0.0023 J	0.0024	0.00029	mg/kg	SW846 8260B
Methylene chloride		0.0037	0.0024	0.0014	mg/kg	SW846 8260B
Toluene		0.0028 J	0.0060	0.0010	mg/kg	SW846 8260B
MC18752-3	MW-24-47					
Benzene		0.0014	0.00057	0.00034	mg/kg	SW846 8260B
Ethylbenzene		0.0021 J	0.0023	0.00028	mg/kg	SW846 8260B
Toluene		0.0026 J	0.0057	0.00097	mg/kg	SW846 8260B
MC18752-4	MW-24-47DUP					
Benzene		0.0012	0.00057	0.00033	mg/kg	SW846 8260B
Ethylbenzene		0.0013 J	0.0023	0.00027	mg/kg	SW846 8260B
Methylene chloride		0.0032	0.0023	0.0013	mg/kg	SW846 8260B
Toluene		0.0018 J	0.0057	0.00096	mg/kg	SW846 8260B
MC18752-5	MW-24-47-EB					
Naphthalene		1.8 J	5.0	0.50	ug/l	SW846 8260B
MC18752-6	TB-030713-01					
Naphthalene		0.67 J	5.0	0.50	ug/l	SW846 8260B

(a) Initial Calibration Verification outside of acceptance criteria. Sample result may be biased high.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	MW-24-12		
Lab Sample ID:	MC18752-1	**Date Sampled:**	03/07/13
Matrix:	SO - Soil	**Date Received:**	03/08/13
Method:	SW846 8260B	**Percent Solids:**	95.9
Project:	URSMOSTL: Roxana Drilling, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M54870.D	1	03/20/13	AMY	n/a	n/a	MSM1869
Run #2							

	Initial Weight	Final Volume
Run #1	4.41 g	5.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone [a]	0.0560	0.0059	0.0015	mg/kg	
107-02-8	Acrolein	ND	0.030	0.012	mg/kg	
107-13-1	Acrylonitrile	ND	0.030	0.0015	mg/kg	
71-43-2	Benzene	ND	0.00059	0.00035	mg/kg	
108-86-1	Bromobenzene	ND	0.0059	0.00026	mg/kg	
74-97-5	Bromochloromethane	ND	0.0059	0.00044	mg/kg	
75-27-4	Bromodichloromethane	ND	0.0024	0.00025	mg/kg	
75-25-2	Bromoform	ND	0.0024	0.0024	mg/kg	
74-83-9	Bromomethane	ND	0.0024	0.00061	mg/kg	
78-93-3	2-Butanone (MEK)	ND	0.0059	0.0015	mg/kg	
104-51-8	n-Butylbenzene	ND	0.0059	0.00022	mg/kg	
135-98-8	sec-Butylbenzene	ND	0.0059	0.00027	mg/kg	
98-06-6	tert-Butylbenzene	ND	0.0059	0.0010	mg/kg	
75-15-0	Carbon disulfide	ND	0.0059	0.00019	mg/kg	
56-23-5	Carbon tetrachloride	ND	0.0024	0.00086	mg/kg	
108-90-7	Chlorobenzene	ND	0.0024	0.00033	mg/kg	
75-00-3	Chloroethane	ND	0.0059	0.0015	mg/kg	
110-75-8	2-Chloroethyl vinyl ether	ND	0.0059	0.0024	mg/kg	
67-66-3	Chloroform	0.0012	0.0024	0.00061	mg/kg	J
74-87-3	Chloromethane	ND	0.0059	0.00055	mg/kg	
95-49-8	o-Chlorotoluene	ND	0.0059	0.0013	mg/kg	
106-43-4	p-Chlorotoluene	ND	0.0059	0.00027	mg/kg	
124-48-1	Dibromochloromethane	ND	0.0024	0.00035	mg/kg	
95-50-1	1,2-Dichlorobenzene	ND	0.0024	0.00026	mg/kg	
541-73-1	1,3-Dichlorobenzene	ND	0.0024	0.00027	mg/kg	
106-46-7	1,4-Dichlorobenzene	ND	0.0024	0.00025	mg/kg	
75-71-8	Dichlorodifluoromethane	ND	0.0024	0.0013	mg/kg	
75-34-3	1,1-Dichloroethane	ND	0.0024	0.00032	mg/kg	
107-06-2	1,2-Dichloroethane	ND	0.0024	0.00034	mg/kg	
75-35-4	1,1-Dichloroethene	ND	0.0024	0.00043	mg/kg	
156-59-2	cis-1,2-Dichloroethene	ND	0.0024	0.00036	mg/kg	
156-60-5	trans-1,2-Dichloroethene	ND	0.0024	0.00034	mg/kg	

ND = Not detected MDL = Method Detection Limit
RL = Reporting 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:	MW-24-12		
Lab Sample ID:	MC18752-1	**Date Sampled:**	03/07/13
Matrix:	SO - Soil	**Date Received:**	03/08/13
Method:	SW846 8260B	**Percent Solids:**	95.9
Project:	URSMOSTL: Roxana Drilling, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	0.0024	0.00044	mg/kg	
142-28-9	1,3-Dichloropropane	ND	0.0059	0.00027	mg/kg	
594-20-7	2,2-Dichloropropane	ND	0.0059	0.0010	mg/kg	
563-58-6	1,1-Dichloropropene	ND	0.0059	0.00031	mg/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	0.0024	0.00020	mg/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	0.0024	0.00059	mg/kg	
123-91-1	1,4-Dioxane	ND	0.030	0.030	mg/kg	
97-63-2	Ethyl methacrylate	ND	0.0059	0.00081	mg/kg	
100-41-4	Ethylbenzene	ND	0.0024	0.00029	mg/kg	
87-68-3	Hexachlorobutadiene	ND	0.0059	0.00055	mg/kg	
591-78-6	2-Hexanone	ND	0.0059	0.0015	mg/kg	
98-82-8	Isopropylbenzene	ND	0.0059	0.00027	mg/kg	
99-87-6	p-Isopropyltoluene	ND	0.0059	0.00021	mg/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	0.0024	0.00034	mg/kg	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	0.0059	0.00059	mg/kg	
74-95-3	Methylene bromide	ND	0.0059	0.00058	mg/kg	
75-09-2	Methylene chloride	0.0031	0.0024	0.0014	mg/kg	
91-20-3	Naphthalene	ND	0.0059	0.0015	mg/kg	
103-65-1	n-Propylbenzene	ND	0.0059	0.0012	mg/kg	
100-42-5	Styrene	ND	0.0059	0.00028	mg/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.0059	0.00028	mg/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.0024	0.00050	mg/kg	
127-18-4	Tetrachloroethene	ND	0.0024	0.00027	mg/kg	
108-88-3	Toluene	ND	0.0059	0.0010	mg/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	0.0059	0.00028	mg/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	0.0059	0.00027	mg/kg	
71-55-6	1,1,1-Trichloroethane	ND	0.0024	0.00037	mg/kg	
79-00-5	1,1,2-Trichloroethane	ND	0.0024	0.00087	mg/kg	
79-01-6	Trichloroethene	ND	0.0024	0.00025	mg/kg	
75-69-4	Trichlorofluoromethane	ND	0.0024	0.00036	mg/kg	
96-18-4	1,2,3-Trichloropropane	ND	0.0059	0.00035	mg/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	0.0059	0.00026	mg/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	0.0059	0.00025	mg/kg	
108-05-4	Vinyl Acetate	ND	0.0059	0.0015	mg/kg	
75-01-4	Vinyl chloride	ND	0.0024	0.00032	mg/kg	
	m,p-Xylene	ND	0.0024	0.00093	mg/kg	
95-47-6	o-Xylene	ND	0.0024	0.00028	mg/kg	
1330-20-7	Xylene (total)	ND	0.0024	0.00028	mg/kg	

ND = Not detected MDL = Method Detection Limit
RL = Reporting 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:	MW-24-12		
Lab Sample ID:	MC18752-1	**Date Sampled:**	03/07/13
Matrix:	SO - Soil	**Date Received:**	03/08/13
Method:	SW846 8260B	**Percent Solids:**	95.9
Project:	URSMOSTL: Roxana Drilling, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	91%		70-130%
2037-26-5	Toluene-D8	110%		70-130%
460-00-4	4-Bromofluorobenzene	95%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	mg/kg	

(a) Initial Calibration Verification outside of acceptance criteria. Sample result may be biased high.

ND = Not detected MDL = Method Detection Limit
RL = Reporting 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:	MW-24-12		
Lab Sample ID:	MC18752-1	**Date Sampled:**	03/07/13
Matrix:	SO - Soil	**Date Received:**	03/08/13
Method:	SW846 8011 SW846 3550B	**Percent Solids:**	95.9
Project:	URSMOSTL: Roxana Drilling, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	YZ78546.D	1	03/16/13	CZ	03/13/13	OP32247	GYZ7047
Run #2							

	Initial Weight	Final Volume
Run #1	30.2 g	50.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.0026	0.0012	mg/kg	
106-93-4	1,2-Dibromoethane	ND	0.0026	0.0010	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	162%		61-167%
460-00-4	Bromofluorobenzene (S)	202% [a]		61-167%

(a) Outside control limits.Sample non-detect for target analytes.

ND = Not detected MDL = Method Detection Limit
RL = Reporting 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:	MW-24-25		
Lab Sample ID:	MC18752-2	**Date Sampled:**	03/07/13
Matrix:	SO - Soil	**Date Received:**	03/08/13
Method:	SW846 8260B	**Percent Solids:**	93.6
Project:	URSMOSTL: Roxana Drilling, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M54871.D	1	03/20/13	AMY	n/a	n/a	MSM1869
Run #2							

	Initial Weight	Final Volume
Run #1	4.44 g	5.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	0.0060	0.0015	mg/kg	
107-02-8	Acrolein	ND	0.030	0.012	mg/kg	
107-13-1	Acrylonitrile	ND	0.030	0.0015	mg/kg	
71-43-2	Benzene	0.0012	0.00060	0.00035	mg/kg	
108-86-1	Bromobenzene	ND	0.0060	0.00027	mg/kg	
74-97-5	Bromochloromethane	ND	0.0060	0.00045	mg/kg	
75-27-4	Bromodichloromethane	ND	0.0024	0.00025	mg/kg	
75-25-2	Bromoform	ND	0.0024	0.0024	mg/kg	
74-83-9	Bromomethane	ND	0.0024	0.00062	mg/kg	
78-93-3	2-Butanone (MEK)	ND	0.0060	0.0015	mg/kg	
104-51-8	n-Butylbenzene	ND	0.0060	0.00022	mg/kg	
135-98-8	sec-Butylbenzene	ND	0.0060	0.00028	mg/kg	
98-06-6	tert-Butylbenzene	ND	0.0060	0.0011	mg/kg	
75-15-0	Carbon disulfide	0.0058	0.0060	0.00020	mg/kg	J
56-23-5	Carbon tetrachloride	ND	0.0024	0.00087	mg/kg	
108-90-7	Chlorobenzene	ND	0.0024	0.00033	mg/kg	
75-00-3	Chloroethane	ND	0.0060	0.0015	mg/kg	
110-75-8	2-Chloroethyl vinyl ether	ND	0.0060	0.0024	mg/kg	
67-66-3	Chloroform	ND	0.0024	0.00062	mg/kg	
74-87-3	Chloromethane	ND	0.0060	0.00056	mg/kg	
95-49-8	o-Chlorotoluene	ND	0.0060	0.0013	mg/kg	
106-43-4	p-Chlorotoluene	ND	0.0060	0.00027	mg/kg	
124-48-1	Dibromochloromethane	ND	0.0024	0.00036	mg/kg	
95-50-1	1,2-Dichlorobenzene	ND	0.0024	0.00026	mg/kg	
541-73-1	1,3-Dichlorobenzene	ND	0.0024	0.00027	mg/kg	
106-46-7	1,4-Dichlorobenzene	ND	0.0024	0.00025	mg/kg	
75-71-8	Dichlorodifluoromethane	ND	0.0024	0.0014	mg/kg	
75-34-3	1,1-Dichloroethane	ND	0.0024	0.00032	mg/kg	
107-06-2	1,2-Dichloroethane	ND	0.0024	0.00035	mg/kg	
75-35-4	1,1-Dichloroethene	ND	0.0024	0.00044	mg/kg	
156-59-2	cis-1,2-Dichloroethene	ND	0.0024	0.00036	mg/kg	
156-60-5	trans-1,2-Dichloroethene	ND	0.0024	0.00034	mg/kg	

ND = Not detected MDL = Method Detection Limit
RL = Reporting 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:	MW-24-25		
Lab Sample ID:	MC18752-2	**Date Sampled:**	03/07/13
Matrix:	SO - Soil	**Date Received:**	03/08/13
Method:	SW846 8260B	**Percent Solids:**	93.6
Project:	URSMOSTL: Roxana Drilling, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	0.0024	0.00045	mg/kg	
142-28-9	1,3-Dichloropropane	ND	0.0060	0.00028	mg/kg	
594-20-7	2,2-Dichloropropane	ND	0.0060	0.0010	mg/kg	
563-58-6	1,1-Dichloropropene	ND	0.0060	0.00032	mg/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	0.0024	0.00021	mg/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	0.0024	0.00060	mg/kg	
123-91-1	1,4-Dioxane	ND	0.030	0.030	mg/kg	
97-63-2	Ethyl methacrylate	ND	0.0060	0.00082	mg/kg	
100-41-4	Ethylbenzene	0.0023	0.0024	0.00029	mg/kg	J
87-68-3	Hexachlorobutadiene	ND	0.0060	0.00056	mg/kg	
591-78-6	2-Hexanone	ND	0.0060	0.0015	mg/kg	
98-82-8	Isopropylbenzene	ND	0.0060	0.00027	mg/kg	
99-87-6	p-Isopropyltoluene	ND	0.0060	0.00021	mg/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	0.0024	0.00035	mg/kg	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	0.0060	0.00060	mg/kg	
74-95-3	Methylene bromide	ND	0.0060	0.00059	mg/kg	
75-09-2	Methylene chloride	0.0037	0.0024	0.0014	mg/kg	
91-20-3	Naphthalene	ND	0.0060	0.0015	mg/kg	
103-65-1	n-Propylbenzene	ND	0.0060	0.0012	mg/kg	
100-42-5	Styrene	ND	0.0060	0.00028	mg/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.0060	0.00029	mg/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.0024	0.00051	mg/kg	
127-18-4	Tetrachloroethene	ND	0.0024	0.00028	mg/kg	
108-88-3	Toluene	0.0028	0.0060	0.0010	mg/kg	J
87-61-6	1,2,3-Trichlorobenzene	ND	0.0060	0.00029	mg/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	0.0060	0.00028	mg/kg	
71-55-6	1,1,1-Trichloroethane	ND	0.0024	0.00038	mg/kg	
79-00-5	1,1,2-Trichloroethane	ND	0.0024	0.00088	mg/kg	
79-01-6	Trichloroethene	ND	0.0024	0.00025	mg/kg	
75-69-4	Trichlorofluoromethane	ND	0.0024	0.00037	mg/kg	
96-18-4	1,2,3-Trichloropropane	ND	0.0060	0.00035	mg/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	0.0060	0.00027	mg/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	0.0060	0.00026	mg/kg	
108-05-4	Vinyl Acetate	ND	0.0060	0.0015	mg/kg	
75-01-4	Vinyl chloride	ND	0.0024	0.00033	mg/kg	
	m,p-Xylene	ND	0.0024	0.00095	mg/kg	
95-47-6	o-Xylene	ND	0.0024	0.00029	mg/kg	
1330-20-7	Xylene (total)	ND	0.0024	0.00029	mg/kg	

ND = Not detected MDL = Method Detection Limit
RL = Reporting 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:	MW-24-25		
Lab Sample ID:	MC18752-2	**Date Sampled:**	03/07/13
Matrix:	SO - Soil	**Date Received:**	03/08/13
Method:	SW846 8260B	**Percent Solids:**	93.6
Project:	URSMOSTL: Roxana Drilling, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	87%		70-130%
2037-26-5	Toluene-D8	111%		70-130%
460-00-4	4-Bromofluorobenzene	89%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	mg/kg	

ND = Not detected MDL = Method Detection Limit
RL = Reporting 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:	MW-24-25		
Lab Sample ID:	MC18752-2	**Date Sampled:**	03/07/13
Matrix:	SO - Soil	**Date Received:**	03/08/13
Method:	SW846 8011 SW846 3550B	**Percent Solids:**	93.6
Project:	URSMOSTL: Roxana Drilling, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	YZ78547.D	1	03/16/13	CZ	03/13/13	OP32247	GYZ7047
Run #2							

	Initial Weight	Final Volume
Run #1	30.3 g	50.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.0026	0.0012	mg/kg	
106-93-4	1,2-Dibromoethane	ND	0.0026	0.0010	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	177% [a]		61-167%
460-00-4	Bromofluorobenzene (S)	208% [a]		61-167%

(a) Outside control limits.Sample non-detect for target analytes.

ND = Not detected MDL = Method Detection Limit
RL = Reporting 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:	MW-24-47		
Lab Sample ID:	MC18752-3	**Date Sampled:**	03/07/13
Matrix:	SO - Soil	**Date Received:**	03/08/13
Method:	SW846 8260B	**Percent Solids:**	81.3
Project:	URSMOSTL: Roxana Drilling, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M54904.D	1	03/21/13	AMY	n/a	n/a	MSM1871
Run #2	K67892.D	1	03/12/13	GK	n/a	n/a	MSK2225

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.37 g	5.0 ml	
Run #2	4.15 g	10.0 ml	100 ul

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	0.0057	0.0014	mg/kg	
107-02-8	Acrolein	ND	0.029	0.011	mg/kg	
107-13-1	Acrylonitrile	ND	0.029	0.0014	mg/kg	
71-43-2	Benzene	0.0014	0.00057	0.00034	mg/kg	
108-86-1	Bromobenzene	ND	0.0057	0.00026	mg/kg	
74-97-5	Bromochloromethane	ND	0.0057	0.00043	mg/kg	
75-27-4	Bromodichloromethane	ND	0.0023	0.00024	mg/kg	
75-25-2	Bromoform	ND	0.0023	0.0023	mg/kg	
74-83-9	Bromomethane	ND	0.0023	0.00059	mg/kg	
78-93-3	2-Butanone (MEK)	ND	0.0057	0.0014	mg/kg	
104-51-8	n-Butylbenzene	ND	0.0057	0.00021	mg/kg	
135-98-8	sec-Butylbenzene	ND	0.0057	0.00026	mg/kg	
98-06-6	tert-Butylbenzene	ND	0.0057	0.0010	mg/kg	
75-15-0	Carbon disulfide	ND	0.0057	0.00019	mg/kg	
56-23-5	Carbon tetrachloride	ND	0.0023	0.00083	mg/kg	
108-90-7	Chlorobenzene	ND	0.0023	0.00032	mg/kg	
75-00-3	Chloroethane	ND	0.0057	0.0014	mg/kg	
110-75-8	2-Chloroethyl vinyl ether	ND [a]	0.80	0.32	mg/kg	
67-66-3	Chloroform	ND	0.0023	0.00059	mg/kg	
74-87-3	Chloromethane	ND	0.0057	0.00053	mg/kg	
95-49-8	o-Chlorotoluene	ND	0.0057	0.0013	mg/kg	
106-43-4	p-Chlorotoluene	ND	0.0057	0.00026	mg/kg	
124-48-1	Dibromochloromethane	ND	0.0023	0.00034	mg/kg	
95-50-1	1,2-Dichlorobenzene	ND	0.0023	0.00025	mg/kg	
541-73-1	1,3-Dichlorobenzene	ND	0.0023	0.00026	mg/kg	
106-46-7	1,4-Dichlorobenzene	ND	0.0023	0.00024	mg/kg	
75-71-8	Dichlorodifluoromethane	ND	0.0023	0.0013	mg/kg	
75-34-3	1,1-Dichloroethane	ND	0.0023	0.00031	mg/kg	
107-06-2	1,2-Dichloroethane	ND	0.0023	0.00033	mg/kg	
75-35-4	1,1-Dichloroethene	ND	0.0023	0.00042	mg/kg	
156-59-2	cis-1,2-Dichloroethene	ND	0.0023	0.00034	mg/kg	
156-60-5	trans-1,2-Dichloroethene	ND	0.0023	0.00033	mg/kg	

ND = Not detected MDL = Method Detection Limit
RL = Reporting 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:	MW-24-47		
Lab Sample ID:	MC18752-3	**Date Sampled:**	03/07/13
Matrix:	SO - Soil	**Date Received:**	03/08/13
Method:	SW846 8260B	**Percent Solids:**	81.3
Project:	URSMOSTL: Roxana Drilling, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	0.0023	0.00043	mg/kg	
142-28-9	1,3-Dichloropropane	ND	0.0057	0.00026	mg/kg	
594-20-7	2,2-Dichloropropane	ND	0.0057	0.00099	mg/kg	
563-58-6	1,1-Dichloropropene	ND	0.0057	0.00030	mg/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	0.0023	0.00020	mg/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	0.0023	0.00057	mg/kg	
123-91-1	1,4-Dioxane	ND	0.029	0.029	mg/kg	
97-63-2	Ethyl methacrylate	ND	0.0057	0.00078	mg/kg	
100-41-4	Ethylbenzene	0.0021	0.0023	0.00028	mg/kg	J
87-68-3	Hexachlorobutadiene	ND	0.0057	0.00053	mg/kg	
591-78-6	2-Hexanone	ND	0.0057	0.0014	mg/kg	
98-82-8	Isopropylbenzene	ND	0.0057	0.00026	mg/kg	
99-87-6	p-Isopropyltoluene	ND	0.0057	0.00020	mg/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	0.0023	0.00033	mg/kg	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	0.0057	0.00057	mg/kg	
74-95-3	Methylene bromide	ND	0.0057	0.00057	mg/kg	
75-09-2	Methylene chloride	ND	0.0023	0.0013	mg/kg	
91-20-3	Naphthalene	ND	0.0057	0.0014	mg/kg	
103-65-1	n-Propylbenzene	ND	0.0057	0.0012	mg/kg	
100-42-5	Styrene	ND	0.0057	0.00027	mg/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.0057	0.00027	mg/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.0023	0.00049	mg/kg	
127-18-4	Tetrachloroethene	ND	0.0023	0.00026	mg/kg	
108-88-3	Toluene	0.0026	0.0057	0.00097	mg/kg	J
87-61-6	1,2,3-Trichlorobenzene	ND	0.0057	0.00027	mg/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	0.0057	0.00026	mg/kg	
71-55-6	1,1,1-Trichloroethane	ND	0.0023	0.00036	mg/kg	
79-00-5	1,1,2-Trichloroethane	ND	0.0023	0.00084	mg/kg	
79-01-6	Trichloroethene	ND	0.0023	0.00024	mg/kg	
75-69-4	Trichlorofluoromethane	ND	0.0023	0.00035	mg/kg	
96-18-4	1,2,3-Trichloropropane	ND	0.0057	0.00033	mg/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	0.0057	0.00026	mg/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	0.0057	0.00024	mg/kg	
108-05-4	Vinyl Acetate	ND	0.0057	0.0014	mg/kg	
75-01-4	Vinyl chloride	ND	0.0023	0.00031	mg/kg	
	m,p-Xylene	ND	0.0023	0.00090	mg/kg	
95-47-6	o-Xylene	ND	0.0023	0.00027	mg/kg	
1330-20-7	Xylene (total)	ND	0.0023	0.00027	mg/kg	

ND = Not detected MDL = Method Detection Limit
RL = Reporting 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:	MW-24-47		
Lab Sample ID:	MC18752-3	**Date Sampled:**	03/07/13
Matrix:	SO - Soil	**Date Received:**	03/08/13
Method:	SW846 8260B	**Percent Solids:**	81.3
Project:	URSMOSTL: Roxana Drilling, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	88%	115%	70-130%
2037-26-5	Toluene-D8	112%	110%	70-130%
460-00-4	4-Bromofluorobenzene	89%	104%	70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	mg/kg	

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting 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:	MW-24-47		
Lab Sample ID:	MC18752-3	**Date Sampled:**	03/07/13
Matrix:	SO - Soil	**Date Received:**	03/08/13
Method:	SW846 8011 SW846 3550B	**Percent Solids:**	81.3
Project:	URSMOSTL: Roxana Drilling, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	YZ78548.D	1	03/16/13	CZ	03/13/13	OP32247	GYZ7047
Run #2							

	Initial Weight	Final Volume
Run #1	30.2 g	50.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.0031	0.0014	mg/kg	
106-93-4	1,2-Dibromoethane	ND	0.0031	0.0012	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	158%		61-167%
460-00-4	Bromofluorobenzene (S)	200% [a]		61-167%

(a) Outside control limits.Sample non-detect for target analytes.

ND = Not detected MDL = Method Detection Limit
RL = Reporting 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:	MW-24-47DUP		
Lab Sample ID:	MC18752-4	**Date Sampled:**	03/07/13
Matrix:	SO - Soil	**Date Received:**	03/08/13
Method:	SW846 8260B	**Percent Solids:**	81.8
Project:	URSMOSTL: Roxana Drilling, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M54872.D	1	03/20/13	AMY	n/a	n/a	MSM1869
Run #2							

	Initial Weight	Final Volume
Run #1	5.40 g	5.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	0.0057	0.0014	mg/kg	
107-02-8	Acrolein	ND	0.028	0.011	mg/kg	
107-13-1	Acrylonitrile	ND	0.028	0.0014	mg/kg	
71-43-2	Benzene	0.0012	0.00057	0.00033	mg/kg	
108-86-1	Bromobenzene	ND	0.0057	0.00025	mg/kg	
74-97-5	Bromochloromethane	ND	0.0057	0.00042	mg/kg	
75-27-4	Bromodichloromethane	ND	0.0023	0.00024	mg/kg	
75-25-2	Bromoform	ND	0.0023	0.0023	mg/kg	
74-83-9	Bromomethane	ND	0.0023	0.00059	mg/kg	
78-93-3	2-Butanone (MEK)	ND	0.0057	0.0014	mg/kg	
104-51-8	n-Butylbenzene	ND	0.0057	0.00021	mg/kg	
135-98-8	sec-Butylbenzene	ND	0.0057	0.00026	mg/kg	
98-06-6	tert-Butylbenzene	ND	0.0057	0.0010	mg/kg	
75-15-0	Carbon disulfide	ND	0.0057	0.00019	mg/kg	
56-23-5	Carbon tetrachloride	ND	0.0023	0.00082	mg/kg	
108-90-7	Chlorobenzene	ND	0.0023	0.00031	mg/kg	
75-00-3	Chloroethane	ND	0.0057	0.0014	mg/kg	
110-75-8	2-Chloroethyl vinyl ether	ND	0.0057	0.0023	mg/kg	
67-66-3	Chloroform	ND	0.0023	0.00058	mg/kg	
74-87-3	Chloromethane	ND	0.0057	0.00053	mg/kg	
95-49-8	o-Chlorotoluene	ND	0.0057	0.0012	mg/kg	
106-43-4	p-Chlorotoluene	ND	0.0057	0.00026	mg/kg	
124-48-1	Dibromochloromethane	ND	0.0023	0.00033	mg/kg	
95-50-1	1,2-Dichlorobenzene	ND	0.0023	0.00024	mg/kg	
541-73-1	1,3-Dichlorobenzene	ND	0.0023	0.00026	mg/kg	
106-46-7	1,4-Dichlorobenzene	ND	0.0023	0.00024	mg/kg	
75-71-8	Dichlorodifluoromethane	ND	0.0023	0.0013	mg/kg	
75-34-3	1,1-Dichloroethane	ND	0.0023	0.00031	mg/kg	
107-06-2	1,2-Dichloroethane	ND	0.0023	0.00033	mg/kg	
75-35-4	1,1-Dichloroethene	ND	0.0023	0.00042	mg/kg	
156-59-2	cis-1,2-Dichloroethene	ND	0.0023	0.00034	mg/kg	
156-60-5	trans-1,2-Dichloroethene	ND	0.0023	0.00032	mg/kg	

ND = Not detected MDL = Method Detection Limit
RL = Reporting 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:	MW-24-47DUP		
Lab Sample ID:	MC18752-4	**Date Sampled:**	03/07/13
Matrix:	SO - Soil	**Date Received:**	03/08/13
Method:	SW846 8260B	**Percent Solids:**	81.8
Project:	URSMOSTL: Roxana Drilling, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	0.0023	0.00042	mg/kg	
142-28-9	1,3-Dichloropropane	ND	0.0057	0.00026	mg/kg	
594-20-7	2,2-Dichloropropane	ND	0.0057	0.00098	mg/kg	
563-58-6	1,1-Dichloropropene	ND	0.0057	0.00030	mg/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	0.0023	0.00019	mg/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	0.0023	0.00056	mg/kg	
123-91-1	1,4-Dioxane	ND	0.028	0.028	mg/kg	
97-63-2	Ethyl methacrylate	ND	0.0057	0.00077	mg/kg	
100-41-4	Ethylbenzene	0.0013	0.0023	0.00027	mg/kg	J
87-68-3	Hexachlorobutadiene	ND	0.0057	0.00053	mg/kg	
591-78-6	2-Hexanone	ND	0.0057	0.0014	mg/kg	
98-82-8	Isopropylbenzene	ND	0.0057	0.00026	mg/kg	
99-87-6	p-Isopropyltoluene	ND	0.0057	0.00020	mg/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	0.0023	0.00033	mg/kg	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	0.0057	0.00057	mg/kg	
74-95-3	Methylene bromide	ND	0.0057	0.00056	mg/kg	
75-09-2	Methylene chloride	0.0032	0.0023	0.0013	mg/kg	
91-20-3	Naphthalene	ND	0.0057	0.0014	mg/kg	
103-65-1	n-Propylbenzene	ND	0.0057	0.0011	mg/kg	
100-42-5	Styrene	ND	0.0057	0.00026	mg/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.0057	0.00027	mg/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.0023	0.00048	mg/kg	
127-18-4	Tetrachloroethene	ND	0.0023	0.00026	mg/kg	
108-88-3	Toluene	0.0018	0.0057	0.00096	mg/kg	J
87-61-6	1,2,3-Trichlorobenzene	ND	0.0057	0.00027	mg/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	0.0057	0.00026	mg/kg	
71-55-6	1,1,1-Trichloroethane	ND	0.0023	0.00036	mg/kg	
79-00-5	1,1,2-Trichloroethane	ND	0.0023	0.00083	mg/kg	
79-01-6	Trichloroethene	ND	0.0023	0.00024	mg/kg	
75-69-4	Trichlorofluoromethane	ND	0.0023	0.00034	mg/kg	
96-18-4	1,2,3-Trichloropropane	ND	0.0057	0.00033	mg/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	0.0057	0.00025	mg/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	0.0057	0.00024	mg/kg	
108-05-4	Vinyl Acetate	ND	0.0057	0.0014	mg/kg	
75-01-4	Vinyl chloride	ND	0.0023	0.00031	mg/kg	
	m,p-Xylene	ND	0.0023	0.00089	mg/kg	
95-47-6	o-Xylene	ND	0.0023	0.00027	mg/kg	
1330-20-7	Xylene (total)	ND	0.0023	0.00027	mg/kg	

ND = Not detected MDL = Method Detection Limit
RL = Reporting 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:	MW-24-47DUP		
Lab Sample ID:	MC18752-4	**Date Sampled:**	03/07/13
Matrix:	SO - Soil	**Date Received:**	03/08/13
Method:	SW846 8260B	**Percent Solids:**	81.8
Project:	URSMOSTL: Roxana Drilling, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	87%		70-130%
2037-26-5	Toluene-D8	112%		70-130%
460-00-4	4-Bromofluorobenzene	89%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	mg/kg	

ND = Not detected MDL = Method Detection Limit
RL = Reporting 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:	MW-24-47DUP		
Lab Sample ID:	MC18752-4	**Date Sampled:**	03/07/13
Matrix:	SO - Soil	**Date Received:**	03/08/13
Method:	SW846 8011 SW846 3550B	**Percent Solids:**	81.8
Project:	URSMOSTL: Roxana Drilling, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	YZ78549.D	1	03/16/13	CZ	03/13/13	OP32247	GYZ7047
Run #2							

	Initial Weight	Final Volume
Run #1	30.2 g	50.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.0030	0.0014	mg/kg	
106-93-4	1,2-Dibromoethane	ND	0.0030	0.0012	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	158%		61-167%
460-00-4	Bromofluorobenzene (S)	218% [a]		61-167%

(a) Outside control limits.Sample non-detect for target analytes.

ND = Not detected MDL = Method Detection Limit
RL = Reporting 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:	MW-24-47-EB		
Lab Sample ID:	MC18752-5	**Date Sampled:**	03/07/13
Matrix:	AQ - Equipment Blank	**Date Received:**	03/08/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSMOSTL: Roxana Drilling, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	G125263.D	1	03/13/13	JM	n/a	n/a	MSG4957
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	
107-02-8	Acrolein [a]	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.3	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.61	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	1.3	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting 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:	MW-24-47-EB		
Lab Sample ID:	MC18752-5	**Date Sampled:**	03/07/13
Matrix:	AQ - Equipment Blank	**Date Received:**	03/08/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSMOSTL: Roxana Drilling, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
91-20-3	Naphthalene	1.8	5.0	0.50	ug/l	J
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	ND	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.3	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate [a]	ND	5.0	1.3	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting 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:	MW-24-47-EB		
Lab Sample ID:	MC18752-5	**Date Sampled:**	03/07/13
Matrix:	AQ - Equipment Blank	**Date Received:**	03/08/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSMOSTL: Roxana Drilling, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	77%		70-130%
2037-26-5	Toluene-D8	76%		70-130%
460-00-4	4-Bromofluorobenzene	77%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) Initial Calibration Verification outside of acceptance criteria. Sample result may be biased low.

ND = Not detected MDL = Method Detection Limit
RL = Reporting 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:	MW-24-47-EB		
Lab Sample ID:	MC18752-5	**Date Sampled:**	03/07/13
Matrix:	AQ - Equipment Blank	**Date Received:**	03/08/13
Method:	SW846 8011 SW846 8011	**Percent Solids:**	n/a
Project:	URSMOSTL: Roxana Drilling, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BB46162.D	1	03/11/13	CZ	03/11/13	OP32212	GBB2782
Run #2							

	Initial Volume	Final Volume
Run #1	35.9 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	83%		36-173%
460-00-4	Bromofluorobenzene (S)	149%		36-173%

ND = Not detected MDL = Method Detection Limit
RL = Reporting 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-030713-01		
Lab Sample ID:	MC18752-6	**Date Sampled:**	03/07/13
Matrix:	AQ - Trip Blank Water	**Date Received:**	03/08/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSMOSTL: Roxana Drilling, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	G125264.D	1	03/13/13	JM	n/a	n/a	MSG4957
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	
107-02-8	Acrolein [a]	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.3	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.61	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	1.3	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	ug/l	

ND = Not detected MDL = Method Detection Limit
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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-030713-01		
Lab Sample ID:	MC18752-6	**Date Sampled:**	03/07/13
Matrix:	AQ - Trip Blank Water	**Date Received:**	03/08/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSMOSTL: Roxana Drilling, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
91-20-3	Naphthalene	0.67	5.0	0.50	ug/l	J
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	ND	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.3	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate [a]	ND	5.0	1.3	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting 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-030713-01		
Lab Sample ID:	MC18752-6	**Date Sampled:**	03/07/13
Matrix:	AQ - Trip Blank Water	**Date Received:**	03/08/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSMOSTL: Roxana Drilling, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	76%		70-130%
2037-26-5	Toluene-D8	76%		70-130%
460-00-4	4-Bromofluorobenzene	78%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) Initial Calibration Verification outside of acceptance criteria. Sample result may be biased low.

ND = Not detected MDL = Method Detection Limit
RL = Reporting 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-030713-01		
Lab Sample ID:	MC18752-6	**Date Sampled:**	03/07/13
Matrix:	AQ - Trip Blank Water	**Date Received:**	03/08/13
Method:	SW846 8011 SW846 8011	**Percent Solids:**	n/a
Project:	URSMOSTL: Roxana Drilling, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BB46163.D	1	03/12/13	CZ	03/11/13	OP32212	GBB2782
Run #2							

	Initial Volume	Final Volume
Run #1	37.2 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.014	0.012	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.014	0.0098	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	61%		36-173%
460-00-4	Bromofluorobenzene (S)	75%		36-173%

ND = Not detected MDL = Method Detection Limit
RL = Reporting 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
- Sample Tracking Chronicle
- Internal Chain of Custody

Shell Oil Products Chain Of Custody Record

URS

LAB (LOCATION)

- ☐ XENCO
- ☐ TestAmerica ( )
- ☑ OTHER Accutest Labs; 495 Technology Ctr W Marlborough, MA 01752 (508-481-6200)
- ☐ Lab Vendor # ( )
- ☐ SPL ( )

Lab Vendor #

Please Check Appropriate Box:

- ☑ ENV. SERVICES
- ☐ MOTIVA RETAIL
- ☐ SHELL RETAIL
- ☐ MOTIVA SD&CM
- ☐ CONSULTANT
- ☐ LUBES
- ☐ SHELL PIPELINE
- ☐ OTHER ______

Print Bill To Contact Name: BOB BILLMAN

INCIDENT # (ENV SERVICES): 9 7 2 1 6 6 4 0

☐ CHECK IF NO INCIDENT # APPLIES

DATE: 3/7/13

PAGE: 1 of 1

PO #

SAP #: 3 4 0 0 6 1

SAMPLING COMPANY: URS CORPORATION

LOG CODE:

ADDRESS: 1001 HIGHLANDS PLAZA DRIVE WEST - SUITE 300; ST. LOUIS, MO 63110

PROJECT CONTACT (Hardcopy or PDF Report to): ELIZABETH KUNKEL

TELEPHONE: 314-429-0100

FAX: 314-429-0462

Bill To Contact E-MAIL:

SITE ADDRESS: Street and City: 900 SOUTH CENTRAL AVE – ROXANA

State: IL

GLOBAL ID NO.:

EDF DELIVERABLE TO (Name, Company, Office Location):

PHONE NO.:

E-MAIL:

CONSULTANT PROJECT NO.: Additional Comp... 21562850.130...

SAMPLER NAME(S) (Print): Michael Miller / Michael Curren

LAB USE ONLY: MC18752

TURNAROUND TIME (CALENDAR DAYS): ☑ STANDARD 10 DAY) ☐ 5 DAYS ☐ 3 DAYS ☐ 2 DAYS ☐ 24 HOURS ☐ RESULTS NEEDED ON WEEKEND

☐ LA - RWQCB REPORT FORMAT ☐ UST AGENCY:

DELIVERABLES: ☐ LEVEL 1 ☑ LEVEL 2 ☐ LEVEL 3 ☑ LEVEL 4 ☑ OTHER (SPECIFY) EDD

TEMPERATURE ON RECEIPT C° Cooler #1 Cooler #2 Cooler #3

SPECIAL INSTRUCTIONS OR NOTES :

* Please include "J" values on Reports.
* Please provide sample receipt upon login.

- ☑ SHELL CONTRACT RATE APPLIES
- ☐ STATE REIMBURSEMENT RATE APPLIES
- ☐ EDD NOT NEEDED
- ☑ RECEIPT VERIFICATION REQUESTED / PROVIDE EDD

REQUESTED ANALYSIS

FIELD NOTES:

TEMPERATURE ON RECEIPT C°

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	PRESERVATIVE HCL	HNO3	H2SO4	NONE	OTHER	NO. OF CONT.	VOC 8260B	VOC 8011	SVOC 8270D	PAH 8270LL	PID (ppm)	Container PID Readings or Laboratory Notes
-1	MW-24-12	3/7/13	0955	Soil				1	3	4	X	X				
-2	MW-24-25	↓	1115	Soil				1	3	4	X	X				
-2S	MW-24-25-MS		1115	Soil				1	3	4	X	X				
-2SD	MW-24-25-MSD		1115	Soil				1	3	4	X	X				
-3	MW-24-47		1215	Soil				1	3	4	X	X				
	~~MW-47-Dup~~ MPM															
-4	MW-24-47-Dup		1215	Soil				1	3	4	X	X				
-5	MW-24-47-EB		1315	Water	2				2	4	X	X				IC3, IC,
-6	TB-030713-01	↓	0800	Water	2				2	4	X	X				10D3
																2.0°

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
[signature]	FED EX	3/7/13	1700
Fedex	[signature]	3/8/13	11:00

05/2/06 Revision

MC18752: Chain of Custody
Page 1 of 2

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: MC18752 Client: URS Immediate Client Services Action Required: No

Date / Time Received: 3/8/2013 Delivery Method: Client Service Action Required at Login: No

Project: 900 SO CENTRAL AVE No. Coolers: 1 Airbill #'s:

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:	Infared gun		
3. Cooler media:	Ice (bag)		

Quality Control Preservatio	Y	or	N	N/A
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

Accutest Laboratories
V:508.481.6200

495 Technology Center West, Bldg One
F: 508.481.7753

Marlborough, MA
www/accutest.com

MC18752: Chain of Custody
Page 2 of 2

Internal Sample Tracking Chronicle

Shell Oil

Job No: MC18752

URSMOSTL: Roxana Drilling, Roxana, IL
Project No: 21562850.15000

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
MC18752-1 Collected: 07-MAR-13 09:55 By: MMMC Received: 08-MAR-13 By: MW-24-12						
MC18752-1	SM21 2540 B MOD.	12-MAR-13	BF			%SOL
MC18752-1	SW846 8011	16-MAR-13 02:46	CZ	13-MAR-13	CC	V8011SL
MC18752-1	SW846 8260B	20-MAR-13 11:01	AMY			V8260SL+
MC18752-2 Collected: 07-MAR-13 11:15 By: MMMC Received: 08-MAR-13 By: MW-24-25						
MC18752-2	SM21 2540 B MOD.	12-MAR-13	BF			%SOL
MC18752-2	SW846 8011	16-MAR-13 03:14	CZ	13-MAR-13	CC	V8011SL
MC18752-2	SW846 8260B	20-MAR-13 11:31	AMY			V8260SL+
MC18752-3 Collected: 07-MAR-13 12:15 By: MMMC Received: 08-MAR-13 By: MW-24-47						
MC18752-3	SM21 2540 B MOD.	12-MAR-13	BF			%SOL
MC18752-3	SW846 8260B	12-MAR-13 12:18	GK			V8260SL+
MC18752-3	SW846 8011	16-MAR-13 03:42	CZ	13-MAR-13	CC	V8011SL
MC18752-3	SW846 8260B	21-MAR-13 13:07	AMY			V8260SL+
MC18752-4 Collected: 07-MAR-13 12:15 By: MMMC Received: 08-MAR-13 By: MW-24-47DUP						
MC18752-4	SM21 2540 B MOD.	12-MAR-13	BF			%SOL
MC18752-4	SW846 8011	16-MAR-13 04:10	CZ	13-MAR-13	CC	V8011SL
MC18752-4	SW846 8260B	20-MAR-13 12:01	AMY			V8260SL+
MC18752-5 Collected: 07-MAR-13 13:15 By: MMMC Received: 08-MAR-13 By: MW-24-47-EB						
MC18752-5	SW846 8011	11-MAR-13 23:38	CZ	11-MAR-13	BJ	V8011SL
MC18752-5	SW846 8260B	13-MAR-13 14:29	JM			V8260SL+
MC18752-6 Collected: 07-MAR-13 08:00 By: MMMC Received: 08-MAR-13 By: TB-030713-01						
MC18752-6	SW846 8011	12-MAR-13 00:05	CZ	11-MAR-13	BJ	V8011SL
MC18752-6	SW846 8260B	13-MAR-13 14:57	JM			V8260SL+

SGS Accutest Internal Chain of Custody

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL
Received: 03/08/13

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
MC18752-1.1	Walk In Ref #5	Bijan Firowznin	03/12/13 08:33	Retrieve from Storage
MC18752-1.1	Bijan Firowznin	Walk In Ref #5	03/12/13 09:48	Return to Storage
MC18752-1.1	Walk In Ref #5	Chris Cataldo	03/13/13 17:50	Retrieve from Storage
MC18752-1.1	Chris Cataldo	Walk In Ref #5	03/13/13 21:09	Return to Storage
MC18752-1.1	Scott Parsick		07/24/13 13:53	Disposed
MC18752-1.2	VOC Ref #10	Amy Min Yang	03/19/13 10:47	Retrieve from Storage
MC18752-1.2	Amy Min Yang	GCMSM	03/19/13 10:48	Load on Instrument
MC18752-1.2	GCMSM	Amy Min Yang	04/12/13 15:08	Unload from Instrument
MC18752-1.2	Amy Min Yang	Freezer #6	04/12/13 15:08	Return to Storage
MC18752-1.2	Scott Parsick		07/24/13 13:53	Disposed
MC18752-1.3	VOC Ref #10	Amy Min Yang	03/20/13 09:53	Retrieve from Storage
MC18752-1.3	Amy Min Yang	GCMSM	03/20/13 09:53	Load on Instrument
MC18752-1.3	GCMSM	Amy Min Yang	04/12/13 15:08	Unload from Instrument
MC18752-1.3	Amy Min Yang	Freezer #6	04/12/13 15:08	Return to Storage
MC18752-1.3	Scott Parsick		07/24/13 13:53	Disposed
MC18752-1.4	VOC Ref #10	Gary Krasinski	03/11/13 14:31	Retrieve from Storage
MC18752-1.4	Gary Krasinski	VOC Ref #10	03/12/13 08:44	Return to Storage
MC18752-1.4	Scott Parsick		07/24/13 13:53	Disposed
MC18752-2.1	Walk In Ref #5	Bijan Firowznin	03/12/13 08:33	Retrieve from Storage
MC18752-2.1	Bijan Firowznin	Walk In Ref #5	03/12/13 09:48	Return to Storage
MC18752-2.1	Walk In Ref #5	Chris Cataldo	03/13/13 21:01	Retrieve from Storage
MC18752-2.1	Chris Cataldo	Walk In Ref #5	03/13/13 21:09	Return to Storage
MC18752-2.1	Scott Parsick		07/24/13 13:53	Disposed
MC18752-2.2	VOC Ref #10	Amy Min Yang	03/20/13 09:53	Retrieve from Storage
MC18752-2.2	Amy Min Yang	GCMSM	03/20/13 09:53	Load on Instrument
MC18752-2.2	GCMSM	Amy Min Yang	04/12/13 15:08	Unload from Instrument
MC18752-2.2	Amy Min Yang	Freezer #6	04/12/13 15:08	Return to Storage
MC18752-2.2	Scott Parsick		07/24/13 13:53	Disposed
MC18752-2.3	VOC Ref #10	Amy Min Yang	03/19/13 10:47	Retrieve from Storage
MC18752-2.3	Amy Min Yang	GCMSM	03/19/13 10:48	Load on Instrument
MC18752-2.3	GCMSM	Amy Min Yang	04/12/13 15:08	Unload from Instrument
MC18752-2.3	Amy Min Yang	Freezer #6	04/12/13 15:08	Return to Storage
MC18752-2.3	Scott Parsick		07/24/13 13:53	Disposed
MC18752-2.6	VOC Ref #10	Amy Min Yang	03/19/13 10:47	Retrieve from Storage
MC18752-2.6	Amy Min Yang	GCMSM	03/19/13 10:48	Load on Instrument
MC18752-2.6	GCMSM	Amy Min Yang	04/12/13 15:08	Unload from Instrument
MC18752-2.6	Amy Min Yang	Freezer #6	04/12/13 15:08	Return to Storage

SGS Accutest Internal Chain of Custody

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL
Received: 03/08/13

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
MC18752-2.6	Scott Parsick		07/24/13 13:53	Disposed
MC18752-2.7	VOC Ref #10	Amy Min Yang	03/20/13 09:53	Retrieve from Storage
MC18752-2.7	Amy Min Yang	GCMSM	03/20/13 09:53	Load on Instrument
MC18752-2.7	GCMSM	Amy Min Yang	04/12/13 15:08	Unload from Instrument
MC18752-2.7	Amy Min Yang	Freezer #6	04/12/13 15:08	Return to Storage
MC18752-2.7	Scott Parsick		07/24/13 13:53	Disposed
MC18752-2.10	VOC Ref #10	Amy Min Yang	03/19/13 10:47	Retrieve from Storage
MC18752-2.10	Amy Min Yang	GCMSM	03/19/13 10:48	Load on Instrument
MC18752-2.10	GCMSM	Amy Min Yang	04/12/13 15:08	Unload from Instrument
MC18752-2.10	Amy Min Yang	Freezer #6	04/12/13 15:08	Return to Storage
MC18752-2.10	Scott Parsick		07/24/13 13:53	Disposed
MC18752-2.11	VOC Ref #10	Amy Min Yang	03/20/13 09:53	Retrieve from Storage
MC18752-2.11	Amy Min Yang	GCMSM	03/20/13 09:53	Load on Instrument
MC18752-2.11	GCMSM	Amy Min Yang	04/12/13 15:08	Unload from Instrument
MC18752-2.11	Amy Min Yang	Freezer #6	04/12/13 15:08	Return to Storage
MC18752-2.11	Scott Parsick		07/24/13 13:53	Disposed
MC18752-2.12	VOC Ref #10	Gary Krasinski	03/11/13 14:31	Retrieve from Storage
MC18752-2.12	Gary Krasinski	VOC Ref #10	03/12/13 08:44	Return to Storage
MC18752-2.12	Scott Parsick		07/24/13 13:53	Disposed
MC18752-3.1	Walk In Ref #5	Bijan Firowznin	03/12/13 08:33	Retrieve from Storage
MC18752-3.1	Bijan Firowznin	Walk In Ref #5	03/12/13 09:48	Return to Storage
MC18752-3.1	Walk In Ref #5	Chris Cataldo	03/13/13 21:01	Retrieve from Storage
MC18752-3.1	Chris Cataldo	Walk In Ref #5	03/13/13 21:09	Return to Storage
MC18752-3.1	Scott Parsick		07/24/13 13:53	Disposed
MC18752-3.3	VOC Ref #10	Amy Min Yang	03/21/13 12:18	Retrieve from Storage
MC18752-3.3	Amy Min Yang	GCMSM	03/21/13 12:18	Load on Instrument
MC18752-3.3	GCMSM	Amy Min Yang	04/12/13 15:08	Unload from Instrument
MC18752-3.3	Amy Min Yang	Freezer #6	04/12/13 15:08	Return to Storage
MC18752-3.3	Scott Parsick		07/24/13 13:53	Disposed
MC18752-3.4	VOC Ref #10	Gary Krasinski	03/11/13 14:31	Retrieve from Storage
MC18752-3.4	Gary Krasinski	VOC Ref #10	03/12/13 08:44	Return to Storage
MC18752-3.4	VOC Ref #10	Gary Krasinski	03/12/13 09:44	Retrieve from Storage
MC18752-3.4	Gary Krasinski	VOC Ref #10	03/13/13 07:53	Return to Storage
MC18752-3.4	Scott Parsick		07/24/13 13:53	Disposed
MC18752-4.1	Walk In Ref #5	Bijan Firowznin	03/12/13 08:33	Retrieve from Storage
MC18752-4.1	Bijan Firowznin	Walk In Ref #5	03/12/13 09:48	Return to Storage

SGS Accutest Internal Chain of Custody

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL
Received: 03/08/13

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
MC18752-4.1	Walk In Ref #5	Chris Cataldo	03/13/13 21:01	Retrieve from Storage
MC18752-4.1	Chris Cataldo	Walk In Ref #5	03/13/13 21:09	Return to Storage
MC18752-4.1	Scott Parsick		07/24/13 13:53	Disposed
MC18752-4.2	VOC Ref #10	Amy Min Yang	03/19/13 10:47	Retrieve from Storage
MC18752-4.2	Amy Min Yang	GCMSM	03/19/13 10:48	Load on Instrument
MC18752-4.2	GCMSM	Amy Min Yang	04/12/13 15:08	Unload from Instrument
MC18752-4.2	Amy Min Yang	Freezer #6	04/12/13 15:08	Return to Storage
MC18752-4.2	Scott Parsick		07/24/13 13:53	Disposed
MC18752-4.3	VOC Ref #10	Amy Min Yang	03/20/13 09:53	Retrieve from Storage
MC18752-4.3	Amy Min Yang	GCMSM	03/20/13 09:53	Load on Instrument
MC18752-4.3	GCMSM	Amy Min Yang	04/12/13 15:08	Unload from Instrument
MC18752-4.3	Amy Min Yang	Freezer #6	04/12/13 15:08	Return to Storage
MC18752-4.3	Scott Parsick		07/24/13 13:53	Disposed
MC18752-4.4	VOC Ref #10	Gary Krasinski	03/11/13 14:31	Retrieve from Storage
MC18752-4.4	Gary Krasinski	VOC Ref #10	03/12/13 08:44	Return to Storage
MC18752-4.4	Scott Parsick		07/24/13 13:53	Disposed
MC18752-5.2	VOC Ref #1	Jaime Maslowski	03/13/13 11:24	Retrieve from Storage
MC18752-5.2	Jaime Maslowski	GCMSG	03/13/13 11:24	Load on Instrument
MC18752-5.2	GCMSG	Jaime Maslowski	03/14/13 14:28	Unload from Instrument
MC18752-5.2	Jaime Maslowski	VOC Ref #1	03/14/13 14:29	Return to Storage
MC18752-5.2	Scott Parsick		07/24/13 13:53	Disposed
MC18752-5.4	VOC Ref #1	Bijan Jafari	03/11/13 13:01	Retrieve from Storage
MC18752-5.4	Bijan Jafari		03/11/13 14:33	Depleted
MC18752-6.1	VOC Ref #1	Jaime Maslowski	03/13/13 11:24	Retrieve from Storage
MC18752-6.1	Jaime Maslowski	GCMSG	03/13/13 11:24	Load on Instrument
MC18752-6.1	GCMSG	Jaime Maslowski	03/14/13 14:28	Unload from Instrument
MC18752-6.1	Jaime Maslowski	VOC Ref #1	03/14/13 14:29	Return to Storage
MC18752-6.1	Scott Parsick		07/24/13 13:53	Disposed
MC18752-6.4	VOC Ref #1	Bijan Jafari	03/11/13 13:01	Retrieve from Storage
MC18752-6.4	Bijan Jafari		03/11/13 14:33	Depleted

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Internal Standard Area Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSK2225-MB	K67889.D	1	03/12/13	GK	n/a	n/a	MSK2225

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

MC18752-3

CAS No.	Compound	Result	RL	MDL	Units	Q
110-75-8	2-Chloroethyl vinyl ether	ND	250	100	ug/kg	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	113%	70-130%
2037-26-5	Toluene-D8	107%	70-130%
460-00-4	4-Bromofluorobenzene	100%	70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/kg	

Method Blank Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSG4957-MB	G125256.D	1	03/13/13	JM	n/a	n/a	MSG4957

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

MC18752-5, MC18752-6

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	
107-02-8	Acrolein	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.3	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.61	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	1.3	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	

Method Blank Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSG4957-MB	G125256.D	1	03/13/13	JM	n/a	n/a	MSG4957

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

MC18752-5, MC18752-6

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
91-20-3	Naphthalene	ND	5.0	0.50	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	ND	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.3	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.3	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	ug/l	

Method Blank Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSG4957-MB	G125256.D	1	03/13/13	JM	n/a	n/a	MSG4957

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

MC18752-5, MC18752-6

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	78%	70-130%
2037-26-5	Toluene-D8	76%	70-130%
460-00-4	4-Bromofluorobenzene	78%	70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

Method Blank Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSM1869-MB1	M54869.D	1	03/20/13	AMY	n/a	n/a	MSM1869

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

MC18752-1, MC18752-2, MC18752-4

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	1.3	ug/kg	
107-02-8	Acrolein	ND	25	10	ug/kg	
107-13-1	Acrylonitrile	ND	25	1.3	ug/kg	
71-43-2	Benzene	ND	0.50	0.29	ug/kg	
108-86-1	Bromobenzene	ND	5.0	0.22	ug/kg	
74-97-5	Bromochloromethane	ND	5.0	0.37	ug/kg	
75-27-4	Bromodichloromethane	ND	2.0	0.21	ug/kg	
75-25-2	Bromoform	ND	2.0	2.0	ug/kg	
74-83-9	Bromomethane	ND	2.0	0.52	ug/kg	
78-93-3	2-Butanone (MEK)	ND	5.0	1.3	ug/kg	
104-51-8	n-Butylbenzene	ND	5.0	0.18	ug/kg	
135-98-8	sec-Butylbenzene	ND	5.0	0.23	ug/kg	
98-06-6	tert-Butylbenzene	ND	5.0	0.88	ug/kg	
75-15-0	Carbon disulfide	ND	5.0	0.16	ug/kg	
56-23-5	Carbon tetrachloride	ND	2.0	0.73	ug/kg	
108-90-7	Chlorobenzene	ND	2.0	0.28	ug/kg	
75-00-3	Chloroethane	ND	5.0	1.3	ug/kg	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	2.0	ug/kg	
67-66-3	Chloroform	ND	2.0	0.52	ug/kg	
74-87-3	Chloromethane	ND	5.0	0.46	ug/kg	
95-49-8	o-Chlorotoluene	ND	5.0	1.1	ug/kg	
106-43-4	p-Chlorotoluene	ND	5.0	0.23	ug/kg	
124-48-1	Dibromochloromethane	ND	2.0	0.30	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	2.0	0.22	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	2.0	0.23	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	2.0	0.21	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.1	ug/kg	
75-34-3	1,1-Dichloroethane	ND	2.0	0.27	ug/kg	
107-06-2	1,2-Dichloroethane	ND	2.0	0.29	ug/kg	
75-35-4	1,1-Dichloroethene	ND	2.0	0.37	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	2.0	0.30	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	2.0	0.29	ug/kg	
78-87-5	1,2-Dichloropropane	ND	2.0	0.37	ug/kg	
142-28-9	1,3-Dichloropropane	ND	5.0	0.23	ug/kg	
594-20-7	2,2-Dichloropropane	ND	5.0	0.87	ug/kg	
563-58-6	1,1-Dichloropropene	ND	5.0	0.26	ug/kg	

Method Blank Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSM1869-MB1	M54869.D	1	03/20/13	AMY	n/a	n/a	MSM1869

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

MC18752-1, MC18752-2, MC18752-4

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.17	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	0.50	ug/kg	
123-91-1	1,4-Dioxane	ND	25	25	ug/kg	
97-63-2	Ethyl methacrylate	ND	5.0	0.68	ug/kg	
100-41-4	Ethylbenzene	ND	2.0	0.24	ug/kg	
87-68-3	Hexachlorobutadiene	ND	5.0	0.46	ug/kg	
591-78-6	2-Hexanone	ND	5.0	1.3	ug/kg	
98-82-8	Isopropylbenzene	ND	5.0	0.23	ug/kg	
99-87-6	p-Isopropyltoluene	ND	5.0	0.18	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	2.0	0.29	ug/kg	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	0.50	ug/kg	
74-95-3	Methylene bromide	ND	5.0	0.49	ug/kg	
75-09-2	Methylene chloride	4.1	2.0	1.2	ug/kg	
91-20-3	Naphthalene	ND	5.0	1.3	ug/kg	
103-65-1	n-Propylbenzene	ND	5.0	1.0	ug/kg	
100-42-5	Styrene	ND	5.0	0.23	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.24	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	0.43	ug/kg	
127-18-4	Tetrachloroethene	ND	2.0	0.23	ug/kg	
108-88-3	Toluene	ND	5.0	0.85	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	0.24	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.23	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.31	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	2.0	0.73	ug/kg	
79-01-6	Trichloroethene	ND	2.0	0.21	ug/kg	
75-69-4	Trichlorofluoromethane	ND	2.0	0.30	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.29	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.22	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.21	ug/kg	
108-05-4	Vinyl Acetate	ND	5.0	1.3	ug/kg	
75-01-4	Vinyl chloride	ND	2.0	0.27	ug/kg	
	m,p-Xylene	ND	2.0	0.79	ug/kg	
95-47-6	o-Xylene	ND	2.0	0.24	ug/kg	
1330-20-7	Xylene (total)	ND	2.0	0.24	ug/kg	

Method Blank Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSM1869-MB1	M54869.D	1	03/20/13	AMY	n/a	n/a	MSM1869

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

MC18752-1, MC18752-2, MC18752-4

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	88%	70-130%
2037-26-5	Toluene-D8	110%	70-130%
460-00-4	4-Bromofluorobenzene	88%	70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/kg	

Method Blank Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSM1871-MB	M54899.D	1	03/21/13	AMY	n/a	n/a	MSM1871

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

MC18752-3

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	1.3	ug/kg	
107-02-8	Acrolein	ND	25	10	ug/kg	
107-13-1	Acrylonitrile	ND	25	1.3	ug/kg	
71-43-2	Benzene	ND	0.50	0.29	ug/kg	
108-86-1	Bromobenzene	ND	5.0	0.22	ug/kg	
74-97-5	Bromochloromethane	ND	5.0	0.37	ug/kg	
75-27-4	Bromodichloromethane	ND	2.0	0.21	ug/kg	
75-25-2	Bromoform	ND	2.0	2.0	ug/kg	
74-83-9	Bromomethane	ND	2.0	0.52	ug/kg	
78-93-3	2-Butanone (MEK)	ND	5.0	1.3	ug/kg	
104-51-8	n-Butylbenzene	ND	5.0	0.18	ug/kg	
135-98-8	sec-Butylbenzene	ND	5.0	0.23	ug/kg	
98-06-6	tert-Butylbenzene	ND	5.0	0.88	ug/kg	
75-15-0	Carbon disulfide	ND	5.0	0.16	ug/kg	
56-23-5	Carbon tetrachloride	ND	2.0	0.73	ug/kg	
108-90-7	Chlorobenzene	ND	2.0	0.28	ug/kg	
75-00-3	Chloroethane	ND	5.0	1.3	ug/kg	
67-66-3	Chloroform	ND	2.0	0.52	ug/kg	
74-87-3	Chloromethane	ND	5.0	0.46	ug/kg	
95-49-8	o-Chlorotoluene	ND	5.0	1.1	ug/kg	
106-43-4	p-Chlorotoluene	ND	5.0	0.23	ug/kg	
124-48-1	Dibromochloromethane	ND	2.0	0.30	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	2.0	0.22	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	2.0	0.23	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	2.0	0.21	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.1	ug/kg	
75-34-3	1,1-Dichloroethane	ND	2.0	0.27	ug/kg	
107-06-2	1,2-Dichloroethane	ND	2.0	0.29	ug/kg	
75-35-4	1,1-Dichloroethene	ND	2.0	0.37	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	2.0	0.30	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	2.0	0.29	ug/kg	
78-87-5	1,2-Dichloropropane	ND	2.0	0.37	ug/kg	
142-28-9	1,3-Dichloropropane	ND	5.0	0.23	ug/kg	
594-20-7	2,2-Dichloropropane	ND	5.0	0.87	ug/kg	
563-58-6	1,1-Dichloropropene	ND	5.0	0.26	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.17	ug/kg	

Method Blank Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSM1871-MB	M54899.D	1	03/21/13	AMY	n/a	n/a	MSM1871

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

MC18752-3

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	0.50	ug/kg	
123-91-1	1,4-Dioxane	ND	25	25	ug/kg	
97-63-2	Ethyl methacrylate	ND	5.0	0.68	ug/kg	
100-41-4	Ethylbenzene	ND	2.0	0.24	ug/kg	
87-68-3	Hexachlorobutadiene	ND	5.0	0.46	ug/kg	
591-78-6	2-Hexanone	ND	5.0	1.3	ug/kg	
98-82-8	Isopropylbenzene	ND	5.0	0.23	ug/kg	
99-87-6	p-Isopropyltoluene	ND	5.0	0.18	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	2.0	0.29	ug/kg	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	0.50	ug/kg	
74-95-3	Methylene bromide	ND	5.0	0.49	ug/kg	
75-09-2	Methylene chloride	4.1	2.0	1.2	ug/kg	
91-20-3	Naphthalene	ND	5.0	1.3	ug/kg	
103-65-1	n-Propylbenzene	ND	5.0	1.0	ug/kg	
100-42-5	Styrene	ND	5.0	0.23	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.24	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	0.43	ug/kg	
127-18-4	Tetrachloroethene	ND	2.0	0.23	ug/kg	
108-88-3	Toluene	ND	5.0	0.85	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	0.24	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.23	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.31	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	2.0	0.73	ug/kg	
79-01-6	Trichloroethene	ND	2.0	0.21	ug/kg	
75-69-4	Trichlorofluoromethane	ND	2.0	0.30	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.29	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.22	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.21	ug/kg	
108-05-4	Vinyl Acetate	ND	5.0	1.3	ug/kg	
75-01-4	Vinyl chloride	ND	2.0	0.27	ug/kg	
	m,p-Xylene	ND	2.0	0.79	ug/kg	
95-47-6	o-Xylene	ND	2.0	0.24	ug/kg	
1330-20-7	Xylene (total)	ND	2.0	0.24	ug/kg	

Method Blank Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSM1871-MB	M54899.D	1	03/21/13	AMY	n/a	n/a	MSM1871

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

MC18752-3

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	88%	70-130%
2037-26-5	Toluene-D8	111%	70-130%
460-00-4	4-Bromofluorobenzene	88%	70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile			ug/kg	

Method Blank Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSG4957-MB1	G125279.D	1	03/14/13	JM	n/a	n/a	MSG4957

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

MC18723-2MS, MC18723-2MSD

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	
107-02-8	Acrolein	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.3	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.61	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	1.3	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	

Method Blank Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSG4957-MB1	G125279.D	1	03/14/13	JM	n/a	n/a	MSG4957

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

MC18723-2MS, MC18723-2MSD

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
91-20-3	Naphthalene	ND	5.0	0.50	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	ND	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.3	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.3	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	ug/l	

Method Blank Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSG4957-MB1	G125279.D	1	03/14/13	JM	n/a	n/a	MSG4957

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

MC18723-2MS, MC18723-2MSD

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	77%	70-130%
2037-26-5	Toluene-D8	76%	70-130%
460-00-4	4-Bromofluorobenzene	78%	70-130%

Method Blank Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSM1869-MB	M54845.D	1	03/19/13	AMY	n/a	n/a	MSM1869

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

MSM1869-BSD, MSM1869-BS1

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	1.3	ug/kg	
107-02-8	Acrolein	ND	25	10	ug/kg	
107-13-1	Acrylonitrile	ND	25	1.3	ug/kg	
71-43-2	Benzene	ND	0.50	0.29	ug/kg	
108-86-1	Bromobenzene	ND	5.0	0.22	ug/kg	
74-97-5	Bromochloromethane	ND	5.0	0.37	ug/kg	
75-27-4	Bromodichloromethane	ND	2.0	0.21	ug/kg	
75-25-2	Bromoform	ND	2.0	2.0	ug/kg	
74-83-9	Bromomethane	ND	2.0	0.52	ug/kg	
78-93-3	2-Butanone (MEK)	ND	5.0	1.3	ug/kg	
104-51-8	n-Butylbenzene	ND	5.0	0.18	ug/kg	
135-98-8	sec-Butylbenzene	ND	5.0	0.23	ug/kg	
98-06-6	tert-Butylbenzene	ND	5.0	0.88	ug/kg	
75-15-0	Carbon disulfide	ND	5.0	0.16	ug/kg	
56-23-5	Carbon tetrachloride	ND	2.0	0.73	ug/kg	
108-90-7	Chlorobenzene	ND	2.0	0.28	ug/kg	
75-00-3	Chloroethane	ND	5.0	1.3	ug/kg	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	2.0	ug/kg	
67-66-3	Chloroform	ND	2.0	0.52	ug/kg	
74-87-3	Chloromethane	ND	5.0	0.46	ug/kg	
95-49-8	o-Chlorotoluene	ND	5.0	1.1	ug/kg	
106-43-4	p-Chlorotoluene	ND	5.0	0.23	ug/kg	
124-48-1	Dibromochloromethane	ND	2.0	0.30	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	2.0	0.22	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	2.0	0.23	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	2.0	0.21	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.1	ug/kg	
75-34-3	1,1-Dichloroethane	ND	2.0	0.27	ug/kg	
107-06-2	1,2-Dichloroethane	ND	2.0	0.29	ug/kg	
75-35-4	1,1-Dichloroethene	ND	2.0	0.37	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	2.0	0.30	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	2.0	0.29	ug/kg	
78-87-5	1,2-Dichloropropane	ND	2.0	0.37	ug/kg	
142-28-9	1,3-Dichloropropane	ND	5.0	0.23	ug/kg	
594-20-7	2,2-Dichloropropane	ND	5.0	0.87	ug/kg	
563-58-6	1,1-Dichloropropene	ND	5.0	0.26	ug/kg	

Method Blank Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSM1869-MB	M54845.D	1	03/19/13	AMY	n/a	n/a	MSM1869

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

MSM1869-BSD, MSM1869-BS1

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.17	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	0.50	ug/kg	
123-91-1	1,4-Dioxane	ND	25	25	ug/kg	
97-63-2	Ethyl methacrylate	ND	5.0	0.68	ug/kg	
100-41-4	Ethylbenzene	ND	2.0	0.24	ug/kg	
87-68-3	Hexachlorobutadiene	ND	5.0	0.46	ug/kg	
591-78-6	2-Hexanone	ND	5.0	1.3	ug/kg	
98-82-8	Isopropylbenzene	ND	5.0	0.23	ug/kg	
99-87-6	p-Isopropyltoluene	ND	5.0	0.18	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	2.0	0.29	ug/kg	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	0.50	ug/kg	
74-95-3	Methylene bromide	ND	5.0	0.49	ug/kg	
75-09-2	Methylene chloride	3.8	2.0	1.2	ug/kg	
91-20-3	Naphthalene	ND	5.0	1.3	ug/kg	
103-65-1	n-Propylbenzene	ND	5.0	1.0	ug/kg	
100-42-5	Styrene	ND	5.0	0.23	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.24	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	0.43	ug/kg	
127-18-4	Tetrachloroethene	ND	2.0	0.23	ug/kg	
108-88-3	Toluene	ND	5.0	0.85	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	0.24	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.23	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.31	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	2.0	0.73	ug/kg	
79-01-6	Trichloroethene	ND	2.0	0.21	ug/kg	
75-69-4	Trichlorofluoromethane	ND	2.0	0.30	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.29	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.22	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.21	ug/kg	
108-05-4	Vinyl Acetate	ND	5.0	1.3	ug/kg	
75-01-4	Vinyl chloride	ND	2.0	0.27	ug/kg	
	m,p-Xylene	ND	2.0	0.79	ug/kg	
95-47-6	o-Xylene	ND	2.0	0.24	ug/kg	
1330-20-7	Xylene (total)	ND	2.0	0.24	ug/kg	

Method Blank Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSM1869-MB	M54845.D	1	03/19/13	AMY	n/a	n/a	MSM1869

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

MSM1869-BSD, MSM1869-BS1

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	86%	70-130%
2037-26-5	Toluene-D8	111%	70-130%
460-00-4	4-Bromofluorobenzene	88%	70-130%

Blank Spike Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSG4957-BS	G125254.D	1	03/13/13	JM	n/a	n/a	MSG4957

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

MC18752-5, MC18752-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	50	76.0	152* [a]	70-130
107-02-8	Acrolein	250	128	51* [a]	70-130
107-13-1	Acrylonitrile	50	36.7	73	70-130
71-43-2	Benzene	50	47.2	94	70-130
108-86-1	Bromobenzene	50	55.1	110	70-130
74-97-5	Bromochloromethane	50	49.6	99	70-130
75-27-4	Bromodichloromethane	50	46.6	93	70-130
75-25-2	Bromoform	50	47.2	94	70-130
74-83-9	Bromomethane	50	46.2	92	70-130
78-93-3	2-Butanone (MEK)	50	70.8	142* [a]	70-130
104-51-8	n-Butylbenzene	50	56.9	114	70-130
135-98-8	sec-Butylbenzene	50	54.1	108	70-130
98-06-6	tert-Butylbenzene	50	50.5	101	70-130
75-15-0	Carbon disulfide	50	45.7	91	70-130
56-23-5	Carbon tetrachloride	50	50.0	100	70-130
108-90-7	Chlorobenzene	50	52.2	104	70-130
75-00-3	Chloroethane	50	47.4	95	70-130
110-75-8	2-Chloroethyl vinyl ether	50	33.1	66* [a]	70-130
67-66-3	Chloroform	50	45.3	91	70-130
74-87-3	Chloromethane	50	46.0	92	70-130
95-49-8	o-Chlorotoluene	50	50.2	100	70-130
106-43-4	p-Chlorotoluene	50	50.3	101	70-130
124-48-1	Dibromochloromethane	50	50.1	100	70-130
95-50-1	1,2-Dichlorobenzene	50	49.7	99	70-130
541-73-1	1,3-Dichlorobenzene	50	52.1	104	70-130
106-46-7	1,4-Dichlorobenzene	50	53.7	107	70-130
75-71-8	Dichlorodifluoromethane	50	40.7	81	70-130
75-34-3	1,1-Dichloroethane	50	46.5	93	70-130
107-06-2	1,2-Dichloroethane	50	45.0	90	70-130
75-35-4	1,1-Dichloroethene	50	46.8	94	70-130
156-59-2	cis-1,2-Dichloroethene	50	49.3	99	70-130
156-60-5	trans-1,2-Dichloroethene	50	49.6	99	70-130
78-87-5	1,2-Dichloropropane	50	46.7	93	70-130
142-28-9	1,3-Dichloropropane	50	50.1	100	70-130
594-20-7	2,2-Dichloropropane	50	62.7	125	70-130
563-58-6	1,1-Dichloropropene	50	51.9	104	70-130

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSG4957-BS	G125254.D	1	03/13/13	JM	n/a	n/a	MSG4957

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

MC18752-5, MC18752-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
10061-01-5	cis-1,3-Dichloropropene	50	43.0	86	70-130
10061-02-6	trans-1,3-Dichloropropene	50	44.3	89	70-130
123-91-1	1,4-Dioxane	250	253	101	70-130
97-63-2	Ethyl methacrylate	50	42.8	86	77-137
100-41-4	Ethylbenzene	50	53.7	107	70-130
87-68-3	Hexachlorobutadiene	50	64.2	128	70-130
591-78-6	2-Hexanone	50	76.5	153* [a]	70-130
98-82-8	Isopropylbenzene	50	50.8	102	70-130
99-87-6	p-Isopropyltoluene	50	60.2	120	70-130
1634-04-4	Methyl Tert Butyl Ether	50	41.5	83	70-130
108-10-1	4-Methyl-2-pentanone (MIBK)	50	39.8	80	70-130
74-95-3	Methylene bromide	50	45.6	91	70-130
75-09-2	Methylene chloride	50	46.3	93	70-130
91-20-3	Naphthalene	50	46.0	92	70-130
103-65-1	n-Propylbenzene	50	50.9	102	70-130
100-42-5	Styrene	50	54.2	108	70-130
630-20-6	1,1,1,2-Tetrachloroethane	50	55.3	111	70-130
79-34-5	1,1,2,2-Tetrachloroethane	50	47.8	96	70-130
127-18-4	Tetrachloroethene	50	58.2	116	70-130
108-88-3	Toluene	50	48.5	97	70-130
87-61-6	1,2,3-Trichlorobenzene	50	53.7	107	70-130
120-82-1	1,2,4-Trichlorobenzene	50	56.4	113	70-130
71-55-6	1,1,1-Trichloroethane	50	56.0	112	70-130
79-00-5	1,1,2-Trichloroethane	50	44.8	90	70-130
79-01-6	Trichloroethene	50	44.3	89	70-130
75-69-4	Trichlorofluoromethane	50	43.5	87	70-130
96-18-4	1,2,3-Trichloropropane	50	44.6	89	70-130
95-63-6	1,2,4-Trimethylbenzene	50	49.2	98	70-130
108-67-8	1,3,5-Trimethylbenzene	50	48.0	96	70-130
108-05-4	Vinyl Acetate	50	64.0	128	70-130
75-01-4	Vinyl chloride	50	43.8	88	70-130
	m,p-Xylene	100	106	106	70-130
95-47-6	o-Xylene	50	50.5	101	70-130
1330-20-7	Xylene (total)	150	157	105	70-130

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSG4957-BS	G125254.D	1	03/13/13	JM	n/a	n/a	MSG4957

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

MC18752-5, MC18752-6

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	76%	70-130%
2037-26-5	Toluene-D8	76%	70-130%
460-00-4	4-Bromofluorobenzene	72%	70-130%

(a) Outside control limits. Blank Spike meets program technical requirements.

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSM1869-BS1	M54867.D	1	03/20/13	AMY	n/a	n/a	MSM1869

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

MC18752-1, MC18752-2, MC18752-4

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
67-64-1	Acetone	50	59.4	119	70-130
107-02-8	Acrolein	250	274	110	70-130
107-13-1	Acrylonitrile	50	47.6	95	70-130
71-43-2	Benzene	50	55.3	111	70-130
108-86-1	Bromobenzene	50	53.9	108	70-130
74-97-5	Bromochloromethane	50	54.4	109	70-130
75-27-4	Bromodichloromethane	50	54.1	108	70-130
75-25-2	Bromoform	50	48.9	98	70-130
74-83-9	Bromomethane	50	54.9	110	70-130
78-93-3	2-Butanone (MEK)	50	46.4	93	70-130
104-51-8	n-Butylbenzene	50	53.0	106	70-130
135-98-8	sec-Butylbenzene	50	52.3	105	70-130
98-06-6	tert-Butylbenzene	50	51.8	104	70-130
75-15-0	Carbon disulfide	50	55.6	111	70-130
56-23-5	Carbon tetrachloride	50	54.5	109	70-130
108-90-7	Chlorobenzene	50	50.6	101	70-130
75-00-3	Chloroethane	50	58.4	117	70-130
110-75-8	2-Chloroethyl vinyl ether	50	39.0	78	10-160
67-66-3	Chloroform	50	54.6	109	70-130
74-87-3	Chloromethane	50	60.3	121	70-130
95-49-8	o-Chlorotoluene	50	51.3	103	70-130
106-43-4	p-Chlorotoluene	50	53.2	106	70-130
124-48-1	Dibromochloromethane	50	52.1	104	70-130
95-50-1	1,2-Dichlorobenzene	50	50.7	101	70-130
541-73-1	1,3-Dichlorobenzene	50	49.8	100	70-130
106-46-7	1,4-Dichlorobenzene	50	52.1	104	70-130
75-71-8	Dichlorodifluoromethane	50	59.5	119	70-130
75-34-3	1,1-Dichloroethane	50	56.3	113	70-130
107-06-2	1,2-Dichloroethane	50	53.3	107	70-130
75-35-4	1,1-Dichloroethene	50	58.4	117	70-130
156-59-2	cis-1,2-Dichloroethene	50	54.1	108	70-130
156-60-5	trans-1,2-Dichloroethene	50	55.4	111	70-130
78-87-5	1,2-Dichloropropane	50	54.0	108	70-130
142-28-9	1,3-Dichloropropane	50	51.9	104	70-130
594-20-7	2,2-Dichloropropane	50	54.7	109	70-130
563-58-6	1,1-Dichloropropene	50	56.6	113	70-130

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSM1869-BS1	M54867.D	1	03/20/13	AMY	n/a	n/a	MSM1869

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

MC18752-1, MC18752-2, MC18752-4

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
10061-01-5	cis-1,3-Dichloropropene	50	52.8	106	70-130
10061-02-6	trans-1,3-Dichloropropene	50	56.4	113	70-130
123-91-1	1,4-Dioxane	250	257	103	70-130
97-63-2	Ethyl methacrylate	50	53.7	107	76-141
100-41-4	Ethylbenzene	50	52.9	106	70-130
87-68-3	Hexachlorobutadiene	50	51.3	103	70-130
591-78-6	2-Hexanone	50	52.9	106	70-130
98-82-8	Isopropylbenzene	50	52.9	106	70-130
99-87-6	p-Isopropyltoluene	50	55.4	111	70-130
1634-04-4	Methyl Tert Butyl Ether	50	53.2	106	70-130
108-10-1	4-Methyl-2-pentanone (MIBK)	50	48.7	97	70-130
74-95-3	Methylene bromide	50	53.1	106	70-130
75-09-2	Methylene chloride	50	54.7	109	70-130
91-20-3	Naphthalene	50	51.8	104	70-130
103-65-1	n-Propylbenzene	50	52.1	104	70-130
100-42-5	Styrene	50	51.5	103	70-130
630-20-6	1,1,1,2-Tetrachloroethane	50	52.6	105	70-130
79-34-5	1,1,2,2-Tetrachloroethane	50	51.6	103	70-130
127-18-4	Tetrachloroethene	50	53.9	108	70-130
108-88-3	Toluene	50	55.4	111	70-130
87-61-6	1,2,3-Trichlorobenzene	50	52.0	104	70-130
120-82-1	1,2,4-Trichlorobenzene	50	51.4	103	70-130
71-55-6	1,1,1-Trichloroethane	50	54.4	109	70-130
79-00-5	1,1,2-Trichloroethane	50	51.3	103	70-130
79-01-6	Trichloroethene	50	53.4	107	70-130
75-69-4	Trichlorofluoromethane	50	51.6	103	70-130
96-18-4	1,2,3-Trichloropropane	50	52.3	105	70-130
95-63-6	1,2,4-Trimethylbenzene	50	52.9	106	70-130
108-67-8	1,3,5-Trimethylbenzene	50	52.8	106	70-130
108-05-4	Vinyl Acetate	50	42.4	85	70-130
75-01-4	Vinyl chloride	50	53.8	108	70-130
	m,p-Xylene	100	103	103	70-130
95-47-6	o-Xylene	50	49.9	100	70-130
1330-20-7	Xylene (total)	150	153	102	70-130

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSM1869-BS1	M54867.D	1	03/20/13	AMY	n/a	n/a	MSM1869

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

MC18752-1, MC18752-2, MC18752-4

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	87%	70-130%
2037-26-5	Toluene-D8	109%	70-130%
460-00-4	4-Bromofluorobenzene	89%	70-130%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSK2225-BS	K67886.D	1	03/12/13	GK	n/a	n/a	MSK2225
MSK2225-BSD	K67887.D	1	03/12/13	GK	n/a	n/a	MSK2225

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

MC18752-3

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	BSD ug/kg	BSD %	RPD	Limits Rec/RPD
110-75-8	2-Chloroethyl vinyl ether	2500	1830	73	1850	74	1	10-160/25

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	106%	105%	70-130%
2037-26-5	Toluene-D8	110%	107%	70-130%
460-00-4	4-Bromofluorobenzene	100%	101%	70-130%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSM1869-BS	M54842.D	1	03/19/13	AMY	n/a	n/a	MSM1869
MSM1869-BSD	M54843.D	1	03/19/13	AMY	n/a	n/a	MSM1869

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

MC18752-1, MC18752-2, MC18752-4

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	BSD ug/kg	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	50	43.9	88	40.2	80	9	70-130/25
107-02-8	Acrolein	250	247	99	222	89	11	70-130/25
107-13-1	Acrylonitrile	50	51.0	102	48.3	97	5	70-130/25
71-43-2	Benzene	50	53.6	107	52.4	105	2	70-130/25
108-86-1	Bromobenzene	50	47.7	95	47.1	94	1	70-130/25
74-97-5	Bromochloromethane	50	50.2	100	48.5	97	3	70-130/25
75-27-4	Bromodichloromethane	50	49.6	99	47.6	95	4	70-130/25
75-25-2	Bromoform	50	46.1	92	44.4	89	4	70-130/25
74-83-9	Bromomethane	50	55.7	111	54.1	108	3	70-130/25
78-93-3	2-Butanone (MEK)	50	52.3	105	49.2	98	6	70-130/25
104-51-8	n-Butylbenzene	50	50.2	100	50.7	101	1	70-130/25
135-98-8	sec-Butylbenzene	50	49.0	98	49.8	100	2	70-130/25
98-06-6	tert-Butylbenzene	50	48.3	97	49.0	98	1	70-130/25
75-15-0	Carbon disulfide	50	59.1	118	57.9	116	2	70-130/25
56-23-5	Carbon tetrachloride	50	56.5	113	56.3	113	0	70-130/25
108-90-7	Chlorobenzene	50	47.8	96	46.9	94	2	70-130/25
75-00-3	Chloroethane	50	58.5	117	57.5	115	2	70-130/25
67-66-3	Chloroform	50	52.7	105	50.8	102	4	70-130/25
74-87-3	Chloromethane	50	63.1	126	62.3	125	1	70-130/25
95-49-8	o-Chlorotoluene	50	47.3	95	47.5	95	0	70-130/25
106-43-4	p-Chlorotoluene	50	48.7	97	48.3	97	1	70-130/25
124-48-1	Dibromochloromethane	50	46.9	94	45.4	91	3	70-130/25
95-50-1	1,2-Dichlorobenzene	50	45.3	91	44.0	88	3	70-130/25
541-73-1	1,3-Dichlorobenzene	50	45.7	91	45.0	90	2	70-130/25
106-46-7	1,4-Dichlorobenzene	50	47.1	94	46.4	93	1	70-130/25
75-71-8	Dichlorodifluoromethane	50	67.4	135* [a]	66.7	133* [a]	1	70-130/25
75-34-3	1,1-Dichloroethane	50	55.4	111	54.0	108	3	70-130/25
107-06-2	1,2-Dichloroethane	50	48.4	97	47.4	95	2	70-130/25
75-35-4	1,1-Dichloroethene	50	61.7	123	60.1	120	3	70-130/25
156-59-2	cis-1,2-Dichloroethene	50	52.1	104	51.1	102	2	70-130/25
156-60-5	trans-1,2-Dichloroethene	50	56.9	114	56.7	113	0	70-130/25
78-87-5	1,2-Dichloropropane	50	50.0	100	49.0	98	2	70-130/25
142-28-9	1,3-Dichloropropane	50	47.9	96	46.2	92	4	70-130/25
594-20-7	2,2-Dichloropropane	50	58.1	116	56.4	113	3	70-130/25
563-58-6	1,1-Dichloropropene	50	58.3	117	57.8	116	1	70-130/25
10061-01-5	cis-1,3-Dichloropropene	50	48.5	97	47.0	94	3	70-130/25

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSM1869-BS	M54842.D	1	03/19/13	AMY	n/a	n/a	MSM1869
MSM1869-BSD	M54843.D	1	03/19/13	AMY	n/a	n/a	MSM1869

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

MC18752-1, MC18752-2, MC18752-4

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	BSD ug/kg	BSD %	RPD	Limits Rec/RPD
10061-02-6	trans-1,3-Dichloropropene	50	51.5	103	49.5	99	4	70-130/25
123-91-1	1,4-Dioxane	250	260	104	263	105	1	70-130/25
97-63-2	Ethyl methacrylate	50	53.6	107	51.7	103	4	76-141/25
100-41-4	Ethylbenzene	50	52.2	104	51.0	102	2	70-130/25
87-68-3	Hexachlorobutadiene	50	47.8	96	48.4	97	1	70-130/25
591-78-6	2-Hexanone	50	61.8	124	56.8	114	8	70-130/25
98-82-8	Isopropylbenzene	50	49.7	99	50.7	101	2	70-130/25
99-87-6	p-Isopropyltoluene	50	51.8	104	53.0	106	2	70-130/25
1634-04-4	Methyl Tert Butyl Ether	50	47.3	95	43.2	86	9	70-130/25
108-10-1	4-Methyl-2-pentanone (MIBK)	50	55.7	111	54.3	109	3	70-130/25
74-95-3	Methylene bromide	50	48.8	98	46.6	93	5	70-130/25
75-09-2	Methylene chloride	50	51.5	103	49.6	99	4	70-130/25
91-20-3	Naphthalene	50	52.7	105	51.4	103	2	70-130/25
103-65-1	n-Propylbenzene	50	49.7	99	49.8	100	0	70-130/25
100-42-5	Styrene	50	48.0	96	46.6	93	3	70-130/25
630-20-6	1,1,1,2-Tetrachloroethane	50	48.3	97	46.9	94	3	70-130/25
79-34-5	1,1,2,2-Tetrachloroethane	50	50.5	101	49.0	98	3	70-130/25
127-18-4	Tetrachloroethene	50	54.8	110	54.3	109	1	70-130/25
108-88-3	Toluene	50	53.8	108	53.1	106	1	70-130/25
87-61-6	1,2,3-Trichlorobenzene	50	45.6	91	44.5	89	2	70-130/25
120-82-1	1,2,4-Trichlorobenzene	50	45.9	92	45.1	90	2	70-130/25
71-55-6	1,1,1-Trichloroethane	50	56.7	113	54.6	109	4	70-130/25
79-00-5	1,1,2-Trichloroethane	50	47.8	96	45.8	92	4	70-130/25
79-01-6	Trichloroethene	50	53.9	108	53.8	108	0	70-130/25
75-69-4	Trichlorofluoromethane	50	56.2	112	55.1	110	2	70-130/25
96-18-4	1,2,3-Trichloropropane	50	53.2	106	52.4	105	2	70-130/25
95-63-6	1,2,4-Trimethylbenzene	50	48.6	97	49.1	98	1	70-130/25
108-67-8	1,3,5-Trimethylbenzene	50	49.3	99	50.0	100	1	70-130/25
108-05-4	Vinyl Acetate	50	41.1	82	36.1	72	13	70-130/25
75-01-4	Vinyl chloride	50	58.9	118	57.3	115	3	70-130/25
	m,p-Xylene	100	102	102	99.4	99	3	70-130/25
95-47-6	o-Xylene	50	48.7	97	47.8	96	2	70-130/25
1330-20-7	Xylene (total)	150	150	100	147	98	2	70-130/25

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSM1869-BS	M54842.D	1	03/19/13	AMY	n/a	n/a	MSM1869
MSM1869-BSD	M54843.D	1	03/19/13	AMY	n/a	n/a	MSM1869

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

MC18752-1, MC18752-2, MC18752-4

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	91%	89%	70-130%
2037-26-5	Toluene-D8	110%	111%	70-130%
460-00-4	4-Bromofluorobenzene	88%	88%	70-130%

(a) Outside control limits. Blank Spike meets program technical requirements.

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSM1871-BS	M54896.D	1	03/21/13	AMY	n/a	n/a	MSM1871
MSM1871-BSD	M54897.D	1	03/21/13	AMY	n/a	n/a	MSM1871

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

MC18752-3

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	BSD ug/kg	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	50	34.3	69* [a]	39.4	79	14	70-130/25
107-02-8	Acrolein	250	188	75	185	74	2	70-130/25
107-13-1	Acrylonitrile	50	41.7	83	46.3	93	10	70-130/25
71-43-2	Benzene	50	45.2	90	51.3	103	13	70-130/25
108-86-1	Bromobenzene	50	39.7	79	45.1	90	13	70-130/25
74-97-5	Bromochloromethane	50	41.5	83	45.7	91	10	70-130/25
75-27-4	Bromodichloromethane	50	41.7	83	47.4	95	13	70-130/25
75-25-2	Bromoform	50	38.7	77	43.2	86	11	70-130/25
74-83-9	Bromomethane	50	48.0	96	51.5	103	7	70-130/25
78-93-3	2-Butanone (MEK)	50	41.7	83	43.1	86	3	70-130/25
104-51-8	n-Butylbenzene	50	41.1	82	47.5	95	14	70-130/25
135-98-8	sec-Butylbenzene	50	40.6	81	47.3	95	15	70-130/25
98-06-6	tert-Butylbenzene	50	41.7	83	47.7	95	13	70-130/25
75-15-0	Carbon disulfide	50	49.5	99	55.0	110	11	70-130/25
56-23-5	Carbon tetrachloride	50	47.1	94	53.6	107	13	70-130/25
108-90-7	Chlorobenzene	50	39.4	79	44.9	90	13	70-130/25
75-00-3	Chloroethane	50	52.0	104	55.4	111	6	70-130/25
67-66-3	Chloroform	50	43.6	87	48.9	98	11	70-130/25
74-87-3	Chloromethane	50	53.6	107	58.6	117	9	70-130/25
95-49-8	o-Chlorotoluene	50	39.2	78	45.4	91	15	70-130/25
106-43-4	p-Chlorotoluene	50	40.0	80	45.8	92	14	70-130/25
124-48-1	Dibromochloromethane	50	39.8	80	44.5	89	11	70-130/25
95-50-1	1,2-Dichlorobenzene	50	36.4	73	41.7	83	14	70-130/25
541-73-1	1,3-Dichlorobenzene	50	37.3	75	42.4	85	13	70-130/25
106-46-7	1,4-Dichlorobenzene	50	37.4	75	42.7	85	13	70-130/25
75-71-8	Dichlorodifluoromethane	50	56.2	112	61.5	123	9	70-130/25
75-34-3	1,1-Dichloroethane	50	46.5	93	52.5	105	12	70-130/25
107-06-2	1,2-Dichloroethane	50	41.6	83	46.0	92	10	70-130/25
75-35-4	1,1-Dichloroethene	50	50.5	101	57.8	116	13	70-130/25
156-59-2	cis-1,2-Dichloroethene	50	44.1	88	49.3	99	11	70-130/25
156-60-5	trans-1,2-Dichloroethene	50	48.1	96	53.4	107	10	70-130/25
78-87-5	1,2-Dichloropropane	50	41.8	84	47.8	96	13	70-130/25
142-28-9	1,3-Dichloropropane	50	40.7	81	45.3	91	11	70-130/25
594-20-7	2,2-Dichloropropane	50	47.7	95	54.2	108	13	70-130/25
563-58-6	1,1-Dichloropropene	50	48.8	98	55.1	110	12	70-130/25
10061-01-5	cis-1,3-Dichloropropene	50	40.3	81	45.4	91	12	70-130/25

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSM1871-BS	M54896.D	1	03/21/13	AMY	n/a	n/a	MSM1871
MSM1871-BSD	M54897.D	1	03/21/13	AMY	n/a	n/a	MSM1871

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

MC18752-3

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	BSD ug/kg	BSD %	RPD	Limits Rec/RPD
10061-02-6	trans-1,3-Dichloropropene	50	42.9	86	48.2	96	12	70-130/25
123-91-1	1,4-Dioxane	250	212	85	261	104	21	70-130/25
97-63-2	Ethyl methacrylate	50	44.1	88	49.7	99	12	76-141/25
100-41-4	Ethylbenzene	50	42.8	86	49.1	98	14	70-130/25
87-68-3	Hexachlorobutadiene	50	39.0	78	46.2	92	17	70-130/25
591-78-6	2-Hexanone	50	48.0	96	55.3	111	14	70-130/25
98-82-8	Isopropylbenzene	50	41.3	83	48.4	97	16	70-130/25
99-87-6	p-Isopropyltoluene	50	42.5	85	49.6	99	15	70-130/25
1634-04-4	Methyl Tert Butyl Ether	50	37.3	75	43.6	87	16	70-130/25
108-10-1	4-Methyl-2-pentanone (MIBK)	50	45.5	91	51.7	103	13	70-130/25
74-95-3	Methylene bromide	50	40.9	82	45.9	92	12	70-130/25
75-09-2	Methylene chloride	50	43.4	87	48.5	97	11	70-130/25
91-20-3	Naphthalene	50	42.7	85	48.6	97	13	70-130/25
103-65-1	n-Propylbenzene	50	40.8	82	47.4	95	15	70-130/25
100-42-5	Styrene	50	39.2	78	44.7	89	13	70-130/25
630-20-6	1,1,1,2-Tetrachloroethane	50	40.2	80	46.1	92	14	70-130/25
79-34-5	1,1,2,2-Tetrachloroethane	50	41.7	83	47.2	94	12	70-130/25
127-18-4	Tetrachloroethene	50	45.7	91	52.2	104	13	70-130/25
108-88-3	Toluene	50	44.6	89	51.3	103	14	70-130/25
87-61-6	1,2,3-Trichlorobenzene	50	36.9	74	41.8	84	12	70-130/25
120-82-1	1,2,4-Trichlorobenzene	50	36.6	73	41.0	82	11	70-130/25
71-55-6	1,1,1-Trichloroethane	50	47.5	95	53.5	107	12	70-130/25
79-00-5	1,1,2-Trichloroethane	50	40.0	80	45.1	90	12	70-130/25
79-01-6	Trichloroethene	50	45.2	90	50.5	101	11	70-130/25
75-69-4	Trichlorofluoromethane	50	48.0	96	53.1	106	10	70-130/25
96-18-4	1,2,3-Trichloropropane	50	43.9	88	49.0	98	11	70-130/25
95-63-6	1,2,4-Trimethylbenzene	50	39.9	80	46.4	93	15	70-130/25
108-67-8	1,3,5-Trimethylbenzene	50	40.7	81	47.3	95	15	70-130/25
108-05-4	Vinyl Acetate	50	29.6	59* [a]	30.1	60* [a]	2	70-130/25
75-01-4	Vinyl chloride	50	50.1	100	54.5	109	8	70-130/25
	m,p-Xylene	100	85.4	85	96.1	96	12	70-130/25
95-47-6	o-Xylene	50	40.9	82	46.1	92	12	70-130/25
1330-20-7	Xylene (total)	150	126	84	142	95	12	70-130/25

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSM1871-BS	M54896.D	1	03/21/13	AMY	n/a	n/a	MSM1871
MSM1871-BSD	M54897.D	1	03/21/13	AMY	n/a	n/a	MSM1871

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

MC18752-3

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	90%	89%	70-130%
2037-26-5	Toluene-D8	110%	110%	70-130%
460-00-4	4-Bromofluorobenzene	88%	90%	70-130%

(a) Outside control limits. Blank Spike meets program technical requirements.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC18768-6MS	K67901.D	1	03/12/13	GK	n/a	n/a	MSK2225
MC18768-6MSD	K67902.D	1	03/12/13	GK	n/a	n/a	MSK2225
MC18768-6	K67893.D	1	03/12/13	GK	n/a	n/a	MSK2225

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

MC18752-3

CAS No.	Compound	MC18768-6 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
110-75-8	2-Chloroethyl vinyl ether	ND		3300	2530	77	3300	2550	77	1	10-160/30

CAS No.	Surrogate Recoveries	MS	MSD	MC18768-6	Limits
1868-53-7	Dibromofluoromethane	103%	101%	107%	70-130%
2037-26-5	Toluene-D8	111%	106%	101%	70-130%
460-00-4	4-Bromofluorobenzene	105%	100%	98%	70-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC18723-2MS	G125284.D	1	03/14/13	JM	n/a	n/a	MSG4957
MC18723-2MSD	G125285.D	1	03/14/13	JM	n/a	n/a	MSG4957
MC18723-2	G125266.D	1	03/13/13	JM	n/a	n/a	MSG4957

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

MC18752-5, MC18752-6

CAS No.	Compound	MC18723-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND		50	35.4	71	50	37.1	74	5	70-130/30
107-02-8	Acrolein	ND		250	125	50* a	250	131	52* a	5	70-130/30
107-13-1	Acrylonitrile	ND		50	35.3	71	50	35.4	71	0	70-130/30
71-43-2	Benzene	ND		50	46.7	93	50	46.2	92	1	70-130/30
108-86-1	Bromobenzene	ND		50	53.1	106	50	53.5	107	1	70-130/30
74-97-5	Bromochloromethane	ND		50	48.8	98	50	48.0	96	2	70-130/30
75-27-4	Bromodichloromethane	ND		50	46.6	93	50	45.5	91	2	70-130/30
75-25-2	Bromoform	ND		50	44.3	89	50	44.9	90	1	70-130/30
74-83-9	Bromomethane	ND		50	44.8	90	50	44.4	89	1	70-130/30
78-93-3	2-Butanone (MEK)	ND		50	38.3	77	50	38.5	77	1	70-130/30
104-51-8	n-Butylbenzene	ND		50	51.5	103	50	51.1	102	1	70-130/30
135-98-8	sec-Butylbenzene	ND		50	51.1	102	50	51.5	103	1	70-130/30
98-06-6	tert-Butylbenzene	ND		50	48.3	97	50	48.8	98	1	70-130/30
75-15-0	Carbon disulfide	ND		50	39.1	78	50	38.8	78	1	70-130/30
56-23-5	Carbon tetrachloride	ND		50	50.2	100	50	49.0	98	2	70-130/30
108-90-7	Chlorobenzene	ND		50	51.8	104	50	50.6	101	2	70-130/30
75-00-3	Chloroethane	ND		50	47.8	96	50	46.7	93	2	70-130/30
110-75-8	2-Chloroethyl vinyl ether	ND		50	ND	0* a	50	ND	0* a	nc	70-130/30
67-66-3	Chloroform	ND		50	44.4	89	50	44.0	88	1	70-130/30
74-87-3	Chloromethane	ND		50	47.1	94	50	45.7	91	3	70-130/30
95-49-8	o-Chlorotoluene	ND		50	47.8	96	50	47.9	96	0	70-130/30
106-43-4	p-Chlorotoluene	ND		50	48.7	97	50	48.9	98	0	70-130/30
124-48-1	Dibromochloromethane	ND		50	48.6	97	50	48.8	98	0	70-130/30
95-50-1	1,2-Dichlorobenzene	ND		50	47.4	95	50	48.2	96	2	70-130/30
541-73-1	1,3-Dichlorobenzene	ND		50	49.3	99	50	49.5	99	0	70-130/30
106-46-7	1,4-Dichlorobenzene	ND		50	51.3	103	50	51.1	102	0	70-130/30
75-71-8	Dichlorodifluoromethane	ND		50	38.0	76	50	40.0	80	5	70-130/30
75-34-3	1,1-Dichloroethane	ND		50	46.6	93	50	46.1	92	1	70-130/30
107-06-2	1,2-Dichloroethane	ND		50	43.9	88	50	43.7	87	0	70-130/30
75-35-4	1,1-Dichloroethene	ND		50	46.0	92	50	45.4	91	1	70-130/30
156-59-2	cis-1,2-Dichloroethene	ND		50	48.8	98	50	48.5	97	1	70-130/30
156-60-5	trans-1,2-Dichloroethene	ND		50	49.4	99	50	48.6	97	2	70-130/30
78-87-5	1,2-Dichloropropane	ND		50	45.8	92	50	45.7	91	0	70-130/30
142-28-9	1,3-Dichloropropane	ND		50	48.9	98	50	48.4	97	1	70-130/30
594-20-7	2,2-Dichloropropane	ND		50	35.4	71	50	35.3	71	0	70-130/30
563-58-6	1,1-Dichloropropene	ND		50	50.9	102	50	49.4	99	3	70-130/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC18723-2MS	G125284.D	1	03/14/13	JM	n/a	n/a	MSG4957
MC18723-2MSD	G125285.D	1	03/14/13	JM	n/a	n/a	MSG4957
MC18723-2	G125266.D	1	03/13/13	JM	n/a	n/a	MSG4957

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

MC18752-5, MC18752-6

CAS No.	Compound	MC18723-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	ND		50	38.7	77	50	38.3	77	1	70-130/30
10061-02-6	trans-1,3-Dichloropropene	ND		50	39.8	80	50	39.5	79	1	70-130/30
123-91-1	1,4-Dioxane	ND		250	256	102	250	283	113	10	70-130/30
97-63-2	Ethyl methacrylate	ND		50	41.0	82	50	41.3	83	1	72-139/30
100-41-4	Ethylbenzene	ND		50	52.2	104	50	51.7	103	1	70-130/30
87-68-3	Hexachlorobutadiene	ND		50	58.4	117	50	60.1	120	3	70-130/30
591-78-6	2-Hexanone	ND		50	38.6	77	50	39.6	79	3	70-130/30
98-82-8	Isopropylbenzene	ND		50	49.6	99	50	49.5	99	0	70-130/30
99-87-6	p-Isopropyltoluene	ND		50	56.7	113	50	56.6	113	0	70-130/30
1634-04-4	Methyl Tert Butyl Ether	ND		50	40.0	80	50	39.8	80	1	70-130/30
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		50	26.5	53* [a]	50	26.4	53* [a]	0	70-130/30
74-95-3	Methylene bromide	ND		50	44.5	89	50	44.3	89	0	70-130/30
75-09-2	Methylene chloride	ND		50	46.1	92	50	46.1	92	0	70-130/30
91-20-3	Naphthalene	ND		50	41.9	84	50	45.9	92	9	70-130/30
103-65-1	n-Propylbenzene	ND		50	48.1	96	50	48.1	96	0	70-130/30
100-42-5	Styrene	ND		50	51.9	104	50	51.4	103	1	70-130/30
630-20-6	1,1,1,2-Tetrachloroethane	ND		50	53.8	108	50	53.7	107	0	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND		50	45.9	92	50	47.9	96	4	70-130/30
127-18-4	Tetrachloroethene	1.2		50	56.0	110	50	54.0	106	4	70-130/30
108-88-3	Toluene	ND		50	48.2	96	50	47.3	95	2	70-130/30
87-61-6	1,2,3-Trichlorobenzene	ND		50	49.2	98	50	53.0	106	7	70-130/30
120-82-1	1,2,4-Trichlorobenzene	ND		50	51.9	104	50	54.1	108	4	70-130/30
71-55-6	1,1,1-Trichloroethane	ND		50	55.8	112	50	54.7	109	2	70-130/30
79-00-5	1,1,2-Trichloroethane	ND		50	44.0	88	50	44.1	88	0	70-130/30
79-01-6	Trichloroethene	ND		50	43.4	87	50	42.6	85	2	70-130/30
75-69-4	Trichlorofluoromethane	ND		50	42.4	85	50	42.2	84	0	70-130/30
96-18-4	1,2,3-Trichloropropane	ND		50	42.1	84	50	43.7	87	4	70-130/30
95-63-6	1,2,4-Trimethylbenzene	ND		50	46.7	93	50	47.0	94	1	70-130/30
108-67-8	1,3,5-Trimethylbenzene	ND		50	46.1	92	50	46.2	92	0	70-130/30
108-05-4	Vinyl Acetate	ND		50	58.0	116	50	58.2	116	0	70-130/30
75-01-4	Vinyl chloride	ND		50	43.9	88	50	42.8	86	3	70-130/30
	m,p-Xylene	ND		100	103	103	100	101	101	2	70-130/30
95-47-6	o-Xylene	ND		50	49.5	99	50	48.9	98	1	70-130/30
1330-20-7	Xylene (total)	ND		150	153	102	150	150	100	2	70-130/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC18723-2MS	G125284.D	1	03/14/13	JM	n/a	n/a	MSG4957
MC18723-2MSD	G125285.D	1	03/14/13	JM	n/a	n/a	MSG4957
MC18723-2	G125266.D	1	03/13/13	JM	n/a	n/a	MSG4957

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

MC18752-5, MC18752-6

CAS No.	Surrogate Recoveries	MS	MSD	MC18723-2	Limits
1868-53-7	Dibromofluoromethane	77%	77%	79%	70-130%
2037-26-5	Toluene-D8	77%	77%	77%	70-130%
460-00-4	4-Bromofluorobenzene	72%	73%	77%	70-130%

(a) Outside control limits due to possible matrix interference. Refer to Blank Spike.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC18752-2MS	M54873.D	1	03/20/13	AMY	n/a	n/a	MSM1869
MC18752-2MSD	M54874.D	1	03/20/13	AMY	n/a	n/a	MSM1869
MC18752-2	M54871.D	1	03/20/13	AMY	n/a	n/a	MSM1869

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

MC18752-1, MC18752-2, MC18752-4

CAS No.	Compound	MC18752-2 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND		59.8	91.4	153* [a]	62	90.2	146* [a]	1	70-130/30
107-02-8	Acrolein	ND		299	283	95	310	271	87	4	70-130/30
107-13-1	Acrylonitrile	ND		59.8	72.1	121	62	72.2	117	0	70-130/30
71-43-2	Benzene	1.2		59.8	65.5	108	62	60.9	96	7	70-130/30
108-86-1	Bromobenzene	ND		59.8	60.3	101	62	51.9	84	15	70-130/30
74-97-5	Bromochloromethane	ND		59.8	63.8	107	62	61.3	99	4	70-130/30
75-27-4	Bromodichloromethane	ND		59.8	62.1	104	62	59.3	96	5	70-130/30
75-25-2	Bromoform	ND		59.8	64.2	107	62	61.5	99	4	70-130/30
74-83-9	Bromomethane	ND		59.8	67.1	112	62	63.6	103	5	70-130/30
78-93-3	2-Butanone (MEK)	ND		59.8	76.9	129	62	75.6	122	2	70-130/30
104-51-8	n-Butylbenzene	ND		59.8	59.6	100	62	37.9	61* [a]	45* [b]	70-130/30
135-98-8	sec-Butylbenzene	ND		59.8	59.0	99	62	40.8	66* [a]	36* [b]	70-130/30
98-06-6	tert-Butylbenzene	ND		59.8	58.4	98	62	45.7	74	24	70-130/30
75-15-0	Carbon disulfide	5.8	J	59.8	66.4	101	62	63.6	93	4	70-130/30
56-23-5	Carbon tetrachloride	ND		59.8	66.3	111	62	61.0	98	8	70-130/30
108-90-7	Chlorobenzene	ND		59.8	57.3	96	62	51.4	83	11	70-130/30
75-00-3	Chloroethane	ND		59.8	69.4	116	62	64.9	105	7	70-130/30
110-75-8	2-Chloroethyl vinyl ether	ND		59.8	ND	0* [a]	62	ND	0* [a]	nc	10-160/30
67-66-3	Chloroform	ND		59.8	62.7	105	62	59.7	96	5	70-130/30
74-87-3	Chloromethane	ND		59.8	77.0	129	62	71.7	116	7	70-130/30
95-49-8	o-Chlorotoluene	ND		59.8	58.2	97	62	45.7	74	24	70-130/30
106-43-4	p-Chlorotoluene	ND		59.8	59.2	99	62	47.0	76	23	70-130/30
124-48-1	Dibromochloromethane	ND		59.8	62.6	105	62	60.5	98	3	70-130/30
95-50-1	1,2-Dichlorobenzene	ND		59.8	56.4	94	62	42.7	69* [a]	28	70-130/30
541-73-1	1,3-Dichlorobenzene	ND		59.8	55.5	93	62	42.2	68* [a]	27	70-130/30
106-46-7	1,4-Dichlorobenzene	ND		59.8	58.1	97	62	44.3	71	27	70-130/30
75-71-8	Dichlorodifluoromethane	ND		59.8	80.7	135* [a]	62	73.4	118	9	70-130/30
75-34-3	1,1-Dichloroethane	ND		59.8	65.7	110	62	62.2	100	5	70-130/30
107-06-2	1,2-Dichloroethane	ND		59.8	65.7	110	62	62.5	101	5	70-130/30
75-35-4	1,1-Dichloroethene	ND		59.8	70.3	118	62	65.7	106	7	70-130/30
156-59-2	cis-1,2-Dichloroethene	ND		59.8	62.2	104	62	59.4	96	5	70-130/30
156-60-5	trans-1,2-Dichloroethene	ND		59.8	64.3	108	62	61.5	99	4	70-130/30
78-87-5	1,2-Dichloropropane	ND		59.8	62.1	104	62	58.4	94	6	70-130/30
142-28-9	1,3-Dichloropropane	ND		59.8	63.7	107	62	62.2	100	2	70-130/30
594-20-7	2,2-Dichloropropane	ND		59.8	65.3	109	62	61.0	98	7	70-130/30
563-58-6	1,1-Dichloropropene	ND		59.8	68.6	115	62	62.9	101	9	70-130/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC18752-2MS	M54873.D	1	03/20/13	AMY	n/a	n/a	MSM1869
MC18752-2MSD	M54874.D	1	03/20/13	AMY	n/a	n/a	MSM1869
MC18752-2	M54871.D	1	03/20/13	AMY	n/a	n/a	MSM1869

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

MC18752-1, MC18752-2, MC18752-4

CAS No.	Compound	MC18752-2 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	ND		59.8	61.6	103	62	57.5	93	7	70-130/30
10061-02-6	trans-1,3-Dichloropropene	ND		59.8	68.0	114	62	64.0	103	6	70-130/30
123-91-1	1,4-Dioxane	ND		299	451	151* [a]	310	428	138* [a]	5	70-130/30
97-63-2	Ethyl methacrylate	ND		59.8	74.8	125	62	72.4	117	3	41-160/30
100-41-4	Ethylbenzene	2.3	J	59.8	62.9	101	62	54.9	85	14	70-130/30
87-68-3	Hexachlorobutadiene	ND		59.8	54.6	91	62	29.4	47* [a]	60* [b]	70-130/30
591-78-6	2-Hexanone	ND		59.8	90.3	151* [a]	62	85.0	137* [a]	6	70-130/30
98-82-8	Isopropylbenzene	ND		59.8	60.5	101	62	48.7	79	22	70-130/30
99-87-6	p-Isopropyltoluene	ND		59.8	62.6	105	62	43.3	70	36* [b]	70-130/30
1634-04-4	Methyl Tert Butyl Ether	ND		59.8	64.7	108	62	61.7	100	5	70-130/30
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		59.8	86.4	145* [a]	62	81.1	131* [a]	6	70-130/30
74-95-3	Methylene bromide	ND		59.8	66.4	111	62	63.7	103	4	70-130/30
75-09-2	Methylene chloride	3.7		59.8	61.1	96	62	59.7	90	2	70-130/30
91-20-3	Naphthalene	ND		59.8	73.6	123	62	45.6	74	47* [b]	70-130/30
103-65-1	n-Propylbenzene	ND		59.8	59.5	100	62	45.8	74	26	70-130/30
100-42-5	Styrene	ND		59.8	57.7	97	62	50.0	81	14	70-130/30
630-20-6	1,1,1,2-Tetrachloroethane	ND		59.8	60.2	101	62	55.9	90	7	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND		59.8	73.3	123	62	68.1	110	7	70-130/30
127-18-4	Tetrachloroethene	ND		59.8	63.6	106	62	56.8	92	11	70-130/30
108-88-3	Toluene	2.8	J	59.8	66.6	107	62	60.5	93	10	70-130/30
87-61-6	1,2,3-Trichlorobenzene	ND		59.8	58.2	97	62	32.2	52* [a]	58* [b]	70-130/30
120-82-1	1,2,4-Trichlorobenzene	ND		59.8	56.7	95	62	32.9	53* [a]	53* [b]	70-130/30
71-55-6	1,1,1-Trichloroethane	ND		59.8	65.4	109	62	61.6	99	6	70-130/30
79-00-5	1,1,2-Trichloroethane	ND		59.8	65.3	109	62	62.0	100	5	70-130/30
79-01-6	Trichloroethene	ND		59.8	65.6	110	62	60.2	97	9	70-130/30
75-69-4	Trichlorofluoromethane	ND		59.8	64.9	109	62	59.5	96	9	70-130/30
96-18-4	1,2,3-Trichloropropane	ND		59.8	79.0	132* [a]	62	73.4	118	7	70-130/30
95-63-6	1,2,4-Trimethylbenzene	ND		59.8	59.6	100	62	44.9	72	28	70-130/30
108-67-8	1,3,5-Trimethylbenzene	ND		59.8	60.3	101	62	45.1	73	29	70-130/30
108-05-4	Vinyl Acetate	ND		59.8	51.7	87	62	47.3	76	9	70-130/30
75-01-4	Vinyl chloride	ND		59.8	69.8	117	62	64.3	104	8	70-130/30
	m,p-Xylene	ND		120	120	100	124	105	85	13	70-130/30
95-47-6	o-Xylene	ND		59.8	57.9	97	62	51.9	84	11	70-130/30
1330-20-7	Xylene (total)	ND		179	178	99	186	157	84	13	70-130/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC18752-2MS	M54873.D	1	03/20/13	AMY	n/a	n/a	MSM1869
MC18752-2MSD	M54874.D	1	03/20/13	AMY	n/a	n/a	MSM1869
MC18752-2	M54871.D	1	03/20/13	AMY	n/a	n/a	MSM1869

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

MC18752-1, MC18752-2, MC18752-4

CAS No.	Surrogate Recoveries	MS	MSD	MC18752-2	Limits
1868-53-7	Dibromofluoromethane	88%	89%	87%	70-130%
2037-26-5	Toluene-D8	112%	111%	111%	70-130%
460-00-4	4-Bromofluorobenzene	89%	89%	89%	70-130%

(a) Outside control limits due to possible matrix interference. Refer to Blank Spike.
(b) High RPD due to possible matrix interference and/or sample non-homogeneity.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC18887-3MS	M54906.D	1	03/21/13	AMY	n/a	n/a	MSM1871
MC18887-3MSD	M54907.D	1	03/21/13	AMY	n/a	n/a	MSM1871
MC18887-3	M54905.D	1	03/21/13	AMY	n/a	n/a	MSM1871

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

MC18752-3

CAS No.	Compound	MC18887-3 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND		156	122	78	165	110	67* a	10	70-130/30
107-02-8	Acrolein	ND		782	604	77	824	572	69* a	5	70-130/30
107-13-1	Acrylonitrile	ND		156	152	97	165	146	89	4	70-130/30
71-43-2	Benzene	ND		156	150	96	165	140	85	7	70-130/30
108-86-1	Bromobenzene	ND		156	122	78	165	106	64* a	14	70-130/30
74-97-5	Bromochloromethane	ND		156	147	94	165	138	84	6	70-130/30
75-27-4	Bromodichloromethane	ND		156	145	93	165	135	82	7	70-130/30
75-25-2	Bromoform	ND		156	137	88	165	126	76	8	70-130/30
74-83-9	Bromomethane	ND		156	157	100	165	152	92	3	70-130/30
78-93-3	2-Butanone (MEK)	ND		156	169	108	165	164	99	3	70-130/30
104-51-8	n-Butylbenzene	ND		156	80.7	52* a	165	64.1	39* a	23	70-130/30
135-98-8	sec-Butylbenzene	ND		156	84.8	54* a	165	69.0	42* a	21	70-130/30
98-06-6	tert-Butylbenzene	ND		156	98.0	63* a	165	84.0	51* a	15	70-130/30
75-15-0	Carbon disulfide	ND		156	162	104	165	155	94	4	70-130/30
56-23-5	Carbon tetrachloride	ND		156	154	99	165	142	86	8	70-130/30
108-90-7	Chlorobenzene	ND		156	125	80	165	113	69* a	10	70-130/30
75-00-3	Chloroethane	ND		156	168	107	165	160	97	5	70-130/30
67-66-3	Chloroform	ND		156	147	94	165	140	85	5	70-130/30
74-87-3	Chloromethane	ND		156	174	111	165	171	104	2	70-130/30
95-49-8	o-Chlorotoluene	ND		156	109	70	165	90.6	55* a	18	70-130/30
106-43-4	p-Chlorotoluene	ND		156	112	72	165	94.8	57* a	17	70-130/30
124-48-1	Dibromochloromethane	ND		156	139	89	165	130	79	7	70-130/30
95-50-1	1,2-Dichlorobenzene	ND		156	99.6	64* a	165	83.1	50* a	18	70-130/30
541-73-1	1,3-Dichlorobenzene	ND		156	102	65* a	165	84.2	51* a	19	70-130/30
106-46-7	1,4-Dichlorobenzene	ND		156	105	67* a	165	88.5	54* a	17	70-130/30
75-71-8	Dichlorodifluoromethane	ND		156	176	113	165	166	101	6	70-130/30
75-34-3	1,1-Dichloroethane	ND		156	154	99	165	145	88	6	70-130/30
107-06-2	1,2-Dichloroethane	ND		156	149	95	165	137	83	8	70-130/30
75-35-4	1,1-Dichloroethene	ND		156	168	107	165	159	96	6	70-130/30
156-59-2	cis-1,2-Dichloroethene	ND		156	148	95	165	142	86	4	70-130/30
156-60-5	trans-1,2-Dichloroethene	ND		156	156	100	165	146	89	7	70-130/30
78-87-5	1,2-Dichloropropane	ND		156	144	92	165	134	81	7	70-130/30
142-28-9	1,3-Dichloropropane	ND		156	143	91	165	133	81	7	70-130/30
594-20-7	2,2-Dichloropropane	ND		156	156	100	165	148	90	5	70-130/30
563-58-6	1,1-Dichloropropene	ND		156	157	100	165	146	89	7	70-130/30
10061-01-5	cis-1,3-Dichloropropene	ND		156	139	89	165	129	78	7	70-130/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC18887-3MS	M54906.D	1	03/21/13	AMY	n/a	n/a	MSM1871
MC18887-3MSD	M54907.D	1	03/21/13	AMY	n/a	n/a	MSM1871
MC18887-3	M54905.D	1	03/21/13	AMY	n/a	n/a	MSM1871

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

MC18752-3

CAS No.	Compound	MC18887-3 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
10061-02-6	trans-1,3-Dichloropropene	ND		156	150	96	165	139	84	8	70-130/30
123-91-1	1,4-Dioxane	ND		782	657	84	824	687	83	4	70-130/30
97-63-2	Ethyl methacrylate	ND		156	164	105	165	149	90	10	41-160/30
100-41-4	Ethylbenzene	ND		156	126	81	165	110	67* a	14	70-130/30
87-68-3	Hexachlorobutadiene	ND		156	62.8	40* a	165	48.2	29* a	26	70-130/30
591-78-6	2-Hexanone	ND		156	180	115	165	171	104	5	70-130/30
98-82-8	Isopropylbenzene	ND		156	107	68* a	165	88.6	54* a	19	70-130/30
99-87-6	p-Isopropyltoluene	ND		156	88.8	57* a	165	71.5	43* a	22	70-130/30
1634-04-4	Methyl Tert Butyl Ether	ND		156	149	95	165	145	88	3	70-130/30
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		156	175	112	165	162	98	8	70-130/30
74-95-3	Methylene bromide	ND		156	147	94	165	135	82	9	70-130/30
75-09-2	Methylene chloride	8.4		156	149	90	165	141	80	6	70-130/30
91-20-3	Naphthalene	ND		156	90.9	58* a	165	69.0	42* a	27	70-130/30
103-65-1	n-Propylbenzene	ND		156	101	65* a	165	82.6	50* a	20	70-130/30
100-42-5	Styrene	ND		156	117	75	165	103	62* a	13	70-130/30
630-20-6	1,1,1,2-Tetrachloroethane	ND		156	131	84	165	120	73	9	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND		156	151	97	165	137	83	10	70-130/30
127-18-4	Tetrachloroethene	ND		156	138	88	165	124	75	11	70-130/30
108-88-3	Toluene	ND		156	144	92	165	130	79	10	70-130/30
87-61-6	1,2,3-Trichlorobenzene	ND		156	69.7	45* a	165	51.1	31* a	31* b	70-130/30
120-82-1	1,2,4-Trichlorobenzene	ND		156	72.7	47* a	165	53.1	32* a	31* b	70-130/30
71-55-6	1,1,1-Trichloroethane	ND		156	153	98	165	146	89	5	70-130/30
79-00-5	1,1,2-Trichloroethane	ND		156	143	91	165	132	80	8	70-130/30
79-01-6	Trichloroethene	ND		156	148	95	165	140	85	6	70-130/30
75-69-4	Trichlorofluoromethane	ND		156	150	96	165	143	87	5	70-130/30
96-18-4	1,2,3-Trichloropropane	ND		156	160	102	165	145	88	10	70-130/30
95-63-6	1,2,4-Trimethylbenzene	ND		156	97.8	63* a	165	78.9	48* a	21	70-130/30
108-67-8	1,3,5-Trimethylbenzene	ND		156	97.9	63* a	165	79.5	48* a	21	70-130/30
108-05-4	Vinyl Acetate	ND		156	111	71	165	98.7	60* a	12	70-130/30
75-01-4	Vinyl chloride	ND		156	160	102	165	156	95	3	70-130/30
	m,p-Xylene	ND		313	248	79	330	223	68* a	11	70-130/30
95-47-6	o-Xylene	ND		156	121	77	165	109	66* a	10	70-130/30
1330-20-7	Xylene (total)	ND		469	369	79	495	332	67* a	11	70-130/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC18887-3MS	M54906.D	1	03/21/13	AMY	n/a	n/a	MSM1871
MC18887-3MSD	M54907.D	1	03/21/13	AMY	n/a	n/a	MSM1871
MC18887-3	M54905.D	1	03/21/13	AMY	n/a	n/a	MSM1871

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

MC18752-3

CAS No.	Surrogate Recoveries	MS	MSD	MC18887-3	Limits
1868-53-7	Dibromofluoromethane	89%	89%	89%	70-130%
2037-26-5	Toluene-D8	111%	112%	111%	70-130%
460-00-4	4-Bromofluorobenzene	88%	88%	87%	70-130%

(a) Outside control limits due to possible matrix interference. Refer to Blank Spike.
(b) High RPD due to possible matrix interference and/or sample non-homogeneity.

* = Outside of Control Limits.

Volatile Internal Standard Area Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Check Std:	MSG4957-CC4948	**Injection Date:**	03/13/13
Lab File ID:	G125253.D	**Injection Time:**	09:43
Instrument ID:	GCMSG	**Method:**	SW846 8260B

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	89396	5.08	132090	6.21	55001	9.55	63633	12.18	17376	3.08
Upper Limit [a]	178792	5.58	264180	6.71	110002	10.05	127266	12.68	34752	3.58
Lower Limit [b]	44698	4.58	66045	5.71	27501	9.05	31817	11.68	8688	2.58

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
MSG4957-BS	90808	5.08	130888	6.21	54999	9.55	63615	12.18	18124	3.08
MSG4957-MB	85402	5.08	126429	6.21	52700	9.55	55058	12.18	17677	3.09
ZZZZZZ	85662	5.08	126221	6.21	56363	9.55	65280	12.18	15389	3.08
ZZZZZZ	90176	5.08	131417	6.21	54376	9.55	58685	12.18	16898	3.08
ZZZZZZ	89629	5.08	129745	6.21	55960	9.55	58607	12.18	17532	3.08
ZZZZZZ	91227	5.08	134243	6.21	58429	9.55	61530	12.18	17147	3.08
ZZZZZZ	103075	5.08	152324	6.21	71358	9.56	72246	12.18	19007	3.08
ZZZZZZ	92797	5.08	133081	6.21	56134	9.55	59416	12.18	18307	3.08
MC18752-5	89719	5.08	130612	6.21	54508	9.55	57390	12.18	16408	3.09
MC18752-6	89263	5.08	131253	6.21	54276	9.55	56537	12.18	16415	3.08
ZZZZZZ	87406	5.08	129010	6.21	53988	9.55	55656	12.18	16890	3.08
MC18723-2	86738	5.08	128710	6.21	53351	9.55	56141	12.18	16543	3.09

IS 1 = Pentafluorobenzene
IS 2 = 1,4-Difluorobenzene
IS 3 = Chlorobenzene-D5
IS 4 = 1,4-Dichlorobenzene-d4
IS 5 = Tert Butyl Alcohol-D9

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Volatile Internal Standard Area Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Check Std:	MSG4958-CC4948	**Injection Date:**	03/14/13
Lab File ID:	G125275.D	**Injection Time:**	12:17
Instrument ID:	GCMSG	**Method:**	SW846 8260B

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	97237	5.08	140264	6.21	59213	9.55	68425	12.18	20177	3.08
Upper Limit [a]	194474	5.58	280528	6.71	118426	10.05	136850	12.68	40354	3.58
Lower Limit [b]	48619	4.58	70132	5.71	29607	9.05	34213	11.68	10089	2.58

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
MSG4957-MB1	89357	5.08	130864	6.21	54509	9.55	56264	12.18	16198	3.08
MSG4958-MB	89357	5.08	130864	6.21	54509	9.55	56264	12.18	16198	3.08
MSG4957-BS1	92371	5.08	133990	6.21	56354	9.55	64189	12.18	16252	3.08
MSG4958-BS	92371	5.08	133990	6.21	56354	9.55	64189	12.18	16252	3.08
MC18835-1MS	94248	5.08	136178	6.21	56787	9.55	65091	12.18	17408	3.08
MC18835-1MSD	92925	5.08	136296	6.21	57039	9.55	64610	12.18	17163	3.08
MC18835-1	88275	5.08	129965	6.21	55640	9.55	57948	12.18	16920	3.08
MC18723-2MS	93663	5.08	135563	6.21	57130	9.55	65687	12.18	17651	3.08
MC18723-2MSD	93049	5.08	135002	6.21	56603	9.55	64058	12.18	17547	3.08
ZZZZZZ	90598	5.08	131979	6.21	54673	9.55	56940	12.18	17377	3.08
ZZZZZZ	88456	5.08	130222	6.21	55101	9.55	75501	12.18	16835	3.08
ZZZZZZ	93065	5.08	134867	6.21	56108	9.55	61870	12.18	18450	3.09
ZZZZZZ	91909	5.08	135124	6.21	58135	9.55	61308	12.18	19597	3.08
ZZZZZZ	92209	5.08	135696	6.21	55820	9.55	59283	12.18	19464	3.09
ZZZZZZ	91453	5.08	134697	6.21	55349	9.55	58541	12.18	18000	3.08
ZZZZZZ	92599	5.08	135450	6.21	59170	9.55	63335	12.18	18426	3.08
ZZZZZZ	92706	5.08	136152	6.21	57018	9.55	65690	12.18	18581	3.08
ZZZZZZ	93427	5.08	134142	6.21	56883	9.55	61875	12.18	18949	3.08
ZZZZZZ	93154	5.08	135429	6.21	56614	9.55	60514	12.18	18606	3.09
ZZZZZZ	91448	5.08	134288	6.21	56135	9.55	59474	12.18	18176	3.08
GP15707-LB1	91115	5.08	133497	6.21	55077	9.55	58810	12.18	18805	3.08
GP15707-LS1	92797	5.08	134223	6.21	56387	9.55	65758	12.18	18250	3.08

IS 1 = Pentafluorobenzene
IS 2 = 1,4-Difluorobenzene
IS 3 = Chlorobenzene-D5
IS 4 = 1,4-Dichlorobenzene-d4
IS 5 = Tert Butyl Alcohol-D9

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Volatile Internal Standard Area Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Check Std:	MSK2225-CC2209	**Injection Date:**	03/12/13
Lab File ID:	K67885.D	**Injection Time:**	09:07
Instrument ID:	GCMSK	**Method:**	SW846 8260B

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	301965	8.82	374896	9.67	197667	12.93	194702	15.49	55037	6.42
Upper Limit [a]	603930	9.32	749792	10.17	395334	13.43	389404	15.99	110074	6.92
Lower Limit [b]	150983	8.32	187448	9.17	98834	12.43	97351	14.99	27519	5.92

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
MSK2225-BS	294051	8.82	368594	9.67	193867	12.93	191942	15.49	57350	6.41
MSK2225-BSD	298719	8.82	377857	9.67	195558	12.93	191737	15.49	59208	6.42
MSK2225-MB	295770	8.82	378530	9.67	188205	12.93	190027	15.49	53725	6.42
MC18752-3	285185	8.82	360748	9.67	181300	12.93	180515	15.49	54140	6.41
MC18768-6	277825	8.82	355119	9.67	179215	12.93	178979	15.49	54495	6.42
ZZZZZZ	276061	8.82	352017	9.67	180127	12.93	182978	15.49	56653	6.42
ZZZZZZ	296027	8.82	373281	9.67	189588	12.93	193260	15.49	58438	6.42
ZZZZZZ	313151	8.82	402291	9.67	199577	12.93	203581	15.49	63409	6.42
ZZZZZZ	306524	8.82	388300	9.67	195392	12.93	199289	15.49	59512	6.42
ZZZZZZ	310804	8.82	394417	9.67	198517	12.93	204659	15.49	62592	6.42
ZZZZZZ	321163	8.82	414010	9.67	202868	12.93	205956	15.49	60533	6.41
ZZZZZZ	310465	8.82	386237	9.67	184645	12.93	196534	15.49	57677	6.42
MC18768-6MS	322680	8.82	403339	9.67	206463	12.93	203762	15.49	63595	6.42
MC18768-6MSD	320061	8.82	403624	9.67	205832	12.93	204274	15.49	60775	6.41
ZZZZZZ	329172	8.82	422117	9.67	205725	12.93	210253	15.49	63790	6.40
ZZZZZZ	328696	8.82	418402	9.67	206307	12.93	201799	15.49	63976	6.41
ZZZZZZ	331591	8.82	424511	9.67	203902	12.93	202138	15.49	63815	6.42
ZZZZZZ	330994	8.82	427163	9.67	209884	12.93	209130	15.49	62927	6.41
ZZZZZZ	339448	8.82	438382	9.67	212809	12.93	214970	15.49	67675	6.42
ZZZZZZ	318990	8.82	405017	9.67	209516	12.93	210575	15.49	66505	6.41

IS 1 = Pentafluorobenzene
IS 2 = 1,4-Difluorobenzene
IS 3 = Chlorobenzene-D5
IS 4 = 1,4-Dichlorobenzene-d4
IS 5 = Tert Butyl Alcohol-D9

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Volatile Internal Standard Area Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Check Std:	MSM1869-CC1868	**Injection Date:**	03/19/13
Lab File ID:	M54841.D	**Injection Time:**	08:42
Instrument ID:	GCMSM	**Method:**	SW846 8260B

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	502665	9.35	729518	10.24	358694	13.51	413512	16.08	328730	6.85
Upper Limit [a]	1005330	9.85	1459036	10.74	717388	14.01	827024	16.58	657460	7.35
Lower Limit [b]	251333	8.85	364759	9.74	179347	13.01	206756	15.58	164365	6.35
Lab Sample ID	**IS 1 AREA**	**RT**	**IS 2 AREA**	**RT**	**IS 3 AREA**	**RT**	**IS 4 AREA**	**RT**	**IS 5 AREA**	**RT**
MSM1869-BS	468995	9.36	697592	10.24	340612	13.51	396588	16.08	395623	6.85
MSM1869-BSD	470837	9.36	690180	10.24	338593	13.52	385247	16.08	400448	6.86
MSM1869-MB	508182	9.36	727896	10.24	341291	13.51	401062	16.08	194235	6.86
ZZZZZZ	528183	9.36	756292	10.24	350856	13.52	410738	16.08	342476	6.85
ZZZZZZ	503759	9.36	725984	10.24	331173	13.52	373619	16.08	254119	6.85
ZZZZZZ	493583	9.36	719228	10.24	328957	13.51	342879	16.08	279589	6.86
ZZZZZZ	498980	9.36	722030	10.24	329180	13.52	366330	16.08	319172	6.85
ZZZZZZ	378195	9.36	553266	10.24	264008	13.51	306490	16.08	356976	6.85
ZZZZZZ	476941	9.36	678876	10.24	316876	13.52	365488	16.08	370622	6.85
ZZZZZZ	505632	9.35	729878	10.24	341752	13.51	400752	16.08	402925	6.85

IS 1 = Pentafluorobenzene
IS 2 = 1,4-Difluorobenzene
IS 3 = Chlorobenzene-D5
IS 4 = 1,4-Dichlorobenzene-d4
IS 5 = Tert Butyl Alcohol-D9

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Volatile Internal Standard Area Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Check Std:	MSM1870-CC1868	**Injection Date:**	03/20/13
Lab File ID:	M54867.D	**Injection Time:**	09:30
Instrument ID:	GCMSM	**Method:**	SW846 8260B

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	562086	9.36	817082	10.24	398563	13.52	443387	16.08	211423	6.85
Upper Limit [a]	1124172	9.86	1634164	10.74	797126	14.02	886774	16.58	422846	7.35
Lower Limit [b]	281043	8.86	408541	9.74	199282	13.02	221694	15.58	105712	6.35

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
MSM1869-BS1	562086	9.36	817082	10.24	398563	13.52	443387	16.08	211423	6.85
MSM1870-BS	562086	9.36	817082	10.24	398563	13.52	443387	16.08	211423	6.85
MSM1870-MB	490706	9.36	711160	10.24	334700	13.52	390992	16.08	209587	6.85
MSM1869-MB1	490706	9.36	711160	10.24	334700	13.52	390992	16.08	209587	6.85
MC18752-1	498384	9.36	715817	10.24	321149	13.51	335108	16.08	360932	6.86
MC18752-2	485157	9.36	703987	10.24	335612	13.51	392567	16.08	331221	6.85
MC18752-4	485887	9.36	697087	10.24	329196	13.51	383953	16.08	320050	6.85
MC18752-2MS	470701	9.36	682054	10.24	341053	13.52	385195	16.08	394500	6.86
MC18752-2MSD	515200	9.35	752047	10.24	367214	13.51	419191	16.08	402047	6.85
MC18819-2MS	521176	9.36	764059	10.24	378022	13.52	426182	16.08	435141[c]	6.86
MC18819-2MSD	473702	9.35	695300	10.24	345131	13.51	385798	16.08	377698	6.85
ZZZZZZ	483998	9.35	698267	10.24	331173	13.51	395212	16.08	389720	6.85
MC18819-2	481280	9.36	699085	10.24	333931	13.52	394535	16.08	357982	6.85
ZZZZZZ	415927	9.36	600339	10.24	283293	13.52	332914	16.08	297142	6.86
ZZZZZZ	502475	9.36	719831	10.24	343019	13.52	406734	16.08	370290	6.85
ZZZZZZ	523843	9.36	761213	10.24	365047	13.52	428214	16.08	336677[c]	6.86
ZZZZZZ	505187	9.36	730090	10.24	346137	13.52	414365	16.08	322908	6.86
ZZZZZZ	497600	9.35	727165	10.24	343555	13.52	407218	16.08	339017	6.86
ZZZZZZ	500528	9.36	725740	10.24	346212	13.52	398976	16.08	431980[c]	6.85
ZZZZZZ	455229	9.35	664160	10.24	317306	13.52	372694	16.08	313719	6.86
ZZZZZZ	488510	9.35	702984	10.24	335636	13.51	399323	16.08	416537	6.85
ZZZZZZ	495451	9.36	710206	10.24	339805	13.52	393185	16.08	409888	6.85
ZZZZZZ	462626	9.35	667400	10.24	317036	13.52	376213	16.08	385976	6.85
ZZZZZZ	485851	9.35	700954	10.24	333939	13.51	386400	16.08	275465	6.85
ZZZZZZ	397435	9.36	573811	10.24	242744	13.52	220976[d]	16.08	191793	6.85

IS 1 = Pentafluorobenzene
IS 2 = 1,4-Difluorobenzene
IS 3 = Chlorobenzene-D5
IS 4 = 1,4-Dichlorobenzene-d4
IS 5 = Tert Butyl Alcohol-D9

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.
(c) Outside control limits. Target analytes not associated with this internal standard.

Volatile Internal Standard Area Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Check Std:	MSM1870-CC1868	**Injection Date:**	03/20/13
Lab File ID:	M54867.D	**Injection Time:**	09:30
Instrument ID:	GCMSM	**Method:**	SW846 8260B

Lab	IS 1		IS 2		IS 3		IS 4		IS 5	
Sample ID	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT

(d) Outside control limits due to possible matrix interference. Confirmed by reanalysis.

Volatile Internal Standard Area Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Check Std:	MSM1871-CC1868	**Injection Date:**	03/21/13
Lab File ID:	M54895.D	**Injection Time:**	08:37
Instrument ID:	GCMSM	**Method:**	SW846 8260B

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	533513	9.35	779419	10.24	379074	13.51	435546	16.08	222865	6.86
Upper Limit [a]	1067026	9.85	1558838	10.74	758148	14.01	871092	16.58	445730	7.36
Lower Limit [b]	266757	8.85	389710	9.74	189537	13.01	217773	15.58	111433	6.36

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
MSM1871-BS	499426	9.36	732728	10.24	358167	13.51	413679	16.08	388997	6.86
MSM1871-BSD	487795	9.36	711400	10.24	347500	13.52	396756	16.08	377796	6.85
MSM1871-MB	525096	9.36	764209	10.24	358446	13.51	418828	16.08	214639	6.86
ZZZZZZ	208251[c]	9.35	295300[c]	10.24	127013[c]	13.52	118278[c]	16.08	188650	6.85
ZZZZZZ	484490	9.35	708367	10.24	320354	13.52	343189	16.08	382916	6.85
ZZZZZZ	533850	9.35	778571	10.24	368949	13.51	446010	16.08	383184	6.85
ZZZZZZ	522880	9.35	757489	10.24	361984	13.51	430942	16.08	383083	6.86
MC18752-3	489490	9.35	706071	10.24	339318	13.52	397959	16.08	303478	6.85
MC18887-3	517098	9.35	746315	10.24	354714	13.52	427160	16.08	388800	6.85
MC18887-3MS	518108	9.36	754933	10.24	373245	13.52	426213	16.08	351000	6.85
MC18887-3MSD	507527	9.35	744059	10.24	364211	13.52	423504	16.08	396453	6.85
ZZZZZZ	537153	9.36	769708	10.24	371372	13.52	439832	16.08	379768	6.85
ZZZZZZ	517390	9.35	749342	10.24	360807	13.52	418778	16.08	305484	6.85
ZZZZZZ	505205	9.36	734615	10.24	355256	13.52	409143	16.08	365827	6.85
ZZZZZZ	475421	9.35	689853	10.24	324962	13.52	379500	16.08	335727	6.85
ZZZZZZ	508236	9.36	731972	10.24	351311	13.51	412922	16.08	316415	6.85
ZZZZZZ	475325	9.36	680993	10.24	325519	13.52	378298	16.08	344573	6.85
ZZZZZZ	478293	9.35	679914	10.24	328576	13.52	381500	16.08	350174	6.85
ZZZZZZ	464869	9.35	662897	10.24	366719	13.51	386002	16.08	287522	6.85
ZZZZZZ	464221	9.35	666231	10.24	320737	13.51	373098	16.08	307294	6.85

IS 1 = Pentafluorobenzene
IS 2 = 1,4-Difluorobenzene
IS 3 = Chlorobenzene-D5
IS 4 = 1,4-Dichlorobenzene-d4
IS 5 = Tert Butyl Alcohol-D9

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.
(c) Outside control limits due to possible matrix interference. Confirmed by reanalysis.

Volatile Surrogate Recovery Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Method: SW846 8260B **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3
MC18752-5	G125263.D	77	76	77
MC18752-6	G125264.D	76	76	78
MC18723-2MS	G125284.D	77	77	72
MC18723-2MSD	G125285.D	77	77	73
MSG4957-BS	G125254.D	76	76	72
MSG4957-MB	G125256.D	78	76	78
MSG4957-MB1	G125279.D	77	76	78

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	70-130%
S2 = Toluene-D8	70-130%
S3 = 4-Bromofluorobenzene	70-130%

Volatile Surrogate Recovery Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Method: SW846 8260B **Matrix:** SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3
MC18752-1	M54870.D	91	110	95
MC18752-2	M54871.D	87	111	89
MC18752-3	M54904.D	88	112	89
MC18752-3	K67892.D	115	110	104
MC18752-4	M54872.D	87	112	89
MC18752-2MS	M54873.D	88	112	89
MC18752-2MSD	M54874.D	89	111	89
MC18768-6MS	K67901.D	103	111	105
MC18768-6MSD	K67902.D	101	106	100
MC18887-3MS	M54906.D	89	111	88
MC18887-3MSD	M54907.D	89	112	88
MSK2225-BS	K67886.D	106	110	100
MSK2225-BSD	K67887.D	105	107	101
MSK2225-MB	K67889.D	113	107	100
MSM1869-BS1	M54867.D	87	109	89
MSM1869-BSD	M54843.D	89	111	88
MSM1869-MB1	M54869.D	88	110	88
MSM1871-BS	M54896.D	90	110	88
MSM1871-BSD	M54897.D	89	110	90
MSM1871-MB	M54899.D	88	111	88
MSM1869-MB	M54845.D	86	111	88

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	70-130%
S2 = Toluene-D8	70-130%
S3 = 4-Bromofluorobenzene	70-130%

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Surrogate Recovery Summaries
- GC Surrogate Retention Time Summaries

Method Blank Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP32212-MB	BB46154.D	1	03/11/13	CZ	03/11/13	OP32212	GBB2782

The QC reported here applies to the following samples: **Method:** SW846 8011

MC18752-5, MC18752-6

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries		Limits
460-00-4	Bromofluorobenzene (S)	127%	36-173%
460-00-4	Bromofluorobenzene (S)	154%	36-173%

Method Blank Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP32247-MB	YZ78535.D	1	03/15/13	CZ	03/13/13	OP32247	GYZ7047

The QC reported here applies to the following samples: **Method:** SW846 8011

MC18752-1, MC18752-2, MC18752-3, MC18752-4

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.4	1.1	ug/kg	
106-93-4	1,2-Dibromoethane	ND	2.4	0.94	ug/kg	

CAS No.	Surrogate Recoveries		Limits
460-00-4	Bromofluorobenzene (S)	159%	61-167%
460-00-4	Bromofluorobenzene (S)	192%* [a]	61-167%

(a) Outside control limit.Samples are non-detect for analyte.

Blank Spike Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP32212-BS	BB46155.D	1	03/11/13	CZ	03/11/13	OP32212	GBB2782

The QC reported here applies to the following samples: **Method:** SW846 8011

MC18752-5, MC18752-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
96-12-8	1,2-Dibromo-3-chloropropane	0.071	0.11	155* [a]	60-140
106-93-4	1,2-Dibromoethane	0.071	0.099	139	60-140

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	Bromofluorobenzene (S)	123%	36-173%
460-00-4	Bromofluorobenzene (S)	157%	36-173%

(a) Outside control limits. Associated samples are non-detect for target analyte.

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP32247-BS	YZ78536.D	1	03/15/13	CZ	03/13/13	OP32247	GYZ7047
OP32247-BSD	YZ78537.D	1	03/15/13	CZ	03/13/13	OP32247	GYZ7047

The QC reported here applies to the following samples: **Method:** SW846 8011

MC18752-1, MC18752-2, MC18752-3, MC18752-4

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	BSD ug/kg	BSD %	RPD	Limits Rec/RPD
96-12-8	1,2-Dibromo-3-chloropropane	32.9	42.8	130	44.1	134	3	59-142/30
106-93-4	1,2-Dibromoethane	32.9	39.2	120	39.4	120	1	56-140/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
460-00-4	Bromofluorobenzene (S)	149%	157%	61-167%
460-00-4	Bromofluorobenzene (S)	194%* [a]	218%* [a]	61-167%

(a) Outside control limits.Targets recovery satisfactory.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP32212-MS	BB46156.D	1	03/11/13	CZ	03/11/13	OP32212	GBB2782
OP32212-MSD	BB46157.D	1	03/11/13	CZ	03/11/13	OP32212	GBB2782
MC18700-10	BB46158.D	1	03/11/13	CZ	03/11/13	OP32212	GBB2782

The QC reported here applies to the following samples: **Method:** SW846 8011

MC18752-5, MC18752-6

CAS No.	Compound	MC18700-10 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
96-12-8	1,2-Dibromo-3-chloropropane	ND		0.071	0.12	169* [a]	0.071	0.12	169* [a]	0	64-141/29
106-93-4	1,2-Dibromoethane	ND		0.071	0.14	197* [a]	0.071	0.13	183* [a]	7	63-163/27

CAS No.	Surrogate Recoveries	MS	MSD	MC18700-10	Limits
460-00-4	Bromofluorobenzene (S)	164%	133%	156%	36-173%
460-00-4	Bromofluorobenzene (S)	174%* [a]	168%	159%	36-173%

(a) Outside control limits. Associated samples are non-detect for target analyte.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP32247-MS	YZ78538.D	1	03/15/13	CZ	03/13/13	OP32247	GYZ7047
OP32247-MSD	YZ78539.D	1	03/15/13	CZ	03/13/13	OP32247	GYZ7047
MC18752-2	YZ78547.D	1	03/16/13	CZ	03/13/13	OP32247	GYZ7047

The QC reported here applies to the following samples: **Method:** SW846 8011

MC18752-1, MC18752-2, MC18752-3, MC18752-4

CAS No.	Compound	MC18752-2 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
96-12-8	1,2-Dibromo-3-chloropropane	ND		35.6	49.3	138	35.6	48.4	136	2	40-156/27
106-93-4	1,2-Dibromoethane	ND		35.6	43.1	121	35.6	43.3	121	0	48-141/27

CAS No.	Surrogate Recoveries	MS	MSD	MC18752-2	Limits
460-00-4	Bromofluorobenzene (S)	152%	150%	177%* [a]	61-167%
460-00-4	Bromofluorobenzene (S)	189%* [b]	174%* [b]	208%* [a]	61-167%

(a) Outside control limits.Sample non-detect for target analytes.
(b) Outside control limits.Spike recovery satisfactory.

* = Outside of Control Limits.

Volatile Surrogate Recovery Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Method: SW846 8011	**Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]	S1 [b]
MC18752-5	BB46162.D	83	149
MC18752-6	BB46163.D	61	75
OP32212-BS	BB46155.D	123	157
OP32212-MB	BB46154.D	127	154
OP32212-MS	BB46156.D	164	174* [c]
OP32212-MSD	BB46157.D	133	168

Surrogate Compounds	Recovery Limits
S1 = Bromofluorobenzene (S)	36-173%

(a) Recovery from GC signal #2
(b) Recovery from GC signal #1
(c) Outside control limits. Associated samples are non-detect for target analyte.

Volatile Surrogate Recovery Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Method: SW846 8011 **Matrix:** SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]	S1 [b]
MC18752-1	YZ78546.D	162	202* [c]
MC18752-2	YZ78547.D	177* [c]	208* [c]
MC18752-3	YZ78548.D	158	200* [c]
MC18752-4	YZ78549.D	158	218* [c]
OP32247-BS	YZ78536.D	149	194* [d]
OP32247-BSD	YZ78537.D	157	218* [d]
OP32247-MB	YZ78535.D	159	192* [e]
OP32247-MS	YZ78538.D	152	189* [f]
OP32247-MSD	YZ78539.D	150	174* [f]

Surrogate Compounds	Recovery Limits
S1 = Bromofluorobenzene (S)	61-167%

(a) Recovery from GC signal #2
(b) Recovery from GC signal #1
(c) Outside control limits.Sample non-detect for target analytes.
(d) Outside control limits.Targets recovery satisfactory.
(e) Outside control limit.Samples are non-detect for analyte.
(f) Outside control limits.Spike recovery satisfactory.

GC Surrogate Retention Time Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Check Std:	GBB2782-ICC2782	**Injection Date:**	03/11/13
Lab File ID:	BB46149.D	**Injection Time:**	17:55
Instrument ID:	GCBB	**Method:**	SW846 8011

	S1 [a] RT	S1 [b] RT
Check Std	3.50	3.25

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT
ZZZZZZ	BB46152A.D	03/11/13	19:13	3.48	3.25
OP32212-MB	BB46154.D	03/11/13	20:04	3.50	3.25
OP32212-BS	BB46155.D	03/11/13	20:30	3.50	3.25
OP32212-MS	BB46156.D	03/11/13	20:57	3.50	3.25
OP32212-MSD	BB46157.D	03/11/13	21:23	3.50	3.25
MC18700-10	BB46158.D	03/11/13	21:50	3.50	3.24
MC18752-5	BB46162.D	03/11/13	23:38	3.51	3.25
MC18752-6	BB46163.D	03/12/13	00:05	3.53	3.25
GBB2782-ECC2782	BB46164.D	03/12/13	00:32	3.53	3.25

Surrogate Compounds

S1 = Bromofluorobenzene (S)

(a) Retention time from GC signal #2
(b) Retention time from GC signal #1

GC Surrogate Retention Time Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Check Std:	GYZ7047-ICC7047	**Injection Date:**	03/15/13
Lab File ID:	YZ78529.D	**Injection Time:**	18:48
Instrument ID:	GCYZ	**Method:**	SW846 8011

	S1 [a] RT	S1 [b] RT
Check Std	4.01	3.77

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT
OP32247-MB	YZ78535.D	03/15/13	21:36	4.01	3.77
OP32247-BS	YZ78536.D	03/15/13	22:04	4.01	3.77
OP32247-BSD	YZ78537.D	03/15/13	22:32	4.00	3.77
OP32247-MS	YZ78538.D	03/15/13	23:00	4.00	3.77
OP32247-MSD	YZ78539.D	03/15/13	23:29	4.00	3.77
ZZZZZZ	YZ78540.D	03/15/13	23:57	4.00	3.77
ZZZZZZ	YZ78541.D	03/16/13	00:25	4.00	3.77
ZZZZZZ	YZ78542.D	03/16/13	00:53	4.00	3.77
ZZZZZZ	YZ78543.D	03/16/13	01:21	4.00	3.77
ZZZZZZ	YZ78544.D	03/16/13	01:49	4.00	3.77

Surrogate Compounds

S1 = Bromofluorobenzene (S)

(a) Retention time from GC signal #2
(b) Retention time from GC signal #1

GC Surrogate Retention Time Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Check Std:	GYZ7047-CC7047	**Injection Date:**	03/16/13
Lab File ID:	YZ78545.D	**Injection Time:**	02:18
Instrument ID:	GCYZ	**Method:**	SW846 8011

	S1 [a] RT	S1 [b] RT
Check Std	4.01	3.77

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT
MC18752-1	YZ78546.D	03/16/13	02:46	4.00	3.77
MC18752-2	YZ78547.D	03/16/13	03:14	4.01	3.77
MC18752-3	YZ78548.D	03/16/13	03:42	4.00	3.77
MC18752-4	YZ78549.D	03/16/13	04:10	4.00	3.77
ZZZZZZ	YZ78550.D	03/16/13	04:38	4.00	3.77
MC18819-2	YZ78551.D	03/16/13	05:06	4.00	3.77
ZZZZZZ	YZ78552.D	03/16/13	05:34	4.00	3.77
ZZZZZZ	YZ78553.D	03/16/13	06:01	4.00	3.77
OP32247-MS1	YZ78554.D	03/16/13	06:29	4.00	3.77
OP32247-MSD1	YZ78555.D	03/16/13	06:58	4.00	3.77

Surrogate Compounds

S1 = Bromofluorobenzene (S)

(a) Retention time from GC signal #2
(b) Retention time from GC signal #1

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Percent Solids Raw Data Summary

Percent Solids Raw Data Summary

Job Number: MC18752
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana Drilling, Roxana, IL

Sample: MC18752-1 **Analyzed:** 12-MAR-13 by BF **Method:** SM21 2540 B MOD.
ClientID: MW-24-12

Wet Weight (Total)	37.88	g
Tare Weight	26.081	g
Dry Weight (Total)	37.396	g
Solids, Percent	95.9	%

Sample: MC18752-2 **Analyzed:** 12-MAR-13 by BF **Method:** SM21 2540 B MOD.
ClientID: MW-24-25

Wet Weight (Total)	37.545	g
Tare Weight	24.373	g
Dry Weight (Total)	36.707	g
Solids, Percent	93.6	%

Sample: MC18752-3 **Analyzed:** 12-MAR-13 by BF **Method:** SM21 2540 B MOD.
ClientID: MW-24-47

Wet Weight (Total)	34.756	g
Tare Weight	20.448	g
Dry Weight (Total)	32.086	g
Solids, Percent	81.3	%

Sample: MC18752-4 **Analyzed:** 12-MAR-13 by BF **Method:** SM21 2540 B MOD.
ClientID: MW-24-47DUP

Wet Weight (Total)	34.62	g
Tare Weight	21.176	g
Dry Weight (Total)	32.179	g
Solids, Percent	81.8	%