

## ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental  
2425 New Holland Pike  
Lancaster, PA 17601

Prepared for:

ExxonMobil  
PO Box 4592  
Houston TX 77210-4592

July 21, 2014

Project: Mayflower, AR Pipeline Incident

Submittal Date: 07/03/2014

Group Number: 1486545

SDG: PEO09

PO Number: 4410181435

Release Number: SIXSMITH

State of Sample Origin: AR

### Client Sample Description

WS-007(0.5-1.0)070214 Grab Surface Water  
WS-009(Surface)070214 Grab Surface Water  
WS-001(0.5-1.0)070214 Grab Surface Water  
WS-021(Surface)070214 Grab Surface Water  
WS-004(0.5-1.0)070214 Grab Surface Water

### Lancaster Labs (LL) #

7521097  
7521098  
7521099  
7521100  
7521101

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO	ARCADIS	Attn: Stephen Barrick
ELECTRONIC COPY TO	ARCADIS	Attn: Lyndi Mott
ELECTRONIC COPY TO	ExxonMobil	Attn: Michael J. Firth
ELECTRONIC COPY TO	ARCADIS	Attn: Emily Leamer
ELECTRONIC COPY TO	ARCADIS	Attn: Rhiannon Parmalee
ELECTRONIC COPY TO	ExxonMobil	Attn: Michael L Sixsmith
ELECTRONIC COPY TO	ExxonMobil	Attn: Julie Foster
ELECTRONIC COPY TO	ARCADIS	Attn: Kim Abbott

Respectfully Submitted,



Katherine A. Klinefelter  
Principal Specialist

(717) 556-7256

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Project Name: Mayflower, AR Pipeline Incident  
LL Group #: 1486545

**General Comments:**

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below. Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are not included in this data set

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

**Analysis Specific Comments:****SW-846 8270C SIM, GC/MS Semivolatiles**

Sample #s: 7521097, 7521098, 7521099, 7521100, 7521101

The laboratory did not receive sufficient sample volume to perform the method QC requirement for MS/MSD or MS/DUP analysis.

The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken:

The sample was re-extracted outside the method required holding time and the QC is again outside of the

acceptance limits. All results are reported from the

first trial. Similar results were obtained in both trials.

The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The client was contacted and the data reported.

Batch #: 14186WAC026 (Sample number(s): 7521097-7521101)

The recovery(ies) for the following analyte(s) in the LCS and/or LCSD were below the acceptance window: Dibenz(a,h)anthracene, Indeno(1,2,3-cd)pyrene, Benzo(g,h,i)perylene

The recovery(ies) for one or more surrogates were outside of the QC window for sample(s) 7521097, 7521098, 7521099, 7521100, 7521101

Sample Description: WS-007(0.5-1.0)070214 Grab Surface Water  
S20135565 Mayflower, AR  
Pipeline Incident

LL Sample # WW 7521097  
LL Group # 1486545  
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 07/02/2014 10:30 by LMH ExxonMobil  
PO Box 4592  
Submitted: 07/03/2014 09:30 Houston TX 77210-4592  
Reported: 07/21/2014 21:53

MWS07 SDG#: PEO09-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
<b>GC/MS</b>	<b>Semivolatiles</b>	<b>SW-846 8270C SIM</b>	<b>ug/l</b>	<b>ug/l</b>	<b>ug/l</b>	
08357	Acenaphthene	83-32-9	N.D.	0.010	0.051	1
08357	Acenaphthylene	208-96-8	N.D.	0.010	0.051	1
08357	Anthracene	120-12-7	N.D.	0.010	0.051	1
08357	Benzo(a)anthracene	56-55-3	N.D.	0.010	0.051	1
08357	Benzo(a)pyrene	50-32-8	N.D.	0.010	0.051	1
08357	Benzo(b)fluoranthene	205-99-2	N.D.	0.010	0.051	1
08357	Benzo(g,h,i)perylene	191-24-2	N.D.	0.010	0.051	1
08357	Benzo(k)fluoranthene	207-08-9	N.D.	0.010	0.051	1
08357	Chrysene	218-01-9	N.D.	0.010	0.051	1
08357	Dibenz(a,h)anthracene	53-70-3	N.D.	0.010	0.051	1
08357	Fluoranthene	206-44-0	0.018 J	0.010	0.051	1
08357	Fluorene	86-73-7	N.D.	0.010	0.051	1
08357	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.010	0.051	1
08357	1-Methylnaphthalene	90-12-0	N.D.	0.010	0.051	1
08357	2-Methylnaphthalene	91-57-6	N.D.	0.010	0.051	1
08357	Naphthalene	91-20-3	N.D.	0.030	0.051	1
08357	Phenanthrene	85-01-8	N.D.	0.030	0.051	1
08357	Pyrene	129-00-0	0.011 J	0.010	0.051	1

The laboratory did not receive sufficient sample volume to perform the method QC requirement for MS/MSD or MS/DUP analysis.

The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken:  
The sample was re-extracted outside the method required holding time and the QC is again outside of the acceptance limits. All results are reported from the first trial. Similar results were obtained in both trials.

The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The client was contacted and the data reported.

### General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	14186WAC026	07/15/2014 06:15	Brian K Graham	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	14186WAC026	07/06/2014 19:30	Nicholas W Shroyer	1

\*=This limit was used in the evaluation of the final result

Sample Description: WS-009 (Surface) 070214 Grab Surface Water  
S20135565 Mayflower, AR  
Pipeline Incident

LL Sample # WW 7521098  
LL Group # 1486545  
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 07/02/2014 10:35 by LMH ExxonMobil  
PO Box 4592  
Submitted: 07/03/2014 09:30 Houston TX 77210-4592  
Reported: 07/21/2014 21:53

MWS09 SDG#: PEO09-02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
<b>GC/MS</b>	<b>Semivolatiles</b>	<b>SW-846 8270C SIM</b>	<b>ug/l</b>	<b>ug/l</b>	<b>ug/l</b>	
08357	Acenaphthene	83-32-9	N.D.	0.011	0.054	1
08357	Acenaphthylene	208-96-8	N.D.	0.011	0.054	1
08357	Anthracene	120-12-7	N.D.	0.011	0.054	1
08357	Benzo(a)anthracene	56-55-3	N.D.	0.011	0.054	1
08357	Benzo(a)pyrene	50-32-8	N.D.	0.011	0.054	1
08357	Benzo(b)fluoranthene	205-99-2	N.D.	0.011	0.054	1
08357	Benzo(g,h,i)perylene	191-24-2	N.D.	0.011	0.054	1
08357	Benzo(k)fluoranthene	207-08-9	N.D.	0.011	0.054	1
08357	Chrysene	218-01-9	N.D.	0.011	0.054	1
08357	Dibenz(a,h)anthracene	53-70-3	N.D.	0.011	0.054	1
08357	Fluoranthene	206-44-0	N.D.	0.011	0.054	1
08357	Fluorene	86-73-7	N.D.	0.011	0.054	1
08357	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.011	0.054	1
08357	1-Methylnaphthalene	90-12-0	N.D.	0.011	0.054	1
08357	2-Methylnaphthalene	91-57-6	N.D.	0.011	0.054	1
08357	Naphthalene	91-20-3	N.D.	0.033	0.054	1
08357	Phenanthrene	85-01-8	N.D.	0.033	0.054	1
08357	Pyrene	129-00-0	N.D.	0.011	0.054	1

The laboratory did not receive sufficient sample volume to perform the method QC requirement for MS/MSD or MS/DUP analysis.

The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken:  
The sample was re-extracted outside the method required holding time and the QC is again outside of the acceptance limits. All results are reported from the first trial. Similar results were obtained in both trials.

The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The client was contacted and the data reported.

### General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	14186WAC026	07/15/2014 06:42	Brian K Graham	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	14186WAC026	07/06/2014 19:30	Nicholas W Shroyer	1

\*=This limit was used in the evaluation of the final result

Sample Description: WS-001(0.5-1.0)070214 Grab Surface Water  
S20135565 Mayflower, AR  
Pipeline Incident

LL Sample # WW 7521099  
LL Group # 1486545  
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 07/02/2014 10:40 by LMH ExxonMobil  
PO Box 4592  
Submitted: 07/03/2014 09:30 Houston TX 77210-4592  
Reported: 07/21/2014 21:53

MWS01 SDG#: PEO09-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
<b>GC/MS</b>	<b>Semivolatiles</b>	<b>SW-846 8270C SIM</b>	<b>ug/l</b>	<b>ug/l</b>	<b>ug/l</b>	
08357	Acenaphthene	83-32-9	N.D.	0.010	0.050	1
08357	Acenaphthylene	208-96-8	N.D.	0.010	0.050	1
08357	Anthracene	120-12-7	N.D.	0.010	0.050	1
08357	Benzo(a)anthracene	56-55-3	N.D.	0.010	0.050	1
08357	Benzo(a)pyrene	50-32-8	N.D.	0.010	0.050	1
08357	Benzo(b)fluoranthene	205-99-2	N.D.	0.010	0.050	1
08357	Benzo(g,h,i)perylene	191-24-2	N.D.	0.010	0.050	1
08357	Benzo(k)fluoranthene	207-08-9	N.D.	0.010	0.050	1
08357	Chrysene	218-01-9	N.D.	0.010	0.050	1
08357	Dibenz(a,h)anthracene	53-70-3	N.D.	0.010	0.050	1
08357	Fluoranthene	206-44-0	N.D.	0.010	0.050	1
08357	Fluorene	86-73-7	N.D.	0.010	0.050	1
08357	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.010	0.050	1
08357	1-Methylnaphthalene	90-12-0	N.D.	0.010	0.050	1
08357	2-Methylnaphthalene	91-57-6	N.D.	0.010	0.050	1
08357	Naphthalene	91-20-3	N.D.	0.030	0.050	1
08357	Phenanthrene	85-01-8	N.D.	0.030	0.050	1
08357	Pyrene	129-00-0	N.D.	0.010	0.050	1

The laboratory did not receive sufficient sample volume to perform the method QC requirement for MS/MSD or MS/DUP analysis.

The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken:  
The sample was re-extracted outside the method required holding time and the QC is again outside of the acceptance limits. All results are reported from the first trial. Similar results were obtained in both trials.

The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The client was contacted and the data reported.

### General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	14186WAC026	07/15/2014 07:10	Brian K Graham	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	14186WAC026	07/06/2014 19:30	Nicholas W Shroyer	1

\*=This limit was used in the evaluation of the final result

Sample Description: WS-021(Surface)070214 Grab Surface Water  
S20135565 Mayflower, AR  
Pipeline Incident

LL Sample # WW 7521100  
LL Group # 1486545  
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 07/02/2014 10:45 by LMH ExxonMobil  
PO Box 4592  
Submitted: 07/03/2014 09:30 Houston TX 77210-4592  
Reported: 07/21/2014 21:53

MWS21 SDG#: PEO09-04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
<b>GC/MS</b>	<b>Semivolatiles</b>	<b>SW-846 8270C SIM</b>	<b>ug/l</b>	<b>ug/l</b>	<b>ug/l</b>	
08357	Acenaphthene	83-32-9	N.D.	0.010	0.051	1
08357	Acenaphthylene	208-96-8	N.D.	0.010	0.051	1
08357	Anthracene	120-12-7	N.D.	0.010	0.051	1
08357	Benzo(a)anthracene	56-55-3	N.D.	0.010	0.051	1
08357	Benzo(a)pyrene	50-32-8	N.D.	0.010	0.051	1
08357	Benzo(b)fluoranthene	205-99-2	N.D.	0.010	0.051	1
08357	Benzo(g,h,i)perylene	191-24-2	N.D.	0.010	0.051	1
08357	Benzo(k)fluoranthene	207-08-9	N.D.	0.010	0.051	1
08357	Chrysene	218-01-9	N.D.	0.010	0.051	1
08357	Dibenz(a,h)anthracene	53-70-3	N.D.	0.010	0.051	1
08357	Fluoranthene	206-44-0	N.D.	0.010	0.051	1
08357	Fluorene	86-73-7	N.D.	0.010	0.051	1
08357	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.010	0.051	1
08357	1-Methylnaphthalene	90-12-0	N.D.	0.010	0.051	1
08357	2-Methylnaphthalene	91-57-6	N.D.	0.010	0.051	1
08357	Naphthalene	91-20-3	N.D.	0.031	0.051	1
08357	Phenanthrene	85-01-8	N.D.	0.031	0.051	1
08357	Pyrene	129-00-0	N.D.	0.010	0.051	1

The laboratory did not receive sufficient sample volume to perform the method QC requirement for MS/MSD or MS/DUP analysis.

The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken:  
The sample was re-extracted outside the method required holding time and the QC is again outside of the acceptance limits. All results are reported from the first trial. Similar results were obtained in both trials.

The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The client was contacted and the data reported.

### General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	14186WAC026	07/15/2014 07:37	Brian K Graham	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	14186WAC026	07/06/2014 19:30	Nicholas W Shroyer	1

\*=This limit was used in the evaluation of the final result

Sample Description: WS-004(0.5-1.0)070214 Grab Surface Water  
S20135565 Mayflower, AR  
Pipeline Incident

LL Sample # WW 7521101  
LL Group # 1486545  
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 07/02/2014 10:50 by LMH ExxonMobil  
PO Box 4592  
Houston TX 77210-4592  
Submitted: 07/03/2014 09:30  
Reported: 07/21/2014 21:53

MWS04 SDG#: PEO09-05\*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
<b>GC/MS</b>	<b>Semivolatiles</b>	<b>SW-846 8270C SIM</b>	<b>ug/l</b>	<b>ug/l</b>	<b>ug/l</b>	
08357	Acenaphthene	83-32-9	N.D.	0.010	0.051	1
08357	Acenaphthylene	208-96-8	N.D.	0.010	0.051	1
08357	Anthracene	120-12-7	N.D.	0.010	0.051	1
08357	Benzo(a)anthracene	56-55-3	N.D.	0.010	0.051	1
08357	Benzo(a)pyrene	50-32-8	N.D.	0.010	0.051	1
08357	Benzo(b)fluoranthene	205-99-2	N.D.	0.010	0.051	1
08357	Benzo(g,h,i)perylene	191-24-2	N.D.	0.010	0.051	1
08357	Benzo(k)fluoranthene	207-08-9	N.D.	0.010	0.051	1
08357	Chrysene	218-01-9	N.D.	0.010	0.051	1
08357	Dibenz(a,h)anthracene	53-70-3	N.D.	0.010	0.051	1
08357	Fluoranthene	206-44-0	N.D.	0.010	0.051	1
08357	Fluorene	86-73-7	N.D.	0.010	0.051	1
08357	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.010	0.051	1
08357	1-Methylnaphthalene	90-12-0	N.D.	0.010	0.051	1
08357	2-Methylnaphthalene	91-57-6	N.D.	0.010	0.051	1
08357	Naphthalene	91-20-3	N.D.	0.030	0.051	1
08357	Phenanthrene	85-01-8	N.D.	0.030	0.051	1
08357	Pyrene	129-00-0	N.D.	0.010	0.051	1

The laboratory did not receive sufficient sample volume to perform the method QC requirement for MS/MSD or MS/DUP analysis.

The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken:  
The sample was re-extracted outside the method required holding time and the QC is again outside of the acceptance limits. All results are reported from the first trial. Similar results were obtained in both trials.

The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The client was contacted and the data reported.

### General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	14186WAC026	07/15/2014 08:04	Brian K Graham	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	14186WAC026	07/06/2014 19:30	Nicholas W Shroyer	1

\*=This limit was used in the evaluation of the final result



## Quality Control Summary

Client Name: ExxonMobil  
Reported: 07/21/14 at 09:53 PM

Group Number: 1486545

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

### Laboratory Compliance Quality Control

<u>Analysis Name</u>	<u>Blank Result</u>	<u>Blank MDL**</u>	<u>Blank LOQ</u>	<u>Report Units</u>	<u>LCS %REC</u>	<u>LCSD %REC</u>	<u>LCS/LCSD Limits</u>	<u>RPD</u>	<u>RPD Max</u>
Batch number: 14186WAC026	Sample number(s): 7521097-7521101								
Acenaphthene	N.D.	0.010	0.050	ug/l	107	113	83-119	6	30
Acenaphthylene	N.D.	0.010	0.050	ug/l	98	104	81-130	6	30
Anthracene	N.D.	0.010	0.050	ug/l	100	105	83-125	5	30
Benzo(a)anthracene	N.D.	0.010	0.050	ug/l	98	103	79-122	5	30
Benzo(a)pyrene	N.D.	0.010	0.050	ug/l	91	101	80-121	10	30
Benzo(b)fluoranthene	N.D.	0.010	0.050	ug/l	96	105	79-136	9	30
Benzo(g,h,i)perylene	N.D.	0.010	0.050	ug/l	66*	78	72-132	17	30
Benzo(k)fluoranthene	N.D.	0.010	0.050	ug/l	89	99	81-131	11	30
Chrysene	N.D.	0.010	0.050	ug/l	94	102	84-118	8	30
Dibenz(a,h)anthracene	N.D.	0.010	0.050	ug/l	48*	61*	66-133	25	30
Fluoranthene	N.D.	0.010	0.050	ug/l	98	103	84-124	4	30
Fluorene	N.D.	0.010	0.050	ug/l	97	104	82-119	7	30
Indeno(1,2,3-cd)pyrene	N.D.	0.010	0.050	ug/l	61*	74	68-132	18	30
1-Methylnaphthalene	N.D.	0.010	0.050	ug/l	92	98	86-130	6	30
2-Methylnaphthalene	N.D.	0.010	0.050	ug/l	88	95	81-131	8	30
Naphthalene	N.D.	0.030	0.050	ug/l	92	98	82-122	6	30
Phenanthrene	N.D.	0.030	0.050	ug/l	97	102	83-116	5	30
Pyrene	N.D.	0.010	0.050	ug/l	100	105	78-125	5	30

### Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: PAHs in waters by SIM

Batch number: 14186WAC026

	Fluoranthene-d10	Benzo(a)pyrene-d12	1-Methylnaphthalene-d10
7521097	79	32*	77
7521098	69	28*	75
7521099	69	26*	73
7521100	68	27*	75
7521101	86	49*	84
Blank	88	73	83
LCS	98	95	92
LCSD	102	105	97

\*- Outside of specification

\*\* - This limit was used in the evaluation of the final result for the blank

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

**Quality Control Summary**Client Name: ExxonMobil  
Reported: 07/21/14 at 09:53 PM

Group Number: 1486545

**Surrogate Quality Control**

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Limits:	59-128	62-141	70-134
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\*- Outside of specification

\*\*-This limit was used in the evaluation of the final result for the blank

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

# ExxonMobil Analysis Request/Chain of Custody



**Lancaster Laboratories**

For Eurofins Lancaster Laboratories use only  
 Acct. # 14739 Group # 1486545 Sample # 7521097-1101  
Instructions on reverse side correspond with circled numbers.

1 of 1

<b>1 Client Information</b>				<b>4 Matrix</b>		<b>5 Analyses Requested</b>								SCR#: _____																																																																																																																																																									
Facility #/SID <u>Mayflower Pipeline Incident</u>				Sediment <input type="checkbox"/> Ground <input type="checkbox"/> Surface <input checked="" type="checkbox"/> Potable <input type="checkbox"/> NPDES <input type="checkbox"/> Air <input type="checkbox"/> Oil <input type="checkbox"/> Total # of Containers <u>PAH 8270 SIM</u>		<b>Preservation Code</b>								<b>Preservation Codes</b>																																																																																																																																																									
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ExxonMobil PM <u>Mike Sixsmith</u>		Cost Center/AFE		Soils <input type="checkbox"/> Water <input type="checkbox"/>		<table border="1" style="width: 100%; height: 100%; border-collapse: collapse;"> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </table>																																<b>6 Remarks</b>																																																																																																																																	
Consultant/Office <u>Arcadis</u>				Composite <input type="checkbox"/>		Consultant PM <u>Steve Barrick</u> Consultant Phone # <u>919-302-6799</u>		Tracking # <u>12 75Y 02X Y0 4092 8139</u>																																																																																																																																																															
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<b>7 Turnaround Time Requested (TAT) (please circle)</b>				Relinquished by <u>[Signature]</u> Date <u>7/2/14</u> Time <u>1600</u> Relinquished by <u>[Signature]</u> Date <u>7/2/14</u> Time <u>1600</u> Relinquished by _____      Date _____      Time _____		Received by _____      Date _____      Time _____ Received by _____      Date _____      Time _____ Received by _____      Date _____      Time _____		<b>9</b>																																																																																																																																																															
Standard      5 day      4 day 72 hour      48 hour      24 hour										Relinquished by Commercial Carrier UPS <input checked="" type="checkbox"/> FedEx _____      Other _____		Received by <u>[Signature]</u> Date <u>7.3.14</u> Time <u>930</u>		Temperature Upon Receipt <u>0.3</u> °C      Custody Seals Intact? <u>Yes</u> No																																																																																																																																																									
<b>8 Data Package (circle if required)</b>				EDD (circle if required) Locus EIM (default) _____ Other _____		Type I - Full _____ Type VI (Raw Data) _____ NJ Reduced _____ Other _____																																																																																																																																																																	

Client: ExxonMobil

## Delivery and Receipt Information

Delivery Method:	<u>UPS</u>	Arrival Timestamp:	<u>07/03/2014 9:30</u>
Number of Packages:	<u>1</u>	Number of Projects:	<u>1</u>
State/Province of Origin:	<u>AR</u>		

## Arrival Condition Summary

Shipping Container Sealed:	<u>Yes</u>	Total Trip Blank Qty:	<u>0</u>
Custody Seal Present:	<u>Yes</u>	Trip Blank Type:	<u>N/A</u>
Custody Seal Intact:	<u>Yes</u>	Air Quality Samples Present:	<u>No</u>
Samples Chilled:	<u>Yes</u>	Air Quality Flow Controllers Present:	<u>N/A</u>
Paperwork Enclosed:	<u>Yes</u>	Flow Controller Quantity:	<u>0</u>
Samples Intact:	<u>Yes</u>	Air Quality Returns:	<u>N/A</u>
Missing Samples:	<u>No</u>		
Extra Samples:	<u>No</u>		
Discrepancy in Container Qty on COC:	<u>No</u>		
Sample IDs on COC match Containers:	<u>Yes</u>		
Sample Date/Times match COC:	<u>Yes</u>		
VOA Vial Headspace $\geq$ 6mm:	<u>N/A</u>		
VOA IDs ( $\geq$ 6mm):	<u>N/A</u>		

Unpacked by Brandy Barclay (2299) at 12:34 on 07/03/2014

## Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	<u>Samples Collected Same Day as Receipt?</u>	<u>Elevated Temp?</u>
1	DT146	0.3	DT	Wet	Y	Bagged	N	N

# Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

<b>RL</b>	Reporting Limit	<b>BMQL</b>	Below Minimum Quantitation Level
<b>N.D.</b>	none detected	<b>MPN</b>	Most Probable Number
<b>TNTC</b>	Too Numerous To Count	<b>CP Units</b>	cobalt-chloroplatinate units
<b>IU</b>	International Units	<b>NTU</b>	nephelometric turbidity units
<b>umhos/cm</b>	micromhos/cm	<b>ng</b>	nanogram(s)
<b>C</b>	degrees Celsius	<b>F</b>	degrees Fahrenheit
<b>meq</b>	milliequivalents	<b>lb.</b>	pound(s)
<b>g</b>	gram(s)	<b>kg</b>	kilogram(s)
<b>µg</b>	microgram(s)	<b>mg</b>	milligram(s)
<b>mL</b>	milliliter(s)	<b>L</b>	liter(s)
<b>m<sup>3</sup></b>	cubic meter(s)	<b>µL</b>	microliter(s)
		<b>pg/L</b>	picogram/liter

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

**ppm** parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.

**ppb** parts per billion

**Dry weight basis** Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

*Data Qualifiers:*

**C** – result confirmed by reanalysis.

**J** - estimated value – The result is  $\geq$  the Method Detection Limit (MDL) and  $<$  the Limit of Quantitation (LOQ).

*U.S. EPA CLP Data Qualifiers:*

**Organic Qualifiers**

- A** TIC is a possible aldol-condensation product
- B** Analyte was also detected in the blank
- C** Pesticide result confirmed by GC/MS
- D** Compound quantitated on a diluted sample
- E** Concentration exceeds the calibration range of the instrument
- N** Presumptive evidence of a compound (TICs only)
- P** Concentration difference between primary and confirmation columns  $>25\%$
- U** Compound was not detected
- X,Y,Z** Defined in case narrative

**Inorganic Qualifiers**

- B** Value is  $<$ CRDL, but  $\geq$ IDL
- E** Estimated due to interference
- M** Duplicate injection precision not met
- N** Spike sample not within control limits
- S** Method of standard additions (MSA) used for calculation
- U** Compound was not detected
- W** Post digestion spike out of control limits
- \*** Duplicate analysis not within control limits
- +** Correlation coefficient for MSA  $<0.995$

**Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.**

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR part 136 Table II as “analyze immediately” are not performed within 15 minutes.

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