UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CHICAGO REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

Date: **5/9/2019**

Subject: **Review of Region 5 Data for R06 Deer Park PFAS**

To: **Region 6, US EPA**
10625 Fallstone Road
Houston, TX 77099

From: **Danielle Kleinmaier, Chemist**
US EPA Region 5 Chicago Regional Laboratory

DRAFT REPORT

The data transmitted under this cover memo successfully passed CRL's data review procedures as documented in the current Quality Management Plan and applicable Standard Operating Procedures. In accordance with the EPA QA/G-8 *Guidance on Environmental Data Verification and Data Validation* and the U.S. EPA Region 5 RMD QMP, CRL performs data verification on all the data generated internally. CRL does not perform data validation or quality assessment procedures.

This report was reviewed and the information provided herein accurately represents the analysis performed.

Please contact the analyst with any technical report issues, Amanda Wroble at (312)-353-0375 for sample project concerns, and Sylvia Griffin at (312)-353-9073 with data transmittal questions. Thank you.

Attached are Results for: **R06 Deer Park PFAS**

Analyses included in this report:

OSRTI PFC

Report Name: 1905005,1905006,1905009 PFC DRAFT May 09 19 1652

9814386

Environmental Protection Agency Region 5
Chicago Regional Laboratory
536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Accredited Analyses included in this Report

Method: ****** DEFAULT SPECIFIC METHOD *** in Water***
Analysis: ***OSRTI PFC***

Analyte	Certifications
perfluorobutanoate	ISO/IEC 17025:2005
perfluoropentanoate	ISO/IEC 17025:2005
perfluorohexanoate	ISO/IEC 17025:2005
perfluoroheptanoate	ISO/IEC 17025:2005
perfluorooctanoate	ISO/IEC 17025:2005
perfluorononanoate	ISO/IEC 17025:2005
perfluorodecanoate	ISO/IEC 17025:2005
perfluoroundecanoate	ISO/IEC 17025:2005
perfluorododecanoate	ISO/IEC 17025:2005
perfluorotridecanoate	ISO/IEC 17025:2005
perfluorotetradecanoate	ISO/IEC 17025:2005
perfluorobutyl sulfonate	ISO/IEC 17025:2005
perfluorohexyl sulfonate	ISO/IEC 17025:2005
perfluorooctyl sulfonate	ISO/IEC 17025:2005
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	ISO/IEC 17025:2005
perfluoro-1-pentanesulfonate (PFPeS)	ISO/IEC 17025:2005
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	ISO/IEC 17025:2005
perfluoro-1-heptanesulfonate (PFHpS)	ISO/IEC 17025:2005
perfluoro-1-octanesulfonamide (FOSA)	ISO/IEC 17025:2005
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	ISO/IEC 17025:2005
perfluoro-1-nonanesulfonate (PFNS)	ISO/IEC 17025:2005
N-MeFOSAA	ISO/IEC 17025:2005
N-EtFOSAA	ISO/IEC 17025:2005
perfluoro-1-decanesulfonate (PFDS)	ISO/IEC 17025:2005

Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analytes not listed above are not accredited by ANAB.

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WORK ORDER **Printed: 5/2/2019 2:59:07PM**

1905005

US EPA Region 5 Chicago Regional Laboratory

Client: **Region 6, US EPA** **Project Manager:** **Angela Ockrassa Davis**
Project: **R06 Deer Park PFAS** **Project Number:** **[none]**

Report To:

Matthew Loesel
Region 6, US EPA

10625 Fallstone Road
Houston, TX 77099

Phone: (214) 665-9544
Fax: (281) 983-2248

Date Due: Jun-03-19 15:00 (32 day TAT)
Received By: Robert Snyder Date Received: May-02-19 09:15
Logged In By: Robert Snyder Date Logged In: May-02-19 14:12

Samples Received at: 0.6 °C
Sample tags/labels **Yes**
Seals Intact **Yes**
Received on ice **Yes**
Paperwork Included **Yes**

Work Order Comments:
Copy/Relog from 1905003.

Sample ID: 1905005-01 **Sampled:** May-01-19 08:45 **Matrix:** Water *QC Source Sample*
Sample Name: ITC-BB-01-20190501-11 **Sample Location/Comments:** BB-01
Sample Comments:

Analysis	Hold time (days)	Expires	Comments
OSRTI PFC	28	May-29-19 08:45	

Sample ID: 1905005-02 **Sampled:** May-01-19 09:00 **Matrix:** Water
Sample Name: ITC-BB-01-20190501-15 **Sample Location/Comments:** FieldQC
Sample Comments:

Analysis	Hold time (days)	Expires	Comments
OSRTI PFC	28	May-29-19 09:00	

Sample ID: 1905005-03 **Sampled:** May-01-19 09:10 **Matrix:** Water
Sample Name: ITC-BB-02-20190501-11 **Sample Location/Comments:** BB-02
Sample Comments:

Analysis	Hold time (days)	Expires	Comments
OSRTI PFC	28	May-29-19 09:10	

1905005

US EPA Region 5 Chicago Regional Laboratory

Client: Region 6, US EPA
Project: R06 Deer Park PFAS
Project Manager: Angela Ockrassa Davis
Project Number: [none]

Sample ID: 1905005-04 **Sampled:** May-01-19 09:25 **Matrix:** Water

Sample Name: ITC-BB-03-20190501-11 **Sample Location/Comments:** BB-03

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
OSRTI PFC	28	May-29-19 09:25	

Sample ID: 1905005-05 **Sampled:** May-01-19 09:40 **Matrix:** Water

Sample Name: ITC-BB-05-20190501-11 **Sample Location/Comments:** BB-05

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
OSRTI PFC	28	May-29-19 09:40	

Sample ID: 1905005-06 **Sampled:** May-01-19 10:35 **Matrix:** Water

Sample Name: ITC-BB-07-20190501-11 **Sample Location/Comments:** BB-07

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
OSRTI PFC	28	May-29-19 10:35	

Sample ID: 1905005-07 **Sampled:** May-01-19 10:15 **Matrix:** Water

Sample Name: ITC-BB-09-20190501-11 **Sample Location/Comments:** BB-09

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
OSRTI PFC	28	May-29-19 10:15	

Sample ID: 1905005-08 **Sampled:** May-01-19 09:55 **Matrix:** Water

Sample Name: ITC-BB-11-20190501-11 **Sample Location/Comments:** BB-11

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
OSRTI PFC	28	May-29-19 09:55	

1905005

US EPA Region 5 Chicago Regional Laboratory

Client: Region 6, US EPA
Project: R06 Deer Park PFAS

Project Manager: Angela Ockrassa Davis
Project Number: [none]

Sample ID: 1905005-09 **Sampled:** May-01-19 09:55 **Matrix:** Water

Sample Name: ITC-BB-11-20190501-12 **Sample Location/Comments:** BB-11

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
OSRTI PFC	28	May-29-19 09:55	

Sample ID: 1905005-10 **Sampled:** May-01-19 08:30 **Matrix:** Water

Sample Name: ITC-BB-12-20190501-11 **Sample Location/Comments:** BB-12

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
OSRTI PFC	28	May-29-19 08:30	

REVIEWED
By Amanda Wroble at 2:59 pm, May 02, 2019

Reviewed By Date

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WORK ORDER **Printed: 5/7/2019 1:32:28PM**

1905006

US EPA Region 5 Chicago Regional Laboratory

Client: **Region 6, US EPA** **Project Manager:** **Angela Ockrassa Davis**
Project: **R06 Deer Park PFAS** **Project Number:** **[none]**

Report To:

Matthew Loesel	10625 Fallstone Road	Phone: (214) 665-9544
Region 6, US EPA	Houston, TX 77099	Fax: (281) 983-2248

Date Due:	Jun-03-19 15:00 (31 day TAT)		
Received By:	Robert Snyder	Date Received:	May-03-19 10:40
Logged In By:	Robert Snyder	Date Logged In:	May-07-19 11:23

Samples Received at:	0.8 °C	**Work Order Comments:**
Sample tags/labels	**Yes**	Copy/Relog from 1905005.
Seals Intact	**Yes**	
Received on ice	**Yes**	
Paperwork Included	**Yes**	

Sample ID: **1905006-01** **Sampled:** **May-02-19 09:35** **Matrix:** **Water**

Sample Name: **ITC-BB-01-20190502-11** **Sample Location/Comments:** **BB-01**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
OSRTI PFC	28	May-30-19 09:35	

Sample ID: **1905006-02** **Sampled:** **May-02-19 09:45** **Matrix:** **Water** ***QC Source Sample***

Sample Name: **ITC-BB-02-20190502-11** **Sample Location/Comments:** **BB-02**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
OSRTI PFC	28	May-30-19 09:45	

Sample ID: **1905006-03** **Sampled:** **May-02-19 10:15** **Matrix:** **Water**

Sample Name: **ITC-BB-03-20190502-11** **Sample Location/Comments:** **BB-03**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
OSRTI PFC	28	May-30-19 10:15	

1905006

US EPA Region 5 Chicago Regional Laboratory

Client: Region 6, US EPA
Project: R06 Deer Park PFAS
Project Manager: Angela Ockrassa Davis
Project Number: [none]

Sample ID: 1905006-04 **Sampled:** May-02-19 10:30 **Matrix:** Water

Sample Name: ITC-BB-05-20190502-11 **Sample Location/Comments:** BB-05

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
OSRTI PFC	28	May-30-19 10:30	

Sample ID: 1905006-05 **Sampled:** May-02-19 10:40 **Matrix:** Water

Sample Name: ITC-BB-05-20190502-15 **Sample Location/Comments:** FieldQC

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
OSRTI PFC	28	May-30-19 10:40	

Sample ID: 1905006-06 **Sampled:** May-02-19 11:15 **Matrix:** Water

Sample Name: ITC-BB-07-20190502-11 **Sample Location/Comments:** BB-07

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
OSRTI PFC	28	May-30-19 11:15	

Sample ID: 1905006-07 **Sampled:** May-02-19 10:55 **Matrix:** Water

Sample Name: ITC-BB-09-20190502-11 **Sample Location/Comments:** BB-09

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
OSRTI PFC	28	May-30-19 10:55	

Sample ID: 1905006-08 **Sampled:** May-02-19 10:45 **Matrix:** Water

Sample Name: ITC-BB-11-20190502-11 **Sample Location/Comments:** BB-11

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
OSRTI PFC	28	May-30-19 10:45	

1905006

US EPA Region 5 Chicago Regional Laboratory

Client: Region 6, US EPA
Project: R06 Deer Park PFAS
Project Manager: Angela Ockrassa Davis
Project Number: [none]

Sample ID: 1905006-09 **Sampled:** May-02-19 09:10 **Matrix:** Water

Sample Name: ITC-BB-12-20190502-11 **Sample Location/Comments:** BB-12

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
OSRTI PFC	28	May-30-19 09:10	

Sample ID: 1905006-10 **Sampled:** May-02-19 09:10 **Matrix:** Water

Sample Name: ITC-BB-12-20190502-12 **Sample Location/Comments:** BB-12

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
OSRTI PFC	28	May-30-19 09:10	

Sample ID: 1905006-11 **Sampled:** May-02-19 15:05 **Matrix:** Water

Sample Name: ITC-TB-04-20190502-11 **Sample Location/Comments:** TB-04

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
OSRTI PFC	28	May-30-19 15:05	

Sample ID: 1905006-12 **Sampled:** May-02-19 15:20 **Matrix:** Water

Sample Name: ITC-TB-05-20190502-11 **Sample Location/Comments:** TB-05

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
OSRTI PFC	28	May-30-19 15:20	

WORK ORDER

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1905006

US EPA Region 5 Chicago Regional Laboratory

Client:	**Region 6, US EPA**	**Project Manager:**	**Angela Ockrassa Davis**
Project:	**R06 Deer Park PFAS**	**Project Number:**	**[none]**

REVIEWED

By Amanda Wroble at 1:33 pm, May 07, 2019

Reviewed By Date

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WORK ORDER **Printed: 5/8/2019 8:04:10AM**

1905009

US EPA Region 5 Chicago Regional Laboratory

Client: **Region 6, US EPA** **Project Manager:** **Angela Ockrassa Davis**
Project: **R06 Deer Park PFAS** **Project Number:** **[none]**

Report To:

Matthew Loesel	10625 Fallstone Road	Phone: (214) 665-9544
Region 6, US EPA	Houston, TX 77099	Fax: (281) 983-2248

Date Due:	Jun-06-19 15:00 (30 day TAT)		
Received By:	Robert Snyder	Date Received:	May-07-19 10:45
Logged In By:	Robert Snyder	Date Logged In:	May-07-19 14:18

Samples Received at:	1.8 °C	**Work Order Comments:**
Sample tags/labels	**Yes**	Copy/Relog from 1905006.
Seals Intact	**Yes**	
Received on ice	**Yes**	
Paperwork Included	**Yes**	

Sample ID: **1905009-01** **Sampled:** **May-03-19 11:25** **Matrix:** **Water**

Sample Name: **ITC-TB-04-20190503-11** **Sample Location/Comments:** **TB-04**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
OSRTI PFC	28	May-31-19 11:25	

Sample ID: **1905009-02** **Sampled:** **May-03-19 11:10** **Matrix:** **Water**

Sample Name: **ITC-TB-05-20190503-11** **Sample Location/Comments:** **TB-05**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
OSRTI PFC	28	May-31-19 11:10	

Sample ID: **1905009-03** **Sampled:** **May-03-19 08:55** **Matrix:** **Water**

Sample Name: **ITC-BB-01-20190503-11** **Sample Location/Comments:** **BB-01**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
OSRTI PFC	28	May-31-19 08:55	

1905009

US EPA Region 5 Chicago Regional Laboratory

Client: Region 6, US EPA
Project: R06 Deer Park PFAS
Project Manager: Angela Ockrassa Davis
Project Number: [none]

Sample ID: 1905009-04 **Sampled:** May-03-19 08:55 **Matrix:** Water

Sample Name: ITC-BB-01-20190503-12 **Sample Location/Comments:** BB-01

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
OSRTI PFC	28	May-31-19 08:55	

Sample ID: 1905009-05 **Sampled:** May-03-19 09:10 **Matrix:** Water

Sample Name: ITC-BB-02-20190503-11 **Sample Location/Comments:** BB-02

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
OSRTI PFC	28	May-31-19 09:10	

Sample ID: 1905009-06 **Sampled:** May-03-19 09:15 **Matrix:** Water

Sample Name: ITC-BB-02-20190503-15 **Sample Location/Comments:** FieldQC

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
OSRTI PFC	28	May-31-19 09:15	

Sample ID: 1905009-07 **Sampled:** May-03-19 09:20 **Matrix:** Water *QC Source Sample*

Sample Name: ITC-BB-03-20190503-11 **Sample Location/Comments:** BB-03

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
OSRTI PFC	28	May-31-19 09:20	

Sample ID: 1905009-08 **Sampled:** May-03-19 09:40 **Matrix:** Water

Sample Name: ITC-BB-05-20190503-11 **Sample Location/Comments:** BB-05

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
OSRTI PFC	28	May-31-19 09:40	

1905009

US EPA Region 5 Chicago Regional Laboratory

Client: Region 6, US EPA
Project: R06 Deer Park PFAS

Project Manager: Angela Ockrassa Davis
Project Number: [none]

Sample ID: 1905009-09 **Sampled:** May-03-19 10:15 **Matrix:** Water

Sample Name: ITC-BB-07-20190503-11 **Sample Location/Comments:** BB-07

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
OSRTI PFC	28	May-31-19 10:15	

Sample ID: 1905009-10 **Sampled:** May-03-19 10:00 **Matrix:** Water

Sample Name: ITC-BB-09-20190503-11 **Sample Location/Comments:** BB-09

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
OSRTI PFC	28	May-31-19 10:00	

Sample ID: 1905009-11 **Sampled:** May-03-19 09:50 **Matrix:** Water

Sample Name: ITC-BB-11-20190503-11 **Sample Location/Comments:** BB-11

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
OSRTI PFC	28	May-31-19 09:50	

Sample ID: 1905009-12 **Sampled:** May-03-19 09:40 **Matrix:** Water

Sample Name: ITC-BB-12-20190503-11 **Sample Location/Comments:** BB-12

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
OSRTI PFC	28	May-31-19 09:40	

WORK ORDER

Printed: 5/8/2019 8:04:10AM

1905009

US EPA Region 5 Chicago Regional Laboratory

Client:	**Region 6, US EPA**	**Project Manager:**	**Angela Ockrassa Davis**
Project:	**R06 Deer Park PFAS**	**Project Number:**	**[none]**

REVIEWED

By Amanda Wroble at 8:04 am, May 08, 2019

Reviewed By Date

Environmental Protection Agency Region 5
Chicago Regional Laboratory
536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS
US EPA Region 5 Chicago Regional Laboratory

ITC-BB-05-20190501-11 (1905005-05) **Matrix: Water** **Sampled: May-01-19 09:40** **Received: May-02-19 09:15**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorobutanoate	**U**			41.5	ng/L	1	B19E018	May-08-19	May-09-19
perfluoropentanoate	**U**			41.5	"	"	"	"	"
perfluorohexanoate	**34.2**			8.30	"	"	"	"	"
perfluoroheptanoate	**14.2**			8.30	"	"	"	"	"
perfluorooctanoate	**8.76**			8.30	"	"	"	"	"
perfluorononanoate	**39.5**			8.30	"	"	"	"	"
perfluorodecanoate	**U**			8.30	"	"	"	"	"
perfluoroundecanoate	**U**			8.30	"	"	"	"	"
perfluorododecanoate	**U**			8.30	"	"	"	"	"
perfluorotridecanoate	**U**			8.30	"	"	"	"	"
perfluorotetradecanoate	**U**			8.30	"	"	"	"	"
perfluorobutyl sulfonate	**8.57**			8.30	"	"	"	"	"
perfluorohexyl sulfonate	**14.3**			8.30	"	"	"	"	"
perfluorooctyl sulfonate	**46.2**			8.30	"	"	"	"	"
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	**U**			8.30	"	"	"	"	"
perfluoro-1-pentanesulfonate (PFPeS)	**U**			8.30	"	"	"	"	"
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	**365**			8.30	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	**U**			8.30	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	**U**			8.30	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	**U**			8.30	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	**U**			8.30	"	"	"	"	"
N-MeFOSAA	**U**			8.30	"	"	"	"	"
N-EtFOSAA	**U**			8.30	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	**U**			8.30	"	"	"	"	"

Surogate	Result	%REC	%REC Limits	Batch	Prepared	Analyzed
D5-N-EtFOSAA	86.3	*81.7%*	*70-130*	"	"	"
D3-N-MeFOSAA	88.3	*83.6%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	75.7	*74.0%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	99.3	*99.0%*	*70-130*	"	"	"
perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS	73.7	*74.6%*	*70-130*	"	"	"

Environmental Protection Agency Region 5
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Phone:(312)353-8370 Fax:(312)886-2591

Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS
US EPA Region 5 Chicago Regional Laboratory

ITC-BB-05-20190501-11 (1905005-05) **Matrix: Water** **Sampled: May-01-19 09:40** **Received: May-02-19 09:15**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Surogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
M9PFNA	97.1			*91.9%*		*70-130*	*B19E018*	*May-08-19*	*May-09-19*
M8PFOSA	95.5			*90.4%*		*70-130*	"	"	"
M8PFOS	91.8			*90.8%*		*70-130*	"	"	"
M8PFOA	99.8			*94.5%*		*70-130*	"	"	"
M7PFUnA	88.3			*83.6%*		*70-130*	"	"	"
M6PFDA	95.3			*90.3%*		*70-130*	"	"	"
M5PFPeA	97.8			*92.6%*		*70-130*	"	"	"
M5PFHxA	95.3			*90.2%*		*70-130*	"	"	"
M4PFHpA	96.0			*90.9%*		*70-130*	"	"	"
M3PFHxS	97.0			*97.0%*		*70-130*	"	"	"
M3PFBS	94.4			*96.2%*		*70-130*	"	"	"
M2PFTreA	0.949	Q		*0.899%*		*70-130*	"	"	"
MPFDoA	67.4	Q		*63.8%*		*70-130*	"	"	"
MPFBA	111			*105%*		*70-130*	"	"	"

ITC-BB-07-20190501-11 (1905005-06) **Matrix: Water** **Sampled: May-01-19 10:35** **Received: May-02-19 09:15**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorobutanoate	**U**			43.4	ng/L	1	B19E018	May-08-19	May-09-19
perfluoropentanoate	**45.0**			43.4	"	"	"	"	"
perfluorohexanoate	**38.0**			8.68	"	"	"	"	"
perfluoroheptanoate	**16.7**			8.68	"	"	"	"	"
perfluorooctanoate	**U**			8.68	"	"	"	"	"
perfluorononanoate	**20.2**			8.68	"	"	"	"	"
perfluorodecanoate	**U**			8.68	"	"	"	"	"
perfluoroundecanoate	**U**			8.68	"	"	"	"	"
perfluorododecanoate	**U**			8.68	"	"	"	"	"
perfluorotridecanoate	**U**			8.68	"	"	"	"	"
perfluorotetradecanoate	**U**			8.68	"	"	"	"	"
perfluorobutyl sulfonate	**U**			8.68	"	"	"	"	"
perfluorohexyl sulfonate	**14.4**			8.68	"	"	"	"	"
perfluorooctyl sulfonate	**48.2**			8.68	"	"	"	"	"
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	**U**			8.68	"	"	"	"	"

Environmental Protection Agency Region 5
Chicago Regional Laboratory
536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS
US EPA Region 5 Chicago Regional Laboratory

ITC-BB-07-20190501-11 (1905005-06) **Matrix: Water** **Sampled: May-01-19 10:35** **Received: May-02-19 09:15**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluoro-1-pentanesulfonate (PFPeS)	**U**			8.68	ng/L	1	B19E018	May-08-19	May-09-19
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	**383**			8.68	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	**U**			8.68	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	**U**			8.68	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	**U**			8.68	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	**U**			8.68	"	"	"	"	"
N-MeFOSAA	**U**			8.68	"	"	"	"	"
N-EtFOSAA	**U**			8.68	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	**U**			8.68	"	"	"	"	"

Surogate	Result	%REC	%REC Limits	Batch	Prepared	Analyzed
D5-N-EtFOSAA	92.0	*78.1%*	*70-130*	"	"	"
D3-N-MeFOSAA	94.5	*80.3%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	85.9	*75.3%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	106	*95.0%*	*70-130*	"	"	"
perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS	81.2	*73.8%*	*70-130*	"	"	"
M9PFNA	106	*90.3%*	*70-130*	"	"	"
M8PFOSA	109	*92.6%*	*70-130*	"	"	"
M8PFOS	102	*90.5%*	*70-130*	"	"	"
M8PFOA	106	*90.2%*	*70-130*	"	"	"
M7PFUnA	96.1	*81.6%*	*70-130*	"	"	"
M6PFDA	102	*86.4%*	*70-130*	"	"	"
M5PFPeA	109	*92.8%*	*70-130*	"	"	"
M5PFHxA	107	*90.4%*	*70-130*	"	"	"
M4PFHpA	106	*89.8%*	*70-130*	"	"	"
M3PFHxS	109	*97.9%*	*70-130*	"	"	"
M3PFBS	105	*95.7%*	*70-130*	"	"	"
M2PFTreA	26.0	Q *22.1%*	*70-130*	"	"	"
MPFDoA	81.3	Q *69.0%*	*70-130*	"	"	"
MPFBA	124	*106%*	*70-130*	"	"	"

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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS
US EPA Region 5 Chicago Regional Laboratory

ITC-BB-09-20190501-11 (1905005-07) **Matrix: Water** **Sampled: May-01-19 10:15** **Received: May-02-19 09:15**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorobutanoate	**U**			43.2	ng/L	1	B19E018	May-08-19	May-09-19
perfluoropentanoate	**U**			43.2	"	"	"	"	"
perfluorohexanoate	**38.8**			8.65	"	"	"	"	"
perfluoroheptanoate	**14.0**			8.65	"	"	"	"	"
perfluorooctanoate	**U**			8.65	"	"	"	"	"
perfluorononanoate	**U**			8.65	"	"	"	"	"
perfluorodecanoate	**U**			8.65	"	"	"	"	"
perfluoroundecanoate	**U**			8.65	"	"	"	"	"
perfluorododecanoate	**U**			8.65	"	"	"	"	"
perfluorotridecanoate	**U**			8.65	"	"	"	"	"
perfluorotetradecanoate	**U**			8.65	"	"	"	"	"
perfluorobutyl sulfonate	**U**			8.65	"	"	"	"	"
perfluorohexyl sulfonate	**13.0**			8.65	"	"	"	"	"
perfluorooctyl sulfonate	**40.9**			8.65	"	"	"	"	"
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	**U**			8.65	"	"	"	"	"
perfluoro-1-pentanesulfonate (PFPeS)	**U**			8.65	"	"	"	"	"
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	**344**			8.65	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	**U**			8.65	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	**U**			8.65	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	**U**			8.65	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	**U**			8.65	"	"	"	"	"
N-MeFOSAA	**U**			8.65	"	"	"	"	"
N-EtFOSAA	**U**			8.65	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	**U**			8.65	"	"	"	"	"

Surogate	Result	%REC	%REC Limits	Batch	Prepared	Analyzed
D5-N-EtFOSAA	93.8	*80.3%*	*70-130*	"	"	"
D3-N-MeFOSAA	94.7	*81.1%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	84.1	*74.4%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	103	*92.6%*	*70-130*	"	"	"
perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS	82.0	*75.1%*	*70-130*	"	"	"

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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS
US EPA Region 5 Chicago Regional Laboratory

ITC-BB-09-20190501-11 (1905005-07) **Matrix: Water** **Sampled: May-01-19 10:15** **Received: May-02-19 09:15**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Surogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
M9PFNA	106			*91.0%*		*70-130*	*B19E018*	*May-08-19*	*May-09-19*
M8PFOSA	106			*91.1%*		*70-130*	"	"	"
M8PFOS	99.9			*89.5%*		*70-130*	"	"	"
M8PFOA	107			*91.6%*		*70-130*	"	"	"
M7PFUnA	96.2			*82.4%*		*70-130*	"	"	"
M6PFDA	104			*88.7%*		*70-130*	"	"	"
M5PFPeA	106			*90.5%*		*70-130*	"	"	"
M5PFHxA	106			*90.4%*		*70-130*	"	"	"
M4PFHpA	107			*91.6%*		*70-130*	"	"	"
M3PFHxS	103			*92.8%*		*70-130*	"	"	"
M3PFBS	98.7			*91.0%*		*70-130*	"	"	"
M2PFTreA	5.07	Q		*4.35%*		*70-130*	"	"	"
MPFDoA	79.3	Q		*68.0%*		*70-130*	"	"	"
MPFBA	124			*106%*		*70-130*	"	"	"

ITC-BB-11-20190501-11 (1905005-08) **Matrix: Water** **Sampled: May-01-19 09:55** **Received: May-02-19 09:15**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorobutanoate	**U**			42.7	ng/L	1	B19E018	May-08-19	May-09-19
perfluoropentanoate	**U**			42.7	"	"	"	"	"
perfluorohexanoate	**41.3**			8.53	"	"	"	"	"
perfluoroheptanoate	**15.9**			8.53	"	"	"	"	"
perfluorooctanoate	**8.79**			8.53	"	"	"	"	"
perfluorononanoate	**U**			8.53	"	"	"	"	"
perfluorodecanoate	**U**			8.53	"	"	"	"	"
perfluoroundecanoate	**U**			8.53	"	"	"	"	"
perfluorododecanoate	**U**			8.53	"	"	"	"	"
perfluorotridecanoate	**U**			8.53	"	"	"	"	"
perfluorotetradecanoate	**U**			8.53	"	"	"	"	"
perfluorobutyl sulfonate	**8.76**			8.53	"	"	"	"	"
perfluorohexyl sulfonate	**14.7**			8.53	"	"	"	"	"
perfluorooctyl sulfonate	**44.2**			8.53	"	"	"	"	"
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	**U**			8.53	"	"	"	"	"

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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS
US EPA Region 5 Chicago Regional Laboratory

ITC-BB-11-20190501-11 (1905005-08) **Matrix: Water** **Sampled: May-01-19 09:55** **Received: May-02-19 09:15**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluoro-1-pentanesulfonate (PFPeS)	**U**			8.53	ng/L	1	B19E018	May-08-19	May-09-19
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	**388**			8.53	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	**U**			8.53	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	**U**			8.53	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	**U**			8.53	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	**U**			8.53	"	"	"	"	"
N-MeFOSAA	**U**			8.53	"	"	"	"	"
N-EtFOSAA	**U**			8.53	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	**U**			8.53	"	"	"	"	"

Surogate	Result	%REC	%REC Limits	Batch	Prepared	Analyzed
D5-N-EtFOSAA	89.3	*79.0%*	*70-130*	"	"	"
D3-N-MeFOSAA	97.1	*85.8%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	82.2	*75.1%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	105	*97.4%*	*70-130*	"	"	"
perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS	77.1	*73.0%*	*70-130*	"	"	"
M9PFNA	106	*94.1%*	*70-130*	"	"	"
M8PFOSA	104	*92.2%*	*70-130*	"	"	"
M8PFOS	98.8	*91.3%*	*70-130*	"	"	"
M8PFOA	108	*95.1%*	*70-130*	"	"	"
M7PFUnA	96.4	*85.3%*	*70-130*	"	"	"
M6PFDA	101	*89.3%*	*70-130*	"	"	"
M5PFPeA	105	*92.5%*	*70-130*	"	"	"
M5PFHxA	103	*91.2%*	*70-130*	"	"	"
M4PFHpA	106	*93.5%*	*70-130*	"	"	"
M3PFHxS	103	*96.0%*	*70-130*	"	"	"
M3PFBS	100	*95.2%*	*70-130*	"	"	"
M2PFTreA	0.707	Q *0.625%*	*70-130*	"	"	"
MPFDoA	75.9	Q *67.1%*	*70-130*	"	"	"
MPFBA	122	*108%*	*70-130*	"	"	"

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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS
US EPA Region 5 Chicago Regional Laboratory

ITC-BB-11-20190501-12 (1905005-09) **Matrix: Water** **Sampled: May-01-19 09:55** **Received: May-02-19 09:15**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorobutanoate	**U**			47.7	ng/L	1	B19E018	May-08-19	May-09-19
perfluoropentanoate	**U**			47.7	"	"	"	"	"
perfluorohexanoate	**37.8**			9.53	"	"	"	"	"
perfluoroheptanoate	**18.2**			9.53	"	"	"	"	"
perfluorooctanoate	**12.3**			9.53	"	"	"	"	"
perfluorononanoate	**373**			9.53	"	"	"	"	"
perfluorodecanoate	**U**			9.53	"	"	"	"	"
perfluoroundecanoate	**50.6**			9.53	"	"	"	"	"
perfluorododecanoate	**U**			9.53	"	"	"	"	"
perfluorotridecanoate	**U**			9.53	"	"	"	"	"
perfluorotetradecanoate	**U**			9.53	"	"	"	"	"
perfluorobutyl sulfonate	**U**			9.53	"	"	"	"	"
perfluorohexyl sulfonate	**15.2**			9.53	"	"	"	"	"
perfluorooctyl sulfonate	**59.2**			9.53	"	"	"	"	"
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	**U**			9.53	"	"	"	"	"
perfluoro-1-pentanesulfonate (PFPeS)	**U**			9.53	"	"	"	"	"
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	**410**			9.53	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	**U**			9.53	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	**U**			9.53	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	**U**			9.53	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	**U**			9.53	"	"	"	"	"
N-MeFOSAA	**U**			9.53	"	"	"	"	"
N-EtFOSAA	**U**			9.53	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	**U**			9.53	"	"	"	"	"

Surogate	Result	%REC	%REC Limits	Batch	Prepared	Analyzed
D5-N-EtFOSAA	126	*86.9%*	*70-130*	"	"	"
D3-N-MeFOSAA	127	*87.5%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	118	*84.3%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	134	*97.5%*	*70-130*	"	"	"
perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS	105	*77.2%*	*70-130*	"	"	"

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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS
US EPA Region 5 Chicago Regional Laboratory

ITC-BB-11-20190501-12 (1905005-09) **Matrix: Water** **Sampled: May-01-19 09:55** **Received: May-02-19 09:15**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Surogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
M9PFNA	139			*95.6%*		*70-130*	*B19E018*	*May-08-19*	*May-09-19*
M8PFOSA	139			*96.0%*		*70-130*	"	"	"
M8PFOS	133			*96.0%*		*70-130*	"	"	"
M8PFOA	139			*96.0%*		*70-130*	"	"	"
M7PFUnA	132			*90.8%*		*70-130*	"	"	"
M6PFDA	133			*92.0%*		*70-130*	"	"	"
M5PFPeA	137			*94.1%*		*70-130*	"	"	"
M5PFHxA	137			*94.6%*		*70-130*	"	"	"
M4PFHpA	135			*93.1%*		*70-130*	"	"	"
M3PFHxS	135			*98.7%*		*70-130*	"	"	"
M3PFBS	130			*96.5%*		*70-130*	"	"	"
M2PFTreA	73.8	Q		*50.9%*		*70-130*	"	"	"
MPFDoA	122			*84.0%*		*70-130*	"	"	"
MPFBA	158			*109%*		*70-130*	"	"	"

ITC-BB-12-20190501-11 (1905005-10) **Matrix: Water** **Sampled: May-01-19 08:30** **Received: May-02-19 09:15**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorobutanoate	**U**			47.6	ng/L	1	B19E018	May-08-19	May-09-19
perfluoropentanoate	**U**			47.6	"	"	"	"	"
perfluorohexanoate	**29.6**			9.53	"	"	"	"	"
perfluoroheptanoate	**11.4**			9.53	"	"	"	"	"
perfluorooctanoate	**U**			9.53	"	"	"	"	"
perfluorononanoate	**11.3**			9.53	"	"	"	"	"
perfluorodecanoate	**U**			9.53	"	"	"	"	"
perfluoroundecanoate	**U**			9.53	"	"	"	"	"
perfluorododecanoate	**U**			9.53	"	"	"	"	"
perfluorotridecanoate	**U**			9.53	"	"	"	"	"
perfluorotetradecanoate	**U**			9.53	"	"	"	"	"
perfluorobutyl sulfonate	**U**			9.53	"	"	"	"	"
perfluorohexyl sulfonate	**12.7**			9.53	"	"	"	"	"
perfluorooctyl sulfonate	**39.9**			9.53	"	"	"	"	"
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	**U**			9.53	"	"	"	"	"

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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS
US EPA Region 5 Chicago Regional Laboratory

ITC-BB-12-20190501-11 (1905005-10) **Matrix: Water** **Sampled: May-01-19 08:30** **Received: May-02-19 09:15**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluoro-1-pentanesulfonate (PFPeS)	**U**			9.53	ng/L	1	B19E018	May-08-19	May-09-19
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	**303**			9.53	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	**U**			9.53	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	**U**			9.53	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	**U**			9.53	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	**U**			9.53	"	"	"	"	"
N-MeFOSAA	**U**			9.53	"	"	"	"	"
N-EtFOSAA	**U**			9.53	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	**U**			9.53	"	"	"	"	"

Surogate	Result	%REC	%REC Limits	Batch	Prepared	Analyzed
D5-N-EtFOSAA	120	*83.1%*	*70-130*	"	"	"
D3-N-MeFOSAA	121	*83.8%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	104	*73.9%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	120	*87.3%*	*70-130*	"	"	"
perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS	102	*75.0%*	*70-130*	"	"	"
M9PFNA	131	*90.2%*	*70-130*	"	"	"
M8PFOSA	132	*91.4%*	*70-130*	"	"	"
M8PFOS	125	*90.1%*	*70-130*	"	"	"
M8PFOA	134	*92.6%*	*70-130*	"	"	"
M7PFUnA	128	*88.4%*	*70-130*	"	"	"
M6PFDA	127	*87.8%*	*70-130*	"	"	"
M5PFPeA	133	*91.7%*	*70-130*	"	"	"
M5PFHxA	132	*91.4%*	*70-130*	"	"	"
M4PFHpA	129	*89.0%*	*70-130*	"	"	"
M3PFHxS	128	*93.3%*	*70-130*	"	"	"
M3PFBS	124	*92.1%*	*70-130*	"	"	"
M2PFTreA	64.6	Q *44.6%*	*70-130*	"	"	"
MPFDoA	114	*78.4%*	*70-130*	"	"	"
MPFBA	153	*105%*	*70-130*	"	"	"

Environmental Protection Agency Region 5
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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS
US EPA Region 5 Chicago Regional Laboratory

ITC-BB-01-20190502-11 (1905006-01) **Matrix: Water** **Sampled: May-02-19 09:35** **Received: May-03-19 10:40**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorobutanoate	**U**			43.5	ng/L	1	B19E018	May-08-19	May-09-19
perfluoropentanoate	**U**			43.5	"	"	"	"	"
perfluorohexanoate	**34.2**			8.69	"	"	"	"	"
perfluoroheptanoate	**13.9**			8.69	"	"	"	"	"
perfluorooctanoate	**9.90**			8.69	"	"	"	"	"
perfluorononanoate	**U**			8.69	"	"	"	"	"
perfluorodecanoate	**U**			8.69	"	"	"	"	"
perfluoroundecanoate	**U**			8.69	"	"	"	"	"
perfluorododecanoate	**U**			8.69	"	"	"	"	"
perfluorotridecanoate	**U**			8.69	"	"	"	"	"
perfluorotetradecanoate	**U**			8.69	"	"	"	"	"
perfluorobutyl sulfonate	**U**			8.69	"	"	"	"	"
perfluorohexyl sulfonate	**13.8**			8.69	"	"	"	"	"
perfluorooctyl sulfonate	**41.8**			8.69	"	"	"	"	"
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	**U**			8.69	"	"	"	"	"
perfluoro-1-pentanesulfonate (PFPeS)	**U**			8.69	"	"	"	"	"
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	**341**			8.69	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	**U**			8.69	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	**U**			8.69	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	**U**			8.69	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	**U**			8.69	"	"	"	"	"
N-MeFOSAA	**U**			8.69	"	"	"	"	"
N-EtFOSAA	**U**			8.69	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	**U**			8.69	"	"	"	"	"

Surogate	Result	%REC	%REC Limits	Batch	Prepared	Analyzed
D5-N-EtFOSAA	96.1	*81.3%*	*70-130*	"	"	"
D3-N-MeFOSAA	99.6	*84.2%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	88.9	*77.7%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	107	*95.5%*	*70-130*	"	"	"
perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS	81.9	*74.1%*	*70-130*	"	"	"

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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS
US EPA Region 5 Chicago Regional Laboratory

ITC-BB-01-20190502-11 (1905006-01) **Matrix: Water** **Sampled: May-02-19 09:35** **Received: May-03-19 10:40**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Surogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
M9PFNA	112			*94.9%*		*70-130*	*B19E018*	*May-08-19*	*May-09-19*
M8PFOSA	110			*92.8%*		*70-130*	"	"	"
M8PFOS	104			*91.5%*		*70-130*	"	"	"
M8PFOA	113			*95.3%*		*70-130*	"	"	"
M7PFUnA	99.3			*84.0%*		*70-130*	"	"	"
M6PFDA	104			*87.7%*		*70-130*	"	"	"
M5PFPeA	111			*93.8%*		*70-130*	"	"	"
M5PFHxA	114			*96.1%*		*70-130*	"	"	"
M4PFHpA	109			*91.8%*		*70-130*	"	"	"
M3PFHxS	107			*95.6%*		*70-130*	"	"	"
M3PFBS	103			*93.5%*		*70-130*	"	"	"
M2PFTreA	4.78	Q		*4.04%*		*70-130*	"	"	"
MPFDoA	80.9	Q		*68.5%*		*70-130*	"	"	"
MPFBA	129			*109%*		*70-130*	"	"	"

ITC-BB-02-20190502-11 (1905006-02) **Matrix: Water** **Sampled: May-02-19 09:45** **Received: May-03-19 10:40**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorobutanoate	**U**			42.6	ng/L	1	B19E018	May-08-19	May-09-19
perfluoropentanoate	**48.3**			42.6	"	"	"	"	"
perfluorohexanoate	**38.1**			8.52	"	"	"	"	"
perfluoroheptanoate	**15.3**			8.52	"	"	"	"	"
perfluorooctanoate	**9.76**			8.52	"	"	"	"	"
perfluorononanoate	**71.2**			8.52	"	"	"	"	"
perfluorodecanoate	**U**			8.52	"	"	"	"	"
perfluoroundecanoate	**U**			8.52	"	"	"	"	"
perfluorododecanoate	**U**			8.52	"	"	"	"	"
perfluorotridecanoate	**U**			8.52	"	"	"	"	"
perfluorotetradecanoate	**U**			8.52	"	"	"	"	"
perfluorobutyl sulfonate	**9.22**			8.52	"	"	"	"	"
perfluorohexyl sulfonate	**14.3**			8.52	"	"	"	"	"
perfluorooctyl sulfonate	**54.2**			8.52	"	"	"	"	"
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	**U**			8.52	"	"	"	"	"

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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS
US EPA Region 5 Chicago Regional Laboratory

ITC-BB-02-20190502-11 (1905006-02) **Matrix: Water** **Sampled: May-02-19 09:45** **Received: May-03-19 10:40**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluoro-1-pentanesulfonate (PFPeS)	**U**			8.52	ng/L	1	B19E018	May-08-19	May-09-19
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	**369**			8.52	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	**U**			8.52	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	**U**			8.52	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	**U**			8.52	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	**U**			8.52	"	"	"	"	"
N-MeFOSAA	**U**			8.52	"	"	"	"	"
N-EtFOSAA	**U**			8.52	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	**U**			8.52	"	"	"	"	"

Surogate	Result	%REC	%REC Limits	Batch	Prepared	Analyzed
D5-N-EtFOSAA	92.2	*81.7%*	*70-130*	"	"	"
D3-N-MeFOSAA	94.8	*84.1%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	84.4	*77.4%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	103	*96.2%*	*70-130*	"	"	"
perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS	78.1	*74.1%*	*70-130*	"	"	"
M9PFNA	106	*94.3%*	*70-130*	"	"	"
M8PFOSA	104	*92.3%*	*70-130*	"	"	"
M8PFOS	102	*94.8%*	*70-130*	"	"	"
M8PFOA	108	*95.9%*	*70-130*	"	"	"
M7PFUnA	96.3	*85.4%*	*70-130*	"	"	"
M6PFDA	105	*92.9%*	*70-130*	"	"	"
M5PFPeA	108	*96.2%*	*70-130*	"	"	"
M5PFHxA	109	*97.1%*	*70-130*	"	"	"
M4PFHpA	105	*92.8%*	*70-130*	"	"	"
M3PFHxS	106	*98.9%*	*70-130*	"	"	"
M3PFBS	102	*97.3%*	*70-130*	"	"	"
M2PFTreA	2.12 Q	*1.88%*	*70-130*	"	"	"
MPFDoA	76.8 Q	*68.1%*	*70-130*	"	"	"
MPFBA	127	*112%*	*70-130*	"	"	"

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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS
US EPA Region 5 Chicago Regional Laboratory

ITC-BB-03-20190502-11 (1905006-03) **Matrix: Water** **Sampled: May-02-19 10:15** **Received: May-03-19 10:40**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorobutanoate	**U**			47.9	ng/L	1	B19E018	May-08-19	May-09-19
perfluoropentanoate	**U**			47.9	"	"	"	"	"
perfluorohexanoate	**36.6**			9.58	"	"	"	"	"
perfluoroheptanoate	**15.0**			9.58	"	"	"	"	"
perfluorooctanoate	**10.2**			9.58	"	"	"	"	"
perfluorononanoate	**41.1**			9.58	"	"	"	"	"
perfluorodecanoate	**U**			9.58	"	"	"	"	"
perfluoroundecanoate	**U**			9.58	"	"	"	"	"
perfluorododecanoate	**U**			9.58	"	"	"	"	"
perfluorotridecanoate	**U**			9.58	"	"	"	"	"
perfluorotetradecanoate	**U**			9.58	"	"	"	"	"
perfluorobutyl sulfonate	**U**			9.58	"	"	"	"	"
perfluorohexyl sulfonate	**13.8**			9.58	"	"	"	"	"
perfluorooctyl sulfonate	**56.4**			9.58	"	"	"	"	"
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	**U**			9.58	"	"	"	"	"
perfluoro-1-pentanesulfonate (PFPeS)	**U**			9.58	"	"	"	"	"
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	**380**			9.58	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	**U**			9.58	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	**U**			9.58	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	**U**			9.58	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	**U**			9.58	"	"	"	"	"
N-MeFOSAA	**U**			9.58	"	"	"	"	"
N-EtFOSAA	**U**			9.58	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	**U**			9.58	"	"	"	"	"

Surogate	Result	%REC	%REC Limits	Batch	Prepared	Analyzed
D5-N-EtFOSAA	125	*85.3%*	*70-130*	"	"	"
D3-N-MeFOSAA	124	*84.4%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	112	*79.1%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	131	*94.2%*	*70-130*	"	"	"
perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS	102	*74.6%*	*70-130*	"	"	"

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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS
US EPA Region 5 Chicago Regional Laboratory

ITC-BB-03-20190502-11 (1905006-03) **Matrix: Water** **Sampled: May-02-19 10:15** **Received: May-03-19 10:40**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Surogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
M9PFNA	137			*93.7%*		*70-130*	*B19E018*	*May-08-19*	*May-09-19*
M8PFOSA	138			*94.4%*		*70-130*	"	"	"
M8PFOS	140			*99.9%*		*70-130*	"	"	"
M8PFOA	136			*92.7%*		*70-130*	"	"	"
M7PFUnA	132			*89.7%*		*70-130*	"	"	"
M6PFDA	133			*90.8%*		*70-130*	"	"	"
M5PFPeA	138			*94.2%*		*70-130*	"	"	"
M5PFHxA	141			*95.8%*		*70-130*	"	"	"
M4PFHpA	136			*92.4%*		*70-130*	"	"	"
M3PFHxS	135			*97.0%*		*70-130*	"	"	"
M3PFBS	129			*94.9%*		*70-130*	"	"	"
M2PFTreA	78.8	Q		*53.7%*		*70-130*	"	"	"
MPFDoA	121			*82.6%*		*70-130*	"	"	"
MPFBA	163			*111%*		*70-130*	"	"	"

ITC-BB-05-20190502-11 (1905006-04) **Matrix: Water** **Sampled: May-02-19 10:30** **Received: May-03-19 10:40**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorobutanoate	**U**			44.2	ng/L	1	B19E018	May-08-19	May-09-19
perfluoropentanoate	**47.9**			44.2	"	"	"	"	"
perfluorohexanoate	**35.9**			8.83	"	"	"	"	"
perfluoroheptanoate	**15.9**			8.83	"	"	"	"	"
perfluorooctanoate	**U**			8.83	"	"	"	"	"
perfluorononanoate	**U**			8.83	"	"	"	"	"
perfluorodecanoate	**U**			8.83	"	"	"	"	"
perfluoroundecanoate	**U**			8.83	"	"	"	"	"
perfluorododecanoate	**U**			8.83	"	"	"	"	"
perfluorotridecanoate	**U**			8.83	"	"	"	"	"
perfluorotetradecanoate	**U**			8.83	"	"	"	"	"
perfluorobutyl sulfonate	**U**			8.83	"	"	"	"	"
perfluorohexyl sulfonate	**14.3**			8.83	"	"	"	"	"
perfluorooctyl sulfonate	**49.2**			8.83	"	"	"	"	"
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	**U**			8.83	"	"	"	"	"

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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS
US EPA Region 5 Chicago Regional Laboratory

ITC-BB-05-20190502-11 (1905006-04) **Matrix: Water** **Sampled: May-02-19 10:30** **Received: May-03-19 10:40**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluoro-1-pentanesulfonate (PFPeS)	**U**			8.83	ng/L	1	B19E018	May-08-19	May-09-19
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	**367**			8.83	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	**U**			8.83	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	**U**			8.83	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	**U**			8.83	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	**U**			8.83	"	"	"	"	"
N-MeFOSAA	**U**			8.83	"	"	"	"	"
N-EtFOSAA	**U**			8.83	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	**U**			8.83	"	"	"	"	"

Surogate	Result		%REC	%REC Limits	Batch	Prepared	Analyzed
D5-N-EtFOSAA	86.4		*70.5%*	*70-130*	"	"	"
D3-N-MeFOSAA	93.7		*76.4%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	82.0	Q	*69.1%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	100		*86.0%*	*70-130*	"	"	"
perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS	75.8	Q	*66.1%*	*70-130*	"	"	"
M9PFNA	104		*84.7%*	*70-130*	"	"	"
M8PFOSA	103		*83.8%*	*70-130*	"	"	"
M8PFOS	100		*85.5%*	*70-130*	"	"	"
M8PFOA	108		*88.3%*	*70-130*	"	"	"
M7PFUnA	92.4		*75.4%*	*70-130*	"	"	"
M6PFDA	98.8		*80.6%*	*70-130*	"	"	"
M5PFPeA	107		*87.3%*	*70-130*	"	"	"
M5PFHxA	104		*85.1%*	*70-130*	"	"	"
M4PFHpA	104		*84.7%*	*70-130*	"	"	"
M3PFHxS	107		*91.9%*	*70-130*	"	"	"
M3PFBS	102		*89.7%*	*70-130*	"	"	"
M2PFTreA	6.45	Q	*5.26%*	*70-130*	"	"	"
MPFDoA	78.5	Q	*64.1%*	*70-130*	"	"	"
MPFBA	125		*102%*	*70-130*	"	"	"

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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS
US EPA Region 5 Chicago Regional Laboratory

ITC-BB-05-20190502-15 (1905006-05) **Matrix: Water** **Sampled: May-02-19 10:40** **Received: May-03-19 10:40**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorobutanoate	U			44.9	ng/L	1	B19E018	May-08-19	May-09-19
perfluoropentanoate	U			44.9	"	"	"	"	"
perfluorohexanoate	U			8.98	"	"	"	"	"
perfluoroheptanoate	U			8.98	"	"	"	"	"
perfluorooctanoate	U			8.98	"	"	"	"	"
perfluorononanoate	U			8.98	"	"	"	"	"
perfluorodecanoate	U			8.98	"	"	"	"	"
perfluoroundecanoate	U			8.98	"	"	"	"	"
perfluorododecanoate	U			8.98	"	"	"	"	"
perfluorotridecanoate	U			8.98	"	"	"	"	"
perfluorotetradecanoate	U			8.98	"	"	"	"	"
perfluorobutyl sulfonate	U			8.98	"	"	"	"	"
perfluorohexyl sulfonate	U			8.98	"	"	"	"	"
perfluorooctyl sulfonate	U			8.98	"	"	"	"	"
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	U			8.98	"	"	"	"	"
perfluoro-1-pentanesulfonate (PFPeS)	U			8.98	"	"	"	"	"
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	U			8.98	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	U			8.98	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	U			8.98	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	U			8.98	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	U			8.98	"	"	"	"	"
N-MeFOSAA	U			8.98	"	"	"	"	"
N-EtFOSAA	U			8.98	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	U			8.98	"	"	"	"	"

Surogate	Result	%REC	%REC Limits	Batch	Prepared	Analyzed
D5-N-EtFOSAA	108	*85.3%*	*70-130*	"	"	"
D3-N-MeFOSAA	115	*90.6%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	105	*85.3%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	104	*86.2%*	*70-130*	"	"	"
perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS	94.6	*79.6%*	*70-130*	"	"	"

Environmental Protection Agency Region 5
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536 South Clark Street, Chicago, IL 60605
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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS
US EPA Region 5 Chicago Regional Laboratory

ITC-BB-05-20190502-15 (1905006-05) **Matrix: Water** **Sampled: May-02-19 10:40** **Received: May-03-19 10:40**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Surogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
M9PFNA	120			*94.7%*		*70-130*	*B19E018*	*May-08-19*	*May-09-19*
M8PFOSA	124			*97.3%*		*70-130*	"	"	"
M8PFOS	118			*96.6%*		*70-130*	"	"	"
M8PFOA	123			*96.9%*		*70-130*	"	"	"
M7PFUnA	113			*89.0%*		*70-130*	"	"	"
M6PFDA	118			*92.8%*		*70-130*	"	"	"
M5PFPeA	118			*93.1%*		*70-130*	"	"	"
M5PFHxA	117			*91.9%*		*70-130*	"	"	"
M4PFHpA	116			*91.2%*		*70-130*	"	"	"
M3PFHxS	116			*96.6%*		*70-130*	"	"	"
M3PFBS	112			*94.5%*		*70-130*	"	"	"
M2PFTreA	71.5	Q		*56.2%*		*70-130*	"	"	"
MPFDoA	105			*82.4%*		*70-130*	"	"	"
MPFBA	126			*99.4%*		*70-130*	"	"	"

ITC-BB-07-20190502-11 (1905006-06) **Matrix: Water** **Sampled: May-02-19 11:15** **Received: May-03-19 10:40**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorobutanoate	**U**			46.0	ng/L	1	B19E018	May-08-19	May-09-19
perfluoropentanoate	**52.3**			46.0	"	"	"	"	"
perfluorohexanoate	**41.6**			9.19	"	"	"	"	"
perfluoroheptanoate	**17.5**			9.19	"	"	"	"	"
perfluorooctanoate	**U**			9.19	"	"	"	"	"
perfluorononanoate	**U**			9.19	"	"	"	"	"
perfluorodecanoate	**U**			9.19	"	"	"	"	"
perfluoroundecanoate	**U**			9.19	"	"	"	"	"
perfluorododecanoate	**U**			9.19	"	"	"	"	"
perfluorotridecanoate	**U**			9.19	"	"	"	"	"
perfluorotetradecanoate	**U**			9.19	"	"	"	"	"
perfluorobutyl sulfonate	**U**			9.19	"	"	"	"	"
perfluorohexyl sulfonate	**15.0**			9.19	"	"	"	"	"
perfluorooctyl sulfonate	**54.5**			9.19	"	"	"	"	"
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	**U**			9.19	"	"	"	"	"

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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS
US EPA Region 5 Chicago Regional Laboratory

ITC-BB-07-20190502-11 (1905006-06) **Matrix: Water** **Sampled: May-02-19 11:15** **Received: May-03-19 10:40**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluoro-1-pentanesulfonate (PFPeS)	**U**			9.19	ng/L	1	B19E018	May-08-19	May-09-19
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	**390**			9.19	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	**U**			9.19	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	**U**			9.19	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	**U**			9.19	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	**U**			9.19	"	"	"	"	"
N-MeFOSAA	**U**			9.19	"	"	"	"	"
N-EtFOSAA	**U**			9.19	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	**U**			9.19	"	"	"	"	"

Surogate	Result	%REC	%REC Limits	Batch	Prepared	Analyzed
D5-N-EtFOSAA	108	*80.6%*	*70-130*	"	"	"
D3-N-MeFOSAA	111	*83.0%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	102	*78.6%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	121	*94.7%*	*70-130*	"	"	"
perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS	92.6	*73.8%*	*70-130*	"	"	"
M9PFNA	124	*92.7%*	*70-130*	"	"	"
M8PFOSA	127	*95.0%*	*70-130*	"	"	"
M8PFOS	120	*93.7%*	*70-130*	"	"	"
M8PFOA	121	*90.5%*	*70-130*	"	"	"
M7PFUnA	117	*87.3%*	*70-130*	"	"	"
M6PFDA	120	*89.1%*	*70-130*	"	"	"
M5PFPeA	127	*94.6%*	*70-130*	"	"	"
M5PFHxA	122	*91.2%*	*70-130*	"	"	"
M4PFHpA	123	*91.7%*	*70-130*	"	"	"
M3PFHxS	123	*97.1%*	*70-130*	"	"	"
M3PFBS	118	*94.9%*	*70-130*	"	"	"
M2PFTreA	34.2 Q	*25.5%*	*70-130*	"	"	"
MPFDoA	103	*76.7%*	*70-130*	"	"	"
MPFBA	142	*106%*	*70-130*	"	"	"

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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

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US EPA Region 5 Chicago Regional Laboratory

ITC-BB-09-20190502-11 (1905006-07) **Matrix: Water** **Sampled: May-02-19 10:55** **Received: May-03-19 10:40**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorobutanoate	**U**			44.8	ng/L	1	B19E018	May-08-19	May-09-19
perfluoropentanoate	**51.2**			44.8	"	"	"	"	"
perfluorohexanoate	**31.0**			8.95	"	"	"	"	"
perfluoroheptanoate	**11.5**			8.95	"	"	"	"	"
perfluorooctanoate	**U**			8.95	"	"	"	"	"
perfluorononanoate	**U**			8.95	"	"	"	"	"
perfluorodecanoate	**U**			8.95	"	"	"	"	"
perfluoroundecanoate	**U**			8.95	"	"	"	"	"
perfluorododecanoate	**U**			8.95	"	"	"	"	"
perfluorotridecanoate	**U**			8.95	"	"	"	"	"
perfluorotetradecanoate	**U**			8.95	"	"	"	"	"
perfluorobutyl sulfonate	**U**			8.95	"	"	"	"	"
perfluorohexyl sulfonate	**10.8**			8.95	"	"	"	"	"
perfluorooctyl sulfonate	**35.9**			8.95	"	"	"	"	"
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	**U**			8.95	"	"	"	"	"
perfluoro-1-pentanesulfonate (PFPeS)	**U**			8.95	"	"	"	"	"
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	**273**			8.95	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	**U**			8.95	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	**U**			8.95	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	**U**			8.95	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	**U**			8.95	"	"	"	"	"
N-MeFOSAA	**U**			8.95	"	"	"	"	"
N-EtFOSAA	**U**			8.95	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	**U**			8.95	"	"	"	"	"

Surogate	Result	%REC	%REC Limits	Batch	Prepared	Analyzed
D5-N-EtFOSAA	101	*79.6%*	*70-130*	"	"	"
D3-N-MeFOSAA	105	*83.1%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	95.1	*77.7%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	109	*90.4%*	*70-130*	"	"	"
perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS	89.4	*75.6%*	*70-130*	"	"	"

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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

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ITC-BB-09-20190502-11 (1905006-07) **Matrix: Water** **Sampled: May-02-19 10:55** **Received: May-03-19 10:40**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Surogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
M9PFNA	115			*91.0%*		*70-130*	*B19E018*	*May-08-19*	*May-09-19*
M8PFOSA	116			*91.4%*		*70-130*	"	"	"
M8PFOS	115			*94.8%*		*70-130*	"	"	"
M8PFOA	118			*93.7%*		*70-130*	"	"	"
M7PFUnA	106			*84.1%*		*70-130*	"	"	"
M6PFDA	109			*86.1%*		*70-130*	"	"	"
M5PFPeA	116			*91.7%*		*70-130*	"	"	"
M5PFHxA	117			*92.8%*		*70-130*	"	"	"
M4PFHpA	114			*89.9%*		*70-130*	"	"	"
M3PFHxS	115			*96.1%*		*70-130*	"	"	"
M3PFBS	109			*92.9%*		*70-130*	"	"	"
M2PFTreA	18.9	Q		*14.9%*		*70-130*	"	"	"
MPFDoA	91.8			*72.5%*		*70-130*	"	"	"
MPFBA	135			*107%*		*70-130*	"	"	"

ITC-BB-11-20190502-11 (1905006-08) **Matrix: Water** **Sampled: May-02-19 10:45** **Received: May-03-19 10:40**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorobutanoate	**U**			45.5	ng/L	1	B19E018	May-08-19	May-09-19
perfluoropentanoate	**49.6**			45.5	"	"	"	"	"
perfluorohexanoate	**37.5**			9.11	"	"	"	"	"
perfluoroheptanoate	**16.9**			9.11	"	"	"	"	"
perfluorooctanoate	**U**			9.11	"	"	"	"	"
perfluorononanoate	**U**			9.11	"	"	"	"	"
perfluorodecanoate	**U**			9.11	"	"	"	"	"
perfluoroundecanoate	**U**			9.11	"	"	"	"	"
perfluorododecanoate	**U**			9.11	"	"	"	"	"
perfluorotridecanoate	**U**			9.11	"	"	"	"	"
perfluorotetradecanoate	**U**			9.11	"	"	"	"	"
perfluorobutyl sulfonate	**U**			9.11	"	"	"	"	"
perfluorohexyl sulfonate	**14.2**			9.11	"	"	"	"	"
perfluorooctyl sulfonate	**48.7**			9.11	"	"	"	"	"
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	**U**			9.11	"	"	"	"	"

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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

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US EPA Region 5 Chicago Regional Laboratory

ITC-BB-11-20190502-11 (1905006-08) **Matrix: Water** **Sampled: May-02-19 10:45** **Received: May-03-19 10:40**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluoro-1-pentanesulfonate (PFPeS)	**U**			9.11	ng/L	1	B19E018	May-08-19	May-09-19
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	**376**			9.11	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	**U**			9.11	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	**U**			9.11	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	**U**			9.11	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	**U**			9.11	"	"	"	"	"
N-MeFOSAA	**U**			9.11	"	"	"	"	"
N-EtFOSAA	**U**			9.11	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	**U**			9.11	"	"	"	"	"

Surogate	Result	%REC	%REC Limits	Batch	Prepared	Analyzed
D5-N-EtFOSAA	101	*76.5%*	*70-130*	"	"	"
D3-N-MeFOSAA	111	*84.4%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	95.5	*75.1%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	120	*96.1%*	*70-130*	"	"	"
perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS	94.1	*76.6%*	*70-130*	"	"	"
M9PFNA	123	*93.8%*	*70-130*	"	"	"
M8PFOSA	122	*92.6%*	*70-130*	"	"	"
M8PFOS	121	*96.3%*	*70-130*	"	"	"
M8PFOA	124	*94.1%*	*70-130*	"	"	"
M7PFUnA	113	*86.0%*	*70-130*	"	"	"
M6PFDA	119	*90.3%*	*70-130*	"	"	"
M5PFPeA	124	*94.7%*	*70-130*	"	"	"
M5PFHxA	124	*94.3%*	*70-130*	"	"	"
M4PFHpA	119	*90.9%*	*70-130*	"	"	"
M3PFHxS	120	*96.7%*	*70-130*	"	"	"
M3PFBS	120	*98.6%*	*70-130*	"	"	"
M2PFTreA	21.5	Q *16.3%*	*70-130*	"	"	"
MPFDoA	99.0	*75.4%*	*70-130*	"	"	"
MPFBA	146	*111%*	*70-130*	"	"	"

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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS
US EPA Region 5 Chicago Regional Laboratory

ITC-BB-12-20190502-11 (1905006-09) **Matrix: Water** **Sampled: May-02-19 09:10** **Received: May-03-19 10:40**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorobutanoate	**U**			43.8	ng/L	1	B19E018	May-08-19	May-09-19
perfluoropentanoate	**U**			43.8	"	"	"	"	"
perfluorohexanoate	**29.2**			8.77	"	"	"	"	"
perfluoroheptanoate	**11.9**			8.77	"	"	"	"	"
perfluorooctanoate	**9.41**			8.77	"	"	"	"	"
perfluorononanoate	**U**			8.77	"	"	"	"	"
perfluorodecanoate	**U**			8.77	"	"	"	"	"
perfluoroundecanoate	**U**			8.77	"	"	"	"	"
perfluorododecanoate	**U**			8.77	"	"	"	"	"
perfluorotridecanoate	**U**			8.77	"	"	"	"	"
perfluorotetradecanoate	**U**			8.77	"	"	"	"	"
perfluorobutyl sulfonate	**U**			8.77	"	"	"	"	"
perfluorohexyl sulfonate	**11.5**			8.77	"	"	"	"	"
perfluorooctyl sulfonate	**40.5**			8.77	"	"	"	"	"
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	**U**			8.77	"	"	"	"	"
perfluoro-1-pentanesulfonate (PFPeS)	**U**			8.77	"	"	"	"	"
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	**297**			8.77	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	**U**			8.77	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	**U**			8.77	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	**U**			8.77	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	**U**			8.77	"	"	"	"	"
N-MeFOSAA	**U**			8.77	"	"	"	"	"
N-EtFOSAA	**U**			8.77	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	**U**			8.77	"	"	"	"	"

Surogate	Result	%REC	%REC Limits	Batch	Prepared	Analyzed
D5-N-EtFOSAA	95.6	*79.3%*	*70-130*	"	"	"
D3-N-MeFOSAA	102	*84.7%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	93.8	*80.4%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	106	*92.6%*	*70-130*	"	"	"
perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS	80.1	*71.1%*	*70-130*	"	"	"

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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS
US EPA Region 5 Chicago Regional Laboratory

ITC-BB-12-20190502-11 (1905006-09) **Matrix: Water** **Sampled: May-02-19 09:10** **Received: May-03-19 10:40**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Surogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
M9PFNA	109			*90.7%*		*70-130*	*B19E018*	*May-08-19*	*May-09-19*
M8PFOSA	108			*89.3%*		*70-130*	"	"	"
M8PFOS	102			*88.6%*		*70-130*	"	"	"
M8PFOA	113			*93.5%*		*70-130*	"	"	"
M7PFUnA	101			*83.7%*		*70-130*	"	"	"
M6PFDA	107			*88.6%*		*70-130*	"	"	"
M5PFPeA	111			*91.8%*		*70-130*	"	"	"
M5PFHxA	111			*92.0%*		*70-130*	"	"	"
M4PFHpA	107			*88.7%*		*70-130*	"	"	"
M3PFHxS	110			*96.7%*		*70-130*	"	"	"
M3PFBS	104			*92.6%*		*70-130*	"	"	"
M2PFTreA	7.74	Q		*6.42%*		*70-130*	"	"	"
MPFDoA	82.8	Q		*68.7%*		*70-130*	"	"	"
MPFBA	128			*106%*		*70-130*	"	"	"

ITC-BB-12-20190502-12 (1905006-10) **Matrix: Water** **Sampled: May-02-19 09:10** **Received: May-03-19 10:40**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorobutanoate	**U**			47.5	ng/L	1	B19E018	May-08-19	May-09-19
perfluoropentanoate	**U**			47.5	"	"	"	"	"
perfluorohexanoate	**27.0**			9.49	"	"	"	"	"
perfluoroheptanoate	**9.73**			9.49	"	"	"	"	"
perfluorooctanoate	**U**			9.49	"	"	"	"	"
perfluorononanoate	**U**			9.49	"	"	"	"	"
perfluorodecanoate	**U**			9.49	"	"	"	"	"
perfluoroundecanoate	**U**			9.49	"	"	"	"	"
perfluorododecanoate	**U**			9.49	"	"	"	"	"
perfluorotridecanoate	**U**			9.49	"	"	"	"	"
perfluorotetradecanoate	**U**			9.49	"	"	"	"	"
perfluorobutyl sulfonate	**U**			9.49	"	"	"	"	"
perfluorohexyl sulfonate	**11.9**			9.49	"	"	"	"	"
perfluorooctyl sulfonate	**34.0**			9.49	"	"	"	"	"
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	**U**			9.49	"	"	"	"	"

Environmental Protection Agency Region 5
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536 South Clark Street, Chicago, IL 60605
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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS
US EPA Region 5 Chicago Regional Laboratory

ITC-BB-12-20190502-12 (1905006-10) **Matrix: Water** **Sampled: May-02-19 09:10** **Received: May-03-19 10:40**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluoro-1-pentanesulfonate (PFPeS)	**U**			9.49	ng/L	1	B19E018	May-08-19	May-09-19
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	**285**			9.49	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	**U**			9.49	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	**U**			9.49	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	**U**			9.49	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	**U**			9.49	"	"	"	"	"
N-MeFOSAA	**U**			9.49	"	"	"	"	"
N-EtFOSAA	**U**			9.49	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	**U**			9.49	"	"	"	"	"

Surogate	Result	%REC	%REC Limits	Batch	Prepared	Analyzed
D5-N-EtFOSAA	110	*76.4%*	*70-130*	"	"	"
D3-N-MeFOSAA	121	*84.1%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	107	*77.1%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	118	*86.8%*	*70-130*	"	"	"
perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS	93.7 Q	*69.7%*	*70-130*	"	"	"
M9PFNA	128	*89.0%*	*70-130*	"	"	"
M8PFOSA	121	*84.0%*	*70-130*	"	"	"
M8PFOS	116	*84.7%*	*70-130*	"	"	"
M8PFOA	126	*87.5%*	*70-130*	"	"	"
M7PFUnA	125	*86.8%*	*70-130*	"	"	"
M6PFDA	126	*87.8%*	*70-130*	"	"	"
M5PFPeA	123	*85.5%*	*70-130*	"	"	"
M5PFHxA	117	*81.3%*	*70-130*	"	"	"
M4PFHpA	116	*80.5%*	*70-130*	"	"	"
M3PFHxS	116	*85.2%*	*70-130*	"	"	"
M3PFBS	114	*85.6%*	*70-130*	"	"	"
M2PFTreA	66.1 Q	*46.0%*	*70-130*	"	"	"
MPFDoA	112	*77.6%*	*70-130*	"	"	"
MPFBA	138	*96.2%*	*70-130*	"	"	"

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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS
US EPA Region 5 Chicago Regional Laboratory

ITC-TB-04-20190502-11 (1905006-11) **Matrix: Water** **Sampled: May-02-19 15:05** **Received: May-03-19 10:40**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorobutanoate	**1700**			45.7	ng/L	1	B19E018	May-08-19	May-09-19
perfluoropentanoate	**1260**			45.7	"	"	"	"	"
perfluorohexanoate	**54500**			9.14	"	"	"	"	"
perfluoroheptanoate	**859**			9.14	"	"	"	"	"
perfluorooctanoate	**82.6**			9.14	"	"	"	"	"
perfluorononanoate	**U**			9.14	"	"	"	"	"
perfluorodecanoate	**U**			9.14	"	"	"	"	"
perfluoroundecanoate	**U**			9.14	"	"	"	"	"
perfluorododecanoate	**U**			9.14	"	"	"	"	"
perfluorotridecanoate	**U**			9.14	"	"	"	"	"
perfluorotetradecanoate	**U**			9.14	"	"	"	"	"
perfluorobutyl sulfonate	**181**			9.14	"	"	"	"	"
perfluorohexyl sulfonate	**224**			9.14	"	"	"	"	"
perfluorooctyl sulfonate	**219**			9.14	"	"	"	"	"
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	**80.9**			9.14	"	"	"	"	"
perfluoro-1-pentanesulfonate (PFPeS)	**93.3**			9.14	"	"	"	"	"
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	**14500**			9.14	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	**U**			9.14	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	**U**			9.14	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	**22.4**			9.14	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	**U**			9.14	"	"	"	"	"
N-MeFOSAA	**U**			9.14	"	"	"	"	"
N-EtFOSAA	**U**			9.14	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	**U**			9.14	"	"	"	"	"

Surogate	Result		%REC	%REC Limits	Batch	Prepared	Analyzed
D5-N-EtFOSAA	79.5	Q	*60.0%*	*70-130*	"	"	"
D3-N-MeFOSAA	90.7	Q	*68.4%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	107		*83.3%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	1510	Q	*1200%*	*70-130*	"	"	"
perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS	97.7		*78.9%*	*70-130*	"	"	"

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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS
US EPA Region 5 Chicago Regional Laboratory

ITC-TB-04-20190502-11 (1905006-11) **Matrix: Water** **Sampled: May-02-19 15:05** **Received: May-03-19 10:40**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Surogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
M9PFNA	119			*89.6%*		*70-130*	*B19E018*	*May-08-19*	*May-09-19*
M8PFOSA	96.1			*72.5%*		*70-130*	"	"	"
M8PFOS	111			*87.2%*		*70-130*	"	"	"
M8PFOA	118			*89.4%*		*70-130*	"	"	"
M7PFUnA	110			*82.9%*		*70-130*	"	"	"
M6PFDA	117			*88.4%*		*70-130*	"	"	"
M5PFPeA	118			*88.9%*		*70-130*	"	"	"
M5PFHxA	66.9	Q		*50.5%*		*70-130*	"	"	"
M4PFHpA	110			*83.1%*		*70-130*	"	"	"
M3PFHxS	119			*95.0%*		*70-130*	"	"	"
M3PFBS	115			*93.3%*		*70-130*	"	"	"
M2PFTreA	29.9	Q		*22.5%*		*70-130*	"	"	"
MPFDoA	94.2			*71.1%*		*70-130*	"	"	"
MPFBA	135			*102%*		*70-130*	"	"	"

ITC-TB-05-20190502-11 (1905006-12) **Matrix: Water** **Sampled: May-02-19 15:20** **Received: May-03-19 10:40**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorobutanoate	**U**			44.4	ng/L	1	B19E018	May-08-19	May-09-19
perfluoropentanoate	**63.3**			44.4	"	"	"	"	"
perfluorohexanoate	**59.3**			8.88	"	"	"	"	"
perfluoroheptanoate	**19.2**			8.88	"	"	"	"	"
perfluorooctanoate	**15.4**			8.88	"	"	"	"	"
perfluorononanoate	**U**			8.88	"	"	"	"	"
perfluorodecanoate	**U**			8.88	"	"	"	"	"
perfluoroundecanoate	**U**			8.88	"	"	"	"	"
perfluorododecanoate	**U**			8.88	"	"	"	"	"
perfluorotridecanoate	**U**			8.88	"	"	"	"	"
perfluorotetradecanoate	**U**			8.88	"	"	"	"	"
perfluorobutyl sulfonate	**18.4**			8.88	"	"	"	"	"
perfluorohexyl sulfonate	**31.6**			8.88	"	"	"	"	"
perfluorooctyl sulfonate	**1110**			8.88	"	"	"	"	"
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	**U**			8.88	"	"	"	"	"

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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS
US EPA Region 5 Chicago Regional Laboratory

ITC-TB-05-20190502-11 (1905006-12) **Matrix: Water** **Sampled: May-02-19 15:20** **Received: May-03-19 10:40**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluoro-1-pentanesulfonate (PFPeS)	**U**			8.88	ng/L	1	B19E018	May-08-19	May-09-19
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	**502**			8.88	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	**9.48**			8.88	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	**U**			8.88	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	**72.0**			8.88	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	**U**			8.88	"	"	"	"	"
N-MeFOSAA	**U**			8.88	"	"	"	"	"
N-EtFOSAA	**U**			8.88	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	**U**			8.88	"	"	"	"	"

Surogate	Result		%REC	%REC Limits	Batch	Prepared	Analyzed
D5-N-EtFOSAA	66.7	Q	*53.7%*	*70-130*	"	"	"
D3-N-MeFOSAA	68.9	Q	*55.5%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	88.6		*73.7%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	114		*96.5%*	*70-130*	"	"	"
perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS	83.1		*71.6%*	*70-130*	"	"	"
M9PFNA	94.0		*75.7%*	*70-130*	"	"	"
M8PFOSA	56.9	Q	*45.8%*	*70-130*	"	"	"
M8PFOS	75.0	Q	*63.1%*	*70-130*	"	"	"
M8PFOA	96.9		*78.1%*	*70-130*	"	"	"
M7PFUnA	68.0	Q	*54.8%*	*70-130*	"	"	"
M6PFDA	87.0		*70.1%*	*70-130*	"	"	"
M5PFPeA	91.9		*74.0%*	*70-130*	"	"	"
M5PFHxA	92.4		*74.4%*	*70-130*	"	"	"
M4PFHpA	94.9		*76.5%*	*70-130*	"	"	"
M3PFHxS	86.5		*73.6%*	*70-130*	"	"	"
M3PFBS	82.6		*71.7%*	*70-130*	"	"	"
M2PFTreA	0.504	Q	*0.406%*	*70-130*	"	"	"
MPFDoA	38.6	Q	*31.1%*	*70-130*	"	"	"
MPFBA	101		*81.0%*	*70-130*	"	"	"

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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS
US EPA Region 5 Chicago Regional Laboratory

ITC-TB-04-20190503-11 (1905009-01) **Matrix: Water** **Sampled: May-03-19 11:25** **Received: May-07-19 10:45**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorobutanoate	**295**			43.8	ng/L	1	B19E015	May-08-19	May-09-19
perfluoropentanoate	**169**			43.8	"	"	"	"	"
perfluorohexanoate	**2510**			8.77	"	"	"	"	"
perfluoroheptanoate	**84.9**			8.77	"	"	"	"	"
perfluorooctanoate	**12.0**			8.77	"	"	"	"	"
perfluorononanoate	**U**			8.77	"	"	"	"	"
perfluorodecanoate	**U**			8.77	"	"	"	"	"
perfluoroundecanoate	**U**			8.77	"	"	"	"	"
perfluorododecanoate	**U**			8.77	"	"	"	"	"
perfluorotridecanoate	**U**			8.77	"	"	"	"	"
perfluorotetradecanoate	**U**			8.77	"	"	"	"	"
perfluorobutyl sulfonate	**30.4**			8.77	"	"	"	"	"
perfluorohexyl sulfonate	**66.0**			8.77	"	"	"	"	"
perfluorooctyl sulfonate	**193**			8.77	"	"	"	"	"
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	**U**			8.77	"	"	"	"	"
perfluoro-1-pentanesulfonate (PFPeS)	**15.6**			8.77	"	"	"	"	"
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	**2590**			8.77	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	**U**			8.77	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	**U**			8.77	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	**9.79**			8.77	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	**U**			8.77	"	"	"	"	"
N-MeFOSAA	**U**			8.77	"	"	"	"	"
N-EtFOSAA	**U**			8.77	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	**U**			8.77	"	"	"	"	"

Surogate	Result		%REC	%REC Limits	Batch	Prepared	Analyzed
D5-N-EtFOSAA	103		*85.8%*	*70-130*	"	"	"
D3-N-MeFOSAA	110		*91.5%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	100		*86.1%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	245	Q	*214%*	*70-130*	"	"	"
perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS	104		*92.0%*	*70-130*	"	"	"

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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS
US EPA Region 5 Chicago Regional Laboratory

ITC-TB-04-20190503-11 (1905009-01) **Matrix: Water** **Sampled: May-03-19 11:25** **Received: May-07-19 10:45**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Surogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
M9PFNA	116			*96.0%*		*70-130*	*B19E015*	*May-08-19*	*May-09-19*
M8PFOSA	104			*86.4%*		*70-130*	"	"	"
M8PFOS	107			*92.7%*		*70-130*	"	"	"
M8PFOA	116			*95.8%*		*70-130*	"	"	"
M7PFUnA	105			*87.4%*		*70-130*	"	"	"
M6PFDA	109			*90.3%*		*70-130*	"	"	"
M5PFPeA	127			*105%*		*70-130*	"	"	"
M5PFHxA	114			*94.5%*		*70-130*	"	"	"
M4PFHpA	121			*100%*		*70-130*	"	"	"
M3PFHxS	114			*100%*		*70-130*	"	"	"
M3PFBS	110			*98.0%*		*70-130*	"	"	"
M2PFTreA	27.4	Q		*22.8%*		*70-130*	"	"	"
MPFDoA	96.0			*79.7%*		*70-130*	"	"	"
MPFBA	132			*109%*		*70-130*	"	"	"

ITC-TB-05-20190503-11 (1905009-02) **Matrix: Water** **Sampled: May-03-19 11:10** **Received: May-07-19 10:45**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorobutanoate	**U**			43.5	ng/L	1	B19E015	May-08-19	May-09-19
perfluoropentanoate	**U**			43.5	"	"	"	"	"
perfluorohexanoate	**25.7**			8.70	"	"	"	"	"
perfluoroheptanoate	**8.99**			8.70	"	"	"	"	"
perfluorooctanoate	**U**			8.70	"	"	"	"	"
perfluorononanoate	**U**			8.70	"	"	"	"	"
perfluorodecanoate	**U**			8.70	"	"	"	"	"
perfluoroundecanoate	**U**			8.70	"	"	"	"	"
perfluorododecanoate	**U**			8.70	"	"	"	"	"
perfluorotridecanoate	**U**			8.70	"	"	"	"	"
perfluorotetradecanoate	**U**			8.70	"	"	"	"	"
perfluorobutyl sulfonate	**15.1**			8.70	"	"	"	"	"
perfluorohexyl sulfonate	**20.1**			8.70	"	"	"	"	"
perfluorooctyl sulfonate	**46.5**			8.70	"	"	"	"	"
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	**U**			8.70	"	"	"	"	"

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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS
US EPA Region 5 Chicago Regional Laboratory

ITC-TB-05-20190503-11 (1905009-02) **Matrix: Water** **Sampled: May-03-19 11:10** **Received: May-07-19 10:45**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluoro-1-pentanesulfonate (PFPeS)	**U**			8.70	ng/L	1	B19E015	May-08-19	May-09-19
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	**65.2**			8.70	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	**U**			8.70	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	**U**			8.70	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	**U**			8.70	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	**U**			8.70	"	"	"	"	"
N-MeFOSAA	**U**			8.70	"	"	"	"	"
N-EtFOSAA	**U**			8.70	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	**U**			8.70	"	"	"	"	"

Surogate	Result		%REC	%REC Limits	Batch	Prepared	Analyzed
D5-N-EtFOSAA	80.0	Q	*67.5%*	*70-130*	"	"	"
D3-N-MeFOSAA	87.2		*73.6%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	95.8		*83.6%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	108		*96.5%*	*70-130*	"	"	"
perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS	107		*96.8%*	*70-130*	"	"	"
M9PFNA	116		*98.2%*	*70-130*	"	"	"
M8PFOSA	79.0	Q	*66.7%*	*70-130*	"	"	"
M8PFOS	102		*89.6%*	*70-130*	"	"	"
M8PFOA	118		*99.4%*	*70-130*	"	"	"
M7PFUnA	98.4		*83.1%*	*70-130*	"	"	"
M6PFDA	110		*92.8%*	*70-130*	"	"	"
M5PFPeA	130		*110%*	*70-130*	"	"	"
M5PFHxA	122		*103%*	*70-130*	"	"	"
M4PFHpA	124		*104%*	*70-130*	"	"	"
M3PFHxS	117		*104%*	*70-130*	"	"	"
M3PFBS	115		*105%*	*70-130*	"	"	"
M2PFTreA	10.1	Q	*8.52%*	*70-130*	"	"	"
MPFDoA	78.4	Q	*66.1%*	*70-130*	"	"	"
MPFBA	133		*112%*	*70-130*	"	"	"

Environmental Protection Agency Region 5
Chicago Regional Laboratory
536 South Clark Street, Chicago, IL 60605
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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS
US EPA Region 5 Chicago Regional Laboratory

ITC-BB-01-20190503-11 (1905009-03) **Matrix: Water** **Sampled: May-03-19 08:55** **Received: May-07-19 10:45**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorobutanoate	**U**			44.7	ng/L	1	B19E015	May-08-19	May-09-19
perfluoropentanoate	**U**			44.7	"	"	"	"	"
perfluorohexanoate	**36.2**			8.94	"	"	"	"	"
perfluoroheptanoate	**15.7**			8.94	"	"	"	"	"
perfluorooctanoate	**U**			8.94	"	"	"	"	"
perfluorononanoate	**U**			8.94	"	"	"	"	"
perfluorodecanoate	**U**			8.94	"	"	"	"	"
perfluoroundecanoate	**U**			8.94	"	"	"	"	"
perfluorododecanoate	**U**			8.94	"	"	"	"	"
perfluorotridecanoate	**U**			8.94	"	"	"	"	"
perfluorotetradecanoate	**U**			8.94	"	"	"	"	"
perfluorobutyl sulfonate	**U**			8.94	"	"	"	"	"
perfluorohexyl sulfonate	**14.1**			8.94	"	"	"	"	"
perfluorooctyl sulfonate	**41.4**			8.94	"	"	"	"	"
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	**U**			8.94	"	"	"	"	"
perfluoro-1-pentanesulfonate (PFPeS)	**U**			8.94	"	"	"	"	"
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	**373**			8.94	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	**U**			8.94	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	**U**			8.94	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	**U**			8.94	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	**U**			8.94	"	"	"	"	"
N-MeFOSAA	**U**			8.94	"	"	"	"	"
N-EtFOSAA	**U**			8.94	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	**U**			8.94	"	"	"	"	"

Surogate	Result	%REC	%REC Limits	Batch	Prepared	Analyzed
D5-N-EtFOSAA	95.1	*75.4%*	*70-130*	"	"	"
D3-N-MeFOSAA	99.0	*78.5%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	91.0	*74.5%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	118	*98.8%*	*70-130*	"	"	"
perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS	96.9	*82.2%*	*70-130*	"	"	"

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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS
US EPA Region 5 Chicago Regional Laboratory

ITC-BB-01-20190503-11 (1905009-03) **Matrix: Water** **Sampled: May-03-19 08:55** **Received: May-07-19 10:45**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Surogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
M9PFNA	115			*91.1%*		*70-130*	*B19E015*	*May-08-19*	*May-09-19*
M8PFOSA	102			*81.0%*		*70-130*	"	"	"
M8PFOS	106			*87.8%*		*70-130*	"	"	"
M8PFOA	115			*91.5%*		*70-130*	"	"	"
M7PFUnA	102			*80.5%*		*70-130*	"	"	"
M6PFDA	105			*83.4%*		*70-130*	"	"	"
M5PFPeA	128			*102%*		*70-130*	"	"	"
M5PFHxA	121			*95.6%*		*70-130*	"	"	"
M4PFHpA	122			*96.9%*		*70-130*	"	"	"
M3PFHxS	113			*95.1%*		*70-130*	"	"	"
M3PFBS	112			*95.7%*		*70-130*	"	"	"
M2PFTreA	23.5	Q		*18.7%*		*70-130*	"	"	"
MPFDoA	92.9			*73.7%*		*70-130*	"	"	"
MPFBA	137			*109%*		*70-130*	"	"	"

ITC-BB-01-20190503-12 (1905009-04) **Matrix: Water** **Sampled: May-03-19 08:55** **Received: May-07-19 10:45**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorobutanoate	**U**			43.8	ng/L	1	B19E015	May-08-19	May-09-19
perfluoropentanoate	**U**			43.8	"	"	"	"	"
perfluorohexanoate	**36.1**			8.77	"	"	"	"	"
perfluoroheptanoate	**16.6**			8.77	"	"	"	"	"
perfluorooctanoate	**U**			8.77	"	"	"	"	"
perfluorononanoate	**U**			8.77	"	"	"	"	"
perfluorodecanoate	**U**			8.77	"	"	"	"	"
perfluoroundecanoate	**U**			8.77	"	"	"	"	"
perfluorododecanoate	**U**			8.77	"	"	"	"	"
perfluorotridecanoate	**U**			8.77	"	"	"	"	"
perfluorotetradecanoate	**U**			8.77	"	"	"	"	"
perfluorobutyl sulfonate	**U**			8.77	"	"	"	"	"
perfluorohexyl sulfonate	**13.6**			8.77	"	"	"	"	"
perfluorooctyl sulfonate	**44.9**			8.77	"	"	"	"	"
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	**U**			8.77	"	"	"	"	"

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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS
US EPA Region 5 Chicago Regional Laboratory

ITC-BB-01-20190503-12 (1905009-04) **Matrix: Water** **Sampled: May-03-19 08:55** **Received: May-07-19 10:45**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluoro-1-pentanesulfonate (PFPeS)	**U**			8.77	ng/L	1	B19E015	May-08-19	May-09-19
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	**355**			8.77	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	**U**			8.77	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	**U**			8.77	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	**U**			8.77	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	**U**			8.77	"	"	"	"	"
N-MeFOSAA	**U**			8.77	"	"	"	"	"
N-EtFOSAA	**U**			8.77	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	**U**			8.77	"	"	"	"	"

Surogate	Result		%REC	%REC Limits	Batch	Prepared	Analyzed
D5-N-EtFOSAA	75.9	Q	*63.0%*	*70-130*	"	"	"
D3-N-MeFOSAA	81.5	Q	*67.6%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	73.2	Q	*62.7%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	97.7		*85.4%*	*70-130*	"	"	"
perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS	80.5		*71.4%*	*70-130*	"	"	"
M9PFNA	93.7		*77.7%*	*70-130*	"	"	"
M8PFOSA	87.7		*72.7%*	*70-130*	"	"	"
M8PFOS	87.3		*75.7%*	*70-130*	"	"	"
M8PFOA	95.5		*79.2%*	*70-130*	"	"	"
M7PFUnA	82.1	Q	*68.1%*	*70-130*	"	"	"
M6PFDA	86.7		*71.9%*	*70-130*	"	"	"
M5PFPeA	111		*92.4%*	*70-130*	"	"	"
M5PFHxA	102		*84.7%*	*70-130*	"	"	"
M4PFHpA	104		*86.0%*	*70-130*	"	"	"
M3PFHxS	96.5		*84.6%*	*70-130*	"	"	"
M3PFBS	89.7		*80.1%*	*70-130*	"	"	"
M2PFTreA	15.9	Q	*13.2%*	*70-130*	"	"	"
MPFDoA	74.0	Q	*61.4%*	*70-130*	"	"	"
MPFBA	117		*96.7%*	*70-130*	"	"	"

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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS
US EPA Region 5 Chicago Regional Laboratory

ITC-BB-02-20190503-11 (1905009-05) **Matrix: Water** **Sampled: May-03-19 09:10** **Received: May-07-19 10:45**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorobutanoate	**U**			46.5	ng/L	1	B19E015	May-08-19	May-09-19
perfluoropentanoate	**U**			46.5	"	"	"	"	"
perfluorohexanoate	**36.7**			9.29	"	"	"	"	"
perfluoroheptanoate	**16.7**			9.29	"	"	"	"	"
perfluorooctanoate	**U**			9.29	"	"	"	"	"
perfluorononanoate	**11.9**			9.29	"	"	"	"	"
perfluorodecanoate	**U**			9.29	"	"	"	"	"
perfluoroundecanoate	**U**			9.29	"	"	"	"	"
perfluorododecanoate	**U**			9.29	"	"	"	"	"
perfluorotridecanoate	**U**			9.29	"	"	"	"	"
perfluorotetradecanoate	**U**			9.29	"	"	"	"	"
perfluorobutyl sulfonate	**U**			9.29	"	"	"	"	"
perfluorohexyl sulfonate	**13.0**			9.29	"	"	"	"	"
perfluorooctyl sulfonate	**46.7**			9.29	"	"	"	"	"
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	**U**			9.29	"	"	"	"	"
perfluoro-1-pentanesulfonate (PFPeS)	**U**			9.29	"	"	"	"	"
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	**376**			9.29	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	**U**			9.29	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	**U**			9.29	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	**U**			9.29	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	**U**			9.29	"	"	"	"	"
N-MeFOSAA	**U**			9.29	"	"	"	"	"
N-EtFOSAA	**U**			9.29	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	**U**			9.29	"	"	"	"	"

Surogate	Result	%REC	%REC Limits	Batch	Prepared	Analyzed
D5-N-EtFOSAA	107	*77.7%*	*70-130*	"	"	"
D3-N-MeFOSAA	114	*82.7%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	105	*79.3%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	128	*98.5%*	*70-130*	"	"	"
perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS	111	*86.6%*	*70-130*	"	"	"

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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS
US EPA Region 5 Chicago Regional Laboratory

ITC-BB-02-20190503-11 (1905009-05) **Matrix: Water** **Sampled: May-03-19 09:10** **Received: May-07-19 10:45**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Surogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
M9PFNA	129			*93.6%*		*70-130*	*B19E015*	*May-08-19*	*May-09-19*
M8PFOSA	121			*87.8%*		*70-130*	"	"	"
M8PFOS	117			*89.2%*		*70-130*	"	"	"
M8PFOA	128			*93.2%*		*70-130*	"	"	"
M7PFUnA	113			*82.2%*		*70-130*	"	"	"
M6PFDA	116			*84.7%*		*70-130*	"	"	"
M5PFPeA	147			*107%*		*70-130*	"	"	"
M5PFHxA	133			*97.1%*		*70-130*	"	"	"
M4PFHpA	138			*101%*		*70-130*	"	"	"
M3PFHxS	127			*97.6%*		*70-130*	"	"	"
M3PFBS	118			*92.6%*		*70-130*	"	"	"
M2PFTreA	45.0	Q		*32.8%*		*70-130*	"	"	"
MPFDoA	109			*79.3%*		*70-130*	"	"	"
MPFBA	151			*110%*		*70-130*	"	"	"

ITC-BB-02-20190503-15 (1905009-06) **Matrix: Water** **Sampled: May-03-19 09:15** **Received: May-07-19 10:45**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorobutanoate	**U**			45.4	ng/L	1	B19E015	May-08-19	May-09-19
perfluoropentanoate	**U**			45.4	"	"	"	"	"
perfluorohexanoate	**U**			9.09	"	"	"	"	"
perfluoroheptanoate	**U**			9.09	"	"	"	"	"
perfluorooctanoate	**U**			9.09	"	"	"	"	"
perfluorononanoate	**U**			9.09	"	"	"	"	"
perfluorodecanoate	**U**			9.09	"	"	"	"	"
perfluoroundecanoate	**U**			9.09	"	"	"	"	"
perfluorododecanoate	**U**			9.09	"	"	"	"	"
perfluorotridecanoate	**U**			9.09	"	"	"	"	"
perfluorotetradecanoate	**U**			9.09	"	"	"	"	"
perfluorobutyl sulfonate	**U**			9.09	"	"	"	"	"
perfluorohexyl sulfonate	**U**			9.09	"	"	"	"	"
perfluorooctyl sulfonate	**U**			9.09	"	"	"	"	"
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	**U**			9.09	"	"	"	"	"

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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS
US EPA Region 5 Chicago Regional Laboratory

ITC-BB-02-20190503-15 (1905009-06) **Matrix: Water** **Sampled: May-03-19 09:15** **Received: May-07-19 10:45**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluoro-1-pentanesulfonate (PFPeS)	**U**			9.09	ng/L	1	B19E015	May-08-19	May-09-19
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	**U**			9.09	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	**U**			9.09	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	**U**			9.09	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	**U**			9.09	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	**U**			9.09	"	"	"	"	"
N-MeFOSAA	**U**			9.09	"	"	"	"	"
N-EtFOSAA	**U**			9.09	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	**U**			9.09	"	"	"	"	"

Surogate	Result	%REC	%REC Limits	Batch	Prepared	Analyzed
D5-N-EtFOSAA	106	*80.8%*	*70-130*	"	"	"
D3-N-MeFOSAA	104	*79.9%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	107	*84.5%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	115	*92.4%*	*70-130*	"	"	"
perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS	117	*95.7%*	*70-130*	"	"	"
M9PFNA	125	*95.6%*	*70-130*	"	"	"
M8PFOSA	115	*88.1%*	*70-130*	"	"	"
M8PFOS	120	*95.8%*	*70-130*	"	"	"
M8PFOA	127	*97.2%*	*70-130*	"	"	"
M7PFUnA	115	*87.6%*	*70-130*	"	"	"
M6PFDA	115	*88.0%*	*70-130*	"	"	"
M5PFPeA	142	*109%*	*70-130*	"	"	"
M5PFHxA	130	*99.2%*	*70-130*	"	"	"
M4PFHpA	133	*102%*	*70-130*	"	"	"
M3PFHxS	123	*99.3%*	*70-130*	"	"	"
M3PFBS	117	*96.0%*	*70-130*	"	"	"
M2PFTreA	63.2	Q *48.3%*	*70-130*	"	"	"
MPFDoA	111	*84.8%*	*70-130*	"	"	"
MPFBA	148	*113%*	*70-130*	"	"	"

Environmental Protection Agency Region 5
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536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS
US EPA Region 5 Chicago Regional Laboratory

ITC-BB-03-20190503-11 (1905009-07) **Matrix: Water** **Sampled: May-03-19 09:20** **Received: May-07-19 10:45**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorobutanoate	**U**			45.8	ng/L	1	B19E015	May-08-19	May-09-19
perfluoropentanoate	**U**			45.8	"	"	"	"	"
perfluorohexanoate	**36.8**			9.16	"	"	"	"	"
perfluoroheptanoate	**17.1**			9.16	"	"	"	"	"
perfluorooctanoate	**U**			9.16	"	"	"	"	"
perfluorononanoate	**U**			9.16	"	"	"	"	"
perfluorodecanoate	**U**			9.16	"	"	"	"	"
perfluoroundecanoate	**U**			9.16	"	"	"	"	"
perfluorododecanoate	**U**			9.16	"	"	"	"	"
perfluorotridecanoate	**U**			9.16	"	"	"	"	"
perfluorotetradecanoate	**U**			9.16	"	"	"	"	"
perfluorobutyl sulfonate	**U**			9.16	"	"	"	"	"
perfluorohexyl sulfonate	**12.7**			9.16	"	"	"	"	"
perfluorooctyl sulfonate	**39.9**			9.16	"	"	"	"	"
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	**U**			9.16	"	"	"	"	"
perfluoro-1-pentanesulfonate (PFPeS)	**U**			9.16	"	"	"	"	"
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	**349**			9.16	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	**U**			9.16	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	**U**			9.16	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	**U**			9.16	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	**U**			9.16	"	"	"	"	"
N-MeFOSAA	**U**			9.16	"	"	"	"	"
N-EtFOSAA	**U**			9.16	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	**U**			9.16	"	"	"	"	"

Surogate	Result		%REC	%REC Limits	Batch	Prepared	Analyzed
D5-N-EtFOSAA	89.4	Q	*67.2%*	*70-130*	"	"	"
D3-N-MeFOSAA	97.7		*73.4%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	84.6	Q	*65.7%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	112		*88.8%*	*70-130*	"	"	"
perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS	97.9		*78.7%*	*70-130*	"	"	"

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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS
US EPA Region 5 Chicago Regional Laboratory

ITC-BB-03-20190503-11 (1905009-07) **Matrix: Water** **Sampled: May-03-19 09:20** **Received: May-07-19 10:45**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Surogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
M9PFNA	114			*85.8%*		*70-130*	*B19E015*	*May-08-19*	*May-09-19*
M8PFOSA	98.8			*74.3%*		*70-130*	"	"	"
M8PFOS	102			*80.2%*		*70-130*	"	"	"
M8PFOA	114			*85.6%*		*70-130*	"	"	"
M7PFUnA	97.8			*73.5%*		*70-130*	"	"	"
M6PFDA	103			*77.3%*		*70-130*	"	"	"
M5PFPeA	129			*96.7%*		*70-130*	"	"	"
M5PFHxA	120			*90.0%*		*70-130*	"	"	"
M4PFHpA	122			*92.1%*		*70-130*	"	"	"
M3PFHxS	113			*89.5%*		*70-130*	"	"	"
M3PFBS	107			*86.3%*		*70-130*	"	"	"
M2PFTreA	28.8	Q		*21.6%*		*70-130*	"	"	"
MPFDoA	92.3	Q		*69.4%*		*70-130*	"	"	"
MPFBA	140			*105%*		*70-130*	"	"	"

ITC-BB-05-20190503-11 (1905009-08) **Matrix: Water** **Sampled: May-03-19 09:40** **Received: May-07-19 10:45**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorobutanoate	**U**			51.3	ng/L	1	B19E015	May-08-19	May-09-19
perfluoropentanoate	**U**			51.3	"	"	"	"	"
perfluorohexanoate	**36.4**			10.3	"	"	"	"	"
perfluoroheptanoate	**17.2**			10.3	"	"	"	"	"
perfluorooctanoate	**U**			10.3	"	"	"	"	"
perfluorononanoate	**75.1**			10.3	"	"	"	"	"
perfluorodecanoate	**U**			10.3	"	"	"	"	"
perfluoroundecanoate	**U**			10.3	"	"	"	"	"
perfluorododecanoate	**U**			10.3	"	"	"	"	"
perfluorotridecanoate	**U**			10.3	"	"	"	"	"
perfluorotetradecanoate	**U**			10.3	"	"	"	"	"
perfluorobutyl sulfonate	**U**			10.3	"	"	"	"	"
perfluorohexyl sulfonate	**12.7**			10.3	"	"	"	"	"
perfluorooctyl sulfonate	**54.9**			10.3	"	"	"	"	"
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	**U**			10.3	"	"	"	"	"

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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS
US EPA Region 5 Chicago Regional Laboratory

ITC-BB-05-20190503-11 (1905009-08) **Matrix: Water** **Sampled: May-03-19 09:40** **Received: May-07-19 10:45**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluoro-1-pentanesulfonate (PFPeS)	**U**			10.3	ng/L	1	B19E015	May-08-19	May-09-19
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	**365**			10.3	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	**U**			10.3	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	**U**			10.3	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	**U**			10.3	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	**U**			10.3	"	"	"	"	"
N-MeFOSAA	**U**			10.3	"	"	"	"	"
N-EtFOSAA	**U**			10.3	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	**U**			10.3	"	"	"	"	"

Surogate	Result	%REC	%REC Limits	Batch	Prepared	Analyzed
D5-N-EtFOSAA	132	*78.1%*	*70-130*	"	"	"
D3-N-MeFOSAA	140	*83.0%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	134	*82.5%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	158	*99.0%*	*70-130*	"	"	"
perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS	133	*84.3%*	*70-130*	"	"	"
M9PFNA	162	*96.1%*	*70-130*	"	"	"
M8PFOSA	140	*83.0%*	*70-130*	"	"	"
M8PFOS	151	*93.5%*	*70-130*	"	"	"
M8PFOA	160	*95.2%*	*70-130*	"	"	"
M7PFUnA	143	*84.7%*	*70-130*	"	"	"
M6PFDA	149	*88.3%*	*70-130*	"	"	"
M5PFPeA	182	*108%*	*70-130*	"	"	"
M5PFHxA	165	*97.8%*	*70-130*	"	"	"
M4PFHpA	175	*104%*	*70-130*	"	"	"
M3PFHxS	157	*98.4%*	*70-130*	"	"	"
M3PFBS	145	*92.8%*	*70-130*	"	"	"
M2PFTreA	103	Q *61.1%*	*70-130*	"	"	"
MPFDoA	145	*86.3%*	*70-130*	"	"	"
MPFBA	180	*107%*	*70-130*	"	"	"

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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS
US EPA Region 5 Chicago Regional Laboratory

ITC-BB-07-20190503-11 (1905009-09) **Matrix: Water** **Sampled: May-03-19 10:15** **Received: May-07-19 10:45**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorobutanoate	**U**			45.4	ng/L	1	B19E015	May-08-19	May-09-19
perfluoropentanoate	**47.3**			45.4	"	"	"	"	"
perfluorohexanoate	**41.4**			9.08	"	"	"	"	"
perfluoroheptanoate	**19.2**			9.08	"	"	"	"	"
perfluorooctanoate	**U**			9.08	"	"	"	"	"
perfluorononanoate	**U**			9.08	"	"	"	"	"
perfluorodecanoate	**U**			9.08	"	"	"	"	"
perfluoroundecanoate	**U**			9.08	"	"	"	"	"
perfluorododecanoate	**U**			9.08	"	"	"	"	"
perfluorotridecanoate	**U**			9.08	"	"	"	"	"
perfluorotetradecanoate	**U**			9.08	"	"	"	"	"
perfluorobutyl sulfonate	**U**			9.08	"	"	"	"	"
perfluorohexyl sulfonate	**14.1**			9.08	"	"	"	"	"
perfluorooctyl sulfonate	**46.7**			9.08	"	"	"	"	"
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	**U**			9.08	"	"	"	"	"
perfluoro-1-pentanesulfonate (PFPeS)	**U**			9.08	"	"	"	"	"
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	**382**			9.08	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	**U**			9.08	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	**U**			9.08	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	**U**			9.08	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	**U**			9.08	"	"	"	"	"
N-MeFOSAA	**U**			9.08	"	"	"	"	"
N-EtFOSAA	**U**			9.08	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	**U**			9.08	"	"	"	"	"

Surogate	Result	%REC	%REC Limits	Batch	Prepared	Analyzed
D5-N-EtFOSAA	92.2	*70.6%*	*70-130*	"	"	"
D3-N-MeFOSAA	98.3	*75.3%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	89.3	*70.6%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	116	*93.8%*	*70-130*	"	"	"
perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS	96.8	*79.3%*	*70-130*	"	"	"

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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS
US EPA Region 5 Chicago Regional Laboratory

ITC-BB-07-20190503-11 (1905009-09) **Matrix: Water** **Sampled: May-03-19 10:15** **Received: May-07-19 10:45**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Surogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
M9PFNA	117			*90.0%*		*70-130*	*B19E015*	*May-08-19*	*May-09-19*
M8PFOSA	102			*77.8%*		*70-130*	"	"	"
M8PFOS	108			*86.7%*		*70-130*	"	"	"
M8PFOA	116			*88.9%*		*70-130*	"	"	"
M7PFUnA	98.8			*75.7%*		*70-130*	"	"	"
M6PFDA	105			*80.1%*		*70-130*	"	"	"
M5PFPeA	136			*104%*		*70-130*	"	"	"
M5PFHxA	123			*94.0%*		*70-130*	"	"	"
M4PFHpA	126			*96.4%*		*70-130*	"	"	"
M3PFHxS	119			*96.0%*		*70-130*	"	"	"
M3PFBS	106			*87.7%*		*70-130*	"	"	"
M2PFTreA	22.8	Q		*17.5%*		*70-130*	"	"	"
MPFDoA	92.0			*70.4%*		*70-130*	"	"	"
MPFBA	142			*109%*		*70-130*	"	"	"

ITC-BB-09-20190503-11 (1905009-10) **Matrix: Water** **Sampled: May-03-19 10:00** **Received: May-07-19 10:45**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorobutanoate	**U**			44.8	ng/L	1	B19E015	May-08-19	May-09-19
perfluoropentanoate	**U**			44.8	"	"	"	"	"
perfluorohexanoate	**39.1**			8.96	"	"	"	"	"
perfluoroheptanoate	**18.5**			8.96	"	"	"	"	"
perfluorooctanoate	**U**			8.96	"	"	"	"	"
perfluorononanoate	**U**			8.96	"	"	"	"	"
perfluorodecanoate	**U**			8.96	"	"	"	"	"
perfluoroundecanoate	**U**			8.96	"	"	"	"	"
perfluorododecanoate	**U**			8.96	"	"	"	"	"
perfluorotridecanoate	**U**			8.96	"	"	"	"	"
perfluorotetradecanoate	**U**			8.96	"	"	"	"	"
perfluorobutyl sulfonate	**U**			8.96	"	"	"	"	"
perfluorohexyl sulfonate	**14.5**			8.96	"	"	"	"	"
perfluorooctyl sulfonate	**43.6**			8.96	"	"	"	"	"
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	**U**			8.96	"	"	"	"	"

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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS
US EPA Region 5 Chicago Regional Laboratory

ITC-BB-09-20190503-11 (1905009-10) **Matrix: Water** **Sampled: May-03-19 10:00** **Received: May-07-19 10:45**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluoro-1-pentanesulfonate (PFPeS)	**U**			8.96	ng/L	1	B19E015	May-08-19	May-09-19
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	**356**			8.96	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	**U**			8.96	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	**U**			8.96	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	**U**			8.96	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	**U**			8.96	"	"	"	"	"
N-MeFOSAA	**U**			8.96	"	"	"	"	"
N-EtFOSAA	**U**			8.96	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	**U**			8.96	"	"	"	"	"

Surogate	Result		%REC	%REC Limits	Batch	Prepared	Analyzed
D5-N-EtFOSAA	83.5	Q	*65.8%*	*70-130*	"	"	"
D3-N-MeFOSAA	96.1		*75.8%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	91.3		*74.4%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	121		*101%*	*70-130*	"	"	"
perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS	104		*87.3%*	*70-130*	"	"	"
M9PFNA	119		*93.9%*	*70-130*	"	"	"
M8PFOSA	98.2		*77.5%*	*70-130*	"	"	"
M8PFOS	110		*90.7%*	*70-130*	"	"	"
M8PFOA	121		*95.8%*	*70-130*	"	"	"
M7PFUnA	94.1		*74.2%*	*70-130*	"	"	"
M6PFDA	102		*80.7%*	*70-130*	"	"	"
M5PFPeA	141		*111%*	*70-130*	"	"	"
M5PFHxA	127		*101%*	*70-130*	"	"	"
M4PFHpA	132		*104%*	*70-130*	"	"	"
M3PFHxS	119		*99.5%*	*70-130*	"	"	"
M3PFBS	109		*92.7%*	*70-130*	"	"	"
M2PFTreA	16.2	Q	*12.8%*	*70-130*	"	"	"
MPFDoA	86.0	Q	*67.9%*	*70-130*	"	"	"
MPFBA	149		*117%*	*70-130*	"	"	"

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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS
US EPA Region 5 Chicago Regional Laboratory

ITC-BB-11-20190503-11 (1905009-11) **Matrix: Water** **Sampled: May-03-19 09:50** **Received: May-07-19 10:45**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorobutanoate	**U**			43.6	ng/L	1	B19E015	May-08-19	May-09-19
perfluoropentanoate	**45.5**			43.6	"	"	"	"	"
perfluorohexanoate	**39.4**			8.72	"	"	"	"	"
perfluoroheptanoate	**19.2**			8.72	"	"	"	"	"
perfluorooctanoate	**U**			8.72	"	"	"	"	"
perfluorononanoate	**15.7**			8.72	"	"	"	"	"
perfluorodecanoate	**U**			8.72	"	"	"	"	"
perfluoroundecanoate	**U**			8.72	"	"	"	"	"
perfluorododecanoate	**U**			8.72	"	"	"	"	"
perfluorotridecanoate	**U**			8.72	"	"	"	"	"
perfluorotetradecanoate	**U**			8.72	"	"	"	"	"
perfluorobutyl sulfonate	**U**			8.72	"	"	"	"	"
perfluorohexyl sulfonate	**13.8**			8.72	"	"	"	"	"
perfluorooctyl sulfonate	**45.4**			8.72	"	"	"	"	"
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	**U**			8.72	"	"	"	"	"
perfluoro-1-pentanesulfonate (PFPeS)	**U**			8.72	"	"	"	"	"
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	**362**			8.72	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	**U**			8.72	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	**U**			8.72	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	**U**			8.72	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	**U**			8.72	"	"	"	"	"
N-MeFOSAA	**U**			8.72	"	"	"	"	"
N-EtFOSAA	**U**			8.72	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	**U**			8.72	"	"	"	"	"

Surogate	Result		%REC	%REC Limits	Batch	Prepared	Analyzed
D5-N-EtFOSAA	75.7	Q	*63.6%*	*70-130*	"	"	"
D3-N-MeFOSAA	84.8		*71.3%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	76.0	Q	*66.0%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	103		*91.4%*	*70-130*	"	"	"
perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS	92.3		*83.0%*	*70-130*	"	"	"

Environmental Protection Agency Region 5
Chicago Regional Laboratory
536 South Clark Street, Chicago, IL 60605
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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS
US EPA Region 5 Chicago Regional Laboratory

ITC-BB-11-20190503-11 (1905009-11) **Matrix: Water** **Sampled: May-03-19 09:50** **Received: May-07-19 10:45**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Surogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
M9PFNA	105			*88.0%*		*70-130*	*B19E015*	*May-08-19*	*May-09-19*
M8PFOSA	90.8			*76.3%*		*70-130*	"	"	"
M8PFOS	101			*88.4%*		*70-130*	"	"	"
M8PFOA	107			*89.5%*		*70-130*	"	"	"
M7PFUnA	84.0			*70.6%*		*70-130*	"	"	"
M6PFDA	91.8			*77.2%*		*70-130*	"	"	"
M5PFPeA	125			*105%*		*70-130*	"	"	"
M5PFHxA	112			*94.0%*		*70-130*	"	"	"
M4PFHpA	118			*99.5%*		*70-130*	"	"	"
M3PFHxS	104			*92.5%*		*70-130*	"	"	"
M3PFBS	97.7			*88.3%*		*70-130*	"	"	"
M2PFTreA	9.00	Q		*7.56%*		*70-130*	"	"	"
MPFDoA	74.4	Q		*62.5%*		*70-130*	"	"	"
MPFBA	133			*112%*		*70-130*	"	"	"

ITC-BB-12-20190503-11 (1905009-12) **Matrix: Water** **Sampled: May-03-19 09:40** **Received: May-07-19 10:45**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorobutanoate	**U**			46.9	ng/L	1	B19E015	May-08-19	May-09-19
perfluoropentanoate	**U**			46.9	"	"	"	"	"
perfluorohexanoate	**33.2**			9.38	"	"	"	"	"
perfluoroheptanoate	**14.7**			9.38	"	"	"	"	"
perfluorooctanoate	**U**			9.38	"	"	"	"	"
perfluorononanoate	**U**			9.38	"	"	"	"	"
perfluorodecanoate	**U**			9.38	"	"	"	"	"
perfluoroundecanoate	**U**			9.38	"	"	"	"	"
perfluorododecanoate	**U**			9.38	"	"	"	"	"
perfluorotridecanoate	**U**			9.38	"	"	"	"	"
perfluorotetradecanoate	**U**			9.38	"	"	"	"	"
perfluorobutyl sulfonate	**9.48**			9.38	"	"	"	"	"
perfluorohexyl sulfonate	**12.4**			9.38	"	"	"	"	"
perfluorooctyl sulfonate	**39.3**			9.38	"	"	"	"	"
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	**U**			9.38	"	"	"	"	"

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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS
US EPA Region 5 Chicago Regional Laboratory

ITC-BB-12-20190503-11 (1905009-12) **Matrix: Water** **Sampled: May-03-19 09:40** **Received: May-07-19 10:45**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluoro-1-pentanesulfonate (PFPeS)	**U**			9.38	ng/L	1	B19E015	May-08-19	May-09-19
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	**300**			9.38	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	**U**			9.38	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	**U**			9.38	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	**U**			9.38	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	**U**			9.38	"	"	"	"	"
N-MeFOSAA	**U**			9.38	"	"	"	"	"
N-EtFOSAA	**U**			9.38	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	**U**			9.38	"	"	"	"	"

Surogate	Result		%REC	%REC Limits	Batch	Prepared	Analyzed
D5-N-EtFOSAA	97.0	Q	*69.3%*	*70-130*	"	"	"
D3-N-MeFOSAA	106		*75.7%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	96.3		*71.0%*	*70-130*	"	"	"
perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	122		*92.1%*	*70-130*	"	"	"
perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS	115		*87.6%*	*70-130*	"	"	"
M9PFNA	131		*93.6%*	*70-130*	"	"	"
M8PFOSA	103		*73.7%*	*70-130*	"	"	"
M8PFOS	124		*92.5%*	*70-130*	"	"	"
M8PFOA	127		*90.3%*	*70-130*	"	"	"
M7PFUnA	106		*75.4%*	*70-130*	"	"	"
M6PFDA	113		*80.6%*	*70-130*	"	"	"
M5PFPeA	153		*110%*	*70-130*	"	"	"
M5PFHxA	139		*99.5%*	*70-130*	"	"	"
M4PFHpA	146		*104%*	*70-130*	"	"	"
M3PFHxS	126		*95.4%*	*70-130*	"	"	"
M3PFBS	117		*90.0%*	*70-130*	"	"	"
M2PFTreA	31.7	Q	*22.6%*	*70-130*	"	"	"
MPFDoA	100		*71.5%*	*70-130*	"	"	"
MPFBA	162		*115%*	*70-130*	"	"	"

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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

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Batch B19E015 - *** DEFAULT PREP ***

Blank (B19E015-BLK1) **Prepared & Analyzed: May-08-19**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
perfluorobutanoate	U			50.0	ng/L						
perfluoropentanoate	U			50.0	"						
perfluorohexanoate	U			10.0	"						
perfluoroheptanoate	U			10.0	"						
perfluorooctanoate	U			10.0	"						
perfluorononanoate	U			10.0	"						
perfluorodecanoate	U			10.0	"						
perfluoroundecanoate	U			10.0	"						
perfluorododecanoate	U			10.0	"						
perfluorotridecanoate	U			10.0	"						
perfluorotetradecanoate	U			10.0	"						
perfluorobutyl sulfonate	U			10.0	"						
perfluorohexyl sulfonate	U			10.0	"						
perfluorooctyl sulfonate	U			10.0	"						
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	U			10.0	"						
perfluoro-1-pentanesulfonate (PFPeS)	U			10.0	"						
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	U			10.0	"						
perfluoro-1-heptanesulfonate (PFHpS)	U			10.0	"						
perfluoro-1-octanesulfonamide (FOSA)	U			10.0	"						
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	U			10.0	"						
perfluoro-1-nonanesulfonate (PFNS)	U			10.0	"						
N-MeFOSAA	U			10.0	"						
N-EtFOSAA	U			10.0	"						
perfluoro-1-decanesulfonate (PFDS)	U			10.0	"						
Surrogate: D5-N-EtFOSAA	*153*				*"*	*160.0*		*95.4%*	*70-130*		
Surrogate: D3-N-MeFOSAA	*148*				*"*	*160.0*		*92.6%*	*70-130*		
Surrogate: perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	*137*				*"*	*154.9*		*88.6%*	*70-130*		
Surrogate: perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	*136*				*"*	*151.8*		*89.7%*	*70-130*		

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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS - Quality Control
US EPA Region 5 Chicago Regional Laboratory

Batch B19E015 - *** DEFAULT PREP ***

Blank (B19E015-BLK1) **Prepared & Analyzed: May-08-19**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Surrogate: perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:	*136*				*ng/L*	*149.6*		*90.7%*	*70-130*		
Surrogate: M9PFNA	*153*				*"*	*160.0*		*95.8%*	*70-130*		
Surrogate: M8PFOSA	*152*				*"*	*160.0*		*95.2%*	*70-130*		
Surrogate: M8PFOS	*145*				*"*	*153.1*		*94.7%*	*70-130*		
Surrogate: M8PFOA	*154*				*"*	*160.0*		*96.3%*	*70-130*		
Surrogate: M7PFUnA	*152*				*"*	*160.0*		*95.1%*	*70-130*		
Surrogate: M6PFDA	*153*				*"*	*160.0*		*95.7%*	*70-130*		
Surrogate: M5PFPeA	*158*				*"*	*160.0*		*98.7%*	*70-130*		
Surrogate: M5PFHxA	*153*				*"*	*160.0*		*95.8%*	*70-130*		
Surrogate: M4PFHpA	*156*				*"*	*160.0*		*97.5%*	*70-130*		
Surrogate: M3PFHxS	*150*				*"*	*151.4*		*99.1%*	*70-130*		
Surrogate: M3PFBS	*143*				*"*	*148.6*		*96.0%*	*70-130*		
Surrogate: M2PFTreA	*144*				*"*	*160.0*		*90.1%*	*70-130*		
Surrogate: MPFDoA	*153*				*"*	*160.0*		*95.8%*	*70-130*		
Surrogate: MPFBA	*158*				*"*	*160.0*		*98.7%*	*70-130*		

Blank (B19E015-BLK2) **Prepared & Analyzed: May-08-19**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
perfluorobutanoate	**U**			50.0	ng/L						
perfluoropentanoate	**U**			50.0	"						
perfluorohexanoate	**U**			10.0	"						
perfluoroheptanoate	**U**			10.0	"						
perfluorooctanoate	**U**			10.0	"						
perfluorononanoate	**U**			10.0	"						
perfluorodecanoate	**U**			10.0	"						
perfluoroundecanoate	**U**			10.0	"						
perfluorododecanoate	**U**			10.0	"						
perfluorotridecanoate	**U**			10.0	"						
perfluorotetradecanoate	**U**			10.0	"						
perfluorobutyl sulfonate	**U**			10.0	"						
perfluorohexyl sulfonate	**U**			10.0	"						
perfluorooctyl sulfonate	**U**			10.0	"						

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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS - Quality Control
US EPA Region 5 Chicago Regional Laboratory

Batch B19E015 - *** DEFAULT PREP ***

Blank (B19E015-BLK2) **Prepared & Analyzed: May-08-19**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	U			10.0	ng/L						
perfluoro-1-pentanesulfonate (PFPeS)	U			10.0	"						
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	U			10.0	"						
perfluoro-1-heptanesulfonate (PFHpS)	U			10.0	"						
perfluoro-1-octanesulfonamide (FOSA)	U			10.0	"						
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	U			10.0	"						
perfluoro-1-nonanesulfonate (PFNS)	U			10.0	"						
N-MeFOSAA	U			10.0	"						
N-EtFOSAA	U			10.0	"						
perfluoro-1-decanesulfonate (PFDS)	U			10.0	"						
Surrogate: D5-N-EtFOSAA	*152*				*"*	*160.0*		*95.0%*	*70-130*		
Surrogate: D3-N-MeFOSAA	*148*				*"*	*160.0*		*92.2%*	*70-130*		
Surrogate: perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	*136*				*"*	*154.9*		*88.1%*	*70-130*		
Surrogate: perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	*137*				*"*	*151.8*		*90.5%*	*70-130*		
Surrogate: perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:	*137*				*"*	*149.6*		*91.7%*	*70-130*		
Surrogate: M9PFNA	*150*				*"*	*160.0*		*93.7%*	*70-130*		
Surrogate: M8PFOSA	*151*				*"*	*160.0*		*94.5%*	*70-130*		
Surrogate: M8PFOS	*142*				*"*	*153.1*		*92.6%*	*70-130*		
Surrogate: M8PFOA	*154*				*"*	*160.0*		*96.1%*	*70-130*		
Surrogate: M7PFUnA	*151*				*"*	*160.0*		*94.4%*	*70-130*		
Surrogate: M6PFDA	*151*				*"*	*160.0*		*94.7%*	*70-130*		
Surrogate: M5PFPeA	*157*				*"*	*160.0*		*98.0%*	*70-130*		
Surrogate: M5PFHxA	*148*				*"*	*160.0*		*92.7%*	*70-130*		
Surrogate: M4PFHpA	*155*				*"*	*160.0*		*97.1%*	*70-130*		
Surrogate: M3PFHxS	*146*				*"*	*151.4*		*96.3%*	*70-130*		
Surrogate: M3PFBS	*143*				*"*	*148.6*		*96.1%*	*70-130*		
Surrogate: M2PFTreA	*146*				*"*	*160.0*		*90.9%*	*70-130*		
Surrogate: MPFDoA	*153*				*"*	*160.0*		*95.8%*	*70-130*		
Surrogate: MPFBA	*159*				*"*	*160.0*		*99.3%*	*70-130*		

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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS - Quality Control
US EPA Region 5 Chicago Regional Laboratory

Batch B19E015 - *** DEFAULT PREP ***

LCS (B19E015-BS1) **Prepared & Analyzed: May-08-19**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
perfluorobutanoate	**781**			50.0	ng/L	800.0		97.6%	70-130		
perfluoropentanoate	**749**			50.0	"	800.0		93.7%	70-130		
perfluorohexanoate	**150**			10.0	"	160.0		93.7%	70-130		
perfluoroheptanoate	**151**			10.0	"	160.0		94.6%	70-130		
perfluorooctanoate	**144**			10.0	"	160.0		90.3%	70-130		
perfluorononanoate	**147**			10.0	"	160.0		92.2%	70-130		
perfluorodecanoate	**144**			10.0	"	160.0		90.1%	70-130		
perfluoroundecanoate	**148**			10.0	"	160.0		92.4%	70-130		
perfluorododecanoate	**145**			10.0	"	160.0		90.5%	70-130		
perfluorotridecanoate	**147**			10.0	"	160.0		91.7%	70-130		
perfluorotetradecanoate	**141**			10.0	"	160.0		88.2%	70-130		
perfluorobutyl sulfonate	**150**			10.0	"	160.0		93.8%	70-130		
perfluorohexyl sulfonate	**147**			10.0	"	160.0		92.1%	70-130		
perfluorooctyl sulfonate	**152**			10.0	"	160.0		94.9%	70-130		
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	**148**			10.0	"	160.0		92.3%	70-130		
perfluoro-1-pentanesulfonate (PFPeS)	**149**			10.0	"	160.0		92.9%	70-130		
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	**144**			10.0	"	160.0		89.9%	70-130		
perfluoro-1-heptanesulfonate (PFHpS)	**149**			10.0	"	160.0		93.3%	70-130		
perfluoro-1-octanesulfonamide (FOSA)	**143**			10.0	"	160.0		89.3%	70-130		
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	**142**			10.0	"	160.0		88.6%	70-130		
perfluoro-1-nonanesulfonate (PFNS)	**148**			10.0	"	160.0		92.4%	70-130		
N-MeFOSAA	**145**			10.0	"	160.0		90.9%	70-130		
N-EtFOSAA	**149**			10.0	"	160.0		93.1%	70-130		
perfluoro-1-decanesulfonate (PFDS)	**138**			10.0	"	160.0		86.3%	70-130		
Surrogate: D5-N-EtFOSAA	*148*				*"*	*160.0*		*92.3%*	*70-130*		
Surrogate: D3-N-MeFOSAA	*146*				*"*	*160.0*		*91.4%*	*70-130*		
Surrogate: perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	*140*				*"*	*154.9*		*90.7%*	*70-130*		
Surrogate: perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	*152*				*"*	*151.8*		*100%*	*70-130*		

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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS - Quality Control
US EPA Region 5 Chicago Regional Laboratory

Batch B19E015 - *** DEFAULT PREP ***

LCS (B19E015-BS1) **Prepared & Analyzed: May-08-19**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Surrogate: perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:	*149*				*ng/L*	*149.6*		*99.9%*	*70-130*		
Surrogate: M9PFNA	*155*				*"*	*160.0*		*96.7%*	*70-130*		
Surrogate: M8PFOSA	*157*				*"*	*160.0*		*97.9%*	*70-130*		
Surrogate: M8PFOS	*153*				*"*	*153.1*		*99.8%*	*70-130*		
Surrogate: M8PFOA	*154*				*"*	*160.0*		*96.5%*	*70-130*		
Surrogate: M7PFUnA	*154*				*"*	*160.0*		*96.4%*	*70-130*		
Surrogate: M6PFDA	*156*				*"*	*160.0*		*97.4%*	*70-130*		
Surrogate: M5PFPeA	*160*				*"*	*160.0*		*100%*	*70-130*		
Surrogate: M5PFHxA	*155*				*"*	*160.0*		*96.8%*	*70-130*		
Surrogate: M4PFHpA	*158*				*"*	*160.0*		*98.6%*	*70-130*		
Surrogate: M3PFHxS	*145*				*"*	*151.4*		*95.9%*	*70-130*		
Surrogate: M3PFBS	*146*				*"*	*148.6*		*98.3%*	*70-130*		
Surrogate: M2PFTreA	*151*				*"*	*160.0*		*94.3%*	*70-130*		
Surrogate: MPFDoA	*156*				*"*	*160.0*		*97.2%*	*70-130*		
Surrogate: MPFBA	*164*				*"*	*160.0*		*103%*	*70-130*		

LCS Dup (B19E015-BSD1) **Prepared & Analyzed: May-08-19**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
perfluorobutanoate	**808**			50.0	ng/L	800.0		101%	70-130	3.46	30
perfluoropentanoate	**780**			50.0	"	800.0		97.5%	70-130	3.98	30
perfluorohexanoate	**153**			10.0	"	160.0		95.9%	70-130	2.24	30
perfluoroheptanoate	**153**			10.0	"	160.0		95.8%	70-130	1.20	30
perfluorooctanoate	**150**			10.0	"	160.0		94.0%	70-130	4.10	30
perfluorononanoate	**147**			10.0	"	160.0		91.7%	70-130	0.507	30
perfluorodecanoate	**146**			10.0	"	160.0		91.6%	70-130	1.59	30
perfluoroundecanoate	**146**			10.0	"	160.0		91.2%	70-130	1.35	30
perfluorododecanoate	**144**			10.0	"	160.0		90.2%	70-130	0.365	30
perfluorotridecanoate	**144**			10.0	"	160.0		90.0%	70-130	1.87	30
perfluorotetradecanoate	**133**			10.0	"	160.0		83.1%	70-130	5.89	30
perfluorobutyl sulfonate	**154**			10.0	"	160.0		96.1%	70-130	2.37	30
perfluorohexyl sulfonate	**150**			10.0	"	160.0		93.6%	70-130	1.67	30
perfluorooctyl sulfonate	**151**			10.0	"	160.0		94.4%	70-130	0.465	30

Environmental Protection Agency Region 5
Chicago Regional Laboratory
536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS - Quality Control
US EPA Region 5 Chicago Regional Laboratory

Batch B19E015 - *** DEFAULT PREP ***

LCS Dup (B19E015-BSD1) **Prepared & Analyzed: May-08-19**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	**150**			10.0	ng/L	160.0		94.0%	70-130	1.84	30
perfluoro-1-pentanesulfonate (PFPeS)	**151**			10.0	"	160.0		94.5%	70-130	1.69	30
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	**153**			10.0	"	160.0		95.7%	70-130	6.28	30
perfluoro-1-heptanesulfonate (PFHpS)	**156**			10.0	"	160.0		97.5%	70-130	4.38	30
perfluoro-1-octanesulfonamide (FOSA)	**145**			10.0	"	160.0		90.5%	70-130	1.29	30
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	**144**			10.0	"	160.0		89.9%	70-130	1.50	30
perfluoro-1-nonanesulfonate (PFNS)	**146**			10.0	"	160.0		91.4%	70-130	1.04	30
N-MeFOSAA	**146**			10.0	"	160.0		91.1%	70-130	0.249	30
N-EtFOSAA	**148**			10.0	"	160.0		92.5%	70-130	0.618	30
perfluoro-1-decanesulfonate (PFDS)	**152**			10.0	"	160.0		95.2%	70-130	9.78	30
Surrogate: D5-N-EtFOSAA	*149*				*"*	*160.0*		*93.0%*	*70-130*		
Surrogate: D3-N-MeFOSAA	*159*				*"*	*160.0*		*99.2%*	*70-130*		
Surrogate: perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	*155*				*"*	*154.9*		*99.8%*	*70-130*		
Surrogate: perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	*158*				*"*	*151.8*		*104%*	*70-130*		
Surrogate: perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:	*160*				*"*	*149.6*		*107%*	*70-130*		
Surrogate: M9PFNA	*164*				*"*	*160.0*		*102%*	*70-130*		
Surrogate: M8PFOSA	*156*				*"*	*160.0*		*97.2%*	*70-130*		
Surrogate: M8PFOS	*152*				*"*	*153.1*		*99.1%*	*70-130*		
Surrogate: M8PFOA	*161*				*"*	*160.0*		*101%*	*70-130*		
Surrogate: M7PFUnA	*158*				*"*	*160.0*		*98.8%*	*70-130*		
Surrogate: M6PFDA	*158*				*"*	*160.0*		*98.7%*	*70-130*		
Surrogate: M5PFPeA	*176*				*"*	*160.0*		*110%*	*70-130*		
Surrogate: M5PFHxA	*167*				*"*	*160.0*		*104%*	*70-130*		
Surrogate: M4PFHpA	*171*				*"*	*160.0*		*107%*	*70-130*		
Surrogate: M3PFHxS	*158*				*"*	*151.4*		*104%*	*70-130*		
Surrogate: M3PFBS	*156*				*"*	*148.6*		*105%*	*70-130*		
Surrogate: M2PFTreA	*146*				*"*	*160.0*		*91.2%*	*70-130*		
Surrogate: MPFDoA	*163*				*"*	*160.0*		*102%*	*70-130*		
Surrogate: MPFBA	*176*				*"*	*160.0*		*110%*	*70-130*		

Environmental Protection Agency Region 5
Chicago Regional Laboratory
536 South Clark Street, Chicago, IL 60605
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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS - Quality Control
US EPA Region 5 Chicago Regional Laboratory

Batch B19E015 - *** DEFAULT PREP ***

Duplicate (B19E015-DUP1) **Source: 1905009-07** **Prepared: May-08-19 Analyzed: May-09-19**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
perfluorobutanoate	**19.1**			47.1	ng/L		17.1			11.1	30
perfluoropentanoate	**44.4**			47.1	"		44.5			0.187	30
perfluorohexanoate	**38.1**			9.42	"		36.8			3.51	30
perfluoroheptanoate	**16.5**			9.42	"		17.1			3.05	30
perfluorooctanoate	**7.69**			9.42	"		7.34			4.62	30
perfluorononanoate	**3.25**			9.42	"		3.03			6.72	30
perfluorodecanoate	**1.35**			9.42	"		U				30
perfluoroundecanoate	**U**			9.42	"		U				30
perfluorododecanoate	**1.64**			9.42	"		1.49			9.58	30
perfluorotridecanoate	**U**			9.42	"		U				30
perfluorotetradecanoate	**1.74**			9.42	"		U				30
perfluorobutyl sulfonate	**7.90**			9.42	"		8.02			1.61	30
perfluorohexyl sulfonate	**13.4**			9.42	"		12.7			5.33	30
perfluorooctyl sulfonate	**42.0**			9.42	"		39.9			5.08	30
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	**1.45**			9.42	"		1.43			1.43	30
perfluoro-1-pentanesulfonate (PFPeS)	**2.48**			9.42	"		2.11			16.2	30
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	**344**			9.42	"		349			1.51	30
perfluoro-1-heptanesulfonate (PFHpS)	**U**			9.42	"		U				30
perfluoro-1-octanesulfonamide (FOSA)	**U**			9.42	"		U				30
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	**4.73**			9.42	"		4.01			16.4	30
perfluoro-1-nonanesulfonate (PFNS)	**U**			9.42	"		U				30
N-MeFOSAA	**U**			9.42	"		U				30
N-EtFOSAA	**U**			9.42	"		U				30
perfluoro-1-decanesulfonate (PFDS)	**U**			9.42	"		U				30
Surrogate: D5-N-EtFOSAA	*99.0*				*"*	*141.6*		*70.0%*	*70-130*		
Surrogate: D3-N-MeFOSAA	*107*				*"*	*141.6*		*75.3%*	*70-130*		
Surrogate: perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	*102*				*"*	*137.0*		*74.4%*	*70-130*		
Surrogate: perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	*126*				*"*	*134.3*		*94.0%*	*70-130*		

Environmental Protection Agency Region 5
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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS - Quality Control
US EPA Region 5 Chicago Regional Laboratory

Batch B19E015 - *** DEFAULT PREP ***

Duplicate (B19E015-DUP1) **Source: 1905009-07** **Prepared: May-08-19 Analyzed: May-09-19**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Surrogate: perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:	*104*				*ng/L*	*132.4*		*78.9%*	*70-130*		
Surrogate: M9PFNA	*127*				*"*	*141.6*		*89.9%*	*70-130*		
Surrogate: M8PFOSA	*109*				*"*	*141.6*		*76.9%*	*70-130*		
Surrogate: M8PFOS	*124*				*"*	*135.5*		*91.6%*	*70-130*		
Surrogate: M8PFOA	*130*				*"*	*141.6*		*91.9%*	*70-130*		
Surrogate: M7PFUnA	*110*				*"*	*141.6*		*77.7%*	*70-130*		
Surrogate: M6PFDA	*114*				*"*	*141.6*		*80.3%*	*70-130*		
Surrogate: M5PFPeA	*152*				*"*	*141.6*		*107%*	*70-130*		
Surrogate: M5PFHxA	*135*				*"*	*141.6*		*95.4%*	*70-130*		
Surrogate: M4PFHpA	*141*				*"*	*141.6*		*99.9%*	*70-130*		
Surrogate: M3PFHxS	*130*				*"*	*133.9*		*97.0%*	*70-130*		
Surrogate: M3PFBS	*116*				*"*	*131.5*		*88.4%*	*70-130*		
Surrogate: M2PFTreA	*47.7*	Q			*"*	*141.6*		*33.7%*	*70-130*		
Surrogate: MPFDoA	*107*				*"*	*141.6*		*75.7%*	*70-130*		
Surrogate: MPFBA	*157*				*"*	*141.6*		*111%*	*70-130*		

MRL Check (B19E015-MRL1) **Prepared & Analyzed: May-08-19**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
perfluorobutanoate	**52.6**			50.0	ng/L	50.00		105%	50-150		
perfluoropentanoate	**50.2**			50.0	"	50.00		100%	50-150		
perfluorohexanoate	**10.7**			10.0	"	10.00		107%	50-150		
perfluoroheptanoate	**11.8**			10.0	"	10.00		118%	50-150		
perfluorooctanoate	**11.0**			10.0	"	10.00		110%	50-150		
perfluorononanoate	**11.1**			10.0	"	10.00		111%	50-150		
perfluorodecanoate	**9.51**			10.0	"	10.00		95.1%	50-150		
perfluoroundecanoate	**9.80**			10.0	"	10.00		98.0%	50-150		
perfluorododecanoate	**10.4**			10.0	"	10.00		104%	50-150		
perfluorotridecanoate	**9.85**			10.0	"	10.00		98.5%	50-150		
perfluorotetradecanoate	**12.3**			10.0	"	10.00		123%	50-150		
perfluorobutyl sulfonate	**10.2**			10.0	"	10.00		102%	50-150		
perfluorohexyl sulfonate	**10.1**			10.0	"	10.00		101%	50-150		
perfluorooctyl sulfonate	**13.0**			10.0	"	10.00		130%	50-150		

Environmental Protection Agency Region 5
Chicago Regional Laboratory
536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS - Quality Control
US EPA Region 5 Chicago Regional Laboratory

Batch B19E015 - *** DEFAULT PREP ***

MRL Check (B19E015-MRL1) **Prepared & Analyzed: May-08-19**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	**10.5**			10.0	ng/L	10.00		105%	50-150		
perfluoro-1-pentanesulfonate (PFPeS)	**9.01**			10.0	"	10.00		90.1%	50-150		
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	**19.4**	Q		10.0	"	10.00		194%	50-150		
perfluoro-1-heptanesulfonate (PFHpS)	**9.89**			10.0	"	10.00		98.9%	50-150		
perfluoro-1-octanesulfonamide (FOSA)	**9.08**			10.0	"	10.00		90.8%	50-150		
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	**10.0**			10.0	"	10.00		100%	50-150		
perfluoro-1-nonanesulfonate (PFNS)	**9.56**			10.0	"	10.00		95.6%	50-150		
N-MeFOSAA	**10.0**			10.0	"	10.00		100%	50-150		
N-EtFOSAA	**9.22**			10.0	"	10.00		92.2%	50-150		
perfluoro-1-decanesulfonate (PFDS)	**8.68**			10.0	"	10.00		86.8%	50-150		
Surrogate: D5-N-EtFOSAA	*173*				*"*	*160.0*		*108%*	*70-130*		
Surrogate: D3-N-MeFOSAA	*172*				*"*	*160.0*		*107%*	*70-130*		
Surrogate: perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	*162*				*"*	*154.9*		*105%*	*70-130*		
Surrogate: perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	*154*				*"*	*151.8*		*101%*	*70-130*		
Surrogate: perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:	*155*				*"*	*149.6*		*104%*	*70-130*		
Surrogate: M9PFNA	*174*				*"*	*160.0*		*109%*	*70-130*		
Surrogate: M8PFOSA	*168*				*"*	*160.0*		*105%*	*70-130*		
Surrogate: M8PFOS	*160*				*"*	*153.1*		*104%*	*70-130*		
Surrogate: M8PFOA	*173*				*"*	*160.0*		*108%*	*70-130*		
Surrogate: M7PFUnA	*172*				*"*	*160.0*		*107%*	*70-130*		
Surrogate: M6PFDA	*172*				*"*	*160.0*		*108%*	*70-130*		
Surrogate: M5PFPeA	*180*				*"*	*160.0*		*113%*	*70-130*		
Surrogate: M5PFHxA	*173*				*"*	*160.0*		*108%*	*70-130*		
Surrogate: M4PFHpA	*176*				*"*	*160.0*		*110%*	*70-130*		
Surrogate: M3PFHxS	*165*				*"*	*151.4*		*109%*	*70-130*		
Surrogate: M3PFBS	*162*				*"*	*148.6*		*109%*	*70-130*		
Surrogate: M2PFTreA	*160*				*"*	*160.0*		*100%*	*70-130*		
Surrogate: MPFDoA	*169*				*"*	*160.0*		*106%*	*70-130*		
Surrogate: MPFBA	*182*				*"*	*160.0*		*114%*	*70-130*		

Environmental Protection Agency Region 5
Chicago Regional Laboratory
536 South Clark Street, Chicago, IL 60605
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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS - Quality Control
US EPA Region 5 Chicago Regional Laboratory

Batch B19E015 - *** DEFAULT PREP ***

MRL Check (B19E015-MRL2) **Prepared & Analyzed: May-08-19**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
perfluorobutanoate	**50.6**			50.0	ng/L	50.00		101%	50-150		
perfluoropentanoate	**50.1**			50.0	"	50.00		100%	50-150		
perfluorohexanoate	**10.8**			10.0	"	10.00		108%	50-150		
perfluoroheptanoate	**12.4**			10.0	"	10.00		124%	50-150		
perfluorooctanoate	**10.6**			10.0	"	10.00		106%	50-150		
perfluorononanoate	**10.4**			10.0	"	10.00		104%	50-150		
perfluorodecanoate	**10.9**			10.0	"	10.00		109%	50-150		
perfluoroundecanoate	**9.82**			10.0	"	10.00		98.2%	50-150		
perfluorododecanoate	**11.0**			10.0	"	10.00		110%	50-150		
perfluorotridecanoate	**10.2**			10.0	"	10.00		102%	50-150		
perfluorotetradecanoate	**11.3**			10.0	"	10.00		113%	50-150		
perfluorobutyl sulfonate	**10.5**			10.0	"	10.00		105%	50-150		
perfluorohexyl sulfonate	**9.65**			10.0	"	10.00		96.5%	50-150		
perfluorooctyl sulfonate	**10.6**			10.0	"	10.00		106%	50-150		
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	**9.55**			10.0	"	10.00		95.5%	50-150		
perfluoro-1-pentanesulfonate (PFPeS)	**9.26**			10.0	"	10.00		92.6%	50-150		
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	**18.9**	Q		10.0	"	10.00		189%	50-150		
perfluoro-1-heptanesulfonate (PFHpS)	**9.17**			10.0	"	10.00		91.7%	50-150		
perfluoro-1-octanesulfonamide (FOSA)	**10.0**			10.0	"	10.00		100%	50-150		
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	**9.56**			10.0	"	10.00		95.6%	50-150		
perfluoro-1-nonanesulfonate (PFNS)	**8.61**			10.0	"	10.00		86.1%	50-150		
N-MeFOSAA	**10.4**			10.0	"	10.00		104%	50-150		
N-EtFOSAA	**9.17**			10.0	"	10.00		91.7%	50-150		
perfluoro-1-decanesulfonate (PFDS)	**9.14**			10.0	"	10.00		91.4%	50-150		
Surrogate: D5-N-EtFOSAA	*166*				*"*	*160.0*		*104%*	*70-130*		
Surrogate: D3-N-MeFOSAA	*160*				*"*	*160.0*		*100%*	*70-130*		
Surrogate: perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	*143*				*"*	*154.9*		*92.4%*	*70-130*		
Surrogate: perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	*145*				*"*	*151.8*		*95.7%*	*70-130*		

Environmental Protection Agency Region 5
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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS - Quality Control
US EPA Region 5 Chicago Regional Laboratory

Batch B19E015 - *** DEFAULT PREP ***

MRL Check (B19E015-MRL2) **Prepared & Analyzed: May-08-19**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Surrogate: perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:	*147*				*ng/L*	*149.6*		*98.2%*	*70-130*		
Surrogate: M9PFNA	*165*				*"*	*160.0*		*103%*	*70-130*		
Surrogate: M8PFOSA	*163*				*"*	*160.0*		*102%*	*70-130*		
Surrogate: M8PFOS	*158*				*"*	*153.1*		*103%*	*70-130*		
Surrogate: M8PFOA	*161*				*"*	*160.0*		*101%*	*70-130*		
Surrogate: M7PFUnA	*161*				*"*	*160.0*		*101%*	*70-130*		
Surrogate: M6PFDA	*166*				*"*	*160.0*		*104%*	*70-130*		
Surrogate: M5PFPeA	*175*				*"*	*160.0*		*109%*	*70-130*		
Surrogate: M5PFHxA	*164*				*"*	*160.0*		*102%*	*70-130*		
Surrogate: M4PFHpA	*167*				*"*	*160.0*		*104%*	*70-130*		
Surrogate: M3PFHxS	*156*				*"*	*151.4*		*103%*	*70-130*		
Surrogate: M3PFBS	*153*				*"*	*148.6*		*103%*	*70-130*		
Surrogate: M2PFTreA	*160*				*"*	*160.0*		*100%*	*70-130*		
Surrogate: MPFDoA	*160*				*"*	*160.0*		*100%*	*70-130*		
Surrogate: MPFBA	*176*				*"*	*160.0*		*110%*	*70-130*		

Matrix Spike (B19E015-MS1) **Source: 1905009-07** **Prepared: May-08-19 Analyzed: May-09-19**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
perfluorobutanoate	**763**			45.9	ng/L	668.4	17.1	112%	70-130		
perfluoropentanoate	**738**			45.9	"	668.4	44.5	104%	70-130		
perfluorohexanoate	**166**			9.18	"	133.7	36.8	96.8%	70-130		
perfluoroheptanoate	**149**			9.18	"	133.7	17.1	98.8%	70-130		
perfluorooctanoate	**131**			9.18	"	133.7	7.34	92.6%	70-130		
perfluorononanoate	**124**			9.18	"	133.7	3.03	90.6%	70-130		
perfluorodecanoate	**112**			9.18	"	133.7	U	83.9%	70-130		
perfluoroundecanoate	**111**			9.18	"	133.7	U	82.9%	70-130		
perfluorododecanoate	**96.1**			9.18	"	133.7	1.49	70.8%	70-130		
perfluorotridecanoate	**76.6**	Q		9.18	"	133.7	U	57.3%	70-130		
perfluorotetradecanoate	**35.6**	Q		9.18	"	133.7	U	26.6%	70-130		
perfluorobutyl sulfonate	**144**			9.18	"	133.7	8.02	101%	70-130		
perfluorohexyl sulfonate	**143**			9.18	"	133.7	12.7	97.3%	70-130		
perfluorooctyl sulfonate	**174**			9.18	"	133.7	39.9	100%	70-130		

Environmental Protection Agency Region 5
Chicago Regional Laboratory
536 South Clark Street, Chicago, IL 60605
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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS - Quality Control
US EPA Region 5 Chicago Regional Laboratory

Batch B19E015 - *** DEFAULT PREP ***

Matrix Spike (B19E015-MS1) **Source: 1905009-07** **Prepared: May-08-19 Analyzed: May-09-19**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	**120**			9.18	ng/L	133.7	1.43	89.0%	70-130		
perfluoro-1-pentanesulfonate (PFPeS)	**135**			9.18	"	133.7	2.11	99.3%	70-130		
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	**500**			9.18	"	133.7	349	113%	70-130		
perfluoro-1-heptanesulfonate (PFHpS)	**130**			9.18	"	133.7	U	96.9%	70-130		
perfluoro-1-octanesulfonamide (FOSA)	**123**			9.18	"	133.7	U	91.8%	70-130		
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	**117**			9.18	"	133.7	4.01	84.5%	70-130		
perfluoro-1-nonanesulfonate (PFNS)	**120**			9.18	"	133.7	U	89.6%	70-130		
N-MeFOSAA	**105**			9.18	"	133.7	U	78.5%	70-130		
N-EtFOSAA	**109**			9.18	"	133.7	U	81.9%	70-130		
perfluoro-1-decanesulfonate (PFDS)	**109**			9.18	"	133.7	U	81.9%	70-130		
Surrogate: D5-N-EtFOSAA	*99.9*				*"*	*133.7*		*74.7%*	*70-130*		
Surrogate: D3-N-MeFOSAA	*108*				*"*	*133.7*		*80.4%*	*70-130*		
Surrogate: perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	*118*				*"*	*129.4*		*91.5%*	*70-130*		
Surrogate: perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	*135*				*"*	*126.9*		*106%*	*70-130*		
Surrogate: perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:	*118*				*"*	*125.0*		*94.6%*	*70-130*		
Surrogate: M9PFNA	*128*				*"*	*133.7*		*96.0%*	*70-130*		
Surrogate: M8PFOSA	*116*				*"*	*133.7*		*86.9%*	*70-130*		
Surrogate: M8PFOS	*116*				*"*	*127.9*		*90.9%*	*70-130*		
Surrogate: M8PFOA	*128*				*"*	*133.7*		*95.4%*	*70-130*		
Surrogate: M7PFUnA	*110*				*"*	*133.7*		*82.4%*	*70-130*		
Surrogate: M6PFDA	*117*				*"*	*133.7*		*87.7%*	*70-130*		
Surrogate: M5PFPeA	*149*				*"*	*133.7*		*111%*	*70-130*		
Surrogate: M5PFHxA	*134*				*"*	*133.7*		*101%*	*70-130*		
Surrogate: M4PFHpA	*138*				*"*	*133.7*		*103%*	*70-130*		
Surrogate: M3PFHxS	*129*				*"*	*126.5*		*102%*	*70-130*		
Surrogate: M3PFBS	*121*				*"*	*124.2*		*97.5%*	*70-130*		
Surrogate: M2PFTreA	*36.7*	Q			*"*	*133.7*		*27.4%*	*70-130*		
Surrogate: MPFDoA	*103*				*"*	*133.7*		*77.4%*	*70-130*		
Surrogate: MPFBA	*157*				*"*	*133.7*		*118%*	*70-130*		

Environmental Protection Agency Region 5
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536 South Clark Street, Chicago, IL 60605
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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS - Quality Control
US EPA Region 5 Chicago Regional Laboratory

Batch B19E015 - *** DEFAULT PREP ***

Matrix Spike Dup (B19E015-MSD1) **Source: 1905009-07** **Prepared: May-08-19 Analyzed: May-09-19**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
perfluorobutanoate	**683**			44.4	ng/L	621.9	17.1	107%	70-130	11.0	30
perfluoropentanoate	**663**			44.4	"	621.9	44.5	99.5%	70-130	10.6	30
perfluorohexanoate	**154**			8.89	"	124.4	36.8	94.4%	70-130	7.49	30
perfluoroheptanoate	**134**			8.89	"	124.4	17.1	94.1%	70-130	10.6	30
perfluorooctanoate	**116**			8.89	"	124.4	7.34	87.6%	70-130	11.9	30
perfluorononanoate	**110**			8.89	"	124.4	3.03	86.0%	70-130	12.0	30
perfluorodecanoate	**98.5**			8.89	"	124.4	U	79.2%	70-130	12.9	30
perfluoroundecanoate	**96.0**			8.89	"	124.4	U	77.2%	70-130	14.3	30
perfluorododecanoate	**80.9**	Q		8.89	"	124.4	1.49	63.8%	70-130	17.2	30
perfluorotridecanoate	**53.1**	Q		8.89	"	124.4	U	42.7%	70-130	36.2	30
perfluorotetradecanoate	**12.0**	Q		8.89	"	124.4	U	9.68%	70-130	98.8	30
perfluorobutyl sulfonate	**130**			8.89	"	124.4	8.02	98.3%	70-130	9.78	30
perfluorohexyl sulfonate	**127**			8.89	"	124.4	12.7	92.1%	70-130	11.5	30
perfluorooctyl sulfonate	**152**			8.89	"	124.4	39.9	90.5%	70-130	13.1	30
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	**104**			8.89	"	124.4	1.43	82.3%	70-130	14.9	30
perfluoro-1-pentanesulfonate (PFPeS)	**118**			8.89	"	124.4	2.11	93.0%	70-130	13.6	30
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	**459**			8.89	"	124.4	349	88.2%	70-130	8.66	30
perfluoro-1-heptanesulfonate (PFHpS)	**114**			8.89	"	124.4	U	91.6%	70-130	12.8	30
perfluoro-1-octanesulfonamide (FOSA)	**103**			8.89	"	124.4	U	82.4%	70-130	17.9	30
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	**95.8**			8.89	"	124.4	4.01	73.8%	70-130	19.9	30
perfluoro-1-nonanesulfonate (PFNS)	**103**			8.89	"	124.4	U	82.6%	70-130	15.4	30
N-MeFOSAA	**93.6**			8.89	"	124.4	U	75.3%	70-130	11.4	30
N-EtFOSAA	**92.4**			8.89	"	124.4	U	74.3%	70-130	16.9	30
perfluoro-1-decanesulfonate (PFDS)	**85.8**	Q		8.89	"	124.4	U	69.0%	70-130	24.3	30
Surrogate: D5-N-EtFOSAA	*88.4*				*"*	*124.4*		*71.1%*	*70-130*		
Surrogate: D3-N-MeFOSAA	*95.7*				*"*	*124.4*		*76.9%*	*70-130*		
Surrogate: perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	*96.2*				*"*	*120.4*		*79.9%*	*70-130*		
Surrogate: perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	*119*				*"*	*118.0*		*101%*	*70-130*		

Environmental Protection Agency Region 5
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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS - Quality Control
US EPA Region 5 Chicago Regional Laboratory

Batch B19E015 - *** DEFAULT PREP ***

Matrix Spike Dup (B19E015-MSD1) **Source: 1905009-07** **Prepared: May-08-19 Analyzed: May-09-19**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Surrogate: perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:	*102*				*ng/L*	*116.3*		*87.3%*	*70-130*		
Surrogate: M9PFNA	*112*				*"*	*124.4*		*90.2%*	*70-130*		
Surrogate: M8PFOSA	*93.6*				*"*	*124.4*		*75.2%*	*70-130*		
Surrogate: M8PFOS	*109*				*"*	*119.0*		*91.7%*	*70-130*		
Surrogate: M8PFOA	*115*				*"*	*124.4*		*92.5%*	*70-130*		
Surrogate: M7PFUnA	*93.6*				*"*	*124.4*		*75.2%*	*70-130*		
Surrogate: M6PFDA	*100*				*"*	*124.4*		*80.6%*	*70-130*		
Surrogate: M5PFPeA	*129*				*"*	*124.4*		*104%*	*70-130*		
Surrogate: M5PFHxA	*118*				*"*	*124.4*		*94.6%*	*70-130*		
Surrogate: M4PFHpA	*119*				*"*	*124.4*		*96.0%*	*70-130*		
Surrogate: M3PFHxS	*112*				*"*	*117.7*		*94.8%*	*70-130*		
Surrogate: M3PFBS	*104*				*"*	*115.5*		*89.8%*	*70-130*		
Surrogate: M2PFTreA	*12.9*	Q			*"*	*124.4*		*10.4%*	*70-130*		
Surrogate: MPFDoA	*83.8*	Q			*"*	*124.4*		*67.4%*	*70-130*		
Surrogate: MPFBA	*137*				*"*	*124.4*		*110%*	*70-130*		

Batch B19E018 - *** DEFAULT PREP ***

Blank (B19E018-BLK1) **Prepared: May-08-19 Analyzed: May-09-19**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
perfluorobutanoate	**U**			50.0	ng/L						
perfluoropentanoate	**U**			50.0	"						
perfluorohexanoate	**U**			10.0	"						
perfluoroheptanoate	**U**			10.0	"						
perfluorooctanoate	**U**			10.0	"						
perfluorononanoate	**U**			10.0	"						
perfluorodecanoate	**U**			10.0	"						
perfluoroundecanoate	**U**			10.0	"						
perfluorododecanoate	**U**			10.0	"						
perfluorotridecanoate	**U**			10.0	"						
perfluorotetradecanoate	**U**			10.0	"						
perfluorobutyl sulfonate	**U**			10.0	"						
perfluorohexyl sulfonate	**U**			10.0	"						

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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS - Quality Control
US EPA Region 5 Chicago Regional Laboratory

Batch B19E018 - *** DEFAULT PREP ***

Blank (B19E018-BLK1) **Prepared: May-08-19 Analyzed: May-09-19**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
perfluorooctyl sulfonate	U			10.0	ng/L						
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	U			10.0	"						
perfluoro-1-pentanesulfonate (PFPeS)	U			10.0	"						
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	U			10.0	"						
perfluoro-1-heptanesulfonate (PFHpS)	U			10.0	"						
perfluoro-1-octanesulfonamide (FOSA)	U			10.0	"						
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	U			10.0	"						
perfluoro-1-nonanesulfonate (PFNS)	U			10.0	"						
N-MeFOSAA	U			10.0	"						
N-EtFOSAA	U			10.0	"						
perfluoro-1-decanesulfonate (PFDS)	U			10.0	"						
Surrogate: D5-N-EtFOSAA	*145*				*"*	*160.0*		*90.6%*	*70-130*		
Surrogate: D3-N-MeFOSAA	*151*				*"*	*160.0*		*94.4%*	*70-130*		
Surrogate: perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	*135*				*"*	*154.9*		*87.0%*	*70-130*		
Surrogate: perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	*132*				*"*	*151.8*		*86.8%*	*70-130*		
Surrogate: perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:	*131*				*"*	*149.6*		*87.4%*	*70-130*		
Surrogate: M9PFNA	*149*				*"*	*160.0*		*92.8%*	*70-130*		
Surrogate: M8PFOSA	*150*				*"*	*160.0*		*93.7%*	*70-130*		
Surrogate: M8PFOS	*141*				*"*	*153.1*		*92.1%*	*70-130*		
Surrogate: M8PFOA	*148*				*"*	*160.0*		*92.3%*	*70-130*		
Surrogate: M7PFUnA	*144*				*"*	*160.0*		*90.2%*	*70-130*		
Surrogate: M6PFDA	*143*				*"*	*160.0*		*89.1%*	*70-130*		
Surrogate: M5PFPeA	*144*				*"*	*160.0*		*90.0%*	*70-130*		
Surrogate: M5PFHxA	*146*				*"*	*160.0*		*91.0%*	*70-130*		
Surrogate: M4PFHpA	*145*				*"*	*160.0*		*90.4%*	*70-130*		
Surrogate: M3PFHxS	*138*				*"*	*151.4*		*91.4%*	*70-130*		
Surrogate: M3PFBS	*137*				*"*	*148.6*		*92.4%*	*70-130*		
Surrogate: M2PFTreA	*135*				*"*	*160.0*		*84.6%*	*70-130*		
Surrogate: MPFDoA	*146*				*"*	*160.0*		*91.4%*	*70-130*		

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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS - Quality Control
US EPA Region 5 Chicago Regional Laboratory

Batch B19E018 - *** DEFAULT PREP ***

Blank (B19E018-BLK1) **Prepared: May-08-19 Analyzed: May-09-19**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Surrogate: MPFBA	*141*				*ng/L*	*160.0*		*87.9%*	*70-130*		

Blank (B19E018-BLK2) **Prepared: May-08-19 Analyzed: May-09-19**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
perfluorobutanoate	U			50.0	ng/L						
perfluoropentanoate	U			50.0	"						
perfluorohexanoate	U			10.0	"						
perfluoroheptanoate	U			10.0	"						
perfluorooctanoate	U			10.0	"						
perfluorononanoate	U			10.0	"						
perfluorodecanoate	U			10.0	"						
perfluoroundecanoate	U			10.0	"						
perfluorododecanoate	U			10.0	"						
perfluorotridecanoate	U			10.0	"						
perfluorotetradecanoate	U			10.0	"						
perfluorobutyl sulfonate	U			10.0	"						
perfluorohexyl sulfonate	U			10.0	"						
perfluorooctyl sulfonate	U			10.0	"						
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	U			10.0	"						
perfluoro-1-pentanesulfonate (PFPeS)	U			10.0	"						
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	U			10.0	"						
perfluoro-1-heptanesulfonate (PFHpS)	U			10.0	"						
perfluoro-1-octanesulfonamide (FOSA)	U			10.0	"						
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	U			10.0	"						
perfluoro-1-nonanesulfonate (PFNS)	U			10.0	"						
N-MeFOSAA	U			10.0	"						
N-EtFOSAA	U			10.0	"						
perfluoro-1-decanesulfonate (PFDS)	U			10.0	"						

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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS - Quality Control
US EPA Region 5 Chicago Regional Laboratory

Batch B19E018 - *** DEFAULT PREP ***

Blank (B19E018-BLK2) **Prepared: May-08-19 Analyzed: May-09-19**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Surrogate: D5-N-EtFOSAA	*153*				*ng/L*	*160.0*		*95.7%*	*70-130*		
Surrogate: D3-N-MeFOSAA	*157*				*"*	*160.0*		*98.2%*	*70-130*		
Surrogate: perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	*143*				*"*	*154.9*		*92.6%*	*70-130*		
Surrogate: perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	*140*				*"*	*151.8*		*92.2%*	*70-130*		
Surrogate: perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:	*138*				*"*	*149.6*		*92.5%*	*70-130*		
Surrogate: M9PFNA	*150*				*"*	*160.0*		*94.0%*	*70-130*		
Surrogate: M8PFOSA	*158*				*"*	*160.0*		*98.9%*	*70-130*		
Surrogate: M8PFOS	*147*				*"*	*153.1*		*95.8%*	*70-130*		
Surrogate: M8PFOA	*153*				*"*	*160.0*		*95.7%*	*70-130*		
Surrogate: M7PFUnA	*151*				*"*	*160.0*		*94.5%*	*70-130*		
Surrogate: M6PFDA	*151*				*"*	*160.0*		*94.4%*	*70-130*		
Surrogate: M5PFPeA	*145*				*"*	*160.0*		*90.9%*	*70-130*		
Surrogate: M5PFHxA	*152*				*"*	*160.0*		*95.2%*	*70-130*		
Surrogate: M4PFHpA	*151*				*"*	*160.0*		*94.1%*	*70-130*		
Surrogate: M3PFHxS	*149*				*"*	*151.4*		*98.3%*	*70-130*		
Surrogate: M3PFBS	*141*				*"*	*148.6*		*95.2%*	*70-130*		
Surrogate: M2PFTreA	*147*				*"*	*160.0*		*92.1%*	*70-130*		
Surrogate: MPFDoA	*149*				*"*	*160.0*		*93.4%*	*70-130*		
Surrogate: MPFBA	*149*				*"*	*160.0*		*93.4%*	*70-130*		

LCS (B19E018-BS1) **Prepared: May-08-19 Analyzed: May-09-19**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
perfluorobutanoate	**682**			50.0	ng/L	800.0		85.2%	70-130		
perfluoropentanoate	**711**			50.0	"	800.0		88.9%	70-130		
perfluorohexanoate	**140**			10.0	"	160.0		87.3%	70-130		
perfluoroheptanoate	**135**			10.0	"	160.0		84.6%	70-130		
perfluorooctanoate	**141**			10.0	"	160.0		88.2%	70-130		
perfluorononanoate	**140**			10.0	"	160.0		87.3%	70-130		
perfluorodecanoate	**137**			10.0	"	160.0		85.7%	70-130		
perfluoroundecanoate	**139**			10.0	"	160.0		86.8%	70-130		
perfluorododecanoate	**137**			10.0	"	160.0		85.5%	70-130		

Environmental Protection Agency Region 5
Chicago Regional Laboratory
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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

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US EPA Region 5 Chicago Regional Laboratory

Batch B19E018 - *** DEFAULT PREP ***

LCS (B19E018-BS1) **Prepared: May-08-19 Analyzed: May-09-19**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
perfluorotridecanoate	**134**			10.0	ng/L	160.0		83.7%	70-130		
perfluorotetradecanoate	**130**			10.0	"	160.0		81.3%	70-130		
perfluorobutyl sulfonate	**141**			10.0	"	160.0		88.3%	70-130		
perfluorohexyl sulfonate	**149**			10.0	"	160.0		93.4%	70-130		
perfluorooctyl sulfonate	**142**			10.0	"	160.0		88.9%	70-130		
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	**138**			10.0	"	160.0		86.3%	70-130		
perfluoro-1-pentanesulfonate (PFPeS)	**142**			10.0	"	160.0		88.6%	70-130		
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	**143**			10.0	"	160.0		89.4%	70-130		
perfluoro-1-heptanesulfonate (PFHpS)	**143**			10.0	"	160.0		89.5%	70-130		
perfluoro-1-octanesulfonamide (FOSA)	**142**			10.0	"	160.0		88.8%	70-130		
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	**142**			10.0	"	160.0		88.7%	70-130		
perfluoro-1-nonanesulfonate (PFNS)	**140**			10.0	"	160.0		87.7%	70-130		
N-MeFOSAA	**135**			10.0	"	160.0		84.6%	70-130		
N-EtFOSAA	**138**			10.0	"	160.0		86.2%	70-130		
perfluoro-1-decanesulfonate (PFDS)	**143**			10.0	"	160.0		89.1%	70-130		
Surrogate: D5-N-EtFOSAA	*155*				*"*	*160.0*		*96.7%*	*70-130*		
Surrogate: D3-N-MeFOSAA	*156*				*"*	*160.0*		*97.7%*	*70-130*		
Surrogate: perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	*147*				*"*	*154.9*		*95.0%*	*70-130*		
Surrogate: perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	*147*				*"*	*151.8*		*96.6%*	*70-130*		
Surrogate: perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:	*145*				*"*	*149.6*		*97.0%*	*70-130*		
Surrogate: M9PFNA	*153*				*"*	*160.0*		*95.4%*	*70-130*		
Surrogate: M8PFOSA	*165*				*"*	*160.0*		*103%*	*70-130*		
Surrogate: M8PFOS	*152*				*"*	*153.1*		*99.3%*	*70-130*		
Surrogate: M8PFOA	*153*				*"*	*160.0*		*95.5%*	*70-130*		
Surrogate: M7PFUnA	*152*				*"*	*160.0*		*95.1%*	*70-130*		
Surrogate: M6PFDA	*151*				*"*	*160.0*		*94.5%*	*70-130*		
Surrogate: M5PFPeA	*153*				*"*	*160.0*		*95.6%*	*70-130*		
Surrogate: M5PFHxA	*152*				*"*	*160.0*		*95.1%*	*70-130*		

Environmental Protection Agency Region 5
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Phone:(312)353-8370 Fax:(312)886-2591

Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

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Batch B19E018 - *** DEFAULT PREP ***

LCS (B19E018-BS1) **Prepared: May-08-19 Analyzed: May-09-19**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Surrogate: M4PFHpA	*150*				*ng/L*	*160.0*		*93.6%*	*70-130*		
Surrogate: M3PFHxS	*148*				*"*	*151.4*		*97.5%*	*70-130*		
Surrogate: M3PFBS	*145*				*"*	*148.6*		*97.6%*	*70-130*		
Surrogate: M2PFTreA	*143*				*"*	*160.0*		*89.2%*	*70-130*		
Surrogate: MPFDoA	*148*				*"*	*160.0*		*92.3%*	*70-130*		
Surrogate: MPFBA	*149*				*"*	*160.0*		*93.1%*	*70-130*		

LCS Dup (B19E018-BSD1) **Prepared: May-08-19 Analyzed: May-09-19**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
perfluorobutanoate	**710**			50.0	ng/L	800.0		88.7%	70-130	4.03	30
perfluoropentanoate	**739**			50.0	"	800.0		92.4%	70-130	3.80	30
perfluorohexanoate	**142**			10.0	"	160.0		88.8%	70-130	1.79	30
perfluoroheptanoate	**142**			10.0	"	160.0		88.7%	70-130	4.75	30
perfluorooctanoate	**148**			10.0	"	160.0		92.8%	70-130	5.03	30
perfluorononanoate	**149**			10.0	"	160.0		93.1%	70-130	6.34	30
perfluorodecanoate	**146**			10.0	"	160.0		91.2%	70-130	6.26	30
perfluoroundecanoate	**144**			10.0	"	160.0		90.1%	70-130	3.78	30
perfluorododecanoate	**145**			10.0	"	160.0		90.7%	70-130	5.93	30
perfluorotridecanoate	**142**			10.0	"	160.0		88.5%	70-130	5.62	30
perfluorotetradecanoate	**143**			10.0	"	160.0		89.4%	70-130	9.53	30
perfluorobutyl sulfonate	**143**			10.0	"	160.0		89.6%	70-130	1.46	30
perfluorohexyl sulfonate	**156**			10.0	"	160.0		97.3%	70-130	4.04	30
perfluorooctyl sulfonate	**149**			10.0	"	160.0		93.1%	70-130	4.61	30
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	**141**			10.0	"	160.0		88.1%	70-130	2.01	30
perfluoro-1-pentanesulfonate (PFPeS)	**150**			10.0	"	160.0		93.8%	70-130	5.80	30
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	**152**			10.0	"	160.0		95.0%	70-130	6.12	30
perfluoro-1-heptanesulfonate (PFHpS)	**149**			10.0	"	160.0		92.8%	70-130	3.62	30
perfluoro-1-octanesulfonamide (FOSA)	**146**			10.0	"	160.0		91.3%	70-130	2.76	30
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	**149**			10.0	"	160.0		93.1%	70-130	4.78	30

Environmental Protection Agency Region 5
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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS - Quality Control
US EPA Region 5 Chicago Regional Laboratory

Batch B19E018 - *** DEFAULT PREP ***

LCS Dup (B19E018-BSD1) **Prepared: May-08-19 Analyzed: May-09-19**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
perfluoro-1-nonanesulfonate (PFNS)	**151**			10.0	ng/L	160.0		94.6%	70-130	7.65	30
N-MeFOSAA	**142**			10.0	"	160.0		88.6%	70-130	4.71	30
N-EtFOSAA	**150**			10.0	"	160.0		93.8%	70-130	8.37	30
perfluoro-1-decanesulfonate (PFDS)	**150**			10.0	"	160.0		93.5%	70-130	4.83	30
Surrogate: D5-N-EtFOSAA	*149*				*"*	*160.0*		*93.1%*	*70-130*		
Surrogate: D3-N-MeFOSAA	*155*				*"*	*160.0*		*96.8%*	*70-130*		
Surrogate: perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	*146*				*"*	*154.9*		*94.0%*	*70-130*		
Surrogate: perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	*149*				*"*	*151.8*		*98.4%*	*70-130*		
Surrogate: perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:	*142*				*"*	*149.6*		*94.8%*	*70-130*		
Surrogate: M9PFNA	*153*				*"*	*160.0*		*95.6%*	*70-130*		
Surrogate: M8PFOSA	*156*				*"*	*160.0*		*97.6%*	*70-130*		
Surrogate: M8PFOS	*146*				*"*	*153.1*		*95.6%*	*70-130*		
Surrogate: M8PFOA	*155*				*"*	*160.0*		*96.6%*	*70-130*		
Surrogate: M7PFUnA	*153*				*"*	*160.0*		*95.5%*	*70-130*		
Surrogate: M6PFDA	*150*				*"*	*160.0*		*93.5%*	*70-130*		
Surrogate: M5PFPeA	*153*				*"*	*160.0*		*95.7%*	*70-130*		
Surrogate: M5PFHxA	*148*				*"*	*160.0*		*92.3%*	*70-130*		
Surrogate: M4PFHpA	*151*				*"*	*160.0*		*94.1%*	*70-130*		
Surrogate: M3PFHxS	*146*				*"*	*151.4*		*96.6%*	*70-130*		
Surrogate: M3PFBS	*144*				*"*	*148.6*		*97.2%*	*70-130*		
Surrogate: M2PFTreA	*146*				*"*	*160.0*		*91.4%*	*70-130*		
Surrogate: MPFDoA	*148*				*"*	*160.0*		*92.5%*	*70-130*		
Surrogate: MPFBA	*151*				*"*	*160.0*		*94.3%*	*70-130*		

Duplicate (B19E018-DUP1) **Source: 1905006-02** **Prepared: May-08-19 Analyzed: May-09-19**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
perfluorobutanoate	**16.2**			43.7	ng/L		19.6			19.1	30
perfluoropentanoate	**49.1**			43.7	"		48.3			1.63	30
perfluorohexanoate	**34.8**			8.74	"		38.1			9.12	30
perfluoroheptanoate	**14.1**			8.74	"		15.3			8.03	30
perfluorooctanoate	**10.1**			8.74	"		9.76			3.58	30

Environmental Protection Agency Region 5
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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS - Quality Control
US EPA Region 5 Chicago Regional Laboratory

Batch B19E018 - *** DEFAULT PREP ***

Duplicate (B19E018-DUP1) **Source: 1905006-02** **Prepared: May-08-19 Analyzed: May-09-19**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
perfluorononanoate	**9.77**	Q		8.74	ng/L		71.2			152	30
perfluorodecanoate	**2.29**			8.74	"		2.27			0.808	30
perfluoroundecanoate	**2.49**	Q		8.74	"		7.54			101	30
perfluorododecanoate	**1.15**			8.74	"		U				30
perfluorotridecanoate	**U**			8.74	"		U				30
perfluorotetradecanoate	**U**			8.74	"		U				30
perfluorobutyl sulfonate	**9.37**			8.74	"		9.22			1.63	30
perfluorohexyl sulfonate	**13.8**			8.74	"		14.3			3.15	30
perfluorooctyl sulfonate	**51.1**			8.74	"		54.2			5.88	30
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	**U**			8.74	"		U				30
perfluoro-1-pentanesulfonate (PFPeS)	**1.83**			8.74	"		2.29			22.2	30
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	**361**			8.74	"		369			2.25	30
perfluoro-1-heptanesulfonate (PFHpS)	**2.31**			8.74	"		U			7.25	30
perfluoro-1-octanesulfonamide (FOSA)	**U**			8.74	"		U				30
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	**3.92**			8.74	"		4.06			3.29	30
perfluoro-1-nonanesulfonate (PFNS)	**U**			8.74	"		U				30
N-MeFOSAA	**U**			8.74	"		U				30
N-EtFOSAA	**U**			8.74	"		1.94				30
perfluoro-1-decanesulfonate (PFDS)	**U**			8.74	"		U				30
Surrogate: D5-N-EtFOSAA	*90.7*				*"*	*119.7*		*75.7%*	*70-130*		
Surrogate: D3-N-MeFOSAA	*96.0*				*"*	*119.7*		*80.1%*	*70-130*		
Surrogate: perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	*86.7*				*"*	*115.9*		*74.8%*	*70-130*		
Surrogate: perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	*108*				*"*	*113.6*		*95.0%*	*70-130*		
Surrogate: perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:	*79.8*				*"*	*112.0*		*71.3%*	*70-130*		
Surrogate: M9PFNA	*108*				*"*	*119.7*		*90.6%*	*70-130*		
Surrogate: M8PFOSA	*106*				*"*	*119.7*		*88.5%*	*70-130*		
Surrogate: M8PFOS	*104*				*"*	*114.6*		*90.5%*	*70-130*		
Surrogate: M8PFOA	*112*				*"*	*119.7*		*93.5%*	*70-130*		

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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

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US EPA Region 5 Chicago Regional Laboratory

Batch B19E018 - *** DEFAULT PREP ***

Duplicate (B19E018-DUP1) **Source: 1905006-02** **Prepared: May-08-19 Analyzed: May-09-19**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Surrogate: M7PFUnA	*99.4*				*ng/L*	*119.7*		*83.0%*	*70-130*		
Surrogate: M6PFDA	*106*				*"*	*119.7*		*88.1%*	*70-130*		
Surrogate: M5PFPeA	*109*				*"*	*119.7*		*91.2%*	*70-130*		
Surrogate: M5PFHxA	*110*				*"*	*119.7*		*91.9%*	*70-130*		
Surrogate: M4PFHpA	*109*				*"*	*119.7*		*90.6%*	*70-130*		
Surrogate: M3PFHxS	*108*				*"*	*113.3*		*95.6%*	*70-130*		
Surrogate: M3PFBS	*105*				*"*	*111.2*		*94.7%*	*70-130*		
Surrogate: M2PFTreA	*6.56*	Q			*"*	*119.7*		*5.48%*	*70-130*		
Surrogate: MPFDoA	*80.8*	Q			*"*	*119.7*		*67.4%*	*70-130*		
Surrogate: MPFBA	*129*				*"*	*119.7*		*108%*	*70-130*		

MRL Check (B19E018-MRL1) **Prepared: May-08-19 Analyzed: May-09-19**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
perfluorobutanoate	**43.5**			50.0	ng/L	50.00		87.0%	50-150		
perfluoropentanoate	**48.3**			50.0	"	50.00		96.6%	50-150		
perfluorohexanoate	**7.86**			10.0	"	10.00		78.6%	50-150		
perfluoroheptanoate	**8.64**			10.0	"	10.00		86.4%	50-150		
perfluorooctanoate	**9.81**			10.0	"	10.00		98.1%	50-150		
perfluorononanoate	**9.16**			10.0	"	10.00		91.6%	50-150		
perfluorodecanoate	**9.77**			10.0	"	10.00		97.7%	50-150		
perfluoroundecanoate	**9.34**			10.0	"	10.00		93.4%	50-150		
perfluorododecanoate	**8.82**			10.0	"	10.00		88.2%	50-150		
perfluorotridecanoate	**9.28**			10.0	"	10.00		92.8%	50-150		
perfluorotetradecanoate	**8.75**			10.0	"	10.00		87.5%	50-150		
perfluorobutyl sulfonate	**9.66**			10.0	"	10.00		96.6%	50-150		
perfluorohexyl sulfonate	**8.02**			10.0	"	10.00		80.2%	50-150		
perfluorooctyl sulfonate	**7.12**			10.0	"	10.00		71.2%	50-150		
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	**7.79**			10.0	"	10.00		77.9%	50-150		
perfluoro-1-pentanesulfonate (PFPeS)	**7.86**			10.0	"	10.00		78.6%	50-150		
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	**16.8**	Q		10.0	"	10.00		168%	50-150		

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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS - Quality Control
US EPA Region 5 Chicago Regional Laboratory

Batch B19E018 - *** DEFAULT PREP ***

MRL Check (B19E018-MRL1) **Prepared: May-08-19 Analyzed: May-09-19**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
perfluoro-1-heptanesulfonate (PFHpS)	**9.49**			10.0	ng/L	10.00		94.9%	50-150		
perfluoro-1-octanesulfonamide (FOSA)	**9.25**			10.0	"	10.00		92.5%	50-150		
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	**8.65**			10.0	"	10.00		86.5%	50-150		
perfluoro-1-nonanesulfonate (PFNS)	**8.35**			10.0	"	10.00		83.5%	50-150		
N-MeFOSAA	**10.1**			10.0	"	10.00		101%	50-150		
N-EtFOSAA	**9.68**			10.0	"	10.00		96.8%	50-150		
perfluoro-1-decanesulfonate (PFDS)	**8.55**			10.0	"	10.00		85.5%	50-150		
Surrogate: D5-N-EtFOSAA	*156*				*"*	*160.0*		*97.7%*	*70-130*		
Surrogate: D3-N-MeFOSAA	*162*				*"*	*160.0*		*101%*	*70-130*		
Surrogate: perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	*152*				*"*	*154.9*		*97.9%*	*70-130*		
Surrogate: perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	*142*				*"*	*151.8*		*93.7%*	*70-130*		
Surrogate: perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:	*136*				*"*	*149.6*		*90.7%*	*70-130*		
Surrogate: M9PFNA	*152*				*"*	*160.0*		*95.0%*	*70-130*		
Surrogate: M8PFOSA	*160*				*"*	*160.0*		*100%*	*70-130*		
Surrogate: M8PFOS	*148*				*"*	*153.1*		*96.5%*	*70-130*		
Surrogate: M8PFOA	*155*				*"*	*160.0*		*96.8%*	*70-130*		
Surrogate: M7PFUnA	*154*				*"*	*160.0*		*95.9%*	*70-130*		
Surrogate: M6PFDA	*154*				*"*	*160.0*		*96.4%*	*70-130*		
Surrogate: M5PFPeA	*150*				*"*	*160.0*		*93.9%*	*70-130*		
Surrogate: M5PFHxA	*148*				*"*	*160.0*		*92.4%*	*70-130*		
Surrogate: M4PFHpA	*149*				*"*	*160.0*		*92.9%*	*70-130*		
Surrogate: M3PFHxS	*151*				*"*	*151.4*		*99.7%*	*70-130*		
Surrogate: M3PFBS	*143*				*"*	*148.6*		*96.4%*	*70-130*		
Surrogate: M2PFTreA	*148*				*"*	*160.0*		*92.2%*	*70-130*		
Surrogate: MPFDoA	*152*				*"*	*160.0*		*94.9%*	*70-130*		
Surrogate: MPFBA	*152*				*"*	*160.0*		*94.8%*	*70-130*		

MRL Check (B19E018-MRL2) **Prepared: May-08-19 Analyzed: May-09-19**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
perfluorobutanoate	**50.9**			50.0	ng/L	50.00		102%	50-150		

Environmental Protection Agency Region 5
Chicago Regional Laboratory
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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS - Quality Control
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Batch B19E018 - *** DEFAULT PREP ***

MRL Check (B19E018-MRL2) **Prepared: May-08-19 Analyzed: May-09-19**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
perfluoropentanoate	**52.2**			50.0	ng/L	50.00		104%	50-150		
perfluorohexanoate	**10.1**			10.0	"	10.00		101%	50-150		
perfluoroheptanoate	**9.14**			10.0	"	10.00		91.4%	50-150		
perfluorooctanoate	**10.3**			10.0	"	10.00		103%	50-150		
perfluorononanoate	**10.6**			10.0	"	10.00		106%	50-150		
perfluorodecanoate	**10.8**			10.0	"	10.00		108%	50-150		
perfluoroundecanoate	**10.3**			10.0	"	10.00		103%	50-150		
perfluorododecanoate	**9.98**			10.0	"	10.00		99.8%	50-150		
perfluorotridecanoate	**8.84**			10.0	"	10.00		88.4%	50-150		
perfluorotetradecanoate	**9.99**			10.0	"	10.00		99.9%	50-150		
perfluorobutyl sulfonate	**9.88**			10.0	"	10.00		98.8%	50-150		
perfluorohexyl sulfonate	**9.82**			10.0	"	10.00		98.2%	50-150		
perfluorooctyl sulfonate	**9.39**			10.0	"	10.00		93.9%	50-150		
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	**7.91**			10.0	"	10.00		79.1%	50-150		
perfluoro-1-pentanesulfonate (PFPeS)	**8.47**			10.0	"	10.00		84.7%	50-150		
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	**17.1**	Q		10.0	"	10.00		171%	50-150		
perfluoro-1-heptanesulfonate (PFHpS)	**10.0**			10.0	"	10.00		100%	50-150		
perfluoro-1-octanesulfonamide (FOSA)	**9.14**			10.0	"	10.00		91.4%	50-150		
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	**8.26**			10.0	"	10.00		82.6%	50-150		
perfluoro-1-nonanesulfonate (PFNS)	**10.4**			10.0	"	10.00		104%	50-150		
N-MeFOSAA	**10.3**			10.0	"	10.00		103%	50-150		
N-EtFOSAA	**10.4**			10.0	"	10.00		104%	50-150		
perfluoro-1-decanesulfonate (PFDS)	**9.23**			10.0	"	10.00		92.3%	50-150		
Surrogate: D5-N-EtFOSAA	*149*				*"*	*160.0*		*93.4%*	*70-130*		
Surrogate: D3-N-MeFOSAA	*153*				*"*	*160.0*		*95.4%*	*70-130*		
Surrogate: perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	*136*				*"*	*154.9*		*88.1%*	*70-130*		
Surrogate: perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	*136*				*"*	*151.8*		*89.9%*	*70-130*		
Surrogate: perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:	*129*				*"*	*149.6*		*86.2%*	*70-130*		

Environmental Protection Agency Region 5
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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

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US EPA Region 5 Chicago Regional Laboratory

Batch B19E018 - *** DEFAULT PREP ***

MRL Check (B19E018-MRL2) **Prepared: May-08-19 Analyzed: May-09-19**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Surrogate: M9PFNA	*151*				*ng/L*	*160.0*		*94.6%*	*70-130*		
Surrogate: M8PFOSA	*151*				*"*	*160.0*		*94.2%*	*70-130*		
Surrogate: M8PFOS	*148*				*"*	*153.1*		*96.7%*	*70-130*		
Surrogate: M8PFOA	*154*				*"*	*160.0*		*96.2%*	*70-130*		
Surrogate: M7PFUnA	*149*				*"*	*160.0*		*92.9%*	*70-130*		
Surrogate: M6PFDA	*148*				*"*	*160.0*		*92.2%*	*70-130*		
Surrogate: M5PFPeA	*148*				*"*	*160.0*		*92.7%*	*70-130*		
Surrogate: M5PFHxA	*147*				*"*	*160.0*		*91.9%*	*70-130*		
Surrogate: M4PFHpA	*146*				*"*	*160.0*		*91.5%*	*70-130*		
Surrogate: M3PFHxS	*147*				*"*	*151.4*		*97.2%*	*70-130*		
Surrogate: M3PFBS	*143*				*"*	*148.6*		*95.9%*	*70-130*		
Surrogate: M2PFTreA	*147*				*"*	*160.0*		*92.0%*	*70-130*		
Surrogate: MPFDoA	*146*				*"*	*160.0*		*91.4%*	*70-130*		
Surrogate: MPFBA	*149*				*"*	*160.0*		*93.2%*	*70-130*		

Matrix Spike (B19E018-MS1) **Source: 1905006-02** **Prepared: May-08-19 Analyzed: May-09-19**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
perfluorobutanoate	**639**			44.0	ng/L	608.4	19.6	102%	70-130		
perfluoropentanoate	**572**			44.0	"	608.4	48.3	86.0%	70-130		
perfluorohexanoate	**140**			8.80	"	121.7	38.1	83.9%	70-130		
perfluoroheptanoate	**117**			8.80	"	121.7	15.3	83.6%	70-130		
perfluorooctanoate	**112**			8.80	"	121.7	9.76	84.2%	70-130		
perfluorononanoate	**112**	Q		8.80	"	121.7	71.2	33.8%	70-130		
perfluorodecanoate	**101**			8.80	"	121.7	2.27	81.0%	70-130		
perfluoroundecanoate	**96.2**			8.80	"	121.7	7.54	72.9%	70-130		
perfluorododecanoate	**85.0**	Q		8.80	"	121.7	U	69.9%	70-130		
perfluorotridecanoate	**56.8**	Q		8.80	"	121.7	U	46.7%	70-130		
perfluorotetradecanoate	**10.1**	Q		8.80	"	121.7	U	8.33%	70-130		
perfluorobutyl sulfonate	**116**			8.80	"	121.7	9.22	87.8%	70-130		
perfluorohexyl sulfonate	**120**			8.80	"	121.7	14.3	86.9%	70-130		
perfluorooctyl sulfonate	**151**			8.80	"	121.7	54.2	79.3%	70-130		
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	**88.3**			8.80	"	121.7	U	72.6%	70-130		

Environmental Protection Agency Region 5
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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

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Batch B19E018 - *** DEFAULT PREP ***

Matrix Spike (B19E018-MS1) **Source: 1905006-02** **Prepared: May-08-19 Analyzed: May-09-19**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
perfluoro-1-pentanesulfonate (PFPeS)	**111**			8.80	ng/L	121.7	2.29	89.7%	70-130		
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	**442**	Q		8.80	"	121.7	369	60.2%	70-130		
perfluoro-1-heptanesulfonate (PFHpS)	**109**			8.80	"	121.7	U	89.3%	70-130		
perfluoro-1-octanesulfonamide (FOSA)	**99.2**			8.80	"	121.7	U	81.6%	70-130		
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	**99.1**			8.80	"	121.7	4.06	78.1%	70-130		
perfluoro-1-nonanesulfonate (PFNS)	**95.2**			8.80	"	121.7	U	78.3%	70-130		
N-MeFOSAA	**89.0**			8.80	"	121.7	U	73.1%	70-130		
N-EtFOSAA	**92.9**			8.80	"	121.7	1.94	74.7%	70-130		
perfluoro-1-decanesulfonate (PFDS)	**82.5**	Q		8.80	"	121.7	U	67.8%	70-130		
Surrogate: D5-N-EtFOSAA	*90.2*				*"*	*121.7*		*74.1%*	*70-130*		
Surrogate: D3-N-MeFOSAA	*92.0*				*"*	*121.7*		*75.6%*	*70-130*		
Surrogate: perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	*90.1*				*"*	*117.8*		*76.5%*	*70-130*		
Surrogate: perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	*105*				*"*	*115.5*		*91.2%*	*70-130*		
Surrogate: perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:	*83.5*				*"*	*113.8*		*73.4%*	*70-130*		
Surrogate: M9PFNA	*103*				*"*	*121.7*		*84.3%*	*70-130*		
Surrogate: M8PFOSA	*103*				*"*	*121.7*		*84.8%*	*70-130*		
Surrogate: M8PFOS	*98.7*				*"*	*116.5*		*84.8%*	*70-130*		
Surrogate: M8PFOA	*104*				*"*	*121.7*		*85.3%*	*70-130*		
Surrogate: M7PFUnA	*95.7*				*"*	*121.7*		*78.6%*	*70-130*		
Surrogate: M6PFDA	*101*				*"*	*121.7*		*82.6%*	*70-130*		
Surrogate: M5PFPeA	*106*				*"*	*121.7*		*87.0%*	*70-130*		
Surrogate: M5PFHxA	*103*				*"*	*121.7*		*84.6%*	*70-130*		
Surrogate: M4PFHpA	*102*				*"*	*121.7*		*83.7%*	*70-130*		
Surrogate: M3PFHxS	*98.6*				*"*	*115.1*		*85.7%*	*70-130*		
Surrogate: M3PFBS	*99.2*				*"*	*113.0*		*87.8%*	*70-130*		
Surrogate: M2PFTreA	*10.0*	Q			*"*	*121.7*		*8.23%*	*70-130*		
Surrogate: MPFDoA	*77.8*	Q			*"*	*121.7*		*63.9%*	*70-130*		
Surrogate: MPFBA	*123*				*"*	*121.7*		*101%*	*70-130*		

Environmental Protection Agency Region 5
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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

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Batch B19E018 - *** DEFAULT PREP ***

Matrix Spike Dup (B19E018-MSD1) **Source: 1905006-02** **Prepared: May-08-19 Analyzed: May-09-19**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
perfluorobutanoate	**716**			46.3	ng/L	680.7	19.6	102%	70-130	11.3	30
perfluoropentanoate	**642**			46.3	"	680.7	48.3	87.2%	70-130	11.5	30
perfluorohexanoate	**155**			9.25	"	136.1	38.1	85.7%	70-130	9.91	30
perfluoroheptanoate	**134**			9.25	"	136.1	15.3	87.1%	70-130	13.5	30
perfluorooctanoate	**131**			9.25	"	136.1	9.76	88.7%	70-130	15.1	30
perfluorononanoate	**129**	Q		9.25	"	136.1	71.2	42.2%	70-130	13.5	30
perfluorodecanoate	**118**			9.25	"	136.1	2.27	84.8%	70-130	15.4	30
perfluoroundecanoate	**117**			9.25	"	136.1	7.54	80.7%	70-130	19.8	30
perfluorododecanoate	**108**			9.25	"	136.1	U	79.1%	70-130	23.5	30
perfluorotridecanoate	**94.0**	Q		9.25	"	136.1	U	69.0%	70-130	49.3	30
perfluorotetradecanoate	**56.5**	Q		9.25	"	136.1	U	41.5%	70-130	139	30
perfluorobutyl sulfonate	**131**			9.25	"	136.1	9.22	89.8%	70-130	12.4	30
perfluorohexyl sulfonate	**136**			9.25	"	136.1	14.3	89.3%	70-130	12.4	30
perfluorooctyl sulfonate	**167**			9.25	"	136.1	54.2	82.7%	70-130	10.2	30
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	**100**			9.25	"	136.1	U	73.7%	70-130	12.7	30
perfluoro-1-pentanesulfonate (PFPeS)	**123**			9.25	"	136.1	2.29	88.6%	70-130	9.84	30
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	**481**			9.25	"	136.1	369	82.0%	70-130	8.30	30
perfluoro-1-heptanesulfonate (PFHpS)	**129**			9.25	"	136.1	U	94.8%	70-130	17.1	30
perfluoro-1-octanesulfonamide (FOSA)	**121**			9.25	"	136.1	U	89.2%	70-130	20.1	30
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	**108**			9.25	"	136.1	4.06	76.5%	70-130	8.79	30
perfluoro-1-nonanesulfonate (PFNS)	**122**			9.25	"	136.1	U	89.7%	70-130	24.8	30
N-MeFOSAA	**107**			9.25	"	136.1	U	78.8%	70-130	18.6	30
N-EtFOSAA	**114**			9.25	"	136.1	1.94	82.4%	70-130	20.5	30
perfluoro-1-decanesulfonate (PFDS)	**112**	Q		9.25	"	136.1	U	82.6%	70-130	30.7	30
Surrogate: D5-N-EtFOSAA	*111*				*"*	*136.1*		*81.7%*	*70-130*		
Surrogate: D3-N-MeFOSAA	*116*				*"*	*136.1*		*84.9%*	*70-130*		
Surrogate: perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	*112*				*"*	*131.8*		*85.3%*	*70-130*		
Surrogate: perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	*127*				*"*	*129.2*		*98.0%*	*70-130*		

Environmental Protection Agency Region 5
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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Analysis by LC MS MS - Quality Control
US EPA Region 5 Chicago Regional Laboratory

Batch B19E018 - *** DEFAULT PREP ***

Matrix Spike Dup (B19E018-MSD1) **Source: 1905006-02** **Prepared: May-08-19 Analyzed: May-09-19**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Surrogate: perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:	*98.0*				*ng/L*	*127.3*		*77.0%*	*70-130*		
Surrogate: M9PFNA	*125*				*"*	*136.1*		*92.1%*	*70-130*		
Surrogate: M8PFOSA	*127*				*"*	*136.1*		*93.6%*	*70-130*		
Surrogate: M8PFOS	*121*				*"*	*130.3*		*92.7%*	*70-130*		
Surrogate: M8PFOA	*127*				*"*	*136.1*		*93.3%*	*70-130*		
Surrogate: M7PFUnA	*120*				*"*	*136.1*		*88.0%*	*70-130*		
Surrogate: M6PFDA	*123*				*"*	*136.1*		*90.6%*	*70-130*		
Surrogate: M5PFPeA	*126*				*"*	*136.1*		*92.9%*	*70-130*		
Surrogate: M5PFHxA	*126*				*"*	*136.1*		*92.8%*	*70-130*		
Surrogate: M4PFHpA	*121*				*"*	*136.1*		*88.7%*	*70-130*		
Surrogate: M3PFHxS	*124*				*"*	*128.8*		*96.7%*	*70-130*		
Surrogate: M3PFBS	*118*				*"*	*126.5*		*93.5%*	*70-130*		
Surrogate: M2PFTreA	*56.9*	Q			*"*	*136.1*		*41.8%*	*70-130*		
Surrogate: MPFDoA	*108*				*"*	*136.1*		*79.3%*	*70-130*		
Surrogate: MPFBA	*146*				*"*	*136.1*		*107%*	*70-130*		

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Region 6, US EPA	Project: R06 Deer Park PFAS	
10625 Fallstone Road	Project Number: [none]	**Reported:**
Houston TX, 77099	Project Manager: Matthew Loesel	May-09-19 16:52

Notes and Definitions

U	Not Detected
NR	Not Reported
Q	QC limit Exceeded