

## 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

March 06, 2015

Project: Mayflower, AR Pipeline Incident

Submittal Date: 02/21/2015

Group Number: 1540252

SDG: PEO55

PO Number: 4410272923

Release Number: SIXSMITH

State of Sample Origin: AR

Client Sample DescriptionLancaster Labs (LL) #

WS-007(0.5-1.0)021915 Grab Surface Water	7780788
WS-007(0.5-1.0)021915 MS Grab Surface Water	7780789
WS-007(0.5-1.0)021915 MSD Grab Surface Water	7780790
WS-009(Surface)021915 Grab Surface Water	7780791
WS-001(0.5-1.0)021915 Grab Surface Water	7780792
WS-021(Surface)021915 Grab Surface Water	7780793
WS-004(0.5-1.0)021915 Grab Surface Water	7780794
DUP-WS-140-021915 Grab Surface Water	7780795

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

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our scopes of accreditation can be viewed at <http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/>.

ELECTRONIC      ARCADIS

Attn: Stephen Barrick

COPY TO

ELECTRONIC      ARCADIS

Attn: Lyndi Mott

COPY TO

ELECTRONIC      ExxonMobil

Attn: Michael J. Firth

COPY TO

ELECTRONIC      ARCADIS

Attn: Emily Leamer

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ELECTRONIC      ARCADIS

Attn: Rhiannon Parmelee

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ELECTRONIC      ExxonMobil

Attn: Michael L Sixsmith

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ELECTRONIC  
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ExxonMobil

ARCADIS

ARCADIS

Attn: Julie Foster

Attn: Sonal Patil

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 #: 1540252

**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:**

No additional comments are necessary.

REVISED

**Sample Description:** WS-007(0.5-1.0)021915 Grab Surface Water  
S20135565 Mayflower, AR  
Pipeline Incident

LL Sample # WW 7780788  
LL Group # 1540252  
Account # 14739

**Project Name:** Mayflower, AR Pipeline Incident

Collected: 02/19/2015 14:50 by ZP

ExxonMobil

PO Box 4592

Submitted: 02/21/2015 10:00

Houston TX 77210-4592

Reported: 03/06/2015 09:41

7051- SDG#: PEO55-01BKG

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	0.016 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	0.011 J	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	15054WAB026	02/24/2015 19:13	Holly Berry	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	15054WAB026	02/23/2015 20:30	Nicholas W Shroyer	1

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

REVISED

**Sample Description:** WS-007(0.5-1.0)021915 MS Grab Surface Water  
S20135565 Mayflower, AR  
Pipeline Incident

LL Sample # WW 7780789  
LL Group # 1540252  
Account # 14739

**Project Name:** Mayflower, AR Pipeline Incident

Collected: 02/19/2015 14:50 by ZP

ExxonMobil

PO Box 4592

Submitted: 02/21/2015 10:00

Houston TX 77210-4592

Reported: 03/06/2015 09:41

7051- SDG#: PEO55-01MS

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	0.82	0.010	0.051	1
08357	Acenaphthylene	208-96-8	0.80	0.010	0.051	1
08357	Anthracene	120-12-7	0.89	0.010	0.051	1
08357	Benzo(a)anthracene	56-55-3	0.82	0.010	0.051	1
08357	Benzo(a)pyrene	50-32-8	0.69	0.010	0.051	1
08357	Benzo(b)fluoranthene	205-99-2	0.84	0.010	0.051	1
08357	Benzo(g,h,i)perylene	191-24-2	0.41	0.010	0.051	1
08357	Benzo(k)fluoranthene	207-08-9	0.79	0.010	0.051	1
08357	Chrysene	218-01-9	0.78	0.010	0.051	1
08357	Dibenz(a,h)anthracene	53-70-3	0.42	0.010	0.051	1
08357	Fluoranthene	206-44-0	0.80	0.010	0.051	1
08357	Fluorene	86-73-7	0.84	0.010	0.051	1
08357	Indeno(1,2,3-cd)pyrene	193-39-5	0.45	0.010	0.051	1
08357	1-Methylnaphthalene	90-12-0	0.82	0.010	0.051	1
08357	2-Methylnaphthalene	91-57-6	0.80	0.010	0.051	1
08357	Naphthalene	91-20-3	0.82	0.031	0.061	1
08357	Phenanthrene	85-01-8	0.78	0.031	0.061	1
08357	Pyrene	129-00-0	0.76	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	15054WAB026	02/24/2015 19:40	Holly Berry	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	15054WAB026	02/23/2015 20:30	Nicholas W Shroyer	1

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

REVISED

**Sample Description:** WS-007(0.5-1.0)021915 MSD Grab Surface Water  
S20135565 Mayflower, AR  
Pipeline Incident

LL Sample # WW 7780790  
LL Group # 1540252  
Account # 14739

**Project Name:** Mayflower, AR Pipeline Incident

Collected: 02/19/2015 14:50 by ZP

ExxonMobil

PO Box 4592

Submitted: 02/21/2015 10:00

Houston TX 77210-4592

Reported: 03/06/2015 09:41

7051- SDG#: PEO55-01MSD

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	0.87	0.010	0.052	1
08357	Acenaphthylene	208-96-8	0.85	0.010	0.052	1
08357	Anthracene	120-12-7	0.94	0.010	0.052	1
08357	Benzo(a)anthracene	56-55-3	0.89	0.010	0.052	1
08357	Benzo(a)pyrene	50-32-8	0.76	0.010	0.052	1
08357	Benzo(b)fluoranthene	205-99-2	0.87	0.010	0.052	1
08357	Benzo(g,h,i)perylene	191-24-2	0.45	0.010	0.052	1
08357	Benzo(k)fluoranthene	207-08-9	0.92	0.010	0.052	1
08357	Chrysene	218-01-9	0.84	0.010	0.052	1
08357	Dibenz(a,h)anthracene	53-70-3	0.46	0.010	0.052	1
08357	Fluoranthene	206-44-0	0.85	0.010	0.052	1
08357	Fluorene	86-73-7	0.89	0.010	0.052	1
08357	Indeno(1,2,3-cd)pyrene	193-39-5	0.49	0.010	0.052	1
08357	1-Methylnaphthalene	90-12-0	0.88	0.010	0.052	1
08357	2-Methylnaphthalene	91-57-6	0.85	0.010	0.052	1
08357	Naphthalene	91-20-3	0.88	0.031	0.063	1
08357	Phenanthrene	85-01-8	0.83	0.031	0.063	1
08357	Pyrene	129-00-0	0.82	0.010	0.052	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	15054WAB026	02/24/2015 20:08	Holly Berry	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	15054WAB026	02/23/2015 20:30	Nicholas W Shroyer	1

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

REVISED

**Sample Description:** WS-009(Surface)021915 Grab Surface Water  
S20135565 Mayflower, AR  
Pipeline Incident

LL Sample # WW 7780791  
LL Group # 1540252  
Account # 14739

**Project Name:** Mayflower, AR Pipeline Incident

Collected: 02/19/2015 15:00 by ZP

ExxonMobil

PO Box 4592

Submitted: 02/21/2015 10:00

Houston TX 77210-4592

Reported: 03/06/2015 09:41

09SRF SDG#: PEO55-02

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	0.053	1
08357	Acenaphthylene	208-96-8	N.D.	0.011	0.053	1
08357	Anthracene	120-12-7	N.D.	0.011	0.053	1
08357	Benzo(a)anthracene	56-55-3	N.D.	0.011	0.053	1
08357	Benzo(a)pyrene	50-32-8	N.D.	0.011	0.053	1
08357	Benzo(b)fluoranthene	205-99-2	N.D.	0.011	0.053	1
08357	Benzo(g,h,i)perylene	191-24-2	N.D.	0.011	0.053	1
08357	Benzo(k)fluoranthene	207-08-9	N.D.	0.011	0.053	1
08357	Chrysene	218-01-9	N.D.	0.011	0.053	1
08357	Dibenz(a,h)anthracene	53-70-3	N.D.	0.011	0.053	1
08357	Fluoranthene	206-44-0	N.D.	0.011	0.053	1
08357	Fluorene	86-73-7	N.D.	0.011	0.053	1
08357	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.011	0.053	1
08357	1-Methylnaphthalene	90-12-0	N.D.	0.011	0.053	1
08357	2-Methylnaphthalene	91-57-6	N.D.	0.011	0.053	1
08357	Naphthalene	91-20-3	N.D.	0.032	0.063	1
08357	Phenanthrene	85-01-8	N.D.	0.032	0.063	1
08357	Pyrene	129-00-0	N.D.	0.011	0.053	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	15054WAB026	02/24/2015 20:35	Holly Berry	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	15054WAB026	02/23/2015 20:30	Nicholas W Shroyer	1

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

REVISED

**Sample Description:** WS-001(0.5-1.0)021915 Grab Surface Water  
S20135565 Mayflower, AR  
Pipeline Incident

LL Sample # WW 7780792  
LL Group # 1540252  
Account # 14739

**Project Name:** Mayflower, AR Pipeline Incident

Collected: 02/19/2015 15:10 by ZP

ExxonMobil

PO Box 4592

Submitted: 02/21/2015 10:00

Houston TX 77210-4592

Reported: 03/06/2015 09:41

01051 SDG#: PEO55-03

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	15054WAB026	02/24/2015 21:02	Holly Berry	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	15054WAB026	02/23/2015 20:30	Nicholas W Shroyer	1

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

REVISED

**Sample Description:** WS-021(Surface)021915 Grab Surface Water  
S20135565 Mayflower, AR  
Pipeline Incident

LL Sample # WW 7780793  
LL Group # 1540252  
Account # 14739

**Project Name:** Mayflower, AR Pipeline Incident

Collected: 02/19/2015 15:15 by ZP

ExxonMobil

PO Box 4592

Submitted: 02/21/2015 10:00

Houston TX 77210-4592

Reported: 03/06/2015 09:41

21051 SDG#: PEO55-04

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	15054WAB026	02/25/2015 02:54	Brian K Graham	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	15054WAB026	02/23/2015 20:30	Nicholas W Shroyer	1

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

REVISED

Sample Description: WS-004(0.5-1.0)021915 Grab Surface Water  
S20135565 Mayflower, AR  
Pipeline Incident

LL Sample # WW 7780794  
LL Group # 1540252  
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 02/19/2015 15:20 by ZP

ExxonMobil

PO Box 4592

Submitted: 02/21/2015 10:00

Houston TX 77210-4592

Reported: 03/06/2015 09:41

04051 SDG#: PEO55-05

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	0.061	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	15054WAB026	02/24/2015 21:56	Holly Berry	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	15054WAB026	02/23/2015 20:30	Nicholas W Shroyer	1

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

REVISED

**Sample Description:** DUP-WS-140-021915 Grab Surface Water  
S20135565 Mayflower, AR  
Pipeline Incident

LL Sample # WW 7780795  
LL Group # 1540252  
Account # 14739

**Project Name:** Mayflower, AR Pipeline Incident

Collected: 02/19/2015 by ZP

ExxonMobil

PO Box 4592

Submitted: 02/21/2015 10:00

Houston TX 77210-4592

Reported: 03/06/2015 09:41

FD140 SDG#: PEO55-06FD

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.	0.011	0.053	1
08357	Acenaphthylene	208-96-8	N.D.	0.011	0.053	1
08357	Anthracene	120-12-7	N.D.	0.011	0.053	1
08357	Benzo(a)anthracene	56-55-3	N.D.	0.011	0.053	1
08357	Benzo(a)pyrene	50-32-8	N.D.	0.011	0.053	1
08357	Benzo(b)fluoranthene	205-99-2	N.D.	0.011	0.053	1
08357	Benzo(g,h,i)perylene	191-24-2	N.D.	0.011	0.053	1
08357	Benzo(k)fluoranthene	207-08-9	N.D.	0.011	0.053	1
08357	Chrysene	218-01-9	N.D.	0.011	0.053	1
08357	Dibenz(a,h)anthracene	53-70-3	N.D.	0.011	0.053	1
08357	Fluoranthene	206-44-0	0.013 J	0.011	0.053	1
08357	Fluorene	86-73-7	N.D.	0.011	0.053	1
08357	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.011	0.053	1
08357	1-Methylnaphthalene	90-12-0	N.D.	0.011	0.053	1
08357	2-Methylnaphthalene	91-57-6	N.D.	0.011	0.053	1
08357	Naphthalene	91-20-3	N.D.	0.032	0.064	1
08357	Phenanthrene	85-01-8	N.D.	0.032	0.064	1
08357	Pyrene	129-00-0	N.D.	0.011	0.053	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	15054WAB026	02/24/2015 22:24	Holly Berry	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	15054WAB026	02/23/2015 20:30	Nicholas W Shroyer	1

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

REVISED

**Quality Control Summary**Client Name: ExxonMobil  
Reported: 03/06/15 at 09:41 AM

Group Number: 1540252

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: 15054WAB026	Sample number(s): 7780788-7780795								
Acenaphthene	N.D.	0.010	0.050	ug/l	92		76-139		
Acenaphthylene	N.D.	0.010	0.050	ug/l	90		67-120		
Anthracene	N.D.	0.010	0.050	ug/l	97		72-128		
Benzo(a)anthracene	N.D.	0.010	0.050	ug/l	96		71-127		
Benzo(a)pyrene	N.D.	0.010	0.050	ug/l	94		64-132		
Benzo(b)fluoranthene	N.D.	0.010	0.050	ug/l	107		71-139		
Benzo(g,h,i)perylene	N.D.	0.010	0.050	ug/l	73		49-140		
Benzo(k)fluoranthene	N.D.	0.010	0.050	ug/l	93		63-136		
Chrysene	N.D.	0.010	0.050	ug/l	90		72-132		
Dibenz(a,h)anthracene	N.D.	0.010	0.050	ug/l	60		37-142		
Fluoranthene	N.D.	0.010	0.050	ug/l	97		76-121		
Fluorene	N.D.	0.010	0.050	ug/l	95		71-124		
Indeno(1,2,3-cd)pyrene	N.D.	0.010	0.050	ug/l	71		45-136		
1-Methylnaphthalene	N.D.	0.010	0.050	ug/l	91		65-122		
2-Methylnaphthalene	N.D.	0.010	0.050	ug/l	87		59-124		
Naphthalene	N.D.	0.030	0.060	ug/l	88		69-119		
Phenanthrene	N.D.	0.030	0.060	ug/l	91		75-121		
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

<u>Analysis Name</u>	<u>MS %REC</u>	<u>MSD %REC</u>	<u>MS/MSD Limits</u>	<u>RPD</u>	<u>RPD MAX</u>	<u>BKG Conc</u>	<u>DUP Conc</u>	<u>DUP RPD</u>	<u>Dup RPD Max</u>
Batch number: 15054WAB026	Sample number(s): 7780788-7780795 UNSPK: 7780788								
Acenaphthene	80	83	69-134	6	30				
Acenaphthylene	78	82	66-132	7	30				
Anthracene	87	89	64-129	5	30				
Benzo(a)anthracene	80	85	32-151	8	30				
Benzo(a)pyrene	67	73	32-137	10	30				
Benzo(b)fluoranthene	82	83	41-137	4	30				
Benzo(g,h,i)perylene	40	43	21-127	9	30				
Benzo(k)fluoranthene	78	88	36-139	15	30				
Chrysene	76	81	51-129	8	30				
Dibenz(a,h)anthracene	42	44	17-134	8	30				
Fluoranthene	76	80	49-138	7	30				
Fluorene	82	85	59-137	6	30				
Indeno(1,2,3-cd)pyrene	44	47	26-130	9	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.

REVISED

## Quality Control Summary

Client Name: ExxonMobil

Group Number: 1540252

Reported: 03/06/15 at 09:41 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	81	84	47-136	6	30				
2-Methylnaphthalene	79	81	66-120	6	30				
Naphthalene	81	84	58-131	7	30				
Phenanthrene	76	79	66-126	6	30				
Pyrene	73	77	37-142	7	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: 15054WAB026

	Fluoranthene-d10	Benzo(a)pyrene-d12	1-Methylnaphthalene-d10
7780788	90	82	80
7780789	86	82	79
7780790	88	87	81
7780791	94	81	81
7780792	94	73	82
7780793	93	64	77
7780794	84	68	74
7780795	86	68	76
Blank	99	95	87
LCS	100	110	89
MS	86	82	79
MSD	88	87	81
Limits:	56-134	26-158	52-127

\*- 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.



eurofins

For Eurofins Lancaster Laboratories Environmental use only  
Acct. # 14739 Group # 1540252 Sample # 7780788-95  
Instructions on reverse side correspond with circled numbers.

[illegible]

Client: ExxonMobil

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**Delivery and Receipt Information**

Delivery Method:	<u>UPS</u>	Arrival Timestamp:	<u>02/21/2015 10:00</u>
Number of Packages:	<u>1</u>	Number of Projects:	<u>1</u>

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**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 $\geq$ 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 Timothy Cubberley (6520) at 12:03 on 02/21/2015*

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**Samples Chilled Details**

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

<u>Cooler #</u>	<u>Thermometer ID</u>	<u>Corrected Temp</u>	<u>Therm. Type</u>	<u>Ice Type</u>	<u>Ice Present?</u>	<u>Ice Container</u>	<u>Elevated Temp?</u>
1	DT121	1.3	DT	Wet	Y	Bagged	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>m3</b>	cubic meter(s)	<b>µL</b>	microliter(s)
		<b>pg/L</b>	picogram/liter
<b>&lt;</b>	less than		
<b>&gt;</b>	greater than		
<b>ppm</b>	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.		
<b>ppb</b>	parts per billion		
<b>Dry weight basis</b>	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.		

## Laboratory Data Qualifiers:

- B - Analyte detected in the blank
- C - Result confirmed by reanalysis
- E - Concentration exceeds the calibration range
- J (or G, I, X) - estimated value  $\geq$  the Method Detection Limit (MDL or DL) and the  $<$  Limit of Quantitation (LOQ or RL)
- P - Concentration difference between the primary and confirmation column  $>40\%$ . The lower result is reported.
- U - Analyte was not detected at the value indicated
- V - Concentration difference between the primary and confirmation column  $>100\%$ . The reporting limit is raised due to this disparity and evident interference...

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

**Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, ISO17025) 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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