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

August 19, 2014

Project: Mayflower, AR Pipeline Incident

Submittal Date: 08/08/2014
Group Number: 1494652
SDG: PEO16
PO Number: 4410181435
Release Number: SIXSMITH
State of Sample Origin: AR

Client Sample Description	Lancaster Labs (LL) #
WS-007(0.5-1.0)080714 Grab Surface Water	7558650
WS-009(Surface)080714 Grab Surface Water	7558651
WS-009(Surface)080714MS Grab Surface Water	7558652
WS-009(Surface)080714MSD Grab Surface Water	7558653
WS-001(0.5-1.0)080714 Grab Surface Water	7558654
WS-021(Surface)080714 Grab Surface Water	7558655
WS-004(0.5-1.0)080714 Grab Surface Water	7558656
DUP-WS-134-080714 Grab Surface Water	7558657

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	ARCADIS	Attn: Kim Abbott

COPY TO

Respectfully Submitted,

Katherine A. Klinefelter

Katherine A. Klinefelter
Principal Specialist

(717) 556-7256

Project Name: Mayflower, AR Pipeline Incident
LL Group #: 1494652

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 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: 7558650, 7558654, 7558655

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 #: 14225WAA026 (Sample number(s): 7558650-7558657 UNSPK: 7558651)

The recovery(ies) for the following analyte(s) in the MS and/or MSD was outside the acceptance window: Anthracene, Benzo(a)pyrene

The recovery(ies) for one or more surrogates were outside of the QC window for sample(s) 7558650, 7558654, 7558655

Sample Description: WS-007(0.5-1.0)080714 Grab Surface Water
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # WW 7558650
LL Group # 1494652
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 08/07/2014 09:00 by ZP

Submitted: 08/08/2014 09:30
Reported: 08/19/2014 11:41

ExxonMobil
PO Box 4592
Houston TX 77210-4592

WS007 SDG#: PEO16-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C SIM**		**ug/l**	**ug/l**	**ug/l**	
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	0.011 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.	0.031	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 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	14225WAA026	08/15/2014 09:50	Brian K Graham	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	14225WAA026	08/13/2014 20:00	Nicholas W Shroyer	1

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

Sample Description: WS-009(Surface)080714 Grab Surface Water
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # WW 7558651
LL Group # 1494652
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 08/07/2014 09:05 by ZP

Submitted: 08/08/2014 09:30
Reported: 08/19/2014 11:41

ExxonMobil
PO Box 4592
Houston TX 77210-4592

WS009 SDG#: PEO16-02BKG

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C SIM**		ug/l	ug/l	ug/l	
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

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	14225WAA026	08/15/2014 08:29	Brian K Graham	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	14225WAA026	08/13/2014 20:00	Nicholas W Shroyer	1

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

Sample Description: WS-009(Surface)080714MS Grab Surface Water
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # WW 7558652
LL Group # 1494652
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 08/07/2014 09:05 by ZP

Submitted: 08/08/2014 09:30
Reported: 08/19/2014 11:41

ExxonMobil
PO Box 4592
Houston TX 77210-4592

WS009 SDG#: PEO16-02MS

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C SIM			ug/l	ug/l	ug/l	
08357	Acenaphthene	83-32-9	0.96	0.010	0.051	1
08357	Acenaphthylene	208-96-8	0.84	0.010	0.051	1
08357	Anthracene	120-12-7	0.45	0.010	0.051	1
08357	Benzo(a)anthracene	56-55-3	0.62	0.010	0.051	1
08357	Benzo(a)pyrene	50-32-8	0.31	0.010	0.051	1
08357	Benzo(b)fluoranthene	205-99-2	0.65	0.010	0.051	1
08357	Benzo(g,h,i)perylene	191-24-2	0.44	0.010	0.051	1
08357	Benzo(k)fluoranthene	207-08-9	0.63	0.010	0.051	1
08357	Chrysene	218-01-9	0.79	0.010	0.051	1
08357	Dibenz(a,h)anthracene	53-70-3	0.46	0.010	0.051	1
08357	Fluoranthene	206-44-0	0.89	0.010	0.051	1
08357	Fluorene	86-73-7	0.90	0.010	0.051	1
08357	Indeno(1,2,3-cd)pyrene	193-39-5	0.48	0.010	0.051	1
08357	1-Methylnaphthalene	90-12-0	0.90	0.010	0.051	1
08357	2-Methylnaphthalene	91-57-6	0.85	0.010	0.051	1
08357	Naphthalene	91-20-3	0.92	0.030	0.051	1
08357	Phenanthrene	85-01-8	0.90	0.030	0.051	1
08357	Pyrene	129-00-0	0.70	0.010	0.051	1

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	14225WAA026	08/15/2014 08:56	Brian K Graham	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	14225WAA026	08/13/2014 20:00	Nicholas W Shroyer	1

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

Sample Description: WS-009(Surface)080714MSD Grab Surface Water
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # WW 7558653
LL Group # 1494652
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 08/07/2014 09:05 by ZP

Submitted: 08/08/2014 09:30
Reported: 08/19/2014 11:41

ExxonMobil
PO Box 4592
Houston TX 77210-4592

WS009 SDG#: PEO16-02MSD

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C SIM**		ug/l	ug/l	ug/l	
08357	Acenaphthene	83-32-9	0.94	0.010	0.051	1
08357	Acenaphthylene	208-96-8	0.83	0.010	0.051	1
08357	Anthracene	120-12-7	0.48	0.010	0.051	1
08357	Benzo(a)anthracene	56-55-3	0.64	0.010	0.051	1
08357	Benzo(a)pyrene	50-32-8	0.33	0.010	0.051	1
08357	Benzo(b)fluoranthene	205-99-2	0.68	0.010	0.051	1
08357	Benzo(g,h,i)perylene	191-24-2	0.45	0.010	0.051	1
08357	Benzo(k)fluoranthene	207-08-9	0.64	0.010	0.051	1
08357	Chrysene	218-01-9	0.82	0.010	0.051	1
08357	Dibenz(a,h)anthracene	53-70-3	0.56	0.010	0.051	1
08357	Fluoranthene	206-44-0	0.92	0.010	0.051	1
08357	Fluorene	86-73-7	0.90	0.010	0.051	1
08357	Indeno(1,2,3-cd)pyrene	193-39-5	0.55	0.010	0.051	1
08357	1-Methylnaphthalene	90-12-0	0.92	0.010	0.051	1
08357	2-Methylnaphthalene	91-57-6	0.87	0.010	0.051	1
08357	Naphthalene	91-20-3	0.94	0.030	0.051	1
08357	Phenanthrene	85-01-8	0.95	0.030	0.051	1
08357	Pyrene	129-00-0	0.73	0.010	0.051	1

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	14225WAA026	08/15/2014 09:23	Brian K Graham	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	14225WAA026	08/13/2014 20:00	Nicholas W Shroyer	1

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

Sample Description: WS-001(0.5-1.0)080714 Grab Surface Water
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # WW 7558654
LL Group # 1494652
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 08/07/2014 09:20 by ZP

Submitted: 08/08/2014 09:30
Reported: 08/19/2014 11:41

ExxonMobil
PO Box 4592
Houston TX 77210-4592

WS001 SDG#: PEO16-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C SIM**		ug/l	ug/l	ug/l	
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 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	14225WAA026	08/15/2014 10:17	Brian K Graham	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	14225WAA026	08/13/2014 20:00	Nicholas W Shroyer	1

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

Sample Description: WS-021(Surface)080714 Grab Surface Water
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # WW 7558655
LL Group # 1494652
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 08/07/2014 09:25 by ZP

Submitted: 08/08/2014 09:30
Reported: 08/19/2014 11:41

ExxonMobil
PO Box 4592
Houston TX 77210-4592

WS021 SDG#: PEO16-04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C SIM**		ug/l	ug/l	ug/l	
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 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	14225WAA026	08/15/2014 10:45	Brian K Graham	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	14225WAA026	08/13/2014 20:00	Nicholas W Shroyer	1

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

Sample Description: WS-004(0.5-1.0)080714 Grab Surface Water
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # WW 7558656
LL Group # 1494652
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 08/07/2014 09:30 by ZP

Submitted: 08/08/2014 09:30
Reported: 08/19/2014 11:41

ExxonMobil
PO Box 4592
Houston TX 77210-4592

WS004 SDG#: PEO16-05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C SIM**		ug/l	ug/l	ug/l	
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

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	14225WAA026	08/15/2014 11:12	Brian K Graham	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	14225WAA026	08/13/2014 20:00	Nicholas W Shroyer	1

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

Sample Description: DUP-WS-134-080714 Grab Surface Water
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # WW 7558657
LL Group # 1494652
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 08/07/2014 by ZP

Submitted: 08/08/2014 09:30
Reported: 08/19/2014 11:41

ExxonMobil
PO Box 4592
Houston TX 77210-4592

DU134 SDG#: PEO16-06FD*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C SIM**		ug/l	ug/l	ug/l	
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

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	14225WAA026	08/15/2014 11:39	Brian K Graham	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	14225WAA026	08/13/2014 20:00	Nicholas W Shroyer	1

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

Quality Control Summary

Client Name: ExxonMobil Group Number: 1494652
Reported: 08/19/14 at 11:41 AM

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

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 14225WAA026	Sample number(s): 7558650-7558657								
Acenaphthene	N.D.	0.010	0.050	ug/l	107		82-126		
Acenaphthylene	N.D.	0.010	0.050	ug/l	86		72-124		
Anthracene	N.D.	0.010	0.050	ug/l	91		83-125		
Benzo(a)anthracene	N.D.	0.010	0.050	ug/l	86		79-122		
Benzo(a)pyrene	N.D.	0.010	0.050	ug/l	101		72-126		
Benzo(b)fluoranthene	N.D.	0.010	0.050	ug/l	105		79-136		
Benzo(g,h,i)perylene	N.D.	0.010	0.050	ug/l	92		59-137		
Benzo(k)fluoranthene	N.D.	0.010	0.050	ug/l	107		72-129		
Chrysene	N.D.	0.010	0.050	ug/l	101		77-122		
Dibenz(a,h)anthracene	N.D.	0.010	0.050	ug/l	70		42-143		
Fluoranthene	N.D.	0.010	0.050	ug/l	96		76-121		
Fluorene	N.D.	0.010	0.050	ug/l	94		82-119		
Indeno(1,2,3-cd)pyrene	N.D.	0.010	0.050	ug/l	80		53-136		
1-Methylnaphthalene	N.D.	0.010	0.050	ug/l	91		75-117		
2-Methylnaphthalene	N.D.	0.010	0.050	ug/l	86		68-124		
Naphthalene	N.D.	0.030	0.050	ug/l	93		78-117		
Phenanthrene	N.D.	0.030	0.050	ug/l	95		83-116		
Pyrene	N.D.	0.010	0.050	ug/l	88		70-124		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 14225WAA026	Sample number(s): 7558650-7558657 UNSPK: 7558651								
Acenaphthene	95	93	69-134	2	30				
Acenaphthylene	83	82	66-132	2	30				
Anthracene	45*	47*	64-129	5	30				
Benzo(a)anthracene	61	63	37-135	4	30				
Benzo(a)pyrene	31*	33	32-137	6	30				
Benzo(b)fluoranthene	64	67	41-137	4	30				
Benzo(g,h,i)perylene	43	45	21-127	3	30				
Benzo(k)fluoranthene	63	63	36-139	1	30				
Chrysene	78	81	51-129	4	30				
Dibenz(a,h)anthracene	45	55	17-134	20	30				
Fluoranthene	87	91	53-133	4	30				
Fluorene	89	89	59-137	0	30				
Indeno(1,2,3-cd)pyrene	48	55	26-130	14	30				

*- 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.

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Quality Control Summary

Client Name: ExxonMobil Group Number: 1494652
Reported: 08/19/14 at 11:41 AM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
1-Methylnaphthalene	89	91	60-129	3	30				
2-Methylnaphthalene	84	86	64-129	2	30				
Naphthalene	91	92	58-131	2	30				
Phenanthrene	89	94	66-126	5	30				
Pyrene	69	72	49-136	4	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: 14225WAA026

	Fluoranthene-d10	Benzo(a)pyrene-d12	1-Methylnaphthalene-d10
7558650	71	24*	70
7558651	113	58	82
7558652	91	43	87
7558653	95	46	89
7558654	74	28*	72
7558655	80	28*	75
7558656	92	58	83
7558657	98	51	84
Blank	99	90	89
LCS	98	107	88
MS	91	43	87
MSD	95	46	89
Limits:	56-134	36-156	59-132

*- 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

eurofins | Lancaster Laboratories Environmental

Acct. # 14739 | For Eurofins Lancaster Laboratories Environmental use only | Group # 1494652 | Sample # 75586 50-57

Instructions on reverse side correspond with circled numbers.

SCR#: 158491

1 Client Information

Facility #/SID: Mayflower Pipeline Incident

Site Address: Mayflower, AR

ExxonMobil PM: Mike Sixsmith | Cost Center/AFE:

Consultant/Office: Arcadis

Consultant PM: Steve Barrick | Consultant Phone #: 919 302 6799

Sampler: Zac Powers

4 Matrix

Soil ☐ | Sediment ☐ | Water: Ground ☐ Surface ☒ Potable ☐ NPDES ☐ | Oil ☐ Air ☐

3 Grab | Composite

2 Sample Identification | Collected: Date | Time

5 Analyses Requested — Preservation Code

Sample Identification	Collected Date	Collected Time	Grab	Composite	Soil	Water	Oil	Total # of Containers	PAH (8270 SIM)
WS-007(0.5-1.0)080714	8.7.14	0900	X			X		2	X
WS-009(surface)080714	8.7.14	0905	X			X		2	X
WS-009(surface)080714 MS/MSD	8.7.14	0905	X			X		4	X
WS-001(0.5-1.0)080714	8.7.14	0920	X			X		2	X
WS-021(surface)080714	8.7.14	0925	X			X		2	X
WS-004(0.5-1.0)080714	8.7.14	0930	X			X		2	X
DUP-WS-134-080714	8.7.14	/	X			X		2	X

Preservation Codes

H = HCl | T = Thiosulfate
N = HNO_3 | B = NaOH
S = H_2SO_4 | O = Other

6 Remarks

7 Turnaround Time Requested (TAT) (please circle)

Standard | 5 day | 4 day | 72 hour | 48 hour | 24 hour

8 Data Package (circle if required)

Type I - Full
Type VI (Raw Data)
NJ Reduced
Other _____

EDD (circle if required)

Locus EIM (default)
Other _____

Relinquished by	Date	Time	Received by	Date	Time
Karl Hunt	7-11-14	1225		8/7/14	0830
	8/7/14	1600	UPS		
	Date	Time		Date	Time

Relinquished by Commercial Carrier: UPS X | FedEx ____ | Other ____

Received by: | Date: 8.8.14 | Time: 0930

Temperature Upon Receipt 1.0 °C

Custody Seals Intact? (Yes) No

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Sample Administration Receipt Documentation Log

Doc Log ID: 23214

Group Number(s): 1494652

Client: ExxonMobil

Delivery and Receipt Information

Delivery Method:	UPS	Arrival Timestamp:	08/08/2014 9:30
Number of Packages:	1	Number of Projects:	1

Arrival Condition Summary

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

Unpacked by Timothy Cubberley (6520) at 10:42 on 08/08/2014

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	Samples Collected Same Day as Receipt?	Elevated Temp?
1	DT131	1.0	DT	Wet	Y	Bagged	N	N

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Lancaster, PA 17605-2425
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Explanation of Symbols and Abbreviations

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

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	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 ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers		Inorganic Qualifiers	
A	TIC is a possible aldol-condensation product	**B**	Value is <CRDL, but ≥IDL
B	Analyte was also detected in the blank	**E**	Estimated due to interference
C	Pesticide result confirmed by GC/MS	**M**	Duplicate injection precision not met
D	Compound quantitated on a diluted sample	**N**	Spike sample not within control limits
E	Concentration exceeds the calibration range of the instrument	**S**	Method of standard additions (MSA) used for calculation
N	Presumptive evidence of a compound (TICs only)	**U**	Compound was not detected
P	Concentration difference between primary and confirmation columns >25%	**W**	Post digestion spike out of control limits
U	Compound was not detected	*****	Duplicate analysis not within control limits
X,Y,Z	Defined in case narrative	**+**	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.