TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 280-115117-1

Job Description: RFP001227 - Savanna Army Depot - FUP

For:
Leidos, Inc.
11951 Freedom Drive
Reston, VA 20190

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The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

The Lab Certification ID# is 4025.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

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Table of Contents

Table of Contents

Table of Contents

Table of Contents

Table of Contents

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.
J1	Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
J	Estimated: The analyte was positively identified; the quantitation is an estimation
Q	One or more quality control criteria failed.

GC Semi VOA

Qualifier	Qualifier Description
M	Manual integrated compound.
U	Undetected at the Limit of Detection.

LCMS

Qualifier	Qualifier Description
M	Manual integrated compound.
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Undetected at the Limit of Detection.
J1	Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
D	The reported value is from a dilution.

Metals

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.
J1	Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
J	Estimated: The analyte was positively identified; the quantitation is an estimation

General Chemistry

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

CASE NARRATIVE

Client: Leidos, Inc.

Project: RFP001227 - Savanna Army Depot - FUP

Report Number: 280-115117-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The samples were received on 10/4/2018 at 8:55 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.0ºC and 4.1ºC.

Per prior communication with the client, extra unpreserved volume was provided for sample ID IDW-WA-PFAS LD0501 for the lab to pour off into a Sodium Hydroxide / Zinc Acetate bottle upon arrival, for sulfide analysis. Volume was received and preserved as instructed.

TCLP VOLATILE ORGANIC COMPOUNDS (GC-MS)
Sample IDW-WA-PFAS LD0501 (280-115117-10) was analyzed for TCLP volatile organic compounds (GC-MS) in accordance with 1311. The samples were leached on 10/10/2018 and analyzed on 10/11/2018.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TCLP SEMIVOLATILE ORGANIC COMPOUNDS (GC-MS)
Sample IDW-WA-PFAS LD0501 (280-115117-10) was analyzed for TCLP semivolatile organic compounds (GC-MS) in accordance with 8270D. The samples were leached on 10/05/2018, prepared on 10/07/2018 and analyzed on 10/11/2018.

The recoveries for surrogate 2-Fluorophenol, Nitrobenzene-d5 and Phenol-d5 failed the surrogate recovery criteria low for LB3 280-432266/1-B. Target analytes were all "non-detect". Surrogates in the associated client samples were in control. Data was reported and flagged.

The recovery for surrogate Terphenyl-d14 was outside the surrogate recovery criteria low in the MSD performed on sample IDW-WA-PFAS LD0501 (280-115117-10) associated with batch 432991. Pyridine exceeded the RPD limit in this MS/MSD batch. All spike recoveries were in control. The associated LCS was in control. Data was reported and flagged.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

POLYCHLORINATED BIPHENYLS (PCBS)
Sample IDW-WA-PFAS LD0501 (280-115117-10) was analyzed for polychlorinated biphenyls (PCBs) in accordance with SW-846 8082A. The samples were prepared on 10/08/2018 and analyzed on 10/31/2018.

The following samples required a sulfuric acid clean-up, via EPA Method 3665A, to reduce matrix interferences: IDW-WA-PFAS LD0501 (280-115117-10), (LCS 280-432451/4-A), (LCSD 280-432451/5-A) and (MB 280-432451/1-A).
Acid Lot: 161554

The continuing calibration verification (CCV) associated with preparation batch 280-432451 and analytical batch 280-435709 recovered below the lower limit for Tetrachloro-m-xylene on the confirmation column. The primary column was in control. Sample IDW-WA-PFAS LD0501 (280-115117-10) associated with this CCV was " ND" for all target analytes and the surrogate recoveries are in control. The data is being reported from the in control column.

CCVIS In control

CCV (confirmation) Tetrachloro-m-xylene -23%; (primary) In control

CCV (confirmation) Tetrachloro-m-xylene -21%; (primary) In control

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TCLP METALS
Sample IDW-WA-PFAS LD0501 (280-115117-10) was analyzed for TCLP metals in accordance with EPA SW846 Methods 1311/6010C. The samples were leached on 10/05/2018, prepared on 10/09/2018 and analyzed on 10/10/2018.

Barium failed the recovery criteria low for the MSD performed on sample IDW-WA-PFAS LD0501 (280-115117-10) in batch 280-432894. The associated LCS and LCSD samples were in control and provide evidence that operating procedures were in control.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TCLP MERCURY
Sample IDW-WA-PFAS LD0501 (280-115117-10) was analyzed for TCLP mercury in accordance with SW-846 1311/7470. The samples were leached on 10/05/2018, and prepared and analyzed on 10/08/2018.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

IGNITABILITY
Sample IDW-WA-PFAS LD0501 (280-115117-10) was analyzed for Ignitability in accordance with EPA SW-846 Method 1020A. The samples were analyzed on 10/09/2018.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL CYANIDE
Sample IDW-WA-PFAS LD0501 (280-115117-10) was analyzed for Total Cyanide in accordance with 9012A. The samples were prepared and analyzed on 10/10/2018.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

SULFIDE
Sample IDW-WA-PFAS LD0501 (280-115117-10) was analyzed for sulfide in accordance with EPA SW-846 Method 9034. The samples were prepared and analyzed on 10/05/2018.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

CORROSIVITY (PH)
Sample IDW-WA-PFAS LD0501 (280-115117-10) was analyzed for Corrosivity (pH) in accordance with EPA SW-846 9040C. The samples were analyzed on 10/08/2018.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PFC
Samples MW-67PFAS01 LD0501 (280-115117-1), MW-67PFAS01 LD0501N (280-115117-2), MW-67PFAS01 LD0501ND (280-115117-3), MW-67PFAS-02 LD05EB01 (280-115117-4), MW-67PFAS-02 LD05FB02 (280-115117-5), MW-67PFAS-02 LD0501 (280-115117-6), MW-67PFAS-02 LD0501D (280-115117-7), MW-67PFAS-03 LD0501 (280-115117-8), MW-84PFAS-03 LD0501 (280-115117-9), MW-84PFAS-01 LD05RB01 (280-115117-11), MW-84PFAS-01 LD0501 (280-115117-12) and MW-84PFAS-02 LD0501 (280-115117-13) were analyzed for PFC in accordance with PFC_IDA. The samples were prepared on 10/15/2018 and analyzed on 10/20/2018, 10/21/2018 and 10/26/2018.

Samples MW-67PFAS-03 LD0501 (280-115117-8)[5X], MW-84PFAS-03 LD0501 (280-115117-9)[10X] and MW-84PFAS-02 LD0501 (280-115117-13)[5X] required dilutions prior to analysis. The reporting limits have been adjusted accordingly.

The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/- 0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

The concentration of Perfluorooctanoic acid (PFOA) and Perfluorohexanesulfonic acid (PFHxS) associated with the following sample exceeded the instrument calibration range: MW-67PFAS-03 LD0501 (280-115117-8). These analytes have been qualified; however, the peaks did not saturate the instrument detector. The sample was diluted within calibration range, and both sets of data were reported.

The concentration of Perfluorohexanesulfonic acid (PFHxS) associated with the following sample exceeded the instrument calibration range: MW-84PFAS-02 LD0501 (280-115117-13). This analyte has been qualified; however, the peak did not saturate the instrument detector. The sample was diluted within calibration range, and both sets of data were reported.

The concentration of several analytes associated with the following sample exceeded the instrument calibration range: MW-84PFAS-03 LD0501 (280-115117-9). These analytes have been qualified; however, the peaks did not saturate the instrument detector. The sample was diluted within calibration range, and both sets of data were reported.

The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/-

0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

Results for samples MW-67PFAS-03 LD0501 (280-115117-8) and MW-84PFAS-02 LD0501 (280-115117-13) were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits

Results for sample MW-84PFAS-03 LD0501 (280-115117-9) were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were outside acceptance limits. The internal standard response was in control in the undiluted analysis and both sets of data were reported. The internal standard is not used to quantitate target analytes; therefore, there is no impact to the data.

The following samples were diluted to bring the concentration of target analytes within the calibration range: MW-67PFAS-03 LD0501 (280-115117-8), MW-84PFAS-03 LD0501 (280-115117-9) and MW-84PFAS-02 LD0501 (280-115117-13). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Leidos, Inc.
Project/Site: RFP001227 - Savanna Army Depot - FUP

TestAmerica Job ID: 280-115117-1

Client Sample ID: MW-67PFAS01 LD0501 — Lab Sample ID: 280-115117-1

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanesulfonic acid (PFBS)	3.4		1.9	0.43	ng/L	1		EPA 537 (Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.9	M	1.9	0.57	ng/L	1		EPA 537 (Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	99		1.9	0.35	ng/L	1		EPA 537 (Mod)	Total/NA
Perfluorononanoic acid (PFNA)	1.4	J	1.9	0.48	ng/L	1		EPA 537 (Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	33		3.7	1.0	ng/L	1		EPA 537 (Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	350		1.9	0.50	ng/L	1		EPA 537 (Mod)	Total/NA

Client Sample ID: MW-67PFAS01 LD0501N — Lab Sample ID: 280-115117-2

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanesulfonic acid (PFBS)	3.6		1.9	0.43	ng/L	1		EPA 537 (Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.9	M	1.9	0.58	ng/L	1		EPA 537 (Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	98		1.9	0.36	ng/L	1		EPA 537 (Mod)	Total/NA
Perfluorononanoic acid (PFNA)	1.4	J	1.9	0.49	ng/L	1		EPA 537 (Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	35		3.8	1.0	ng/L	1		EPA 537 (Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	360		1.9	0.51	ng/L	1		EPA 537 (Mod)	Total/NA

Client Sample ID: MW-67PFAS01 LD0501ND — Lab Sample ID: 280-115117-3

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanesulfonic acid (PFBS)	3.4		1.9	0.43	ng/L	1		EPA 537 (Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.9	M	1.9	0.57	ng/L	1		EPA 537 (Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	100		1.9	0.35	ng/L	1		EPA 537 (Mod)	Total/NA
Perfluorononanoic acid (PFNA)	1.8	J	1.9	0.48	ng/L	1		EPA 537 (Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	35		3.7	1.0	ng/L	1		EPA 537 (Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	360		1.9	0.50	ng/L	1		EPA 537 (Mod)	Total/NA

Client Sample ID: MW-67PFAS-02 LD05EB01 — Lab Sample ID: 280-115117-4

No Detections.

Client Sample ID: MW-67PFAS-02 LD05FB02 — Lab Sample ID: 280-115117-5

No Detections.

Client Sample ID: MW-67PFAS-02 LD0501 — Lab Sample ID: 280-115117-6

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanesulfonic acid (PFBS)	3.1		1.8	0.42	ng/L	1		EPA 537 (Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	19	M	1.8	0.56	ng/L	1		EPA 537 (Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	52		1.8	0.35	ng/L	1		EPA 537 (Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.69	J	1.8	0.47	ng/L	1		EPA 537 (Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	160		3.6	1.0	ng/L	1		EPA 537 (Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	200		1.8	0.49	ng/L	1		EPA 537 (Mod)	Total/NA

Client Sample ID: MW-67PFAS-02 LD0501D — Lab Sample ID: 280-115117-7

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanesulfonic acid (PFBS)	3.3		1.9	0.43	ng/L	1		EPA 537 (Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	19	M	1.9	0.57	ng/L	1		EPA 537 (Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	51		1.9	0.36	ng/L	1		EPA 537 (Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-67PFAS-02 LD0501D (Continued) — Lab Sample ID: 280-115117-7

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorononanoic acid (PFNA)	1.2	J	1.9	0.49	ng/L	1		EPA 537 (Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	170		3.8	1.0	ng/L	1		EPA 537 (Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	200		1.9	0.51	ng/L	1		EPA 537 (Mod)	Total/NA

Client Sample ID: MW-67PFAS-03 LD0501 — Lab Sample ID: 280-115117-8

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanesulfonic acid (PFBS)	5.9	M	1.8	0.41	ng/L	1		EPA 537 (Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	16	M	1.8	0.54	ng/L	1		EPA 537 (Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	430	J1	1.8	0.34	ng/L	1		EPA 537 (Mod)	Total/NA
Perfluorononanoic acid (PFNA)	1.7	J	1.8	0.46	ng/L	1		EPA 537 (Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	93		3.5	0.98	ng/L	1		EPA 537 (Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	450	J1	1.8	0.48	ng/L	1		EPA 537 (Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS) - DL	6.2	J D	8.9	2.0	ng/L	5		EPA 537 (Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA) - DL	16	D M	8.9	2.7	ng/L	5		EPA 537 (Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS) - DL	440	D	8.9	1.7	ng/L	5		EPA 537 (Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	100	D	18	4.9	ng/L	5		EPA 537 (Mod)	Total/NA
Perfluorooctanoic acid (PFOA) - DL	470	D	8.9	2.4	ng/L	5		EPA 537 (Mod)	Total/NA

Client Sample ID: MW-84PFAS-03 LD0501 — Lab Sample ID: 280-115117-9

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanesulfonic acid (PFBS)	44		1.9	0.43	ng/L	1		EPA 537 (Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	4.9	M	1.9	0.57	ng/L	1		EPA 537 (Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	850	J1	1.9	0.35	ng/L	1		EPA 537 (Mod)	Total/NA
Perfluorononanoic acid (PFNA)	1700	J1	1.9	0.48	ng/L	1		EPA 537 (Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	560	J1	3.7	1.0	ng/L	1		EPA 537 (Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	160		1.9	0.50	ng/L	1		EPA 537 (Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS) - DL	45	D	19	4.3	ng/L	10		EPA 537 (Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS) - DL	1000	D	19	3.5	ng/L	10		EPA 537 (Mod)	Total/NA
Perfluorononanoic acid (PFNA) - DL	1900	D	19	4.8	ng/L	10		EPA 537 (Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	530	D	37	10	ng/L	10		EPA 537 (Mod)	Total/NA
Perfluorooctanoic acid (PFOA) - DL	160	D	19	5.0	ng/L	10		EPA 537 (Mod)	Total/NA

Client Sample ID: IDW-WA-PFAS LD0501 — Lab Sample ID: 280-115117-10

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Barium	8.7	J J1	1000	4.0	ug/L	1		6010C	TCLP
Chromium	3.1	J	500	3.0	ug/L	1		6010C	TCLP
Flashpoint	> 211		50.0	50.0	Degrees F	1		1020A	Total/NA
Cyanide, Total	26		20	4.0	ug/L	1		9012A	Total/NA
pH adj. to 25 deg C	8.1	HF	0.1	0.1	SU	1		9040C	Total/NA
Temperature	21.6	HF	1.0	1.0	Degrees C	1		9040C	Total/NA

Client Sample ID: MW-84PFAS-01 LD05RB01 — Lab Sample ID: 280-115117-11

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-84PFAS-01 LD05RB01 (Continued)

Lab Sample ID: 280-115117-11

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.44	J	1.7	0.32	ng/L	1		EPA 537 (Mod)	Total/NA

Client Sample ID: MW-84PFAS-01 LD0501

Lab Sample ID: 280-115117-12

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanesulfonic acid (PFBS)	0.62	J	1.8	0.41	ng/L	1		EPA 537 (Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.3	J M	1.8	0.34	ng/L	1		EPA 537 (Mod)	Total/NA

Client Sample ID: MW-84PFAS-02 LD0501

Lab Sample ID: 280-115117-13

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanesulfonic acid (PFBS)	110		1.8	0.42	ng/L	1		EPA 537 (Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	20	M	1.8	0.56	ng/L	1		EPA 537 (Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	420	J1	1.8	0.35	ng/L	1		EPA 537 (Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	120		3.7	1.0	ng/L	1		EPA 537 (Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	13	M	1.8	0.49	ng/L	1		EPA 537 (Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS) - DL	110	D	9.1	2.1	ng/L	5		EPA 537 (Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA) - DL	22	D M	9.1	2.8	ng/L	5		EPA 537 (Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS) - DL	390	D	9.1	1.7	ng/L	5		EPA 537 (Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	120	D	18	5.0	ng/L	5		EPA 537 (Mod)	Total/NA
Perfluorooctanoic acid (PFOA) - DL	13	D M	9.1	2.5	ng/L	5		EPA 537 (Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Method: 8260B - Volatile Organic Compounds (GC/MS) - TCLP

Client Sample ID: IDW-WA-PFAS LD0501 **Lab Sample ID: 280-115117-10**
Date Collected: 10/02/18 17:25 **Matrix: Water**
Date Received: 10/04/18 08:55

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	2.0	U	10	1.6	ug/L			10/11/18 11:46	1
2-Butanone (MEK)	32	U	100	20	ug/L			10/11/18 11:46	1
Carbon tetrachloride	4.0	U	10	1.9	ug/L			10/11/18 11:46	1
Chlorobenzene	2.0	U	10	1.7	ug/L			10/11/18 11:46	1
Chloroform	2.0	U	10	1.6	ug/L			10/11/18 11:46	1
1,2-Dichloroethane	4.0	U	10	1.3	ug/L			10/11/18 11:46	1
1,1-Dichloroethene	4.0	U	10	2.3	ug/L			10/11/18 11:46	1
Tetrachloroethene	4.0	U	10	2.0	ug/L			10/11/18 11:46	1
Trichloroethene	2.0	U	10	1.6	ug/L			10/11/18 11:46	1
Vinyl chloride	8.0	U	10	1.0	ug/L			10/11/18 11:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*103*		*78 - 120*		*10/11/18 11:46*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*64 - 129*		*10/11/18 11:46*	*1*
4-Bromofluorobenzene (Surr)	*91*		*78 - 121*		*10/11/18 11:46*	*1*
Dibromofluoromethane (Surr)	*99*		*79 - 119*		*10/11/18 11:46*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - TCLP

Client Sample ID: IDW-WA-PFAS LD0501 **Lab Sample ID: 280-115117-10**
Date Collected: 10/02/18 17:25 **Matrix: Water**
Date Received: 10/04/18 08:55

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	10	U	50	4.9	ug/L		10/07/18 13:47	10/11/18 23:15	1
3 & 4 Methylphenol	2.5	U	50	1.3	ug/L		10/07/18 13:47	10/11/18 23:15	1
1,4-Dichlorobenzene	20	U	20	1.6	ug/L		10/07/18 13:47	10/11/18 23:15	1
2,4-Dinitrotoluene	22	U	50	8.3	ug/L		10/07/18 13:47	10/11/18 23:15	1
Hexachlorobenzene	10	U	50	3.3	ug/L		10/07/18 13:47	10/11/18 23:15	1
Hexachlorobutadiene	50	U	50	17	ug/L		10/07/18 13:47	10/11/18 23:15	1
Hexachloroethane	22	U	50	11	ug/L		10/07/18 13:47	10/11/18 23:15	1
Nitrobenzene	10	U	50	4.1	ug/L		10/07/18 13:47	10/11/18 23:15	1
Pentachlorophenol	200	U	250	100	ug/L		10/07/18 13:47	10/11/18 23:15	1
Pyridine	22	U J1	100	5.7	ug/L		10/07/18 13:47	10/11/18 23:15	1
2,4,5-Trichlorophenol	5.0	U	50	2.2	ug/L		10/07/18 13:47	10/11/18 23:15	1
2,4,6-Trichlorophenol	5.0	U	25	1.4	ug/L		10/07/18 13:47	10/11/18 23:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*72*		*49 - 120*	*10/07/18 13:47*	*10/11/18 23:15*	*1*
2-Fluorophenol (Surr)	*59*		*50 - 120*	*10/07/18 13:47*	*10/11/18 23:15*	*1*
2,4,6-Tribromophenol (Surr)	*54*		*51 - 120*	*10/07/18 13:47*	*10/11/18 23:15*	*1*
Nitrobenzene-d5 (Surr)	*59*		*51 - 120*	*10/07/18 13:47*	*10/11/18 23:15*	*1*
Phenol-d5 (Surr)	*60*		*47 - 120*	*10/07/18 13:47*	*10/11/18 23:15*	*1*
Terphenyl-d14 (Surr)	*62*		*56 - 120*	*10/07/18 13:47*	*10/11/18 23:15*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Client Sample ID: IDW-WA-PFAS LD0501 **Lab Sample ID: 280-115117-10**
Date Collected: 10/02/18 17:25 **Matrix: Water**
Date Received: 10/04/18 08:55

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.38	U M	0.95	0.12	ug/L		10/08/18 12:55	10/31/18 19:03	1
PCB-1221	0.24	U M	0.95	0.20	ug/L		10/08/18 12:55	10/31/18 19:03	1
PCB-1232	0.57	U M	0.95	0.16	ug/L		10/08/18 12:55	10/31/18 19:03	1
PCB-1242	0.29	U M	0.95	0.099	ug/L		10/08/18 12:55	10/31/18 19:03	1
PCB-1248	0.29	U M	0.95	0.087	ug/L		10/08/18 12:55	10/31/18 19:03	1
PCB-1254	0.24	U M	0.95	0.11	ug/L		10/08/18 12:55	10/31/18 19:03	1
PCB-1260	0.38	U M	0.95	0.15	ug/L		10/08/18 12:55	10/31/18 19:03	1
PCB-1262	0.38	U M	0.95	0.080	ug/L		10/08/18 12:55	10/31/18 19:03	1
PCB-1268	0.95	U M	0.95	0.35	ug/L		10/08/18 12:55	10/31/18 19:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*83*		*25 - 120*	*10/08/18 12:55*	*10/31/18 19:03*	*1*
DCB Decachlorobiphenyl	*42*		*30 - 136*	*10/08/18 12:55*	*10/31/18 19:03*	*1*

Method: EPA 537 (Mod) - PFAS for QSM 5.1, Table B-15

Client Sample ID: MW-67PFAS01 LD0501 **Lab Sample ID: 280-115117-1**
Date Collected: 10/02/18 09:20 **Matrix: Water**
Date Received: 10/04/18 08:55

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	**3.4**		1.9	0.43	ng/L		10/15/18 14:57	10/20/18 23:33	1
Perfluoroheptanoic acid (PFHpA)	**1.9**	**M**	1.9	0.57	ng/L		10/15/18 14:57	10/20/18 23:33	1
Perfluorohexanesulfonic acid (PFHxS)	**99**		1.9	0.35	ng/L		10/15/18 14:57	10/20/18 23:33	1
Perfluorononanoic acid (PFNA)	**1.4**	**J**	1.9	0.48	ng/L		10/15/18 14:57	10/20/18 23:33	1
Perfluorooctanesulfonic acid (PFOS)	**33**		3.7	1.0	ng/L		10/15/18 14:57	10/20/18 23:33	1
Perfluorooctanoic acid (PFOA)	**350**		1.9	0.50	ng/L		10/15/18 14:57	10/20/18 23:33	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 PFBS	*85*		*50 - 150*	*10/15/18 14:57*	*10/20/18 23:33*	*1*
13C4 PFHpA	*88*		*50 - 150*	*10/15/18 14:57*	*10/20/18 23:33*	*1*
13C5 PFNA	*81*		*50 - 150*	*10/15/18 14:57*	*10/20/18 23:33*	*1*
13C4 PFOA	*83*		*50 - 150*	*10/15/18 14:57*	*10/20/18 23:33*	*1*
13C4 PFOS	*85*		*50 - 150*	*10/15/18 14:57*	*10/20/18 23:33*	*1*
18O2 PFHxS	*83*		*50 - 150*	*10/15/18 14:57*	*10/20/18 23:33*	*1*

Client Sample ID: MW-67PFAS01 LD0501N **Lab Sample ID: 280-115117-2**
Date Collected: 10/02/18 09:20 **Matrix: Water**
Date Received: 10/04/18 08:55

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	**3.6**		1.9	0.43	ng/L		10/15/18 14:57	10/20/18 23:41	1
Perfluoroheptanoic acid (PFHpA)	**1.9**	**M**	1.9	0.58	ng/L		10/15/18 14:57	10/20/18 23:41	1
Perfluorohexanesulfonic acid (PFHxS)	**98**		1.9	0.36	ng/L		10/15/18 14:57	10/20/18 23:41	1
Perfluorononanoic acid (PFNA)	**1.4**	**J**	1.9	0.49	ng/L		10/15/18 14:57	10/20/18 23:41	1
Perfluorooctanesulfonic acid (PFOS)	**35**		3.8	1.0	ng/L		10/15/18 14:57	10/20/18 23:41	1
Perfluorooctanoic acid (PFOA)	**360**		1.9	0.51	ng/L		10/15/18 14:57	10/20/18 23:41	1

Method: EPA 537 (Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 PFBS	88		50 - 150	10/15/18 14:57	10/20/18 23:41	1
13C4 PFHpA	88		50 - 150	10/15/18 14:57	10/20/18 23:41	1
13C5 PFNA	88		50 - 150	10/15/18 14:57	10/20/18 23:41	1
13C4 PFOA	86		50 - 150	10/15/18 14:57	10/20/18 23:41	1
13C4 PFOS	87		50 - 150	10/15/18 14:57	10/20/18 23:41	1
18O2 PFHxS	85		50 - 150	10/15/18 14:57	10/20/18 23:41	1

Client Sample ID: MW-67PFAS01 LD0501ND **Lab Sample ID: 280-115117-3**
Date Collected: 10/02/18 09:20 **Matrix: Water**
Date Received: 10/04/18 08:55

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	3.4		1.9	0.43	ng/L		10/15/18 14:57	10/20/18 23:48	1
Perfluoroheptanoic acid (PFHpA)	1.9	M	1.9	0.57	ng/L		10/15/18 14:57	10/20/18 23:48	1
Perfluorohexanesulfonic acid (PFHxS)	100		1.9	0.35	ng/L		10/15/18 14:57	10/20/18 23:48	1
Perfluorononanoic acid (PFNA)	1.8	J	1.9	0.48	ng/L		10/15/18 14:57	10/20/18 23:48	1
Perfluorooctanesulfonic acid (PFOS)	35		3.7	1.0	ng/L		10/15/18 14:57	10/20/18 23:48	1
Perfluorooctanoic acid (PFOA)	360		1.9	0.50	ng/L		10/15/18 14:57	10/20/18 23:48	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 PFBS	84		50 - 150	10/15/18 14:57	10/20/18 23:48	1
13C4 PFHpA	82		50 - 150	10/15/18 14:57	10/20/18 23:48	1
13C5 PFNA	77		50 - 150	10/15/18 14:57	10/20/18 23:48	1
13C4 PFOA	78		50 - 150	10/15/18 14:57	10/20/18 23:48	1
13C4 PFOS	80		50 - 150	10/15/18 14:57	10/20/18 23:48	1
18O2 PFHxS	80		50 - 150	10/15/18 14:57	10/20/18 23:48	1

Client Sample ID: MW-67PFAS-02 LD05EB01 **Lab Sample ID: 280-115117-4**
Date Collected: 10/02/18 10:00 **Matrix: Water**
Date Received: 10/04/18 08:55

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	0.97	U	1.9	0.45	ng/L		10/15/18 14:57	10/20/18 23:56	1
Perfluoroheptanoic acid (PFHpA)	1.5	U M	1.9	0.59	ng/L		10/15/18 14:57	10/20/18 23:56	1
Perfluorohexanesulfonic acid (PFHxS)	0.97	U M	1.9	0.37	ng/L		10/15/18 14:57	10/20/18 23:56	1
Perfluorononanoic acid (PFNA)	1.5	U	1.9	0.51	ng/L		10/15/18 14:57	10/20/18 23:56	1
Perfluorooctanesulfonic acid (PFOS)	2.9	U	3.9	1.1	ng/L		10/15/18 14:57	10/20/18 23:56	1
Perfluorooctanoic acid (PFOA)	1.5	U	1.9	0.53	ng/L		10/15/18 14:57	10/20/18 23:56	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 PFBS	80		50 - 150	10/15/18 14:57	10/20/18 23:56	1
13C4 PFHpA	87		50 - 150	10/15/18 14:57	10/20/18 23:56	1
13C5 PFNA	87		50 - 150	10/15/18 14:57	10/20/18 23:56	1
13C4 PFOA	84		50 - 150	10/15/18 14:57	10/20/18 23:56	1
13C4 PFOS	86		50 - 150	10/15/18 14:57	10/20/18 23:56	1
18O2 PFHxS	81		50 - 150	10/15/18 14:57	10/20/18 23:56	1

Client Sample ID: MW-67PFAS-02 LD05FB02 **Lab Sample ID: 280-115117-5**
Date Collected: 10/02/18 10:05 **Matrix: Water**
Date Received: 10/04/18 08:55

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	0.85	U	1.7	0.39	ng/L		10/15/18 14:57	10/21/18 00:03	1
Perfluoroheptanoic acid (PFHpA)	1.3	U M	1.7	0.52	ng/L		10/15/18 14:57	10/21/18 00:03	1
Perfluorohexanesulfonic acid (PFHxS)	0.85	U M	1.7	0.32	ng/L		10/15/18 14:57	10/21/18 00:03	1

Method: EPA 537 (Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Client Sample ID: MW-67PFAS-02 LD05FB02 **Lab Sample ID: 280-115117-5**
Date Collected: 10/02/18 10:05 **Matrix: Water**
Date Received: 10/04/18 08:55

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	1.3	U	1.7	0.44	ng/L		10/15/18 14:57	10/21/18 00:03	1
Perfluorooctanesulfonic acid (PFOS)	2.5	U	3.4	0.93	ng/L		10/15/18 14:57	10/21/18 00:03	1
Perfluorooctanoic acid (PFOA)	1.3	U M	1.7	0.46	ng/L		10/15/18 14:57	10/21/18 00:03	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 PFBS	*80*		*50 - 150*	*10/15/18 14:57*	*10/21/18 00:03*	*1*
13C4 PFHpA	*86*		*50 - 150*	*10/15/18 14:57*	*10/21/18 00:03*	*1*
13C5 PFNA	*87*		*50 - 150*	*10/15/18 14:57*	*10/21/18 00:03*	*1*
13C4 PFOA	*83*		*50 - 150*	*10/15/18 14:57*	*10/21/18 00:03*	*1*
13C4 PFOS	*86*		*50 - 150*	*10/15/18 14:57*	*10/21/18 00:03*	*1*
18O2 PFHxS	*82*		*50 - 150*	*10/15/18 14:57*	*10/21/18 00:03*	*1*

Client Sample ID: MW-67PFAS-02 LD0501 **Lab Sample ID: 280-115117-6**
Date Collected: 10/02/18 11:46 **Matrix: Water**
Date Received: 10/04/18 08:55

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	**3.1**		1.8	0.42	ng/L		10/15/18 14:57	10/21/18 00:11	1
Perfluoroheptanoic acid (PFHpA)	**19**	**M**	1.8	0.56	ng/L		10/15/18 14:57	10/21/18 00:11	1
Perfluorohexanesulfonic acid (PFHxS)	**52**		1.8	0.35	ng/L		10/15/18 14:57	10/21/18 00:11	1
Perfluorononanoic acid (PFNA)	**0.69**	**J**	1.8	0.47	ng/L		10/15/18 14:57	10/21/18 00:11	1
Perfluorooctanesulfonic acid (PFOS)	**160**		3.6	1.0	ng/L		10/15/18 14:57	10/21/18 00:11	1
Perfluorooctanoic acid (PFOA)	**200**		1.8	0.49	ng/L		10/15/18 14:57	10/21/18 00:11	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 PFBS	*80*		*50 - 150*	*10/15/18 14:57*	*10/21/18 00:11*	*1*
13C4 PFHpA	*83*		*50 - 150*	*10/15/18 14:57*	*10/21/18 00:11*	*1*
13C5 PFNA	*79*		*50 - 150*	*10/15/18 14:57*	*10/21/18 00:11*	*1*
13C4 PFOA	*80*		*50 - 150*	*10/15/18 14:57*	*10/21/18 00:11*	*1*
13C4 PFOS	*82*		*50 - 150*	*10/15/18 14:57*	*10/21/18 00:11*	*1*
18O2 PFHxS	*79*		*50 - 150*	*10/15/18 14:57*	*10/21/18 00:11*	*1*

Client Sample ID: MW-67PFAS-02 LD0501D **Lab Sample ID: 280-115117-7**
Date Collected: 10/02/18 11:46 **Matrix: Water**
Date Received: 10/04/18 08:55

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	**3.3**		1.9	0.43	ng/L		10/15/18 14:57	10/21/18 00:18	1
Perfluoroheptanoic acid (PFHpA)	**19**	**M**	1.9	0.57	ng/L		10/15/18 14:57	10/21/18 00:18	1
Perfluorohexanesulfonic acid (PFHxS)	**51**		1.9	0.36	ng/L		10/15/18 14:57	10/21/18 00:18	1
Perfluorononanoic acid (PFNA)	**1.2**	**J**	1.9	0.49	ng/L		10/15/18 14:57	10/21/18 00:18	1
Perfluorooctanesulfonic acid (PFOS)	**170**		3.8	1.0	ng/L		10/15/18 14:57	10/21/18 00:18	1
Perfluorooctanoic acid (PFOA)	**200**		1.9	0.51	ng/L		10/15/18 14:57	10/21/18 00:18	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 PFBS	*82*		*50 - 150*	*10/15/18 14:57*	*10/21/18 00:18*	*1*
13C4 PFHpA	*85*		*50 - 150*	*10/15/18 14:57*	*10/21/18 00:18*	*1*
13C5 PFNA	*86*		*50 - 150*	*10/15/18 14:57*	*10/21/18 00:18*	*1*
13C4 PFOA	*85*		*50 - 150*	*10/15/18 14:57*	*10/21/18 00:18*	*1*
13C4 PFOS	*85*		*50 - 150*	*10/15/18 14:57*	*10/21/18 00:18*	*1*

Method: EPA 537 (Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Client Sample ID: MW-67PFAS-02 LD0501D — **Lab Sample ID: 280-115117-7**
Date Collected: 10/02/18 11:46 — **Matrix: Water**
Date Received: 10/04/18 08:55

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
18O2 PFHxS	*84*		*50 - 150*	*10/15/18 14:57*	*10/21/18 00:18*	*1*

Client Sample ID: MW-67PFAS-03 LD0501 — **Lab Sample ID: 280-115117-8**
Date Collected: 10/02/18 14:10 — **Matrix: Water**
Date Received: 10/04/18 08:55

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	5.9	M	1.8	0.41	ng/L		10/15/18 14:57	10/21/18 00:33	1
Perfluoroheptanoic acid (PFHpA)	16	M	1.8	0.54	ng/L		10/15/18 14:57	10/21/18 00:33	1
Perfluorohexanesulfonic acid (PFHxS)	430	J1	1.8	0.34	ng/L		10/15/18 14:57	10/21/18 00:33	1
Perfluorononanoic acid (PFNA)	1.7	J	1.8	0.46	ng/L		10/15/18 14:57	10/21/18 00:33	1
Perfluorooctanesulfonic acid (PFOS)	93		3.5	0.98	ng/L		10/15/18 14:57	10/21/18 00:33	1
Perfluorooctanoic acid (PFOA)	450	J1	1.8	0.48	ng/L		10/15/18 14:57	10/21/18 00:33	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 PFBS	*79*		*50 - 150*	*10/15/18 14:57*	*10/21/18 00:33*	*1*
13C4 PFHpA	*79*		*50 - 150*	*10/15/18 14:57*	*10/21/18 00:33*	*1*
13C5 PFNA	*79*		*50 - 150*	*10/15/18 14:57*	*10/21/18 00:33*	*1*
13C4 PFOA	*76*		*50 - 150*	*10/15/18 14:57*	*10/21/18 00:33*	*1*
13C4 PFOS	*80*		*50 - 150*	*10/15/18 14:57*	*10/21/18 00:33*	*1*
18O2 PFHxS	*77*		*50 - 150*	*10/15/18 14:57*	*10/21/18 00:33*	*1*

Client Sample ID: MW-84PFAS-03 LD0501 — **Lab Sample ID: 280-115117-9**
Date Collected: 10/02/18 16:17 — **Matrix: Water**
Date Received: 10/04/18 08:55

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	44		1.9	0.43	ng/L		10/15/18 14:57	10/21/18 00:40	1
Perfluoroheptanoic acid (PFHpA)	4.9	M	1.9	0.57	ng/L		10/15/18 14:57	10/21/18 00:40	1
Perfluorohexanesulfonic acid (PFHxS)	850	J1	1.9	0.35	ng/L		10/15/18 14:57	10/21/18 00:40	1
Perfluorononanoic acid (PFNA)	1700	J1	1.9	0.48	ng/L		10/15/18 14:57	10/21/18 00:40	1
Perfluorooctanesulfonic acid (PFOS)	560	J1	3.7	1.0	ng/L		10/15/18 14:57	10/21/18 00:40	1
Perfluorooctanoic acid (PFOA)	160		1.9	0.50	ng/L		10/15/18 14:57	10/21/18 00:40	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 PFBS	*77*		*50 - 150*	*10/15/18 14:57*	*10/21/18 00:40*	*1*
13C4 PFHpA	*82*		*50 - 150*	*10/15/18 14:57*	*10/21/18 00:40*	*1*
13C5 PFNA	*73*		*50 - 150*	*10/15/18 14:57*	*10/21/18 00:40*	*1*
13C4 PFOA	*81*		*50 - 150*	*10/15/18 14:57*	*10/21/18 00:40*	*1*
13C4 PFOS	*75*		*50 - 150*	*10/15/18 14:57*	*10/21/18 00:40*	*1*
18O2 PFHxS	*78*		*50 - 150*	*10/15/18 14:57*	*10/21/18 00:40*	*1*

Client Sample ID: MW-84PFAS-01 LD05RB01 — **Lab Sample ID: 280-115117-11**
Date Collected: 10/03/18 08:15 — **Matrix: Water**
Date Received: 10/04/18 08:55

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	0.83	U	1.7	0.38	ng/L		10/15/18 14:57	10/21/18 00:48	1
Perfluoroheptanoic acid (PFHpA)	1.3	U M	1.7	0.51	ng/L		10/15/18 14:57	10/21/18 00:48	1

Method: EPA 537 (Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Client Sample ID: MW-84PFAS-01 LD05RB01 — **Lab Sample ID: 280-115117-11**
Date Collected: 10/03/18 08:15 — **Matrix: Water**
Date Received: 10/04/18 08:55

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanesulfonic acid (PFHxS)	**0.44**	**J**	1.7	0.32	ng/L		10/15/18 14:57	10/21/18 00:48	1
Perfluorononanoic acid (PFNA)	1.3	U M	1.7	0.43	ng/L		10/15/18 14:57	10/21/18 00:48	1
Perfluorooctanesulfonic acid (PFOS)	2.5	U	3.3	0.92	ng/L		10/15/18 14:57	10/21/18 00:48	1
Perfluorooctanoic acid (PFOA)	1.3	U M	1.7	0.45	ng/L		10/15/18 14:57	10/21/18 00:48	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 PFBS	*84*		*50 - 150*	*10/15/18 14:57*	*10/21/18 00:48*	*1*
13C4 PFHpA	*88*		*50 - 150*	*10/15/18 14:57*	*10/21/18 00:48*	*1*
13C5 PFNA	*81*		*50 - 150*	*10/15/18 14:57*	*10/21/18 00:48*	*1*
13C4 PFOA	*82*		*50 - 150*	*10/15/18 14:57*	*10/21/18 00:48*	*1*
13C4 PFOS	*84*		*50 - 150*	*10/15/18 14:57*	*10/21/18 00:48*	*1*
18O2 PFHxS	*84*		*50 - 150*	*10/15/18 14:57*	*10/21/18 00:48*	*1*

Client Sample ID: MW-84PFAS-01 LD0501 — **Lab Sample ID: 280-115117-12**
Date Collected: 10/03/18 08:57 — **Matrix: Water**
Date Received: 10/04/18 08:55

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	**0.62**	**J**	1.8	0.41	ng/L		10/15/18 14:57	10/21/18 00:55	1
Perfluoroheptanoic acid (PFHpA)	1.3	U	1.8	0.55	ng/L		10/15/18 14:57	10/21/18 00:55	1
Perfluorohexanesulfonic acid (PFHxS)	**1.3**	**J M**	1.8	0.34	ng/L		10/15/18 14:57	10/21/18 00:55	1
Perfluorononanoic acid (PFNA)	1.3	U	1.8	0.47	ng/L		10/15/18 14:57	10/21/18 00:55	1
Perfluorooctanesulfonic acid (PFOS)	2.7	U	3.6	0.99	ng/L		10/15/18 14:57	10/21/18 00:55	1
Perfluorooctanoic acid (PFOA)	1.3	U M	1.8	0.49	ng/L		10/15/18 14:57	10/21/18 00:55	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 PFBS	*81*		*50 - 150*	*10/15/18 14:57*	*10/21/18 00:55*	*1*
13C4 PFHpA	*88*		*50 - 150*	*10/15/18 14:57*	*10/21/18 00:55*	*1*
13C5 PFNA	*81*		*50 - 150*	*10/15/18 14:57*	*10/21/18 00:55*	*1*
13C4 PFOA	*82*		*50 - 150*	*10/15/18 14:57*	*10/21/18 00:55*	*1*
13C4 PFOS	*81*		*50 - 150*	*10/15/18 14:57*	*10/21/18 00:55*	*1*
18O2 PFHxS	*82*		*50 - 150*	*10/15/18 14:57*	*10/21/18 00:55*	*1*

Client Sample ID: MW-84PFAS-02 LD0501 — **Lab Sample ID: 280-115117-13**
Date Collected: 10/03/18 11:16 — **Matrix: Water**
Date Received: 10/04/18 08:55

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	**110**		1.8	0.42	ng/L		10/15/18 14:57	10/21/18 01:03	1
Perfluoroheptanoic acid (PFHpA)	**20**	**M**	1.8	0.56	ng/L		10/15/18 14:57	10/21/18 01:03	1
Perfluorohexanesulfonic acid (PFHxS)	**420**	**J1**	1.8	0.35	ng/L		10/15/18 14:57	10/21/18 01:03	1
Perfluorononanoic acid (PFNA)	1.4	U	1.8	0.48	ng/L		10/15/18 14:57	10/21/18 01:03	1
Perfluorooctanesulfonic acid (PFOS)	**120**		3.7	1.0	ng/L		10/15/18 14:57	10/21/18 01:03	1
Perfluorooctanoic acid (PFOA)	**13**	**M**	1.8	0.49	ng/L		10/15/18 14:57	10/21/18 01:03	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 PFBS	*89*		*50 - 150*	*10/15/18 14:57*	*10/21/18 01:03*	*1*
13C4 PFHpA	*89*		*50 - 150*	*10/15/18 14:57*	*10/21/18 01:03*	*1*
13C5 PFNA	*82*		*50 - 150*	*10/15/18 14:57*	*10/21/18 01:03*	*1*
13C4 PFOA	*84*		*50 - 150*	*10/15/18 14:57*	*10/21/18 01:03*	*1*

Method: EPA 537 (Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Client Sample ID: MW-84PFAS-02 LD0501 **Lab Sample ID: 280-115117-13**
Date Collected: 10/03/18 11:16 **Matrix: Water**
Date Received: 10/04/18 08:55

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*86*		*50 - 150*	*10/15/18 14:57*	*10/21/18 01:03*	*1*
18O2 PFHxS	*79*		*50 - 150*	*10/15/18 14:57*	*10/21/18 01:03*	*1*

Method: EPA 537 (Mod) - PFAS for QSM 5.1, Table B-15 - DL

Client Sample ID: MW-67PFAS-03 LD0501 **Lab Sample ID: 280-115117-8**
Date Collected: 10/02/18 14:10 **Matrix: Water**
Date Received: 10/04/18 08:55

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	**6.2**	**J D**	8.9	2.0	ng/L		10/15/18 14:57	10/26/18 14:53	5
Perfluoroheptanoic acid (PFHpA)	**16**	**D M**	8.9	2.7	ng/L		10/15/18 14:57	10/26/18 14:53	5
Perfluorohexanesulfonic acid (PFHxS)	**440**	**D**	8.9	1.7	ng/L		10/15/18 14:57	10/26/18 14:53	5
Perfluorononanoic acid (PFNA)	6.7	U	8.9	2.3	ng/L		10/15/18 14:57	10/26/18 14:53	5
Perfluorooctanesulfonic acid (PFOS)	**100**	**D**	18	4.9	ng/L		10/15/18 14:57	10/26/18 14:53	5
Perfluorooctanoic acid (PFOA)	**470**	**D**	8.9	2.4	ng/L		10/15/18 14:57	10/26/18 14:53	5

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 PFBS	*78*		*50 - 150*	*10/15/18 14:57*	*10/26/18 14:53*	*5*
13C4 PFHpA	*77*		*50 - 150*	*10/15/18 14:57*	*10/26/18 14:53*	*5*
13C5 PFNA	*77*		*50 - 150*	*10/15/18 14:57*	*10/26/18 14:53*	*5*
13C4 PFOA	*73*		*50 - 150*	*10/15/18 14:57*	*10/26/18 14:53*	*5*
13C4 PFOS	*72*		*50 - 150*	*10/15/18 14:57*	*10/26/18 14:53*	*5*
18O2 PFHxS	*75*		*50 - 150*	*10/15/18 14:57*	*10/26/18 14:53*	*5*

Client Sample ID: MW-84PFAS-03 LD0501 **Lab Sample ID: 280-115117-9**
Date Collected: 10/02/18 16:17 **Matrix: Water**
Date Received: 10/04/18 08:55

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	**45**	**D**	19	4.3	ng/L		10/15/18 14:57	10/26/18 15:00	10
Perfluoroheptanoic acid (PFHpA)	14	U	19	5.7	ng/L		10/15/18 14:57	10/26/18 15:00	10
Perfluorohexanesulfonic acid (PFHxS)	**1000**	**D**	19	3.5	ng/L		10/15/18 14:57	10/26/18 15:00	10
Perfluorononanoic acid (PFNA)	**1900**	**D**	19	4.8	ng/L		10/15/18 14:57	10/26/18 15:00	10
Perfluorooctanesulfonic acid (PFOS)	**530**	**D**	37	10	ng/L		10/15/18 14:57	10/26/18 15:00	10
Perfluorooctanoic acid (PFOA)	**160**	**D**	19	5.0	ng/L		10/15/18 14:57	10/26/18 15:00	10

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 PFBS	*72*		*50 - 150*	*10/15/18 14:57*	*10/26/18 15:00*	*10*
13C4 PFHpA	*83*		*50 - 150*	*10/15/18 14:57*	*10/26/18 15:00*	*10*
13C5 PFNA	*83*		*50 - 150*	*10/15/18 14:57*	*10/26/18 15:00*	*10*
13C4 PFOA	*85*		*50 - 150*	*10/15/18 14:57*	*10/26/18 15:00*	*10*
13C4 PFOS	*82*		*50 - 150*	*10/15/18 14:57*	*10/26/18 15:00*	*10*
18O2 PFHxS	*77*		*50 - 150*	*10/15/18 14:57*	*10/26/18 15:00*	*10*

Method: EPA 537 (Mod) - PFAS for QSM 5.1, Table B-15 - DL

Client Sample ID: MW-84PFAS-02 LD0501 **Lab Sample ID: 280-115117-13**
Date Collected: 10/03/18 11:16 **Matrix: Water**
Date Received: 10/04/18 08:55

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	**110**	**D**	9.1	2.1	ng/L		10/15/18 14:57	10/26/18 15:15	5
Perfluoroheptanoic acid (PFHpA)	**22**	**D M**	9.1	2.8	ng/L		10/15/18 14:57	10/26/18 15:15	5
Perfluorohexanesulfonic acid (PFHxS)	**390**	**D**	9.1	1.7	ng/L		10/15/18 14:57	10/26/18 15:15	5
Perfluorononanoic acid (PFNA)	6.9	U	9.1	2.4	ng/L		10/15/18 14:57	10/26/18 15:15	5
Perfluorooctanesulfonic acid (PFOS)	**120**	**D**	18	5.0	ng/L		10/15/18 14:57	10/26/18 15:15	5
Perfluorooctanoic acid (PFOA)	**13**	**D M**	9.1	2.5	ng/L		10/15/18 14:57	10/26/18 15:15	5

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 PFBS	*82*		*50 - 150*	*10/15/18 14:57*	*10/26/18 15:15*	*5*
13C4 PFHpA	*83*		*50 - 150*	*10/15/18 14:57*	*10/26/18 15:15*	*5*
13C5 PFNA	*82*		*50 - 150*	*10/15/18 14:57*	*10/26/18 15:15*	*5*
13C4 PFOA	*81*		*50 - 150*	*10/15/18 14:57*	*10/26/18 15:15*	*5*
13C4 PFOS	*81*		*50 - 150*	*10/15/18 14:57*	*10/26/18 15:15*	*5*
18O2 PFHxS	*83*		*50 - 150*	*10/15/18 14:57*	*10/26/18 15:15*	*5*

Method: 6010C - Metals (ICP) - TCLP

Client Sample ID: IDW-WA-PFAS LD0501 **Lab Sample ID: 280-115117-10**
Date Collected: 10/02/18 17:25 **Matrix: Water**
Date Received: 10/04/18 08:55

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	75	U J1	500	22	ug/L		10/09/18 17:30	10/10/18 12:58	1
Barium	**8.7**	**J J1**	1000	4.0	ug/L		10/09/18 17:30	10/10/18 12:58	1
Cadmium	9.0	U J1	100	2.0	ug/L		10/09/18 17:30	10/10/18 12:58	1
Chromium	**3.1**	**J**	500	3.0	ug/L		10/09/18 17:30	10/10/18 12:58	1
Lead	50	U	500	14	ug/L		10/09/18 17:30	10/10/18 12:58	1
Selenium	95	U J1	100	32	ug/L		10/09/18 17:30	10/10/18 12:58	1
Silver	18	U J1	500	4.0	ug/L		10/09/18 17:30	10/10/18 12:58	1

Method: 7470A - Mercury (CVAA) - TCLP

Client Sample ID: IDW-WA-PFAS LD0501 **Lab Sample ID: 280-115117-10**
Date Collected: 10/02/18 17:25 **Matrix: Water**
Date Received: 10/04/18 08:55

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.080	U	2.0	0.030	ug/L		10/08/18 11:12	10/08/18 18:11	1

General Chemistry

Client Sample ID: IDW-WA-PFAS LD0501 **Lab Sample ID: 280-115117-10**
Date Collected: 10/02/18 17:25 **Matrix: Water**
Date Received: 10/04/18 08:55

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Flashpoint	**> 211**		50.0	50.0	Degrees F			10/09/18 15:48	1
Cyanide, Total	**26**		20	4.0	ug/L		10/10/18 07:23	10/10/18 11:24	1
Sulfide	1900	U	4000	790	ug/L		10/05/18 13:04	10/05/18 14:53	1
pH adj. to 25 deg C	**8.1**	**HF**	0.1	0.1	SU			10/08/18 16:20	1
Temperature	**21.6**	**HF**	1.0	1.0	Degrees C			10/08/18 16:20	1

Default Detection Limits

Client: Leidos, Inc.
Project/Site: RFP001227 - Savanna Army Depot - FUP

TestAmerica Job ID: 280-115117-1

Method: 8260B - Volatile Organic Compounds (GC/MS) - TCLP

Leach: 1311

Analyte	LOQ	DL	Units	Method
1,1-Dichloroethene	10	2.3	ug/L	8260B
1,2-Dichloroethane	10	1.3	ug/L	8260B
2-Butanone (MEK)	100	20	ug/L	8260B
Benzene	10	1.6	ug/L	8260B
Carbon tetrachloride	10	1.9	ug/L	8260B
Chlorobenzene	10	1.7	ug/L	8260B
Chloroform	10	1.6	ug/L	8260B
Tetrachloroethene	10	2.0	ug/L	8260B
Trichloroethene	10	1.6	ug/L	8260B
Vinyl chloride	10	1.0	ug/L	8260B

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - TCLP

Prep: 3510C

Leach: 1311

Analyte	LOQ	DL	Units	Method
1,4-Dichlorobenzene	20	1.6	ug/L	8270D
2,4,5-Trichlorophenol	50	2.2	ug/L	8270D
2,4,6-Trichlorophenol	25	1.4	ug/L	8270D
2,4-Dinitrotoluene	50	8.3	ug/L	8270D
2-Methylphenol	50	4.9	ug/L	8270D
3 & 4 Methylphenol	50	1.3	ug/L	8270D
Hexachlorobenzene	50	3.3	ug/L	8270D
Hexachlorobutadiene	50	17	ug/L	8270D
Hexachloroethane	50	11	ug/L	8270D
Nitrobenzene	50	4.1	ug/L	8270D
Pentachlorophenol	250	100	ug/L	8270D
Pyridine	100	5.7	ug/L	8270D

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Prep: 3510C

Analyte	LOQ	DL	Units	Method
PCB-1016	1.0	0.12	ug/L	8082A
PCB-1221	1.0	0.21	ug/L	8082A
PCB-1232	1.0	0.17	ug/L	8082A
PCB-1242	1.0	0.10	ug/L	8082A
PCB-1248	1.0	0.092	ug/L	8082A
PCB-1254	1.0	0.11	ug/L	8082A
PCB-1260	1.0	0.16	ug/L	8082A
PCB-1262	1.0	0.085	ug/L	8082A
PCB-1268	1.0	0.36	ug/L	8082A

Method: EPA 537 (Mod) - PFAS for QSM 5.1, Table B-15

Prep: 3535

Analyte	LOQ	DL	Units	Method
Perfluorobutanesulfonic acid (PFBS)	2.0	0.46	ng/L	EPA 537 (Mod)
Perfluoroheptanoic acid (PFHpA)	2.0	0.61	ng/L	EPA 537 (Mod)
Perfluorohexanesulfonic acid (PFHxS)	2.0	0.38	ng/L	EPA 537 (Mod)
Perfluorononanoic acid (PFNA)	2.0	0.52	ng/L	EPA 537 (Mod)
Perfluorooctanesulfonic acid (PFOS)	4.0	1.1	ng/L	EPA 537 (Mod)

Default Detection Limits

Client: Leidos, Inc.
Project/Site: RFP001227 - Savanna Army Depot - FUP

TestAmerica Job ID: 280-115117-1

Method: EPA 537 (Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Prep: 3535

Analyte	LOQ	DL	Units	Method
Perfluorooctanoic acid (PFOA)	2.0	0.54	ng/L	EPA 537 (Mod)

Method: 6010C - Metals (ICP) - TCLP

Prep: 3010A
Leach: 1311

Analyte	LOQ	DL	Units	Method
Arsenic	500	22	ug/L	6010C
Barium	1000	4.0	ug/L	6010C
Cadmium	100	2.0	ug/L	6010C
Chromium	500	3.0	ug/L	6010C
Lead	500	14	ug/L	6010C
Selenium	100	32	ug/L	6010C
Silver	500	4.0	ug/L	6010C

Method: 7470A - Mercury (CVAA) - TCLP

Prep: 7470A
Leach: 1311

Analyte	LOQ	DL	Units	Method
Mercury	2.0	0.030	ug/L	7470A

General Chemistry

Analyte	LOQ	DL	Units	Method
Flashpoint	50.0	50.0	Degrees F	1020A
pH adj. to 25 deg C	0.1	0.1	SU	9040C
Temperature	1.0	1.0	Degrees C	9040C

General Chemistry

Prep: 9012A

Analyte	LOQ	DL	Units	Method
Cyanide, Total	10	2.0	ug/L	9012A

General Chemistry

Prep: 9030B

Analyte	LOQ	DL	Units	Method
Sulfide	4000	790	ug/L	9034

Surrogate Summary

Client: Leidos, Inc.
Project/Site: RFP001227 - Savanna Army Depot - FUP

TestAmerica Job ID: 280-115117-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: TCLP**

		Percent Surrogate Recovery (Acceptance Limits)			
		TOL	DCA	BFB	DBFM
Lab Sample ID	Client Sample ID	(78-120)	(64-129)	(78-121)	(79-119)
280-115117-10	IDW-WA-PFAS LD0501	103	100	91	99
LB 280-432747/1-A	Method Blank	105	102	94	98
LCS 280-432747/2-A	Lab Control Sample	110	104	87	96

Surrogate Legend

TOL = Toluene-d8 (Surr)
DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = D bromofluoromethane (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: TCLP**

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	2FP	TBP	NBZ	PHL	TPHL
Lab Sample ID	Client Sample ID	(49-120)	(50-120)	(51-120)	(51-120)	(47-120)	(56-120)
280-115117-10	IDW-WA-PFAS LD0501	72	59	54	59	60	62
280-115117-10 MS	IDW-WA-PFAS LD0501	76	67	86	68	67	68
280-115117-10 MSD	IDW-WA-PFAS LD0501	64	55	69	56	55	53 Q
LB3 280-432266/1-B	Method Blank	55	47 Q	60	46 Q	41 Q	68
LCS 280-432266/2-B	Lab Control Sample	70	57	74	59	51	74

Surrogate Legend

FBP = 2-Fluorobiphenyl
2FP = 2-Fluorophenol (Surr)
TBP = 2,4,6-Tr bromophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL = Phenol-d5 (Surr)
TPHL = Terphenyl-d14 (Surr)

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		TCX2	DCBP2
Lab Sample ID	Client Sample ID	(25-120)	(30-136)
280-115117-10	IDW-WA-PFAS LD0501	83	42
LCS 280-432451/4-A	Lab Control Sample	83	85
LCSD 280-432451/5-A	Lab Control Sample Dup	85	85
MB 280-432451/1-A	Method Blank	56	74

Surrogate Legend

TCX = Tetrachloro-m-xylene
DCBP = DCB Decachlorobiphenyl

Isotope Dilution Summary

Client: Leidos, Inc.
Project/Site: RFP001227 - Savanna Army Depot - FUP

TestAmerica Job ID: 280-115117-1

Method: EPA 537 (Mod) - PFAS for QSM 5.1, Table B-15

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	3C3-PFBS (50-150)	PFHpA (50-150)	PFNA (50-150)	PFOA (50-150)	PFOS (50-150)	PFHxS (50-150)		
280-115117-1	MW-67PFAS01 LD0501	85	88	81	83	85	83		
280-115117-2	MW-67PFAS01 LD0501N	88	88	88	86	87	85		
280-115117-3	MW-67PFAS01 LD0501ND	84	82	77	78	80	80		
280-115117-4	MW-67PFAS-02 LD05EB01	80	87	87	84	86	81		
280-115117-5	MW-67PFAS-02 LD05FB02	80	86	87	83	86	82		
280-115117-6	MW-67PFAS-02 LD0501	80	83	79	80	82	79		
280-115117-7	MW-67PFAS-02 LD0501D	82	85	86	85	85	84		
280-115117-8	MW-67PFAS-03 LD0501	79	79	79	76	80	77		
280-115117-8 - DL	MW-67PFAS-03 LD0501	78	77	77	73	72	75		
280-115117-9	MW-84PFAS-03 LD0501	77	82	73	81	75	78		
280-115117-9 - DL	MW-84PFAS-03 LD0501	72	83	83	85	82	77		
280-115117-11	MW-84PFAS-01 LD05RB01	84	88	81	82	84	84		
280-115117-12	MW-84PFAS-01 LD0501	81	88	81	82	81	82		
280-115117-13	MW-84PFAS-02 LD0501	89	89	82	84	86	79		
280-115117-13 - DL	MW-84PFAS-02 LD0501	82	83	82	81	81	83		
LCS 320-252432/2-A	Lab Control Sample	76	79	75	76	81	77		
LCSD 320-252432/3-A	Lab Control Sample Dup	82	79	81	82	84	81		
MB 320-252432/1-A	Method Blank	81	83	79	82	82	81		

Surrogate Legend

13C3-PFBS = 13C3 PFBS
PFHpA = 13C4 PFHpA
PFNA = 13C5 PFNA
PFOA = 13C4 PFOA
PFOS = 13C4 PFOS
PFHxS = 18O2 PFHxS

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: LB 280-432747/1-A
Matrix: Water
Analysis Batch: 432901

Client Sample ID: Method Blank
Prep Type: TCLP

Analyte	LB Result	LB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	2.0	U	10	1.6	ug/L			10/11/18 09:54	1
2-Butanone (MEK)	32	U	100	20	ug/L			10/11/18 09:54	1
Carbon tetrachloride	4.0	U	10	1.9	ug/L			10/11/18 09:54	1
Chlorobenzene	2.0	U	10	1.7	ug/L			10/11/18 09:54	1
Chloroform	2.0	U	10	1.6	ug/L			10/11/18 09:54	1
1,2-Dichloroethane	4.0	U	10	1.3	ug/L			10/11/18 09:54	1
1,1-Dichloroethene	4.0	U	10	2.3	ug/L			10/11/18 09:54	1
Tetrachloroethene	4.0	U	10	2.0	ug/L			10/11/18 09:54	1
Trichloroethene	2.0	U	10	1.6	ug/L			10/11/18 09:54	1
Vinyl chloride	8.0	U	10	1.0	ug/L			10/11/18 09:54	1

Surrogate	*LB %Recovery*	*LB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*105*		*78 - 120*		*10/11/18 09:54*	*1*
1,2-Dichloroethane-d4 (Surr)	*102*		*64 - 129*		*10/11/18 09:54*	*1*
4-Bromofluorobenzene (Surr)	*94*		*78 - 121*		*10/11/18 09:54*	*1*
Dibromofluoromethane (Surr)	*98*		*79 - 119*		*10/11/18 09:54*	*1*

Lab Sample ID: LCS 280-432747/2-A
Matrix: Water
Analysis Batch: 432901

Client Sample ID: Lab Control Sample
Prep Type: TCLP

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene			50.0	46.6		ug/L		93	74 - 135		
2-Butanone (MEK)			200	183		ug/L		92	44 - 150		
Carbon tetrachloride			50.0	46.7		ug/L		93	67 - 135		
Chlorobenzene			50.0	46.8		ug/L		94	76 - 135		
Chloroform			50.0	46.6		ug/L		93	76 - 120		
1,2-Dichloroethane			50.0	45.6		ug/L		91	70 - 135		
1,1-Dichloroethene			50.0	48.4		ug/L		97	71 - 136		
Tetrachloroethene			50.0	47.7		ug/L		95	70 - 135		
Trichloroethene			50.0	46.6		ug/L		93	73 - 135		
Vinyl chloride			50.0	47.0		ug/L		94	40 - 144		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*110*		*78 - 120*
1,2-Dichloroethane-d4 (Surr)	*104*		*64 - 129*
4-Bromofluorobenzene (Surr)	*87*		*78 - 121*
Dibromofluoromethane (Surr)	*96*		*79 - 119*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: LB3 280-432266/1-B
Matrix: Water
Analysis Batch: 432991

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 432344

Analyte	LB3 Result	LB3 Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	10	U Q	50	4.9	ug/L		10/07/18 13:47	10/11/18 17:02	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LB3 280-432266/1-B **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: TCLP**
Analysis Batch: 432991 **Prep Batch: 432344**

Analyte	LB3 Result	LB3 Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
3 & 4 Methylphenol	2.5	U Q	50	1.3	ug/L		10/07/18 13:47	10/11/18 17:02	1
1,4-Dichlorobenzene	20	U Q	20	1.6	ug/L		10/07/18 13:47	10/11/18 17:02	1
2,4-Dinitrotoluene	22	U	50	8.3	ug/L		10/07/18 13:47	10/11/18 17:02	1
Hexachlorobenzene	10	U	50	3.3	ug/L		10/07/18 13:47	10/11/18 17:02	1
Hexachlorobutadiene	50	U Q	50	17	ug/L		10/07/18 13:47	10/11/18 17:02	1
Hexachloroethane	22	U Q	50	11	ug/L		10/07/18 13:47	10/11/18 17:02	1
Nitrobenzene	10	U Q	50	4.1	ug/L		10/07/18 13:47	10/11/18 17:02	1
Pentachlorophenol	200	U	250	100	ug/L		10/07/18 13:47	10/11/18 17:02	1
Pyridine	22	U Q	100	5.7	ug/L		10/07/18 13:47	10/11/18 17:02	1
2,4,5-Trichlorophenol	5.0	U	50	2.2	ug/L		10/07/18 13:47	10/11/18 17:02	1
2,4,6-Trichlorophenol	5.0	U	25	1.4	ug/L		10/07/18 13:47	10/11/18 17:02	1

Surrogate	*LB3 %Recovery*	*LB3 Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*55*		*49 - 120*	*10/07/18 13:47*	*10/11/18 17:02*	*1*
2-Fluorophenol (Surr)	*47*	*Q*	*50 - 120*	*10/07/18 13:47*	*10/11/18 17:02*	*1*
2,4,6-Tribromophenol (Surr)	*60*		*51 - 120*	*10/07/18 13:47*	*10/11/18 17:02*	*1*
Nitrobenzene-d5 (Surr)	*46*	*Q*	*51 - 120*	*10/07/18 13:47*	*10/11/18 17:02*	*1*
Phenol-d5 (Surr)	*41*	*Q*	*47 - 120*	*10/07/18 13:47*	*10/11/18 17:02*	*1*
Terphenyl-d14 (Surr)	*68*		*56 - 120*	*10/07/18 13:47*	*10/11/18 17:02*	*1*

Lab Sample ID: LCS 280-432266/2-B **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: TCLP**
Analysis Batch: 432991 **Prep Batch: 432344**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Methylphenol	250	147		ug/L		59	45 - 120
3 & 4 Methylphenol	500	310		ug/L		62	44 - 120
1,4-Dichlorobenzene	250	143		ug/L		57	36 - 120
2,4-Dinitrotoluene	100	58.7		ug/L		59	36 - 120
Hexachlorobenzene	100	71.0		ug/L		71	52 - 120
Hexachlorobutadiene	250	132		ug/L		53	35 - 120
Hexachloroethane	250	124		ug/L		50	35 - 120
Nitrobenzene	250	144		ug/L		58	50 - 120
Pentachlorophenol	500	288		ug/L		58	39 - 120
Pyridine	250	110		ug/L		44	10 - 121
2,4,5-Trichlorophenol	250	174		ug/L		70	46 - 120
2,4,6-Trichlorophenol	250	178		ug/L		71	43 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl	*70*		*49 - 120*
2-Fluorophenol (Surr)	*57*		*50 - 120*
2,4,6-Tribromophenol (Surr)	*74*		*51 - 120*
Nitrobenzene-d5 (Surr)	*59*		*51 - 120*
Phenol-d5 (Surr)	*51*		*47 - 120*
Terphenyl-d14 (Surr)	*74*		*56 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 280-115117-10 MS
Matrix: Water
Analysis Batch: 432991

Client Sample ID: IDW-WA-PFAS LD0501
Prep Type: TCLP
Prep Batch: 432344

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Methylphenol	10	U	250	187		ug/L		75	45 - 120
3 & 4 Methylphenol	2.5	U	500	386		ug/L		77	44 - 120
1,4-Dichlorobenzene	20	U	250	156		ug/L		62	36 - 120
2,4-Dinitrotoluene	22	U	100	69.3		ug/L		69	36 - 120
Hexachlorobenzene	10	U	100	65.8		ug/L		66	52 - 120
Hexachlorobutadiene	50	U	250	160		ug/L		64	35 - 120
Hexachloroethane	22	U	250	138		ug/L		55	35 - 120
Nitrobenzene	10	U	250	171		ug/L		68	50 - 120
Pentachlorophenol	200	U	500	276		ug/L		55	39 - 120
Pyridine	22	U J1	250	182		ug/L		73	10 - 121
2,4,5-Trichlorophenol	5.0	U	250	210		ug/L		84	46 - 120
2,4,6-Trichlorophenol	5.0	U	250	215		ug/L		86	43 - 120

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
2-Fluorobiphenyl	*76*		*49 - 120*
2-Fluorophenol (Surr)	*67*		*50 - 120*
2,4,6-Tribromophenol (Surr)	*86*		*51 - 120*
Nitrobenzene-d5 (Surr)	*68*		*51 - 120*
Phenol-d5 (Surr)	*67*		*47 - 120*
Terphenyl-d14 (Surr)	*68*		*56 - 120*

Lab Sample ID: 280-115117-10 MSD
Matrix: Water
Analysis Batch: 432991

Client Sample ID: IDW-WA-PFAS LD0501
Prep Type: TCLP
Prep Batch: 432344

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2-Methylphenol	10	U	250	152		ug/L		61	45 - 120	20	30
3 & 4 Methylphenol	2.5	U	500	320		ug/L		64	44 - 120	19	30
1,4-Dichlorobenzene	20	U	250	130		ug/L		52	36 - 120	18	30
2,4-Dinitrotoluene	22	U	100	57.1		ug/L		57	36 - 120	19	30
Hexachlorobenzene	10	U	100	52.2		ug/L		52	52 - 120	23	30
Hexachlorobutadiene	50	U	250	127		ug/L		51	35 - 120	23	30
Hexachloroethane	22	U	250	115		ug/L		46	35 - 120	18	30
Nitrobenzene	10	U	250	141		ug/L		56	50 - 120	19	30
Pentachlorophenol	200	U	500	218	J	ug/L		44	39 - 120	24	30
Pyridine	22	U J1	250	122	J1	ug/L		49	10 - 121	40	30
2,4,5-Trichlorophenol	5.0	U	250	175		ug/L		70	46 - 120	18	30
2,4,6-Trichlorophenol	5.0	U	250	172		ug/L		69	43 - 120	22	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
2-Fluorobiphenyl	*64*		*49 - 120*
2-Fluorophenol (Surr)	*55*		*50 - 120*
2,4,6-Tribromophenol (Surr)	*69*		*51 - 120*
Nitrobenzene-d5 (Surr)	*56*		*51 - 120*
Phenol-d5 (Surr)	*55*		*47 - 120*
Terphenyl-d14 (Surr)	*53*	*Q*	*56 - 120*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 280-432451/1-A
Matrix: Water
Analysis Batch: 435709

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 432451

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.40	U M	1.0	0.12	ug/L		10/08/18 12:55	10/31/18 14:28	1
PCB-1221	0.25	U M	1.0	0.21	ug/L		10/08/18 12:55	10/31/18 14:28	1
PCB-1232	0.60	U M	1.0	0.17	ug/L		10/08/18 12:55	10/31/18 14:28	1
PCB-1242	0.30	U M	1.0	0.10	ug/L		10/08/18 12:55	10/31/18 14:28	1
PCB-1248	0.30	U M	1.0	0.092	ug/L		10/08/18 12:55	10/31/18 14:28	1
PCB-1254	0.25	U M	1.0	0.11	ug/L		10/08/18 12:55	10/31/18 14:28	1
PCB-1260	0.40	U M	1.0	0.16	ug/L		10/08/18 12:55	10/31/18 14:28	1
PCB-1262	0.40	U M	1.0	0.085	ug/L		10/08/18 12:55	10/31/18 14:28	1
PCB-1268	1.0	U M	1.0	0.36	ug/L		10/08/18 12:55	10/31/18 14:28	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*56*		*25 - 120*	*10/08/18 12:55*	*10/31/18 14:28*	*1*
DCB Decachlorobiphenyl	*74*		*30 - 136*	*10/08/18 12:55*	*10/31/18 14:28*	*1*

Lab Sample ID: LCS 280-432451/4-A
Matrix: Water
Analysis Batch: 435709

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 432451

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1016	2.00	1.83		ug/L		92	46 - 129
PCB-1260	2.00	1.82		ug/L		91	45 - 134

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*83*		*25 - 120*
DCB Decachlorobiphenyl	*85*		*30 - 136*

Lab Sample ID: LCSD 280-432451/5-A
Matrix: Water
Analysis Batch: 435709

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 432451

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1016	2.00	1.87		ug/L		93	46 - 129	2	30
PCB-1260	2.00	1.79		ug/L		90	45 - 134	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*85*		*25 - 120*
DCB Decachlorobiphenyl	*85*		*30 - 136*

Method: EPA 537 (Mod) - PFAS for QSM 5.1, Table B-15

Lab Sample ID: MB 320-252432/1-A
Matrix: Water
Analysis Batch: 253688

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 252432

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	1.0	U	2.0	0.46	ng/L		10/15/18 14:57	10/20/18 23:11	1
Perfluoroheptanoic acid (PFHpA)	1.5	U	2.0	0.61	ng/L		10/15/18 14:57	10/20/18 23:11	1

Method: EPA 537 (Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: MB 320-252432/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 253688 — **Prep Batch: 252432**

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanesulfonic acid (PFHxS)	1.0	U M	2.0	0.38	ng/L		10/15/18 14:57	10/20/18 23:11	1
Perfluorononanoic acid (PFNA)	1.5	U	2.0	0.52	ng/L		10/15/18 14:57	10/20/18 23:11	1
Perfluorooctanesulfonic acid (PFOS)	3.0	U	4.0	1.1	ng/L		10/15/18 14:57	10/20/18 23:11	1
Perfluorooctanoic acid (PFOA)	1.5	U M	2.0	0.54	ng/L		10/15/18 14:57	10/20/18 23:11	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 PFBS	*81*		*50 - 150*	*10/15/18 14:57*	*10/20/18 23:11*	*1*
13C4 PFHpA	*83*		*50 - 150*	*10/15/18 14:57*	*10/20/18 23:11*	*1*
13C5 PFNA	*79*		*50 - 150*	*10/15/18 14:57*	*10/20/18 23:11*	*1*
13C4 PFOA	*82*		*50 - 150*	*10/15/18 14:57*	*10/20/18 23:11*	*1*
13C4 PFOS	*82*		*50 - 150*	*10/15/18 14:57*	*10/20/18 23:11*	*1*
18O2 PFHxS	*81*		*50 - 150*	*10/15/18 14:57*	*10/20/18 23:11*	*1*

Lab Sample ID: LCS 320-252432/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 253688 — **Prep Batch: 252432**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Perfluorobutanesulfonic acid (PFBS)			35.4	34.6		ng/L		98	87 - 120		
Perfluoroheptanoic acid (PFHpA)			40.0	38.4		ng/L		96	80 - 113		
Perfluorohexanesulfonic acid (PFHxS)			36.4	33.6		ng/L		92	81 - 106		
Perfluorononanoic acid (PFNA)			40.0	42.7		ng/L		107	83 - 113		
Perfluorooctanesulfonic acid (PFOS)			37.1	34.7	M	ng/L		93	82 - 112		
Perfluorooctanoic acid (PFOA)			40.0	41.3		ng/L		103	80 - 107		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C3 PFBS	*76*		*50 - 150*
13C4 PFHpA	*79*		*50 - 150*
13C5 PFNA	*75*		*50 - 150*
13C4 PFOA	*76*		*50 - 150*
13C4 PFOS	*81*		*50 - 150*
18O2 PFHxS	*77*		*50 - 150*

Lab Sample ID: LCSD 320-252432/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 253688 — **Prep Batch: 252432**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanesulfonic acid (PFBS)			35.4	33.1		ng/L		94	87 - 120	5	30
Perfluoroheptanoic acid (PFHpA)			40.0	39.3		ng/L		98	80 - 113	2	30
Perfluorohexanesulfonic acid (PFHxS)			36.4	33.6		ng/L		92	81 - 106	0	30
Perfluorononanoic acid (PFNA)			40.0	41.3		ng/L		103	83 - 113	3	30
Perfluorooctanesulfonic acid (PFOS)			37.1	33.8		ng/L		91	82 - 112	2	30
Perfluorooctanoic acid (PFOA)			40.0	39.3		ng/L		98	80 - 107	5	30

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C3 PFBS	82		50 - 150
13C4 PFHpA	79		50 - 150
13C5 PFNA	81		50 - 150
13C4 PFOA	82		50 - 150
13C4 PFOS	84		50 - 150
18O2 PFHxS	81		50 - 150

Method: 6010C - Metals (ICP)

Lab Sample ID: LB3 280-432266/1-E — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: TCLP**
Analysis Batch: 432894 — **Prep Batch: 432423**

Analyte	LB3 Result	LB3 Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	75	U	500	22	ug/L		10/09/18 17:30	10/10/18 12:51	1
Barium	10	U	1000	4.0	ug/L		10/09/18 17:30	10/10/18 12:51	1
Cadmium	9.0	U	100	2.0	ug/L		10/09/18 17:30	10/10/18 12:51	1
Chromium	13	U	500	3.0	ug/L		10/09/18 17:30	10/10/18 12:51	1
Lead	50	U	500	14	ug/L		10/09/18 17:30	10/10/18 12:51	1
Selenium	95	U	100	32	ug/L		10/09/18 17:30	10/10/18 12:51	1
Silver	18	U	500	4.0	ug/L		10/09/18 17:30	10/10/18 12:51	1

Lab Sample ID: LCS 280-432266/2-E — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: TCLP**
Analysis Batch: 432894 — **Prep Batch: 432423**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	5000	4900		ug/L		98	80 - 120
Barium	12000	11300		ug/L		94	80 - 120
Cadmium	2000	2010		ug/L		101	80 - 120
Chromium	6000	6110		ug/L		102	80 - 120
Lead	6000	6180		ug/L		103	80 - 120
Selenium	3000	2910		ug/L		97	80 - 120
Silver	1050	1080		ug/L		103	80 - 120

Lab Sample ID: LCSD 280-432266/5-C — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: TCLP**
Analysis Batch: 432894 — **Prep Batch: 432423**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	5000	4290		ug/L		86	80 - 120	13	20
Barium	12000	9800		ug/L		82	80 - 120	14	20
Cadmium	2000	1770		ug/L		88	80 - 120	13	20
Chromium	6000	5350		ug/L		89	80 - 120	13	20
Lead	6000	5440		ug/L		91	80 - 120	13	20
Selenium	3000	2580		ug/L		86	80 - 120	12	20
Silver	1050	943		ug/L		90	80 - 120	14	20

Lab Sample ID: 280-115117-10 MS — **Client Sample ID: IDW-WA-PFAS LD0501**
Matrix: Water — **Prep Type: TCLP**
Analysis Batch: 432894 — **Prep Batch: 432423**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	75	U J1	5000	4220		ug/L		84	80 - 120
Barium	8.7	J1	12000	9610		ug/L		80	80 - 120

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 280-115117-10 MS
Matrix: Water
Analysis Batch: 432894

Client Sample ID: IDW-WA-PFAS LD0501
Prep Type: TCLP
Prep Batch: 432423

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	9.0	U J1	2000	1740		ug/L		87	80 - 120
Chromium	3.1	J	6000	5150		ug/L		86	80 - 120
Lead	50	U	6000	5220		ug/L		87	80 - 120
Selenium	95	U J1	3000	2560		ug/L		85	80 - 120
Silver	18	U J1	1050	888		ug/L		85	80 - 120

Lab Sample ID: 280-115117-10 MSD
Matrix: Water
Analysis Batch: 432894

Client Sample ID: IDW-WA-PFAS LD0501
Prep Type: TCLP
Prep Batch: 432423

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	75	U J1	5000	4340		ug/L		87	80 - 120	3	20
Barium	8.7	J1	12000	9520	J1	ug/L		79	80 - 120	1	20
Cadmium	9.0	U J1	2000	1780		ug/L		89	80 - 120	2	20
Chromium	3.1	J	6000	5270		ug/L		88	80 - 120	2	20
Lead	50	U	6000	5330		ug/L		89	80 - 120	2	20
Selenium	95	U J1	3000	2620		ug/L		87	80 - 120	2	20
Silver	18	U J1	1050	888		ug/L		85	80 - 120	0	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: LB3 280-432266/1-D
Matrix: Water
Analysis Batch: 432520

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 432386

Analyte	LB3 Result	LB3 Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.080	U	2.0	0.030	ug/L		10/08/18 11:12	10/08/18 18:05	1

Lab Sample ID: LCS 280-432266/2-D
Matrix: Water
Analysis Batch: 432520

Client Sample ID: Lab Control Sample
Prep Type: TCLP
Prep Batch: 432386

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	5.00	4.82		ug/L		96	90 - 116

Lab Sample ID: LCSD 280-432266/5-B
Matrix: Water
Analysis Batch: 432520

Client Sample ID: Lab Control Sample Dup
Prep Type: TCLP
Prep Batch: 432386

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	5.00	4.91		ug/L		98	90 - 116	2	10

Lab Sample ID: 280-115117-10 MS
Matrix: Water
Analysis Batch: 432520

Client Sample ID: IDW-WA-PFAS LD0501
Prep Type: TCLP
Prep Batch: 432386

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.080	U	5.00	4.98		ug/L		100	90 - 116

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: 280-115117-10 MSD
Matrix: Water
Analysis Batch: 432520

Client Sample ID: IDW-WA-PFAS LD0501
Prep Type: TCLP
Prep Batch: 432386

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.080	U	5.00	5.04		ug/L		101	90 - 116	1	10

Method: 1020A - Ignitability, Setaflash Closed-Cup Method

Lab Sample ID: LCS 580-286031/1
Matrix: Water
Analysis Batch: 286031

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Flashpoint	81.0	81.00		Degrees F		100	98 - 102

Lab Sample ID: LCSD 580-286031/2
Matrix: Water
Analysis Batch: 286031

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Flashpoint	81.0	81.00		Degrees F		100	98 - 102	0	20

Lab Sample ID: 280-115117-10 DU
Matrix: Water
Analysis Batch: 286031

Client Sample ID: IDW-WA-PFAS LD0501
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Flashpoint	> 211		> 211		Degrees F		NC	20

Method: 9012A - Cyanide, Total and/or Amenable

Lab Sample ID: MB 280-432699/4-A
Matrix: Water
Analysis Batch: 432868

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 432699

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	5.0	U	10	2.0	ug/L		10/10/18 07:23	10/10/18 11:15	1

Lab Sample ID: HLCS 280-432699/1-A
Matrix: Water
Analysis Batch: 432868

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 432699

Analyte	Spike Added	HLCS Result	HLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	350	349		ug/L		100	90 - 110

Lab Sample ID: LCS 280-432699/3-A
Matrix: Water
Analysis Batch: 432868

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 432699

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	100	101		ug/L		101	83 - 116

Method: 9012A - Cyanide, Total and/or Amenable (Continued)

Lab Sample ID: LLCS 280-432699/2-A
Matrix: Water
Analysis Batch: 432868

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 432699

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	100	95.9		ug/L		96	44 - 167

Method: 9034 - Sulfide, Acid Soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 280-432233/1-A
Matrix: Water
Analysis Batch: 432240

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 432233

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	1900	U	4000	790	ug/L		10/05/18 13:04	10/05/18 14:53	1

Lab Sample ID: LCS 280-432233/2-A
Matrix: Water
Analysis Batch: 432240

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 432233

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	21700	16000		ug/L		74	50 - 106

Lab Sample ID: 280-115117-10 MS
Matrix: Water
Analysis Batch: 432240

Client Sample ID: IDW-WA-PFAS LD0501
Prep Type: Total/NA
Prep Batch: 432233

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	1900	U	21700	13600		ug/L		63	50 - 106

Lab Sample ID: 280-115117-10 MSD
Matrix: Water
Analysis Batch: 432240

Client Sample ID: IDW-WA-PFAS LD0501
Prep Type: Total/NA
Prep Batch: 432233

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfide	1900	U	21700	12000		ug/L		55	50 - 106	13	20

Method: 9040C - pH

Lab Sample ID: LCS 280-432587/29
Matrix: Water
Analysis Batch: 432587

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH adj. to 25 deg C	7.00	7.0		SU		100	99 - 101

GC/MS VOA

Leach Batch: 432747

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-115117-10	IDW-WA-PFAS LD0501	TCLP	Water	1311	
LB 280-432747/1-A	Method Blank	TCLP	Water	1311	
LCS 280-432747/2-A	Lab Control Sample	TCLP	Water	1311	

Analysis Batch: 432901

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-115117-10	IDW-WA-PFAS LD0501	TCLP	Water	8260B	432747
LB 280-432747/1-A	Method Blank	TCLP	Water	8260B	432747
LCS 280-432747/2-A	Lab Control Sample	TCLP	Water	8260B	432747

GC/MS Semi VOA

Leach Batch: 432266

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-115117-10	IDW-WA-PFAS LD0501	TCLP	Water	1311	
LB3 280-432266/1-B	Method Blank	TCLP	Water	1311	
LCS 280-432266/2-B	Lab Control Sample	TCLP	Water	1311	
280-115117-10 MS	IDW-WA-PFAS LD0501	TCLP	Water	1311	
280-115117-10 MSD	IDW-WA-PFAS LD0501	TCLP	Water	1311	

Prep Batch: 432344

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-115117-10	IDW-WA-PFAS LD0501	TCLP	Water	3510C	432266
LB3 280-432266/1-B	Method Blank	TCLP	Water	3510C	432266
LCS 280-432266/2-B	Lab Control Sample	TCLP	Water	3510C	432266
280-115117-10 MS	IDW-WA-PFAS LD0501	TCLP	Water	3510C	432266
280-115117-10 MSD	IDW-WA-PFAS LD0501	TCLP	Water	3510C	432266

Analysis Batch: 432991

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-115117-10	IDW-WA-PFAS LD0501	TCLP	Water	8270D	432344
LB3 280-432266/1-B	Method Blank	TCLP	Water	8270D	432344
LCS 280-432266/2-B	Lab Control Sample	TCLP	Water	8270D	432344
280-115117-10 MS	IDW-WA-PFAS LD0501	TCLP	Water	8270D	432344
280-115117-10 MSD	IDW-WA-PFAS LD0501	TCLP	Water	8270D	432344

GC Semi VOA

Prep Batch: 432451

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-115117-10	IDW-WA-PFAS LD0501	Total/NA	Water	3510C	
MB 280-432451/1-A	Method Blank	Total/NA	Water	3510C	
LCS 280-432451/4-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 280-432451/5-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 435709

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-115117-10	IDW-WA-PFAS LD0501	Total/NA	Water	8082A	432451
MB 280-432451/1-A	Method Blank	Total/NA	Water	8082A	432451
LCS 280-432451/4-A	Lab Control Sample	Total/NA	Water	8082A	432451

GC Semi VOA (Continued)

Analysis Batch: 435709 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 280-432451/5-A	Lab Control Sample Dup	Total/NA	Water	8082A	432451

LCMS

Prep Batch: 252432

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-115117-1	MW-67PFAS01 LD0501	Total/NA	Water	3535	
280-115117-2	MW-67PFAS01 LD0501N	Total/NA	Water	3535	
280-115117-3	MW-67PFAS01 LD0501ND	Total/NA	Water	3535	
280-115117-4	MW-67PFAS-02 LD05EB01	Total/NA	Water	3535	
280-115117-5	MW-67PFAS-02 LD05FB02	Total/NA	Water	3535	
280-115117-6	MW-67PFAS-02 LD0501	Total/NA	Water	3535	
280-115117-7	MW-67PFAS-02 LD0501D	Total/NA	Water	3535	
280-115117-8	MW-67PFAS-03 LD0501	Total/NA	Water	3535	
280-115117-8 - DL	MW-67PFAS-03 LD0501	Total/NA	Water	3535	
280-115117-9 - DL	MW-84PFAS-03 LD0501	Total/NA	Water	3535	
280-115117-9	MW-84PFAS-03 LD0501	Total/NA	Water	3535	
280-115117-11	MW-84PFAS-01 LD05RB01	Total/NA	Water	3535	
280-115117-12	MW-84PFAS-01 LD0501	Total/NA	Water	3535	
280-115117-13	MW-84PFAS-02 LD0501	Total/NA	Water	3535	
280-115117-13 - DL	MW-84PFAS-02 LD0501	Total/NA	Water	3535	
MB 320-252432/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-252432/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-252432/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 253688

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-115117-1	MW-67PFAS01 LD0501	Total/NA	Water	EPA 537 (Mod)	252432
280-115117-2	MW-67PFAS01 LD0501N	Total/NA	Water	EPA 537 (Mod)	252432
280-115117-3	MW-67PFAS01 LD0501ND	Total/NA	Water	EPA 537 (Mod)	252432
280-115117-4	MW-67PFAS-02 LD05EB01	Total/NA	Water	EPA 537 (Mod)	252432
280-115117-5	MW-67PFAS-02 LD05FB02	Total/NA	Water	EPA 537 (Mod)	252432
280-115117-6	MW-67PFAS-02 LD0501	Total/NA	Water	EPA 537 (Mod)	252432
280-115117-7	MW-67PFAS-02 LD0501D	Total/NA	Water	EPA 537 (Mod)	252432
280-115117-8	MW-67PFAS-03 LD0501	Total/NA	Water	EPA 537 (Mod)	252432
280-115117-9	MW-84PFAS-03 LD0501	Total/NA	Water	EPA 537 (Mod)	252432
280-115117-11	MW-84PFAS-01 LD05RB01	Total/NA	Water	EPA 537 (Mod)	252432
280-115117-12	MW-84PFAS-01 LD0501	Total/NA	Water	EPA 537 (Mod)	252432
280-115117-13	MW-84PFAS-02 LD0501	Total/NA	Water	EPA 537 (Mod)	252432
MB 320-252432/1-A	Method Blank	Total/NA	Water	EPA 537 (Mod)	252432
LCS 320-252432/2-A	Lab Control Sample	Total/NA	Water	EPA 537 (Mod)	252432
LCSD 320-252432/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 537 (Mod)	252432

Analysis Batch: 255173

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-115117-8 - DL	MW-67PFAS-03 LD0501	Total/NA	Water	EPA 537 (Mod)	252432
280-115117-9 - DL	MW-84PFAS-03 LD0501	Total/NA	Water	EPA 537 (Mod)	252432
280-115117-13 - DL	MW-84PFAS-02 LD0501	Total/NA	Water	EPA 537 (Mod)	252432

Metals

Leach Batch: 432266

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-115117-10	IDW-WA-PFAS LD0501	TCLP	Water	1311	
LB3 280-432266/1-D	Method Blank	TCLP	Water	1311	
LB3 280-432266/1-E	Method Blank	TCLP	Water	1311	
LCS 280-432266/2-D	Lab Control Sample	TCLP	Water	1311	
LCS 280-432266/2-E	Lab Control Sample	TCLP	Water	1311	
LCSD 280-432266/5-B	Lab Control Sample Dup	TCLP	Water	1311	
LCSD 280-432266/5-C	Lab Control Sample Dup	TCLP	Water	1311	
280-115117-10 MS	IDW-WA-PFAS LD0501	TCLP	Water	1311	
280-115117-10 MSD	IDW-WA-PFAS LD0501	TCLP	Water	1311	

Prep Batch: 432386

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-115117-10	IDW-WA-PFAS LD0501	TCLP	Water	7470A	432266
LB3 280-432266/1-D	Method Blank	TCLP	Water	7470A	432266
LCS 280-432266/2-D	Lab Control Sample	TCLP	Water	7470A	432266
LCSD 280-432266/5-B	Lab Control Sample Dup	TCLP	Water	7470A	432266
280-115117-10 MS	IDW-WA-PFAS LD0501	TCLP	Water	7470A	432266
280-115117-10 MSD	IDW-WA-PFAS LD0501	TCLP	Water	7470A	432266

Prep Batch: 432423

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-115117-10	IDW-WA-PFAS LD0501	TCLP	Water	3010A	432266
LB3 280-432266/1-E	Method Blank	TCLP	Water	3010A	432266
LCS 280-432266/2-E	Lab Control Sample	TCLP	Water	3010A	432266
LCSD 280-432266/5-C	Lab Control Sample Dup	TCLP	Water	3010A	432266
280-115117-10 MS	IDW-WA-PFAS LD0501	TCLP	Water	3010A	432266
280-115117-10 MSD	IDW-WA-PFAS LD0501	TCLP	Water	3010A	432266

Analysis Batch: 432520

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-115117-10	IDW-WA-PFAS LD0501	TCLP	Water	7470A	432386
LB3 280-432266/1-D	Method Blank	TCLP	Water	7470A	432386
LCS 280-432266/2-D	Lab Control Sample	TCLP	Water	7470A	432386
LCSD 280-432266/5-B	Lab Control Sample Dup	TCLP	Water	7470A	432386
280-115117-10 MS	IDW-WA-PFAS LD0501	TCLP	Water	7470A	432386
280-115117-10 MSD	IDW-WA-PFAS LD0501	TCLP	Water	7470A	432386

Analysis Batch: 432894

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-115117-10	IDW-WA-PFAS LD0501	TCLP	Water	6010C	432423
LB3 280-432266/1-E	Method Blank	TCLP	Water	6010C	432423
LCS 280-432266/2-E	Lab Control Sample	TCLP	Water	6010C	432423
LCSD 280-432266/5-C	Lab Control Sample Dup	TCLP	Water	6010C	432423
280-115117-10 MS	IDW-WA-PFAS LD0501	TCLP	Water	6010C	432423
280-115117-10 MSD	IDW-WA-PFAS LD0501	TCLP	Water	6010C	432423

General Chemistry

Analysis Batch: 286031

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-115117-10	IDW-WA-PFAS LD0501	Total/NA	Water	1020A	
LCS 580-286031/1	Lab Control Sample	Total/NA	Water	1020A	
LCSD 580-286031/2	Lab Control Sample Dup	Total/NA	Water	1020A	
280-115117-10 DU	IDW-WA-PFAS LD0501	Total/NA	Water	1020A	

Prep Batch: 432233

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-115117-10	IDW-WA-PFAS LD0501	Total/NA	Water	9030B	
MB 280-432233/1-A	Method Blank	Total/NA	Water	9030B	
LCS 280-432233/2-A	Lab Control Sample	Total/NA	Water	9030B	
280-115117-10 MS	IDW-WA-PFAS LD0501	Total/NA	Water	9030B	
280-115117-10 MSD	IDW-WA-PFAS LD0501	Total/NA	Water	9030B	

Analysis Batch: 432240

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-115117-10	IDW-WA-PFAS LD0501	Total/NA	Water	9034	432233
MB 280-432233/1-A	Method Blank	Total/NA	Water	9034	432233
LCS 280-432233/2-A	Lab Control Sample	Total/NA	Water	9034	432233
280-115117-10 MS	IDW-WA-PFAS LD0501	Total/NA	Water	9034	432233
280-115117-10 MSD	IDW-WA-PFAS LD0501	Total/NA	Water	9034	432233

Analysis Batch: 432587

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-115117-10	IDW-WA-PFAS LD0501	Total/NA	Water	9040C	
LCS 280-432587/29	Lab Control Sample	Total/NA	Water	9040C	

Prep Batch: 432699

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-115117-10	IDW-WA-PFAS LD0501	Total/NA	Water	9012A	
MB 280-432699/4-A	Method Blank	Total/NA	Water	9012A	
HLCS 280-432699/1-A	Lab Control Sample	Total/NA	Water	9012A	
LCS 280-432699/3-A	Lab Control Sample	Total/NA	Water	9012A	
LLCS 280-432699/2-A	Lab Control Sample	Total/NA	Water	9012A	

Analysis Batch: 432868

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-115117-10	IDW-WA-PFAS LD0501	Total/NA	Water	9012A	432699
MB 280-432699/4-A	Method Blank	Total/NA	Water	9012A	432699
HLCS 280-432699/1-A	Lab Control Sample	Total/NA	Water	9012A	432699
LCS 280-432699/3-A	Lab Control Sample	Total/NA	Water	9012A	432699
LLCS 280-432699/2-A	Lab Control Sample	Total/NA	Water	9012A	432699

Client Sample ID: MW-67PFAS01 LD0501 — Lab Sample ID: 280-115117-1

Date Collected: 10/02/18 09:20 **Matrix: Water**
Date Received: 10/04/18 08:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			268.6 mL	10.00 mL	252432	10/15/18 14:57	(b)	TAL SAC
Total/NA	Analysis	EPA 537 (Mod)		1			253688	10/20/18 23:33	(b)	TAL SAC

Client Sample ID: MW-67PFAS01 LD0501N — Lab Sample ID: 280-115117-2

Date Collected: 10/02/18 09:20 **Matrix: Water**
Date Received: 10/04/18 08:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			265.2 mL	10.00 mL	252432	10/15/18 14:57	(b)	TAL SAC
Total/NA	Analysis	EPA 537 (Mod)		1			253688	10/20/18 23:41	(b)	TAL SAC

Client Sample ID: MW-67PFAS01 LD0501ND — Lab Sample ID: 280-115117-3

Date Collected: 10/02/18 09:20 **Matrix: Water**
Date Received: 10/04/18 08:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			269.3 mL	10.00 mL	252432	10/15/18 14:57	(b)	TAL SAC
Total/NA	Analysis	EPA 537 (Mod)		1			253688	10/20/18 23:48	(b)	TAL SAC

Client Sample ID: MW-67PFAS-02 LD05EB01 — Lab Sample ID: 280-115117-4

Date Collected: 10/02/18 10:00 **Matrix: Water**
Date Received: 10/04/18 08:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			257 mL	10.00 mL	252432	10/15/18 14:57	(b)	TAL SAC
Total/NA	Analysis	EPA 537 (Mod)		1			253688	10/20/18 23:56	(b)	TAL SAC

Client Sample ID: MW-67PFAS-02 LD05FB02 — Lab Sample ID: 280-115117-5

Date Collected: 10/02/18 10:05 **Matrix: Water**
Date Received: 10/04/18 08:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			294.7 mL	10.00 mL	252432	10/15/18 14:57	(b)	TAL SAC
Total/NA	Analysis	EPA 537 (Mod)		1			253688	10/21/18 00:03	(b)	TAL SAC

Client Sample ID: MW-67PFAS-02 LD0501 — Lab Sample ID: 280-115117-6

Date Collected: 10/02/18 11:46 **Matrix: Water**
Date Received: 10/04/18 08:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			274.2 mL	10.00 mL	252432	10/15/18 14:57	(b)	TAL SAC
Total/NA	Analysis	EPA 537 (Mod)		1			253688	10/21/18 00:11	(b)	TAL SAC

Lab Chronicle

Client: Leidos, Inc.
Project/Site: RFP001227 - Savanna Army Depot - FUP

TestAmerica Job ID: 280-115117-1

Client Sample ID: MW-67PFAS-02 LD0501D

Lab Sample ID: 280-115117-7
Date Collected: 10/02/18 11:46
Matrix: Water
Date Received: 10/04/18 08:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			266.5 mL	10.00 mL	252432	10/15/18 14:57	(b)	TAL SAC
Total/NA	Analysis	EPA 537 (Mod)		1			253688	10/21/18 00:18	(b)	TAL SAC

Client Sample ID: MW-67PFAS-03 LD0501

Lab Sample ID: 280-115117-8
Date Collected: 10/02/18 14:10
Matrix: Water
Date Received: 10/04/18 08:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			281.9 mL	10.00 mL	252432	10/15/18 14:57	(b)	TAL SAC
Total/NA	Analysis	EPA 537 (Mod)		1			253688	10/21/18 00:33	(b)	TAL SAC
Total/NA	Prep	3535	DL		281.9 mL	10.00 mL	252432	10/15/18 14:57	(b)	TAL SAC
Total/NA	Analysis	EPA 537 (Mod)	DL	5			255173	10/26/18 14:53	(b)	TAL SAC

Client Sample ID: MW-84PFAS-03 LD0501

Lab Sample ID: 280-115117-9
Date Collected: 10/02/18 16:17
Matrix: Water
Date Received: 10/04/18 08:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			268.2 mL	10.00 mL	252432	10/15/18 14:57	(b)	TAL SAC
Total/NA	Analysis	EPA 537 (Mod)		1			253688	10/21/18 00:40	(b)	TAL SAC
Total/NA	Prep	3535	DL		268.2 mL	10.00 mL	252432	10/15/18 14:57	(b)	TAL SAC
Total/NA	Analysis	EPA 537 (Mod)	DL	10			255173	10/26/18 15:00	(b)	TAL SAC

Client Sample ID: IDW-WA-PFAS LD0501

Lab Sample ID: 280-115117-10
Date Collected: 10/02/18 17:25
Matrix: Water
Date Received: 10/04/18 08:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			1.0 g	1.0 mL	432747	10/10/18 10:05	(b) (6)	TAL DEN
TCLP	Analysis	8260B		1	2 mL	20 mL	432901	10/11/18 11:46		TAL DEN
TCLP	Leach	1311			1.0 g	1.0 mL	432266	10/05/18 16:26		TAL DEN
TCLP	Prep	3510C			200 mL	1 mL	432344	10/07/18 13:47		TAL DEN
TCLP	Analysis	8270D		1			432991	10/11/18 23:15		TAL DEN
Total/NA	Prep	3510C			1052 mL	10 mL	432451	10/08/18 12:55		TAL DEN
Total/NA	Analysis	8082A		1			435709	10/31/18 19:03		TAL DEN
TCLP	Leach	1311			1.0 g	1.0 mL	432266	10/05/18 16:26		TAL DEN
TCLP	Prep	3010A			10 mL	50 mL	432423	10/09/18 17:30		TAL DEN
TCLP	Analysis	6010C		1			432894	10/10/18 12:58		TAL DEN
TCLP	Leach	1311			1.0 g	1.0 mL	432266	10/05/18 16:26		TAL DEN
TCLP	Prep	7470A			30 mL	50 mL	432386	10/08/18 11:12		TAL DEN
TCLP	Analysis	7470A		1			432520	10/08/18 18:11		TAL DEN
Total/NA	Analysis	1020A		1			286031	10/09/18 15:48		TAL SEA
Total/NA	Prep	9012A			25 mL	50 mL	432699	10/10/18 07:23		TAL DEN

T rica Denver

Lab Chronicle

Client: Leidos, Inc.
Project/Site: RFP001227 - Savanna Army Depot - FUP

TestAmerica Job ID: 280-115117-1

Client Sample ID: IDW-WA-PFAS LD0501
Lab Sample ID: 280-115117-10
Date Collected: 10/02/18 17:25
Matrix: Water
Date Received: 10/04/18 08:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9012A		1	50 mL	50 mL	432868	10/10/18 11:24	(b)	TAL DEN
Total/NA	Prep	9030B			50 mL	50 mL	432233	10/05/18 13:04	(b)	TAL DEN
Total/NA	Analysis	9034		1			432240	10/05/18 14:53	(b)	TAL DEN
Total/NA	Analysis	9040C		1			432587	10/08/18 16:20	(b)	TAL DEN

Client Sample ID: MW-84PFAS-01 LD05RB01
Lab Sample ID: 280-115117-11
Date Collected: 10/03/18 08:15
Matrix: Water
Date Received: 10/04/18 08:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			300 mL	10.00 mL	252432	10/15/18 14:57	(b)	TAL SAC
Total/NA	Analysis	EPA 537 (Mod)		1			253688	10/21/18 00:48	(b)	TAL SAC

Client Sample ID: MW-84PFAS-01 LD0501
Lab Sample ID: 280-115117-12
Date Collected: 10/03/18 08:57
Matrix: Water
Date Received: 10/04/18 08:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			278.3 mL	10.00 mL	252432	10/15/18 14:57	(b)	TAL SAC
Total/NA	Analysis	EPA 537 (Mod)		1			253688	10/21/18 00:55	(b)	TAL SAC

Client Sample ID: MW-84PFAS-02 LD0501
Lab Sample ID: 280-115117-13
Date Collected: 10/03/18 11:16
Matrix: Water
Date Received: 10/04/18 08:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			273.4 mL	10.00 mL	252432	10/15/18 14:57	(b)	TAL SAC
Total/NA	Analysis	EPA 537 (Mod)		1			253688	10/21/18 01:03	(b)	TAL SAC
Total/NA	Prep	3535	DL		273.4 mL	10.00 mL	252432	10/15/18 14:57	(b)	TAL SAC
Total/NA	Analysis	EPA 537 (Mod)	DL	5			255173	10/26/18 15:15	(b)	TAL SAC

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Leidos, Inc. TestAmerica Job ID: 280-115117-1
Project/Site: RFP001227 - Savanna Army Depot - FUP

Laboratory: TestAmerica Denver

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
A2LA	DoD ELAP		2907.01	10-31-19

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
9040C		Water	Temperature

Illinois	NELAP	5	200017	04-30-19

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
6010C	3010A	Water	Barium
6010C	3010A	Water	Cadmium
6010C	3010A	Water	Chromium
6010C	3010A	Water	Selenium
8260B		Water	1,1-Dichloroethene
8260B		Water	1,2-Dichloroethane
8260B		Water	2-Butanone (MEK)
8260B		Water	Benzene
8260B		Water	Carbon tetrachloride
8260B		Water	Chlorobenzene
8260B		Water	Chloroform
8260B		Water	Tetrachloroethene
8260B		Water	Trichloroethene
8260B		Water	Vinyl chloride
8270D	3510C	Water	1,4-Dichlorobenzene
8270D	3510C	Water	2,4,5-Trichlorophenol
8270D	3510C	Water	2,4,6-Trichlorophenol
8270D	3510C	Water	2,4-Dinitrotoluene
8270D	3510C	Water	2-Methylphenol
8270D	3510C	Water	3 & 4 Methylphenol
8270D	3510C	Water	Hexachlorobenzene
8270D	3510C	Water	Hexachlorobutadiene
8270D	3510C	Water	Hexachloroethane
8270D	3510C	Water	Nitrobenzene
8270D	3510C	Water	Pentachlorophenol
8270D	3510C	Water	Pyridine
9012A	9012A	Water	Cyanide, Total
9040C		Water	Temperature

Washington	State Program	10	C583	08-03-19

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
6010C	3010A	Water	Arsenic
6010C	3010A	Water	Barium
6010C	3010A	Water	Cadmium
6010C	3010A	Water	Chromium
6010C	3010A	Water	Lead
6010C	3010A	Water	Selenium
6010C	3010A	Water	Silver
7470A	7470A	Water	Mercury
8082A	3510C	Water	PCB-1016
8082A	3510C	Water	PCB-1221

Laboratory: TestAmerica Denver (Continued)

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C583	08-03-19

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
8082A	3510C	Water	PCB-1232
8082A	3510C	Water	PCB-1242
8082A	3510C	Water	PCB-1248
8082A	3510C	Water	PCB-1254
8082A	3510C	Water	PCB-1260
8082A	3510C	Water	PCB-1262
8082A	3510C	Water	PCB-1268
8260B		Water	1,1-Dichloroethene
8260B		Water	1,2-Dichloroethane
8260B		Water	2-Butanone (MEK)
8260B		Water	Benzene
8260B		Water	Carbon tetrachloride
8260B		Water	Chlorobenzene
8260B		Water	Chloroform
8260B		Water	Tetrachloroethene
8260B		Water	Trichloroethene
8260B		Water	Vinyl chloride
8270D	3510C	Water	1,4-Dichlorobenzene
8270D	3510C	Water	2,4,5-Trichlorophenol
8270D	3510C	Water	2,4,6-Trichlorophenol
8270D	3510C	Water	2,4-Dinitrotoluene
8270D	3510C	Water	2-Methylphenol
8270D	3510C	Water	3 & 4 Methylphenol
8270D	3510C	Water	Hexachlorobenzene
8270D	3510C	Water	Hexachlorobutadiene
8270D	3510C	Water	Hexachloroethane
8270D	3510C	Water	Nitrobenzene
8270D	3510C	Water	Pentachlorophenol
8270D	3510C	Water	Pyridine
9012A	9012A	Water	Cyanide, Total
9040C		Water	pH adj. to 25 deg C
9040C		Water	Temperature

Laboratory: TestAmerica Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	17-020	01-20-21
ANAB	DoD ELAP		L2468	01-20-21
Arizona	State Program	9	AZ0708	08-11-19
Arkansas DEQ	State Program	6	88-0691	06-17-19
California	State Program	9	2897	01-31-19
Colorado	State Program	8	CA00044	08-31-19
Connecticut	State Program	1	PH-0691	06-30-19
Florida	NELAP	4	E87570	06-30-19
Georgia	State Program	4	N/A	01-28-19
Hawaii	State Program	9	N/A	01-29-19

Accreditation/Certification Summary

Client: Leidos, Inc. TestAmerica Job ID: 280-115117-1
Project/Site: RFP001227 - Savanna Army Depot - FUP

Laboratory: TestAmerica Sacramento (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Illinois	NELAP	5	200060	03-17-19
Kansas	NELAP	7	E-10375	10-31-18 *
Louisiana	NELAP	6	30612	06-30-19
Maine	State Program	1	CA0004	04-14-20
Michigan	State Program	5	9947	01-31-20
Nevada	State Program	9	CA00044	07-31-19
New Hampshire	NELAP	1	2997	04-18-19
New Jersey	NELAP	2	CA005	06-30-19
New York	NELAP	2	11666	03-31-19
Oregon	NELAP	10	4040	01-29-19
Pennsylvania	NELAP	3	68-01272	03-31-19
Texas	NELAP	6	T104704399	05-31-19
US Fish & Wildlife	Federal		LE148388-0	07-31-19
USDA	Federal		P330-18-00239	01-17-21
USEPA UCMR	Federal	1	CA00044	12-31-20
Utah	NELAP	8	CA00044	02-28-19
Vermont	State Program	1	VT-4040	04-30-19
Virginia	NELAP	3	460278	03-14-19
Washington	State Program	10	C581	05-05-19
West Virginia (DW)	State Program	3	9930C	12-31-18
Wyoming	State Program	8	8TMS-L	01-28-19

Laboratory: TestAmerica Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
ANAB	DoD ELAP		L2236	01-19-19

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Leidos, Inc. TestAmerica Job ID: 280-115117-1
Project/Site: RFP001227 - Savanna Army Depot - FUP

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL DEN
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL DEN
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL DEN
EPA 537 (Mod)	PFAS for QSM 5.1, Table B-15	DOD 5.1	TAL SAC
6010C	Metals (ICP)	SW846	TAL DEN
7470A	Mercury (CVAA)	SW846	TAL DEN
1020A	Ignitability, Setaflash Closed-Cup Method	SW846	TAL SEA
9012A	Cyanide, Total and/or Amenable	SW846	TAL DEN
9034	Sulfide, Acid Soluble and Insoluble (Titrimetric)	SW846	TAL DEN
9040C	pH	SW846	TAL DEN
1311	TCLP Extraction	SW846	TAL DEN
3010A	Preparation, Total Metals	SW846	TAL DEN
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL DEN
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC
5030B	Purge and Trap	SW846	TAL DEN
7470A	Preparation, Mercury	SW846	TAL DEN
9012A	Cyanide, Total and/or Amenable, Distillation	SW846	TAL DEN
9030B	Sulfide, Distillation (Acid Soluble and Insoluble)	SW846	TAL DEN

Protocol References:

DOD 5.1 = Department of Defense Quality Systems Manual V5.1

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Sample Summary

Client: Leidos, Inc. TestAmerica Job ID: 280-115117-1
Project/Site: RFP001227 - Savanna Army Depot - FUP

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-115117-1	MW-67PFAS01 LD0501	Water	10/02/18 09:20	10/04/18 08:55
280-115117-2	MW-67PFAS01 LD0501N	Water	10/02/18 09:20	10/04/18 08:55
280-115117-3	MW-67PFAS01 LD0501ND	Water	10/02/18 09:20	10/04/18 08:55
280-115117-4	MW-67PFAS-02 LD05EB01	Water	10/02/18 10:00	10/04/18 08:55
280-115117-5	MW-67PFAS-02 LD05FB02	Water	10/02/18 10:05	10/04/18 08:55
280-115117-6	MW-67PFAS-02 LD0501	Water	10/02/18 11:46	10/04/18 08:55
280-115117-7	MW-67PFAS-02 LD0501D	Water	10/02/18 11:46	10/04/18 08:55
280-115117-8	MW-67PFAS-03 LD0501	Water	10/02/18 14:10	10/04/18 08:55
280-115117-9	MW-84PFAS-03 LD0501	Water	10/02/18 16:17	10/04/18 08:55
280-115117-10	IDW-WA-PFAS LD0501	Water	10/02/18 17:25	10/04/18 08:55
280-115117-11	MW-84PFAS-01 LD05RB01	Water	10/03/18 08:15	10/04/18 08:55
280-115117-12	MW-84PFAS-01 LD0501	Water	10/03/18 08:57	10/04/18 08:55
280-115117-13	MW-84PFAS-02 LD0501	Water	10/03/18 11:16	10/04/18 08:55

GC/MS VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-115117-1

SDG No.:

Instrument ID: VMS_Z Analysis Batch Number: 432398

Lab Sample ID: IC 280-432398/32 Client Sample ID:

Date Analyzed: 10/08/18 08:13 Lab File ID: Z2136.D GC Column: DB-624 (75.53 ID: 0.53(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,4-Trichlorobenzene		Invalid Compound ID	(b) (6)	10/09/18 07:30
2-Butanone (MEK)		Invalid Compound ID	(b) (6)	10/08/18 11:16
2-Chloroethyl vinyl ether		Invalid Compound ID	(b) (6)	10/08/18 11:16
2-Hexanone		Invalid Compound ID	(b) (6)	10/08/18 11:16
2-Pentanone		Invalid Compound ID	(b) (6)	10/08/18 11:16
4-Methyl-2-pentanone (MIBK)		Invalid Compound ID	(b) (6)	10/08/18 11:16
Acrolein		Invalid Compound ID	(b) (6)	10/08/18 11:15
Carbon disulfide		Invalid Compound ID	(b) (6)	10/09/18 07:30
Cyclohexanone		Invalid Compound ID	(b) (6)	10/09/18 07:30
Ethyl ether		Invalid Compound ID	(b) (6)	10/08/18 11:15
Hexane		Invalid Compound ID	(b) (6)	10/09/18 07:30
Isobutyl alcohol		Invalid Compound ID	(b) (6)	10/08/18 11:16
Methyl acetate		Invalid Compound ID	(b) (6)	10/08/18 11:16
Methylcyclohexane		Invalid Compound ID	(b) (6)	10/09/18 07:31
Methylene Chloride		Invalid Compound ID	(b) (6)	10/08/18 11:16
n-Butylbenzene		Invalid Compound ID	(b) (6)	10/09/18 07:30
sec-Butyl Alcohol		Invalid Compound ID	(b) (6)	10/08/18 11:16

8260B

GC/MS VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-115117-1

SDG No.:

Instrument ID: VMS_Z Analysis Batch Number: 432398

Lab Sample ID: IC 280-432398/32 Client Sample ID:

Date Analyzed: 10/08/18 08:13 Lab File ID: Z2136.D GC Column: DB-624 (75.53 ID: 0.53(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
t-Butyl alcohol		Invalid Compound ID	(b) (6)	10/08/18 11:16
trans-1,4-Dichloro-2-butene		Invalid Compound ID	(b) (6)	10/09/18 07:30

Lab Sample ID: ICV 280-432398/39 Client Sample ID:

Date Analyzed: 10/08/18 11:15 Lab File ID: Z2144.D GC Column: DB-624 (75.53 ID: 0.53(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,2-Dichloropropane		Invalid Compound ID	(b) (6)	10/10/18 07:02

Lab Sample ID: ICV 280-432398/46 Client Sample ID:

Date Analyzed: 10/08/18 13:53 Lab File ID: Z2151.D GC Column: DB-624 (75.53 ID: 0.53(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Acetonitrile		Invalid Compound ID	(b) (6)	10/08/18 14:18
Isopropyl alcohol		Invalid Compound ID	(b) (6)	10/08/18 14:18
n-Butanol		Invalid Compound ID	(b) (6)	10/08/18 14:18

GC/MS SEMI VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-115117-1

SDG No.:

Instrument ID: SMS_Y Analysis Batch Number: 423014

Lab Sample ID: ICIS 280-423014/3 Client Sample ID:

Date Analyzed: 07/20/18 11:11 Lab File ID: Y20567.D GC Column: Rxi-5Sil MS ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2-Methylphenol	4.84	Wrong peak	(b) (6)	07/20/18 12:22
2,2'-oxybis[1-chloropropane]	4.87	Wrong peak	(b) (6)	07/20/18 12:22
3 & 4 Methylphenol	4.98	Wrong peak	(b) (6)	07/20/18 12:22
N-Nitrosodi-n-propylamine	4.99	Wrong peak	(b) (6)	07/20/18 12:27
Acetophenone	5.00	Wrong peak	(b) (6)	07/20/18 12:27
Nitrobenzene-d5 (Surr)	5.15	Wrong peak	(b) (6)	07/20/18 12:22
Nitrobenzene	5.16	Wrong peak	(b) (6)	07/20/18 12:27
Isophorone	5.39	Wrong peak	(b) (6)	07/20/18 12:27
2-Nitrophenol	5.47	Wrong peak	(b) (6)	07/20/18 12:27
2,4-Dimethylphenol	5.49	Wrong peak	(b) (6)	07/20/18 12:27
Bis(2-chloroethoxy)methane	5.58	Wrong peak	(b) (6)	07/20/18 12:27
Benzoic acid	5.62	Wrong peak	(b) (6)	07/20/18 12:27
Naphthalene-d8 (IS)	5.85	Wrong peak	(b) (6)	07/20/18 12:21
Naphthalene	5.87	Wrong peak	(b) (6)	07/20/18 12:27
4-Chloroaniline	5.91	Wrong peak	(b) (6)	07/20/18 12:27
2,6-Dichlorophenol	5.93	Wrong peak	(b) (6)	07/20/18 12:28
Hexachlorobutadiene	6.00	Wrong peak	(b) (6)	07/20/18 12:28
Caprolactam	6.24	Split Peak	(b) (6)	07/20/18 12:31
4-Chloro-3-methylphenol	6.38	Wrong peak	(b) (6)	07/20/18 12:28
2-Methylnaphthalene	6.56	Wrong peak	(b) (6)	07/20/18 12:28
1-Methylnaphthalene	6.66	Wrong peak	(b) (6)	07/20/18 12:28
4-Nitrophenol	7.70	Wrong peak	(b) (6)	07/20/18 12:28
Diethyl phthalate	8.01	Wrong peak	(b) (6)	07/20/18 12:28
1,2-Diphenylhydrazine	8.29	Wrong peak	(b) (6)	07/20/18 12:29
Azobenzene	8.29	Wrong peak	(b) (6)	07/20/18 12:29

GC/MS SEMI VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-115117-1

SDG No.:

Instrument ID: SMS_Y Analysis Batch Number: 423014

Lab Sample ID: STD004 280-423014/4 IC Client Sample ID:

Date Analyzed: 07/20/18 11:40 Lab File ID: Y20568.D GC Column: Rxi-5Sil MS ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Benzoic acid	5.52	Wrong peak	(b) (6)	07/20/18 12:30
Benzo[g,h,i]perylene	20.83	Wrong peak	(b) (6)	07/20/18 12:31

Lab Sample ID: STD010 280-423014/5 IC Client Sample ID:

Date Analyzed: 07/20/18 12:09 Lab File ID: Y20569.D GC Column: Rxi-5Sil MS ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Benzoic acid	5.54	Wrong peak	(b) (6)	07/20/18 14:15

Lab Sample ID: STD020 280-423014/6 IC Client Sample ID:

Date Analyzed: 07/20/18 12:38 Lab File ID: Y20570.D GC Column: Rxi-5Sil MS ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Benzoic acid	5.55	Wrong peak	(b) (6)	07/20/18 14:15
4-Nitrophenol	7.68	Wrong peak	(b) (6)	07/20/18 14:19
Diethyl phthalate	8.00	Wrong peak	(b) (6)	07/20/18 14:19

Lab Sample ID: STD050 280-423014/7 IC Client Sample ID:

Date Analyzed: 07/20/18 13:07 Lab File ID: Y20571.D GC Column: Rxi-5Sil MS ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Benzoic acid	5.59	Wrong peak	(b) (6)	07/20/18 14:16
Caprolactam	6.23	Split Peak	(b) (6)	07/20/18 14:15

GC/MS SEMI VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-115117-1

SDG No.:

Instrument ID: SMS_Y Analysis Batch Number: 423014

Lab Sample ID: STD120 280-423014/8 IC Client Sample ID:

Date Analyzed: 07/20/18 13:36 Lab File ID: Y20572.D GC Column: Rxi-5Sil MS ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Caprolactam	6.25	Split Peak	(b) (6)	07/20/18 14:16

Lab Sample ID: STD160 280-423014/9 IC Client Sample ID:

Date Analyzed: 07/20/18 14:05 Lab File ID: Y20573.D GC Column: Rxi-5Sil MS ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Caprolactam	6.26	Split Peak	(b) (6)	07/20/18 15:21

Lab Sample ID: STD200 280-423014/10 IC Client Sample ID:

Date Analyzed: 07/20/18 14:34 Lab File ID: Y20574.D GC Column: Rxi-5Sil MS ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Caprolactam	6.28	Split Peak	(b) (6)	07/20/18 15:23
Indeno[1,2,3-cd]pyrene	20.18	Shouldering	(b) (6)	07/20/18 15:24

PCBS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-115117-1

SDG No.:

Instrument ID: SGC_J Analysis Batch Number: 434577

Lab Sample ID: STDL51248 280-434577/5 Client Sample ID:

Date Analyzed: 10/23/18 15:13 Lab File ID: 10231805.D GC Column: CLP1 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PCB-1248 Peak 1	3.69	Baseline Smoothing	(b) (6)	10/25/18 11:32
PCB-1248 Peak 2	4.19	Baseline Smoothing	(b) (6)	10/25/18 11:32
PCB-1248 Peak 3	4.81	Baseline Smoothing	(b) (6)	10/25/18 11:32
PCB-1248 Peak 4	5.60	Baseline Smoothing	(b) (6)	10/25/18 11:32
PCB-1248 Peak 5	6.10	Baseline Smoothing	(b) (6)	10/25/18 11:32

Lab Sample ID: STDL31248 280-434577/7 Client Sample ID:

Date Analyzed: 10/23/18 15:56 Lab File ID: 10231807.D GC Column: CLP1 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PCB-1248 Peak 1	3.69	Baseline Smoothing	(b) (6)	10/25/18 11:45
PCB-1248 Peak 2	4.19	Baseline Smoothing	(b) (6)	10/25/18 11:45
PCB-1248 Peak 3	4.81	Baseline Smoothing	(b) (6)	10/25/18 11:45
PCB-1248 Peak 4	5.60	Baseline Smoothing	(b) (6)	10/25/18 11:45
PCB-1248 Peak 5	6.10	Baseline Smoothing	(b) (6)	10/25/18 11:45

PCBS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-115117-1

SDG No.:

Instrument ID: SGC_J Analysis Batch Number: 434577

Lab Sample ID: STDL61660 280-434577/18 lient Sample ID:

Date Analyzed: 10/23/18 19:48 Lab File ID: 10231818.D GC Column: CLP2 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PCB-1016 Peak 1	3.35	Baseline Smoothing	(b) (6)	10/25/18 11:34
PCB-1016 Peak 2	3.75	Baseline Smoothing	(b) (6)	10/25/18 11:34
PCB-1016 Peak 3	4.22	Baseline Smoothing	(b) (6)	10/25/18 11:34
PCB-1016 Peak 4	4.36	Baseline Smoothing	(b) (6)	10/25/18 11:34
PCB-1016 Peak 5	4.60	Baseline Smoothing	(b) (6)	10/25/18 11:34
PCB-1260 Peak 1	6.78	Baseline Smoothing	(b) (6)	10/25/18 11:34
PCB-1260 Peak 2	7.25	Baseline Smoothing	(b) (6)	10/25/18 11:34
PCB-1260 Peak 3	7.79	Baseline Smoothing	(b) (6)	10/25/18 11:34
PCB-1260 Peak 4	8.16	Baseline Smoothing	(b) (6)	10/25/18 11:34
PCB-1260 Peak 5	8.67	Baseline Smoothing	(b) (6)	10/25/18 11:34

Lab Sample ID: STDL33262 280-434577/28 Client Sample ID:

Date Analyzed: 10/23/18 23:19 Lab File ID: 10231828.D GC Column: CLP2 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PCB-1232 Peak 1	3.35	Baseline Smoothing	(b) (6)	10/25/18 11:39
PCB-1232 Peak 2	3.75	Baseline Smoothing	(b) (6)	10/25/18 11:39
PCB-1232 Peak 3	4.22	Baseline Smoothing	(b) (6)	10/25/18 11:39
PCB-1232 Peak 4	4.36	Baseline Smoothing	(b) (6)	10/25/18 11:39
PCB-1232 Peak 5	5.04	Baseline Smoothing	(b) (6)	10/25/18 11:39

PCBS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-115117-1

SDG No.:

Instrument ID: SGC_J Analysis Batch Number: 435709

Lab Sample ID: MB 280-432451/1-A Client Sample ID:

Date Analyzed: 10/31/18 14:28 Lab File ID: 10311809.D GC Column: CLP1 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PCB-1016		Unspecified		
PCB-1221		Unspecified		
PCB-1232		Unspecified		
PCB-1242		Unspecified		
PCB-1248		Unspecified		
PCB-1254		Unspecified		
PCB-1260		Unspecified		
PCB-1262		Unspecified		
PCB-1268		Unspecified		
PCB-1016 Peak 1		Invalid Compound ID	(b) (6)	11/01/18 09:38
PCB-1016 Peak 2		Invalid Compound ID	(b) (6)	11/01/18 09:38
PCB-1016 Peak 3		Invalid Compound ID	(b) (6)	11/01/18 09:38
PCB-1016 Peak 4		Invalid Compound ID	(b) (6)	11/01/18 09:38
PCB-1016 Peak 5		Invalid Compound ID	(b) (6)	11/01/18 09:38
PCB-1221 Peak 1		Invalid Compound ID	(b) (6)	11/01/18 09:38
PCB-1221 Peak 2		Invalid Compound ID	(b) (6)	11/01/18 09:38
PCB-1221 Peak 3		Invalid Compound ID	(b) (6)	11/01/18 09:38
PCB-1232 Peak 1		Invalid Compound ID	(b) (6)	11/01/18 09:38
PCB-1232 Peak 2		Invalid Compound ID	(b) (6)	11/01/18 09:38
PCB-1232 Peak 3		Invalid Compound ID	(b) (6)	11/01/18 09:38
PCB-1232 Peak 4		Invalid Compound ID	(b) (6)	11/01/18 09:38
PCB-1232 Peak 5		Invalid Compound ID	(b) (6)	11/01/18 09:38
PCB-1242 Peak 1		Invalid Compound ID	(b) (6)	11/01/18 09:38
PCB-1242 Peak 2		Invalid Compound ID	(b) (6)	11/01/18 09:38
PCB-1242 Peak 3		Invalid Compound ID	(b) (6)	11/01/18 09:38
PCB-1242 Peak 4		Invalid Compound ID	(b) (6)	11/01/18 09:38
PCB-1242 Peak 5		Invalid Compound ID	(b) (6)	11/01/18 09:38
PCB-1248 Peak 1		Invalid Compound ID	(b) (6)	11/01/18 09:38
PCB-1248 Peak 2		Invalid Compound ID	(b) (6)	11/01/18 09:38
PCB-1248 Peak 3		Invalid Compound ID	(b) (6)	11/01/18 09:38

8082A

PCBS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-115117-1

SDG No.:

Instrument ID: SGC_J Analysis Batch Number: 435709

Lab Sample ID: MB 280-432451/1-A Client Sample ID:

Date Analyzed: 10/31/18 14:28 Lab File ID: 10311809.D GC Column: CLP1 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PCB-1248 Peak 4		Invalid Compound ID	(b) (6)	11/01/18 09:38
PCB-1248 Peak 5		Invalid Compound ID	(b) (6)	11/01/18 09:38
PCB-1254 Peak 1		Invalid Compound ID	(b) (6)	11/01/18 09:38
PCB-1254 Peak 2		Invalid Compound ID	(b) (6)	11/01/18 09:38
PCB-1254 Peak 3		Invalid Compound ID	(b) (6)	11/01/18 09:38
PCB-1254 Peak 4		Invalid Compound ID	(b) (6)	11/01/18 09:38
PCB-1254 Peak 5		Invalid Compound ID	(b) (6)	11/01/18 09:38
PCB-1260 Peak 1		Invalid Compound ID	(b) (6)	11/01/18 09:38
PCB-1260 Peak 2		Invalid Compound ID	(b) (6)	11/01/18 09:38
PCB-1260 Peak 3		Invalid Compound ID	(b) (6)	11/01/18 09:38
PCB-1260 Peak 4		Invalid Compound ID	(b) (6)	11/01/18 09:38
PCB-1260 Peak 5		Invalid Compound ID	(b) (6)	11/01/18 09:38
PCB-1262 Peak 1		Invalid Compound ID	(b) (6)	11/01/18 09:38
PCB-1262 Peak 2		Invalid Compound ID	(b) (6)	11/01/18 09:38
PCB-1262 Peak 3		Invalid Compound ID	(b) (6)	11/01/18 09:38
PCB-1262 Peak 4		Invalid Compound ID	(b) (6)	11/01/18 09:38
PCB-1262 Peak 5		Invalid Compound ID	(b) (6)	11/01/18 09:38
PCB-1268 Peak 1		Invalid Compound ID	(b) (6)	11/01/18 09:38
PCB-1268 Peak 2		Invalid Compound ID	(b) (6)	11/01/18 09:38
PCB-1268 Peak 3		Invalid Compound ID	(b) (6)	11/01/18 09:38
PCB-1268 Peak 4		Invalid Compound ID	(b) (6)	11/01/18 09:38
PCB-1268 Peak 5		Invalid Compound ID	(b) (6)	11/01/18 09:38

PCBS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-115117-1

SDG No.:

Instrument ID: SGC_J Analysis Batch Number: 435709

Lab Sample ID: MB 280-432451/1-A Client Sample ID:

Date Analyzed: 10/31/18 14:28 Lab File ID: 10311809.D GC Column: CLP2 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PCB-1016		Unspecified		
PCB-1221		Unspecified		
PCB-1232		Unspecified		
PCB-1242		Unspecified		
PCB-1248		Unspecified		
PCB-1254		Unspecified		
PCB-1260		Unspecified		
PCB-1262		Unspecified		
PCB-1268		Unspecified		
PCB-1016 Peak 1		Unspecified		
PCB-1016 Peak 2		Unspecified		
PCB-1016 Peak 3		Unspecified		
PCB-1016 Peak 4		Unspecified		
PCB-1016 Peak 5		Unspecified		
PCB-1221 Peak 1		Unspecified		
PCB-1221 Peak 2		Unspecified		
PCB-1221 Peak 3		Unspecified		
PCB-1232 Peak 1		Unspecified		
PCB-1232 Peak 2		Unspecified		
PCB-1232 Peak 3		Unspecified		
PCB-1232 Peak 4		Unspecified		
PCB-1232 Peak 5		Unspecified		
PCB-1242 Peak 1		Unspecified		
PCB-1242 Peak 2		Unspecified		
PCB-1242 Peak 3		Unspecified		
PCB-1242 Peak 4		Unspecified		
PCB-1242 Peak 5		Unspecified		
PCB-1248 Peak 1		Unspecified		
PCB-1248 Peak 2		Unspecified		
PCB-1248 Peak 3		Unspecified		

PCBS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-115117-1

SDG No.:

Instrument ID: SGC_J Analysis Batch Number: 435709

Lab Sample ID: MB 280-432451/1-A Client Sample ID:

Date Analyzed: 10/31/18 14:28 Lab File ID: 10311809.D GC Column: CLP2 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PCB-1248 Peak 4		Unspecified		
PCB-1248 Peak 5		Unspecified		
PCB-1254 Peak 1		Unspecified		
PCB-1254 Peak 2		Unspecified		
PCB-1254 Peak 3		Unspecified		
PCB-1254 Peak 4		Unspecified		
PCB-1254 Peak 5		Unspecified		
PCB-1260 Peak 1		Unspecified		
PCB-1260 Peak 2		Unspecified		
PCB-1260 Peak 3		Unspecified		
PCB-1260 Peak 4		Unspecified		
PCB-1260 Peak 5		Unspecified		
PCB-1262 Peak 1		Unspecified		
PCB-1262 Peak 2		Unspecified		
PCB-1262 Peak 3		Unspecified		
PCB-1262 Peak 4		Unspecified		
PCB-1262 Peak 5		Unspecified		
PCB-1268 Peak 1		Unspecified		
PCB-1268 Peak 2		Unspecified		
PCB-1268 Peak 3		Unspecified		
PCB-1268 Peak 4		Unspecified		
PCB-1268 Peak 5		Unspecified		

PCBS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-115117-1

SDG No.:

Instrument ID: SGC_J Analysis Batch Number: 435709

Lab Sample ID: 280-115117-10 Client Sample ID: IDW-WA-PFAS LD0501

Date Analyzed: 10/31/18 19:03 Lab File ID: 10311822.D GC Column: CLP1 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PCB-1016		Unspecified		
PCB-1221		Unspecified		
PCB-1232		Unspecified		
PCB-1242		Unspecified		
PCB-1248		Unspecified		
PCB-1254		Unspecified		
PCB-1260		Unspecified		
PCB-1262		Unspecified		
PCB-1268		Unspecified		
PCB-1016 Peak 1		Invalid Compound ID	(b) (6)	11/01/18 10:15
PCB-1016 Peak 2		Invalid Compound ID	(b) (6)	11/01/18 10:15
PCB-1016 Peak 3		Invalid Compound ID	(b) (6)	11/01/18 10:15
PCB-1016 Peak 4		Invalid Compound ID	(b) (6)	11/01/18 10:15
PCB-1016 Peak 5		Invalid Compound ID	(b) (6)	11/01/18 10:15
PCB-1221 Peak 1		Invalid Compound ID	(b) (6)	11/01/18 10:15
PCB-1221 Peak 2		Invalid Compound ID	(b) (6)	11/01/18 10:15
PCB-1221 Peak 3		Invalid Compound ID	(b) (6)	11/01/18 10:15
PCB-1232 Peak 1		Invalid Compound ID	(b) (6)	11/01/18 10:15
PCB-1232 Peak 2		Invalid Compound ID	(b) (6)	11/01/18 10:15
PCB-1232 Peak 3		Invalid Compound ID	(b) (6)	11/01/18 10:15
PCB-1232 Peak 4		Invalid Compound ID	(b) (6)	11/01/18 10:15
PCB-1232 Peak 5		Invalid Compound ID	(b) (6)	11/01/18 10:15
PCB-1242 Peak 1		Invalid Compound ID	(b) (6)	11/01/18 10:15
PCB-1242 Peak 2		Invalid Compound ID	(b) (6)	11/01/18 10:15
PCB-1242 Peak 3		Invalid Compound ID	(b) (6)	11/01/18 10:15
PCB-1242 Peak 4		Invalid Compound ID	(b) (6)	11/01/18 10:15
PCB-1242 Peak 5		Invalid Compound ID	(b) (6)	11/01/18 10:15
PCB-1248 Peak 1		Invalid Compound ID	(b) (6)	11/01/18 10:15
PCB-1248 Peak 2		Invalid Compound ID	(b) (6)	11/01/18 10:15
PCB-1248 Peak 3		Invalid Compound ID	(b) (6)	11/01/18 10:15

8082A

PCBS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-115117-1

SDG No.:

Instrument ID: SGC_J Analysis Batch Number: 435709

Lab Sample ID: 280-115117-10 Client Sample ID: IDW-WA-PFAS LD0501

Date Analyzed: 10/31/18 19:03 Lab File ID: 10311822.D GC Column: CLP1 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PCB-1248 Peak 4		Invalid Compound ID	(b) (6)	11/01/18 10:15
PCB-1248 Peak 5		Invalid Compound ID	(b) (6)	11/01/18 10:15
PCB-1254 Peak 1		Invalid Compound ID	(b) (6)	11/01/18 10:15
PCB-1254 Peak 2		Invalid Compound ID	(b) (6)	11/01/18 10:15
PCB-1254 Peak 3		Invalid Compound ID	(b) (6)	11/01/18 10:15
PCB-1254 Peak 4		Invalid Compound ID	(b) (6)	11/01/18 10:15
PCB-1254 Peak 5		Invalid Compound ID	(b) (6)	11/01/18 10:15
PCB-1260 Peak 1		Invalid Compound ID	(b) (6)	11/01/18 10:15
PCB-1260 Peak 2		Invalid Compound ID	(b) (6)	11/01/18 10:15
PCB-1260 Peak 3		Invalid Compound ID	(b) (6)	11/01/18 10:15
PCB-1260 Peak 4		Invalid Compound ID	(b) (6)	11/01/18 10:15
PCB-1260 Peak 5		Invalid Compound ID	(b) (6)	11/01/18 10:15
PCB-1262 Peak 1		Invalid Compound ID	(b) (6)	11/01/18 10:15
PCB-1262 Peak 2		Invalid Compound ID	(b) (6)	11/01/18 10:15
PCB-1262 Peak 3		Invalid Compound ID	(b) (6)	11/01/18 10:15
PCB-1262 Peak 4		Invalid Compound ID	(b) (6)	11/01/18 10:15
PCB-1262 Peak 5		Invalid Compound ID	(b) (6)	11/01/18 10:15
PCB-1268 Peak 1		Invalid Compound ID	(b) (6)	11/01/18 10:15
PCB-1268 Peak 2		Invalid Compound ID	(b) (6)	11/01/18 10:15
PCB-1268 Peak 3		Invalid Compound ID	(b) (6)	11/01/18 10:15
PCB-1268 Peak 4		Invalid Compound ID	(b) (6)	11/01/18 10:15
PCB-1268 Peak 5		Invalid Compound ID	(b) (6)	11/01/18 10:15

PCBS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-115117-1

SDG No.:

Instrument ID: SGC_J Analysis Batch Number: 435709

Lab Sample ID: 280-115117-10 Client Sample ID: IDW-WA-PFAS LD0501

Date Analyzed: 10/31/18 19:03 Lab File ID: 10311822.D GC Column: CLP2 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PCB-1016		Unspecified		
PCB-1221		Unspecified		
PCB-1232		Unspecified		
PCB-1242		Unspecified		
PCB-1248		Unspecified		
PCB-1254		Unspecified		
PCB-1260		Unspecified		
PCB-1262		Unspecified		
PCB-1268		Unspecified		
PCB-1016 Peak 1		Unspecified		
PCB-1016 Peak 2		Unspecified		
PCB-1016 Peak 3		Unspecified		
PCB-1016 Peak 4		Unspecified		
PCB-1016 Peak 5		Unspecified		
PCB-1221 Peak 1		Unspecified		
PCB-1221 Peak 2		Unspecified		
PCB-1221 Peak 3		Unspecified		
PCB-1232 Peak 1		Unspecified		
PCB-1232 Peak 2		Unspecified		
PCB-1232 Peak 3		Unspecified		
PCB-1232 Peak 4		Unspecified		
PCB-1232 Peak 5		Unspecified		
PCB-1242 Peak 1		Unspecified		
PCB-1242 Peak 2		Unspecified		
PCB-1242 Peak 3		Unspecified		
PCB-1242 Peak 4		Unspecified		
PCB-1242 Peak 5		Unspecified		
PCB-1248 Peak 1		Unspecified		
PCB-1248 Peak 2		Unspecified		
PCB-1248 Peak 3		Unspecified		

8082A

PCBS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-115117-1

SDG No.:

Instrument ID: SGC_J Analysis Batch Number: 435709

Lab Sample ID: 280-115117-10 Client Sample ID: IDW-WA-PFAS LD0501

Date Analyzed: 10/31/18 19:03 Lab File ID: 10311822.D GC Column: CLP2 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PCB-1248 Peak 4		Unspecified		
PCB-1248 Peak 5		Unspecified		
PCB-1254 Peak 1		Unspecified		
PCB-1254 Peak 2		Unspecified		
PCB-1254 Peak 3		Unspecified		
PCB-1254 Peak 4		Unspecified		
PCB-1254 Peak 5		Unspecified		
PCB-1260 Peak 1		Unspecified		
PCB-1260 Peak 2		Unspecified		
PCB-1260 Peak 3		Unspecified		
PCB-1260 Peak 4		Unspecified		
PCB-1260 Peak 5		Unspecified		
PCB-1262 Peak 1		Unspecified		
PCB-1262 Peak 2		Unspecified		
PCB-1262 Peak 3		Unspecified		
PCB-1262 Peak 4		Unspecified		
PCB-1262 Peak 5		Unspecified		
PCB-1268 Peak 1		Unspecified		
PCB-1268 Peak 2		Unspecified		
PCB-1268 Peak 3		Unspecified		
PCB-1268 Peak 4		Unspecified		
PCB-1268 Peak 5		Unspecified		

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 280-115117-1

SDG No.:

Instrument ID: A8_N Analysis Batch Number: 253036

Lab Sample ID: IC 320-253036/2 Client Sample ID:

Date Analyzed: 10/17/18 19:55 Lab File ID: 2018.10.17ICAL_005.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorobutanoic acid (PFBA)	1.43	Baseline	(b) (6)	10/18/18 08:20
Perfluorohexanoic acid (PFHxA)	1.98	Baseline	(b) (6)	10/18/18 08:20
Perfluoroheptanoic acid (PFHpA)	2.30	Baseline	(b) (6)	10/18/18 08:20
Perfluorohexanesulfonic acid (PFHxS)	2.31	Isomers	(b) (6)	10/18/18 08:21
6:2 FTS	2.62	Baseline	(b) (6)	10/18/18 08:21
Perfluorooctanoic acid (PFOA)	2.65	Baseline	(b) (6)	10/18/18 08:21
Perfluorononanoic acid (PFNA)	3.03	Baseline	(b) (6)	10/18/18 08:22
Perfluorooctanesulfonic acid (PFOS)	3.03	Baseline	(b) (6)	10/18/18 08:31
Perfluorododecanoic acid (PFDoA)	4.00	Baseline	(b) (6)	10/18/18 08:26

Lab Sample ID: IC 320-253036/3 Client Sample ID:

Date Analyzed: 10/17/18 20:03 Lab File ID: 2018.10.17ICAL_006.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorobutanoic acid (PFBA)	1.44	Baseline	(b) (6)	10/18/18 08:27
Perfluoropentanoic acid (PFPeA)	1.71	Baseline	(b) (6)	10/18/18 08:27
Perfluorohexanesulfonic acid (PFHxS)	2.33	Isomers	(b) (6)	10/18/18 08:28
Perfluorooctanoic acid (PFOA)	2.66	Baseline	(b) (6)	10/18/18 08:28
Perfluorononanoic acid (PFNA)	3.04	Baseline	(b) (6)	10/18/18 08:29
Perfluorooctanesulfonic acid (PFOS)	3.04	Baseline	(b) (6)	10/18/18 08:29
Perfluoroundecanoic acid (PFUnA)	3.72	Baseline	(b) (6)	10/18/18 08:30

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 280-115117-1

SDG No.:

Instrument ID: A8_N Analysis Batch Number: 253036

Lab Sample ID: IC 320-253036/4 Client Sample ID:

Date Analyzed: 10/17/18 20:10 Lab File ID: 2018.10.17ICAL_007.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorohexanesulfonic acid (PFHxS)	2.32	Isomers	(b) (6)	10/18/18 08:32
Perfluorooctanoic acid (PFOA)	2.66	Baseline	(b) (6)	10/18/18 08:32
N-ethylperfluorooctanesulfonamido acetic acid (NEtFOSAA)	3.72	Baseline	(b) (6)	10/18/18 08:32

Lab Sample ID: IC 320-253036/5 ICIS Client Sample ID:

Date Analyzed: 10/17/18 20:17 Lab File ID: 2018.10.17ICAL_008.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
N-ethylperfluorooctanesulfonamido acetic acid (NEtFOSAA)	3.71	Isomers	(b) (6)	10/18/18 08:34

Lab Sample ID: IC 320-253036/6 Client Sample ID:

Date Analyzed: 10/17/18 20:25 Lab File ID: 2018.10.17ICAL_009.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorobutanoic acid (PFBA)	1.43	Baseline	(b) (6)	10/18/18 08:35
Perfluorohexanesulfonic acid (PFHxS)	2.33	Isomers	(b) (6)	10/18/18 08:35

Lab Sample ID: IC 320-253036/7 Client Sample ID:

Date Analyzed: 10/17/18 20:32 Lab File ID: 2018.10.17ICAL_010.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorobutanoic acid (PFBA)	1.43	Baseline	(b) (6)	10/18/18 08:36
N-ethylperfluorooctanesulfonamido acetic acid (NEtFOSAA)	3.72	Isomers	(b) (6)	10/18/18 08:37

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 280-115117-1

SDG No.:

Instrument ID: A8_N Analysis Batch Number: 253036

Lab Sample ID: IC 320-253036/8 Client Sample ID:

Date Analyzed: 10/17/18 20:40 Lab File ID: 2018.10.17ICAL_011.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorobutanoic acid (PFBA)	1.43	Baseline	(b) (6)	10/18/18 08:37

Lab Sample ID: ICB 320-253036/9 Client Sample ID:

Date Analyzed: 10/17/18 20:47 Lab File ID: 2018.10.17ICAL_012.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorohexanesulfonic acid (PFHxS)	2.31	Baseline	(b) (6)	10/18/18 08:38
Perfluorooctanoic acid (PFOA)	2.66	Baseline	(b) (6)	10/18/18 08:38

Lab Sample ID: ICV 320-253036/10 Client Sample ID:

Date Analyzed: 10/17/18 20:55 Lab File ID: 2018.10.17ICAL_013.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorobutanoic acid (PFBA)	1.44	Baseline	(b) (6)	10/18/18 08:40

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 280-115117-1

SDG No.:

Instrument ID: A8_N Analysis Batch Number: 253688

Lab Sample ID: CCB 320-253688/1 Client Sample ID:

Date Analyzed: 10/20/18 22:49 Lab File ID: 2018.10.20LLB_004.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorohexanesulfonic acid (PFHxS)	2.32	Baseline	(b) (6)	10/23/18 09:52
Perfluorooctanoic acid (PFOA)		Invalid Compound ID	(b) (6)	10/22/18 13:19

Lab Sample ID: CCVL 320-253688/2 Client Sample ID:

Date Analyzed: 10/20/18 22:56 Lab File ID: 2018.10.20LLB_005.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorohexanoic acid (PFHxA)	1.98	Baseline	(b) (6)	10/22/18 13:20
Perfluorohexanesulfonic acid (PFHxS)	2.32	Isomers	(b) (6)	10/22/18 13:20
Perfluorooctanoic acid (PFOA)	2.65	Baseline	(b) (6)	10/22/18 13:20
Perfluorooctanesulfonic acid (PFOS)	3.02	Baseline	(b) (6)	10/22/18 13:20

Lab Sample ID: CCV 320-253688/3 CCVIS Client Sample ID:

Date Analyzed: 10/20/18 23:04 Lab File ID: 2018.10.20LLB_006.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	3.02	Isomers	(b) (6)	10/22/18 13:21

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 280-115117-1

SDG No.:

Instrument ID: A8_N Analysis Batch Number: 253688

Lab Sample ID: MB 320-252432/1-A Client Sample ID:

Date Analyzed: 10/20/18 23:11 Lab File ID: 2018.10.20LLB_007.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorohexanesulfonic acid (PFHxS)	2.32	Baseline	(b) (6)	10/23/18 09:54
Perfluorooctanoic acid (PFOA)		Baseline	(b) (6)	10/22/18 13:22

Lab Sample ID: LCS 320-252432/2-A Client Sample ID:

Date Analyzed: 10/20/18 23:18 Lab File ID: 2018.10.20LLB_008.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	3.03	Isomers	(b) (6)	10/22/18 13:23

Lab Sample ID: 280-115117-1 Client Sample ID: MW-67PFAS01 LD0501

Date Analyzed: 10/20/18 23:33 Lab File ID: 2018.10.20LLB_010.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluoroheptanoic acid (PFHpA)	2.31	Split Peak	(b) (6)	10/26/18 08:54

Lab Sample ID: 280-115117-2 Client Sample ID: MW-67PFAS01 LD0501N

Date Analyzed: 10/20/18 23:41 Lab File ID: 2018.10.20LLB_011.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluoroheptanoic acid (PFHpA)	2.31	Baseline	(b) (6)	10/26/18 08:53

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 280-115117-1

SDG No.:

Instrument ID: A8_N Analysis Batch Number: 253688

Lab Sample ID: 280-115117-3 Client Sample ID: MW-67PFAS01 LD0501ND

Date Analyzed: 10/20/18 23:48 Lab File ID: 2018.10.20LLB_012.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluoroheptanoic acid (PFHpA)	2.30	Baseline	(b) (6)	10/26/18 08:55

Lab Sample ID: 280-115117-4 Client Sample ID: MW-67PFAS-02 LD05EB01

Date Analyzed: 10/20/18 23:56 Lab File ID: 2018.10.20LLB_013.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorohexanesulfonic acid (PFHxS)	2.31	Baseline	(b) (6)	10/26/18 08:56
Perfluoroheptanoic acid (PFHpA)		Invalid Compound ID	(b) (6)	10/26/18 08:56

Lab Sample ID: 280-115117-5 Client Sample ID: MW-67PFAS-02 LD05FB02

Date Analyzed: 10/21/18 00:03 Lab File ID: 2018.10.20LLB_014.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorohexanesulfonic acid (PFHxS)	2.32	Baseline	(b) (6)	10/26/18 08:58
Perfluorooctanoic acid (PFOA)	2.65	Baseline	(b) (6)	10/26/18 08:58
Perfluoroheptanoic acid (PFHpA)		Invalid Compound ID	(b) (6)	10/26/18 08:58

Lab Sample ID: 280-115117-6 Client Sample ID: MW-67PFAS-02 LD0501

Date Analyzed: 10/21/18 00:11 Lab File ID: 2018.10.20LLB_015.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluoroheptanoic acid (PFHpA)	2.31	Split Peak	(b) (6)	10/26/18 08:59

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 280-115117-1

SDG No.:

Instrument ID: A8_N Analysis Batch Number: 253688

Lab Sample ID: 280-115117-7 Client Sample ID: MW-67PFAS-02 LD0501D

Date Analyzed: 10/21/18 00:18 Lab File ID: 2018.10.20LLB_016.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluoroheptanoic acid (PFHpA)	2.30	Split Peak	(b) (6)	10/26/18 09:01

Lab Sample ID: CCV 320-253688/14 Client Sample ID:

Date Analyzed: 10/21/18 00:25 Lab File ID: 2018.10.20LLB_017.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	3.03	Isomers	(b) (6)	10/23/18 10:22

Lab Sample ID: 280-115117-8 Client Sample ID: MW-67PFAS-03 LD0501

Date Analyzed: 10/21/18 00:33 Lab File ID: 2018.10.20LLB_018.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorobutanesulfonic acid (PFBS)	1.74	Baseline	(b) (6)	10/26/18 09:02
Perfluoroheptanoic acid (PFHpA)	2.30	Baseline	(b) (6)	10/26/18 09:03

Lab Sample ID: 280-115117-9 Client Sample ID: MW-84PFAS-03 LD0501

Date Analyzed: 10/21/18 00:40 Lab File ID: 2018.10.20LLB_019.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluoroheptanoic acid (PFHpA)	2.30	Split Peak	(b) (6)	10/26/18 09:04

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 280-115117-1

SDG No.:

Instrument ID: A8_N Analysis Batch Number: 253688

Lab Sample ID: 280-115117-11 Client Sample ID: MW-84PFAS-01 LD05RB01

Date Analyzed: 10/21/18 00:48 Lab File ID: 2018.10.20LLB_020.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	2.66	Baseline	(b) (6)	10/26/18 09:05
Perfluorononanoic acid (PFNA)	3.04	Baseline	(b) (6)	10/26/18 09:05
Perfluoroheptanoic acid (PFHpA)		Invalid Compound ID	(b) (6)	10/26/18 09:04

Lab Sample ID: 280-115117-12 Client Sample ID: MW-84PFAS-01 LD0501

Date Analyzed: 10/21/18 00:55 Lab File ID: 2018.10.20LLB_021.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorohexanesulfonic acid (PFHxS)	2.32	Baseline	(b) (6)	10/26/18 09:06
Perfluorooctanoic acid (PFOA)	2.64	Baseline	(b) (6)	10/26/18 09:06

Lab Sample ID: 280-115117-13 Client Sample ID: MW-84PFAS-02 LD0501

Date Analyzed: 10/21/18 01:03 Lab File ID: 2018.10.20LLB_022.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluoroheptanoic acid (PFHpA)	2.31	Baseline	(b) (6)	10/26/18 09:06
Perfluorooctanoic acid (PFOA)	2.66	Baseline	(b) (6)	10/26/18 09:06

Lab Sample ID: CCV 320-253688/20 Client Sample ID:

Date Analyzed: 10/21/18 01:10 Lab File ID: 2018.10.20LLB_023.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorohexanesulfonic acid (PFHxS)	2.31	Isomers	(b) (6)	10/23/18 10:23

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 280-115117-1

SDG No.:

Instrument ID: A8_N Analysis Batch Number: 254823

Lab Sample ID: IC 320-254823/2 Client Sample ID:

Date Analyzed: 10/25/18 10:53 Lab File ID: 2018.10.25ICAL_005.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorobutanoic acid (PFBA)	1.41	Baseline	(b) (6)	10/25/18 12:33
Perfluorohexanoic acid (PFHxA)	1.95	Baseline	(b) (6)	10/25/18 12:33
Perfluorohexanesulfonic acid (PFHxS)	2.29	Isomers	(b) (6)	10/25/18 12:34
Perfluorooctanoic acid (PFOA)	2.63	Baseline	(b) (6)	10/25/18 12:34
Perfluorononanoic acid (PFNA)	3.00	Baseline	(b) (6)	10/25/18 12:34
Perfluorooctanesulfonic acid (PFOS)	3.00	Baseline	(b) (6)	10/25/18 12:34
N-ethylperfluorooctanesulfonamido acetic acid (NEtFOSAA)	3.70	Baseline	(b) (6)	10/25/18 12:35

Lab Sample ID: IC 320-254823/3 Client Sample ID:

Date Analyzed: 10/25/18 11:01 Lab File ID: 2018.10.25ICAL_006.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorohexanesulfonic acid (PFHxS)	2.29	Isomers	(b) (6)	10/25/18 12:36
Perfluorooctanoic acid (PFOA)	2.62	Baseline	(b) (6)	10/25/18 12:37
Perfluorooctanesulfonic acid (PFOS)	2.99	Baseline	(b) (6)	10/25/18 12:37

Lab Sample ID: IC 320-254823/4 Client Sample ID:

Date Analyzed: 10/25/18 11:08 Lab File ID: 2018.10.25ICAL_007.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorohexanesulfonic acid (PFHxS)	2.28	Isomers	(b) (6)	10/25/18 12:38
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	3.52	Isomers	(b) (6)	10/25/18 12:38

EPA 537 (Mod)

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 280-115117-1

SDG No.:

Instrument ID: A8_N Analysis Batch Number: 254823

Lab Sample ID: IC 320-254823/5 ICIS Client Sample ID:

Date Analyzed: 10/25/18 11:16 Lab File ID: 2018.10.25ICAL_008.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorobutanoic acid (PFBA)	1.41	Baseline	(b) (6)	10/25/18 13:55

Lab Sample ID: ICB 320-254823/9 Client Sample ID:

Date Analyzed: 10/25/18 11:45 Lab File ID: 2018.10.25ICAL_012.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	2.61	Baseline	(b) (6)	10/25/18 14:11

Lab Sample ID: ICV 320-254823/10 Client Sample ID:

Date Analyzed: 10/25/18 11:53 Lab File ID: 2018.10.25ICAL_013.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorobutanoic acid (PFBA)	1.41	Baseline	(b) (6)	10/25/18 14:13
Perfluorohexanesulfonic acid (PFHxS)	2.29	Isomers	(b) (6)	10/25/18 14:13

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 280-115117-1

SDG No.:

Instrument ID: A8_N Analysis Batch Number: 255169

Lab Sample ID: CCB 320-255169/1 Client Sample ID:

Date Analyzed: 10/26/18 14:08 Lab File ID: 2018.10.26LLA_004.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	2.61	Baseline	(b) (6)	10/26/18 14:43
Perfluoroheptanoic acid (PFHpA)		Invalid Compound ID	(b) (6)	10/26/18 14:43

Lab Sample ID: CCVL 320-255169/2 Client Sample ID:

Date Analyzed: 10/26/18 14:15 Lab File ID: 2018.10.26LLA_005.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorohexanesulfonic acid (PFHxS)	2.28	Isomers	(b) (6)	10/26/18 14:46
Perfluorooctanoic acid (PFOA)	2.61	Baseline	(b) (6)	10/26/18 14:46

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 280-115117-1

SDG No.:

Instrument ID: A8_N Analysis Batch Number: 255173

Lab Sample ID: 280-115117-8 DL Client Sample ID: MW-67PFAS-03 LD0501 DL

Date Analyzed: 10/26/18 14:53 Lab File ID: 2018.10.26LLA_038.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluoroheptanoic acid (PFHpA)	2.28	Split Peak	(b) (6)	10/27/18 09:25

Lab Sample ID: 280-115117-13 DL Client Sample ID: MW-84PFAS-02 LD0501 DL

Date Analyzed: 10/26/18 15:15 Lab File ID: 2018.10.26LLA_041.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluoroheptanoic acid (PFHpA)	2.27	Split Peak	(b) (6)	10/27/18 09:27
Perfluorooctanoic acid (PFOA)	2.61	Baseline	(b) (6)	10/27/18 09:27