



**Groundwater Sample Results,
Level 4 Laboratory Report, Electronic Data Deliverable,
Data Validation Report, and the Sample Location Report,
SDG NCB01**

*Naval Construction Battalion Center Gulfport
Gulfport, Mississippi*

July 2019

N62604.SF.001997
NCBC GULFPORT
5090.3c

LABORATORY DATA PACKAGE, NCB01, NCBC GULFPORT MS
04/27/2015
EUROFINS LANCASTER LABORATORIES

DoD Type I Data Package

Prepared for:

Tetra Tech Inc.
Foster Plaza VII
661 Andersen Drive
Pittsburgh PA 15220

Project: NCBC Gulfport
Groundwater Samples
Collected on 03/24/15

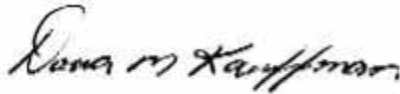
SDG# NCB01

GROUP	SAMPLE NUMBERS
1548038	7819820-7819827

A2LA (DoD) Cert. # 0001.01
PA Cert. # 36-00037
NY Cert. # 10670
NJ Cert. # PA011
NC Cert. # 521
TX Cert. # T104704194-13-10
AZ Cert. # AZ0780

Through our technical processes and second person review of data, we have established that our data/deliverables are in compliance with the methods and project requirements unless otherwise noted or previously resolved with the client.

Authorized by:



Date: 04/27/2015

Dana M. Kauffman
Manager

Any questions or concerns you might have regarding this data package should be directed to your client representative, Kaitlin Plasterer at (717) 556-7323.

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**Sample Reference List for SDG Number NCB01
with a Data Package Type of I-DOD**

07558 - Tetra Tech Inc.
Project: NCBC Gulfport

Lab Sample Number	Lab Sample Code	Client Sample Description
7819820	GW04-	06GW04032415 Grab Groundwater
7819821	GW06-	06GW06032415 Grab Groundwater
7819822	GW03-	06GW03032415 Grab Groundwater
7819823	GW09-	06GW09032415 Grab Groundwater
7819824	GW16-	06GW16032415 Grab Groundwater
7819825	GW16-	06GW16032415MS Grab Groundwater
7819826	GW16-	06GW16032415MSD Grab Groundwater
7819827	NCBFD	06FD032415 Grab Groundwater

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 · 717-656-2300 Fax: 717-656-2681 · www.lancasterlabs.com

10954 PFAAs in Water by LC/MS/MS

A 100 ml sample of water is extracted using a solid phase extraction (SPE) cartridge. The resulting extract is analyzed by LC/MS/MS in negative electrospray ionization (ESI) mode.

Reference: Determination of Selected Perfluorinated Alkyl Acids (PFAAs) in Aqueous Samples by LC/MS/MS

Analysis Reports / Field Chain of Custody

ANALYTICAL RESULTS

Prepared by:

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

Prepared for:

Tetra Tech Inc.
Foster Plaza VII
661 Andersen Drive
Pittsburgh PA 15220

April 24, 2015

Project: NCBC Gulfport

Submittal Date: 03/25/2015
Group Number: 1548038
SDG: NCB01
PO Number: 1113382
Release Number: 112G02741
State of Sample Origin: MS

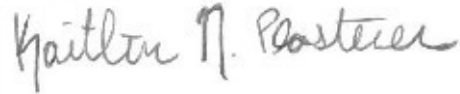
<u>Client Sample Description</u>	<u>Lancaster Labs (LL) #</u>
06GW04032415 Grab Groundwater	7819820
06GW06032415 Grab Groundwater	7819821
06GW03032415 Grab Groundwater	7819822
06GW09032415 Grab Groundwater	7819823
06GW16032415 Grab Groundwater	7819824
06GW16032415MS Grab Groundwater	7819825
06GW16032415MSD Grab Groundwater	7819826
06FD032415 Grab Groundwater	7819827

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

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

ELECTRONIC COPY TO	Tetra Tech, Inc.	Attn: Amy Thomson
ELECTRONIC COPY TO	Tetra Tech Inc.	Attn: Kelly Carper
ELECTRONIC COPY TO	Tetra Tech Inc.	Attn: Greg Roof

Respectfully Submitted,



Kaitlin N. Plasterer
Specialist

(717) 556-7323

Project Name: NCBC Gulfport
LL Group #: 1548038

General Comments:

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

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

Project specific QC samples are included in this data set

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

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

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

Analysis Specific Comments:

No additional comments are necessary.

Sample Description: 06GW04032415 Grab Groundwater
GPT6

LL Sample # WW 7819820
LL Group # 1548038
Account # 07558

Project Name: NCBC Gulfport

Collected: 03/24/2015 09:20

Tetra Tech Inc.

Submitted: 03/25/2015 09:15

Foster Plaza VII

Reported: 04/24/2015 15:45

661 Andersen Drive

Pittsburgh PA 15220

GW04- SDG#: NCB01-01

CAT No.	Analysis Name	CAS Number	Result	Detection Limit*	Limit of Detection	Limit of Quantitation	DF
Misc. Organics		EPA 537 Rev. 1.1 modified	ng/l	ng/l	ng/l	ng/l	
10954	Perfluoro-octanesulfonate	1763-23-1	N.D.	5	10	10	1
10954	Perfluorooctanoic acid	335-67-1	1 J	1	2	2	1

General Sample Comments

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10954	PFAAs in Water by LC/MS/MS	EPA 537 Rev. 1.1 modified	1	15085003	04/13/2015 00:06	Meng Yu	1

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

Sample Description: 06GW06032415 Grab Groundwater
GPT6

LL Sample # WW 7819821
LL Group # 1548038
Account # 07558

Project Name: NCBC Gulfport

Collected: 03/24/2015 10:51

Tetra Tech Inc.

Submitted: 03/25/2015 09:15

Foster Plaza VII

Reported: 04/24/2015 15:45

661 Andersen Drive

Pittsburgh PA 15220

GW06- SDG#: NCB01-02

CAT No.	Analysis Name	CAS Number	Result	Detection Limit*	Limit of Detection	Limit of Quantitation	DF
Misc. Organics		EPA 537 Rev. 1.1 modified	ng/l	ng/l	ng/l	ng/l	
10954	Perfluoro-octanesulfonate	1763-23-1	15	5	10	10	1
10954	Perfluorooctanoic acid	335-67-1	76	1	2	2	1

General Sample Comments

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10954	PFAAs in Water by LC/MS/MS	EPA 537 Rev. 1.1 modified	1	15085003	04/13/2015 00:23	Meng Yu	1

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

Sample Description: 06GW03032415 Grab Groundwater
GPT6

LL Sample # WW 7819822
LL Group # 1548038
Account # 07558

Project Name: NCBC Gulfport

Collected: 03/24/2015 11:20

Tetra Tech Inc.

Submitted: 03/25/2015 09:15

Foster Plaza VII

Reported: 04/24/2015 15:45

661 Andersen Drive

Pittsburgh PA 15220

GW03- SDG#: NCB01-03

CAT No.	Analysis Name	CAS Number	Result	Detection Limit*	Limit of Detection	Limit of Quantitation	DF
Misc. Organics		EPA 537 Rev. 1.1 modified	ng/l	ng/l	ng/l	ng/l	
10954	Perfluoro-octanesulfonate	1763-23-1	N.D.	20	30	30	3
10954	Perfluorooctanoic acid	335-67-1	480	3	6	6	3

General Sample Comments

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10954	PFAAs in Water by LC/MS/MS	EPA 537 Rev. 1.1 modified	1	15085003	04/13/2015 00:40	Meng Yu	3

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

Sample Description: 06GW09032415 Grab Groundwater
GPT6

LL Sample # WW 7819823
LL Group # 1548038
Account # 07558

Project Name: NCBC Gulfport

Collected: 03/24/2015 12:50

Tetra Tech Inc.

Submitted: 03/25/2015 09:15

Foster Plaza VII

Reported: 04/24/2015 15:45

661 Andersen Drive

Pittsburgh PA 15220

GW09- SDG#: NCB01-04

CAT No.	Analysis Name	CAS Number	Result	Detection Limit*	Limit of Detection	Limit of Quantitation	DF
Misc. Organics		EPA 537 Rev. 1.1 modified	ng/l	ng/l	ng/l	ng/l	
10954	Perfluoro-octanesulfonate	1763-23-1	N.D.	5	10	10	1
10954	Perfluorooctanoic acid	335-67-1	15	1	2	2	1

General Sample Comments

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10954	PFAAs in Water by LC/MS/MS	EPA 537 Rev. 1.1 modified	1	15085003	04/13/2015 00:57	Meng Yu	1

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

Sample Description: 06GW16032415 Grab Groundwater
GPT6

LL Sample # WW 7819824
LL Group # 1548038
Account # 07558

Project Name: NCBC Gulfport

Collected: 03/24/2015 12:59

Tetra Tech Inc.

Submitted: 03/25/2015 09:15

Foster Plaza VII

Reported: 04/24/2015 15:45

661 Andersen Drive

Pittsburgh PA 15220

GW16- SDG#: NCB01-05BKG

CAT No.	Analysis Name	CAS Number	Result	Detection Limit*	Limit of Detection	Limit of Quantitation	DF
Misc. Organics		EPA 537 Rev. 1.1 modified	ng/l	ng/l	ng/l	ng/l	
10954	Perfluoro-octanesulfonate	1763-23-1	N.D.	10	20	20	2
10954	Perfluorooctanoic acid	335-67-1	N.D.	2	4	4	2

General Sample Comments

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10954	PFAAs in Water by LC/MS/MS	EPA 537 Rev. 1.1 modified	1	15085003	04/12/2015 22:57	Meng Yu	2

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

Sample Description: 06GW16032415MS Grab Groundwater
GPT6

LL Sample # WW 7819825
LL Group # 1548038
Account # 07558

Project Name: NCBC Gulfport

Collected: 03/24/2015 12:59

Tetra Tech Inc.

Submitted: 03/25/2015 09:15

Foster Plaza VII

Reported: 04/24/2015 15:45

661 Andersen Drive

Pittsburgh PA 15220

GW16- SDG#: NCB01-05MS

CAT No.	Analysis Name	CAS Number	Result	Detection Limit*	Limit of Detection	Limit of Quantitation	DF
Misc. Organics		EPA 537 Rev. 1.1 modified	ng/l	ng/l	ng/l	ng/l	
10954	Perfluoro-octanesulfonate	1763-23-1	110	5	10	10	1
10954	Perfluorooctanoic acid	335-67-1	120	1	2	2	1

General Sample Comments

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10954	PFAAs in Water by LC/MS/MS	EPA 537 Rev. 1.1 modified	1	15085003	04/12/2015 23:14	Meng Yu	1

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

Sample Description: 06GW16032415MSD Grab Groundwater
GPT6

LL Sample # WW 7819826
LL Group # 1548038
Account # 07558

Project Name: NCBC Gulfport

Collected: 03/24/2015 12:59

Tetra Tech Inc.

Submitted: 03/25/2015 09:15

Foster Plaza VII

Reported: 04/24/2015 15:45

661 Andersen Drive

Pittsburgh PA 15220

GW16- SDG#: NCB01-05MSD

CAT No.	Analysis Name	CAS Number	Result	Detection Limit*	Limit of Detection	Limit of Quantitation	DF
Misc. Organics		EPA 537 Rev. 1.1 modified	ng/l	ng/l	ng/l	ng/l	
10954	Perfluoro-octanesulfonate	1763-23-1	99	5	10	10	1
10954	Perfluorooctanoic acid	335-67-1	100	1	2	2	1

General Sample Comments

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10954	PFAAs in Water by LC/MS/MS	EPA 537 Rev. 1.1 modified	1	15085003	04/12/2015 23:31	Meng Yu	1

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

Sample Description: 06FD032415 Grab Groundwater
GPT6

LL Sample # WW 7819827
LL Group # 1548038
Account # 07558

Project Name: NCBC Gulfport

Collected: 03/24/2015

Tetra Tech Inc.
Foster Plaza VII
661 Andersen Drive
Pittsburgh PA 15220

Submitted: 03/25/2015 09:15
Reported: 04/24/2015 15:45

NCBFD SDG#: NCB01-06FD

CAT No.	Analysis Name	CAS Number	Result	Detection Limit*	Limit of Detection	Limit of Quantitation	DF
Misc. Organics		EPA 537 Rev. 1.1 modified	ng/l	ng/l	ng/l	ng/l	
10954	Perfluoro-octanesulfonate	1763-23-1	13	5	10	10	1
10954	Perfluorooctanoic acid	335-67-1	63	1	2	2	1

General Sample Comments

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10954	PFAAs in Water by LC/MS/MS	EPA 537 Rev. 1.1 modified	1	15085003	04/13/2015 01:14	Meng Yu	1

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

Quality Control Summary

Client Name: Tetra Tech Inc.
Reported: 04/24/2015 15:45

Group Number: 1548038

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

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

Laboratory Compliance Quality Control

<u>Analysis Name</u>	<u>Blank Result</u>	<u>Blank DL**</u>	<u>Blank LOD</u>	<u>Blank LOQ</u>	<u>Report Units</u>	<u>LCS %REC</u>	<u>LCSD %REC</u>	<u>LCS/LCSD Limits</u>	<u>RPD</u>	<u>RPD Max</u>
Batch number: 15085003	Sample number(s): 7819820-7819827									
Perfluoro-octanesulfonate	N.D.	5	10	10	ng/l	111		70-130		
Perfluorooctanoic acid	N.D.	1	2	2	ng/l	105		70-130		

Sample Matrix Quality Control

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

<u>Analysis Name</u>	<u>MS %REC</u>	<u>MSD %REC</u>	<u>MS/MSD Limits</u>	<u>RPD</u>	<u>RPD MAX</u>	<u>BKG Conc</u>	<u>DUP Conc</u>	<u>DUP RPD</u>	<u>Dup RPD Max</u>
Batch number: 15085003	Sample number(s): 7819820-7819827 UNSPK: 7819824								
Perfluoro-octanesulfonate	108	99	70-130	8	30				
Perfluorooctanoic acid	116	102	70-130	12	30				

*- Outside of specification

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

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



TETRA TECH NUS, INC.

7558/1548038/7819820-27

CHAIN OF CUSTODY

NUMBER

2840

PAGE 1 OF 1

PROJECT NO: 12602741		FACILITY: GPTS		PROJECT MANAGER L. Root		PHONE NUMBER 904 736 4669		LABORATORY NAME AND CONTACT: Lancaster Laboratories			
SAMPLERS (SIGNATURE) 		FIELD OPERATIONS LEADER Bill Olson		PHONE NUMBER 850 443 6855		ADDRESS 2425 New Hollow Pike				CITY, STATE Lancaster PA 17601	
STANDARD TAT <input checked="" type="checkbox"/> RUSH TAT <input type="checkbox"/>		CARRIER/WAYBILL NUMBER FEDEX 8684 5044 4800		CONTAINER TYPE PLASTIC (P) or GLASS (G)		PRESERVATIVE USED		TYPE OF ANALYSIS PFOA/PFO5 N/A P			
<input type="checkbox"/> 24 hr. <input type="checkbox"/> 48 hr. <input type="checkbox"/> 72 hr. <input type="checkbox"/> 7 day <input type="checkbox"/> 14 day											
DATE YEAR	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS		COMMENTS	
3/24	0926	06G-W04032415	GPT-6-4	3	13	GW	G	1	1	 *high DRO *high DRO ms/msd 3x vol. 	
	1051	06G-W06032415	GPT-6-6	3	13	GW	G	1	1		
	1120	06G-W03032415	GPT-6-3	3	22	FW	F	1	1		
	1250	06G-W09032415	GPT-6-9	20	30	GW	G	1	1		
	1259	06G-W16032415	GPT-6-16	3	13	GW	G	3	3		
3/24 0000		06 FD 032415	GPA	-	-	QC	G	1	1		
1. RELINQUISHED BY 		DATE 3/24/15	TIME 1700	1. RECEIVED BY 		DATE	TIME	2. RECEIVED BY 		DATE	TIME
2. RELINQUISHED BY		DATE	TIME	3. RECEIVED BY 		DATE	TIME	3. RECEIVED BY 		DATE	TIME
3. RELINQUISHED BY		DATE	TIME			DATE	TIME			DATE	TIME
COMMENTS											

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE)

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YELLOW (FIELD COPY)
Page 13 of 15

PINK (FILE COPY)

4/02R
FORM NO. TINUS-001

Kaitlin Plasterer

1548038

From: Olson, William <William.Olson@tetrattech.com>
Sent: Thursday, March 26, 2015 3:25 PM
To: Roof, Gregory; Carper, Kelly; Leck, Lee; Kaitlin Plasterer
Subject: RE: NCBC Gulfport

1250 is the correct sample time

From: Roof, Gregory
Sent: Thursday, March 26, 2015 3:20 PM
To: Olson, William; Carper, Kelly; Leck, Lee
Subject: FW: NCBC Gulfport

Bill, read below and let us know what is the proper time for the GW09 sample.

Kelly and Lee, please read Kaitlin's question below about deliverables. She called me to explain how they typically provide the data package, and ask if that was acceptable. I let her know that I have no say in what we get and how we get it. Would one of you please answer her question and copy me?

From: Kaitlin Plasterer [<mailto:KaitlinPlasterer@eurofinsus.com>]
Sent: Thursday, March 26, 2015 3:07 PM
To: Roof, Gregory
Subject: FW: NCBC Gulfport

Hi Greg,

Please see below. Let me know if you have any questions.

Thanks,
Kaitlin

Kaitlin Plasterer
Senior Project Manager, Environmental Client Services

Eurofins Lancaster Laboratories
Environmental, LLC
2425 New Holland Pike
Lancaster, PA 17601
USA
Phone: +1 717-556-7323
Website: www.LancasterLabsEnv.com

Look for Eurofins Lancaster Laboratories Environmental at these upcoming conferences and industry events.

From: Kaitlin Plasterer
Sent: Thursday, March 26, 2015 2:48 PM
To: 'amy.thomson@tetrattech.com'; 'Kelly.Carper@tetrattech.com'; 'greg.roof@tetrattech.com'
Subject: NCBC Gulfport

Explanation of Symbols and Abbreviations

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

RL	Reporting Limit	BMQL	Below Minimum Quantitation Level
N.D.	none detected	MPN	Most Probable Number
TNTC	Too Numerous To Count	CP Units	cobalt-chloroplatinate units
IU	International Units	NTU	nephelometric turbidity units
umhos/cm	micromhos/cm	ng	nanogram(s)
C	degrees Celsius	F	degrees Fahrenheit
meq	milliequivalents	lb.	pound(s)
g	gram(s)	kg	kilogram(s)
µg	microgram(s)	mg	milligram(s)
mL	milliliter(s)	L	liter(s)
m³	cubic meter(s)	µL	microliter(s)
		pg/L	picogram/liter
<	less than		
>	greater than		
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.		
ppb	parts per billion		
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.		

Laboratory Data Qualifiers:

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

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

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, ISO17025) unless otherwise noted under the individual analysis.

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

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

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

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

Client: Tetra Tech

Delivery and Receipt Information

Delivery Method: Fed Ex Arrival Timestamp: 03/25/2015 9:15
 Number of Packages: 1 Number of Projects: 1
 State/Province of Origin: FL

Arrival Condition Summary

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

Unpacked by Jordan Woods (6698) at 14:16 on 03/25/2015

Samples Chilled Details

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

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT121	4.6	DT	Wet	Y	Bagged	N

Sample Date/Time Discrepancy Details

Sample ID on COC	Date/Time on Label	Comments
06GW09032415	3/24/2015 12:45	

PFAAs by LC/MS/MS Data

Case Narrative/Conformance Summary

PFAAs by LC/MS/MS

Case Narrative/Conformance Summary

CLIENT: Tetra Tech Inc.
SDG: NCB01

Specialty Services Group
 Fraction: PFAAs by LC/MS/MS

Sample #	Client ID	Matrix		DF	Comments
		Liquid	Solid		
7819820	06GW04032415	X		1	
7819821	06GW06032415	X		1	
7819822	06GW03032415	X		3	
7819823	06GW09032415	X		1	
7819824	06GW16032415	X		2	Unspiked
7819825	06GW16032415MS	X		1	Matrix Spike
7819826	06GW16032415MSD	X		1	Matrix Spike Duplicate
7819827	06FD032415	X		1	Field Duplicate Sample

See QC Reference List for Associated Batch QC Samples

SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

HOLDING TIME:

All holding times were met.

PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

CALIBRATION/STANDARDIZATION:

All criteria were met.

QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

All QC is within specification.

SAMPLE ANALYSIS:

No problems were encountered with the analysis of the samples.

Abbreviation Key

UNSPK = Unspiked (for MS/MSD)	LOQ = Limit of Quantitation
-------------------------------	-----------------------------

Case Narrative/Conformance Summary

CLIENT: Tetra Tech Inc.
SDG: NCB01

Specialty Services Group

Fraction: PFAAs by LC/MS/MS

MS = Matrix Spike	MDL = Method Detection Limit
MSD = Matrix Spike Duplicate	ND = Not Detected
BKG = Background (for Duplicate)	J = Estimated Value
D = Duplicate (DUP)	E= out of calibration range
LCS = Lab Control Sample	RE = Repreparation/Reanalysis
LCSD = Lab Control Sample Duplicate	* = Out of Specification
NC = Not Calculated	NF = Not Found

QC Summary

PFAAs by LC/MS/MS



Lancaster Laboratories
Environmental

**Quality Control Reference List
Specialty Services Group**

**CLIENT: Tetra Tech Inc.
SDG: NCB01**

Fraction: PFAAs by LC/MS/MS

Analysis	Batch Number	Sample Number	Analysis Date
PFAAs in Water by LC/MS/MS	15085003	BLK	04/12/2015 21:47:00
		LCS	04/12/2015 22:39:00
		7819820	04/13/2015 00:06:00
		7819821	04/13/2015 00:23:00
		7819822	04/13/2015 00:40:00
		7819823	04/13/2015 00:57:00
		7819824 UNSPK	04/12/2015 22:57:00
		7819825 MS	04/12/2015 23:14:00
		7819826 MSD	04/12/2015 23:31:00
		7819827	04/13/2015 01:14:00

Fraction: PFAAs by LC/MS/MS

15085003 / BLK Analyte	Analysis Date	Blank Results	Units	DL	LOD	LOQ
Perfluorooctanoic acid	04/12/15	N.D.	ng/l	1	2	2
Perfluoro-octanesulfonate	04/12/15	N.D.	ng/l	5	10	10

Specialty Services Group

Fraction: PFAAs by LC/MS/MS

UNSPK: 7819824 MS: 7819825 MSD: 7819826 Analyte	Batch: 15085003 (Sample number(s): 7819820-7819827)								
	Spike Added ng/l	Unspiked Conc ng/l	MS Conc ng/l	MSD Conc ng/l	MS %Rec	MSD %Rec	%Rec Limits	%RPD	%RPD Limits
Perfluorooctanoic acid	100	N.D.	117.6	104.1	116	102	70-130	12	30
Perfluoro-octanesulfonate	100	N.D.	107.7	99.02	108	99	70-130	8	30

Comments:

(2) The unspiked sample result is greater than four times the spike added.

* = Out of Specification

Results are being reported on an as received basis.



Lancaster Laboratories
Environmental

Quality Control Summary
Laboratory Control Standard (LCS)
Laboratory Control Standard Duplicate(LCSD)

SDG: NCB01
Matrix: LIQUID

Specialty Services Group
Fraction: PFAAs by LC/MS/MS

LCS	Batch: 15085003 (Sample number(s): 7819820-7819827)							
	Spike Added ng/l	LCS Conc ng/l	LCSD Conc ng/l	LCS %Rec	LCSD %Rec	%Rec Limits	%RPD	%RPD Limits
Analyte								
Perfluorooctanoic acid	100	104.8	NA	105	NA	70-130	NA	NA
Perfluoro-octanesulfonate	100	111.1	NA	111	NA	70-130	NA	NA

Sample Data

PFAAs by LC/MS/MS

Fraction: PFAAs by LC/MS/MS

10954: PFAAs in Water by LC/MS/MS Analyte Name	Default DL	Default LOD	Default LOQ	Units
Perfluorooctanoic acid	1	2	2	ng/l
Perfluoro-octanesulfonate	5	10	10	ng/l

LCMSMS ANALYSIS REPORT

Component Name: PFOA

Summary of Quan Results

Sample ID	Data File Name	Area	ISTD Area	Area Ratio	Specified Amount	Calculated Amount	% Diff	Excluded
equi	D15085003-01	6616.58	430868.22	0.015	N/A	1.522365	N/A	N/A
SYS	D15085003-02	7507.86	392167.53	0.019	N/A	1.699974	N/A	N/A
CAL1	D15085003-03	11930.13	406255.01	0.029	2.000000	2.179219	8.96	N/A
CAL2	D15085003-04	20752.48	330803.48	0.063	4.000000	3.743670	-6.41	N/A
CAL3	D15085003-05	41404.54	348513.54	0.119	6.000000	6.372528	6.21	N/A
CAL4	D15085003-06	106795.57	361571.35	0.295	16.000000	14.650729	-8.43	N/A
CAL5	D15085003-07	393105.90	369976.81	1.063	50.000000	50.618971	1.24	N/A
CAL6	D15085003-08	638430.96	320421.81	1.992	100.000000	94.220441	-5.78	N/A
CAL7	D15085003-09	1201064.13	335105.10	3.584	160.000000	168.846823	5.53	N/A
CAL8	D15085003-10	1424510.27	339780.04	4.192	200.000000	197.367620	-1.32	N/A
Recon	D15085003-11	N/A	Undefined	Undefined	N/A	N/A	N/A	N/A
STD0	D15085003-12	798.99	419858.90	0.002	N/A	0.891595	N/A	N/A
BLK 15085003	D15085003-13	456.99	324996.45	0.001	N/A	0.868300	N/A	N/A
CCV1	D15085003-14	39134.42	360406.43	0.109	6.000000	5.893399	-1.78	N/A
ICV	D15085003-15	743052.39	342840.07	2.167	100.000000	102.419489	2.42	N/A
LCS 15085003	D15085003-16	814809.78	367190.51	2.219	100.000000	104.843200	4.84	N/A
7819824 (bkg) ISDF2	D15085003-17	4370.09	219029.89	0.020	N/A	1.737835	N/A	N/A
7819825 MS	D15085003-18	855884.39	343449.79	2.492	N/A	117.642187	N/A	N/A
7819826 MSD	D15085003-19	750815.47	340794.04	2.203	N/A	104.097597	N/A	N/A
CCV2	D15085003-20	140125.68	403421.24	0.347	16.000000	17.087756	6.80	N/A
7819820	D15085003-21	2475.59	477870.42	0.005	N/A	1.045261	N/A	N/A
7819821	D15085003-22	451271.72	281490.53	1.603	N/A	75.966971	N/A	N/A
7819822 ISDF3	D15085003-23	1366476.84	135078.40	10.116	N/A	475.104844	N/A	N/A
7819823	D15085003-24	116243.33	390982.10	0.297	N/A	14.741969	N/A	N/A
7819827	D15085003-25	343836.08	259407.37	1.325	N/A	62.947654	N/A	N/A
CCV3	D15085003-26	391669.16	372070.57	1.053	50.000000	50.157591	0.32	N/A

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Meng Yu
Principal Chemist

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LCMSMS ANALYSIS REPORT

Component Name: PFOS

Summary of Quan Results

Sample ID	Data File Name	Area	ISTD Area	Area Ratio	Specified Amount	Calculated Amount	% Diff	Excluded
equi	D15085003-01	712.28	49060.21	0.015	N/A	4.952687	N/A	N/A
SYS	D15085003-02	526.34	49948.52	0.011	N/A	4.731200	N/A	N/A
CAL1	D15085003-03	1427.52	47741.64	0.030	5.000000	5.808529	16.17	N/A
CAL2	D15085003-04	5295.10	55510.63	0.095	10.000000	9.452129	-5.48	N/A
CAL3	D15085003-05	8944.88	43702.24	0.205	15.000000	15.532694	3.55	N/A
CAL4	D15085003-06	27675.66	46702.85	0.593	40.000000	37.115224	-7.21	N/A
CAL5	D15085003-07	90950.52	44378.99	2.049	125.000000	118.168909	-5.46	N/A
CAL6	D15085003-08	162102.05	39474.41	4.107	250.000000	232.621320	-6.95	N/A
CAL7	D15085003-09	278846.69	38946.28	7.160	400.000000	402.497793	0.62	N/A
CAL8	D15085003-10	380189.18	40705.23	9.340	500.000000	523.803402	4.76	N/A
Recon	D15085003-11	N/A	Undefined	Undefined	N/A	N/A	N/A	N/A
STD0	D15085003-12	N/A	51520.18	N/A	N/A	N/A	N/A	N/A
BLK 15085003	D15085003-13	N/A	212.46	N/A	N/A	N/A	N/A	N/A
CCV1	D15085003-14	9962.33	46762.99	0.213	15.000000	15.997882	6.65	N/A
ICV	D15085003-15	89453.57	52509.36	1.704	100.000000	98.927677	-1.07	N/A
LCS 15085003	D15085003-16	74127.77	38560.79	1.922	100.000000	111.100481	11.10	N/A
7819824 (bkg) ISDF2	D15085003-17	N/A	23539.46	N/A	N/A	N/A	N/A	N/A
7819825 MS	D15085003-18	68213.29	36627.29	1.862	N/A	107.762309	N/A	N/A
7819826 MSD	D15085003-19	68322.53	40067.14	1.705	N/A	99.018224	N/A	N/A
CCV2	D15085003-20	36409.74	56760.46	0.641	40.000000	39.834386	-0.41	N/A
7819820	D15085003-21	N/A	44803.60	N/A	N/A	N/A	N/A	N/A
7819821	D15085003-22	8504.59	43995.45	0.193	N/A	14.900008	N/A	N/A
7819822 ISDF3	D15085003-23	1130.09	15362.98	0.074	N/A	8.237576	N/A	N/A
7819823	D15085003-24	N/A	43665.24	N/A	N/A	N/A	N/A	N/A
7819827	D15085003-25	6750.41	43462.80	0.155	N/A	12.786246	N/A	N/A
CCV3	D15085003-26	92179.18	43695.79	2.110	125.000000	121.516151	-2.79	N/A

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LCMSMS ANALYSIS REPORT

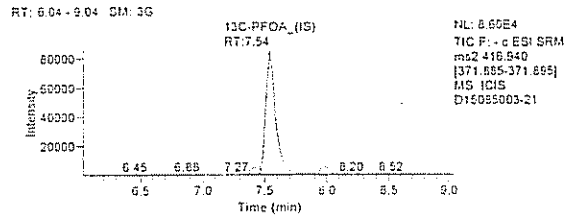
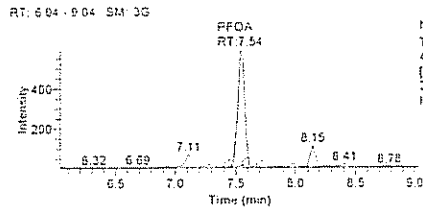
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Sample Type: Unknown	Instrument Software Version: 2.3.0.1206 SP1
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Run Time(min): 14.51	Operator: Quantum
Injection Volume(µl): 10.00	

Quan Peak Table

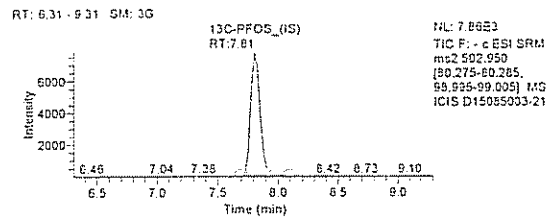
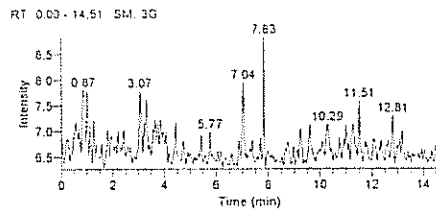
Component Name	Calculated Amount	RT	Response	ISTD Response	Response Ratio	Units
13C-PFOA_(IS)	N/A	7.54	477870.42	N/A	N/A	N/A
13C-PFOS_(IS)	N/A	7.81	44803.60	N/A	N/A	N/A
PFOA	1.045	7.54	2475.59	477870.42	0.005	ng/L
PFOS	N/A	N/A	N/A	N/A	N/A	ng/L

Extracted Ion Chromatogram

Component Name: PFOA



Component Name: PFOS



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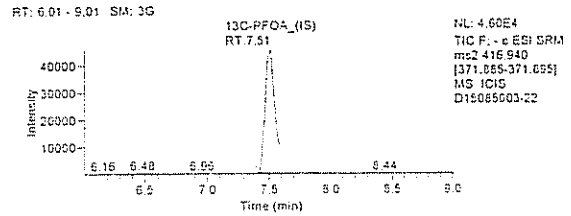
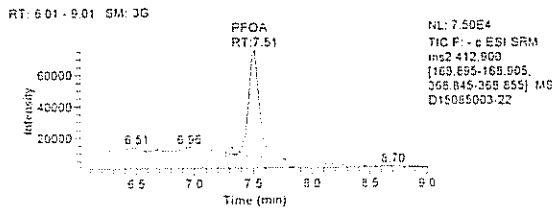
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Sample ID:	7819821	Instrument Method:	C:\XCalibur\APFC\APFC_Leid
Data File:	D15085003-22	Dilution Factor:	1.00
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Sample Type:	Unknown	Instrument Software Version:	2.3.0.1206 SP1
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Run Time(min):	14.52	Operator:	Quantum
Injection Volume(µl):	10.00		

Quan Peak Table

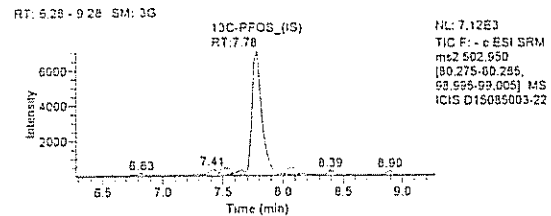
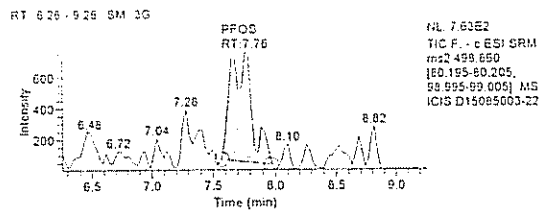
Component Name	Calculated Amount	RT	Response	ISTD Response	Response Ratio	Units
13C-PFOA_(IS)	N/A	7.51	281490.53	N/A	N/A	N/A
13C-PFOS_(IS)	N/A	7.78	43995.45	N/A	N/A	N/A
PFOA	75.967	7.51	451271.72	281490.53	1.603	ng/L
PFOS	14.900	7.76	8504.59	43995.45	0.193	ng/L

Extracted Ion Chromatogram

Component Name: PFOA



Component Name: PFOS



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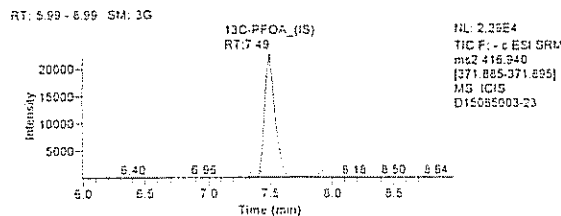
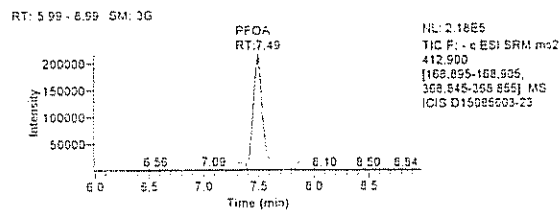
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Sample Type:	Unknown	Instrument Software Version:	2.3.0.1206 SP1
Vial:	D:25	Instrument Serial Number:	TQU01408
Run Time(min):	14.52	Operator:	Quantum
Injection Volume(μl):	10.00		

Quan Peak Table

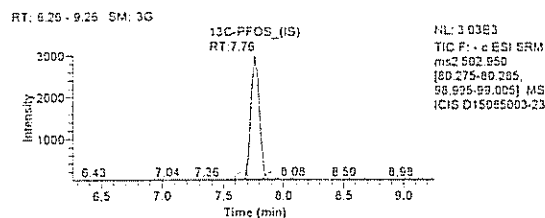
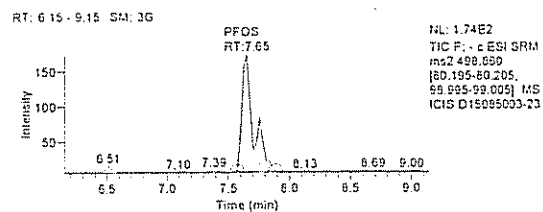
Component Name	Calculated Amount	RT	Response	ISTD Response	Response Ratio	Units
13C-PFOA_(IS)	N/A	7.49	135078.40	N/A	N/A	N/A
13C-PFOS_(IS)	N/A	7.76	15362.98	N/A	N/A	N/A
PFOA	475.105	7.49	1366476.84	135078.40	10.116	ng/L
PFOS	8.238	7.65	1130.09	15362.98	0.074	ng/L

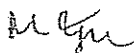
Extracted Ion Chromatogram

Component Name: PFOA



Component Name: PFOS




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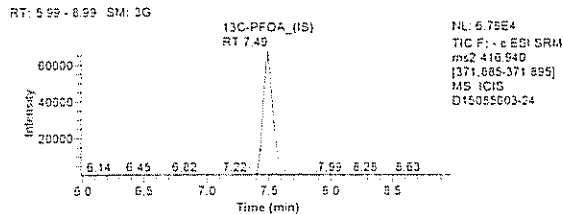
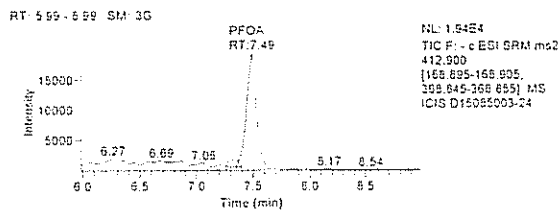
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Sample Type:	Unknown	Instrument Software Version:	2.3.0.1206 SP1
Vial:	D:26	Instrument Serial Number:	TQU01408
Run Time(min):	14.51	Operator:	Quantum
Injection Volume(µl):	10.00		

Quan Peak Table

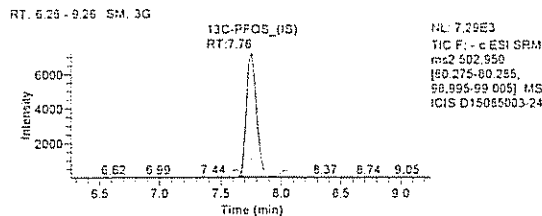
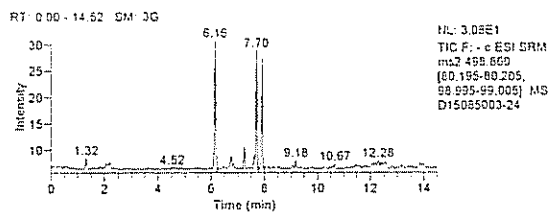
Component Name	Calculated Amount	RT	Response	ISTD Response	Response Ratio	Units
13C-PFOA_(IS)	N/A	7.49	390982.10	N/A	N/A	N/A
13C-PFOS_(IS)	N/A	7.76	43665.24	N/A	N/A	N/A
PFOA	14.742	7.49	116243.33	390982.10	0.297	ng/L
PFOS	N/A	N/A	N/A	N/A	N/A	ng/L

Extracted Ion Chromatogram

Component Name: PFOA



Component Name: PFOS



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LCMSMS ANALYSIS REPORT

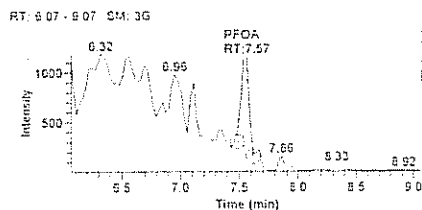
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Sample ID:	7819824 (bkg) ISDF2	Instrument Method:	C:\XCalibur\PFC\PFC_Leid
Data File:	D15085003-17	Dilution Factor:	1.00
Acquisition Date:	04/12/15 10:57:00 PM	Instrument Model:	TSQ Quantum Access
Sample Type:	Unknown	Instrument Software Version:	2.3.0.1206 SPI
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Run Time(min):	14.51	Operator:	Quantum
Injection Volume(μl):	10.00		

Quan Peak Table

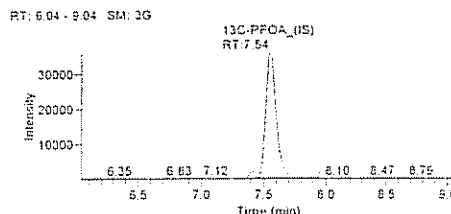
Component Name	Calculated Amount	RT	Response	ISTD Response	Response Ratio	Units
13C-PFOA_(IS)	N/A	7.54	219029.89	N/A	N/A	N/A
13C-PFOS_(IS)	N/A	7.84	23539.46	N/A	N/A	N/A
PFOA	1.738	7.57	4370.09	219029.89	0.020	ng/L
PFOS	N/A	N/A	N/A	N/A	N/A	ng/L

Extracted Ion Chromatogram

Component Name: PFOA

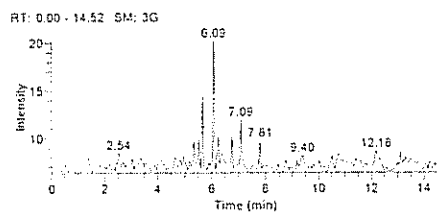


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 365.845-365.855] MS
 ICIS D15085003-17

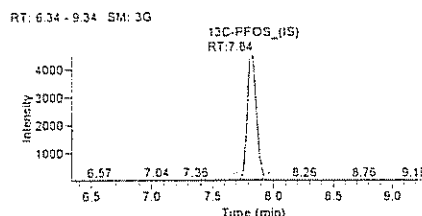


NL: 3.60E4
 TIC F: - c ESI SRM
 ms2 416.940
 [371.885-371.895]
 MS ICIS
 D15085003-17

Component Name: PFOS



NL: 2.02E1
 TIC F: - c ESI SRM
 ms2 459.650
 [60.195-60.205,
 98.995-99.005] MS
 D15085003-17



NL: 4.51E3
 TIC F: - c ESI SRM
 ms2 502.950
 [80.275-80.285,
 98.995-99.005] MS
 ICIS D15085003-17

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LCMSMS ANALYSIS REPORT

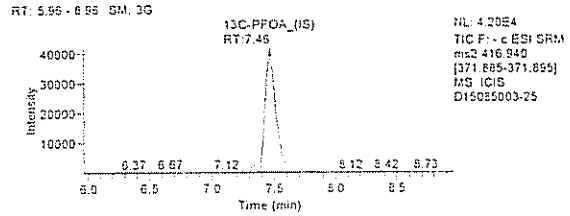
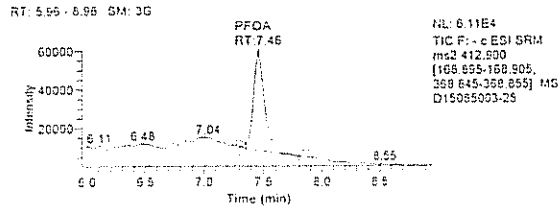
Sample Name:	7819827	Original Data Path:	C:\XCalibur\PFCA\2015 forced
Sample ID:	7819827	Instrument Method:	C:\XCalibur\PFCA\PFC_Leid
Data File:	D15085003-25	Dilution Factor:	1.00
Acquisition Date:	04/13/15 01:14:57 AM	Instrument Model:	TSQ Quantum Access
Sample Type:	Unknown	Instrument Software Version:	2.3.0.1206 SP1
Vial:	D:27	Instrument Serial Number:	TQU01408
Run Time(min):	14.52	Operator:	Quantum
Injection Volume(µl):	10.00		

Quan Peak Table

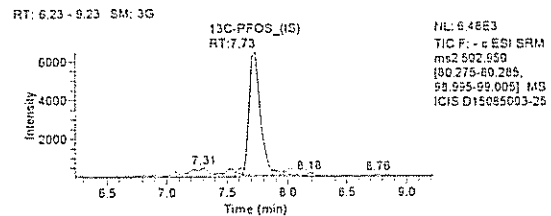
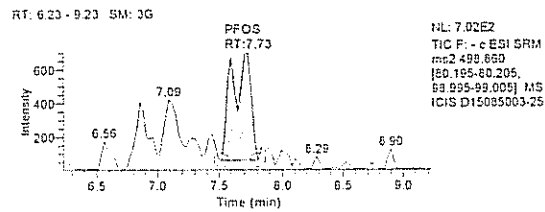
Component Name	Calculated Amount	RT	Response	ISTD Response	Response Ratio	Units
13C-PFOA_(IS)	N/A	7.46	259407.37	N/A	N/A	N/A
13C-PFOS_(IS)	N/A	7.73	43462.80	N/A	N/A	N/A
PFOA	62.948	7.46	343836.08	259407.37	1.325	ng/L
PFOS	12.786	7.73	6750.41	43462.80	0.155	ng/L

Extracted Ion Chromatogram

Component Name: PFOA



Component Name: PFOS



Michele J. Smith

APR 23 2015

Michele J. Smith
Senior Specialist

Meng Yu
Meng Yu
Principal Chemist

APR 13 2015

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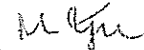
Standards Data

PFAAs by LC/MS/MS

Sequence Table

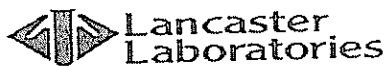
File Name	Sample ID	Sample Type	Level	Vial	Inj Vol	Dil Factor	Path	Inst Method	Proc Method
D15085003-01	equi	Unknown	N/A	D:2	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\PFC_Leid	C:\XCalibur\APFC\Quan MPFOAPFOS
D15085003-02	SYS	Unknown	N/A	D:2	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\PFC_Leid	C:\XCalibur\APFC\Quan MPFOAPFOS
D15085003-03	CAL1	Std Bracket	1	D:3	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\PFC_Leid	C:\XCalibur\APFC\Quan MPFOAPFOS
D15085003-04	CAL2	Std Bracket	2	D:4	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\PFC_Leid	C:\XCalibur\APFC\Quan MPFOAPFOS
D15085003-05	CAL3	Std Bracket	3	D:5	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\PFC_Leid	C:\XCalibur\APFC\Quan MPFOAPFOS
D15085003-06	CAL4	Std Bracket	4	D:6	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\PFC_Leid	C:\XCalibur\APFC\Quan MPFOAPFOS
D15085003-07	CAL5	Std Bracket	5	D:7	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\PFC_Leid	C:\XCalibur\APFC\Quan MPFOAPFOS
D15085003-08	CAL6	Std Bracket	6	D:8	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\PFC_Leid	C:\XCalibur\APFC\Quan MPFOAPFOS
D15085003-09	CAL7	Std Bracket	7	D:9	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\PFC_Leid	C:\XCalibur\APFC\Quan MPFOAPFOS
D15085003-10	CAL8	Std Bracket	8	D:10	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\PFC_Leid	C:\XCalibur\APFC\Quan MPFOAPFOS
D15085003-11	Recon	Unknown	N/A	D:11	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\PFC_Leid	C:\XCalibur\APFC\Quan MPFOAPFOS
D15085003-12	STD0	Unknown	N/A	D:12	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\PFC_Leid	C:\XCalibur\APFC\Quan MPFOAPFOS
D15085003-13	BLK 15085003	Unknown	N/A	D:13	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\PFC_Leid	C:\XCalibur\APFC\Quan MPFOAPFOS
D15085003-14	CCV1	QC	1	D:14	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\PFC_Leid	C:\XCalibur\APFC\Quan MPFOAPFOS
D15085003-15	ICV	QC	ICV	D:18	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\PFC_Leid	C:\XCalibur\APFC\Quan MPFOAPFOS
D15085003-16	LCS 15085003	QC	ICV	D:19	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\PFC_Leid	C:\XCalibur\APFC\Quan MPFOAPFOS
D15085003-17	7819824 (bkg)	Unknown	N/A	D:20	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\PFC_Leid	C:\XCalibur\APFC\Quan MPFOAPFOS
D15085003-18	ISDF2 7819825 MS	Unknown	N/A	D:21	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\PFC_Leid	C:\XCalibur\APFC\Quan MPFOAPFOS
D15085003-19	7819826 MSD	Unknown	N/A	D:22	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\PFC_Leid	C:\XCalibur\APFC\Quan MPFOAPFOS
D15085003-20	CCV2	QC	2	D:15	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\PFC_Leid	C:\XCalibur\APFC\Quan MPFOAPFOS
D15085003-21	7819820	Unknown	N/A	D:23	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\PFC_Leid	C:\XCalibur\APFC\Quan MPFOAPFOS

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 Meng Yu
 Principal Chemist

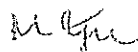
Page 1 of 2
 Monday, April 13, 2015, 11:45:00

APR 13 2015



File Name	Sample ID	Sample Type	Level	Vial	Inj Vol	Dil Factor	Path	Inst Method	Proc Method
D15085003-22	7819821	Unknown	N/A	D:24	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\PFC_Leid	C:\XCalibur\APFC\Quan M\PF0APFOS
D15085003-23	7819822 ISDF3	Unknown	N/A	D:25	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\PFC_Leid	C:\XCalibur\APFC\Quan M\PF0APFOS
D15085003-24	7819823	Unknown	N/A	D:26	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\PFC_Leid	C:\XCalibur\APFC\Quan M\PF0APFOS
D15085003-25	7819827	Unknown	N/A	D:27	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\PFC_Leid	C:\XCalibur\APFC\Quan M\PF0APFOS
D15085003-26	CCV3	QC	3	D:16	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\PFC_Leid	C:\XCalibur\APFC\Quan M\PF0APFOS

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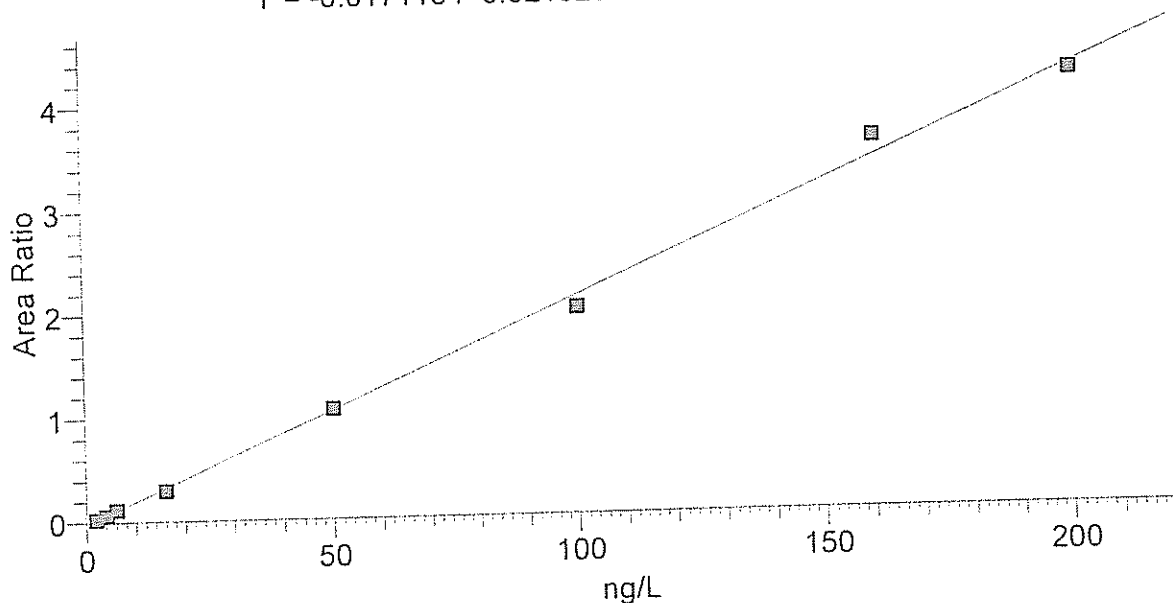

Meng Yu
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APR 13 2015

LCMSMS ANALYSIS REPORT

Component Name: PFOA

PFOA
 $Y = -0.0171134 + 0.0213285 * X$ $R^2 = 0.9978$ W: 1/X



<p>Identification Filter: - c ESI SRM ms2 412.90 [168.90-168.91, 368.85-368.86]</p> <p>2nd Trace Type: N/A</p> <p>Mass Range 2 (m/z): N/A</p> <p>Base Peak(BP):</p> <p>Retention Time Window (sec): 30.00000</p> <p>RT Reference: No</p> <p>Adjust Using: N/A</p> <p>Detection Options</p> <p>ICIS Smoothing Points: 3</p> <p>Area Noise Factor: 10</p> <p>ICIS Constrain Peak Width: No</p> <p>ICIS Tailing Factor: N/A</p> <p>ICIS Peak Detection</p> <p>ICIS Minimum Peak Height (S/N): 5.0</p> <p>ICIS Window %:</p> <p>ICIS Forward: 0</p> <p>ICIS Match: 0</p> <p>ICIS Advanced Parameters</p> <p>Minimum Peak Width: 3</p> <p>Area Tail Extension: 5</p> <p>Component Type: Target Compound</p> <p>ISTD Amount: N/A</p> <p>ISTD: 13C-PFOA_(IS)</p> <p>Origin: IgnoreOrigin</p> <p>Calibration Curve: Linear</p> <p>Number of Cal. Levels: 8</p> <p>Scan Threshold (mAU): N/A</p> <p>Limit ScanRange (nm): N/A</p>	<p>Component Name: PFOA</p> <p>1st Trace Type: TIC</p> <p>Mass Range 1 (m/z):</p> <p>Wavelength Range 2 (nm): N/A</p> <p>Expected RT (min): 7.60000</p> <p>View Width (min): 3.00000</p> <p>Adjust Expected RT: No</p> <p>Peak Detection Algorithm: ICIS</p> <p>ICIS Peak Integration</p> <p>Baseline Window: 200</p> <p>Peak Noise Factor: 10</p> <p>ICIS Peak Height (%): N/A</p> <p>ICIS Identify By: Nearest RT</p> <p>ICIS Ion Ratio Confirmation: Disallowed</p> <p>ICIS Qualifier Ion Coelution (min): N/A</p> <p>ICIS Spectrum Thresholds</p> <p>ICIS Reverse: 0</p> <p>Noise Method: Incos</p> <p>Multiplet Resolution: 10</p> <p>Area Scan Window: 0</p> <p>Calibration</p> <p>%RSD Calculation Method: Use calculated amounts</p> <p>Internal Standard</p> <p>ISTD Units: N/A</p> <p>Target Compounds</p> <p>Weighting: OneOverX</p> <p>Response: Area</p> <p>Target Units: ng/L</p> <p>Number of QC Levels: 6</p> <p>Peak Purity Options</p> <p>Peak Coverage (%): N/A</p>	<p style="text-align: right; font-size: 1.2em; font-weight: bold;">Michele J. Smith</p> <p style="text-align: right; font-weight: bold;">APR 23 2015</p> <p style="text-align: right; font-weight: bold;">Michele J. Smith Senior Specialist</p> <p style="text-align: right; font-size: 0.8em;">Meng Yu Principal Chemist</p> <p style="text-align: right; font-weight: bold;">APR 13 2015</p>
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LCMSMS ANALYSIS REPORT

Component Cal Level Table

Cal Level	Amount
1	2.000
2	4.000
3	6.000
4	16.000
5	50.000
6	100.000
7	160.000
8	200.000

Component QC Level Table

QC Level	Amount
VICV	50.000
ICV	100.000
1	6.000
2	16.000
3	50.000
4	160.000

ICV & CCV Result Table

Sample ID	Data File Name	Calculated Amount	Area	ISTD Area	Area Ratio	% Diff
CAL1	D15085003-03	2.179	11930.13	406255.01	0.029	8.96
CAL2	D15085003-04	3.744	20752.48	330803.48	0.063	-6.41
CAL3	D15085003-05	6.373	41404.54	348513.54	0.119	6.21
CAL4	D15085003-06	14.651	106795.57	361571.35	0.295	-8.43
CAL5	D15085003-07	50.619	393105.90	369976.81	1.063	1.24
CAL6	D15085003-08	94.220	638430.96	320421.81	1.992	-5.78
CAL7	D15085003-09	168.847	1201064.13	335105.10	3.584	5.53
CAL8	D15085003-10	197.368	1424510.27	339780.04	4.192	-1.32
CCV1	D15085003-14	5.893	39134.42	360406.43	0.109	-1.78
ICV	D15085003-15	102.419	743052.39	342840.07	2.167	2.42
LCS 15085003	D15085003-16	104.843	814809.78	367190.51	2.219	4.84
CCV2	D15085003-20	17.088	140125.68	403421.24	0.347	6.80
CCV3	D15085003-26	50.158	391669.16	372070.57	1.053	0.32

Michele J. Smith

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Meng Yu
Principal Chemist

APR 13 2015

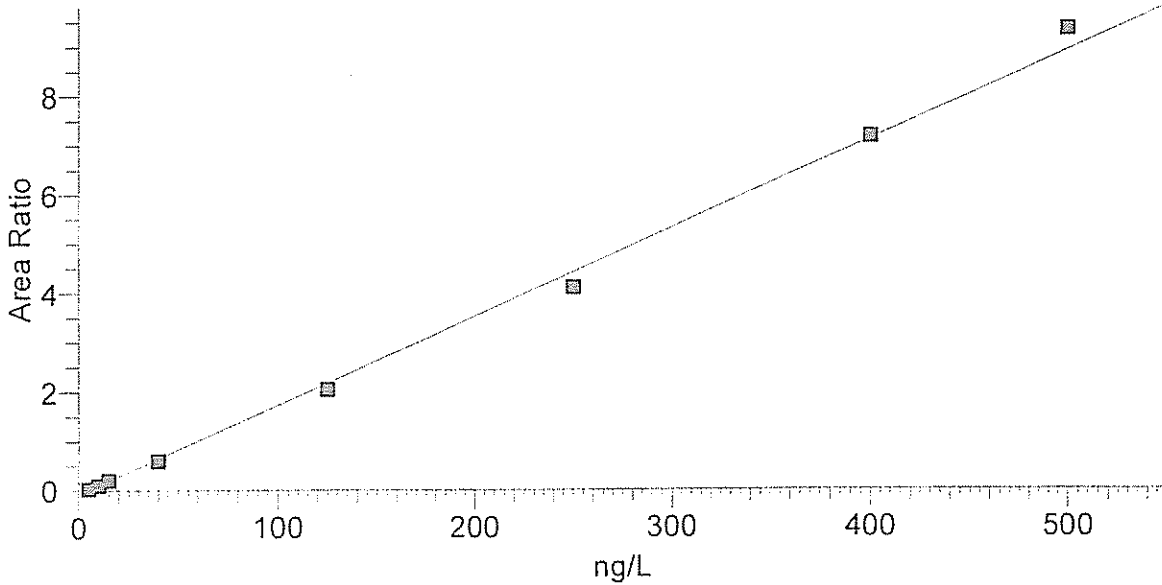
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LCMSMS ANALYSIS REPORT

Component Name: PFOS

PFOS
 $Y = -0.0744985 + 0.0179735 * X$ $R^2 = 0.9974$ $W: 1/X$



Identification Filter: - c ESI SRM ms2 498.86 [80.19-80.20, 99.00-99.00]
 2nd Trace Type: N/A
 Mass Range 2 (m/z): N/A
 Base Peak(BP):
 Retention Time: 50.00000
 Window (sec): No
 RT Reference: N/A
 Adjust Using:
 Detection Options:
 ICIS Smoothing Points: 3
 Area Noise Factor: 5
 ICIS Constrain Peak Width: No
 ICIS Tailing Factor: N/A
 ICIS Peak Detection:
 ICIS Minimum Peak Height (S/N): 3.0
 ICIS Window %:
 ICIS Forward: 0
 ICIS Match: 0
 ICIS Advanced Parameters:
 Minimum Peak Width: 3
 Area Tail Extension: 5
 Component Type: Target Compound
 ISTD Amount: N/A
 ISTD: 13C-PFOS_(IS)
 Origin: IgnoreOrigin
 Calibration Curve: Linear
 Number of Cal. Levels: 8
 Scan Threshold (mAU): N/A
 Limit ScanRange (nm): N/A

Component Name: PFOS
 1st Trace Type: TIC
 Mass Range 1 (m/z):
 Wavelength Range 2 (nm): N/A
 Expected RT (min): 7.80000
 View Width (min): 3.00000
 Adjust Expected RT: No
 Peak Detection Algorithm: ICIS
 ICIS Peak Integration:
 Baseline Window: 75
 Peak Noise Factor: 10
 ICIS Peak Height (%): N/A
 ICIS Identify By: Nearest RT
 ICIS Ion Ratio Confirmation: Disabled
 ICIS Qualifier Ion Coelution (min): N/A
 ICIS Spectrum Thresholds:
 ICIS Reverse: 0
 Noise Method: IncoS
 Multiplet Resolution: 10
 Area Scan Window: 0
 Calibration:
 %RSD Calculation Method: Use calculated amounts
 Internal Standard:
 ISTD Units: N/A
 Target Compounds:
 Weighting: OneOverX
 Response: Area
 Target Units: ng/L
 Number of QC Levels: 6
 Peak Purity Options:
 Peak Coverage (%): N/A

Michelle J. Smith

APR 23 2015

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Senior Specialist

Meng Yu
Meng Yu
Principal Chemist

LCMSMS ANALYSIS REPORT

Component Cal Level Table

Cal Level	Amount
1	5.000
2	10.000
3	15.000
4	40.000
5	125.000
6	250.000
7	400.000
8	500.000

Component QC Level Table

QC Level	Amount
ICV	100.000
VICV	50.000
1	15.000
2	40.000
3	125.000
4	400.000

ICV & CCV Result Table

Sample ID	Data File Name	Calculated Amount	Area	ISTD Area	Area Ratio	% Diff
CAL1	D15085003-03	5.809	1427.52	47741.64	0.030	16.17
CAL2	D15085003-04	9.452	5295.10	55510.63	0.095	-5.48
CAL3	D15085003-05	15.533	8944.88	43702.24	0.205	3.55
CAL4	D15085003-06	37.115	27675.66	46702.85	0.593	-7.21
CAL5	D15085003-07	118.169	90950.52	44378.99	2.049	-5.46
CAL6	D15085003-08	232.621	162102.05	39474.41	4.107	-6.95
CAL7	D15085003-09	402.498	278846.69	38946.28	7.160	0.62
CAL8	D15085003-10	523.803	380189.18	40705.23	9.340	4.76
CCV1	D15085003-14	15.998	9962.33	46762.99	0.213	6.65
ICV	D15085003-15	98.928	89453.57	52509.36	1.704	-1.07
LCS 15085003	D15085003-16	111.100	74127.77	38560.79	1.922	11.10
CCV2	D15085003-20	39.834	36409.74	56760.46	0.641	-0.41
CCV3	D15085003-26	121.516	92179.18	43695.79	2.110	-2.79

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APR 23 2015

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Principal Chemist

APR 13 2015

LCMSMS ANALYSIS REPORT

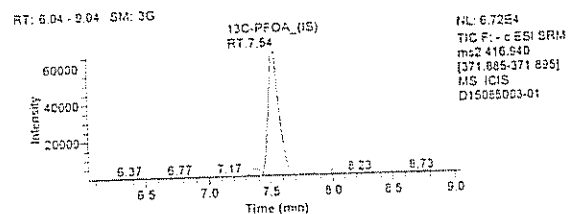
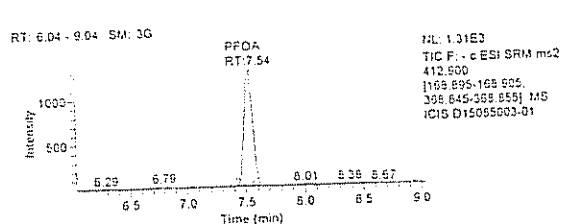
Sample Name:	equi	Original Data Path:	C:\XCalibur\PFPC2015 forced
Sample ID:	equi	Instrument Method:	C:\XCalibur\PFPC\PFPC_Leid
Data File:	D15085003-01	Dilution Factor:	1.00
Acquisition Date:	04/12/15 06:21:08 PM	Instrument Model:	TSQ Quantum Access
Sample Type:	Unknown	Instrument Software Version:	2.3.0.1206 SP1
Vial:	D:2	Instrument Serial Number:	TQU01408
Run Time(min):	14.51	Operator:	Quantum
Injection Volume(μl):	10.00		

Quan Peak Table

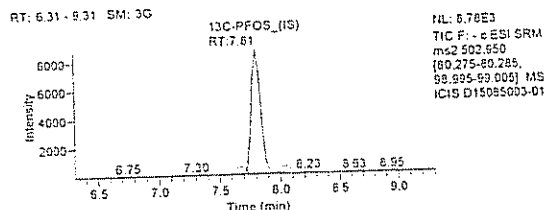
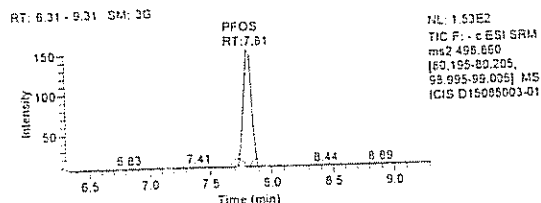
Component Name	Calculated Amount	RT	Response	ISTD Response	Response Ratio	Units
13C-PFOA_(IS)	N/A	7.54	430868.22	N/A	N/A	N/A
13C-PFOS_(IS)	N/A	7.81	49060.21	N/A	N/A	N/A
PFOA	1.522	7.54	6616.58	430868.22	0.015	ng/L
PFOS	4.953	7.81	712.28	49060.21	0.015	ng/L

Extracted Ion Chromatogram

Component Name: PFOA



Component Name: PFOS



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LCMSMS ANALYSIS REPORT

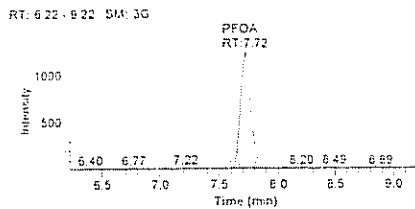
Sample Name:	SYS	Original Data Path:	C:\XCalibur\PFCA\2015 forced
Sample ID:	SYS	Instrument Method:	C:\XCalibur\PFCA\PFCA_Leid
Data File:	D15085003-02	Dilution Factor:	1.00
Acquisition Date:	04/12/15 06:38:21 PM	Instrument Model:	TSQ Quantum Access
Sample Type:	Unknown	Instrument Software Version:	2.3.0.1206 SP1
Vial:	D:2	Instrument Serial Number:	TQU01408
Run Time(min):	14.52	Operator:	Quantum
Injection Volume(µl):	10.00		

Quan Peak Table

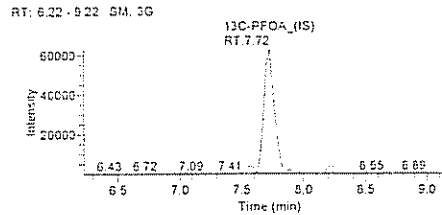
Component Name	Calculated Amount	RT	Response	ISTD Response	Response Ratio	Units
13C-PFOA_(IS)	N/A	7.72	392167.53	N/A	N/A	N/A
13C-PFOS_(IS)	N/A	7.94	49948.52	N/A	N/A	N/A
PFOA	1.700	7.72	7507.86	392167.53	0.019	ng/L
PFOS	4.731	7.97	526.34	49948.52	0.011	ng/L

Extracted Ion Chromatogram

Component Name: PFOA

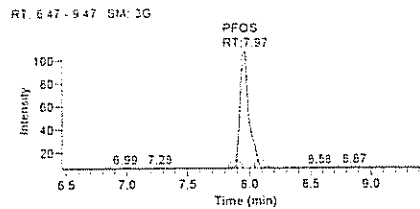


NL: 1.25E3
 TIC F: - c ESI SRM ms2
 412.800
 [158.885-168.805,
 388.845-388.855] MS
 ICIS D15085003-02

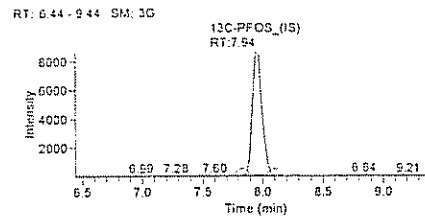


NL: 6.28E4
 TIC F: - c ESI SRM
 ms2 416.840
 [371.885-371.895]
 MS ICIS
 D15085003-02

Component Name: PFOS



NL: 1.08E2
 TIC F: - c ESI SRM
 ms2 498.660
 [80.195-80.205,
 98.895-98.905] MS
 ICIS D15085003-02



NL: 8.71E3
 TIC F: - c ESI SRM
 ms2 502.950
 [80.275-80.285,
 98.895-98.905] MS
 ICIS D15085003-02

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Sample Name: CAL1
 Sample ID: CAL1
 Data File: D15085003-03
 Acquisition Date: 04/12/15 06:55:34 PM
 Sample Type: Std Bracket
 Vial: D:3
 Run Time(min): 14.52
 Injection Volume(µl): 10.00

Original Data Path:
 Instrument Method:
 Dilution Factor:
 Instrument Model:
 Instrument Software Version:
 Instrument Serial Number:
 Operator:

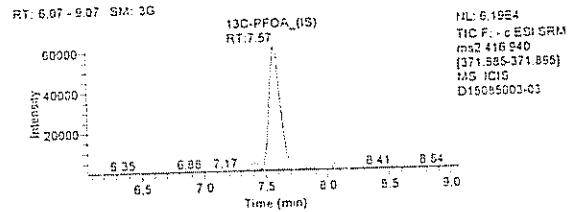
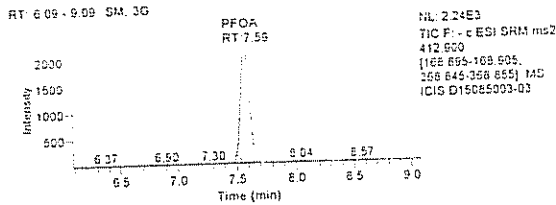
C:\XCalibur\PFC\2015 forced
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 1.00
 TSQ Quantum Access
 2.3.0.1206 SP1
 TQU01408
 Quantum

Quan Peak Table

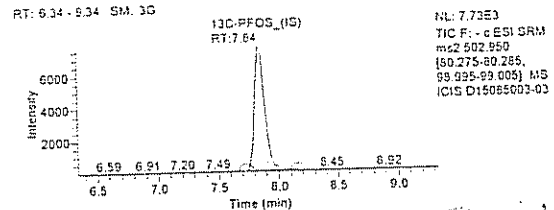
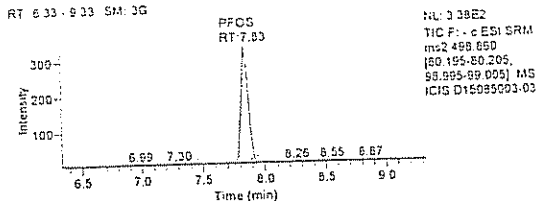
Component Name	Calculated Amount	RT	Response	ISTD Response	Response Ratio	Units
13C-PFOA_(IS)	N/A	7.57	406255.01	N/A	N/A	N/A
13C-PFOS_(IS)	N/A	7.84	47741.64	N/A	N/A	N/A
PFOA	2.179	7.59	11930.13	406255.01	0.029	ng/L
PFOS	5.809	7.83	1427.52	47741.64	0.030	ng/L

Extracted Ion Chromatogram

Component Name: PFOA



Component Name: PFOS



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Monday, April 13, 2015, 11:47:50

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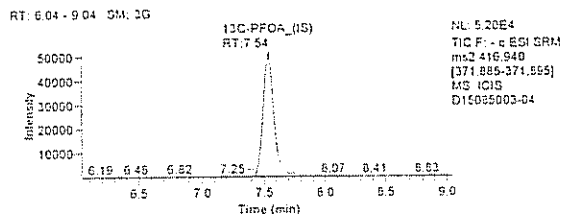
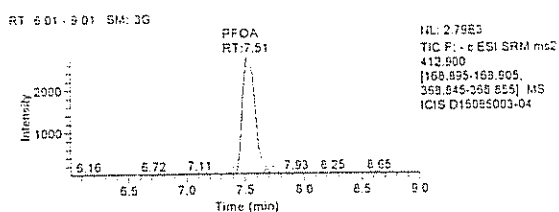
Sample Name: CAL2	Original Data Path: C:\XCalibur\PFC\2015 forced
Sample ID: CAL2	Instrument Method: C:\XCalibur\PFC\PFC_Leid
Data File: D15085003-04	Dilution Factor: 1.00
Acquisition Date: 04/12/15 07:12:47 PM	Instrument Model: TSQ Quantum Access
Sample Type: Std Bracket	Instrument Software Version: 2.3.0.1206 SP1
Vial: D:4	Instrument Serial Number: TQU01408
Run Time(min): 14.51	Operator: Quantum
Injection Volume(µl): 10.00	

Quan Peak Table

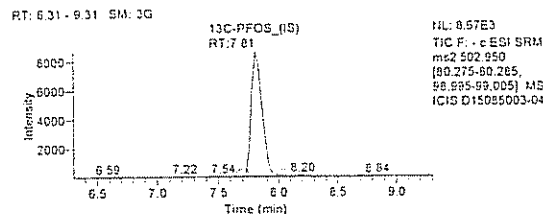
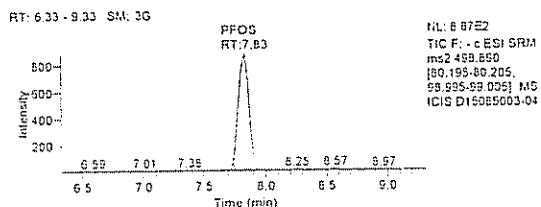
Component Name	Calculated Amount	RT	Response	ISTD Response	Response Ratio	Units
13C-PFOA_(IS)	N/A	7.54	330803.48	N/A	N/A	N/A
13C-PFOS_(IS)	N/A	7.81	55510.63	N/A	N/A	N/A
PFOA	3.744	7.51	20752.48	330803.48	0.063	ng/L
PFOS	9.452	7.83	5295.10	55510.63	0.095	ng/L

Extracted Ion Chromatogram

Component Name: PFOA



Component Name: PFOS



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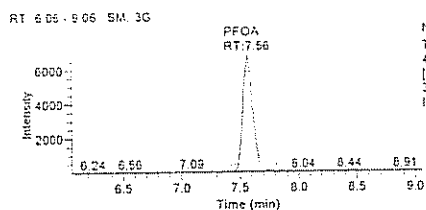
Sample Name: CAL3	Original Data Path: C:\XCalibur\PFC\2015 forced
Sample ID: CAL3	Instrument Method: C:\XCalibur\PFC\PFC_Leid
Data File: D15085003-05	Dilution Factor: 1.00
Acquisition Date: 04/12/15 07:30:00 PM	Instrument Model: TSQ Quantum Access
Sample Type: Std Bracket	Instrument Software Version: 2.3.0.1206 SPI
Vial: D:5	Instrument Serial Number: TQU01408
Run Time(min): 14.51	Operator: Quantum
Injection Volume(µl): 10.00	

Quan Peak Table

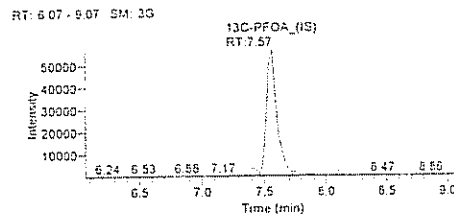
Component Name	Calculated Amount	RT	Response	ISTD Response	Response Ratio	Units
13C-PFOA_(IS)	N/A	7.57	348513.54	N/A	N/A	N/A
13C-PFOS_(IS)	N/A	7.81	43702.24	N/A	N/A	N/A
PFOA	6.373	7.56	41404.54	348513.54	0.119	ng/L
PFOS	15.533	7.81	8944.88	43702.24	0.205	ng/L

Extracted Ion Chromatogram

Component Name: PFOA

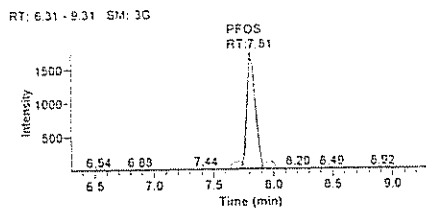


NL: 6.90E3
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 [168.829-169.805,
 358.645-359.855] MS
 ICIS D15085003-05

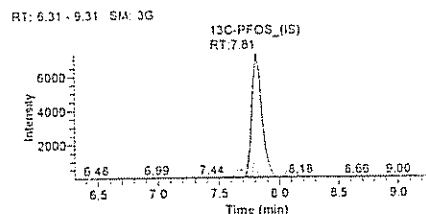


NL: 5.65E4
 TIC F: - c ESI SRM
 ms2 416.940
 [371.685-371.895]
 MS ICIS
 D15085003-05

Component Name: PFOS



NL: 1.75E3
 TIC F: - c ESI SRM
 ms2 469.860
 [80.195-80.205,
 58.995-59.005] MS
 ICIS D15085003-05



NL: 7.37E3
 TIC F: - c ESI SRM
 ms2 502.850
 [80.275-80.285,
 58.995-59.005] MS
 ICIS D15085003-05

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Sample Name: CAL4
 Sample ID: CAL4
 Data File: D15085003-06
 Acquisition Date: 04/12/15 07:47:14 PM
 Sample Type: Std Bracket
 Vial: D:6
 Run Time(min): 14.49
 Injection Volume(µl): 10.00

Original Data Path:
 Instrument Method:
 Dilution Factor:
 Instrument Model:
 Instrument Software Version:
 Instrument Serial Number:
 Operator:

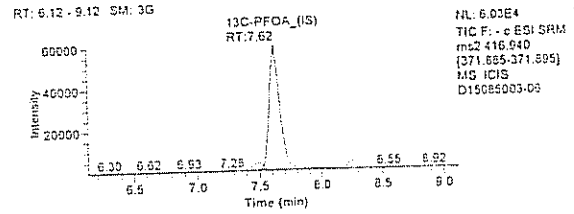
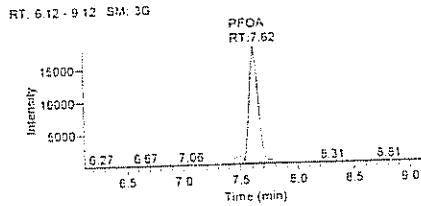
C:\XCalibur\PPFC\2015 forced
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 1.00
 TSQ Quantum Access
 2.3.0.1206 SP1
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 Quantum

Quan Peak Table

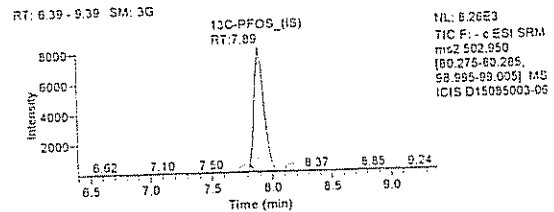
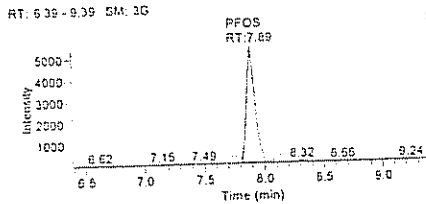
Component Name	Calculated Amount	RT	Response	ISTD Response	Response Ratio	Units
13C-PFOA_(IS)	N/A	7.62	361571.35	N/A	N/A	N/A
13C-PFOS_(IS)	N/A	7.89	46702.85	N/A	N/A	N/A
PFOA	14.651	7.62	106795.57	361571.35	0.295	ng/L
PFOS	37.115	7.89	27675.66	46702.85	0.593	ng/L

Extracted Ion Chromatogram

Component Name: PFOA



Component Name: PFOS



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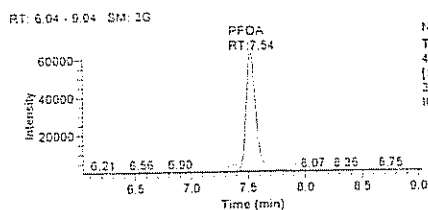
Sample Name:	CAL5	Original Data Path:	C:\XCalibur\PFC\2015 forced
Sample ID:	CAL5	Instrument Method:	C:\XCalibur\PFC\PFC_Leid
Data File:	D15085003-07	Dilution Factor:	1.00
Acquisition Date:	04/12/15 08:04:27 PM	Instrument Model:	TSQ Quantum Access
Sample Type:	Std Bracket	Instrument Software Version:	2.3.0.1206 SP1
Vial:	D:7	Instrument Serial Number:	TQU01408
Run Time(min):	14.51	Operator:	Quantum
Injection Volume(µl):	10.00		

Quan Peak Table

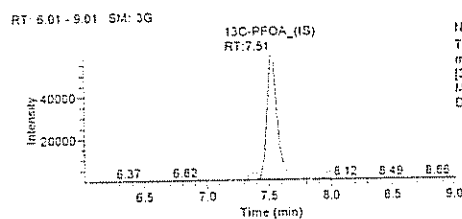
Component Name	Calculated Amount	RT	Response	ISTD Response	Response Ratio	Units
13C-PFOA_(IS)	N/A	7.51	369976.81	N/A	N/A	N/A
13C-PFOS_(IS)	N/A	7.81	44378.99	N/A	N/A	N/A
PFOA	50.619	7.54	393105.90	369976.81	1.063	ng/L
PFOS	118.169	7.81	90950.52	44378.99	2.049	ng/L

Extracted Ion Chromatogram

Component Name: PFOA

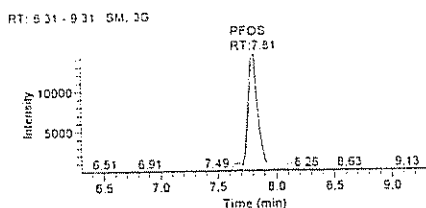


NL: 624E4
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 [188.695-168.905,
 368.645-368.855] MS
 ICIS D15085003-07

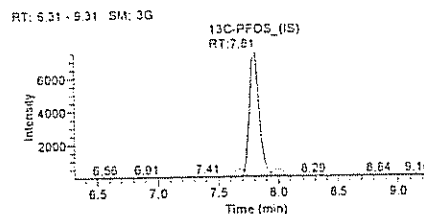


NL: 5.66E4
 TIC F: - c ESI SRM
 ms2 416.640
 [371.685-371.895]
 MS ICIS
 D15085003-07

Component Name: PFOS



NL: 1.45E4
 TIC F: - c ESI SRM
 ms2 498.650
 [80.195-60.205,
 98.895-99.005] MS
 ICIS D15085003-07



NL: 7.55E3
 TIC F: - c ESI SRM
 ms2 502.950
 [80.275-60.285,
 98.895-99.005] MS
 ICIS D15085003-07

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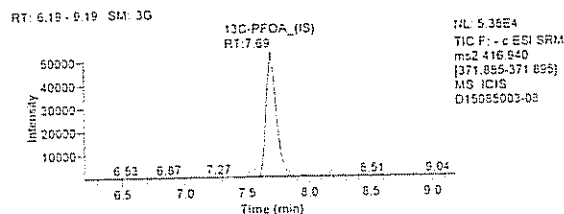
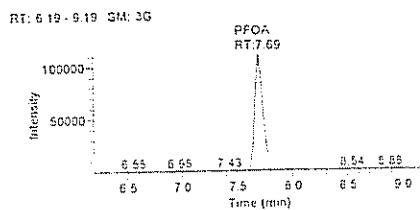
Sample Name:	CAL6	Original Data Path:	C:\XCalibur\PFPC\2015 forced
Sample ID:	CAL6	Instrument Method:	C:\XCalibur\PFPC\PF_Ceid
Data File:	D15085003-08	Dilution Factor:	1.00
Acquisition Date:	04/12/15 08:21:40 PM	Instrument Model:	TSQ Quantum Access
Sample Type:	Std Bracket	Instrument Software Version:	2.3.0.1206 SP1
Vial:	D:8	Instrument Serial Number:	TQU01408
Run Time(min):	14.51	Operator:	Quantum
Injection Volume(µl):	10.00		

Quan Peak Table

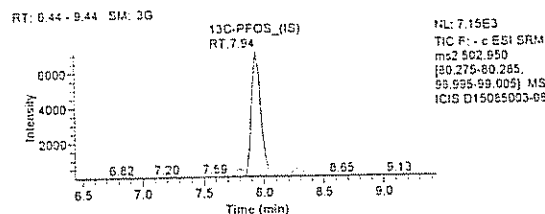
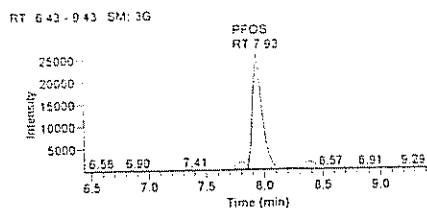
Component Name	Calculated Amount	RT	Response	ISTD Response	Response Ratio	Units
13C-PFOA_(IS)	N/A	7.69	320421.81	N/A	N/A	N/A
13C-PFOS_(IS)	N/A	7.94	39474.41	N/A	N/A	N/A
PFOA	94.220	7.69	638430.96	320421.81	1.992	ng/L
PFOS	232.621	7.93	162102.05	39474.41	4.107	ng/L

Extracted Ion Chromatogram

Component Name: PFOA



Component Name: PFOS



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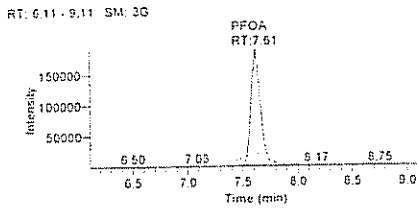
Sample Name: CAL7	Original Data Path: C:\XCalibur\PFC\2015 forced
Sample ID: CAL7	Instrument Method: C:\XCalibur\PFC\PFC_Leid
Data File: D15085003-09	Dilution Factor: 1.00
Acquisition Date: 04/12/15 08:38:54 PM	Instrument Model: TSQ Quantum Access
Sample Type: Std Bracket	Instrument Software Version: 2.3.0.1206 SP1
Vial: D:9	Instrument Serial Number: TQU01408
Run Time(min): 14.51	Operator: Quantum
Injection Volume(µl): 10.00	

Quan Peak Table

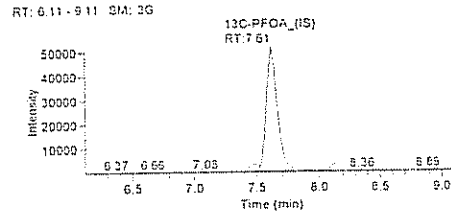
Component Name	Calculated Amount	RT	Response	ISTD Response	Response Ratio	Units
13C-PFOA_(IS)	N/A	7.61	335105.10	N/A	N/A	N/A
13C-PFOS_(IS)	N/A	7.88	38946.28	N/A	N/A	N/A
PFOA	168.847	7.61	1201064.13	335105.10	3.584	ng/L
PFOS	402.498	7.88	278846.69	38946.28	7.160	ng/L

Extracted Ion Chromatogram

Component Name: PFOA

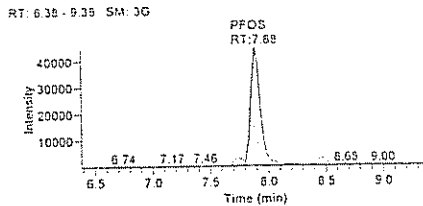


NL: 1.90E5
 TIC F: - c ESI SRM ms2
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 365.645-365.655] MS
 ICIS D15085003-09

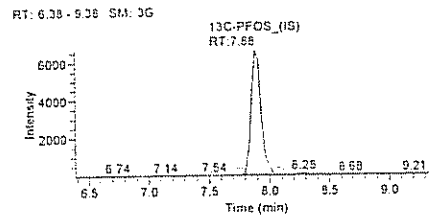


NL: 5.18E4
 TIC F: - c ESI SRM
 ms2 416.940
 [371.885-371.895]
 MS ICIS
 D15085003-09

Component Name: PFOS



NL: 4.47E4
 TIC F: - c ESI SRM
 ms2 498.820
 [80.195-80.205,
 93.995-93.005] MS
 ICIS D15085003-09



NL: 6.68E3
 TIC F: - c ESI SRM
 ms2 502.950
 [80.275-80.285,
 93.995-93.005] MS
 ICIS D15085003-09

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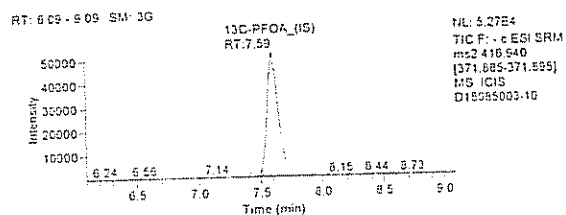
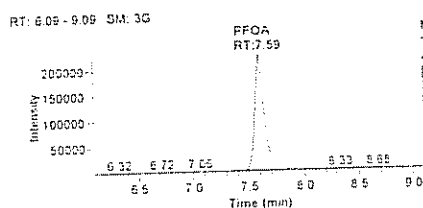
Sample Name:	CAL8	Original Data Path:	C:\XCalibur\PFC\2015 forced
Sample ID:	CAL8	Instrument Method:	C:\XCalibur\PFC\PFC_Leid
Data File:	D15085003-10	Dilution Factor:	1.00
Acquisition Date:	04/12/15 08:56:07 PM	Instrument Model:	TSQ Quantum Access
Sample Type:	Std Bracket	Instrument Software Version:	2.3.0.1206 SPI
Vial:	D:10	Instrument Serial Number:	TQU01408
Run Time(min):	14.52	Operator:	Quantum
Injection Volume(µl):	10.00		

Quan Peak Table

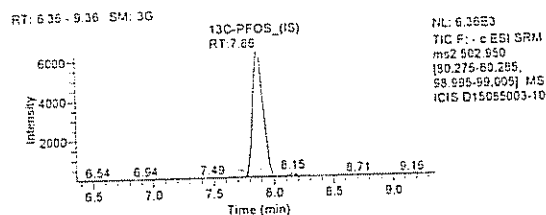
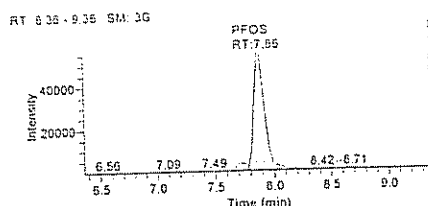
Component Name	Calculated Amount	RT	Response	ISTD Response	Response Ratio	Units
13C-PFOA_(IS)	N/A	7.59	339780.04	N/A	N/A	N/A
13C-PFOS_(IS)	N/A	7.86	40705.23	N/A	N/A	N/A
PFOA	197.368	7.59	1424510.27	339780.04	4.192	ng/L
PFOS	523.803	7.86	380189.18	40705.23	9.340	ng/L

Extracted Ion Chromatogram

Component Name: PFOA



Component Name: PFOS



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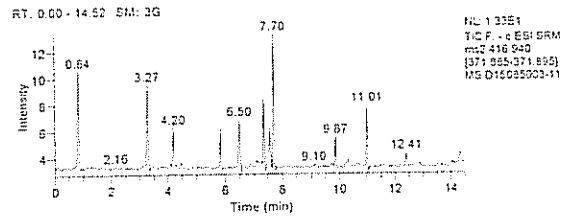
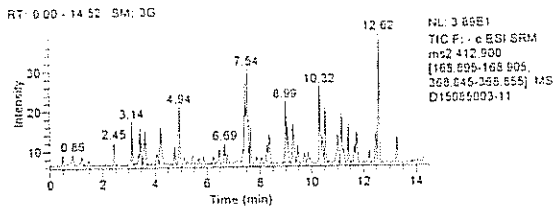
Sample Name:	Recon	Original Data Path:	C:\XCalibur\PFC\2015 forced
Sample ID:	Recon	Instrument Method:	C:\XCalibur\PFC\PFC_Leid
Data File:	D15085003-11	Dilution Factor:	1.00
Acquisition Date:	04/12/15 09:13:22 PM	Instrument Model:	TSQ Quantum Access
Sample Type:	Unknown	Instrument Software Version:	2.3.0.1206 SP1
Vial:	D:11	Instrument Serial Number:	TQU01408
Run Time(min):	14.52	Operator:	Quantum
Injection Volume(µl):	10.00		

Quan Peak Table

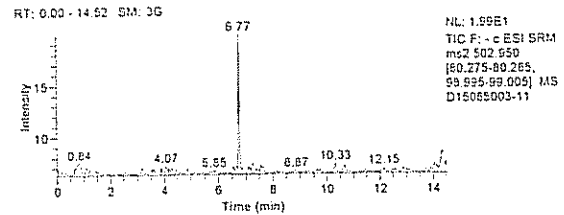
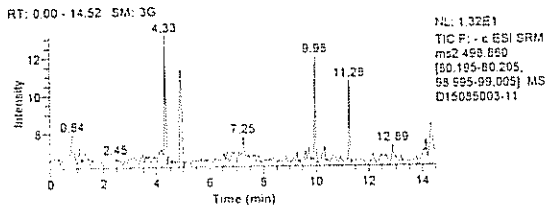
Component Name	Calculated Amount	RT	Response	ISTD Response	Response Ratio	Units
13C-PFOA_(IS)	N/A	N/A	N/A	N/A	N/A	N/A
13C-PFOS_(IS)	N/A	N/A	N/A	N/A	N/A	N/A
PFOA	N/A	N/A	N/A	N/A	N/A	ng/L
PFOS	N/A	N/A	N/A	N/A	N/A	ng/L

Extracted Ion Chromatogram

Component Name: PFOA



Component Name: PFOS



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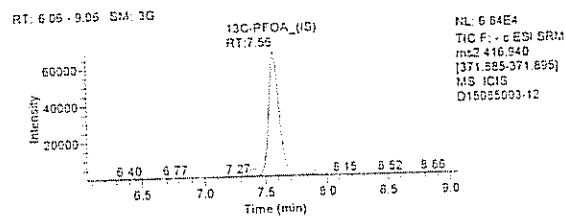
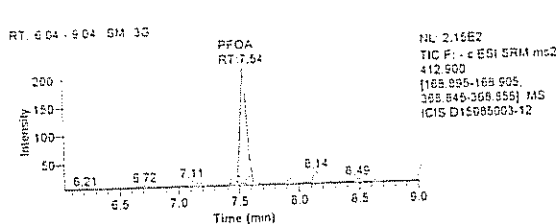
Sample Name:	STD0	Original Data Path:	C:\XCalibur\PFC\2015 forced
Sample ID:	STD0	Instrument Method:	C:\XCalibur\PFC\PFC_Leid
Data File:	D15085003-12	Dilution Factor:	1.00
Acquisition Date:	04/12/15 09:30:39 PM	Instrument Model:	TSQ Quantum Access
Sample Type:	Unknown	Instrument Software Version:	2.3.0.1206 SPI
Vial:	D:12	Instrument Serial Number:	TQU01408
Run Time(min):	14.51	Operator:	Quantum
Injection Volume(µl):	10.00		

Quan Peak Table

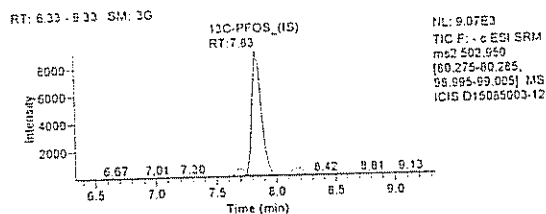
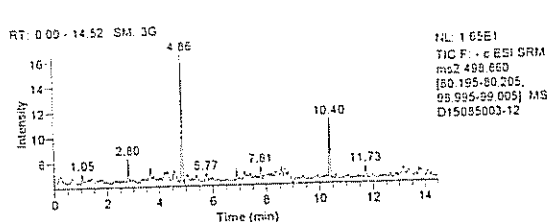
Component Name	Calculated Amount	RT	Response	ISTD Response	Response Ratio	Units
13C-PFOA_(IS)	N/A	7.56	419858.90	N/A	N/A	N/A
13C-PFOS_(IS)	N/A	7.83	51520.18	N/A	N/A	N/A
PFOA	0.892	7.54	798.99	419858.90	0.002	ng/L
PFOS	N/A	N/A	N/A	N/A	N/A	ng/L

Extracted Ion Chromatogram

Component Name: PFOA



Component Name: PFOS



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Sample Name: CCV1
 Sample ID: CCV1
 Data File: D15085003-14
 Acquisition Date: 04/12/15 10:05:10 PM
 Sample Type: QC
 Vial: D:14
 Run Time(min): 14.52
 Injection Volume(µl): 10.00

Original Data Path:
 Instrument Method:
 Dilution Factor:
 Instrument Model:
 Instrument Software Version:
 Instrument Serial Number:
 Operator:

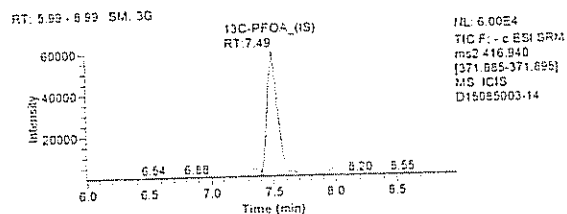
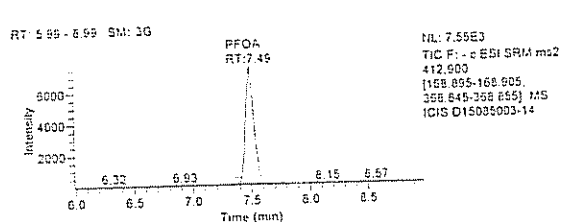
C:\XCalibur\PFPC\2015 forced
 C:\XCalibur\PFPC\PFPC_Leid
 1.00
 TSQ Quantum Access
 2.3.0.1206 SP1
 TQU01408
 Quantum

Quan Peak Table

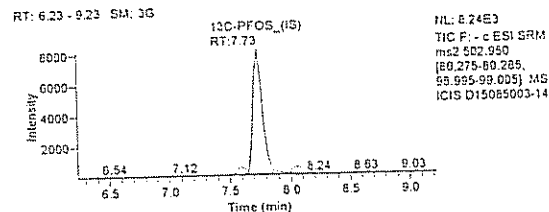
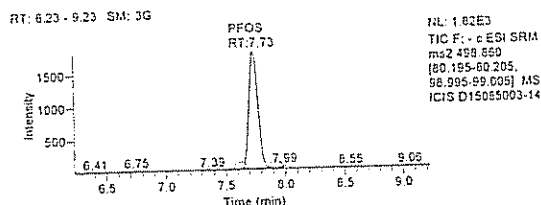
Component Name	Calculated Amount	RT	Response	ISTD Response	Response Ratio	Units
13C-PFOA_(IS)	N/A	7.49	360406.43	N/A	N/A	N/A
13C-PFOS_(IS)	N/A	7.73	46762.99	N/A	N/A	N/A
PFOA	5.893	7.49	39134.42	360406.43	0.109	ng/L
PFOS	15.998	7.73	9962.33	46762.99	0.213	ng/L

Extracted Ion Chromatogram

Component Name: PFOA



Component Name: PFOS



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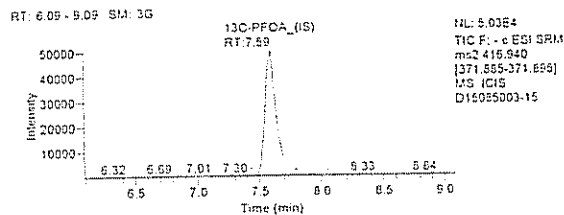
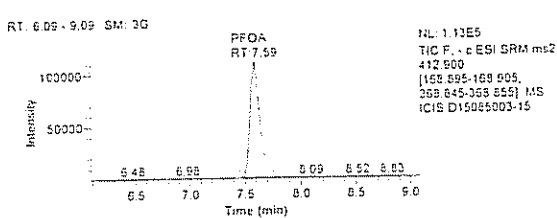
Sample Name:	ICV	Original Data Path:	C:\XCalibur\PFC\2015 forced
Sample ID:	ICV	Instrument Method:	C:\XCalibur\PFC\PFC_Leid
Data File:	D15085003-15	Dilution Factor:	1.00
Acquisition Date:	04/12/15 10:22:25 PM	Instrument Model:	TSQ Quantum Access
Sample Type:	QC	Instrument Software Version:	2.3.0.1206 SP1
Vial:	D:18	Instrument Serial Number:	TQU01408
Run Time(min):	14.51	Operator:	Quantum
Injection Volume(µl):	10.00		

Quan Peak Table

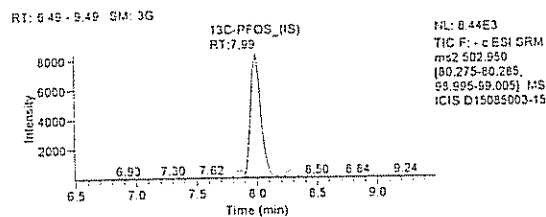
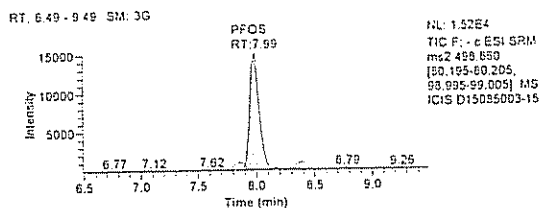
Component Name	Calculated Amount	RT	Response	ISTD Response	Response Ratio	Units
13C-PFOA_(IS)	N/A	7.59	342840.07	N/A	N/A	N/A
13C-PFOS_(IS)	N/A	7.99	52509.36	N/A	N/A	N/A
PFOA	102.419	7.59	743052.39	342840.07	2.167	ng/L
PFOS	98.928	7.99	89453.57	52509.36	1.704	ng/L

Extracted Ion Chromatogram

Component Name: PFOA



Component Name: PFOS



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Sample Name: CCV2
 Sample ID: CCV2
 Data File: D15085003-20
 Acquisition Date: 04/12/15 11:48:45 PM
 Sample Type: QC
 Vial: D:15
 Run Time(min): 14.51
 Injection Volume(µl): 10.00

Original Data Path:
 Instrument Method:
 Dilution Factor:
 Instrument Model:
 Instrument Software Version:
 Instrument Serial Number:
 Operator:

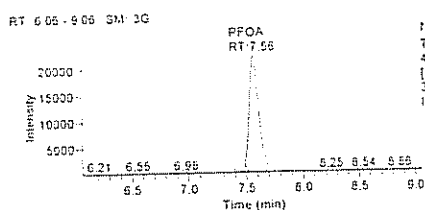
C:\XCalibur\PFCA\2015 forced
 C:\XCalibur\PFCA\PFCA_Leid
 1.00
 TSQ Quantum Access
 2.3.0.1206 SPI
 TQU01408
 Quantum

Quan Peak Table

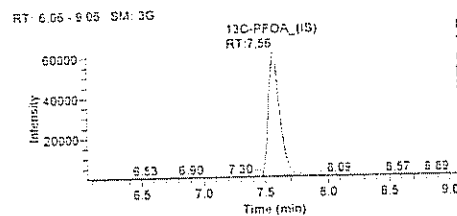
Component Name	Calculated Amount	RT	Response	ISTD Response	Response Ratio	Units
13C-PFOA_(IS)	N/A	7.56	403421.24	N/A	N/A	N/A
13C-PFOS_(IS)	N/A	7.81	56760.46	N/A	N/A	N/A
PFOA	17.088	7.56	140125.68	403421.24	0.347	ng/L
PFOS	39.834	7.80	36409.74	56760.46	0.641	ng/L

Extracted Ion Chromatogram

Component Name: PFOA

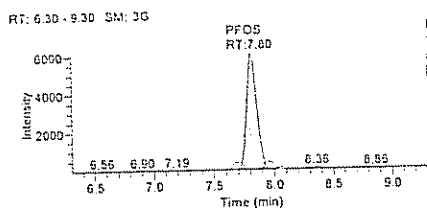


NL: 2.25E4
 TIC F1 - c ESI SRM ms2
 412.800
 [168.895-168.905,
 358.846-358.855] MS
 ICIS D15085003-20

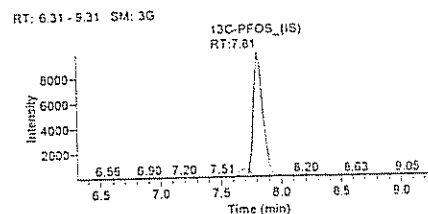


NL: 6.22E4
 TIC F1 - c ESI SRM
 ms2 416.940
 [371.885-371.895]
 MS ICIS
 D15085003-20

Component Name: PFOS



NL: 6.12E3
 TIC F1 - c ESI SRM
 ms2 499.860
 [80.185-80.205,
 98.995-99.005] MS
 ICIS D15085003-20



NL: 9.92E3
 TIC F1 - c ESI SRM
 ms2 502.950
 [80.275-80.285,
 98.985-99.005] MS
 ICIS D15085003-20

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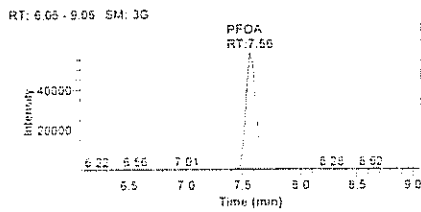
Sample Name: CCV3	Original Data Path: C:\XCalibur\PFC\2015 forced	C:\XCalibur\PFC\2015 forced
Sample ID: CCV3	Instrument Method: C:\XCalibur\PFC\PFC_Leid	C:\XCalibur\PFC\PFC_Leid
Data File: D15085003-26	Dilution Factor: 1.00	1.00
Acquisition Date: 04/13/15 01:32:12 AM	Instrument Model: TSQ Quantum Access	TSQ Quantum Access
Sample Type: QC	Instrument Software Version: 2.3.0.1206 SP1	2.3.0.1206 SP1
Vial: D:16	Instrument Serial Number: TQU01408	TQU01408
Run Time(min): 14.51	Operator: Quantum	Quantum
Injection Volume(µl): 10.00		

Quan Peak Table

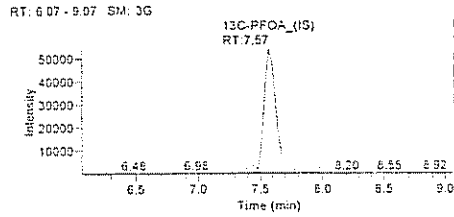
Component Name	Calculated Amount	RT	Response	ISTD Response	Response Ratio	Units
13C-PFOA_(IS)	N/A	7.57	372070.57	N/A	N/A	N/A
13C-PFOS_(IS)	N/A	7.86	43695.79	N/A	N/A	N/A
PFOA	50.158	7.56	391669.16	372070.57	1.053	ng/L
PFOS	121.516	7.86	92179.18	43695.79	2.110	ng/L

Extracted Ion Chromatogram

Component Name: PFOA

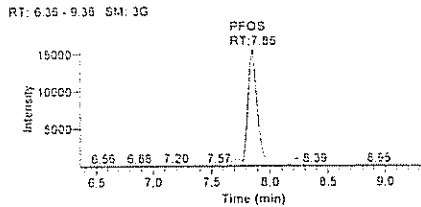


NL: 5.64E4
 TIC F: - c ESI SRM m/z
 412.530
 [165.045-166.005,
 328.845-328.855] MS
 ICIS D15085003-26

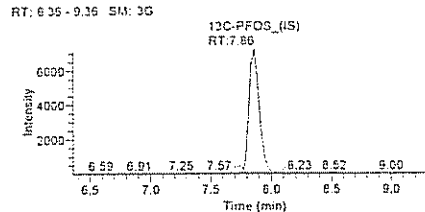


NL: 5.42E4
 TIC F: - c ESI SRM
 m/z 416.540
 [371.865-371.895] MS
 MS ICIS
 D15085003-26

Component Name: PFOS



NL: 1.55E4
 TIC F: - c ESI SRM
 m/z 495.680
 [80.175-80.205,
 93.995-99.005] MS
 ICIS D15085003-26



NL: 7.27E3
 TIC F: - c ESI SRM
 m/z 502.950
 [80.275-80.285,
 95.095-99.005] MS
 ICIS D15085003-26

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Raw QC Data

PFAAs by LC/MS/MS

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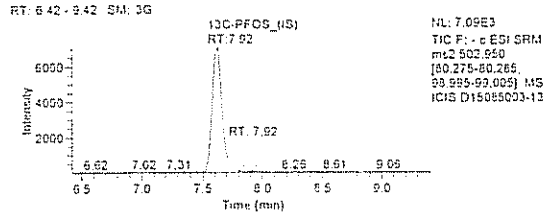
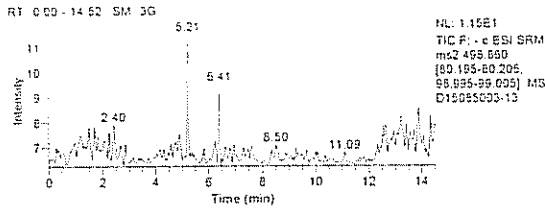
Sample Name:	BLK 15085003	Original Data Path:	C:\XCalibur\PFCA\2015 forced
Sample ID:	BLK 15085003	Instrument Method:	C:\XCalibur\PFCA\PFCA_Leid
Data File:	D15085003-13	Dilution Factor:	1.00
Acquisition Date:	04/12/15 09:47:57 PM	Instrument Model:	TSQ Quantum Access
Sample Type:	Unknown	Instrument Software Version:	2.3.0.1206 SP1
Vial:	D:13	Instrument Serial Number:	TQU01408
Run Time(min):	14.52	Operator:	Quantum
Injection Volume(ul):	10.00		

Quan Peak Table

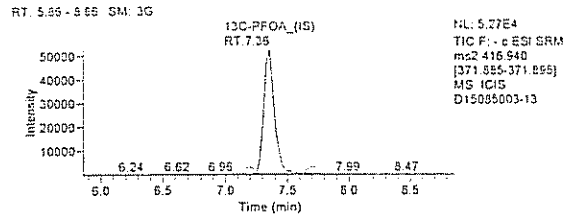
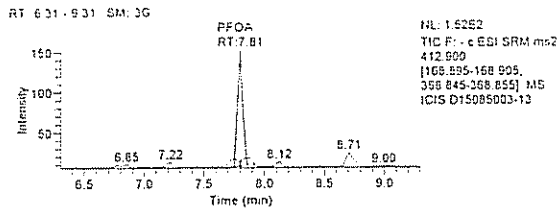
Component Name	Calculated Amount	RT	Response	ISTD Response	Response Ratio	Units
13C-PFOA_(IS)	N/A	7.36	324996.45	N/A	N/A	N/A
13C-PFOS_(IS)	N/A	7.92	212.46	N/A	N/A	N/A
PFOA	0.868	7.81	456.99	324996.45	0.001	ng/L
PFOS	N/A	N/A	N/A	N/A	N/A	ng/L

Extracted Ion Chromatogram

Component Name: PFOS



Component Name: PFOA



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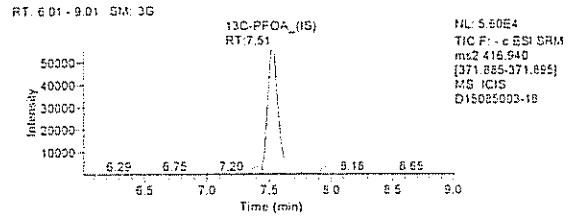
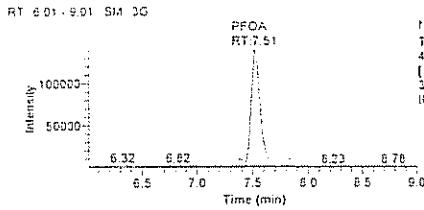
Sample Name: 7819825 MS	Original Data Path: C:\XCalibur\PFC\2015 forced
Sample ID: 7819825 MS	Instrument Method: C:\XCalibur\PFC\PFC_Leid
Data File: D15085003-18	Dilution Factor: 1.00
Acquisition Date: 04/12/15 11:14:19 PM	Instrument Model: TSQ Quantum Access
Sample Type: Unknown	Instrument Software Version: 2.3.0.1206 SP1
Vial: D:21	Instrument Serial Number: TQU01408
Run Time(min): 14.51	Operator: Quantum
Injection Volume(µl): 10.00	

Quan Peak Table

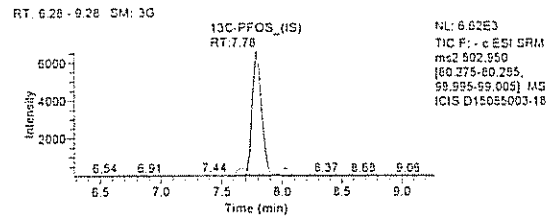
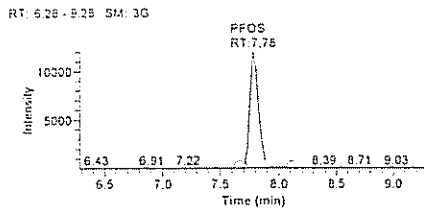
Component Name	Calculated Amount	RT	Response	ISTD Response	Response Ratio	Units
13C-PFOA_(IS)	N/A	7.51	343449.79	N/A	N/A	N/A
13C-PFOS_(IS)	N/A	7.78	36627.29	N/A	N/A	N/A
PFOA	117.642	7.51	855884.39	343449.79	2.492	ng/L
PFOS	107.762	7.78	68213.29	36627.29	1.862	ng/L

Extracted Ion Chromatogram

Component Name: PFOA



Component Name: PFOS



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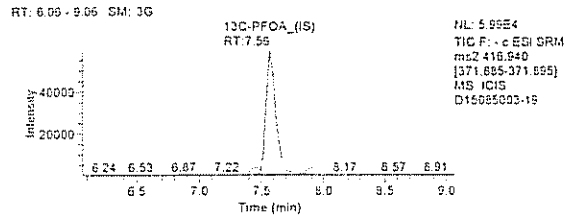
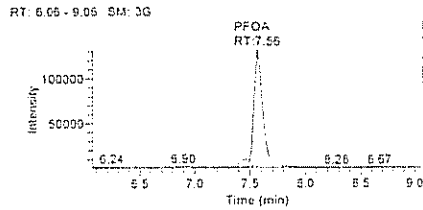
Sample Name:	7819826 MSD	Original Data Path:	C:\XCalibur\PFC\2015 forced
Sample ID:	7819826 MSD	Instrument Method:	C:\XCalibur\PFC\PFC_Leid
Data File:	D15085003-19	Dilution Factor:	1.00
Acquisition Date:	04/12/15 11:31:32 PM	Instrument Model:	TSQ Quantum Access
Sample Type:	Unknown	Instrument Software Version:	2.3.0.1206 SP1
Vial:	D:22	Instrument Serial Number:	TQU01408
Run Time(min):	14.51	Operator:	Quantum
Injection Volume(µl):	10.00		

Quan Peak Table

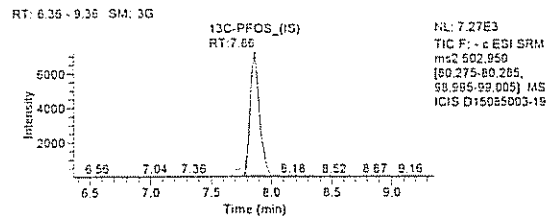
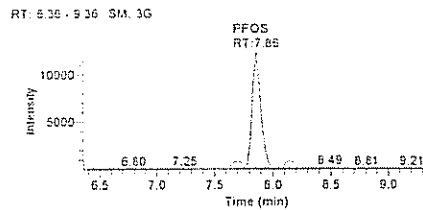
Component Name	Calculated Amount	RT	Response	ISTD Response	Response Ratio	Units
13C-PFOA_(IS)	N/A	7.56	340794.04	N/A	N/A	N/A
13C-PFOS_(IS)	N/A	7.86	40067.14	N/A	N/A	N/A
PFOA	104.098	7.56	750815.47	340794.04	2.203	ng/L
PFOS	99.018	7.86	68322.53	40067.14	1.705	ng/L

Extracted Ion Chromatogram

Component Name: PFOA



Component Name: PFOS



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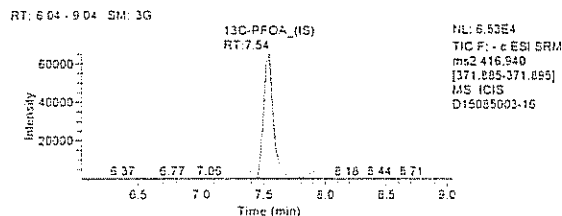
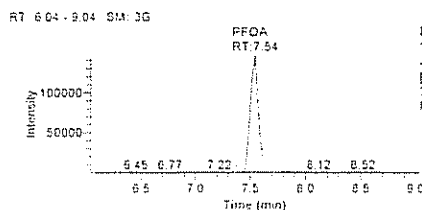
Sample Name:	LCS 15085003	Original Data Path:	C:\XCalibur\PFC\2015 forced
Sample ID:	LCS 15085003	Instrument Method:	C:\XCalibur\PFC\PFC_Leid
Data File:	D15085003-16	Dilution Factor:	1.00
Acquisition Date:	04/12/15 10:39:42 PM	Instrument Model:	TSQ Quantum Access
Sample Type:	QC	Instrument Software Version:	2.3.0.1206 SP1
Vial:	D:19	Instrument Serial Number:	TQU01408
Run Time(min):	14.51	Operator:	Quantum
Injection Volume(µl):	10.00		

Quan Peak Table

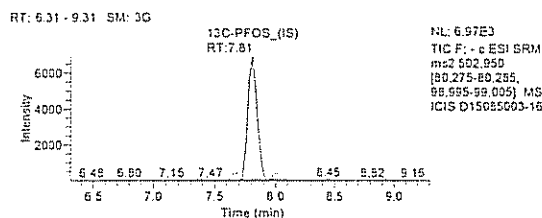
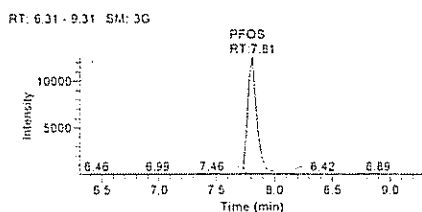
Component Name	Calculated Amount	RT	Response	ISTD Response	Response Ratio	Units
13C-PFOA_(IS)	N/A	7.54	367190.51	N/A	N/A	N/A
13C-PFOS_(IS)	N/A	7.81	38560.79	N/A	N/A	N/A
PFOA	104.843	7.54	814809.78	367190.51	2.219	ng/L
PFOS	111.100	7.81	74127.77	38560.79	1.922	ng/L

Extracted Ion Chromatogram

Component Name: PFOA



Component Name: PFOS



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Preparation Logs

PFAAs by LC/MS/MS

15085003

Tech 1: MY 2628 Tech 2: _____

Dept: 37		Prep Analysis: 00000		PFAAs in Water by LC/MS/MS							
QC	Sample Code	Amt (g/mL)	SS/IS Sol.	Amt (mL)	MS Sol.	Amt (mL)	FV (mL)	pH	pH	BC	Comments
7819825MS	GW16-	200.2	199325-41B	0.05	199325-41A	0.04	1			201a	
7819826MSD	GW16-	200.2		0.05	↓	0.04	1			↓	
BLANKA	BLK085003	200mL		0.05	N/A	N/A	1			N/A	
LCSA	OPR085003	200mL		0.05	199325-41A	0.04	1			N/A	

Solvent Used	Lot No.

Sample #	Sample Code	Amt (g)	SS/IS Sol.	Amt (mL)	FV (mL)	pH	pH	BC	Comments	Analyses	List	Due Date	Prio
1 7819820	GW04-	200.1	199325-41B	0.05	1			201a		10954	15877	04/06/2015	Q
2 7819821	GW06-	200.3		0.05	1					10954	15877	04/06/2015	Q
3 7819822	GW03-	200.4		0.05	1				ISDF3 Δ	10954	15877	04/06/2015	Q
4 7819823	GW09-	200.1		0.05	1					10954	15877	04/06/2015	Q
5 7819824BKG	GW16-	199.8		0.05	1				ISDF2 *	10954	15877	04/06/2015	Q
6 7819827	NCBFD	200.1		0.05	1					10954	15877	04/06/2015	Q

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* ISDF2: 250ul of final extract was mixed with 250ul of MeOH
 Δ ISDF3: 200ul of final extract was mixed with 400ul of MeOH

MY 2628 04/11/2015

Rack ID:	Work Station	Micro Temp
Internal Standard	Balance #	100?

S-bath ID	C	S-bath ID	C	N-Evap	C	M-vap	C	15085003
-----------	---	-----------	---	--------	---	-------	---	----------

Documented temps are NIST corrected.

"06GW04032415"	"EPA 537 Rev. 1.1 modified"	"RES"	"7819820"	"LL"	"335-67-1"	"Perfluorooctanoic acid"	"1"	"ng/L"	"J"	"1"	"DL"	"TRG"	"2"	"LOQ"	"YES"	"100"
"06GW04032415"	"EPA 537 Rev. 1.1 modified"	"RES"	"7819820"	"LL"	"1763-23-1"	"Perfluorooctanesulfonate"	"5"	"ng/L"	"U"	"5"	"DL"	"TRG"	"10"	"LOQ"	"YES"	"100"
"06GW06032415"	"EPA 537 Rev. 1.1 modified"	"RES"	"7819821"	"LL"	"335-67-1"	"Perfluorooctanoic acid"	"76"	"ng/L"	"1"	"DL"	"TRG"	"2"	"LOQ"	"YES"	"100"	
"06GW06032415"	"EPA 537 Rev. 1.1 modified"	"RES"	"7819821"	"LL"	"1763-23-1"	"Perfluorooctanesulfonate"	"15"	"ng/L"	"5"	"DL"	"TRG"	"10"	"LOQ"	"YES"	"100"	
"06GW03032415"	"EPA 537 Rev. 1.1 modified"	"RES"	"7819822"	"LL"	"335-67-1"	"Perfluorooctanoic acid"	"480"	"ng/L"	"3"	"DL"	"TRG"	"6"	"LOQ"	"YES"	"100"	
"06GW03032415"	"EPA 537 Rev. 1.1 modified"	"RES"	"7819822"	"LL"	"1763-23-1"	"Perfluorooctanesulfonate"	"20"	"ng/L"	"U"	"20"	"DL"	"TRG"	"30"	"LOQ"	"YES"	"100"
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"06GW09032415"	"EPA 537 Rev. 1.1 modified"	"RES"	"7819823"	"LL"	"1763-23-1"	"Perfluorooctanesulfonate"	"5"	"ng/L"	"U"	"5"	"DL"	"TRG"	"10"	"LOQ"	"YES"	"100"
"06GW16032415"	"EPA 537 Rev. 1.1 modified"	"RES"	"7819824"	"LL"	"335-67-1"	"Perfluorooctanoic acid"	"2"	"ng/L"	"U"	"2"	"DL"	"TRG"	"4"	"LOQ"	"YES"	"100"
"06GW16032415"	"EPA 537 Rev. 1.1 modified"	"RES"	"7819824"	"LL"	"1763-23-1"	"Perfluorooctanesulfonate"	"10"	"ng/L"	"U"	"10"	"DL"	"TRG"	"20"	"LOQ"	"YES"	"100"
"06GW16032415MS"	"EPA 537 Rev. 1.1 modified"	"RES"	"7819825"	"LL"	"335-67-1"	"Perfluorooctanoic acid"	"120"	"ng/L"	"100"	"NA"	"NA"	"SPK"	"116"	"100"	"NA"	
"06GW16032415MS"	"EPA 537 Rev. 1.1 modified"	"RES"	"7819825"	"LL"	"1763-23-1"	"Perfluorooctanesulfonate"	"110"	"ng/L"	"100"	"NA"	"NA"	"SPK"	"108"	"100"	"NA"	
"06GW16032415MSD"	"EPA 537 Rev. 1.1 modified"	"RES"	"7819826"	"LL"	"335-67-1"	"Perfluorooctanoic acid"	"100"	"ng/L"	"100"	"NA"	"NA"	"SPK"	"102"	"12"	"100"	"NA"
"06GW16032415MSD"	"EPA 537 Rev. 1.1 modified"	"RES"	"7819826"	"LL"	"1763-23-1"	"Perfluorooctanesulfonate"	"99"	"ng/L"	"100"	"NA"	"NA"	"SPK"	"99"	"8"	"100"	"NA"
"06FD032415"	"EPA 537 Rev. 1.1 modified"	"RES"	"7819827"	"LL"	"335-67-1"	"Perfluorooctanoic acid"	"63"	"ng/L"	"1"	"DL"	"TRG"	"2"	"LOQ"	"YES"	"100"	
"06FD032415"	"EPA 537 Rev. 1.1 modified"	"RES"	"7819827"	"LL"	"1763-23-1"	"Perfluorooctanesulfonate"	"13"	"ng/L"	"5"	"DL"	"TRG"	"10"	"LOQ"	"YES"	"100"	
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"BLK15085003"	"EPA 537 Rev. 1.1 modified"	"RES"	"BLK15085003"	"LL"	"1763-23-1"	"Perfluorooctanesulfonate"	"5"	"ng/L"	"U"	"5"	"DL"	"TRG"	"10"	"LOQ"	"YES"	"100"

"10"

"LCS15085003" "EPA 537 Rev. 1.1 modified""RES" "LCS15085003" "LL" "335-67-1"

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"YES" "100" "2"

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"NA" "2" "NA" "NA" "00/00/0000 00:00" "100" "15085003" "15085003" "15085003"

"15085003" "NCB01" "03/25/2015 09:15" "04/24/2015 15:46"

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"-99" "EPA 537 Rev. 1.1 modified""NONE" "RES" "04/12/2015 23:14" "04/12/2015 23:14" "LL" "COA"

"Wet" "NA" "1" "NA" "NA" "00/00/0000 00:00" "100" "15085003" "15085003" "15085003"

"15085003" "NCB01" "03/25/2015 09:15" "04/24/2015 15:46"

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"15085003" "NCB01" "03/25/2015 09:15" "04/24/2015 15:46"

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"NCB01" "00/00/0000 00:00" "04/24/2015 15:46"



TO: G. ROOF DATE: MAY 18, 2015

FROM: EDWARD SEDLMYER COPIES: DV FILE

SUBJECT: ORGANIC DATA VALIDATION – PFOA / PFOS
 NCBC GULFPORT
 SAMPLE DELIVERY GROUP (SDG) NCB01

SAMPLES: 6/Aqueous/PFOA/PFOS

06FD032415	06GW03032415	06GW04032415
06GW06032415	06GW09032415	06GW16032415

OVERVIEW

The sample set for NCBC Gulfport, SDG NCB01 consisted of six (6) aqueous samples. The samples were analyzed for perfluorooctanoic acid (PFOA), and perfluorooctane sulfonate (PFOS). One field duplicate pair was associated with this SDG: 06GW06032415 / 06FD032415.

The samples were collected on March 24, 2015 and analyzed by Eurofins Lancaster Laboratories Environmental, LLC. All analyses were conducted in accordance with a modified EPA Method 537 Rev 1.1 analytical method and reporting protocols. The data was evaluated based on the following parameters:

- * • Data Completeness
- * • Holding Times
- * • LC/MS Tuning
- * • Laboratory Method Blank Results
- * • Initial and Continuing Calibrations
- * • Matrix Spike/Matrix Spike Duplicate Sample (MS/MSD) Results
- * • Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Results
- * • Field Duplicate Results
- * • Detection Limits
- * • Compound Identification
- * • Compound Quantification

The asterisk (*) indicates that all quality control criteria were met for this parameter. Qualified (if applicable) analytical results are summarized in Appendix A. Results as reported by the laboratory are presented in Appendix B. Appendix C contains the documentation to support the findings as discussed in this data validation report.

PFOA/PFOS

No laboratory issues were noted.

NOTES

Detected results reported below the limit of quantitation (LOQ) but greater than the Method Detection Limit (MDL) were qualified as estimated, (J). Non-detected results were reported to the MDL.

The laboratory analyzed sample 06GW03032415 at a 3-fold dilution and sample 06GW16032415 was analyzed at 2-fold dilution. This accounts for the elevated detection limits for the nondetected results.

TO: G. ROOF
SDG: NCB01

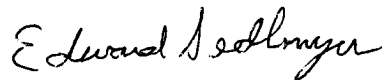
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EXECUTIVE SUMMARY

Laboratory Performance Issues: None.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the USEPA National Functional Guidelines for Organic Data Validation (June 2008) and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (July 2013). The text of this report has been formulated to address only those areas affecting data quality.



Tetra Tech, Inc.
Edward Sedlmyer
Chemist/Data Validator



Tetra Tech Inc.
Joseph A. Samchuck
Data Validation Manager

Attachments:

Appendix A – Qualified Analytical Results
Appendix B – Results as Reported by the Laboratory
Appendix C – Support Documentation

Data Qualifier Definitions

The following definitions provide brief explanations of the validation qualifiers assigned to results in the data review process.

U	The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the adjusted method detection limit for sample and method.
J	The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the reporting limit).
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
UJ	The analyte was analyzed for, but was not detected. The reported detection limit is approximate and may be inaccurate or imprecise.
R	The sample result (detected) is unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.
UR	The sample result (nondetected) is unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

Qualifier Codes:

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
- C01 = GC/MS Tuning Noncompliance
- D = MS/MSD Recovery Noncompliance
- E = LCS/LCSD Recovery Noncompliance
- F = Lab Duplicate Imprecision
- G = Field Duplicate Imprecision
- H = Holding Time Exceedance
- I = ICP Serial Dilution Noncompliance
- J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
- K = ICP Interference - includes ICS % R Noncompliance
- L = Instrument Calibration Range Exceedance
- M = Sample Preservation Noncompliance
- N = Internal Standard Noncompliance
- N01 = Internal Standard Recovery Noncompliance Dioxins
- N02 = Recovery Standard Noncompliance Dioxins
- N03 = Clean-up Standard Noncompliance Dioxins
- O = Poor Instrument Performance (i.e., base-time drifting)
- P = Uncertainty near detection limit ($< 2 \times$ IDL for inorganics and $<$ CRQL for organics)
- Q = Other problems (can encompass a number of issues; i.e. chromatography, interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = RPD between columns/detectors $>40\%$ for positive results determined via GC/HPLC
- V = Non-linear calibrations; correlation coefficient $r < 0.995$
- W = EMPC result
- X = Signal to noise response drop
- Y = Percent solids $<30\%$
- Z = Uncertainty at 2 standard deviations is greater than sample activity
- Z1 = Tentatively Identified Compound considered presumptively present
- Z2 = Tentatively Identified Compound column bleed
- Z3 = Tentatively Identified Compound aldol condensate

PROJ_NO: 02741 SDG: NCB01 FRACTION: OS MEDIA: WATER	NSAMPLE	06FD032415			06GW03032415			06GW04032415			06GW06032415		
	LAB_ID	7819827			7819822			7819820			7819821		
	SAMP_DATE	3/24/2015			3/24/2015			3/24/2015			3/24/2015		
	QC_TYPE	FD			NM			NM			NM		
	UNITS	NG/L			NG/L			NG/L			NG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF	06GW06032415											
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	
PENTADECAFLUOROOCTANOIC ACID	63			480			1	J	P	76			
PERFLUOROOCTANE SULFONIC ACID	13			20	U		5	U		15			

PROJ_NO: 02741 SDG: NCB01 FRACTION: OS MEDIA: WATER	NSAMPLE	06GW09032415			06GW16032415		
	LAB_ID	7819823			7819824		
	SAMP_DATE	3/24/2015			3/24/2015		
	QC_TYPE	NM			NM		
	UNITS	NG/L			NG/L		
	PCT_SOLIDS	0.0			0.0		
	DUP_OF						
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	
PENTADECAFLUOROOCTANOIC ACID	15			2	U		
PERFLUOROOCTANE SULFONIC ACID	5	U		10	U		

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

Sample Description: 06FD032415 Grab Groundwater
GPT6

LL Sample # WW 7819827
LL Group # 1548038
Account # 07558

Project Name: NCBC Gulfport

Collected: 03/24/2015

Tetra Tech Inc.
Foster Plaza VII
661 Andersen Drive
Pittsburgh PA 15220

Submitted: 03/25/2015 09:15
Reported: 04/24/2015 15:45

NCBFD SDG#: NCB01-06FD

CAT No.	Analysis Name	CAS Number	Result	Detection Limit*	Limit of Detection	Limit of Quantitation	DF
Misc. Organics		EPA 537 Rev. 1.1 modified	ng/l	ng/l	ng/l	ng/l	
10954	Perfluoro-octanesulfonate	1763-23-1	13	5	10	10	1
10954	Perfluorooctanoic acid	335-67-1	63	1	2	2	1

General Sample Comments

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10954	PFAAs in Water by LC/MS/MS	EPA 537 Rev. 1.1 modified	1	15085003	04/13/2015 01:14	Meng Yu	1

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

Sample Description: 06GW03032415 Grab Groundwater
GPT6

LL Sample # WW 7819822
LL Group # 1548038
Account # 07558

Project Name: NCBC Gulfport

Collected: 03/24/2015 11:20

Tetra Tech Inc.

Submitted: 03/25/2015 09:15

Foster Plaza VII

Reported: 04/24/2015 15:45

661 Andersen Drive

Pittsburgh PA 15220

GW03- SDG#: NCB01-03

CAT No.	Analysis Name	CAS Number	Result	Detection Limit*	Limit of Detection	Limit of Quantitation	DF
Misc. Organics		EPA 537 Rev. 1.1 modified	ng/l	ng/l	ng/l	ng/l	
10954	Perfluoro-octanesulfonate	1763-23-1	N.D.	20	30	30	3
10954	Perfluorooctanoic acid	335-67-1	480	3	6	6	3

General Sample Comments

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10954	PFAAs in Water by LC/MS/MS	EPA 537 Rev. 1.1 modified	1	15085003	04/13/2015 00:40	Meng Yu	3

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

Sample Description: 06GW04032415 Grab Groundwater
GPT6

LL Sample # WW 7819820
LL Group # 1548038
Account # 07558

Project Name: NCBC Gulfport

Collected: 03/24/2015 09:20

Tetra Tech Inc.

Submitted: 03/25/2015 09:15

Foster Plaza VII

Reported: 04/24/2015 15:45

661 Andersen Drive

Pittsburgh PA 15220

GW04- SDG#: NCB01-01

CAT No.	Analysis Name	CAS Number	Result	Detection Limit*	Limit of Detection	Limit of Quantitation	DF
Misc. Organics		EPA 537 Rev. 1.1 modified	ng/l	ng/l	ng/l	ng/l	
10954	Perfluoro-octanesulfonate	1763-23-1	N.D.	5	10	10	1
10954	Perfluorooctanoic acid	335-67-1	1 J	1	2	2	1

General Sample Comments

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10954	PFAAs in Water by LC/MS/MS	EPA 537 Rev. 1.1 modified	1	15085003	04/13/2015 00:06	Meng Yu	1

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

Sample Description: 06GW06032415 Grab Groundwater
GPT6

LL Sample # WW 7819821
LL Group # 1548038
Account # 07558

Project Name: NCBC Gulfport

Collected: 03/24/2015 10:51

Tetra Tech Inc.

Submitted: 03/25/2015 09:15

Foster Plaza VII

Reported: 04/24/2015 15:45

661 Andersen Drive

Pittsburgh PA 15220

GW06- SDG#: NCB01-02

CAT No.	Analysis Name	CAS Number	Result	Detection Limit*	Limit of Detection	Limit of Quantitation	DF
Misc. Organics		EPA 537 Rev. 1.1 modified	ng/l	ng/l	ng/l	ng/l	
10954	Perfluoro-octanesulfonate	1763-23-1	15	5	10	10	1
10954	Perfluorooctanoic acid	335-67-1	76	1	2	2	1

General Sample Comments

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10954	PFAAs in Water by LC/MS/MS	EPA 537 Rev. 1.1 modified	1	15085003	04/13/2015 00:23	Meng Yu	1

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

Sample Description: 06GW09032415 Grab Groundwater
GPT6

LL Sample # WW 7819823
LL Group # 1548038
Account # 07558

Project Name: NCBC Gulfport

Collected: 03/24/2015 12:50

Tetra Tech Inc.

Submitted: 03/25/2015 09:15

Foster Plaza VII

Reported: 04/24/2015 15:45

661 Andersen Drive

Pittsburgh PA 15220

GW09- SDG#: NCB01-04

CAT No.	Analysis Name	CAS Number	Result	Detection Limit*	Limit of Detection	Limit of Quantitation	DF
Misc. Organics		EPA 537 Rev. 1.1 modified	ng/l	ng/l	ng/l	ng/l	
10954	Perfluoro-octanesulfonate	1763-23-1	N.D.	5	10	10	1
10954	Perfluorooctanoic acid	335-67-1	15	1	2	2	1

General Sample Comments

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10954	PFAAs in Water by LC/MS/MS	EPA 537 Rev. 1.1 modified	1	15085003	04/13/2015 00:57	Meng Yu	1

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

Sample Description: 06GW16032415 Grab Groundwater
GPT6

LL Sample # WW 7819824
LL Group # 1548038
Account # 07558

Project Name: NCBC Gulfport

Collected: 03/24/2015 12:59

Tetra Tech Inc.

Submitted: 03/25/2015 09:15

Foster Plaza VII

Reported: 04/24/2015 15:45

661 Andersen Drive

Pittsburgh PA 15220

GW16- SDG#: NCB01-05BKG

CAT No.	Analysis Name	CAS Number	Result	Detection Limit*	Limit of Detection	Limit of Quantitation	DF
Misc. Organics		EPA 537 Rev. 1.1 modified	ng/l	ng/l	ng/l	ng/l	
10954	Perfluoro-octanesulfonate	1763-23-1	N.D.	10	20	20	2
10954	Perfluorooctanoic acid	335-67-1	N.D.	2	4	4	2

General Sample Comments

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10954	PFAAs in Water by LC/MS/MS	EPA 537 Rev. 1.1 modified	1	15085003	04/12/2015 22:57	Meng Yu	2

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

APPENDIX C

SUPPORT DOCUMENTATION

Field Duplicate NCB01								
Analyte	06GW06032415	Qualifier	06FD032415	Qualifier	Units	RPD	D	RL
PENTADECAFLUOROOCTANOIC ACID	76		63		NG/L	18.70504	13	5
PERFLUOROOCTANESULFONIC ACID	15		13		NG/L	14.28571	2	1

Summary Data Package

Prepared for:

Tetra Tech Inc.
Foster Plaza VII
661 Andersen Drive
Pittsburgh PA 15220

Project: NCBC Gulfport
Groundwater Samples
Collected on 03/24/15

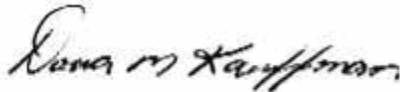
SDG# NCB01

GROUP	SAMPLE NUMBERS
1548038	7819820-7819827

PA Cert. # 36-00037
NY Cert. # 10670
NJ Cert. # PA011
NC Cert. # 521
TX Cert. # T104704194-13-10
AZ Cert. # AZ0780

Through our technical processes and second person review of data, we have established that our data/deliverables are in compliance with the methods and project requirements unless otherwise noted or previously resolved with the client.

Authorized by:



Date: 04/30/2015

Dana M. Kauffman
Manager

Any questions or concerns you might have regarding this data package should be directed to your client representative, Kaitlin Plasterer at (717) 556-7323.

Table of Contents for SDG# NCB01

1. Sample Reference List	3
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a. PFAAs by LC/MS/MS	4
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**Sample Reference List for SDG Number NCB01
with a Data Package Type of SUMMARY**

07558 - Tetra Tech Inc.
Project: NCBC Gulfport

Lab Sample Number	Lab Sample Code	Client Sample Description
7819820	GW04-	06GW04032415 Grab Groundwater
7819821	GW06-	06GW06032415 Grab Groundwater
7819822	GW03-	06GW03032415 Grab Groundwater
7819823	GW09-	06GW09032415 Grab Groundwater
7819824	GW16-	06GW16032415 Grab Groundwater
7819825	GW16-	06GW16032415MS Grab Groundwater
7819826	GW16-	06GW16032415MSD Grab Groundwater
7819827	NCBFD	06FD032415 Grab Groundwater

Case Narrative/Conformance Summary

CLIENT: Tetra Tech Inc.
SDG: NCB01

Specialty Services Group
 Fraction: PFAAs by LC/MS/MS

Sample #	Client ID	Matrix		DF	Comments
		Liquid	Solid		
7819820	06GW04032415	X		1	
7819821	06GW06032415	X		1	
7819822	06GW03032415	X		3	
7819823	06GW09032415	X		1	
7819824	06GW16032415	X		2	Unspiked
7819825	06GW16032415MS	X		1	Matrix Spike
7819826	06GW16032415MSD	X		1	Matrix Spike Duplicate
7819827	06FD032415	X		1	Field Duplicate Sample

See QC Reference List for Associated Batch QC Samples

SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

HOLDING TIME:

All holding times were met.

PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

CALIBRATION/STANDARDIZATION:

All criteria were met.

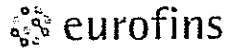
QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

All QC is within specification.

SAMPLE ANALYSIS:

No problems were encountered with the analysis of the samples.

Abbreviation Key	
UNSPK = Unspiked (for MS/MSD)	LOQ = Limit of Quantitation



Lancaster Laboratories
Environmental

Case Narrative/Conformance Summary

CLIENT: Tetra Tech Inc.
SDG: NCB01

Specialty Services Group
Fraction: PFAAs by LC/MS/MS

MS = Matrix Spike	MDL = Method Detection Limit
MSD = Matrix Spike Duplicate	ND = Not Detected
BKG = Background (for Duplicate)	J = Estimated Value
D = Duplicate (DUP)	E = out of calibration range
LCS = Lab Control Sample	RE = Repreparation/Reanalysis
LCSD = Lab Control Sample Duplicate	* = Out of Specification
NC = Not Calculated	NF = Not Found

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 · 717-656-2300 Fax: 717-656-2681 · www.lancasterlabs.com

10954 PFAAs in Water by LC/MS/MS

A 100 ml sample of water is extracted using a solid phase extraction (SPE) cartridge. The resulting extract is analyzed by LC/MS/MS in negative electrospray ionization (ESI) mode.

Reference: Determination of Selected Perfluorinated Alkyl Acids (PFAAs) in Aqueous Samples by LC/MS/MS

ANALYTICAL RESULTS

Prepared by:

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

Prepared for:

Tetra Tech Inc.
Foster Plaza VII
661 Andersen Drive
Pittsburgh PA 15220

April 24, 2015

Project: NCBC Gulfport

Submittal Date: 03/25/2015
Group Number: 1548038
SDG: NCB01
PO Number: 1113382
Release Number: 112G02741
State of Sample Origin: MS


<u>Client Sample Description</u>	<u>Lancaster Labs (LL) #</u>
06GW04032415 Grab Groundwater	7819820
06GW06032415 Grab Groundwater	7819821
06GW03032415 Grab Groundwater	7819822
06GW09032415 Grab Groundwater	7819823
06GW16032415 Grab Groundwater	7819824
06GW16032415MS Grab Groundwater	7819825
06GW16032415MSD Grab Groundwater	7819826
06FD032415 Grab Groundwater	7819827

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

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

ELECTRONIC COPY TO	Tetra Tech, Inc.	Attn: Amy Thomson
ELECTRONIC COPY TO	Tetra Tech Inc.	Attn: Kelly Carper
ELECTRONIC COPY TO	Tetra Tech Inc.	Attn: Greg Roof

Respectfully Submitted,



Kaitlin N. Plasterer
Specialist

(717) 556-7323

Project Name: NCBC Gulfport
LL Group #: 1548038

General Comments:

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

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

Project specific QC samples are included in this data set

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

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

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

Analysis Specific Comments:

No additional comments are necessary.

Sample Description: 06GW16032415MS Grab Groundwater
GPT6

LL Sample # WW 7819825
LL Group # 1548038
Account # 07558

Project Name: NCBC Gulfport

Collected: 03/24/2015 12:59

Tetra Tech Inc.

Submitted: 03/25/2015 09:15

Foster Plaza VII

Reported: 04/24/2015 15:45

661 Andersen Drive

Pittsburgh PA 15220

GW16- SDG#: NCB01-05MS

CAT No.	Analysis Name	CAS Number	Result	Detection Limit*	Limit of Detection	Limit of Quantitation	DF
Misc. Organics		EPA 537 Rev. 1.1 modified	ng/l	ng/l	ng/l	ng/l	
10954	Perfluoro-octanesulfonate	1763-23-1	110	5	10	10	1
10954	Perfluorooctanoic acid	335-67-1	120	1	2	2	1

General Sample Comments

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10954	PFAAs in Water by LC/MS/MS	EPA 537 Rev. 1.1 modified	1	15085003	04/12/2015 23:14	Meng Yu	1

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

Sample Description: 06GW16032415MSD Grab Groundwater
GPT6

LL Sample # WW 7819826
LL Group # 1548038
Account # 07558

Project Name: NCBC Gulfport

Collected: 03/24/2015 12:59

Tetra Tech Inc.

Submitted: 03/25/2015 09:15

Foster Plaza VII

Reported: 04/24/2015 15:45

661 Andersen Drive

Pittsburgh PA 15220

GW16- SDG#: NCB01-05MSD

CAT No.	Analysis Name	CAS Number	Result	Detection Limit*	Limit of Detection	Limit of Quantitation	DF
Misc. Organics			EPA 537 Rev. 1.1 modified	ng/l	ng/l	ng/l	
10954	Perfluoro-octanesulfonate	1763-23-1	99	5	10	10	1
10954	Perfluorooctanoic acid	335-67-1	100	1	2	2	1

General Sample Comments

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10954	PFAAs in Water by LC/MS/MS	EPA 537 Rev. 1.1 modified	1	15085003	04/12/2015 23:31	Meng Yu	1

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

Quality Control Summary

Client Name: Tetra Tech Inc.
Reported: 04/24/2015 15:45

Group Number: 1548038

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

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

Laboratory Compliance Quality Control

<u>Analysis Name</u>	<u>Blank Result</u>	<u>Blank DL**</u>	<u>Blank LOD</u>	<u>Blank LOQ</u>	<u>Report Units</u>	<u>LCS %REC</u>	<u>LCSD %REC</u>	<u>LCS/LCSD Limits</u>	<u>RPD</u>	<u>RPD Max</u>
Batch number: 15085003	Sample number(s): 7819820-7819827									
Perfluoro-octanesulfonate	N.D.	5	10	10	ng/l	111		70-130		
Perfluorooctanoic acid	N.D.	1	2	2	ng/l	105		70-130		

Sample Matrix Quality Control

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

<u>Analysis Name</u>	<u>MS %REC</u>	<u>MSD %REC</u>	<u>MS/MSD Limits</u>	<u>RPD</u>	<u>RPD MAX</u>	<u>BKG Conc</u>	<u>DUP Conc</u>	<u>DUP RPD</u>	<u>Dup RPD Max</u>
Batch number: 15085003	Sample number(s): 7819820-7819827 UNSPK: 7819824								
Perfluoro-octanesulfonate	108	99	70-130	8	30				
Perfluorooctanoic acid	116	102	70-130	12	30				

*- Outside of specification

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

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



TETRA TECH NUS, INC.

7558/1548038/7819820-27

CHAIN OF CUSTODY

NUMBER

2840

PAGE 1 OF 1

PROJECT NO: 12602741		FACILITY: GPTS		PROJECT MANAGER G. Root		PHONE NUMBER 904 736 4669		LABORATORY NAME AND CONTACT: Lancaster Laboratories						
SAMPLERS (SIGNATURE) 				FIELD OPERATIONS LEADER Bill Olson		PHONE NUMBER 850 443 6855		ADDRESS 2425 New Hollow Pike						
				CARRIER/WAYBILL NUMBER FEDEX 8684 5044 4800				CITY, STATE Lancaster PA 17601						
STANDARD TAT <input checked="" type="checkbox"/> RUSH TAT <input type="checkbox"/>								CONTAINER TYPE PLASTIC (P) or GLASS (G)		TYPE OF ANALYSIS PFOA/PFO5 N/A				
<input type="checkbox"/> 24 hr. <input type="checkbox"/> 48 hr. <input type="checkbox"/> 72 hr. <input type="checkbox"/> 7 day <input type="checkbox"/> 14 day								PRESERVATIVE USED						
DATE YEAR	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS		COMMENTS				
3/24	0926	06G-W04032415	GPT-6-4	3	13	GW G	G	1	1	TYPE OF ANALYSIS PFOA/PFO5 N/A				
	1051	06G-W06032415	GPT-6-6	3	13	GW G	G	1	1				* high DRO	
	1120	06G-W03032415	GPT-6-3	3	22	FW F	F	1	1				* high DRO	
	1250	06G-W09032415	GPT-6-9	20	30	GW G	G	1	1					
	1259	06G-W16032415	GPT-6-16	3	13	GW G	G	3	3				ms/msd 3x vol.	
3/24 0000 06 FD 032415 GPT-6														
1. RELINQUISHED BY				DATE	TIME	1. RECEIVED BY				DATE	TIME			
2. RELINQUISHED BY				DATE	TIME	2. RECEIVED BY				DATE	TIME			
3. RELINQUISHED BY				DATE	TIME	3. RECEIVED BY				DATE	TIME			
COMMENTS														

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE)

PINK (FILE COPY)

Kaitlin Plasterer

154 8038

From: Olson, William <William.Olson@tetrattech.com>
Sent: Thursday, March 26, 2015 3:25 PM
To: Roof, Gregory; Carper, Kelly; Leck, Lee; Kaitlin Plasterer
Subject: RE: NCBC Gulfport

1250 is the correct sample time

From: Roof, Gregory
Sent: Thursday, March 26, 2015 3:20 PM
To: Olson, William; Carper, Kelly; Leck, Lee
Subject: FW: NCBC Gulfport

Bill, read below and let us know what is the proper time for the GW09 sample.

Kelly and Lee, please read Kaitlin's question below about deliverables. She called me to explain how they typically provide the data package, and ask if that was acceptable. I let her know that I have no say in what we get and how we get it. Would one of you please answer her question and copy me?

From: Kaitlin Plasterer [<mailto:KaitlinPlasterer@eurofinsus.com>]
Sent: Thursday, March 26, 2015 3:07 PM
To: Roof, Gregory
Subject: FW: NCBC Gulfport

Hi Greg,

Please see below. Let me know if you have any questions.

Thanks,
Kaitlin

Kaitlin Plasterer
Senior Project Manager, Environmental Client Services

Eurofins Lancaster Laboratories
Environmental, LLC
2425 New Holland Pike
Lancaster, PA 17601
USA
Phone: +1 717-556-7323
Website: www.LancasterLabsEnv.com

Look for Eurofins Lancaster Laboratories Environmental at these upcoming conferences and industry events.

From: Kaitlin Plasterer
Sent: Thursday, March 26, 2015 2:48 PM
To: 'amy.thomson@tetrattech.com'; 'Kelly.Carper@tetrattech.com'; 'greg.roof@tetrattech.com'
Subject: NCBC Gulfport

Explanation of Symbols and Abbreviations

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

RL	Reporting Limit	BMQL	Below Minimum Quantitation Level
N.D.	none detected	MPN	Most Probable Number
TNTC	Too Numerous To Count	CP Units	cobalt-chloroplatinate units
IU	International Units	NTU	nephelometric turbidity units
umhos/cm	micromhos/cm	ng	nanogram(s)
C	degrees Celsius	F	degrees Fahrenheit
meq	milliequivalents	lb.	pound(s)
g	gram(s)	kg	kilogram(s)
µg	microgram(s)	mg	milligram(s)
mL	milliliter(s)	L	liter(s)
m³	cubic meter(s)	µL	microliter(s)
		pg/L	picogram/liter
<	less than		
>	greater than		
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.		
ppb	parts per billion		
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.		

Laboratory Data Qualifiers:

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

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

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, ISO17025) unless otherwise noted under the individual analysis.

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

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

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

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

Client: Tetra Tech

Delivery and Receipt Information

Delivery Method: Fed Ex Arrival Timestamp: 03/25/2015 9:15
 Number of Packages: 1 Number of Projects: 1
 State/Province of Origin: FL

Arrival Condition Summary

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

Unpacked by Jordan Woods (6698) at 14:16 on 03/25/2015

Samples Chilled Details

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

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT121	4.6	DT	Wet	Y	Bagged	N

Sample Date/Time Discrepancy Details

Sample ID on COC	Date/Time on Label	Comments
06GW09032415	3/24/2015 12:45	

PFAAs by LC/MS/MS



Lancaster Laboratories
Environmental

Quality Control Reference List Specialty Services Group

CLIENT: Tetra Tech Inc.
SDG: NCB01

Fraction: PFAAs by LC/MS/MS

Analysis	Batch Number	Sample Number	Analysis Date
PFAAs in Water by LC/MS/MS	15085003	BLK	04/12/2015 21:47:00
		LCS	04/12/2015 22:39:00
		7819820	04/13/2015 00:06:00
		7819821	04/13/2015 00:23:00
		7819822	04/13/2015 00:40:00
		7819823	04/13/2015 00:57:00
		7819824 UNSPK	04/12/2015 22:57:00
		7819825 MS	04/12/2015 23:14:00
		7819826 MSD	04/12/2015 23:31:00
		7819827	04/13/2015 01:14:00

Fraction: PFAAs by LC/MS/MS

15085003 / BLK Analyte	Analysis Date	Blank Results	Units	DL	LOD	LOQ
Perfluorooctanoic acid	04/12/15	N.D.	ng/l	1	2	2
Perfluoro-octanesulfonate	04/12/15	N.D.	ng/l	5	10	10

Specialty Services Group
Fraction: PFAAs by LC/MS/MS

UNSPK: 7819824 MS: 7819825 MSD: 7819826 Analyte	Batch: 15085003 (Sample number(s): 7819820-7819827)								
	Spike Added ng/l	Unspiked Conc ng/l	MS Conc ng/l	MSD Conc ng/l	MS %Rec	MSD %Rec	%Rec Limits	%RPD	%RPD Limits
Perfluorooctanoic acid	100	N.D.	117.6	104.1	116	102	70-130	12	30
Perfluoro-octanesulfonate	100	N.D.	107.7	99.02	108	99	70-130	8	30

Comments:

(2) The unspiked sample result is greater than four times the spike added.

* = Out of Specification

Results are being reported on an as received basis.

SDG: NCB01
Matrix: LIQUID

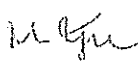
Specialty Services Group
Fraction: PFAAs by LC/MS/MS

LCS	Batch: 15085003 (Sample number(s): 7819820-7819827)							
	Spike Added ng/l	LCS Conc ng/l	LCSD Conc ng/l	LCS %Rec	LCSD %Rec	%Rec Limits	%RPD	%RPD Limits
Analyte								
Perfluorooctanoic acid	100	104.8	NA	105	NA	70-130	NA	NA
Perfluoro-octanesulfonate	100	111.1	NA	111	NA	70-130	NA	NA

Sequence Table

File Name	Sample ID	Sample Type	Level	Vial	Inj Vol	Dil Factor	Path	Inst Method	Proc Method
D15085003-01	equi	Unknown	N/A	D:2	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\PFC_Leid	C:\XCalibur\APFC\Quan MAPFOAPFOS
D15085003-02	SYS	Unknown	N/A	D:2	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\PFC_Leid	C:\XCalibur\APFC\Quan MAPFOAPFOS
D15085003-03	CAL1	Std Bracket	1	D:3	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\PFC_Leid	C:\XCalibur\APFC\Quan MAPFOAPFOS
D15085003-04	CAL2	Std Bracket	2	D:4	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\PFC_Leid	C:\XCalibur\APFC\Quan MAPFOAPFOS
D15085003-05	CAL3	Std Bracket	3	D:5	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\PFC_Leid	C:\XCalibur\APFC\Quan MAPFOAPFOS
D15085003-06	CAL4	Std Bracket	4	D:6	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\PFC_Leid	C:\XCalibur\APFC\Quan MAPFOAPFOS
D15085003-07	CAL5	Std Bracket	5	D:7	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\PFC_Leid	C:\XCalibur\APFC\Quan MAPFOAPFOS
D15085003-08	CAL6	Std Bracket	6	D:8	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\PFC_Leid	C:\XCalibur\APFC\Quan MAPFOAPFOS
D15085003-09	CAL7	Std Bracket	7	D:9	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\PFC_Leid	C:\XCalibur\APFC\Quan MAPFOAPFOS
D15085003-10	CAL8	Std Bracket	8	D:10	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\PFC_Leid	C:\XCalibur\APFC\Quan MAPFOAPFOS
D15085003-11	Recon	Unknown	N/A	D:11	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\PFC_Leid	C:\XCalibur\APFC\Quan MAPFOAPFOS
D15085003-12	STD0	Unknown	N/A	D:12	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\PFC_Leid	C:\XCalibur\APFC\Quan MAPFOAPFOS
D15085003-13	BLK 15085003	Unknown	N/A	D:13	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\PFC_Leid	C:\XCalibur\APFC\Quan MAPFOAPFOS
D15085003-14	CCV1	QC	1	D:14	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\PFC_Leid	C:\XCalibur\APFC\Quan MAPFOAPFOS
D15085003-15	ICV	QC	ICV	D:18	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\PFC_Leid	C:\XCalibur\APFC\Quan MAPFOAPFOS
D15085003-16	LCS 15085003	QC	ICV	D:19	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\PFC_Leid	C:\XCalibur\APFC\Quan MAPFOAPFOS
D15085003-17	7819824 (bkg) ISDP2	Unknown	N/A	D:20	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\PFC_Leid	C:\XCalibur\APFC\Quan MAPFOAPFOS
D15085003-18	7819825 MS	Unknown	N/A	D:21	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\PFC_Leid	C:\XCalibur\APFC\Quan MAPFOAPFOS
D15085003-19	7819826 MSD	Unknown	N/A	D:22	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\PFC_Leid	C:\XCalibur\APFC\Quan MAPFOAPFOS
D15085003-20	CCV2	QC	2	D:15	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\PFC_Leid	C:\XCalibur\APFC\Quan MAPFOAPFOS
D15085003-21	7819820	Unknown	N/A	D:23	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\PFC_Leid	C:\XCalibur\APFC\Quan MAPFOAPFOS

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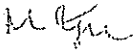

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File Name	Sample ID	Sample Type	Level	Vial	Inj Vol	Dil Factor	Path	Inst Method	Proc Method
D15085003-22	7819821	Unknown	N/A	D:24	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\APFC_Leid	C:\XCalibur\APFC\Quan MPFOAPFOS
D15085003-23	7819822 ISDF3	Unknown	N/A	D:25	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\APFC_Leid	C:\XCalibur\APFC\Quan MPFOAPFOS
D15085003-24	7819823	Unknown	N/A	D:26	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\APFC_Leid	C:\XCalibur\APFC\Quan MPFOAPFOS
D15085003-25	7819827	Unknown	N/A	D:27	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\APFC_Leid	C:\XCalibur\APFC\Quan MPFOAPFOS
D15085003-26	CCV3	QC	3	D:16	10.0	1.000	C:\XCalibur\APFC\2015 forced	C:\XCalibur\APFC\APFC_Leid	C:\XCalibur\APFC\Quan MPFOAPFOS

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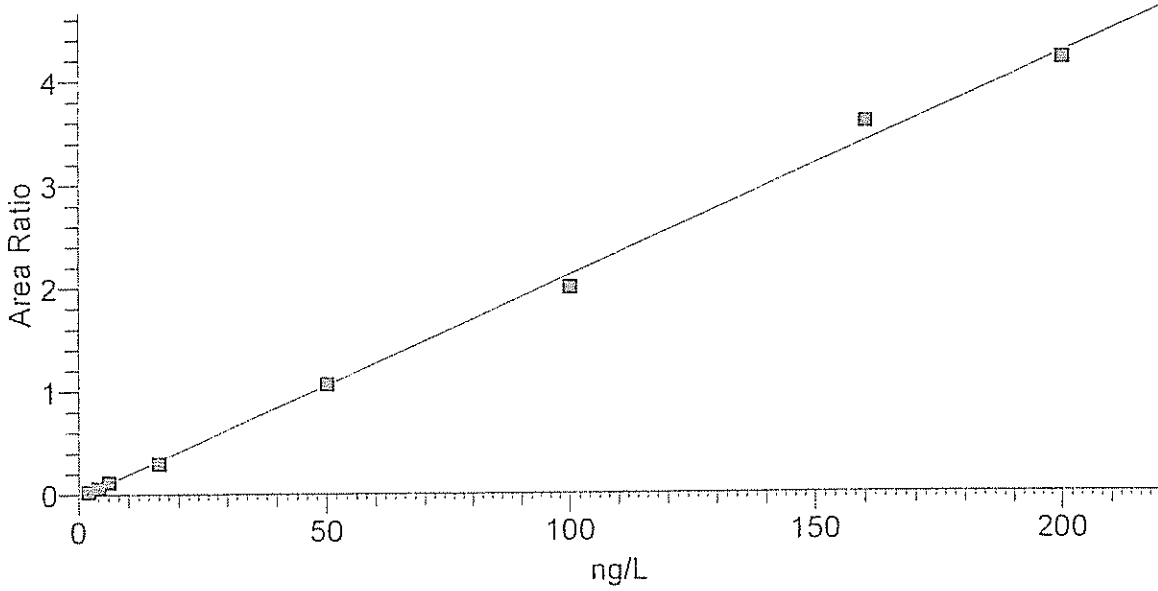

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LCMSMS ANALYSIS REPORT

Component Name: PFOA

PFOA
 $Y = -0.0171134 + 0.0213285 * X \quad R^2 = 0.9978 \quad W: 1/X$



Identification
 Filter: - c ESI SRM ms2 412.90
 [168.90-168.91, 368.85-368.86]
 2nd Trace Type: N/A
 Mass Range 2 (m/z): N/A
 Base Peak (BP):
 Retention Time:
 Window (sec): 30.00000
 RT Reference: No
 Adjust Using: N/A
Detection Options
 ICIS Smoothing Points: 3
 Area Noise Factor: 10
 ICIS Constrain Peak Width: No
 ICIS Tailing Factor: N/A
 ICIS Peak Detection
 ICIS Minimum Peak Height (S/N): 5.0
 ICIS Window %:
 ICIS Forward: 0
 ICIS Match: 0
ICIS Advanced Parameters
 Minimum Peak Width: 3
 Area Tail Extension: 5
Component Type: Target Compound
ISTD Amount: N/A
ISTD: 13C-PFOA_(IS)
 Origin: IgnoreOrigin
 Calibration Curve: Linear
 Number of Cal. Levels: 8
 Scan Threshold (mAU): N/A
 Limit ScanRange (nm): N/A

Component Name: PFOA
1st Trace Type: TIC
Mass Range 1 (m/z):
Wavelength Range 2 (nm): N/A
Expected RT (min): 7.60000
View Width (min): 3.00000
Adjust Expected RT: No
Peak Detection Algorithm: ICIS
ICIS Peak Integration
Baseline Window: 200
Peak Noise Factor: 10
ICIS Peak Height (%): N/A
ICIS Identify By: Nearest RT.
ICIS Ion Ratio Confirmation: Disabled
ICIS Qualifier Ion Coelution (min): N/A
ICIS Spectrum Thresholds
ICIS Reverse: 0
Noise Method: Incos
Multiplet Resolution: 10
Area Scan Window: 0
Calibration
%RSD Calculation Method: Use calculated amounts
Internal Standard
ISTD Units: N/A
Target Compounds
Weighting: OneOverX
Response: Area
Target Units: ng/L
Number of QC Levels: 6
Peak Purity Options
Peak Coverage (%): N/A

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LCMSMS ANALYSIS REPORT

Component Cal Level Table

Cal Level	Amount
1	2.000
2	4.000
3	6.000
4	16.000
5	50.000
6	100.000
7	160.000
8	200.000

Component QC Level Table

QC Level	Amount
VICV	50.000
ICV	100.000
1	6.000
2	16.000
3	50.000
4	160.000

ICV & CCV Result Table

Sample ID	Data File Name	Calculated Amount	Area	ISTD Area	Area Ratio	% Diff
CAL1	D15085003-03	2.179	11930.13	406255.01	0.029	8.96
CAL2	D15085003-04	3.744	20752.48	330803.48	0.063	-6.41
CAL3	D15085003-05	6.373	41404.54	348513.54	0.119	6.21
CAL4	D15085003-06	14.651	106795.57	361571.35	0.295	-8.43
CAL5	D15085003-07	50.619	393105.90	369976.81	1.063	1.24
CAL6	D15085003-08	94.220	638430.96	320421.81	1.992	-5.78
CAL7	D15085003-09	168.847	1201064.13	335105.10	3.584	5.53
CAL8	D15085003-10	197.368	1424510.27	339780.04	4.192	-1.32
CCV1	D15085003-14	5.893	39134.42	360406.43	0.109	-1.78
ICV	D15085003-15	102.419	743052.39	342840.07	2.167	2.42
LCS 15085003	D15085003-16	104.843	814809.78	367190.51	2.219	4.84
CCV2	D15085003-20	17.088	140125.68	403421.24	0.347	6.80
CCV3	D15085003-26	50.158	391669.16	372070.57	1.053	0.32

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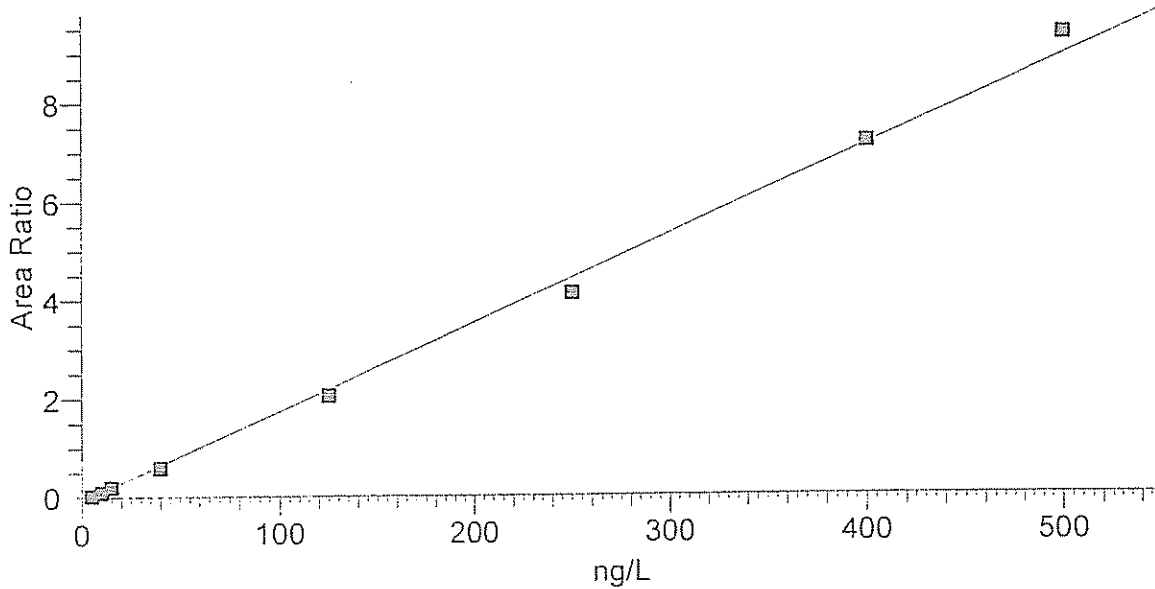
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LCMSMS ANALYSIS REPORT

Component Name: PFOS

PFOS
 $Y = -0.0744985 + 0.0179735 * X \quad R^2 = 0.9974 \quad W: 1/X$



Identification Filter: 2nd Trace Type: Mass Range 2 (m/z): Base Peak(BP): Retention Time Window (sec): RT Reference: Adjust Using: Detection Options ICIS Smoothing Points: Area Noise Factor: ICIS Constrain Peak Width: ICIS Tailing Factor: ICIS Peak Detection ICIS Minimum Peak Height (S/N): ICIS Window %: ICIS Forward: ICIS Match: ICIS Advanced Parameters Minimum Peak Width: Area Tail Extension:	- c ESI SRM ms2 498.86 [80.19-80.20, 99.00-99.00] N/A N/A 50.00000 No N/A 3 5 No N/A 5.0 0 0 3 5	Component Name: PFOS 1st Trace Type: TIC Mass Range 1 (m/z): Wavelength Range 2 (nm): N/A Expected RT (min): 7.80000 View Width (min): 3.00000 Adjust Expected RT: No Peak Detection Algorithm: ICIS ICIS Peak Integration Baseline Window: 75 Peak Noise Factor: 10 ICIS Peak Height (%): N/A ICIS Identify By: Nearest RT ICIS Ion Ratio Confirmation: Disabled ICIS Qualifier Ion Coelution (min): N/A ICIS Spectrum Thresholds ICIS Reverse: 0 Noise Method: Multiplet Resolution: 10 Area Scan Window: 0 Calibration %RSD Calculation Method: Use calculated amounts Internal Standard ISTD Units: Target Compounds Weighting: Response: Target Units: Number of QC Levels: Peak Purity Options Peak Coverage (%):
Component Type: ISTD Amount: ISTD: Origin: Calibration Curve: Number of Cal. Levels: Scan Threshold (mAU): Limit ScanRange (nm):	Target Compound N/A 13C-PFOS_(IS) IgnoreOrigin Linear 8 N/A N/A	0 0 10 0 Use calculated amounts N/A OneOverX Area ng/L 6 N/A

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LCMSMS ANALYSIS REPORT

Component Cal Level Table

Cal Level	Amount
1	5.000
2	10.000
3	15.000
4	40.000
5	125.000
6	250.000
7	400.000
8	500.000

Component QC Level Table

QC Level	Amount
ICV	100.000
VICV	50.000
1	15.000
2	40.000
3	125.000
4	400.000

ICV & CCV Result Table

Sample ID	Data File Name	Calculated Amount	Area	ISTD Area	Area Ratio	% Diff
CAL1	D15085003-03	5.809	1427.52	47741.64	0.030	16.17
CAL2	D15085003-04	9.452	5295.10	55510.63	0.095	-5.48
CAL3	D15085003-05	15.533	8944.88	43702.24	0.205	3.55
CAL4	D15085003-06	37.115	27675.66	46702.85	0.593	-7.21
CAL5	D15085003-07	118.169	90950.52	44378.99	2.049	-5.46
CAL6	D15085003-08	232.621	162102.05	39474.41	4.107	-6.95
CAL7	D15085003-09	402.498	278846.69	38946.28	7.160	0.62
CAL8	D15085003-10	523.803	380189.18	40705.23	9.340	4.76
CCV1	D15085003-14	15.998	9962.33	46762.99	0.213	6.65
ICV	D15085003-15	98.928	89453.57	52509.36	1.704	-1.07
LCS 15085003	D15085003-16	111.100	74127.77	38560.79	1.922	11.10
CCV2	D15085003-20	39.834	36409.74	56760.46	0.641	-0.41
CCV3	D15085003-26	121.516	92179.18	43695.79	2.110	-2.79

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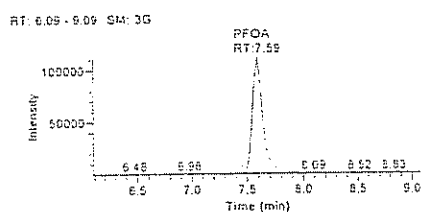
Sample Name: ICV	Original Data Path: C:\XCalibur\PFC\2015 forced
Sample ID: ICV	Instrument Method: C:\XCalibur\PFC\PFC_Leid
Data File: D15085003-15	Dilution Factor: 1.00
Acquisition Date: 04/12/15 10:22:25 PM	Instrument Model: TSQ Quantum Access
Sample Type: QC	Instrument Software Version: 2.3.0.1206 SP1
Vial: D:18	Instrument Serial Number: TQU01408
Run Time(min): 14.51	Operator: Quantum
Injection Volume(μl): 10.00	

Quan Peak Table

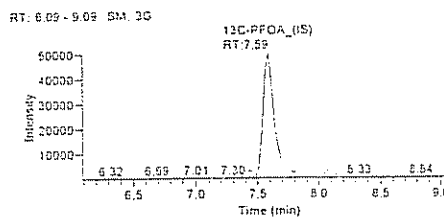
Component Name	Calculated Amount	RT	Response	ISTD Response	Response Ratio	Units
13C-PFOA_(IS)	N/A	7.59	342840.07	N/A	N/A	N/A
13C-PFOS_(IS)	N/A	7.99	52509.36	N/A	N/A	N/A
PFOA	102.419	7.59	743052.39	342840.07	2.167	ng/L
PFOS	98.928	7.99	89453.57	52509.36	1.704	ng/L

Extracted Ion Chromatogram

Component Name: PFOA

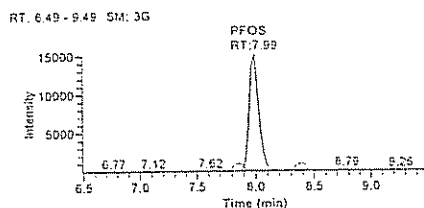


NL: 1.13E5
 TIC F: - c ESI SRM.ms2
 412.900
 [145.895-168.205,
 266.645-368.855] MS
 ICIS D15085003-15

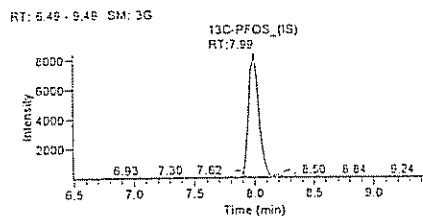


NL: 5.02E4
 TIC F: - c ESI SRM
 ms2 416.940
 [371.655-371.655] MS
 MS ICIS
 D15085003-15

Component Name: PFOS



NL: 1.52E4
 TIC F: - c ESI SRM
 ms2 499.850
 [80.185-80.205,
 98.995-99.005] MS
 ICIS D15085003-15



NL: 6.44E3
 TIC F: - c ESI SRM
 ms2 502.950
 [80.275-80.205,
 98.995-99.005] MS
 ICIS D15085003-15

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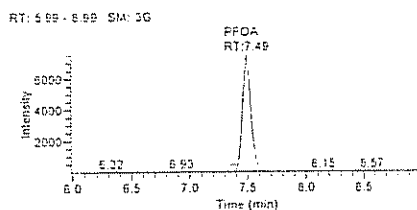
Sample Name: CCV1	Original Data Path: C:\XCalibur\PFC\2015 forced
Sample ID: CCV1	Instrument Method: C:\XCalibur\PFC\PFC_Leid
Data File: D15085003-14	Dilution Factor: 1.00
Acquisition Date: 04/12/15 10:05:10 PM	Instrument Model: TSQ Quantum Access
Sample Type: QC	Instrument Software Version: 2.3.0.1206 SP1
Vial: D:14	Instrument Serial Number: TQU01408
Run Time(min): 14.52	Operator: Quantum
Injection Volume(µl): 10.00	

Quan Peak Table

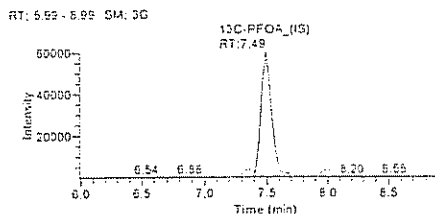
Component Name	Calculated Amount	RT	Response	ISTD Response	Response Ratio	Units
13C-PFOA_(IS)	N/A	7.49	360406.43	N/A	N/A	N/A
13C-PFOS_(IS)	N/A	7.73	46762.99	N/A	N/A	N/A
PFOA	5.893	7.49	39134.42	360406.43	0.109	ng/L
PFOS	15.998	7.73	9962.33	46762.99	0.213	ng/L

Extracted Ion Chromatogram

Component Name: PFOA

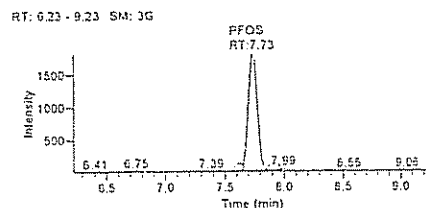


NL: 7.55E3
 TIC F: - c ESI SRM ms2
 412.500
 [169.895-169.505,
 366.645-366.855] MS
 ICIS D15085003-14

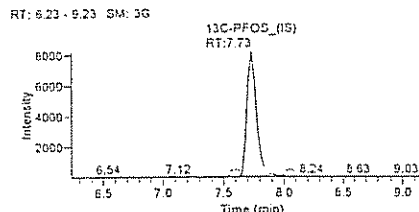


NL: 6.00E4
 TIC F: - c ESI SRM
 ms2 416.940
 [371.555-371.695]
 125 ICIS
 D15085003-14

Component Name: PFOS



NL: 1.62E3
 TIC F: - c ESI SRM
 ms2 498.550
 [80.195-80.205,
 92.995-99.005] MS
 ICIS D15085003-14



NL: 8.24E3
 TIC F: - c ESI SRM
 ms2 502.950
 [80.275-80.285,
 92.995-99.005] MS
 ICIS D15085003-14

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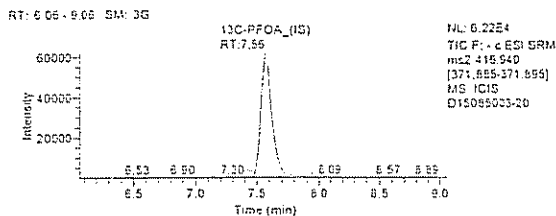
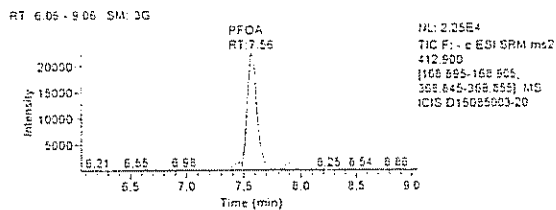
Sample Name: CCV2	Original Data Path: C:\XCalibur\PFC\2015 forced
Sample ID: CCV2	Instrument Method: C:\XCalibur\PFC\PFC_Leid
Data File: D15085003-20	Dilution Factor: 1.00
Acquisition Date: 04/12/15 11:48:45 PM	Instrument Model: TSQ Quantum Access
Sample Type: QC	Instrument Software Version: 2.3.0.1206 SP1
Vial: D:15	Instrument Serial Number: TQU01408
Run Time(min): 14.51	Operator: Quantum
Injection Volume(µl): 10.00	

Quan Peak Table

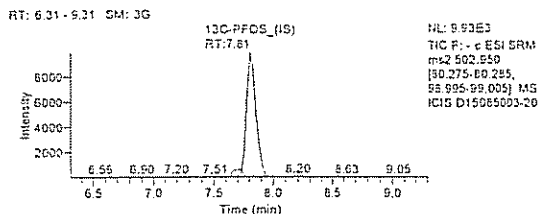
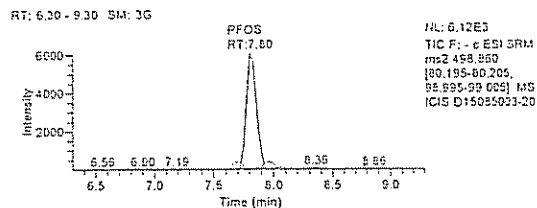
Component Name	Calculated Amount	RT	Response	ISTD Response	Response Ratio	Units
13C-PFOA_(IS)	N/A	7.56	403421.24	N/A	N/A	N/A
13C-PFOS_(IS)	N/A	7.81	56760.46	N/A	N/A	N/A
PFOA	17.088	7.56	140125.68	403421.24	0.347	ng/L
PFOS	39.834	7.80	36409.74	56760.46	0.641	ng/L

Extracted Ion Chromatogram

Component Name: PFOA



Component Name: PFOS



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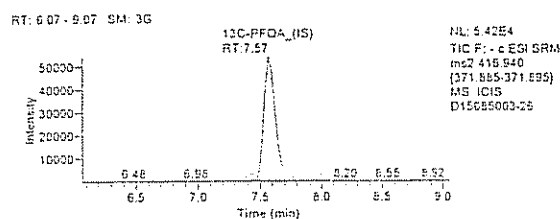
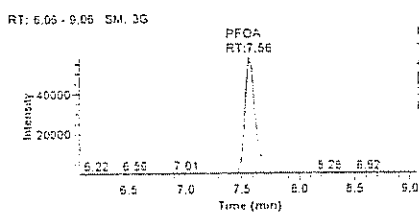
Sample Name:	CCV3	Original Data Path:	C:\XCalibur\PFC\2015 forced
Sample ID:	CCV3	Instrument Method:	C:\XCalibur\PFC\PFC_Leid
Data File:	D15085003-26	Dilution Factor:	1.00
Acquisition Date:	04/13/15 01:32:12 AM	Instrument Model:	TSQ Quantum Access
Sample Type:	QC	Instrument Software Version:	2.3.0.1206 SP1
Vial:	D:16	Instrument Serial Number:	TQU01408
Run Time(min):	14.51	Operator:	Quantum
Injection Volume(µl):	10.00		

Quan Peak Table

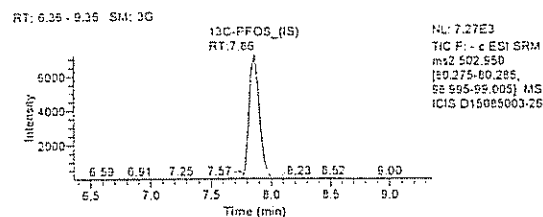
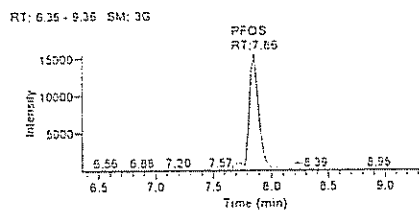
Component Name	Calculated Amount	RT	Response	ISTD Response	Response Ratio	Units
13C-PFOA_(IS)	N/A	7.57	372070.57	N/A	N/A	N/A
13C-PFOS_(IS)	N/A	7.86	43695.79	N/A	N/A	N/A
PFOA	50.158	7.56	391669.16	372070.57	1.053	ng/L
PFOS	121.516	7.86	92179.18	43695.79	2.110	ng/L

Extracted Ion Chromatogram

Component Name: PFOA



Component Name: PFOS



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DODCMD_ID	INSTALLATION_ID	SDG	SITE_NAME	NORM_SITE_NAME	LOCATION_NAME	LOCATION_TYPE_DESC	COORD_X	COORD_Y	CONTRACT_ID	DO_CTO_NUMBER	CONTR_NAME	SAMPLE_NAME	SAMPLE_MATRIX_DESC	SAMPLE_TYPE_DESC	COLLECT_DATE	ANALYTICAL_METHOD	ANALYTICAL_METHOD_GRP_DESC	RES_META_ID
SOUTHEAST	GULFPORT_NCBC	NCB01	SITE 00006	SITE 00006	GPT-6-3	Monitoring well	888757.846	318072.4797	N6247008D1001	JM21	TETRA TECH NUS, INC.	06GW03032415	Ground water	Normal (Regular)	24-Mar-15	537	Perfluoroalkyl Compounds	20160113045746.00
SOUTHEAST	GULFPORT_NCBC	NCB01	SITE 00006	SITE 00006	GPT-6-9	Monitoring well	888661.1458	318084.1687	N6247008D1001	JM21	TETRA TECH NUS, INC.	06GW09032415	Ground water	Normal (Regular)	24-Mar-15	537	Perfluoroalkyl Compounds	20160108074406.00
SOUTHEAST	GULFPORT_NCBC	NCB01	SITE 00006	SITE 00006	GPT-6-16	Monitoring well	888657.74	317944.41	N6247008D1001	JM21	TETRA TECH NUS, INC.	06GW16032415	Ground water	Normal (Regular)	24-Mar-15	537	Perfluoroalkyl Compounds	20160113045746.00
SOUTHEAST	GULFPORT_NCBC	NCB01	SITE 00006	SITE 00006	GPT-6-6	Monitoring well	888774.8483	318007.6586	N6247008D1001	JM21	TETRA TECH NUS, INC.	06GW06032415	Ground water	Normal (Regular)	24-Mar-15	537	Perfluoroalkyl Compounds	20160113045746.00
SOUTHEAST	GULFPORT_NCBC	NCB01	SITE 00006	SITE 00006	GPT-6-6	Monitoring well	888774.8483	318007.6586	N6247008D1001	JM21	TETRA TECH NUS, INC.	06GW06032415-D	Ground water	Field duplicate	24-Mar-15	537	Perfluoroalkyl Compounds	20160113045746.00
SOUTHEAST	GULFPORT_NCBC	NCB01	SITE 00006	SITE 00006	GPT-6-4	Monitoring well	888807.7901	318074.6049	N6247008D1001	JM21	TETRA TECH NUS, INC.	06GW04032415	Ground water	Normal (Regular)	24-Mar-15	537	Perfluoroalkyl Compounds	20160113045746.00