

# DEPARTMENT OF THE ARMY US ARMY INSTALLATION MANAGEMENT COMMAND IMCOM - READINESS HEADQUARTERS, UNITED STATES ARMY GARRISON, FORT McCOY 2171 SOUTH 8th AVENUE FORT McCOY, WI 54656-5150

December 22, 2016

Ms. Colleen Olsberg USEPA REGION 5 77 West Jackson Boulevard Mail Code: LU-9j Chicago, IL 60604-3507

Dear Ms. Olsberg:

Recent studies have identified serious health concerns associated with exposure to certain perfluorinated chemicals (PFCs) which were contained in Aqueous Film Forming Foam (AFFF) used to extinguish fires caused by flammable liquids. AFFF was historically utilized at Fort McCoy's former Fire Training Burn Pit 2 (FTBP2; BRRTS Case No. 02-42-279956; included in Fort McCoy's Resource Conservation and Recovery Act permit W13 210 020 563), and is currently being used at Fire Training Burn Pit 3 (FTBP3) located southeast (upgradient) of FTBP2 (Figure 1).

On September 6, 2016, the installation collected samples from the four (4) monitoring wells located at FTBP3, and on October 13, 2016, collected groundwater samples from 11 Geoprobe® borings in the vicinity of former FTBP2 (Figure 1). All of the samples were analyzed for PFCs. Communication with the Wisconsin Department of Natural Resources (WDNR) revealed that eight PFCs are typically found in groundwater at former fire training sites where AFFF has been utilized. All of the samples were analyzed for these eight constituents, which are perfluorobutanoic acid (PFBA), perfluoropentanoic acid (PFPeA), perfluorohexanoic acid (PFHxA), perfluoroheptanoic acid (PFHpA), perfluorooctanoic acid (PFOA), perfluorobutanesulfonate (PFBS), perfluorohexanesulfonate (PFHxS), and perfluorooctanesulfonate (PFOS). Analytical results are included in Attachment 1, logs and borehole abandonment forms for the Geoprobe borings are included in Attachment 2.

PFC constituents readily dissolve and tend to migrate freely in groundwater without adhering to soil particles. Two PFCs that have been found to cause serious health problems are PFOS and PFOA. In 2016 the United States Environmental Protection Agency (USEPA) established a Health Advisory (HA) level in drinking water for combined concentrations of PFOS and

PFOA of 70 parts per trillion. Federal Maximum Contaminant Levels (MCLs) and State of Wisconsin Enforcement Standards (ESs) have not yet been established for these parameters.

Groundwater elevations collected from the former monitoring wells at FTBP2 in 1994 and 2002 indicate that groundwater flow is north-northwest, toward Silver Creek (Attachment 3), at a rate of 248 feet per year. The creek is more than 3,200 feet north of FTBP2 (Figure 1). AFFF use at FTBP2 began prior to 1982. The last time AFFF was used at FTBP2 was in 1992. Groundwater has had time to flow nearly 6,000 feet downgradient from the pit since the last time AFFF was used at FTBP2 (Assume 1992: 24 years X 365 days/year X 0.68 feet/day = 5,956.8 feet). AFFF continues to be used at FTBP3. In addition, groundwater has had time to flow more than 8,400 feet since 1982, and AFFF use began prior to that time.

The September 2016 results for FTBP3 and the October 2016 results for FTBP2 are summarized in Table 1. Figure 2 presents an isoconcentration map for combined PFOS and PFOA concentrations reported at both FTBP2 and FTBP3.

As shown, it appears that residual PFC contamination at FTBP2 is low. This would be expected, as remediation at FTBP2 included removal of 12,700 gallons of liquid and 610 cubic yards of contaminated soil, along with the liner. Elevated PFC concentrations are flowing north and northwest from ongoing AFFF use at FTBP3. Fort McCoy reported the PFC contamination at FTBP3 to the WDNR on October 11, 2016. Fort McCoy and the WDNR will begin addressing this contamination in the coming months.

Since 1995 (approximate time when AFFF use at FTBP3 began), PFC concentrations in excess of the HA have only migrated 1330 feet beyond FTBP3. The data show that even though PFCs have been migrating in groundwater away from FTBP2 and FTBP3 for 24 and 22 years respectively, combined concentrations of PFOS and PFOA at levels exceeding the HA do not extend beyond the north/south runway and only extend approximately 740 feet north of FTBP2. This is approximately 2,400 feet (south) upgradient of Silver Creek (Figures 1 and 2). In addition, data from the three potable wells located at the airfield (Figure 1) show that PFCs are were not detected (Attachment 4). Since it has been over 34 years since AFFF use began at the Airfield, it is likely that the downgradient plume margin has reached its maximum extent, and is stable to receding.

These data show that there are no completed human health or ecological exposure pathways. Such pathways are not likely to be completed in the future. Therefore, Fort McCoy does not recommend any further action with regard to FTBP2.

If you have any questions, please contact Craig Bartholomew at (608) 388-8453.

Sincerely,

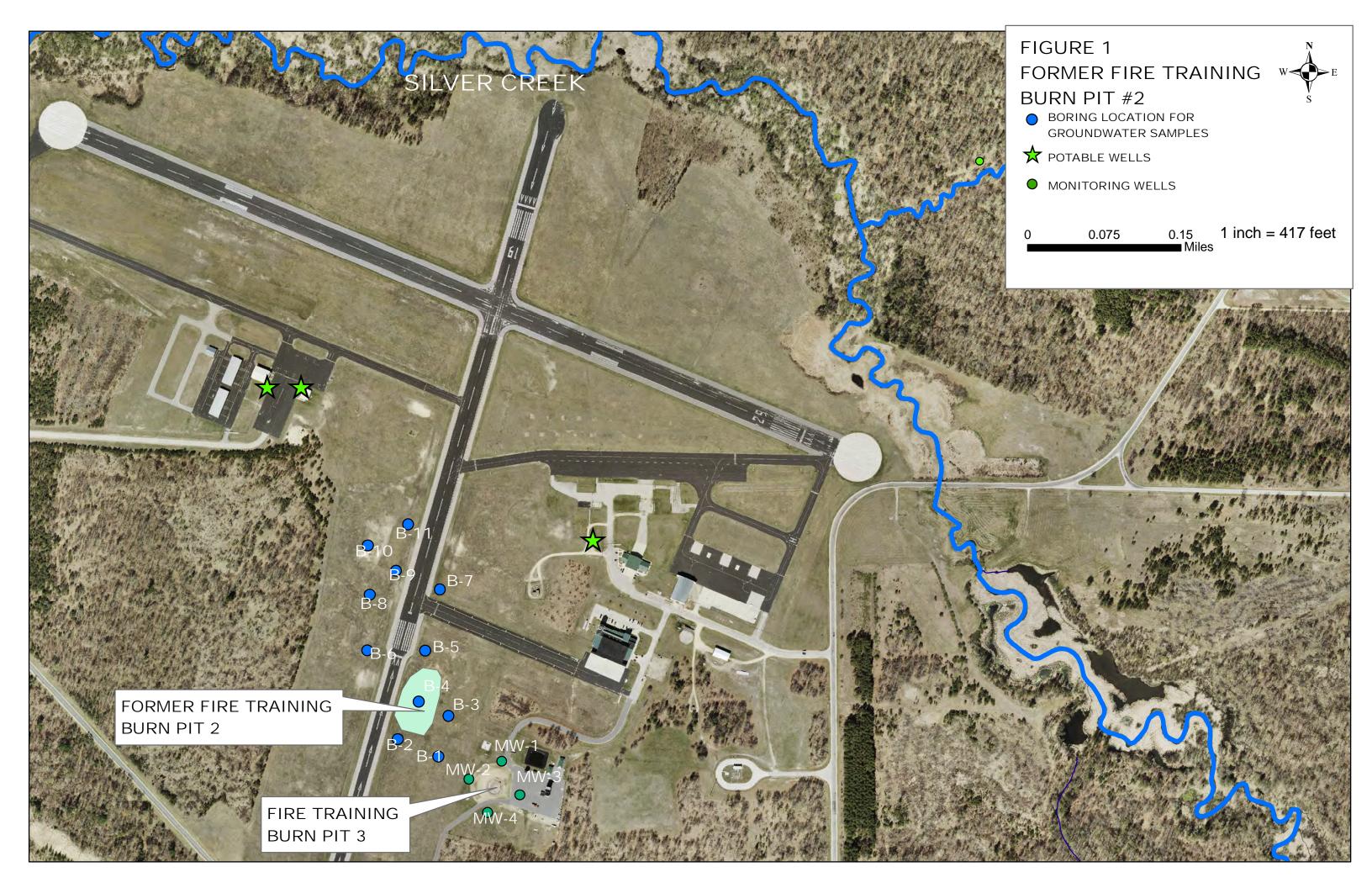
James R. Hessil

James R Hersil

Chief, Environmental Division Directorate of Public Works

Enclosures

CC: Ms. Mae Willkom - WDNR



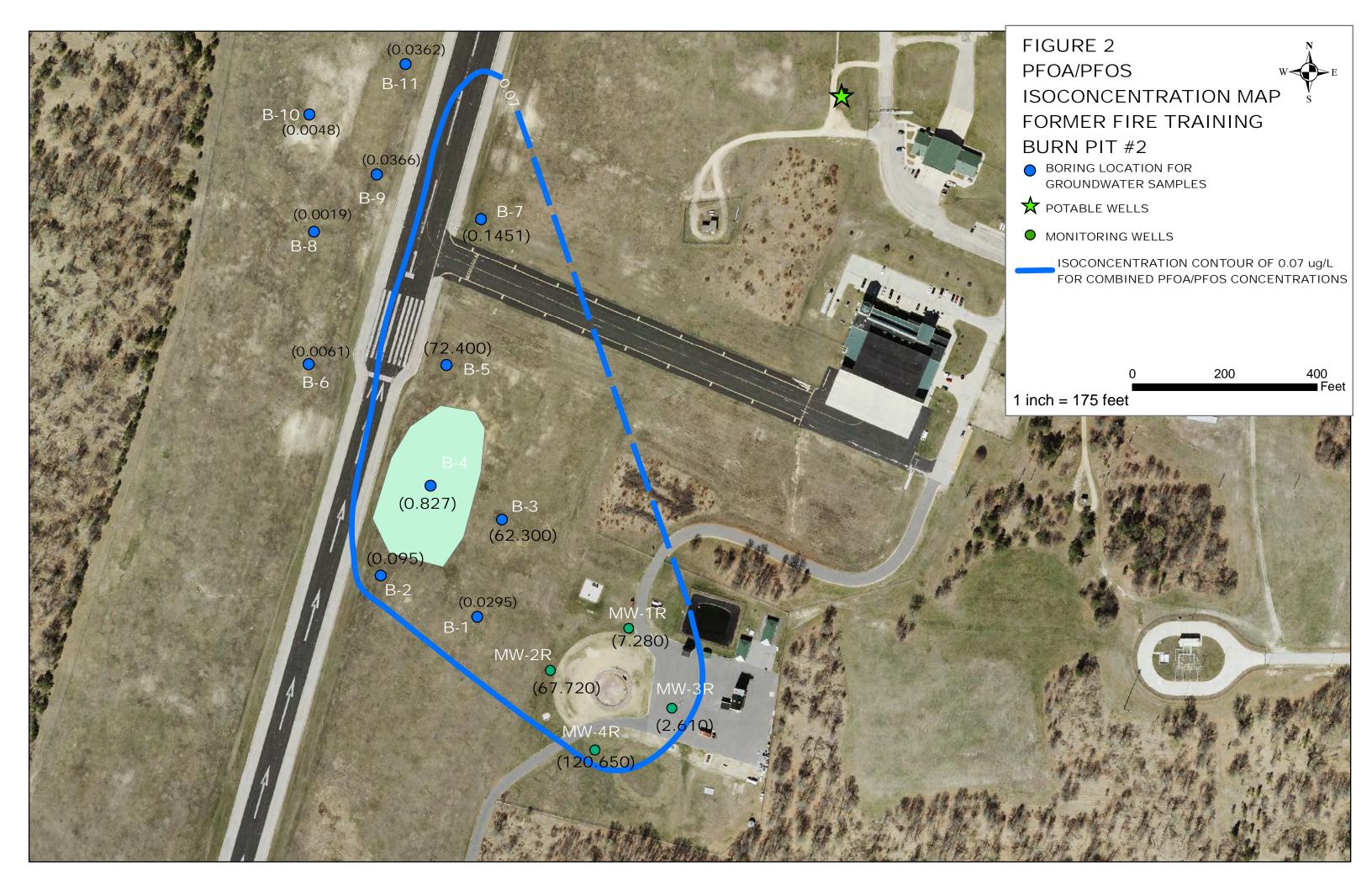


TABLE 1 PFC SAMPLING RESULTS FOR FIRE TRAINING BURN PITS 2 & 3  $$\rm (ug/L)$$ 

SAMPLING POINT				PARA	METER				COMBINED
	PFBA	PFHxA	PFHpA	PFBS	PFPeA	PFHxS	PFOA	PFOS	PFOA & PFOS
FIRE TRAINING BUR	N PIT 2 (1	0/13 & 14/20	016)						
B-1	0.0062	0.018	0.0083	0.0037	0.014	0.088	0.0055	0.024	0.0295
B-2	0.0065	0.010	0.0066	0.0041	0.010	0.036	0.014	0.081	0.095
B-3	0.100	0.480	0.130	0.230	0.210	4.400	0.300	62.000	62.300
B-4	0.0076	0.012	0.012	0.0025	0.0093	0.070	0.017	0.810	0.827
B-4 (DUP)	0.0074	0.012	0.012	0.0026	0.0092	0.070	0.017	0.820	0.017
B-5	0.330	0.880	1.400	0.120	0.730	7.400	3.400	69.000	72.400
B-6	0.0028	< 0.00077	0.00082	< 0.00090	0.0018	0.0018	0.0024	0.0037	0.0061
B-7	0.0017	0.0015	0.0018	0.0015	0.0012	0.044	0.0051	0.140	0.1451
B-8	0.00058	< 0.00082	< 0.00083	0.001	0.0019	< 0.00090	< 0.00078	0.0019	0.0019
B-9	0.0064	0.0044	0.0040	< 0.00089	0.0029	0.0037	0.0046	0.032	0.0366
B-10	0.00046	< 0.00078	< 0.00079	< 0.00091	< 0.00098	0.0010	0.0014	0.0034	0.0048
B-11	0.0058		0.0016	0.0010	0.0040	0.0036	0.0036	0.029	0.0326
FIRE TRAINING BUR	N PIT 3 (9)	/6/2016)							
MW-1R	0.094	0.250	0.280	0.035	0.390	1.200	0.480	6.800	7.280
MW-1R (DUP)	0.098	0.260	0.300	0.042	0.420	1.300	0.480	6.300	6.780
MW-2R	1.400	4.900	1.200	0.380	5.300	7.800	0.720	67.000	67.720
MW-3R	0.750	2.000	0.530	1.200	3.000	2.600	0.510	2.100	2.610
MW-4R	0.200	1.200	0.230	0.250	0.700	5.500	0.650	120.000	120.650
USEPA PROVISIONAL HEALTH ADVISORY (ug/L)	NS	NS	NS	NS	NS	NS	0.07 <sup>1</sup>	0.07 <sup>1</sup>	0.07 <sup>1</sup>

<sup>&</sup>lt;sup>1</sup>This standard is for combined PFOA and PFOS.

# ATTACHMENT 1 ANALYTICAL REPORTS

# September 2016 Laboratory Reports FTBP3



THE LEADER IN ENVIRONMENTAL TESTING

# **ANALYTICAL REPORT**

TestAmerica Laboratories, Inc.

TestAmerica Sacramento 880 Riverside Parkway West Sacramento, CA 95605 Tel: (916)373-5600

TestAmerica Job ID: 320-21576-2

Client Project/Site: Fort McCoy PFAS FTBP3

#### For:

Hyde Environmental, Inc. W175 N11163 Stonewood Drive Suite 110 Germantown, Wisconsin 53022

Attn: Jim Lindemann

Saide freduct

Authorized for release by: 10/3/2016 2:53:28 PM

Sandie Fredrick, Project Manager II (920)261-1660

sandie.fredrick@testamericainc.com

.....LINKS .....

Review your project results through

Total Access

**Have a Question?** 



Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Client: Hyde Environmental, Inc. Project/Site: Fort McCoy PFAS FTBP3 TestAmerica Job ID: 320-21576-2

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# **Definitions/Glossary**

Client: Hyde Environmental, Inc. Project/Site: Fort McCoy PFAS FTBP3

TestAmerica Job ID: 320-21576-2

#### **Qualifiers**

#### **LCMS**

Qualifier	Qualifier Description
В	Compound was found in the blank and sample.
*	Isotope Dilution analyte is outside acceptance limits.
E	Result exceeded calibration range.

# Glossary

TEF

TEQ

Toxicity Equivalent Factor (Dioxin)

Toxicity Equivalent Quotient (Dioxin)

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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points

#### **Case Narrative**

Client: Hyde Environmental, Inc. Project/Site: Fort McCoy PFAS FTBP3 TestAmerica Job ID: 320-21576-2

Job ID: 320-21576-2

**Laboratory: TestAmerica Sacramento** 

**Narrative** 

Job Narrative 320-21576-2

#### Comments

No additional comments.

#### Receipt

The samples were received on 9/8/2016 9:55 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 4.0° C and 5.1° C.

#### Dioxin

Method(s) 537 (Modified): The concentration of Perfluorooctanesulfonic acid (PFOS) in the following sample exceeded the instrument calibration range: MW-2R (320-21576-16) and MW-4R (320-21576-17). This analytes has been qualified; however, the peak did not saturate the instrument detector. Historical data indicate that for the isotope dilution method, dilution and re-analysis will not produce significantly different results from those reported above the calibration range. The maximum dilution was performed for the sample.

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

#### LCMS

Method(s) 537 (Modified): 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.

Method(s) 537 (Modified): Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for several analytes in the following samples: MW-1R (DUP) (320-21576-15), MW-4R (320-21576-17) and MW-3R (320-21576-18). Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Method(s) 537 (Modified): The injection times displayed in chrom/TALS do not match the injection times listed on A8 instrument printouts. The instrument printout listing the injection times can be found at the end of the run log section. MW-1R (320-21576-14), MW-1R (DUP) (320-21576-15), MW-2R (320-21576-16), MW-4R (320-21576-17), MW-3R (320-21576-18), (CCV 320-129688/19), (CCV 320-129688/20), (CCV 320-129688/6), (CCV 320-129688/7), (CCV 320-129688/4), (CCV 320-129688/5), (ICV 320-129364/12), (ICV 320-129364/22), (CCV 320-129481/30), (CCV 320-129481/31), (CCV 320-129481/59), (CCV 320-129481/60), (CCV 320-129481/63), (CCV 320-129481/64), (CCV 320-129481/70), (CCV 320-129481/15), (CCV 320-129481/5), (LCS 320-126548/2-A), (MB 320-126548/1-A), (320-21576-A-5-A), (320-21576-B-5-A MS), (320-21576-B-5-B MSD), (CCV 320-129691/16), (CCV 320-129691/17), (CCV 320-129691/26) and (CCV 320-129691/27)

Method(s) 537 (Modified): The closing continuing calibration verification (CCV) standard associated with batch 320-129481 failed to meet acceptance limits for Perfluorooctanesulfonic acid (PFOS). The CCV was out high due to carryover from high concentrations of PFOS in the preceding samples. The opening CCV was in control and so reanalysis of the following samples was not performed: (CCV 320-129481/63).

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

#### Organic Prep

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

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TestAmerica Job ID: 320-21576-2

Client: Hyde Environmental, Inc. Project/Site: Fort McCoy PFAS FTBP3

Client Sample ID: MW-1R (DUP)

Client Sample ID: MW-1R

DL

Analyte

Lab Sample ID: 320-21576-14

Lab Sample ID: 320-21576-15

537 (Modified)

Method

Dil Fac D

1

1

1

1

50

50

50

**Prep Type** 

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

**Prep Type** 

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

Analyte Result Qualifier RL **MDL** Unit Dil Fac D Method 94 R 2.1 Perfluorobutanoic acid (PFBA) 0.38 ng/L 537 (Modified) 250 537 (Modified) Perfluorohexanoic acid (PFHxA) 2.1 0.65 ng/L 1 Perfluoroheptanoic acid (PFHpA) 280 2.1 0.66 ng/L 1 537 (Modified) Perfluorooctanoic acid (PFOA) 480 2.1 0.62 ng/L 1 537 (Modified) 35 2.1 0.76 ng/L 537 (Modified) Perfluorobutanesulfonic acid (PFBS) 1 Perfluoropentanoic acid (PFPeA) - DL 390 100 50 537 (Modified) 41 ng/L 1200 100 50 537 (Modified) 36 ng/L Perfluorohexanesulfonic acid (PFHxS) Perfluorooctanesulfonic acid (PFOS) -6800 160 53 ng/L 50 537 (Modified)

Result Qualifier

98 B

260

300

480

42

420

1300

6300

Client Sample ID: MW-2R

Perfluorobutanoic acid (PFBA)

Perfluorohexanoic acid (PFHxA)

Perfluoroheptanoic acid (PFHpA)

Perfluorobutanesulfonic acid (PFBS)

Perfluoropentanoic acid (PFPeA) - DL

Perfluorohexanesulfonic acid (PFHxS)

Perfluorooctanesulfonic acid (PFOS) -

Perfluorooctanoic acid (PFOA)

Lab Sample ID: 320-21576-16

Analyte	Result Qualifier	r RL	MDL	Unit	Dil Fac	D Method	Prep Type
Perfluorobutanoic acid (PFBA) - DL	1400 B	110	19	ng/L	50	537 (Modified)	Total/NA
Perfluorohexanoic acid (PFHxA) - DL	4900	110	33	ng/L	50	537 (Modified)	Total/NA
Perfluoroheptanoic acid (PFHpA) - DL	1200	110	34	ng/L	50	537 (Modified)	Total/NA
Perfluoropentanoic acid (PFPeA) - DL	5300	110	42	ng/L	50	537 (Modified)	Total/NA
Perfluorooctanoic acid (PFOA) - DL	720	110	31	ng/L	50	537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS) - DL	380	110	39	ng/L	50	537 (Modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS) - DL	7800	110	37	ng/L	50	537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL2	67000 E	340	110	ng/L	100	537 (Modified)	Total/NA

RL

2.1

2.1

2.1

2.1

2.1

100

100

170

MDL Unit

0.38 ng/L

0.65 ng/L

0.66 ng/L

0.62 ng/L

0.76 ng/L

41 ng/L

36 ng/L

53 ng/L

Client Sample ID: MW-4R

Lab Sample ID: 320-21576-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	200	В —	2.1	0.38	ng/L		_	537 (Modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	230		2.1	0.67	ng/L	1		537 (Modified)	Total/NA
Perfluorohexanoic acid (PFHxA) - DL	1200		100	33	ng/L	50		537 (Modified)	Total/NA
Perfluoropentanoic acid (PFPeA) - DL	700		100	41	ng/L	50		537 (Modified)	Total/NA
Perfluorooctanoic acid (PFOA) - DL	650		100	31	ng/L	50		537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS) - DL	250		100	39	ng/L	50		537 (Modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS) - DL	5500		100	37	ng/L	50		537 (Modified)	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Sacramento

# **Detection Summary**

Client: Hyde Environmental, Inc. Project/Site: Fort McCoy PFAS FTBP3

Client Sample ID: MW-4R (Continued)

TestAmerica Job ID: 320-21576-2

Lab Sample ID: 320-21576-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D Method	Prep Type	
Perfluorooctanesulfonic acid (PFOS) - DL2	120000	E	340	110	ng/L	100	537 (Modified)	Total/NA	

Lab Sample ID: 320-21576-18

**Client Sample ID: MW-3R** 

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	510		2.1	0.63	ng/L		537 (Modified)	Total/NA
Perfluorobutanoic acid (PFBA) - DL	750	В	110	19	ng/L	50	537 (Modified)	Total/NA
Perfluorohexanoic acid (PFHxA) - DL	2000		110	33	ng/L	50	537 (Modified)	Total/NA
Perfluoroheptanoic acid (PFHpA) - DL	530		110	34	ng/L	50	537 (Modified)	Total/NA
Perfluoropentanoic acid (PFPeA) - DL	3000		110	42	ng/L	50	537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS) - DL	1200		110	39	ng/L	50	537 (Modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS) - DL	2600		110	37	ng/L	50	537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	2100		170	54	ng/L	50	537 (Modified)	Total/NA

Client: Hyde Environmental, Inc. Project/Site: Fort McCoy PFAS FTBP3

TestAmerica Job ID: 320-21576-2

Lab Sample ID: 320-21576-14

09/10/16 09:06 09/28/16 13:56

50

Matrix: Water

Client Sample ID: MW-1R Date Collected: 09/06/16 16:20 Date Received: 09/08/16 09:55

13C5-PFPeA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	94	В	2.1	0.38	ng/L		09/10/16 09:06	09/27/16 18:24	1
Perfluorohexanoic acid (PFHxA)	250		2.1	0.65	ng/L		09/10/16 09:06	09/27/16 18:24	1
Perfluoroheptanoic acid (PFHpA)	280		2.1	0.66	ng/L		09/10/16 09:06	09/27/16 18:24	1
Perfluorooctanoic acid (PFOA)	480		2.1	0.62	ng/L		09/10/16 09:06	09/27/16 18:24	1
Perfluorobutanesulfonic acid (PFBS)	35		2.1	0.76	ng/L		09/10/16 09:06	09/27/16 18:24	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	64		25 - 150				09/10/16 09:06	09/27/16 18:24	1
13C4 PFOA	46		25 - 150				09/10/16 09:06	09/27/16 18:24	1
1802 PFHxS	70		25 - 150				09/10/16 09:06	09/27/16 18:24	1
13C4-PFHpA	47		25 - 150				09/10/16 09:06	09/27/16 18:24	1
13C4 PFBA	35		25 - 150				09/10/16 09:06	09/27/16 18:24	1
Method: 537 (Modified) - Perfl	uorinated H	ydrocarbo	ns - DL						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoropentanoic acid (PFPeA)	390		100	41	ng/L		09/10/16 09:06	09/28/16 13:56	50
Perfluorohexanesulfonic acid (PFHxS)	1200		100	36	ng/L		09/10/16 09:06	09/28/16 13:56	50
Perfluorooctanesulfonic acid (PFOS)	6800		160	53	ng/L		09/10/16 09:06	09/28/16 13:56	50
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1802 PFHxS	135		25 - 150				09/10/16 09:06	09/28/16 13:56	50
13C4 PFOS	132		25 - 150				00/40/40 00 00	09/28/16 13:56	50

25 - 150

Client: Hyde Environmental, Inc. Project/Site: Fort McCoy PFAS FTBP3

13C5-PFPeA

TestAmerica Job ID: 320-21576-2

09/10/16 09:06 09/28/16 14:04

Client Sample ID: MW-1R (DUP) Lab Sample ID: 320-21576-15

Date Collected: 09/06/16 16:20 Matrix: Water

Date Received: 09/08/16 09:55

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	98	В	2.1	0.38	ng/L		09/10/16 09:06	09/27/16 18:31	1
Perfluorohexanoic acid (PFHxA)	260		2.1	0.65	ng/L		09/10/16 09:06	09/27/16 18:31	1
Perfluoroheptanoic acid (PFHpA)	300		2.1	0.66	ng/L		09/10/16 09:06	09/27/16 18:31	1
Perfluorooctanoic acid (PFOA)	480		2.1	0.62	ng/L		09/10/16 09:06	09/27/16 18:31	1
Perfluorobutanesulfonic acid (PFBS)	42		2.1	0.76	ng/L		09/10/16 09:06	09/27/16 18:31	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	65		25 - 150				09/10/16 09:06	09/27/16 18:31	1
13C4 PFOA	47		25 - 150				09/10/16 09:06	09/27/16 18:31	1
18O2 PFHxS	71		25 - 150				09/10/16 09:06	09/27/16 18:31	1
13C4-PFHpA	48		25 - 150				09/10/16 09:06	09/27/16 18:31	1
13C4 PFBA	36		25 - 150				09/10/16 09:06	09/27/16 18:31	1
Method: 537 (Modified) - Perfl	uorinated H	vdrocarbo	ns - DL						
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoropentanoic acid (PFPeA)	420		100	41	ng/L		09/10/16 09:06	09/28/16 14:04	50
Perfluorohexanesulfonic acid (PFHxS)	1300		100	36	ng/L		09/10/16 09:06	09/28/16 14:04	50
Perfluorooctanesulfonic acid (PFOS)	6300		170	53	ng/L		09/10/16 09:06	09/28/16 14:04	50
	0/ Daggirani	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Isotope Dilution	%Recovery	Qualifici						· · · · · · · · · · · · · · · · · · ·	
Isotope Dilution 1802 PFHxS	286	*	25 - 150				09/10/16 09:06	09/28/16 14:04	50

25 - 150

183 \*

10/3/2016

Client: Hyde Environmental, Inc. Project/Site: Fort McCoy PFAS FTBP3

TestAmerica Job ID: 320-21576-2

Lab Sample ID: 320-21576-16

**Matrix: Water** 

Client Sample ID: MW-2R Date Collected: 09/06/16 17:15 Date Received: 09/08/16 09:55

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	1400	В	110	19	ng/L		09/10/16 09:06	09/28/16 14:11	50
Perfluorohexanoic acid (PFHxA)	4900		110	33	ng/L		09/10/16 09:06	09/28/16 14:11	50
Perfluoroheptanoic acid (PFHpA)	1200		110	34	ng/L		09/10/16 09:06	09/28/16 14:11	50
Perfluoropentanoic acid (PFPeA)	5300		110	42	ng/L		09/10/16 09:06	09/28/16 14:11	50
Perfluorooctanoic acid (PFOA)	720		110	31	ng/L		09/10/16 09:06	09/28/16 14:11	50
Perfluorobutanesulfonic acid (PFBS)	380		110	39	ng/L		09/10/16 09:06	09/28/16 14:11	50
Perfluorohexanesulfonic acid (PFHxS)	7800		110	37	ng/L		09/10/16 09:06	09/28/16 14:11	50
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	95		25 - 150				09/10/16 09:06	09/28/16 14:11	50
13C4 PFOA	113		25 - 150				09/10/16 09:06	09/28/16 14:11	50
1802 PFHxS	141		25 - 150				09/10/16 09:06	09/28/16 14:11	50
13C4-PFHpA	91		25 - 150				09/10/16 09:06	09/28/16 14:11	50
13C5-PFPeA	103		25 - 150				09/10/16 09:06	09/28/16 14:11	50
13C4 PFBA	100		25 - 150				09/10/16 09:06	09/28/16 14:11	50
Method: 537 (Modified) - Perfl	uorinated H	ydrocarbo	ns - DL2						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	67000	E	340	110	ng/L		09/10/16 09:06	09/28/16 18:33	100
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOS	138		25 - 150				09/10/16 09:06	09/28/16 18:33	100

Client: Hyde Environmental, Inc. Project/Site: Fort McCoy PFAS FTBP3

TestAmerica Job ID: 320-21576-2

Lab Sample ID: 320-21576-17

**Matrix: Water** 

Client Sample ID: MW-4R Date Collected: 09/06/16 18:00 Date Received: 09/08/16 09:55

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	200	В	2.1	0.38	ng/L		09/10/16 09:06	09/27/16 19:16	1
Perfluoroheptanoic acid (PFHpA)	230		2.1	0.67	ng/L		09/10/16 09:06	09/27/16 19:16	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4-PFHpA	34		25 - 150				09/10/16 09:06	09/27/16 19:16	1
13C4 PFBA	26		25 - 150				09/10/16 09:06	09/27/16 19:16	1

Method: 537 (Modified) - Perfl Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	1200		100	33	ng/L		09/10/16 09:06	09/28/16 14:26	50
Perfluoropentanoic acid (PFPeA)	700		100	41	ng/L		09/10/16 09:06	09/28/16 14:26	50
Perfluorooctanoic acid (PFOA)	650		100	31	ng/L		09/10/16 09:06	09/28/16 14:26	50
Perfluorobutanesulfonic acid (PFBS)	250		100	39	ng/L		09/10/16 09:06	09/28/16 14:26	50
Perfluorohexanesulfonic acid (PFHxS)	5500		100	37	ng/L		09/10/16 09:06	09/28/16 14:26	50
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	180	*	25 - 150				09/10/16 09:06	09/28/16 14:26	50
13C4 PFOA	204	*	25 - 150				09/10/16 09:06	09/28/16 14:26	50
1802 PFHxS	227	*	25 - 150				09/10/16 09:06	09/28/16 14:26	50
13C5-PFPeA	199	*	25 - 150				00/10/16 00:06	09/28/16 14:26	50

Method: 537 (Modified) - Per	fluorinated H								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	120000	E	340	110	ng/L		09/10/16 09:06	09/28/16 14:19	100
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared 00/10/10	Analyzed	Dil Fac
_13C4 PFOS	/2		25 - 150				09/10/16 09:06	09/28/16 14:19	100

Client: Hyde Environmental, Inc. Project/Site: Fort McCoy PFAS FTBP3

TestAmerica Job ID: 320-21576-2

Lab Sample ID: 320-21576-18

09/10/16 09:06 09/28/16 14:34

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Matrix: Water

Client Sample ID: MW-3R Date Collected: 09/06/16 18:30 Date Received: 09/08/16 09:55

13C4 PFBA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	510		2.1	0.63	ng/L		09/10/16 09:06	09/27/16 19:24	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	48		25 - 150				09/10/16 09:06	09/27/16 19:24	1
Method: 537 (Modified) - Perfl	uorinated H	vdrocarbo	ons - DL						
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	750	В	110	19	ng/L		09/10/16 09:06	09/28/16 14:34	50
Perfluorohexanoic acid (PFHxA)	2000		110	33	ng/L		09/10/16 09:06	09/28/16 14:34	50
Perfluoroheptanoic acid (PFHpA)	530		110	34	ng/L		09/10/16 09:06	09/28/16 14:34	50
Perfluoropentanoic acid (PFPeA)	3000		110	42	ng/L		09/10/16 09:06	09/28/16 14:34	50
Perfluorobutanesulfonic acid (PFBS)	1200		110	39	ng/L		09/10/16 09:06	09/28/16 14:34	50
Perfluorohexanesulfonic acid (PFHxS)	2600		110	37	ng/L		09/10/16 09:06	09/28/16 14:34	50
Perfluorooctanesulfonic acid (PFOS)	2100		170	54	ng/L		09/10/16 09:06	09/28/16 14:34	50
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	187	*	25 - 150				09/10/16 09:06	09/28/16 14:34	50
1802 PFHxS	217	*	25 - 150				09/10/16 09:06	09/28/16 14:34	50
13C4 PFOS	215	*	25 - 150				09/10/16 09:06	09/28/16 14:34	50
13C4-PFHpA	174	*	25 - 150				09/10/16 09:06	09/28/16 14:34	50
13C5-PFPeA	194	*	25 - 150				09/10/16 09:06	09/28/16 14:34	50

25 - 150

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Client: Hyde Environmental, Inc.
Project/Site: Fort McCoy PFAS FTBP3

TestAmerica Job ID: 320-21576-2

Method: 537 (Modified) - Perfluorinated Hydrocarbons

Matrix: Water Prep Type: Total/NA

	Percent Isotope Dilution Recovery (Acceptance Limits)								
	3C2 PFHx	3C4 PFO	3O2 PFHx	3C4 PFOS	3C4-PFHp	3C5-PFPe.	3C4 PFB/		
Client Sample ID	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)		
MW-1R	64	46	70		47		35		
MW-1R (DUP)	65	47	71		48		36		
MW-2R	95	113	141		91	103	100		
MW-4R					34		26		
MW-4R	180 *	204 *	227 *			199 *			
MW-3R		48							
	MW-1R MW-1R (DUP) MW-2R MW-4R MW-4R	Client Sample ID     (25-150)       MW-1R     64       MW-1R (DUP)     65       MW-2R     95       MW-4R     180 *	Client Sample ID   (25-150)   (25-150)     (25-150)	Client Sample ID         3C2 PFHx         3C4 PFO/ (25-150)         3O2 PFHx           MW-1R         64         46         70           MW-1R (DUP)         65         47         71           MW-2R         95         113         141           MW-4R         180 *         204 *         227 *	Client Sample ID   (25-150)   (	Client Sample ID         3C2 PFHx         3C4 PFO/ (25-150)         3C2 PFHx         3C4 PFO/ 3C4 PFO/ 3C4 PFHy         3C4 PFO/ 3C4 PFHp         4C5 PFHp         4C5 PFHp         4C5 PFHp         4C5 PFHp         4C7 PFHp </td <td>Client Sample ID         3C2 PFHx         3C4 PFO/ (25-150)         3O2 PFHx         3C4 PFO/ (25-150)         3C4-PFHp (25-150)         3C5-PFPe (25-150)           MW-1R         64         46         70         47           MW-1R (DUP)         65         47         71         48           MW-2R         95         113         141         91         103           MW-4R         180 *         204 *         227 *         199 *</td>	Client Sample ID         3C2 PFHx         3C4 PFO/ (25-150)         3O2 PFHx         3C4 PFO/ (25-150)         3C4-PFHp (25-150)         3C5-PFPe (25-150)           MW-1R         64         46         70         47           MW-1R (DUP)         65         47         71         48           MW-2R         95         113         141         91         103           MW-4R         180 *         204 *         227 *         199 *		

**Surrogate Legend** 

13C2 PFHxA = 13C2 PFHxA

13C4 PFOA = 13C4 PFOA

1802 PFHxS = 1802 PFHxS

13C4-PFHpA = 13C4-PFHpA

13C5-PFPeA = 13C5-PFPeA

13C4 PFBA = 13C4 PFBA

13C4 PFOS = 13C4 PFOS 13C5-PFPeA = 13C5-PFPeA

Method: 537 (Modified) - Perfluorinated Hydrocarbons

Matrix: Water Prep Type: Total/NA

_		Percent Isotope Dilution Recovery (Acceptance Limits)							
		BO2 PFHx	3C4 PFOS	3C5-PFPe.					
Lab Sample ID	Client Sample ID	(25-150)	(25-150)	(25-150)					
320-21576-14 - DL	MW-1R	135	132	78					
320-21576-15 - DL	MW-1R (DUP)	286 *	278 *	183 *					
Surrogate Legend									
1802 PFHxS = 1802	PFHxS								

Method: 537 (Modified) - Perfluorinated Hydrocarbons

Matrix: Water Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		3C4 PFOS							
Lab Sample ID	Client Sample ID	(25-150)							
320-21576-16 - DL2	MW-2R	138							
320-21576-17 - DL2	MW-4R	72							
Surrogate Legend									
13C4 PFOS = 13C4 F	PFOS								

Method: 537 (Modified) - Perfluorinated Hydrocarbons

Matrix: Water Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		3C2 PFHx	<b>BO2 PFHx</b>	3C4 PFOS	3C4-PFHp	3C5-PFPe	3C4 PFB/		
Lab Sample ID	Client Sample ID	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)		
320-21576-18 - DL	MW-3R	187 *	217 *	215 *	174 *	194 *	179 *		

TestAmerica Sacramento

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# **Isotope Dilution Summary**

Client: Hyde Environmental, Inc. Project/Site: Fort McCoy PFAS FTBP3

1802 PFHxS = 1802 PFHxS 13C4 PFOS = 13C4 PFOS 13C4-PFHpA = 13C4-PFHpA 13C5-PFPeA = 13C5-PFPeA 13C4 PFBA = 13C4 PFBA TestAmerica Job ID: 320-21576-2

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# **QC Association Summary**

Client: Hyde Environmental, Inc. Project/Site: Fort McCoy PFAS FTBP3 TestAmerica Job ID: 320-21576-2

#### LCMS

**Prep Batch: 126548** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-21576-14 - DL	MW-1R	Total/NA	Water	3535	
320-21576-14	MW-1R	Total/NA	Water	3535	
320-21576-15 - DL	MW-1R (DUP)	Total/NA	Water	3535	
320-21576-15	MW-1R (DUP)	Total/NA	Water	3535	
320-21576-16 - DL	MW-2R	Total/NA	Water	3535	
320-21576-16 - DL2	MW-2R	Total/NA	Water	3535	
320-21576-17	MW-4R	Total/NA	Water	3535	
320-21576-17 - DL	MW-4R	Total/NA	Water	3535	
320-21576-17 - DL2	MW-4R	Total/NA	Water	3535	
320-21576-18 - DL	MW-3R	Total/NA	Water	3535	
320-21576-18	MW-3R	Total/NA	Water	3535	

#### **Analysis Batch: 129481**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-21576-14	MW-1R	Total/NA	Water	537 (Modified)	126548
320-21576-15	MW-1R (DUP)	Total/NA	Water	537 (Modified)	126548
320-21576-17	MW-4R	Total/NA	Water	537 (Modified)	126548
320-21576-18	MW-3R	Total/NA	Water	537 (Modified)	126548

#### **Analysis Batch: 129688**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-21576-14 - DL	MW-1R	Total/NA	Water	537 (Modified)	126548
320-21576-15 - DL	MW-1R (DUP)	Total/NA	Water	537 (Modified)	126548
320-21576-16 - DL	MW-2R	Total/NA	Water	537 (Modified)	126548
320-21576-17 - DL2	MW-4R	Total/NA	Water	537 (Modified)	126548
320-21576-17 - DL	MW-4R	Total/NA	Water	537 (Modified)	126548
320-21576-18 - DL	MW-3R	Total/NA	Water	537 (Modified)	126548

#### **Analysis Batch: 129691**

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Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-21576-16 - DL 2	M\M-2R	Total/NA	Water	537 (Modified)	126548

Client: Hyde Environmental, Inc. Project/Site: Fort McCoy PFAS FTBP3 TestAmerica Job ID: 320-21576-2

Client Sample ID: MW-1R

Date Collected: 09/06/16 16:20 Date Received: 09/08/16 09:55

Lab Sample ID: 320-21576-14

**Matrix: Water** 

**Matrix: Water** 

TAL SAC

**Matrix: Water** 

**Matrix: Water** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			303.1 mL	0.5 mL	126548	09/10/16 09:06	HJA	TAL SAC
Total/NA	Analysis	537 (Modified)		1			129481	09/27/16 18:24	SBC	TAL SAC
Total/NA	Prep	3535	DL		303.1 mL	0.5 mL	126548	09/10/16 09:06	HJA	TAL SAC
Total/NA	Analysis	537 (Modified)	DL	50			129688	09/28/16 13:56	SBC	TAL SAC

Client Sample ID: MW-1R (DUP) Lab Sample ID: 320-21576-15

Date Collected: 09/06/16 16:20 Date Received: 09/08/16 09:55

Batch Batch Dil Initial Final Batch Prepared **Prep Type** Туре Method **Amount Amount** Number or Analyzed Run **Factor** Analyst Lab Total/NA Prep 3535 302.8 mL 0.5 mL 126548 09/10/16 09:06 HJA TAL SAC Total/NA 129481 09/27/16 18:31 SBC TAL SAC Analysis 537 (Modified) 1 Total/NA Prep 3535 DL 302.8 mL 126548 09/10/16 09:06 HJA TAL SAC 0.5 mL

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Client Sample ID: MW-2R Lab Sample ID: 320-21576-16 Date Collected: 09/06/16 17:15 **Matrix: Water** 

129688

09/28/16 14:04 SBC

Date Received: 09/08/16 09:55

Analysis

537 (Modified)

DL

Total/NA

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535	DL		296.9 mL	0.5 mL	126548	09/10/16 09:06	HJA	TAL SAC
Total/NA	Analysis	537 (Modified)	DL	50			129688	09/28/16 14:11	SBC	TAL SAC
Total/NA	Prep	3535	DL2		296.9 mL	0.5 mL	126548	09/10/16 09:06	HJA	TAL SAC
Total/NA	Analysis	537 (Modified)	DL2	100			129691	09/28/16 18:33	CBW	TAL SAC

Lab Sample ID: 320-21576-17 Client Sample ID: MW-4R

Date Collected: 09/06/16 18:00 Date Received: 09/08/16 09:55

Prep Type Total/NA Total/NA	Batch Type Prep Analysis	Batch Method 3535 537 (Modified)	Run	Dil Factor	Initial Amount 297.9 mL	Final Amount 0.5 mL	Batch Number 126548 129481	Prepared or Analyzed 09/10/16 09:06 09/27/16 19:16		Lab TAL SAC TAL SAC
Total/NA Total/NA	Prep Analysis	3535 537 (Modified)	DL2 DL2	100	297.9 mL	0.5 mL	126548 129688	09/10/16 09:06 09/28/16 14:19	SBC	TAL SAC TAL SAC
Total/NA Total/NA	Prep Analysis	3535 537 (Modified)	DL DL	50	297.9 mL	0.5 mL	126548 129688	09/10/16 09:06 09/28/16 14:26		TAL SAC TAL SAC

Client Sample ID: MW-3R Lab Sample ID: 320-21576-18

Date Collected: 09/06/16 18:30 Date Received: 09/08/16 09:55

<del>_</del>	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			295.3 mL	0.5 mL	126548	09/10/16 09:06	HJA	TAL SAC

TestAmerica Sacramento

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## **Lab Chronicle**

Client: Hyde Environmental, Inc. Project/Site: Fort McCoy PFAS FTBP3

TestAmerica Job ID: 320-21576-2

Lab Sample ID: 320-21576-18

Matrix: Water

Date Collected: 09/06/16 18:30 Date Received: 09/08/16 09:55

**Client Sample ID: MW-3R** 

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	537 (Modified)		1			129481	09/27/16 19:24	SBC	TAL SAC
Total/NA Total/NA	Prep Analysis	3535 537 (Modified)	DL DL	50	295.3 mL	0.5 mL	126548 129688	09/10/16 09:06 09/28/16 14:34		TAL SAC TAL SAC

#### **Laboratory References:**

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

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# **Certification Summary**

Client: Hyde Environmental, Inc. Project/Site: Fort McCoy PFAS FTBP3 TestAmerica Job ID: 320-21576-2

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# **Laboratory: TestAmerica Sacramento**

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2928-01	01-31-17
Oregon	NELAP	10	4040	01-29-17

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# **Method Summary**

Client: Hyde Environmental, Inc. Project/Site: Fort McCoy PFAS FTBP3

TestAmerica Job ID: 320-21576-2

Method	Method Description	Protocol	Laboratory
537 (Modified)	Perfluorinated Hydrocarbons	EPA	TAL SAC

<u>y</u>

#### **Protocol References:**

EPA = US Environmental Protection Agency

#### Laboratory References:

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

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# **Sample Summary**

Client: Hyde Environmental, Inc. Project/Site: Fort McCoy PFAS FTBP3

TestAmerica Job ID: 320-21576-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-21576-14	MW-1R	Water	09/06/16 16:20	09/08/16 09:55
320-21576-15	MW-1R (DUP)	Water	09/06/16 16:20	09/08/16 09:55
320-21576-16	MW-2R	Water	09/06/16 17:15	09/08/16 09:55
320-21576-17	MW-4R	Water	09/06/16 18:00	09/08/16 09:55
320-21576-18	MW-3R	Water	09/06/16 18:30	09/08/16 09:55

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TestAmerica

# **Chain of Custody Record**

**TestAmerica Sacramento** 

880 Riverside Parkway West Sacramento, CA 95605 Phone (916) 373-5600 Fax (916) 372-1059	Chain of Custody Record	Record		IESIAMETERING
Client Information	Sampler Sampler	Lab PM Fredrick, Sandie J	Carrier Tracking No(s):	COC No. 320-12373-2794.3
Client Contact. Jim Lindemann		E-Mail: sandie fredrick@testamericainc.com		Page 3 of 3
Company: Hyde Environmental, Inc.		Analysis Requested	equested	Job#,
Address: W175 N11163 Stonewood Drive Suite 110	Due Date Requested:	•		Š
City Germantown State, Zip: Wil, 53022	TAT Requested (days):	it Specific Lis		D - TOC. M - Havane B - Mad H
Phone. 262-227-5878(Tel)	PO#: Purchase Order Requested	980		D
Email: jclindemann@hyde-env.com	WO#.	(oN	100 BEACH	
Project Name Fort McCoy PFAS	Project #: 32008436	10 89	100000	
Site Cort Melan ITERS	SSOW#	v) ası		Other:
	Sample (Wewater, Type (Wewater)  Sample (C=comp, Owestern)  C=mode Date Time C=comp	ield Filtered Perdorm MS/N DGO_AGO	nedmuN isto	Social Instructions (Notes
	X	X	1	opecial instructions/notes.
20	9/4/1/8 11,20 6 Water	7	N	
(and) - (mw) of 2			0	
2C-MW 1	17K Water			
MW- LIM	1400		R	
MW- 3D	1,630		u	
	_ [	Sample Disposal ( A fee may be	Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month	d longer than 1 month)
Deliverable Requested: I, III, IV, Other (specify)	Poison B Unknown Radiological	Special Instructions/QC Requirements:	Usposal By Lab Archive For rents:	ve ForMonths
Empty Kit Relinquished by:	Date:	Time:	Method of Shipment	
Reimourhed by 10/3/2	DaterTire 1730 pm The	Received by 7.5%	Date/Time	59455 Company Company Company
O16	Date/Time	Received by.	Date/Time	Company
Custody Seais Intact: Custody Seal No.		Cooler Temperature(s) °C and Other Remarks: $4$	Remarks: 40	
A		13	7 8 9	1 2 3 4 5

# **Login Sample Receipt Checklist**

Client: Hyde Environmental, Inc.

Job Number: 320-21576-2

Login Number: 21576 List Source: TestAmerica Sacramento

List Number: 1

Creator: Turpen, Troy

Creator: Turpen, Troy		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	ESS Seals
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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# October 2016 Laboratory Reports FTBP2



THE LEADER IN ENVIRONMENTAL TESTING

# ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Sacramento 880 Riverside Parkway West Sacramento, CA 95605 Tel: (916)373-5600

TestAmerica Job ID: 320-22766-1

Client Project/Site: Former Fire Training Pit #2, Fort McCoy

#### For:

Short Elliott Hendrickson, Inc. dba SEH 10 North Bridge Street Chippewa Falls, Wisconsin 54729-3374

Attn: Mr. Mike Rohlik

Authorized for release by: 10/31/2016 2:05:02 PM

Sanda Jreduik

Sandie Fredrick, Project Manager II (920)261-1660

sandie.fredrick@testamericainc.com

..... LINKS .....

Review your project results through

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**Have a Question?** 



Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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# **Definitions/Glossary**

Client: Short Elliott Hendrickson, Inc. dba SEH

Project/Site: Former Fire Training Pit #2, Fort McCoy

TestAmerica Job ID: 320-22766-1

#### **Qualifiers**

#### **LCMS**

J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

## **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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)

PQL Practical Quantitation Limit

QC Quality Control RER Relative error ratio

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)

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#### **Case Narrative**

Client: Short Elliott Hendrickson, Inc. dba SEH Project/Site: Former Fire Training Pit #2, Fort McCoy TestAmerica Job ID: 320-22766-1

Job ID: 320-22766-1

**Laboratory: TestAmerica Sacramento** 

Narrative

Job Narrative 320-22766-1

#### **Comments**

No additional comments.

#### Receipt

The samples were received on 10/18/2016 9:40 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.2° C.

#### LCMS

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

#### **Organic Prep**

Method(s) 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with 320-133422.

Method(s) 3535: Due to the excessive amount of sediment in the sample bottles the aqueous portion of these samples was decanted to new bottles prior to spiking and extraction. B-1 (320-22766-1), B-2 (320-22766-2), B-4 (320-22766-4), B-4 DUP (320-22766-5), B-6 (320-22766-10), B-9 (320-22766-10), B-10 (320-22766-11) and B-11 (320-22766-12)

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

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Client: Short Elliott Hendrickson, Inc. dba SEH

TestAmerica Job ID: 320-22766-1

Client Sample ID: B-1

Project/Site: Former Fire Training Pit #2, Fort McCoy

Lab Sample ID: 320-22766-1

Analyte	Result Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanesulfonic acid (PFBS)	3.7	2.0	0.90	ng/L	1	_	537 (modified)	Total/NA
Perfluorobutanoic acid (PFBA)	6.2	2.0	0.45	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	88	2.0	0.85	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	14	2.0	0.97	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	8.3	2.0	0.78	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	18	2.0	0.77	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	5.5	2.0	0.73	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	24	2.0	1.2	ng/L	1		537 (modified)	Total/NA

Client Sample ID: B-2

Lab Sample ID: 320-22766-2

Analyte	Result Qualifier	RL	MDL	Unit	Dil Fac D	Method	Prep Type
Perfluorobutanesulfonic acid (PFBS)	4.1	2.0	0.92	ng/L		537 (modified)	Total/NA
Perfluorobutanoic acid (PFBA)	6.5	2.0	0.46	ng/L	1	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	36	2.0	0.87	ng/L	1	537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	10	2.0	0.99	ng/L	1	537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	6.6	2.0	0.81	ng/L	1	537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	10	2.0	0.79	ng/L	1	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	14	2.0	0.75	ng/L	1	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	81	2.0	1.3	ng/L	1	537 (modified)	Total/NA

Client Sample ID: B-3

Lab Sample ID: 320-22766-3

Analyte	Result Qualifier	RL	MDL	Unit	Dil Fac	D Method	Prep Type
Perfluorobutanesulfonic acid (PFBS)	230	1.8	0.84	ng/L		537 (modified)	Total/NA
Perfluorobutanoic acid (PFBA)	100	1.8	0.42	ng/L	1	537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	210	1.8	0.90	ng/L	1	537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	130	1.8	0.73	ng/L	1	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	300	1.8	0.68	ng/L	1	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS) - DL	4400	180	79	ng/L	100	537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA) - DL	480	180	72	ng/L	100	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) -	62000	180	120	ng/L	100	537 (modified)	Total/NA

Client Sample ID: B-4

Lab Sample ID: 320-22766-4

Analyte	Result Qualifier	RL	MDL	Unit	Dil Fac	D Method	Prep Type
Perfluorobutanesulfonic acid (PFBS)	2.5	1.9	0.88	ng/L		537 (modified)	Total/NA
Perfluorobutanoic acid (PFBA)	7.6	1.9	0.44	ng/L	1	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	70	1.9	0.83	ng/L	1	537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	9.3	1.9	0.95	ng/L	1	537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	12	1.9	0.77	ng/L	1	537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	12	1.9	0.75	ng/L	1	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	17	1.9	0.72	ng/L	1	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	810	19	12	ng/L	10	537 (modified)	Total/NA

**Client Sample ID: B-4 DUP** 

Lab Sample ID: 320-22766-5

This Detection Summary does not include radiochemical test results.

TestAmerica Sacramento

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Client: Short Elliott Hendrickson, Inc. dba SEH Project/Site: Former Fire Training Pit #2, Fort McCoy

TestAmerica Job ID: 320-22766-1

Lab Sample ID: 320-22766-5

Analyte	Result Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanesulfonic acid (PFBS)	2.6	1.9	0.89	ng/L	1	_	537 (modified)	Total/NA
Perfluorobutanoic acid (PFBA)	7.4	1.9	0.44	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	70	1.9	0.84	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	9.2	1.9	0.96	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	12	1.9	0.78	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	12	1.9	0.76	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	17	1.9	0.72	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	820	19	12	ng/L	10		537 (modified)	Total/NA

Client Sample ID: B-4 DUP (Continued)

Client Sample ID: B-5				Lab Sample ID: 320-22766-6				
Analysta	Popult Qualifier	ы	MDI Unit	Dil Ego D. Mothod	Dron Tuno			

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanesulfonic acid (PFBS)	120		1.9	0.87	ng/L	1	_	537 (modified)	Total/NA
Perfluorobutanoic acid (PFBA)	330		1.9	0.43	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS) - DL	7400		190	82	ng/L	100		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA) - DL	730		190	93	ng/L	100		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA) - DL	1400		190	76	ng/L	100		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA) - DL	880		190	74	ng/L	100		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA) - DL	3400		190	71	ng/L	100		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	69000		190	120	ng/L	100		537 (modified)	Total/NA

# Client Sample ID: B-6

# Lab Sample ID: 320-22766-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	2.8		2.0	0.45	ng/L		_	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS) - RA	1.8	J	2.0	0.85	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA) - RA	1.8	J	2.0	0.97	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA) - RA	0.82	J	2.0	0.78	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA) - RA	2.4		2.0	0.73	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - RA	3.7		2.0	1.2	ng/L	1		537 (modified)	Total/NA

# Client Sample ID: B-7

# Lab Sample ID: 320-22766-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanesulfonic acid (PFBS)	1.5	J	1.8	0.85	ng/L		_	537 (modified)	Total/NA
Perfluorobutanoic acid (PFBA)	1.7	J	1.8	0.42	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	44		1.8	0.80	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	1.2	J	1.8	0.91	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.8		1.8	0.74	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	1.5	J	1.8	0.72	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	5.1		1.8	0.69	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	140		1.8	1.2	ng/L	1		537 (modified)	Total/NA

## Client Sample ID: B-8

### Lab Sample ID: 320-22766-9

Analyte	Result Qualifier	RL	MDL Unit	Dil Fac D Method	Prep Type
Perfluorobutanesulfonic acid (PFBS)	1.0 J	2.1	0.95 ng/L	1 537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Sacramento

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Client: Short Elliott Hendrickson, Inc. dba SEH Project/Site: Former Fire Training Pit #2, Fort McCoy TestAmerica Job ID: 320-22766-1

Client Sample ID: B-8 (Continued)

Lab Sa	ample	ID: 320	-22766-9
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Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.58	J	2.1	0.48	ng/L	1	537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	1.9	J	2.1	1.0	ng/L	1	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	1.9	J	2.1	1.3	ng/L	1	537 (modified)	Total/NA

Client Sample ID: B-9 Lab Sample ID: 320-22766-10

Analyte	Result Qua	lifier RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	6.4	1.9	0.45	ng/L		_	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.7	1.9	0.85	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	2.9	1.9	0.96	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	4.0	1.9	0.78	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	4.4	1.9	0.76	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	4.6	1.9	0.73	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	32	1.9	1.2	ng/L	1		537 (modified)	Total/NA

**Client Sample ID: B-10** Lab Sample ID: 320-22766-11

Analyte	Result Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.46 J	2.0	0.45	ng/L		_	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.0 J	2.0	0.86	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	1.4 J	2.0	0.74	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.4	2.0	1.3	ng/L	1		537 (modified)	Total/NA

Client Sample ID: B-11 Lab Sample ID: 320-22766-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanesulfonic acid (PFBS)	1.0	J	2.0	0.94	ng/L	1	_	537 (modified)	Total/NA
Perfluorobutanoic acid (PFBA)	5.8		2.0	0.47	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.6		2.0	0.89	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	4.0		2.0	1.0	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.6	J	2.0	0.82	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	3.6		2.0	0.80	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	3.6		2.0	0.76	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	29		2.0	1.3	ng/L	1		537 (modified)	Total/NA

**Client Sample ID: EQUIPMENT BLANK** Lab Sample ID: 320-22766-13

Analyte	Result Qualifier	RL	MDL Unit	Dil Fac D Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.95 J	1.9	0.43 ng/L	1 537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Client: Short Elliott Hendrickson, Inc. dba SEH

Project/Site: Former Fire Training Pit #2, Fort McCoy

Lab Sample ID: 320-22766-1

TestAmerica Job ID: 320-22766-1

**Matrix: Water** 

Client Sample ID: B-1 Date Collected: 10/13/16 14:50

Date Received: 10/18/16 09:40

Method: 537 (modified) - Perfluorinated Hydrocarbons Result Qualifier RL **MDL** Unit Dil Fac Analyte D Prepared Analyzed Perfluorobutanesulfonic acid 3.7 2.0 0.90 ng/L 10/19/16 15:23 10/25/16 22:12 (PFBS) 10/19/16 15:23 10/25/16 22:12 Perfluorobutanoic acid (PFBA) 6.2 2.0 0.45 ng/L Perfluorohexanesulfonic acid 88 2.0 0.85 ng/L 10/19/16 15:23 10/25/16 22:12 (PFHxS) Perfluoropentanoic acid (PFPeA) 2.0 0.97 ng/L 10/19/16 15:23 10/25/16 22:12 14 Perfluoroheptanoic acid (PFHpA) 2.0 0.78 ng/L 10/19/16 15:23 10/25/16 22:12 8.3 Perfluorohexanoic acid (PFHxA) 2.0 0.77 ng/L 10/19/16 15:23 10/25/16 22:12 18 2.0 0.73 ng/L 10/19/16 15:23 10/25/16 22:12 Perfluorooctanoic acid (PFOA) 5.5 Perfluorooctanesulfonic acid 24 2.0 1.2 ng/L 10/19/16 15:23 10/25/16 22:12 (PFOS) Isotope Dilution %Recovery Qualifier Limits Prepared Analyzed Dil Fac 1802 PFHxS 107 25 - 150 <u>10/19/16 15:23</u> <u>10/25/16 22:12</u> 13C4-PFHpA 75 10/19/16 15:23 10/25/16 22:12 25 - 150 1 13C4 PFOA 76 10/19/16 15:23 10/25/16 22:12 25 - 150 1 13C4 PFOS 115 25 - 150 10/19/16 15:23 10/25/16 22:12 13C4 PFBA 47 25 - 150 10/19/16 15:23 10/25/16 22:12 13C2 PFHxA 79 25 - 150 10/19/16 15:23 10/25/16 22:12 13C5 PFPeA 80 25 - 150 10/19/16 15:23 10/25/16 22:12

Client Sample ID: B-2 Lab Sample ID: 320-22766-2

Date Collected: 10/13/16 16:20 Matrix: Water

Date Received: 10/18/16 09:40

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	4.1		2.0	0.92	ng/L		10/19/16 15:23	10/25/16 22:19	1
Perfluorobutanoic acid (PFBA)	6.5		2.0	0.46	ng/L		10/19/16 15:23	10/25/16 22:19	1
Perfluorohexanesulfonic acid (PFHxS)	36		2.0	0.87	ng/L		10/19/16 15:23	10/25/16 22:19	1
Perfluoropentanoic acid (PFPeA)	10		2.0	0.99	ng/L		10/19/16 15:23	10/25/16 22:19	1
Perfluoroheptanoic acid (PFHpA)	6.6		2.0	0.81	ng/L		10/19/16 15:23	10/25/16 22:19	1
Perfluorohexanoic acid (PFHxA)	10		2.0	0.79	ng/L		10/19/16 15:23	10/25/16 22:19	1
Perfluorooctanoic acid (PFOA)	14		2.0	0.75	ng/L		10/19/16 15:23	10/25/16 22:19	1
Perfluorooctanesulfonic acid (PFOS)	81		2.0	1.3	ng/L		10/19/16 15:23	10/25/16 22:19	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1802 PFHxS	107		25 - 150				10/19/16 15:23	10/25/16 22:19	1
13C4-PFHpA	66		25 - 150				10/19/16 15:23	10/25/16 22:19	1
13C4 PFOA	63		25 - 150				10/19/16 15:23	10/25/16 22:19	1
13C4 PFOS	110		25 - 150				10/19/16 15:23	10/25/16 22:19	1
13C4 PFBA	44		25 - 150				10/19/16 15:23	10/25/16 22:19	1
13C2 PFHxA	70		25 - 150				10/19/16 15:23	10/25/16 22:19	1
13C5 PFPeA	70		25 - 150				10/19/16 15:23	10/25/16 22:19	1

Client: Short Elliott Hendrickson, Inc. dba SEH Project/Site: Former Fire Training Pit #2, Fort McCoy

Client Sample ID: B-3

Date Collected: 10/13/16 15:45

Date Received: 10/18/16 09:40

TestAmerica Job ID: 320-22766-1

Lab Sample ID: 320-22766-3

**Matrix: Water** 

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	230		1.8	0.84	ng/L		10/19/16 15:23	10/25/16 22:27	1
Perfluorobutanoic acid (PFBA)	100		1.8	0.42	ng/L		10/19/16 15:23	10/25/16 22:27	1
Perfluoropentanoic acid (PFPeA)	210		1.8	0.90	ng/L		10/19/16 15:23	10/25/16 22:27	1
Perfluoroheptanoic acid (PFHpA)	130		1.8	0.73	ng/L		10/19/16 15:23	10/25/16 22:27	1
Perfluorooctanoic acid (PFOA)	300		1.8	0.68	ng/L		10/19/16 15:23	10/25/16 22:27	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1802 PFHxS	51		25 - 150				10/19/16 15:23	10/25/16 22:27	1
13C4-PFHpA	44		25 - 150				10/19/16 15:23	10/25/16 22:27	1
13C4 PFOA	71		25 - 150				10/19/16 15:23	10/25/16 22:27	1
13C4 PFBA	34		25 - 150				10/19/16 15:23	10/25/16 22:27	1
13C5 PFPeA	67		25 - 150				10/19/16 15:23	10/25/16 22:27	1

Method: 537 (modified) - Perf	<b>luorinated</b> F	lydrocarbo	ons - DL						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanesulfonic acid (PFHxS)	4400		180	79	ng/L		10/19/16 15:23	10/26/16 18:18	100
Perfluorohexanoic acid (PFHxA)	480		180	72	ng/L		10/19/16 15:23	10/26/16 18:18	100
Perfluorooctanesulfonic acid (PFOS)	62000		180	120	ng/L		10/19/16 15:23	10/26/16 18:18	100
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
18O2 PFHxS	108		25 - 150				10/19/16 15:23	10/26/16 18:18	100
13C4 PFOS	100		25 - 150				10/19/16 15:23	10/26/16 18:18	100
13C2 PFHxA	80		25 - 150				10/19/16 15:23	10/26/16 18:18	100

Client Sample ID: B-4 Lab Sample ID: 320-22766-4 Date Collected: 10/14/16 11:20 **Matrix: Water** 

Date Received: 10/18/16 09:40

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	2.5		1.9	0.88	ng/L		10/19/16 15:23	10/25/16 22:34	1
Perfluorobutanoic acid (PFBA)	7.6		1.9	0.44	ng/L		10/19/16 15:23	10/25/16 22:34	1
Perfluorohexanesulfonic acid (PFHxS)	70		1.9	0.83	ng/L		10/19/16 15:23	10/25/16 22:34	1
Perfluoropentanoic acid (PFPeA)	9.3		1.9	0.95	ng/L		10/19/16 15:23	10/25/16 22:34	1
Perfluoroheptanoic acid (PFHpA)	12		1.9	0.77	ng/L		10/19/16 15:23	10/25/16 22:34	1
Perfluorohexanoic acid (PFHxA)	12		1.9	0.75	ng/L		10/19/16 15:23	10/25/16 22:34	1
Perfluorooctanoic acid (PFOA)	17		1.9	0.72	ng/L		10/19/16 15:23	10/25/16 22:34	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1802 PFHxS	102		25 - 150				10/19/16 15:23	10/25/16 22:34	1
13C4-PFHpA	64		25 - 150				10/19/16 15:23	10/25/16 22:34	1
13C4 PFOA	71		25 - 150				10/19/16 15:23	10/25/16 22:34	1
13C4 PFBA	43		25 - 150				10/19/16 15:23	10/25/16 22:34	1
13C2 PFHxA	65		25 - 150				10/19/16 15:23	10/25/16 22:34	1
13C5 PFPeA	64		25 - 150				10/19/16 15:23	10/25/16 22:34	1

TestAmerica Sacramento

Client: Short Elliott Hendrickson, Inc. dba SEH Project/Site: Former Fire Training Pit #2, Fort McCoy

Client Sample ID: B-4 Lab Sample ID: 320-22766-4

**Matrix: Water** 

Date Collected: 10/14/16 11:20 Date Received: 10/18/16 09:40

Method: 537 (modified) - Per	fluorinated F	lydrocarbo	ons - DL						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	810		19	12	ng/L		10/19/16 15:23	10/26/16 18:56	10
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOS	116		25 - 150				10/19/16 15:23	10/26/16 18:56	10

Client Sample ID: B-4 DUP

Date Collected: 10/14/16 11:30

Lab Sample ID: 320-22766-5

Matrix: Water

Date Received: 10/18/16 09:40

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	2.6		1.9	0.89	ng/L		10/19/16 15:23	10/25/16 22:42	1
Perfluorobutanoic acid (PFBA)	7.4		1.9	0.44	ng/L		10/19/16 15:23	10/25/16 22:42	1
Perfluorohexanesulfonic acid (PFHxS)	70		1.9	0.84	ng/L		10/19/16 15:23	10/25/16 22:42	1
Perfluoropentanoic acid (PFPeA)	9.2		1.9	0.96	ng/L		10/19/16 15:23	10/25/16 22:42	1
Perfluoroheptanoic acid (PFHpA)	12		1.9	0.78	ng/L		10/19/16 15:23	10/25/16 22:42	1
Perfluorohexanoic acid (PFHxA)	12		1.9	0.76	ng/L		10/19/16 15:23	10/25/16 22:42	1
Perfluorooctanoic acid (PFOA)	17		1.9	0.72	ng/L		10/19/16 15:23	10/25/16 22:42	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1802 PFHxS	98		25 - 150				10/19/16 15:23	10/25/16 22:42	1
13C4-PFHpA	69		25 - 150				10/19/16 15:23	10/25/16 22:42	1
13C4 PFOA	74		25 - 150				10/19/16 15:23	10/25/16 22:42	1
13C4 PFBA	46		25 - 150				10/19/16 15:23	10/25/16 22:42	1
13C2 PFHxA	71		25 - 150				10/19/16 15:23	10/25/16 22:42	1
13C5 PFPeA	72		25 - 150				10/19/16 15:23	10/25/16 22:42	1

Method: 537 (modified) - Perf	luorinated H	lydrocarbo	ons - DL						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	820		19	12	ng/L		10/19/16 15:23	10/26/16 19:03	10
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOS	100		25 - 150				10/19/16 15:23	10/26/16 19:03	10

Client Sample ID: B-5

Date Collected: 10/14/16 11:00

Lab Sample ID: 320-22766-6

Matrix: Water

Date Received: 10/18/16 09:40

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	120		1.9	0.87	ng/L		10/19/16 15:23	10/25/16 22:49	1
Perfluorobutanoic acid (PFBA)	330		1.9	0.43	ng/L		10/19/16 15:23	10/25/16 22:49	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
18O2 PFHxS	38		25 - 150				10/19/16 15:23	10/25/16 22:49	1
13C4 PFBA	44		25 - 150				10/19/16 15:23	10/25/16 22:49	1

TestAmerica Sacramento

Client: Short Elliott Hendrickson, Inc. dba SEH

13C5 PFPeA

Project/Site: Former Fire Training Pit #2, Fort McCoy

Client Sample ID: B-5 Lab Sample ID: 320-22766-6

Date Collected: 10/14/16 11:00 **Matrix: Water** Date Received: 10/18/16 09:40

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanesulfonic acid (PFHxS)	7400		190	82	ng/L		10/19/16 15:23	10/26/16 18:26	100
Perfluoropentanoic acid (PFPeA)	730		190	93	ng/L		10/19/16 15:23	10/26/16 18:26	100
Perfluoroheptanoic acid (PFHpA)	1400		190	76	ng/L		10/19/16 15:23	10/26/16 18:26	100
Perfluorohexanoic acid (PFHxA)	880		190	74	ng/L		10/19/16 15:23	10/26/16 18:26	100
Perfluorooctanoic acid (PFOA)	3400		190	71	ng/L		10/19/16 15:23	10/26/16 18:26	100
Perfluorooctanesulfonic acid (PFOS)	69000		190	120	ng/L		10/19/16 15:23	10/26/16 18:26	100
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4-PFHpA	82		25 - 150				10/19/16 15:23	10/26/16 18:26	100
13C4 PFOA	102		25 - 150				10/19/16 15:23	10/26/16 18:26	100
13C4 PFOS	85		25 - 150				10/19/16 15:23	10/26/16 18:26	100
13C2 PFHxA	78		25 - 150				10/19/16 15:23	10/26/16 18:26	100
13C5 PFPeA	86		25 - 150				10/19/16 15:23	10/26/16 18:26	100

Lab Sample ID: 320-22766-7 Client Sample ID: B-6

Date Collected: 10/14/16 10:15 **Matrix: Water** Date Received: 10/18/16 09:40

Method: 537 (modified) - Perf	luorinated H	lydrocarbo	ons						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	<0.90		2.0	0.90	ng/L		10/19/16 15:23	10/25/16 22:57	1
Perfluorobutanoic acid (PFBA)	2.8		2.0	0.45	ng/L		10/19/16 15:23	10/25/16 22:57	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1802 PFHxS	100		25 - 150				10/19/16 15:23	10/25/16 22:57	1
13C4 PFBA	50		25 - 150				10/19/16 15:23	10/25/16 22:57	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanesulfonic acid (PFHxS)	1.8	J	2.0	0.85	ng/L		10/19/16 15:23	10/26/16 20:11	1
Perfluoropentanoic acid (PFPeA)	1.8	J	2.0	0.97	ng/L		10/19/16 15:23	10/26/16 20:11	1
Perfluoroheptanoic acid (PFHpA)	0.82	J	2.0	0.78	ng/L		10/19/16 15:23	10/26/16 20:11	1
Perfluorohexanoic acid (PFHxA)	<0.77		2.0	0.77	ng/L		10/19/16 15:23	10/26/16 20:11	1
Perfluorooctanoic acid (PFOA)	2.4		2.0	0.73	ng/L		10/19/16 15:23	10/26/16 20:11	1
Perfluorooctanesulfonic acid (PFOS)	3.7		2.0	1.2	ng/L		10/19/16 15:23	10/26/16 20:11	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4-PFHpA	67	-	25 - 150				10/19/16 15:23	10/26/16 20:11	1
13C4 PFOA	65		25 - 150				10/19/16 15:23	10/26/16 20:11	1
13C4 PFOS	112		25 - 150				10/19/16 15:23	10/26/16 20:11	1
13C2 PFHxA	70		25 - 150				10/19/16 15:23	10/26/16 20:11	1

25 - 150

73

10/19/16 15:23 10/26/16 20:11

TestAmerica Job ID: 320-22766-1

Client: Short Elliott Hendrickson, Inc. dba SEH Project/Site: Former Fire Training Pit #2, Fort McCoy TestAmerica Job ID: 320-22766-1

**Client Sample ID: B-7** Lab Sample ID: 320-22766-8

Date Collected: 10/14/16 09:15 **Matrix: Water** Date Received: 10/18/16 09:40

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	1.5	J	1.8	0.85	ng/L		10/19/16 15:23	10/25/16 23:34	1
Perfluorobutanoic acid (PFBA)	1.7	J	1.8	0.42	ng/L		10/19/16 15:23	10/25/16 23:34	1
Perfluorohexanesulfonic acid (PFHxS)	44		1.8	0.80	ng/L		10/19/16 15:23	10/25/16 23:34	1
Perfluoropentanoic acid (PFPeA)	1.2	J	1.8	0.91	ng/L		10/19/16 15:23	10/25/16 23:34	1
Perfluoroheptanoic acid (PFHpA)	1.8		1.8	0.74	ng/L		10/19/16 15:23	10/25/16 23:34	1
Perfluorohexanoic acid (PFHxA)	1.5	J	1.8	0.72	ng/L		10/19/16 15:23	10/25/16 23:34	1
Perfluorooctanoic acid (PFOA)	5.1		1.8	0.69	ng/L		10/19/16 15:23	10/25/16 23:34	1
Perfluorooctanesulfonic acid (PFOS)	140		1.8	1.2	ng/L		10/19/16 15:23	10/25/16 23:34	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1802 PFHxS	98		25 - 150				10/19/16 15:23	10/25/16 23:34	1
13C4-PFHpA	66		25 - 150				10/19/16 15:23	10/25/16 23:34	1
13C4 PFOA	66		25 - 150				10/19/16 15:23	10/25/16 23:34	1
13C4 PFOS	103		25 - 150				10/19/16 15:23	10/25/16 23:34	1
13C4 PFBA	36		25 - 150				10/19/16 15:23	10/25/16 23:34	1
13C2 PFHxA	69		25 - 150				10/19/16 15:23	10/25/16 23:34	1
13C5 PFPeA	64		25 - 150				10/19/16 15:23	10/25/16 23:34	1

**Client Sample ID: B-8** Lab Sample ID: 320-22766-9 **Matrix: Water** 

Date Collected: 10/14/16 09:50 Date Received: 10/18/16 09:40

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	1.0	J	2.1	0.95	ng/L		10/19/16 15:23	10/25/16 23:42	1
Perfluorobutanoic acid (PFBA)	0.58	J	2.1	0.48	ng/L		10/19/16 15:23	10/25/16 23:42	1
Perfluorohexanesulfonic acid (PFHxS)	<0.90		2.1	0.90	ng/L		10/19/16 15:23	10/25/16 23:42	1
Perfluoropentanoic acid (PFPeA)	1.9	J	2.1	1.0	ng/L		10/19/16 15:23	10/25/16 23:42	1
Perfluoroheptanoic acid (PFHpA)	<0.83		2.1	0.83	ng/L		10/19/16 15:23	10/25/16 23:42	1
Perfluorohexanoic acid (PFHxA)	<0.82		2.1	0.82	ng/L		10/19/16 15:23	10/25/16 23:42	1
Perfluorooctanoic acid (PFOA)	<0.78		2.1	0.78	ng/L		10/19/16 15:23	10/25/16 23:42	1
Perfluorooctanesulfonic acid (PFOS)	1.9	J	2.1	1.3	ng/L		10/19/16 15:23	10/25/16 23:42	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1802 PFHxS	101		25 - 150				10/19/16 15:23	10/25/16 23:42	1
13C4-PFHpA	83		25 - 150				10/19/16 15:23	10/25/16 23:42	1
13C4 PFOA	90		25 - 150				10/19/16 15:23	10/25/16 23:42	1
13C4 PFOS	107		25 - 150				10/19/16 15:23	10/25/16 23:42	1
13C4 PFBA	61		25 - 150				10/19/16 15:23	10/25/16 23:42	1
13C2 PFHxA	88		25 - 150				10/19/16 15:23	10/25/16 23:42	1
13C5 PFPeA	94		25 - 150				10/19/16 15:23	10/25/16 23:42	1

Client: Short Elliott Hendrickson, Inc. dba SEH Project/Site: Former Fire Training Pit #2, Fort McCoy

Lab Sample ID: 320-22766-10

10/19/16 15:23 10/25/16 23:49

TestAmerica Job ID: 320-22766-1

**Matrix: Water** 

Date Collected: 10/13/16 13:50 Date Received: 10/18/16 09:40

Client Sample ID: B-9

Method: 537 (modified) - Perfl	luorinated F	lydrocarbo	ons						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	<0.89		1.9	0.89	ng/L		10/19/16 15:23	10/25/16 23:49	1
Perfluorobutanoic acid (PFBA)	6.4		1.9	0.45	ng/L		10/19/16 15:23	10/25/16 23:49	1
Perfluorohexanesulfonic acid (PFHxS)	3.7		1.9	0.85	ng/L		10/19/16 15:23	10/25/16 23:49	1
Perfluoropentanoic acid (PFPeA)	2.9		1.9	0.96	ng/L		10/19/16 15:23	10/25/16 23:49	1
Perfluoroheptanoic acid (PFHpA)	4.0		1.9	0.78	ng/L		10/19/16 15:23	10/25/16 23:49	1
Perfluorohexanoic acid (PFHxA)	4.4		1.9	0.76	ng/L		10/19/16 15:23	10/25/16 23:49	1
Perfluorooctanoic acid (PFOA)	4.6		1.9	0.73	ng/L		10/19/16 15:23	10/25/16 23:49	1
Perfluorooctanesulfonic acid (PFOS)	32		1.9	1.2	ng/L		10/19/16 15:23	10/25/16 23:49	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1802 PFHxS	104	-	25 - 150				10/19/16 15:23	10/25/16 23:49	1
13C4-PFHpA	86		25 - 150				10/19/16 15:23	10/25/16 23:49	1
13C4 PFOA	83		25 - 150				10/19/16 15:23	10/25/16 23:49	1
13C4 PFOS	108		25 - 150				10/19/16 15:23	10/25/16 23:49	1
13C4 PFBA	66		25 - 150				10/19/16 15:23	10/25/16 23:49	1
13C2 PFHxA	94		25 - 150				10/19/16 15:23	10/25/16 23:49	1

Client Sample ID: B-10 Lab Sample ID: 320-22766-11

25 - 150

Date Collected: 10/13/16 13:20 **Matrix: Water** 

Date Received: 10/18/16 09:40

13C5 PFPeA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	<0.91		2.0	0.91	ng/L		10/19/16 15:23	10/25/16 23:57	1
Perfluorobutanoic acid (PFBA)	0.46	J	2.0	0.45	ng/L		10/19/16 15:23	10/25/16 23:57	1
Perfluorohexanesulfonic acid (PFHxS)	1.0	J	2.0	0.86	ng/L		10/19/16 15:23	10/25/16 23:57	1
Perfluoropentanoic acid (PFPeA)	<0.98		2.0	0.98	ng/L		10/19/16 15:23	10/25/16 23:57	1
Perfluoroheptanoic acid (PFHpA)	< 0.79		2.0	0.79	ng/L		10/19/16 15:23	10/25/16 23:57	1
Perfluorohexanoic acid (PFHxA)	<0.78		2.0	0.78	ng/L		10/19/16 15:23	10/25/16 23:57	1
Perfluorooctanoic acid (PFOA)	1.4	J	2.0	0.74	ng/L		10/19/16 15:23	10/25/16 23:57	1
Perfluorooctanesulfonic acid (PFOS)	3.4		2.0	1.3	ng/L		10/19/16 15:23	10/25/16 23:57	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1802 PFHxS	107		25 - 150				10/19/16 15:23	10/25/16 23:57	1
13C4-PFHpA	54		25 - 150				10/19/16 15:23	10/25/16 23:57	1
13C4 PFOA	55		25 - 150				10/19/16 15:23	10/25/16 23:57	1
13C4 PFOS	109		25 - 150				10/19/16 15:23	10/25/16 23:57	1
13C4 PFBA	45		25 - 150				10/19/16 15:23	10/25/16 23:57	1
13C2 PFHxA	52		25 - 150				10/19/16 15:23	10/25/16 23:57	1
13C5 PFPeA	55		25 - 150				10/19/16 15:23	10/25/16 23:57	1

Client: Short Elliott Hendrickson, Inc. dba SEH Project/Site: Former Fire Training Pit #2, Fort McCoy

**Client Sample ID: B-11** Lab Sample ID: 320-22766-12 **Matrix: Water** 

Date Collected: 10/13/16 12:00 Date Received: 10/18/16 09:40

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	1.0	J	2.0	0.94	ng/L		10/19/16 15:23	10/26/16 00:04	1
Perfluorobutanoic acid (PFBA)	5.8		2.0	0.47	ng/L		10/19/16 15:23	10/26/16 00:04	1
Perfluorohexanesulfonic acid (PFHxS)	3.6		2.0	0.89	ng/L		10/19/16 15:23	10/26/16 00:04	1
Perfluoropentanoic acid (PFPeA)	4.0		2.0	1.0	ng/L		10/19/16 15:23	10/26/16 00:04	1
Perfluoroheptanoic acid (PFHpA)	1.6	J	2.0	0.82	ng/L		10/19/16 15:23	10/26/16 00:04	1
Perfluorohexanoic acid (PFHxA)	3.6		2.0	0.80	ng/L		10/19/16 15:23	10/26/16 00:04	1
Perfluorooctanoic acid (PFOA)	3.6		2.0	0.76	ng/L		10/19/16 15:23	10/26/16 00:04	1
Perfluorooctanesulfonic acid (PFOS)	29		2.0	1.3	ng/L		10/19/16 15:23	10/26/16 00:04	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1802 PFHxS	99		25 - 150				10/19/16 15:23	10/26/16 00:04	1
13C4-PFHpA	89		25 - 150				10/19/16 15:23	10/26/16 00:04	1
13C4 PFOA	87		25 - 150				10/19/16 15:23	10/26/16 00:04	1
13C4 PFOS	103		25 - 150				10/19/16 15:23	10/26/16 00:04	1
13C4 PFBA	62		25 - 150				10/19/16 15:23	10/26/16 00:04	1
13C2 PFHxA	94		25 - 150				10/19/16 15:23	10/26/16 00:04	1
13C5 PFPeA	94		25 - 150				10/19/16 15:23	10/26/16 00:04	1

**Client Sample ID: EQUIPMENT BLANK** 

Lab Sample ID: 320-22766-13 Date Collected: 10/14/16 11:45 **Matrix: Water** 

Date Received: 10/18/16 09:40

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	<0.86		1.9	0.86	ng/L		10/19/16 15:23	10/26/16 00:12	1
Perfluorobutanoic acid (PFBA)	0.95	J	1.9	0.43	ng/L		10/19/16 15:23	10/26/16 00:12	1
Perfluorohexanesulfonic acid (PFHxS)	<0.82		1.9	0.82	ng/L		10/19/16 15:23	10/26/16 00:12	1
Perfluoropentanoic acid (PFPeA)	<0.93		1.9	0.93	ng/L		10/19/16 15:23	10/26/16 00:12	1
Perfluoroheptanoic acid (PFHpA)	<0.75		1.9	0.75	ng/L		10/19/16 15:23	10/26/16 00:12	1
Perfluorohexanoic acid (PFHxA)	<0.74		1.9	0.74	ng/L		10/19/16 15:23	10/26/16 00:12	1
Perfluorooctanoic acid (PFOA)	<0.70		1.9	0.70	ng/L		10/19/16 15:23	10/26/16 00:12	1
Perfluorooctanesulfonic acid (PFOS)	<1.2		1.9	1.2	ng/L		10/19/16 15:23	10/26/16 00:12	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1802 PFHxS	100		25 - 150				10/19/16 15:23	10/26/16 00:12	1
13C4-PFHpA	80		25 - 150				10/19/16 15:23	10/26/16 00:12	1
13C4 PFOA	72		25 - 150				10/19/16 15:23	10/26/16 00:12	1
13C4 PFOS	101		25 - 150				10/19/16 15:23	10/26/16 00:12	1
13C4 PFBA	100		25 - 150				10/19/16 15:23	10/26/16 00:12	1
13C2 PFHxA	98		25 - 150				10/19/16 15:23	10/26/16 00:12	1
13C5 PFPeA	114		25 - 150				10/19/16 15:23	10/26/16 00:12	1

TestAmerica Job ID: 320-22766-1

#### **Isotope Dilution Summary**

Client: Short Elliott Hendrickson, Inc. dba SEH Project/Site: Former Fire Training Pit #2, Fort McCoy TestAmerica Job ID: 320-22766-1

#### Method: 537 (modified) - Perfluorinated Hydrocarbons

Matrix: Water Prep Type: Total/NA

_			Perce	ent Isotope	Dilution Re	covery (Ac	ceptance L	imits)
		BO2 PFHx	3C4-PFHp	3C4 PFO/	3C4 PFOS	3C4 PFB/	3C2 PFHx	3C5 PFPe.
Lab Sample ID	Client Sample ID	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)
320-22766-1	B-1	107	75	76	115	47	79	80
320-22766-2	B-2	107	66	63	110	44	70	70
320-22766-3	B-3	51	44	71		34		67
320-22766-3 - DL	B-3	108			100		80	
320-22766-4	B-4	102	64	71		43	65	64
320-22766-4 - DL	B-4				116			
320-22766-5	B-4 DUP	98	69	74		46	71	72
320-22766-5 - DL	B-4 DUP				100			
320-22766-6	B-5	38				44		
320-22766-6 - DL	B-5		82	102	85		78	86
320-22766-7	B-6	100				50		
320-22766-7 - RA	B-6		67	65	112		70	73
320-22766-8	B-7	98	66	66	103	36	69	64
320-22766-9	B-8	101	83	90	107	61	88	94
320-22766-10	B-9	104	86	83	108	66	94	94
320-22766-11	B-10	107	54	55	109	45	52	55
320-22766-12	B-11	99	89	87	103	62	94	94
320-22766-13	EQUIPMENT BLANK	100	80	72	101	100	98	114
LCS 320-133422/2-A	Lab Control Sample	100	101	110	104	109	106	108
LCSD 320-133422/3-A	Lab Control Sample Dup	104	106	109	107	114	108	109
MB 320-133422/1-A	Method Blank	97	105	112	97	106	100	104

#### Surrogate Legend

1802 PFHxS = 1802 PFHxS

13C4-PFHpA = 13C4-PFHpA

13C4 PFOA = 13C4 PFOA

13C4 PFOS = 13C4 PFOS

13C4 PFBA = 13C4 PFBA

13C2 PFHxA = 13C2 PFHxA

13C5 PFPeA = 13C5 PFPeA

TestAmerica Sacramento

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TestAmerica Job ID: 320-22766-1

Client: Short Elliott Hendrickson, Inc. dba SEH Project/Site: Former Fire Training Pit #2, Fort McCoy

#### Method: 537 (modified) - Perfluorinated Hydrocarbons

MD MD

Lab Sample ID: MB 320-133422/1-A

**Matrix: Water** 

**Analysis Batch: 134487** 

**Client Sample ID: Method Blank Prep Type: Total/NA** 

Prep Batch: 133422

	IVID	IVID							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	<0.92		2.0	0.92	ng/L		10/19/16 15:23	10/25/16 21:49	1
Perfluorobutanoic acid (PFBA)	<0.46		2.0	0.46	ng/L		10/19/16 15:23	10/25/16 21:49	1
Perfluorohexanesulfonic acid (PFHxS)	<0.87		2.0	0.87	ng/L		10/19/16 15:23	10/25/16 21:49	1
Perfluoropentanoic acid (PFPeA)	<0.99		2.0	0.99	ng/L		10/19/16 15:23	10/25/16 21:49	1
Perfluoroheptanoic acid (PFHpA)	<0.80		2.0	0.80	ng/L		10/19/16 15:23	10/25/16 21:49	1
Perfluorohexanoic acid (PFHxA)	< 0.79		2.0	0.79	ng/L		10/19/16 15:23	10/25/16 21:49	1
Perfluorooctanoic acid (PFOA)	<0.75		2.0	0.75	ng/L		10/19/16 15:23	10/25/16 21:49	1
Perfluorooctanesulfonic acid (PFOS)	<1.3		2.0	1.3	ng/L		10/19/16 15:23	10/25/16 21:49	1

MB MB Isotope Dilution %Recovery Qualifier Limits Prepared Analyzed 1802 PFHxS 97 <u>10/19/16 15:23</u> <u>10/25/16 21:49</u> 25 - 150 13C4-PFHpA 105 25 - 150 10/19/16 15:23 10/25/16 21:49 13C4 PFOA 112 25 - 150 10/19/16 15:23 10/25/16 21:49 13C4 PFOS 97 25 - 150 10/19/16 15:23 10/25/16 21:49 13C4 PFBA 106 25 - 150 10/19/16 15:23 10/25/16 21:49 13C2 PFHxA 25 - 150 100 10/19/16 15:23 10/25/16 21:49 13C5 PFPeA 104 25 - 150 10/19/16 15:23 10/25/16 21:49

Lab Sample ID: LCS 320-133422/2-A

**Matrix: Water** 

**Analysis Batch: 134487** 

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

Prep Batch: 133422

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perfluorobutanesulfonic acid (PFBS)	35.4	40.5		ng/L		115	55 - 147	
Perfluorobutanoic acid (PFBA)	40.0	44.8		ng/L		112	74 - 138	
Perfluorohexanesulfonic acid (PFHxS)	36.4	38.1		ng/L		105	58 - 138	
Perfluoropentanoic acid (PFPeA)	40.0	39.9		ng/L		100	69 - 134	
Perfluoroheptanoic acid (PFHpA)	40.0	41.7		ng/L		104	63 - 135	
Perfluorohexanoic acid (PFHxA)	40.0	40.9		ng/L		102	70 - 136	
Perfluorooctanoic acid (PFOA)	40.0	39.8		ng/L		100	63 - 141	
Perfluorooctanesulfonic acid (PFOS)	37.1	37.1		ng/L		100	47 - 162	

LCS LCS

Isotope Dilution	%Recovery	Qualifier	Limits
1802 PFHxS	100		25 - 150
13C4-PFHpA	101		25 - 150
13C4 PFOA	110		25 - 150
13C4 PFOS	104		25 - 150
13C4 PFBA	109		25 - 150
13C2 PFHxA	106		25 - 150
13C5 PFPeA	108		25 - 150

TestAmerica Sacramento

#### **QC Sample Results**

Client: Short Elliott Hendrickson, Inc. dba SEH Project/Site: Former Fire Training Pit #2, Fort McCoy TestAmerica Job ID: 320-22766-1

#### Method: 537 (modified) - Perfluorinated Hydrocarbons (Continued)

Lab Sample ID: LCSD 320-133422/3-A Matrix: Water			(	Client Sa	ample	ID: Lab	Control: Prep Ty		•
Analysis Batch: 134487							Prep Ba	atch: 13	33422
	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Perfluorobutanesulfonic acid (PFBS)	35.4	39.4		ng/L		111	55 - 147	3	30
Perfluorobutanoic acid (PFBA)	40.0	42.7		ng/L		107	74 - 138	5	30
Perfluorohexanesulfonic acid (PFHxS)	36.4	36.3		ng/L		100	58 - 138	5	30
Perfluoropentanoic acid (PFPeA)	40.0	39.0		ng/L		98	69 - 134	2	30
Perfluoroheptanoic acid (PFHpA)	40.0	40.1		ng/L		100	63 - 135	4	30
Perfluorohexanoic acid (PFHxA)	40.0	40.6		ng/L		102	70 - 136	1	30
Perfluorooctanoic acid (PFOA)	40.0	40.7		ng/L		102	63 - 141	2	30
Perfluorooctanesulfonic acid (PFOS)	37.1	36.5		ng/L		98	47 - 162	1	30

,	LCSD	LCSD	
Isotope Dilution	%Recovery	Qualifier	Limits
1802 PFHxS	104		25 - 150
13C4-PFHpA	106		25 - 150
13C4 PFOA	109		25 - 150
13C4 PFOS	107		25 - 150
13C4 PFBA	114		25 - 150
13C2 PFHxA	108		25 - 150
13C5 PFPeA	109		25 - 150

TestAmerica Job ID: 320-22766-1

Client: Short Elliott Hendrickson, Inc. dba SEH Project/Site: Former Fire Training Pit #2, Fort McCoy

#### LCMS

#### **Prep Batch: 133422**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-22766-1	B-1	Total/NA	Water	3535	
320-22766-2	B-2	Total/NA	Water	3535	
320-22766-3	B-3	Total/NA	Water	3535	
320-22766-3 - DL	B-3	Total/NA	Water	3535	
320-22766-4	B-4	Total/NA	Water	3535	
320-22766-4 - DL	B-4	Total/NA	Water	3535	
320-22766-5	B-4 DUP	Total/NA	Water	3535	
320-22766-5 - DL	B-4 DUP	Total/NA	Water	3535	
320-22766-6 - DL	B-5	Total/NA	Water	3535	
320-22766-6	B-5	Total/NA	Water	3535	
320-22766-7	B-6	Total/NA	Water	3535	
320-22766-7 - RA	B-6	Total/NA	Water	3535	
320-22766-8	B-7	Total/NA	Water	3535	
320-22766-9	B-8	Total/NA	Water	3535	
320-22766-10	B-9	Total/NA	Water	3535	
320-22766-11	B-10	Total/NA	Water	3535	
320-22766-12	B-11	Total/NA	Water	3535	
320-22766-13	EQUIPMENT BLANK	Total/NA	Water	3535	
MB 320-133422/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-133422/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-133422/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

#### **Analysis Batch: 134487**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-22766-1	B-1	Total/NA	Water	537 (modified)	133422
320-22766-2	B-2	Total/NA	Water	537 (modified)	133422
320-22766-3	B-3	Total/NA	Water	537 (modified)	133422
320-22766-4	B-4	Total/NA	Water	537 (modified)	133422
320-22766-5	B-4 DUP	Total/NA	Water	537 (modified)	133422
320-22766-6	B-5	Total/NA	Water	537 (modified)	133422
320-22766-7	B-6	Total/NA	Water	537 (modified)	133422
320-22766-8	B-7	Total/NA	Water	537 (modified)	133422
320-22766-9	B-8	Total/NA	Water	537 (modified)	133422
320-22766-10	B-9	Total/NA	Water	537 (modified)	133422
320-22766-11	B-10	Total/NA	Water	537 (modified)	133422
320-22766-12	B-11	Total/NA	Water	537 (modified)	133422
320-22766-13	EQUIPMENT BLANK	Total/NA	Water	537 (modified)	133422
MB 320-133422/1-A	Method Blank	Total/NA	Water	537 (modified)	133422
LCS 320-133422/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	133422
LCSD 320-133422/3-A	Lab Control Sample Dup	Total/NA	Water	537 (modified)	133422

#### **Analysis Batch: 134710**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-22766-3 - DL	B-3	Total/NA	Water	537 (modified)	133422
320-22766-4 - DL	B-4	Total/NA	Water	537 (modified)	133422
320-22766-5 - DL	B-4 DUP	Total/NA	Water	537 (modified)	133422
320-22766-6 - DL	B-5	Total/NA	Water	537 (modified)	133422
320-22766-7 - RA	B-6	Total/NA	Water	537 (modified)	133422

TestAmerica Sacramento

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TestAmerica Job ID: 320-22766-1

Client: Short Elliott Hendrickson, Inc. dba SEH Project/Site: Former Fire Training Pit #2, Fort McCoy

Client Sample ID: B-1 Lab Sample ID: 320-22766-1 Date Collected: 10/13/16 14:50

**Matrix: Water** 

Date Received: 10/18/16 09:40

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			256.1 mL	0.5 mL	133422	10/19/16 15:23	JER	TAL SAC
Total/NA	Analysis	537 (modified)		1			134487	10/25/16 22:12	SBC	TAL SAC

Client Sample ID: B-2 Lab Sample ID: 320-22766-2

Date Collected: 10/13/16 16:20 **Matrix: Water** 

Date Received: 10/18/16 09:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			248.8 mL	0.5 mL	133422	10/19/16 15:23	JER	TAL SAC
Total/NA	Analysis	537 (modified)		1			134487	10/25/16 22:19	SBC	TAL SAC

Client Sample ID: B-3 Lab Sample ID: 320-22766-3 **Matrix: Water** 

Date Collected: 10/13/16 15:45 Date Received: 10/18/16 09:40

Dil Batch Batch Initial Final Batch Prepared Method **Prep Type** Type Run **Factor Amount** Amount Number or Analyzed Analyst Lab Prep Total/NA 3535 274.7 mL 0.5 mL 133422 10/19/16 15:23 JER TAL SAC TAL SAC Total/NA Analysis 537 (modified) 134487 10/25/16 22:27 SBC 1 Total/NA Prep 3535 DL 274.7 mL 133422 10/19/16 15:23 JER TAL SAC 0.5 mL Analysis Total/NA 537 (modified) DL 100 134710 10/26/16 18:18 SBC TAL SAC

Client Sample ID: B-4 Lab Sample ID: 320-22766-4 Date Collected: 10/14/16 11:20 **Matrix: Water** 

Date Received: 10/18/16 09:40

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			261 mL	0.5 mL	133422	10/19/16 15:23	JER	TAL SAC
Total/NA	Analysis	537 (modified)		1			134487	10/25/16 22:34	SBC	TAL SAC
Total/NA	Prep	3535	DL		261 mL	0.5 mL	133422	10/19/16 15:23	JER	TAL SAC
Total/NA	Analysis	537 (modified)	DL	10			134710	10/26/16 18:56	SBC	TAL SAC

Client Sample ID: B-4 DUP Lab Sample ID: 320-22766-5 **Matrix: Water** 

Date Collected: 10/14/16 11:30 Date Received: 10/18/16 09:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			258.3 mL	0.5 mL	133422	10/19/16 15:23		TAL SAC
Total/NA	Analysis	537 (modified)		1			134487	10/25/16 22:42	SBC	TAL SAC
Total/NA	Prep	3535	DL		258.3 mL	0.5 mL	133422	10/19/16 15:23	JER	TAL SAC
Total/NA	Analysis	537 (modified)	DL	10			134710	10/26/16 19:03	SBC	TAL SAC

TestAmerica Sacramento

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Client: Short Elliott Hendrickson, Inc. dba SEH Project/Site: Former Fire Training Pit #2, Fort McCoy

Lab Sample ID: 320-22766-6

**Matrix: Water** 

Date Collected: 10/14/16 11:00 Date Received: 10/18/16 09:40

Client Sample ID: B-5

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			265.2 mL	0.5 mL	133422	10/19/16 15:23	JER	TAL SAC
Total/NA	Analysis	537 (modified)		1			134487	10/25/16 22:49	SBC	TAL SAC
Total/NA	Prep	3535	DL		265.2 mL	0.5 mL	133422	10/19/16 15:23	JER	TAL SAC
Total/NA	Analysis	537 (modified)	DL	100			134710	10/26/16 18:26	SBC	TAL SAC

Lab Sample ID: 320-22766-7

**Matrix: Water** 

Date Collected: 10/14/16 10:15 Date Received: 10/18/16 09:40

Client Sample ID: B-6

Prep Type Total/NA Total/NA	Batch Type Prep Analysis	Batch Method 3535 537 (modified)	Run	Dil Factor	Initial Amount 255.6 mL	Final Amount 0.5 mL	Batch Number 133422 134487	Prepared or Analyzed 10/19/16 15:23 10/25/16 22:57		Lab TAL SAC TAL SAC
Total/NA Total/NA	Prep Analysis	3535 537 (modified)	RA RA	1	255.6 mL	0.5 mL	133422 134710	10/19/16 15:23 10/26/16 20:11	JER SBC	TAL SAC TAL SAC

Client Sample ID: B-7 Lab Sample ID: 320-22766-8 Date Collected: 10/14/16 09:15 **Matrix: Water** 

Date Received: 10/18/16 09:40

Batch

Batch

Initial Final Batch Prepared or Analyzed Amount Number Analyst

Method **Prep Type** Type Run **Factor Amount** Total/NA 271.5 mL 133422 10/19/16 15:23 JER TAL SAC Prep 3535 0.5 mL Total/NA Analysis 537 (modified) 134487 10/25/16 23:34 SBC TAL SAC 1

Dil

Client Sample ID: B-8 Lab Sample ID: 320-22766-9 Date Collected: 10/14/16 09:50 **Matrix: Water** 

Date Received: 10/18/16 09:40

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			240.9 mL	0.5 mL	133422	10/19/16 15:23	JER	TAL SAC
Total/NA	Analysis	537 (modified)		1			134487	10/25/16 23:42	SBC	TAL SAC

Client Sample ID: B-9 Lab Sample ID: 320-22766-10

Date Collected: 10/13/16 13:50 Date Received: 10/18/16 09:40

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			256.9 mL	0.5 mL	133422	10/19/16 15:23	JER	TAL SAC
Total/NA	Analysis	537 (modified)		1			134487	10/25/16 23:49	SBC	TAL SAC

TestAmerica Sacramento

**Matrix: Water** 

#### **Lab Chronicle**

Client: Short Elliott Hendrickson, Inc. dba SEH

Project/Site: Former Fire Training Pit #2, Fort McCoy

Lab Sample ID: 320-22766-11

TestAmerica Job ID: 320-22766-1

Date Collected: 10/13/16 13:20 **Matrix: Water** 

Date Received: 10/18/16 09:40

Client Sample ID: B-10

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			252.8 mL	0.5 mL	133422	10/19/16 15:23	JER	TAL SAC
Total/NA	Analysis	537 (modified)		1			134487	10/25/16 23:57	SBC	TAL SAC

Lab Sample ID: 320-22766-12 Client Sample ID: B-11

Date Collected: 10/13/16 12:00 Date Received: 10/18/16 09:40

Dil Initial Batch Batch Batch Final Prepared **Prep Type** Type Method Run **Factor Amount Amount** Number or Analyzed **Analyst** Lab Total/NA Prep 3535 244.6 mL 0.5 mL 133422 10/19/16 15:23 JER TAL SAC Total/NA Analysis 537 (modified) 134487 10/26/16 00:04 SBC TAL SAC 1

Lab Sample ID: 320-22766-13 Client Sample ID: EQUIPMENT BLANK

Date Collected: 10/14/16 11:45

Date Received: 10/18/16 09:40

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			265.7 mL	0.5 mL	133422	10/19/16 15:23	JER	TAL SAC
Total/NA	Analysis	537 (modified)		1			134487	10/26/16 00:12	SBC	TAL SAC

**Laboratory References:** 

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

**Matrix: Water** 

**Matrix: Water** 

#### **Certification Summary**

Client: Short Elliott Hendrickson, Inc. dba SEH

Project/Site: Former Fire Training Pit #2, Fort McCoy

TestAmerica Job ID: 320-22766-1

#### **Laboratory: TestAmerica Sacramento**

The certifications listed below are applicable to this report.

Authority	Program	<b>EPA</b> Region	Certification ID	<b>Expiration Date</b>
Oregon	NELAP	10	4040	01-29-17

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### **Method Summary**

Client: Short Elliott Hendrickson, Inc. dba SEH Project/Site: Former Fire Training Pit #2, Fort McCoy TestAmerica Job ID: 320-22766-1

Method	Method Description	Protocol	Laboratory
537 (modified)	Perfluorinated Hydrocarbons	EPA	TAL SAC

#### **Protocol References:**

EPA = US Environmental Protection Agency

#### **Laboratory References:**

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

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#### **Sample Summary**

Client: Short Elliott Hendrickson, Inc. dba SEH Project/Site: Former Fire Training Pit #2, Fort McCoy TestAmerica Job ID: 320-22766-1

Lab Sample ID	Client Sample ID	Matrix	Collected Received
320-22766-1	B-1	Water	<u>10/13/16 14:50</u> <u>10/18/16 09:40</u>
320-22766-2	B-2	Water	10/13/16 16:20 10/18/16 09:40
320-22766-3	B-3	Water	10/13/16 15:45 10/18/16 09:40
320-22766-4	B-4	Water	10/14/16 11:20 10/18/16 09:40
320-22766-5	B-4 DUP	Water	10/14/16 11:30 10/18/16 09:40
320-22766-6	B-5	Water	10/14/16 11:00 10/18/16 09:40
320-22766-7	B-6	Water	10/14/16 10:15 10/18/16 09:40
320-22766-8	B-7	Water	10/14/16 09:15 10/18/16 09:40
320-22766-9	B-8	Water	10/14/16 09:50 10/18/16 09:40
320-22766-10	B-9	Water	10/13/16 13:50 10/18/16 09:40
320-22766-11	B-10	Water	10/13/16 13:20 10/18/16 09:40
320-22766-12	B-11	Water	10/13/16 12:00 10/18/16 09:40
320-22766-13	FOUIPMENT BLANK	Water	10/14/16 11:45 10/18/16 09:40

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# Chain of Custody Record

Phone (916) 373-5600 Fax (916) 372-1059

West Sacramento, CA 95605

880 Riverside Parkway

TestAmerica Sacramento

( FB

**TestAmerica** 

EPA Method 537/matrood P - Na204S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate Special Instructions/Note: Z - other (specify) Compagn N - None O - AsNaO2 U - Acetone V - MCAA Months Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)

Return To Client A Disposal By Lab Archive For Mon reservation Codes 320-13029-2983.1 35 G - Amchlor H - Ascorbic Acid Page: Page 1 of 2 A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH 1 - Ice J - DI Water K-EDTA 60 L-EDA ice Total Number of containers 320-22766 Chain of Custody Date/Tyme: 3/1 Aethod of Shipment 205 Analysis Requested 120 Cooler Temperature(s) °C and Other Remarks Special Instructions/QC Requirements Trasa. mot lide schinc con Cesar Cortes Received by: Received by: Time: E-Mail: Water Water Matrix Water Water Water Water Water Water Preservation Code Water Water Water Company Company 0 Radiological Type (C=comp, G=grab) Sample 715-271-105 0 1:30 Sample 3:50 4:30 3:45 1:30 11:30 05: P 150 10:15 00:11 4:15 Time Unknown Date: TAT Requested (days) Due Date Requested: Sample Date Olyllo 10/13/10 0113110 0/14/10 Jate/Time roject# SSOW #OM Poison B Skin Irritant Deliverable Requested: I, II, III, IV, Other (specify) Custody Seal No. Former Fire Training Pit #2, Fort McCoy Short Elliott Hendrickson, Inc. dba SEH Flammable Possible Hazard Identification Empty Kit Relinquished by Custody Seals Intact Dop Client Information Sample Identification 10 North Bridge Street mrohlik@sehinc.com Non-Hazard 0-10 WI, 54729-3374 Client Contact: Mr. Mike Rohlik Chippewa Falls 8-8 B-9 linquished by: 8-3 3-6 6-7 roject Name B-2

Page 25 of 29

10/31/2016

Cooler Temperature(s) °C and Other Remarks.

Received by:

Date/Time:

# Chain of Custody Record

**TestAmerica Sacramento** 

880 Riverside Parkway

Zof A TestAmerica

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Mr. Mike Rohlik									Page 2 of 2	
Company: Short Elliott Hendrickson, Inc. dba SEH						Analysis	Analysis Requested		# dol	
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City Chippewa Falls	TAT Requested (days):	:(s):			*				B - NaOH C - Zn Acetate	M - Hexane N - None O - AsNaO2
State, Zp. WI 54729-3374					pys					P - Na2O4S Q - Na2SO3
Phone	# Od				(c					R - Na2S2O3 S - H2SO4
Email: mrohik@sehinc.com	#OM							S	1 - Ice J - DI Water	I - ISP Dodecahydrai U - Acetone V - MCAA
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Relinquished by	Date/Time:			Company	Received by	ed by:		Date/Time:		Company

Custody Seal No.

Custody Seals Intact



Job.

Tracking #:	1807	1779	4656
Tracking #.	1073	7 32 (	1000

Therm. ID 11 / 6 / AK / Other
Contractive South
Cooler Custody Seal:
Sample Custody Seal:
Temp: Observed [ C
Corrected: 0.2°C
From: Temp Blank D Sample D
NCM : Yes D No D
Yes No NA
100 110 101
Perchlorate has headspace?

L'IQAVFORMSIQA-812 REV. 1 SAMPLE RECEIVING NOTES.DOC

QA-812 RE 01/22/2016

#### ATTACHMENT B

#### STATEMENT OF WORK

#### Contract No. W911SA-15-D-0016

## FORMER FIRE TRAINING BURN PIT #2 Fort McCoy, WI

Robert

#### 1. GENERAL PROJECT INFORMATION

Project Name: Former Fire Training Burn Pit #2, Fort McCoy WI Work Order Number: NA

#### 2. SCOPE OF AE SERVICES:

Provide groundwater sampling and analysis for eight perfluorinated surfactant compounds at Former Fire Training Burn Pit #2 located adjacent to the north-south runway at the Fort McCoy Airfield Figure 1. The purpose of the work is to determine if residual concentrations of perfluorinated surfactants are present in groundwater due to the former use of Aqueous Film Forming Foam (AFFF) for training in extinguishing fires at the former fire training pit.

#### 3. PROJECT REQUIREMENTS:

#### General Requirements:

The project requires collection of M groundwater samples, utilizing direct push technology, from the locations shown on Figure 2, at the approximate coordinates listed on Table 1 (to the nearest meter, if utilities allow). Each sample will be analyzed for the following eight perfluorinated surfactant parameters: perfluorobutanoic acid (PFBA), perfluoropentanoic acid (PFPeA), perfluorohexanoic acid (PFHxA), perfluorohexanoic acid (PFHxA), perfluorohexanoic acid (PFHxA), perfluorobutanesulfonate (PFHxB), and perfluoroctanesulfonate (PFOS).

#### Specific Requirements:

The contractor shall contact Diggers Hotline (800-242-8511) to have the site marked prior to conducting work.

The contractor shall coordinate all work with the Fort McCoy Airfield (Mr. James Hubbard 608-388-4207) to schedule the work on days when the north-south runway can be shutdown. The coordination shall be at least two weeks in advance of any field work.

Utilizing direct push technology, the contractor shall collect groundwater samples from the 11 locations shown on Figure 2, at the approximate coordinates shown on Table 1. In addition, the Contractor shall collect one duplicate sample from Boring 4, and one equipment blank. The duplicate and equipment blank will also be analyzed for perfluorinated surfactants. No soil samples will be collected either for boring logs or for chemical analyses. Each groundwater sample will be collected utilizing the United States Environmental Protection Agency (USEPA)

#### **Login Sample Receipt Checklist**

Client: Short Elliott Hendrickson, Inc. dba SEH

Job Number: 320-22766-1

Login Number: 22766 List Source: TestAmerica Sacramento

List Number: 1

Creator: Nelson, Kym D

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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# ATTACHMENT 2 BORING LOGS AND ABANDONMENT FORMS

## BORING LOGS FTBP2 OCTOBER 2016

State of Wisconsi	in
Department of Na	atural Resources

#### SOIL BORING LOG INFORMATION Form 4400-122 Rev. 7-98

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State of Wisconsin
Department of Natural Resources

#### SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98 Watershed/Wastewater Waste Management Route To: Remediation/Revelopment Other Facility/Project Name License/Permit/Monitoring Number Boring Number Pit #2 Ft Me(o) Former Fire Training P:+ #2, F+17
Boring Drilled By: Name of crew chief (first, last) and Firm Date Drilling Started Date Drilling Completed Drilling Method  $\frac{1}{m}\frac{0}{m}, \frac{1}{d}\frac{3}{d}, \frac{20}{y}\frac{1}{y}\frac{6}{y}$ Firm: On site Environmental Services Inc. WI Unique Well No. DNR Well ID No. Final Static Water Level Surface Elevation Borehole Diameter Feet MSL Feet MSL inches Local Grid Origin (estimated: ) " Local Grid Location D Lat  $\square$  N  $\Box$  E , T17 N. R 3W Long Feet □ S Feet□ W Civil Town/City/ or Village County Code Soil Properties Sample Depth in Feet (Below ground surface) સ્ત્ર Soil/Rock Description Blow Counts Compressive Strength Length Att. Recovered ( And Geologic Origin For Plasticity Index Number and Type USCS Graphic Log Well Diagram PID/FID Moisture Content Each Major Unit Liquid Limit P 200 5, rules Dark Brum, sandy Topso. 1 Ţ 22 inchos park Brum, mediungrania 3 4 Ġ 80 V C 4 10 11 12 13 15 End of Boring at 15 FF

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

Firm

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature

State of Wisconsin	
Department of Natural Resources	÷

#### SOIL BORING LOG INFORMATION Form 4400-122 Rev. 7-98

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State of Wisconsin	
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#### SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

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State of Wisconsin
Department of Natural Resources

### **SOIL BORING LOG INFORMATION** Form 4400-122 Rev. 7-98

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State of Wisconsin
Department of Natural Resources

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#### SOIL BORING LOG INFORMATION Form 4400-122 Rev. 7-98

Watershed/Wastewater 
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I hereby certify that the information on this form is true and correct to the best of my knowledge. Signature Firm

End of Boing @ 1544

State of Wisconsin
Department of Natural Resources

#### SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater Waste Management Remediation/Revelopment Other Description																			
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Pacility/Project Name Former Fire Training Pit #2, Ft Meloy								License/Permit/Monitoring Number Boring Number											
Boring Drilled By: Name of crew chief (first, last) and Firm First Name:  Last Name:								Date Drilling Started $ \frac{1}{m} \frac{0}{m} \frac{1}{d} \frac{3}{d} \frac{20}{y} \frac{1}{y} \frac{6}{y} \frac{1}{y} \frac{0}{y} \frac{1}{m} \frac{3}{m} \frac{3}{d} \frac{20}{y} \frac{1}{y} \frac{6}{y} \frac{1}{y} \frac{1}{y} \frac{1}{y} $ $ \frac{1}{m} \frac{0}{m} \frac{1}{d} \frac{3}{d} \frac{20}{y} \frac{1}{y} \frac{6}{y} \frac{1}{y}											
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State of Wisconsin
Department of Natural Resources

#### SOIL BORING LOG INFORMATION Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater Waste Management Remediation/Revelopment Other																					
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For	Former Fire Prairie Pit #2 Ft/E(0)									License/Permit/Monitoring Number Boring Number											
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State of Wisconsin	
Department of Natural Resources	

#### SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater Waste Management Remediation/Revelopment Other Control																				
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Facility/Project Name Former Fire Training P. + #2, Ft McCoy								License/Permit/Monitoring Number Boring Number												
Boring Drilled By: Name of crew chief (first, last) and Firm First Name:  Last Name:  Last Name:								Date Drilling Started Date Drilling Completed Drilling Method												
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State of Wisconsin
Department of Natural Resources

#### SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98 Watershed/Wastewater Waste Management Route To: Remediation/Revelopment Other Facility/Project Name License/Permit/Monitoring Number Boring Number Control Pit 中日 Fr /k(ov Former Fire Boring Drilled By: Name of crew chief (first, last) and Firm Date Drilling Started Date Drilling Completed Drilling Method <u></u>

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y Hydrake Firm: On-Site Eng. un mental Services Inc. DNR Well ID No. Well Name Final Static Water Level Surface Elevation WI Unique Well No. Borehole Diameter Feet MSL Feet MSL inches " Local Grid Location Local Grid Origin (estimated: ) or Boring Location 1 Lat  $\square$  N ПE 0 5W 1/4 of SW 1/4 of Section 16 Feet □ S Long Feet□ W Facility ID County Code Civil Town/City/ or Village Sample Soil Properties Depth in Feet (Below ground surface Length Att. & Recovered (in) Soil/Rock Description Blow Counts And Geologic Origin For USCS PID/FID Plasticity Index Graphic Log Well Diagram Moisture Content Each Major Unit Liquid Limit P 200 3 Sį 0 7 Ç 98 4 10 11 12 13 15 End of Borge 15th

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

Firm

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature

State of Wisconsin	
Department of Natural Resources	

#### SOIL BORING LOG INFORMATION Form 4400-122 Rev. 7-98

Watershed/Wastewater Waste Management Route To: Remediation/Revelopment Other License/Permit/Monitoring Number Facility/Project Name Boring Number Draining Pit #2 Former File Boring Drilled By: Name of crew chief (first, last) and Firm Date Drilling Started Date Drilling Completed | Drilling Method 2 / 6 y Hydrake Fim: On Site Environmental Services Inc. DNR Well ID No. Surface Elevation Final Static Water Level WI Unique Well No. Feet MSL \_Feet MSL inches Local Grid Origin (estimated: ) or Boring Location " Local Grid Location O  $\square$  N ΠE D 5W 1/4 of SW 1/4 of Section 16 Long Feet□ W Feet □ S Civil Town/City/ or Village County Code Sample Soil Properties Depth in Feet (Below ground surface め Recovered (in) Soil/Rock Description Blow Counts Length Att. And Geologic Origin For Compressiv Strength uscs PID/FID Plasticity Index Graphic Log Well Diagram Moisture Content Each Major Unit P 200 Brindes Dark Brown, Antregrand 19 18 rate Deck Brown, Fine granted 3 Sį \$ light Brown Fino grainer 8# V E đ 10 11 12 13 14 ıς EndoF Boring @15fs I hereby certify that the information on this form is true and correct to the best of my knowledge. Signature

# BOREHOLE ABANDONMENT FORMS FTBP2 OCTOBER 2016

WI

53590

# Well / Drillhole / Borehole Filling & Sealing Report

Form 3300-005 (R 4/2015)

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and chs. NR 141 and 812, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between \$10-25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. Return form to the appropriate DNR office and bureau. See instructions on reverse for more information. Route to DNR Bureau: **Drinking Water** Watershed/Wastewater Remediation/Redevelopment Verification Only of Fill and Seal Waste Management Other: 1. Well Location Information 2. Facility / Owner Information Facility Name WI Unique Well # of Hicap # County Removed Well Fort McCov Monroe Facility ID (FID or PWS) Latitude / Longitude (see instructions) Format Code Method Code GPS008 ∃DD Ν License/Permit/Monitoring # SCR002 DDM W OTH001 1/4 / 1/4 1/4 Township Original Well Owner Section Range or Gov't Lot # W Present Well Owner Well Street Address 6058 Hanger Way Mailing Address of Present Owner Well City, Village or Town Well ZIP Code Sparta, WI City of Present Owner ZIP Code State Subdivision Name Lot# 4. Pump, Liner, Screen, Casing & Sealing Material Reason for Removal from Service WI Unique Well # of Replacement Well Pump and piping removed? Yes No Liner(s) removed? Yes Nο 3. Filled & Sealed Well / Drillhole / Borehole Information Liner(s) perforated? Yes No Original Construction Date (mm/dd/yyyy) Monitoring Well No Screen removed? Yes 10/13/2016 Water Well Casing left in place? If a Well Construction Report is available, Borehole / Drillhole Was casing cut off below surface? please attach. Did sealing material rise to surface? **√** No Construction Type: Yes Did material settle after 24 hours? Yes Drilled Driven (Sandpoint) Dug If yes, was hole retopped? Yes ✓ Other (specify): Direct Push If bentonite chips were used, were they hydrated **√** Yes Formation Type: with water from a known safe source? Required Method of Placing Sealing Material Unconsolidated Formation Bedrock Conductor Pipe-Pumped Total Well Depth From Ground Surface (ft.) Casing Diameter (in.) Conductor Pipe-Gravity Screened & Poured (Bentonite Chips) Other (Explain): Lower Drillhole Diameter (in.) Casing Depth (ft.) Sealing Materials **Neat Cement Grout** Concrete 2.5 Sand-Cement (Concrete) Grout Bentonite Chips Was well annular space grouted? Yes No Unknown For Monitoring Wells and Monitoring Well Boreholes Only: If yes, to what depth (feet)? Depth to Water (feet) ✓ Bentonite Chips Bentonite - Cement Grout Granular Bentonite Bentonite - Sand Slurry No. Yards, Sacks Sealant or 5. Material Used to Fill Well / Drillhole From (ft.) To (ft.) /olume (circle one) Surface 3/8" Bentonite Chips 15 25# 6. Comments Boring Name - B-1 7. Supervision of Work **DNR Use Only** Name of Person or Firm Doing Filling & Sealing Date Received Noted By License # Date of Filling & Sealing or Verification (mm/dd/yyyy) On-site Environmental Services, Inc. 10/13/2016 Street or Route Telephone Number Comments PO Box 280 608 ) 837-8992 City ZIP Code Signature of Person Doing Work Date Signed State

Anthony R. Kapuai

11/16/2016

# Well / Drillhole / Borehole Filling & Sealing Report

Form 3300-005 (R 4/2015)

Page 1 of 2

☐ Verification Only	y of Fill and S		te to DNR Bureau Drinking Water		Watershed/\	Vastewater [	Remed	iation/Redevelopment			
			Waste Manageme		Other:	W 7 (0 V 20 - 20 - 20 - 20 - 20 - 20 - 20 - 2					
1. Well Location Info County	WI Unique Well Removed Well	# of Hicar	) #	2. Facility / Owner Information Facility Name For + McCoy							
Latitude / Longitude (see	instructions)	Format Code	Method Code GPS008 SCR002		FID or PWS)	3#					
770	W		□OTH001								
or Gov't Lot #	Section		Range E W	Original We	II Owner						
Well Street Address	langer	Way	14]	Present We	ll Owner						
Well City, Village or Town	WIT	W	ell ZIP Code	Mailing Add	ress of Preser	nt Owner					
Subdivision Name	, WI	Lo	t#	City of Pres	ent Owner		State	ZIP Code			
Reason for Removal from 3. Filled & Sealed We	ell / Drillhole / B	orehole Info		Pump an Liner(s) r	d piping removemoved?	en, Casing & Sea /ed?		Yes No NA Yes No NA			
Monitoring Well Water Well Borehole / Drillhole	If a Well	0/13/20 Construction Re	e (mm/dd/yyyy)  // port is available,	Screen re Casing le	erforated? emoved? ft in place? ng cut off belo	ut stufe and		Yes No NA Yes No NA Yes No NA Yes No NA Yes No NA			
Driven (Sandpoint)  Other (specify):  Driven (Sandpoint)  Droven (Sandpoint)  Droven (Sandpoint)  Droven (Sandpoint)  Droven (Sandpoint)					Did sealing material rise to surface?  Did material settle after 24 hours?  If yes, was hole retopped?  If bentonite chips were used, were they hydrated with water from a known safe source?  Yes No N/						
Unconsolidated Form Total Well Depth From Gro		Bedrock Casing Diame	ter (in.)	Condu	ethod of Placir ctor Pipe-Gra- ned & Poured nite Chips)	ng Sealing Material vity Conductor Other (Expl		ed			
Lower Drillhole Diameter (	in.)	Casing Depth	(ft.)	Sealing Mat		rete) Grout	Concrete Bentonite	Chine			
Was well annular space gro If yes, to what depth (feet)	Albanya -	Yes Note to Water (fee	O- 1- 3 STANCEMEN	For Monitori Bentor	ng Wells and I	Monitoring Well Bore	hales Only:	nt Grout			
5. Material Used to Fi	ll Well / Drillhol tc do:ps			From (ft.) Surface	To (ft.)	No. Yards, Sacks S Volume (circle		Mix Ratio or Mud Weight			
6. Comments Boring Marin											
7. Supervision of Wor Name of Person or Firm D Mile C. K.) Street or Route	oing Filling & Seali	~	(mm/dd/yy	yy) /0//9 elephone Num			NR Use (	Only loted By			
City Lippena La	Bidge 5		(  SY724	Signature of	Person Doing	Work All	Date	Signed 1/22/2016			

WI

53590

# Well / Drillhole / Borehole Filling & Sealing Report

Form 3300-005 (R 4/2015)

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and chs. NR 141 and 812, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between \$10-25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. Return form to the appropriate DNR office and bureau. See instructions on reverse for more information. Route to DNR Bureau: **Drinking Water** Watershed/Wastewater Remediation/Redevelopment Verification Only of Fill and Seal Waste Management Other: 1. Well Location Information 2. Facility / Owner Information Facility Name WI Unique Well # of Hicap # County Removed Well Fort McCov Monroe Facility ID (FID or PWS) Latitude / Longitude (see instructions) Format Code Method Code GPS008 ∃DD Ν License/Permit/Monitoring # SCR002 DDM W OTH001 1/4 / 1/4 1/4 Township Original Well Owner Section Range or Gov't Lot # W Present Well Owner Well Street Address 6058 Hanger Way Mailing Address of Present Owner Well City, Village or Town Well ZIP Code Sparta, WI City of Present Owner ZIP Code State Subdivision Name Lot# 4. Pump, Liner, Screen, Casing & Sealing Material Reason for Removal from Service WI Unique Well # of Replacement Well Pump and piping removed? Yes No Liner(s) removed? Yes Nο 3. Filled & Sealed Well / Drillhole / Borehole Information Liner(s) perforated? Yes No Original Construction Date (mm/dd/yyyy) Monitoring Well No Screen removed? Yes 10/13/2016 Water Well Casing left in place? If a Well Construction Report is available, Borehole / Drillhole Was casing cut off below surface? please attach. Did sealing material rise to surface? **√** No Construction Type: Yes Did material settle after 24 hours? Yes Drilled Driven (Sandpoint) Dug If yes, was hole retopped? Yes ✓ Other (specify): Direct Push If bentonite chips were used, were they hydrated **√** Yes Formation Type: with water from a known safe source? Required Method of Placing Sealing Material Unconsolidated Formation Bedrock Conductor Pipe-Pumped Total Well Depth From Ground Surface (ft.) Casing Diameter (in.) Conductor Pipe-Gravity Screened & Poured (Bentonite Chips) Other (Explain): Lower Drillhole Diameter (in.) Casing Depth (ft.) Sealing Materials **Neat Cement Grout** Concrete 2.5 Sand-Cement (Concrete) Grout Bentonite Chips Was well annular space grouted? Yes No Unknown For Monitoring Wells and Monitoring Well Boreholes Only: If yes, to what depth (feet)? Depth to Water (feet) ✓ Bentonite Chips Bentonite - Cement Grout Granular Bentonite Bentonite - Sand Slurry No. Yards, Sacks Sealant or 5. Material Used to Fill Well / Drillhole From (ft.) To (ft.) /olume (circle one) Surface 3/8" Bentonite Chips 15 25# 6. Comments Boring Name - B-3 7. Supervision of Work **DNR Use Only** Name of Person or Firm Doing Filling & Sealing Date Received Noted By License # Date of Filling & Sealing or Verification (mm/dd/yyyy) On-site Environmental Services, Inc. 10/13/2016 Street or Route Telephone Number Comments PO Box 280 608 ) 837-8992 City ZIP Code Signature of Person Doing Work Date Signed State

Anthony R. Kapuai

11/16/2016

# Well / Drillhole / Borehole Filling & Sealing Report

Form 3300-005 (R 4/2015)

Page 1 of 2

☐ Verification Only	of Fill and Se	eal 🔲	e to DNR Bureau Drinking Water		Watershed/V	/astewater	Remed	liation/Redevelopme			
NAME OF TAXABLE PARTY.			Waste Manageme		Other:	Total Control of the					
1. Well Location Info County	WI Unique Well Removed Well	# of Hicap i	#	2. Facility / Owner Information Facility Name For + McCoy							
Latitude / Longitude (see i	instructions)	Format Code	Method Code GPS008 SCR002 OTH001		FID or PWS)	#					
%/% % or Gov't Lot#	Section	Township	Range E	Original We	II Owner						
Well Street Address	langer	Way	<u> </u>	Present We	II Owner						
Well City, Village or Town	WI	Wel	I ZIP Code		ress of Preser	t Owner					
Subdivision Name	, ,	Lot	#	City of Pres	ent Owner		State	ZIP Code			
Reason for Removal from  3. Filled & Sealed We  Monitoring Well  Water Well	II / Drillhole / B Original C		(mm/dd/yyyy)	Pump an Liner(s) r Liner(s) p Screen re	d piping remov emoved? erforated?	n, Casing & Sea ed?		Yes No No No Yes No No No No No No No No No No No No No			
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Lower Drillhole Diameter (i 2.5	n.)	Casing Depth (f	t.)		erials ement Grout Cement (Conc	meta) Graut	Concrete	China			
Was well annular space gro		Yes No	- CANADAYA	For Monitori Bentor	ng Wells and M	Monitoring Well Bore Bento Bento	eholes Only nite - Ceme nite - Sand	: ent Grout Slurry			
5. Material Used to Fil 3/8 Benton	l Well / Drillhol te Chips			From (ft.) Surface	To (ft.)	No. Yards. Sacks & Volume (circle のかか		Mix Ratio or Mud Weight			
6. Comments Boring Para											
7. Supervision of Wor Name of Person or Firm Do Mke Chil Street or Route		ng License#	(mm/dd/yy	lephone Num		Date Received  Comments	ONR Use	Only Noted By			
Chy Cippenn La	Bidge "		Code 54729	7(5 ) 2.7 Signature of	Person Doing	Work All	Date	signed 11/22/2016			

# Well / Drillhole / Borehole Filling & Sealing Report

Form 3300-005 (R 4/2015)

Page 1 of 2

Verification Only	of Fill and S	eal		to DNR Bure Drinking Wate Waste Manage	r _	Watershed/W	/astewater [	Remed	liation/Redevelopment				
1. Well Location Info	rmation				State of the state	/ Owner Inf	ormation		3 N 7 7				
Monroe	WI Unique Wel Removed Well	l#of	Hicap #		Facility Nan	Facility Name For + McCoy Facility ID (FID or PWS)							
Latitude / Longitude (see i		v   _	t Code DD DDM	Method Cod	le 08 02 License/Per	mit/Monitoring	#						
74174 14	Section	n To	wnship	Range	E Original We	ll Owner							
Well Street Address	langer	Was	, N		Present We	l Owner							
Well City, Village or Town	WI	very	Well	ZIP Code	Mailing Add	ress of Presen	t Owner						
Subdivision Name	, (12-		Lot #	#	City of Pres	ent Owner		State	ZIP Code				
Reason for Removal from  3. Filled & Sealed We  Monitoring Well  Water Well	II / Drillhole / I Original	Sorehol Construct	e Informion Date	eplacement W  nation (mm/dd/yyyy)	Pump and Liner(s) re Liner(s) p Screen re Casing le	d piping remov emoved? erforated?	n, Casing & Sea ed?	0000	Yes No NA Yes No NA Yes No NA Yes No NA Yes No NA Yes No NA Yes No NA				
	please a	ntlach.	Du		Was casi Did sealir Did mater If yes		to surface? 24 hours?	ated	Yes No N/A Yes No N/A Yes No N/A Yes No N/A Yes No N/A				
Total Well Depth From Gro	ound Surface (ft.)	1/19	Diameter Depth (fi		Condu	ctor Pipe-Grav ed & Poured nite Chips)	g Sealing Material ity Conductor I Other (Expl.		ped				
2.5		Casing	Depai (ii	.,	Neat C	ement Grout Cement (Conc	rete) Grout	Concrete Bentonite	Chins				
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5. Material Used to Fil	1 Well / Drillho				From (ft.) Surface	To (ft.)	No. Yards, Sacks S Volume (circle		Mix Ratio or Mud Weight				
6. Comments Boring Nown	e B-5												
7. Supervision of Wor		Bud			1000		D	NR Use	Only				
Name of Person or Firm Do  Mike Cold  Street or Route	oing Filling & Sea	lling Lic	ense#		Filling & Sealing d/yyyy) /0/19 Telephone Num	12016			Noted By				
10 Porth	Bridge	57.			(715) 27	1-1054							
Chippenn La	115	State		Code 4729	Signature of	Person Doing	Work	Date	e Signed 11/22/2016				

# Well / Drillhole / Borehole Filling & Sealing Report

Form 3300-005 (R 4/2015)

Page 1 of 2

☐ Verificat	ion Only	of Fill	and Se	al	Rout	e to DNR Bureau Drinking Water			Wastewater	Reme	diation/Redevelopment		
PERVENIEN						Waste Managem	_	Other:					
1. Well Loca County			ue Well # d Well	of	Hicap	#	2. Facility / Owner Information  Facility Name  For + McCoy  Facility ID (FID or PWS)						
Latitude / Long		nstruction	s) N	Form	at Code	Method Code GPS008 SCR002	1	ermit/Monitorin	g#				
74174	1/4		Section	T	DDM ownship	Range E	0.11 100 0						
or Gov't Lot#					1	u □w							
Well Street Add	8 H	lange	ri	Va	,		Present W						
Well City, Village	sor Town	12	II	/	We	I ZIP Code	177	dress of Prese	nt Owner				
Subdivision Na		,			Lot	#	City of Pre	sent Owner		State	ZIP Code		
Reason for Ren				_		eplacement Well	Pump ai	Liner, Scre nd piping remo removed?	en, Casing & S ved?	Sealing Mat	erial  Yes   No   N/A  Yes   No   N/A		
3. Filled & Se	y Well	0	riginal Co	onstruc	tion Date	mation (mm/dd/yyyy)	Liner(s) Screen	perforated? removed? eft in place?			Yes No NA Yes No NA Yes No NA		
Borehole /	A STATE OF THE STA		lease atta		ction Rep	ont is available,	The state of the s	ing cut off beloing material ris			Yes No N/A		
Drilled Other (spe	cify):	Driven (Sa D: ract			Du	lg .	If ye	erial settle after s, was hole ret alte chips were		nvdrated —	Yes No N/A		
Formation Type Unconsolid		ation		Bed	lrock		with water	er from a know	n safe source? ng Sealing Materi	L	Yes No N/A		
Total Well Depti	From Gro	und Surfa	ice (ft.)	Casing	Diamete	er (in.)	Scree	uctor Pipe-Gra ened & Poured onite Chips)	$\equiv$	tor Pipe-Pum Explain):	ped		
Lower Drillhole I	Diameter (i	n.)		Casing	Depth (	ft.)		terials Cement Grout -Cement (Cond	Or engage of	Concrete	22.5		
Was well annula	N. Aller			Yes	☐ No	DOMESTIC STATE	For Monitor	ring Wells and	Monitoring Well B	lareholes Onl	y:		
If yes, to what de	eptn (reet)		Depth	to vva	iter (feet)		1	nite Chips ular Bentonite		ntonite - Cem ntonite - Sanc			
5. Material Us	THE RESERVE	Calcing 3 to	HOLD WADE				From (ft.)	To (ft.)	No. Yards, Sacl Volume (cir	cle one)	Mix Ratio or Mud Weight		
3/8	Rentoni	e d	vips				Surface	15	25#				
6. Comments	-	-	1 7.5		37					77.77			
Boring 7. Supervisio			3-6							DND	O-b		
Name of Person		ing Filling	& Sealin	g L	cense #	Date of Fi		g or Verification	n Date Received	DNR Use	Noted By		
Street or Route	1+4	Bida	e 5	7.			Plephone Nur	mber	Comments				
Clippen		115		State		Code 54729		Person Doing	Work	Dai	te Signed		

# Well / Drillhole / Borehole Filling & Sealing Report

Form 3300-005 (R 4/2015)

Page 1 of 2

☐ Verification Only	of Fill and Se		ite to DNR Bureau  Drinking Water	. [	Watershed/\	Wastewater	L Remed	diation/Redevelopr	nent		
			Waste Managem	ent	Other:	17.00		1			
1. Well Location Info		por star	150	2. Facility	y / Owner In	formation					
County	WI Unique Well Removed Well	# of Hica	p #	Facility Na		A A F					
Monroe	Kellloved Well			For + McCoy Facility ID (FID or PWS)							
Latitude / Longitude (see i	instructions)	Format Code	Method Code	Facility ID	(FID or PWS)	,					
annung (ng x no sara	N	□DD	GPS008	Danner (De		- 4			_		
	V	7	SCR002	License/Pe	rmit/Monitoring	g#					
14/14 14	Section	The state of the s		Original We	ell Owner				_		
or Gov't Lot#		17:00			211/12/						
Well Street Address			N L W	Present We	ell Owner						
	langer	Way		ALC: N			-,-				
Well City, Village or Town	9-	W	ell ZIP Code	Mailing Add	fress of Prese	nt Owner					
Sparta	WI						12.				
Subdivision Name	-	Lo	ot#	City of Pres	ent Owner		State	ZIP Code			
	a love			4 Pump	liner Scree	en, Casing & Sea	aling Mat	erial			
Reason for Removal from	Service Wi U	nique Well # of	Replacement Well	Section 2 in contrast of the last	d piping remo	The second secon			N/A		
3. Filled & Sealed We	II / Drillbole / B	orehole info	rmation	Liner(s)	emoved?			Yes No	N/A		
			te (mm/dd/yyyy)	Liner(s)	perforated?			Yes No	N/A		
Monitoring Well		10/12/10	11-	Screen r	emoved?			-	N/A		
Water Well	If a Woll	Construction P	eport is available,	Casing le	oft in place?		1.	Yes No	NA		
Borehole / Drillhole	please at		sport is available,	Was casi	ing cut off belo	w surface?		Yes No V	N/A		
Construction Type:				Did seali	ng material ris	e to surface?		Yes No 🗌	N/A		
	Driven (Sandpoint		Dug	The second second	rial settle after				N/A		
Other (specify):	Direct Pus	4		100000	s, was hole ret	The state of the s		Yes No	N/A		
Formation Type:						used, were they hyd n safe source?	rated	Yes No	N/A		
Unconsolidated Form	ation	Bedrock		Required M	ethod of Placin	ng Sealing Material					
Total Well Depth From Gro	ound Surface (ft.)	Casing Diame	eter (in.)	Condu	ıctor Pipe-Gra	vity Conductor	Pipe-Pump	ed			
15					ned & Poured onite Chips)	Other (Exp	lain):				
Lower Drillhole Diameter (i	n.)	Casing Depth	(ft.)	Sealing Mat							
25				☐ Neat 0	Cement Grout		Concrete				
a.0	na ne		in Investigate	Sand-	Cement (Cond	rete) Grout	Bentonite	Chips			
Was well annular space gro			lo Unknown	For Moniton	ing Wells and	Monitoring Well Bore	holes Only				
If yes, to what depth (feet)?	Dep	th to Water (fee	t)	Bento	nite Chips	Bento	nite - Cem	ent Grout			
				Granu	lar Bentonite	Bento	nite - Sand	Slurry			
5. Material Used to Fil	l Well / Drillhol	e		From (ft.)	To (ft.)	No. Yards, Sacks S Volume (circle		Mix Ratio or Mud Weight			
3/8 Benton				Surface	15	25#	one	widd weight			
110 DENIDA	ic chips					45 /			_		
LAST TATES					-						
6. Comments											
Boring Mars	e B-	7									
7. Supervision of Wor		English S.	S. Contract				ONR Use	Only	$\neg$		
Name of Person or Firm Do	oing Filling & Seal	ing License #			or Verification			Noted By			
Mke Rohl	./c		(mm/dd/yy		1/2016						
Street or Route	01	-		elephone Nun	4	Comments					
10 Morth	Bridge "	51.		715) 27		Maria -	, la	- Olera d			
City	11-		54729	Signature of	Person Doing	11 11 11 1	Dat	e Signed	1/		
Chippenn La	115	1-1	11/07	//	ceso.	porter		11/22/201	0		

# Well / Drillhole / Borehole Filling & Sealing Report

Form 3300-005 (R 4/2015)

Page 1 of 2

☐ Verifica	ation Only	of Fill and	Seal			to DNR Bu Drinking Wa Vaste Mana	ter	nt 🗌	Watershed/\ Other:	Wastewater	Remed	liation/Redevelopment			
1. Well Loc	cation Infor		100				AH.		/ Owner In	formation					
Monro	e	WI Unique We Removed We	ll#o	f	licap#			Facility Name For Y McCo Y Facility ID (FID or PWS)							
Latitude / Lor		nstructions)	N	Format C	0	Method C	008		ID or PWS)	<i>,</i> g#					
1/411/4	1/4	Sect	on on	Town		Range	001 E	Original Wel	l Owner		-				
or Gov't Lot#	1				N		W								
Well Street A	CONTRACTOR OF THE PARTY OF THE	langer	W	1011				Present Wel	l Owner						
Well City, Vill		WT	-	7	Well	ZIP Code		Mailing Add	ess of Prese	nt Owner					
Subdivision		, WI		*	Lot#			City of Prese	ent Owner		State	ZIP Code			
	Sealed We	II / Drillhole /	Bor	ehole l	nform	placement nation (mm/dd/yyy		Company of the later of the lat	piping remo moved?	en, Casing & Sea ved?	aling Mat	erial Yes No NA Yes No NA Yes No NA			
Water V	ing Well Vell le / Drillhole	If a We			10/0 n Repo	ort is availal	ble,	-	moved? t in place? ng cut off belo	ow surface?		Yes No NA Yes No NA Yes No NA			
Construction Drilled Other (s	specify):	Driven (Sandpo Drocot Pu	int) S.L.	1	Dug	ı		Did mater If yes, If bentonit	ial settle after was hole ret e chips were		rated 🗔	Yes No N/A Yes No N/A Yes No N/A Yes No N/A			
the state of the	pth From Gro	ation ound Surface (ft	.) C	Bedroc		r (in.)		Condu	thod of Placi ctor Pipe-Gra ed & Poured nite Chips)			ped			
Lower Drillhol	le Diameter (i	n.)	C	asing Do	epth (ft	.)		Sealing Mate		Crete) Grout	Concrete				
Was well annu			-	es o Water	No (feet)	Unkr	nown	For Monitorin		Monitoring Well Bore	, eholes Only	v: ent Grout			
5. Material 3/8	A STATE OF THE PARTY OF THE PAR	l Well / Drillt tと くいり	40-					From (ft.) Surface	To (ft.)	No. Yards, Sacks of Volume (circle		Mix Ratio or Mud Weight			
6. Commen	its g Nam	e B-	8												
7. Supervis Name of Pers M. /ce Street or Rout	on or Firm D	k ping Filling & Se	aling	Licer	ise#		/dd/yy	ing & Sealing yy) /0//9 lephone Num	12016		ONR Use	Only Noted By			
10 /	Porth	Bridge	5	State WI		Code 4729	(	7(5 ) 27 Signature of	1-1054	U.	Dat	te Signed 11/22-13016			

WI

53590

# Well / Drillhole / Borehole Filling & Sealing Report

Form 3300-005 (R 4/2015)

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and chs. NR 141 and 812, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between \$10-25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. Return form to the appropriate DNR office and bureau. See instructions on reverse for more information. Route to DNR Bureau: **Drinking Water** Watershed/Wastewater Remediation/Redevelopment Verification Only of Fill and Seal Waste Management Other: 1. Well Location Information 2. Facility / Owner Information Facility Name WI Unique Well # of Hicap # County Removed Well Fort McCov Monroe Facility ID (FID or PWS) Latitude / Longitude (see instructions) Format Code Method Code GPS008 ∃DD Ν License/Permit/Monitoring # SCR002 DDM W OTH001 1/4 / 1/4 1/4 Township Original Well Owner Section Range or Gov't Lot # W Present Well Owner Well Street Address 6058 Hanger Way Mailing Address of Present Owner Well City, Village or Town Well ZIP Code Sparta, WI City of Present Owner ZIP Code State Subdivision Name Lot# 4. Pump, Liner, Screen, Casing & Sealing Material Reason for Removal from Service WI Unique Well # of Replacement Well Pump and piping removed? Yes No Liner(s) removed? Yes Nο 3. Filled & Sealed Well / Drillhole / Borehole Information Liner(s) perforated? Yes No Original Construction Date (mm/dd/yyyy) Monitoring Well No Screen removed? Yes 10/13/2016 Water Well Casing left in place? If a Well Construction Report is available, Borehole / Drillhole Was casing cut off below surface? please attach. Did sealing material rise to surface? **√** No Construction Type: Yes Did material settle after 24 hours? Yes Drilled Driven (Sandpoint) Dug If yes, was hole retopped? Yes ✓ Other (specify): Direct Push If bentonite chips were used, were they hydrated **√** Yes Formation Type: with water from a known safe source? Required Method of Placing Sealing Material Unconsolidated Formation Bedrock Conductor Pipe-Pumped Total Well Depth From Ground Surface (ft.) Casing Diameter (in.) Conductor Pipe-Gravity Screened & Poured (Bentonite Chips) Other (Explain): Lower Drillhole Diameter (in.) Casing Depth (ft.) Sealing Materials **Neat Cement Grout** Concrete 2.5 Sand-Cement (Concrete) Grout Bentonite Chips Was well annular space grouted? Yes No Unknown For Monitoring Wells and Monitoring Well Boreholes Only: If yes, to what depth (feet)? Depth to Water (feet) ✓ Bentonite Chips Bentonite - Cement Grout Granular Bentonite Bentonite - Sand Slurry No. Yards, Sacks Sealant or 5. Material Used to Fill Well / Drillhole From (ft.) To (ft.) /olume (circle one) Surface 3/8" Bentonite Chips 15 30# 6. Comments Boring Name - B-9 7. Supervision of Work **DNR Use Only** Name of Person or Firm Doing Filling & Sealing Date Received Noted By License # Date of Filling & Sealing or Verification (mm/dd/yyyy) On-site Environmental Services, Inc. 10/13/2016 Street or Route Telephone Number Comments PO Box 280 608 ) 837-8992 City ZIP Code Signature of Person Doing Work Date Signed State

Anthony R. Kapuai

11/16/2016

WI

53590

# Well / Drillhole / Borehole Filling & Sealing Report

Form 3300-005 (R 4/2015)

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Anthony R. Kapuai

11/16/2016

WI

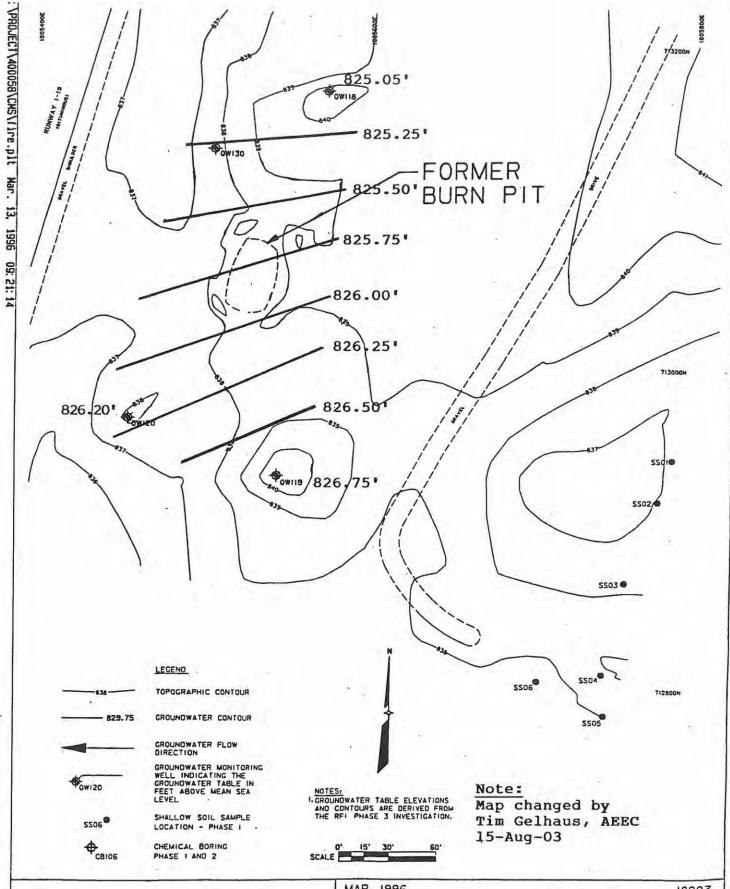
53590

# Well / Drillhole / Borehole Filling & Sealing Report

Form 3300-005 (R 4/2015)

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# ATTACHMENT 3 WATER TABLE MAPS



ENVIRONMENT & INFRASTRUCTURE

MAR. 1996

18903

FIRE TRAINING BURN PIT 2

Groundwater Flow Map for April 24, 2002 DRAFT CORRECTIVE MEASURES STUDY FORT McCOY, WISCONSIN

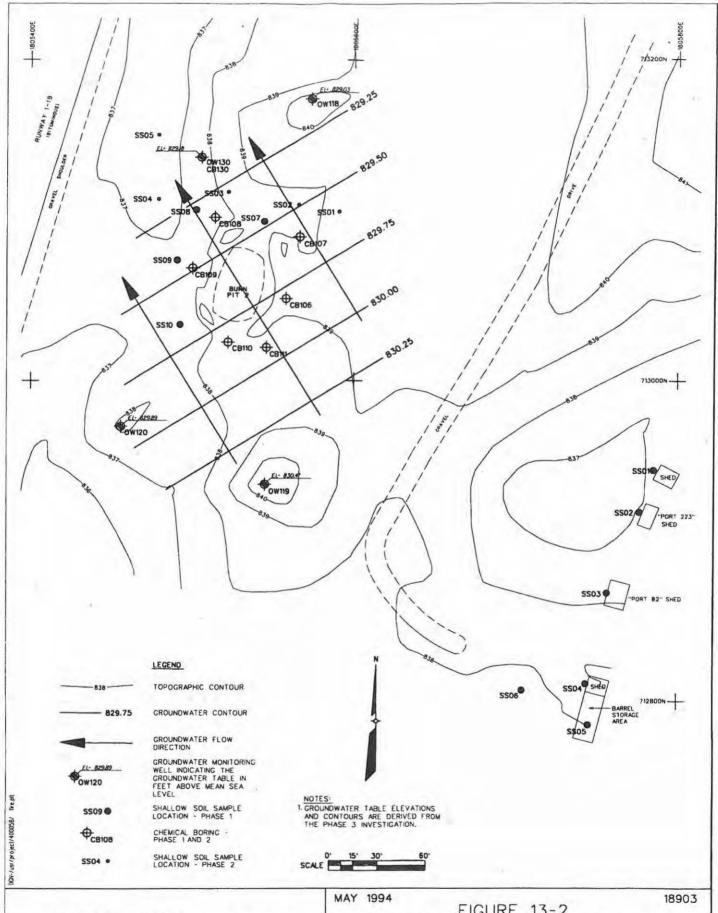




FIGURE 13-2

FIRE TRAINING BURN PIT 2

SAMPLE LOCATIONS AND WATER TABLE MAP

FORT MCCOY RFI MONROE COUNTY, WISCONSIN

# ATTACHMENT 4 ANALYTICAL RESULTS FOR POTABLE WELLS AT THE FORT MCCOY AIRFIELD

# PFC RESULTS FOR FORT MCCOY POTBALE WELLS SAMPLE 5020 IS THE WELL NORTH OF FTBP3

# **ANALYTICAL REPORT**

NORTHERN LAKE SERVICE, INC. Analytical Laboratory and Environmental Services 400 North Lake Avenue - Crandon, WI 54520 Ph: (715)-478-2777 Fax: (715)-478-3060

U S Army - EMECO (Fort McCoy)

Attn: Mike Miller 2171 South 8th Avenue 2IMNW-MCY-SSP-E Fort McCov. WI 54656

Client:

WDNR Laboratory ID No. 721026460 WDATCP Laboratory Certification No. 105-330

EPA Laboratory ID No. WI00034

Printed: 11/23/16 Page 1 of 2

NLS Project: 270910 NLS Customer: 35655

Fax: 608 388 3136 Phone: 608 388 6546

Project   Drinking Water - Method 537	Fort McCoy, WI 54656								
Soza NLS 1D. 958.872   Collected: 11/09/16 13:00 Received: 11/11/16   Result	Duniant Driving Water Mathed 527								
Coc. 1961871   Matrix: DW   Collected: 11/07/16   See attached   Size   See attached   Size   See attached   Size   See attached   Size   See attached   Size   See attached   Size   See attached   Size   See attached   Size   See attached   Size   See attached   Size   See attached   Size   See attached   Size   See attached   Size   See attached   Size   See attached   Size   Size   See attached   Size									
Collected: 11/09/16 13:00   Received: 11/11/16   Result   Units   Dilution   LOD   LOQ/MCL   Analyzed   Method 527   Rev. 1.   721026460   Solid Phase Extraction by EPA Method 537   yes     11/12/16   EPA 537 Rev. 1.   721026460   Solid Phase Extraction by EPA Method 537   yes       11/17/16   EPA 537 Rev. 1.   721026460   Solid Phase Extraction by EPA Method 537 Rev. 1.   Result   Units   Dilution   LOD   LOQ/MCL   Analyzed   Method EPA 537 Rev. 1.   721026460   Solid Phase Extraction by EPA Method 537 Rev. 1.   Solid Phase Extraction by EPA Method 537 Rev.									
Parameter									
Perfluorinated Chemicals by EPA Method 537 Rev 1.1   see attached   See attache		Danult	l luita	Dilution	1.00	1.00/MCI	A a l a l	Mashad	l ala
Solid Phase Extraction by EPA Method 537   yes			Units	Dilution	LOD	LOQ/MCL			
So21 NLS ID 958673									
Coci   1946   1872   Matrix : DW   Collected : 11/09/16   13.15   Received : 11/11/16   Result   Units   Dilution   LOD   LOQ/MCL   Analyzed   Method   Lab   EPA 537 Rev 1.1   721026460	·	усз					11/17/10	LI A 337	721020400
Collected: 11/09/16 13:15   Received: 11/11/16   Result   Units   Dilution   LOD   LOQ/MCL   Analyzed   Method   Lab   Perffuorinated Chemicals by EPA Method 537   EPA 537 Rev 1.1   721026460   Solid Phase Extraction by EPA Method 537   EPA 537 Rev 1.1   721026460   Solid Phase Extraction by EPA Method 537   EPA 537 Rev 1.1   721026460   Solid Phase Extraction by EPA Method 537   EPA 537 Rev 1.1   Part 547									
Parameter									
Perfluorinated Chemicals by EPA Method 537 Rev 1.1   See attached   Solid Phase Extraction by EPA Method 537   Yes   Solid Phase Extraction by EPA Method 537   Yes   Solid Phase Extraction by EPA Method 537 Rev 1.1   Yes   Yes   Solid Phase Extraction by EPA Method 537 Rev 1.1   Yes   Yes   Solid Phase Extraction by EPA Method 537 Rev 1.1   Yes   Yes   Solid Phase Extraction by EPA Method 537   Yes   Solid Phase Extraction by EPA Method 537 Rev 1.1   Yes   Yes   Solid Phase Extraction by EPA Method 537   Yes   Solid Phase Extraction by EPA Method 537   Yes   Solid Phase Extraction by EPA Method 537   Yes   Solid Phase Extraction by EPA Method 537   Yes   Solid Phase Extraction by EPA Method 537 Rev 1.1   Yes   Yes   Solid Phase Extraction by EPA Method 537 Rev 1.1   Yes   Yes   Solid Phase Extraction by EPA Method 537   Yes   Solid Phase Extraction by EPA Method 537 Rev 1.1   Yes   Yes   Solid Phase Extraction by EPA Method 537   Yes   Solid Phase Extraction by EPA Method 537   Yes   Solid Phase Extraction by EPA Method 537   Yes   Solid Phase Extraction by EPA Method 537   Yes   Solid Phase Extraction by EPA Method 537   Yes		Danult	l luita	Dilution	1.00	1.00/MCI	Amalumad	Mashad	l alı
Solid Phase Extraction by EPA Method 537   yes			Units	Dilution	LOD	LOQ/MCL			
S024 NLS ID: 958674									
Collected: 11/09/16 10:30 Received: 11/11/16   Result   Units   Dilution   LOD   LOQ/MCL   Analyzed   Method   Lab		yes					11/17/16	EPA 337	721020400
Collected: 11/09/16 10:30   Received: 11/11/16   Result   Units   Dilution   LOD   LOQ/MCL   Analyzed   Method   Lab									
Parameter									
Perfluorinated Chemicals by EPA Method 537 Rev 1.1   See attached									
Solid Phase Extraction by EPA Method 537   yes			Units	Dilution	LOD	LOQ/MCL			
So25 NLS 1D: 958675   COC: 196187:4 Matrix: DW   Collected: 11/09/16 10:15   Received: 11/11/16									
COC: 196187:4 Matrix: DW Collected: 11709/16 10:15 Received: 11711/16 Parameter Result Units Dilution LOD LOQ/MCL Analyzed Method Lab Perfluorinated Chemicals by EPA Method 537 Rev 1.1 See attached Solid Phase Extraction by EPA Method 537 Rev 1.1 See attached Solid Phase Extraction by EPA Method 537 Ves  Result Units Dilution LOD LOQ/MCL Analyzed Method Lab Parameter Result Perfluorinated Chemicals by EPA Method 537 Rev 1.1 See attached Solid Phase Extraction by EPA Method 537 Rev 1.1 See attached Solid Phase Extraction by EPA Method 537 Rev 1.1 See attached Solid Phase Extraction by EPA Method 537 Solid		yes					11/17/16	EPA 537	721026460
Collected: 11/09/16 10:15   Received: 11/11/16   Result   Units   Dilution   LOD   LOQ/MCL   Analyzed   Method   Lab									
Parameter									
Perfluorinated Chemicals by EPA Method 537 Rev 1.1   See attached   Solid Phase Extraction by EPA Method 537 Rev 1.1   721026460   Solid Phase Extraction by EPA Method 537   Pex 537									
Solid Phase Extraction by ÉPA Method 537   yes			Units	Dilution	LOD	LOQ/MCL			
Solid Phase Extraction by EPA Method 537 Rev 1.1   See attached   Solid Phase Extraction by EPA Method 537 Rev 1.1   See attached   Solid Phase Extraction by EPA Method 537 Rev 1.1   See attached   Solid Phase Extraction by EPA Method 537   Solid Phase Extraction by EPA Method 537   Solid Phase Extraction by EPA Method 537   Solid Phase Extraction by EPA Method 537   Solid Phase Extraction by EPA Method 537   Solid Phase Extraction by EPA Method 537   Solid Phase Extraction by EPA Method 537   Solid Phase Extraction by EPA Method 537   Solid Phase Extraction by EPA Method 537   Solid Phase Extraction by EPA Method 537 Rev 1.1   Solid Phase Extraction by EPA Method 537   Solid Phase Extraction by EPA Me									
COC: 196187:5 Matrix: DW Collected: 11/09/16 13:15 Received: 11/11/16 Parameter  Perfluorinated Chemicals by EPA Method 537 Rev 1.1 see attached Solid Phase Extraction by EPA Method 537 Ves  SOLID: 958677 COC: 196187:6 Matrix: DW Collected: 11/09/16 10:15 Received: 11/11/16  Perfluorinated Chemicals by EPA Method 537 Rev 1.1 see attached Solid Phase Extraction by EPA Method 537  Dilution  LOD  LOQ/MCL Analyzed Method EPA 537 Rev 1.1 721026460  SOLID: 958677 COC: 196187:6 Matrix: DW Collected: 11/09/16 10:15 Received: 11/11/16  Parameter  Perfluorinated Chemicals by EPA Method 537 Rev 1.1 see attached Solid Phase Extraction by EPA Method 537 Ves  Solid Phase	Solid Phase Extraction by EPA Method 537	yes					11/17/16	EPA 537	721026460
Collected: 11/09/16 13:15 Received: 11/11/16  Parameter Result Units Dilution LOD LOQ/MCL Analyzed Method Lab  Perfluorinated Chemicals by EPA Method 537 Rev 1.1 see attached   11/22/16 EPA 537 Rev 1.1 721026460    Solid Phase Extraction by EPA Method 537 yes   11/17/16 EPA 537 721026460    Solid Phase Extraction by EPA Method 537   721026460    COC: 196187:6 Matrix: DW  Collected: 11/09/16 10:15 Received: 11/11/16  Parameter Result Units Dilution LOD LOQ/MCL Analyzed Method Lab  Perfluorinated Chemicals by EPA Method 537 Rev 1.1 see attached   11/22/16 EPA 537 Rev 1.1 721026460    Solid Phase Extraction by EPA Method 537 yes   11/17/16 EPA 537 721026460    Solid Phase Extraction by EPA Method 537   721026460    Solid Phase Extraction by EPA Method	5026 NLS ID: 958676								
Parameter	COC: 196187:5 Matrix: DW								
Perfluorinated Chemicals by EPA Method 537 Rev 1.1   See attached   Solid Phase Extraction by EPA Method 537   yes   Solid Phase Extraction by EPA Method 537   yes   Solid Phase Extraction by EPA Method 537   yes   Solid Phase Extraction by EPA Method 537   yes   Solid Phase Extraction by EPA Method 537   yes   Solid Phase Extraction by EPA Method 537 Rev 1.1   721026460   Solid Phase Extraction by EPA Method 537   yes   Yes	Collected: 11/09/16 13:15 Received: 11/11/16								
Solid Phase Extraction by ÉPA Method 537   yes			Units	Dilution	LOD	LOQ/MCL			
Solar   Sola									
COC: 196187:6 Matrix: DW  Collected: 11/09/16 10:15 Received: 11/11/16  Parameter  Perfluorinated Chemicals by EPA Method 537 Rev 1.1 see attached  Solid Phase Extraction by EPA Method 537  yes  Dilution  LOD  LOQ/MCL  Analyzed  Method  EPA 537 Rev 1.1 721026460  11/22/16 EPA 537 Rev 1.1 721026460  Solid Phase Extraction by EPA Method 537  yes  COC: 196187:7 Matrix: DW  Collected: 11/09/16 10:00 Received: 11/11/16  Parameter  Result  Units  Dilution  LOD  LOQ/MCL  Analyzed  Method  Lab  Perfluorinated Chemicals by EPA Method 537 Rev 1.1 see attached  Perfluorinated Chemicals by EPA Method 537 Rev 1.1 see attached	Solid Phase Extraction by EPA Method 537	yes					11/17/16	EPA 537	721026460
Collected: 11/09/16 10:15   Received: 11/11/16	5027 NLS ID: 958677								
Parameter Result Units Dilution LOD LOQ/MCL Analyzed Method Lab Perfluorinated Chemicals by EPA Method 537 Rev 1.1 see attached	COC: 196187:6 Matrix: DW								
Perfluorinated Chemicals by EPA Method 537 Rev 1.1   see attached   11/22/16   EPA 537 Rev 1.1   721026460	Collected: 11/09/16 10:15 Received: 11/11/16								
Solid Phase Extraction by EPA Method 537 yes 11/17/16 EPA 537 721026460    5028   NLS   ID: 958678	Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
So28 NLS ID: 958678   COC: 196187:7   Matrix: DW   Collected: 11/09/16 10:00   Received: 11/11/16   Result   Units   Dilution   LOD   LOQ/MCL   Analyzed   Method   Lab   Perfluorinated Chemicals by EPA Method 537 Rev 1.1   721026460   See attached   11/22/16   EPA 537 Rev 1.1   721026460		see attached							
COC: 196187:7 Matrix: DW  Collected: 11/09/16 10:00 Received: 11/11/16  Parameter Result Units Dilution LOD LOQ/MCL Analyzed Method Lab  Perfluorinated Chemicals by EPA Method 537 Rev 1.1 see attached 11/22/16 EPA 537 Rev 1.1 721026460	Solid Phase Extraction by EPA Method 537	yes					11/17/16	EPA 537	721026460
COC: 196187:7 Matrix: DW  Collected: 11/09/16 10:00 Received: 11/11/16  Parameter Result Units Dilution LOD LOQ/MCL Analyzed Method Lab  Perfluorinated Chemicals by EPA Method 537 Rev 1.1 see attached 11/22/16 EPA 537 Rev 1.1 721026460	5028 NLS ID: 958678								
Collected: 11/09/16 10:00 Received: 11/11/16  Parameter Result Units Dilution LOD LOQ/MCL Analyzed Method Lab  Perfluorinated Chemicals by EPA Method 537 Rev 1.1 see attached 11/22/16 EPA 537 Rev 1.1 721026460									
ParameterResultUnitsDilutionLODLOQ/MCLAnalyzedMethodLabPerfluorinated Chemicals by EPA Method 537 Rev 1.1see attached11/22/16EPA 537 Rev 1.1721026460									
Perfluorinated Chemicals by EPA Method 537 Rev 1.1 see attached 11/22/16 EPA 537 Rev 1.1 721026460		Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
	Perfluorinated Chemicals by EPA Method 537 Rev 1.1	see attached						EPA 537 Rev 1.1	721026460
Only 1 have Extraction by E1 A wethou 307 yes 11/11/10 EPA 337 //21020400	Solid Phase Extraction by EPA Method 537	yes					11/17/16	EPA 537	721026460

#### NORTHERN LAKE SERVICE. INC. **Analytical Laboratory and Environmental Services** 400 North Lake Avenue - Crandon, WI 54520 Ph: (715)-478-2777 Fax: (715)-478-3060

ANALYTICAL REPORT

WDNR Laboratory ID No. 721026460 **WDATCP Laboratory Certification No. 105-330** 

**EPA Laboratory ID No. WI00034** 

Printed: 11/23/16 Page 2 of 2

> **NLS Project:** 270910

**NLS Customer:** 35655

Fax: 608 388 3136 Phone: 608 388 6546

Auto J. Out

U S Army - EMECO (Fort McCoy) Client:

Attn: Mike Miller 2171 South 8th Avenue 2IMNW-MCY-SSP-E Fort McCoy, WI 54656

**Drinking Water - Method 537** Project:

5029 NLS ID: 958679 COC: 196187:8 Matrix: DW

Collected: 11/09/16 09:50 Received: 11/11/16

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
Perfluorinated Chemicals by EPA Method 537 Rev 1.1	see attached					11/22/16	EPA 537 Rev 1.1	721026460
Solid Phase Extraction by EPA Method 537	yes					11/17/16	EPA 537	721026460

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and/or LOQ tagged with an asterisk(\*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution and/or solids content. NA = Not Applicable

ND = Not Detected (< LOD) DWB = Dry Weight Basis

LOD = Limit of Detection

%DWB = (mg/kg DWB) / 10000

LOQ = Limit of Quantitation 1000 ug/L = 1 mg/L

MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL. Reviewed by:

Authorized by: R. T. Krueger

President

Customer: U S Army - EMECO (Fort McCoy) NLS Project: 270910

**Project Description: Drinking Water - Method 537** 

Project Title: Template: 537PPT Printed: 11/23/2016 14:08

Sample: 958672 5020 Collected: 11/09/16 Analyzed: 11/22/16 - Analyte							
ANALYTE NAME	RESULT	<b>UNITS WWB</b>	DIL	LOD	LOQ	MCL	Note
perfluorobutanesulfonic acid (PFBS)	ND	ppt	1	11	37		
perfluoroheptanoic acid (PFHpA)	ND	ppt	1	1.0	3.3		
perfluorohexanesulfonic acid (PFHxS)	ND	ppt	1	3.8	13		
perfluorooctanoic acid (PFOA)	ND	ppt	1	2.3	7.6		
perfluorononanoic acid (PFNA)	ND	ppt	1	2.3	7.7		
perfluorooctanesulfonic acid (PFOS)	ND	ppt	1	3.8	13		
C13-PFHxA (SURR)	92.915%						S
C13-PFDA (SURR)	90.451%						S

#### **NOTES APPLICABLE TO THIS ANALYSIS:**

S = This compound is a surrogate used to evaluate the quality control of a method.

Sample: 958673 5021 Collected: 11/09/16 Analyzed: 11/22/16 - Analytes	s: 6						
ANALYTE NAME	RESULT	<b>UNITS WWB</b>	DIL	LOD	LOQ	MCL	Note
perfluorobutanesulfonic acid (PFBS)	ND	ppt	1	11	37		
perfluoroheptanoic acid (PFHpA)	ND	ppt	1	1.0	3.3		
perfluorohexanesulfonic acid (PFHxS)	ND	ppt	1	3.8	13		
perfluorooctanoic acid (PFOA)	ND	ppt	1	2.3	7.6		
perfluorononanoic acid (PFNA)	ND	ppt	1	2.3	7.7		
perfluorooctanesulfonic acid (PFOS)	ND	ppt	1	3.8	13		
C13-PFHxA (SURR)	96.406%						S
C13-PFDA (SURR)	100.576%						S

#### NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

ample: 958674 5024 Collected: 11/09/16 Analyzed: 11/22/16 - Analytes: 6						
RESULT	<b>UNITS WWB</b>	DIL	LOD	LOQ	MCL	Note
ND	ppt	1	11	37		
ND	ppt	1	1.0	3.3		
ND	ppt	1	3.8	13		
ND	ppt	1	2.3	7.6		
ND	ppt	1	2.3	7.7		
ND	ppt	1	3.8	13		
93.267%			•	•	•	S
84.129%						S
	RESULT  ND  ND  ND  ND  ND  ND  ND  ND  ND  N	RESULT UNITS WWB  ND ppt ND ppt ND ppt ND ppt ND ppt ND ppt ND ppt ND ppt ND ppt 93.267%	RESULT         UNITS WWB         DIL           ND         ppt         1           93.267%         1	RESULT         UNITS WWB         DIL         LOD           ND         ppt         1         11           ND         ppt         1         1.0           ND         ppt         1         3.8           ND         ppt         1         2.3           ND         ppt         1         2.3           ND         ppt         1         3.8           93.267%         3.8         3.8	RESULT         UNITS WWB         DIL         LOD         LOQ           ND         ppt         1         11         37           ND         ppt         1         1.0         3.3           ND         ppt         1         3.8         13           ND         ppt         1         2.3         7.6           ND         ppt         1         2.3         7.7           ND         ppt         1         3.8         13           93.267%         1         3.8         13	RESULT         UNITS WWB         DIL         LOD         LOQ         MCL           ND         ppt         1         11         37           ND         ppt         1         1.0         3.3           ND         ppt         1         3.8         13           ND         ppt         1         2.3         7.6           ND         ppt         1         2.3         7.7           ND         ppt         1         3.8         13           93.267%         93.267%

#### NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

The PFOA branch isotope peak is included in the PFOA calculation per EPA directive.

Page 1 of 3

Customer: U S Army - EMECO (Fort McCoy) NLS Project: 270910

**Project Description: Drinking Water - Method 537** 

Project Title: Template: 537PPT Printed: 11/23/2016 14:08

Sample: 958675 5025 Collected: 11/09/16 Analyzed: 11/22/16 - Analyte							
ANALYTE NAME	RESULT	UNITS WWB	DIL	LOD	LOQ	MCL	Note
perfluorobutanesulfonic acid (PFBS)	ND	ppt	1	11	37		
perfluoroheptanoic acid (PFHpA)	ND	ppt	1	1.0	3.3		
perfluorohexanesulfonic acid (PFHxS)	ND	ppt	1	3.8	13		
perfluorooctanoic acid (PFOA)	ND	ppt	1	2.3	7.6		
perfluorononanoic acid (PFNA)	ND	ppt	1	2.3	7.7		
perfluorooctanesulfonic acid (PFOS)	ND	ppt	1	3.8	13		
C13-PFHxA (SURR)	82.82%			•	•		S
C13-PFDA (SURR)	83.653%			·	•		S

#### NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

Sample: 958676 5026 Collected: 11/09/16 Analyzed: 11/22/16 - Analytes: 6							
ANALYTE NAME	RESULT	<b>UNITS WWB</b>	DIL	LOD	LOQ	MCL	Note
perfluorobutanesulfonic acid (PFBS)	ND	ppt	1	11	37		
perfluoroheptanoic acid (PFHpA)	ND	ppt	1	1.0	3.3		
perfluorohexanesulfonic acid (PFHxS)	ND	ppt	1	3.8	13		
perfluorooctanoic acid (PFOA)	ND	ppt	1	2.3	7.6		
perfluorononanoic acid (PFNA)	ND	ppt	1	2.3	7.7		
perfluorooctanesulfonic acid (PFOS)	ND	ppt	1	3.8	13		
C13-PFHxA (SURR)	98.922%	•		•			S
C13-PFDA (SURR)	91.007%	•		•			S

#### NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

Sample: 958677 5027 Collected: 11/09/16 Analyzed: 11/22/16 - Analytes: 6							
ANALYTE NAME	RESULT	UNITS WWB	DIL	LOD	LOQ	MCL	Note
perfluorobutanesulfonic acid (PFBS)	ND	ppt	1	11	37		
perfluoroheptanoic acid (PFHpA)	ND	ppt	1	1.0	3.3		
perfluorohexanesulfonic acid (PFHxS)	ND	ppt	1	3.8	13		
perfluorooctanoic acid (PFOA)	ND	ppt	1	2.3	7.6		
perfluorononanoic acid (PFNA)	ND	ppt	1	2.3	7.7		
perfluorooctanesulfonic acid (PFOS)	ND	ppt	1	3.8	13		
C13-PFHxA (SURR)	93.613%						S
C13-PFDA (SURR)	88.409%	•		•			S
NOTES ADDITIONS OF THE PARTY OF							

#### NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

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Customer: U S Army - EMECO (Fort McCoy) NLS Project: 270910

**Project Description: Drinking Water - Method 537** 

Project Title: Template: 537PPT Printed: 11/23/2016 14:08

Sample: 958678 5028 Collected: 11/09/16 Analyzed: 11/22/16 - Analytes: 6							
ANALYTE NAME	RESULT	<b>UNITS WWB</b>	DIL	LOD	LOQ	MCL	Note
perfluorobutanesulfonic acid (PFBS)	ND	ppt	1	11	37		
perfluoroheptanoic acid (PFHpA)	ND	ppt	1	1.0	3.3		
perfluorohexanesulfonic acid (PFHxS)	ND	ppt	1	3.8	13		
perfluorooctanoic acid (PFOA)	ND	ppt	1	2.3	7.6		
perfluorononanoic acid (PFNA)	ND	ppt	1	2.3	7.7		
perfluorooctanesulfonic acid (PFOS)	ND	ppt	1	3.8	13		
C13-PFHxA (SURR)	104.606%						S
C13-PFDA (SURR)	102.886%				·		S

#### NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

Sample: 958679 5029 Collected: 11/09/16 Analyzed: 11/22/16 - Analytes: 6							
ANALYTE NAME	RESULT	<b>UNITS WWB</b>	DIL	LOD	LOQ	MCL	Note
perfluorobutanesulfonic acid (PFBS)	ND	ppt	1	11	37		
perfluoroheptanoic acid (PFHpA)	ND	ppt	1	1.0	3.3		
perfluorohexanesulfonic acid (PFHxS)	ND	ppt	1	3.8	13		
perfluorooctanoic acid (PFOA)	ND	ppt	1	2.3	7.6		
perfluorononanoic acid (PFNA)	ND	ppt	1	2.3	7.7		
perfluorooctanesulfonic acid (PFOS)	ND	ppt	1	3.8	13		
C13-PFHxA (SURR)	94.77%			•		•	S
C13-PFDA (SURR)	91.643%						S

#### NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

Page 3 of 3

# PFC RESULTS FOR THE TWO POTABLE WELLS ON THE EAST SIDE OF THE AIRFIELD AT THE SPARTA HANGER

#### NORTHERN LAKE SERVICE, INC. Analytical Laboratory and Environmental Services 400 North Lake Avenue - Crandon, WI 54520 Ph: (715)-478-2777 Fax: (715)-478-3060

ANALYTICAL REPORT

WDNR Laboratory ID No. 721026460 WDATCP Laboratory Certification No. 105-330

EPA Laboratory ID No. WI00034

Printed: 12/20/16 Page 1 of 1

NLS Project: 272235

NLS Customer: 35655

Fax: 608 388 3136 Phone: 608 388 6546

And J. Oct

Client: U S Army - EMECO (Fort McCoy)

Attn: Mike Miller 2171 South 8th Avenue 2IMNW-MCY-SSP-E Fort McCoy, WI 54656

**Project: Perfluorinated Compounds** 

S Air 1	NLS I	): 965	695
COC: 177	738:1	Matrix:	DW

Collected: 12/08/16 07:30 Received: 12/09/16

Parameter	Result	Units	Dilution	MRL	Analyzed	Method	Lab
Perfluorinated Chemicals by EPA Method 537 Rev 1.1	see attached				12/15/16	EPA 537 Rev 1.1	721026460
Solid Phase Extraction by EPA Method 537	yes				12/14/16	EPA 537	721026460

S Air 2 NLS ID: 965696 COC: 177738:2 Matrix: DW

Collected: 12/08/16 07:40 Received: 12/09/16

Parameter	Result	Units	Dilution	MRL	Analyzed	Method	Lab
Perfluorinated Chemicals by EPA Method 537 Rev 1.1	see attached				12/15/16	EPA 537 Rev 1.1	721026460
Solid Phase Extraction by EPA Method 537	yes				12/14/16	EPA 537	721026460

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and/or LOQ tagged with an asterisk(\*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution and/or solids content.

ND = Not Detected (< LOD)

LOD = Limit of Detection %DWB = (mg/kg DWB) / 10000 LOQ = Limit of Quantitation

NA = Not Applicable

DWB = Dry Weight Basis

MCL = Maximum Contaminant Levels for Drinking Water Samples.

1000 ug/L = 1 mg/L

Shaded results indicate >MCL.

Reviewed by:

Authorized by: R. T. Krueger President

Customer: U S Army - EMECO (Fort McCoy) NLS Project: 272235

**Project Description: Perfluorinated Compounds** 

Project Title: Template: 537PPT2 Printed: 12/20/2016 16:58

Sample: 965695 S Air 1 Collected: 12/08/16 Analyzed: 12/15/16 - Analytes: 6						
ANALYTE NAME	RESULT	<b>UNITS WWB</b>	DIL	MRL	MCL	Note
perfluorobutanesulfonic acid (PFBS)	ND	ppt	1	90		
perfluoroheptanoic acid (PFHpA)	ND	ppt	1	10		
perfluorohexanesulfonic acid (PFHxS)	ND	ppt	1	30		
perfluorooctanoic acid (PFOA)	ND	ppt	1	20		
perfluorononanoic acid (PFNA)	ND	ppt	1	20		
perfluorooctanesulfonic acid (PFOS)	ND	ppt	1	40		
C13-PFHxA (SURR)	80.901%					S
C13-PFDA (SURR)	74.849%					S

Page 1 of 1

#### NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

Sample: 965696 S Air 2 Collected: 12/08/16 Analyzed: 12/15/16 - Analytes: 6							
ANALYTE NAME	RESULT	UNITS WWB	DIL	MRL		MCL	Note
perfluorobutanesulfonic acid (PFBS)	ND	ppt	1	90			
perfluoroheptanoic acid (PFHpA)	ND	ppt	1	10			
perfluorohexanesulfonic acid (PFHxS)	ND	ppt	1	30			
perfluorooctanoic acid (PFOA)	ND	ppt	1	20			
perfluorononanoic acid (PFNA)	ND	ppt	1	20			
perfluorooctanesulfonic acid (PFOS)	ND	ppt	1	40			
C13-PFHxA (SURR)	82.381%	•		•		•	S
C13-PFDA (SURR)	78.59%	•		•		•	S

#### NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

The PFOA branch isotope peak is included in the PFOA calculation per EPA directive.

QuickTurn Due Date:		NLS SAMPLE TRACK	Staple Here	Staple Here					
Client#		Receiving Sample Conditions							
Client Info:  ACCOY  Ship To Address on Reverse Side		Project Received Via: FedEx UPS Dunham Speedee US Mail Hand Other:  Short Hold time (<72hrs) Rush Turn around Requested  Samples Met All Receipt Requirements  YES  NO - "See Specific Issues Below"							
		Temperature over 6.5 C	TES TES	NO - See Specific Issues Below					
Ordered By:	Date:	No Chain of Custody Present Chain of Custody Not Filled out							
Phone:	Order Recv'd By:	Headspace in VOA vials(>6mm)							
Fax:		Insufficient Volume			7				
Client Project Description	);	Incorrect/Insufficient Preservation							
Data To:	Date To Be Sampled:	Addition Comments:	Lab Instructions:						
	NLS Quote #								
Extra CC To: Cus	Customer PO #								
	Pricing Info:	Client Notifications/Resolutions:	PWS ID# DNR Forms: Electronic Submittal PROJECT #	Yes No Yes No					
Done		The second second	272235						
Bill To:			965695-	BOTTLES REC'D and MATRIX   WW					
Reporting Instructions TAD CRQL EDD or Other type Special report to:				SL/SEDTISSOILAIR					
			177738	For Initial Date Log - In Review/Login Ck	8				
Special Requirements Email Fax Paperless			Date Collected  12/08/16  Date Rec'd	Work Review Special Report TAD / Disk Data/Pkg. Review 1					
			12/69/16	Final Pkg. Ck & CC Billing Check					