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

November 21, 2014

Project: Mayflower, AR Pipeline Incident

Submittal Date: 11/14/2014
Group Number: 1518641
SDG: PEO41
PO Number: 4410263810
Release Number: SIXSMITH
State of Sample Origin: AR

Client Sample Description	Lancaster Labs (LL) #
WS-007(0.5-1.0)111314 Grab Surface Water	7675685
WS-007(0.5-1.0)111314MS Grab Surface Water	7675686
WS-007(0.5-1.0)111314MSD Grab Surface Water	7675687
WS-009(Surface)111314 Grab Surface Water	7675688
WS-001(0.5-1.0)111314 Grab Surface Water	7675689
WS-021(Surface)111314 Grab Surface Water	7675690
WS-004(0.5-1.0)111314 Grab Surface Water	7675691
DUP-WS-137-111314 Grab Surface Water	7675692

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 Parmelee
ELECTRONIC COPY TO	ExxonMobil	Attn: Michael L Sixsmith
ELECTRONIC COPY TO	ExxonMobil	Attn: Julie Foster
ELECTRONIC	ARCADIS	Attn: Sonal Patil

COPY TO
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 #: 1518641

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

Batch #: 14321WAJ026 (Sample number(s): 7675685-7675692 UNSPK: 7675685)

The relative percent difference(s) for the following analyte(s) in the MS/MSD were outside outside acceptance windows: Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenz(a,h)anthracene, Benzo(g,h,i)perylene

Sample Description: WS-007(0.5-1.0)111314 Grab Surface Water
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # WW 7675685
LL Group # 1518641
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 11/13/2014 13:40 by MH

Submitted: 11/14/2014 09:30
Reported: 11/21/2014 17:40

ExxonMobil
PO Box 4592
Houston TX 77210-4592

P4101 SDG#: PEO41-01BKG

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	0.013 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	0.061	1
08357	Phenanthrene	85-01-8	N.D.	0.031	0.061	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	14321WAJ026	11/18/2014 22:28	Mark A Clark	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	14321WAJ026	11/17/2014 15:30	Kelli M Barto	1

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

Sample Description: WS-007(0.5-1.0)111314MS Grab Surface Water
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # WW 7675686
LL Group # 1518641
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 11/13/2014 13:40 by MH

Submitted: 11/14/2014 09:30
Reported: 11/21/2014 17:40

ExxonMobil
PO Box 4592
Houston TX 77210-4592

P4101 SDG#: PEO41-01MS

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	1.1	0.010	0.051	1
08357	Acenaphthylene	208-96-8	1.0	0.010	0.051	1
08357	Anthracene	120-12-7	0.96	0.010	0.051	1
08357	Benzo(a)anthracene	56-55-3	0.78	0.010	0.051	1
08357	Benzo(a)pyrene	50-32-8	0.52	0.010	0.051	1
08357	Benzo(b)fluoranthene	205-99-2	0.60	0.010	0.051	1
08357	Benzo(g,h,i)perylene	191-24-2	0.35	0.010	0.051	1
08357	Benzo(k)fluoranthene	207-08-9	0.54	0.010	0.051	1
08357	Chrysene	218-01-9	0.63	0.010	0.051	1
08357	Dibenz(a,h)anthracene	53-70-3	0.33	0.010	0.051	1
08357	Fluoranthene	206-44-0	0.98	0.010	0.051	1
08357	Fluorene	86-73-7	1.1	0.010	0.051	1
08357	Indeno(1,2,3-cd)pyrene	193-39-5	0.35	0.010	0.051	1
08357	1-Methylnaphthalene	90-12-0	1.0	0.010	0.051	1
08357	2-Methylnaphthalene	91-57-6	0.99	0.010	0.051	1
08357	Naphthalene	91-20-3	1.1	0.031	0.061	1
08357	Phenanthrene	85-01-8	0.97	0.031	0.061	1
08357	Pyrene	129-00-0	0.79	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	14321WAJ026	11/18/2014 22:55	Mark A Clark	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	14321WAJ026	11/17/2014 15:30	Kelli M Barto	1

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

Sample Description: WS-007(0.5-1.0)111314MSD Grab Surface Water
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # WW 7675687
LL Group # 1518641
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 11/13/2014 13:40 by MH

Submitted: 11/14/2014 09:30
Reported: 11/21/2014 17:40

ExxonMobil
PO Box 4592
Houston TX 77210-4592

P4101 SDG#: PEO41-01MSD

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	1.1	0.010	0.050	1
08357	Acenaphthylene	208-96-8	1.0	0.010	0.050	1
08357	Anthracene	120-12-7	1.0	0.010	0.050	1
08357	Benzo(a)anthracene	56-55-3	0.98	0.010	0.050	1
08357	Benzo(a)pyrene	50-32-8	0.74	0.010	0.050	1
08357	Benzo(b)fluoranthene	205-99-2	0.82	0.010	0.050	1
08357	Benzo(g,h,i)perylene	191-24-2	0.50	0.010	0.050	1
08357	Benzo(k)fluoranthene	207-08-9	0.76	0.010	0.050	1
08357	Chrysene	218-01-9	0.82	0.010	0.050	1
08357	Dibenz(a,h)anthracene	53-70-3	0.54	0.010	0.050	1
08357	Fluoranthene	206-44-0	1.0	0.010	0.050	1
08357	Fluorene	86-73-7	1.1	0.010	0.050	1
08357	Indeno(1,2,3-cd)pyrene	193-39-5	0.53	0.010	0.050	1
08357	1-Methylnaphthalene	90-12-0	1.0	0.010	0.050	1
08357	2-Methylnaphthalene	91-57-6	0.99	0.010	0.050	1
08357	Naphthalene	91-20-3	1.1	0.030	0.060	1
08357	Phenanthrene	85-01-8	1.0	0.030	0.060	1
08357	Pyrene	129-00-0	0.94	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	14321WAJ026	11/18/2014 23:23	Mark A Clark	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	14321WAJ026	11/17/2014 15:30	Kelli M Barto	1

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

Sample Description: WS-009(Surface)111314 Grab Surface Water
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # WW 7675688
LL Group # 1518641
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 11/13/2014 13:45 by MH

Submitted: 11/14/2014 09:30
Reported: 11/21/2014 17:40

ExxonMobil
PO Box 4592
Houston TX 77210-4592

P4102 SDG#: PEO41-02

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	0.060	1
08357	Phenanthrene	85-01-8	N.D.	0.030	0.060	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	14321WAJ026	11/19/2014 03:58	Mark A Clark	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	14321WAJ026	11/17/2014 15:30	Kelli M Barto	1

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

Sample Description: WS-001(0.5-1.0)111314 Grab Surface Water
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # WW 7675689
LL Group # 1518641
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 11/13/2014 13:50 by MH

Submitted: 11/14/2014 09:30
Reported: 11/21/2014 17:40

ExxonMobil
PO Box 4592
Houston TX 77210-4592

P4103 SDG#: PEO41-03

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	0.051	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	0.061	1
08357	Phenanthrene	85-01-8	N.D.	0.030	0.061	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	14321WAJ026	11/19/2014 04:25	Mark A Clark	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	14321WAJ026	11/17/2014 15:30	Kelli M Barto	1

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

Sample Description: WS-021(Surface)111314 Grab Surface Water
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # WW 7675690
LL Group # 1518641
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 11/13/2014 13:55 by MH

Submitted: 11/14/2014 09:30
Reported: 11/21/2014 17:40

ExxonMobil
PO Box 4592
Houston TX 77210-4592

P4104 SDG#: PEO41-04

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	0.061	1
08357	Phenanthrene	85-01-8	N.D.	0.030	0.061	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	14321WAJ026	11/19/2014 04:53	Mark A Clark	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	14321WAJ026	11/17/2014 15:30	Kelli M Barto	1

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

Sample Description: WS-004(0.5-1.0)111314 Grab Surface Water
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # WW 7675691
LL Group # 1518641
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 11/13/2014 14:00 by MH

Submitted: 11/14/2014 09:30
Reported: 11/21/2014 17:40

ExxonMobil
PO Box 4592
Houston TX 77210-4592

P4105 SDG#: PEO41-05

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	0.050	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	0.060	1
08357	Phenanthrene	85-01-8	N.D.	0.030	0.060	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	14321WAJ026	11/20/2014 01:58	Mark A Clark	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	14321WAJ026	11/17/2014 15:30	Kelli M Barto	1

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

Sample Description: DUP-WS-137-111314 Grab Surface Water
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # WW 7675692
LL Group # 1518641
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 11/13/2014 by MH

Submitted: 11/14/2014 09:30
Reported: 11/21/2014 17:40

ExxonMobil
PO Box 4592
Houston TX 77210-4592

P4106 SDG#: PEO41-06FD

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	0.051	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	0.013 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	0.061	1
08357	Phenanthrene	85-01-8	N.D.	0.030	0.061	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	14321WAJ026	11/20/2014 02:26	Mark A Clark	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	14321WAJ026	11/17/2014 15:30	Kelli M Barto	1

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

Quality Control Summary

Client Name: ExxonMobil Group Number: 1518641
Reported: 11/21/14 at 05:40 PM

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: 14321WAJ026	Sample number(s): 7675685-7675692								
Acenaphthene	N.D.	0.010	0.050	ug/l	115		82-126		
Acenaphthylene	N.D.	0.010	0.050	ug/l	106		72-124		
Anthracene	N.D.	0.010	0.050	ug/l	113		83-125		
Benzo(a)anthracene	N.D.	0.010	0.050	ug/l	116		79-122		
Benzo(a)pyrene	N.D.	0.010	0.050	ug/l	116		72-126		
Benzo(b)fluoranthene	N.D.	0.010	0.050	ug/l	126		79-136		
Benzo(g,h,i)perylene	N.D.	0.010	0.050	ug/l	121		59-137		
Benzo(k)fluoranthene	N.D.	0.010	0.050	ug/l	115		72-129		
Chrysene	N.D.	0.010	0.050	ug/l	117		77-122		
Dibenz(a,h)anthracene	N.D.	0.010	0.050	ug/l	115		42-143		
Fluoranthene	N.D.	0.010	0.050	ug/l	112		76-121		
Fluorene	N.D.	0.010	0.050	ug/l	115		82-119		
Indeno(1,2,3-cd)pyrene	N.D.	0.010	0.050	ug/l	115		53-136		
1-Methylnaphthalene	N.D.	0.010	0.050	ug/l	102		75-117		
2-Methylnaphthalene	N.D.	0.010	0.050	ug/l	100		68-124		
Naphthalene	N.D.	0.030	0.060	ug/l	101		78-117		
Phenanthrene	N.D.	0.030	0.060	ug/l	106		83-116		
Pyrene	N.D.	0.010	0.050	ug/l	108		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: 14321WAJ026	Sample number(s): 7675685-7675692 UNSPK: 7675685								
Acenaphthene	107	109	69-134	0	30				
Acenaphthylene	101	100	66-132	2	30				
Anthracene	94	102	64-129	7	30				
Benzo(a)anthracene	76	98	37-135	23	30				
Benzo(a)pyrene	51	74	32-137	35*	30				
Benzo(b)fluoranthene	58	82	41-137	32*	30				
Benzo(g,h,i)perylene	34	50	21-127	36*	30				
Benzo(k)fluoranthene	53	76	36-139	34*	30				
Chrysene	61	82	51-129	27	30				
Dibenz(a,h)anthracene	32	53	17-134	48*	30				
Fluoranthene	94	101	53-133	6	30				
Fluorene	105	106	59-137	1	30				
Indeno(1,2,3-cd)pyrene	34	53	26-130	41*	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.

Quality Control Summary

Client Name: ExxonMobil Group Number: 1518641
Reported: 11/21/14 at 05:40 PM

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	99	100	60-129	0	30				
2-Methylnaphthalene	96	98	64-129	0	30				
Naphthalene	103	107	58-131	2	30				
Phenanthrene	95	99	66-126	3	30				
Pyrene	77	93	49-136	17	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: 14321WAJ026

	Fluoranthene-d10	Benzo(a)pyrene-d12	1-Methylnaphthalene-d10
7675685	106	70	98
7675686	102	58	99
7675687	110	88	98
7675688	109	58	98
7675689	118	77	96
7675690	121	98	95
7675691	107	86	91
7675692	105	83	89
Blank	108	112	92
LCS	116	127	97
MS	102	58	99
MSD	110	88	98
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 # 1518611 Sample # 7675685-92

Instructions on reverse side correspond with circled numbers.

SCR#: _____

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 #:

Sampler: Matt Hamby

4 Matrix

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

5 Analyses Requested

Preservation Code

Preservation Codes

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

6 Remarks

2 Sample Identification	Collected Date	Collected Time	3 Grab	Composite	Total # of Containers	PAH 8270 SIM
WS-007(0.5-1.0)111314	11.13.14	1340	X		2	X
WS-009(Surface)111314	11.13.14	1345	X		2	X
WS-001(0.5-1.0)111314	11.13.14	1350	X		2	X
WS-021(Surface)111314	11.13.14	1355	X		2	X
WS-004(0.5-1.0)111314	11.13.14	1400	X		2	X
WS-003(0.5-1.0)111314 MS/MSD	11.13.14	1340	X		4	X
DUP-WS-137-111314	11.13.14	—	X		2	X

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
	11/13/14	1500		11/13/14	1500
	11/13/14	1700	UPS		

Relinquished by Commercial Carrier: UPS X FedEx ____ Other ____

Received by: _____ Date 11/14/14 Time 0930

Temperature Upon Receipt 1.1 °C

Custody Seals Intact? Yes No

eurofins | Lancaster Laboratories Environmental

Sample Administration Receipt Documentation Log

Doc Log ID: 40333

Group Number(s): 1518641

Client: EXXONMOBIL

MAYFLOWER PIPELINE INCIDENT

Delivery and Receipt Information

Delivery Method:	UPS	Arrival Timestamp:	11/14/2014 9:30
Number of Packages:	1	Number of Projects:	1
State/Province of Origin:	AR		

Arrival Condition Summary

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

Unpacked by Corey Eshleman (3647) at 09:50 on 11/14/2014

Samples Chilled Details: MAYFLOWER PIPELINE INCIDENT

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	Elevated Temp?
1	DT121	1.1	DT	Wet	Y	Bagged	N

2425 New Holland Pike
Lancaster, PA 17605-2425

T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

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

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 ≥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.