## PART 1 OF 3



Naval Facilities Engineering Systems Command Northwest Silverdale, Washington

Final

### Phase 2 Site Inspection Report for Per- and Polyfluoroalkyl Substances Ault Field

Naval Air Station Whidbey Island Oak Harbor, Washington

September 2021



Naval Facilities Engineering Systems Command Northwest Silverdale, Washington

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Prepared for NAVFAC Northwest by CH2M HILL, Inc. Bellevue, Washington Contract N62470-16-D-9000 CTO 4041



# **Executive Summary**

The Department of the Navy (Navy), Naval Facilities Engineering Systems Command Northwest Division, contracted CH2M HILL, Inc. (CH2M) to perform a Phase 2 Site Inspection (SI) at Naval Air Station Whidbey Island, Ault Field (**Figure 1**), in Oak Harbor, Washington, to evaluate the presence or absence of per- and polyfluoroalkyl substances (PFAS) in soil and groundwater at 30 of the 35 potential source areas (PSAs) (**Figure 2**) identified in the preliminary assessment (PA) for Ault Field, which was issued in November 2018 (Navy, 2018a). The remaining five sites are addressed under separate inspections. Figure 2 identifies the confirmed PFAS release areas among the 30 PSAs with color coding based on the findings of the PA. A Phase 1 SI was completed in 2018 near the eastern and southwestern boundaries of Ault Field, where PFAS have been detected in drinking water above the United States Environmental Protection Agency (USEPA) Lifetime Health Advisory. The Phase 1 SI was conducted in accordance with the *Final Sampling and Analysis Plan, Phase 1 Site Investigation for Per- and Polyfluoroalkyl Substances in Soil and Groundwater, Ault Field, Naval Air Station Whidbey Island, Oak Harbor, Washington* (Navy, 2018b) and the investigation conclusions are summarized in a technical memorandum prepared by CH2M and submitted to the Navy in March 2019 (Navy, 2019a).

This report describes the Phase 2 SI, which was conducted in four stages: Stages 2 and 3 were conducted in November and December 2019, and Stages 1 and 4 were conducted in July and August 2020. All work was performed in accordance with the *Final Sampling and Analysis Plan, Phase 2 Site Inspection Ault Field, Naval Air Station Whidbey Island Oak Harbor, Washington* (SAP), henceforth referred to as the SAP (Navy, 2019c), and three field change requests (FCRs). FCR 1 was completed in November 2019 (2019 FCR 1) for Stages 2 and 3 to adjust soil sampling and monitoring well installation based on lithology, FCR 2 (2019 FCR 2) was completed in December 2019 for Stages 2 and 3 to adjust the well development methods based on observed field conditions, and 2020 FCR 1 was completed in July 2020 to streamline Stages 1 and 4 of the Phase 2 SI and continue to meet the objectives of the SAP (the FCRs are included in **Appendix H**).

For ease of discussion, the sites investigated during each stage of the inspection have been grouped together based on their location and status as determined by the Phase 2 inspection. They are hereafter referred to as Group 1 through Group 5 (**Figure 2**) and defined as follows, except where noted:

- Group 1 Wastewater Treatment Plant, Former Sewage Lagoons, and the Former Wastewater Treatment Plant (Building 420)
- Group 2 Hardstand Area, 1985 EA-6B Crash Site, 1989 A-6 Crash Site, 1990 A-6 Crash Site, 1981 P-3A Crash Site, 2006 F-18 Crash Site, and the Runway Drainage Ditch System (Area 16), including Stormwater Outfall 2
- Group 3 Former Avionics Facility (Building 2547), Former/Current Fire Station (Building 2897), Hangar 1 (Building 112), Hangar 5 (Building 386), Hangar 6 (Building 410), Hangar 7 (Building 2544), Hangar 8 (Building 2642), Hangar 9 (Building 2681), Hangar 10 (Building 2699), Hangar 11 (Building 2733), Hangar 12 (Building 2737), Hangar 14 (newly constructed), Indoor Wash Rack (Building 2903), P3 Wash Rack, and Stormwater Outfall 1 of the Runway Drainage Ditch System (Area 16)
- Group 4 Former 1966 Fire School (Area 27) and Pesticide Rinsate Disposal Area (Area 14)
- Group 5 1976 EA-6 Crash Site, Former Clover Valley Fire School (Area 29), Fire School Can Disposal Area (Area 30), Gallery Golf Course

Group 1, Group 4, and Group 5 are sites associated with Stage 1 and Stage 4 of the Phase 2 SI field investigation, and Group 2 and Group 3 are sites associated with Stage 2 and Stage 3.

Investigations of potential PFAS releases at Ault Field began in 2015 and have included sampling of on-Base monitoring wells and off-Base drinking water wells; drilling, installation, and sampling for PFAS at new on-Base groundwater monitoring wells to better understand the aquifer system; and aquifer testing at residential parcels to determine the feasibility of using the newly installed wells as potential alternative water supply wells for the

affected residences. Details of the aquifer testing, including methodology and results, are presented in a technical memorandum prepared by CH2M and finalized in March 2019 (Navy, 2019b). The overall objectives for the Phase 2 SI were defined in the SAP as:

- Identify the presence or absence of PFAS in the shallow portion of the aquifer at areas where surface releases
  are suspected that have not previously been investigated, or where the well network previously sampled was
  not sufficient to assess whether a surface release has occurred at or above the USEPA Lifetime Health
  Advisory for perfluorooctanoic acid (PFOA), perfluorooctane sulfonate (PFOS), or both.<sup>1</sup>
- Identify the groundwater and surface water interaction and potential PFAS migration pathways.<sup>2</sup>
- Improve understanding of on-Base groundwater flow directions and potential for migration of PFAS from the PSAs identified in the PA.

Field activities during Stage 2 and Stage 3 of the Phase 2 SI consisted of sampling existing and newly installed monitoring wells, soil boring sampling, and installing new monitoring wells targeting both the shallow and intermediate aquifer<sup>3</sup> (**Figure 3**). The Stage 1 and Stage 4 field activities consisted of sampling five existing wells, installing and sampling seven new on-Base monitoring wells, advancing and sampling 20 soil borings, and collecting grab groundwater samples at 12 of the 20 soil boring locations (**Figure 4**).

Groundwater elevation surveys were conducted on new and existing monitoring wells during the first half of the field investigation in 2019, and during the second half of the field investigation in 2020. Groundwater measurements are generally consistent with prior groundwater elevation data across Ault Field, including artesian conditions near the Runway Drainage Ditch System (Area 16), and where flow direction is generally to the east or northeast. Some variations were noted for monitoring wells near the western boundary of Ault Field, where groundwater flow direction was toward the northwest out to the Strait of Juan de Fuca. New information gathered from the groundwater elevation surveys, and from the drilling activities, were used to refine the conceptual site model and are discussed in this report in the Updated Conceptual Site Model Section 5. Project Action Levels (PALs) for this project, as established in the SAP and updated based on revised guidance issued after the SAP, are as follows:

Although the SAP objective referred to the Lifetime Health Advisory, this report focuses on PAL exceedances, as established in the SAP and updated based on revised guidance issued after the SAP.

<sup>2</sup> This objective was specified in the SAP; however, it is not necessary for the SI phase of investigation and has been deferred to future remedial investigations.

<sup>3</sup> The SAP for this project specifies that the soil borings advanced during Stage 3 would be completed as piezometers, essentially shallow monitoring wells. The construction, development, and sampling of the designated piezometers did not differ from the monitoring wells installed during Stages 2 and 4. To avoid confusion in this report by referring to both monitoring wells and piezometers, they will all be referred to as monitoring wells.

#### Project Action Levels<sup>1</sup>

Analyte	Media (units)	Project Action Levels <sup>2</sup>
PFOS	Soil (μg/kg)/ Groundwater (ng/L)	130 40
PFOA	Soil (µg/kg) Groundwater (ng/L)	130 40
PFBS	Soil (µg/kg) Groundwater (ng/L)	1,900 600

Notes:

<sup>1</sup> While SSLs were included in the SAP to ensure data quality for assessment of leaching and screening against these values was completed to inform decision-making during future investigations, these values are not considered PALs for this project. Additionally, while the Lifetime Health Advisory was included in the SAP, it is not to be used for making CERCLA-related decisions, but may be used to determine and expand drinking water sampling areas and to determine whether drinking water receptors require response actions.

PALs for PFOA and PFOS are based on a hazard quotient of 0.1 and were generated using the USEPA online calculator as described in the Assistant Secretary of Defense October 15, 2019 memorandum, "Investigating Per- and Polyfluoroalkyl Substances within the Department of Defense Cleanup Program" (DoD, 2019). PALs for PFBS were generated similarly, but values were updated from those listed in the 2019 memorandum to reflect reference doses provided in "Provisional Peer-Reviewed Toxicity Values for Perfluorobutane Sulfonic Acid (PFBS) and Related Compound Potassium Perfluorobutane Sulfonate" (USEPA, 2021). The original value of 602 ng/L derived from the online calculator for PFBS was rounded to 600 ng/L, consistent with two significant figures included in the USEPA's RSL table.

= not applicable	PFBS = perfluorobutanesulfonic acid
μg/kg = micrograms(s) per kilogram	RSL = regional screening level
ng/L = nanograms per liter	SSL = soil screening level
CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act of 1980	

Project action limits are currently not established for the remaining 15 PFAS compounds for soil or groundwater, nor are there any State of Washington regulatory screening levels or USEPA RSLs available (Navy, 2019c).

The laboratory analytical results for soil samples collected during the Phase 2 SI showed no detection of PFOA or PFBS in any sample, and detections of PFOS in three locations near the hangar area and in one location at the Former Sewage Lagoons that were all below the respective PALs (**Figure 5** through **Figure 9**).

Groundwater samples taken during Phase 2 were collected at depths ranging from 7 to 65 feet below ground surface (**Figure 10** through **Figure 14**). Laboratory analytical results for groundwater samples collected from the newly installed and existing monitoring wells found that PFBS was present in nearly every sample, but no detection was at a concentration exceeding the PAL. PFOS was detected above the PAL in the samples collected from Group 3 wells WI-AF-MW-620, WI-AF-MW-621, WI-AF-MW-624 along the taxiway, and well WI-AF-H6-B3 near Hangar 6 (**Figure 14**), and Group 1 wells WI-AF-MW-14, WI-AF-MW-20, and WI-AF-MW-21 at Building 420, and WI-AF-MW-630 at the Wastewater Treatment Plant (**Figure 10**). PFOA was detected above the PALs in the samples collected from Group 3 wells WI-AF-MW-618, WI-AF-MW-620, WI-AF-MW-621, and WI-AF-MW-621, and WI-AF-MW-624, all installed along the taxiway (**Figure 14**).

Group 2 dual completion monitoring well clusters were installed during Stage 3 at the Hardstand Area and various locations along and around the Area 16 drainage ditch system. The Group 3 dual completion monitoring well cluster installed at Stormwater Outfall 1, which joins to the Area 16 drainage ditch system, was also installed during Stage 3. The dual completion wells installed during Stage 3 were to investigate whether the runway ditch at each location is losing surface water to the underlying aquifer or gaining water from shallow groundwater discharge into the surface water system (**Figure 14**) (Navy, 2019c). Groundwater samples collected from the monitoring wells confirmed the presence of PFOS above the PAL at Group 3 well WI-AF-WT09, located at Stormwater Outfall 1, and Group 2 Hardstand Area wells WI-AF-WT01 and WI-AF-WT02, and WI-AF-WT05 (Area 16) (**Figure 13**). PFOA was detected above the PAL in the samples from Group 3 Stormwater Outfall wells WI-AF-WT01 and WI-AF-WT01 (featured on **Figure 14** with the Group 3 wells) and from Group 2 wells WI-AF-WT01 and WI-AF-WT02 (**Figure 13**).

Grab groundwater samples were collected from 12 Group 1, Group 4, and Group 5 soil borings advanced during Stage 4 (**Figure 10** through **Figure 12**). PFOS and PFOA above the PALs were detected in samples collected from Group 1 borings WI-AF-BH10 (at the Wastewater Treatment Plant) and WI-AF-BH12 (at the Former Sewage Lagoons) (**Figure 10**). The sample from Former Sewage Lagoons boring WI-AF-BH13 exceeded the PAL for PFOA, only.

Based on an assessment of data collected during Phase 2, the following recommendations are made for the PSAs investigated at Ault Field:

- Group 1 Conduct further investigation to delineate the nature and extent of PFAS in groundwater at the Former Sewage Lagoons, Wastewater Treatment Plant, and Building 420. And, conduct further investigation to assess the leaching potential for PFOS in soil at the Former Sewage Lagoons, where samples confirmed the presence of PFOS in soil at one location below the PAL of 130 µg/kg, and where the groundwater samples from the same location exceed PALs.
- Group 2 Conduct further investigation to delineate the nature and extent of PFAS in groundwater at the Hardstand Area, 2006 F-18 Crash Site, 1990 A-6 Crash Site, 1985 EA-6B Crash Site, the 1989 A-6 Crash Site, the Runway Drainage Ditch System (Area 16), and Stormwater Outfall 2.
- Group 3 Conduct further investigation to delineate the nature and extent of PFAS in groundwater near the Former Avionics Facility (Building 2547), Former/Current Fire Station (Building 2897), Hangar 1 (Building 112), Hangar 5 (Building 386), Hangar 6 (Building 410), Hangar 7 (Building 2544), Hangar 8 (Building 2642), Hangar 9 (Building 2681), Hangar 10 (Building 2699), Hangar 11 (Building 2733), Hangar 12 (Building 2737), Hangar 14 (newly constructed), Indoor Wash Rack (Building 2903), P3 Wash Rack, and Stormwater Outfall 1. And, conduct further investigation to assess the leaching potential for PFOS in soil to the east of Hangar 8 and the Indoor Wash Rack, to the east of Hangar 9, and at Stormwater Outfall 1 where PFOS were detected in soil samples in these areas, below the PAL of 130 μg/kg, and where the groundwater samples from the same locations exceed PALs.
- Group 4 No further action planned for soil or groundwater at Area 14 or Area 27.
- Group 5 No further action planned for soil or groundwater at the 1976 EA-6 Crash Site, Area 29, Area 30, or the Gallery Golf Course.

## Contents

Exec	utive Su	nmary		iii
Acro	nyms an	d Abbrev	viations	xi
1	Intro	duction		1-1
2	Site E	Backgrour	nd and Physical Setting	2-1
	2.1		ackground	
		2.1.1	Regulatory Setting	2-1
		2.1.2	Investigation History	2-2
	2.2	Physic	al Setting	2-3
		2.2.1	Physical Characteristics	2-3
		2.2.2	Climate	2-3
		2.2.3	Topography and Surface Drainage Features	2-3
		2.2.4	Land Use	2-3
		2.2.5	Geologic Setting	2-3
		2.2.6	Hydrogeologic Setting	2-4
		2.2.7	Hydrologic Setting	2-4
		2.2.8	Water Use	2-4
3	Inves	tigation I	Methodology	3-1
	3.1	Investi	igation Objectives	3-1
	3.2	Field T	Fask Summary	3-1
		3.2.1	Stage 2 and Stage 3	3-1
		3.2.2	Stage 1 and Stage 4	3-1
		3.2.3	Site Preparation and Utility Location	3-2
		3.2.4	Soil Borings	3-2
		3.2.5	Grab Groundwater Sampling	
		3.2.6	Monitoring Well Construction	
		3.2.7	Monitoring Well Development	3-4
		3.2.8	Groundwater Sampling	
		3.2.9	Groundwater Elevation Survey	3-6
		3.2.10	, 6	
	3.3	•	e Analysis and Quality Control	
	3.4		tamination Procedures	
	3.5		igation-derived Waste Management	
			Stage 2 and Stage 3	
		3.5.2	Stage 1 and Stage 4	
	3.6		tions from the Sampling and Analysis Plan	
	3.7	Data C	Quality Evaluation	3-10
4	Phase	e 2 Site In	nspection Results	4-1
	4.1	Soil		
		4.1.1	Group 1	
		4.1.2	Group 2	
		4.1.3	Group 3	
		4.1.4	Group 4	
		4.1.5	Group 5	
	4.2		idwater Grab Sampling	
		4.2.1	Group 1	
		4.2.2	Group 4	
		4.2.3	Group 5	4-3

	4.3	Ground	lwater Sampling	4-4
		4.3.1	Group 1	
		4.3.2	Group 2	
		4.3.3	Group 3	4-5
		4.3.4	Group 4	4-5
		4.3.5	Group 5	4-6
5	Update	d Site C	onceptual Model	5-1
		5.1.1	Group 1	
		5.1.2	Group 2	
		5.1.3	Group 3	
		5.1.4	Group 4	5-2
		5.1.5	Group 5	5-3
		5.1.6	Groundwater Flow	5-3
6	Conclus		d Proposed Actions	
	6.1		sions	
	6.2	Propos	ed Actions	6-1
7	Referen	nces		7-1

#### Appendixes

- A Utility Verification Forms
- B Soil Boring Logs and Well Completion Diagrams
- C Well Development Logs
- D Groundwater Sampling Data Sheets
- E Synoptic Water Level Data Sheets
- F Survey Report
- G Field Notes
- H Field Change Requests
- I Investigation-derived Waste Inventory
- J Data Validation Reports
- K Additional PFAS Analytes Raw Data

#### Tables

- 1 Ault Field Monitoring Well and Monitoring well Construction Details
- 2 Ault Field Groundwater Elevation Survey
- 3 Summary of PFAS Chemicals Detected in Soil Stages 2 and 3
- 4 Summary of PFAS Chemicals Detected in Soil Stage 4
- 5 Summary of PFAS Chemicals Detected in Groundwater Stages 2 and 3
- 6 Summary of PFAS Chemicals Detected in Groundwater Stages 1 and 4
- 7 Summary of PFAS Chemicals Detected in Grab Groundwater Stage 4

#### Figures

- 1 Base Location Map
- 2 Site Layout with Potential PFAS Sources
- 3 Stage 2/Stage 3 Sampling Locations
- 4 Stage 1/Stage 4 Sampling Locations
- 5 Stage 4 Soil Sampling Results Group 1 Sites

- 6 Stage 3 Soil Sampling Results Group 2 Sites
- 7 Stage 2 Soil Sampling Results Group 3 Sites
- 8 Stage 4 Soil Sampling Results Group 4 Sites
- 9 Stage 4 Soil Sampling Results Group 5 Sites
- 10 Stage 1/Stage 4 Monitoring Well and Grab Groundwater Sampling Results Group 1 Sites
- 11 Stage 1/Stage 4 Monitoring Well and Grab Groundwater Sampling Results Group 4 Sites
- 12 Stage 1/Stage 4 Monitoring Well and Grab Groundwater Sampling Results Group 5 Sites
- 13 Stage 3 Monitoring Well Sampling Results Group 2 Sites
- 14 Stage 2 Groundwater Sampling Results Group 3 Sites
- 15 Surface Aquifer Groundwater Elevation Map Group 3 Sites
- 16 Surface Aquifer Groundwater Elevation Map Group 2 and Group 3 Sites
- 17 Deep Aquifer Groundwater Elevation Map Group 2 and Group 3 Sites
- 18 Surface Aquifer Groundwater Elevation Map Group 1 Sites
- 19 Surface Aquifer Groundwater Elevation Map Group 4 Sites

# Acronyms and Abbreviations

µg/kg	micrograms(s) per kilogram
APS	Applied Professional Services
bgs	below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CH2M	CH2M HILL, Inc.
CLEAN	Comprehensive Long-term Environmental Action – Navy
CTO	Contract Task Order
DI	deionized
DoD	Department of Defense
FCR	field change request
FD	field duplicate
HQ	hazard quotient
IDW	investigation-derived waste
LC-MS/MS	liquid chromatography – tandem mass spectrometer
msl	mean sea level
NAVFAC	Naval Facilities Engineering Systems Command
Navy	Department of the Navy
ng/L	nanograms per liter
NTU	nephelometric turbidity units
PA	Preliminary Assessment
PAL	project action level
PFAS	per- and polyfluorinated alkyl substances
PFBS	perfluorobutane sulfonate
PFOA	perfluorooctanoic acid
PFOS	perfluorooctane sulfonate
PPE	personal protective equipment
ppt	parts per trillion
PQO	project quality objective
PSA	potential source area
PVC	polyvinyl chloride
QC	quality control
QSM	Quality Systems Manual
RSL	regional screening level
SAP	Sampling and Analysis Plan
SDWA	Safe Drinking Water Act
SI	Site Inspection
SOP	standard operating procedures
SSL	soil screening level
SVOC	semivolatile organic compounds
UCMR3	third Unregulated Contaminant Monitoring Rule
USEPA	United States Environmental Protection Agency

PHASE 2 SITE INSPECTION REPORT FOR PER- AND POLYFLUOROALKYL SUBSTANCES AULT FIELD NAVAL AIR STATION WHIDBEY ISLAND, OAK HARBOR, WASHINGTON

- VOC volatile organic compound
- WQP water quality parameters

# Introduction

CH2M HILL, Inc. (CH2M) was contracted by Naval Facilities Engineering Systems Command (NAVFAC) Northwest to perform a Phase 2 Site Inspection (SI) for per- and polyfluoroalkyl substances (PFAS) at Ault Field (**Figure 1**). A Phase 1 SI was performed in 2018 near the eastern and southwestern boundaries of Ault Field, with a focus on collecting information to support the long-term solutions for two residential parcels near Ault Field, where PFAS have been detected in drinking water above the United States Environmental Protection Agency (USEPA) Lifetime Health Advisory. The results of the Phase 1 SI are summarized in a technical memorandum prepared by CH2M and submitted to the Department of the Navy (Navy) in March 2019 (Navy, 2019a). This Phase 2 SI Report presents the data and findings obtained during the Phase 2 SI field activities. For ease of discussion, the sites investigated during each stage of the inspection have been grouped together based on their location and status as determined by the Phase 2 SI. They are hereafter referred to as Group 1 through Group 5 (**Figure 2**) and defined as follows:

- Group 1 Wastewater Treatment Plant, Former Sewage Lagoons, and the Former Wastewater Treatment Plant (Building 420)
- Group 2 Hardstand Area, 1990 A-6 Crash Site, 1981 P-3A Crash Site, 2006 F-18 Crash Site, and the Runway Drainage Ditch System (Area 16), including Stormwater Outfall 2
- Group 3 Former Avionics Facility (Building 2547), Former/Current Fire Station (Building 2897), Hangar 1 (Building 112), Hangar 5 (Building 386), Hangar 6 (Building 410), Hangar 7 (Building 2544), Hangar 8 (Building 2642), Hangar 9 (Building 2681), Hangar 10 (Building 2699), Hangar 11 (Building 2733), Hangar 12 (Building 2737), Hangar 14 (newly constructed), Indoor Wash Rack (Building 2903), P3 Wash Rack, and Stormwater Outfall 1 of the Runway Drainage Ditch System (Area 16)
- Group 4 Former 1966 Fire School (Area 27) and Pesticide Rinsate Disposal Area (Area 14)
- Group 5 1976 EA-6 Crash Site, Former Clover Valley Fire School (Area 29), Fire School Can Disposal Area (Area 30), Gallery Golf Course

Group 1, Group 4, and Group 5 are sites associated with Stage 1 and Stage 4 of the Phase 2 SI field investigation, and Group 2 and Group 3 are sites associated with Stage 2 and Stage 3.

The overall objectives for the Phase 2 SI were defined in the *Final Sampling and Analysis Plan, Phase 2 Site Inspection Ault Field, Naval Air Station Whidbey Island Oak Harbor, Washington* (SAP), henceforth referred to as the SAP (Navy, 2019c). Changes to the SAP to streamline the summer 2020 Stage 1 and Stage 4 activities, while still achieving the project quality objectives (PQOs), were approved via 2020 Field Change Request (FCR) 1 (included in **Appendix H**). The overall objectives were:

- Identify the presence or absence of PFAS in the shallow aquifer at areas where surface releases are suspected but have not previously been investigated, or where the well network previously sampled was not sufficient to assess whether a surface release has occurred at or above the Lifetime Health Advisory concentrations for perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS).
- Identify the groundwater and surface water interaction and potential PFAS migration pathways.<sup>1</sup>
- Improve understanding of on-Base groundwater flow directions and potential for migration of PFAS from the potential source areas (PSAs) identified in the preliminary assessment (PA).

This Phase 2 SI Report outlines the approach taken to achieve the listed objectives and provides conclusions based on data collected and recommendations for further study. This report was prepared for NAVFAC Northwest under

<sup>1</sup> This objective was specified in the SAP; however, it is not necessary for the SI phase of investigation and has been deferred to future remedial investigations.

PHASE 2 SITE INSPECTION REPORT FOR PER- AND POLYFLUOROALKYL SUBSTANCES AULT FIELD NAVAL AIR STATION WHIDBEY ISLAND, OAK HARBOR, WASHINGTON

the Comprehensive Long-term Environmental Action – Navy (CLEAN) 9000 Contract N62470-16-D-9000, Contract Task Order (CTO) 4041.

The Phase 2 SI Report is organized as follows:

- Section 1 Introduction
- Section 2 Site Background and Physical Setting
- Section 3 Investigation Methodology
- Section 4 Investigation Results
- Section 5 Conclusions and Recommendations
- Section 6 References

Tables, figures, and appendixes follow Section 6.

## 1.1 Per- and Polyfluoroalkyl Substances

PFAS are manufactured chemicals that have been used since the 1950s in many household and industrial products because of their stain- and water-repellant properties. Within Navy operations, PFAS are most commonly associated with aqueous film-forming foam used primarily for firefighting (including emergency response, equipment testing and/or training, and fire suppression systems in buildings). PFAS can also be present in other industrial and household materials, in vapor suppression systems, and in waste streams. PFAS are now present virtually everywhere in the world because of the large amounts that have been manufactured and used. Once these compounds are released to the environment, they break down very slowly. PFAS are considered an "emerging chemical", which do not have Safe Drinking Water Act (SDWA) regulatory standards or routine water quality testing requirements. The USEPA is studying PFAS to determine if national regulation is needed. The State of Washington does not have an established state standard or promulgated screening value for any PFAS constituent in either groundwater or drinking water.

USEPA issued the third Unregulated Contaminant Monitoring Rule (UCMR3)<sup>2</sup> in May 2012. The UCMR3 required monitoring of all large public water systems serving more than 10,000 people and 800 representative public water systems serving 10,000 or fewer people between 2013 and 2015, for 30 substances. Six PFAS compounds were included in the UCMR3 list; of these six PFAS, USEPA issued health advisories<sup>3</sup> for only two, PFOA and PFOS. USEPA has also published toxicity values for PFOA and PFOS, as well as another PFAS compound, perfluorobutane sulfonate (PFBS). Health advisory levels are not regulatory standards; they are health-based concentrations which should offer a margin of protection for all Americans throughout their lives from adverse health effects resulting from exposure to PFOA and PFOS in drinking water. The USEPA Lifetime Health Advisory level is 70 parts per trillion<sup>4</sup> (ppt; also equivalent to 70 nanograms per liter [ng/L]) for PFOA, and 70 ppt for PFOS. When both PFOA and PFOS are found in groundwater, the combined concentration should not exceed 70 ppt (USEPA, 2016a, 2016b).

<sup>&</sup>lt;sup>2</sup> The 1996 SDWA amendments require that once every 5 years USEPA issue a new list of no more than 30 unregulated chemicals to be monitored by public water systems.

<sup>&</sup>lt;sup>3</sup> USEPA issued a Lifetime Health Advisory level for PFOS and PFOA in May 2016, superseding the 2009 provisional health advisory. USEPA has not issued a health advisory for any other PFAS compounds.

<sup>&</sup>lt;sup>4</sup> 70 ppt is equal to 70 ng/L or 0.07 microgram per liter.

# Site Background and Physical Setting

This section presents background information on Ault Field including site history, potential sources of PFAS, and relevant information on the physical, environmental, and hydrogeologic setting at the site.

### 2.1 Site Background

Ault Field occupies approximately 4,300 acres and is located three miles northwest of the City of Oak Harbor, Washington (**Figure 1**). It was commissioned on September 21, 1942 as one of three Naval Air Station Whidbey Island installations. Ault Field was formerly used for the rearming and refueling of Navy patrol planes and other tactical aircraft operating in the Puget Sound region. Currently, Ault Field supports Navy tactical electronic attack squadrons flying the EA-18G Growler, the P-3 Orion Maritime Patrol squadrons, and two Fleet Reconnaissance squadrons flying the EP-3E Aries (Navy, 2019c).

#### 2.1.1 Regulatory Setting

PFAS have been identified by the USEPA as an "emerging chemical", which is defined by the Department of Defense (DoD) as a chemical that has a perceived or real threat to human health or the environment, and that have new or changing toxicity values or new or changing human health or environmental regulatory standards. Changes may be due to new science discoveries, detection capabilities, or exposure pathways (DoD, 2019). As detailed in the NAVFAC Interim PFAS Site Guidance (Navy, 2020), there are no SDWA federal regulations or Clean Water Act Ambient Water Quality Human Health Criteria for any PFAS. For chemicals not subject to national primary drinking water regulation, the SDWA authorized the USEPA to publish nonregulatory lifetime health advisories and risk-based regional screening levels (RSLs) to assist state and local officials in evaluating risks from PFAS in drinking water. Only the Project Action Levels (PALs) specified herein are applicable for groundwater samples collected during the Phase 2 investigation; the Lifetime Health Advisory is applicable for drinking water. For soil, the PALs are applicable for soil samples collected during the Phase 2 investigation (Navy, 2018b). The U.S. protection of groundwater soil screening levels (SSLs) are not considered official PALs for this project and are instead used to represent generalized screening criteria for evaluation of the presence of PFAS vadose zone source areas. The soil screening level values are not intended for use in remedial action or risk assessment decision-making. The PALs for this project, as established in the SAP and updated based on current guidance, are tabulated as follows:

Analyte	Media (units)	Project Action Levels <sup>2</sup>
PFOS	Soil (µg/kg) Groundwater (ng/L)	130 40
PFOA	Soil (µg/kg) Groundwater (ng/L)	130 40
PFBS	Soil (µg/kg) Groundwater (ng/L)	1,900 600

#### Project Action Levels<sup>1</sup>

#### Notes:

<sup>1</sup> While SSLs were included in the SAP to ensure data quality for assessment of leaching and screening against these values was completed to inform decision-making during future investigations, these values are not considered PALs for this project. Additionally, while the Lifetime Health Advisory was included in the SAP, it is not to be used for making CERCLA-related decisions, but may be used to determine and expand drinking water sampling areas and to determine whether drinking water receptors require response actions.

PALs for PFOA and PFOS are based on a HQ of 0.1 and were generated using the USEPA online calculator as described in the Assistant Secretary of Defense October 15, 2019 memorandum, "Investigating Per- and Polyfluoroalkyl Substances within the Department of Defense Cleanup Program" (DoD, 2019). PALs for PFBS were generated similarly, but values were updated from those listed in the 2019 memorandum to reflect reference doses provided in "Provisional Peer-Reviewed Toxicity Values for Perfluorobutane Sulfonic Acid (PFBS) and Related Compound Potassium Perfluorobutane Sulfonate" (USEPA, 2021). The original value of 602 ng/L derived from the online calculator for PFBS was rounded to 600 ng/L, consistent with two significant figures included in the USEPA's RSL table.
 --- = not applicable

--- = not applicable
µg/kg = micrograms(s) per kilogram

Project action limits are currently not established for the remaining 15 PFAS compounds for soil or groundwater, nor are there any State of Washington regulatory screening levels or USEPA RSLs available.

In accordance with Navy policy, all samples collected for this Phase 2 SI were analyzed for PFAS by liquid chromatography – tandem mass spectrometry (LC-MS/MS) compliant with DoD Quality Systems Manual (QSM) 5.1.1 Table B-15 (Navy, 2019c).

#### 2.1.2 Investigation History

Groundwater investigations for PFAS at Ault Field have been conducted over the past five years. In September of 2015, the Navy conducted shallow groundwater sampling at Area 16, Area 31, and Hangar 5 (**Figure 2**). Neither PFOS nor PFOA were detected above the method detection limit in the samples from Area 16. Minor detections of PFOS (maximum concentration of 35 ng/L) and PFOA (maximum concentration of 7 ng/L) were found in the Hangar 5 samples, and the samples from Area 31 detected PFOS above the USEPA RSL and the USEPA Lifetime Health Advisory (PFOS maximum concentration of 2,370 ng/L and PFOA maximum concentration of 58,500 ng/L) (Navy, 2019c). The 2015 investigation concluded that further investigation was recommended to assess the potential for PFAS contamination in the shallow aquifer, and suggested that the deeper portion of the aquifer at the central drainage ditch portion of Area 16 had not been impacted by PFAS (Navy, 2018a). It was also concluded that investigation of the area to the north and northwest of Hangar 5 was not warranted; however, additional review of records revealed that the well network sampled at Hangar 5 was not sufficient to assess if a PFAS release had occurred at or above the USEPA RSL or Lifetime Health Advisory for either PFOS, PFOA, or both, and the installation of additional wells was recommended (Navy, 2019c).

A Phase 1 SI was conducted from January to March 2018 to refine the understanding of groundwater flow at Ault Field, to confirm the presence of PFAS in groundwater and characterize their nature, if present, and to gather information to support the evaluation of long-term solutions for two off-Base residential parcels near Ault Field (one to the east and one to the southwest of the Base) where PFAS have been detected in drinking water above the USEPA Lifetime Health Advisory for PFOS, PFOA, or both (Navy, 2019a). Nine on-Base monitoring wells and two off-Base potential alternative water supply wells were installed between the eastern and southern portions of the Base, within the shallow, intermediate, and deep zones of the aquifer. Soil samples collected during drilling were non-detect for PFBS, and the detections of PFOA and PFOS were below the sample quantitation limit. All detections of PFOS and PFOA were below the Life Health Advisory, and the detections of PFBS were below USEPA RSL (Navy, 2019a). Groundwater sample results from the nine newly installed groundwater monitoring wells were non-detect for PFOS and PFOA. Only one of the off-Base potential alternative water supply wells had PFAS detections, of which the PFOS and PFOA detections were below the Lifetime Health Advisory, and PFBS was below the USEPA RSL (Navy, 2019a). In addition to the new wells, groundwater samples for PFAS analysis were collected from 17 existing on-Base wells that had no prior PFAS sampling history: 1959-1969 Landfill (Area 2), Areas 3, 4, 29, and the Current Fire Training Area (Area 2 and the Current Fire Training Area are located in between the Phase 2 sites in Group 4 and Group 5) (**Figure 2**). The results confirmed that groundwater samples from 9 of the 17 wells had detections of PFOS and PFOA above the USEPA Lifetime Health Advisory (Navy, 2019a).

### 2.2 Physical Setting

#### 2.2.1 Physical Characteristics

Ault Field is situated on the northern end of Whidbey Island in the Puget Lowland (**Figure 1**). The central and most developed portion of Ault Field, which includes operations buildings, runways, taxiways, and barracks, is relatively flat with elevations ranging from approximately 10 to 50 feet above mean sea level (msl) (Navy, 2018b).

#### 2.2.2 Climate

Whidbey Island has a temperate climate with mild, dry summers, and cool, wet winters. On average, January is the coolest month and August is the hottest. The mean temperature for Whidbey Island is 50 degrees Fahrenheit. Whidbey island has a mean annual precipitation of 19 inches per year, which is lower than most locations in western Washington due to a "rain shadow" effect as storm systems move over the Olympic Mountain Range (Navy, 2018b).

#### 2.2.3 Topography and Surface Drainage Features

The far eastern and western extents of Ault Field are bounded by Dugualla Bay and the Strait of Juan de Fuca, respectively. Steep slopes and coastal bluffs occur mainly along the shoreline along the western side of Ault Field (Navy, 2018b).

#### 2.2.4 Land Use

The area surrounding Ault Field is a low-density residential area, used for a combination of residential and commercial purposes (Navy, 2019c).

#### 2.2.5 Geologic Setting

Whidbey Island lies within the Puget Lowland, a topographic and structural depression between the Olympic Mountains and the Cascade Range (**Figure 1**). The geology of the area is heavily influenced by glacial advances and retreats. At the height of the most recent glaciation, ice is estimated to have reached a thickness of about 4,500 feet in the Oak Harbor area. The geologic units on Whidbey Island thus consist of a sequence of Quaternary-age (less than 2 million years old) glacial and interglacial deposits that may be over 3,000 feet thick (USGS, 2005) with near-surface deposits being mostly glacial sediment of the Fraser glaciation (20,000 to 10,000 years old) (Navy, 2018b).

The Everson and Vashon units of the Fraser glaciation, post-glacial sediment, and artificial fill make up most of the surface and near-surface soil underlying Ault Field. In general, stratigraphic units up to 100 feet thick, consisting of relatively impermeable clay, silt, and silty fine sand (Everson glaciomarine drift and Vashon till), form the near-surface layers. Underlying the Vashon Outwash in most places are sand, silt, and clay of the Whidbey Formation (Navy, 2018b).

Three parallel active fault zones exist at Ault Field that are regionally significant. The Devil's Mountain, Strawberry Point, and Utsalady Point fault zones trend from southeast to northwest across Ault Field. Fault movement is oblique with both horizontal and vertical components. In general, the horizontal component is left-lateral, while the vertical component is normal with the north wedge up (Navy, 2018b).

#### 2.2.6 Hydrogeologic Setting

The United States Geological Survey has identified five major hydrogeologic units on Whidbey Island. Only two units are present at Ault Field, and are termed intermediate and shallow aquifers, respectively. Locally perched zones may exist over discontinuous areas of till or other clay-rich units (Navy, 2018b).

The shallow aquifer is a locally discontinuous unconfined aquifer consisting of sand and gravel with an average groundwater elevation of 20 feet msl. At Ault Field, the shallow aquifer is found in the Vashon Outwash deposits at or near the surface. The intermediate aquifer is a moderately continuous sandy unit that is generally confined. Potentiometric surface elevations vary from 10 to 75 feet msl (Navy, 2018a).

Groundwater beneath Ault Field is recharged by infiltration of precipitation. Groundwater flow in specific regions of Ault Field has been studied in previous environmental investigations and groundwater flow is generally to the northeast toward Dugualla Bay, and it mimics the topography of the Clover Valley. A groundwater divide extends southwest to northeast along the topographic high of the coastal bluff in the southwestern part of Ault Field. Groundwater to the northwest of the divide flows west toward the Strait of Juan de Fuca, and groundwater to the southeast of the divide flows ast toward the interior of the island and eventually out toward Dugualla Bay (Navy, 2018a).

#### 2.2.7 Hydrologic Setting

Surface water on Whidbey Island occurs in soils with low infiltration rates, resulting from surficial clays, or at locations with high water tables. Streams tend to be shallow and flow is reduced significantly during the summer months. The primary surface water feature on Ault Field, the Clover Valley Stream, flows northeast toward Dugualla Bay (**Figure 1**). Stormwater from the central and southeastern portions of Ault Field is diverted into a complex system of drainage ditches and culverts adjacent to the runways and taxiways (referred to as Runway Drainage Ditch System [Area 16]) and eventually discharges into Clover Valley Stream east of Ault Field. Stormwater from the northern and southwestern portions of Ault Field is captured by the stormwater system which discharges into the Strait of Juan de Fuca (Navy, 2018b).

#### 2.2.8 Water Use

The Ault Field water supply is sourced from the drinking water treatment plant facility at Mount Vernon 16 miles to the northwest, which is owned and operated by the City of Anacortes. Water from the Skagit River is pumped into the Mount Vernon water treatment plant and transported to Naval Air Station Whidbey Island via pipeline. The pipeline was constructed in 1942 to service the newly developed installation at Ault Field and was extended to Oak Harbor in 1970 to supplement the city water supply; however, residences surrounding Ault Field are mainly supplied by private or community drinking water wells (Navy, 2018b).

A seasonal water supply well used to water the golf course exists in the southeastern portion of Ault Field. The well is operated by the Navy on an as-needed basis in cooperation with surrounding private well owners to ensure limited drawdown in adjacent wells (Navy, 2018b).

The USEPA has designated the Whidbey Island aquifer system as a sole-source aquifer as it is the only potable water source for half the island's residents. The aquifer boundaries have been clearly defined and there is no alternative source for drinking water on the island (Navy, 2018b).

# Investigation Methodology

This section describes the methodology used in the Phase 2 SI to accomplish the stated objectives and is discussed by the stage of the investigation. Stage 1 and Stage 4 activities are associated with Group 1, Group 4, and Group 5, and Stage 2 and Stage 3 are sites associated with Group 2 and Group 3.

### 3.1 Investigation Objectives

The field activities discussed in this report were performed in accordance with the SAP (Navy, 2019c). Deviations from the SAP are discussed in Section 3.5. Field activities were conducted in four stages and included sampling of existing on-Base wells, soil boring sampling, grab groundwater sampling, installing and sampling new on-Base monitoring wells, and measuring synoptic water levels.

### 3.2 Field Task Summary

#### 3.2.1 Stage 2 and Stage 3

Field work for Stages 2 and 3 of the Phase 2 SI was performed during a combined field event from November 6 to December 15, 2019. Field notes are provided in **Appendix G**; sampling locations are provided on **Figure 3**.

Stage 2 of the Phase 2 SI focused on areas associated with potential releases or drainage from hangar facilities or other associated PSAs in the immediate vicinity of the hangars (at or downgradient of the Indoor Wash Rack), Former Avionics Facility, Former/Current Fire Station, Hardstand Area, Hangars 1, 5 through 12, and 14, P3 Washrack, and Stormwater Outfalls 1 and 2 (part of the Runway Drainage Ditch System [Area 16]). Stage 2 activities were modified from the SAP via 2019 FCRs 1 and 2 (while still achieving the PQOs) and consisted of the following:

- Sampling of five existing monitoring wells located downgradient of the hangar facilities area, for PFAS
- Drilling of eight boreholes and completion of seven of those as monitoring wells at approximately 30 feet below ground surface (bgs) along the taxiway to the east/northeast of the hangars
- Soil sampling at the soil/water table interface for PFAS
- Groundwater sampling of all newly installed monitoring wells for PFAS

Stage 3 of the Phase 2 SI focused on areas associated with potential releases at or near the Runway Drainage Ditch System (Area 16), including the 1981 P-3A Crash Site, 1985 EA-6B Crash Site, 1989 A-6 Crash Site, 1990 A-6 Crash Site, 2006 F-18 Crash Site, Former Avionics Facility, and P3 Washrack. Stage 3 activities were modified from the SAP via 2019 FCRs 1 and 2 (while still achieving the PQOs) and consisted of the following:

- Drilling of 12 soil boreholes in six clusters of two, advanced to the soil/water table interface.
- Completion of the boreholes as monitoring wells in six clusters of dual completion sets (total of 12 monitoring wells) screened at two intervals (approximately 15 and 30 feet bgs).
- Soil sampling at the soil/water table interface for PFAS.
- Groundwater sampling of all newly installed monitoring wells for PFAS.

#### 3.2.2 Stage 1 and Stage 4

Field work for Stages 1 and 4 of the SI was performed during a combined field event from July 13 to September 9, 2020. Stage 4 was performed prior to Stage 1. Field notes are provided in **Appendix G**; sampling locations are provided on **Figure 4**.

Stage 1 of the Phase 2 SI focused on collecting groundwater samples from existing monitoring wells and the associated activities consisted of the following:

• Sampling of five existing monitoring wells in close proximity to three PSAs (the Pesticide Rinsate Disposal Area [Area 14], the Former Wastewater Treatment Plant [Building 420], and the Gallery Golf Course) to assess the presence or absence of PFAS in groundwater.

Stage 4 of the Phase 2 SI focused on on-Base areas where known data gaps for PFAS in soil and groundwater existed: 1976 EA-6 Crash Site, Area 14, Area 27, Area 29, Area 30, Building 420, Wastewater Treatment Plant, and the Former Sewage Lagoons. Stage 4 activities were modified from the SAP via 2020 FCR 1 (while still achieving the PQOs) and consisted of the following:

- Drilling of 20 boreholes and completion of seven of those as monitoring wells with total depths ranging from 40 to 70 feet bgs.
- Soil sampling at the soil/water table interface for PFAS at all 20 borings.
- Grab groundwater sampling for PFAS was conducted at the soil/water table interface at eight borings and at both the soil/water table interface and the total depth of the boring at four borings. Wells were not installed at Area 14, 1976 EA-6 Crash Site, and the Former Sewage Lagoons. Only soil and groundwater grab sampling was completed for the boreholes at these locations, to assess the locations for PFAS.
- Groundwater sampling of all newly installed monitoring wells for PFAS.
- Survey of synoptic water level of wells sampled during the Stage 1 and Stage 4 field effort.

#### 3.2.3 Site Preparation and Utility Location

Prior to any ground disturbing activities, proposed drilling locations were demarcated, and an 811 call-before-youdig ticket was submitted for public utility providers. Each drilling location was also scanned for utilities by Applied Professional Services (APS), a licensed third-party utility locating company. APS scanned a 30-foot radius around each location using a combination of ground-penetrating radar and radio frequency instruments. Third-party utility location activities were performed October 21-22, 2019 for Stage 2 and Stage 3, and July 13-14, 2020 for Stage 1 and Stage 4 (Appendix A). During the third-party utility location, the following locations were moved due to utilities identified within 5 feet of the proposed locations and/or for greater ease of access for drilling equipment:

#### Stage 2 and Stage 3

- WI-AF-MW-616 was moved 18 feet east of the proposed location from the SAP
- WI-AF-MW-618 was moved 20 feet east of the proposed location from the SAP
- WI-AF-MW-619 was moved 6 feet east of the proposed location from the SAP
- WI-AF-MW-620 was moved 23 feet east of the proposed location from the SAP
- WI-AF-MW-621 was moved 18 feet north of the proposed location from the SAP

#### Stage 1 and Stage 4

- WI-AF-WT11/WI-AF-WT12 was moved 7 feet south of the proposed location from the SAP
- WI-AF-BH09 was moved 5 feet north of the proposed location from the SAP
- WI-AF-BH10 was moved within 5 feet east of the proposed location from the SAP
- WI-AF-BH19 was moved within 5 feet east of the proposed location from the SAP
- WI-AF-BH20 was moved within 5 feet east of the proposed location from the SAP

#### 3.2.4 Soil Borings

Sonic drilling operations for Stage 2 and Stage 3 were conducted from November 6-23, 2019, and from July 13-29, 2020 for Stage 4. A total of 40 soil borings (20 soil borings during Stage 2 and Stage 3, and 20 soil borings during

Stage 4) (Figure 5 through Figure 9) were advanced by a Washington-licensed driller using sonic drilling techniques in accordance with applicable standard operating procedures (SOPs) included in the SAP (Navy, 2019c). Each drilling location was hand cleared to a depth of 5 feet bgs using non-invasive methods prior to drilling to ensure that no undetected buried utilities were present. No materials containing PFAS were used during drilling.

Continuous soil cores were collected for lithologic classification and screened for volatile organic compounds (VOCs) using a photoionization detector. Soil cores were closely examined for signs of saturation and the presence of fine-grained beds that could indicate the presence of perched groundwater or confining conditions. Lithology observed in the soil cores was classified according to the Unified Soil Classification System and logged in accordance with applicable SOPs included in the SAP. Soil boring logs are included in **Appendix B**. All boreholes were drilled according to the SAP, with the exception of Stage 2 monitoring well location WI-AF-MW-617. This drilling location was inaccessible due to recent heavy precipitation; therefore, the borehole was not drilled, and a well was not installed.

#### Soil Sampling

Soil samples were collected from the soil cores at the soil/water table interface in accordance with applicable SOPs in the SAP. Twenty-seven soil samples (24 primary samples and 3 field duplicate [FD] samples) were collected from the 20 soil borings advanced during Stage 2 and Stage 3. The four additional primary samples were collected from three Stage 2 borings: WI-AF-MW-620, to aid with vertical profiling of PFAS contamination, and locations WI-AF-MW-619 and WI-AF-MW-624, to assist with vertical delineation due to a potential seasonal perched groundwater layer encountered at 2 feet bgs at each location. Twenty primary samples were collected from the 20 soil borings advanced during Stage 4.

Soil samples were sent to Battelle Analytical Services in Norwell, Massachusetts to be analyzed for the 18 PFAS compounds listed in USEPA Method 537.1 via LC-MS/MS compliant with the QSM v. 5.1.1 Table B-15.

#### 3.2.5 Grab Groundwater Sampling

Grab groundwater samples were collected at soil borings advanced during Stage 4 that were not completed as monitoring wells to gather groundwater quality data and to improve the understanding of PFAS migration in groundwater (Figure 10 through Figure 12) (Navy, 2019c). The SAP called for two grab groundwater samples to be collected from each Stage 4 soil boring and the samples be sent for expedited analytical turnaround time; based on these results, monitoring wells were to be installed at the locations with PFAS detections (Navy, 2019c). In order to meet the PQOs of the 2019 SAP and perform the Stage 4 field work without a task order modification, 2020 FCR 1 (Appendix H) was submitted and approved by the Navy. The FCR reduced the number of borings with grab groundwater samples from 20 to 13 and eliminated the need for expedited analytical turnaround time, with the exception of the Area 29 and Area 30 boring samples. When drilling activities were initiated at Area 30, the targeted shallow groundwater zone was not encountered in the three borings at the site (WI-AF-BH06, WI-AF-BH07, and WI-AF-BH08) and only one grab groundwater sample from the total depth of each boring could be collected. The same groundwater condition observed at Area 30 was seen at two of the three Area 29 borings (WI-AF-BH03 and WI-AF-BH04), and the third boring (WI-AF-BH05) was dry to the total depth of 50 feet bgs and no sample could be collected (Figure 12). Due to these groundwater conditions, only two wells were installed between Area 29 and Area 30, both at Area 29, eliminating the need for expedited analytical turnaround time. In addition to the Area 29 and Area 30 borings, a shallow water bearing zone was also not encountered at Crash Site borings WI-AF-BH01 and WI-AF-BH02 (Figure 12), and Area 14 borings WI-AF-BH19 and WI-AF-BH20 (Figure 11), and only one sample from the total depth of each boring was collected. One grab groundwater sample was collected from the soil/water interface at Wastewater Treatment Plant location WI-AF-BH09 (Figure 10), but the boring was terminated after sample collection due to misinterpretation of the field project instructions, and a second grab groundwater sample was not collected. Two grab groundwater samples each were collected from Wastewater Treatment Plant boring WI-AF-BH10, and Former Sewage Lagoon borings WI-AF-BH12, WI-AF-BH13, and WI-AF-BH14. In total, 18 samples were collected from 12 borings (16 primary samples and 2 FD samples).

Soil boring purging and grab groundwater sample collection from each boring was accomplished using PFAS-free equipment: either a Geotech GeoSquirt purge pump, a disposable bailer, or a Hydropunch in-situ sampling tool, as described in the subsequent paragraph. An attempt to purge one borehole casing volume was made prior to grab groundwater sample collection at each soil boring. During purging, the depth to water was measured with a water level indicator, and water quality parameters (WQPs) were measured using a water quality meter, calibrated daily at a minimum. One set of WQPs, including pH, temperature, conductivity, and turbidity, was recorded immediately prior to collecting the sample. If excess drawdown was observed in the soil boring, all groundwater was evacuated from the boring and sampling was performed once the water level had recovered to a minimum of 90 percent of the initial water level. Groundwater sampling data sheets are provided in **Appendix D**.

Groundwater sampling with the Geotech GeoSquirt purge pump or disposable bailer was conducted by placing the sampling equipment directly into the open soil boring to first purge and then obtain the groundwater sample. The disposable bailer was used when a minimal amount of groundwater was present in the soil boring and the Geotech GeoSquirt purge pump could not draw water to the surface for sample collection; the Hydropunch was used as an alternative to the GeoSquirt. The sampling procedure for using the Hydropunch required using sonic drilling techniques to advance the boring to the desired sampling depth. Once the soil boring was advanced to depth, the Hydropunch was connected to a small-diameter drive pipe and driven to a discrete interval into the undisturbed formation by the sonic drilling rig. Once in the formation, the screen was exposed inside the Hydropunch by pulling the drive pipe up approximately 2 feet, allowing groundwater to fill the sample chamber (Edge, et al., 1989). When the Hydropunch was extracted to the surface, the groundwater trapped in the sample chamber was then transferred to a groundwater sample container.

#### 3.2.6 Monitoring Well Construction

Monitoring well construction was done following advancement of each associated soil boring (except where noted). Seven borings were completed as monitoring wells during Stage 2, six borings were completed as dual set completion monitoring wells during Stage 3, and seven borings were completed as monitoring wells during Stage 4. As stated in Section 3.2.5, only grab groundwater sampling, with no monitoring well installation, was conducted during Stage 4 at Area 14, 1976 EA-6 Crash Site, and the Former Sewage Lagoons in accordance with 2020 FCR 1. All monitoring wells were constructed with a Schedule 40 polyvinyl chloride (PVC) riser connected to a 5- or 10foot, factory slotted 0.020-inch PVC screen with a bottom cap. A sand filter pack (12/20 washed silica) was placed around the annular space of the screen from the bottom of the boring extending to a minimum height of 2 feet above the top of the screen. A bentonite seal, at least 2 feet thick, was placed above the top of the sand pack. After the bentonite had been hydrated, a cement-bentonite grout was placed in the remaining annular space. All construction materials were free of fluorine; no fluorine containing greases, bentonite, or other materials were used. Monitoring wells were finished with flush-mount completions that included a metal vault and concrete pad. A locking watertight cap was placed on the top of the PVC casing. The monitoring wells were labeled on the exterior of the vault with a metal stamp indicating the identification. Monitoring well construction information is provided in **Table 1**, and completion diagrams are provided in **Appendix B**. Each newly constructed monitoring well was allowed to sit for at least 24 hours before being developed.

Location WI-AF-MW-616 was not constructed as a monitoring well because no productive interval was identified during drilling. The boring was backfilled with bentonite chips from 0.5 to 30 feet bgs, and the top 0.5 feet was backfilled with native soil and grass.

#### 3.2.7 Monitoring Well Development

After construction, each newly installed monitoring well was developed using a combination of bailing, surging, and pumping throughout the screen in accordance with the applicable SOP included in the SAP and the 2019 FCR 2 for Stages 2 and 3 wells. Wells greater than 40 feet bgs were developed by the drilling subcontractor, and wells less than 40 feet bgs were developed by CH2M field staff. Development activities occurred November 24 to December 10, 2019 for Stages 2 and 3, and August 10 to August 13 and August 18, 2020 for Stage 4. During development, the CH2M field staff measured field WQPs, including potential of Hydrogen (pH), temperature,

conductivity, and turbidity with a water quality meter. Development continued until either turbidity readings were below 10 nephelometric turbidity units (NTU) (or 20 NTU in accordance with 2019 FCR 2) and water was free of visible sediment, measurements for three consecutive WQP readings stabilized, a minimum of 10 well casing volumes had been purged, or until four hours of total development time (including the surge and bail period) had been reached, whichever occurred first. All wells were developed as described above with the exception of the following Stage 4 wells:

- WI-AF-MW-627 did not achieve stabilization within the four-hour development time limit and development was terminated. The total purge volume required for development was removed from the well; the final turbidity reading was 47.5 NTU, and the other parameters were generally within range.
- WI-AF-MW-628 was purged dry when development started, and recharge was very slow. After continually purging dry, development was terminated. Water quality measurements were collected when able to, but they did not stabilize. The final turbidity reading was out of range.
- WI-AF-MW-631 purged dry three times before development was terminated. Groundwater quality measurements were collected, but they did not stabilize before termination. The final turbidity reading was out of range.
- WI-AF-MW-630 had a minor obstruction in the casing which prevented lowering a pump into the screen. The well was surged and manually bailed,. 42 gallons of water were bailed before development was terminated due to reaching the 4-hour development time limit. Turbidity was approximately 400 NTU at the time of termination.

Wells that ran dry during development due to low recharge rates were allowed to recharge to ensure the full screen interval was surged and bailed and then purged to the extent practicable (up to three total purges). Surge blocks and pumps with Teflon parts were not used during development. Development logs are provided in **Appendix C**.

#### 3.2.8 Groundwater Sampling

Groundwater sampling activities occurred December 7-12, 2019 for Stage 2 and Stage 3, and August 13-19, 2020 for Stage 1 and Stage 4 (**Figures 10 through 14**). During Stage 2, 13 samples (12 primary samples and 1 FD sample) were collected from 7 newly installed monitoring wells (WI-AF-MW-618 to WI-AF-MW-624) and 5 existing monitoring wells (MW4-B3, MW10-B8, MW15-B23, 16-26B, and H6-B3) (**Figure 14**). Stage 3 groundwater sampling consisted of collecting 14 samples (12 primary samples and 2 FD samples) from 12 newly installed monitoring wells (**Figures 13** and **14**; WI-AF-WT01 to WI-AF-WT12). Stage 1 and Stage 4 groundwater sampling consisted of sampling 5 existing monitoring wells (MW-14, MW-20, MW-21 [**Figure 10**], 14-MW-2 [**Figure 11**], and Ault Field Well 1 [**Figure 12**]) and 7 newly installed monitoring wells (WI-AF-MW-625 to WI-AF-MW-631) (**Figure 10** through **Figure 12**). The newly installed monitoring wells were sampled approximately 24 hours after completion of development.

Groundwater samples were collected under low flow/low stress conditions using a PFAS-free submersible pump or peristaltic pump with the pump intake placed at the middle of the screen interval. Purging was conducted at a rate such that drawdown in the well was less than 0.3 foot. During purging, depth to water readings and WQPs were measured and recorded at regular time intervals of at least 3 minutes. Depth to water was measured with a water level indicator, and WQPs were measured using a water quality meter, calibrated daily at a minimum. Purging continued until WQPs stabilized for three consecutive readings according to the following stabilization criteria:

- Temperature within 0.1 degree Celsius
- pH within 0.1 pH units
- Conductivity within 0.01 millisiemens per centimeter
- Oxidation-reduction potential within 10 millivolts

PHASE 2 SITE INSPECTION REPORT FOR PER- AND POLYFLUOROALKYL SUBSTANCES AULT FIELD NAVAL AIR STATION WHIDBEY ISLAND, OAK HARBOR, WASHINGTON

- Dissolved oxygen within 0.05 milligram per liter
- Turbidity measurements are within 10 percent or less than 10 NTU

If excess drawdown was observed with the minimum achievable purge rate, the purge rate was increased to evacuate all the water. Sampling was performed once the water level had recovered to a minimum of 90 percent of the static water level within a 24-hour period. One set of WQPs was recorded immediately prior to collecting the sample. Groundwater sampling data sheets are provided in **Appendix D**.

In most cases, sampling was conducted at least 24 hours after development. Access to Stage 3 monitoring wells WI-AF-WT01 and WI-AF-WT02 required temporary shutdown of a runway; therefore, to minimize the number of times the area was accessed, these wells were sampled immediately following development.

#### 3.2.9 Groundwater Elevation Survey

A groundwater elevation study of existing and newly installed wells was conducted on December 15, 2019 for Stages 2 and 3 and September 9, 2020 for Stage 1 and Stage 4. Depth to water was measured with a water level indicator from the top of the survey point on the PVC riser casing and recorded to the nearest 0.01 foot, following applicable SOPs in the SAP. The elevation surveys were conducted at least 24 hours after well installation and development had been completed for newly installed wells for each respective phase (**Appendix E**). Groundwater contour maps were constructed using these data and are provided as **Figure 15** through **Figure 19**. These data will be discussed in the Updated Conceptual Site Model section later in this report.

#### 3.2.10 Surveying

All existing monitoring wells that were sampled and new monitoring wells that were installed during the Phase 2 field events were horizontally and vertically surveyed by a Washington-licensed surveyor, in December 2019 for Stages 2 and 3, and in September 2020 for Stages 1 and 4. The surveyor provided easting and northing horizontal coordinates according to Washington State Plane North Zone based on the North American Datum of 1983. Horizontal coordinates were provided to the nearest 0.01 foot. The surveyor provided vertical elevations in feet above mean sea level based on the North American Vertical Datum of 1988. Vertical coordinates were provided to the nearest 0.001 foot. The survey of the nearest 0.001 foot. The survey reports are provided in **Appendix F**.

### 3.3 Sample Analysis and Quality Control

Groundwater and soil samples for all stages of the Phase 2 SI field effort were collected according to the applicable SOPs referenced in the SAP. Groundwater and soil samples were sent to Battelle Analytical Services in Norwell, Massachusetts to be analyzed for the 18 PFAS compounds listed in USEPA Method 537.1. Samples were analyzed using LC-MS/MS compliant with the QSM v. 5.1.1 Table B-15.

Field quality control (QC) samples were collected during the sampling program. These samples were obtained to ensure that disposable and reusable sampling equipment were free of PFAS, evaluate field methodology, establish ambient field background conditions, and evaluate whether cross-contamination occurred during sampling and/or shipping. Several types of field QC samples that were collected and analyzed are defined as follows:

- Equipment Rinsate Blank (decontaminated equipment): Equipment blanks were collected at the frequency of one per day of sampling. These samples were obtained by running certified PFAS-free laboratory-grade deionized (DI) water over or through decontaminated sample collection equipment.
- Equipment Rinsate Blank (disposable equipment): Equipment blanks were collected at the frequency of one per lot. These samples were obtained by running certified PFAS-free laboratory-grade DI water over or through unused sample collection equipment.
- **Field Blank:** Field blanks were collected at the frequency of one per week. These samples were collected by pouring the certified PFAS-free laboratory-provided blank water into the blank container.

• **Duplicate Sample:** FD samples were collected at the same time and under identical conditions as their respective associated sample at the frequency of one per 10 field samples of similar matrix.

In addition to field QC samples, the following lab QC samples were also collected at a rate of one per every 20 samples of a given medium:

- **Matrix Spike:** An aliquot of sampled groundwater and/or soil was spiked with known quantities of analytes of interest and subjected to the entire analytical procedure. By measuring the recovery of these spiked quantities, the appropriateness of the method for the matrix was demonstrated.
- **Matrix Spike Duplicate:** These samples were collected as second aliquots of the same matrix as the matrix spike to determine the precision of the method.

### 3.4 Decontamination Procedures

Decontamination activities for all stages of the Phase 2 SI field effort were conducted in accordance with the applicable SOPs included in the SAP. Non-disposable equipment was decontaminated using the following solutions in this order:

- 1. Wash with Alconox/Liquinox solution
- 2. Rinse with distilled water
- 3. Rinse with laboratory-grade DI water (laboratory certified PFAS-free)

Disposable sampling equipment and personal protective equipment (PPE), such as Masterflex tubing and nitrile gloves, were not decontaminated after use and, instead, were disposed of as nonhazardous solid waste. After use, disposable equipment was placed in plastic contractor bags and disposed in an onsite trash dumpster.

Reusable heavy equipment, such as drilling rods and augers, was decontaminated before and in between the collection of each sample using a high-pressure steam cleaner with potable-grade water. Pressure washing was conducted at the temporary decontamination pad, which had been constructed prior to the start of drilling activities.

### 3.5 Investigation-derived Waste Management

#### 3.5.1 Stage 2 and Stage 3

Investigation-derived waste (IDW) management activities were conducted in accordance with the Final Waste Management Plan and Environmental Protection Plan (Navy, 2019d). IDW generated during Stages 2 and 3 included soil cuttings, disposable PPE, well development groundwater, groundwater sampling purge water, disposable sampling equipment, and decontamination rinse water from non-disposable sampling equipment and heavy equipment. Specific wastes were handled as follows:

- Solid IDW, including soil cuttings and spent PPE, was placed in a 25-cubic yard roll-off container.
- Aqueous IDW was placed in 275-gallon polyethylene totes.

All IDW containers were properly labeled (project name, accumulation start date, contents, source location of contents, and point of contact information) and staged with secondary containment in the designated IDW area off of Aries Rd east of the flight line gate. IDW containers were inspected weekly during the Stage 2 and Stage 3 field event and monthly thereafter until their removal.

Prior to disposal, CH2M field staff collected waste characterization samples from the totes and the roll-off container. Solid and aqueous IDW samples were analyzed for PFAS, VOCs, semivolatile organic compounds (SVOCs), total metals, reactivity, corrosivity, and ignitability. The waste characterization profiles are provided in **Appendix I**. Waste characterization analytical results indicated that Stage 2 and Stage 3 IDW was nonhazardous. PFAS soil results from sample WI-AF-IDW-SO02-1219 had low detections of PFOS and PFOA; PFAS aqueous results

PHASE 2 SITE INSPECTION REPORT FOR PER- AND POLYFLUOROALKYL SUBSTANCES AULT FIELD NAVAL AIR STATION WHIDBEY ISLAND, OAK HARBOR, WASHINGTON

were less than the USEPA Lifetime Health Advisory of 70 ng/L for the combined sum of PFOA and PFOS with the exception of the following samples:

- WI-AF-IDW-AQ01-1219:
  - PFOS 118 ng/L
  - PFOA 65.7 ng/L
- WI-AF-IDW-AQ02-1219
  - PFOS 76 ng/L
- WI-AF-IDW-AQ03-1219
  - PFOA 349 D ng/L
  - PFOS 276 D ng/L
- WI-AF-IDW-AQ06-1219
  - PFOS 130 ng/L
  - PFOA 113 ng/L
- WI-AF-IDW-AQ10-1219
  - PFOS 365 D ng/L
  - PFOA 67.3 D ng/L

All IDW was transported offsite and disposed of as nonhazardous PFAS containing waste, by Clean Harbors on April 22, 2020.

#### 3.5.2 Stage 1 and Stage 4

IDW generated during Stages 1 and 4 included soil cuttings, disposable PPE, well development groundwater, groundwater sampling purge water, disposable sampling equipment, and decontamination rinse water from nondisposable sampling equipment and heavy equipment. Specific wastes were handled as follows:

- Solid IDW, including soil cuttings and spent PPE, were placed in 55-gallon drums.
- Aqueous IDW was placed in 275-gallon polyethylene totes.

All IDW containers were properly labeled (project name, accumulation start date, contents, source location of contents, and point of contact location) and staged with secondary containment in the designated IDW area off of Clover Valley Road. IDW containers were inspected weekly during the Stage 1 and Stage 4 field events and are currently inspected monthly until they are removed.

Prior to disposal, CH2M field staff collected waste characterization samples from the 55-gallon drums and 275gallon polyethylene totes. Solid and aqueous IDW samples were analyzed for PFAS, VOCs, SVOCs, total metals, reactivity, corrosivity, and ignitability.. Waste characterization analytical results indicated that Stage 1 and Stage 4 solid IDW was nonhazardous, and PFAS aqueous results were less than the USEPA Lifetime Health Advisory of 70 ng/L for the combined sum of PFOA and PFOS in one of two samples, and in exceedance of 70 ng/L in the second sample. IDW disposal and container removal is currently in being coordinated.

### 3.6 Deviations from the Sampling and Analysis Plan

The lists in the following sub-sections summarize the deviations from the SAP (Navy, 2019c) during the investigation activities, and justification for those deviations. All deviations were approved by the Navy via direct communication or via 2019 FCRs 1 and 2 for Stages 2 and 3 and 2020 FCR 1 for Stage 4. A copy of the approved FCRs are included in **Appendix H**. Data quality and usability were not affected by these deviations:

#### Stage 2 and Stage 3

- Group 2 (Figure 13):
  - The location of monitoring wells WI-AF-WT05 and WI-AF-WT06 were removed from the Phase 2 SI scope due to an archaeological find near the proposed location of the monitoring well pair. The standard buffer for an archaeological site is 30 meters (approximately 100 feet). To meet the investigation goals, this monitoring well location could only be moved within 25 feet of the proposed location, and a management decision was made to exclude the monitoring well pair from the scope. The PQOs for the SI were still achieved with this exclusion. Other wells installed in the area provide information regarding the presence or absence of PFAS in the Area 16 Drainage Ditch System. To maintain a consistent naming convention, proposed monitoring wells WI-AF-WT13 and WI-AF-WT14 were renamed WI-AF-WT05 and WI-AF-WT06, respectively. Figure 11-7 in the SAP displays the proposed monitoring well locations (identified as PZ-05 and PZ-06 on SAP Figure 11-7) before exclusion (Navy, 2019c).
  - Monitoring wells WI-AF-WT01 and WI-AF-WT02 were sampled immediately after development rather than waiting 24 hours as required by the SAP. This was done in accordance with 2019 FCR 2 for logistical reasons as access to the well location required temporary shutdown of a runway. The combined well development and groundwater sampling forms for these locations are included in Appendix D.
- Group 3 (Figure 14):
  - Due to the lack of a productive interval encountered during drilling of the taxiway borehole WI-AF-MW-616, a monitoring well was not constructed at that location and the borehole was abandoned.
  - Taxiway monitoring well WI-AF-MW-617 was not drilled or installed due to inaccessibility of the drilling location as a result of recent heavy precipitation.

#### Stage 1 and Stage 4

- Group 1 (Figure 10):
  - Prior to the start of drilling, 2020 FCR 1 directed that only one well would be installed at the Wastewater Treatment Plant, and the other two locations would be sampled for grab groundwater samples only. The well was to be placed closest to the recent foam-over event that occurred after the PA was conducted (Appendix H).
  - One grab groundwater sample was collected from soil boring WI-AF-BH09 at 9.5 feet bgs, and due to misinterpretation of the field project instructions, the boring was terminated without advancing it further to the intended total depth of 40 feet bgs and collecting an additional grab groundwater sample (Appendix D).
  - Groundwater was encountered before 40 feet bgs in soil boring WI-AF-BH11 and the boring was completed as monitoring well WI-AF-MW-630. The screen was set from 9 to 13 feet bgs (Appendix B).
  - To complete the field event within the daily work window, newly installed monitoring well, WI-AF-MW-630 was sampled four minutes before completing a 24-hour cycle after well development, on the last day of sampling activities (Appendix D).
- <u>Group 4 (Figure 11):</u>
  - Groundwater was not encountered at 40 feet bgs in Area 14 soil boring WI-AF-BH19 as was anticipated, and the boring was advanced to a total depth of 50 feet bgs (**Appendix B**).
  - The anticipated depth to water at Area 27 was 40 feet bgs; however, each soil boring location (WI-AF-BH15, WI-AF-BH16, and WI-AF-BH17) was advanced to a total depth of 60 feet bgs before reaching groundwater and completing each boring as a monitoring well (Appendix B).
- <u>Group 5 (Figure 12):</u>

PHASE 2 SITE INSPECTION REPORT FOR PER- AND POLYFLUOROALKYL SUBSTANCES AULT FIELD NAVAL AIR STATION WHIDBEY ISLAND, OAK HARBOR, WASHINGTON

- Groundwater was not encountered in Area 29 soil boring WI-AF-BH03 by 40 feet bgs as was anticipated.
   The boring was advanced further until groundwater was encountered, and monitoring well WI-AF-MW-629 was installed. The screen was set from 60 to 70 feet bgs. (Appendix B).
- Due to the conditions encountered while advancing soil boring WI-AF-BH03, grab groundwater sample collection was omitted at soil boring WI-AF-BH04, the borehole was advanced to groundwater and monitoring well WI-AF-MW-628 was installed. The screen was set from 55 to 65 feet bgs. (Appendix B).
- Groundwater was not encountered at 40 feet bgs as was anticipated at the location of soil boring WI-AF-BH05, and it was advanced to 50 feet bgs and allowed to sit for recharge. Groundwater did not infiltrate the boring during the approximately 48 hours it was allowed to sit undisturbed, so the soil boring was abandoned by backfilling with bentonite chips. (Appendix D).
- The FCR (2020 FCR 1) approved prior to the start of drilling (Appendix H) reduced the number of wells between Area 30 and nearby Area 29 to three wells total, to be spread across and shared between the two PSAs. During the investigation, field conditions where the target shallow groundwater zone was not encountered, reduced the number of monitoring wells installed to two, both installed at Area 29.
- Soil borings WI-AF-BH06, WI-AF-BH07, and WI-AF-BH08 (Area 30) did not have a shallow water bearing zone, and only one grab groundwater sample from the total depth of each boring could be collected (Appendix D).
- Soil boring WI-AF-BH08 was advanced to a total depth of 50 feet bgs for grab groundwater sample collection when groundwater was not encountered at the anticipated depth of 40 feet bgs (Appendix D).

### 3.7 Data Quality Evaluation

The data quality evaluation and data validation were performed on the soil and groundwater samples collected during the Phase 2 SI at Ault Field, using a multitiered approach. The process begins with an internal laboratory review, continues with an independent review by a third-party validator, and ends with an overall review by the CH2M project chemistry team. The data validation included a review for systematic errors or patterns that are found in the distribution of data qualifiers. The data validation reports are included in **Appendix J**.

Select PFAS were analyzed by DoD method PFASk\_QSM5.1, an analytical method that is compliant with DoD QSM v 5.1.1 Table B-15, as specified in the SAP (Navy, 2019c). The data packages were then reviewed by an independent data validator on the basis of the criteria outlined by the DoD Consolidated QSM for Environmental Laboratories (DoD, 2019). Excluding field QC samples, 88 distinct data points were generated, and select results were qualified with J, J-, or J+ qualifiers (because of the low or high sample concentrations) or U (non-detect) or UJ-qualified (because of blank contamination).

All results are usable as qualified. The overall conclusion is that the dataset generated is acceptable and appropriate for its intended use.

# Phase 2 Site Inspection Results

This section presents the results of the investigation described in **Section 3**. Group 1, Group 4, and Group 5 are associated with Stage 1 and Stage 4 of the Phase 2 SI field investigation, and Group 2 and Group 3 are associated with Stage 2 and Stage 3.

To meet the objectives of the Phase 2 SI, the PFAS analytical data were screened against the PALs as prescribed by the SAP. The PALs for this investigation are summarized in the following table:

Analyte	Media (units)	Project Action Levels <sup>2</sup>
PFOS	Soil (µg/kg) Groundwater (ng/L)	130 40
PFOA	Soil (µg/kg) Groundwater (ng/L)	130 40
PFBS	Soil (µg/kg) Groundwater (ng/L)	1,900 600

Project Action Levels<sup>1</sup>

Notes:

<sup>1</sup> While SSLs were included in the SAP to ensure data quality for assessment of leaching and screening against these values was completed to inform decision-making during future investigations, these values are not considered PALs for this project. Additionally, while the Lifetime Health Advisory was included in the SAP, it is not to be used for making CERCLA-related decisions, but may be used to determine and expand drinking water sampling areas and to determine whether drinking water receptors require response actions.

PALs for PFOA and PFOS are based on a HQ of 0.1 and were generated using the USEPA online calculator as described in the Assistant Secretary of Defense October 15, 2019 memorandum, "Investigating Per- and Polyfluoroalkyl Substances within the Department of Defense Cleanup Program" (DoD, 2019). PALs for PFBS were generated similarly, but values were updated from those listed in the 2019 memorandum to reflect reference doses provided in "Provisional Peer-Reviewed Toxicity Values for Perfluorobutane Sulfonic Acid (PFBS) and Related Compound Potassium Perfluorobutane Sulfonate" (USEPA, 2021). The original value of 602 ng/L derived from the online calculator for PFBS was rounded to 600 ng/L, consistent with two significant figures included in the USEPA's RSL table.

Screening criteria do not exist for the remaining 15 PFAS compounds for soil or groundwater; therefore, PALs were not developed for these compounds. Data for compounds other than PFBS, PFOA, and PFOS are presented in **Appendix K.** These data may be further evaluated in the future if criteria are established.

### 4.1 Soil

This section presents the analytical results for PFAS in soil samples collected for the Phase 2 SI at Ault Field. Table 4 presents a summary of PFAS in soil samples collected from Group 1, Group 4, and Group 5 borings, and Table 5 presents a summary of PFAS in soil samples collected from Group 2 and Group 3 borings. Comprehensive laboratory results and data validation summaries are presented in **Appendix J**, the raw data are presented in **Appendix K**.

#### 4.1.1 Group 1

The following is a summary of the soil sampling results for borings in Group 1 (Wastewater Treatment Plant, Former Sewage Lagoons, and the Former Wastewater Treatment Plant (Building 420)):

- **PFBS** PFBS was not detected in any samples.
- PFOS PFOS was only detected in the sample from WI-AF-BH12 (13.2 μg/kg), but below the PAL of 130 μg/kg. WI-AF-BH12 is located at the Former Sewage Lagoons.
- **PFOA** PFOA was not detected in any sample.

Figure 5 shows the analysis results for PFBS, PFOS, and PFOA in soil samples from Group 1 borings.

#### 4.1.2 Group 2

The following is a summary of the soil sampling results for borings in Group 2 (Hardstand Area, 1990 A-6 Crash Site, 1981 P-3A Crash Site, 2006 F-18 Crash Site, the Runway Drainage Ditch System (Area 16), including Stormwater Outfall 2):

- **PFBS** PFBS was not detected in any sample.
- **PFOS** PFOS was not detected in any sample.
- **PFOA** PFOA was not detected in any sample.

Figure 6 shows the analysis results for PFBS, PFOS, and PFOA in soil samples from Group 2 borings.

#### 4.1.3 Group 3

The following is a summary of the soil sampling results for borings in Group 3 (Former Avionics Facility (Building 2547), Former/Current Fire Station (Building 2897), Hangar 1 (Building 112), Hangar 5 (Building 386), Hangar 6 (Building 410), Hangar 7 (Building 2544), Hangar 8 (Building 2642), Hangar 9 (Building 2681), Hangar 10 (Building 2699), Hangar 11 (Building 2733), Hangar 12 (Building 2737), Hangar 14 (newly constructed), Indoor Wash Rack (Building 2903), P3 Wash Rack, and Stormwater Outfall 1 of the Runway Drainage Ditch System (Area 16)):

- **PFBS** PFBS was not detected in any sample.
- PFOS PFOS was detected in the soil samples from three locations: WI-AF-MW-621 (1.05 J μg/kg), the shallow sample from WI-AF-MW-624 (1.41 J ug/kg), and at WI-AF-WT09 (6.3 ug/kg). WI-AF-MW-621 is located east of Hangar 8 and the Indoor Wash Rack, WI-AF-MW-624 is located east of Hangar 9, and WI-AF-WT09 is part of a co-located well pair at Stormwater Outfall 1. All of the PFOS detections were below the PAL of 130 μg/kg.
   PFOA PFOA was not detected in any sample.

Figure 7 shows the analysis results for PFBS, PFOS, and PFOA in soil samples from Group 3 borings.

#### 4.1.4 Group 4

The following is a summary of the soil sampling results for borings in Group 4 (Former 1966 Fire School (Area 27) and Pesticide Rinsate Disposal Area (Area 14)):

- **PFBS** PFBS was not detected in any sample.
- **PFOS** PFOS was not detected in any sample.
- **PFOA** PFOA was not detected in any sample.

Figure 8 shows the analysis results for PFBS, PFOS, and PFOA in soil samples from Group 4 borings.

#### 4.1.5 Group 5

The following is a summary of the soil sampling results for borings in Group 5 (1976 EA-6 Crash Site, Former Clover Valley Fire School (Area 29), Fire School Can Disposal Area (Area 30), Gallery Golf Course):

- **PFBS** PFBS was not detected in any sample.
- **PFOS** PFOS was not detected in any sample.
- **PFOA** PFOA was not detected in any sample.

Figure 9 shows the analysis results for PFBS, PFOS, and PFOA in soil samples from Group 5 borings.

### 4.2 Groundwater Grab Sampling

This section presents the results for PFAS in grab groundwater samples collected during Stage 4 of the Phase 2 SI borehole drilling activities at Ault Field. The borings selected for grab groundwater collection were located in Group 1, Group 4, and Group 5. **Table 7** presents a summary of PFAS in grab groundwater samples, and

comprehensive laboratory results and data validation summaries are presented in **Appendix J**; the raw data are presented in **Appendix K**.

#### 4.2.1 Group 1

The following is a summary of the grab groundwater sampling results for the five borings that were sampled in Group 1:

- **PFBS** PFBS was detected in the samples from all five borings, ranging from an estimated 2.99 J- ng/L in the shallow sample collected from WI-AF-BH09 (Wastewater Treatment Plant), to an estimated 216 J- ng/L from the shallow sample collected from WI-AF-BH13 (Former Sewage Lagoons). No PFBS detection exceeded the PAL of 600 ng/L for PFBS in groundwater.
- **PFOS** PFOS was detected in the samples from four of the five borings ranging from an estimated 10.7 J- ng/L in the shallow sample collected from WI-AF-BH13 (Former Sewage Lagoons), to an estimated 225 J- ng/L in the shallow sample collected from WI-AF-BH10 (Wastewater Treatment Plant). The following borings had samples with concentrations of PFOS exceeding the PAL of 40 ng/L for PFOS in groundwater:
  - 225 J- ng/L at WI-AF-BH10 (estimated) Wastewater Treatment Plant
  - 89.7 J- ng/L at WI-AF-BH12 (estimated) Former Sewage Lagoons
- **PFOA** PFOA was detected in the samples from four of the five borings ranging from an estimated 0.82 J ng/L in the deeper sample collected from WI-AF-BH13, to an estimated 119 J- ng/L in the shallow sample collected from WI-AF-BH13. The following borings had samples with concentrations of PFOA exceeding the PAL of 40 ng/L for PFOA in groundwater:
  - 70.2 J- ng/L at WI-AF-BH10 (estimated) Wastewater Treatment Plant
  - 97.1 J- ng/L at WI-AF-BH12 (estimated) Former Sewage Lagoons
  - 119 J- ng/L at WI-AF-BH13 (estimated) Former Sewage Lagoons

**Figure 10** shows the concentrations of PFOS, PFOA, and PFBS in the grab groundwater samples collected from Group 1 borings.

#### 4.2.2 Group 4

The following is a summary of the grab groundwater sampling results for the two borings at Area 14, where grab groundwater samples were collected in Group 4:

- **PFBS** PFBS was detected in the samples from both locations, at an estimated 0.46 J- ng/L in the sample collected from WI-AF-BH19, to an estimated 1.4 J- ng/L in the sample collected from WI-AF-BH20. No PFBS detection exceeded the PAL of 600 ng/L for PFBS in groundwater.
- **PFOS** PFOS was detected in the samples from both borings, at an estimated 0.82 J- ng/L in the sample from WI-AF-BH19, to an estimated 5.21 J- ng/L in the sample collected from WI-AF-BH20. No PFOS detection exceeded the PAL of 40 ng/L for PFOS in groundwater.
- **PFOA** PFOA was detected in the samples from both borings, at an estimated 1.81 J- ng/L in the sample collected from WI-AF-BH19, to an estimated 3.13 J- ng/L in the sample collected from WI-AF-BH20. No PFOA detection exceeded the PAL of 40 ng/L for PFOA in groundwater.

**Figure 11** shows the concentrations of PFOS, PFOA, and PFBS in the grab groundwater samples collected from Group 4 borings.

#### 4.2.3 Group 5

The following is a summary of the grab groundwater sampling results for the five borings that were sampled in Group 5:

• **PFBS** – PFBS was not detected in any sample.

- **PFOS** PFOS was detected in the samples from two of the five borings, at an estimated 0.77 J ng/L in the sample collected from WI-AF-BH06 (Area 30), to an estimated 5.18 J- ng/L in the sample collected from WI-AF-BH01 (1976 EA-6 Crash Site). No PFOS detection exceeded the PAL of 40 ng/L for PFOS in groundwater.
- **PFOA** PFOA was detected in the samples from two of the five locations, at an estimated 0.57 J ng/L in the sample collected from WI-AF-BH06 (Area 30), to an estimated 1.29 J- ng/L in the sample collected from WI-AF-BH01 (1976 EA-6 Crash Site). No PFOA detection exceeded the PAL of 40 ng/L for PFOA in groundwater.

**Figure 12** shows the concentrations of PFOS, PFOA, and PFBS in the grab groundwater samples collected from Group 5 borings.

### 4.3 Groundwater Sampling

This section presents the results for PFAS in groundwater samples collected from monitoring wells during the Phase 2 SI at Ault Field. **Table 6** presents a summary of PFAS in groundwater samples collected from Group 1, Group 4, and Group 5 wells; **Table 5** presents a summary of PFAS in groundwater samples collected from Group 2 and Group 3 wells. Comprehensive laboratory results and data validation summaries are presented in **Appendix J**, raw data are presented in **Appendix K**.

#### 4.3.1 Group 1

The following is a summary of the groundwater sampling results for the five monitoring wells that were sampled in Group 1:

- **PFBS** PFBS was detected in the samples from all five wells, ranging from an estimated 1.69 J ng/L in the sample collected from WI-AF-MW-631 (Building 420), to 12.3 ng/L in the sample collected from existing well MW-21 (Building 420). No PFBS detection exceeded the PAL of 600 ng/L for PFBS in groundwater.
- **PFOS** PFOS was detected in the samples from four of the five wells, ranging from an estimated 40.9 J ng/L in the sample from existing well MW-14 (Building 420), to 553 ng/L in the sample from WI-AF-MW-630 (Wastewater Treatment Plant). The following wells had samples with concentrations of PFOS exceeding the PAL of 40 ng/L for PFOS in groundwater:
  - 40.9 J ng/L (estimated) at existing well MW-14 Building 420
  - 125 ng/L at existing well MW-20 Building 420
  - 118 ng/L at existing well MW-21 Building 420
  - 553 ng/L at WI-AF-MW-630 Wastewater Treatment Plant
- **PFOA** PFOA was detected in the samples from all five wells, ranging from an estimated 1.61 J ng/L in the sample from WI-AF-MW-631 (Building 420), to 39 ng/L in the sample from existing well MW-21 (Building 420). No PFOA detection exceeded the PAL of 40 ng/L for PFOA in groundwater.

**Figure 10** shows the concentrations of PFBS, PFOS, and PFOA in groundwater samples from monitoring wells in Group 1.

#### 4.3.2 Group 2

The following is a summary of the groundwater sampling results for the eight monitoring wells that were sampled in Group 2:

- **PFBS** PFBS was detected in the samples from four of the eight wells, ranging from an estimated 2.06 J+ ng/L in the sample collected from WI-AF-WT03 (Runway Drainage Ditch Outfall), to 8.94 ng/L in the sample collected from WI-AF-WT02 (Runway Drainage Ditch System/Hardstand Area). No PFBS detection exceeded the PAL of 600 ng/L for PFBS in groundwater.
- **PFOS** PFOS was detected in the samples from five of the eight wells, ranging from an estimated 0.8 J ng/L in the sample from WI-AF-WT06 (Stormwater Outfall 2), to 564 ng/L in the sample from WI-AF-WT02 (Runway

Drainage Ditch System/Hardstand Area). The following wells had samples with concentrations of PFOS exceeding the PAL of 40 ng/L for PFOS in groundwater:

- 164 ng/L at WI-AF-WT01 Runway Drainage Ditch System/Hardstand Area
- 564 ng/L at WI-AF-WT02 Runway Drainage Ditch System/Hardstand Area
- 65.3 ng/L at WI-AF-WT05 Runway Drainage Ditch System/Stormwater Outfall 2
- **PFOA** PFOA was detected in the samples from four of the five wells ranging from an estimated 0.7 J- ng/L in the sample collected from WI-AF-WT04 (Runway Drainage Ditch Outfall), to 238 ng/L in the sample collected from WI-AF-WT01 (Runway Drainage Ditch System/Hardstand Area). The following wells had samples with concentrations of PFOA exceeding the PAL of 40 ng/L for PFOA in groundwater:
  - 238 ng/L at WI-AF-WT01- Runway Drainage Ditch System/Hardstand Area
  - 45.5 ng/L at WI-AF-WT02- Runway Drainage Ditch System/Hardstand Area

**Figure 13** shows the concentrations of PFBS, PFOS, and PFOA in groundwater samples from the monitoring wells in Group 2.

#### 4.3.3 Group 3

The following is a summary of the groundwater sampling results for the 16 monitoring wells that were sampled in Group 3:

- **PFBS** PFBS was detected in the samples from 14 of the 16 wells, ranging from an estimated 0.26 J ng/L in the sample collected from existing well 16-26B (east of Hangar 10), to 256 ng/L in the sample collected from WI-AF-MW620 (east of Hangar 10). No PFBS detection exceeded the PAL of 600 ng/L for PFBS in groundwater.
- **PFOS** PFOS was detected in the samples from 14 of the 16 wells, ranging from an estimated 1.25 J ng/L in the sample from WI-AF-MW-618 (east of Hangar 5), to 842 ng/L in the sample from WI-AF-MW-621 (east of Hangar 8 and Indoor Wash Rack). The following wells had samples with concentrations of PFOS exceeding the PAL of 40 ng/L for PFOS in groundwater:
  - 46.5 J- ng/L at H6-B3 (estimated) south of Hangar 6
  - 128 ng/L at WI-AF-MW-624 east of Hangar 7
  - 456 J- ng/L at WI-AF-WT09 Stormwater Outfall 1
  - 677 ng/L at WI-AF-MW-620 east of Hangar 10
  - 842 ng/L at WI-AF-MW-621 east of Hangar 8 and Indoor Wash Rack
- **PFOA** PFOA was detected in the samples from 14 of the 16 wells ranging from an estimated 3.38 J- ng/L in the sample collected from WI-AF-MW-622 (east of Hangar 6), to an estimated 407 J- ng/L in the sample collected from WI-AF-WT09 (Stormwater Outfall 1). The following wells had samples with concentrations of PFOA exceeding the PAL of 40 ng/L for PFOS in groundwater:
  - 92.7 ng/L at WI-AF-MW-624 east of Hangar 7 and Hangar 9
  - 407 J- ng/L at WI-AF-WT09 Stormwater Outfall 1
  - 42.8 J- ng/L at WI-AF-WT11 Runway Drainage Ditch System
  - 48.6 ng/L at WI-AF-MW-618 east of Hangar 5
  - 60.7 J- ng/L at WI-AF-MW-620 east of Hangar 10
  - 56.5 ng/L at WI-AF-MW-621 east of Hangar 8 and Indoor Wash Rack

**Figure 14** shows the concentrations of PFBS, PFOS, and PFOA in groundwater samples from the monitoring wells in Group 3.

#### 4.3.4 Group 4

The following is a summary of the groundwater sampling results for the four monitoring wells that were sampled in Group 4:

- **PFBS** PFBS was detected in the samples from all four wells, ranging from an estimated 0.99 J ng/L in the sample collected from WI-AF-MW-627 (Area 27), to 5.02 ng/L in the sample collected from existing well 14-MW-2 (Area 14). No PFBS detection exceeded the PAL of 600 ng/L for PFBS in groundwater.
- **PFOS** PFOS was not detected in any sample.
- **PFOA** PFOA was detected in the samples from all four wells, ranging from an estimated 1.87 J ng/L in the sample collected from WI-AF-MW-627 (Area 27), to 12.7 ng/L in the sample collected from existing well 14-MW-2 (Area 14). No PFOA detection exceeded the PAL of 40 ng/L for PFOA in groundwater.

**Figure 11** shows the concentrations of PFBS, PFOS, and PFOA in groundwater samples from the monitoring wells in Group 4.

#### 4.3.5 Group 5

The following is a summary of the groundwater sampling results for the three monitoring wells that were sampled in Group 5:

- **PFBS** PFBS was detected in the samples from two of the three wells, at an estimated 0.28 J ng/L in the sample collected from WI-AF-MW-628 (Area 29), to an estimated 0.65 J ng/L in the sample collected from WI-AF-MW-629 (Area 29). No PFBS detection exceeded the PAL of 600 ng/L for PFBS in groundwater.
- **PFOS** PFOS was detected in a sample from one of the three wells, at an estimated 2.77 J ng/L in the sample from WI-AF-MW-628 (Area 29). The PFOS detection did not exceed the PAL of 40 ng/L for PFOS in groundwater.
- **PFOA** PFOA was not detected in any sample.

**Figure 12** shows the concentrations of PFBS, PFOS, and PFOA in groundwater samples from the monitoring wells in Group 5.

### SECTION 5 Updated Site Conceptual Model

Drilling conducted during this Phase 2 SI provided additional information on lithology and groundwater conditions in the areas of Ault Field where the monitoring wells and soil borings were located (**Figure 3** and **Figure 4**). These data were used to refine the conceptual site model in the areas where investigative work was conducted.

For ease of discussion, the sites investigated during each stage of the investigation have been grouped together (as defined in Section 1) based on their location and status as determined by the Phase 2 investigation. They are referred to as Group 1 through Group 5 (**Figure 2**). Group 1, Group 4, and Group 5 are sites associated with Stage 1 and Stage 4 of the Phase 2 SI field investigation, and Group 2 and Group 3 are sites associated with Stage 2 and Stage 3.

#### 5.1.1 Group 1

PFOS was the only PFAS analyte detected in soil at any Group 1 boring. The detection (13.2  $\mu$ g/kg) was in the sample from Former Sewage Lagoons boring WI-AF-BH12, and it was below the PAL (130  $\mu$ g/kg).

The grab groundwater sample collected from WI-AF-BH12 detected PFOS and PFOA above the PAL of 40 ng/L (PFOS: 89.7 J- ng/L [estimated]; PFOA: 97.1 J- ng/L [estimated]), and the boring south of WI-AF-BH12, WI-AF-BH13, had a PAL exceedance for PFOA (119 J- ng/L [estimated]), confirming the presence of PFAS above the PAL in shallow groundwater (11 feet bgs) at the Former Sewage Lagoons. The lithology observed in each of the Former Sewage Lagoons borings was generally interbedded well-graded and poorly graded sands with gravel and some silt.

The grab groundwater sample collected from boring WI-AF-BH10 (PFOS: 225 J- ng/L [estimated]; PFOA: 70.2 Jng/L [estimated]) and the groundwater sampled collected south of the WI-AF-BH10 from monitoring well WI-AF-MW-630 (former boring WI-AF-BH11) (PFOS: 553 ng/L) confirmed that PFAS in exceedance of the PALs is present in shallow groundwater (11 to 11.5 feet bgs) at the Wastewater Treatment Plant. The lithology observed in the Wastewater Treatment Plant borings was well-graded sand with silt and gravel interbedded with poorly graded sands for the entire depth of each boring.

PFOS, PFOA, and PFBS in exceedance of PALs were not present in the soil or groundwater samples collected from co-located boring WI-AF-BH18 and monitoring well WI-AF-MW-631, at Building 420, south of the Former Sewage Lagoons (**Figure 5** and **Figure 10**). A definitive water bearing zone was not present in the lithology during soil boring advancement, but a 2.5-foot section of poorly graded sand at 37.5 feet bgs was productive enough to install the monitoring well. The upper 35 feet of the boring was a mixture of silty sand with gravel and poorly graded sands; this combination also continued below 37.5 feet bgs to the total depth of the boring. The three existing wells north and northwest of Building 420 (MW-14, MW-20, and MW-21) had PFOS detections (40.9 J ng/L [estimated], 125 ng/L, and 118 ng/L, respectively) above the PALs; the lithologies of these borings are unknown.

#### 5.1.2 Group 2

PFOS, PFOA, and PFBS were not detected in any soil sample collected from a Group 2 boring.

The dual monitoring wells installed at the Hardstand Area (WI-AF-WT01 and WI-AF-WT02), one well in the pair of wells installed in the eastern portion of the Area 16 drainage ditch system along the Clover Valley Stream (WI-AF-WT03), and one well from a pair installed near Stormwater Outfall 2 along the Area 16 drainage ditch system (WI-AF-WT05) confirmed the presence of PFOS and PFOA in groundwater (**Figure 13**). Groundwater samples collected from WI-AF-WT01 and WI-AF-WT02 had exceedances of both PFOS (164 ng/L and 564 ng/L, respectively) and PFOA (238 ng/L and 45.5 ng/L, respectively) above the PALs; only the detection of PFOS in the groundwater sample from WI-AF-WT05 (65.3 ng/L) exceeded the PAL.

During drilling at WI-AF-WT05 companion well WI-AF-WT06, the air/water interface was encountered at 7 feet bgs but the lithology remained clay with sands until approximately 38 feet bgs, where it transitioned to a poorly graded sand that persisted to the total depth of the boring. The bottom of the monitoring well screen was set at 45 feet bgs. The lithology observed in the Group 2 borings for well pairs WI-AF-WT01 and WI-AF-WT02, WI-AF-WT03 and WI-AF-WT04, WI-AF-WT07 and WI-AF-WT08, and well WI-AF-WT05 was generally well-graded sand and gravel, with interbedded fat or lean clay, and silt.

#### 5.1.3 Group 3

PFOS was the only PFAS analyte detected in soil at any Group 3 boring. Soil samples from monitoring well locations WI-AF-MW-621 and WI-AF-MW-624, located along the taxiway, and well WI-AF-WT09, at Stormwater Outfall 1, had detections of PFOS (1.05 J  $\mu$ g/kg, 1.41 J  $\mu$ g/kg [estimated], and 6.3 J  $\mu$ g/kg, respectively), but no detection was above the PAL (**Figure 7**).

PFOS and PFOA was detected above the PAL in shallow groundwater samples (7 to 15 feet bgs) collected from 7 of the 11 newly installed Group 3 monitoring wells. The three existing monitoring wells that were sampled downgradient of Hangar 12 (MW10-B8, MW4-B3, and MW15-B23), and one existing monitoring well that was sampled downgradient of Hangar 10 (16-26B), did not have PFOS, PFOA, or PFBS detections in exceedance of the PALs. The fifth existing monitoring well sampled, downgradient of Hangar 6 (H6-B3), had a detection of PFOS (46.5 J- ng/L [estimated]) above the PAL for PFOS in groundwater (40 ng/L) (**Figure 14**).

PFOS and PFOA were detected above the PAL in the samples from taxiway monitoring wells WI-AF-MW-620, WI-AF-MW-621, WI-AF-MW-624, and Stormwater Outfall 1 well WI-AF-WT09; detections of only PFOA above the PAL were found in the samples collected from taxiway monitoring well WI-AF-MW-618 and Stormwater Outfall 1 well WI-AF-MW-WT11. Monitoring well WI-AF-MW-620, located south of Stormwater Outfall 1, had the highest concentration of PFOS at 677 ng/L (estimated). The sample collected from Stormwater Outfall 1 well WI-AF-MW-WT09 had the highest concentration of PFOA at 407 J- ng/L (estimated); WI-AF-WT09 also had a high concentration of PFOS: 456 J- ng/L (estimated).

Monitoring well WI-AF-WT11 is located approximately 1,200 feet east of WI-AF-WT09 in a separate dual completion monitoring well set and the two locations are along a common stretch of the drainage ditch. The groundwater sample collected from WI-AF-WT11 (42.8 J- ng/L [estimated]) exceeded the PAL for PFOA in groundwater (40 ng/L).

The lithology observed in the Group 3 borings was generally silt and sand interbedded with fat or lean clay, and well-graded gravel.

#### 5.1.4 Group 4

PFOS, PFOA, and PFBS were not detected in soil at any Group 4 boring.

Groundwater was found to be greater than 40 feet bgs in each of the three Area 27 soil borings (WI-AF-BH15, WI-AF-BH16, and WI-AF-BH17), and the new wells installed at each boring location (WI-AF-MW-627, WI-AF-MW-626, and WI-AF-MW-625, respectively) were completed with the bottom of each screen set at 59 to 60 feet bgs. The upper 30 to 40 feet of soil at each location was composed primarily of clay, with thin layers of interbedded silt; deeper than 40 feet bgs was a mix of sands and gravels. The aquifer in this area was encountered at 47 feet bgs in the southern most soil boring, WI-AF-BH15, but was not encountered until 53 feet bgs in both soil borings WI-AF-BH16 and WI-AF-BH17, which are north and northeast of WI-AF-BH15, respectively.

PFOS, PFOA, and PFBS were not detected above the PAL in the groundwater samples collected from the three newly installed Area 27 soil borings, or in the grab groundwater samples collected from the two borings advanced at Area 14 (WI-AF-BH19 and WI-AF-BH20). Area 14 boring WI-AF-BH19 was advanced to 50 feet bgs before a grab groundwater sample could be collected (at 49 feet bgs). The upper 30 feet of soil was composed primarily of clay, with thin layers of interbedded sands; deeper than 40 feet bgs was a mix of sands and gravels.

#### 5.1.5 Group 5

PFOS, PFAS, and PFOA were not detected in soil at any Group 5 boring.

PFOS, PFAS, and PFOA were not detected above the PAL in any grab groundwater sample or monitoring well sample collected from a Group 5 location.

The lithology at the Crash Site borings (WI-AF-BH01 and WI-AF-BH02) observed in the area consisted of clays until about 10 feet bgs, where it transitioned to sand with silt and gravel. The lithology of Ault Field Well 1 is unknown.

A shallow aquifer was not encountered in any of the three Area 29 soil borings (WI-AF-BH03, WI-AF-BH04, and WI-AF-BH05), and each was advanced past 40 feet bgs until reaching groundwater (**Figure 12**). WI-AF-BH03 was advanced to 70 feet bgs before being completed as a monitoring well (WI-AF-MW-629) with the bottom of the screen at 70 feet bgs, and boring WI-AF-BH04 was advanced to 60 feet bgs before being completed as a monitoring well (WI-AF-MW-629) with the bottom of the screen at 70 feet bgs, and boring WI-AF-BH04 was advanced to 60 feet bgs. The total depth of WI-AF-BH05, the northernmost of the three borings, was 50 feet bgs; however; groundwater at this location was not confirmed as it was not encountered during drilling and did not infiltrate the boring after it had been sitting for 48 hours. The lithology observed in the Area 29 borings was primarily clay with gravel.

Approximately 600 feet north of WI-AF-BH05, Area 30 boring WI-AF-BH08 was advanced to a total depth of 50 feet bgs before termination. Pulverized rock, which was believed to be part of a shallow bedrock ridge that has previously been observed in the area, was seen in the soil core at approximately 37 feet bgs, prompting the decision for boring termination. Above the pulverized bedrock was clay with areas of sand and gravel. The boring was allowed to sit overnight for groundwater infiltration, and sufficient groundwater was present the next morning for collection of a grab groundwater sample. The lithology observed in the other two Area 30 borings (WI-AF-BH06 and WI-AF-MW-BH07) was generally sandy clay with gravel.

#### 5.1.6 Groundwater Flow

Groundwater levels were collected at all new monitoring wells and at the select existing groundwater monitoring wells sampled during each stage of the investigation, as discussed in the Groundwater Elevation Surveys in Sections 3.2.6 and 3.3.7. These data were used to assess the degree of hydraulic connection between aquifer units at the site and to estimate groundwater flow directions. Estimates of groundwater flow directions in the areas investigated as part of this field program are summarized on the figure(s) for each area; potentiometric maps are shown on **Figure 15** through **Figure 19**. Group 3 monitoring wells WI-AF-WT09 and WI-AF-WT10 are included with Group 2 on **Figure 16** and **Figure 17** for determining groundwater flow because they are part of the dual completion monitoring wells installed during Stage 3 that monitor both shallow and deep groundwater.

Groundwater flow patterns at Ault Field are generally to the east or northeast. Some variation from this was seen north of Runway 07-25, near the Hardstand Area, where groundwater was observed flowing from the north and then joining the west to east flow pattern south of Runway 07-25, and another variation was seen around Building 420 where groundwater was observed to flow from the south-east to the north-west, going from the site out to the Strait of Juan de Fuca. Artesian conditions were encountered during the installation of well pairs (in the deeper well of the respective pair) in the Runway Drainage Ditch System (Area 16) at WI-AF-WT06, WI-AF-WT08, WI-A-WT10, and WI-AF-WT12. These observations are consistent with artesian conditions observed at existing Area 16 well 16-26B.

## Conclusions and Proposed Actions

Based on the data collected during the Phase 2 SI field investigation, the following section presents conclusions that have been made regarding each Group, and the proposed actions that are recommended.

## 6.1 Conclusions

- The Phase 2 SI was divided into four stages of work to gather information on PFAS contamination in soil and groundwater at Ault Field. Stage 1 and Stage 4 activities are associated with Group 1, Group 4, and Group 5, and Stage 2 and Stage 3 are sites associated with Group 2 and Group 3. Only existing wells were sampled for Stage 1. Stage 2 included installing and sampling eight monitoring wells along the taxiway to the east/northeast of the hangars. Six dual completion monitoring well clusters were installed east of the new taxiway wells during Stage 3. Twenty soil borings were advanced, and seven were completed and sampled as monitoring wells, during Stage 4. Twelve of the remaining 13 soil borings were sampled for grab groundwater samples, taken from at least one depth (a maximum of two).
- PFAS in soil did not exceed the PAL in any soil boring sample.
- The Group 1 grab groundwater samples and monitoring well samples collected during Stage 1 and Stage 4 confirmed the presence of PFOS and PFOA in exceedance of the PALs in shallow groundwater at the Wastewater Treatment Plant and the Former Sewage Lagoons.
- The Group 2 monitoring wells installed during Stage 3 confirmed the presence of PFOS and PFOA in exceedance of the PALs in groundwater, particularly at the Hardstand Area.
- The Group 3 monitoring wells installed along the taxiway during Stage 2 confirmed the presence of PFOS and PFOA in exceedance of the PALs along the taxiway, in the vicinity of the hangars upgradient of the taxiway, and at Stormwater Outfall 1.
- Groundwater samples collected from Group 4 borings and monitoring wells did not exceed the PALs.
- Groundwater samples collected from Group 5 borings and monitoring wells did not exceed the PALs.
- Lithologic and groundwater elevation data were generally consistent with what have previously been seen at Ault Field, including artesian conditions near the Runway Drainage Ditch System (Area 16). However, the shallow zone of the aquifer was not encountered in Group 4 borings at Area 14 and Area 27, or Group 5 borings at Area 29 and Area 30. Locally perched zones have been previously observed at Ault Field and a perched groundwater zone was identified at the Building 420 boring location for WI-AF-MW-631, in the western portion of the investigation area.
- Some variation from the general east or northeast groundwater flow pattern seen at Ault Field was observed north of Runway 07-25, near the Hardstand Area, where groundwater was observed to flow from the north then joining the east-west flow pattern south of Runway 07-25, and around Building 420 where it was observed to flow from the south-east to the north-west, going from the site out to the Strait of Juan de Fuca.

### 6.2 Proposed Actions

Based on an assessment of data collected during Phase 2, the following recommendations are made for the PSAs investigated at Ault Field:

• Group 1 – Conduct further investigation to delineate the nature and extent of PFAS in groundwater at the Former Sewage Lagoons, Wastewater Treatment Plant, and Building 420. And, conduct further investigation to assess the leaching potential for PFOS in soil at the Former Sewage Lagoons, where samples confirmed the

presence of PFOS in soil at one location below the PAL of 130  $\mu g/kg$ , and where the groundwater samples from the same location exceed PALs.

- Group 2 Conduct further investigation to delineate the nature and extent of PFAS in groundwater at the Hardstand Area, 2006 F-18 Crash Site, 1990 A-6 Crash Site, 1985 EA-6B Crash Site, the 1989 A-6 Crash Site, Stormwater Outfall 2, and the Runway Drainage Ditch System (Area 16).
- Group 3 Conduct further investigation to delineate the nature and extent of PFAS in groundwater near the Former Avionics Facility (Building 2547), Former/Current Fire Station (Building 2897), Hangar 1 (Building 112), Hangar 5 (Building 386), Hangar 6 (Building 410), Hangar 7 (Building 2544), Hangar 8 (Building 2642), Hangar 9 (Building 2681), Hangar 10 (Building 2699), Hangar 11 (Building 2733), Hangar 12 (Building 2737), Hangar 14 (newly constructed), Indoor Wash Rack (Building 2903), P3 Wash Rack, and Stormwater Outfall 1,. And, conduct further investigation to assess the leaching potential for PFOS in soil to the east of Hangar 8 and the Indoor Wash Rack, to the east of Hangar 9, and at Stormwater Outfall 1 where PFOS were detected in soil samples in these areas, below the PAL of 130 µg/kg, and where the groundwater samples from the same locations exceed PALs.
- Group 4 No further action planned for soil or groundwater at Area 14 or Area 27.
- Group 5 No further action planned for soil or groundwater at the 1976 EA-6 Crash Site, Area 29, Area 30, or the Gallery Golf Course.

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Tables

#### Table 1. Ault Field Monitoring Well and Piezometer Construction Details

Phase 2 Site Inspection Report Ault Field, Naval Air Station Whidbey Island Oak Harbor, Washington

Location ID	Installation Date	Ground Elevation (feet NAVD88)	TOC Elevation (feet NAVD88)	Total Depth (feet btoc)	Well Casing Diameter (inches)	Completion	Screen Length (feet)	Top of Screen Depth (feet bgs)	Screen Top Elevation (feet NAVD88)	Bottom of Screen Depth (feet bgs)	Screen Bottom Elevation (feet NAVD88)	Northing (feet NAD83)	Easting (feet NAD83)
WI-AF-MW-618	11/17/2019	19.801	19.368	14.89	2	Flush	5.00	10.00	9.368	15.00	4.368	496967.91	1194695.95
WI-AF-MW-619	11/19/2019	14.903	14.556	15.37	2	Flush	5.00	11.00	3.556	16.00	-1.444	496227.49	1195171.36
WI-AF-MW-620	11/11/2019	12.834	12.412	8.67	2	Flush	5.00	4.00	8.412	9.00	3.412	495358.31	1195723.73
WI-AF-MW-621	11/10/2019	12.998	12.585	9.59	2	Flush	5.00	5.00	7.585	10.00	2.585	494574.28	1196246.58
WI-AF-MW-622	11/9/2019	12.159	11.756	11.78	2	Flush	5.00	7.00	4.756	12.00	-0.244	493662.97	1196181.80
WI-AF-MW-623	11/23/2019	16.956	16.559	7.05	2	Flush	5.00	4.00	12.559	9.00	7.559	493640.40	1196835.13
WI-AF-MW-624	11/23/2019	14.518	14.069	12.44	2	Flush	5.00	7.66	6.409	12.66	1.409	492880.61	1197461.02
WI-AF-WT01	11/16/2019	28.563	28.002	14.95	2	Flush	5.00	10.00	18.002	15.00	13.002	498728.67	1198139.25
WI-AF-WT02	11/16/2019	28.316	27.880	29.95	2	Flush	5.00	25.00	2.880	30.00	-2.120	498728.94	1198149.80
WI-AF-WT03	11/20/2019	13.611	13.243	9.90	2	Flush	5.00	5.00	8.243	10.00	3.243	497674.02	1201883.27
WI-AF-WT04	11/20/2019	13.060	12.540	29.31	2	Flush	5.00	25.00	-12.460	30.00	-17.460	497667.78	1201870.65
WI-AF-WT05	11/14/2019	12.491	12.002	9.84	2	Flush	5.00	5.50	6.502	10.50	1.502	494154.15	1196696.47
WI-AF-WT06*	11/13/2019	12.657	12.474	45.00	2	Flush	5.00	40.00	-27.526	45.00	-32.526	494143.98	1196700.02
WI-AF-WT07	11/11/2019	11.142	10.808	15.25	2	Flush	5.00	10.00	0.808	15.00	-4.192	496945.15	1199048.86
WI-AF-WT08*	11/17/2019	11.072	10.850	40.00	2	Flush	5.00	34.50	-23.650	39.50	-28.650	496945.00	1199058.50
WI-AF-WT09	11/22/2019	13.277	13.028	15.37	2	Flush	10.00	4.66	8.368	14.66	-1.632	495819.01	1195690.23
WI-AF-WT10*	11/22/2019	13.258	13.182	45.00	2	Flush	5.00	39.66	-26.478	44.66	-31.478	495822.65	1195676.41
WI-AF-WT11	11/15/2019	9.480	9.010	9.14	2	Flush	5.00	4.00	5.010	9.00	0.010	495462.73	1196867.23
WI-AF-WT12*	11/15/2019	9.662	9.536	26.00	2	Flush	5.00	21.00	-11.464	26.00	-16.464	495466.55	1196883.86
WI-AF-MW-625	7/25/2020	54.849	54.518	59.60	2	Flush	10.00	50.00	4.518	60.00	-5.482	493823.75	1191426.38
WI-AF-MW-626	7/27/2020	50.339	50.113	58.20	2	Flush	10.00	49.00	1.113	59.00	-8.887	493848.59	1191363.63
WI-AF-MW-627	7/27/2020	59.098	58.790	58.59	2	Flush	10.00	49.00	9.790	59.00	-0.210	493762.09	1191378.75
WI-AF-MW-628	7/17/2020	96.092	95.668	64.80	2	Flush	10.00	55.00	40.668	65.00	30.668	489175.66	1188474.02
WI-AF-MW-629	7/18/2020	98.407	98.056	69.45	2	Flush	10.00	60.00	38.056	70.00	28.056	489238.69	1188272.09
WI-AF-MW-630	7/22/2020	13.012	12.604	12.81	2	Flush	5.00	8.00	4.604	13.00	-0.396	501230.4	1193964.12
WI-AF-MW-631	7/29/2020	18.715	18.399	39.66	2	Flush	10.00	30.00	-11.601	40.00	-21.601	496852.43	1192022.05

Notes:

bgs = below ground surface

btoc = below top of casing

ID = identification assigned during well installation

NAVD88 = North American Vertical Datum of 1988

NAD83 = Washington State Plane North Zone, North American Datum of 1983

TOC = top of casing

\* = indicates Artesian Well. The TOC elevations for these wells are to the top of the nut/nipple.

#### Table 2. Ault Field Groundwater Elevation Survey

Phase 2 Site Inspection Report Ault Field, Naval Air Station Whidbey Island Oak Harbor, Washington

Well ID	Elevation Survey Date	Top of Casing Elevation (feet NAVD88)	Measurement Date	Measured Total Depth (feet btoc)	Depth to Water (feet btoc)	Groundwater Elevation (feet NAVD88)	Artesian Wellhead Presure (PSI)
WI-AF-MW-618	Dec 2019	19.368	12/15/2019	14.89	6.81	12.56	N/A
WI-AF-MW-619	Dec 2019	14.556	12/15/2019	15.37	5.92	8.64	N/A
WI-AF-MW-620	Dec 2019	12.412	12/15/2019	8.67	4.38	8.03	N/A
WI-AF-MW-621	Dec 2019	12.585	12/15/2019	9.59	4.06	8.53	N/A
WI-AF-MW-622	Dec 2019	11.756	12/15/2019	11.78	1.69	10.07	N/A
WI-AF-MW-623	Dec 2019	16.559	12/15/2019	7.05	4.82	11.74	N/A
WI-AF-MW-624	Dec 2019	14.069	12/15/2019	12.44	2.16	11.91	N/A
WI-AF-WT01	Dec 2019	28.002	12/15/2019	14.95	11.68	16.32	N/A
WI-AF-WT02	Dec 2019	27.880	12/15/2019	29.95	11.55	16.33	N/A
WI-AF-WT03	Dec 2019	13.243	12/15/2019	9.90	8.35	4.89	N/A
WI-AF-WT04	Dec 2019	12.540	12/15/2019	29.31	7.88	4.66	N/A
WI-AF-WT05	Dec 2019	12.002	12/15/2019	9.84	5.59	6.41	N/A
WI-AF-WT06*	Dec 2019	12.474	12/15/2019	45.00	N/A	14.32	0.80
WI-AF-WT07	Dec 2019	10.808	12/15/2019	15.25	9.29	1.52	N/A
WI-AF-WT08*	Dec 2019	10.850	12/15/2019	40.00	N/A	15.26	1.91
WI-AF-WT09	Dec 2019	13.028	12/15/2019	15.37	11.82	1.21	N/A
WI-AF-WT10*	Dec 2019	13.182	12/15/2019	45.00	N/A	14.57	0.60
WI-AF-WT11	Dec 2019	9.010	12/15/2019	9.14	3.28	5.73	N/A
WI-AF-WT12*	Dec 2019	9.536	12/15/2019	26.00	N/A	11.73	0.95
MW10-B8	Dec 2019	22.297	12/15/2019	14.96	4.56	17.74	N/A
MW15-B23	Dec 2019	24.945	12/15/2019	18.53	7.63	17.32	N/A
16-26B*	Dec 2019	12.319	12/15/2019	UNK	N/A	14.63	1.00
MW4-B3	Dec 2019	25.505	12/15/2019	17.64	5.58	19.93	N/A
H6-B3	Dec 2019	13.630	12/15/2019	16.99	2.83	10.80	N/A
WI-AF-MW-625	Sept 2020	54.518	9/9/2020	59.60	33.94	20.58	N/A
WI-AF-MW-626	Sept 2020	50.113	9/9/2020	58.20	29.47	20.64	N/A
WI-AF-MW-627	Sept 2020	58.790	9/9/2020	58.59	38.12	20.67	N/A

#### Table 2. Ault Field Groundwater Elevation Survey

Phase 2 Site Inspection Report Ault Field, Naval Air Station Whidbey Island Oak Harbor, Washington

Well ID	Elevation Survey Date	Top of Casing Elevation (feet NAVD88)	Measurement Date	Measured Total Depth (feet btoc)	Depth to Water (feet btoc)	Groundwater Elevation (feet NAVD88)	Artesian Wellhead Presure (PSI)
WI-AF-MW-628	Sept 2020	95.668	9/9/2020	64.80	53.98	41.69	N/A
WI-AF-MW-629	Sept 2020	98.056	9/9/2020	69.45	43.06	55.00	N/A
WI-AF-MW-630	Sept 2020	12.604	9/9/2020	12.81	7.00	5.60	N/A
WI-AF-MW-631	Sept 2020	18.399	9/9/2020	39.66	9.28	9.12	N/A
14-MW-2	Sept 2020	32.841	9/9/2020	45.51	14.95	17.89	N/A
Ault Field Well #1	Sept 2020	143.136	9/9/2020	176.00	129.36	13.78	N/A
MW-14	Sept 2020	17.709	9/9/2020	17.61	12.07	5.64	N/A
MW-20	Sept 2020	16.470	9/9/2020	15.13	11.90	4.57	N/A
MW-21	Sept 2020	13.918	9/9/2020	13.25	8.22	5.70	N/A

Notes:

btoc = below top of casing

Dec = December

ID = identification assigned in the field

N/A = not applicable

NAVD88 = North American Vertical Datum of 1988

PSI = pound-force per square inch

Sept = September

UNK = unknown

\* = Indicates Artesian Well. The top of casing elevations for these wells are on the top of the nut/nipple.

Equation used to calculate groundwater elevation at artesian wells: Groundwater elevation (feet) = (PSI at well head x 2.31) + top of casing elevation (feet)

#### Table 3. Summary of PFAS Chemicals Detected in Soil - Stages 2 and 3

Phase 2 Site Inspection Report Ault Field, Naval Air Station Whidbey Island Oak Harbor, Washington

	Location	WI-AF-WT07	WI-AF-WT08	WI-AF-MW-622	WI-AF-N	MW-621	WI-AF-MW-616		WI-AF-MW-620	
Analyta	Sample ID	WI-AF-WT07-SB-12	WI-AF-WT08-SB-13	WI-AF-MW-622-SB-02	WI-AF-MW-621P-SB-05	WI-AF-MW-621-SB-05	WI-AF-MW-616-SB-07	WI-AF-MW-620-SB-06	WI-AF-MW-620-SB-15	WI-AF-MW-620-SB-20
Analyte (μg/kg)	Sample Depth (feet bgs)	12	13	2	5	5	7	6	15	20
(46/ 46)	Sample Date	11/8/19	11/8/19	11/9/19	11/10/19	11/10/19	11/10/19	11/11/19	11/11/19	11/11/19
	Project Action Levels	11/0/15	11/0/15	11/3/13	11/10/19	11/10/15	11/10/19	11/11/19	11/11/19	11/11/19
Perfluorooctane Sulfonate (PFOS)	130 <sup>1</sup>	2.47 U	2.78 U	2.37 U	2.29 U	1.05 J	2.67 U	3.01 U	3.01 U	3.13 U
Perfluorooctanoic acid (PFOA)	130 <sup>1</sup>	2.47 U	2.78 U	2.37 U	2.29 U	2.26 U	2.67 U	3.01 U	3.01 U	3.13 U
Perfluorobutanesulfonic acid (PFBS)	1,900 <sup>2</sup>	1.23 U	1.39 U	1.18 U	1.14 U	1.13 U	1.33 U	1.5 U	1.5 U	1.56 U

Notes:

<sup>1</sup>Derived from the USEPA online calculator for direct contact (residential exposure)

based on a hazard

<sup>2</sup> Derived from the USEPA online calculator for residential soil based on a hazard

quotient of 0.1, updated in April 2021.

--- = not available

µg/kg = microgram(s) per kilogram

bgs = below ground surface

ID = sample identification assigned during sample collection

J = Analyte present: value may or may not be accurate or precise.

PFAS = per- and polyfluoroalkyl substances

U = The chemical was analyzed for, but not detected.

USEPA = U.S. Environmental Protection Agency

#### Table 3. Summary of PFAS Chemicals Detected in Soil - Stages 2 and 3

Phase 2 Site Inspection Report Ault Field, Naval Air Station Whidbey Island Oak Harbor, Washington

	Location	WI-AF-WT06	WI-AF-WT05	WI-AF-WT12	WI-AF-WT11	WI-AF-WT01	WI-AF-WT02	WI-AF-MW-618	WI-AF-N	/W-619
Analuta	Sample ID	WI-AF-WT06-SB-07	WI-AF-WT05-SB-08	WI-AF-WT12-SB-05	WI-AF-WT11-SB-05	WI-AF-WT01-SB-13	WI-AF-WT02-SB-11	WI-AF-MW-618-SB-11	WI-AF-MW-619-SB-02	WI-AF-MW-619-SB-11
Analyte (μg/kg)	Sample Depth (feet bgs)	7	8	5	5	13	11	11	2	11
(µ6/ №6)	Sample Date	11/13/19	11/14/19	11/14/19	11/15/19	11/16/19	11/16/19	11/17/19	11/17/19	11/19/19
	Project Action Levels	11/13/19	11/14/15	11/14/15	11/13/19	11/10/19	11/10/15	11/17/15	11/1//15	11/13/13
Perfluorooctane Sulfonate (PFOS)	130 <sup>1</sup>	2.7 U	2.38 U	2.56 U	2.29 U	2.17 U	2.06 U	2.25 U	2.58 U	2.41 U
Perfluorooctanoic acid (PFOA)	130 <sup>1</sup>	2.7 U	2.38 U	2.56 U	2.29 U	2.17 U	2.06 U	2.25 U	2.58 U	2.41 U
Perfluorobutanesulfonic acid (PFBS)	1,900 <sup>2</sup>	1.35 U	1.19 U	1.28 U	1.14 U	1.09 U	1.03 U	1.12 U	1.29 U	1.2 U

Notes:

<sup>1</sup>Derived from the USEPA online calculator for direct contact (residential exposure)

based on a hazard

<sup>2</sup> Derived from the USEPA online calculator for residential soil based on a hazard

quotient of 0.1, updated in April 2021.

--- = not available

µg/kg = microgram(s) per kilogram

bgs = below ground surface

ID = sample identification assigned during sample collection

J = Analyte present: value may or may not be accurate or precise.

PFAS = per- and polyfluoroalkyl substances

U = The chemical was analyzed for, but not detected.

USEPA = U.S. Environmental Protection Agency

#### Table 3. Summary of PFAS Chemicals Detected in Soil - Stages 2 and 3

Phase 2 Site Inspection Report Ault Field, Naval Air Station Whidbey Island Oak Harbor, Washington

	Location	WI-AF-MW-623	WI-AF	-WT03	WI-AF-WT04	WI-AF-	-WT09	WI-AF-WT10	WI-AF-I	VW-624
Analyte	Sample ID	WI-AF-MW-623-SB-03	WI-AF-WT03P-SB-08	WI-AF-WT03-SB-08	WI-AF-WT04-SB-08	WI-AF-WT09P-SB-06	WI-AF-WT09-SB-06	WI-AF-WT10-SB-06	WI-AF-MW-624-SB-02	WI-AF-MW-624-SB-10
(µg/kg)	Sample Depth (feet bgs)	3	8	8	8	6	6	6	2	10
(\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	Sample Date	11/19/19	11/20/19	11/20/19	11/20/19	11/21/19	11/21/19	11/21/19	11/22/19	11/22/19
	Project Action Levels	11/19/19	11/20/19	11/20/19	11/20/19	11/21/19	11/21/19	11/21/19	11/22/19	11/22/19
Perfluorooctane Sulfonate (PFOS)	130 <sup>1</sup>	2.17 U	2.01 U	2.14 U	2.14 U	6.3	5.57 J	2.8 U	1.41 J	2.4 U
Perfluorooctanoic acid (PFOA)	130 <sup>1</sup>	2.17 U	2.01 U	2.14 U	2.14 U	2.21 U	2.52 U	2.8 U	2.76 U	2.4 U
Perfluorobutanesulfonic acid (PFBS)	1,900 <sup>2</sup>	1.09 U	1.01 U	1.07 U	1.07 U	1.1 U	1.26 U	1.4 U	1.38 U	1.2 U

Notes:

<sup>1</sup>Derived from the USEPA online calculator for direct contact (residential exposure)

based on a hazard

<sup>2</sup> Derived from the USEPA online calculator for residential soil based on a hazard

quotient of 0.1, updated in April 2021.

--- = not available

µg/kg = microgram(s) per kilogram

bgs = below ground surface

ID = sample identification assigned during sample collection

J = Analyte present: value may or may not be accurate or precise.

PFAS = per- and polyfluoroalkyl substances

U = The chemical was analyzed for, but not detected. USEPA = U.S. Environmental Protection Agency

Bold indicates the analyte was detected.

#### Table 4. Summary of PFAS Chemicals Detected in Soil - Stage 4

Phase 2 Site Inspection Report Ault Field, Naval Air Station Whidbey Island Oak Harbor, Washington

	Location	WI-AF-BH01	WI-AF-BH02	WI-AF-BH03	WI-AF-BH04	WI-AF-BH05	WI-AF-BH06	WI-AF-BH07	
Analyte	Sample ID	WI-AF-BH01-SB-29	WI-AF-BH02-SB-13	WI-AF-BH03-SB-47	WI-AF-BH04-SB-54	WI-AF-BH05-SB-44	WI-AF-BH06-SB-35	WI-AF-BH07-SB-36	
	Sample Depth (feet bgs)	29	13	47	54	44	35	36	
(µg/kg)	Sample Date	7/20/20	7/20/20	7/16/20	7/16/20	7/15/20	7/15/20	7/14/20	
	Project Action Levels	7/20/20	7/20/20	//10/20	//10/20	7/13/20	//13/20	//14/20	
Perfluorooctane Sulfonate (PFOS)	130 <sup>1</sup>	2.2 U	2.29 U	2.3 U	2.42 U	2.21 U	2.07 U	2.38 U	
Perfluorooctanoic acid (PFOA)	130 <sup>1</sup>	2.2 U	2.29 U	2.3 U	2.42 U	2.21 U	2.07 U	2.38 U	
Perfluorobutanesulfonic acid (PFBS)	1,900 <sup>2</sup>	1.1 U	1.14 U	1.15 U	1.21 U	1.1 U	1.04 U	1.19 U	

Notes:

<sup>1</sup> Derived from the USEPA online calculator for direct contact (residential

exposure) based on a hazard quotient of 0.1.

<sup>2</sup> Derived from the USEPA online calculator for residential soil based

on a hazard quotient of 0.1, updated in April 2021.

µg/kg = microgram(s) per kilogram

bgs = below ground surface

ID = identification assigned at the time of sample collection

PFAS = per- and polyfluoroalkyl substances

U = The chemical was analyzed for, but not detected.

USEPA = U.S. Environmental Protection Agency

#### Table 4. Summary of PFAS Chemicals Detected in Soil - Stage 4

Phase 2 Site Inspection Report Ault Field, Naval Air Station Whidbey Island Oak Harbor, Washington

	Location	WI-AF-BH08	WI-AF-BH09	WI-AF-BH10	WI-AF-BH11	WI-AF-BH12	WI-AF-BH13	WI-AF	-BH14	
Analyte	Sample ID	WI-AF-BH08-SB-34	WI-AF-BH09-SB-9.5	WI-AF-BH10-SB-9.5	WI-AF-BH11-SB-9	WI-AF-BH12-SB-9.5	WI-AF-BH13-SB-9.5	WI-AF-BH14-SB-11	WI-AF-BH14-SBP-11	
	Sample Depth (feet bgs)	34	9.5	9.5	9	9.5	9.5	11	11	
(µg/kg)	Sample Date	7/14/20	7/21/20	7/22/20	7/22/20	7/23/20	7/24/20	7/24/20	7/24/20	
	Project Action Levels	//14/20	//21/20	1/22/20	7/22/20	7/23/20	//24/20	//24/20	//24/20	
Perfluorooctane Sulfonate (PFOS)	130 <sup>1</sup>	2.11 U	2.19 U	2.09 U	2.23 U	13.2	2.42 U	2.55 U	2.41 U	
Perfluorooctanoic acid (PFOA)	130 <sup>1</sup>	2.11 U	2.19 U	2.09 U	2.23 U	2.16 U	2.42 U	2.55 U	2.41 U	
Perfluorobutanesulfonic acid (PFBS)	1,900 <sup>2</sup>	1.05 U	1.09 U	1.05 U	1.12 U	1.08 U	1.21 U	1.27 U	1.2 U	

Notes:

<sup>1</sup> Derived from the USEPA online calculator for direct contact (residential

exposure) based on a hazard quotient of 0.1.

<sup>2</sup> Derived from the USEPA online calculator for residential soil based

on a hazard quotient of 0.1, updated in April 2021.

µg/kg = microgram(s) per kilogram

bgs = below ground surface

ID = identification assigned at the time of sample collection

PFAS = per- and polyfluoroalkyl substances

U = The chemical was analyzed for, but not detected.

USEPA = U.S. Environmental Protection Agency

#### Table 4. Summary of PFAS Chemicals Detected in Soil - Stage 4

Phase 2 Site Inspection Report Ault Field, Naval Air Station Whidbey Island Oak Harbor, Washington

	Location	WI-AF-BH15	WI-AF-BH16	WI-AF	-BH17	WI-AF-BH18	WI-AF-BH19	WI-AF-BH20	
Analyte	Sample ID	WI-AF-BH15-SB-47	WI-AF-BH16-SB-53	WI-AF-BH17-SB-53	WI-AF-BH17-SBP-53	WI-AF-BH18-SB-34	WI-AF-BH19-SB-37	WI-AF-BH20-SB-30	
-	Sample Depth (feet bgs)	47	53	53	53	34	37	30	
(µg/kg)	Sample Date	7/27/20	7/25/20	7/25/20	7/25/20	7/29/20	7/28/20	7/28/20	
	Project Action Levels	1/2//20	7/23/20	1/23/20	7/23/20	1/23/20	7/20/20	7/20/20	
Perfluorooctane Sulfonate (PFOS)	130 <sup>1</sup>	2.4 U	2.13 U	2.65 U	2.63 U	2.45 U	2.17 U	2.34 U	
Perfluorooctanoic acid (PFOA)	130 <sup>1</sup>	2.4 U	2.13 U	2.65 U	2.63 U	2.45 U	2.17 U	2.34 U	
Perfluorobutanesulfonic acid (PFBS)	1,900 <sup>2</sup>	1.2 U	1.06 U	1.32 U	1.32 U	1.23 U	1.09 U	1.17 U	

Notes:

<sup>1</sup> Derived from the USEPA online calculator for direct contact (residential

exposure) based on a hazard quotient of 0.1.

<sup>2</sup> Derived from the USEPA online calculator for residential soil based

on a hazard quotient of 0.1, updated in April 2021.

µg/kg = microgram(s) per kilogram

bgs = below ground surface

ID = identification assigned at the time of sample collection

PFAS = per- and polyfluoroalkyl substances

U = The chemical was analyzed for, but not detected.

USEPA = U.S. Environmental Protection Agency

Phase 2 Site Inspection Report Ault Field, Naval Air Station Whidbey Island Oak Harbor, Washington

	Location	WI-AF-MW-620	WI-AF-MW-621	WI-AF-MW-622	WI-AF-	-WT01	WI-AF-WT02	WI-AF	-WT01	WI-AF-WT02
	Sample ID	WI-AF-MW-620-1219	WI-AF-MW-621-1219	WI-AF-MW-622-1219	WI-AF-WT01-GW-1219	WI-AF-WT01-GWP-1219	WI-AF-WT02-GW-1219	WI-AF-WT01-GW-1219	WI-AF-WT01-GWP-1219	WI-AF-WT02-GW-1219
Analyte	Sample Depth (feet btoc)	7	7	10	NA	NA	NA	N	A	NA
(ng/L)	Sample Date									
	Project Action Levels <sup>1</sup>	12/7/19	12/7/19	12/7/19	12/7/19	12/7/19	12/7/19	12/7/19	12/7/19	12/7/19
Perfluorooctane Sulfonate (PFOS)	40	677	842	6.64 U	164	143	564	164	143	564
Perfluorooctanoic acid (PFOA)	40	60.7 J-	56.5	3.38 J-	238	216	45.5	238	216	45.5
Perfluorobutanesulfonic acid (PFBS)	600	256	17.6	0.72 J-	5.66	5.46	8.94	5.66	5.46	8.94

Notes:

<sup>1</sup> Tap water project action level derived from USEPA's online calculator,

based on a target hazard quotient of 0.1; PFBS updated in April 2021.

--- = Not applicable

btoc = below top of casing

ID = identification assigned at the time of sample collection

J- = Analyte present; value may be biased low or value may be higher.

J = Analyte present: value may or may not be accurate or precise.

J+ = Analyte present: value may be biased high or the actual value may be lower.

NA = not available

ng/L = nanogram(s) per liter

PFAS = per- and polyfluoroalkyl substances

U = The chemical was analyzed for, but not detected. UJ = Analyte not detected, quantitation limit may be inaccurate.

USEPA = U.S. Environmental Protection Agency Bold indicates the analyte was detected.

Phase 2 Site Inspection Report Ault Field, Naval Air Station Whidbey Island Oak Harbor, Washington

	Location	16-	26B	H6-B3	WI-AF-MW-624	WI-AF-WT03	WI-AF-WT04	WI-AF-WT05	WI-AF-WT06	WI-AF-WT05
	Sample ID	WI-A16-16-26B-1219	WI-A16-16-26BP-1219	WI-A16-H6-B3-1219	WI-AF-MW-624-1219	WI-AF-WT03-GW-1219	WI-AF-WT04-GW-1219	WI-AF-WT05-GW-1219	WI-AF-WT06-GW-1219	WI-AF-WT05-GW-1219
Analyte	Sample Depth (feet btoc)	Artesian	Artesian	15	11	9.5	27	8	Artesian	8
(ng/L)	Sample Date									
	Project Action Levels <sup>1</sup>	12/8/19	12/8/19	12/8/19	12/8/19	12/11/19	12/11/19	12/8/19	12/8/19	12/8/19
Perfluorooctane Sulfonate (PFOS)	40	0.94 U	0.94 U	46.5 J-	128	1.74 J	0.98 UJ	65.3	0.8 J	65.3
Perfluorooctanoic acid (PFOA)	40	1.42 U	1.42 U	1.5 UJ	92.7	21.2	0.7 J-	13.6	1.34 U	13.6
Perfluorobutanesulfonic acid (PFBS)	600	0.26 J	0.15 J	0.5 UJ	37.1	2.06 J+	0.49 UJ	6.68	0.45 U	6.68

Notes:

<sup>1</sup> Tap water project action level derived from USEPA's online calculator,

based on a target hazard quotient of 0.1; PFBS updated in April 2021.

--- = Not applicable

btoc = below top of casing

ID = identification assigned at the time of sample collection

J- = Analyte present; value may be biased low or value may be higher.

J = Analyte present: value may or may not be accurate or precise.

J+ = Analyte present: value may be biased high or the actual value may be lower.

NA = not available

ng/L = nanogram(s) per liter

PFAS = per- and polyfluoroalkyl substances

U = The chemical was analyzed for, but not detected.

UJ = Analyte not detected, quantitation limit may be inaccurate.

USEPA = U.S. Environmental Protection Agency Bold indicates the analyte was detected.

Phase 2 Site Inspection Report Ault Field, Naval Air Station Whidbey Island Oak Harbor, Washington

	Location	WI-AF-WT06	MW10-B8	WI-AF-MW-619	MW15-B23	MW4-B3	WI-AF-WT07	WI-AF-WT08	WT09	WT10
	Sample ID	WI-AF-WT06-GW-1219	WI-AF-MW10-B8-1219	WI-AF-MW-619-1219	WI-AF-MW15-B23-1219	WI-AF-MW4-B3-1219	WI-AF-WT07-GW-1219	WI-AF-WT08-GW-1219	WI-AF-WT09-GW-1219	WI-AF-WT10-GW-1219
Analyte	Sample Depth (feet btoc)	Artesian	12	NA	16	15	14	Artesian	14	Artesian
(ng/L)	Sample Date									
	Project Action Levels <sup>1</sup>	12/8/19	12/10/19	12/10/19	12/11/19	12/11/19	12/12/19	12/12/19	12/13/19	12/12/19
Perfluorooctane Sulfonate (PFOS)	40	0.8 J	11.4	2.11 J	24.1 J-	3.37 J	0.96 U	0.93 U	456 J-	0.89 U
Perfluorooctanoic acid (PFOA)	40	1.34 U	10.3	20.0	33.5 J-	32.8	0.93 J	1.49 J	407 J-	1.34 U
Perfluorobutanesulfonic acid (PFBS)	600	0.45 U	6.64	1.41 J	39.3 J	14.2	0.48 UJ	0.46 U	13.9 J-	0.45 U

Notes:

<sup>1</sup> Tap water project action level derived from USEPA's online calculator,

based on a target hazard quotient of 0.1; PFBS updated in April 2021.

---- = Not applicable

btoc = below top of casing

ID = identification assigned at the time of sample collection

J- = Analyte present; value may be biased low or value may be higher.

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J+ = Analyte present: value may be biased high or the actual value may be lower.

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ng/L = nanogram(s) per liter

PFAS = per- and polyfluoroalkyl substances

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UJ = Analyte not detected, quantitation limit may be inaccurate.

USEPA = U.S. Environmental Protection Agency Bold indicates the analyte was detected.

Shading indicates the result exceeded screening criteria.

Page 3 of 5

Phase 2 Site Inspection Report Ault Field, Naval Air Station Whidbey Island Oak Harbor, Washington

	Location	WI-AF-WT11	WI-AF	-WT12	WI-AF-WT03	WI-AF-WT04	WI-AF	-WT12	WI-AF-WT07	WI-AF-WT08
	Sample ID	WI-AF-WT11-GW-1219	WI-AF-WT12-GW-1219	WI-AF-WT12-GWP-1219	WI-AF-WT03-GW-1219	WI-AF-WT04-GW-1219	WI-AF-WT12-GW-1219	WI-AF-WT12-GWP-1219	WI-AF-WT07-GW-1219	WI-AF-WT08-GW-1219
Analyte	Sample Depth (feet btoc)	8	Artesian	Artesian	9.5	27	Arte	esian	14	Artesian
(ng/L)	Sample Date									
	Project Action Levels <sup>1</sup>	12/12/19	12/11/19	12/11/19	12/11/19	12/11/19	12/11/19	12/11/19	12/12/19	12/12/19
Perfluorooctane Sulfonate (PFOS)	40	19.0 J-	5.33	5.39	1.74 J	0.98 UJ	5.33	5.39	0.96 U	0.93 U
Perfluorooctanoic acid (PFOA)	40	42.8 J-	4.96	4.59 J	21.2	0.7 J-	4.96	4.59 J	0.93 J	1.49 J
Perfluorobutanesulfonic acid (PFBS)	600	5.04 J-	3.26 J+	3.29 J+	2.06 J+	0.49 UJ	3.26 J+	3.29 J+	0.48 UJ	0.46 U

Notes:

<sup>1</sup> Tap water project action level derived from USEPA's online calculator,

based on a target hazard quotient of 0.1; PFBS updated in April 2021.

--- = Not applicable

btoc = below top of casing

ID = identification assigned at the time of sample collection

J- = Analyte present; value may be biased low or value may be higher.

J = Analyte present: value may or may not be accurate or precise.

J+ = Analyte present: value may be biased high or the actual value may be lower.

NA = not available

ng/L = nanogram(s) per liter

PFAS = per- and polyfluoroalkyl substances

U = The chemical was analyzed for, but not detected. UJ = Analyte not detected, quantitation limit may be inaccurate.

USEPA = U.S. Environmental Protection Agency Bold indicates the analyte was detected.

Phase 2 Site Inspection Report Ault Field, Naval Air Station Whidbey Island Oak Harbor, Washington

	Location	WI-AF-WT10	WI-AF-WT11	WI-AF-MW-618	WI-AF-MW-623	WI-AF-WT09
	Sample ID	WI-AF-WT10-GW-1219	WI-AF-WT11-GW-1219	WI-AF-MW-618-1219	WI-AF-MW-623-1219	WI-AF-WT09-GW-1219
Analyte	Sample Depth (feet btoc)	Artesian	8	12	6	14
(ng/L)	Sample Date					
	Project Action Levels <sup>1</sup>	12/12/19	12/12/19	12/12/19	12/12/19	12/13/19
Perfluorooctane Sulfonate (PFOS)	40	0.89 U	19.0 J-	1.25 J	16.1	456 J-
Perfluorooctanoic acid (PFOA)	40	1.34 U	42.8 J-	48.6	30.3	407 J-
Perfluorobutanesulfonic acid (PFBS)	600	0.45 U	5.04 J-	2.06 J	9.29 J+	13.9 J-

Notes:

<sup>1</sup> Tap water project action level derived from USEPA's online calculator,

based on a target hazard quotient of 0.1; PFBS updated in April 2021.

--- = Not applicable

btoc = below top of casing

ID = identification assigned at the time of sample collection

J- = Analyte present; value may be biased low or value may be higher.

J = Analyte present: value may or may not be accurate or precise.

J+ = Analyte present: value may be biased high or the actual value may be lower.

NA = not available

ng/L = nanogram(s) per liter

PFAS = per- and polyfluoroalkyl substances

U = The chemical was analyzed for, but not detected.

UJ = Analyte not detected, quantitation limit may be inaccurate.

USEPA = U.S. Environmental Protection Agency Bold indicates the analyte was detected.

Phase 2 Site Inspection Report Ault Field, Naval Air Station Whidbey Island Oak Harbor, Washington

	Location	MW-21	14-MW-2	MW-14	MW-20		WI-AF-MW-626	WI-AF-MW-625
	Sample ID	WI-A52-MW-21-0820	WI-A14-MW-2-0820	WI-A52-MW-14-0820	WI-A52-MW-20-0820	WI-A52-MW-20P-0820	WI-AF-MW-626-0820	WI-AF-MW-625-0820
Analyte	Sample Depth (feet btoc)	10	NA	15	12.5	12.5	54	54
(ng/L)	Sample Date						- 4 - 4	
	Project Action Levels <sup>1</sup>	8/13/20	8/14/20	8/14/20	8/14/20	8/14/20	8/14/20	8/15/20
Perfluorooctane Sulfonate (PFOS)	40	118	0.89 U	40.9 J	101	125	1.12 U	0.89 U
Perfluorooctanoic acid (PFOA)	40	39.0	12.7	16.0 J	30.5	29.5	2.29 J	2.1 J
Perfluorobutanesulfonic acid (PFBS)	600	12.3	5.02	7.65 J	10.0	10.4	1.95 J	2.67 J

Notes:

<sup>1</sup> Tap water project action level derived from USEPA's online calculator, based on a target

hazard quotient of 0.1; PFBS updated in April 2021.

--- = not available

btoc = below top of casing

ID = identification assigned at the time of sample collection

J = Analyte present; value may or may not be accurate or precise.

ng/L = nanogram(s) per liter

PFAS = per- and polyfluoroalkyl substances

U = The chemical was analyzed for, but not detected.

UJ = Analyte not detected, quantitation limit may be inaccurate.

USEPA = U.S. Environmental Protection Agency

Bold indicates the analyte was detected.

Phase 2 Site Inspection Report Ault Field, Naval Air Station Whidbey Island Oak Harbor, Washington

	Location	WI-AF-MW-627		Ault Field Well #1	WI-AF-MW-628	WI-AF-MW-629	WI-AF-MW-631	WI-AF-MW-630
	Sample ID	WI-AF-MW-627-0820	WI-AF-MW-627P-0820	WI-GC-W1-0820	WI-AF-MW-628-0820	WI-AF-MW-629-0820	WI-AF-MW-631-0820	WI-AF-MW-630-0820
Analyte	Sample Depth (feet btoc)	54	54	NA	60	65	35	11.5
(ng/L)	Sample Date		a / 1 a / 1 a a	8/15/20	8/18/20		8/18/20	
	Project Action Levels <sup>1</sup>	8/15/20	8/15/20			8/18/20		8/19/20
Perfluorooctane Sulfonate (PFOS)	40	0.89 U	0.88 U	0.91 U	2.77 U	0.99 U	5.83 U	553
Perfluorooctanoic acid (PFOA)	40	1.87 J	1.78 J	1.36 U	1.36 UJ	1.36 UJ	1.61 J	37.2
Perfluorobutanesulfonic acid (PFBS)	600	0.99 J	0.93 J	0.45 U	0.28 J	0.65 J	1.69 J	6.46

Notes:

<sup>1</sup> Tap water project action level derived from USEPA's online calculator, based on a target

hazard quotient of 0.1; PFBS updated in April 2021.

--- = not available

btoc = below top of casing

ID = identification assigned at the time of sample collection

J = Analyte present; value may or may not be accurate or precise.

ng/L = nanogram(s) per liter

PFAS = per- and polyfluoroalkyl substances

U = The chemical was analyzed for, but not detected.

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Bold indicates the analyte was detected.

Phase 2 Site Inspection Report Ault Field, Naval Air Station Whidbey Island Oak Harbor, Washington

	Location	WI-AF-BH01	WI-AF-BH02	WI-AF	-BH06	WI-AF-BH07	WI-AF-BH08	WI-AF	-вно9
	Sample ID	WI-AF-BH01-GW-40	WI-AF-BH02-GW-35	WI-AF-BH06-GW-31	WI-AF-BH06-GWP-31	WI-AF-BH07-GW-24	WI-AF-BH08-GW-35	WI-AF-BH09-GW-11	WI-AF-BH09-GWP-11
Analyte	Sample Depth (feet btoc)	40	35	31	31	24	35	11	11
(ng/L)	Sample Date		- / /	7/16/20	7/16/20	7/14/20	7/15/20	7/21/20	7/21/20
	Project Action Levels <sup>1</sup>	7/20/20	7/20/20						
Perfluorooctane Sulfonate (PFOS)	40	5.18 J-	0.96 UJ	0.69 J	0.77 J	0.88 U	0.88 U	4.21 U	4.17 U
Perfluorooctanoic acid (PFOA)	40	1.29 J-	1.44 UJ	0.54 J	0.57 J	1.32 UJ	1.32 UJ	14.6 J-	14.0 J-
Perfluorobutanesulfonic acid (PFBS)	600	0.81 UJ	0.48 UJ	0.62 U	0.55 U	0.44 UJ	0.53 U	2.99 J-	2.66 J-

Notes:

<sup>1</sup> Tap water project action level derived from USEPA's online calculator, based on a target hazard

quotient of 0.1; PFBS updated in April 2021.

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btoc = below top of casing

ID = identification assigned at the time of sample collection

J = Analyte present; value may or may not be accurate or precise.

J- = Analyte present; value may be biased low or value may be higher.

ng/L = nanogram(s) per liter

PFAS = per- and polyfluoroalkyl substances

U = The chemical was analyzed for, but not detected.

UJ = Analyte not detected, quantitation limit may be inaccurate.

USEPA = U.S. Environmental Protection Agency

Bold indicates the analyte was detected.

Phase 2 Site Inspection Report Ault Field, Naval Air Station Whidbey Island Oak Harbor, Washington

	Location	WI-AF-BH10		WI-AF-BH12		WI-AF-BH13		WI-AF-BH14	
	Sample ID	WI-AF-BH10-GW-11.5	WI-AF-BH10-GW-41	WI-AF-BH12-GW-11	WI-AF-BH12-GW-39	WI-AF-BH13-GW-11	WI-AF-BH13-GW-41	WI-AF-BH14-GW-21	WI-AF-BH14-GW-40
Analyte	Sample Depth (feet btoc)	11.5	41	11	39	11	41	21	40
(ng/L)	Sample Date		- 100 /00	- /00 /00	- /00 /00	- / /	- / /	- /0 - /0 0	- / /
	Project Action Levels <sup>1</sup>	7/22/20	7/23/20	7/23/20	7/23/20	7/24/20	7/24/20	7/24/20	7/24/20
Perfluorooctane Sulfonate (PFOS)	40	225 J-	1.18 U	89.7 J-	2.2 U	10.7 J-	0.85 U	33.4 J-	0.86 U
Perfluorooctanoic acid (PFOA)	40	70.2 J-	1.78 J	97.1 J-	2.06 J	119 J-	0.82 J	24.7 J-	1.29 U
Perfluorobutanesulfonic acid (PFBS)	600	5.06 J-	4.41 J	174 J-	1.4 U	216 J-	0.42 U	32.7 J-	0.43 U

Notes:

<sup>1</sup> Tap water project action level derived from USEPA's online calculator, based on a target hazard

quotient of 0.1; PFBS updated in April 2021.

--- = not applicable

btoc = below top of casing

ID = identification assigned at the time of sample collection

J = Analyte present; value may or may not be accurate or precise.

J- = Analyte present; value may be biased low or value may be higher.

ng/L = nanogram(s) per liter

PFAS = per- and polyfluoroalkyl substances

U = The chemical was analyzed for, but not detected.

UJ = Analyte not detected, quantitation limit may be inaccurate.

USEPA = U.S. Environmental Protection Agency

Bold indicates the analyte was detected.

Phase 2 Site Inspection Report Ault Field, Naval Air Station Whidbey Island Oak Harbor, Washington

	Location	WI-AF-BH19	WI-AF-BH20
	Sample ID	WI-AF-BH19-GW-49	WI-AF-BH20-GW-41
Analyte	Sample Depth (feet btoc)	49	41
(ng/L)	Sample Date		- / /
	Project Action Levels <sup>1</sup>	7/28/20	7/28/20
Perfluorooctane Sulfonate (PFOS)	40	0.82 J-	5.21 J-
Perfluorooctanoic acid (PFOA)	40	1.81 J-	3.12 J-
Perfluorobutanesulfonic acid (PFBS)	600	0.46 J-	1.4 J-

Notes:

<sup>1</sup> Tap water project action level derived from USEPA's online calculator, based on a target hazard

quotient of 0.1; PFBS updated in April 2021.

--- = not applicable

btoc = below top of casing

ID = identification assigned at the time of sample collection

J = Analyte present; value may or may not be accurate or precise.

J- = Analyte present; value may be biased low or value may be higher.

ng/L = nanogram(s) per liter

PFAS = per- and polyfluoroalkyl substances

U = The chemical was analyzed for, but not detected.

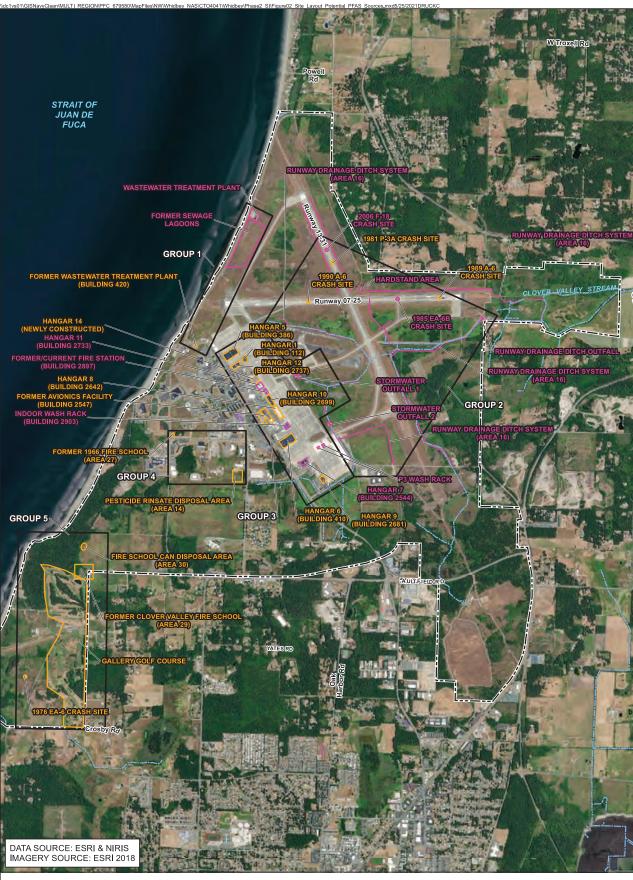
UJ = Analyte not detected, quantitation limit may be inaccurate.

USEPA = U.S. Environmental Protection Agency

Bold indicates the analyte was detected.

Figures





#### Legend

Surface Water
 Drainage Ditch
 Confirmed PFAS Release Area
 Potential PFAS Source Area
 PFAS Source Area Group
 Base Boundary

Note: PFAS = Per- and Polyfluoroalkyl Substances N

0.2

1 inch = 0.4 mile

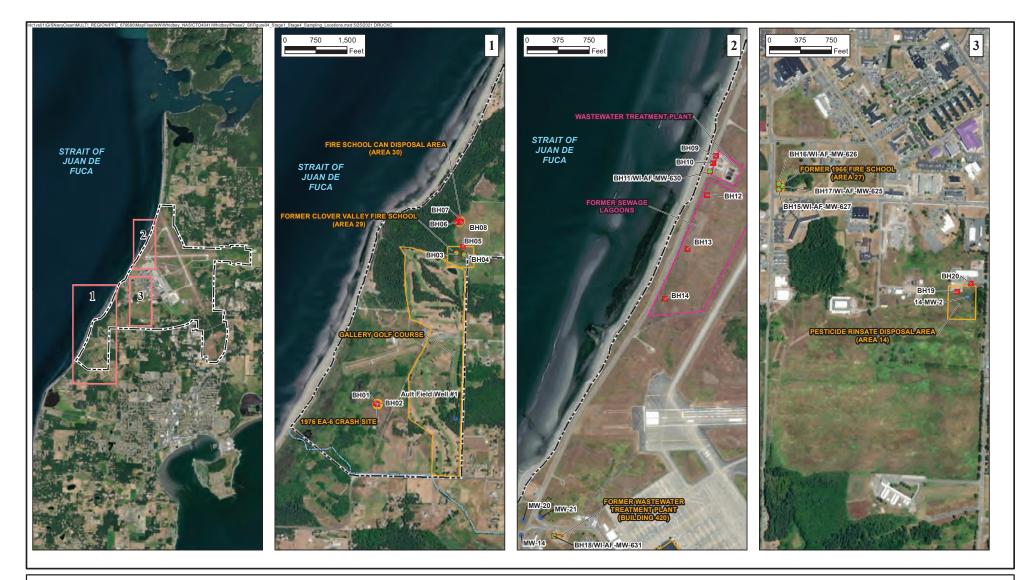
0.4

Miles

Confirmed PFAS Release Area color coding is based on the findings of the Preliminary Assessment (Navy, 2018a) Figure 2 Site Layout with Potential PFAS Sources Phase 2 Site Inspection Report Ault Field, Naval Air Station Whidbey Island Oak Harbor, Washington







#### Legend

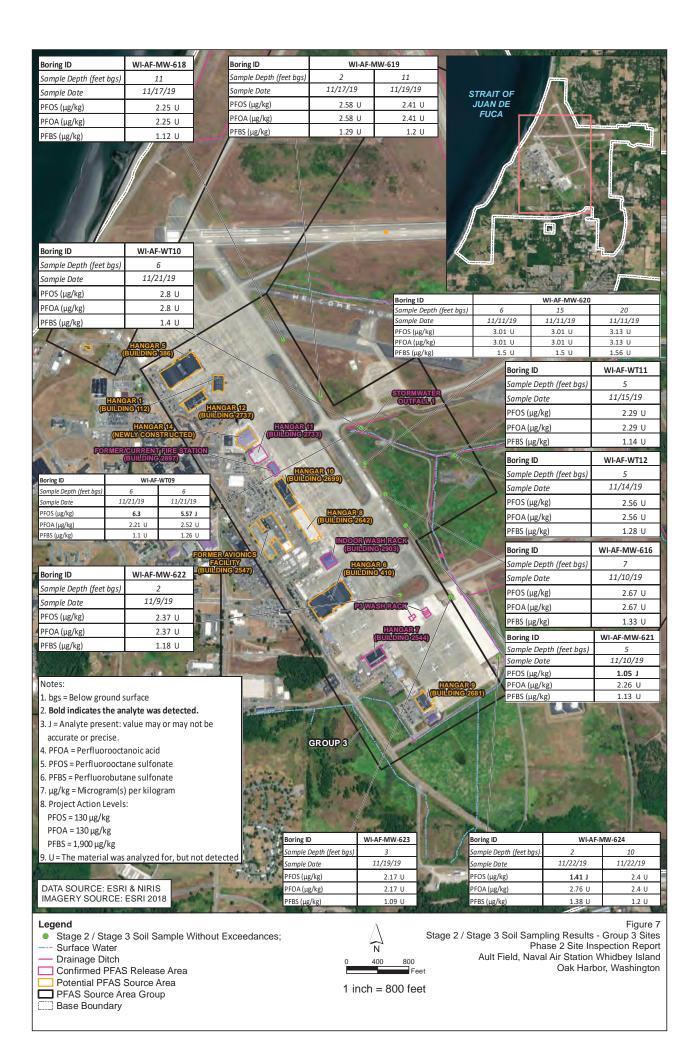
- Phase 1 Existing Monitoring Well Sampled
- Phase 1 Existing Monitoring Well Sam
   Phase 4 Soil Boring
   Phase 4 Soil Boring
   Phase 4 Monitoring Well Installation
   Surface Water
   Confirmed PFAS Release Area
   Potential PFAS Source Area
   Base Boundary



Figure 4 Stage 1/Stage 4 Sampling Locations Phase 2 Site Inspection Report Ault Field, Naval Air Station Whidbey Island Oak Harbor, Washington

Boring ID	WI-AF-BH09	STRAIT OF	WASTEWATER TREATMENTIPLANT	
Sample Depth (feet bgs)	9.5	JUAN DE	0/1/2	N
Sample Date	7/21/20	FUCA		
PFOS (µg/kg)	2.19 U	146	11/20	
PFOA (μg/kg)	2.19 U	-		2 /
PFBS (µg/kg)	1.09 U			
Boring ID	WI-AF-BH10			
Sample Depth (feet bgs)	9.5			
Sample Date	7/22/20		1/1/	- 1/2-18
PFOS (µg/kg)	2.09 U		11.	FORMERSEW
PFOA (μg/kg)	2.09 U			LAGOONS
PFBS (μg/kg)	1.05 U			1
Boring ID	WI-AF-BH11			
Sample Depth (feet bgs)	9		11 5 11	1 Charles B
Sample Date	7/22/20		2/1 - 11	10 10 21
PFOS (µg/kg)	2.23 U		4	NONY.
PFOA (μg/kg)	2.23 U			P-3/2
PFBS (µg/kg)	1.12 U		12 12 1	W MARTIN
Boring ID	WI-AF-BH12			3/14 4
Sample Depth (feet bgs)	9.5		GROUP 1	A STATE OF
Sample Date	7/23/20		21	
PFOS (µg/kg)	13.2		Kill and	
PFOA (µg/kg)	2.16 U		A-1-	
PFBS (µg/kg)	1.08 U			
Boring ID	WI-AF-BH13			
Sample Depth (feet bgs)	9.5			No Ch
Sample Date	7/24/20		Boring ID	WI-AF-BH18
PFOS (μg/kg)	2.42 U		Sample Depth (feet bgs)	34
PFOA (µg/kg)	2 42 11			7/29/20
FTUA (µg/kg)	2.42 U		Sample Date	7/29/20
	1.21 U	1 Albert L	Sample Date PFOS (µg/kg)	2.45 U
PFBS (µg/kg)	1.21 U			
PFBS (μg/kg) Boring ID	1.21 U WI-AF-BH14		PFOS (µg/kg)	2.45 U
PFBS (μg/kg) <b>Boring ID</b> Sample Depth (feet bgs)	1.21 U WI-AF-BH14 <i>11</i>		PFOS (μg/kg) PFOA (μg/kg)	2.45 U 2.45 U
PFBS (μg/kg) <b>Boring ID</b> Sample Depth (feet bgs) Sample Date	1.21 U WI-AF-BH14 11 7/24/20	FORMER WASHING	PFOS (μg/kg) PFOA (μg/kg)	2.45 U 2.45 U
PFBS (μg/kg) <b>Boring ID</b> Sample Depth (feet bgs) Sample Date PFOS (μg/kg)	1.21 U WI-AF-BH14 11 7/24/20 2.41 U	FORMERWASTIEW	PFOS (μg/kg) PFOA (μg/kg)	2.45 U 2.45 U
PFBS (μg/kg) <b>Boring ID</b> Sample Depth (feet bgs) Sample Date PFOS (μg/kg) PFOA (μg/kg)	1.21 U WI-AF-BH14 11 7/24/20 2.41 U 2.41 U	GORMER WASSLEW/	PFOS (μg/kg) PFOA (μg/kg)	2.45 U 2.45 U
PFBS (μg/kg) Boring ID Sample Depth (feet bgs) Sample Date PFOS (μg/kg) PFOA (μg/kg) PFBS (μg/kg)	1.21 U WI-AF-BH14 11 7/24/20 2.41 U	FORMER WASSE	PFOS (μg/kg)         PFOA (μg/kg)         PFBS (μg/kg)         PFBS (μg/kg)         STRAIT OF	2.45 U 2.45 U
PFBS (μg/kg) <b>Boring ID</b> Sample Depth (feet bgs) Sample Date PFOS (μg/kg) PFOA (μg/kg) PFBS (μg/kg) Notes:	1.21 U WI-AF-BH14 11 7/24/20 2.41 U 2.41 U 1.2 U	FORMER WASHEW	PFOS (μg/kg) PFOA (μg/kg) PFBS (μg/kg) NTERTIREATMENT/PLANT IDINO(22)	2.45 U 2.45 U
PFBS (μg/kg) Boring ID Sample Depth (feet bgs) Sample Date PFOS (μg/kg) PFOA (μg/kg) PFBS (μg/kg) Notes: 1. μg/kg = Microgram(s)	1.21 U WI-AF-BH14 11 7/24/20 2.41 U 2.41 U 1.2 U 7 V Per kilogram	FORMER WASLEW	PFOS (µg/kg) PFOA (µg/kg) PFBS (µg/kg) NTER TREATMENTIFIANT JUINO (20) STRAIT OF JUAN DE	2.45 U 2.45 U
PFBS (μg/kg) Boring ID Sample Depth (feet bgs) Sample Date PFOS (μg/kg) PFOA (μg/kg) PFBS (μg/kg) Notes: 1. μg/kg = Microgram(s) 2. bgs = Below ground s	1.21 U WI-AF-BH14 11 7/24/20 2.41 U 2.41 U 1.2 U ////////////////////////////////////		PFOS (µg/kg) PFOA (µg/kg) PFBS (µg/kg) NTER TREATMENTIFIANT JUINO (20) STRAIT OF JUAN DE	2.45 U 2.45 U
PFBS (μg/kg) Boring ID Sample Depth (feet bgs) Sample Date PFOS (μg/kg) PFOA (μg/kg) PFBS (μg/kg) Notes: 1. μg/kg = Microgram(s) 2. bgs = Below ground s 3. Bold indicates the an	1.21 U WI-AF-BH14 11 7/24/20 2.41 U 2.41 U 1.2 U per kilogram urface alyte was detected.		PFOS (µg/kg) PFOA (µg/kg) PFBS (µg/kg) NTER TREATMENTIFIANT JUINO (20) STRAIT OF JUAN DE	2.45 U 2.45 U
PFBS (μg/kg) <b>Boring ID</b> Sample Depth (feet bgs) Sample Date PFOS (μg/kg) PFOA (μg/kg) PFBS (μg/kg) Notes: 1. μg/kg = Microgram(s) 2. bgs = Below ground s 3. <b>Bold indicates the an</b> 4. PFOA = Perfluoroocta	1.21 U WI-AF-BH14 11 7/24/20 2.41 U 2.41 U 1.2 U 1.2 U per kilogram urface alyte was detected. anoic acid		PFOS (µg/kg) PFOA (µg/kg) PFBS (µg/kg) NTER TREATMENTIFICANT STRAIT OF JUAN DE	2.45 U 2.45 U
PFBS (μg/kg) Boring ID Sample Depth (feet bgs) Sample Date PFOS (μg/kg) PFOA (μg/kg) PFBS (μg/kg) Notes: 1. μg/kg = Microgram(s) 2. bgs = Below ground s 3. Bold indicates the an	1.21 U WI-AF-BH14 11 7/24/20 2.41 U 2.41 U 1.2 U V per kilogram urface alyte was detected. anoic acid ane sulfonate		PFOS (µg/kg) PFOA (µg/kg) PFBS (µg/kg) NTER TREATMENTIFICANT STRAIT OF JUAN DE	2.45 U 2.45 U
PFBS (μg/kg) Boring ID Sample Depth (feet bgs) Sample Date PFOS (μg/kg) PFOA (μg/kg) PFBS (μg/kg) Notes: 1. μg/kg = Microgram(s) 2. bgs = Below ground s 3. Bold indicates the an 4. PFOA = Perfluoroocta 5. PFOS = Perfluoroocta	1.21 U WI-AF-BH14 11 7/24/20 2.41 U 2.41 U 1.2 U 1.		PFOS (µg/kg) PFOA (µg/kg) PFBS (µg/kg) NTER TREATMENTIFICANT STRAIT OF JUAN DE	2.45 U 2.45 U
PFBS (μg/kg) Boring ID Sample Depth (feet bgs) Sample Date PFOS (μg/kg) PFOA (μg/kg) PFBS (μg/kg) Notes: 1. μg/kg = Microgram(s) 2. bgs = Below ground s 3. Bold indicates the an 4. PFOA = Perfluoroocta 5. PFOS = Perfluoroocta 6. PFBS = Perfluorobuta	1.21 U WI-AF-BH14 11 7/24/20 2.41 U 2.41 U 1.2 U 1.		PFOS (µg/kg) PFOA (µg/kg) PFBS (µg/kg) NTER TREATMENTIFICANT STRAIT OF JUAN DE	2.45 U 2.45 U
PFBS (μg/kg) Boring ID Sample Depth (feet bgs) Sample Date PFOS (μg/kg) PFOA (μg/kg) PFBS (μg/kg) Notes: 1. μg/kg = Microgram(s) 2. bgs = Below ground s 3. Bold indicates the an 4. PFOA = Perfluoroocta 5. PFOS = Perfluoroocta 6. PFBS = Perfluorobuta 7. Project Action Levels	1.21 U WI-AF-BH14 11 7/24/20 2.41 U 2.41 U 1.2 U 1.		PFOS (µg/kg) PFOA (µg/kg) PFBS (µg/kg) NTER TREATMENTIFICANT STRAIT OF JUAN DE	2.45 U 2.45 U
PFBS (μg/kg) Boring ID Sample Depth (feet bgs) Sample Date PFOS (μg/kg) PFOA (μg/kg) PFBS (μg/kg) Notes: 1. μg/kg = Microgram(s) 2. bgs = Below ground s 3. Bold indicates the an 4. PFOA = Perfluoroocta 5. PFOS = Perfluoroota 6. PFBS = Perfluorobuta 7. Project Action Levels PFOS = 130 μg/kg PFOA = 130 μg/kg PFBS = 1,900 μg/kg	1.21 U WI-AF-BH14 11 7/24/20 2.41 U 2.41 U 1.2 U U per kilogram urface alyte was detected. anoic acid ane sulfonate ine sulfonate :	COLUMN ASSESS	PFOS (µg/kg) PFOA (µg/kg) PFBS (µg/kg) NTER TREATMENTIFICANT STRAIT OF JUAN DE	2.45 U 2.45 U
PFBS (μg/kg) Boring ID Sample Depth (feet bgs) Sample Date PFOS (μg/kg) PFOA (μg/kg) PFOA (μg/kg) Notes: 1. μg/kg = Microgram(s) 2. bgs = Below ground s 3. Bold indicates the an 4. PFOA = Perfluoroocta 5. PFOS = Perfluoroota 6. PFBS = Perfluorobuta 7. Project Action Levels PFOS = 130 μg/kg PFOA = 130 μg/kg	1.21 U WI-AF-BH14 11 7/24/20 2.41 U 2.41 U 1.2 U U per kilogram urface alyte was detected. anoic acid ane sulfonate ine sulfonate :		PFOS (µg/kg) PFOA (µg/kg) PFBS (µg/kg) NTER TREATMENTIFICANT STRAIT OF JUAN DE	2.45 U 2.45 U
PFBS (μg/kg) Boring ID Sample Depth (feet bgs) Sample Date PFOS (μg/kg) PFOA (μg/kg) PFBS (μg/kg) Notes: 1. μg/kg = Microgram(s) 2. bgs = Below ground s 3. Bold indicates the an 4. PFOA = Perfluoroocta 5. PFOS = Perfluoroota 7. Project Action Levels PFOS = 130 μg/kg PFOA = 130 μg/kg PFBS = 1,900 μg/kg 8. U = The material was	1.21 U WI-AF-BH14 11 7/24/20 2.41 U 2.41 U 1.2 U U per kilogram urface alyte was detected. anoic acid ane sulfonate ine sulfonate :		PFOS (µg/kg) PFOA (µg/kg) PFBS (µg/kg) NTER TREATMENTIFICANT STRAIT OF JUAN DE	2.45 U 2.45 U 1.23 U
PFBS (μg/kg) Boring ID Sample Depth (feet bgs) Sample Date PFOS (μg/kg) PFOA (μg/kg) PFBS (μg/kg) Notes: 1. μg/kg = Microgram(s) 2. bgs = Below ground s 3. Bold indicates the an 4. PFOA = Perfluoroocta 5. PFOS = Perfluoroota 6. PFBS = Perfluorobuta 7. Project Action Levels PFOS = 130 μg/kg PFOA = 130 μg/kg PFBS = 1,900 μg/kg 8. U = The material was	1.21 U WI-AF-BH14 11 7/24/20 2.41 U 2.41 U 1.2 U U per kilogram urface alyte was detected. anoic acid ane sulfonate ine sulfonate :	detected IMAGERY SOURCE: ESRI 2018	PFOS (µg/kg) PFOA (µg/kg) PFBS (µg/kg) TETTECATIVENTIVEANT TETTECATIVENTIVEAT TETTECATIVENTIVEANT TETTECATIVENTIVEAT TETTECATIVENTIVEAT TETTECATIVENTIVEAT TETTECATIVENTIVEAT TETTECATIVENTIVEAT TETTECATIVENTIVEAT TETTECATIVENTIVEAT TETTECATIVENTIVEAT TETTECATIVENTIVEAT TETTECATIVENTIVEAT TETTECATIVENTIVEAT TETTECATIVENTIVEAT TETTECATIVENTIVEAT TETTECATIVENTIVEAT TETTECATIVEA	2.45 U 2.45 U 1.23 U
PFBS (μg/kg) Boring ID Sample Depth (feet bgs) Sample Date PFOS (μg/kg) PFOA (μg/kg) PFOA (μg/kg) Notes: 1. μg/kg = Microgram(s) 2. bgs = Below ground s 3. Bold indicates the an 4. PFOA = Perfluoroocta 5. PFOS = Perfluoroocta 6. PFBS = Perfluorobuta 7. Project Action Levels PFOS = 130 μg/kg PFOA = 130 μg/kg PFBS = 1,900 μg/kg 8. U = The material was Elegend Stage 4 Soil Sample Confirmed PFAS Re	1.21 U WI-AF-BH14 11 7/24/20 2.41 U 2.41 U 1.2 U per kilogram urface alyte was detected. anoic acid ane sulfonate ine sulfonate : analyzed for, but not With No Exceedances	s	PFOS (µg/kg) PFOA (µg/kg) PFBS (µg/kg) PFBS (µg/kg) TERT TREATING TOF FUCA FUCA Stage 4 Soil Sampling I Phase 2	2.45 U 2.45 U 1.23 U
PFBS (μg/kg) Boring ID Sample Depth (feet bgs) Sample Date PFOS (μg/kg) PFOA (μg/kg) PFOA (μg/kg) PFBS (μg/kg) Notes: 1. μg/kg = Microgram(s) 2. bgs = Below ground s 3. Bold indicates the an 4. PFOA = Perfluorootta 5. PFOS = Perfluorootta 6. PFBS = Perfluorobuta 7. Project Action Levels PFOS = 130 μg/kg PFOA = 130 μg/kg PFBS = 1,900 μg/kg 8. U = The material was Elegend • Stage 4 Soil Sample	1.21 U WI-AF-BH14 11 7/24/20 2.41 U 2.41 U 1.2 U per kilogram urface alyte was detected. anoic acid ane sulfonate ine sulfonate : analyzed for, but not With No Exceedances lease Area rce Area	detected IMAGERY SOURCE: ESRI 2018	PFOS (µg/kg) PFOA (µg/kg) PFBS (µg/kg) PFBS (µg/kg) TERT TREATORENT TRANT STRAIT OF FUCA FUCA FUCA Stage 4 Soil Sampling I Phase 2 Ault Field, Naval Air	2.45 U 2.45 U 1.23 U

\dc1vs01\GISNavyClean\MULTI_REGIO	DN\PFC_679580\MapFiles\NW\V	/hidbey_NAS\CTO4041\Whidbey\Phase2_5	IVFigure06_Stage3_Soil_Sampling_Res	sults_Group2.mxd5/25/2021DRUCk	(C		TAN MARKED STREET				
Boring ID	WI-AF-WT01	1225002		A	Boring ID	WI-AF-WT02	Boring ID	WI-AF-WT03	S. S. Saco	Boring ID	WI-AF-WT04
Sample Depth (feet bgs)	13	2006 F-18		1981 P-3A RASH SITE	Sample Depth (feet bgs)	11	Sample Depth (feet bgs)	8	States and the second second	Sample Depth (feet bgs)	8
Sample Date	11/16/19	CRASH SITE	1333 CT		Sample Date	11/16/19	Sample Date	11/20/19	Winda.	Sample Date	11/20/19
PFOS (µg/kg)	2.17 U			in the	PFOS (μg/kg)	2.06 U	PFOS (µg/kg)	2.01 U	And a	PFOS (µg/kg)	2.14 U
PFOA (µg/kg)	2.17 U	1973 - X			PFOA (μg/kg)	2.06 U	PFOA (μg/kg)	2.01 U	the local	PFOA (μg/kg)	2.14 U
PFBS (μg/kg)	1.09 U			A chan by a	PFBS (µg/kg)	1.03 U	PFBS (μg/kg)	1.01 U	A DEC	PFBS (μg/kg)	1.07 U
	- / 3						RUNWA	(AREA 16)	YSTEM		
Boring ID	WI-AF-WT08	1990 A-6 CRASH SITE	HARDSTAND		Total and a subscription of the					CLOVER VALLEY. STR	PAM
Sample Depth (feet bgs)	13		AREA								Clover
Sample Date	11/8/19		Runway 07-25	(The second seco	CRASH SITE	1989A-6		( and the second		Elenen /	Valley
PFOS (μg/kg)	2.78 U					CRASHISITE	171		1.60		
PFOA (µg/kg)	2.78 U	RUNWAY	(AREA/16)			The second state	7 F		-		2-21-121-
PFBS (µg/kg)	1.39 U		A CONTRACTOR		RUNWAY DRAINAGE DITC	HSYSTEM	Common	AY DRAINAGE DITCH	OUTEAND	and the second	
		OHE HU			(AREA 16)						
Boring ID	WI-AF-WT07	1000	and the second second		C. C. Starting				a	Value -	IN CONTRACT
Sample Depth (feet bgs)	12								10	1 day	ATTES
Sample Date	11/8/19							and the second second		A BURNE	
PFOS (μg/kg)	2.47 U		and the second	and have		anun (2.450)				1-× 1	
PFOA (μg/kg)	2.47 U					a contra	The second second				
PFBS (μg/kg)	1.23 U				China La La B	Rest in the					
Boring ID	WI-AF-WT05				Main Stat	GRO	OUP 2		STRAIT		
Sample Depth (feet bgs)	8				a standard and	the / to	No- New York		JUAN D FUCA		
Sample Date	11/14/19				Pin Sala	01/14	A CONTRACTOR				
PFOS (µg/kg)	2.38 U		RUNWAY DRAIL	NAGEDITCHSYSTEM		N/2	and the state				
PFOA (µg/kg)	2.38 U		A	REA16)		Y a state	51 March R.	* 10 St		1 carson	
PFBS (μg/kg)	1.19 U				1	Notes:			A		A DEC
ALL STREET	A LOW A		STORMW	ATER			ogram(s) per kilogram	5	ļ.	and the second	1. 7/4- 70
Boring ID	WI-AF-WT06		OULFAI			2. bgs = Below g				de the second	S. CARDE
Sample Depth (feet bgs)	7						uorooctanoic acid		F		
Sample Date	11/13/19				X		uorooctane sulfonate	2			
PFOS (μg/kg)	2.7 U					Contraction of Contra	orobutane sulfonate		/	Altona area	
PFOA (µg/kg)	2.7 U		00			6. Project Action			1.1.5		4
PFBS (μg/kg)	1.35 U					PFOS = 130 ug PFOA = 130 ug			<i>م</i> ـــــا		
DATA SOURCE: ESR IMAGERY SOURCE:	RI & NIRIS ESRI 2018			Antest	1	PFBS = 1,900 u 7. U = The mate	ug/kg rial was analyzed for, but r	ot detected	1.36		満入っ
1110 - 1-00					- all a lar				The second		WWWWWWWWWWW
Legend      Stage 3 Soil Samp Surface Water      Drainage Ditch      Confirmed PFAS Fe      Potential PFAS So	Release Area	inces				N 0 500 1,000	<sub>0</sub> Ault eet	Field, Naval Air S	Ū	Soil Sampling Resu Phase 2 Site idbey Island Oak H	Inspection Report
PFAS Source Area						1 inch = 1,000	feet				



c1vs01\GISNavyClean\MULTI_REGION\PF	FC_679580\MapFiles\NW\Whidbey_NAS	CTO4041\Whidbey\Phase2_SI\Figure08_Stage4_So	il Sampling Results Group4.mxd5/25/20	21DRUCKC	
Boring ID	WI-AF-BH15	Boring ID	WI-AF-BH16		A 100 0 000
Sample Depth (feet bgs)	47	Sample Depth (feet bgs)	53		Main Call
Sample Date	7/27/20	Sample Date	7/25/20	STRAIT OF	
PFOS (µg/kg)	2.4 U	PFOS (µg/kg)	2.13 U	JUAN DE FUCA	
PFOA (μg/kg)	2.4 U	PFOA (μg/kg)	2.13 U		Land and the second sec
PFBS (µg/kg)	1.2 U	PFBS (µg/kg)	1.06 U		
	And the second second	5. 13 6 H. 19	the Cart		
		and the second	2 12		The second
- C. HANNER		Boring ID	WI-AF-BH17		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
		Sample Depth (feet bgs)	53		~ 7
and the second		Sample Date	7/25/20		
	0	PFOS (µg/kg)	2.63 U		
		PFOA (μg/kg)	2.63 U		
		PFBS (µg/kg)	1.32 U	Save Share	A share -
		de no	All of the	and the second state	
		Contraction of the second	1 million	A DESCRIPTION OF A DESC	1/2/15
			STANS NO.		
	- Q	the part of	and the second second		- Cartonia
	12 .	C. Garge States	1 Para B		-
	- And and a	Service Service Service		Les La commente	
Carl I Conta	FORMER 1966 FIRE SO	HOOL	THE REAL	Des Builder	
38C	A Shademan a shad	the second second	and the second		
AL AN	A Designation of the		1	Contraction .	1 10 TH
PLCC	AND DESCRIPTION OF THE	100 · 100		A TERMAN	
	16 Cartes	All in the second	TOTAL	1 - Ca.S	
Selene.	HT MOUND	the work		SALER A	
ALL DE CONTRACT		ALL ALL DESCRIPTION	11. 11 15		
a star			111. 1. 1.		5
and the second second		A CONTRACTOR OF THE OWNER	Brand Star		Sec.es
		Ser and a series		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	and the second s
		The second second	A COLUMN TO LAND		Service -
and the manual of			1. St. 699	and a second	
The second second			PESTIC	DE RINSATE DISPOSAL AREA (AREA 14)	
The The	A DECEMBER OF	ALMONT PL	Call Contract		A REAL AND A
and the second	C. Alice Cost of		Concernant of the second		
	THE REAL PROPERTY OF THE PARTY	Charles and the	ALL THE ALL	The second second	
	the state	a Contraction	The state		10 13 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
and and	and the second	1 1 1 1 1 1	the second		
		Conception in such as	ALC: AN		
MAL ASS		California			
400	A LA LANGE				
March Stephen	1-27 1 20		GR	OUP 4	AR 1962 .
Notes:		Contraction (Section 1)	and the second		
1. μg/kg = Microgram(s)	per kilogram	100 C	San Stranger		
2. bgs = Below ground su		Section and Automation	100000		
3. PFOA = Perfluoroocta			the state of the state		
4. PFOS = Perfluorooctar	ne sulfonate	the for the first of	0.00		
5. PFBS = Perfluorobutar	ne sulfonate		and the second s		
6. Project Action Levels:		and the second second		A REAL PROPERTY OF ALL	
PFOA: 130 μg/kg		Boring ID	WI-AF-BH19	Boring ID	WI-AF-BH20
PFOS: 130 µg/kg		Sample Depth (feet be		Sample Depth (feet bgs)	30
PFBS: 1,900 μg/kg		Sample Date	7/28/20	Sample Date	7/28/20
7. U = The material was a	analyzed for, but not de	tected PFOS (μg/kg)	2.17 U	PFOS (µg/kg)	2.34 U
DATA SOURCE: ESRI &	NIRIS	PFOA (μg/kg)	2.17 U	PFOA (μg/kg)	2.34 U
IMAGERY SOURCE: ESKI &		PFBS (µg/kg)	1.09 U	PFBS (µg/kg)	1.17 U
egend			Δ	Stage 4 Soil Sampling R	Figure
<ul> <li>Stage 4 Soil Sampl</li> <li>Potential PFAS Source</li> </ul>		5	$\overrightarrow{N}$		Site Inspection Repo
PFAS Source Area		0	150 300	Ault Field, Naval Air S	station Whidbey Isla
Base Boundary			Feet	Oa	k Harbor, Washingt
		1 inch	= 300 feet		

dc1vs01\GISNavyClean\MULTI_REGION\P	FC_679580\MapFiles\NW\Whidbey_NAS
Boring ID	WI-AF-BH07
Sample Depth (feet bgs)	36
Sample Date	7/14/20
PFOS (μg/kg)	2.38 U =
PFOA (µg/kg)	2.38 U
PFBS (µg/kg)	1.19 U
1 1 05 (μ6/ Ν6/	
Boring ID	WI-AF-BH06
Sample Depth (feet bgs)	35
Sample Date	7/15/20
PFOS (µg/kg)	2.07 U
PFOA (μg/kg)	2.07 U
PFBS (μg/kg)	1.04 U
Boring ID	WI-AF-BH08
ample Depth (feet bgs)	34
Sample Date	7/14/20
-	2.11 U
FOS (µg/kg)	
FOA (µg/kg)	2.11 U
FBS (µg/kg)	1.05 U
oring ID	WI-AF-BH03
ample Depth (feet bgs)	47
ample Date	7/16/20
FOS (µg/kg)	2.3 U
PFOA (μg/kg)	2.3 U
PFBS (μg/kg)	1.15 U
	A CONTRACT OF
oring ID	WI-AF-BH04
ample Depth (feet bgs)	54
Sample Date	7/16/20
PFOS (μg/kg)	2.42 U
PFOA (μg/kg)	2.42 U
FBS (µg/kg)	1.21 U
	110000000000000000000000000000000000000
1	
1	
oring ID	WI-AF-BH01
ample Depth (feet bgs)	29
ample Date	7/20/20
FOS (µg/kg)	2.2 U
FOA (µg/kg)	2.2 U
-BS (μg/kg)	1.1 U
	28 12 T 18
otes:	() 1.1
. μg/kg = Microgram	
. bgs = Below ground	
8. PFOA = Perfluoroo	
. PFOS = Perfluorood	ctane sulfonate
PFBS = Perfluorobu	utane sulfonate
. Project Action Leve	els:
PFOA = 130 µg/kg	
PFOS = 130 μg/kg	
PFBS = 1,900 μg/kg	
	as analyzed for, but n
egend	
<ul> <li>Stage 4 Soil Sample</li> <li>Surface Water</li> </ul>	Without Exceedances
Potential PFAS Source	ce Area
Area 29 Burn Pad Mobile Turret Tower F	Range/Machine Gun Ran
PFAS Source Area G	
Base Boundary	

Boring ID	WI-AF-BH09		STRAIT OF	WASTEWA		T
Sample Depth (feet bgs)	11		JUAN DE FUCA		0116	
Sample Date PFOS (ng/L)	7/21/20 4.21 U				1 jas	
PFOA (ng/L)	14.6 J-				12	1 7
PFBS (ng/L)	2.99 J-					
Boring ID	WI-A	F-BH10			110	
Sample Depth (feet bgs)	11.5	41			11	
Sample Date	7/22/20	7/23/20			1/1	
PFOS (ng/L)	225 J-	1.18 U				
PFOA (ng/L)	70.2 J-	1.78 J			1	11/3
PFBS (ng/L)	5.06 J-	4.41 J			10 10	11 12-2
Well ID	WI-AF-MW-630					
Sample Depth (feet bgs) Sample Date	11.5 8/19/20			1/1		FORMER SEWAGE
PFOS (ng/L)	553			AND Y	1	
PFOA (ng/L)	37.2				11	1 contraction
PFBS (ng/L)	6.46			11-11	GR	OUP 1
Boring ID	WI-A	F-BH12				
Sample Depth (feet bgs)	11	39		1		The states
Sample Date	7/23/20	7/23/20		1/2		
PFOS (ng/L)	89.7 J-	2.2 U				
PFOA (ng/L) PFBS (ng/L)	97.1 J- 174 J-	<b>2.06 J</b> 1.4 U			Well ID Sample Depth (feet bgs)	MW-20 12.5
					Sample Depth (Jeet bys) Sample Date	8/14/20
Boring ID Sample Depth (feet bgs)	11 WI-A	F-BH13 41			PFOS (ng/L)	125
Sample Date	7/24/20	7/24/20			PFOA (ng/L)	30.5
PFOS (ng/L)	10.7 J-	0.85 U			PFBS (ng/L)	10.4
PFOA (ng/L)	119 J-	0.82 J				
PFBS (ng/L)	216 J-	0.42 U			Well ID Sample Depth (feet bgs)	MW-21 10
Boring ID	WI-A	F-BH14			Sample Depth (jeet bys) Sample Date	8/13/20
Sample Depth (feet bgs)	21	40		1/	PFOS (ng/L)	118
Sample Date	7/24/20	7/24/20			PFOA (ng/L)	39.0
PFOS (ng/L) PFOA (ng/L)	33.4 J- 24.7 J-	0.86 U 1.29 U	1		PFBS (ng/L)	12.3
PFBS (ng/L)	32.7 J-	0.43 U	h hard hard hard hard hard hard hard har		Well ID	WI-AF-MW-631
Well ID	MW-14	1 11		1 cm	Sample Depth (feet bgs)	35
Sample Depth (feet bgs)	15	11		1	Sample Date PFOS (ng/L)	8/18/20 5.83 U
Sample Date	8/14/20		- ALLIN	/ /	PFOA (ng/L)	1.61 J
PFOS (ng/L) PFOA (ng/L)	40.9 J 16.0 J				PFBS (ng/L)	1.69 J
PFBS (ng/L)	7.65 J	1			and the	100000
	FORMER WASTE	MATER TREATMENT PLANT			1	A DELISE
Notes:			- FI	6		
1. Bold = the analyte wa	as detected.	and the second		STRAIT O		
2. Bold and Shaded = Ex		Bern	ALTER A	JUAN D FUCA		
<ol> <li>btoc = Below top of c</li> <li>J = Analyte present: w</li> </ol>	•			TAN		
be accurate or precise			in the second		LARY	
5. J- = Analyte present:		Distant I	ALL AND AND A			
low or the actual value		and a	S	and and an	and the second	in the second
<ol> <li>6. ng/L = Nanograms pe</li> <li>7. PFOA = perfluoroocta</li> </ol>		a de la			at the second	Code -
8. PFOS = perfluoroocta		1	Contraction of		has stated	
9. PFBS = perfluorobuta		and an	and a staff			
10. Project Action Level PFOS: 40 ng/L	s:		1 FAL		Change and	
PFOA: 40 ng/L		1	A state			
PFBS: 600 ng/L			DATA SOURCE: ESRI & NII IMAGERY SOURCE: ESRI		Superior and	
11. U = The material was	s analyzed for, but not d	letected	WINGENT SOURCE. ESRI	2010	A Brok William	
Legend			Δ			Figure 10
	dwater Sample Wit		$\Delta$	Stage 1 / Stage 4 Me		Grab Groundwater Its - Group 1 Sites
	e 4 Groundwater Sa	ample With Exceedance	S N 0 187.5 375		Phase 2 Site	Inspection Report
Detential PFAS	Source Area		Feet	Ault Fi	eld, Naval Air Statio Oak Ha	on Whidbey Island arbor, Washington
PFAS Source A			1 inch = 500 feet		Carti	,
	,					
1						

		S 8			E 10	THE REAL PROPERTY.
Well ID	WI-AF-MW-626	10	Well ID	WI-AF-MW-625		
Sample Depth (feet bgs)	54 8/14/20	100	Sample Depth (feet bgs)	54 8/15/20	STRAIT OF	
Sample Date PFOS (ng/L)	1.12 U	- 2	Sample Date PFOS (ng/L)	0.89 U	JUAN DE FUCA	
PFOS (ng/L) PFOA (ng/L)	2.29 J		PFOS (ng/L) PFOA (ng/L)	2.1 J	FOCA	
PFBS (ng/L)	1.95 J		PFBS (ng/L)	2.67 J		
		1994				ALL BUNG
				2 1 .		
			(30 ° 3	and the second		an that
			Well ID	WI-AF-MW-627		
		A. 15	Sample Depth (feet bgs)	54		
	0	-	Sample Date	8/15/20		
		- lo	PFOS (ng/L)	0.89 U		
			PFOA (ng/L)	1.87 J	and the second second	A ANT
			PFBS (ng/L)	0.99 J		
			1111	and all	beite der merste ander bereite beiten angen.	11/2/2
		10.	THE R. LOW	and a state		
	18 85 7	-	and the second	1		- Contract 1
	100 100	17	5000 4	1 Martin Part	To the Deside Concession	
	FORMER 1966 FIRE	SCHOOL	The share is	P THE	Der Bullet	
- 3 MA	(AREA27)	1	- Barret Inc	The star		
	CONSTRUCTION	1		1 2 2 100	"E" man of	· · ·
P P P	Linesson	Sec. 1		1 1 1 1 2 1 2	a second	
	10 Carl	No.	a test in	TTELLIT, IN	19	
Sectores.	H > MOOR		V		- 1100 - A	
address of the second	S / BRANCE	1809	K- CONSTRUCT	Pill 6 La		
a star	人。他们的制度	as St	FI	I DE LA	CONTRACTOR OF STREET	6.00
	A CARA	1.85	the man	Stand Bar	the second	Deven
		615 K	101 BR440	11	2.5.8 1. 145	
			A Real Property in the second	A TO A DE MAR		ALCONT OF
and the second second second		2012-00		A CONTRACTOR	and a second	And the second se
Parcel and the second second		S. O. March	A REAL PROPERTY AND INCOME.			State of the local division of the local div
	11220			PESTIC	DE RINSATE DISPOSAL AREA (AREA 14)	
	18 Aller	1	Starter 1	CESTIC	(AREA(14)	Terre
				The state	(AREA(14)	
				No. of Street,	(AREA(14)	
				The state	(AREA(14)	
				The state	(AREA(14)	
Notes: 1. <b>Bold</b> = the analyte was d				The state	(AREA(14)	
Notes: 1. Bold = the analyte was d 2. btoc = Below top of casin	ng			The state	(AREA(14)	
Notes: 1. Bold = the analyte was d 2. btoc = Below top of casin 3. J = Analyte present: valu	ng				(AREA(14)	
Notes: 1. Bold = the analyte was d 2. btoc = Below top of casii 3. J = Analyte present: valu be accurate or precise.	ng ue may or may not		Boring ID	GROUP 4	(AREA(14)	
Notes: 1. Bold = the analyte was d 2. btoc = Below top of casii 3. J = Analyte present: valu be accurate or precise.	ng ue may or may not lue may be biased low		Boring ID Sample Depth (feet by	GROUP 4 WI-AF-BH19	(AREA(14)	
Notes: 1. Bold = the analyte was d 2. btoc = Below top of casii 3. J = Analyte present: valu be accurate or precise. 4. J- = Analyte present: val or actual value maybe hi 5. ng/L = Nanogram(s) per	ng ue may or may not lue may be biased low igher. l liter	All Control of the second	Sample Depth (feet b	GROUP 4 WI-AF-BH19	(AREA(14)	
Notes: 1. Bold = the analyte was d 2. btoc = Below top of casii 3. J = Analyte present: valu be accurate or precise. 4. J- = Analyte present: val or actual value maybe hi 5. ng/L = Nanogram(s) per 6. PFOA = Perfluorooctano	ng ue may or may not lue may be biased low igher. liter bic acid		Sample Depth (feet by Sample Date	GROUP 4           WI-AF-BH19           gs)         49           7/28/20	(AREA(14)	
Notes: 1. Bold = the analyte was d 2. btoc = Below top of casii 3. J = Analyte present: valu be accurate or precise. 4. J- = Analyte present: val or actual value maybe hi 5. ng/L = Nanogram(s) per 6. PFOA = Perfluorooctano 7. PFOS = Perfluorooctane	ng ue may or may not lue may be biased low igher. r liter sic acid s sulfonate	No.	Sample Depth (feet by Sample Date PFOS (ng/L)	GROUP 4           WI-AF-BH19           35)         49           7/28/20           0.82 J-	(AREA(14)	
Notes: 1. Bold = the analyte was d 2. btoc = Below top of casii 3. J = Analyte present: valu be accurate or precise. 4. J- = Analyte present: val or actual value maybe hi 5. ng/L = Nanogram(s) per 6. PFOA = Perfluorooctano 7. PFOS = Perfluorooctane 8. PFBS = Perfluorobutane	ng ue may or may not lue may be biased low igher. r liter sic acid s sulfonate		Sample Depth (feet by Sample Date PFOS (ng/L) PFOA (ng/L)	GROUP 4           WI-AF-BH19           gs)         49           7/28/20	(AREA(14)	
Notes: 1. Bold = the analyte was d 2. btoc = Below top of casii 3. J = Analyte present: valu be accurate or precise. 4. J- = Analyte present: val or actual value maybe hi 5. ng/L = Nanogram(s) per 6. PFOA = Perfluorooctano 7. PFOS = Perfluorooctane 8. PFBS = Perfluorobutane	ng ue may or may not lue may be biased low igher. r liter sic acid sulfonate		Sample Depth (feet by Sample Date PFOS (ng/L) PFOA (ng/L) PFBS (ng/L)	CROUP 4 WI-AF-BH19 gs) 49 7/28/20 0.82 J- 1.81 J- 0.46 J-		
Notes: 1. Bold = the analyte was d 2. btoc = Below top of casii 3. J = Analyte present: valu be accurate or precise. 4. J- = Analyte present: val or actual value maybe hi 5. ng/L = Nanogram(s) per 6. PFOA = Perfluorooctano 7. PFOS = Perfluorooctane 8. PFBS = Perfluorobutane 9. Project Action Levels: PFOS: 40 ng/L PFOA: 40 ng/L	ng ue may or may not lue may be biased low igher. r liter sic acid sulfonate		Sample Depth (feet by Sample Date PFOS (ng/L) PFOA (ng/L) PFBS (ng/L) Well ID	GROUP 4           WI-AF-BH19           7/28/20           0.82 J-           1.81 J-           0.46 J-           14-MW-2	(AREASE)	WI-AF-BH20
Notes: 1. Bold = the analyte was d 2. btoc = Below top of casii 3. J = Analyte present: value be accurate or precise. 4. J- = Analyte present: value or actual value maybe hi 5. ng/L = Nanogram(s) per 6. PFOA = Perfluorooctano 7. PFOS = Perfluorooctane 8. PFBS = Perfluorobutane 9. Project Action Levels: PFOS: 40 ng/L PFOA: 40 ng/L PFBS: 600 ng/L	ng ue may or may not lue may be biased low igher. r liter r liter oic acid sulfonate sulfonate		Sample Depth (feet by Sample Date PFOS (ng/L) PFOA (ng/L) PFBS (ng/L) Well ID Sample Depth (feet by	GROUP 4           WI-AF-BH19           7/28/20           0.82 J-           1.81 J-           0.46 J-           14-MW-2           75)	(AREATA)	41
Notes: 1. Bold = the analyte was d 2. btoc = Below top of casii 3. J = Analyte present: valu be accurate or precise. 4. J- = Analyte present: val or actual value maybe hi 5. ng/L = Nanogram(s) per 6. PFOA = Perfluorooctano 7. PFOS = Perfluorootane 8. PFBS = Perfluorobutane 9. Project Action Levels: PFOS: 40 ng/L PFOA: 40 ng/L	ng ue may or may not lue may be biased low igher. r liter r liter oic acid sulfonate sulfonate		Sample Depth (feet by Sample Date PFOS (ng/L) PFOA (ng/L) PFBS (ng/L) Well ID Sample Depth (feet by Sample Date	GROUP 4           WI-AF-BH19           35)         49           7/28/20           0.82 J-           1.81 J-           0.46 J-           14-MW-2           35)           8/14/20	(AREATC) Boring ID Sample Depth (feet bgs) Sample Date	41 7/28/20
Notes: 1. Bold = the analyte was d 2. btoc = Below top of casii 3. J = Analyte present: valu be accurate or precise. 4. J- = Analyte present: valu or actual value maybe hi 5. ng/L = Nanogram(s) per 6. PFOA = Perfluorooctano 7. PFOS = Perfluorooctano 9. Project Action Levels: PFOS: 40 ng/L PFOA: 40 ng/L PFBS: 600 ng/L 10. U = The material was ar	ng ue may or may not lue may be biased low igher. 'liter oic acid 'sulfonate 'sulfonate nalyzed for, but not de		Sample Depth (feet by Sample Date PFOS (ng/L) PFOA (ng/L) PFBS (ng/L) Well ID Sample Depth (feet by Sample Date PFOS (ng/L)	WI-AF-BH19           gs)         49           7/28/20           0.82 J-           1.81 J-           0.46 J-           14-MW-2           gs)         8/14/20           0.89 U	(AREATC) Boring ID Sample Depth (feet bgs) Sample Date PFOS (ng/L)	41 7/28/20 5.21 J-
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Notes: 1. Bold = the analyte was d 2. btoc = Below top of casii 3. J = Analyte present: valu be accurate or precise. 4. J - = Analyte present: valu or actual value maybe hi 5. ng/L = Nanogram(s) per 6. PFOA = Perfluorooctano 7. PFOS = Perfluorooctane 8. PFBS = Perfluorobutane 9. Project Action Levels: PFOS: 40 ng/L PFOA: 40 ng/L PFBS: 600 ng/L 10. U = The material was ar	ng ue may or may not lue may be biased low igher. - liter oic acid - sulfonate - sulfonate nalyzed for, but not de		Sample Depth (feet by Sample Date PFOS (ng/L) PFOA (ng/L) PFBS (ng/L) Well ID Sample Depth (feet by Sample Date PFOS (ng/L)	WI-AF-BH19           gs)         49           7/28/20           0.82 J-           1.81 J-           0.46 J-           14-MW-2           gs)         8/14/20           0.89 U	(AREATC) Boring ID Sample Depth (feet bgs) Sample Date PFOS (ng/L)	41 7/28/20 5.21 J-
Notes: 1. Bold = the analyte was d 2. btoc = Below top of casii 3. J = Analyte present: value be accurate or precise. 4. J- = Analyte present: value or actual value maybe hi 5. ng/L = Nanogram(s) per 6. PFOA = Perfluorooctane 8. PFBS = Perfluorootane 8. PFBS = Perfluorobutane 9. Project Action Levels: PFOS: 40 ng/L PFOA: 40 ng/L PFOA: 40 ng/L PFBS: 600 ng/L 10. U = The material was ard DATA SOURCE: ESRI & IMAGERY SOURCE: ESRI &	ng ue may or may not lue may be biased low igher. r liter pic acid sulfonate sulfonate nalyzed for, but not de	etected	Sample Depth (feet by Sample Date PFOS (ng/L) PFOA (ng/L) PFBS (ng/L) Well ID Sample Depth (feet by Sample Date PFOS (ng/L) PFOA (ng/L) PFBS (ng/L)	GROUP 4           WI-AF-BH19           35)         49           7/28/20           0.82 J-           1.81 J-           0.46 J-           14-MW-2           35)           8/14/20           0.89 U           12.7           5.02	AREATC) Boring ID Sample Depth (feet bgs) Sample Date PFOS (ng/L) PFDA (ng/L) PFBS (ng/L)	41 7/28/20 5.21 J- 3.12 J- 1.4 J- Figure 1
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Notes: 1. Bold = the analyte was d 2. btoc = Below top of casin 3. J = Analyte present: value be accurate or precise. 4. J - = Analyte present: value or actual value maybe hi 5. ng/L = Nanogram(s) per 6. PFOA = Perfluorooctane 7. PFOS = Perfluorootane 8. PFBS = Perfluorobutane 9. Project Action Levels: PFOS: 40 ng/L PFOA: 40 ng/L PFOA: 40 ng/L PFBS: 600 ng/L 10. U = The material was ar DATA SOURCE: ESRI & I IMAGERY SOURCE: ESRI egend • Stage 1 / Stage 4 G Potential PFAS Sou	ng ue may or may not lue may be biased low igher. litter bic acid sulfonate sulfonate nalyzed for, but not de NIRIS RI 2018 Groundwater Sample urce Area	etected	Sample Depth (feet by Sample Date PFOS (ng/L) PFOA (ng/L) PFBS (ng/L) Well ID Sample Depth (feet by Sample Date PFOS (ng/L) PFOA (ng/L) PFBS (ng/L)	GROUP 4           WI-AF-BH19           35)         49           7/28/20           0.82 J-           1.81 J-           0.46 J-           14-MW-2           35)           8/14/20           0.89 U           12.7           5.02	(ABEATA) Boring ID Sample Depth (feet bgs) Sample Date PFOS (ng/L) PFOA (ng/L) PFBS (ng/L) 1 / Stage 4 Monitoring Well an Sampling R Phase 2 S Ault Field, Naval Air S	41 7/28/20 5.21 J- 3.12 J- 1.4 J- Figure 1 nd Grab Groundwate esults - Group 4 Site Site Inspection Repo

Boring ID	WI-AF-BH07	FIRESCHOOL CAN DIS (AREA 30	SPOSAL AREA
Sample Depth (feet bgs)	24		1 1 mar
Sample Date	7/14/20		196. 200
PFOS (ng/L)	0.88 U	S protection of the second sec	1 1 1 1 1 1 1 1 1 1
PFOA (ng/L)	1.32 UJ		
PFBS (ng/L)	0.44 UJ		
Boring ID	WI-AF-BH06		1. Jan 1. S. M. M.
Sample Depth (feet bgs)	31	FORMER CLOVER VALLEY FIRE SCHOOL (AREA 29)	Contraction of the second
Sample Date	7/16/20	BH05	the aver-
PFOS (ng/L)	0.77 J		· Aller and Para
PFOA (ng/L)	0.57 J		
PFBS (ng/L)	0.55 U		
Well ID	WI-AF-MW-629	Boring ID	WI-AF-BH08
Sample Depth (feet bqs)	65	Sample Depth (feet bgs)	35
Sample Date	8/18/20	Sample Date	7/15/20
PFOS (ng/L)	0.99 U	PFOS (ng/L)	0.88 U
PFOA (ng/L)	1.36 UJ	PFOA (ng/L)	1.32 UJ
PFBS (ng/L)	0.65 J	PFBS (ng/L)	0.53 U
		Company and the second street	A CONTRACT
STRAIT OF JUAN DE		GROUP 5	1.5 2 Martin 19 19
FUCA	1 Januar Har		E Barris March 1991
	12 34 6		
Well ID		GALLERY GOLF COURSE	
Sample Depth (feet bgs)	WI-AF-MW-628 60		about the st
Sample Date	8/18/20	Boring ID	WI-AF-BH02
PFOS (ng/L)	2.77 U	Sample Depth (feet bgs)	35
PFOA (ng/L)	1.36 UJ	Sample Date	7/20/20
PFBS (ng/L)	0.28 J	PFOS (ng/L)	0.96 UJ
11 B3 (11g) E)	0.20 9	PFOA (ng/L)	1.44 UJ
	Contraction of the	PFBS (ng/L)	0.48 UJ
	Contraction of the second s		
	- 1 P - 1		a china and
1/5	SIP 1	1973 EA-9 GRASH SITE	Ault Field Well #1
		Sample Depth (feet bgs)	NA
Boring ID	WI-AF-BH01	Sample Depth (feet bgs) Sample Date	NA 8/15/20
Boring ID Sample Depth (feet bgs)	WI-AF-BH01 40	Sample Depth (feet bgs) Sample Date PFOS (ng/L)	NA 8/15/20 0.91 U
		Sample Depth (feet bgs) Sample Depth (feet bgs) Sample Date PFOS (ng/L) PFOA (ng/L)	NA 8/15/20 0.91 U 1.36 U
Sample Depth (feet bgs)	40	Sample Depth (feet bgs) Sample Date PFOS (ng/L)	NA 8/15/20 0.91 U
Sample Depth (feet bgs) Sample Date	40 7/20/20	Sample Depth (feet bgs) Sample Depth (feet bgs) Sample Date PFOS (ng/L) PFOA (ng/L)	NA 8/15/20 0.91 U 1.36 U
Sample Depth (feet bgs) Sample Date PFOS (ng/L)	40 7/20/20 5.18 J-	Sample Depth (feet bgs) Sample Depth (feet bgs) Sample Date PFOS (ng/L) PFOA (ng/L)	NA 8/15/20 0.91 U 1.36 U
Sample Depth (feet bgs) Sample Date PFOS (ng/L) PFOA (ng/L) PFBS (ng/L) Notes:	40 7/20/20 5.18 J- 1.29 J- 0.81 UJ	Sample Depth (feet bgs) Sample Depth (feet bgs) Sample Date PFOS (ng/L) PFOA (ng/L) PFOA (ng/L) PFBS (ng/L)	NA 8/15/20 0.91 U 1.36 U
Sample Depth (feet bgs) Sample Date PFOS (ng/L) PFOA (ng/L) PFBS (ng/L) Notes: 1. Bold = the analyte was dete	40 7/20/20 5.18 J- 1.29 J- 0.81 UJ	Sample Depth (feet bgs) Sample Depth (feet bgs) Sample Date PFOS (ng/L) PFOA (ng/L) PFBS (ng/L)	NA 8/15/20 0.91 U 1.36 U
Sample Depth (feet bgs) Sample Date PFOS (ng/L) PFOA (ng/L) PFBS (ng/L) Notes: 1. Bold = the analyte was dete 2. btoc = Below top of casing 3. J = Analyte present: value m	40 7/20/20 5.18 J- 1.29 J- 0.81 UJ cted	r precise.	NA 8/15/20 0.91 U 1.36 U
Sample Depth (feet bgs) Sample Date PFOS (ng/L) PFOA (ng/L) PFBS (ng/L) Notes: 1. Bold = the analyte was dete 2. btoc = Below top of casing 3. J = Analyte present: value m 4. J- = Analyte present: value m	40 7/20/20 5.18 J- 1.29 J- 0.81 UJ cted	r precise.	NA 8/15/20 0.91 U 1.36 U
Sample Depth (feet bgs) Sample Date PFOS (ng/L) PFOA (ng/L) PFBS (ng/L) Notes: 1. Bold = the analyte was dete 2. btoc = Below top of casing 3. J = Analyte present: value m	40 7/20/20 5.18 J- 1.29 J- 0.81 UJ cted nay or may not be accurate o may be biased low or the act	r precise.	NA 8/15/20 0.91 U 1.36 U
Sample Depth (feet bgs) Sample Date PFOS (ng/L) PFOA (ng/L) PFBS (ng/L) PFBS (ng/L) Notes: 1. Bold = the analyte was dete 2. btoc = Below top of casing 3. J = Analyte present: value m 4. J = Analyte present: value m may be higher. 5. ng/L = Nanogram(s) per litte 6. PFOA = Perfluorooctanoic ar	40 7/20/20 5.18 J- 1.29 J- 0.81 UJ cted nay or may not be accurate o may be biased low or the act	r precise.	NA 8/15/20 0.91 U 1.36 U
Sample Depth (feet bgs) Sample Date PFOS (ng/L) PFOA (ng/L) PFBS (ng/L) Notes: 1. Bold = the analyte was dete 2. btoc = Below top of casing 3. J = Analyte present: value n may be higher. 5. ng/L = Nanogram(s) per lite	40 7/20/20 5.18 J- 1.29 J- 0.81 UJ cted nay or may not be accurate o may be biased low or the act rr cid fonate	r precise.	NA 8/15/20 0.91 U 1.36 U
Sample Depth (feet bgs) Sample Date PFOS (ng/L) PFOA (ng/L) PFOA (ng/L) PFBS (ng/L) Notes: 1. Bold = the analyte was dete 2. btoc = Below top of casing 3. J = Analyte present: value m 4. J- = Analyte present: value m may be higher. 5. ng/L = Nanogram(s) per litte 6. PFOA = Perfluorooctanoica 7. PFOS = Perfluorooctanoica sult 8. PFBS = Perfluorooctane sult 9. Project Action Levels:	40 7/20/20 5.18 J- 1.29 J- 0.81 UJ cted nay or may not be accurate o may be biased low or the act rr cid fonate	r precise.	NA 8/15/20 0.91 U 1.36 U
Sample Depth (feet bgs) Sample Date PFOS (ng/L) PFOA (ng/L) PFOA (ng/L) PFBS (ng/L) Notes: 1. Bold = the analyte was dete 2. btoc = Below top of casing 3. J = Analyte present: value m 4. J- = Analyte present: value m may be higher. 5. ng/L = Nanogram(s) per lite 6. PFOA = Perfluorooctane sull 8. PFBS = Perfluorooctane sull 9. Project Action Levels: PFOS: 40 ng/L	40 7/20/20 5.18 J- 1.29 J- 0.81 UJ cted nay or may not be accurate o may be biased low or the act rr cid fonate	r precise.	NA 8/15/20 0.91 U 1.36 U
Sample Depth (feet bgs) Sample Date PFOS (ng/L) PFOA (ng/L) PFBS (ng/L) PFBS (ng/L) Notes: 1. Bold = the analyte was dete 2. btoc = Below top of casing 3. J = Analyte present: value m 4. J = Analyte present: value m may be higher. 5. ng/L = Nanogram(s) per litte 6. PFOA = Perfluorooctanoic au 7. PFOS = Perfluorooctane sulf 8. PFBS = Perfluorooctane sulf 9. Project Action Levels: PFOS: 40 ng/L PFOA: 40 ng/L PFBS: 600 ng/L	40 7/20/20 5.18 J- 1.29 J- 0.81 UJ cted hay or may not be accurate o may be biased low or the act or the act fonate fonate	r precise.	NA 8/15/20 0.91 U 1.36 U
Sample Depth (feet bgs) Sample Date PFOS (ng/L) PFOA (ng/L) PFBS (ng/L) PFBS (ng/L) Notes: 1. Bold = the analyte was dete 2. btoc = Below top of casing 3. J = Analyte present: value m 4. J = Analyte present: value m 4. J = Analyte present: value m 4. J = Analyte present: value m 7. J = Analyte present: value m 8. PFOS = Perfluorooctanoic a 7. PFOS = Perfluorooctanoic a 7. PFOS = Perfluorooctane sulf 8. PFBS = Perfluorooctane sulf 8. PFDS = Perfluorootane sulf 9. Project Action Levels: PFOS: 40 ng/L PFDS: 600 ng/L 10. U = The material was analy	40 7/20/20 5.18 J- 1.29 J- 0.81 UJ cted nay or may not be accurate o may be biased low or the act or the act fonate fonate fonate	r precise. tual value	NA 8/15/20 0.91 U 1.36 U
Sample Depth (feet bgs) Sample Date PFOS (ng/L) PFOA (ng/L) PFBS (ng/L) PFBS (ng/L) Notes: 1. Bold = the analyte was dete 2. btoc = Below top of casing 3. J = Analyte present: value m 4. J = Analyte present: value m may be higher. 5. ng/L = Nanogram(s) per litte 6. PFOA = Perfluorooctanoic au 7. PFOS = Perfluorooctane sulf 8. PFBS = Perfluorooctane sulf 9. Project Action Levels: PFOS: 40 ng/L PFOA: 40 ng/L PFBS: 600 ng/L	40 7/20/20 5.18 J- 1.29 J- 0.81 UJ cted nay or may not be accurate o may be biased low or the act or the acturate of the acturate of the acturate of the accurate of the acturate of the actur	nit	NA 8/15/20 0.91 U 1.36 U
Sample Depth (feet bgs)         Sample Date         PFOS (ng/L)         PFOA (ng/L)         PFBS (ng/L)         PFBS (ng/L)         Notes:         1. Bold = the analyte was dete         2. btoc = Below top of casing         3. J = Analyte present: value m         4. J = Analyte present: value r         5. ng/L = Nanogram(s) per lite         6. PFOA = Perfluorooctanoic a         7. PFOS = Perfluorooctane sull         8. PFBS = Perfluorobutane sull         9. Project Action Levels:         PFOS: 40 ng/L         PFBS: 600 ng/L         10. U = The material was analy         11. UJ = The analyte was not do	40 7/20/20 5.18 J- 1.29 J- 0.81 UJ cted hay or may not be accurate o may be biased low or the act or cid fonate fonate fonate zed for, but not detected etected; the quantitative lin	nit	NA 8/15/20 0.91 U 1.36 U
Sample Depth (feet bgs)         Sample Date         PFOS (ng/L)         PFOA (ng/L)         PFBS (ng/L)         PFBS (ng/L)         PFBS (ng/L)         Notes:         1. Bold = the analyte was dete         2. btoc = Below top of casing         3. J = Analyte present: value m         may be higher.         5. ng/L = Nanogram(s) per litte         6. PFOA = Perfluoroctane sulf         8. PFBS = Perfluoroctane sulf         9. Project Action Levels:         PFOS: 40 ng/L         PFOS: 40 ng/L         PFBS: 600 ng/L         10. U = The material was analy         11. UJ = The analyte was not do         may be inaccurate.         12. BH05 was dry and could no	40 7/20/20 5.18 J- 1.29 J- 0.81 UJ cted hay or may not be accurate o may be biased low or the act or cid fonate fonate fonate zed for, but not detected etected; the quantitative lin	nit	NA 8/15/20 0.91 U 1.36 U 0.45 U
Sample Depth (feet bgs) Sample Date PFOS (ng/L) PFOA (ng/L) PFBS (ng/L) PFBS (ng/L) Notes: 1. Bold = the analyte was dete 2. btoc = Below top of casing 3. J = Analyte present: value m 4. J = Analyte present: value m 5. ng/L = Nanogram(s) per lite 6. PFOA = Perfluorooctanoic a 7. PFOS = Perfluorooctanoic a 7. PFOS = Perfluorooctane sulf 8. PFBS = Perfluorootane sulf 9. Project Action Levels: PFOS: 40 ng/L PFDS: 40 ng/L PFDS: 40 ng/L 10. U = The material was analy 11. UJ = The analyte was not du may be inaccurate. 12. BHO5 was dry and could no <b>Legend</b> Stage 1 / Stage 4 Gri	40 7/20/20 5.18 J- 1.29 J- 0.81 UJ cted nay or may not be accurate o may be biased low or the act rr cid fonate fonate fonate zed for, but not detected etected; the quantitative lin t be sampled.	wend Same Depth (feet bgs) Same Date PFOS (ng/L) PFOA (ng/L) PFOA (ng/L) PFBS (ng/L) PFBS (ng/L) PFBS (ng/L) PFBS (ng/L) PFOA	NA         8/15/20         0.91 U         1.36 U         0.45 U    Figure 12 and Grab Groundwated
Sample Depth (feet bgs) Sample Date PFOS (ng/L) PFOA (ng/L) PFDA (ng/L) PFBS (ng/L) Notes: 1. Bold = the analyte was dete 2. btoc = Below top of casing 3. J = Analyte present: value m 4. J = Analyte present: value m may be higher. 5. ng/L = Nanogram(s) per lite 6. PFOA = Perfluorooctane sulf 8. PFBS = Perfluorooctane sulf 8. PFDS = Perfluorooctane sulf 9. Project Action Levels: PFOS: 40 ng/L PFDS: 40 ng/L PFDS: 600 ng/L 10. U = The material was analy 11. UJ = The analyte was not d may be inaccurate. 12. BH05 was dry and could no	40 7/20/20 5.18 J- 1.29 J- 0.81 UJ cted nay or may not be accurate o may be biased low or the act rr cid fonate fonate fonate zed for, but not detected etected; the quantitative lin t be sampled.	thout Exceedances	NA 8/15/20 0.91 U 1.36 U 0.45 U
Sample Depth (feet bgs) Sample Date PFOS (ng/L) PFOA (ng/L) PFOS (ng/L) PFBS (ng/L) Notes: 1. Bold = the analyte was dete 2. btoc = Below top of casing 3. J = Analyte present: value m 4. J = Analyte present: value m may be higher. 5. ng/L = Nanogram(s) per lite 6. PFOA = Perfluorooctane sulf 8. PFBS = Perfluorooctane sulf 8. PFBS = Perfluoroottane sulf 9. Project Action Levels: PFOS: 40 ng/L PFOS: 40 ng/L PFDS: 40 ng/L PFDS: 600 ng/L 10. U = The material was analy 11. UI = The material was analy 11. UI = The analyte was not di- may be inaccurate. 12. BH05 was dry and could no ELEGEND • Stage 1 / Stage 4 Grin • Stage 4 Boring Local • Surface Water • Potential PFAS Sour	40 7/20/20 5.18 J- 1.29 J- 0.81 UJ cted hay or may not be accurate o may be biased low or the act of act of the accurate o may be biased low or the act for act of the accurate o may be biased low or the act act of the accurate o may be biased low or the act act of the accurate o may be biased low or the act for act of the accurate o may be biased low or the act act of the accurate o may be biased low or the act act of the accurate o may be biased low or the act act of the accurate o may be biased low or the act act of the accurate o may be biased low or the act act of the accurate o may be biased low or the act act of the accurate o the accura	wein D Sample Depth (feet bgs) Sample Date PFOS (ng/L) PFOA (ng/L) PFOA (ng/L) PFBS (ng/L) PFOS (ng/L) PFOA (ng/L) PFBS (ng/L) PFOS (ng/L) PFOA (ng/L) PFOS (ng/L)	NA 8/15/20 0.91 U 1.36 U 0.45 U
Sample Depth (feet bgs) Sample Date PFOS (ng/L) PFOA (ng/L) PFOA (ng/L) PFBS (ng/L) Notes: 1. Bold = the analyte was dete 2. btoc = Below top of casing 3. J = Analyte present: value m 4. J = Analyte present: value m 5. ng/L = Nanogram(s) per lite 6. PFOA = Perfluorooctanoic a 7. PFOS = Perfluorooctanoic a 7. PFOS = Perfluorooctane sulf 8. PFBS = Perfluorootane sulf 9. Project Action Levels: PFOS: 40 ng/L PFOS: 40 ng/L PFDS: 600 ng/L 10. U = The analyte was not do may be inaccurate. 12. BH05 was dry and could no <b>Legend</b> Stage 1 / Stage 4 Grin Stage 4 Boring Locat The Stage 4 Boring Locat Dotential PFAS Sour Area 29 Burn Pad	40 7/20/20 5.18 J- 1.29 J- 0.81 UJ cted hay or may not be accurate o may be biased low or the act or cid fonate fonate fonate fonate detected; the quantitative lin t be sampled.	er precise. Init	NA 8/15/20 0.91 U 1.36 U 0.45 U
Sample Depth (feet bgs) Sample Date PFOS (ng/L) PFOA (ng/L) PFOA (ng/L) PFBS (ng/L) Notes: 1. Bold = the analyte was dete 2. btoc = Below top of casing 3. J = Analyte present: value m 4. J = Analyte present: value m 5. ng/L = Nanogram(s) per lite 6. PFOA = Perfluorooctanoic a 7. PFOS = Perfluorooctanoic a 7. PFOS = Perfluorooctane sulf 8. PFBS = Perfluorootane sulf 9. Project Action Levels: PFOS: 40 ng/L PFOS: 40 ng/L PFDS: 600 ng/L 10. U = The analyte was not do may be inaccurate. 12. BH05 was dry and could no <b>Legend</b> Stage 1 / Stage 4 Grin Stage 4 Boring Locat The Stage 4 Boring Locat Dotential PFAS Sour Area 29 Burn Pad	40 7/20/20 5.18 J- 1.29 J- 0.81 UJ cted hay or may not be accurate o may be biased low or the act or cid fonate fonate fonate fonate seed for, but not detected etected; the quantitative lin t be sampled. oundwater Sample With tion ce Area Range/Machine Gun Ra	hut Exceedances	NA 8/15/20 0.91 U 1.36 U 0.45 U

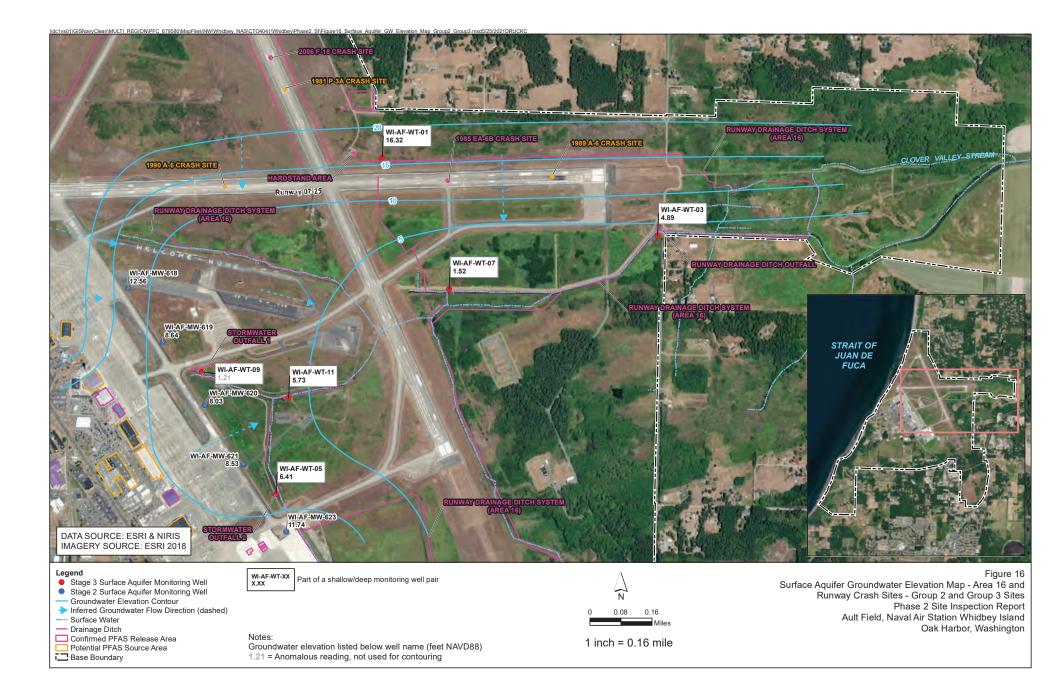
1		R		State of the second second			The second se	NORMAL PROPERTY AND A DESCRIPTION OF A D
Well ID	WI-AF-WT01		1981 P-3A	WI-AF-WT02	Well ID	WI-AF-WT03	Well ID	WI-AF-WT04
Sample Depth (feet bgs)	NA	2006 F-18 CRASHISITE	CRASH SITE Sample Depth (feet bgs	1	Sample Depth (feet bgs)	9.5	Sample Depth (feet l	
Sample Date	12/7/19	CRASHISTIE	Sample Date	12/7/19	Sample Date	12/11/19	Sample Date	12/11/19
PFOS (ng/L)	164		PFOS (ng/L)	564	PFOS (ng/L)	1.74 J	PFOS (ng/L)	0.98 UJ
PFOA (ng/L)	238		PFOA (ng/L)	45.5	PFOA (ng/L)	21.2	PFOA (ng/L)	0.7 J-
PFBS (ng/L)	5.66	THE REAL PROPERTY	PFBS (ng/L)	8.94	PFBS (ng/L)	2.06 J+	PFBS (ng/L)	0.49 UJ
		1990A-6 CRASHISITE HARDSTAND			RUNWAY	(DRAINAGE DITCH S (AREA 16)	CLOVER VALLEY	STREAM
Well ID	WI-AF-WT07	AREA					and the second second	9/
Sample Depth (feet bgs)	14 12/12/19	Runway 07-25	(1985)EA:6B CRASH SITE	1989A-6			S. M. BERNER	Clover Valley
Sample Date		1	The set is a set	CRASHISITE		- m / -	100 Start	
PFOS (ng/L)	0.96 U	RUNWAYDRAINAGE DITCH SYSTEM (AREA16)		Contractor of the lot	<u> </u>	<u> </u>	36 44	The second second
PFOA (ng/L)	0.93 J	HELCOM .	RUNWAY DRAINAGE DI	TCHISYSTEM	RUNW	AYDRAINAGEDITCH	OUTFALL	
PFBS (ng/L)	0.48 UJ		(AREA,16)					States of the second
Well ID	WI-AF-WT08			See 1			ditting.	
Sample Depth (feet bgs)	Artesian	a hard and a		11-1-1		Sec. 1	· L. Elle	- 1 A.
Sample Date	12/12/19			· 188	A Date Barres	CADRON CONTRACT	A DECEMBER	A DESCRIPTION OF THE REAL OF T
PFOS (ng/L)	0.93 U			CONSTRACT ON AND				The state of the second
PFOA (ng/L)	1.49 J		and the second second	and the first of t			12	
PFBS (ng/L)	0.46 U			GR	OUP 2	100	STRAIT OF	
Well ID	WI-AF-WT05			Children and Child			JUAN DE	
Sample Depth (feet bgs)	8	Tad		Notes:			FUCA	A MARTINE 2
Sample Date	12/8/19	FUNWAYOR		1. Bold = the analy				Concernance of the log
PFOS (ng/L)	65.3		AINAGE DITCH SYSTEM (AREA16)	2. Bold and Shade 3. btoc = Below To				
PFOA (ng/L)	13.6				ent: value may or may not be accurate sent; value may be biased low or value			No.
PFBS (ng/L)	6.68	STOR	WWATER	higher.	sent; value may be blased low of value	may be		CON CONTRACTOR
Well ID	WI-AF-WT06	OUT	WWATER FALL2	6. J+ = Analyte pre may be lower	sent: value may be biased high or the a	ictual value		
Sample Depth (feet bgs)	Artesian			7. ng/L = Nanogra		No.	per la	
Sample Date	12/8/19		X	8. PFOA = Perfluor 9. PFOS = Perfluor	ooctanoic acid ooctane sulfonate			
PFOS (ng/L)	0.8 J			10. PFBS = Perfluo	robutane sulfonate		Le Alon A	
PFOA (ng/L)	1.34 U	8 P		11. Project Action PFOS: 40 ng/L	Leveis:			
PFBS (ng/L)	0.45 U			PFOA: 40 ng/L		1/ 3	~i	Startin 1
DATA SOURCE: ESR IMAGERY SOURCE:					al was analyzed for, but not detected. te was not detected; the quantitation li	mit may be	ner	
1.8.46 Print and the					A REAL PROPERTY AND	S BU MPN		
Legend Stage 3 Piezomete Stage 3 Piezomete Surface Water Drainage Ditch Confirmed PFAS R Potential PFAS Source Area	r Groundwater Sam elease Area urce Area	ple Without Exceedances ple With Exceedances		$     \sum_{N=1}^{N} \frac{1,000}{1,000} $ 1 inch = 1,000	Feet	-	nitoring Well Sampling R Phase 2 tation Whidbey Island Oa	Site Inspection Report

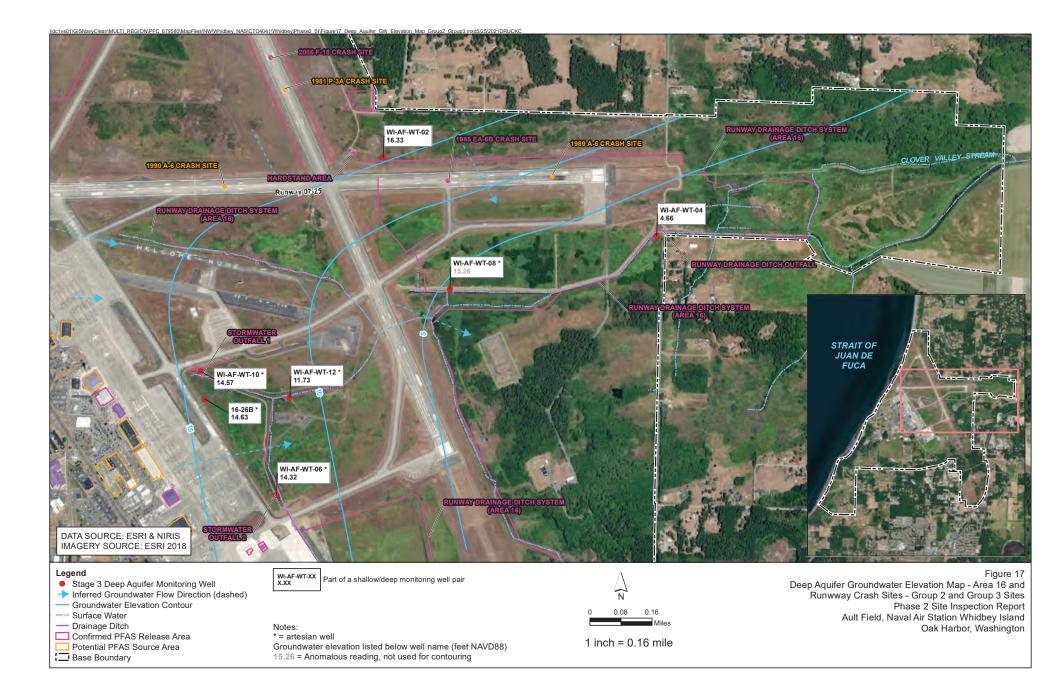
					LINE AND A		- and the state of
Well ID	MW4-B3	Well ID	WI-AF-MW-618			1-4300	
Sample Depth (feet bgs) Sample Date	15 12/11/19	Sample Depth (feet bgs) Sample Date	12 12/12/19				
PFOS (ng/L)	3.37 J	PFOS (ng/L)	1.25 J		STRAIT OF		
PFOA (ng/L)	32.8	PFOA (ng/L)	48.6		JUAN DE		
PFBS (ng/L)	14.2	PFBS (ng/L)	2.06 J		FUCA		IN THE R.
	6 8		State 1 and the			1	
		AN REAL PROPERTY AND					
			Well ID	WI-AF-MW-619	J		A. THERE
			Sample Depth (feet bgs)	NA		E AL	a period
			Sample Date	12/10/19		Contract of the	13 M - 2
			PFOS (ng/L)	2.11 J		The state	
Well ID MW1			PFOA (ng/L)	20.0	( and a second s	IS BOOM	
Sample Depth (feet bgs) 1. Sample Date 12/10	and the second se		PFBS (ng/L)	1.41 J			
7	0/19	a start		1			
PFOS (ng/L) 11.4 PFOA (ng/L) 10.3	Sec. 1			CONTRACTOR OF		A ST AND	
PFBS (ng/L) 6.64				A Marine			
PFB3 (lig/L) 0.04		WE			1 2 2		da tre
			LCOME			A CALL AND A DECO	
	ANGAR5			Statement of the local division of the local		N	
			Well ID	WI-AF-W	/T09	Well ID	WI-AF-WT10
		I SECTION	Sample Dept	0 0/		Sample Depth (feet bgs)	Artesian
		HANGARA	Sample Date	12/13/		Sample Date	12/12/19
		(BUILDING 112)	PFOS (ng/L)	456 J-		PFOS (ng/L)	0.89 U
The failing of the		- and the	PFOA (ng/L)	407 J-		PFOA (ng/L)	1.34 U
		HANGAR 12	PFBS (ng/L)	13.9 J-		PFBS (ng/L)	0.45 U
		(BUILDING 2737) HANGAR	14			Well ID	WI-AF-WT11
Delta del anti-	a la la la	(NEWLYCONST	RUCTED)		1 - 2 - 5	Sample Depth (feet bgs)	8
Well ID MW15	-B23	HANGAR	10 (	STORMWATER OUTFALL1		Sample Date	12/12/19
Sample Depth (feet bgs) 1	- 1 - 3		733)	OUTFALLS	and the second second	PFOS (ng/L)	19.0 J-
Sample Date 12/1.	THE PARTY OF		NGAR 10			PFOA (ng/L)	42.8 J-
PFOS (ng/L) 24.1	2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		4DING(2699)			PFBS (ng/L)	5.04 J-
PFOA (ng/L) 33.5	UCA					Well ID	WI-AF-WT12
PFBS (ng/L) 39.3	(BI	ILLDING(2897)				Sample Depth (feet bgs)	Artesian
Well ID 16-2	ALC: NOT THE OWNER OF THE OWNER OWNER OF THE OWNER OWNER OF THE OWNER OWN					Sample Date	12/11/19
			(BUILDING 2642)			PFOS (ng/L)	5.39
Sample Depth (feet bgs) Artes Sample Date 12/8						PFOA (ng/L)	4.96
PFOS (ng/L) 0.94	A STATE		INDOORWAS	HRACK		PFBS (ng/L)	3.29 J+
PFOA (ng/L) 0.94			(BUILDING	J2903)		Well ID	WI-AF-MW-620
PFBS (ng/L) 0.26	TANK	FORMERAVIO	HANGA	RG		Sample Depth (feet bgs)	7
Contraction of the local division of the loc	State of the local division of the local div	FACILITY		9000)		Sample Date	12/7/19
Notes:		(EULDING 24	430)	le la		PFOS (ng/L)	677
1. Bold = the analyte was detected		and the state of the				PFOA (ng/L)	60.7 J-
2. Bold and Shaded = Exceedan	ice	The second secon		R 1		PFBS (ng/L)	256
3. btoc = Below top of casing		C. C.B.	See 1 and 1			Well ID	WI-AF-MW-621
4. J = Analyte present: value m	ay or	All and		RACK		Sample Depth (feet bgs)	7
may not be accurate or precis	se.	GROUP 3				Sample Date	12/7/19
5. J+ = Analyte present: value n	nay be			6-2- ×		PFOS (ng/L)	842
biased high or the actual value	ue may be lower		HANGAR 7 (BUILDING 2544	A A A		PFOA (ng/L)	56.5
6. J- = Analyte present; value n	nay be		CONTRACTOR			PFBS (ng/L)	17.6
biased low or value may be h	-					Well ID	WI-AF-MW-624
7. ng/L = Nanogram(s) per liter	r	CONTRACTOR OF	1	HAN	IGAR 9	Sample Depth (feet bgs)	11
8. PFOA = Perfluorooctanoic ac	id		11 28 2	(BUILD	ING 2681)	Sample Date	12/8/19
9. PFOS = Perfluorooctane sulf	onate	Commenter +20				PFOS (ng/L)	128
10. PFBS = Perfluorobutane sul	fonate	the state			3 S 84 S	PFOA (ng/L)	92.7
11. Project Action Levels:		- State	1 Marsha			PFBS (ng/L)	37.1
PFOS = 40 ng/L		a jar shire of a	Sale Say			Well ID	WI-AF-MW-623
PFOA = 40 ng/L		Wit of all and	1 2 2 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4			Sample Depth (feet bgs)	6
PFBS = 600 ng/L		die de gent	1			Sample Date	12/12/19
12. U = The material was analyz	zed for, but not	the same	and the second			PFOS (ng/L)	16.1
detected.		the state of the	Same a start	CALIFORNIA IN THE TOP	1	PFOA (ng/L)	30.3
13. UJ = Analyte not detected;	quantitation limit	and the second	and the street has the	ADDON STATE	1 1 1	PFBS (ng/L)	9.29 J+
may be inaccurate.		Mar I and	Carlo and	A Alter Lander	J 14 /		1 - 1 - 1
14. The proposed location for V	NI-AF-MW-617 wa	Well ID	H6-	B3 Well I	D	WI-AF-MW-622	
inaccessible during the inve		and it is a second second		10 M	le Depth (feet bgs)	10	
was not drilled.	0	Sample Date	12/8	2/19 Samp	le Date	12/7/19	ALLES STR
CONTRACTOR DATE	A DECK	PFOS (ng/L)	46.5	J- PFOS	(ng/L)	6.64 U	The second
DATA SOURCE: ESRI & NI		PFOA (ng/L)	1.5	UJ PFOA	(ng/L)	3.38 J-	I I I I I I I I I I I I I I I I I I I
IMAGERY SOURCE: ESRI	2018	PFBS (ng/L)	0.5	UJ PFBS	(ng/L)	0.72 J-	
	CONTRACTOR ON	A CARGO CAR		THE PARTY IS A CONTRACT OF		E CHARMEN	
Legend			$\Delta$	o			Figure 14
<ul> <li>Stage 2 Groundwater S</li> <li>Stage 2 / Stage 3 Groundwater</li> </ul>			$\Delta$	Stage 2 / Stag	e o Groundwater	Sampling Results	s - Group 3 Sites
Surface Water			N		Ault Field	I, Naval Air Station	
- Drainage Ditch			0 400	800 Feet			bor, Washington
Confirmed PFAS Relea	se Area						,
Potential PFAS Source			1 inch = 80	00 feet			
PFAS Source Area Gro	up						
Base Boundary							
1							



Groundwater elevation listed below well name (feet NAVD88) 19.33 = Anomalous reading, not used for contouring

Base Boundary







62.5

1 inch = 125 feet

125

Feet

Notes: Groundwater elevation listed below well name (feet NAVD88)

Inferred Groundwater Flow Direction (dashed)

Potential PFAS Source Area

\_\_\_\_ Base Boundary

Phase 2 Site Inspection Report Ault Field, Naval Air Station Whidbey Island Oak Harbor, Washington



## Appendix A Utility Verification Forms

## Ch2m. Underground Utility Verification

for relative and an entertain to set on the set of the set		and the second se	and the second sec		and a standard and at her other standards who	1
Project No.:	69561ØCH	Project Name:	NASWI	Ault Field	PFAS Inv.	Phase 3
Site Address:	Whichber Island Nava	( Air Stat		Harbox, WA		
Date:	7-13 to 7-14-2020		Jennifer			
Utility Locator:	APS		L. Bournay	N. Parish, E	E. Hillburn	
Ground Disturbance	e Scope and Equipment			. ,		
Ideill sig backhag	at athart.					

(drill rig, backhoe, or other):

	Description	Yes	No*	NA/Notes
1	Obtained and reviewed available utility diagrams or as-built drawings for facility.	$\bigvee$		
z	A facility contact with knowledge of utility locations was met onsite. Facility contact reviewed and approved proposed locations of intrusive work.		t	NI
	Facility Contact: Phone Number:		V	IV/A
3	Proposed ground disturbance areas are "white lined" by project team. White-lined areas should be a 20-foot minimum radius around the proposed ground disturbance location, unless buildings or hazards prohibit marking a 20-foot radius. White paint or pin flags should be used.	Ŧ	$\checkmark$	
4	Contacted the designated local utility notification service (such as 811) and notification ticket is current (according to state/provincial law, typically 10 to 15 days).	$\checkmark$		
5	Public utility companies have been contacted and utilities located and marked.         Present       Not present       Response method (mark, phone, email) & notes         High-Voltage Electric	$\checkmark$		
6	Client- or facility-specific permit or procedure complete (such as dig permit).			NA
7	A qualified, independent field survey provider performed a field survey to identify, locate, and mark potential subsurface utilities in the work area.	$\checkmark$		
8	Independent field survey provider used appropriate instrumentation and geophysical technologies (for example, radio frequency (RF), electromagnetic [EM], ground-penetrating radar [GPR]). Describe methods: <u>GPR</u> , <u>RF</u> , <u>FM</u> RF, EM, and GPR are typically necessary. If one of these is not used, mark "No" and explain rationale in Utility SOP Deviation Request at the bottom of Page 2.	$\checkmark$		
9	Oversight staff were present during independent utility survey.	$\checkmark$		
10	A "360-degree" assessment has been performed, including walking the area and inspecting for utility-related items such as valve caps, previous linear cuts, patchwork in pavement, hydrants, manholes, utility vaults, light standards, drains, and vent risers.	$\checkmark$		
11	Utilities have been properly identified and marked. Utilities are marked within a minimum 20-foot radius around the proposed drilling or excavation location, anticipating step out locations.	$\checkmark$		
12	Utility marks are the appropriate color (red – electrical, yellow – gas; green – sewer; blue – water; orange – communication; purple – irrigation). Pink should be used for unknown/temporary.		1	only column they ho white

## **Ch2m**. Underground Utility Verification

	Description	Yes	No*	NA/Notes
13	Utility marks can be protected and preserved until no longer required (use whiskers or pin flags if necessary). If the utility location markings are destroyed or removed before intrusive work commences or is completed, the Project Manager (PM), Safety Coordinator, or designee must notify the independent field survey provider or the designated utility locating service to resurvey and remark the area.	$\checkmark$		
14	Utility clearances are provided in writing and signed by the party conducting the clearance on the Buried Utility Tracking Form. See Page 3.	$\checkmark$		
15	Private or public utilities within 5 feet of proposed locations are documented on the Buried Utility Tracking Form. See Page 3.	/		
16	Documentation of the utility survey (report, updated utility site map, photo log) is complete.	/		
17	When aggressive intrusive activities will be conducted within 5 feet, either laterally or vertically, of an underground utility, or when there is uncertainty about utility locations, drilling locations must be physically verified by non-aggressive means such as air or water knifing or hand digging.			N/A
	Describe planned clearance method and depth:			
18	For drilling, non-aggressive clearance will be greater than the outside diameter of drill tooling.	$\checkmark$		
19	When underground utility is within 5 feet of intrusive work, then non-aggressive means must be used to physically locate (daylight) the utility before a drill rig, backhoe, excavator, or other aggressive method is used. This step of daylighting is in addition to clearance of the borehole.			NA
20	When an underground utility is within 5 feet of intrusive work, check to see if the utility can be isolated (locked out/tagged out and de-energized [purged as necessary] or blocked) during the subsurface activity. Hazardous utilities (gas, electrical) will be de-energized whenever possible. Verify with facility contact that isolation is completed according to the Lock Out Tag Out Standard Operating Procedure (SOP).			N/A
21	Only non-aggressive means may be used within 2 feet of an identified utility.			NA
22	<ul> <li>The following documentation will be available onsite during ground disturbance:</li> <li>Available utility diagrams or as-built drawings</li> <li>811 notification</li> <li>Facility-specific permit or procedure (dig permit)</li> <li>Utility survey information (e.g. report, updated utility site map, photo log)</li> </ul>	$\checkmark$		/
Pre	pared by: Lindsey Baumann Verified by:			

PM

#### Instructions:

1) Complete and submit Underground Utility Verification Checklist to Health and Safety Manager (HSM) and PM.

Field Personnel

2) Ensure that documentation is communicated to other field staff and available at the site during ground disturbance activities. 3) For items marked No" above, complete the following utility SOP deviation request. Approvals may be provided via email or phone.

#### **Utility SOP Deviation Request**

Items Marked "No" above: <u>#12</u> , No Rationale for Deviation: <u>ARS Team didy</u>	
PM Approval:	Approved Date:
HSM Approval:	Approved Date:

Page 2 of 4

## **Ch2m**. Underground Utility Verification

## **Buried Utility Tracking Form**

Check each box using an "X" if a buried utility is present within 5 feet of a marked location identification (ID).

Location ID	Gas (Yellow)	Electric (Red)	Fiber optic (Orange)	Cable (Orange)	Water (Blue)	Sanitary Sewer (Green)	Storm Sewer (Green)	Steam (Yellow)	Petroleum (Yellow)	Compressed Air (Yellow)	Other	Other	
BH10 R140		1		V	V								
BHIO W	as +	nover	1 to	a	loc	ation	$r \omega$	the	it ut	Filiti	es c	vithi	4
	2	OF	ВН										

The findings of the buried utility location activities summarized herein were conducted in accordance with the scope of work.

Nath m

Utility Locate Subcontractor's Signature

Date

## **Ch2M:** Underground Utility Verification

Project No.:	695610.04,FI,UL	Project Name:	Ault	Field	PFAS	Investigation
Site Address:	Ault Field, Oak	Harbor, W	Α			V
Date:	12/10/17	PM:	Janice	Hort	On	
Utility Locator:	APS	Field Personnel:	David	Butle	7	
Ground Disturbance (drill rig, backhoe, c	e Scope and Equipment Sonic	drill	rig			

	Description	Yes	No*	NA/Notes
1	Obtained and reviewed available utility diagrams or as-built drawings for facility.	$\checkmark$		
2	A facility contact with knowledge of utility locations was met onsite. Facility contact reviewed and approved proposed locations of intrusive work. Facility Contact: Charlie Escola Phone Number: 503-201-5020	$\checkmark$		
3	Proposed ground disturbance areas are "white lined" by project team. White-lined areas should be a 20-foot minimum radius around the proposed ground disturbance location, unless buildings or hazards prohibit marking a 20-foot radius. White paint or pin flags should be used.		$\checkmark$	
4	Contacted the designated local utility notification service (such as 811) and notification ticket is current (according to state/provincial law, typically 10 to 15 days).	$\checkmark$		
5	Public utility companies have been contacted and utilities located and marked.         Present       Not present       Response method (mark, phone, email) & notes         High-Voltage Electric       V       P5E       / 8 L         Low-voltage Electric       V       P5E       / 8 L         Gas       V       P5E       / 8 L         Process/Fuel       V       V         Water       V       City of Oak Harbot / Email         Storm       V       V         Telecommunication       V       V	$\checkmark$		
6	Client- or facility-specific permit or procedure complete (such as dig permit).			No permit. contacted Navy personnel.
7	A qualified, independent field survey provider performed a field survey to identify, locate, and mark potential subsurface utilities in the work area.	$\checkmark$		<ul> <li>S</li> </ul>
8	Independent field survey provider used appropriate instrumentation and geophysical technologies (for example, radio frequency [RF], electromagnetic [EM], ground-penetrating radar [GPR]}. Describe methods: RF, EM, and GPR are typically necessary. If one of these is not used, mark "No" and explain rationale in Utility SOP Deviation Request at the bottom of Page 2.	$\checkmark$		
9	Oversight staff were present during independent utility survey.	V		
10	A "360-degree" assessment has been performed, including walking the area and inspecting for utility-related items such as valve caps, previous linear cuts, patchwork in pavement, hydrants, manholes, utility vaults, light standards, drains, and vent risers.	$\checkmark$		
11	Utilities have been properly identified and marked. Utilities are marked within a minimum 20-foot radius around the proposed drilling or excavation location, anticipating step-out locations.	$\checkmark$		
12	Utility marks are the appropriate color (red – electrical; yellow – gas; green – sewer; blue – water; orange – communication; purple – irrigation). Pink should be used for unknown/temporary.	$\checkmark$		

## Ch2M: Underground Utility Verification

	Description	Yes	No*	NA/Notes
3	Utility marks can be protected and preserved until no longer required (use whiskers or pin flags if necessary). If the utility location markings are destroyed or removed befare intrusive work commences or is completed, the Project Manager (PM), Safety Coordinator, or designee must notify the independent field survey provider or the designated utility locating service to resurvey and remark the area.	$\checkmark$		
4	Utility clearances are provided in writing and signed by the party conducting the clearance on the Buried Utility Tracking Form. See Page 3.	$\checkmark$		
5	Private or public utilities within 5 feet of proposed locations are documented on the Buried Utility Tracking Form. See Page 3.	J		No utilitie
.6	Documentation of the utility survey (report, updated utility site map, photo log) is complete.	$\checkmark$		
17	When aggressive intrusive activities will be conducted within 5 feet, either laterally or vertically, of an underground utility, or when there is uncertainty about utility locations, drilling locations must be physically verified by non-aggressive means such as air or water knifting or hand digging.	$\checkmark$		Not within 5ft
	Describe planned clearance method and depth: Vac truck to 5-7ft			
18	For drilling, non-aggressive clearance will be greater than the outside diameter of drill tooling.	$\checkmark$		
19	When underground utility is within 5 feet of intrusive work, then non-aggressive means must be used to physically locate (daylight) the utility before a drill rig, backhoe, excavator, or other aggressive method is used. This step of daylighting is in addition to clearance of the borehole.			Not within 5ft
20	When an underground utility is within 5 feet of intrusive work, check to see if the utility can be isolated (locked out/tagged out and de-energized [purged as necessary] or blocked) during the subsurface activity. Hazardous utilities (gas, electrical) will be de-energized whenever possible. Verify with facility contact that isolation is completed according to the Lock Out Tag Out Standard Operating Procedure (SOP).			Not within 5 ft
21	Only non-aggressive means may be used within 2 feet of an identified utility.			Not with 2ft
22	The following documentation will be available onsite during ground disturbance: <ul> <li>Available utility diagrams or as-built drawings</li> <li>811 notification</li> <li>Facility-specific permit or procedure (dig permit)</li> <li>Utility survey information (e.g. reports updated utility site map, photo log)</li> </ul>	$\checkmark$		

Field Personnel

PM

instructions:

1) Complete and submit Underground Utility Verification Checklist to Health and Safety Manager (HSM) and PM.

2) Ensure that documentation is communicated to other field staff and available at the site during ground disturbance activities. 3) For items marked No" above, complete the following utility SOP deviation request. Approvals may be provided via email or phone.

Utility	SOP	Deviation	Request
---------	-----	-----------	---------

Items Marked "No" above: 3) white like area	
Rationale for Deviation: 20ft was measured fro	m staked boring location. Ground hummocks) not conducive to painting/
flagging,	
PM Approval:	Approved Date:
HSM Approval:	Approved Date:

Page 2 of 4

## Ch2M. Underground Utility Verification

### **Buried Utility Tracking Form**

Check each box using an "X" if a buried utility is present within 5 feet of a marked location identification (ID).

Location ID	Gas (Yellow)	Electric (Red)	Fiber optic (Orange)	Cable (Orange)	Water (Blue)	Sanitary Sewer (Green)	Storm Sewer (Green)	Steam (Yellow)	Petroleum (Yellow)	Compressed Air (Yellow)	Other	Other

The findings of the buried utility location activities summarized herein were conducted in accordance with the scope of work.

272

Utility Locate Subcontractor's Signature

Date

Appendix B Soil Boring Logs with Well Completion Diagrams

BORING NUMBER: BH01

SHEET 1 OF 2

### Borehole Log

#### PROJECT : NASWI Ault Field Phase 2\_Event 2

LOCATION : Oak Harbor, WA

PROJECT NUMBER:

695619CH

### ELEVATION : N/A DRILLING CONTRACTOR AND DRILL RIG : Yellow Jacket, Truck mount COORDINATES : N/A DRILLING METHOD AND EQUIPMENT : Rotosonic WATER LEVEL START : 7/20/2020 END: 7/20/2020 LOGGER : A. Seay ---DEPTH BELOW GROUND SURFACE (ft) SOIL DESCRIPTION COMMENTS £ LOG RECOVERY SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL DEPTH OF CASING, DRILLING DETAILS, INSTRUMENTATION GRAPHIC WELL DETAILS STRUCTURE, MINERALOGY WELL GRADED SAND WITH SILT AND GRAVEL (SW-SM) Bentonite backfill. olive brown (2.5Y 4/3), loose, dry to slightly moist, fine- to coarse-grained, sub-angular to rounded SAND, with Gravel up to 1". Hand cleared to 5 ft bgs. Breathing zone normal. Core screening normal. 5.0 LEAN CLAY (CL) olive brown (2.5Ý 4/3), stiff, dry. NEW SOIL BORING LOG; PTMCINTYRE GLB; NASWI AF PHASE2 2019.GPJ; CH2M GEOTECH 12.GDT; 10/10/20 WELL GRADED SAND WITH SILT AND GRAVEL (SW-SM) olive brown (2.5Y 4/3), loose, dry , fine- to coarse-grained, sub-angular to rounded SAND, with Gravel up to 1". 3.0 10.0 Ť, WELL GRADED SAND WITH SILT AND GRAVEL (SW-SM) olive brown (2.5Y 4/3), SAME AS ABOVE. 15.0 10.0

 PROJECT NUMBER:
 BORING NUMBER:

 695619CH
 BH01
 SHEET 2 OF 2

## Borehole Log

#### PROJECT : NASWI Ault Field Phase 2\_Event 2

LOCATION : Oak Harbor, WA

ELEVATION : pe	ndina		TOR AND DRILL RIG : Yellow Jacket, Tr	ruck mount
COORDINATES :			AND EQUIPMENT : Rotosonic	dok mount
WATER LEVEL :		START : 7/20/2020	END : 7/20/2020	LOGGER : A. Seay
C CE		SOIL DESCRIPTION		
DEPTH BELOW GROUND SURFACE (ft) RECOVERY (ft)	GRAPHIC LOG	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING DETAILS, INSTRUMENTATION	WELL DETAILS
25.0_ 10.0		WELL GRADED SAND WITH SILT AND GRAVEL (SW-SM) olive brown (2.5Y 4/3), SAME AS ABOVE.	Breathing zone normal. Core screening normal. Sample WI-AF-BH01-SB-29 collected at 0950.	
30.0		WELL GRADED SAND WITH SILT AND GRAVEL (SW-SM) olive brown (2.5Y 4/3), SAME AS ABOVE.	Very loose.	
35.0 			Increase in density.	

Boring terminated at 40 ft bgs.

B1 RING NJ UBER: BH0F

2R1 PEVT NJ UBER:

Y69Y56VH

SHEET 5 10 F

### Borehole Log

#### PROJECT : NASWI Ault Field Phase 2 Event 2 LOCATION : Oak Harbor, WA ELEVATION : N/A DRILLING CONTRACTOR AND DRILL RIG : Yellow Jacket, Truck mount DRILLING METHOD AND EQUIPMENT : Rotosonic COORDINATES : N/A WATER LEVEL START : 7/20/2020 LOGGER : A. Seay END: 7/20/2020 ---DEPTH BELOW GROUND SURFACE (ft) SOIL DESCRIPTION COMMENTS £ LOG RECOVERY SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL GRAPHIC DEPTH OF CASING, WELL DETAILS DRILLING DETAILS, INSTRUMENTATION STRUCTURE, MINERALOGY WELL GRADED SAND WITH VLA( AND GRA- EL NSW)SVC Bentonite backfill. olive brown (2.5Y 4/3), loose, dry, fine- to medium-grained, sub-round to round SAND, with low-plasticity Clay and fine-grained Gravel up to 1". Spots of orange/red iron oxidation. LEAN VLA( WITH SAND NVLC Hand cleared to 5 ft bgs. olive brown (2.5Y 4/3), stiff, dry CLAY, with coarse-grained Sand. WELL GRADED SAND WITH VLA( AND GRA- EL NSW)SVC Breathing zone normal. olive brown (2.5Y 4/3), loose, moist, fine-grained SAND. Core screening normal. 5.0 SOIL BORING LOG; PTMCINTYRE, GLB; NASWI AF PHASE2 2019.GPJ; CH2M GEOTECH 12.GDT; 10/10/20 3.0 10.0 WELL GRADED SAND WITH GRA- EL NSWC olive brown (2.5Y 4/3), loose, moist, fine- to coarse-grained, sub-round to round SAND. LEAN VLA( WITH GRA- EL NVLC olive brown (2.5Y 4/3), stiff CLAY, with Gravel up to 2". WELL GRADED SAND WITH GRA- EL NSWC Sample WI-AF-BH02-SB-13 olive brown (2.5Y 4/3), loose, moist, fine- to coarse-grained, sub-round to round SAND. collected at 0950. 15.0 10.0 Soft, low-plasticity clays observed. Breathing zone normal. Core screening normal. NEW

	2R1 PEVT NJ UBER: Y69Y56VH	B1 RING NJ U BER: BH0F	SHEET	F	10	F
Ch2m:	Boreh	ole Loa				

## Borehole Log

#### PROJECT : NASWI Ault Field Phase 2\_Event 2

LOCATION : Oak Harbor, WA

Image: Second	ELEVATION : pending	DRILLING CONTRAC	TOR AND DRILL RIG : Yellow Jacket, Tru	ick mount
Bit Solution         Solution         Columents         Destination         Well Defails           1         0	COORDINATES : per	nding DRILLING METHOD /	AND EQUIPMENT : Rotosonic	
25.0_       10.0         25.0_       10.0	WATER LEVEL :	START : 7/20/2020	END : 7/20/2020	LOGGER : A. Seay
25.0_       10.0         25.0_       10.0	BEFTH BELOW SROUND SURFACE (f) RECOVERY (ft) GRAPHIC LOG	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL	DEPTH OF CASING, DRILLING DETAILS.	WELL DETAILS
		DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY WELL GRADED SAND WITH SILT AND GRA- EL MSW)SUC olive brown (2.5Y 4/3), to olive gray (5Y 4/2), loose to slightly dense, moist, fine- to medium-grained SAND, with Gravel up to 2".	Increase in fine-grained sands. Breathing zone normal. Core screening normal.	
				-
	Z <u>L 40.0    )![[]</u>	Boring terminated at 40 ft bgs.	1	

PROJECT NUMBER:	BORING NUMBER:				
695619CH	BH03/MW-629	SHEET	1	OF	3

## Borehole Log

#### PROJECT : NASWI Ault Field Phase 2\_Event 2

LOCATION : Oak Harbor, WA

### ELEVATION: 98.056 ft amsl, TOC

DRILLING CONTRACTOR AND DRILL RIG : Yellow Jacket, Truck mount

COORDINATES : N 489238.69, E 1188272.09

## DRILLING METHOD AND EQUIPMENT : Rotosonic

	WATER	LEVEL :	43.1 f	t bgs START : 7/16/2020	END : 7/16/2020	LOGGEF	R : A. Seay
	DEPTH BELOW GROUND SURFACE (ft)	RECOVERY (ft)	GRAPHIC LOG	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS DEPTH OF CASING, DRILLING DETAILS, INSTRUMENTATION		WELL DETAILS
				SANDY LEAN CLAY WITH GRAVEL (CL) olive brown (2.5Y 4/3), soft, dry to slightly moist, low-plasticity CLAY, with fine- to medium-gained Sand and fine-grained			8 in steel flush mount well completion.
				Gravel up to 1".			Bentonite seal/fill.
					Sparse iron oxidation staining. Hand cleared to 5 ft bgs.		
	5	7.0			Breathing zone normal. Core screening normal.		_
							_
	_						
	_			LEAN CLAY (CL) olive brown (2.5Y 4/3), stiff, dry to slightly moist, low-plasticity			-
	_			CLAY.			-
1/5/20	10						_
.GDT;	_						-
ECH_12	_						-
I GEOT	_						-
; CH2N	_						-
19.GPJ	15	10.0					-
SE2_20							-
AF_PHA	_						-
ASWI_4	_						-
GLB; N	_						-
NTYRE	20			LEAN CLAY (CL)	-		-
PTMCI	_			olive gray (5Ý 4/2), medium-stiffness, slightly moist CLAY, with sparse fine- to medium-grained, round Gravel.			-
IG LOG	_	10.0					-
. BORIN							-
NEW SOIL BORING LOG; PTMCINTYRE.GLB; NASWI_AF_PHASE2_2019.GPJ; CH2M GEOTECH_12.GDT; 11/5/20	_						-
ШN	25		V////				

PROJECT NUMBER:	BORING NUMBER:					
695619CH	BH03/MW-629	SHEET	2	OF	3	
Borob	ole I oa					

### **Borehole Log**

END : 7/16/2020

LOGGER : A. Seay

#### PROJECT : NASWI Ault Field Phase 2\_Event 2

LOCATION : Oak Harbor, WA

#### ELEVATION : 98.056 ft amsl, TOC DRILLING CONTRACTOR AND DRILL RIG : Yellow Jacket, Truck mount COORDINATES : N 489238.69, E 1188272.09 DRILLING METHOD AND EQUIPMENT : Rotosonic WATER LEVEL: 43.1 ft bgs START : 7/16/2020 ACE (t) U SOIL DESCRIPTION

OW	(ft)	OG	SOIL DESCRIPTION	COMMENTS	
DEPTH BELOW GROUND SURFACE (ft)	RECOVERY (ft)	GRAPHIC LOG	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING DETAILS, INSTRUMENTATION	WELL DETAILS
-	10.0			Breathing zone normal. Core screening normal.	-
30_	_		LEAN CLAY (CL) olive gray (5Y 4/2), SAME AS ABOVE.		
B. NASWI_AF_PHASE2_2019.GPJ; CH2M GEOTECH_12.GDT; 11/5/20	10.0				
			LEAN CLAY (CL) olive gray (5Y 4/2), SAME AS ABOVE.	Poorly-sorted, fine-grained sands observed.	-
NEW SOIL BORING LOG; PTMCINTYRE.GL	10.0				
≧ <u>50</u>					

# ch2m;

PROJECT NUMBER:BORING NUMBER:695619CHBH03/MW-629SHEET 3 OF 3

## Borehole Log

#### PROJECT : NASWI Ault Field Phase 2\_Event 2

LOCATION : Oak Harbor, WA

### ELEVATION: 98.056 ft amsl, TOC

DRILLING CONTRACTOR AND DRILL RIG : Yellow Jacket, Truck mount

COORDINATES : N 489238.69, E 1188272.09

DRILLING METHOD AND EQUIPMENT : Rotosonic

WATER	LEVEL	43.1	t bgs START : 7/16/2020	END : 7/16/2020	LOGGER : A. Seay
DEPTH BELOW GROUND SURFACE (ft)	RECOVERY (ft)	GRAPHIC LOG	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS DEPTH OF CASING, DRILLING DETAILS, INSTRUMENTATION	WELL DETAILS
			LEAN CLAY (CL)         olive gray (5Y 4/2), SAME AS ABOVE.         LEAN CLAY (CL)         olive gray (5Y 4/2), SAME AS ABOVE.         Boring terminated at 70 ft bgs.	Breathing zone normal. Core screening normal. Increase in gravel volume and size up to 1.5".	Filter pack.
75					

#### PROJECT NUMBER: BORING NUMBER: 695619CH BH04/MW-628 SHEET 1 OF 3

## Borehole Log

NTW AJ I- I J OING - J G; RZQh INZ20TG-I ; NLAWI\_LF\_RSLAT(\_(019GRE\_hS(Q GTJ ZThS\_1(GDZ; 11/w//0

ROJEThz:	NLA	NIL8ee	n-FfierR5pH (_T/ian(	PSpogxo) WL	
-TkLzIJN	N: 9d	dMM7 tn	pBHa)zJh DOIINGhJNzOLł	n zJOLNDDOIOIG:2ieexuEpsPin)zo	8sPBx8an
J J ODINL	zTA :	N Y79	016dd <b>M)</b> T 1177Y6Yd0( DOI ING QTz SJ D	LND TUVIRQTNz: OxnxHkafs	
VLzTO-T	kT-:	dYc0 t	ing. H Az L Oz : 6v/t M/(0( 0	TND : 6vt1M(/0(0	- J GGTO : LcAi p,
J W DFLh T	kiß	Ðſ-	AJ I- DTAh OIRz IJ N	<u>h J QQTNz A</u>	
DT RZS I T- J W GOJ VND AVOFLh T vt/3	ОТҺЈ КТО2	GOLRSIh -	AJ I- NLQT) VAN A GOJ VR A2QI J - ) <u>h J - J O) QJ IAZ VOT h J NzTNz ) OT- LzIkT</u> <u>DTNAIZ2 J O h J NAIAZTNh2 ) AJ I-</u> <u>AZOVhz VOT ) QINTOL- J G2</u>	DTRZS J F hLAING) DOI ING DTZLI-A) INAZOVQTNZLZIJ N	WT DTzLI-A
			SANDY LEAN CLAY WITH GRAVEL (CL) xel/i goxua v(cd2 Yw43) Hxtn) ro, nx Hel. 5ne, BxfHn) exu ymepHfisfn,		7 fa Hnii ete8H5 Bx8an uiœsxBmeinfxac
_			h-L2) ufn5 uieev. qorir) tfaiynx Birf8By, qofair) H8gypa. 8epo Apar) tfaiy. qofair Gop/ie8m nx 0c4" par gepsPxo.pafsH:		lianxafni Hpentfeec
_			LEAN CLAY (CL)	Spar seipoir nx d tng. Hc	-
_			xal/igoxua v(cd2 1/v43) Hftt)rq nx Hat. 5ne, BxfH) exuymap Hfsfn, h-L2c	loipr5fa.bxaiaxoBpec	-
d	7d0			hxoi Hooiiafa. axoBpec	_
_				zopsi HmxnHxtxopa.i foxaxOfrpnfxac	
10					
					-
-					-
1d	10d0				-
-					-
$\neg$					-
-					-
$\neg$					-
(0			LEAN CLAY (CL)	-	-
_			xel∕i.qo, vd2`Yw(3)Birf8ByHfttaiH+)rq.)exuymepHfsfn, h-L2) ufn5 HnpdH tfaiynx Birf8By.qofair)qx8ar Gqo∕iec		-
_					-
_	10d0				- I

### PROJECT NUMBER: 695619CH BORING NUMBER: BH04/MW-628 SHEET 2 OF 3 Borehole Log

#### ROJEThz:NLAWIL8enFfierR5pH (\_T/ian(

-JhLzIJN:JpPSpogxo)WL

## <u>T-TkLzIJN: 9dd/M7 tnpBHa)zJh</u> DOI--ING h J Nz OL h z J O L ND DOI-- OIG : 2i exu EpsR n) z d8sPB x8an h J J ODINLzTA: N Y7916ddM) T 1177Y6Yd0( DOI- - ING QTz SJ D LND TUVIRQTNz : OxnxHkafs WLzTO-TkT-: dYc0 tng. H AzLOz:6w1Mw(0(0 TND:6w1M/0(0 - J GGTO : LcAi p, DTRZSIT-JW GOJVND AVOFLhT vt3 AJ I- DTAh OIRz IJ N <u>h J QQTNz A</u> vtr8 Ю Г OTh J k TO2 AJ I- NLQT) VAh A GOJ VR A2QI J-) hJ-JO) QJ IAZ VOT hJ NZTNZ) OT-LZIKT DTNAIZ2 JO hJ NAIAZ TNh2) AJ I-- RSIh -DTRZS J F h LAING) DOI- - ING DTZLI- A) INAZOVQTNZLZIJ N WT-- DTzLI-A GOL AzOVhzVOT)QINTOL-JG2 loipn5fa.bxaiaxoBpec hxoi Hsoiiafa. axoBpec 10c0 40 LEAN CLAY (CL) xof/i.op, vd2 Yw(3) ALQT LA LIJ k Tc NTW AJ I- I J OING - J G; RZQh INZ2OT6G-I ; NLAWI LF RSLAT( \_ (01963 RE h S( Q GT J Z Th S \_ 1 ( 65 Dz; 11 w 440 4d. 10¢0 Y0. LEAN CLAY (CL) xof/i.op, vd2 Yw(3) ALQT LA LIJ k Tc Yd . 10¢0

 PROJECT NUMBER:
 BORING NUMBER:

 695619CH
 BH04/MW-628
 SHEET 3 OF 3

## Borehole Log

#### ROJEThz:NLAWIL8enFfierR5pH (\_T/ian(

NTW AJ I- I J OING - J G; RZQh INZ2OT6G-I ; NLAWI LF RSLAT( \_ (01963 RE h S( Q GT J Z Th S \_ 1 ( 65 Dz; 11 w 440

-JhLzIJN:JpPSpogxo)WL

#### <u>T-TkLzIJN: 9dd/M7 tnpBHa)zJh</u> DOI--ING h J Nz OL h z J O L ND DOI-- OIG : 2i exu EpsR n) z d8sPB x8an h J J ODINLzTA: N Y7916ddM) T 1177Y6Yd0( DOI- - ING QTz SJ D LND TUVIRQTNz : OxnxHkafs WLzTO-TkT-: dYc0 tng. H AzLOz:6v1/M/(0(0 TND:6w1M/(0(0 - J GGTO : LcAi p, DTRZSIT-JW GOJVNDAVOFLhT M3 AJ I- DTAh OIRz IJ N Vtr8 hJQQTNzA Ю Г OTh J k TO2 AJI- NLQT) VAh A GOJ VR A2QI J-) DTRzSJFhLAING) RSIh WT-- DTzLI-A <u>h J - J O) QJ IAz VOT h J Nz TNz ) OT - Lz lk T</u> DTNAlz 2 J O h J NAIAz TNh 2) AJ I-DOI- - ING DTZLI- A) INAZOVQTNZLZIJ N GOL AzOVhzVOT)QINTOL-JG2 LEAN CLAY (CL) loipn5fa.bxaiaxoBpec xel/i.qp, vd2 Yw(3) ALQT LA LIJ kTc hxoi Hsoiiafa. axoBpec CLAYEY SAND WITH GRAVEL (SP-SC) FfeniompsPc xel/i.qo, vd2 Yw(3) BxfH) mxxqey, qorir) Birf8By.qofair ALND) u fr5 exu ymep Hfsfn, hep, ) ox8ar Gop/ie) par Afeec dd. 1000 Apar H1bi risoipH Hnx tfaiy. opfairc 10 tnHsoiiac lasoipH fa.qo/ie/xe8Bi par Hfbi gi sxBi Htfai ynx Bi r f8B y. opfai r c Apar . opr prfxa gi sxBi HB xoi uieey.oprirc Winc MD. Md. l xofa. nioBfapnir pnMd tng. Hc 60

# ch2m;

 PROJECT NUMBER:
 BORING NUMBER:

 695619CH
 BH05
 SHEET 1 OF 2

## Borehole Log

#### NDG"L1b PRkHOJk(fnElrft NFpxr ITLBronl

vG1kbJGRPGp3SpadgavOk

### LvL7kbJGRP*N/A* : DJ/vJRY 1 GRb Dk 1 b GD k R: : DJ/v DJY Pmr ffg9 "ps3r nvb a(s3 2 g(on 1GGD: JRkbLHP N/A : DJ/vJRY \_ LbSG: kR: LMQJN\_ LRb PDgrgxgols OkbLDvL7LvPyyy Hbk DbP) WeW4I4 LR: P) WeW4I4 vGYYLD Pk. Hrph S ALvGO : HQDEk1L Zh HGJ/: LH1 DJNbJGR 1G LRbH G7LDm zr γĝ <u>: LNbSGE1kH,RYw</u> : DJ/vJRY: LbkJ/Hw JRHbDQLRbkbJGR HGJ/Rk\_LwQH1HYDGQNHm\_AGvw **Y Dk NSJ** OLvv: LbkJ/H YDGQR: H 1 GVGDw GJHbQDL 1 GRbLRbwDLvkbJ/L : LRH.bmGD 1 GRHJHbLR1 mvHGJ/ Ы HbDQ1bQDLw\_JRLDkvGYm SANDY LEAN CLAY WITH GRAVEL (CL) Ar orgoinr dps3/lff. 911Br dag9o zl.em QV-wsg/nvtahng 2 glxnvfg9 ycfpxnlsinh 1 v k mw 911F/loryng 2 rti(2 yi aplort wx(dyag(ot ng ag(ot Hpot wpot /loryi aplort YapBrf(c ng 4.) eu Spot sfr part ng e /ndix. Hcpaxr gapoir lago g5lt prigo xnploloi. bapsrxg/gflBr i aph zem OW-sfph. AarprFloi Ogor oga2 pf. 1 gar xsarroloi oga2 pf. е4 LEAN CLAY (CL) gfBr dag9o zl.emC,\/-wxnl//wtahng xfli Fnfh 2 glxnwfg9ycfpxnlslnh 1 vkm Hcpaxr xcgnx g/ gapoi r lago g5lt prligo. HG.J. AGDJRY VGY NNb\_1 J.BhmDL.YVAVRK HO JIKETNSK HLI TI 4U, YN''V 1SI\_ YLGbL 1 STUI, Y: bV U4M4M4 U4.4 Aar prFloi Ogor oga2 pf. 1 gar xsarroloi oga2 pf. Ue.4 14.4 LEAN CLAY (CL) Aar prFloi 0gor oga2 pf. gfbP:iaph.zem.CM-wxn//wtahwfg9ycfpxn/slnh.1 vkmw9lnFxcpaxr /loryng.2 rtl(2 yiaplortwag(ot Yapbrf. 1 gar xsarroloi oga2 pf. **RLO**

# Ch2ne

BORING NUMBER: BH05

SHEET 2 OF 2

## Borehole Log

#### NDG"L1b PRkHOJk(fnElrft NFpxr ITLBronl

vG1kbJGRPGp3SpadgawOk

LvL7kb.	<u>GR P pe</u>	ending	: DJ/vJRY 1 GRbDk	1 b G D k R: : D Jvv D JY Pmr ffg9 "ps3r nwba(	s3 2 g( on
1 GGD: J	RkbLH	P pen	ding : DJvv,RY_LbSG:	kR: LMQ.N_LRb PDgngxgols	
OkbLD	vL7Lv F	<u>- wy</u>	Hbk Db P) WeW41 4	LR: P) WeW414	vGYYLD Pk. Hrph
: LNbS ALvGO Y DGQR: HQDEK1L ZA	DL1G7LDm <i>z</i> №	YDKNSJI VGY	HGJ/: LH1 DJNbJGR HGJ/Rk LwQH1 H Y DGQN Hm AGvw 1 GvGDw GJHbQDL 1 GRbLRbwDLvkbJ/L : LRHJbmGD 1 GRHJHbLR1 mvHGJ/ HbDQ1 bQDLw _RLDkvGYm	<u>1GLRbH</u> <u>: LNbS GE 1kH</u> RYw <u>: DJvvRY : LbkJ/Hw</u> <u>RHbDQ_LRbkbJGR</u>	<u>OLvv : LbkJ/H</u>
ū			HbDQ1bQDLw_JRLDkvGYm		
-				AarprFloi 0gor oga2 pf. 1 gar xsarroloi oga2 pf.	-
, 4.4			LEAN CLAY (CL)	 AarprFloi 0gor oga2 pf.	-
			gflBriaph zem`Ovĺv-wHk_LkHkAG7L.	1 garxsarröloi oğa2 pf. Hnt//roxxfliFn1h.	-
, e.4					-
EINSKHLI 1144, YN*V151_ YLG6L15101.Y: bVUMM494			LEAN CLAYWITH SAND AND GRAVEL (CL) gflBriaph zem CW-wxg/mwxfliFnfh 2 glxn1 vk mw9 lnF cggafhyiapt rtwlloryiaplortwag(ot Hpotwpot/loryng	_	-
			cggafhyiaptrtwiloryiaplortwag(ot Hpotwpot/loryng 2.rtl(2.yiaplort YapBrf(cng.4.)eu	AarprFloi 0gor oga2pf. 1 garxsarroloi oga2pf.	-
				ubsarpxrloiapBrfBgf(2r. Hpotiaptpnlgodrsg2rx2gar	-
				9 rffyiaptrt 9 hrFpolosarpxrlo/loryng 2 rtl(2 yiaplortwag(ot xpotx. Hp2 cfr	-
Ce.4				OjkEyAS4eyHAyOC sgffrsmt pnUCC4.	
					-
RLO HGW AGDKY VGY VNB_1JKPMDL,Y VAVKKHOJIK P     + + + + + + + + + + + + + + + + +					-
<u> </u>			Agaloi nra2 lopnrt pne4 /ndi x.		

# Ch2m

695619CH

PROJECT NUMBER: BORING NUMBER: **BH06** 

SHEET 1 OF 2

### **Borehole Log**

#### PROJECT : NASWI Ault Field Phase 2 Event 2

LOCATION : Oak Harbor, WA

### DRILLING CONTRACTOR AND DRILL RIG : Yellow Jacket, Truck mount ELEVATION : N/A COORDINATES : N/A DRILLING METHOD AND EQUIPMENT : Rotosonic WATER LEVEL START : 7/15/2020 END: 7/15/2020 LOGGER : A. Seay ---DEPTH BELOW GROUND SURFACE (ft) SOIL DESCRIPTION COMMENTS £ LOG RECOVERY SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL GRAPHIC DEPTH OF CASING, DRILLING DETAILS, INSTRUMENTATION WELL DETAILS STRUCTURE, MINERALOGY SANDY LEAN CLAY WITH GRAVEL (CL) Bentonite backfill. olive brown (2.5Y 4/3), soft, dry top slightly moist, low-plasticity CLAY, with poorly-graded, fine- to medium-grained Sand, and fine-grained, round Gravel up to 0.75". Iron oxidation spots, roots. Hand cleared to 5 ft bgs. Stiff. Micas. No roots. Breathing zone normal. Core screening normal. 5.0 9.5 SANDY LEAN CLAY WITH GRAVEL (CL) Breathing zone normal. olive gray (5Y 4/2), SAME AS ABOVE Core screening normal. SOIL BORING LOG; PTMCINTYRE GLB; NASWI AF PHASE2 2019.GPJ; CH2M GEOTECH 12.GDT; 10/10/20 10.0 SANDY LEAN CLAY WITH GRAVEL (CL) olive gray (5Y 4/2), SAME AS ABOVE. Moist 15.0 10.0 Increase in gravel volume and size up to 1.5". Well-graded, fine- to medium-grained sand lens. NEW

BORING NUMBER: BH06

SHEET 2 OF 2

## Borehole Log

#### PROJECT : NASWI Ault Field Phase 2\_Event 2

LOCATION : Oak Harbor, WA

PROJECT NUMBER:

695619CH

ELEVATION : pending	DRILLING CONTRACTOR AND DRILL RIG : Yellow Jacket, Truck mount		
COORDINATES : pending DRILLING METHOD AND EQUIPMENT : Rotosonic			
WATER LEVEL :	START : 7/15/2020	END : 7/15/2020	LOGGER : A. Seay
DEPTH BELOW GROUND SURFACE (f) RECOVERY (ft) GRAPHIC LOG	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	<u>COMMENTS</u> <u>DEPTH OF CASING,</u> <u>DRILLING DETAILS,</u> INSTRUMENTATION	WELL DETAILS
	SANDY LEAN CLAY WITH GRAVEL (CL) olive gray (5Y 4/2), SAME AS ABOVE.	Soft/loose. Increase in sand and moisture. Breathing zone normal. Core screening normal.	
	SANDY LEAN CLAY WITH GRAVEL (CL) olive gray (5Y 4/2), SAME AS ABOVE.	Sample WI-AF-BH06-SB-35 collected at 1050.	

# Ch2m

695619CH

PROJECT NUMBER: BORING NUMBER: **BH07** 

SHEET 1 OF 2

### **Borehole Log**

SOIL BORING LOG; PTMCINTYRE GLB; NASWI AF PHASE2 2019.GPJ; CH2M GEOTECH 12.GDT; 10/10/20

NEW

#### PROJECT : NASWI Ault Field Phase 2 Event 2 LOCATION : Oak Harbor, WA DRILLING CONTRACTOR AND DRILL RIG : Yellow Jacket, Truck mount ELEVATION : N/A COORDINATES : N/A DRILLING METHOD AND EQUIPMENT : Rotosonic WATER LEVEL START : 7/13/2020 LOGGER : A. Seay END: 7/13/2020 ---DEPTH BELOW GROUND SURFACE (ft) SOIL DESCRIPTION COMMENTS £ LOG RECOVERY SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL DEPTH OF CASING, DRILLING DETAILS, INSTRUMENTATION GRAPHIC WELL DETAILS STRUCTURE, MINERALOGY SANDY LEAN CLAY WITH GRAVEL (CL) Bentonite backfill. olive brown (2.5Y 4/3), soft, dry, low-plasticity CLAY. Hand cleared to 5 ft bgs. Breathing zone normal. Core screening normal. 5.0 10.0 **GRAVELLY LEAN CLAY (CL)** olive brown (2.5Y 4/3), dense, moist, low-plasticity CLAY, with Gravel up to 1.5", and fine-grained Sand. Traces of iron oxide and black organic material Decrease in organic material. Decrease in gravel size down to 0.75". 10.0 GRAVELLY LEAN CLAY (CL) Decrease in gravel size down to 0.25". olive brown (2.5Y 4/3), SAME AS ABOVE. Breathing zone normal. Core screening normal. Cobble ~4" diameter. 15.0 10.0 Dry sand lens. Cobble ~4" diameter. Increase in gravel size up to 3". Dry fine-grained sand lens.

# Ch2m

BORING NUMBER: **BH07** 

SHEET 2 OF 2

## **Borehole Log**

#### PROJECT : NASWI Ault Field Phase 2 Event 2

ELEVATION : pending

LOCATION : Oak Harbor, WA

PROJECT NUMBER:

695619CH

### DRILLING CONTRACTOR AND DRILL RIG : Yellow Jacket, Truck mount COORDINATES : pending DRILLING METHOD AND EQUIPMENT : Rotosonic WATER LEVEL START : 7/13/2020 END: 7/13/2020 LOGGER : A. Seay ---DEPTH BELOW GROUND SURFACE (ft) SOIL DESCRIPTION COMMENTS ŧ LOG RECOVERY SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL **GRAPHIC** DEPTH OF CASING, WELL DETAILS DRILLING DETAILS, INSTRUMENTATION STRUCTURE, MINERALOGY SANDY FAT CLAY WITH GRAVEL (CH) Breathing zone normal. Blueish gray (GLEY 2-6/SB), dense, dry to slightly moist CLAY, with loose, fine- to medium-grained Sand, and Gravel up to 2". Core screening normal. Cobble ~3" diameter. 25.0 10.0 Decrease in sand volume. Increase in gravel volume. Decrease in gravel size down to 2". NEW SOIL BORING LOG: PTMCINTYRE GLB: NASWI AF PHASE2 2019.GPJ: CH2M GEOTECH 12.GDT: 10/10/20 30.0 SANDY FAT CLAY WITH GRAVEL (CH) Blueish gray (GLEY 2-6/SB), SAME AS ABOVE. Breathing zone normal. Core screening normal. 35.0 10.0 SANDY FAT CLAY WITH GRAVEL (CH) Wet. Increase in sand volume. Blueish gray (GLEY 2-6/SB), dense, wet CLAY, with loose, fine-Increase in gravel size up to 3". to medium-grained Sand, and Gravel up to 3". Boring terminated at 40 ft bgs.

# Ch2m.

695619CH

PROJECT NUMBER: BORING NUMBER: **BH08** 

SHEET 1 OF 2

### **Borehole Log**

#### PROJECT : NASWI Ault Field Phase 2 Event 2

LOCATION : Oak Harbor, WA

#### ELEVATION : N/A DRILLING CONTRACTOR AND DRILL RIG : Yellow Jacket, Truck mount COORDINATES : N/A DRILLING METHOD AND EQUIPMENT : Rotosonic WATER LEVEL START : 7/14/2020 END: 7/14/2020 LOGGER : A. Seay DEPTH BELOW GROUND SURFACE (ft) SOIL DESCRIPTION COMMENTS £ LOG RECOVERY SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL DEPTH OF CASING, DRILLING DETAILS, INSTRUMENTATION GRAPHIC WELL DETAILS STRUCTURE, MINERALOGY SANDY LEAN CLAY WITH GRAVEL (CL) Bentonite backfill. olive brown (2.5Y 4/3), loose, dry, low-plasticity CLAY, with fine-grained Sand, and Gravel up to 1". Grass and roots. Hand cleared to 5 ft bgs. Breathing zone normal. Core screening normal. 5.0 10.0 LEAN CLAY WITH SAND (CL) Iron oxidation staining. Sparse olive brown (2.5Y 4/3), stiff, drý, low-plasticity CLAY, with medium-grained sand. poorly-graded, fine-grained, angular Sand. Very stiff. SOIL BORING LOG; PTMCINTYRE GLB; NASWI AF PHASE2 2019.GPJ; CH2M GEOTECH 12.GDT; 10/10/20 10.0 LEAN CLAY WITH SAND (CL) Stiff. olive brown (2.5Y 4/3), SAME AS ABOVE. 15.0\_ 10.0 Increase in gravel volume. 20.0 LEAN CLAY WITH SAND (CL) olive brown (2.5Y 4/3), SAME AS ABOVE. SANDY LEAN CLAY WITH GRAVEL (CL) olive gray (5Y 4/2), loose, dry CLAY, with fine- to medium-grained, round to angular Sand, and fine-grained Iron oxidation staining. Gravel up to 0.75". 10.0 NEW

# Ch2m

695619CH

PROJECT NUMBER: BORING NUMBER: **BH08** SHEET 2 OF 2

## **Borehole Log**

DRILLING CONTRACTOR AND DRILL RIG : Yellow Jacket, Truck mount

#### PROJECT : NASWI Ault Field Phase 2\_Event 2

ELEVATION : pending

LOCATION : Oak Harbor, WA

### COORDINATES : pending DRILLING METHOD AND EQUIPMENT : Rotosonic WATER LEVEL START : 7/14/2020 END: 7/14/2020 LOGGER : A. Seay ----DEPTH BELOW GROUND SURFACE (ft) SOIL DESCRIPTION COMMENTS £ LOG RECOVERY SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL GRAPHIC DEPTH OF CASING, WELL DETAILS DRILLING DETAILS, INSTRUMENTATION STRUCTURE, MINERALOGY Breathing zone normal. Core screening normal. Cobble ~4" diameter. 10.0 30.0 SANDY LEAN CLAY WITH GRAVEL (CL) Blueish gray (GLEY 2-6/5B), soft, dry CLAY, with fine- to medium-grained Sand, and fine-grained, sub-angular to Intermitten iron oxide staining. well-rounded Gravel up to 3". Sample NEW SOIL BORING LOG; PTMCINTYRE GLB; NASWI\_AF\_PHASE2\_2019.GPJ; CH2M GEOTECH\_12.GDT; 10/10/20 WI-AF-BH08-SB-34 35.0\_ 10.0 collected at 1715. Pulverized rock: shale, mineralized fractures (quartz), mica. 40.0 SANDY LEAN CLAY WITH GRAVEL (CL) Blueish gray (GLEY 2-6/5B), SAME AS ABOVE. 45.0\_ 10.0 Breathing zone normal. Core screening normal. Boring terminated at 50 ft bgs.

# ch2m;

BORING NUMBER: BH09

SHEET 1 OF 1

### Borehole Log

#### PROJECT : NASWI Ault Field Phase 2\_Event 2

LOCATION : Oak Harbor, WA

PROJECT NUMBER:

695619CH

### DRILLING CONTRACTOR AND DRILL RIG : Yellow Jacket, Truck mount ELEVATION : N/A COORDINATES : N/A DRILLING METHOD AND EQUIPMENT : Rotosonic WATER LEVEL : START : 7/21/2020 END: 7/21/2020 LOGGER : A. Seay ----DEPTH BELOW GROUND SURFACE (ft) SOIL DESCRIPTION COMMENTS £ LOG RECOVERY SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL GRAPHIC DEPTH OF CASING, DRILLING DETAILS, INSTRUMENTATION WELL DETAILS STRUCTURE, MINERALOGY WELL GRADED SAND WITH SILT AND GRAVEL (SW-SM) olive brown (2.5Y 4/3), loose, dry, fine- to coarse-grained, sub-round to round SAND, with low-plasticity Silt, and fine- to Bentonite backfill. coarse-grained Gravel up to 5". POORLY GRADED SAND (SP) Hand cleared to 5 ft bgs. olive brown (2.5Y 4/3), loose, moist, fine-grainedSAND. SOIL BORING LOG; PTMCINTYRE, GLB; NASWI AF PHASE2 2019. GPJ; CH2M GEOTECH 12. GDT; 10/22/20 Breathing zone normal. Core screening normal. 5.0 10.0 Sample WI-AF-BH09-SB-9.5 collected at 1630 Wet at 9.5 ft bgs. Sample WI-AF-BH09-GW-10 collected at 1700 via Hydropunch. Duplicated sample WI-AF-BH09-GW-10 collected at 1705 via Hydropunch. NEW Boring terminated at 10 ft bgs.

 CRY JEFT NUMBER:
 BYRING NUMBER:

 9519C6F H
 BHC0
 SHEET O Y2 P

### Borehole Log

#### PRHQIZET" ACm I AGInForft PBpxr 3: J 5r on 3

\_HzAEIH" THpkSpadgaDmA

#### J\_JVAEIH" TN/A wRI I' 9 z H'' ERAz EHR A'' w wRI RI9 T4r ffg( Opskr nDEaOsk I gOon wRI\_I" 9 MJESHw A" w JQUIPMJ" E TRgrgxgoos ZHHRWI" AEJCT N/A mAEJR\_JVJ\_T ---CEARE T7)33)3232 J " w T7)33)3232 H99JR TA. Cr py wJ PES bJ Hm 9 RHU" w CURFAz J YM CHI wJ Cz RIPEIH" Ϋ́́ z HMMJ" EC 6H RJ z HVJ R4 <u>CHI</u> "AMJ DUCZ C 9 RHUP C4MbH D <u>z H</u> HRDMHICEURJ z H" EJ" EDRJ\_AEIVJ wJ" CIE4 HR z H" CICEJ" z 4DCHI WJ PES HF z ACI" 9 D WRI\_I" 9 WJ EAI\_CD I" CERUMJ" EAEIH" **9 RAPSIz** mJ\_wJEALC CERUZ EURJ DMI" J RA\_H94 WELL GRADED SAND WITH SILT AND GRAVEL (SW-SM) brongoonrdpsk/off. gf65rdag(o Y3.e4,)uNDfggxrDtayD(cor-ng sgpaxr-iap.cortD xGd-agGot ng agGot CA" wD(orBfg(-VK)pxnosonyCofnDpot /cor-ng sgpaxr-i apcort 9 ap5rf GWng 3.eL CYYRL6 GRADED SAND (SC) Spot sfrpart ng e /ndix. gfc5r dag(o 1/3.e4 , )uNDfggxrDtayDfg(-WipxnosonyD/cor-iapcort CA"w. Haipoosl pnraopfgdxra5rt. barpnBoci hgor ogal pf. zgarxsarrocoi ogal pf. e.2 e.2 \_H9;PEMz I" E4 RJ .9 \_b; " ACmI: AF: PSACJ 3: 3201.9 PQ zS3M 9 JHEJ zS: 03.9 wE; 02)33)32 mrn Cpl Wir m I-AF-bS02-Cb-1.e 02.2 WELL GRADED SAND WITH SILT AND GRAVEL (SW-SM) sgffrsnrt pn0322. gfo5r dag(o Y3.e4,)uNDfggxrDi goxnD/cor-ng sgpaxr-iapoortD xGd-agGot ng agGot CA" wD(orBfg(-Wipxnosovy CofnDpot /cor-ng sgpaxr-iapoort 9 ap5rfGWng uL Cpl Wfr mI-AF-bS02-9m-00 sgffrsnrt pn03, e. barpnBoci hgor ogal pf. zgarxsarrocoi ogal pf. way. 0e.2 02.2 way. CYYRL6 GRADED SAND (SC) gfóri apy 1/64, ) SNDfggxr Di goxnDfg(-WipxmsonyD/cor-iapcortD xGd-agGot ng agGot CA''w. CHI bhri" 9 Cl pffxWgnxg/art cago gvot pnogo. ы ш Г

CRY JEF T NUMBER:BY RING NUMBER:951905F HBHOOSHEET P Y2 P

## Borehole Log

#### PRHQIZET" ACm I AGInForft PBpxr 3: J5ron3

\_HzAEIH" THpkSpadgaDmA

J\_JVAEIH" T pending wRI I" 9 z H" ERAz EHR A" w wRI RI9 T4r ffg( Opskr nDEaOsk I gOon zHHRwl" AEJCT pending wRI\_\_I" 9 MJESHw A" w JQUIPMJ" E TRgrgxgoos mAEJR\_JVJ\_T 02.2 /ndi x CEARE T7)33)3232 J " w T7)33)3232 H99JR TA. Cr py wJ PES bJ Hm 9 RHU" w CURFAz J YiN CHI wJ Cz RIPEIH" <u>z HMMJ" EC</u> Ϋ́́ 6H RJ z HVJ R4 <u>CHI</u> "AMJ DUCZ C 9 RHUP C4MbH D <u>z H</u> HRDMHICEURJ z H" EJ" EDRJ\_AEIVJ wJ" CIE4 HR z H" CICEJ" z 4DCHI WJPES HF z ACI" 9 D WRI\_I" 9 WJEAI\_CD I" CERUMJ" EAEIH" 9 RAPSIz mJ\_wJEALC CERUZ EURJ DMI" J RA\_H94 WELL GRADED SAND WITH GRAVEL (SW-SM) gf5r i apy 1/94 , )3100 [ggxr D] goxrD[g(-Wi[oxmsory/Dioor-ng sgpaxr-i aport DxGd-agGot ng agGot CA" wD(orB/cor-ng sgpaxr-i aport 9 ap5rf GWng 3.eL , Lsgddfr. 3e.2 02.2 barpnBoci hgor ogal pf. zgarxsarrocoi ogal pf. " J m CHL bHRI" 9 \_ H9 ; PEMz I" E4RJ ; 9 \_ b; " ACmI: AF: PSACJ 3: 3201.9 PQ \_ Z S3M 9 J HEJ Z S: 03.9 WE, 02)33322 wrsarpxrtiap5rf5gfGlr. u2.2 WELL GRADED SAND WITH GRAVEL (SW-SM) 1 gfc5riapy Ye4,)3NDCAMJACAbHVJ. losarpxrtiap5rf5gfGlr. ue.2 02.2 CYYRL6 GRADED SAND (SC) gfc5riapy Ye4,)3ND/cor-iapcortD(rff-agGotrt CA"w. "giap5rf. b gazoi nral copnrt pn, 2 /ndix.

# Ch2m

BORING NUMBER: PROJECT NUMBER: 695619CH BH11/MW-630 SHEET 1 OF 1

### **Borehole Log**

PROJECT : NASWI Ault Field Phase 2\_Event 2

SOIL BORING LOG: PTMCINTYRE.GLB: NASWI AF PHASE2 2019.GPJ: CH2M GEOTECH 12.GDT: 11/5/20

NEW

LOCATION : Oak Harbor, WA

#### DRILLING CONTRACTOR AND DRILL RIG : Yellow Jacket, Truck mount ELEVATION: 12.604 ft amsl, TOC COORDINATES : N 501230.4, E 1193964.12 DRILLING METHOD AND EQUIPMENT : Rotosonic WATER LEVEL : 12.8 ft bgs START : 7/22/2020 END: 7/22/2020 LOGGER : A. Seay DEPTH BELOW GROUND SURFACE (ft) SOIL DESCRIPTION COMMENTS ŧ LOG RECOVERY SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL **GRAPHIC** DEPTH OF CASING, WELL DETAILS DRILLING DETAILS, INSTRUMENTATION STRUCTURE, MINERALOGY WELL GRADED SAND WITH SILT AND GRAVEL (SW-SM) olive brown (2.5Y 4/3), loose, dry, fine- to coarse-grained, sub-round to round SAND, with low-plasticity Silt, and fine- to 8 in steel flush mount well completion. coarse-grained Gravel up to 5". Bentonite seal/fill. Hand cleared to 5 ft bgs. POORLY GRADED SAND (SP) Layer of black organic material. olive brown (2.5Y 4/3), loose, moist, fine-grained SAND. Breathing zone normal. Core screening normal. 5 5.0 Filter pack. 5 ft screen. Wet at 9 ft. Sample WI-AF-BH11-SB-9 collected at 0830. 10 5.0 Increase in sand grain size to medium. Sands heaved creating a borehole TD of 13 ft bgs. Boring terminated at 15 ft bgs.

## ch2m;

 PROJECT NUMBER:
 BORING NUMBER:

 695619CH
 BH12
 SHEET 1 OF 2

### Borehole Log

#### RJT:Whil FOw31 kwEt. (gdt, RiaCd 4\_WAdb. 4

HTmwlkTOFTa52acrldMtw

WHW, wIKTOFN/A

VJKHHO-mTOIJwmITJwOVVJkHHJk-FGdttlN:ao5d.MidEo5sIEb.

mTTJVKOwIWBF N/A

VJIHHO-LWI2TVWOVWQURRLWOIFJI.IO.bg

	KOWI WB	1 10/1		WOV WQUKRLWOI FJI.ICIbop	
1 wl WJ	hw, wh f	w	31 wJI F7p4up4S4S	WOV F7p4up4S4S	HTWJFwB3dan
VVMRI 2 hVHT 1 - J T UOV 3 UJ(wmW - D	J WhT; WJ G Ba"	- J wR2kmHT -	<u>3 T KH V W8 mJ KRIKTO</u> <u>3 T KH OWL WWU3 m3 - J T UR 3 GL h T HM</u> <u>mT HT J ML T K3I U J WmT OI VOI MU WHM k W</u> <u>V VO3 KI G T J mT O3 K3I WOmGM&amp;T KH</u> 3 I J UmI U J WML KOWJ wHT - G	<u>MTLL VOI 3</u> <u>VWRI 2 T( mw3K0- M</u> <u>VJ KHO- VW wk+BM</u> KO3I J UL VOI wi KTO	<u>1 ₩₩ ₩₩₩</u>
- WT I Wn2_74B VI 9 Ysp44p4S	- uBS		POORLY GRADED SAND WITH GRAVEL (SP) Itg/drd Nb DAB Gypu"MI I CdM on Megodv.I ol acCdvf cagod, M CErvd Eb, 3wOVMNgi ol acCdvf cagod, - caAdt E0.I uFB POORLY GRADED SAND (SP) Itg/drd Nb DAB Gypu"MI I CdMs I gCMegodv.I ol acCdvf cagod, M CErvd Eb, 3wOVB	Handclertao5lofabogosa.dogatB hoda.iogofzlbdblosatB mlod QooddbogofblosatB	hdb.l bgd r ao5egitB           
OWM 3THHhTJKO-HT-9RtLmKOIGJWB Hh90w31 k_w(_R2w3W4_4SY/B_R:9 m24L - WTI Wh2 BSB 1	- / 85		POORLY GRADED SAND (SP)         Itg/d f can D G yp4"MI I CdIM/d.Mgbdv.I ol adCdvf cadpd, M         CEr vd Eb, .I d Eb, 3wOVB         WELL GRADED SAND WITH GRAVEL (SW)         Itg/d f can D G yp4"MI I CdIM/d.Mgbdv.I s d, gEs vf cadpd, M         CEr vd Eb, .I d Eb, 3wOVB	3 as 0td 1 kw(vh2Y4v3hv/B) ol ttdo.d, a. YYy)B 3 as 0td 1 kw(vh2Y4v-1 vYY ol ttdo.d, a. YY))B	

## ch2m;

 PROJECT NUMBER:
 BORING NUMBER:

 695619CH
 BH12
 SHEET 2 OF 2

### Borehole Log

#### RJT:Whil FOw31 kwEt. (gdt, RiaCd 4\_WAdb. 4

HTmwlkTOFTa52acrldMlw

#### WHW, wIKTOFpending

VJKHHO-mTOIJwmITJwOVVJKHHJk FGdttIN:ao5d.MidEo5sIEb.

#### mTTJVKOwIW8F pending

VJKHHO-LWI2TV WOV WQUKRLWOIFJI.IO bop 31 wJIF7ra4ura4S4S WOV F7ra4ura4S4S

wiwuhi	W, WHF ww		WOV F7p4up4S4S	HTWJ FwB3dan
1 MmW		3 T KH V W8 mJ KRI KT O	mTLLWOI 3	
- JTUOV 3UJ ( wmW - JTUOV 3UJ ( wmW	J WMT; WJ G B.	<u>3 TKH OWL WWU3 m3 - J T UR 3 GL h T HM</u> <u>m T HT J ML TK3 I U J WmT OI WOI MJ WHWI k, W</u> <u>V WO3 kI G T J mT O3 K3 I WOmGWS TKH</u> <u>3 I J UmI U J WML KOWJ WHT - G</u>	<u>WRI2T(mw3k0-M</u> <u>VJkHHO-VWIwk1BM</u> K03IJULWOIwikTO	<u>1 WHIVW wHB</u>
4) 85	/ 85		hoda.iogf zlbdblosatB mlodCooddbogf blosatB	
		WELL GRADED SAND WITH GRAVEL (SW)		
	/ 65	POORLY GRADED SAND (SP)	3as0td 1 kw(vh2Y4γ-1 vu/ aCNdttaCL3β3V Cas0tdC	
		POORLY GRADED SAND (SP) ItgAd fcan D) Gyp4"MIICdMNd.Megodvfcaogod, 3wOVB	1 kw( vh2 Y4 + 1 vu/ aCNdtt aCL 3 ßV Cas 0tdC att ol ttdo.d, a. YyySB	

PROJECT NUMBER: BORING NUMBER: 695619CH BH13 SHEET 1 OF 2

### **Borehole Log**

#### EF: \_JC6 MDw3v TwGt / ield Ehase - QJ Nent -

L: Cw6T O M ak HarborRv w

#### JLJVw6T OMN/A

SFTLTD, C: O6FwC6: F wOS SFTL FT MAellop acketR6rGck moGnt

#### C:: FSTOw6J3 M N/A

SFTLTD, YJ6H: S wOS JU7 TEY JO6 MF otosonic

#### 36wF6 MP0 W0-4-4 JOS MP0 W0 4-4

v w6JF LJVJL M	1	36wF6 MP9 Wo 4-4	JOS MPO VO 4-4	L:,, JF Mw. 3eay
	_	3: L SJ3CFE6T O	C: YYJO63	
SJE6H BJL: v F: 70S 37F/ wCJ Iff8 FJC: VJFA Iff8	, FWEHTCL:	<u>3: T. OwY JR7 3C3 , F: 7E 3AY B: LR</u> <u>C: L: FRY: B67FJ C: O6JO6RF JLw6T/J</u> <u>SJO3T6A: F C: O3B6JOCAR3: T.</u> <u>36F7C67FJRY TDJFwL: , A</u>	<u>SJE6H: / Cw3D, R</u> SFILD, SJ6wI3R D36F7YJO6w6T O	<u>v JLL SJ6wT3</u>
  5.45		WELL GRADED SAND WITH GRAVEL (SW)         yellop       I5A P0' 8RooseRdryRop DulasticityRfineDto         coarse@grainedRsCbDoOnd to roOnd 3wOSRpith fineDto         coarse@grained, raNel Qu to - 9         POORLY GRADED SAND WITH GRAVEL (SP)         , ray I, LJ A (D'ORooseRmoistRop DulasticityRfineDgrainedR         sCbDoOnd to roOnd 3wOSRpith fineDto         Qu to - 9	Hand cleared to 5 ft bgs. Layer of black organic material. Breathing zone normal. Core screening normal. Cobble Wa Sark redish brop n I5 AF 1018 organics and roots.	Bentonite backfill.
		POORLY GRADED SAND (SP)         oliNe 15A W01RooseRmoist to p etRineDgrainedRroGnd 3wOS.         WELL GRADED SAND WITH GRAVEL (SW)         oliNe bropn 15A W01RooseRp etRineDto coarseDgrainedRroGnd 3wOSRp ith fineDgrained roGnd , raNel Qu to 4.59	3amule v TDV/ DBH(1D3 BD2.5 as pell as Y 303 S samules collected at 4) 55. 3amule v TDV/ DBH(1D v D( collected at 4) 54 Na hydrouQnch.	
(5.4(4.4		POORLY GRADED SAND (SP)         oliNe gray 15A VØ &RooseRp etRinet@rainedRroGnd 3 wOS.         WELL GRADED SAND WITH GRAVEL (SW)         oliNe gray 15A VØ &RooseRp etRineDto coarset@rainedRroGnd 3 wOSRp ith finet@rained roGnd , raNel Qu to (.59)	Sark redish brop n I5 AF 1018 organics and roots.	
-4.4				

	PROJECT NUMBER:	BORING NUMBER:					
	695619CH	BH13	SHEET	2	OF	2	
Ch2m:	Boreh	ole Log					

SFTLTD, C: O6FwC6: F wOS SFTLFT, MAellop\_acketR6rGck moGnt

#### EF: \_JC6 MOw3v TwGt / ield Ehase - QJ Nent -

JLJVw6T O Mpending

L: Cw6T OM ak HarborRv w

<u>C:: FSTOw6J3M p</u>	ending SFTLTD, YJ6H: S	wOS JU7 EY J O6 MF otosonic	
v w6JF LJVJL M 2.4	ft bgs 36wF6 MP0 V& 4-4	J OS MP0 V& 4-4	L:,, JF Mw. 3eay
A Iff8	<u>3: LSJ3CFE6T O</u>	<u>C: YYJO63</u>	
sJE6H BJL: v.c.J , F: 70S 37F/ w.c.J 1f8 FJC: VJFA 1f18 FJC: VJFA 1f18	<u>3: TOWYJR/3C3, F: 7E3AYB: LR</u> <u>C: L: FRY: 1667FJC: 06J06RFJLw6T/J</u> <u>SJ0315A: FC: 0316J0CAR3: T</u> <u>36F7C67FJR/10JFwL:, A</u>	<u>SJE6H:/Cw3D,R</u> <u>SFTLD,SJ6wT3R</u> D36F7YJO6w6TO	<u>v JLL SJ6wT3</u>
	WELL GRADED GRAVEL WITH SILT AND SAND (GW-GM) oliNe gray 15A VØ & RooseRp etRineDto coarseByrainedRoOnd , FwVJLRp ith fineDto coarseByrained 3 andRand lop Bulasticity 3 ilt.		
	POORLY GRADED SAND (SP)     oliNe gray 15A VØ 8RooseRp etRop DulasticityRineDyrainedRoGod	_	
-5.4).4		Breathing zone normal. Core screening normal.	
			-
			-
			-
			-
	POORLY GRADED SAND (SP) oliNe gray 15A VØ 8R3 wY J w3 wB: VJ.		-
			-
G 4 ( Z , 1			-
			-
			-
15.4).4			-
			-
		_	-
	POORLY GRADED SAND (SP)     oliNe gray I5A We RooseRp etRine@rainedRroGnd 3wOS.	3amule v TDv/DBH(1D v DW(	-
		collected at (4(5 Na hydrouGhch.	-
3 W4.4	Boring terminated at W4 ft bgs.		

# Ch2m

BORING NUMBER: PROJECT NUMBER: 695619CH **BH14** SHEET 1 OF 2

### **Borehole Log**

#### PFRQICE T, u37 vu) It Dield Phase - : J 6ent -

RCuEVR, TRap Harbor/ 7 u

J	JVuEvR,	T N/A

#### SFv\_v, N CR, EFuCERF u, S SFv\_FvN TAelloW Oacpet/ Er) cp mo) nt CRRFSv, uEJ3 T N/A SFv\_v, N L J EHRS u, S J MQvPL J, E TF otosonic 7 uEJF 3Eu FE TU9 w9 (-( RNNJF Tu. 3ea4 \_JVJ\_T ---J, STU9w9(-( R7 DuCJ 3Rv SJ3CFVPEVR, <u>CRLLJ, E3</u> Ē RN SJ PEH BJ R NFRQ, S 3QFC Ift1 FJCRVJFA <u>3Rv</u>, uLJ/Q3C3 NFRQP 3ALBR / <u>CR\_RF/LR&EQFJ\_CR\_EJ\_E/FJ\_uEWJ</u> SJ, 3/EA RF\_CR\_3/8/EJ\_CA/3Rv NFuPHAC SJPEH RDCu3y N/ 7 J SJEuv 3 <u>SFv v N SJEuv 3/</u> v 3EFQL J, EuEvR, 3EFQCEQFJ/L v JFu RNA POORLY GRADED SAND (SP) Bentonite bacpfill. light broWhish gra4 I- .5A 29 1/ loose/ dr4/ fineygrained/ ro) nd 3u, S. Hand cleared to 5 ft bgs. Breathing zone normal. Core screening normal. 5.( 2.( POORLY GRADED SAND (SP) oli6e gra4 I5A w9 1/ loose/ moist/ fineygrained/ ro) nd 3u, S/ With sGarse Nra6el ) Gto ( .5". 3RV BRFK N\_RN; PEL CV EAFJ.N\_B; 1 u37 x uD; PHu3J-:-(KY.NPQ CH-L NJREJCH; k-.NSE; kk59 Sarp redish broWh I- .5 AF 0901 k( .( organics and roots obser6ed. POORLY GRADED SAND (SP) oli6e gra4 I5A w9 1/ loose/ Wet/ fineygrained/ ro) nd 3u, S/ Wth Nra6el) Gto k". 3 am Ge 7 wuDyBHkwy3Bykk collected at k0k(. WELL GRADED SAND WITH SILT AND GRAVEL (SW-SM) oli6e gra4 I5A w9 1/ loose/ Wet/ finey to coarseygrained/ ro) nd 3u, S/ With IoWyGasticit4 3ilt/ and finygrained Nra6el ) Gto 0". k5.(\_ Y.5 ٦7

PROJECT NUMBER:
695619CH
09501901

BORING NUMBER: BH14

SHEET 2 OF 2

## Borehole Log

#### PFRQICE T, u37 vu) It Dield Phase - : J 6ent -

\_RCuEvR, TRap Harbor/ 7 u

JJVuEvR, T <i>pending</i>	SFv_y, N CR, EFuC	ERF u, S SFv FvN TAelloW Qacpet/ Er)	cp mo) nt
CRRFSy, uEJ3 T pending	SFv_y, N L J EHRS u	I, SJMQVPLJ, ETFotosonic	
7 uEJF_JVJ_T Y.(ft bgs	3 Eu FE TU9 w9 (-(	J, STU9-w9-(-(	_RNNJF Tu. 3ea4
SJ PEH BJ_R7 NFR0, S30F DucJ Ittl FJ CRVJ FA Itt1 NF uPH/C_RN	<u>3Rv_SJ3CFvPEvR,</u> <u>3Rv_uLJ/Q3C3 NFRQP 3AL BR /</u> <u>CR_RF/LR%EQFJ CR,EJ,E/FJ_UEWJ</u> <u>SJ, 3/EA RF_CR, 3/8EJ,CA/3Rv</u> <u>3EFQCEQFJ/LyJFu_RNA</u>	<u>CRLLJ, E3</u> SJPEH RDCu3y N/ SFv_y NSJEuv3/ y 3EFQLJ, EuE/R,	<u>7 J SJEuv 3</u>
31 K BLE N LAN BELOV EVEN B. n31 K nOD HTD NLET OF EVEN WE NOT THE OUT THE COLUMN I AND BELOV EVEN NOT THE COLUMN I AND BELOVE AND BELOV EVEN NOT THE COLUMN I	SEF QCEQFJ/L v JFu RNA         ELL GRADED SAND WITH SILT AND GRAVEL (SW-SM)         6e gra4 15A v9 1/3uL J u3 uBRVJ.         DORLY GRADED SAND (SP)         6e gra4 15A v9 1/loose/ Wet/ loWk/Gasticit4/ fineygrained/ ro) nd 1, S.         DORLY GRADED SAND (SP)         6e gra4 15A v9 1/loose/ Wet/ loWk/Gasticit4/ fineygrained/ ro) nd 3, S.	3 amGe 7 wDyBHkwyN7 y- k collected at k0v6 6ia h4droC) nch. Breathing zone normal. Core screening normal.	
	pring terminated at w( ft bgs.		

## PROJECT NUMBER: BORING NUMBER: 695619CH BH15/MW-627 SHEET 1 OF 3

### Borehole Log

#### JERTPC: NWLSI FL8or\_ilocl Jhtsl (DP/Inr(

#### -RCL:FRWNRtk.tofao)IL

#### P-POL: FRWN 57gW60 ert mso): RC

9 EF-FWACRW.ELC: RELW99 EF-EFAN2locau TtHklr): o8Hk ma8nr

CRRE9FWL: PSNWY64MQ(g06)P11614M7gW5

9 EF - FWA " P:. R9 LW9 PUVFJ" PW. NEarasaniH S:LE: NM///M//000 PW9 NM///M//000

1 L: PE	- POP- I	N 57gQ	erfbs S:LE:NM//M/(0(0	PW9 NM/(M/(0)	-RAAPE	NLgSIt,
9PJ:. BP-RI AERVW9 SVE_LCP W3	EPCROPE2 w3	AELJ. ƘRA	<u>SRF 9 PSCEFJ: FRW</u> <u>SRF WL" P) VSCS AERVJ S2" BR-)</u> <u>CR-RE)" RFS: VEP CRW PW ) EP-L: FOP</u> <u>9 PWSF: 2 RE CRWSFS: PWC2) SRF</u> <u>S: EVC: VEP)" FWPEL-RA2</u>	<u>CR" " PW S</u> <u>9PJ:.R_CLSFWA)</u> <u>9EF-FWA 9P:LFS)</u> FMS:EV" PW.L:FRW		<u>P 9P: LFS</u>
_			SANDY LEAN CLAY WITH GRAVEL (CL) ad/I foaun v(g52 Yw43) saer) caasI) dq) cau ypot sriHr, C-L2) uirh einl yra mIdi8mybot inId) s8f yt nb8t oSt nd) einIybot inId Act /Ic 8p ra (G/t nd Caff ot s 8p ra 50g			7 in srl I cæ8sh ma8nr u I ccHampot riang
			8p ra (Gitno Cattors 8p ra 50g			BInnanin'sItoweicocg
				Spars aeiœn axidt riang . t nd H≵t ol d ra 5 er f bsg		
5_				Boltrhinbzanl naomtog CaolsHollninbnaomtog		-
	7g0		SANDY LEAN CLAY WITH GRAVEL (CL) ac/If caun v(g52 Yw43) srice) dq ) cauypot sriHr, C-L2) uinh einl y raml di8mybot inl d) s8f yt nb8ot oSt nd) einl ybot inl d Act/Ic8p ra (G)	-		
						-
						-
						-
			SANDY LEAN CLAY WITH GRAVEL (CL) ad/If coun v(g52 Yw43) SL"PLSLBROPg			
						-
						-
						-
						-
≗ 15 5	10g0					
						-
- KA:						-
						-
						-
€(0		V/////				

# Ch2m;

 PROJECT NUMBER:
 BORING NUMBER:

 695619CH
 BH15/MW-627
 SHEET 2 OF 3

### Borehole Log

#### JERTPC: NWLSI FL8or\_il od Jhtsl (DP/Inr(

-RCL:FRWNRtk.tofao)IL

#### P-POL: FRWN 57gM60 ortmso): RC

9 EF-FWACRW. ELC: RELW99 EF-EFAN2l ocau Tt Hklr): o8Hk ma8nr

CRRE9FWL: PSNWY64MQ(g06)P11614M7gM5

9 EF - FWA " P: . R9 LW9 PUVFJ" PW. NEarasaniH S: LE: NM//M//0(0 PW9 NM//M//0(0

1 L: PE	-POP-I	N 57gQ	erfbs S:LE:NM(/M(/0(0	PW9 NM/(M/(0	-RAAPE NLgSIt,
9PJ:. BP-RI AERVW9 SVE_LCP va3	EPCROPE2 va3	AELJ. ƘRA	SRF 9PSCEFJ: FRW SRF WL" P)VSCS AERVJ S2" BR-) CR-RE)" RFS: VEP CRW PW.)EP-L: FOP 9PWSF: 2 RE CRWSFS: PWC2)SRF S: EVC: VEP)" FWPEL-RA2	<u>CR" " PW/S</u> <u>9PJ: R CLSFVA)</u> <u>9EF-FVA 9P:LFS)</u> FVS:EV" PW/L:FRW	<u>  P 9P: LFS</u>
	1090		SANDY LEAN CLAY WITH GRAVEL (CL) ad/ 1 bd., v52 Yw(3) ml di8mysriæ) sdbhrc, maisr C-L2) uirh ul cybdt dl d) enl yra Hat osl ybd inl d) s8f yca8nd ra ca8nd St ndg	91 Holt sinb bot/lc/a&3mlg Bolt minb zanl nacomtog Caol sHoll ninb nacomtog FnHolt slin sior raeinlybot inld stindg FnHolt slin maisr8olg	
WPI SRF BREMMA - RA; J.: " CMV 2EPgA-B; MLSI HD_DJ.LSP(0(016gA)T; C. (" APR: PC. DI(gA9: DA =	- 10.90		SILTY SAND WITH GRAVEL (SM) ad/1 bd, v52 YW3 dl nsl ) maisr) énl yra Hat osl ybd inl d) oa8nd SLW9 ) u irh oau ypd sriHr, Sior) t nd énl ybd inl d Ad / I c8p ra ( 0g		

PROJECT NUMBER:	BORING NUMBER:				
695619CH	BH15/MW-627	SHEET	3	OF	3

### Borehole Log

#### JERTPC: NWLSI FL8or\_iloclJhtsl(DP/Inr(

-RCL:FRWNRtk.tofao)IL

P-POL: FRWN 57gM60 ert mso): RC

9 EF-FWACRW. ELC: RELW99 EF-EFAN2Iccau TtHkIr): c8Hk ma8nr

CRRE9 FWL: PS NWY64MQ(g06) P 11614M7gW5

9 EF⊧-FWA "P:. R9 LW9 PUV FJ" PW. NEarasaniH

I L: PE - POP	-N 57gQerfbs	S:LE: NM/(M/(0(0	PW9 NM/(M/(0	- RAAPE NLgSI t ,
9PJ:. BP-RI AERVWB SVE_LCP WB3 EPCROPE2 WB3	AEI	<u>SRF 9 PSCEFJ: IRW</u> SRF WL" P) VSCS AERVJ S2" BR-) CR-RE)" RFS: VEP CRW PW.) EP-L: FOP <u>9 PWSF 2 RE CRWSFS: PWC2) SRF</u> S: EVC: VEP)" FMPEL-RA2	<u>CR" " PW S</u> <u>9PJ: R CLSFVA)</u> <u>9EF-FVA 9P: LFS)</u> FMS: EV" PW: L: FRW	<u>I P 9P: LFS</u>
Y5  _	POORLY ad/1 bd,	WITH GRAVEL (SM)         V52 YW(3) SL" P LS LBROPg         GRADED SAND (SP)         v52 YW(3) caasi ) ul r SLW9 g         RADED GRAVEL WITH SILT (GW-GM)         v52 YW(3) caasi ) ul r) éni yra Hat csi ybot ini d)         ul A EL OP - ) uirh saml mi di8myra Hat csi ybot ini d)         ul A St ndg	Stmpd IFJL_yB. 15ySByYM Hadd Hid tr 11Y0g	- - - - - - - - - - - - - - - - - - -
0. LSP(D(016gkJT; C. (" APR: 1	POORLY	GRADED SAND (SP)	Bd t rhinb zanl naomt og Cad sHoll ninb naomt og	
ы Б П П П П	ad/l bot, SLW9g	v52 Yw(3) oaasl) uÌr) én lybotin Id) u Iooyoa8n dId		
00	ac/lbot, SLW9)uin	RADED SAND WITH GRAVEL (SW) v52 Yw(3) caasl) ulr) einly ra Hatoslybotinld) ca8nd rheinlybotinld) ca8nd Act/lc8p ra 40g mintrldtr00 erfbsg		_idl opt Hkg

## PROJECT NUMBER: BORING NUMBER: 695619CH BH16/MW-626 SHEET 1 OF 3

### Borehole Log

#### JCREPvT: NASWI A4ur Ftdu J5osd h\_P3dnrh

#### LRvATIRN: RoV8 oif ai, WA

#### PLPOATIRN: z2H(7 eroc sy TRv

DCILLING v RNTCAv TRC AND DCILL CIG : mduab Eol Vdr, Ti4l V c a4nr

vRRCDINATPS: N)97Y)YH±9,P((9(767H67

#### DCILLING " PT8 RD AND PMQIJ" PNT : Carasanti STACT : Uhz0h2h2 PND : Uhz0h2h2

ATPC LPOPL	: zYHh	erfxs STACT:U0hz0h2h2	PND:U0hz0h2h2	LRGGPC : AHSdoy
DPJ I8 WPLKW GCRAND SQCFAV P BA CPV ROPCm BA	GCAJ 8IV LRG	<u>SRIL DPSv CIJ TIRN</u> SRIL NA" P, QSv S GCRQJ Sm <sup>I</sup> wRL, <u>v RLRC, " RISTQCP v RNTPNT, CPLATIOP</u> <u>DPNSITmRC v RNSISTPNv m SRIL</u> <u>STCQv TQCP, " INPCALRGm</u>	<u>v R" " PNTS</u> DPJ T8 RF v ASING, DCILLING DPTAILS, INSTCQ" PNTATIRN	WPLL DPTAILS
<u>ö</u>  Z (2H2 		SANDY LEAN CLAY WITH GRAVEL (CL) aut3d f i abn Bhl±m) 071, sae, uaasd, . iy, uab -puosrti try v LAm, b tr5 end-ra c d. t4c -xiotnd. , s4f -onx4uoi Son. , on. end-xiotnd. Gio3dtH	Spars aeaion xd tian agt.ortan H Sac daixon tis idts5fiabn Bhbatm C 7071H 8 on.ludoid.razerfxsH widor5tnx/and naicouH vaidsliddntnx naicouH	Y tn srddue4s5 c a4 b dwl ac pudrtanH wdnrantrd sdoweuH
(2  (z(2H2     h2		SANDY LEAN CLAY WITH GRAVEL (CL) atl3dfiabn Bildm) 0*1, SA" P AS AwROPH		

## PROJECT NUMBER: BORING NUMBER: 695619CH BH16/MW-626 SHEET 2 OF 3

### Borehole Log

#### JCREPvT: NASWI A4ur Ftdu J5osd h\_P3dnrh

LRvATIRN: RoV8 oif ai, WA

## PLPOATIRN: z2H(7 er oc su TRV DCILLING v RNTCAv TRC AND DCILL CIG : mduab Eol Vdr, Ti4l V c a4nr v RRCDINATPS : N ) 97Y) YHz9, P ( ( 9( 767H67 DCILLING " PT8 RD AND PMQIJ " PNT : Carasanti WATPC LPOPL : zYHnlerfxs STACT: U0hz0h2h2 LRGGPC : AHSdoy PND: U0hz0h2h2 DPJT8 WPLRW GCRQND SQCFAV P BA1 SRIL DPSv CIJ TIRN <u>v R" " PNTS</u> CPV ROPCm Br1 LRG SRIL NA" P, QSv S GCRQJ Sm' wRL, v RLRC, " RISTQCP v RNTPNT, CPLATIOP DPNSITMRC v RNSISTPNv m SRIL STCQv TQCP, " INPCALRGm DPJ T8 RF v ASING, DCILLING DPTAILS, INSTCQ" PNTATIRN GCAJ 8IV WPLL DPTAILS SANDY LEAN CLAY WITH GRAVEL (CL) au3d xioy Bzm) 01, c d. t4c -srtee, i yra suk 5ruy c atsr v LAm, b tr5 b duwxio. d., etnd- ra I aoisd-xiotnd., s4f -ia4n. ra ia4n. Son., on. etnd-xiotnd., ia4n. Gio3du4p ra h;H hz (2H2) Inlidosd tn sturaf sdi3d. tn uosrzerae tnrdi 3ouH widor5tnx / and naic oull vaid sliddntnx naic ouH NPW SRIL wRCING LRGKJ T" v INTmCPH6LwKNASWI\_AF\_J8ASPh\_h2(9H6JBk v8h" GPRTPv8\_(hH6DTk (( 02h2 72 SANDY LEAN CLAY WITH GRAVEL (CL) vaffuds4pra7bat;H aut3d xioy Bzm) 0h1, SA" PAS AwROPH 7z (2H2)

# ch2m;

 PROJECT NUMBER:
 BORING NUMBER:

 695619CH
 BH16/MW-626
 SHEET 3 OF 3

### Borehole Log

#### JCREPvT: NASWI A4ur Ftdu J5osd h\_P3dnrh

NPW SRIL wRCING LRGKJ T" v INTmCPH6LwKNASWI\_AF\_J8ASPh\_h2(9H6JBk v8h" GPRTPv8\_(hH6DTk (( 02h2

LRvATIRN: RoV8 oif ai, WA

### PLPOATIRN: z2H(7 er oc su TRV DCILLING v RNTCAv TRC AND DCILL CIG : mduab Eol Vdr, Ti4l V c a4nr v RRCDINATPS : N ) 97Y) YHz9, P ( ( 9( 767H67 DCILLING " PT8 RD AND PMQIJ " PNT : Carasanti zYHnlerfxs WATPC LPOPL : STACT: U0hz0h2h2 LRGGPC : AHSdoy PND: U0hz0h2h2 DPJT8 WPLRW GCRQND SQCFAV P BA1 SRIL DPSv CIJ TIRN <u>v R" " PNTS</u> Æ LRG **CPV ROPCm** SRIL NA" P, QSv S GCRQJ Sm' wRL, v RLRC, " RISTQCP v RNTPNT, CPLATIOP DPNSITMRC v RNSISTPNv m SRIL STCQv TQCP, " INPCALRGm DPJ T8 RF v ASING, DCILLING DPTAILS, INSTCQ" PNTATIRN GCAJ 8IV WPLL DPTAILS SILTY SAND WITH GRAVEL (SM) au3d xioy Bzm) 011. dnsd, c atsr etnd-xiotnd., ia4n. SAND, btr5 uab-puostti try Stur, on. etnd-xiotnd. Gio3du4p ra 7;H ) Z . (2H2) Fturdi pol VH (2 ersliddnH z2 SILTY SAND WITH GRAVEL (SM) widor5tnx / and naic oull aut3d xioy Bzm) 0h1, SA" PAS AwROPH vaid sliddntnx naic ouH POORLY GRADED SAND (SP) Soc pud WI-AF-w8 (6-Sw-z7 aut3d xioy Bzm) 0h1, uaasd, bdr, eind-xiotnd., ia4n. SANDH laundird. or (zh 2H ΖZ (2H2) Son. s 5do3d. I idortnx o f aid5aud TD aez9 erfxsH

waitnx rdic thord. or 62 erf xsH

# ch2m;

## PROJECT NUMBER: BORING NUMBER: 695619CH BH1/ -MW2675 SHEET 1 OF 3

### Borehole Log

#### ET O: R1 N W ASF \_Awir Dtdl. ECosd Y9R(dnr Y

#### LO1AN\_OI WO of boicaiyFA

RLRJAN OI WB3HBM8 er o0 slyNO1

hTLLIG10INTA1NOTAIhhTLLTGW4dlla/: o5fdryNiw5f0 awnr

1 OOT h I ANRS WI 3u) 8Y) H6ByR MMuM8YQH8

hTLLIGPRNbOhAIhRUVEPRINWTarasant5 SNATNV6V/BM/kYk RIhV6V/BM/kYk

F ANRT	LRJ RL	W BulkQe	arcxs SNATN.₩6¥7B¥7kYk	RIh ΜόλγΒλγκγκ	LOGGRT	WAHSdoz
~			SOLhRS1TENOL	1 OP P RI NS		
hRENb mRLOF GTOVI h SVTDA1F 24;	TR1 OJRT4 26,	GTAEb_1 LOG	SOLINGTTENOL SOLIAPRYVS1SGTOVES4PmOLy 10LOTYPOSNVTR10INRINYTRLANJR hRISN40T10ISSNRI14ySOL SNTV1NVTRYPIRTALOG4	<u>h REND OD 1 AS I Gy</u> <u>hT LL I G h RNA LSy</u> <u>I SNTVP RI NAN OL</u>	Ē	RLL h RNA LS
_			SANDY LEAN CLAY WITH GRAVEL (CL) alt(d cia/ n 2/tB4 3y),ysaerylaasdy.izyla/ -plosrt5trz 1 LA4y/ trC / dll-xio. d. yetnd- ra 0 d. tw0 -xiotnd. yswc-onxwloi Son. yon. etnd- ra 5aoisd-xiotnd. Gio(dl wp ra) "H			8 tn srddl &wsC0 awnr / dll 5a0 pldrtanH mdnrantrd sdolv&llH
-				Spars aeaionxd tian agt. ortanH Spoisd clo5f aixont5s tn sparsH		
				bon. 5ldoid. raBercxsH		
В_	818		LEAN CLAY (CL) alt(d cia/ n 2/1894 3v), ysrtæy. izyla/ -plosrt5trz 1 LA4 H	h dnstrz tn5i dosds ra srt <del>el l</del>		_
				midorŒnx 7and nai0 olH 1 aid s5iddntnx nai0 olH		
	-		SANDY LEAN CLAY WITH GRAVEL (CL) alt(d cia/ n 2/1894 3v), ysrtæy. izyla/ -plosrt5trz 1 LA4y/ trC / dll-xio. d. yetnd- ra 5aoisd-xiotnd. yswc-onxwloi ra swc-iawn. Son. yon. Gio(dlH			
Mk			SANDY LEAN CLAY WITH GRAVEL (CL) alt(d cia/ n 2/1884 3)), ySAP R AS AmOJ RH			-
MB	uH₿					-
- - - - - - - - - - - - - - - - - - -						
Yk						

#### PROJECT NUMBER: BORING NUMBER: 695619CH BH1/ -MW2675 SHEET 7 OF 3

### **Borehole Log**

#### ETO: R1 N W ASF \_Awlr Dtdl. ECosd Y9R(dnr Y

LO1ANOI Woof boicaiyFA

#### RLRJAN OI WB3HBM8 er o0 slyNO1

hTLLIG1OINTA1NOTAIhhTLLTGW4dlla/: o5fdryNiw5f0 awnr

#### 1 OOT h I ANRS WI 3u) 8Y) H6ByR MMuM8YQH38

#### hT\_LL\_I G PRNbOh AI h RUV\_EPRI N WT arasant5

F ANRT	LRJ RL V	V BulkQe	≇cxs SNATN ₩6¥7B¥7kYk	RIh W6vYBvYkYk	LOGGRT WAHSdoz
hRENb mRLOF GTOVI h SVTDA1R	TR1 OJRT4 24,	GTAEb_1 LOG	<u>SOL h RS1TENOL</u> SOL I AP RVVS1S GTOVE S4P mOLy <u>1 OLOTYPO SNVTR 1 OI NRI NYTRLANJR</u> <u>h RI S N4 OT 1 OI S SNRI 1 4 ySOL</u> SNTV1 NVTRYP I RTALOG4	<u>1 OP P RINS</u> <u>h REND OD 1 AS I Gy</u> <u>h T LL I G h RNA LSy</u> I SNTVP RINANOI	F RLL h RNA LS
I RF SOL mOT ] GLOG; ENP 1 ] INT REGLIN I ASF _9AD9EbASRY9YKMIGE:: 1b YP GRONR1b 9MM6h N. MABYK RE N N N N N N N N N N N N N	MKHK		SANDY LEAN CLAY WITH GRAVEL (CL) all(d xioz 284 3V/, y0 d. tw0-srteg, iz ra sitkofiz 0 atsr1 LA4y/ trC / dl-xio. d. ydrid- ra 5aoisd-xiotind, yswc-iawn. ra iawn. Son. y on. drid-xiotind, yiawn. Gio(dl wp ra M&*H SanDy Lean CLAY WITH GRAVEL (CL) all(d xioz 284 3V, ySAP R AS ArrOJ RH	midorQnx 7and nai0 olH 1 aid s5iddntnx nai0 olH	

# ch2m;

## PROJECT NUMBER: BORING NUMBER: 695619CH BH1/ -MW2675 SHEET 3 OF 3

### Borehole Log

#### ET O: R1 N W ASF \_Awir Dtdl. ECosd Y9R(dnr Y

LO1AN\_OI WOofboicaiyFA

RLRJAN OI WB3HBM8 er o0 slyNO1

hTLLIG10INTA1NOTAIhhTLLTGW4dlla/:o5fdryNiw5f0awnr

1 OOT h I ANRS WI 3u) 8Y) H6ByR MMuM8YQH8

hT\_LLI G PRNb Oh AI h RUV EPRI N WTarasant5

Ē	- ANRT	LRJ RL \	W BulfQ	ercxs SNATN W6v/BMkYk	RIh W6W/BW/kYk	LOGGRT WAHSdoz
	hRENb mRLOF GTOVI h SVTDA1R 26,	TR1 OJRT4 2#;	GTAEb_1 LOG	<u>SOL h RS1 T EN OL</u> SOL I AP RVVS1 S GTOVE S4P mOLy <u>1 OLOT VPO SNVTR 101 NRI NVTRLAN JR</u> <u>h RI S N4 OT 101 S SNRI 14 VSOL</u> SNTV 1 NVT RVP I RTALOG4	<u>1 OP PRINS</u> <u>h RENbOD 1 AS IG</u> y <u>h TLLIG h RNALS</u> y <u>ISNTVPRINANOI</u>	<u>F RLL h RNA LS</u>
Ib BMMECh N, MMEWK	3B	McHt		SANDY LEAN CLAY WITH GRAVEL (CL) alt(d xioz 284 3W,ySAP R AS AmOJ RH SILTY SAND WITH GRAVEL (SM) alt(d xioz 284 3W,y. dnsdy. izyetnd-xiotnd. yiawn. SAI h y/ trC Gio(dl wp ra) "H	l a xio(dlH	- - - - - - - - - - - - - - - - - - -
Y9YkMul&E:; 1b YP GRONR1	Bk			SILTY SAND WITH GRAVEL (SM) alt(d xioz 284 3W,ySAP R AS AmOJ RH	midorQnx 7and nai0 olH 1 aid s5iddntnx nai0 olH	Mk er s5iddnH
IRF SOL mOT IGLOG; ENP 1 INT TROLM IASF 9AD9E bASR Y9YK MUGE .; 1 b YP GRONR 1 b 9M YG h Y MABMY.	BB	McHł		POORLY GRADED SAND (SP) alt(d xioz 284 3W,ylaasdy/ dryend-xiotnd. yiawn. SAI h H	So0 pld F _AD-mb M6-Sm-B) 5alld5rd. or MkYBH h wpit5ord so0 pld F _AD-mb M6-SmE-B) 5alld5rd. or Mk) kH	

## PROJECT NUMBER: BORING NUMBER: 695619CH BH18/MW-631 SHEET 1 OF 2

### Borehole Log

#### JET: NCWIGA7F SA. 5x\_e05 Jgdno 3DNRorx3

6TCAWSTGITdYcdpBap-FA

N6NkAWSEGIO/H99bxdmn5WTC

"E\$66\$5PCTGWEACWTEAG" "E\$66E\$PI)o55av:dlYox-WolYma.rx

CTTE" \$GAWN7 | G, 9u/f3H,1-N 00093w33HWf

"E\$66\$6PMNWcT"AG"NQUSIMNGWIEaxanarel

F AWNE	6Nk N6 I	19₩	xBt n 7WAEWI V28923w3w	NG" I V23923w3w	6TPPNEIAH7od0
"NJV& hN6TF PETUG" 7UE_ACN	ENCT KNE) 4by	PEAJ cSC 6T P	<u>7T\$65 "N7CE\$JW85G</u> <u>7T\$65 GAMN-U7C7 PETUJ7) MhT6-</u> <u>CT6TE-MT\$7WUEN CTGWNGW-EN6AW86N</u> <u>"NG7\$90) TE CTG7\$7WNGC)-7T\$65</u>	<u>CTMMNGWZ</u> <u>"NJWCT_CA7SSP-</u> <u>"ES66SSP"NVAS57-</u> <u>S57WEUMNGVAWSTG</u>	<u>F N66 " NVAS67</u>
	-		<u>7WEUCWUEN-MSGNEA6TP)</u> SILTY SAND WITH GRAVEL (SM) idpYtpd0eng Bpavr 43Hf), 23y-5aano-ip0-beroltpderoi-pa.ri 7AG''-veg SavL(5dnxelee07e5k dri PpdRo5.(xa O3H		/ er mxoo5b5 ng ma.rx v o55lam(55xearH h orxareonod52xe57H
-				Şar aseion xderert xgpa. tga. x. renH cdri I5odpoi xa fbxBtnH h podvgert zarorapm d5H	-
f	- uHw		SILTY SAND (SM) idpYtpd0eng Bpavr 43hfl), 23y-iorno-maenx-beroLtpderoi-pa.ri 7AG''-veg 5avL(5ahxelen07e5AH	7amoerxopmesoi 5odr I5d0H	-
F 28%	-				-
- DO3HP = W 00	-				-
Ow_					-
9番J:; Cc 3N	-			CaBBର୍ତ୍ତ 1ାମିଖ୍ୟ	
GNF7TS6hTESSP6TP;JWACSSWJEN#P6h;GA7FSCA_DUcA7N3DSWOB#J:;Cc3MPNTWACcDOB#"W CO2723W &	-		SILTY SAND WITH GRAVEL (SM) idpYtpd0eng Bpavr 43hfl), 23y-iorno-maenx-7AG"-veg ସେvl(ସୋମaeleo07e5xdri PpdRo5. (xa 38H	7amoerxopmesoi 5odr I5d0H	-
GA7F SDA	- uHw				-
SGW ENHP6h;					
6T P; J WAC	-				
T ShTESSP	-				
L L L N D 3w			POORLY GRADED SAND (SP)		

# ch2m;

## PROJECT NUMBER: BORING NUMBER: 695619CH BH18/MW-631 SHEET 2 OF 2

### Borehole Log

#### JET: NCWIGA7F SA. 5x\_e05 Jgdno 3DNRorx3

6TCAWSTGITdYcdpBap-FA

N6NkAWSEGIO/H99bxdmn5-WTC

"E\$66\$56PCTGWEACWTEAG" "E\$66E\$PI)o55av:dlYox-WolYma.rx

CTTE" \$GAWN7 | G, 9u/f3H,1-N 00093w33HWf

"E\$\$6\$GPMNWcT"AG"NQUSIMNGWIEaxanarel

FAWNE	6Nk N6 I	19₩ bxBt n	7 VAEWI V28923w3w	NG" I V23923w3w	6TPPNEIAH7od0
"NJV& hNGTF PETUG" 7UE_ACN	ENCTKNE) 4by	PEAJ c S 6T P	<u>7T\$S "N7CESJWSTG</u> <u>7T\$S GAMN-U7C7 PETUJ 7) MhT6-</u> <u>CT6TE-MT57WUEN CTGWNGW; EN6AW&amp;RN</u> <u>"NG7\$WJ TE CTG757WNGC) - 7T\$S</u> <u>7WEUCWUEN-M\$SENA6TP)</u>	<u>CTMMNGW7</u> <u>"NJWCT_CA7\$69-</u> <u>"E\$66\$69 "NWA\$67-</u> \$67 WEUMNGWAW\$7 G	<u>F N66 " NVA\$67</u>
	- - - OwHe	SILTY S i dpY t pc	d0eng Bpavr 43H1), 23y-5aano-maenx-berolt pderoi 7AG"H SAND WITH GRAVEL (SM) d0eng Bpavr 43H1), 23y-maenxH	hpockgert zarorapmd5H Caponlpoorert rapmd5H	
Cc: 3M P NT WUCc DOBIR" W COR 23W	-	i dpY t po	LYGRADED SAND (SP) ±0eng Bpavr 43141), 23y-5aano-maenx-berobt poberoi 7AG"H SAND WITH GRAVEL (SM) ±0eng Bpavr 43141), 23y-iorno-maenx7AG"-veg pa.ri .(xawlf18H		 
7T SS hT ESSP 6T P; JVM/CSSIVJ ENHP6h; GA7F SCA_DL cA7N3D3W03HPJ:; Cc 3M PNT WNCc D03HP* W CO2723W I I M M I M I M I M I M I M I M I M I M	- - - Owhite -	i dp/t μ 7AG" H i dp/t μ PμRo5. i dp/t μ 7AG" H i dp/t μ 7AG" H	SAND WITH GRAVEL (SM) J0eng Bpavr 43H1), 23y-iorno-maenx7AG''-veg pa.ri (xawH18H Y GRADED SAND (SP) J0eng Bpavr 43H1), 23y-5aano-maenx-berolt poleroi-pa.ri SAND WITH GRAVEL (SM)	7dm (5o F\$SA_LhcO'L7hL1, Ia55olxoi dxOQ,wH	
GNF 7T SC hT ESSP K K H H H H	-	i dpYt pc	d0eng Bpavr 431ff), 23y-iorno-maenx7AG"H		

JWCUT) L AMV BTW 695619) S	BCWAN AMV BTW BS19	PSTTL	1
Boreh	ole Log		

1 CF 2

#### PROJECT : NASWI Ault Field Phase 2\_Event 2

LOCATION : Oak Harbor, WA

ELEVATION :	N/A

DRILLING CONTRACTOR AND DRILL RIG : Yellow Jacket, Truck mount

COORDINATES : N/A

DRILLING METHOD AND EQUIPMENT : Rotosonic START : 7/28/2020

VATER	LEVEL :		START : 7/28/2020	END : 7/28/2020	LOGGER : A. Seay
ACE	(tt)	ŋ	SOIL DESCRIPTION	COMMENTS	
DEPTH BELOW GROUND SURFACE (ft)	RECOVERY (ft)	GRAPHIC LOG	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING DETAILS, INSTRUMENTATION	WELL DETAILS
0			PORLY PGADE OLS NWGITR HPV (		Bentonite backfill.
_			olive brown (2.5Y 4/3), loose, dry to slightly moist SAND.		
_					
				Iron oxidation staining. Hand cleared to 5 ft bgs.	
_					
_			RTGA) RGY H R( olive brown (2.5Y 4/3), stiff, moist CLAY.	Breathing zone normal.	
5.0	9.0			Core screening normal.	
_					
_					
_					
_					
10.0					
			RTGA ) RGY H R( Olive gray, SAME AS ABOVE.		
_					
_					
_					
15.0	8.0				
_					
_					
_					
_					
20.0					
			RTGA)RGY H R( Olive gray, SAME AS ABOVE.	Well-graded, fine- to coarse-grained, sub-round sand.	
_	10.0				
_	. 5.0				
_		V/////		1	

	JWCUT) LAMV BTW:	BCWOAN AMV BTW:				
	695619) S	BS19	PSTTL	2	CF	2
Ch2m:	Boreh	ole Log				

#### PROJECT : NASWI Ault Field Phase 2\_Event 2

ELEVATION : pending DRILLING CONTRAC				CTOR AND DRILL RIG : Yellow Jacket, Truck mount		
COORD	NATES :	pene	ding DRILLING METHOD	AND EQUIPMENT : Rotosonic		
WATER	LEVEL :	37.01	ft bgs START : 7/28/2020	END : 7/28/2020	LOGGER : A. Seay	
DEPTH BELOW GROUND SURFACE (ff)	RECOVERY (ft)	GRAPHIC LOG	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	<u>COMMENTS</u> <u>DEPTH OF CASING,</u> <u>DRILLING DETAILS,</u> <u>INSTRUMENTATION</u>	WELL DETAILS	
				Increase in sand volume.	_	
_	10.0			Breathing zone normal. Core screening normal.	-	
_	10.0				-	
30.0				_	-	
_			<b>PGRLY PGAD E 0LS NWGI TR HPV (</b> Olive gray, dense, moist, sub-round to round SAND, with fine-grained Gravel up to 1".		-	
PHASE2_2019.GPJ; CH2M GEOTECH_12.GDT; 11/6/20	10.0				-	
M GEOTEC			JCCWRY NWGDTD PGAD HPJ ( olive brown (2.5Y 4/3), loose, wet, rouund SAND.	Sample WI-AF-BH19-SB-37 collected at 1310.	-	
			JCCWRY NWGDTD PGAD HPJ ( Olive gray, dense, moist, round SAND.		-	
			JCCWRY NWGDTD PGAD HPJ ( Olive gray, loose, wet, fine-grained SAND.			
sLB; NASWI_/					-	
0.017 45.0 CINTYRE	10.0				-	
-06; PTM						
NEW SOIL BORING LOG; PTMCINTYRE.GLB; NASWI_AF 5 6     0   1   0   1				Sample WI-AF-BH19-GW-49 collected at 1500.		
⊒50.0			Boring terminated at 50 ft bgs.			

# ch2m

BFHAETEM(BRH: BI P0

SIRRD O F2 P

### **Borehole Log**

#### EVPRJuBTSyH: IyD5tFil5dEWasIw\_J1Intw

NPuyBIPS TPabhareor3: y

JHFUR6DEM(BRH:

9519C56 I

JNJ; yBIPS TN/A

AVINNISO u PSBVy u BPV y SA AVINN VIOT (I 550k Rafbl t3BrDfb, oDnt

uPPVAISyBJHT N/A

AVINNSO GJBhPA ySA JQUIEGJSB TVotosonif yBJVNJ;JNT ---HBy VB T71/481/40w0 JSA T71/481/40w0 NPOOJV Ty. HIa) AJ EBh CJ NP: OVPUSA HUVFy u J vth HPINAJ Hu VIEBIPS u PGGJ SBH ₽ NPO ) Л HPINSYGJ3UHu H OVPUE H(GCPN3 uPNPV3GPIHBUVJ u PSBJSB3VJNyBI; J AJSHB(PV uPSHIHBJSu(3HPIN OVyEhlu <u>AJEBh PFuyHISO3</u> : JNNAJByINH AVINNISO AJ By INH3 ISHBVUGJ SBy BIPS VJuP; HBVUu BUVJ3GISJVyNPO( SANDY SLEC WADI THLGRN VS() CI ntonitl eaf brits o511 erok n w.z(2)4/350osl 3dr) to s5igW15), oist3HySA. Iron oxidation staining. Hcarsl e5af b organifs. Brafl roots. h and f 5 arl d to z megs. NRLE 6 NLY V6 N) o511 erok n w.z (214/3stimot, oist u Ny (. Crl atWing - onl nor, a5 u orl sfrl I ning nor, a5 z 9.0 HPINCPVISO NPO"EBGUISB( VJ.ONC"SyH: 1\_yF\_EhyHJw\_W099.0ER" uhwG OJPBJuh\_pwOAB" ppX\*W0 p0 SLECY NRLE 6 NLY WAD THLGRN \6 N) o511 gra) vz( 2\W3, 1 diD, Lstim6, oist u Ny( 3k itWk1 53gradl d3 riml Lto f oarsl LgrainI d3sDeLroDnd to roDnd Hand3and riml LgrainI d3roDnd Ora11 5Dc to wM pz 8.0 SJ:

	JHFUR6DEM(BRH:	BFHAETEM(BRH:				
	9519C56 I	BI PO	SI RRD	Ρ	F2	Р
Ch2m:	Boreh	ole Log				

EVPRJ	uBTSy⊢	l: lyD61	iFil5dEWaslw_J1Intw NPuyBIPSTPa	bhareor3: y			
JNJ; y E	BIPSTp	ending	AVI <b>NN</b> SO u PSBVyu	uBPV ySAAVINN VIOT(I55ok Rafblt3BrDfb, oDnt			
uPPVA	AISyBJH	T pen	ding AVINNSO GJBh PA	ySA JQUIEGJSB TVotosonif			
	/NJ;JN			JSA T7168160w0	NPOOJV Ty. HIa)		
			<u>HPINAJ Hu VIEBIPS</u>	uPGGJSBH			
AJ EBh CJ NP: OVPUSA HUVFyu J Wh	, ATL	OVyEhlu NPO	<u>HEINAJ HUVIEDIES</u>				
CH SH SH SH SH SH SH SH SH SH SH SH SH SH	> 	hlu	HPINSyGJ3UHuHOVPUEH(GCPN3	AJEBh PFuyHISO3	<u>: JNNAJByINH</u>		
US/	VJuP; JV(	√y E	<u>u PNPV3GPIHBUVJ u PSBJSB3VJNyBI; J</u> AJSHIB( PV u PSHIHBJSu (3HPIN	AVINNSO AJ By INH3 ISHBVUGJ SBy BIPS			
OVE	>	0	AJSHIB(PV u PSHIHBJSu (3HPIN HBVUu BUVJ3GISJVyNPO(	<u>·····································</u>			
		V////	SLECY NRLE 6 NLY WAD THLGRN V6 N)				
			o511 gra) vz(21W3HyGJyHyCP;J.				
-	-						
-	-						
-	_						
-	_						
wz	p0.0						
	p0.0			Crl atWhg - onl nor, a5 u orl sf rl l ning nor, a5			
Ø¥.							
Add -	-						
AB"							
O'Md –	-						
- h							
Ra 40_	_		JFFHNYTHLCRCSLECVSJ)	 Ha, c5			
PO 6			o511 gra) vz(21W35oosl 3k l t3riml Lgrainl d3roDnd HySA.	: ILy FLCh w0LHCL40			
- Jw	_			fo55iftldatp0w0.			
л Ж							
- BO:	_						
dow							
>' 구 –	_						
Eh y I							
_  +							
4z_							
UNC.	p0.0						
0.LV							
SB(	-						
3Gu l							
= =	-						
d v							
- 1/1SO	-						
CP				Ha. c5			
N -	-			Ha, c5 : ILy FLCh w0LO: L2p			
SJ: HPINCPVISO NPO"EBGUISB(VJ.ONC"SYH: I_YF_EhyHJw_w099.0ER uhwG 0JPBJuh_pw0AB" pp2%0				fo55iftldatpp0z.			
<u>ഗ</u>			Coring the institute of 20 strongs				

BORING NUMBER: MW-616 SHEET 1 OF 2

## Borehole Log

PROJECT	: NASWI	Ault Field	Phase 2

LOCATION : Oak Harbor, WA

PROJECT NUMBER:

695619CH

LEVATI	ION: per	nding	DRILLING CONTRACTOR AND DRI	L RIG : Yellow Jacket, Truck	mount
COORDI	NATES :	pena	ling DRILLING METHOD AND EQUIPME	NT : Rotosonic	
ATER I	LEVEL :	6.0 ft I	bgs START : 11/10/2019 EN	ND : 11/10/2019	LOGGER : T. Chalmers
DEPTH BELOW GROUND SURFACE (ft)	RECOVERY (ft)	GRAPHIC LOG	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS DEPTH OF CASING, DRILLING DETAILS, INSTRUMENTATION	WELL DETAILS
-	0.0		SILT WITH SAND (ML) very dark brown / dusky yellowish brown (10YR 2/2), Dry, low-plasticity SILT, with fine-grained Sand and trace Gravel < 10mm. (Silt: 80%, Sand: 15%, Gravel: 5%) SILT WITH GRAVEL (ML) olive gray (5Y 4/2), Dry, medium-plasticity SILT, with Gravel < 5mm. (Silt: 95%, Gravel: 5%)	Note: Monitoring well not installed at this location. Hand cleared a 2 ft diameter hole to 5 ft.	Bentonite backfill
5			SILT (ML) black (10YR 2/1), Dry, low-plasticity SILT, with few fine-grained Sand. SILT (ML)	Slight organic odor.	
_	0.0		very dark greenish gray (GLEY1 3/5 GY) Dry, low-plasticity SILT, with trace fine-grained Sand. <b>LEAN CLAY (CL)</b> dark gray / olive gray (5Y 4/1), Soft, wet, medium-plasticity, non-dilatant, medium-toughness, LEAN CLAY, with few interbedded Silt layers containing trace shell fragments.	Drilling began at 5 ft with a 4 in core barrel and 6 in casing.	
-			LEAN CLAY (CL) dark gray / olive gray (5Y 4/1), Soft, wet, medium-plasticity, non-dilatant, medium-toughness, LEAN CLAY.	Samples WI-AF-MW-616-SB-07, WI-AF-MW-616-SB-07-M WI-AF-MW-616-SB-07-S collected at 1620.	
10	12.0			Breathing zone normal. Core screening normal.	
-					
15					
-	20.0				
20					

	PROJECT NUMBER:	BORING NUMBER:					
	695619CH	MW-616	SHEET	2	OF	2	
Ch2 <sub>M</sub> :	Boreho	ole Log					

#### PROJECT : NASWI Ault Field Phase 2

ELEVATION : pending         DRILLING CONTRACTOR AND DRILL RIG : Yellow Jacket, Truck mount           COORDINATES : pending         DRILLING METHOD AND EQUIPMENT : Rotosonic									
COORD	NATES :	pena	DRILLING METHOD AND EQUIP	Rotosonic					
WATER	LEVEL :	6.0 ft l	gs START : 11/10/2019	END :	11/10/2019	LOGGER : T. Chalmers			
DEPTH BELOW GROUND SURFACE (ft)	RECOVERY (ft)	GRAPHIC LOG	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY		COMMENTS DEPTH OF CASING, DRILLING DETAILS, INSTRUMENTATION	WELL DETAILS			
- - - 25 -	20.0		LEAN CLAY (CL) dark gray / olive gray (5Y 4/1), SAME AS ABOVE.	Br Cc	eathing zone normal. bre screening normal.				
30			LEAN CLAY (CL) dark gray / olive gray (5Y 4/1), Soft, wet, medium-plasticity, non-dilatant, medium-toughness, LEAN CLAY, with little percentage (15%) Gravels < 55mm.	Co sti	onsistencey slightly ffens.				
			Boring terminated at 30 ft bgs.	1					
						-			
40									

# CI2M;

BORING NUMBER: MW-618

SHEET 1 OF 2

## Borehole Log

PROJECT : NASWI Ault Field Phase 2

		L TOO	LUCATION : Oak Harbor,				
LEVATION : 19			DRILLING CONTRACTO		,	ount	
OORDINATES	: N 496	967.91, E 1194695.95	DRILLING METHOD AND	EQUIPMENT : Rotos			
ATER LEVEL :	: 7.2 ft	gs	START : 11/17/2019	END : 11/17/	/2019 L	OGGER : [	). Butler
DEPTH BELOW GROUND SURFACE (ft) RECOVERY (ft)	GRAPHIC LOG	SOIL NAME, USC COLOR, MOISTURE DENSITY OR CC	SCRIPTION S GROUP SYMBOL, CONTENT, RELATIVE NSISTENCY, SOIL , MINERALOGY	DEPT	OMMENTS H OF CASING, LING DETAILS, RUMENTATION	W	ELL DETAILS
- 0.0		SANDY SILT WITH GRAVEL (ML) very dark brown / dusky yellowish bro rapid-dilatancy, low-toughness SILT, Gravel. FAT CLAY (CH) yellowish brown (10YR 5/6), Hard, du high-toughness FAT CLAY, with trace SANDY LEAN CLAY (CL) light brownish gray / pale yellowish br low-plasticity, non-dilatant, low-tough Sand and trace fine-grained Gravel a	with fine-grained Sand to fine- ry, high-plasticity, non-dilatant e fine-grained Sand. rown (10YR 6/2), Soft, dry, ness LEAN CLAY, with fine-gr	ained Hand cl	eared a 2 ft er hole to 5 ft.		8 in steel flush mount well completion. Bentonite seal.
5		LEAN CLAY (CL) gray (7.5YR 5/1), Soft, dry, medium- LEAN CLAY.	plasticity, non-dilatant, low-tou	ighness with a 4	began at 5 ft in core barrel n casing.		
1012.0		LEAN CLAY (CL) gray (7.5YR 5/1), Soft, dry, medium- LEAN CLAY, with trace fine-grained of SANDY LEAN CLAY (CL)	plasticity, non-dilatant, low-tou Gravel.	ighness			Filter pack.
-		POORLY GRADED SAND WITH CLA dark gray (7.5YR 5/1), Stiff, moist, mediur low-toughness LEAN CLAY, with fine dark gray (7.5YR 4/1), Wet, fine-grai fine-grained Gravel (majority fine-gra SANDY LEAN CLAY (CL) gray (7.5YR 5/1), Stiff, wet, medium- LEAN CLAY, with fine-grained Sand. SANDY LEAN CLAY (CL) dark gray (7.5YR 4/1), Wet, low-plas LEAN CLAY, with fine-grained Sand coarse-grained sand to fine-grained G	-grained Sand. <b>AY (SP-SC)</b> ined, sub-round to rounded S <i>A</i> ined Sand), with non-plastic C plasticity, non-dilatant, low-tou sticity, non-dilatant, low-toughn to fine-grained Gravel (majorit	lay collecte ughness ess y Breathir	MW-618-SB-11 d at 0950. ng zone normal. reening normal.		5 ft screen.
-							

	PROJECT NUMBER:	BORING NUMBER:				
	695619CH	MW-618	SHEET	2	OF	2
<b>Ch2</b> ///.	Borehe	ole Log				

#### PROJECT : NASWI Ault Field Phase 2

	.368 ft amsl, TOC N 496967.91, E			( noune
VATER LEVEL :			END : 11/17/2019	LOGGER : D. Butler
DEPTH BELOW GROUND SURFACE (ft) RECOVERY (ft)	GRAPHIC LOG	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS DEPTH OF CASING, DRILLING DETAILS, INSTRUMENTATION	WELL DETAILS
20 - 11.0 - 11.0 - 25	dark gr toughn Sand.	CLAY (CL) ay (7.5YR 4/1), Stiff, moist, medium-plasticity, non-dilatant, medium ess LEAN CLAY, with interbedded wet, poorly-graded, fine-grained	Breathing zone normal. Core screening normal.	Filter pack. Bentonite backfill.

BNIEPH PMAB)I: A O 65F1

WY))G\_F\_N2\_J

## Borehole Log

#### OHU:N7GMFoli moRfn 58t fSO9ect 6

TU7oGmblFMUeBze1/a1lio

SINU)9GPMAB)I:

51C5F19 Y

			er cfl GU7 v HmTmfij 7 UFGHo7 GUH o Fv v H		<u>3r aROn</u>
			66Ad/biNggbkgAgopDvHmTrfij.NGzUvoFvNQJm0.		TUjj NH M/dwRnft 1
			′yc IGoHGMgg-gA-64gb N IUn≣vNI7HnoQcho/F	IFv Mgg-gb-64gb 7UNFG	
v NOC2≥ wNTUİ j HUJFv IJH5o7N )uj	HN7 ULNHE )u	jHoOzmã TUj	IUmīFo. NIJI7I jHUJOIE. wUTI 7 UTUHI. UmiGJHN7UFGNFGIHNToGmbN v NFImGE UH7UFImiGNF7EIIUmī IGHJ7GJHNI. mīNHoTUjE	v NOGz U5 7olmfil v Hnātnāj v NGomāl nāl GHJ. NEGoGabJE	i NTT v NGomīni
			WEG FALD 1t SS&9 / fesB)g4H6ok-g,ILt 10 caunir a&orifa(h2fecn&s&0 1e2&ShS&feneCs0) fa(hnaRy9Ct cc InfiG (&9 mlest wCt hy1e&Ct SIeCSd SNNILT HIV() (WWP(FNSD) / 1a(C)AokEHWWI.a&oriu wCt hy1e&Ct SIcR/heCyRfe1macR/h1aRCSIoFvd	Haard	Y&CcnttfulRc9 raRCn(tff sar2ftn&aCd
-			SNNILTHIV()(WWP(OBEYWELGRASAAAD	Haarod	wt CnaC8nt ct efd
-	 4ďł		SenB/1a(C)AdkEHp-p,litniu&Othy1e&OCSICR/heCyRfe1nacR/h1aRCS loFvI(&91&5nd L)VP9LVTR9LD SenBy1e0)g4EHWg,lIn&ulSer 21fa(h2fecn&s&01CaChS&feneCnt rtS&RrhnaRy9OtccTNoF7ToEd	ler 2ft i mo5h i hDgbhlwh46 safftsntSengpW41 gg-gA-gbd FantM ent1f80tf0 2t1s9tSd zeCSsfte1tSe6un S&ertnt19aftnakunaC gg-gA-gbd	
WWD64	_		SNNILTHIV() (WWP(OBEGYWELG RNS6WAD) Se 1B y 1e0)g4EHWg, Iv er 21 w3Ct hy 1e3Ct SICR/h1aRCS na 1aRCS IoFvI(89 CaCh2feccr6s I&finitest w3Ct hy 1e3Ct Sj 1eRt fleCS cart c9t ff ufeyr t Orcd	_	
NUGN7 z 3g6g v GV WD64 *			WWP(TL) VP9LVTF9LD y1e0)g4EHk-g,lver2lrtS5Rrh2fecn&S40lCaO1+S56eneO1fa(hnaRy9O1cc TNoF7ToEI(849u&O1hy1e&O1SIeCSeCScartc9tffuleyrtOncd	14990 / hug o ask up	
	gďł			v1566Cy/tyeCenkun (899eW&Csa1t/e11tf eCSD&Csec&CyaC gg-gb-gbd	
3Oz ol N6364gbd O: V7 z6.			O)LLHIV()(WWP(RWOD SenBy1e0&9/1a(C-SenB0tffa(&9/1a(C)g4EHW6,I.a&niu&Othy1e&OtSna saenicthy1e&OtSIcR/heOyRfe1nacR/h1aRCStSIoFvI(&99c9tffulleyrtOncd		
TUJ VJIN. N3wrg TWFoli 1805302	– g6d4		L) VP9LVTOEESYWWP(F9LD y1e0)g4EHk-g,ILt10 caurir a&nifa(h2fecn&&80 ICaOnSofereOni fa(hnaRy9Ot ccTNoF7ToEI(&99u&Othy1e&OtSIeCSeCSndest c9tff ufeyrtOncd		
- - - - - - - - - - - - - - - - - - -					58ht 12esBd

Ch2m:	Boreh	ole Log
	51C5F19 Y	AO 65F1
	SINU)9GPMAB)I:	BNIEPHPMAB)I:

WY))G - N2 J

### **Borehole Log**

#### OHU:N7GMFoli moRfn 58t fS O9ect 6

TU7oGhb/FMUeBze1/a1lio

_	NTNLoG	b∣FMgV	MakkDune	rcflGU7 vHnñTn≦j7UFGHo7GUHoFv	v Hnīn T Hnjn MEt ffa(:esBt nl G1RsB	BraROn		
	7 UUHv rl	ño GNI	MF W6D	δ6Ad/MolN ggb kgAgopD v HπīTπāj. NGz Uv oFv NQJr	oFv NQJm0. NFGMHanacaO3s			
ſ	i o GNH	INL NT M	TM Dopun/yc I Go HG Mgg-gA-64gb NFv Mgg-gb-64gb				M/dwRnft1	
	v NOCZ wNTUi j HUJEv I J H5o7 N )uj	HN7 ULNHE )uj	ј НоО2 🕅 ТОј	IUmīv NI7 HmQCmb/F IUmīFo. NIJI7I jHUJOIE. wUTI 7 UTUHI. UmiGJHN 7 UFGNFGIHNToGmLN v NFImGE UH 7 UFImiGNF7 EIIUmī IGHJ7 GJHNI. mīNHoTUjE	7U NFG v NOCz U5 7olmfil v HmīTīnfij v NComīl l mfil CHJ. NFGoGmUF	i	NTT v NGom	
				9LVT) T WVP( OESY HI V3) L RM9 D	l er 2ft		-	
	_			Se1By/1e0 )g4ËH Wg,Ii triùoChy/1e8OtSna sae1cthy/1e8OtS) re_a1640 sae1cthy/1e8OtS,IcR/heOyRfe1na cR/h1aRCStSIoFvI(849 fa(h2Fecn6s840 7 fe0Iu8Othy/1e8OtSy/1ePtfIn/lest7a//ftcleCSndestc9tffulleyrtOncd	i rho5h i hDgbH whgg safft snt Seng4kkl gg-gb-gbd		kuncs1ttCd	
/ G/ WD-64	_	g6d4		L) VP9LVTR9LD y1e0)g4EHk-g,ILt10caunl(tn/rtS6Rrh2fecn&s&00ICaOHS68eneOnl fa(maRy9OtccTNoF7ToEI(&99n1estw3Cthy1e&CtSj1ePtfd	w1ten980y;aOtCa1refd 7a1tcs1ttO80yCa1refd		-	
FNi IUmītwUHmēj TUjVJIN. N3wwjdTwVFoli m3o53OzolN6364gbd, O:V7z6. jNUGN7z3g6d, vG/WD64	gk			WWP(TL) VP 9 LVT F0 LD         Se1B y 1e0       )AdkEH Wg, ILt 10 cauri (trirt S5Rr h2fecr6s80l CaCh55fereCh1         fa(maRy9Ct cc TNoF 7 To El (89 u8Cthy1e8Ct SI eCS eCS mlest         sae1ct hy1e8Ct Sj 1ePt fd         L) VP 9 LVT F0 LD         y 1e0       )g4EH k-g, ILt 10 cauri (trirt S5Rr h2fecr6s80l CaCh55fereCh1			_	
530z ol N6364gbd O: V	_			fa(hnaRy9OtccTNoF7ToEI(849n1estu8Othy1e8OtSj1ePtfd			- 5&mt12esBd	
3wv oj Tw∿Folin8o	_	g6ď					-	
TUJ VJI N. N3							wtOnaO3nt/esBu8fid	
FNi I Umit wUHrh	64							

SINU)9GPMAB)I:	BNIEPHPMAB)I:			
51C5F19 Y	AO 65F1	WY))G J	N2	J
Boreho	ole Log			

#### OHU:N7GMFoli moRfn 58t fSO9ect 6

TU7oGhb/FMUeBze1/a1lio

-	NTNLoG	b/F MgW	£kkDune	v HmiTmij 7UFGHo7GUH	loFv v Hri	nn THmin MEtffa(:esBtnlG1RsB	r aROn
				36Ad/1ølNggbkgAgφD vHnīππīj.NGzUvoFv			
ſ	i o GNH	TNL NT M	lDapun/	yc I Go HG Mgg-gA-64gb	NF	<sup>-</sup> v Mgg-gb-64gb	TUjjNH M/dwRnft1
	v NOCZ WNTUI J HUJFv I J H5o7 N Juj	th( HN7 ULNHE )th	j HoOzna TUj	IUmīv NI7 Hro£Gno/F IUmīFo. NIJI7I jHUJOIE. wUTI 7 UTUHI. UmiGJHN 7 UFGN FGIHNToGno. v NFImc£E UH 7 UFImiGNF7 EIIUmī IGHJ7 GJHNI. mīNHoTU jE		7UNFG v NOGz U5 7olnfijl v HnñTnfijv NComil mfiGHJ.NFGoGh0F	i NTT v NGomনী
						w1ten98Cy;aCtCa1refd 7a1tcs1ttO8CyCa1refd	-
v GV WD-64	_	g6đł					-
FNi IUmītwUHmīj TUJVUIN. N3wvij TwVFoli m3o53OzolN6364gbij O:V7z6. jNUGN7z3g6ijv GVWD64	6k			wa1802ynt 1r 802ent Sen6Dun/ycd			
53Oz ol N6364gb	_						_
voj Tw/Folin8o.							
TUJ VJI N. N3M	_						
=NiIUm≣wUHmFj	- p4						-

PROJECT NUMBER: BORING NUMBER: 695619CH MW-620 SHEET 1 OF 2

## **Borehole Log**

#### 3NPU9, L < El 26 pl Obv-hiw 3. nel a

)P,ILpPE<PnkMns5osR6I

					0 +	
			ncewRP, mNp))pET, PELNI, LPN IEm mN		c ou t	
			10Hz:0BR9_BB%HJa0:J0 mNp) jnET_A9LMPmIEm9QOp3A9			
5 I L9N ) თ		:D:zd:	5fe 2LINL <bb 9<="" afb%="" bb="" td=""><td>Em <bb afb%<="" bb="" td=""><td>)PTT9N<l:,< td=""><td>.nworlse</td></l:,<></td></bb></td></bb>	Em <bb afb%<="" bb="" td=""><td>)PTT9N<l:,< td=""><td>.nworlse</td></l:,<></td></bb>	)PTT9N <l:,< td=""><td>.nworlse</td></l:,<>	.nworlse
m93LM19)P6 TNP0Em20N-1, 9 udY	N9, PV9N( ưư	TNI 3Mp)PT	2Pp) m92, Np3LpPE 2Pp) EIA9RO2, 2 TNPO3 2(A1P)R , P)PNRAPp2LON9, PEL9ELRN9)ILp/9 m9E2pL(PN, PE2p2L9E, (R2Pp) 2LNO, LON9RApE9NI)PT(	,PAA9EL2 m93LMP-,I2pETR mNp))pETm9LIp)2R pE2LNOA9ELILpPE	69)	) m9L1 p)2
-			SILT WITH SAND (ML) vlsyrn sk:5soSi /rCekyylwoShe.5soSi uBF(N a/a KamsyRwoSW4wuethghty 2p)LRSht. dnil Wonhil r2n irn ir TsnvlwGaFcc:u2hwi≍zF8 R2n ir≪BH8 R TsnvlwsH8 Y	Noote:	c go	hietl∣wok02e. oCitSlww bc4wlthoi: itoihtlelnw
-	F:F		SILT (ML) rnsk:fsnyhe. 5soSi /rnsk:ylwouShe. 5soSi uBF(N D/a)RmsyR clrhCc Wiwaethghny 2p) LRShi. tsngl TsnvlwGHcc:u2nwic%h18 RTsnvlw4H8 Y	Mnirgwinsirn act rhncitis.owitoHot:		wuls4ngk:
- H			SILT WITH SAND (ML) vlsrnsk fsllihe. fsn yuT) 9 (B0/HT (YmsyRwoSW/wrethghny 2 p) LRSht. Onlil Wan hilr 2 nir: u2 hok <zh8 nir<bh8="" r2="" y<br="">SILTY SAND (SM) vlsyrn sk. fsllihe. fsn yuT) 9 (0/BF (YA ohet R4:oosayWekostirRohil W/sn hilr 2 lEm RSht. clrh0c W/wrethghny 2 hok/u2 nir<zf8 f8="" hok<a="" r2="" td="" y<=""><td>2. Iww.dam.fc. lite: meshwnif 5. Ifni nt Hot Sht. n. Dhigosi 5n sel w nir bhignehif: 2. nc. 4wl</td><td>H</td><td>diegslii:</td></zf8></zh8>	2. Iww.dam.fc. lite: meshwnif 5. Ifni nt Hot Sht. n. Dhigosi 5n sel w nir bhignehif: 2. nc. 4wl	H	diegslii:
-			LEAN CLAY(CL) rnsk fsny/owla/ifsnyuH(D/BYR2odtRSItRcIn KCC WawaettghtyRioiWhwatnitR cIn KCc WolOf.ilee)9IE,)I(RSKt. tsngl TsnvIwGHFcc:	6 pM-WX 6 WaaFW2/1 W7b gowWrgtIr nt B0 FF: 1sIn t. hif 7oil iosc nw , osl egsliihif iosc nw		
_ BF	BB:F					nwtis4ngk:
-					1	itoihtl 5ngkdwa.
- BH						
-				2nc4w/ 6 pM/-WX6 WoraFV2/1WBH gowWrgtir:		
-	aF:F			1slnt.hif7oilioscnw ,oslegsllihifioscnw		
аF						

PROJECT NUMBER:	BORING NUMBER:				
695619CH	MW-620	SHEET	2	OF	2
Boreh	ole Log				

#### <u>3NPU9, L < El 26 pl Oxt-hiwr 3. nel a</u>

)P,ILpPE<PnkMns5osR6I

			::0BR9 BB%HJa0:J0		m9QOp3A9EL <notoeoihg< th=""><th></th></notoeoihg<>	
	)9V9) <	D:z d:5fe		2LINL <bb afb%<="" bb="" th=""><th>9Em <bb afb%<="" bb="" th=""><th>)PTT9N<l:,.nworlse< th=""></l:,.nworlse<></th></bb></th></bb>	9Em <bb afb%<="" bb="" th=""><th>)PTT9N<l:,.nworlse< th=""></l:,.nworlse<></th></bb>	)PTT9N <l:,.nworlse< th=""></l:,.nworlse<>
m93LM19)P6 TNPOEm20N-1,9 udY	N9, PV9N( uđY	TNI3MA )PT		92,Np3LpPE 1,2TNPO32(A1P)R 19,PEL9ELRN9)ILpV9 PE2p2L9E,(R2Pp) 19RApE9NI)PT(	, PAA9EL2 m93LMP-, I2 mNp)pET m9L1 pE2LNOA9EL1	2pETR 6 9)) m9Llp)2
-	-				2 nc 4w/ 6 pW-WX6 WvaFV gowwygtIrntBDaF	2
	- aF:F				1slnt.hif 7oili , osl egsllihifi	osc nw osc nw
0F	-	1	oshif tlisc hin tlir n t0 Fot5fe:			
- 0H 	-					
- - DF	-					

BF CINE NUMB6C: MW-92O

SH66T O FG 2

## Borehole Log

#### PROJECT : NASWI Ault Field Phase 2

LOCATION : Oak Harbor, WA

PCF J6 RT NUMB6 C:

951905RH

			574.28, E 1196246.58 DRILLING METHOD AND EQUIPME		
/ATER L	LEVEL :	4.5 ft l	bgs START : 11/10/2019 El	ND : 11/10/2019	LOGGER : D. Butler
DEPTH BELOW GROUND SURFACE (ft)	RECOVERY (ft)	GRAPHIC LOG	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS DEPTH OF CASING, DRILLING DETAILS, INSTRUMENTATION	WELL DETAILS
-	0.0		SILT WITH SAND (ML)         brown (7.5YR 5/2), Damp, fine-grained SAND, with low-plasticity, non-dilatent, low-toughness Silt and trace roots.         SILT WITH SAND (ML)         black (10YR 2/1), Dry, non-plastic, slow-dilatancy, low-toughness, medium-dry strength SILT, with fine-grained Sand, trace medium to coarse-grained Sand, and trace roots.         GAT RLAV WITH ECAY6L (RH)         grayish brown (10YR 5/2), Soft, dry, medium-plasticity, non-dilatant, medium-toughness CLAY, with fine- grained Gravel, and trace fine-grained Sand.         L6AN RLAV (RL)         gray (10YR 6/1), Firm, dry, medium-plasticity, non-dilatant, medium-toughness CLAY, with trace fine-grained Sand.	Hand cleared a 6 in diameter hole to 5 ft.	8 in steel flush mount well completion. Bentonite seal.
5			W6LL ECAD6D SAND WITH ECAY6L (SW) dark gray (10YR 4/1), Moist to wet, fine-grained, sub-round to rounded SAND to fine-grained, sub-round to rounded Gravel, with trace shell fragments. L6AN RLAV (RL) gray (GLEY1 5/N) Very soft, wet, medium-plasticity, non-dilatant, low-toughness CLAY.	Drilling began at 5 ft with a 4 in core barrel and 6 in casing. Sample WI-AF-MW-621-SB-05 collected at 1125 w/ corresponding duplicate.	5 ft screen.
10	12.0			Breathing zone normal. Core screening normal.	Filter pack.
- 15					
-	20.0				
20					

	PCF J6RT NUMB6C:	BF CINE NUMB6C:				
	951905RH	MW-92O	SH66T	2	FG	2
Ch2M:	Boreh	ole Loa				

#### PROJECT : NASWI Ault Field Phase 2

<u>OORDIN</u>	ATES :	N 494574.28, E 119624	46.58 DRILLING METHOD AND E	EQUIPMENT : Rotosonic	
ATER LE		4.5 ft bgs	START : 11/10/2019		_OGGER : D. Butler
DEPTH BELOW GROUND SURFACE (ft)	RECOVERY (ft)	GRAPHIC LOG	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS DEPTH OF CASING, DRILLING DETAILS, INSTRUMENTATION	WELL DETAILS
	20.0			Breathing zone normal. Core screening normal.	
30		Boring termina	ated at 30 ft bgs.		
_ 35					
40					

B9 MIR( RUH BDM: H N -5PP

SVDDT F 92 P

## Borehole Log

PROJECT : NASWI Ault Field Phase 2

LOCATION : Oak Harbor, WA

6 M9 JDCT RUH BDM:

5105F1CV

			62.97, E 1196181.8 DRILLING METHOD AND EQUIPME		
	LEVEL :	2.1 ft k	gs START : 11/9/2019 EN	ND : 11/9/2019	LOGGER : D. Butler
DEPTH BELOW GROUND SURFACE (ft)	RECOVERY (ff)	GRAPHIC LOG	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS DEPTH OF CASING, DRILLING DETAILS, INSTRUMENTATION	WELL DETAILS
	0.0		SILT WILA very dark gray (7.5YR 3/1), Damp, low-plasticity, non-dilatant, low-toughness SILT, with trace fine-grained Sand. NDLL ( M) GDG S) RG NITV ( M) EDL VSN A very dark grayish brown (10YR 3/2), Moist, fine-grained, sub-round to rounded SAND to coarse-grained, sub-round to rounded Gravel. N DLL ( M) GDG ( M) EDL NITV S) RG WN A brown (7.5YR 4/2), Wet, fine-grained, rounded Sand to coarse-grained, rounded GRAVEL.	Sample WI-AF-MW-622-SB-02 collected at 1105. Hand cleared a 6 in diameter hole to 5 ft.	8 in steel flush mount well completion. Bentonite seal.
- c	-		N DLL (M) GDG S) RG N ITV (M) EDL VSN A dark gray (7.5YR 4/1), Wet, fine-grained, sub-round to rounded SAND to coarse-grained, sub-round to rounded Gravel, with little Cobble.	Drilling began at 5 ft with a 4 in core barrel and 6 in casing.	Filter pack.
 10	8.0				
_	-		<b>CL) YDY S) RG VSCA</b> dark gray (10YR 4/1), Wet, low-plasticity CLAY, with interbedded fine-grained Sand and trace fine-grained Gravel.	Breathing zone normal. Core screening normal. Clay beds < 1 in thick. Gap graded.	Filter pack.
15	2.0		NDLL (M)GDG S)RG NITV (M)EDL W3NA		Bentonite backfill.
_	12.0		very dark gray (10YR 3/1), Wet, fine-grained, sub-round to rounded SAND to fine-grained, sub-round to rounded Gravel (majority medium to coarse-grained SAND). 69 9 MLY ( M) GDG S) RG VS6 A gray (7.5YR 5/1), Wet, fine to medium-grained, sub-angular SAND.	Majority fine-grained sand, some beds with more medium-grained	
_	-			sand.	

	6 M9 JDCT RUH BDM:	B9 MIR( RUH BDM:				
	5105F1CV	HN-5PP	SVDDT	Ρ	92	Р
Ch2M:	Boreh	ole Loa				

#### PROJECT : NASWI Ault Field Phase 2

	.756 ft amsl, TOC		AND DRILL RIG : Yellow Jacket, Tru	ick mount
/ATER LEVEL :	N 493662.97, E 11	96181.8 DRILLING METHOD AND E START : 11/9/2019	END : 11/9/2019	LOGGER : D. Butler
		SOIL DESCRIPTION	COMMENTS	
DEPTH BELOW GROUND SURFACE (ft) (ft) RECOVERY (ft)	GRAPHIC LOG	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING DETAILS, INSTRUMENTATION	WELL DETAILS
2512.0				
30	Boring terr	minated at 30 ft bgs.		
-				
- 35				
40				

	2(CJDSTLUMBD(:	BC(ILV LUMBD(:				
	695619SH	MN 36F-	WHDDT	1	СҮ	F
Ch2 <sub>M</sub> :	Boreho	ole Log				

#### Yyz9OkJ7(bfHDbronwodoAYhaudS

vzkbJDz(7za)MaoteoGHb

Ov OPb J [	21(7Rs	511Q2na	a.uoGJzk ByDvD(Ekz(JybkJzyb(BBy	Dv v DE 7N done0 9a-) dnGJor-)	. erin	
			s/15/GORRQsFp15Rp By DvD/E 4 QJMz B b(B 0; : D/4 0			
HbJOy						
BOYJM WOVZ H Ey z : (Bf: y wbk O	y Ok z POy N , 2hT	EybYMDk vz E	fzDvBOfkyDYD2( fzDv(b4OGfkfEyz:YfN4WzvG kzvzyG4zD0J:yOkz(JO(JGyOvbJD9O BO(fDJNzykz(fD0JO(kNGfzDv fJy:kJ:yOG4D0,OybvzEN	kz 4 4 Q(Jf BOYJMzwkbf D(EG By DvD(E BOJbD)f G D(fJy: 4 Q(JbJD2)	vzEEOy7B5Wrmodc HOvvBOJbDof	
-	15		WELGRADEL SAERNITH V(E) DARSAO         Aac) mcaC, RINy / LRICFe2rGAa. IG dA66. gloaune 600G ei gA60anain G         . dA66. grermhiduuk vbNG0 6th 26 dgmca6 dA faiA aiA 26 dgmca6 dA E caVdd5         N DAA V(EGDG V(E) DAN ITH WELG PVN O         mcaC6uh t ce0i, RINy 1LSTCPdcC0 drG26 dgmca6 dAGur t gcer i A ne cer i AdA         faiA ne - eacudgmca6 dAGur t gcer i A ne cer i AdA E y b POVC0 6th k et t cd5	Handclero6m6ne tecdheod5 fa.lod Hūgbwg4HgsSpofWgp -eood-ndAanIFSI5 MaiA-odacdAaS2n		F6i unddo2oruh .erin 0.doo .e.lodn6ei5 Wdinei6nd udac5 w6ondcla-)5 1.2nu-cddi5
1	RS		YET SAER FSHO ooman to come and the second of the second homological second of the sec	A6a. dndcheodine 1.215 Bo6oon6 mtdmai an 1.2n 0.6mia / 6: -eccitacodo aiAs 6: -au6im5		
				z caimolaiAmocaC .emoofmo5 Wodamlo6m 8eidiec.ao5 kecclu-coddi6imiec.ao5		woondcla-)5
	<b>β</b> ρ5		ADEL SAER RSAO         mraC , R Ny slRTC4 dA& .gue2GAa. I re .e@urGh0hhg caur6 60C3 ei gA@anai rG         . dA& .ger mhi duu k vb N5    ADEL SAER RSAO mraC , U5I Ny 1LRTC4 e2G e@unne 0 drG dA& .g caur6 60C3 ei gA@anai rG ce0 ger mhi duu k vb N5	(end7Yeuuo6oCa mcaiuo6oEiaori6o5 zcaimolaiAmcaC .emoo6m5		Wdinei6ndta-)20ao5
R1						

	2(CJDSTLUMBD(:	BC(ILV LUMBD(:				
	695619SH	MN 36F-	WHDDT	F	СҮ	F
Ch2 <sub>M</sub> :	Boreh	ole Log				

#### Yyz9OkJ7(bfHDbronwodoAYhaudS

vzkbJDz(7za)MactecGHb

OvOPbJD2 (7 Rs511Q2na.uoGJz k

ByDvD(Ekz(JybkJzyb(BByDvyDE7Ndone09a-)dnGJor-).erin

#### kzzyBD(bJOf 7 (/Qps/I5/GORRQsFp15Rp

By Dv D(E 4 OJ Mz B b (B O; : DY4 O(J 7 y eneuei6

Single     Single <th>(b4 QG fkf Eyz: Yf N4 Wz vG     BOYJMzwkbf QEG       34 z D J: y Okz (JQ) JQ OvbJDPO     ByDvQ E BOUbDrf G       fDNzy kz (fD JQ kNG z D     Uf Jy: 4 Q JbJDz (</th> <th>N</th> <th>EybYMBk vz E</th> <th>,⊉īT y Ok z POy N ,⊉īT</th>	(b4 QG fkf Eyz: Yf N4 Wz vG     BOYJMzwkbf QEG       34 z D J: y Okz (JQ) JQ OvbJDPO     ByDvQ E BOUbDrf G       fDNzy kz (fD JQ kNG z D     Uf Jy: 4 Q JbJDz (	N	EybYMBk vz E	,⊉īT y Ok z POy N ,⊉īT
SI FP3 FP3 NDAAV(EGOG VELG NITH V(E) DA PNNO Acci mac. USINY / URICH drGB dgmBil dACurt gai m cacre ceri AdAf b (B re B dgmBi dACurt gai m cacre ceri AdA E ca VideD 6h ma-d - eacudgmBil dA			<i>Y////</i>	
SI FR3 NDAA V(EGDG WELG NITH V(E) DA RWN O Ac) maC . USINY / URCH drG20 dgm6ai dAQurt gai m cacre cer i AdAf b (B re 26 dgmc6a dAQurt gai m cacre cer i AdA E caVddQ0 6in rca-d - eacudgrca6 dA E caVdd5 ADEL SAER 15AO				Rp5
NDAAV(EGDG WELG NITH V(E) DA PNN O         Aac) mac , USINy / LRICH drG26 dgm0ai dAQurt gai mr cac re cer i AdA f b (B re         26 dgmca6 dAQurt gai mr cac re cer i AdA E caVdo30 6h rca-d - eacudgmca6 dA         E caVdd6				-
N DAA V (EGDG WELG N ITH V (E) DA PAN O Aac) mcaC, USINy / LRTCH drC36 dgmc3ai dACurt gai mr cac re cer i AdA f b (B re 36 dgmca6 dACurt gai mr cac re cer i AdA E caVdd30 6th nca-d - eacudgmca6 dA E caVdd5				
ADEL SAER ISAO	ITH V(E) DARWNO drG26 dgmo£aidAQurtgaimroacne ceriAdAfb(Bne me ceriAdAEcaVdo306minca-d-eacudgmoa6idA	Aac) mcaC,U51Ny/LR1CH dnC326 dgmc5aidACurtgaimroacn 26 dgmca6idACurtgaimroacne ceriAdAEcaVdoC06h nca-d		-
s1	eounne0dnG dAor.gloauno-oncola eigAooanainG	////// mcaC,U51Ny 1LRTGFe2nG e6unne0dnG dA6r.d oaun6660C3	///// r	_

	FY5 20HN EJT UOYB	U5 YSEL EJT UOYB				
	- M6- 9MH(	T P :- C4	D( OON	9	51	с
<b>Ch2</b> <i>M</i> :	Boreho	ole Log				

#### 3/PUEz%G)bN5Sbkte4owts3HMIwW

8Pzb%38P)GPMa0Mdr:R5b

#### <u>E8E9b%35P) GFInApJ7eM2 itR%Pz</u>

,/\$38\$3;LzP)%/bz%P/b),,/\$38/\$LGywttr.UMnawaR%/kha2rk.ne\_\_\_

#### zPP/, \$) b% ENG) IJW0CAmpFREFFJQ pFmAW

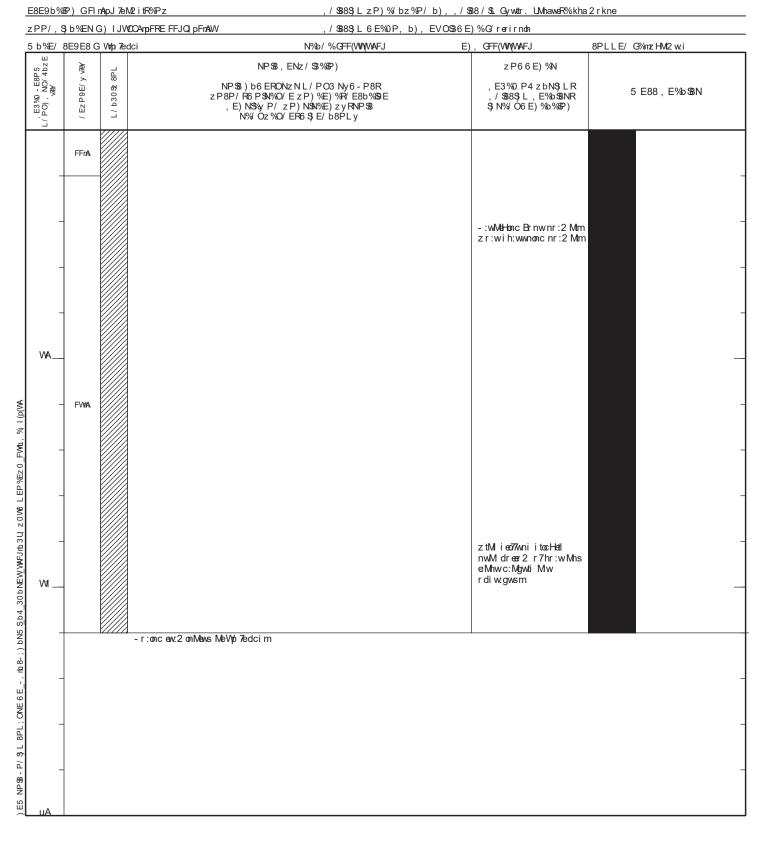
,/\$38\$3)L6E%0P,b),EVOS36E)%G/rerirnoh

			COAPPENE FFJG PFIAWV , 7 3085 L 0 E700 P, D), EV OSO E			
	8E9E8G	3 Wnp7eo	dci N%b/%GFF(VI%AFJ E)	, GFF(VW(WAFJ	8PLLE/ 0	3%mz HM2 w.i
, E3%0 - E8P5 L / P O) , NO/ 4bz E VBV	/ Ez P9E/ y v <del>í</del> ð/	L/ b30& 8PL	NP\$8, ENz/\$3%8P) NP\$8) b6 ERONZN L/PO3 Ny6 - P8R zP8P/R6 P\$N∜0/EzP)%7(E8b%39E ,E) N\$%y P/zP)N\$N%E) zyRNP\$8 N%4 Oz%0/ER6\$}E/b8PLy	zP66E)%N ,E3%0P4zbNSLR ,/\$885L,E%058NR SJN%/O6E)%b%3P)	5	E88,E%b\$33N
			PORRLYGAOA DGEA PSN(LYG) OR NOPPI gwl sMac:MoiHd:r.n vFAy/u(WIR, M2 fR7onwerhrMiwDo:MonwsR ikdDuhcktM er:rknswsNb), RoeHikdDuhcktM erikdDrknswsL:MgwtT p122 vNMnsQoA <rl:mgwtgia<ym DSRN W7RI dtMavFAy/W[FYR, M2 fRHocHD) tM eohoet R2 wsok2 erkcHnwiiNS8% RoeH eMnw7onwDo:MonwsNMnsm PORRLYGAOA LYG) OR PSN(DGEA W/PI sMac:M vFAy/I(FYRS weRkdDuhcktM erikdDrknswsL/b9E8 Tu1 22 RoeH7onwerhrMiwDo:MonwsRikdDuhcktM erikdDrknswsNMnsvL:MgwtG pAc-RNMnsGIA<ym ROGE HRGV PSN(DGEA WMRI gwl sMac:MoiHd:r.n vFAy/u(WIRS weR2 wsok2 DitM eohoet RnrnDodMeWheR</ym </rl:mgwtgia<ym 	Nobee Mhionarni er Mgw.l sMadtWhar:cMhohiole .ootlio2 otM tooth troch f:rfw.eawim NM2 ftw 5 S30o 4126 5 DpW/DN-DAW hrttwhews MeFII1m		Con iewwt7tkiH 2 rkne.wtt hr2 ftweønm - -wnernoewiwMtm -
	-		Žwsok 2. Derk chhwii z 8 by R oeh 7on w Do:Monws NMhs vF1 < Ym DSRN P SN(DGEA WYR c:wwn.oih c:M. vL 8 Ey F1 (FA y Y5 weRtr. DitMiednoel Ritr. Do:dMeMhhl R tr. Derk chhwii NS8% Roeh 7on w Do:Monws NMhs W1 < Ym	-:wWaHon Brnwnr:2 Mm 0 MhshtwMwsMW7a soW2 wew:Hrtw er 1 7am		_
1 1 2006 LEP %=20_FVM1, % 1 (p(VA	-		ROGE HRGV WARI sMac:M. vL 8EyFI() Y9w.Iir7eR weR2 wsok 2 DitMenboek Rnrn DsolWeMneR tr. Derk cHnwiiz 8b yR oeHe MnwiHwtt7.Mc2 wneim	, :otton c dwcMn Me1 7e .oeHMI on hr:w dM:wt Mhs p on hMion.cm - :w MeHon c Brnwn r:2 Mm z r:w i h:wwn on c nr:2 Mm		4 dev. f Mham - 1 7ei h:wwnm
- AFL; ONE OF , ID 8-: ) DNO SD4_SUDNENT WE JINGU ZUWD 	- FFrA		HRGVOV DGEA WOHI         c:wwn.ok HdtMha vL 8Ey F Wht(FA y Y5 weF2 vs.dk2 Dz:Monws i kdDMhcktM er         i kdDr knsws Nb), R oeH 70nwi WA< YR70nwD2:Monws L:Mgwtv1< YRMhs eMhw	NM2 ftw 5 SB04D655 DpW DN-DFA hrttwhews MeF111m		 - 4 dev. f Mham
	-					_ -wnernoewdMha7ottm

	FY5 20HN EJT UOYB	U5 YSEL EJT UOYB				
	- M6- 9MH(	T P :- C4	D( OON	C 5	1	С
<b>Ch2</b> <i>M</i> :	Boreho	ole Log				

#### 3/ PUEz %G) bN5 Sbkte4owts 3HM wW

8Pzb%3P) GPMa0Mdr:R5b



	2H1 P(5SLJMU(HB	U1 HALT LJMU(HB				
	CY6C9Y51	N S:09	WI ( ( S	9	10	F
Ch2 <sub>M</sub> :	Boreho	ole Log				

#### THNPLpGO) RY7 URFtn1.it2 Tgedi k

ENpRGUN) ONe81 em4ann,7 R

		ni.itz igeal k	ENPROUN) UNEOT EFHANINT R		
LELVRGUN)	Ok Ac-k	neDdtyGNp	bHUEEEU), pN)GHRpGNHR)bbH	HUEEHU, Ozitta6 Pef8inyGnFf8	8 DaFr n
pNNHbU)R(	GLYO)s.	A: kAcS: yL hhJAhCJoko	bHUEEEU), / LGIN bR) bLQjUT/	L) G OHanadar.f	
7 RGLH ELV	LEO hkd	5n4wd	YGRHG ChhuhSuk-hJ L	_) b ChhuhSuk-hJ	EN,, LH CocWFntim
bLTG WLEN7 HNJ) b YJ H1RpL 950	HLPNVLHZ 55V , HRTI Up EN,	YNUE) R/ Lyj Yp pNENHy/ NUYG HL bL) YUGz NH pN	YpHUTGUN) Y,HNjTYz/WNEy ,pN)GL)GyHLERGWL N)YUYGL)pzyYNUE YUYHREN,z	pN//L)GY bLTGIN1pRYU,y bHUEEU,bLGRUEYy U/YCHJ/L)GROUN)	7 LEE bLGRUEY
		ta6 (naFwgriddy5ri(wne.ri2 YR) bra N (DDTHEG(GWELGNASITHEV 2em6 0itta6.do4ma6r 9n-zHQSwbe	(D-WN)	Haardc	A.r dniit 50Fdg DaFrn 6itt faDM in arc Wirnar.ni dietc
-	· 6				
-				ler2ftiemi2ehco5n 2.eDinimgatinao5nc	
-		2em3 wma0.dg4ma6r u2em30 itta6.dg4 dF4(maFr2 na maFr2i2 YR) b na faeno , maBitc	na6r 9n-zHsuk wyb n0ly5ri(wna.ri2y	brttt.rw4iwer en o5n 6.ng e s.r fami 4emmit er 2 S.r fed.rwc	
	500	N (DD THEG(G THEV(DN ASI WEI 2em3 wma0.dg 4ma6 r u2em3 0itta6.dg 4 dF4(maFr2 ma maFr2i2 YR) b ma faem , maBitc	1 ma6r 9h-zHsuk wbm0hv5ri(wnne.ri2v	pa44tic Wmieng.rwlariranDetc pamidfmir.rwranDetc	1.tri mVef 8c
	Sco				

	2H1 P(5SLJMU(HB	U1 HALT LJMU(HB		
	CY6C9Y51	N S:09	WI((S F 1	OF
Ch2 <sub>M</sub> :	Borehe	ole Log		

#### THNPLpGO) RY7 URFtn1.it2 Tgedi k

ENpRGUN) ONe81 em4ann;7 R

	LELVRG	N) OKA	vc-k5ne	bHuEEU, pN)GHRpGNHR)b	bHUEEHU, Ozitta6 Pef8inyGmFf8	3 DaFr n
	pNNHbU	RGLY	O) sJA	kAGS:yLhhJAhCJoko bHUEEU),/LGINbR)bLQjU	Г/L)GCHanadar.f	
	7 RGLH	ELVLEC	) hkdk 5	14wd YGRHG ChhuhSuk-hJ	L) b OhhuhSuk-hJ	EN,, LH ObcWFntim
	bltg WLEN7 HNj)byjH1Rpl 95W	HLpNVLHz 854	, HRTI 🖕 EN,	YNUE bLYpHUTGUN) YNUE) R/LyjYpY,HNjTYz/WNEy pNENHy/NUYGjHLpN)GL)GyHLERGUYL bL)YUG2NHpN)YUYGL)pzyYNUE YGHjpGjHLy/UJLHREN,z	pN//L)GY bLTGIN1pRYU),y bHUEEU),bLGRUEYy U)YGHj/L)GRGUN)	7 LEE bLGRUEY
			•••			o 5ndfmirc
	-			N (DD THEG(G WELG NASI THEV(D - WN) 2em3 4ma6r 9h - z H OLOvybeD Mma Da.dny5ri (wme.ri 2ydF4(maFr 2 ma maFr 2i YR) b ma 5ri (wme.ri 2ydF4(maFr 2 ma maFr 2i 2, maBitc	2 Wineng.rwlariranDetc pamidfmir.rwranDetc	
	_	Sco		2em3 wma0 9n - zH suhwy7 iny5ri(wme.ri2ydF4(maFr2 na maFr2i2 Yer2 na faendi(wme.ri2ydF4(maFr2 na maFr2i2 , HRVLE9De_amm0 faendi(wme.ri2 Yer2 na 5ri(wme.ri2 , HRVLEvc	YeDMi 7 UR1(7 G-h(YW(hC fatti fni 2 enhChoc	
P3p1k/,LNGLp1;hkc,bC3suBuk-	_ ho			211 HDR THEG(G WELG-W2) 2em3 4ma6r 9 coz H Oukwy7 i ny5r i (wme.r i 2ydF4(erwFterma dF4(maFr 2i 2 YR) b c N (DD THEG(G THEV(D N & WELG-TN)) 2em3 wma0 9h-zH suhwy7 i ny5r i (wme.r i 2ydF4(maFr 2 ma maFr 2i 2 Yer 2 ma f aendi (wme.r i 2ydF4(maFr 2 ma maFr 2i 2 , HRVLE 9D e_amm0 f aendi (wme.r i 2 Yer 2 ma 5r i (wme.r i 2 , HRVLE NC 211 HDR THEG(G WELG-W2) 2em3 4ma6r 9 coz H Oukwy7 i ny5r i (wme.r i 2ydF4(erwFterma dF4(maFr 2i 2 YR) b c		1.tri mWef 8c
) L7 YNUEWNHUJ, EN, 3j YL / L; W15 EN3) RY7 U/R1; TI RYLK; K-hJG TP3 p1 K/	-			Wamr wri nD.reni 2 enhS5h4wdc		

	YH6 P( CS L J MU( HB	U6 HALT LJMU(HB				
	9519 <b>0</b> 5CI	N S:02	WI ( ( S	0	6 F	2
Ch2 <sub>M</sub> :	Boreho	ole Log				

#### FHJQUpuVNz1B0zWthC5it2FDedih

/JpzuQIN VJel lem4am0Bz

// UOz u(	0 NVhi	cYYk me	e.dtGuJp bH0//0N7pJNuHzpuJHzNbbH0	)/H07 V)itta6 QeflinQunk07l	aWn
			jhYoysQUvvyYvsycY bH0/0N7 EUuIJbzNbU3:0FEU		
	/ UOU/ V			Nb WvLvSLhkvy	/J77UHVbc-Wntim
	v (000/ v		1 J 0 b U1p H0Fu@ N	pJEEUNu1	
bUFul - U/JB 7HJ:Nb1:HCzpU RonT	HUP J OUH) R	7 Hz FI (p. / J 7	1 J 0/ N Z E UG, 1p 1 7 H J : F 1 ) E - J / G p J / J H E J 0/ u: H U p J Nu U Nu GHU/ z u 00 U b U N1 0u ) J H p J N1 0/ u U N p ) G1 J 0/ 1 u H: p u: H U E 0N U H z / J 7 )	b UFul J Cpz10N7 G b H0/0N7 b Uuz01 G 0N1 u H: E UNuzu0/N	BU//bUuz0/1
_	kdk		WELGR WADS NASI THEV(D-MD) M m(2em) wma(5dD4ma6r R/k) H, Lh TCE a5dmCta693tedn355(Gma85225tenernf(G ta69naWMDriddCta5i9wna55i21zNb na d5i9wna55i27 meM tc // DDTHEC(G WELGNASI THEV(D-WN) 2em) (itta65dD4ma6r R/k) H, LSTCb e. 8Cd5fi9wna55i2CdW49naW/2 ma maW/2i21zNb ma faemdi9wna5fi2CdW49naW/2 ma maW/2i27 meM tC655D mefi 15tner2pa44tic	Haardo	Y5rdniitdWdD .aW7n6itt fa.8tim5arc -irnar5nidietc
- g	-		WELGR D( EL CDER -CD)	ler2 ftiemi2 e hon 25e. inimDati na gonc bm5155 w 4iwer en gon	
- sog -	sag		4ma6r Ŗiġ) HgL, TGC5m G2m(G i 25W 98tedn5f5n(Grar925tenernG . i 25W 9naWWDridd p/z) G65nDo5ri9wne5ri2 1 er 2c N (DD THEG(G WELG NASI THEV (D-WN)	650Des55rfami4emmit er2S5rfed5rwc	
			ma6r Rvk.)HisL, TGbe. 8Go£ri9wne5ri2GdW49naW/2 na naW/2i21 z N.b. na aendi9wne5ri2GdW49naW/2 na naW/2i27 neMitR eRam5(faendi9wne5ri2 z N.b. er2o£ri9wne5ri27 neMitTc n.a44tic		
-	-		N (DD THEG(G THEV(DN ASI WELG-TN)) 4ma6 r Rvk) H sL, TCE a5dn Go5 i 9vme5ri2GdW49maWr2 ma maWr2i2 1 er2 ma faendi9vme5ri2GdW49maWr2 ma maWr2i2 7 HzOU/c	pa44tic pa44tidn/\17155fami 4emitc -mienD55wAariram etc pamidfmir55wram etc	
vk	-		N (DD THEG(G WELGNASI THEV (D-WN) 2enh wne( R≀k) Hslv T0E a5dn na 6in 035fi9wne5fi2CdW49erwWkemma dW49naW/2i2 1 z Nb na faendi9wne5fi2CdW49erwWkemma dW49naW/2i2 7 neMitc	FWMMen6ANi2 maflc 1.e.8ti B09zC9Bukh91 -9vv	
-	- Yag		WADSR THEV (DN A. WELG-TM) wme (R/k) Hglv/TCB i nC6 i tt9vme2i 2035 i 9vme5i i 20dW49er wWtemma dW49naW/2i 2 1 er 2 na faendi 9vme5i i 20dW49er wWtemma dW49naW/2i 2 7 Hz OU/c	fattifni2 enkysgc /5lit(wtef5stn5tic	
vg	-		Y6 6 HDR THEG(GWELG-WY) 2enh 4na6r R;og) H, LhTOB inGo≆i9wne55 i2GdW49erwWterma dW49naW/2i2 1 z Nb c	- -mienD5rwAariram.etc	
-				pam df mi r 5 wr am etc	
-	- vgdk				
	_				

YH6 P(CS LJ MU(HB	U6 HALT LJMU(HB				
9519 <b>0</b> 5CI	N S:02	WI ( ( S	26	F	2
Boreh	ole Log				

#### FHJQUpuVNz1B0zWthC5it2FDedih

/JpzuQIN VJel lem4an6Bz

Instruction         Instruction									
3 zuUH / ⊃		vhok on 4wc		1uzHu VvvlvSlhkvy		o VvvlvSlhkvy	/J//L	JHVbc-Wntim	
bUFul - U/JB 7HJ:Nb 1:HCzpU RonT	HUpJOUH) RAT	7 Hz FI \$ / J 7		J0/bU1pH0Fu0JN UG:1p17HJ:F1)E-J/G /1u:HUpJNuUNuGHU/zu00U JHpJN101uUNp)G1J0/ pu:HUCE0NUHz/J7)		pJEEUNu1 bUFulJCpz10N7G bH0//0N7bUuz0/1G 0N1uH:EUNuzu0/N		BU//bUuz0/1	
- - hg	vgdk					-mienD5iw Aari ram etc pamidfmir5iw ram etc		C5inim8eflc gondfmirc	
_ _ , k		- 2	anofiwnim 5reni2 en,kon.4wdo	c					
_ , g									
_ sk									

# 

PROJECT NUMBER: BORING NUMBER: 695619CH WT-03

#### SHEET 1 OF 2

#### 7vj

GLW Sj IY Bj V IGR YJ R3PSL NL; BDfRYB3GASWI; AF; 7HASLJ; J12: fR7 03 THJN RLJ MLTH; 2JfRDMB 45931

	C	Λ	<b>2</b> / <b>1</b> / <sub>5</sub>	E	Boreho	le Log			
<u>7vj 0 T</u>	MUGAS	WI Azln	Fheld 7 5ase J	Yj TAMj GUj aCHart	b. r/ WA				
LYL, AM	jg U28	fJ48 in	aosl/MjT	Dv IYYIGR Tj GM/ AT	M v AGD Dv IY	∕vlRUkell.wOacOen/nMrzo	Co.znm		
<u> </u>	GAMLS	UG 4: 0	6Q4f1J/L2J12008fJQ	Dv IYYIGR NLMHj D A	AGD LVPI7NLG	MUv.ms.nhc			
WAMLv	YL, LYI	J 0fQin	bgs	SMAv MU229J19J12:	LGE	) U229J19J12:	Yj RRLv	UDf Bznker	
j W FATL	ų ng	Я		Sj IYDLSTv17Mj G		Tj NNLGMS			
DL7MH BLY W Rvj PGD SPVFATL ung	vLTj, Lvkuing	<b>ΓΝΑΖΗΙΤ Υ</b>	TjYjv/ DLG	GANL/PSTS Rvj P7 SkNBj Y/ Nj ISMPvL Tj GMLGM vLYAM, L SIMkjvTj GSISMLGTk/Sj IY MvPTMPvL/NIGLvAYj Rk		DL7MH j FTASIGR/ DvIYYIGR DLMAIYS/ IGSM/PNLGMAMj G	V	WL YY DL MAIYS	
2.1fRDM8 456311	1f1		SIYM white mace ihne-grain SILTY GRAVEL WIH SAN br. wn 121k v 498y Dao p szb-r. znded Sand m c. ar white n. n-plashite Shimand m SILTY SAND WITH GRAV darC (ell. whis5 br. wn 1211 szb-anozlar m szb-r. znd	ID (GM) / well-graded/ ilme-gralmed/ szb-angzla rse-gralmed/ szb-angzlar m sz-r. zndeo ace T. bblef	ar m d Rv A, L Y/	Hand cleared a 2ft im dhao ener 5. le m t infi		0 hn sneel ilzs5 o.znnwell c.oplenh nf Benmnhne sealf	
NL; BDRYB3GASWI; AF; 7HASLJ; J12: fR7 03 THJN RLJ M.TH: 2 t	22f1		WELL GRADED GRAVEL darC(ell. whs5 br. wn u21	. WITH SILT AND SAND (GW-GM) kv 499y/Ν. hsm/ihne-grahned/szb-r.zno nded T. bble uo aEnhm()c.arse-grahned s	d m r. znded Sand and	Drthling began ant im who5 a 4 hn c. re barrel and 6 hn cashngf Sao ple		t imscreenf	-
SL NL;			darC(ell.whs5br.wn u21	kv 496y/Wen/twell-graded/ilme-gramed GDmilme-gramed/szb-r.zndmr.znd	d/	WI-AF-WM18-SB-10 c. llecred an221t			

w9c. rresp. ndhng up aErhn(h c. arse-grahned SAGD) dzplhcane c. llecned an2221f SILTY SAND WITH GRAVEL (SM) ) er( darCgra( u21kv 822y Wer/well-graded/ ihne-grahned/ szb-r. znd m r. znded SAGD m ihne-grahned/ szb-r. znd m r. znded Rra) el uo aE rhm c. arse-grahned SAGDyf SANDY LEAN CLAY (CL)

PROJECT NUMBER:	BORING NUMBER:				
695619CH	WT-03	SHEET	2	OF	2
Boreh	ole Log				

vj OLTMUG			Yj TAMj G Uj aCHarb. r				
YL, AM jGl					YvIRUkell. w OacOem/MrzcO	o.znm	
jjvDIGAM	.SUG4:Q6	Q4f1J/L2J12008fJQ	Dv IYYIGR NLMHj D AGI				
VAMLV YL, L	YU 0fQimb	gs	SMAv MU229J19J12:	LC	GD U229J19J12:	Yj RRLv L	Df Bznler
DL7MHBLYJW RvjPGDSPvFATL ung	к А7НІТ У В	Tj Ýj v/ DLG	SjIYDLSTV17MJG GANL/PSTSRVJP7SkNBjY/ NjISMPvLTjGMLGM/vLYAM,L SIMkjvTjGSISMLGTk/SjIY MvPTMPvL/NIGLvAYjRk		Tj NNLGMS DL7MH j F TASIGR/ Dv IYYIGR DLMAIYS/ IGSM/PNLGMAM j G	M	/LYY DLMAIYS
		I. w-mzg5ness TYAk/ whit c. arse-grained Rra) elf FAT CLAY (CH) darCgra( uCft kv 492y/ Sr 5lg5-mzg5ness TYAkf SANDY LEAN CLAY (CL) darCgra( u21kv 492y/ Sh	ii/o.hsr/nl.w-plasn/chr/ysl.w-dhananno(/ jihne-grahned Sand and ihne-grahned m hii/o.hsr/n5hg5-plasn/chr/yn.n-dhanann/ hi/o.hsr/nl.w-plasn/chr/ysl.w-dhananno(/ bihne-grahned Sand and ihne-grahned m		YhQel( nhlif		Filmer pacQ
22 		FAT CLAY (CH) darCgra( ướt kv 492y/ Sr 5lg5-mzg5ness TYAk f	hii/o.hsm/5hg5-plasnhchn(/n.n-dhlananm/		Brearōhmg ne n. ro alf T. re screenhmg n. ro alf		Benmnhine bacQhilf
-		B. rhng rero hnared an2t in	3				

# ch2m:

## PROJECT NUMBER: BORING NUMBER: 695619CH WT-04 SHEET 1 OF 2

## Borehole Log

O(U:E9MQ7ASWIAvImFheld O5ase)

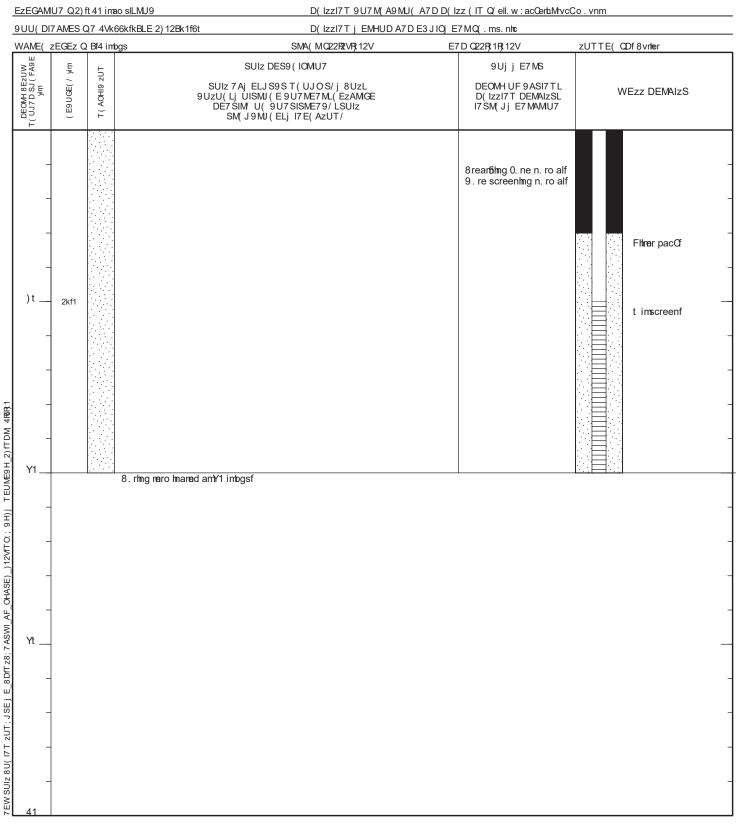
zU9AMU7 QUaCHarb. rLWA

EzEGAMU7	' Q2) ft 41 im	ao sILMU9	D( IzzI7T 9U7M( A9MU(	A7DD(Izz(ITQ/ell.w	/:acCerbMrvcCo.vnm	1
9UU(DI7A	MES Q7 4Vk	66kfkBLE 2) 12Bk1f6t	D( Izzl7T j EMHUD A7D I	E3JIOj E7MO(.ms.nho	;	
	GEz Q Bf4 im	bgs	SMA(MQ22172VF):12V	E7 D Q22R 1R 12	V zUTT	E(QDf8vnker
FA9	(E9UGE(/ym T(AOHI9 zUT	9UzU( DE7	SUIZ DES9 (IOMU7 7 Aj ELJS9S T (UJOS/j 8UZL Lj UISMU (E9U7ME7ML (EZAMGE SIM U (9U7SISME79/LSUIZ SM (J9MJ (ELj I7E (AZUT/	DEOMH UI	E7 MS F 9 ASI7 T L DEMAIZSL E7 MAMU7	WEzz DEMAIZS
_	1f1	r. vnded Sand m c. arse- n. n-plasmc Shrfn SANDY SILT WITH GRA Neru darCbr. wn ykft / ( I. w-mvg5ness SIzM-whft mace 9. bblef WELL GRADED SAND V br. wn ykft / (4PY,LDruL	Dao pLwell-gradedLine-grahmedLsvb-r. vno grahmedLsvb-r. vnd m r. vnded T (AGEzLwi VEL (ML) ) ft R, LDao pLn. n-plasnicLrapid-dhanannouL i ilme-grahmed Sand m ilme-grahmed T raNel a VITH SILT AND GRAVEL (SW-SM) ilme-grahmedLsvb-angvlar m svb-r. vnded S.	nd / Hand cleare dao ener 5.	lem tinfi	Bhn smeel ilvs5 o.vnmwell c.oplenh nf 8 enmnhme sealf
	2ft	ilme-gralmedLsvb-angvla	rm svb-r. vnded TraÑelLwhn6in.n-plasnhc Sh	rfi Drhiling bega who5 a 4 hn c and 6 hn cas	. re barrel	
21	21ft	I. w-mvg5ness 9 zA/ Lwh GRAVELLY LEAN CLAY grau ykft / (tB2,Lj edhv I. w-mvg5ness 9 zA/ Lwh T raNelf WELL GRADED GRAVE br. wn ykft / (4R,LWen c. arse-grahmedLsvb-ang WELL GRADED GRAVE	hvo -s. inbo . hsmli. w-plasmlohndLn. n-dhlanannb no ihne-grahned Sand and ihne-grahned T raNe	sand m		
-		r. vnded Sand m c. arse- line m c. arse-grahned T ( GRAVELLY LEAN CLAY darCgrau ykft / (412,LS 9 zA/ Lwht5 ihne-grahned S 9 blef FAT CLAY (CH)	grahnedLsvb-r.vnd m.r.vnded T(AGEz yo AGEz,Lwhmon.n-plasmlc Shinfn	g5ness	nhng n. ro alf	
2t						
- 2	2kf1	POORLY GRADED SAN darCgrauls5 br. wn Rdar( SA7 Df	<b>D (SP)</b> Cuell. whs5 br. wn y21/ ( 4R),LWenbsvb-ang	vlar		

	PROJECT NUMBER:	BORING NUMBER:				
	695619CH	WT-04	SHEET	2	OF	2
Ch2m:	Boreh	ole Log				

#### O(U: E9 MQ7 ASWI AvImFheld O5ase)

zU9AMU7 QUaCHarb. rLWA



# ch2m:

U1 RIVG VJMUERB WI :09

HTEEI 5 10 F

## Borehole Log

PROJECT : NASWI Ault Field Phase 2

LOCATION : Oak Harbor, WA

2R1 PECI VJ MUERB

Y69Y56CT

			LOCATION . Oak Haibbi, WA			
LEVATIO	DN: 12	.002 ft a	amsl, TOC DRILLING CONTRACTOR AND DRIL	L RIG : Yellow Jacket, Truck	k mount	
OORDIN	ATES :	N 494	154.15, E 1196696.47 DRILLING METHOD AND EQUIPME	NT : Rotosonic		
ATER LE	EVEL :	6.1 ft I	bgs START : 11/13/2019 EN	ND : 11/14/2019	LOGGER : D. Butler	
DEPTH BELOW GROUND SURFACE (ft)	RECOVERY (ft)	GRAPHIC LOG	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS DEPTH OF CASING, DRILLING DETAILS, INSTRUMENTATION	WELL DE	AILS
_			<ul> <li>WELL GRADED GRASEL WNT HAVD (GW- brown (7.5YR 5/2), Damp, fine-grained, rounded Sand to coarse-grained, rounded GRAVEL, with trace Silt (road base material).</li> <li>WELL GRADED GRASEL WNT HAVD (GW- dark brown (7.5YR 3/4), Dry, fine-grained, sub-round to rounded Sand to sub-round to rounded Cobble, with trace Silt and roots.</li> </ul>	Geotextile fabric. Roots.	8 in ste mount comple Benton	vell
	0.0		<b>HLI (ML-</b> reddish black (10R 2.5/1), Damp, low-plasticity, slow-dilatantcy, low-toughness SILT, with trace fine-grained Sand.			
-			<b>HAVD) HNLI (ML-</b> brown (7.5YR 5/2), Damp, low-plasticity, non-dilatant, low-toughness SILT, with fine to medium-grained Sand (majority fine-grained Sand) and many shell fragments.	Hand cleared a 6 in diameter hole to 5 ft.		
5			<b>LEAV CLA) (CL-</b> gray (7.5YR 6/1), Very soft, moist, medium-plasticity, non-dilatant, low-toughness CLAY, with many shell fragments.	End drilling 11/13/2019 at 1515,	Filter p	ack.
_			<b>LEAV CLA) (CL-</b> gray (7.5YR 6/1), Very soft, moist, medium-plasticity, non-dilatant, low-toughness CLAY, with trace shell fragments.	Resume drilling 11/14/2019 at 0945. Drilling began at 5 ft	5 ft scru	een.
-	11.0		<b>HAVD) LEAV CLA) (CL-</b> brown (7.5YR 5/2), Very soft, wet, low-plasticity, non-dilatant, low-toughness CLAY, with fine-grained Sand.	with a 4 in core barrel and 6 in casing.		
_			CLA) E) HAVD (HC- brown (7.5YR 5/2), Wet, poorly-graded, fine-grained, sub-round to rounded SAND, with low-plasticity CLAY. WELL GRADED HAVD WN T GRASEL (HW- very dark gray (10YR 3/1), Wet, fine-grained, rounded Sand to	Sample WI-AF-WT05-SB-08 collected at 0955.		
10			coarse-grained, rounded GRAVEL. LEAV CLA) (CL- gray (10YR 5/1), Very soft, wet, medium-plasticity, non-dilatant, low-toughness CLAY.			

2R1 PECI VJ MUERB	U1 RN/G VJ MUERB				
Y69Y56CT	WI :09	HTEEI	F 1	0	F
Boreh	ole Log				

#### PROJECT : NASWI Ault Field Phase 2

	ELEVATI	ATION: 12.002 ft amsl, TOC DRILLING CONTRACTOR AND DRILL RIG : Yellow Jacket, Truck mount								
	COORDI	NATES :	N 49415	54.15, E 1196696.47 DRILLING METHOD AND EQU	JIPMENT : Rotosonic					
	WATER I				END : 11/14/2019	LOGGER : D. Butler				
	DEPTH BELOW GROUND SURFACE (ft)	RECOVERY (ft)	GRAPHIC LOG	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS DEPTH OF CASING, DRILLING DETAILS, INSTRUMENTATION	WELL DETAILS				
-J; CH2M GEOTECH_12.GDT; 4/6/20	-	11.0			Breathing zone normal. Core screening normal.	Filter pack.				
NEW SOIL BORING LOG; USE ME_BD.GLB; NASWI_AF_PHASE2_2019.GPJ; CH2M GEOTECH_12: GDT; 4/6/20	- - -			Boring terminated at 16 ft bgs.		-				

P( OJI - REUNBI ( :	BO(CETEUNBI(:				
695619- A	S R006	VALLR	1	OF	2
Boreho	ole Log				

#### ORU: yTD MPu30 9uklt 4ield Ohase Y

OUT u D9UP MU aj Harbor V0 u

## yCyLuD9UPMWW/./p/ftamsIVDUT

ER9003PG TUPDRuTDUR uPE ER90C R9G M7 ello1 : acj etVDrkcj moknt

#### TUURE9PuDy3 MP / B/ WII.B8Vy WMB6pww.wY

ER9003PG A y DHUE u PE y QJ 90A y PD MRotosonic 3 Du RD MWWW - YwWB

#### 0 uDvR OvLvCM

0 u Dy R Cy L	_yCM	,,,	3 Du RD MWW -Yw B y	PEM/WWW-YWWB	MWWW-YWWB CUGGy R ME. Sktler				
Ey ODH Sy CU0 GRUJ PE 3J R4u Ty (ft)	RyTULyR7 (ft)	GRUOHIT WG	3U9CEy3TR9DD9UP 3U9CPuAyVJ3T3GRUJO37ASUOV TUQJRVAU93DJRyTUPDyPDVRyQuD9Ly EyP39D7URTUP393DyPT7V3U9C 3DRJTDJRyVA9PyRuCUG7	TUAAyPD3 EyODH U4 Tu39PGV ER9003PG EyDu903V 9P3DRJAyPDu03UP	0 y 000 Ey Du 903				
-			SILLT(M)I) T(MYILS GRAVME) WSH bro1n (p.57R 5-Y)VEam2Vfine, grainedVroknded 3 and to coarse, grainedV roknded GRuLy CV1 ith trace 3ilt (road base material). SILLT(M)I) T(MYILS GRAVME) WSH darj bro1n (p.57R I-/)VErN/fine, grainedVskb, roknd to roknded 3 and to skb, roknd to roknded TobbleV1 ith trace 3ilt and roots. VGR WLH reddish blacj (WR Y.5-WVE am2Vlo1, 2lasticitN/slo1, dilatantcN/ lo1, tokghness 39CDV1 ith trace fine, grained 3 and. VVE) DVGR WLH bro1n (p.57R 5-Y)VE am2Vlo1, 2lasticitN/non, dilatanttVo1, tokghness 39CDV 1 ith fine to medikm, grained 3 and (mavoritNfine, grained) and manNshell fragments. LI ME - LMD WLH graN (p.57R 6-VWL erNsoftVmoistVmedikm, 2lasticitN/non, dilatantV lo1, tokghness TQu7V1 ith trace shell fragments.	Geotextile fabric. Roots. Hand cleared a 6 in diameter hole to 5 ft. Erilling began at 5 ft	8 in steel flksh moknt 1 ell com2letion. Sentonite seal.				
- - - - - - - - - -	WV5		- LMDI D VME) W- H darj graN (p.57R / -W)V0 etVfine to coarse, grainedVskb, roknd to roknded     3u PEV1 ith Io1, 2lasticitNTIaNand some shell fragments.     II ME - LMD S CRA VME) WLH graN (p.57R 5-W)V0 etVo1, 2lasticitWnon, dilatantVlo1, tokghness T Qu7V     1ith fine, grained 3 and and trace shell fragments.     SILLT ( M) I ) VME) S CRA - LMD WS Q'- H darj graN (p.57R / -W)V0 etVfine to coarse, grainedVskb, angklar to skb, roknded 3 u PEV1 ith Io1, 2lasticitNTIaNand trace shell fragments.     LI ME - LMD WLH graN (Wi7R 5-W)L erNsoftV1 etVmedikm, 2lasticitN/non, dilatantV Io1, tokghness T Qu7.	1 ith a / in core barrel and 6 in casing. 3 am2le 0 9u4,0 D,w6,3S,wp collected at WW 5 1 - corres2onding A 3-3E. Sreathing Fone normal. Tore screening normal.					
- V15 - - v	/B.w			Sreathing Fone normal. Tore screening normal.					
- Yw									

	P( OJI - REUNBI ( :	BO(OETEUNBI(:				
	695619- A	S R006	VALLR	3	OF	2
Ch2m:	Boreh	ole Loa				

#### ORU: yTD MPu30 9uklt 4ield Ohase Y

CUTuD9UP MUaj HarborV0 u

## yOyLuD9UPMWW./p/ftamsIVDUT ER9003PG TUPDRuTDUR uPE ER900C R9G M7 ello1 : acj etVDrkcj moknt TUURE9PuDy3 MP / B/ W/I.B8Vy WMB6pww.wY ER9003PG Ay DHUE uPE yQJ 90A y PD MRotosonic y PE MWWW-YwWB 0 uDyROyLyCM , 3 Du RD MWW -YWB CUGGy R ME. Sktler Ey ODH Sy OU0 GRUJPE 3J R4uTy (ft) 3U9CEy3TR90D9UP TUAAyPD3 £ g **Ry TULy R7** 3U9CPuAy VJ3T3 GRUJO37ASUOV TUCURVAU93DJRy TUPDy PDVRy CuD9Ly Ey P39D7 UR TUP393Dy PT7V3U9C 3DRJTDJRy VA9P y RuCUG7 EyODH U4 Tu39PGV GRUOH9T 0 y CC Ey Du 9C3 ER9003PG Ey Du903V 9P3DRJAyPDuD9UP Y5. WB.w Py0 3U CURPG CUG; J3y Ay\_SE.GCS; Pu30 gu4\_OHu3yY\_WMB.GC; THYA GyUDyTH\_WY.GED; /-6-YW l w Sreathing Fone normal. Tore screening normal. 15. V¥.5 LIME - LMD SORA VME) WILH graN (Wv7 R 5-WV3 oftV1 etVmedikm,2lasticitN/non,dilatantV medikm, tokghness TQu7V1 ith fine, grained 3 and and trace fine, grained Grazel. POO(LDT(M)I) VME) WPH zerNdarj graN (WW7RI-VIVO etVfine,grainedVskb,angklar to skb,roknd 3uPE. 4ilter 2acj.

P(OJI - REUNBI (:	BO(CETEUNBI(:				
695619- A	S R006	VALLR	2	OF	2
Boreh	ole Loa				

#### ORU: yTD MPu30 9uklt 4ield Ohase Y

CUTuD9UP MJaj HarborV0 u

#### y CyLuD9UP MWY./p/ft amsIVDUT

ER90C9PG TUPDRuTDUR uPE ER90C R9G M/Tello1 : acj etVDrkcj moknt

#### TUURE9PuDy3 MP / B/ W/I.B8Vy WWB6pww.wY

ER9009PG A	yDHUE uPE yQJ904	A y PD MRotosonic

## 0 uDyROyLyCM , 3 Du RD MWW -YwWB yPEMWWW-YwWB CUGGy R ME. Sktler Ey ODH Sy CU0 GRUJ PE 3J R4u Ty (ff) 3U9CEy3TR90D9UP TUAAyPD3 ŧ g RyTULyR7 ( 3U9C PuAy VJ3T3 GRUJO37ASUOV TUOJRVAU93DJRy TUPDy PD/RyOJDLy Ey P39D7 UR TUP393Dy PT7V3U9C 3DRJTDJRy VA9Py RuOJG7 EyODHU4 Tu39PGV ER90C3PG EyDu9C3V 9P3DRJAyPDuD9UP **GRUOH9T** 0 y CC Ey Du 9C3 5 ft screen. p.w Eriller notes heazing sands. 15. 4ilter 2acj. Soring terminated at / 6 ft bgs. Py0 3U0CSURPG CUG; J3y Ay\_SE.GCS; Pu30 9u4\_OHu3yY\_WWB.GO; THYA\_GyUDyTH\_WY.GED; /-6-Yw 5w. 55

PROJECT NUMBER:	BORING NUMBER:				
695619CH	WT-07	SHEET	1	OF	2
Boreh	ole Log				

#### PROJECT : NASWI Ault Field Phase 2

	<u>10.808 ft a</u>		D DRILL RIG : Yellow Jacket, Truc	k mount
VATER LEVE		145.15, E 1199048.86 DRILLING METHOD AND EQL gs START : 11/8/2019	END : 11/8/2019	LOGGER : D. Butler
DEPTH BELOW GROUND SURFACE (ft) (ft) (ft) (ft) (ft) (ft)		SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS DEPTH OF CASING, DRILLING DETAILS, INSTRUMENTATION	WELL DETAILS
- - 0.0		POORLY GRADED GRAVEL WITH SAND (GP) gray (7.5YR 5/1), Dry, fine to coarse-grained, angular GRAVEL, with fin medium-grained Sand. SILTY SAND WITH GRAVEL (SM) very dark grayish brown (10YR 3/2), Dry, well graded, fine-grained, sub-angular to angular SAND, with fine to coarse-grained, sub-angular t angular Gravel, non-plastic fines, and some Cobble.	Geotextile fabric.	8 in steel flush mount well completion.         Bentonite seal.
5	0		Hand cleared a 6 in diameter hole to 5 ft. Drilling began at 5 ft with a 4 in core barrel and 6 in casing.	
- 11.	.0	SILT WITH SAND (ML) black (10YR 2/1), Dry, non-plastic SILT, with fine-grained Sand (possible decomposed organics). ORGANIC SOIL (OH) reddish black (10R 2.5/1), Dry, non-plastic, non-dilatant fines, with some wood fibers.		Filter pack.
-		<b>SILT (ML)</b> dark yellowish brown (10YR 4/4), Dry, non-plastic, non-dilatant SILT, wi trace fine to medium-grained Sand, wood fibers, and shell fragments.	ith	

## Ch2me More Bore

BORING NUMBER: WT-07

SHEET 2 OF 2

## Borehole Log

PROJECT : NASWI Ault Field Phase 2

ELEVATION :	10.808 ft a	amsl, TOC	DRILLING CONTRACTOR AN	ND DRILI	_ RIG : Yellow Jacket, Truc	k mount	
COORDINATE	ES : N 4969	945.15, E 1199048.86	DRILLING METHOD AND EQ	UIPMEN	IT : Rotosonic		
WATERIEVE			START : 11/8/2019		D : 11/8/2019	LOGGER : D	Butler
GROUND SURFACE (ft) (ft) RECOVERY (ft)			SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, LOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY		COMMENTS DEPTH OF CASING, DRILLING DETAILS, INSTRUMENTATION		LL DETAILS
- 11. - 11. -	.0	SILTY SAND (SM) dark gray (10YR 4/1 angular SAND, with	Damp, low-plasticity, non-dilatant, low-toughness C ), Wet, moderately-graded, fine to medium-graine- many shell fragments (possibly marine Sand).	d,	Sample WI-AF-WT-07-SB-12 collected at 1515.		5 ft screen. Filter pack.
		Boring terminated at	16 ft bgs.				

# ch2m;

BORING NUMBER: WT-08

SHEET 1 OF 2

## Borehole Log

#### WLU: NOk 9PB08 uB, It Field Whase )

CUOBkuUP 9UaT Harbor38 B

PROJECT NUMBER:

695619CH

NON 2 Bkill P 9 1	′y.( 5y ft	amsl3kUO DLuCQPG OUPkLBOkUL BPD	DL uCL uG 9Eellow : acTet3kr, c	T mo, nt		
OUUL DuPBk NO	9 P 4/ 6	/ 453N YY/ / y5( .5 DL 100.PG MNk HUD BPD NQJ i	WMNPk 9Lotosonic			
BKNLON2NC	9 ppp	0kBLk 9 <b>YYS/S</b> /YY/	NPD 9YY\$(\$)yY/	CUGGNL 9D. 7, tler		
DNWKH 7NQJ8 GLUJPD 0JLFBON Atv LNOU2NLE Atv	GL BWHLD CUG	0 UIC DN0 OL WKIUP 0 UIC PBMN3J 0 OO GL UJ W0 EM7 UC3 OUCUL 3MUWKJ L N OUPK NPK 3L NOBKI 2 N DNP0 IKE UL OUP0 WK NPOE30 UIC 0 KL J OKJ L N3MIPNL BOUGE	OUMMNPk0 DNWkHUFOB0uPG3 DLuCOPGDNkBuC03 uP0kLJMNPkBkuUP	8 NCC DNk BLCO		
- - y.y		POORLY GRADED GRAVEL WITH SAND (GP) gra- A/.5EL 59/v3Dr-3fine to coarsepgrained3ang, lar GL B2 NC3with fine medi, mggrained 0 and Atoad base materialv. SILTY SAND WITH GRAVEL (SM) I er- darT gra-ish brown AyEL R9 v3Dr-3well graded3finepgrained3 s, bpang, lar to ang, lar 0BPD to fine to coarsepgrained3s, bpang, lar to ang, lar Gral el3with some Oobble.	to Geotextile fabric. Hand cleared a 6 in diameter hole to 5 ft.	( in steel fl, sh mo, nt well com 1letion. 7 entonite seal.		
5 Y.y		SANDY LEAN CLAY WITH GRAVEL (CL) brown A/yEL 55%3Dr-3lowpflasticit-3lowpto, ghness OCBE3with \finepgrained 0 and and finepgrained Gral el. SILT WITH SAND (ML) blacT A/yEL ) S/v3Dr-3nonpflastic3nonpdilatant 0 uOk 3with finepgrained	Drilling began at 5 ft with a 4 in core barrel and 6 in casing.			
- - - Yy		Oand Alossibi- decom1osed organicsv. ORGANIC SOIL (OH) reddish blacT AyL ).59%BDr-3nonp1lastic3nonpdilatant fines3some woo fibers. SILT (ML) darT -ellowish brown AyEL 49%BDr-3nonp1lastic3nonpdilatant 0 LCk 3with trace fine to medi, mpgrained 0 and3wood fibers3and shell fragments.				
- YY.y -		LEAN CLAY (CL) brown AfyEL 4\$30am13lowp1lasticit-3nonpdilatant3lowpto, ghness OCE SILTY SAND (SM)				
- - Y5		darT gra- AryEL 49/38 et3moderatel-pgraded3fine to medi, mpgrained3 ang, lar 0BPD3with man- shell fragments Alossibl- marine sandv. SANDY LEAN CLAY (CL) gra- AGONEY 59/v8 et3lowp1lasticit-3nonpdilatant OCBE3with interbedded finepgrained 0 and.	0am1le 8 upBFp8 kpy(p07pYR			
- - Y).5		LEAN CLAY (CL) darT gra- AGONEY 45Pv8 et3highp1lasticit-3nonpdilatant3 medi, mpto, ghness OCBE.				
) y		LEAN CLAY (CL) darT gra- AGONEY 43Pv8 et3highp1lasticit-3nonpdilatant3 medi, mpto, ghness OCBE3with interbedded fine to medi, mpgrained 0 and				

	PROJECT NUMBER:	BORING NUMBER:				
	695619CH	WT-08	SHEET	2	OF	2
Ch2m:	Boreh	ole Log				

#### WLU: NOk 9PB08 uB, It Field Whase )

CUOBkuUP 9UaT Harbor38 B

			/ 453N YY/ / y5( .5 DL ược PG MNK HUD BPD NQJ ưới		
BkNL	ON2NC9	ppp	0kBLk 9 <b>YY\$/</b> \$)yY/	NPD 9YY\$(\$)yY/	CUGGNL 9D. 7, tler
DNWKH 7 NOU8 GLUJPD 0JLFBON Attv	L NOU2NL E Ætv	GL BWHLD CUG	0UiC DN0OL WK UP 0UiC PBMN3J0O0 GL UJ W0EM7UC3 OUCUL 3MU@kJL N OUPkNPk3L NOBk 2N DNP0ikE UL OUP0@kNPOE30UiC 0kLJ OKJL N3MIPNL BOUGE	OUMMNPk0 DNWkHUFOB0iPG3 DLicOPGDNkBic03 iP0kLJMNPkBkiUP	8 NCC DNk Bu00
)5	- - - -		LEAN CLAY (CL) darT gra- AGCNEY 49℃8 et3highp1lasticit-3nonpdilatant3 medi, mpto, ghness OCBE.		
- - - Fy	- 5.y				
	- - - Yy.y		WELL GRADED GRAVEL WITH SAND (GW)	<ul> <li>Driller notes heal ing</li> </ul>	Filter 1acT. 5 ft screen.
-	-		I er- darT gra- AryEL R\$V38 et3fineggrained3s, bpang, lar to ro, nded 0 and to coarseggrained3s, bpang, lar to ro, nded GL B2NC. <b>POORLY GRADED SAND (SP)</b> I er- darT gra- AryEL R\$V38 et3fineggrained3s, bpang, lar to s, bpro, nded 0BPD.	sands and artesian conditions when first drilling into G8 and 0W at R5.) ft.	Filter 1acT.

# ch2m;

BORING NUMBER: WT-09

SHEET 1 OF 2

## Borehole Log

PROJECT : NASWI Ault Field Phase 2

LOCATION : Oak Harbor, WA

PROJECT NUMBER:

695619CH

ELEVAT	ION: 13.	.028 ft a	amsl, TOC DRILLING CONTRACTOR AND DR	RILL RIG : Yellow Jacket, Truck	< mount
COORDI	NATES :	N 495	B19.01, E 1195690.23         DRILLING METHOD AND EQUIPMING	ENT : Rotosonic	
WATER	LEVEL :	12.1 ft	bgs START : 11/20/2019 E	END : 11/21/2019	LOGGER : T. Chalmers
DEPTH BELOW GROUND SURFACE (ff)	RECOVERY (ft)	GRAPHIC LOG	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS DEPTH OF CASING, DRILLING DETAILS, INSTRUMENTATION	WELL DETAILS
-			WELL GRADED SAND WITH SILT AND GRAVEL (SW-SM) very dark brown / dusky yellowish brown (10YR 2/2), Dry, fine to coarse-grained SAND to Gravel < 50 mm. (Sand: 70%, Gravel: 20%, Silt: 10%) WELL GRADED SAND WITH GRAVEL (SW) very dark brown / dusky yellowish brown (10YR 2/2), Dry, fine to coarse-grained SAND to fine to coarse-grained Gravel, with trace Cobble.	∫ Geotextile fabric.	8 in steel flush mount well completion. Bentonite seal.
	0.0		<b>LEAN CLAY (CL)</b> dark yellowish brown (10YR 4/4), Medium-stiff, dry, medium-plasticity, low-toughness CLAY, with trace fine-grained Sand.	Hand cleared a 6 in diameter hole to 5 ft.	Filter pack.
5			WELL GRADED SAND WITH GRAVEL (SW) very dark gray (10YR 3/1), Damp, fine to coarse-grained, sub-angular to sub-rounded SAND, with angular Gravel < 30 mm. (Sand: 60%, Gravel: 40%)	Granitic cobble.	
	1.5		LEAN CLAY (CL)         dark yellowish brown (10YR 4/4), Medium-stiff, dry, medium-plasticity,         low-toughness CLAY, with trace fine-grained Sand.         LEAN CLAY (CL)         dark greenish gray (GLEY1 4/10 Y) Very soft, wet, medium-plasticity,	with a 4 in core barrel and 6 in casing.	10 ft screen.
	- 10.5		non-dilatant, low-toughness CLAY.	Sample WI-AF-WT-09-SB-06 collected at 1525. As well as corresponding duplicate WI-AF-WT-09-SBP-06 collected at 1530. At 5.25 ft there is a 20 mm layer of well graded sand with gravel (SW), dark gray (10YR 4/1) Moist, fine to coarse-grained SAND, with Gravel < 15 mm.	
10				Breathing zone normal. Core screening normal.	

	PROJECT NUMBER:	BORING NUMBER:				
	695619CH	WT-09	SHEET	2	OF	2
CH2M:	Boreh	ole Loa				

#### PROJECT : NASWI Ault Field Phase 2

			nsi, TOC 19.01, E 1195690.23			( mount	
				DRILLING METHOD AND			T. Chalmora
WATER				START : 11/20/2019	D : 11/21/2019	LUGGER	T. Chalmers
DEPTH BELOW GROUND SURFACE (ft)	RECOVERY (ft)	GRAPHIC LOG	SOIL NAME, USC COLOR, MOISTURE DENSITY OR CO	SCRIPTION S GROUP SYMBOL, CONTENT, RELATIVE NSISTENCY, SOIL MINERALOGY	COMMENTS DEPTH OF CASING, DRILLING DETAILS, INSTRUMENTATION	v	ELL DETAILS
	- 10.5						- Filter pack.
NEW SOIL BORING LOG; USE ME_BU.GLB; NASWI_AF_PHASEZ_2019.GP.			Boring terminated at 16 ft bgs.				

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BO(RGT GUNBI(: SAH10

YVIIA 1 OF 2

## Borehole Log

PROJECT : NASWI Ault Field Phase 2

ELEVATION : 13	.182 ft amsl, TOC	DRILLING CONTRACTOR AND DR	RILL RIG : Yellow Jacket, Truck	mount
COORDINATES :	N 495822.65, E 1195676	6.41 DRILLING METHOD AND EQUIPM	IENT : Rotosonic	
ATER LEVEL :		START : 11/20/2019	END : 11/21/2019	LOGGER : T. Chalmers
DEPTH BELOW GROUND SURFACE (ft) RECOVERY (ft)	GRAPHIC LOG	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS DEPTH OF CASING, DRILLING DETAILS, INSTRUMENTATION	WELL DETAILS
- 0.0	SILT T(M) SILT(M) SILT(M) SILT(M) Very dark brow coarse-grained (Sand: 60%, G LI MG - LMC W dark yellowish		Geotextile fabric. Breathing zone normal. Core screening normal. Hand cleared a 6 in diameter hole to 5 ft.	8 in steel flush mount well completion. Bentonite seal.
5 1.0	LI MG - LMC W dark greenish g non-dilatant, lo	/LD gray (GLEY1 4/10 Y) Very soft, wet, medium-plasticity, w-toughness CLAY.	Drilling began at 5 ft with a 4 in core barrel and 6 in casing. Sample WI-AF-WT-10-SB-06 collected at 0945.	
11.0			At 5.5 ft there is a 20 mm layer of well graded sand with gravel (SW), dark gray (10YR 4/1) Moist, fine to coarse-grained SAND, with Gravel < 15 mm. Breathing zone normal. Core screening normal.	
- - 15			Sluff of top soil, roots, and grass mixed in with the clay.	
- 16.5			Breathing zone normal. Core screening normal.	
20				

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	695619- V	SAH10	YVI I A	3	OF	2
<b>Ch2</b> <i>m</i> :	Boreho	ole Log				

#### PROJECT : NASWI Ault Field Phase 2

LEVATION : 1	3 182 ft	amsl, TOC DRILLING CONTRACTOR AND I	ORILL RIG · Vellow Jacket Truck	k mount
		5822.65, E 1195676.41 DRILLING METHOD AND EQUIF		a mount
WATER LEVEL :		START : 11/20/2019	END : 11/21/2019	LOGGER : T. Chalmers
DEPTH BELOW GROUND SURFACE (ft) RECOVERY (ft)	GRAPHIC LOG	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS DEPTH OF CASING, DRILLING DETAILS, INSTRUMENTATION	WELL DETAILS
- - - - - - - - - - - - - - - - - - -				
30		UNKNOWN: 3 ft of recovery is a sluff mix of lean clay and medium-graine sand.	d Lost core from 30 to 40 ft run. Breathing zone normal.	
- 35			Driller believes he hit a rock at ~33 ft, which pushed through and refused collection of the core.	
				Filter pack.

	P( OJI - A GUN BI ( :	BO(RGT GUNBI(:				
	695619- V	SAH0	YVI I A	2	OF	2
Ch2 <sub>M</sub> :	Boreh	ole Log				

#### PRO IECT · NASWI Ault Field Phase 2

ELEVATI	ON : 13	192 ft o			
		. 102 IL a	msl, TOC DRILLING CONTRACTOR AND DRIL	LL RIG : Yellow Jacket, Truck	mount
COORDI			322.65, E 1195676.41 DRILLING METHOD AND EQUIPME	NT : Rotosonic	
WATER L				ND : 11/21/2019	LOGGER : T. Chalmers
DEPTH BELOW GROUND SURFACE (ft)	RECOVERY (ft)	GRAPHIC LOG	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS DEPTH OF CASING, DRILLING DETAILS, INSTRUMENTATION	WELL DETAILS
	5.0		SILLT(M)I) T(MEILS FAV YMG) WTSD         black (GLEY1 2.5/N) Wet, fine to coarse-grained, sub-angular to sub-rounded GRAVEL < 60 mm, with fine to coarse-grained, sub-angular to sub-rounded Sand.	Breathing zone normal. Core screening normal.	5 ft screen.
45			SAND.	Heaving sands at bottom of the borehole.	Filter pack.
			Boring terminated at 46 ft bgs.		-

_	
Γ	PIOJWY(GUEBWY:
	695619Y)

BOIDES GUE BWI: M(-11

N) WW( 1 OF 2

## Borehole Log

#### <u>%N93T86 (GbM5 Sb0rt 42 rc %nl ei y</u>

L98b6\$9G(9I7hlwAowu5b

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899N-SGb6TM(				
5 b6TN LTQTL (	):BotAse		G- (pp@f@lpP	L9 RRTN (6:8 nl raiwe
- T%6h WTL9 5 RN9 EG- MEN4b8 T Hg/ NT89 QTNV Hg/	RNb%h38 L9R	M9 & - TM8 N9%639 G M9 & GbUTuEM8 M RN9 E% Mv UW9 Lu 8 9 L9 NuU9 3M6ENT 8 9 G6TG6uNTLb6532T - TGM55v 9 N 8 9 GNM3M6TG8 v uM9 & M6NE8 6ENTuU3GTNbL9 Rv	89 UUTG6M - T%6h 94 8b MSGRu - N\$LLSGR - T6b \$LMu SGM6NEUTG6b6\$9 G	5 TLL - T6b <b>%</b> M
	, i vz cl v ) I Y uM NL GRA swi d2er ) I Y uMr , i vz cl v e0AD ds	HHANDH(MD) NLGRVEHC ▼AwoFd Cc0e7z zirroF2en AwoFd kolvNyQ/uklW2t(ffYuRwl,ir( dc(pfY/ NDH(VEHC nswlz kRLTvpfQlv/-wzuroFDmlet2.2tzuM52.6:kW2t(HfYuMidc( nirre(fY/ il RVRR NLGRMDQ) SILTWHVMMC ▼swiid2en swlz kRLTvp)Qlv/42ti to.olveiDswl2ticu Orlwto e0ADbo0dcic MoG-uF2tn e0ADbds0rlwto e0ADbo0dcic Rwl,ir : kWidc(BfYuRwl,ir(pfY/	Noote: Mhirrgk/saidte: Mhirrgk/saidte:	B2d etiirg0en ao0dtFirr .oamit2od: Widtod2ti eilr:
	clw7wic	<b>HLA WHC</b> ic2en swiz ky:fvN 10¢/uMogucia muaic20a Dmlet2.2zudodDc2itidtu indiee8Lbv:	hldc.rilwiclH2d c2taitiwnoritofgt:	42tiwml.7: fgte.wiid:
f	cl w7 wic e0AD ds dodD22 HWLG Y cl w7 wic	ANLGRWYC ic2en swiz ky:fvN 102/u5 itumoowzDswicicug2di toaic20aDswi2dicu 01 wtoe0ADze0dcic MoG-uF2n eoguaic20aDm1 et2 2zu t1 dturoFDbo0sndiee 8 nl z l dc twi.i Rwl,ir: HLAWHC ic2en swiz ky:fvN 102/uMoguFituaic20aDm1 et2 2zudodDc21 tl dtu indiee 8 Lbv:	Miami 5 SB0-4 D5 6 Dpp DMWD f .omi.tic Itplp1: - w2n2dsAisId Itfgt F2an I 1 2d .owi Alwwir Idc H2d .le2ds:	
pl				42ti wm . 7:

	PIOJWY(GUEBWI:	BOIDES GUE BWI:				
	695619Y)	M( -11	N) WW(	2	OF	2
Ch2m:	Boreh	ole Log				

#### %N93T86 (GbM5 Sb0rt 42:nc %n lei y

L98b6\$9G(9I7hlwAowu5b

		<u>1Hy:O)uTppPHBHQy)</u> Ase	- NSLLSGR UT6h9 - 1	bG-TJES%UT	G6 (Notoeod2		
N LTQTL (	():Bot/	Ase					
Þ			M6bN6 (pp@f@lpP	TO	- , ppφf γβl pP	L9 RRTN ( 6: 8	nlnaiwe
NT89 QTNv kg/	RNb%h S L9 R		M9 SL - TMB N 3% 6 39 G M9 SL G U T U EMB M R N 9 E % M/ U W9 L u I 9 N U 9 3W 6 E N T 8 9 G 6 T G 6 U N T L b 6 SC T - T G M 56 V 9 N 8 9 G M 54/6 T G 8 V U M 9 SL M 6 N E 8 6 E N T U U SC T N b L 9 R V		89UUTG6M -T%6h948bM&GRu -N\$L\$GR-T6b\$LMu \$GM6NEUTG6b6\$9G	5 TLI	T6b <b>\$</b> M
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# ch2m:

:9106S M(52J

:91 DGS GBE:WI-

N)WW (29PJ

## Borehole Log

#### PROJECT : NASWI Ault Field Phase 2

LOCATION : Oak Harbor, WA

6I9 UWY(GBE: WI-

10F120Y)

		466.55, E 1196883.86 DRILLING METHOD AND EQUIPME		
	: 4.3 ft	bgs START : 11/14/2019 EI	ND : 11/14/2019	LOGGER : T. Chalmers
CROUND SURFACE (ft) (ft) RECOVERY (ft)	GRAPHIC LOG	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS DEPTH OF CASING, DRILLING DETAILS, INSTRUMENTATION	WELL DETAILS
_		SI LTWHANDY MD) NLGR VEHC very dark brown / dusky yellowish brown (10YR 2/2), (Silt: 55%, Gravel: 30%, Sand: 15%) NLGRANDY VEHC greenish gray (GLEY 1 5/10Y), Dry, low-plasticity SILT, with fine-grained	Roots. Shell fragments.	8 in steel flush mount well completion. Bentonite seal.
-		Sand. (Silt: 65%, Sand: 30%, Shells: 5%) HWLG YHLA WHC dark reddish gray (2.5YR 4/1), Soft, damp, medium-plasticity, non-dilatant, low-toughness CLAY.	Trace shell fragments.	
5		<b>NLGRA HWLG YHLA WHC</b> very dark gray (GLEY 1 3/N), Medium-stiffness, wet, low to medium-plasticity, non-dilatant, low-toughness CLAY, with fine-grained Sand (40%) and trace Gravel < 35 mm.	Sample WI-AF-WT-12-SB-05 collected at 1250	
-		6991 HA SI LRWR NLGR MID) YHLA W65NYC dark gray (GLEY 1 4/N), Wet, medium-grained, sub-angular to sub-rounded SAND, with trace Gravel < 10 mm. HWLG YHLA WHC	via hand auger. Hand cleared to 6 ft. Drilling began at 6 ft	
_		dark gray (2.5Y 4/1), Soft, wet, medium-plasticity, non-dilatant, low-toughness CLAY.	with a 4 in core barrel and 6 in casing. Breathing zone normal.	
10			Core screening normal.	
- 11.0				
-				
15				
- 15.0			Breathing zone normal. Core screening normal.	
_ 15.0				Filter pack.

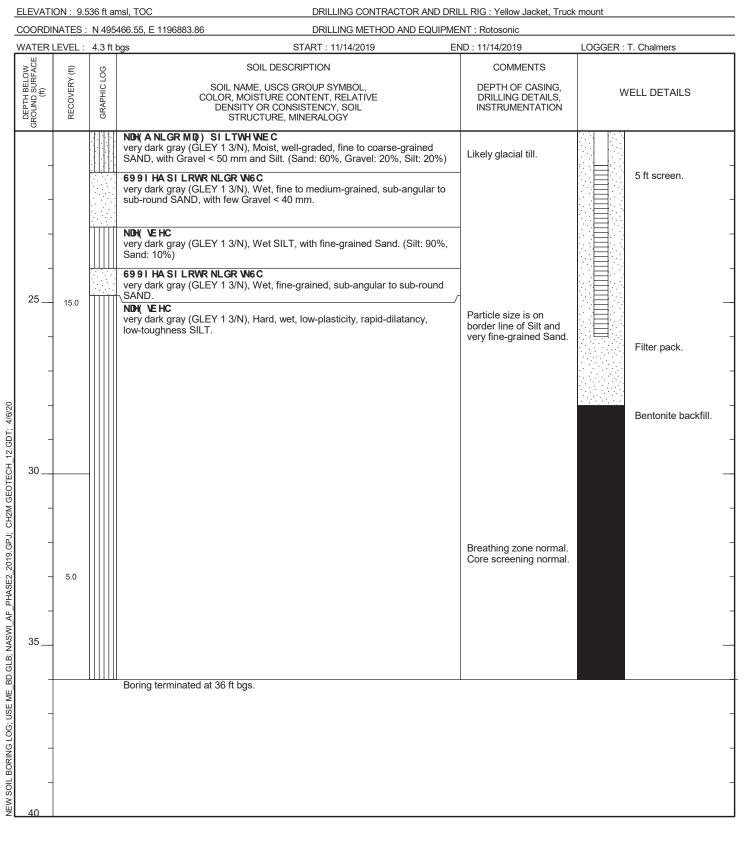
## 61 9 UWY( GBE: W -10F120Y)

:91 DGS GBE:W/-M (52J

N)WW(J9PJ

## Borehole Log

PROJECT : NASWI Ault Field Phase 2



Appendix C Well Development Logs

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International Project Well Display Control 04.11/m       Project Well Display Control 04.11/m         Well Generation       Sample ID: MA       Sample ID: MA         with Well Generation       Sample ID: MA       Sample ID: MA         with Well Generation       Display Control 10.11/m       Display Control 10.11/m         with Well Generation       Display Control 10.11/m       Display Control 10.11/m       Display Control 10.11/m         all Oppit:       11.2/m       12.325       Fr. [ISTOC]       Display Control 10.11/m       Display Control 10.11/m         all Oppit:       11.2/m       1.2.325       Fr. [ISTOC]       Display Control 10.11/m       Display Control 11.11/m       Display Control 11.11/m       Display Control 10.11/m       Display Control 10.11/m       Display Control 10.11/m       Display Control 10.11/m       Displa			1							
International Project Well Display Control 04.11/m       Project Well Display Control 04.11/m         Well Generation       Sample ID: MA       Sample ID: MA         with Well Generation       Sample ID: MA       Sample ID: MA         with Well Generation       Display Control 10.11/m       Display Control 10.11/m         with Well Generation       Display Control 10.11/m       Display Control 10.11/m       Display Control 10.11/m         all Oppit:       11.2/m       12.325       Fr. [ISTOC]       Display Control 10.11/m       Display Control 10.11/m         all Oppit:       11.2/m       1.2.325       Fr. [ISTOC]       Display Control 10.11/m       Display Control 11.11/m       Display Control 11.11/m       Display Control 10.11/m       Display Control 10.11/m       Display Control 10.11/m       Display Control 10.11/m       Displa		<b>Z</b> AA	<b>A</b> .							
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$ \begin{array}{c c c c c c c c c c c c c c c c c c c $				S. S	Proj	ect Number:	695610CH.0	4.FI.WI	ten la distanti a cari di seconda	
	tion:				19-1 19-1	Well ID:	WI-AF- M	W-618		
ther: $10^{23}$ Rain Alber boiling driller unter Burgen Alber boiling driller unter Burgen Alber boiling driller unter Burgen Alber boiling driller unter Burgen Alber boiling driller unter Horber: File & ZIZO Horber: Horber: File & ZIZO Horber: Horber: File & ZIZO Dete and Time: $12/4/19$ 12/35 File Bool File Data and Time: $12/4/19$ 12/35 File Bool Horber: $11/49$ File Tool Dete and Time: $12/4/19$ 12/35 12/7/19 14/15 12/6/19 14/16 12/6/19 14/16 12/6/19 12/16 12/6/19 12/16 12/6/	vent:			1	1 Sale				-	
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ph to water: [1] $1.49$ [1] $1.59$ Fr. (BTOC) Dute and Time: $12/21/9$ [1] $205$ ther Column: $1.54$ [1] $1.$		G	D. Belore	After	3 a 15 mi	in rechary	C.			
ther Column: $\begin{array}{c c c c c c c c c c c c c c c c c c c $	otal Depti	1:	14.89	14.89	FT.(BTOC)		Me	asuring Device:	Solingt Pine	# 12726
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530       10.0       13.09       0.600       1.47       8.15       288       287       11         Final       10.0       13.09       0.600       1.47       8.15       288       287       11         Final       10.0       13.09       0.600       1.47       8.15       288       287       11         Final       10.0       13.09       0.600       1.47       8.15       288       287       11         Servations/Notes:       Purge Start Time:       12/4/19       1305       Purge Rate:       12/4/19         4fter well was initially bailed dry it was left to       Air Monitoring:       0.0										1, 1, 1, 1, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
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servations/Notes: Purge Start Time: <u>12/4/19</u> 1305 Purge Rate: 12/4/19 After well was initially bailed dry it was left to Air Monitoring: VOC (ppm) = 0.0 0.0 VOC (ppm) = 0.0 0.0 VOC (ppm) = 0.0 0.0 VOC (ppm) = 0.0 0.0 VDL was measured and purge volume calculated. LEL (%) = 0 This new purge Volume is believed to be more 02(%) = 209 This representative to the wellLow producing well	550	10.0	15.04	0.600	-1.9 /	CAL	200	- 201		4
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(inches) 1 1.25 2 4</td> <td>Volume (gallons/foot) 0.041 0.064 0.163 0.653</td> <td>Soliast 12/8/19 11/8/19</td> <td>Pine #12720</td>	After After	FT.(BTOC) FT. GAL. GAL. GAL. 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(inches) 1 1.25 2 4	Volume (gallons/foot) 0.041 0.064 0.163 0.653	Soliast 12/8/19 11/8/19	Pine #12720
epth to water ater Column: fell Volume: otal Purge Vo urge Device: ir Monitoring fas well surge urge and bail	: (x) (x) DI.: Equipmen ed and bail l equipmen urge Vol. (gals)	$   \begin{array}{c}     15.49 \\     5.64 \\     9.55 \\     0.63 \\     1.61 \\     16.1 \\ $	ump Rin Uniti RA Surge Cond. mS/cm	FT.(BTOC) FT. GAL. GAL. GAL. GAL. <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GA</u>	4 <u>43639</u> on? <u>}</u> <u></u> <u>BLD PARAMI</u> pH	Well Dia. (inches) 1 1.25 2 4	Volume (gallons/foot) 0.041 0.064 0.163 0.653	Soliast 12/8/19 11/8/19	Pine #12720
epth to water ater Column: Vell Volume: Otal Purge Vo urge Device: ir Monitoring Vas well surge urge and bail	: (x) (x) DI.: Equipmen ed and bail l equipmen urge Vol. (gals)	$   \begin{array}{c}     15.49 \\     5.64 \\     9.55 \\     0.63 \\     1.61 \\     16.1 \\ $	ump Rin Uniti RA Surge Cond. mS/cm	FT.(BTOC) FT. GAL. GAL. GAL. GAL. <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GA</u>	4 <u>43639</u> on? <u>}</u> <u></u> <u>BLD PARAMI</u> pH	Well Dia. (inches) 1 1.25 2 4	Volume (gallons/foot) 0.041 0.064 0.163 0.653	ire 5. lev	ft Saveen
epth to water ater Column: Vell Volume: Otal Purge Vo urge Device: ir Monitoring Vas well surge urge and bail	: (x) (x) DI.: Equipmen ed and bail l equipmen urge Vol. (gals)	5.64 9.55 0.63 1.61 16.1	Cond.	FT.(BTOC) FT. GAL. GAL. GAL. GAL. <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GAL.</u> <u>GA</u>	4 <u>43639</u> on? <u>}</u> <u></u> <u>BLD PARAMI</u> pH	Well Dia. (inches) 1 1.25 2 4	Volume (gallons/foot) 0.041 0.064 0.163 0.653	ire 5. lev	ft Saveen
Vater Column: Vell Volume: otal Purge Vo urge Device: ir Monitoring Vas well surge urge and bail Time	: (x) (x) DI.: Equipmen ed and bail l equipmen urge Vol. (gals)	q.05 $o.163$ $I, GI$ $IG, I$ $IG, I$ $IGI$ $IGII$	Ulti RA ot intervals alo <u>Surge</u> Cond. mS/cm	GAL/FT. GAL. GAL. $\underline{e \pm 4466}$ $\underline{E}$ <i>Pire</i> $\pm$ ong entire scree $\underline{b   ock}$ FI DO mg/L	4 <u>43639</u> on? <u>}</u> <u></u> <u>BLD PARAMI</u> pH	Well Dia. (inches) 1 1.25 2 4	Volume (gallons/foot) 0.041 0.064 0.163 0.653	ire 5. lev	ft Saveen
otal Purge Vo urge Device: ir Monitoring las well surge urge and bail Time	Equipmen ed and bail l equipmen urge Vol. (gals)	1, G1 16, ( staltic Fr nt: A led in 2-3 foo nt: Temp. °C	Ulti RA ot intervals alo <u>Surge</u> Cond. mS/cm	GAL. GAL. E <u>4 4466</u> E <u>Pive</u> <del>1</del> ong entire scree <u>block</u> Fil D0 mg/L	4 <u>43639</u> on? <u>}</u> <u></u> <u>BLD PARAMI</u> pH	(inches) 1 1.25 2 4  15 POSA ETERS ORP	(gallons/foot) 0.041 0.064 0.163 0.653 0.653		
otal Purge Vo urge Device: ir Monitoring las well surge urge and bail Time	Equipmen ed and bail l equipmen urge Vol. (gals)	16.1 staltic F it: A led in 2-3 foo it: Temp. °C	Ulti RA ot intervals alo <u>Surge</u> Cond. mS/cm	GAL. <u>e # 4466</u> <u>E Pire #</u> ong entire scree <u>-block</u> Fil DO mg/L	4 <u>43639</u> on? <u>}</u> <u></u> <u>BLD PARAMI</u> pH	1 1.25 2 4 No, 9 15 p 0 59 ETERS	0.041 0.064 0.163 0.653		
urge Device: ir Monitoring Vas well surge urge and bail Time	Equipmen ed and bail l equipmen urge Vol. (gals)	staltic Fi It: A led in 2-3 foo It: Temp. °C	Ulti RA ot intervals alo <u>Surge</u> Cond. mS/cm	E Pire # E Pire # ong entire scree _block Fil DO mg/L	4 <u>43639</u> on? <u>}</u> <u></u> <u>BLD PARAMI</u> pH	1.25 2 4 	0.064 0.163 0.653		
ir Monitoring las well surge urge and bail Time	Equipmen ed and bail l equipmen urge Vol. (gals)	nt: A led in 2-3 foo nt: Temp. °C	Ulti RA ot intervals alo <u>Surge</u> Cond. mS/cm	E Pire # ong entire scree _block Fil DO mg/L	4 <u>43639</u> on? <u>}</u> <u></u> <u>BLD PARAMI</u> pH	2 4 No, 9 15 <i>PO59</i> ETERS	0.163 0.653		
ir Monitoring las well surge urge and bail Time	Equipmen ed and bail l equipmen urge Vol. (gals)	nt: A led in 2-3 foo nt: Temp. °C	Ulti RA ot intervals alo <u>Surge</u> Cond. mS/cm	E Pire # ong entire scree _block Fil DO mg/L	4 <u>43639</u> on? <u>}</u> <u></u> <u>BLD PARAMI</u> pH	4 <u>No, 9</u> <u>ispose</u> ETERS	0.653		
ras well surge urge and bail Time	ed and bail I equipmen urge Vol. (gals)	led in 2-3 foo it: Temp. °C	Surge Cond. mS/cm	ng entire scree <u>black</u> Fil DO mg/L	en? BLDIPARAMI pH	<u>No, 9</u> <u>ispose</u> ETERS	long cu ble ba; Turbidity NTU		
Vas well surge urge and bail Time	ed and bail I equipmen urge Vol. (gals)	led in 2-3 foo it: Temp. °C	Surge Cond. mS/cm	ng entire scree <u>black</u> Fil DO mg/L	en? BLDIPARAMI pH	<u>No, 9</u> 15 <i>POSG</i> ETERS ORP	Turbidity NTU		
Time	l equipmen urge Vol. (gals)	Temp. °C	Cond. mS/cm	FI DO mg/L	ELD PARAMI pH	eters Orp	Turbidity NTU		
Time	l equipmen urge Vol. (gals)	Temp. °C	Cond. mS/cm	FI DO mg/L	ELD PARAMI pH	eters Orp	Turbidity NTU		
Time Pu	urge Vol. (gals)	Temp. °C	Cond. mS/cm	FI DO mg/L	ELD PARAMI pH	eters Orp	Turbidity NTU		
Time Pu	urge Vol. (gals)	Temp. °C	Cond. mS/cm	FI DO mg/L	ELD PARAMI pH	eters Orp	Turbidity NTU		
lime	(gals)	°C	mS/cm	DO mg/L	pН	ORP	NTU	Other:	Color / Odor / Commen
lime	(gals)	°C	mS/cm	mg/L	· ·		NTU	Other:	Color / Odor / Commen
lime	(gals)		mS/cm ± 0.01 (if <1)		SU	mV			_ Color / Odor / Commen
Stabilizaton		+ 0.4	± 0.01 (if <1)	± 0.05 (if <1)					
Stabilization	Critteria				± 0.1	± 10	<±10%		
		±0.1	± 0.02 (if >1)	± 0.2 (if >1)	10.1	10	or ≤10 NTU		
1040 B	Begin	Surge							
	EGIN	BAIL							
	3.5	11.81	0.962	5.37	7.23	95	71000		BROWN / GREY
		uvge	0.000	a m c	9.02	1-76	1177		44 1 1 1 1 1
	4.0	10.71	0.990	9.05 5.40	9.53	176	473 112		Murky /No 00
	1.125	10.77	1.01	3.78	7.68	206 Z18			1 1. /1 C A
	5.13	11.23		5,45	7.75		46.5		Condy/No a
1330 :	5.75	11-70	1.02	5.16	7.75	205	67.9 35.9		
	7.0	11.87	1.05	6.18	7.72	218	30,2		clear No Ode
	7.5	11.92	1.03	4.39	7.81	224	19.8		11
	,. <u>.</u>								
Final	5	1100	102	17 20	700	074	10.0		dauteration
Final 7. bservations/No	. <u>5</u>	U.92	1.03	4.39	7.89	224	(9.8 Durge Pater	-5 + - / .	dear/No ador
DSCIVATIONS/IN	oles.	Purg	e Start Time:	1120			Furge Rate:	302/min	BZ. WH
		4						Air Monitoring:	
Water	in co	umn is	most	likely du	illers	water		VOC (ppm) =	0.0
				1				H2S (ppm) =	0.0 0.0
not g	7W.							LEL (%) =	0 0
								CO (ppm) =	00 00
								O2 (%) =	20.9 200
									20.9 (20.9
			~	1					
gnature(s):	1-	-0	ta 1	The					

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# Ch2m:

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CI		SM		WELL DE	VELOPMENT	DATA SHEE	T		
	NAVFAC Ault Field			Pioj	Well ID:	695610CH.0	14.FI.WI W-620		
	Well developme				Sample ID:	NA	W-620		
Date:		19		Sam			na meros		
Weather:	40'5	Rain				B. O	wens		
	- 40%							Horiba:	Pine # 21290
Total Depth		Before	After			м	essuring Device	Soliast : 1	Pine # 12726
Depth to w	ater: (-)	<u>8,65</u> 4,54		FT.(BTOC) FT.(BTOC)		141	Date and Time	E)2/4/T	- 12/4/19 0840
Water Colu	imn:	4.11		FT.				<b>,</b> ,	• /
	(x)	0,163		GAL/FT.		Well Dia.	Volume		
Well Volum	ne:	0.67		GAL.		(inches)	(gallons/foot)	-	
Total Purge	e Vol.:	6.7		GAL.		1	0.041	-	
Purge Devi	ice: T	Disposa	ble ba	iler		1.25	0.064	{	
		1			, , , , , , , , , , , , , , , , , , , ,	4	0.653	]	
Air Monito	ring Equipmer	nt: M	ulti RAE	Pine# 43		- ,			٨
Was well s	urged and bai			ng entire scree	en?	No, a	long en	fire 5t	t screen.
Surge and	bail equipmer	nt:	Disposa	ble bail	er				
			The second second	FI	ELD PARAM	ETERS	and the second	The Art	
Time	Purge Vol.	Temp.	Cond.	DO	рН	ORP	Turbidity	Other:	Color / Odor / Comments
Time	(gals)	°C	mS/cm	mg/L	SU	mV	NTU		
Stabiliza	aton Criteria	± 0.1	± 0.01 (if <1) ± 0.02 (if >1)	± 0.05 (if <1) ± 0.2 (if >1)	± 0.1	± 10	< ± 10% or ≤10 NTU		
0840	Besin	SUVCR	3 bail.	10.2 (11 > 1)					
6850	1.5	11,26	0.961	11.26	7.00	385	MAX		Murky/No odor
0920	3.0	11.40	0.999	8.41	7.12	381	103		11
0940	3.5	11,55	0.999	6.29	7.20	339	276		u
1000	4.0	11,56	1.02	7.94	7.46	333	279		11
1025	5.0 5.5	11.58	1.02	5.20	7.31	335	159		11
1040	5.5	11.52	1.03	8.70	7.24	335	127		u
1100	6.0	10.85	1.02	6.65	6.35	395	112		Cloudy/No odon
1120	6.5	11.41	1.03	5.90	7,14	342	28.9		Ч
1140	7.0	11.41	1.03	5.34	7,26	334	71.5		<u> </u>
1155	8.0	11-45	1.02	10,50	7,24	338	102		- <u>4</u>
1210	8.5	1145	1.04	6.04	7.30	337	89.4		
1230	9.0	11.94	1.04	7.69	7.19	333	55.02		¥
Final	~~~	11.44	1.04	-110	7.19	333	55.2		cloudy/No ador
Observatio	q.o ns/Notes:		e Start Time:	7.64 0840	1119	235	Purge Rate:	NA	ACUAY 100 CLO
									BZ, WH
1 100	r produc	Sinn La	.1					Air Monitoring:	0.0 0.0
	prance	ing us	211					VOC (ppm) = H2S (ppm) =	-
								LEL (%) =	
								CO (ppm) =	0 0
								O2(%) =	00
T			-	0					20.9 20.9
Signature(s	s):	-11	-h						
Cignata Off	1-1-0-	01	wr u						AL MARTIN

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# ch2m

Total Depth Depth to wa Water Colu Well Volum Total Purge Purge Devi Air Monitor	e: (*)	Before 11, 6 0, 7 10, q 0, 163 1, 18 23 Bailer ht:	0.14	FT.(BTOC) FT.(BTOC) FT. GAL/FT. GAL. GAL. FE Pinet		ged Well Dia. (inches) 1 1.25 2 4	asuring Device: Date and Time: Volume (gallons/foot) 0.041 0.064 0.163 0.653	Hariba	plac# 21290
Nas well s	urged and bai			ng entire scree		No, su	rged and	bailed u	hole 5starra
Surge and	bail equipmer	nt:	Dispos	able bai	ler (2	++) -	used for	surgia	g and boiling
2		MARK C.			ELD PARAME		and the second	11	
Time	Purge Vol.	Temp.	Cond.	DO	рН	ORP	Turbidity	Other: DTW	Color / Odor / Commer
Stabiliza	(gals) ton Criteria	°C ± 0.1	mS/cm ± 0.01 (if <1)		SU ± 0.1	mV ± 10	NTU <±10%	ftbtoc	Control States States
	the second second		± 0.02 (if >1)	± 0.2 (if >1)			or ≤10 NTU	TTRICC	
0634	Start	surging		disposab		r land	bailing)	-	
0840	1.0 gal	11.0	0.282	4.53	6.31	218	7999	-	Murky water
0908	5.0gal	11,17	0.376	6.28	6.05	142	7999	10.97	11
0900	6.0	12,27	0.408	4.68	6.85	156	7999	-	Murky, somewhat I.
0950	10	11.84	0.435	4.62	7.06	132	360	10.80	Light bicwaysones
1017	12.5	11.82	0.442	6.94	7.09	152	223	-	0 11
1049	16	13.02	0.457	12,45	7.19	209	870	~	
1121	19	13.76	0,440	5,31	7,27	188	216	10 H A	Parker hrows, little
1218	23	14.94	0.449	16.56	7128	241	d 4 hours	10.88 at well.	Light brown
1220	Eng aru	elopmen	t. Remov		PH VOLA	an an	1 1 10011	at wette	1
					-				
			la l'alta de la composition de						
Final	2 million	-							
Observatio	ns/Notes:	Purç	ge Start Time:	0834		-	Purge Rate	NA - Bo	
	Only use Gurge 1	edbailer block	due - broken,	to sha	llow i	wella	nd	LEL (%) = CO (ppm) =	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$

# ch2m.

ient: N	AVFAC	1.		WELL DEVE		ATA SHEET		and the second	-star plant -	
	ult Field			Tiojec		1-AF- MW				
	/ell developmen	t		9	Sample ID: N		- + //			
te: 4/24/19 Sampling Team: D. Butler, B. Owens (YJ)										
	Liear, 40	17	Ø	Semp		VIVAL	1 2.2			
eather.	citar, -it	Before	After		_					
otal Depth: epth to wat		3.91	9.60 F	T.(BTOC) T.(BTOC) ← *	not fully	Mea	suring Device: Date and Time:	Solinst Pin	e世 12726	
ater Colun		.63	3.85 F	Т.	recharge		Date and Time.	11-11.14	1250	
ater colum				GAL/FT.	T	Well Dia.	Volume	Mr. J		
ell Volume				SAL.		and the second s	(gallons/foot)	Horiba	Pine# 21290	
otal Purge		13		GAL.		(inches) 1	0.041			
			1 1 .1.	k.1	Anne	1.25	0.064			
urge Devic	: <u>V</u>	isposalo	le bailt	r & Monso	on hand	2	0.163			
ir Monitori				E Pinett	area a	4	0.653	]		
	urged and baile bail equipment	a second and include her		ng entire screen le bail4				ailed whole	e Sft surren bailing)	
1	in the second second				LD PARAME	TERS		0 0		
Time	Purge Vol.	Temp.	Cond.	DO	pН	ORP	Turbidity	Other: DTW	Color / Odor / Commer	
Time	(gals)	°C	mS/cm	mg/L	SU	mV	NTU	Ould. DI	Color / Color / Collintic	
Stabiliza	ton Criteria	± 0.1	± 0.02 (if >1)	the second second which is an advected at the second	± 0.1	± 10	< ± 10% or ≤10 NTU	ft b toc		
1250	Begin so	urging a	nd bailin	1		1				
1253	Ž	12,40	0.627	10.07	7.31	150	7999	-	Dark gray, murky, sed	
1305	Bailed ~	9 gal,	Will a	tempt	nsing	pumpi			11	
	ZOLORG	4	1	-1			-	4,19	()	
1333	23+60	12.50	0,569	10.72	7.23	184	369	BTOP	Somewhat deal	
	28 3+00	12.57	0.615	4.99	7,12	120000	175	BTOP	11	
1343	2024033	12.53	0-611	5.50	7.20	53	98.4	1.4	13	
1348	38 3+0	12.43	0.619	4,53	7.06	41	34.0	15	Mostly clear	
	43360	12.34	0.619	4,19	7,11	33	32.2	1.4	41	
	484+0	12.26	0.609	3,01	7.13	47	23,2	54	41	
	53460	12.27	0.619	3.07	7,14	39	16.6		Claur	
1408	585+0	12,14	0.623	3.37	7.17	35	16.0	144	11	
+4130	63	12.22	0.425	3.30	7.08	36	12.7	1.	*1	
1420	68	12.25	0.625	2,83	7.02	40	12.0		*1	
1425	73	(2.30	0.426	7.70	7.04	39	12.1		4	
1430	78	12,31	0.426	2,50	7.08	35	11.9	1.	41	
1435	83	11.78		2.02	7.20	20	8.8		1.	
1440	88	12.26	0.630	2,00	6.46	36	8.4		-11	
1445	93	12,26		2.04	7.05	39	8.6		11	
Final	12	100	1	- 10-1	1101	1	0.0			
	one/Notes:	Pu	rge Start Time:	1750	-	1	Purge Pa	A TA L	attres ~19P	
	ons/Notes:	Pu	irge Start Time:	1250	11.	- 011 0	Purge Ra	Air Monitoring	BZ 1 WH	
	sed bail broken 319-pum BTOP=1	er on surge poni below t	pump di	ic shi elivering p comp	alses of	noter a	s nell recha	VOC (ppm) = 1/ 7 H2S (ppm) = LEL (%) = CO (ppm) = O2 (%) =	0 TO 0 0 0 0 0 0 20.4 20.4	
	sed bail broken 319-pum BTOP=1	er on surge poni below t	pump di pump di pop of p	ic shi elivering p comp	alses of	noter a	s nell recha	VOC (ppm) = H2S (ppm) = LEL (%) = CO (ppm) = O2 (%) =	0,0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	

	944						1 7.WA	en e	1 margar	
all all	2M	<b>V</b> <sub>SN</sub>	in the second	A REAL PROPERTY OF A REAL PROPER	CONTRACTOR AND ADDRESS	T DATA SHE	W LINST NY DATA DATA TO AND	() 		
	IAVFAC			Proj		: 695610CH.0				
	ult Field				Sample ID:		W-623			
Event: V Date:	Vell developme		Tolia	Sam	pling Team		1. 1	41	loort	
Weather:	12/11	Paula	18/19		ipinog i cum	- 50	2A ALAC		-24	
weather.	90 5	Before	After			<u>[)</u> . c		Horiba	Pine # 21290	
Total Depth:		8,19		FT.(BTOC)		Me	easuring Device:	Solinst	<u> <u> 1250</u> 9 1250 9 0810</u>	
Depth to wa		4.24		FT.(BTOC)			Date and Time:	12/7/1	9 1250	
Water Colur	nn:	3,95		FT.				12/8/19	10810	
	<u>(x)</u>	0.163		GAL/FT.		Well Dia.	Volume			
Well Volume		0.64		GAL.		(inches)	(gallons/foot)			
Total Purge	Vol.:	6.4	i	GAL.		1.25	0.041			
Purge Devic		Pointh	tio ou	mp Pinet	44447	2	0.064			
ange Devic	. <u> </u>					4	0.653			
Air Monitori	ina Fauinmen	nt:	Mult: R	AE Pin	±1 4363	9				
	Air Monitoring Equipment: <u>Multi RAE Pinc # 43639</u> Was well surged and bailed in 2-3 foot intervals along entire screen? <u>No, entire 5 ft screen</u>									
	•									
Surge and I	bail equipmen	nt:	<u>Uspc</u>	sable			A DO THE PROPERTY AND ADDRESS OF	100 100		
		5 1 m	1200	and the second se	ELD PARAM		Turbidity			
Time	Purge Vol.	Temp.	Cond.	DO	рН.	ORP	Turbidity	Other:	Color / Odor / Comments	
	(gals)	<u>°C</u>	mS/cm	mg/L ± 0.05 (if <1)	SU	mV	NTU <±10%			
Stabiliza	ton Criteria	±0.1	± 0.01 (if <1) ± 0.02 (if >1)		± 0.1	± 10	or ≤10 NTU			
1754	Rect		+ bail	2 0.2 (ii >1)						
nit 1300	Begin	Surge		wed, 1	50 mL	Imin t	You			
1335	4	12.52	0.992	5.56	7.31	316	267		Murky/No Odor	
1350	5	11.73	1.03	-3,0Z	7.13	207	568		h'	
1415	6	11.12	1.05	1.97	5.84	205	170		11 cloudy /No Octor	
1440	7	11.01	1.06	3.09	6.05	218	79.5			
1505	8	11.07	1.07	4.52	6.29	220	47,0	=	11 V	
1530	8.5	().11	1.06	209	6.80	225	40.9	,	n	
1555	9.0	10.96	1.07	3.51	6.53	232 225	93.2		11	
1615	9.5 Begin	10.68 bailin	1.05		6.45	667				
0840	12.5		Durge							
0845	12,9	10.69	1,03	1.62	6.41	370	680		Murky/No Coler	
0915	12,9	11-02	101	1.25	6.71	300	MAX			
	15.3	10,55	0.999	3.11	6.94	276	379		11	
0930	16.5	10.52	1.0	1.90	6.88	6311-267	MAX			
0945	17.7	10,35	1.01	1.67	6.91	250			11	
1000	18,9	10.89	0.996	2.24	6.96	252	MAX			
Final	18,9	10.89	0.994	2.74	6.91	252	21000		Murley /No odar	
Observation		Puro	e Start Time: 12	2.24	12/00	240	Purge Rate:	0.04 9		
		( 1	/ /	1. 1.2.2.2	1.1000			12/721	BZ WH	
Samp	le collec	ted 12	17/19 @1	630 WI-A	F-MW-6	23- GW-	1219	Air Monitoring:		
1							0.0100	VOC (ppm) =	0.0 0.0	
								H2S (ppm) =	0.0 0.0	
							-	LEL (%) =	1 1	
			Sand				C10	CO (ppm) =	0 C 20.9 C 20.9 ZO.9	
							20.9 20.9	Ó2 (%) =	20.9 20.9	
		,					12/8		1	
Signature(s):							. 10			
olgitalute(s).										

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## Scanned by CamScanner

Client: N tion: A	Vell developme			Proje	<b>ELCOPMENT</b> act Number: Well ID: Sample ID: pling Team:	695610CH.0 WI-AF- M NA			ine:#21290
	ter: (·) nn: (X) e: (X) vol.: (X) vol.: (X) ce: (X) ing Equipmen	t: A	3.77 8.64 0.163 1.41 (	H <u>E Pinc</u> H ng entire scree	n?	Well Dia. (inches) 1 1.25 2 4	easuring Device: Date and Time: (gallons/foot) 0.041 0.064 0.163 0.653	50/inst 1 12/4/19	2ine # 12726_ 1513
Surge and I	bail equipmen	t:	Dispa	osable b	ailer				
				FI	LD PARAMI	TERS			
Time	Purge Vol. (gals)	Temp. °C	Cond. mS/cm	DO mg/L	pH SU	ORP mV	Turbidity NTU	Other:	Color / Odor / Comments
Stabiliza	(gais) ton Criteria	± 0.1	± 0.01 (if <1)	± 0.05 (if <1)	± 0.1	± 10	<±10% or ≤10 NTU		
all and a second se	Begin	Surge	± 0.02 (if >1)	± 0.2 (if >1)					
1513	5	11,92	1.14	10.58	6.98	280	MAX		Murky/No Odor
1536	Begin	PUVYC	, at a	2 gal/min					
1545	23	11,75	1-20	4.20	6,80_	221	906		Marky/No Calor
1600	68	11.97	1.20	8,41	6.90	145	323		Clear/No Color
1605	83	11.96	1.24	5.27	6.83	164	32.9		Clear / NO COOR
1610	98	12.20	1.26	5.23	6.87	148	107		Yellow tint/No alor
1615	108	12.00	1.32	5.55	6.87	108	36.6		11 /
1620 1625	128	12.08	1.26	4,61	6.85	113	18,5		Clear/No Odar
1630	138	12.02	1.31	4.94	6.78	119	5.G 4.1		N
1635	148	12,18	1.34	4.61	6.86	118	4.1		.(
					[				
		,						j	
						=======================================			
		-							
								ļ	
Final	148	12,18	1.34	4.61	6.86	118	L/ L/	2.17.	clear/No orlor -39al/min
Observatio	ns/Notes:	Purç	ge Start Time:	1536			Purge Rate:	Zgal/min -	BZJWH
Signature(s		vater	· proc	ludio	И,			Air Monitoring: VOC (ppm) = H2S (ppm) = LEL (%) = CO (ppm) = O2 (%) =	0,0 0.0 0,0 0.0 0,0 0.0 0 0.0 0 0 20,9 20,9
Signature		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~							

0.11	121					NT DATA SHE		the second second	
Nient:	NAVFAC			_ Pro	ject Numbe	er: 695610CH	.04.FI.WI		
cation				<u>.</u>	Well I	D: WI-AF- M	W-625		
Event:	Phase 3 SI			_	Sample I	D: NA			
Date:	\$/10/20	220		Sa	mpling Tear	n: G. Ga	rdner		
Weather:	Sunny			_					
Total Dep Depth to Water Co	water: (	Before 5 8. 4 ) 34.12 24.25 ×) 0. 16 3		_FT.(BTOC) _FT.(BTOC) h _FT.	and bett	on	Date and Time	Solvast 8/10/2020	Model 122
Well Volu	me: 7	3.96	0.163	_GAL/FT, GAL.		Well Dia.			
Total Pur		89.9	4.08	GAL.		(inches)	(gallons/foot)	-	
1 5 5 5 6 6 6		31-1		GAL.		1	0.041	_	
Purge De	vice:	Marcasa	1.5	14.		1.25	0.064	4	
i aige be	100. <u>/</u>	1013001	Low F	iow	-	2	0.163	_	
Air Monit	oring Equipme	nt.	Muller	24E PN	11. 1228	4	0.653		
	surged and ba		03520	block, 4		<u>Yes</u>			
			-	FI	ELD PARAM	METERS			
Time	Purge Vol.	Temp.	Cond.	DO	pH	ORP	Turbidity	-	
Time	(gals)	°C	mS/cm	mg/L	SU	mV	NTU	Other: DTw	Color / Odor / Comm
Stabili	aton Oritoria		± 0.01 (if <1)	± 0.05 (if <1)		IIIV	<± 10%		
Stabiliz	aton Criteria	± 0.1	± 0.02 (if >1)		± 0.1	± 10	or ≤10 NTU		
16:25	25	21.60	0.560	3.71	7-69	-271		2000	
16:35		21.37	0.63	1.69			>1000	35.94	very cloudy
16:45		\$19.28			7.58	-294	71000	35.94	~ ~
16:55	13.5-39	C 18 67	0.647	8.51	7.50	-294	71000	38.01	
17:05		5 18.2		2.11	7.44	-294	21000	38.03	
17:15	7 - 40	\$17.23	0.722	0.93	7.41	-290	310	37.97 32	97
17.7=	32.55	10 15	0.735	1:27	7.40	-273	910	37.97	
17:25	36 23	18.08	0.757	1-14	238	-270	21000	37.93	
17:10-		5 18.42	0.760	1.37	7.35	-249	847	36.40	very cloudy
17:45	36.46	14							Jerry
17:45	40.5		0.756	1.05	7.37	-244	925	36.35	
1800	66.5	18.14	0.759	1.32	7.34	-237	790	36.31	
1815	72.5	17.99	0.760	1.11	7.35	-25	827	36.21	
1830	75.5	19.19	0.765	2.03	7.32	-212	788	34.94	
0735	80.1	15-37	0.820	0-39	6.84	-263	58-2		Clear
0748	85.9	14.90	0.809	0.51	7.16	-261	29.4	36.15	
0758	89.9'	14.75	0.803	0.66	7.20	-250	9.5	36.15	
				1	1.42.8			24.13	
						-			
Final	89.9	14.75	0.803	0.66	7.26	-250	9.5	36.15	<i>C</i> 1-
Observatio	ns/Notes:	Purc		16:15	1 24			36.15	Clearingoodor
15:15 6	loain c.		,	10.15		-	Purge Rate:		
15.30	Finish	3.3					Aly Manifester		
15.110	6	urging					Air Monitoring	BZ	WH
12.40	Begin K Firvshi	ailing					VOC (ppm)	0	0
15:55	FINSH	ailing					H2S (ppm)	0	0
16:15	0	2		21.87			LEL (%)	0	0
0.13	isegin p	amping	10.25 91	m			CO (ppm)	ŏ	
	income	Rumaina	rate to -	0.6000			02 (%)	000000000000000000000000000000000000000	20.1
14:42		1							20.9
Ke: 42	- adure	Derman's.	mbola	@ /: "-					
[6: [5 ] <u>16: 42</u> [7: 25 Signature(s	reduce	pumping	rate to	0. 49Pm					

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8/11/2020 0722 DTW = 33.75 Restart pumping at ~0.4 gpm 0758 . Stop pumping

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	121	SM	_	ALLER A. P. P.			Page	1 of 2	
Nient:	NAVFAC		Contraction of the	WELL DE	VELOPMEN	T DATA SHI	EET		
	Ault Field			- Pro	ject Number	: 695610CH	.04.FI.WI		
Event:				_	Well ID	: WI-AF- M	W-626		
	Phase 3 SI	0		_	Sample ID				
Date:	8/10/2			Sar	mpling Team	: G.Gan	dner		
Weather:	Clouds	Fog, C	lear in R	<u>2</u> M					
	/.	5							
		Before	After						
Total Dep		58.3		FT.(BTOC)		1	Measuring Device:	Solinst 1	model 122
Depth to v	7	129.98		FT.(BTOC)			Date and Time:	8/10/2020	0930
Water Col	umn: <u>2</u>	8.82		FT.				of log 2000	0120
	()	0-163		GAL/FT.		Well Dia.	Volume	1	
Well Volu	me: 4	.70		GAL.		(inches)	(gallons/foot)		
Total Purg	e Vol.:			GAL.		1	0.041	-	
	_			-		1.25	0.064	-	
Purge Dev	rice: N	hnson	Low flo			2	0.163	-	
	·		the total to	~	-	4	0.653	-	
Air Monito	ring Equipme	nt:	Mult: 0	AE PGN	16220		0.003	1	
					Contraction of	_			
Was well a	urged and ba	iled in 2-3 fo	ot intervals	ong entire scre	en?	Yes			
	0		KK /	/					
Surge and	bail equipme	nt: G	5 Sura	block,	y'hal	0/			
1.000		/	- ruge	- month 1	L Jay (s	~			
				EI	ELD PARAM	ETEPS			
T'	Purge Vol.	Temp.	Cond.	DO	pH	ORP	Turbidite		
Time	(gals)	°C	mS/cm		SU		Turbidity	Other: DTW	Color / Odor / Commer
				mg/L ± 0.05 (if <1)	50	mV	NTU		
Stabiliza	aton Criteria	± 0.1	± 0.02 (if >1)		± 0.1	± 10	< ± 10%		
11:20	11.3	in Pe					or ≤10 NTU		
11:25		18.55	0.640	20.86	6.06	-114	563	33.79	Very feelbid No
	22.6	17.08	0.649	1.45	7.04	-271	247	33.70	
11:30	33.9	15.60	0.694	4.97	7.04	-197	231	33.72	
11:35	45.2	15.42	0.721	4.23	7.09	-126	201	33.73	Cloudy
11:40	56.5	15.48	0.728	1.17	7.16	-248	185	33.72	5
11:45	67.8	15.25	0.742	1.03	7.17	-230	182	33.72	
11:50	79.	15.3	0.754	1.44	7.16	-175	191	32.70	
11:55	90.4	15.56	0.762	1.14	7.19	-97	155	33.67	
12:00	101.7	15.30	0.766	1.21	7.20	-100	167	33.67	
12:05	113.0	15-60	0.768	0.72	7.21	-113	146	33.67	
12:10	124.3	15.25	0.777	0.99	7.20	-135		33.67	
12:15	135.6	15.24	0.775	0.72	7.22	-125	162 -		
12:20	146.9	15-07	0.776	0.68	7.23	-131	129	33.65	
		15.14	0.778	1.13	7.23		101	33.65	
12:25	169.5	15.21	0.779	0.70		-154	89-6	33.65	
12:30	180.8	15.09	0.780		7.23	-15	826	33.61	Slightly cloud
12:30		14.93		0.66	7.24	-140	65-6	33.60	
12:30			0.782	0.74	7-24	-151	49.8	33.61	
12:30	191.1	14.91	0.782	0.64	225	-159	38.9	33.60	Clear
12:30 1235 12:40 12:45	202.4	114	0.785	0.79	7.24	-140	29.1	33.60	
12:30 1235 12:40 12:45 12:50	202.4	14.88		7 100	7.23	-146	236	33.60	
12:30 1235 12:40 12:45 12:50	202.4 213.7 224.0	15-02	0.789	215			Purge Rate:		em
12:30 1235 12:40 12:45 12:50 Einal	202.4 213.7 224.0	15-02	o Stort Timo:	for a second			i uige itale.	-2.3 0	
12:30 1235 12:40 12:45 12:50 Einal	202.4 213.7 224.0	15-02	o Stort Timo:	for a second			ruige Nate.	~ 2.3 91	
12:30 1235 12:40 12:45 12:50 Einal	202.4 213.7 224.0	15-02	o Stort Timo:	for a second				J	
12:30 1235 12:40 12:45 12:50 Einal-	202.4 213.7 224.0	15-02	o Stort Timo:	for a second			Air Monitoring	ال BZ	WH
12:30 1235 12:40 12:45 12:50 Einal-	202.4 213.7 224.0	15-02	o Stort Timo:	for a second			Air Monitoring VOC (ppm)	BZ Ø	WH (?)
12:30 1235 12:40 12:45 12:50 Einal-	202.4 213.7 224.0	15-02	o Stort Timo:	for a second			Air Monitoring VOC (ppm) H2S (ppm)	BZ () 0	WH (?)
12:30 1235 12:40 12:45 12:50 Einal-	202.4 213.7 224.0	15-02	o Stort Timo:	for a second			Air Monitoring VOC (ppm) H2S (ppm) LEL (%)	BZ 0 0 0	WH (?)
12:30 1235 12:40 12:45 12:50 Einal-	202.4 213.7 224.0	15-02	o Stort Timo:	for a second			Air Monitoring VOC (ppm) H2S (ppm) LEL (%) CO (ppm)	BZ 0 0 0	WH (?)
12:30 1235 12:40 12:45 12:50 Einal-	202.4 213.7 224.0	15-02		for a second			Air Monitoring VOC (ppm) H2S (ppm) LEL (%)	BZ () 0	WH

	121	a and an		WELLD		TDITI	Ya	ge 2 of	L
Client:	NAVFAC			WELL DE	VELOPMEN	DATA SHE	EET		
ocation	n: Ault Field			- 110	Well ID	. 090010CH	W-626		
Event:	Phase 3 SI				Sample ID	NA	W=016		
Date:	8/10/20	20		Sar	npling Team	12 6	100		
Weather	Clear is	PM			inpining rouni	. [1. [2a	raner		
Total De Depth to Water Co Well Volu Total Pu	water:	Before 52-3 29.48 29.48 19.52 10.163 4.7 157.9	After 5 8. 0 29.65 29.75 4.69 4.69	FT.(BTOC) h	ard botte	Well Dia. (inches) 1	Aeasuring Device Date and Time Volume (gallons/foot) 0.041	<u>Solinst M</u> 8/10/202	o 09:30
Burgo De						1.25	0.064	1	
Purge De	evice: /	lonsoo	Low fle	n~	_	2	0.163		
A := M =			A 111			4	0.653	1	
	toring Equipme			RAER		8			
			ot intervals alc	ong entire scree	en?	Jes			
Surge an	d bail equipme	nt:	6' surge	block, 4	! baile	1			
-	Purge Vol.	Toma		FI	ELD PARAM	and the second se	in the second second		
Time	(gals)	Temp. °C	Cond.	DO	pH	ORP	Turbidity	Other: DTW	Color / Odor / Comment
States to a local		L L	mS/cm ± 0.01 (if <1)	mg/L	SU	mV	NTU	Ouler.	Color / Odor / Commen
Stabiliz	zaton Criteria	± 0.1			± 0.1	± 10	< ± 10%		
1200	235.3	141 6 0	± 0.02 (if >1)	± 0.2 (if >1)			or ≤10 NTU		
1305	246.6		0.785	1-29	7.25	-144	12.4	33.60	clear
	257.9	14.29	0.795	0.85	7.26	-140	10.9	33.60	
1310	~ 0.7	14.84	0.787	0.79	7.26	-129	9-8	33.60	
1.00									
						\			
						<u>,</u>			
						<u>х</u>			
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						×			
Final						×			
Final Dbservatio	ns/Notes:	Pum	e Start Time:	11:14		×			
Observatio	ns/Notes:	Purge	e Start Time:	11:15		·	Purge Rate:	2.3 400	M
Observatio	ns/Notes:	Purge	e Start Time:	11:15		· · · · · · · · · · · · · · · · · · ·		2.3 ypr	
Observatio		Purge	e Start Time:	11:15		· · · · · · · · · · · · · · · · · · ·	Air Monitoring	BZ	WH
Observatio		Purge	e Start Time:	11:15			Air Monitoring VOC (ppm)		WH
Observatio		Purge	e Start Time:	11:15			Air Monitoring VOC (ppm) H2S (ppm)	BZ	WH
Observatio		Purge	e Start Time:	11:15			Air Monitoring VOC (ppm) H2S (ppm) LEL (%)	BZ	WH
Observatio		Purge	e Start Time:	11:15			Air Monitoring VOC (ppm) H2S (ppm)	BZ	

#### CAZAAA.

40.75

45.75

4 hrs

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development time reached

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La				WELL DE	EVEL OPME	NT DATA SH	CCT		
vient:	NAVFAC			Dre	velopie	COECTOCI	EEI		Section 200
cation				- PIC	Ject Numbe	er: 695610CH	1.04.FI.WI		
Event:	Phase 3 SI			-	Well I	D: WI-AF-M	W-627		
Date:	8/11/20	20		-	Sample I	D: NA	-		
Veather				_ Sai	mpling lear	n: G Gan	dner		
	Foggy in	1 77113		-					
		Before	After						
otal De	oth:	58.70	158.5	FT.(BTOC)				C lost	1 Attion
Depth to	water: (	1 37.93	38.08	FT.(BTOC)			Measuring Devic	e: Jolinst	Model #122
later Co		20.77	20.42	FT.			Date and Tim	e: 8/11/2020	07:45
		x) 0.163	0.163	GAL/FT.		Wall Die			
Vell Volu	ime:	3.39	3.33	GAL/FT.		Well Dia.			
otal Pur		45.75	5.55	GAL.		(inches)	(gallons/foot		
		19 19		UAL.		1	0.041	_	
urge De	vice: /	Monsoon				1.25	0.064		
•	<u>_</u>	1900A			-	2	0.163		
ir Monit	oring Equipme	ant	Multin	AE PGMO	(170)	4	0.653		
	g =quipin		manne	ML 1 (7/1) 6	erry				
	d bail equipme			ong entire scree		yes			
				slock, 4'	bailer	•			
urge an	d bail equipme	ent:	G'surge !	olock, 4'	bailer ELD PARAN	METERS	1		
	bail equipme Purge Vol.	ent:	C'surge ) Cond.	DIOCK, 4'	bailer ELD PARAN pH	METERS ORP	Turbidity	Other: DTW	Color / Odor / Common
urge and Time	Purge Vol. (gals)	ent: Temp. °C	Cond.	DIOCK, 4'	bailer ELD PARAN	METERS	NTU	Other: DTW	Color / Odor / Comment
rge and Time	bail equipme Purge Vol.	ent:	Cond. mS/cm ± 0.01 (if <1)	DO DO mg/L ± 0.05 (if <1)	bailer ELD PARAN pH	METERS ORP mV	NTU <± 10%	Other: DTW	Color / Odor / Comment
Time Stabiliz	Purge Vol. (gals) (gaton Criteria	ent: Temp. °C ± 0.1	Cond. mS/cm ± 0.01 (if <1) ± 0.02 (if >1)	Fli DO mg/L ± 0.05 (if <1) ± 0.2 (if >1)	bailer ELD PARAN PH SU ± 0.1	METERS ORP mV ± 10	NTU <±10% or≤10 NTU	in the second	Color / Odor / Comment
Time Stabiliz	Purge Vol. (gals) aton Criteria	ent: Temp. °C ± 0.1	Cond. <u>mS/cm</u> ± 0.01 (if <1) ± 0.02 (if >1) O- 319	DO mg/L ± 0.05 (if <1) ± 0.2 (if >1) >. 1 3	bailer ELD PARAM PH SU ± 0.1	METERS ORP mV ± 10	NTU <±10% or≤10 NTU &76	38.29	
Time Stabiliz	Purge Vol. (gals) aton Criteria	ent: Temp. °C ± 0.1 1/6-3-3 17-18	Cond. mS/cm ± 0.01 (if <1) ± 0.02 (if >1) O- 319 O- 320	Fli DO mg/L ± 0.05 (if <1) ± 0.2 (if >1) >. 1 3 - 1.4 3	bailer ELD PARAM pH SU ± 0.1 7.73 7.67	METERS ORP mV ±10 -/47 -/88	NTU <±10% or≤10 NTU G 7G L/ 31	38.29 38.25	Winy MULKY
Time Stabiliz	Purge Vol. (gals) aton Criteria	rent: Temp. °C ± 0.1 1/6-33 17.18 17.26	Cond. mS/cm ± 0.01 (if <1) ± 0.02 (if >1) O- 319 O- 320 O. 342	Fli DO mg/L ± 0.05 (if <1) ± 0.2 (if >1) 3.13 1.43 1.27	bailer ELD PARAN pH SU ± 0.1 7.73 7.67 7.67	METERS ORP mV ±10 -/47 -/88 - 2.11	NTU <±10% or ≤10 NTU & 7C 4/31 3.57	38.29 38.25 38.25	
Time Stabiliz	Purge Vol. (gals) aton Criteria 5.0 7.5 10.0 13.25	rent: Temp. °C ± 0.1 16.33 17.18 17.26 17.26 17.50	Cond. mS/cm ± 0.01 (if <1) ± 0.02 (if >1) O-319 O-320 O.342 O.354	Fli DO mg/L ± 0.05 (if <1) ± 0.2 (if >1) >.13 1.43 1.27 2.05	ELD PARAM pH SU ± 0.1 7.73 7.67 7.67 7.66	METERS ORP mV ±10 -147 -188 -211 -226	NTU <±10% or≤10 NTU &7C 4/31 357 26C	38.29 38.25	Winy MULKY
Time Stabiliz Ogss Ogs Ogs Ogs Ogs Ogs Ogs Ogs Ogs Og	Bail equipme           Purge Vol.           (gals)           aton Criteria           5.0           7.5           10.0           13.25           15.75	ent: Temp. °C ± 0.1 16.33 17.18 17.26 17.26 17.50 17.60	Cond. mS/cm ± 0.01 (if <1) ± 0.02 (if >1) O-319 O-320 O.342 O.354 O.368	File DO mg/L ± 0.05 (if <1) ± 0.2 (if >1) 3.13 1.43 1.27 1.03 1.20	bailer ELD PARAM pH SU ± 0.1 7.73 7.67 7.67 7.66 7.66 7.66	METERS ORP mV ±10 -147 -188 -211 -226 -211	NTU <±10% or≤10 NTU &7C 4/31 357 26C 200	38.29 38.25 38.25 38.25 38.25 38.25	Winy MULKY
Time Stabiliz OSSS OGS OGS OGS OGS OGS OGS OGS OGS OG	Purge Vol. (gals)         aton Criteria         5.0         7.5         10.0         13.25         15.75         18.25         18.25	rent: Temp. °C ± 0.1 10.33 17.18 17.26 17.26 17.50 17.60 17.81	Cond. mS/cm ± 0.01 (if <1) ± 0.02 (if >1) 0-319 0-320 0.342 0-354 0.368 0.375	Fli DO mg/L ± 0.05 (if <1) ± 0.2 (if >1) 3.13 1.43 1.27 1.05 1.20 1.04	bailer ELD PARAM pH SU ± 0.1 7.73 7.67 7.67 7.66 7.66 7.66 7.66	METERS ORP mV ±10 -147 -188 -211 -226 -211 -230	NTU <±10% or ≤10 NTU &7& 4/31 357 266 206 19]	38.29 38.25 38.25 38.25 38.25 38.25 38.25 38.25	Wiry MULKY
Time Stabiliz 0955 0905 12-9 138 149 58	Purge Vol. (gals) aton Criteria 5.0 7.5 10.0 13.25 15.75 18.25 20.75	rent: Temp. °C ± 0.1 10-33 17-18 17-26 17-26 17-50 17-60 17-81 17-73	Cond. mS/cm ± 0.01 (if <1) ± 0.02 (if >1) 0-319 0-320 0.342 0-359 0-368 0-375 0-382	DO DO mg/L ± 0.05 (if <1) ± 0.2 (if >1) 3.13 1.43 1.27 1.03 1.27 1.03 1.20 1.04 0.96	bailer ELD PARAM pH SU ± 0.1 7.73 7.67 7.67 7.66 7.66 7.66 7.66	METERS ORP mV ±10 -147 -188 -211 -226 -211 -230 -222	$ \begin{array}{c} \text{NTU} \\ < \pm 10\% \\ \text{or} \le 10 \text{ NTU} \\ \hline & 7\% \\ 4 31 \\ 357 \\ 26\% \\ 20\% \\ 191 \\ 154 \end{array} $	38.29 38.25 38.25 38.25 38.25 38.25	Wiry MULKY
Time Stabiliz 0955 0905 0905 0905 0905 0905 0905 090	Purge Vol. (gals) aton Criteria 5.0 7.5 10.0 13.25 15.75 18.25 20.75 23.25	rent: Temp. °C ± 0.1 10-33 17-18 17-26 17-26 17-50 17-60 17-81 17-73 17-87	Cond. mS/cm ± 0.01 (if <1) ± 0.02 (if >1) 0-319 0-320 0.342 0-359 0-368 0.375 0-382 0-382 0-387	block, 4 <sup>1</sup> Fli D0 mg/L ± 0.05 (if <1) ± 0.2 (if >1) >.13 1.43 1.27 1.27 1.02 1.02 1.04 0.96 1.03	bailer ELD PARAM pH SU ± 0.1 7.73 7.67 7.67 7.66 7.66 7.66 7.66 7.66 7.66 7.66	METERS ORP mV ±10 -147 -188 -211 -226 -211 -230 -222 -213	NTU <±10% or ≤10 NTU &7& 4/31 357 266 206 19]	38.29 38.25 38.25 38.25 38.25 38.25 38.25 38.25	Wiry murky
Time Stabiliz 0855 0905 0905 0905 0905 0905 0905 0905	Purge Vol. (gals) aton Criteria 5.0 7.5 10.0 13.25 15.75 18.25 20.75 2.3.25 2.5.75	rt: Temp. °C ± 0.1 10-33 17.18 17.26 17.26 17.50 17.50 17.90 17.91 17.73 17.94	Cond. mS/cm ± 0.01 (if <1) ± 0.02 (if >1) 0-319 0-320 0.342 0.342 0.359 0.368 0.375 0.382 0.385 0.385	block       4'         Fli         D0         mg/L         ± 0.05 (if <1)	bailer ELD PARAM pH SU ± 0.1 7.73 7.67 7.66 7.66 7.66 7.66 7.66 7.66 7.66 7.66 7.66	AETERS ORP mV ±10 -147 -188 -210 -210 -210 -222 -213 -222 -213 -222	NTU <±10% or ≤10 NTU &7& 4/31 357 266 200 191 154 137 111	38.29 38.25 38.25 38.25 38.25 38.25 38.25 38.25 38.25 38.25	Wiry murky
Time Stabiliz 0855 0405 0405 0405 0405 0405 0405 0405	Purge Vol. (gals) aton Criteria 5.0 7.5 10.0 13.25 15.75 18.25 20.75 23.25 25.75 28.25	rt: Temp. °C ±0.1 10-33 17.18 17.26 17.26 17.50 17.50 17.90 17.91 17.73 17.94 17.82	Cond. mS/cm ± 0.01 (if <1) ± 0.02 (if >1) 0-319 0-320 0.342 0-359 0-368 0-375 0-382 0-385 0-395 0-395	block, 4 <sup>1</sup> Fli D0 mg/L ± 0.05 (if <1) ± 0.2 (if >1) 3.13 1.43 1.27 1.27 1.20 1.20 1.04 0.96 1.03 0.77 0.82	bailer ELD PARAM pH SU ± 0.1 7.73 7.67 7.66 7.66 7.66 7.66 7.66 7.66 7.66 7.66 7.66 7.66 7.66	METERS ORP mV ±10 -147 -188 -211 -226 -211 -230 -222 -213 -222 -213 -222 -208	NTU <±10% or≤10 NTU &76 4/31 357 266 206 191 154 137	38.29 38.25 38.25 38.25 38.25 38.25 38.25 38.25 38.25 38.25 38.25 38.23 38.22	Viry murky
Time Stabiliz 0855 0905 0905 0905 0905 0905 0905 0905	Purge Vol. (gals) aton Criteria 5.0 7.5 10.0 13.25 15.75 18.25 20.75 23.25 25.75 25.75 28.25 30.75	rent: Temp. °C ± 0.1 16.33 17.18 17.26 17.26 17.50 17.60 17.91 17.73 17.97 17.94 17.82 17.82 17.82	Cond. mS/cm ± 0.01 (if <1) ± 0.02 (if >1) 0-319 0-320 0.342 0-359 0-368 0-368 0-382 0-382 0-385 0-395 0-395 0-395 0-406	block, 4 <sup>1</sup> Fli D0 mg/L ± 0.05 (if <1) ± 0.2 (if >1) >.13 1.27 1.27 1.27 1.02 1.02 1.04 0.96 1.03 0.77 0.82 0.97	bailer ELD PARAM pH SU ± 0.1 7.73 7.67 7.66 7.66 7.66 7.66 7.66 7.66 7.66 7.66 7.66 7.66	AETERS ORP mV ±10 -147 -188 -211 -226 -211 -226 -211 -225 -213 -222 -213 -225 -213 -225 -215 -225 -210	NTU <±10% or ≤10 NTU &7& 4/31 357 266 200 191 154 137 111	38.29 38.25 38.25 38.25 38.25 38.25 38.25 38.25 38.25 38.25 38.23 38.23 38.22 38.22	Viry murky
Time Stabiliz 0855 0905 0915 92-82 138 098 098 098 098 098 098 098 09	Purge Vol. (gals)         aton Criteria $5.0$ $7.5^{-}$ $10.0$ $13.25^{-}$ $15.75^{-}$ $20.75^{-}$ $2.3.25^{-}$ $2.5.75^{-}$ $2.5.75^{-}$ $2.5.75^{-}$ $2.5.75^{-}$ $2.5.75^{-}$ $2.5.75^{-}$ $2.5.75^{-}$ $2.5.75^{-}$ $3.25^{-}$ $3.25^{-}$	rent: Temp. °C ± 0.1 16.33 17.18 17.26 17.26 17.50 17.60 17.91 17.73 17.97 17.94 17.82 17.87 17.94 17.82 17.95	Cond. mS/cm ± 0.01 (if <1) ± 0.02 (if >1) 0.319 0.320 0.342 0.342 0.342 0.359 0.345 0.382 0.385 0.395 0.395 0.395 0.395 0.395 0.395 0.395 0.406 0.412	block, 4' Fli DO mg/L ± 0.05 (if <1) ± 0.2 (if >1) 3.13 1.43 1.27 1.04 0.96 1.03 0.77 0.92 0.97 0.91	bailer ELD PARAM pH SU ± 0.1 7.73 7.67 7.66 7.66 7.66 7.66 7.66 7.66 7.66 7.66 7.66 7.66 7.66 7.65 7.65 7.66	AETERS ORP mV ±10 -147 -188 -211 -226 -211 -226 -211 -225 -213 -222 -213 -222 -213 -222 -218 -222 -218 -222 -218 -222 -218 -222 -218 -222 -218 -222 -218 -222 -218 -222 -218 -222 -222 -218 -222 -222 -218 -222 -222 -218 -222 -218 -222 -218 -222 -218 -222 -218 -222 -218 -222 -218 -222 -218 -222 -218 -222 -222 -218 -222 -218 -222 -218 -222 -218 -222 -228 -218 -222 -218 -222 -218 -222 -222 -222 -223 -222 -228 -222 -222 -222 -222 -222	NTU <±10% or ≤10 NTU &7& 4/31 357 266 206 191 154 137 111 100	38.29 38.25 38.25 38.25 38.25 38.25 38.25 38.25 38.25 38.25 38.23 38.22 38.22 38.22 38.22	Very murky Cloudy
Time Stabiliz 0855 0105 015 01	bail equipme         Purge Vol.         (gals)         aton Criteria $5.0$ $7.5^{-}$ $10.0$ $13.25^{-}$ $15.75^{-}$ $18.25^{-}$ $20.75^{-}$ $2.3.25^{-}$ $2.5.75^{-}$ $2.5.75^{-}$ $2.5.75^{-}$ $30.75^{-}$ $33.25^{-}$ $35.75^{-}$	rent: Temp. °C ± 0.1 16.33 17.18 17.26 17.26 17.50 17.60 17.87 17.94 17.87 17.94 17.87 17.94 17.87 17.95 17.95 18.02	Cond. mS/cm ± 0.01 (if <1) ± 0.02 (if >1) 0-319 0-320 0.342 0-359 0-342 0-382 0-382 0-382 0-385 0-395 0-395 0-395 0-395 0-395 0-406 0-412 0-418	block, 4 <sup>1</sup> Fli D0 mg/L ± 0.05 (if <1) ± 0.2 (if >1) >.13 1.27 1.27 1.27 1.02 1.02 1.04 0.96 1.03 0.77 0.82 0.97	bailer ELD PARAM pH SU ± 0.1 7.73 7.67 7.66 7.66 7.66 7.66 7.66 7.66 7.66 7.66 7.66 7.66 7.66 7.66 7.65 7.66 7.65 7.60 7.69 7.66 7.	AETERS ORP mV ±10 -147 -188 -211 -226 -211 -226 -211 -225 -213 -222 -213 -225 -213 -225 -215 -225 -210	NTU <±10% or <10 NTU &7C 4 31 357 26C 200 191 154 137 111 100 §2.0 65.4	38.29 38.25 38.25 38.25 38.25 38.25 38.25 38.25 38.25 38.23 38.22 38.22 38.22 38.22 38.22 38.22	Viry murky
Time Stabiliz 0855 0905 0915 92-52 138 098 098 098 098 098 098 098 09	Purge Vol. (gals) aton Criteria 5.0 7.5 10.0 13.25 15.75 18.25 20.75 23.25 25.75 28.25 30.75 33.25 35.75 38.25	rt: Temp. °C ± 0.1 16.33 17.18 17.26 17.26 17.50 17.60 17.87 17.94 17.87 17.94 17.87 17.94 17.87 17.94 17.87 17.95 18.02 18.23	6'surge ) Cond. mS/cm ± 0.01 (if <1) ± 0.02 (if >1) 0-319 0-320 0.342 0.342 0.342 0.342 0.345 0.395 0.406 0.395 0.395 0.406 0.402 0.405 0	block       41         Fli         D0         mg/L         ± 0.05 (if <1)	bailer ELD PARAM pH SU ± 0.1 7.73 7.67 7.66 7.66 7.66 7.66 7.66 7.66 7.66 7.66 7.66 7.66 7.66 7.66 7.65 7.65 7.69 7.64	METERS ORP mV ±10 -/47 -/88 -211 -226 -211 -226 -211 -225 -213 -225 -213 -225 -213 -225 -216 -221 -207 -206	NTU <±10% or <10 NTU &7C 431 357 26C 20C 191 154 137 111 100 §2.0 65.4 63.3	38.29 38.25 38.25 38.25 38.25 38.25 38.25 38.25 38.25 38.23 38.22 38.22 38.22 38.22 38.22 38.22 38.22 38.25 38.25 38.25	Very murky Cloudy
Time Stabiliz	bail equipme         Purge Vol.         (gals)         aton Criteria $5.0$ $7.5^{-}$ $10.0$ $13.25^{-}$ $15.75^{-}$ $18.25^{-}$ $20.75^{-}$ $2.3.25^{-}$ $2.5.75^{-}$ $2.5.75^{-}$ $2.5.75^{-}$ $30.75^{-}$ $33.25^{-}$ $35.75^{-}$	rt: Temp. °C ± 0.1 16.33 17.18 17.26 17.26 17.26 17.50 17.60 17.81 17.73 17.94 17.87 17.94 17.82 17.87 17.95 18.02 18.23 18.72	Cond. mS/cm ± 0.01 (if <1) ± 0.02 (if >1) 0-319 0-320 0.342 0-359 0-342 0-382 0-382 0-382 0-385 0-395 0-395 0-395 0-395 0-395 0-406 0-412 0-418	block     4'       Fli       D0       mg/L       ± 0.05 (if <1)	bailer ELD PARAM pH SU ± 0.1 7.73 7.67 7.66 7.66 7.66 7.66 7.66 7.66 7.66 7.66 7.66 7.66 7.66 7.66 7.65 7.66 7.65 7.60 7.69 7.66 7.	METERS ORP mV ±10 -/47 -/47 -/88 -211 -226 -211 -225 -213 -225 -213 -225 -213 -225 -218 -225 -218 -225 -218 -225 -218 -225 -208 -221 -221 -227	NTU <±10% or <10 NTU &7C 4 31 357 26C 200 191 154 137 111 100 §2.0 65.4	38.29 38.25 38.25 38.25 38.25 38.25 38.25 38.25 38.25 38.23 38.22 38.22 38.22 38.22 38.22 38.22	Viry murry Cloudy

Final 45.75 Observations/Notes: 0740 Begin	19.22 Pur	0-440 ge Start Time:	1.08	7:63	-210	47.5 Purge Rate:	38.23 0.25 gp	Clear, no odor
0800 Finish 0805 Begin ba 0830 Finish k 0847 Begin pump	surgin	9 ~4 ga 25 gpm	l builed			Air Monitoring VOC (ppm) H2S (ppm) LEL (%) CO (ppm) O2 (%)	BZ 0 0 0 20.8	WH 0 0 0 20.8

7.63

7.63

-215

-210

52.7

P

47.5

38.23

38.23

0.84

1.08

Clear

C	1	2	N	V	Ŀ	
					- SI	

lient:	NAVFAC			WELLD	EVELOPMEN	T DATA SH	EET		
	: Ault Field			— PI	roject Numbe	r: 695610CH	1.04.FI.WI		
Event:	Phase 3 SI			m.	Sample I	D: WI-AF-MI	W-628		
Date:	8/11/20:	20			ampling Tean			2	
Weather:	Sunn		7	_ 00	amping real	. G. CIAM	ner		
		Before	After						
Total Dep	C	47	164.70	FT.(BTOC)			Measuring Devic	· Salingt	Model # 122
Depth to		153.34	60.87	FT.(BTOC)			Date and Time	e: <u>8/11/2020</u>	noughter
Water Co		11.36	3.83	FT.			Late and This	- spin 2020	
Well Volu		x)0.163	0.163	GAL/FT.		Well Dia.	Volume		
Total Pure		1-85	0.62	GAL.		(inches)	(gallons/foot		
		7.36 gal		GAL.		1	0.041		
Purge Dev	vice:	Monsoon	0			1.25	0.064	-	
					-	4	0.163	-	
Air Monito	oring Equipm	ent:	PID Mult	IRAE PI	MG6228	3	0.653		
Was well	surged and b	ailed in 2-3 fo		ong entire scre		Yes			
	l bail equipmo			block,					
1	in the second	-	J*		IELD PARAM				
Time	Purge Vol.	Temp.	Cond.	DO	pH	ORP	Turkidit	1	
Time.	(gals)	°C	mS/cm	ma/l	SIL	mV	Turbidity NTU	Other: DTW	Color / Odor / Commen
Stabiliza	aton Criteria	± 0.1	± 0.01 (if <1)	± 0.05 (if <1)	)		<± 10%		
(6	1415-00		± 0.02 (if >1)	± 0.2 (if >1)	and the second se	± 10	or <10 NTU	1.1.1	
1430	1415	Well is	purging	day Not	2V = 58.7	ter to fit	1 tubing.		
-	o Switch	to diffe	rechage	DT DT		5	5		
1630	Switch	TO ALTE	Pert party	Sampling	pump				
1700	DTW:	- 67.65	Water is	very me	in.				
1710		200	0.388	2.70	8.42	-247	ta 71000		
1718	Welldry	3.84 40	llons purge	d So far	111		alge owern	Wa L	
0727	0.48 7	1	2		- ALLEY	in ren	19 avern	58.78	Very Cloudy
0730	0.72							59-12	guloudy
0740	1.52							59.77	
0745	1.92							60.23	
0805	3.52	Well	DUTARS	dev			Nices	62.5	
0817		Will 15-8	purges 0.469	dry 6.33	7.87	-28	71000	62.5	
0872	well d	14.			1-01	0	ALCOU.		
	well ha	and	1		-41				
	ha	s purged	dry mu	Itiple ti	mes; De	Velopmer	it termin	ated	
			_			,			
Final									
Observation	s/Notes:	Purge	e Start Time:	1450			Purde Rate:	0.08 gpm	
1400 131	egin surg	ing						- Jon Jpm	
1420 1	-inish ?	burging,	start has	line			Air Monitoring	BZ	WH
1430 H	inish ba	iling, 23	+ gul bailed	19			VOC (ppm)	0	()
1450 Be	in pun	ning no	25 upm				H2S (ppm)	0	0
1500 h	Jell is pu	Naina dry	Jrit	~			LEL (%) CO (ppm)	0000	0
Valan	10.00	Jugar	Sampling	, E			02 (%)	0	00.6
1090	beyin pa	amping w	th outfor	1450 ling	0.08 92	h		20.6	20.6
Signature(s)	: Aton								
	No la contra con								
lotal	Purge fr	om 211	1 and 8	12 = 7.	36000				1.1.
	- J- 10	011 01	01010	100 - 1.	Je yu			add	litional lotes ->
								10	votes ->
								r	10113 -

8/12/2020

0715 DTW= 57.33

0721 Begin pumping 270 m2/min (0.05 gpm) 0727 DTW=58.78

lient:	NAVFAC		and the second second	WELL DE	VELOPMEN	T DATA SH	EET		
	Ault Field			- Pro	ject Number	: 695610CH	1.04.FI.WI		
vent:	Phase 3 SI				Sample ID	WI-AF-M	W-0629		
ate:	8/11/2020	>		- 60					
Veather:	Sunny			_ 5a	npling Team	- Crarde	ner		
otal Dep epth to v later Col	water: (-	Before 66.70 1 [9.]0 4 7.6	After 64.35 5-15	nard bottom FT.(BTOC) FT.(BTOC) FT.	С.,	I	Measuring Device Date and Time	e: <u>Solinst</u> A	Nodel # 122
unimia re	(x	0.163	0.163	GAL/FT.		Well Dia.	Volume	7	
ell Volui	me:	7.76	0.84	GAL.		(inches)			
otal Purg	ge Vol.:			GAL.		1	(gallons/foot) 0.041		
				_		1.25	0.064	-	
urge Dev	/ice: /	Monscon				2		-	
					- S	4	0.163	-	
ir Monito	oring Equipme	nt:	DID MIL	HIRAE PI	166220	4	0.653		
	surged and ba		20	iong entire scree ionut, 4' b		9es			
	<b>D</b>	-		FIE	LD PARAMI	ETERS			
Time	Purge Vol.	Temp.	Cond.	DO	рН	ORP	Turbidity	1	
	(gals)	°C	mS/cm	mg/L	SU	mV	NTU	Other: DTw	Color / Odor / Commen
Stabiliza	aton Criteria	± 0.1	± 0.01 (if <1)	± 0.05 (if <1)			< ± 10%		
		± 0,1	± 0.02 (if >1)		±0.1	± 10	or ≤10 NTU	1	
	Well purg	es dry	after a				UISIUNIU		2
	1.0		2	15-gallons					
0704	DTW=	61-03	Allow to	rechalg	0				
100	DTW=	61.05	10	100.100.19					1/0
906	1-20-62	1						100	Very muddy
10		.52						65.8	Sandin water
113	well dry	. Let	recharge						
124	DTWZ	66.9	Jerrouge						
155	DTW=	66.12							
000	OTW=	66.09			4				
inal									
servations	s/Notes:	Pura	e Start Time:	Olahta			Durse Del		
servations	s/Notes:	Purg	e Start Time:	0640			Purge Rate:	0.08 gp	m
servations	s/Notes: Pgin Suige nish Suige	Purg. , be jin b	e Start Time:	0640			Air Monitoring	O. OS gp BZ	WH
or Bi 30 Fil 00 Fil	s/Notes: Pgin Suige nish built	Purge , begin b ng; ~ 4	e Start Time: ai l gallons bar	0640 Ted			Air Monitoring VOC (ppm)		
servations	s/Notes: Pgin Suige nish built	Purg , begin b ng; ~ 4	e Start Time: ai l gallons bar	0640 Ted			Air Monitoring		
Servations 00 Bi 30 Fin 00 Fin 00 Fin 00 Bi	nish builde nish builde nish baili	begin b	ail gallons bau	0640 Ted			Air Monitoring VOC (ppm)		
Servations 00 Bi 30 Fin 00 Fin 00 Fin 00 Bi	nish builde nish builde nish baili	begin b	ail gallons bau	0640 Ted			Air Monitoring VOC (ppm) H2S (ppm)		
servations 20 Bi 30 Fi 20 Fi 20 Fi 20 Bi 40 Bi 5045	gin Suige nish Suige nish baili gin pumpir well puges	, begin b ng; ~ 4 ng ~ 0.2 diy	ail gallons bar 5 gpm	led			Air Monitoring VOC (ppm) H2S (ppm) LEL (%)		
servations 20 Bi 30 Fi 20 Fi 20 Fi 20 Bi 40 Bi 5045	gin Suige nish Suige nish baili gin pumpir well puges	, begin b ng; ~ 4 ng ~ 0.2 diy	ail gallons bar 5 gpm	1ed			Air Monitoring VOC (ppm) H2S (ppm) LEL (%) CO (ppm)		

8/12/

#### 8/12/2020

1000 Attent to pump dry again; pump won't bring water to surface 1030 pump is starre in well. 1045 able to remore pump. pump comes out with silty sand on top; TD=69.5 1100 Decide to add clean water and reattempt surget Bail 1100 Decide to add clean water and reattempt surget Bail 1100 Begin Swiging 1130 Begin Swiging 1145 Finish swiging 1150 Begin boiling 1200 24 gd bailed. Formation sand in betton of bucket 122 Baler to not filling completely DTW= 61.03 1217 78 gd bailed. DTW=67.02 ID 0149 72.5° of water in will 1230 DTW=64.50

C	12M	
		2011

0

18

Jocation: Ault Field       Project Number: $695610CH.04.FI.WI$ Event: Phase 3 SI       Well ID: WI-AF- MW (30)         Date: $&//2/2020, 8/13/2020$ Sampling Team: All 140 and 150	Nient:	NAVFAC			WELL DE	VELOPMEN	T DATA SHI	ET		
Vent: Phase 351 Sampling Team: $A1 = V D C S S$ Sampling Team: $A1 = V D C S$ Sampling Team: $A2 = V C S$					_ Proj	ect Number	: 695610CH	.04.FI.WI		
The set set of the second of	Event:					Well ID	: WI-AF- M	10 630		
Vesition: SUMARY GOS THE Control of the second sec	Date:		2070	211212-2	-	Sample ID	: NA			
Odal Depth:       12.61       12.67       FT (BTOC)       Measuring Device:       Solito 54 $1/2$ (2)         State Column:       12.61       12.67       FT (BTOC)       Date and Time:       Science	Weather:	SUNNY	60	2112/2020	3 Sam	pling leam	: <u>N.</u> V	2005		Sec
otal Depti: 12.61 12.02 FT.(BTOC) Measuring Device: $Scinst \pm [2]$ Date and Time: $(S = 0 \ K/(C + c + 2c))$ Date and Time: $(S = 0 \ K/(C + c + 2c))$ Date and Time: $(S = 0 \ K/(C + c + 2c))$ Date and Time: $(S = 0 \ K/(C + c + 2c))$ Date and Time: $(S = 0 \ K/(C + c + 2c))$ Date and Time: $(S = 0 \ K/(C + c + 2c))$ Date and Time: $(S = 0 \ K/(C + c + 2c))$ Date and Time: $(S = 0 \ K/(C + c + 2c))$ Date and Time: $(S = 0 \ K/(C + c + 2c))$ Date and Time: $(S = 0 \ K/(C + c + 2c))$ Date and Time: $(S = 0 \ K/(C + c + 2c))$ Date and Time: $(S = 0 \ K/(C + c + 2c))$ Date and Time: $(S = 0 \ K/(C + c + 2c))$ The Date and bailed in 23 foot intervals along entire screen? The Purge Vol. Terp Cond. Differ: $(S = 0 \ K/(C + c + c + c + c + c + c + c + c + c + $			00	7	-		_Gr. G	ARDNE	7	
Value Column: $X_1Z_2$ $L_1U_2$ Fr.       Value Notion $X_1/(Z_1/Z_2) = 0$ $X_1/(Z_1/Z_2) = 0$ Vell Volume: $0, 0, 0, 0, 0$ $Z_1/(Z_2) = 0$ $GAL$ Well Dia. $Volume$ Vell Volume: $0, 0, 0, 0, 0$ $Z_1/(Z_1/Z_2) = 0$ $GAL$ $Uotype = 0$ vige Device: $Marsson$ $Marsson$ $Z_2$ $0.663$ in Monitoring Equipment: $Mult RA \in PGMG22Y$ $Uotype = 0.663$ arge and bail equipment: $Surge = PVC red_2 with rubber ges/ets'; Bwl: disposeble bwler with         Time       Purge Vol.       Temp.       Cond.       OCP Wrights'         Stabilizaton Criteria       ± 0.1       ± 0.02 (if x1)       ± 0.1       ± 10       Orter       Color / Odor / Comment         Stabilizaton Criteria       ± 0.1       ± 0.02 (if x1)       ± 0.1       ± 10       orter hubber ges/ets bulk       wrights'         All       Purge Vol.       Temp.       Cond.       OCP Wrights' Wrights'         Stabilizaton Criteria       ± 0.1       ± 0.02 (if x1)       ± 0.1       ± 10       orter hubber ges/ets hubbe$	Depth to	water: [-	12.61	12.68			٨	Aeasuring Devic	e: Solinst	#122
Viel Volume: $0.95$ $1.02$ GAL.         urge Device:       Manseen $1.25$ $0.641$ ir Monitoring Equipment:       Mult RAE PGMG227         ir Monitoring Equipment:       Surge-PVC rods with rubber geskets;       Built dispreseble baller of the rubber geskets;         urge and bail equipment:       Surge-PVC rods with rubber geskets;       Built dispreseble baller of the rubber geskets;         urge and bail equipment:       Surge-PVC rods with rubber geskets;       Built dispreseble baller of the rubber geskets;         Time       Purge Vol.       Temp, Cond, DO       DO       PH         Time       Surge-PVC rods with rubber geskets;       Built dispreseble baller of the rubber geskets;       Color / Odor / Commention         Stabilizaton criteria       2.0.1       2.0.1       2.0.02 (I/V1)       2.0.1 (I/V1)         46       Rubber geskets;       Purge Rate: $1/A$ $0.02 (I/V1)$ 2.0.1 (I/V1)         46       Rubber gestart time: $Aot Rubber geskets;       Purge Rate: 1/A 0.02 (I/V1) 0.02 (I/V1)         46       Rubber geskets;       Purge Rate: 1/A 0.02 (I/V1) 0.02 (I/V1) 0.02 (I/V1)         46       Rubber geskets;       Purge Rate: 1/A 0.02 (I/V1) 0.02 (I/V1) 0.02 (I/V1) $	Water Co		2.82	6.16				Date and Tim	e: 15:00	8/12/2020
tail Purge Vol: <u>-42 gallows bolical</u> GAL. <u>Interventions</u> Equipment: <u>Multiplication of the serven</u> ? in Monitoring Equipment: <u>Multiplication of the serven</u> ? The purge vol. Temp. <u>Cond.</u> <u>Monitoring and the serven</u> ? Time <u>Purge Vol.</u> Temp. <u>Cond.</u> <u>mol.</u> <u>Sub molication of the serven</u> ? <u>The purge vol.</u> <u>Temp.</u> <u>Cond.</u> <u>mol.</u> <u>Sub molication of the serven</u> ? <u>The purge vol.</u> <u>Temp.</u> <u>Cond.</u> <u>mol.</u> <u>Sub molication of the serven</u> ? <u>The purge vol.</u> <u>Temp.</u> <u>Cond.</u> <u>mol.</u> <u>Sub molication of the serven</u> ? <u>The purge vol.</u> <u>Temp.</u> <u>Cond.</u> <u>mol.</u> <u>Sub molication of the serven</u> ? <u>The purge vol.</u> <u>Temp.</u> <u>Cond.</u> <u>mol.</u> <u>sub molication of the serven</u> ? <u>The purge vol.</u> <u>Temp.</u> <u>Cond.</u> <u>mol.</u> <u>sub molication of the serven</u> ? <u>The purge vol.</u> <u>Temp.</u> <u>Cond.</u> <u>mol.</u> <u>sub molication of the serven</u> <u>Color / Odor / Comment</u> <u>Stabilizator of teria</u> <u>± 0.1</u> <u>± 0.02 (Ir &gt; 1)</u> <u>± 0.1</u> <u>± 10</u> <u>or si 10 NTU</u> <u>Ab Partimeters</u> <u>Purge Start Time:</u> <u>Not Purge Start Ti</u>		me: C	2.95							
urge Device:       Marssen       125       0.063         ir Monitoring Equipment:       Multi RAE PGM6227       125       0.653         as well surged and bailed in 2.3 foot intervals along entire screen?       1/25       0.653         urge and bailed in 2.3 foot intervals along entire screen?       1/25         urge and bailed in 2.3 foot intervals along entire screen?       1/25         urge and bailed in 2.3 foot intervals along entire screen?       1/25         urge and bailed in 2.3 foot intervals along entire screen?       1/25         urge and bailed in 2.3 foot intervals along entire screen?       1/25         urge and bailed in 2.3 foot intervals along entire screen?       1/25         urge and bailed upper schedule during bailing, screen?       1/25         Stabilization Criteria       ± 0.02 (if <1) ± 0.02 (	I otal Pur	ge Vol.: _~	42 gallo	nsbailed	GAL.				4	
Unge bette:       Marker production         ir Monitoring Equipment:       Multiple RAFE PGMG223         As well surged and bailed in 2.3 foot intervals along entire screen?       1/2 5         Arr Monitoring Equipment:       Surge PVC reds with rubber geskets'; Bull: disposeble bailed; with rubber geskets; Bull: disposeble bailed; Bull: d			J		-		1.25		-	
ir Monitoring Equipment: Mult RAE PGMG223 As well surged and balled in 2.3 foot intervals along entire screen? $\frac{1}{265}$ urge and ball equipment: Surge: PVC Fod 3 with rubber geskets ) Bail: dispersable bailer and set of the rubber gesket with rubber gesket set of the rubber gesket se	Purge De	vice: /	Mansoa	2						
Anomoting Equipment: Plattical provides along entire screen? <u>Yes</u> Aras well surged and bailed in 2-3 foot intervals along entire screen? <u>Yes</u> urge and bail equipment: Surge PVC feds with cubber geskets's Bail: disposeble bailer with an along bailed in 2-3 foot intervals along entire screen? <u>Yes</u> Time <u>Quals</u> <u>Cond</u> <u>DO</u> <u>PH</u> <u>ORP</u> <u>Turbidity</u> <u>Other</u> <u>Color / Odor / Comment</u> <u>Stabilization Criteria</u> ± 0.1 ± 0.02 (if <1) ± 0.1 ± 10 or s10 NTU <u>Ab</u> <u>Parameters</u> <u>vecoded</u> <u>ducing</u> <u>bailing</u> , <u>See</u> <u>Urtes</u> <u>balow</u> <u>Ab</u> <u>Parameters</u> <u>vecoded</u> <u>ducing</u> <u>bailing</u> <u>vecode</u>	Air Monite			MIIA	1				- 1	
urge and bail equipment:       Surge PV( feds with cubber geskets)       Built disposeble barler with urgents         Time       Purge Vol.       Temp.       Cond.       DO       Preclaments       Wrgents         Stabilization Criteria       ± 0.1       ± 0.02 (if <1)	AIr Monito	oring Equipme	nt:	Multil	AE PGM	6228	_			
urge and bail equipment:       Surge PV( feds with cubber geskets)       Built disposeble barler with urgents         Time       Purge Vol.       Temp.       Cond.       DO       Preclaments       Wrgents         Stabilization Criteria       ± 0.1       ± 0.02 (if <1)       ± 0.02 (if <1)       ± 0.1       ± 0.1       ± 0.1       cond.       Other:       Color / Odor / Comment         Ab       Parameters       recorded       during       belling, See       Uctors       See </th <th>Was well :</th> <th>surged and ba</th> <th>iled in 2-3 f</th> <th>oot intervals al</th> <th>and antira correspond</th> <th></th> <th>Uni</th> <th></th> <th></th> <th></th>	Was well :	surged and ba	iled in 2-3 f	oot intervals al	and antira correspond		Uni			
Time       Purge Vol. (gals)       Temp. *C       Cond. mS/cm       DO mg/l       pH       ORP       Turbidity       Other:       Color / Odor / Commer         Stabilizaton Criteria $\pm 0.1$ $\pm 0.05$ (if <1)										
Time       Purge Vol. (gals)       Temp. *C       Cond. mS/cm       DO mg/l       pH       ORP       Turbidity       Other:       Color / Odor / Commer         Stabilizaton Criteria $\pm 0.1$ $\pm 0.05$ (if <1)	Surge and	bail equipment	nt:	Surge P	VC rody wi	thruk	her res	Kets: B	ail diam	cable Louis - in
Time       Purge Vol. (gals)       Temp. *C       Cond. mS/cm       DO mg/l       pH       ORP       Turbidity       Other:       Color / Odor / Commer         Stabilizaton Criteria $\pm 0.1$ $\pm 0.05$ (if <1)				0			y yu		reights	supre bayler with
Intelling       *C       mg/L       SU		Purge Vol	Tomp				TENO		- June	
Stabilizaton Criteria $\pm 0.1$ $\pm 0.01$ (If <1) $\pm 0.05$ (if <1) $\pm 0.2$ (If >1) $\pm 0.1$ $\pm 10$ $\times 10\%$ or $\le 10\%$ Ab       Parameters       recoaled       during       beling $\pm 0.1$ $\pm 10$ $\times 10\%$ Ab       Parameters       recoaled       during       beling $\pm 0.1$ $\pm 10$ $\times 10\%$ Ab       Parameters       recoaled       during       beling $\pm 0.1$ $\pm 10$ $\times 10\%$ Ab       Parameters       recoaled       during       beling $\pm 0.1$ $\pm 10$ $\times 10\%$ Ab       Parameters       recoaled       during       beling $\pm 0.1$ </td <td>Time</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>ORP</td> <td>Turbidity</td> <td>Other</td> <td></td>	Time						ORP	Turbidity	Other	
$\frac{12.11}{40} \frac{12.01}{602} \frac{12.02}{(fr > 1)} \frac{12.02}{20.2} \frac{(fr > 1)}{10} \frac{12.01}{10} \frac{12.01}{10} \frac{12.02}{10} 12$					mg/L	SU	mV		Other:	_ Color / Odor / Commen
$\frac{40}{40}  \begin{array}{c} 1002 (irst) \\ 1002 (irst)$	Stabiliza	aton Criteria	± 0.1			+0.1	+ 10	< ± 10%		
Final       Image: Start Time: Not Purged       Purge Start Time: Not Purged         Final       Image: Start Time: Not Purged       Purge Rate: $N/A$ Servations/Notes:       Purge Start Time: Not Purged       Purge Rate: $N/A$ VIZ GE BLECK       TOD WIDE TO FIT IN       Air Monitoring       BZ       WH         VIZ GE BLECK       TOD WIDE TO FIT IN       Air Monitoring       BZ       WH         VIZ GE BLECK       TOD WIDE TO FIT IN       Air Monitoring       BZ       WH         VIZ GE BLECK       TOD WIDE TO FIT IN       Air Monitoring       BZ       WH         VIZ GE BLECK       TOD WIDE TO FIT IN       Air Monitoring       BZ       WH         VIZ GE BLECK       TOD WIDE TO FIT IN       Air Monitoring       BZ       WH         VIZ (SC (ppm)       BZ       O       O       CO (ppm)       O       CO (ppm)       O       O         Starting String O73D on 8)13/2020       CO (ppm)       O       CO (ppm)       O				1 0.02 (11 >1)	± 0.2 (if >1)		- 10	or ≤10 NTU		
Final       Image: Start Time: Not Purged       Purge Start Time: Not Purged         Final       Image: Start Time: Not Purged       Purge Rate: $N/A$ Servations/Notes:       Purge Start Time: Not Purged       Purge Rate: $N/A$ VIZ GE BLECK       TOD WIDE TO FIT IN       Air Monitoring       BZ       WH         VIZ GE BLECK       TOD WIDE TO FIT IN       Air Monitoring       BZ       WH         VIZ GE BLECK       TOD WIDE TO FIT IN       Air Monitoring       BZ       WH         VIZ GE BLECK       TOD WIDE TO FIT IN       Air Monitoring       BZ       WH         VIZ GE BLECK       TOD WIDE TO FIT IN       Air Monitoring       BZ       WH         VIZ GE BLECK       TOD WIDE TO FIT IN       Air Monitoring       BZ       WH         VIZ (SC (ppm)       BZ       O       O       CO (ppm)       O       CO (ppm)       O       O         Starting String O73D on 8)13/2020       CO (ppm)       O       CO (ppm)       O										
Final       Image: Start Time: Not Purged       Purge Start Time: Not Purged         Final       Image: Start Time: Not Purged       Purge Rate: $N/A$ Servations/Notes:       Purge Start Time: Not Purged       Purge Rate: $N/A$ VIZ GE BLECK       TOD WIDE TO FIT IN       Air Monitoring       BZ       WH         VIZ GE BLECK       TOD WIDE TO FIT IN       Air Monitoring       BZ       WH         VIZ GE BLECK       TOD WIDE TO FIT IN       Air Monitoring       BZ       WH         VIZ GE BLECK       TOD WIDE TO FIT IN       Air Monitoring       BZ       WH         VIZ GE BLECK       TOD WIDE TO FIT IN       Air Monitoring       BZ       WH         VIZ GE BLECK       TOD WIDE TO FIT IN       Air Monitoring       BZ       WH         VIZ (SC (ppm)       BZ       O       O       CO (ppm)       O       CO (ppm)       O       O         Starting String O73D on 8)13/2020       CO (ppm)       O       CO (ppm)       O	10	Parame	ters r	eronded du	cina bailir	20 62	11 lac h	1 .		
servations/Notes: Purge Start Time: <u>Not purged</u> NEGE BLECK TOD WIDE TO FIT IN REDEEN SECTION OF WELL. PAUSIED UNTIL NEW SURGE BLOCK CAN BE ACQUIRED Begin Surging 0730 on 8/13/2020 FFINISH Surging 0845 Finish bailing's ~ 12 gallons bailed 1400 Cannot get pump past choke wint of the	10	1 0 1.1-		- course au	ring bour	19. Jes	Votes D.	elow		
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Air Monitoring BZ WH Air Monitoring BZ WH NEW SURGE BLOCK CAN BE ACQUIRED Begin Surging 0730 on 8/13/2020 Finish Surging 0845 Finish bailing's ~ 12 gallons bailed H2S (ppm) 02 (%) 20.9 20.9 20.9		ALEL								
Air Monitoring BZ WH Air Monitoring BZ WH NEW SURGE BLOCK CAN BE ACQUIRED Begin Surging 0730 on 8/13/2020 Finish Surging 0845 Finish bailing's ~ 12 gallons bailed H2S (ppm) 02 (%) 20.9 20.9 20.9	oservation	s/Notes:	Purg	e Start Time:	Not purged			Purge Rate:	NIA	
Air Monitoring BZ WH NEW SURVE BLOCK CAN BE ACQUIRED UNTIL Begin Surging 0730 on 8/13/2020 Finish Surging 0730 on 8/13/2020 OB45 Finish bailing's ~ 12 gallons bailed Hature(s): 1900 Cannot get pump past choke swith at 14	2020	E BLUCK	TOE	WIDE	TO FIT	12		0		
Begin Surging 0730 on 8/13/2020 Finish surging 0730 on 8/13/2020 0845 Finish bailing's ~ 12 gallons bailed nature(s): 1900 Cannot get pump past choke swith at 14	SCRE	EN SEC	TION	OF WELL	. PAUSED	JATT		Air Monitoring	BZ	WH
1900 Cannot get punip past choke switch at 1	NEW	SURME	BLOCK	CAN BE	ALQUIRE	D		VOC (ppm)	12	
1900 Cannot get punip past choke switch at 1	A.a.								õ	
1900 Cannot get punip past choke switch at 1	orgiv	1 surging	0730	on 8/13/	12020				0	6
1900 Cannot get punip past choke switch at 1			¥.1						Ó	10
nature(s): 1900 Cannot get pump past choke swint at 1	20115	Tin'sin h	e d'ant	0.000				02 (%)	70.9	
nature(s): 1900 Cannot get pump past choke swint at 1	0845	1-(1(1))))))	a (rig)	~ 12 gall	ons builed			4. m	~ ~ 1	10.9
1900 cannot get pump past choke swint at 1.	inature(s)			J , ,						
top of Screen, Pause choke point at the	- 0	e 6 1	1							
	100	top of Sc	rean. P	r past ci	noke point	at the	2			

8/18/20 1526 DT w= 6.60 1530 Attempt to surge and bail to reduce turbidity 1700 ~ 18 gallons bailed today 1730 ~ 30 gallons bailed tuday; 42 total, water is cloudy \* Development terminated (NTU = 400)

	121			WELL DE	EVELOPMENT	DATA SHE	ET		Concernation and
lient:	NAVFAC				ject Number:				
	: Ault Field				Well ID:	WI-AF- M	11-631		
Event:	Phase 3 SI	0/1001		_	Sample ID:	NA			
Date:	\$/12/2020,	8/13/2020	0	_ Sai	mpling Team:	G. Gardin	or, A. Vogt		
vveatner:	Clear, Sunn	4, 55°F	r	- 2			i) i voji		
	in a hi								
Total Dor	oth: bottom :	Before	After						12) Sn:04565
Depth to	wator: ()	8.72	39.56	FT.(BTOC)		measuring Device. Joinst H 122			
Water Co		the second s	34.36	FT.(BTOC)			Date and Time	:	
	(x	0.79	5.5	_FT. GAL/FT.		W-ILD'	T	7	
Well Volu		5.02	0.90	GAL/FT.		Well Dia.	Volume		
Total Pur		-io gal	0.10	GAL.		(inches)	(gallons/foot)	-	
		Jan				1.25	0.041	-	
Purge De	vice: M	logsoon				2	0.163	-	
				1. Sec. 1.	-	4	0.653	-	
Air Monit	oring Equipme	nt:	PID MAI	HEAE PG	M6228		0.000		
Nas woll	surged and hei	ilad in 2.2 f.				c			
Vas Well	surged and bai	ied in 2-3 to	oot intervals alo	ong entire scree	en?	yes			
Surge and	d bail equipmer	ot.				0			
Je and	- sui squipilei								
				FI	ELD PARAME	TERS			
Time	Purge Vol.	Temp.	Cond.	DO	pH	ORP	Turbidity		
	(gals)	°C	mS/cm	mg/L	SU	mV	NTU	Other: ATW	Color / Odor / Commer
	aton Criteria	± 0.1	± 0.01 (if <1)		±0.1		< ± 10%		
Stabiliz			± 0.02 (if >1)			± 10	or ≤10 NTU	12.7	
			1 1 10	10.80	7.14	17	41000	32.05	Claud
1255	0.7	14.37	1.19				#1000	12.03	1 100114
1255	4.00	14.59	1.15	5.36	7.38	4	#1000	Dry	Cloudy Cloudy
1255 1321 1330	4.00 restart pump	14.59	1.15	5.36	7.38	4	#1000 Z1001)		cloudy
1255 1321 1330 1355	4.00 restart pump 4.5	14.59 13.84 16.02	1.15	5.36 6.52 3.74	7.38 7.36 7.60	4 7 -72	#1000 Z1001) Z1000	Dry 34.6 34.38	cloudy
1255 1321 1330	4.00 restart pump	14.59	1.15	5.36	7.38	4	#1000 Z1001)	Dry 34.6	Cloudy Cloudy Verymuddy (loudy

na	-
(estar	1

	1		The second second	FI	ELD PARAM	ETERS			
Time	Purge Vol.	Temp.	Cond.	DO	pH	ORP	Turbidity	I an ATT /	
	(gals)	°C	mS/cm	mg/L	SU	mV	NTU	Other: ATW	Color / Odor / Commen
Stabiliz	aton Criteria	± 0.1	± 0.01 (if <1)	± 0.05 (if <1)	±0.1		< ± 10%		
			± 0.02 (if >1)	and the second sec	10.1	± 10	or ≤10 NTU	12.77	
1255	0.7	14.37	1.19	6.80	7.14	17	41000	32.05	Cloudy
1330	4,00 restart pump	14.59	1.15	5.36	7.38	4	\$1000	Dry	Cloudy
1355	4.5	13.84	1.19	6.52	7.36	7	21000	34.6	
1400	4.7	16.02	1.10	3.74	7.60	-72	Z1000	34.38	very muddy/tu
1407	5	15.02	1.22	5.43	7.46	13	21000	35.14	Verymuddy/tu
1101	3	14.75	1.24	5.35	7.52	2	Z1000	Below pump +	OP J
								, , ,	'
							_		
_									
Final	6	14.73	. 2.0	- 7/-					
Observatio		14.75	1.24	5.35	7.52	2	21000	-	Very Cloudy
	IIS/NOLES.	Purg	e Start Time:	12:50			Purge Rate:	500-800 V	nilimin
8/12							- <u>J</u>	100 000 1	10/10/01
600 H	ir monitosi int overnig	AG reads	abrill				Air Monitoring	Quintanzeun 1	ALD
Ve	nt overnic	Junio	elevated (	O, LEL, of !	12) allow	10	Air Monitoring	5/12/2023/12	8/12 WH 8/13
2113	in and ing	n				10	VUC (ppm)	0 0	0.1
ann i	1 mm						H2S (ppm)	000	17 0
140 11	10 Begin	Surging					LEL (%)	000	10
1200	Finish	haling	1 11				CO (ppm)	0	10 0
	e 1-00 000	Darring	~15 galla	ons DIW-	= 36-44		02 (%)	20.9 20.9	State 0
1151	Finish Begin 0	ina man	5-	L i.			(///	20.9	20.9 20.9
10.00		- r.j.	-500 mi	Umin					20.7
ignature(s	1: Men	NR De	in almon						
		UV V FA	Vener		-				
1511	well ry	ns dry							
17	well runs								

C	121	N.										
		<b>J</b> U si		WELL DE	VELOPMENT	DATA SHEE	T					
Client:	NAVFAC				ject Number:	695610CH.0	4.FI.WI					
	Ault Field			7	Well ID:	WI-AF-	DWT-0					
Event: Date:	Well develop			- 6an	Sample ID:	NA T. Cha	lula A	4. Vagt				
Weather:	40.2			- 040	oping ream:	B. Ov		· • )	1 2 2 2 2 2			
	Weather: $40^{\circ}3$ RqinBeforeAfterTotal Depth: $14.93$ $(4.93$ FT.(BTOC)Measuring Device: $50$ inst Pine # 12726Depth to water: $(\cdot)$ $(1.62$ $(1.64$ FT.(BTOC)Date and Time: $12/7/19$ Water Column: $(\cdot)$ $(1.62$ $(1.64$ FT.(BTOC)Date and Time: $12/7/19$											
Total Dep						Ma	acuring Device:	Solinst	Pine # 12726			
Depth to		14.93	14.93	FT.(BTOC) FT.(BTOC)		INIC	Date and Time:	12/7/19	0825			
Water Co	lumn:	3.31	3.29					, , 1				
Well Velu	<u>(x</u>	0.163	0.163	GAL/FT.		Well Dia.	Voîume (gallons/foot)					
Well Volu Total Purg		0.54	0.54	GAL.		(inches) 1	(gallons/root) 0.041					
		.5.9		GAL.		1.25	0.064	1				
Purge Dev	vice:	Mon 500	NA (		_	2	0.163					
Air Monite				C		4	0.653	J				
All Monito	oring Equipme	nt:	Multi KA	E pine #	43639							
Was well s	surged and bai	iled in 2-3 foo	ot intervals ald	ong entire scree	en?	No,	Entire	5#	Screen			
						,						
Surge and	l bail equipmer	nt:	Dispo	sable	bailer							
		1 Shinese	and the second		ELD PARAM		Tuchiditu	and the second se				
Time	Purge Vol.	Temp.	Cond.	DO	pH	ORP mV	Turbidity NTU	Other:	Color / Odor / Comments			
04-1-11	(gals)	°C	mS/cm ± 0.01 (if <1)	mg/L ± 0.05 (if <1)	SU	IIIV	<± 10%					
	aton Criteria	±0.1	± 0.02 (if >1)		± 0.1	± 10	or ≤10 NTU					
08:25		avge B		iled 39	al				ALC I			
0835		11.19	0.175	0,11	6.90	71	Max		Murky/Ne Odar			
0855			0.151	0.00	746	-64	194		Clear/NO. alar			
0925	33	11.23	0.146	0.15	7.46	-76	42.3		11			
0940	48	12.09	0-140	1.39	7.43	-59	24.6		h			
0955	63	11.99	0.147	0.72	7.8	-16	11.7		<u> </u>			
1005	73	12:01	0.145	2.84	7.69	16	12.9					
1635	9 <u>3</u> 103	12.12	0.145	0.09	7.30	<u>22</u> 36	= 10.9 6.4_		N N			
1040	108	12.18	0.151	0.59	7.26	35	6.5		11			
1045	113	1215	0.150	0.66	7.27	34	4.9		1			
Finel												
Final Observation	ns/Notes:	Puros	e Start Time:	COLA	MALE		Purge Pater	1 94/1	26			
0000110001	0/110100.	, aigt	· otart mine.	The second	0000		ruige nate.	1 141/0	BZJWH			
Colle	ected	GW 5	ample	at 1100	WF-AF	-WTOI	-GW-1219	Air Monitoring: VOC (ppm) =	0.0 0.0			
Col	lected	duplica	ate same	ple at c	0900	WI-AF-1	Purge Rate: -Gw-1219 WTO1-GWP-12	H2S (ppm) =	0.C 0.C 0 C			
		ſ			1			CO (ppm) =	CC			
								02 (%) =	20.9 20.9			
Signature(s)			12	,								
(0)	· · · · · · · · · · · · · · · · · · ·											

Client:       NAFAC       Project Number:       Project Number: </th <th>liant. A</th> <th>AL FLO</th> <th>and the second</th> <th>Call and a spectra</th> <th>WELL DEV</th> <th>ELOPMENT</th> <th>DATA SHEE</th> <th>T</th> <th></th> <th></th>	liant. A	AL FLO	and the second	Call and a spectra	WELL DEV	ELOPMENT	DATA SHEE	T		
Time       Well development       Sample D: NA       Sample D: DA         Date: $1277/6^{\circ}$ Sample D: NA       Sample D: NA         Sample D: NA       Sample D: NA       Sample D: NA       Sample D: NA         Sample D: NA       Sample D: NA       Sample D: NA       Sample D: NA         Total Depth:       29(17)       29(27)       FT (BTOC)       Measuring Device:       Solver A: 12724         Depth to water:       101 (16)       30:0       GALFT.       Measuring Device:       Solver A: 12724         Well Volume:       30:0       C       C       GAL       Well Dia       Volume         125       0.064       2       0.163       GAL       0.641       0.643         Purge Device:       Measuring Device:       Dispose Device:       Ne, extive SFt Sever       Statistican Criteria       12.0       Color / 0.007 /					Proje					
Sample U: IVA         Before After         Total Depth:       22:::::::::::::::::::::::::::::::::			ont					T-02		
Sampling learn: T. Cluck law of S. A. Vegt         Sampling learn: T. Cluck law of S. A. Vegt         Bit of After         Total Depth:         22.67       29.87       FT (BTOC)       Determined S. A. Vegt         Bit of Mather S. Colspan="2">Total Depth:       Device:       Shirt FT (BTOC)         Determined S. A. Vegt         Measuring Device: Solinst Pracet 12726         Weil Volume:       Total Purge Vol.       One 2.99       Alter and Time: IZ/7/19       CP205         Weil Volume:       Device: Measuring Device: Solinst Pracet 12726         Measuring Device: Measuring Device:       Measuring Colspan="2"         Measuring Device:       Measuring Colspan="2"         Measuring Device:       Solinst Pracet 12726         Mather Mat	_							1		/
$\begin{array}{c c c c c c c c c c c c c c c c c c c $		1-1-1/1			Sam	pling Team:			A. Vegt	
Weil Volume:       Weil Colume       Volume       V	_		SALM				B. OL	Jens_		+
Weil Volume:       Weil Colume       Volume       V			Before	After					Her. ba	pinet ZIZYC
Weil Volume:       Weil Colume       Volume       V			29.87		FT.(BTOC)		Me	asuring Device	Solinst	Pine# 12726
Weil Volume:       Weil Volume:       Weil Volume:       Weil Volume:         Total Purge Vol.       3.0.0       2.9.9       GAL.       1 <td></td> <td></td> <td>11.48</td> <td></td> <td></td> <td></td> <td></td> <td>Date and Time:</td> <td>12/7/1</td> <td>9 0905</td>			11.48					Date and Time:	12/7/1	9 0905
Well Volume: 3.00 2.09 GAL (Inches) (gallonsfoot) Total Purge Vol. $30.0$ $2.99$ GAL (Inches) (gallonsfoot) 1 0.041 1 0.053 4 0.053 Was well surged and balled in 2.3 foot intervals along entire screen? Nex entire SFt Screen Surge and ball equipment: Disposable bailer Time Purge Vol. Temp. Cond. DO pH ORP Turbidity Other: Color / Odor / Comments Stabilizaton Criteria ± 0.1 ± 0.02 (ff-1) ± 0.2 (ff-1) ± 0.1 ± 10 or \$10 NTU 2025 Becuine durates that is	Vater Colur								-1-1-11	
Interview Vol.:       Interview Gal.       Interview Gal.         Interview Gal.       Interview Gal.         Purge Device:       Mega Monscon         Air Monitoring Equipment:       Mult, RAE prest 43639         No. extince Set seveen         Surge and bail equipment:       Disposable bailer         Purge Vol.       Tervisition of intervals along entire screen?       No. extince Set seveen         Surge and bail equipment:       Disposable bailer         Purge Vol.       Tervisition of intervals along entire screen?       No. extince Set seveen         Surge and bail equipment:       Disposable bailer         Time Purge Vol.       Tervisition of intervals along entire screen?       No. ext it is Colspan="2">Color / Odor / Comment         Stabilization of intervals along on the screen?       No. ext it is Colspan="2">Color / Odor / Comment         Stabilization of intervals       2002 (ff cil) ± 0.05 (ff cil) ± 0.05 (ff cil) ± 0.01 ± 0 (ff cil) ± 0.05 (ff cil) ± 0.01 ± 0 (ff cil) ± 0.05 (ff cil) ± 0.05 (ff cil) ± 0.07 (jf cil) ± 0.07		<u>(X)</u>	0.163				Well Dia.	Volume	]	
Purge Device:       Mega_Monscon       1.28       0.064         Air Monitoring Equipment:       Muff:       RAE purge 433539         Was well surged and balled in 2:3 foot intervals along entire screen?       No. $4$ 0.683         Surge and ball equipment:       Disposable bailer       No. $4$ 0.683         Surge and ball equipment:       Disposable bailer       No. $eutive SFt Screen$ Time       Purge Vol.       Temp.       Cond.       DO       PH       ORP       Turbidity       Other:       Color / Odor / Comment         Stabilizaton Criteria       ± 0.1       ± 0.02 (ff cl)       ± 0.1       ± 0.1 (ff cl)       ± 0.1       ± 0.1       ff cl $2 \cdot 63$ $2 \cdot 166$		-					(inches)		1	
Purge Device: <u>Mega Monscon</u> <u>Air Monitoring Equipment:</u> <u>Multi RAE pix # 43639</u> Was well surged and balled in 2.3 toot intervals along entire screen? <u>Ne, extile Set screen</u> <u>Ne, extile Set screen</u> <u>Ne, extile Set screen</u> <u>Surge and ball equipment:</u> <u>Disposable bailer</u> <u>Pirposable bailer</u> <u>Time Purge Vol.</u> <u>Ferno Cont.</u> <u>Disposable bailer</u> <u>Time (gals)</u> <u>*c</u> <u>mSicm mgL sub mv NTU Other:</u> <u>Color / Odor / Comment.</u> <u>Stabilizaton Criteria</u> ± 0.1 ± 0.05 (fr31) ± 0.1 ± 10 <u>st 10%</u> <u>mv NTU Other:</u> <u>Color / Odor / Comment.</u> <u>Stabilizaton Criteria</u> ± 0.1 ± 0.01 (fr31) ± 0.1 ± 10 <u>st 10%</u> <u>st 10</u>	otari arge		00.0		GAL.		1			
Air Monitoring Equipment: $M_{u}$ H: RAE pix # 43634 Was well surged and balled in 2.3 toot intervals along entire screen? Ne, cut i.le. SAT Screen Surge and ball equipment: $Disposable ba: ler$ Time $liable in 2.3 toot intervals along entire screen? Ne, cut i.le. SAT Screen Time liable in 2.3 toot intervals along entire screen? Ne, cut i.le. SAT Screen Time liable in 2.3 toot intervals along entire screen? Ne, cut i.le. SAT Screen Time liable in 2.3 toot intervals along entire screen? Ne, cut i.le. SAT Screen Time liable intervals intervals along entire screen? Ne, cut i.le. SAT Screen Time liable intervals intervals intervals along entire screen? No mut intervals interval$	Purge Devic	e: M	PDO N	Inseran						
Air Monitoring Equipment:       Muff: RAE post 43639       No.       Outer State         Was well surged and bailed in 2-3 foot intervals along entire screen?       No., entire Set screen         Surge and bail equipment:       Disposable bailer         Time       Purge Vol.       Temp.         (gals)       *C       ms/cm         Stabilization Criteria       ± 0.1       ± 0.05 (fr < 1)	•	4	Jan	10 Mary			-	0.0	{	
Was well surged and balled in 2.3 foot intervals along entire screen?       No., exitive Sft screen?         Surge and ball equipment:       Disposable bailer         Time       Quige Vol.       Temp.       Cond.       DO       pH       ORP         Time       Quige Vol.       Temp.       Cond.       DO       pH       ORP       Turbidity       Other:       Color / Odor / Comment         Stabilization Criteria       ± 0.1 (ff (1) ± 0.05 (ff 41)       ± 0.1 ± 10       or \$10 NTU       Other:       Color / Odor / Comment         Q420       62       11.00.2 (ff 1)       ± 0.01 (ff (1) ± 0.05 (ff 41)       ± 0.1 ± 10       or \$10 NTU       Color / Odor / Comment         Q420       62       11.7C $O.247$ $I.660$ $7.476$ $95.6$ $Clear/Mo Chance         Q420       62 I.50 7.477 13.6 7.383 10.4 8.6 10.02         Q457       I.62 0.2477 1.32 7.79 13.7 7.2 N I002 13.6 7.479 13.7 7.2 N         Q457       I.60 I.76 0.2447 1.32 7.779 13.6 7.4 N$	Air Monitori	ng Equipmer	nt:	Mult: F	AE DAVA	113639	r	0.055	1	
Surge and bail equipment:       Disponsible bailer         FIELD PARAMETERS         Time       Purge Vol.       Temp.       Cond.       Dop       Purge Nol.       Cond.       Dop         Stabilization Criteria       ± 0.1 (fr<1) ± 0.05 (fr<1)										
Surge and bail equipment:       Disponsible bailer         FIELD PARAMETERS         Time       Purge Vol.       Temp.       Cond.       Dop       Purge Nol.       Cond.       Dop         Stabilization Criteria       ± 0.1 (fr<1) ± 0.05 (fr<1)	Nas well su	irged and bai	led in 2-3 foo	ot intervals alo	ng entire scree	n?	No, a	entire :	5ft 50	NECN
FIELD PARAMETERS         Time       Purge Vol. (gals)       Temp. °C       Cond. mS/cm       DO mq/L       SU       Turbidity mV       Other:       Color / Odor / Comments         Stabilization Criteria       ± 0.1       ± 0.02 (fr >1)       ± 0.1       ± 0.1       ± 0.1       ± 0.1       ± 0.0       ± 0.01 (fr <1)				$\mathbf{O}$	(1) 1	,	/			
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Surge and b	all equipmer	11:	Vispo:	saple t	a, ler				
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$\begin{array}{c c c c c c c c c c c c c c c c c c c $	The composite scalar	Purge Vol.	Temp.	Cond			and the second se	Turbidity		
Stabilizaton Criteria $\pm 0.1$ $\pm 0.07$ (ff <1) $\pm 0.1$ $\pm 0.1$ $\pm 10$ $c \pm 10\%$ OBSS       Brown & Larse & Brown & Carlor & Larse & Brown & Larse & Brown & Larse	Time	•			_			· ·	Other:	Color / Odor / Comments
Submittation of thema $\pm 0.1$ $\pm 0.02$ (if >1) $\pm 0.1$ $\pm 10$ or \$10 NTU         OpenS       Begine Surge: 5 bail, bail, bailed 3 Gal       or \$10 NTU       or \$10 NTU         OpenS       Begine Surge: 5 bail, bailed 3 Gal       or \$10 NTU       or \$10 NTU         OpenS       Begine Surge: 5 bail, bailed 3 Gal       or \$10 NTU       or \$10 NTU         OpenS       Dail, bailed 3 Gal $248$ $7.22$ $-38$ $95.6$ Clear/Mo and the open state s	Stabilizat	on Critoria	1.0.4		± 0.05 (if <1)					
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Stabilizat	on Unterna	± 0.1	± 0.02 (if >1)	± 0.2 (if >1)	± 0.1	± 10			
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		Begine	Surge \$	bail, bo		gal				
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$\frac{1002}{136} \frac{11.56}{1.56} \frac{0.245}{1.51} \frac{1.51}{7.75} \frac{7.75}{136} \frac{1.36}{7.4} \frac{11}{100}$										
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Observations/Notes:Purge Start Time:0850Purge Rate: $2gel/min$ Collected GW Sample + M5/M5D at 1010Air Monitoring: VOC (ppm) = $air Monitoring:UOC (ppm) =air Monitoring:UOC (ppm) =air Monitoring:UOC (ppm) =air Monitoring:UOC (ppm) =air Monitoring:UOC (ppm) =WI-AF-WT02-GW-1Z19VI=AF-WT02-GW-1Z19LEL (\%) =UC (ppm) =air Monitoring:UOC (ppm) =air Monitoring:UOC (ppm) =WI=AF-WT02-GW-1Z19VI=AF-WT02-GW-1Z19air Monitoring:UOC (ppm) =air Monitoring:UOC (ppm) =air Monitoring:UOC (ppm) =WI=AF-WT02-GW-1Z19VI=AF-WT02-GW-1Z19air Monitoring:UOC (ppm) =air Monitoring:UOC (ppm) =air Monitoring:UOC (ppm) =VI=AF-WT02-GW-1Z19VI=AF-WT02-GW-1Z19air Monitoring:UOC (ppm) =air Monitoring:UOC (ppm) =VI=AF-WT02-GW-1Z19air Minitoring:UI =air Minitoring:UI =air Minitoring:UI =VI=AF-WT02-GW-1Z19air Minitoring:UI =air Minitoring:$	101 -					1-61	100			
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Observations/Notes:Purge Start Time: $0850$ Purge Rate: $2gel/min$ Collected GW Sample + MS/M5D at 1010Air Monitoring: VOC (ppm) = $air Monitoring:UOC (ppm) =air Monitoring:UOC (ppm) =air Monitoring:UOC (ppm) =air Monitoring:UOC (ppm) =air Monitoring:UOC (ppm) =WI-AF-WT02-GW-1Z19WI=AF-WT02-GW-1Z19LEL (\%) =UC (ppm) =air Monitoring:UOC (ppm) =air Monitoring:UOC (ppm) =WI=AF-WT02-GW-1Z19UI=MS/M5DUI=0air Monitoring:UOC (ppm) =air Monitoring:UOC (ppm) =UI=AF-WT02-GW-1Z19UI=MS/M5DUI=0air MIUI=AF-WT02-GW-1Z19UI=0uI=0uI=0UI=AF-WT02-GW-1Z19UI=0uI=0uI=0UI=AF-WT02-GW-1Z19UI=0uI=0UI=0uI=0uI=0UI=0uI=0uI=0UI=0uI=0uI=0UI=0uI=0uI=0UI=0uI=0uI=0UI=0uI=0uI=0UI=0uI=0uI=0UI=0uI=0uI=0UI=0uI=0uI=0UI=0uI=0uI=0UI=0uI=0uI=0UI=0uI=0uI=0UI=0uI=0uI=0UI=0uI=0uI=0UI=0uI=0uI=0UI=0uI=0uI=0UI=0uI=0uI=0UI=0uI=0uI=0UI=0uI=0$										
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Observations/Notes:Purge Start Time: $0850$ Purge Rate: $2gel/min$ Collected GW Sample + MS/M5D at 1010Air Monitoring: VOC (ppm) = $air Monitoring:UOC (ppm) =air Monitoring:UOC (ppm) =air Monitoring:UOC (ppm) =air Monitoring:UOC (ppm) =air Monitoring:UOC (ppm) =WI-AF-WT02-GW-1Z19WI=AF-WT02-GW-1Z19LEL (\%) =UC (ppm) =air Monitoring:UOC (ppm) =air Monitoring:UOC (ppm) =WI=AF-WT02-GW-1Z19UI=MS/M5DUI=0air Monitoring:UOC (ppm) =air Monitoring:UOC (ppm) =UI=AF-WT02-GW-1Z19UI=MS/M5DUI=0air MIUI=AF-WT02-GW-1Z19UI=0uI=0uI=0UI=AF-WT02-GW-1Z19UI=0uI=0uI=0UI=AF-WT02-GW-1Z19UI=0uI=0UI=0uI=0uI=0UI=0uI=0uI=0UI=0uI=0uI=0UI=0uI=0uI=0UI=0uI=0uI=0UI=0uI=0uI=0UI=0uI=0uI=0UI=0uI=0uI=0UI=0uI=0uI=0UI=0uI=0uI=0UI=0uI=0uI=0UI=0uI=0uI=0UI=0uI=0uI=0UI=0uI=0uI=0UI=0uI=0uI=0UI=0uI=0uI=0UI=0uI=0uI=0UI=0uI=0uI=0UI=0uI=0$										
Dbservations/Notes: Purge Start Time: $0850$ Collected GW Sample + M5/M5D at 1010 WT-AF-WT02-GW-1Z19 WT-AF-WT02-GW-1Z19 WT-AF-WT02-GW-1Z19M5/M5D WT-AF-WT02-GW-1Z19M5/M5D WT-AF-WT02-GW-1Z19M5/M5D WT-AF-WT02-GW-1Z19M5/M5D WT-AF-WT02-GW-1Z19M5/M5D CO(ppm) = 0 CO(ppm) = 0 CO(p										
Observations/Notes:Purge Start Time:0850Purge Rate: $2gel/min$ Collected GW Sample + M5/M5D at 1010Air Monitoring: VOC (ppm) = $air Monitoring:UOC (ppm) =air Monitoring:UOC (ppm) =air Monitoring:UOC (ppm) =air Monitoring:UOC (ppm) =air Monitoring:UOC (ppm) =WI-AF-WT02-GW-1Z19VI-AF-WT02-GW-1Z19LEL (\%) =UC (ppm) =air Monitoring:UOC (ppm) =air Monitoring:UOC (ppm) =WI-AF-WT02-GW-1Z19VI-AF-WT02-GW-1Z19air Monitoring:UOC (ppm) =air Monitoring:UOC (ppm) =air Monitoring:UOC (ppm) =WI-AF-WT02-GW-1Z19VI-AF-WT02-GW-1Z19air Monitoring:UOC (ppm) =air Monitoring:UOC (ppm) =air Monitoring:UOC (ppm) =WI-AF-WT02-GW-1Z19VI-AF-WT02-GW-1Z19air Minitoring:UOC (ppm) =air Minitoring:UOC (ppm) =WI-AF-WT02-GW-1Z19ir Minitoring:UI-AF-WT02-GW-1Z19air Minitoring:UI-AF-WT02-GW-1Z19air Minitoring:UI-AF-WT02-GW-1Z19$										
Dbservations/Notes: Purge Start Time: $0850$ Collected GW Sample + M5/M5D at 1010 WT-AF-WT02-GW-1Z19 WT-AF-WT02-GW-1Z19 WT-AF-WT02-GW-1Z19M5/M5D WT-AF-WT02-GW-1Z19M5/M5D WT-AF-WT02-GW-1Z19M5/M5D WT-AF-WT02-GW-1Z19M5/M5D WT-AF-WT02-GW-1Z19M5/M5D CO(ppm) = 0 CO(ppm) = 0 CO(p										
Collected GW sample + Ms/MsD at 1010  WI-AF-WT02-GW-1Z19  WI-AF-WT02		Alsher		Clart Time:	0850			Purce Rate:	200	
$Collected GW \text{ sample} + M5/M5D \text{ at } 1010 \qquad \text{Air Monitoring:} \\ VOC (ppm) = C.C & O.C \\ H2S (ppm) = C.C & O.C \\ H2S (ppm) = C.C & O.C \\ LEL (\%) = C & C \\ CO (ppm) = C.C & O.C \\ LEL (\%) = C & C \\ O(ppm) = C.C & O.C \\ LEL (\%) = C & C \\ O(ppm) = C & O.C \\ $	Observation	s/Notes:	Purç	ge Start Time:	0000			r urge ridie.		BZ , WH
VI - AF - WTOZ - GW - IZI9 $VI - AF - WTOZ - GW - IZI9 MS/MSD at 1010$ $VOC (ppm) = 0.0$ $LEL (%) = 0$ $C (0 (ppm)) = 0$ $C (ppm) = 0$ $C (pp$		11 ach-	1 Cali	6	1 I II	GINE		10	Air Monitoring:	
WI - AF - WTOZ - GW - 1219 $WI - AF - WTOZ - GW - 1219 MS/M5D$ $UI - WI -$	Ċ	COL	a qu	ramp	e + M	y MISL	AT IC		VOC (ppm) =	
WI-AF-WTOZ-GW-1219M3/MSD CO (ppm)= 0 02(%)= 000	、	T-A =	- 10 1700	2- (mal-	-1719					
WI - AF - WTOZ - GW - 1219 M 3/ M 31 02(%) = 20.9 20.9 20.9	```	w+ ~r	~~~~	2 4		12/1	AED			
02(70)- 20.9 20.9		WT-A	F-WT	OZ-GH	1-1219	m / m	171			10
		100							02 (%) -	20.9 20.9
										1
Circulture(a)	Cinestor								18	
Signature(s):	Signature(s)							ji ji		
					SU.					

		SM				DATA SHEE			
	NAVFAC			Proj		695610CH.0			
Event:	Ault Field	t			Sample ID:	WI-AF-	103		
Date:	Well developm			Sam			halmers		
Weather:	40%	Over co	4	. Out	ping roun.		wens		
	-10-5	12/2. Before	12/3 After					Heriba:	Pine # 21290
Total Dept	h:	9.90	9.90	FT.(BTOC)	after 1,90	Me	asuring Device:	Solinst = 1	Pine # 12726 1445
Depth to w		8.27	8.36	FT.(BTOC)	3.62		Date and Time:	12/2/19	1445
Water Colu	amn:	1.63	1,54	FT. T	.28				
		0.163	0.163	GAL/FT.		Wel∛ Dia.	Volume		
Well Volur	ne:	7.27	0.25	GAL. GAL.		(inches) 1	(gallons/foot) 0.041		
Total Purg		27	2.5			1.25	0.041	1	
Purge Dev	ice: Bai	ler /	legan	onscen		2	0.163		
						4	0.653	1	
Air Monito	ring Equipmen	nt: 🖌	Mult; RAE	E pine #	:43639	1			
Was well s	surged and bai	led in 2-3 foo	t intervals alo	ong entire scree	en?	No, 50	wge ent	ine 5+	f screen.
Surge and	bail equipmen	ıt:	Dispo	sable	hailer				
			, 		ELD PARAM				
Time	Purge Vol.	Temp.	Cond.	DO	pН	ORP	Turbidity	Other:	Color / Odor / Comments
Time	(gals)	°C	mS/cm	mg/L	SU	mV	NTU		Color / Color / Comments
Stabiliz	aton Criteria	± 0.1		± 0.05 (if <1)	± 0.1	± 10	< ± 10%		Swamp)
		11.4.4	± 0.02 (if >1)		101		or ≤10 NTU		ponor
1620	Input	11.20	0.268 9 Monso	16.88	6.56	75	MAX		Brown /the Octor
1623	29/nin 125		0,279	15.21	6.61	165	861		
1625	Fund		not able.	to Keep		PUMD, A		vis to 50	4 Vero
1645	$\sim$ 14	9.86	0,282	7.98	5.51	301	131		Murky/lessot
13 0858		10.26	0.399	10.11	5.06	382	321		11 an odlor.
0915	25	10,59	0.275	7,52	5,47	357	38.9		clear /No Odor
0930		9.68	0.195	8.30 6.39	4,59	443	22,6 22.2		N
1000	50	10.96	0:277	6,70	5,54	350	16.9		ų
1010	55	11.10	0.276	6.53	5.55	346	22.3		••
1020	60	11.30	0.275	6.48	5,53	348	22.7		
1030	65	11.12	0,277	6.89	5,49	355	10.2		ч
1040	70	11.14	0.277	6.02	5.45		7.0		11
1000	80	11.27	0.271	5,89 6.23	5,47 5,44	344 372	7,9		
		1.40	0.274	0.20		572	26 7		
	4.0	11.20		6.63	2.00				
Final	80	11.26	o,274 e Start Time:	6.23	5,44	372	5.5 Durse Dates		clear No Odor.
Observatio	ns/notes.	Pulg	je Start Time:	12/2 10	12/3	FO	Purge Rate: 12/3 BZ WH		Clear / No Odor. 0.66 gal/min -0.33 12/2 BZ : 4H
				0		$\smile$	BZ WH	Air Monitoring: VOC (ppm) =	0 0
No	tenou	igh w	ater c	olumn t	i takz	~	0.0 0.0	H2S (ppm) =	0.0 0.0
	1 1.	1. 00		olumn -t	!		0 0	LEL (%) =	0 0
W	13 W	ne pe	imp 19	arepicy	eq.		00	CO (ppm) =	0 0
							20.9 20.9	02 (%) =	20.9 20.9
							1		· ·
Signature(	s):								

Ch	<b>2</b> M	<b>1</b> :		10 - Hill (A.S.)								
Client:	NAVFAC			RELIEDE	<b>LEFORMENT</b>	DATIASHEE						
	Ault Field			Proj		695610CH.0						
						WI-AF- W	7-04					
Date:	Well developm	ent			Sample ID:							
	12/2/	19		Sam	pling Team:	T.C	chalmers					
Weather:	40%	OVER CO	st			-B-0	HEAS (TC)	B. Ower	5			
							•	Hariba : P	m#21290			
-		Before	After									
Total Depth		29.25	29.25	FT.(BTOC)		Me	easuring Device:	Solingt: P	ive # 12726			
Depth to wa	ater: (-)	7.98	8.79	FT.(BTOC)			Date and Time:	12/2/19	1400			
Water Colu	imn:	21.27	20.46	FT.								
	(X)	0.163	0-163	GAL/FT.		Well Dia.	Volume					
Well Volum	ie: 了	-47	3.33	GAL.		(inches)	(gallons/foot)					
Total Purge	e Vol.: x10 3	34.7	190	GAL.		1	0.041					
1.25 0.064												
Purge Devi	ice: Me	a Mona	ioon			2	0.163					
	Purge Device: <u>Mega Mon 500n</u> Air Monitoring Equipment: Mn/iRAE Pinett 43639											
Air Monitor	rina Equipmer	nt: Muli	RAE Fine	# 4363	39							
	3-1-1-1	7				•	,					
Was well s	urged and bai	led in 2-3 foo	t intervals alo	ng entire scree	n?	No. 5	word en	tire 5f	t screen.			
						1.00-120	<u> </u>					
Surge and	bail equipmer	nt:	Stainle	ess ste	el baili	er						
<b>0</b>												
The second second			图4 四十二	FI	LD PARAM	TERS	and the second	and the second second				
1	Purge Vol.	Temp.	Cond.	DO	pН	ORP	Turbidity					
Time	(gals)	°C	mS/cm	mg/L	SU	mV	NTU	Other: DTW	Color / Odor / Comments			
	(yais)			± 0.05 (if <1)			< ± 10%					
Stabiliza	ton Criteria	±0.1	± 0.02 (if >1)		± 0.1	± 10	or ≤10 NTU					
							013101010					
1405	Begin	Surge		iler.	6.2.1	110	44.4.1		1. 1. (11) 0 100			
1413	3	11.82	0:413	28.78	6.34	118	MAX	0.20	Murky/No Color			
1438	13	(1.2.)	0.423	0.00	6.68	43	18	9.30	al the alle			
1456	58	10,70	0,404	1.51	6.38	51	25.7	-	Clear/NO oder			
1505	75	10.61	0.413	14.32	6.88	2	15.6	-	11			
1515	100	10.20	0.410	12.73	7.05	-14	12.1	-	11			
1525	125	10.13	0.406	11.71	7.12	-14	8.4	-	"			
1531	140	10.18	0.398	11.70	7.16	-49	7.7	-	n			
1540	165	9.92	0,408	(1.72	7.33	-63	8.6		41			
1550	180	9.93	0.407	11.69	7.29	-60	5.9	-	11			
1600	190	9,91	0.405	11.70	7.35	-57	6.2	8.79	t1			
								_				
Final	100	9,91	0.405	11.70	7.35	-57	6.2	8.79	Clear / No oclar			
Observation	_ <u>190</u>	Duro	e Start Time:				Purge Rate:	2.591	min			
Observation	IS/INOLES.	Fulg	e otart nine.			-	Ŭ		BZ IWH			
					1.2			Air Monitoring:				
1 130	egan Du	NOP W	/ Mega	Monsoor	1 = 1	415		VOC (ppm) =	0 0			
		) ,						H2S (ppm) =	0.0 0.0			
								LEL (%) =				
								CO (ppm) =				
								00(0) =	0 0			
Sec.								2(10)- 2	0.9 20.9			
				/								
Signature(s	): 7	-11	2 h									

# Ch2m:

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Da Da We We We To Pu	ent: eather: eather: eather: epth to water Colum cell Volum otal Purge urge Devi	Well developme           12/3/(1-4)           12/3/(1-4)           12/3/(1-4)           12/3/(1-4)           ater:         (-)           mn:         (-)           me:         (-)           e Vol.:         (-)           ice:         (-)           ring Equipment	ent 9 0vevcc Before 10.02 5.92 4.1 0.63 0.63 0.67 6.7 6.7 ectech nt: N	After Squir NultiRAE	Proje Sam FT.(BTOC) FT.(BTOC) FT. GAL/FT. GAL. GAL.	Sample ID: pling Team:	695610CH.0 WI-AF- M NA B. O Mu Well Dia. (inches) 1 1.25 2 4	4.FI.WI -0.5 -0.5 -0.5 -0.5 -0.5 -0.05 -0.041 -0.064 -0.163 -0.653	Solinst: P: 12/3/19	ne # 21290 ne # 12726 1213 e Sft Screen
		bail equipmen			able b			/		
鐗	States of the	111111	· Parter Part	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	EI	ELD PARAMI	TERS	and the second second	No. of the second second	
	Time	Purge Vol.	Temp.	Cond.	DÖ	pH	ORP	Turbidity	Other:	Color / Odor / Comments
	nine	(gals)	°C	mS/cm	mg/L	SU	mV	NTU		
27		aton Criteria	± 0.1	± 0.02 (if >1)	± 0.05 (if <1) ± 0.2 (if >1)	± 0.1	± 10	< ± 10% or ≤10 NTU		
L	A1227		Surgi		ailer	/ 67	101			MURKY/NO Color
F	1240		12.15 MMP	0.769	8.19	6.82	101	MAX		NUNNY/ NO COLON
	(300	Begint								
	1310	1	Nge i	Rate to	Zgal/n	in				
	1315	16	12.23	0.781	5.96	6.98	41	MAX		Murky (Nocolor
	1337	60	12.25	0,809	7.50	6.87	195	124		
son b	1343	72			transf	ter IDU	r			
	1520	92	12,40	0.798	8.34	7.07	66	256		Murky No ador
	1540	112	12.20	0.788	6,12	7.06	70	27.3		clear / No Odar
F	1550	122	12.12	0.76(	6,11	7.12	25	16.9		1
	1605	137	12.11	0.783	5.50	7.07	28	13.5		u
	1615	147	11.95	0.790	6.48	7,35	27	8.5		u
	1630	162	Pulleo	Primp 1	er day.					
┝				· · · ·	, 			+		
ŀ										
F								+		
Ľ	Fina(	162	11.95	0.790	6.48	7.35	27	8,5		Clear / No odor
0	Observatio	ons/Notes:		e Start Time:	1300		-	Purge Rate	4 991	min-291/min
5		s):		-	4				Air Monitoring: VOC (ppm) = H2S (ppm) = LEL (%) = CO (ppm) = O2 (%) =	BZ WH ab 0.C 0.C 0.C 0.C 0.C 0.C 0.C 0.C

	<b>2</b> M	<b>A</b> .								
		<b>1 1 1 1 1</b>								6.000
Client:				and the second sec	VELOPMENT ject Number:	the state of the deside of the state of the	and the second sec			
	NAVFAC Ault Field			- Proj		WI-AF- W				
Yent:	Well developm	ont		-	Sample ID:					
Date:	12/5/1			- San			halmers			
Weather:		vercas	4	-			rievis_	_		
				*				Horiba: P	inct: ziza	0
_		Av+e Before	After				easuring Device:	Galiact : 1	2. +127	776
Total Dept		45		FT.(BTOC)		Me	easuring Device: Date and Time:	2011131 1	2 1216	
Depth to w	/ater: <u>(-)</u>	0 (v/2Bi)		FT.(BTOC)			Date and Time:	12/3/1	4-1615	
Water Colu		45		_FT. GAL/FT.		Well Dia.	Volume	1		
Well Volun		0.163		GAL/FU.		(inches)	(gallons/foot)			
Total Purg	· · · · —	7.34		GAL.		1	0.041	1		
and ang				-		1.25	0.064	]		
Purge Dev	ice:	Mega.	Monsoc	N		2	0.163	]		
-		-			-	4	0.653	]		
Air Monito	ring Equipme	nt:	Multi RA	FE Piret	:43639					
Was well s	urged and bai	led in 2-3 foo	ot intervals alo	ong entire scree	en?	No. A	trtesian			
			,			-, -				
Surge and	bail equipmer	nt:	N/A A	rtesian						
	the subscript of the second second second		-	FI	ELD PARAMI	TEDQ	14 (15 A 18 1 9 9 17	Last the second second		
P2-Potentin	Durse Val	Temp	Cond.	DO FI	pH	ORP	Turbidity			2 marto
Time	Purge Vol. (gals)	Temp. °C	mS/cm	mg/L	SU	mV	NTU	Other:	Color / Odor / C	,omments
			± 0.01 (if <1)				< ± 10%			
Stabiliza	aton Criteria	±0.1	± 0.02 (if >1)	± 0.2 (if >1)	± 0.1	± 10	or ≤10 NTU			
Fa1218	Remove	d Arte	sian u	ell cap	and o	VOPDEL	Pump			
1222	Begar			/		//			14 1 11	- low
(235	52	11.25 /	0.393	14.14	6.46	-84	580		Murty/No	CONCI
1250	112	11.25	0.395	7.15	7.17	-119	268			
1305	172	11,13	0.383	6.85 2 gal/	7.19	-111	176			
1313	Adjusted	11.29	Rate to 0.396	6.43	7.23	-130	165		cloudy/No	Octor
1320	218			transfe						
1 <u>943</u> 1455	264 Resum		erge to		1.					
15!5	320	11.41		107379.50	7.27	-115	3.5		clear/No	odor
1525	350	11.43	0,394	7.77	7.29	-106	3.2		u	
535	380	11.13	0.397	6,58	7.34	~111	9.7		11	
1545	410	11.23	0.393	6.51	7.39	-105	9.5		1 4	the also
1555	440	11.16	0.401	6.42	7.42	-97	20.3		claudy ish /.	Notaci
1608	479	11.22	0,395	6.34	7.38	-90	25,2		- "	
1613	494	Pulled	Pump fi	pralay.						
							_			
										<u> </u>
Final	494	11.22	0.395	6,34	7.38	-90	25.2		Claudyish/	No Oder
Observation	ns/Notes:	Purg	e Start Time:	1222			Purge Rate:	4 gal/m	-	
						1		Air Monitoring:	BZ	vH_
1	ST m	الصمام	CODb	clore r	rence	101		VOC (ppm) =	0.0 10	0.0
/	1 00							H2S (ppm) =		0.0
	2 psi.							LEL (%) =		0
									<u> </u>	0
								02 (%) =	20.9	20.9
								2	2.1 2	<i>D</i> . (
			h							
Signature(s	):	-11	1/h							

	<b>2</b> M								
<b>U</b>									
12 3 11	and the second second			WELL DE	VELOPMENT	DATA SHEE			
	NAVFAC			Pro	ject Number:	695610CH.0	4.FI.WI		
tion:	Ault Field				Well ID:	WI-AF- W	1-07		
Event:	Well developm	ent			Sample ID:	NA			
Date:	12/5/1		,	San	npling Team:		c mers		
		Wer cast	Rain			_B. CV			
		<u>lotten I</u>	/ Main					IL IL D	· # 21290
		Before	After					Hariba Pire	
Total Dept		15.05		FT.(BTOC)		M	assuring Device:	Slinst Pix	1 0918
		9.30		FT.(BTOC)			Date and Time:	17/5/19	0918
Depth to w							Date and Thine.		
Water Colu		5.75		FT.		Well Dia.	Volume	1	
		0.163		GAL/FT.					
Well Volun		0.94		GAL.		(inches)	(gallons/foot)		
Total Purg	e Vol.:	9.4		GAL.			0.041		
		. 1 7				1.25	0.064		
Purge Devi	ice:	reotech	Geosgu	int	-	2	0.163		
•					_	4	0.653		
Air Monito	ring Equipmer	nt:	MultiRA	E Pine #	43639				
	3-11							$\wedge$	
Was well s	urned and bai	led in 2-3 foo	t intervals alo	ng entire scre	en?	Nor	Entire 5	H Sere	en
Tras Hell S	arged and bar								
Surge and	bail equipmen	nt-	Distors	able b	2 les				
Surge and	ball equipment		- vispe s						
edimbro live The Test				F	ELD PARAM	TERS	A STATE OF		
287.687 CAN		T	Cond	DO	pH	ORP	Turbidity		Color ( Oder / Commonte
Time	Purge Vol.	Temp.	Cond.		SU	mV	NTU	Other:	Color / Odor / Comments
11110	(gals)	°C	mS/cm			IIIV	<±10%		
Otobiling	ton Criteria	±0.1	· · ·	± 0.05 (if <1)	± 0.1	± 10			
Stabiliza	tion Criteria	10.1	± 0.02 (if >1)	± 0.2 (if >1)			or ≤10 NTU		
10918	Surac	3 bai	begin	5					11 1 du ala
F1'0935		11.82	1.51	8.6	6.69	1	MAX		Murky/No ador
1015	1	11.32	1.49	6.93	6.80	50	MAX		N '
	Insert			with pu	hD.				
1045			1.47 E	10.12	7,09	142	693		Murky/No Oder
1112	12.5	10.99		7.57	7.02	111	29.0		Clear/No Color
1130	14	11.37	1.48	7.42	7.07	56	19.4		N '
1145	15.5	11.81	1.48		7.05	95	10.7		11
1200	17	11.75	1.44	7.14	1. 2		00		1
1210	18	10.44	1.50	7.1(	7.02	124	8.8		1(
1220	19	10,27	1.49	7.18	6.98	166			
		=							
·									
						-			
Final						_	Purge Rate:	O. i gal	Imia
Observation	ns/Notes:	Purg	e Start Time:	1045			Fulge Rale.	yal	BZIWH
								Al- Marilaniana	02 1 0011
								Air Monitoring:	0.0 0.0
								VOC (ppm) =	•
								H2S (ppm) =	0.0 0.0
								LEL (%) =	0 0
								CO (ppm) =	0 0
$\sim$								00 (01)	
λ								52(10)	20.9 20.9
				/					
			. /						
Signature(s)	· _/	~/	m						
Signatures	/_								

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Scanned by CamScanner

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	<b>2</b> M	/ .									
		Sa .		WELL DE		DATA SHE	T	19 20 20 20 20 20	Stand Barris		
Ciliant:	NAVFAC			COLUMN STREET,	Constrained and Party States and Party	695610CH.	PTACK CONTRACTOR NUMBER OF STREET				
	Ault Field					WI-AF- 0					
	Well developm	ent			Sample ID:		100				
Date:		19		San	opling Team:		halmers				
Weather:		/	st/Rai		ipning ream.		vens				
mouther.				21				Harcily	Pile # 21290		
		Bofore	sian After					FLOV IBA	The # E.C.C.		
Total Dept	Total Depth: $U_{0}$   ET (BTOC) Measuring Device: $\mathcal{D}U/n\mathcal{S}T$										
Depth to w				FT.(BTOC)			Date and Time:	12/5/19	0850		
Water Colu		40		FT.				_ / /			
	(x)	C163		GAL/FT.		Well Dia.	Volume				
Well Volun	ne:	6.52		GAL.		(inches)	(gallons/foot)				
Total Purg	e Vol.:	65.2		GAL.		1	0.041				
		IP D	,	Adami		1.25	0.064				
Purge Dev	ice: <u>2</u>	elt K	Nge -1	trtesian		2	0.103				
			N. IL P.	AE Pine #	112/20	4	0.055	1			
AIT MONITO	ring Equipmer	11:	ZUUITI KZ	te rive th	-47627	-					
Was well a	urged and bai	lad in 2.3 for	t intonvale alo	ng entire scree	m2	NILL					
mas well s	urgeu anu bai	ieu ili 2-5 iou	/	ing chare solec							
Surge and	bail equipmen	nt:	NA								
ourge and	ball equiphiles										
CHARLES ST.		12.11.12		FI	ELD PARAM	ETERS	in a state of the				
An expeditional procession	Purge Vol.	Temp.	Cond.	DO	pН	ORP	Turbidity	Other:	Color / Odor / Comments		
Time	(gals)	°C	mS/cm	mg/L	SU	mV	NTU				
04-1-11			± 0.01 (if <1)	± 0.05 (if <1)	± 0.1	± 10	< ± 10%				
Stabiliza	aton Criteria	± 0.1	± 0.02 (if >1)	± 0.2 (if >1)	10.1	- 10	or ≤10 NTU				
0850	Begin	PUNGE	at 5.5	gal/min 1	/ Mon	SCON					
0905	Mon 500.		H Keepin		flor, u		fold place	d qu			
0915	Artesian	flow di	rected in			Ket p		tote	Clear/No Odar		
0925	10.3	10.67	0.365	10.39	6.60	-39'	<u>'38.1</u> 195		clandy/No color		
0940	(33	11.08	0.345	8.73	7.6	⊨੶┙ー	5.7		clear No color		
0955	150	io.87	0.324	7,98	7.25	-42 -44	4.6		11		
<b>¢0</b> 00	160	10.89	0.325	7.55	7.22	-46	4.6		11		
1005	175	10.78	0.319	7.50	7,21	-76	-40				
		)									
Final											
Observation	s/Notes:	Puro	e Start Time:	0850			Purge Rate:	~2gal/min	n		
0000110001		, ang				•	_	5 1	BZIVH		
				<. A				Air Monitoring:			
Well	is produ	iong rou	nghly 3.	5A of	head p	rssure		VOC (ppm) =			
10	l'al -	w.e.t	materia	n well l	1.	the	deed	H2S (ppm) =	0.0 0.0		
Atter	aevelop	ment	11 12310	n well b	ead 1	> 9/190	ineq	LEL (%) =	00 00		
-	الصب	DRESTIN	Ne gai	uge re	cols +	2 psi.		CO (ppm) =	0 0		
0	weny	p.0,00		J				02 (%) =	20.9 709		
									20.7		
			/		-						
Signature(s)	Th	-1/	hh						Sec. 1		
ignatio (o)											

							<b>*</b>			
						and the second				
C	121	1.								
C. Baselia				S (THE PART	গৰংগ্ৰা বিয়	VALASIES				
Client:	NAVFAC	tada Makala area		Proj	ect Number:	695610CH 0	E MI			al Stand
tion:	Ault Field				Well ID:	WI-AF- JA	1-00			
Event: Date:	Well develop			- 0	Sample ID:	NA	1 24			
Weather:	12/10/10		-F	- Sam	ipiing ieam:	T. U	almers	A. Vant	-	
voauter.	4003	Querco	5	-						
_		Before	After				asuring Device: Date and Time:	Horiba F	ive # F	1912
Total Dept		15,33		FT.(BTOC)		Me	asuring Device:	Solingt :	·	
Depth to v Water Col	water: <u>(</u> ·		ļ	FT.(BTOC) FT.			Date and Time:	12/10/10	100 H 12	120
		7.51 x) 0.(63		GAL/FT.		Well Dia,	Volume		0410	
Well Volu	me:	1.22		GAL.		(inches)	(gallons/foot)			
Total Purg	je Vol.:	12.2		GAL.		1	0.041			
						1.25	0.064			
Purge Dev	/ice:					2	0.163			
Air Monito	oring Equipme	ent:	Multi R	HE Pine	#436	in in	0.653			
	• • •									
vas well s	surged and ba	ailed in 2-3 fo		ong entire scree		<u> ot</u>	tinterve	its, alo	na in f	-
Surge and	bail equipme	ent:	Disnos	able be	riler			/ -110	701	jerec
- go and	San edaibilie		p. p.							
and the second			2 Cond		ELDPARAM	and the second second second second				
Time	Purge Vol.	Temp.	Cond.	DO	pH	ORP	Turbidity	0		
	(gaîs)	0°	mS/cm ± 0.01 (if <1)	mg/L ± 0.05 (if <1)	SU	mV	NTU	Other:	Color / Odor /	Comments
Stabiliza	aton Criteria	± 0.1	± 0.02 (if >1)	± 0.2 (if >1)	± 0.1	± 10	< ± 10%			
0910	Begin	Surge					or ≤10 NTU			
0125	Bailing	begin	5							
0930	3.5	10.3(	0.855	Z.68	7.80	-29	842	1	M	
0935	Well							ľ.	Murty /	No Cal
1030	3-6	14.40	0.73Z	7.05	7.88	0				
1335	5-6 Well 6		4	7.03	1.00	97	607		Murtyr/N	6 color
			7							
								1		
1. A.								1		
	11	Service in a		X				Î		
	194		· · · · · · · · · · · · · · · · · · ·							
						<i>4</i>				
			ea							
-			1.1							
				. gr.						
Final										
bservation	s/Notes:	Puros	e Start Time:	Bare			Durac Data			
		i uige	o otorit i fillo.	0167			Purge Rate:	NA	3.4	WH
								Air Monitoring:	BZI	
Well	has i	ven a	flow re	echarg.	Ċ.			VOC (ppm) =	0.0	0.0
	10 m <sup>2</sup> 0	/ '						H2S (ppm) =		2.0
÷.								LEL (%) =		0
		-						CO (ppm) =	$\boldsymbol{\rho}$	-
								O2 (%) =	20.9 2	» Ø.q
nature(s):	-	-/	WI							
	/									
		• 7								

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ch	<b>2</b> M	<b>1</b> :		, A\)(a.b)(e)⇒	121(0,412)	DAR. HE			
Client: N	NAVFAC		and a second	Proj	ect Number:	695610CH.0	4.FI.WI		
	Ault Field		H		Well ID:	WI-AF- W	T-10		
Event:	Well developm				Sample ID:				1
Date:	12/10/19			. Sam	pling Team:	T.Ch	almers,	A. Vog	t
Weather:	40'3 0	Magas	t						1 11 100117
		Before	After					Hoviber 1	Pinet 19912
Total Depth	:	45		FT.(BTOC)		Me	asuring Device:	Solinst	Pine # 12726
Depth to wa		0		FT.(BTOC)			Date and Time:	12/10/19	Pine # 12726
Water Colu		45		FT.				, , , , , ,	
		0.163		GAL/FT. GAL.		Well Dia. (inches)	Volume		
Well Volum Total Purge		7.33		GAL.		(inches)	(gallons/foot) 0.041	{	
i otai Puige		13:3				1.25	0.064	1	
Purge Devi	ce: N	huson	Pire #	16522		2	0.163	1	
•		1	1 11 0 1	- 0	1 117/20	4	0.653	]	
Air Monitor	ing Equipme	nt: 🖊	lult: RAE	E Pine #	4 4262	1			
Was well su	urged and bai	iled in 2-3 foo	ot intervals alo	ng entire scree	en?	N/A	artesia	и	
Surge and	bail equipme	nt:	V/A						
			7		Contractory Charles				
est de la de la sa	in in a ding				ELDIPARAM				
Time	Purge Vol.	Temp.	Cond. mS/cm	DO	pH SU	ORP	Turbidity	Other:	Color / Odor / Comments
	(gals)	0° [		mg/L ± 0.05 (if <1)	50	mV	NTU <± 10%		
Stabiliza	ton Criteria	± 0.1	± 0.02 (if >1)		± 0.1	± 10	or ≤10 NTU		
0850	Begin	Purge,	, , , , , , , , , , , , , , , , , , ,						
0900	18	11.66	0.516	2.50	7.36	-28	276		Murky No Oda
0950	90	11.09	0.470	1.27	8.20	-125	268		11
1020	139	(1.36	0.474	1.70	8.23	-136	21.2		Clear/No Color
1038 1043.	160	11.06	0.472	0.60	8.27	-143	12.5		11 n
1048	175.	11.26	0.475	0.35	8,22	-139	9.6		11
		<u>}</u>							
				1					
			1						
Final	175	1.26	0.475	0.35	8.22	-139	5.0		Clear/No Color
Observation	s/Notes:	Purg	e Start Time:	0850	5		Purge Rate:	1.5 9	al /min
					2			Air Monitoring:	BZWH
2			P.	• •	-			VOC (ppm) =	0.0 0.0
Tres	sure g	auge	reach	ng 0,6	151			H2S (ppm) =	0.0 0.0
	0							LEL (%) =	0 0
						۰.		CO (ppm) =	
								02 (%) =	20.9 20.9
									י י
Signature(s)	1-2	-	-6	/					
	/								18

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Client: NAVFAC		A. Ar	WELL DEV	ELOPMENT	DATA SHEE 695610CH.0	T 4 EL M/I		
Ault Field			110,0	Well ID:	WI-AF-	1-1-17		· · · ·
- ent: Well developm	nent			Sample ID:	NA			
	9		Sam	pling Team:	Tich		XITE	
Weather: 46.9 C	vercast						A Vogi	
	- Ar	tesian					.)	36835
Total Depth:	Betore						flor, by f	?'re # [99]7
Death day in The	26		FT.(BTOC)		Me	asuring Device	Soliat 2	ivet 12726
Water Column:			FT.(BTOC)			Date and Time:	10/0/10	12726
	26		FT.			Date and Thine.	<u>_12/1/14</u>	1045
Well Volume:	0.163		GAL/FT.		Well Dia.	Volume	1	
Total Purge Vol.:	4.24		GAL.		(inches)	(gallons/foot)		
	42.4		GAL.		1	0.041		
Purge Device:	1	0			1.25	0.064		
	Cu soon	Pine#1	6522		2	0.163		
Air Monitoring Equipme	nt· A	1 11.01			4	0.653		
	•	INTERAT	E Pine#	<u>-4363</u> °	1		1	
Was well surged and bai	iled in 2-3 for	4 ! I						
	nea 111 2-3 100	t intervals alo	ng entire scree	n?	-N/A	Artesi	<b>A</b> 1A	
Surge and bail equipment	nt:	A . / A	11 -		- 1			
		_N/A	Artesia	5				
	ST WAR LAR WILLING	- CALLENGER CHI	A STATE OF STATE OF STATE					
Purge Vol.	Temp.	Cond.	FI	ELD PARAM	ETERS		L. S. S. S. P. LE	
Time (gals)	°C	mS/cm	DO	pН	ORP	Turbidity		
		± 0.01 (if <1)		SU	mV	NTU	Other: DT	Color / Odor / Comments
Stabilizaton Criteria	± 0.1	± 0.02 (if >1)	(	± 0.1	± 10	< ± 10%		
1045 Begin	5.00		± 0.2 (if >1)	10.1	310	or ≤10 NTU		
1050 0004.0	541054	1 49						<u>+</u>
1107 9.4	12.07	1.08	3.83	7.09	Z3	71000	6.45	Marky/Sulfier Smell
1123 14.47	12.84	0.934	1.71	7.91	-129	759	665	rinerry / sultur sme
1179 19.54	11.96	0.897	1.52	8.61	-127	725	6.98	
1152 23.66	11, 88	0.897	8151	7.87	-160	305	6.98	(LEAR
1212 30.0	11.71	0.941	1.55	8.03	-123	392	6.95	
1249 41.73	11.57	0.946	0.89	8.02	-124	423	7.75	· · · ·
1407 104.13	11.34	0.93Z	1.30	8.03	-120	83.9	-	17
1430 130	11.02	0.927		7.98	-60	30.7	-	11
1445 160	11.05	0.930	1.10	7.91	-78	13.0	-	1
			1.24	7.93	-113	39.	-	<u>u</u>
				<u> </u>				
				<u> </u>				
Final 160	(1.05	0.930	(.24	7.93				
Observations/Notes:		e Start Time:	1045	1.15	-113	39.1		Clear Slight Sulfered
		je etare mile.	10-13		-	Purge Rate	0-899	1/min
								BZ, wH
Pressure c		11 1 .	100	1.0	- 1	A (	Air Monitoring:	
11035410 0	nwe	I vea	a 0.5	P51	afchar	aleurinut	-VOC (ppm) =	0.0 0.0
						queryment		0.0 0.0
						-	LEL (%) =	0 0
							CO (ppm) ≃	0 0
							O2 (%) =	20.9
								20.9
Signature(s): /			1					
			6					
0.317/100							19	

Appendix D Groundwater Sampling Data Sheets

### ch2m;

		Jim				ING DATA SH				
Client:	NAVFAC			Proj		695610CH.04		Page:	of L	
ation:	Ault Field					16-26				
Event:	Phase 2 SI				•		-14-24B.			
Date:	12/08/1			San	pling Team:	P. Butle	r, G. Gar	dner		
Weather:	cloudy,	4015,6	reeze							
Total Dept	th:	70.3	FT.(BTOC)	-		M	easuring Device:	WLI: Solini	Pinet	20435
Depth to v			FT.(BTOC)	.08				Horiba ! P	ine # ?	21414
Water Col	umn:	2013	FT.					MultiRAE		
	(x)	0,163	GAL/FT.			Well Dia.	Volume	Multi KAG	· · · · · · · · · · · · · · · · · · ·	H 1440
Well Volu	me: l	1,46	GAL.			(inches)	(gallons/foot)			
Total Purg	je Vol.:		GAL.			1	0.041	]		
						1.25	0.064			
Purge Dev	vice:	trtesiar	1			2	0.163			
						4	0.653			
				DADAMET		ATION CRITE	DIA			
		Temp.	Cond.	DO	pH	ORP	Turbidity	DTW		
Pa	rameter	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC		
				±0.05 (if <1)			±10 % or	1	-	
C	riteria	±0.1	1 · · ·	±0.2 (if >1)	±0.1	±10	≤ 10 NTU	±0.3 (low flow)		
			110.02 (11 > 1)		IELD PARAM	ETEDE	101010			
	Purge Vol.	Temp.	Cond.	DO	pH	ORP	Turbidity	Pres DTW-OR	Color	/ Odor /
Time	mL (gals)	°C	mS/cm		SU	mV	NTU	PSi #BTOG		ments
0847	()	10.40	0.469	mg/L 2.00	5,43	-22	23.8	0.9		a odor
0850	600	10.25	0.466	1.84	6.44	- 98	21.6	0.9	cirur a	
4853	1200	10.18	0.465	1.69	6.75	-126	18.6	0.9	61	
0856	1800	10,15	0,464	1.71	6.00	-134	14.6	0.9	ί,	
0859	2400	10,10	0,464	1.68	7,03	-141	15,6	0.9		
0902	3000	10.06	0,464	1,77	7,12	-144	15.6	0.9	t ;	
0905	3600	10.01	0.464	1.66	7,20	-148	14.6	0.9	1	
0908	4200	10.02	0.463	2,14	7,24	-150	14,9	0,9	( <sub>1</sub>	
0911	4800	9,96	0,464	2.30	7.28	-152	13.0	0.9		4
0914	5400	9.94	0.464	2,25	7.30	-153	13,8	0,9		1
09 17	6000	9.95	0.464		7.34	-155	(3, 4)	0.9	ĩ	1
the second s	ormation: metho									
		lysis			rvative		ontainer requiren	nents	No. of c	ontainers
	PFAS			56			ML HPPF		2	the second s
		and the second second						1111111111111111111111		
Observatio	ns/Notes: Pa	rameter	the stab	ilized						
										31
Pump Star							ACM	Air Monitoring	BZ	WH
Bladder	Initial Fill Tim	e(FT; sec):	N/F	4	<b>Final Fill Tin</b>		NA	VOC (ppm)	C	G
Bladder	Initial Dischar	rge Time(DT	; sec):     /		<b>Final Discha</b>	rge Time:		H2S (ppm)	0	0
								LEL (%)	000	000000000000000000000000000000000000000
Submersible	Initial Control	Setting(Hz)	: L		<b>Final Contro</b>	ol Setting(Hz):	41	CO (ppm)	0	
								02 (%)	20.4	20.9
					Purge Rate:	@0845~	200 mL/min			19 A
		1.	ar 1							
mp Dep	oth: NA -	ar legian	well							
Sample /T	ime: 0920	ť								
MS/MSD	NA						Duplicate ID: w/	1-A16-16-2	GRP-1	214
Signature(s		B. th			· · · ·		Dupilouto ID, 40,	(D) 0930		<u> </u>
		-								

		MC DM	GI	ROUNDWAT	ER WELL SA	AMPLING DAT	A SHEET			
Client:	NAVFAC	_		Pro	ject Numbe	r: 695610CH.04	4.FI.FS	Page:	of \	
	Ault Field						Well #1			
Event:	Phase 3 SI				Sample ID	1: WA-(-1-W	1-0820			
Date:	8/15/20			San	npling Team	1: G. Gardner	, A. Vogt			
Weather:	"Clear SI	Ky, 650	F		a state of the second		, a og i			
Total Dept Depth to v		-	FT.(BTOC) FT.(BTOC)			М	easuring Device	: NA		
Water Col		-	FT.					-		
apr. 55 55 5.7	(x	1 -	GAL/FT.			Well Dia.	Volume	1		
Well Volur	COPY OF A	-	GAL.			(inches)	(gallons/foot)			
Total Purg	je Vol.:	-23	GAL.			1	0.041			
			0			1.25	0.064	1		
Purge Dev	rice: Pi	umpini	Nel			2	0.163			
	-					4	0.653	]		
				PARAMET	ER STABILI	ZATION CRITE	RIA			
Dar	amotor	Temp.	Cond.	DO	pH	ORP	Turbidity	DTW		
	ameter	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC		
Cı	riteria	±10%	±3%	±0.05 (if <1) ±10% (if >1)	±0.2	±10	±10 % or ≤ 10 NTU	±0.3 (low flow)		
	Purge Vol.	Tomp	Cond		IELD PARA		T = 11.00			
Time	(gals)	Temp. °C	Cond. mS/cm	DO	pH	ORP	Turbidity	DTW		/ Odor /
356	(gais)	16.34	0-590	mg/L	SU	mV	NTU	ft BTOC		ments
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		10.57	0.590	11.87	7.57	151	0.0		Clear,	noodo
	1									
	1					1				
				1	-		1			
									1	
							1			
				1	-					
							1	-		
ample infc	ormation: metho	od, container	number, size,	and type pre	servative us	ed				
	Ana	lysis			rvative		ontainer requirem	ients	No of c	ontainers
	PFAS			560	C	22 25		PE	2	ontainero
	-									
						-				
)bservation	s/Notes: Tur	n kno	hon w	ell conta	El Darix	to "hand	4			
ample to	Time: 1350	gate value	closest to	o well he	ead.	10 Marier		and the set		
								Air Monitoring	BZ	WH
Bladdor	Initial Fill Time Initial Dischar	an Time/DT	anali -		Final Fill Tir			VOC (ppm)		
Diauder	initial Dischar	ge rime(D1;	sec):-		Final Discha	arge Time: _	-	H2S (ppm)	-	
ihmoroihla I	Initial Control	Cottine (11-)						LEL (%)	-	-
uniersible I	Initial Control	Setting(Hz):	-		Final Contro	ol Setting(Hz):	-	CO (ppm)	-	111
								02 (%)	-	-
					Purge Rate:	-		5 D.		
	h. I.I.au	in								
ump Deptl	1. UNKNOW									
ump Deption Imple /Tin S/MSD	ne: 1355			_		_	Duplicate ID:			

#### ch2m;

	and the second	SM		GROUNDWA	TER SAMPL	ING DATA SH	IEET			
Client:	NAVFAC					695610CH.04		Page: (	of \	
ation:	Ault Field					46-B=				
Event:	Phase 2 SI	*					16-H6-B	3-1219		
Date:	12/08/1	a		- Sam			er, G. Gar			
Weather:	cloudy		rteze	-	ipinig i oann	PIDAL				
	1		1102	5 C					1.5	10.00
<b>Total Dept</b>	th: L	7.06	FT.(BTOC)			Me	easuring Device:	WLF: Solins	t Pinei	# 20435
Depth to w	vater: (-)	2:81	FT.(BTOC)					Horiba: Pi	ne# 2	1414
Water Col	umn:	14,25	FT.					MultiRI		
		0.163	GAL/FT.			Well Dia.	Volume	Multik/	11-4	19900
Well Volur		2,32	GAL.			(inches)	(gallons/foot)			
<b>Total Purg</b>		750 mL	GAL DB			1	0.041	1		
	·					1.25	0.064	1		
Purge Dev	vice: D	Dan's Plan	p: Pine	# 16860		2	0.163			
ruige Dev		entim	p i ine	-11 .00000		4	0.653			
						4	0.000	]		
				PARAMETE	R STABILIZ	ATION CRITE	RIA	A CONTRACTOR		
		Temp.	Cond.	DO	pН	ORP	Turbidity	DTW		
Par	rameter	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC		
				±0.05 (if <1)			±10 % or	1		
C	riteria	±0.1	±0.01 (if <1)		±0.1	±10	≤ 10 % 01	$\pm 0.3$ (low flow)		
		1	<u>1=0.02 (   &gt;1)</u>			ETERA				
	Durme Met	Terra			ELD PARAM		<b>7</b>	DTW/	Orland	Oder
Time	Purge Vol.	Temp.	Cond.	DO	pН	ORP	Turbidity	DTW		Odor /
	mL(gals) @		mS/cm	mg/L	SU	mV	NTU	ft BTOC		nents
1051	0	12,54	0.738	2,36	7.47	-108	151	2,81		ight sulfural
1054	750	13.30	0.735	0,27	7:72	-161	188	2.81	i).	<b>.</b>
1057	1500	13,43	0,735	0.08	7.79	-170	234	2.81	11	
1100	2250	13,50	0,735	0.00	7.84	-175	250	2.81	N -	
1103	3000	13,56	0,736	0.00	7.87	-179	269	2.81	L. L	(
1106	3750	13.60	0,735	0.00	7.89	-182	269	2.81	ų	ι
	Ail paro	ms sto	ble, pro	ceed t	o sampl	4			··	
			, p							
	· · · · ·							· · ·		
			1							
Sample info	ormation: metho	nd container	number size	and type nre	servative use	h				
		lysis	110111001, 0120	Prese			ontainer requirem	nents	No of c	ontainers
	PFAS	.,	<u>, </u>	<u> </u>			50 mL HD		2	
	11/13			0	2		JO ME CIP			
					~ ~ · · · ·					
Observatio	ns/Notes: Por	1	actum e		241	011 1.			1.000	
Observation	10/10/03: 103	itive pr	237416	anen op	ening a	sell piyg				
Pump Star	t Time: 10	48				•		Air Monitoring	BZ	WH
•	Initial Fill Tim		A (A		Final Fill Tin		NA		0	
								VOC (ppm)	0	0
Bladder	Initial Dischar	ge lime(DI;	sec):		Final Discha	irge Time:	(	H2S (ppm)	0	0
		• • • • •			-			LEL (%)		20
Submersible	Initial Control	Setting(Hz):	+		Final Contro	I Setting(Hz):	7	CO (ppm)	0	0
							_	O2 (%)	20.9	20.9
					Purge Rate:	250mL/1	nin@1048			9.0.11
mp Dep	th: (5 Ft	= btoc						- 1		
Sample /T	imai +1+/									
	$\frac{ime: (10)}{N^{A}}$	-	-		A-12.		Dunligata ID:	. 1.4		
MS/MSD		D fr		L		····	Duplicate ID:	NA		
Signature(s	s): Dave	Bull								

Olive 4	NUC		G			AMPLING DAT			
Slient:	NAVFAC		-	_ Pro	oject Numbe	r: 695610CH.04	4.FI.FS	Page: 1	of I
cation				-	Well ID	14-MW-	-2		
vent:	Phase 3 SI			2	Sample ID	1: WI-A14-	MW-2-	0820	
ate:	8/14/202	lo	-	Sa	mpling Team	A. VOWS	1 G. GA	RONER	
veather:	Clear Skys	sunny 6	3°F	<u> </u>					
otal Dep			FT.(BTOC)			M			-> all
epth to	A station was been as a state	14.70	FT.(BTOC)			IVI	easuring Device	SOLINSK	1-04565
Vater Co	and the second se	30.10	_FT.					HORIGH	-402485
	the second se	0.653				Well Dia.	Volume	PIDEC	102929
Vell Volu		0.66	GAL.			(inches)	(gallons/foot)	1.0	
otal Pur	ge Vol.:		GAL.			(inclies)	0.041		
						1.25	0.041	-	
urge De	vice: Ø	201000	v run	2		2	0.163	1	
	c	ONTROL	-LER Z	C102	800	4	0.653		
-	_							1	
R		Temp.	Cond.	DO PARAMET		ZATION CRITE			
Pa	rameter	°C	mS/cm	and the second sec	pH	ORP	Turbidity	DTW	
			1	mg/L ±0.05 (if <1)	SU	mV	NTU	ft BTOC	
C	Criteria	±10%	±3%	±10% (if >1)		±10	±10 % or	±0.3 (low flow)	
					IELD PARA	METERS	≤ 10 NTU		1
Time	Purge Vol.	Temp.	Cond.	DO	pH	ORP	Turbidity	DTW	Color / Odo
C. Martin	(gals)	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC	Comments
215	0.15	20.38	0.659	2.97	7.95	60	0.0	15.3	Comments
220	0.70	19.96	0.672	1.88	2.01	55	1.5	Way VANIS 46	Clear, no c
225	0.45	19.53	0.684	52.100	8.10	5.0	10.3	15.74	\$ 6
1230	0.60	20.49	0627	1.31	8.12	49	7.2	15.80	×1
255	0.75	20.57	0.684	1.71	8.22	480	2.8	16.04	٤.
240	0.90	20.66	0.642	1.63	8.20	Zelsy	4.5	16.45	**
250		17.90	0.617	2.40	8.46	53	0-0	14.74	×.1
255-	1,45	18.56	0.613	7.17	\$.48	53	0.0	16.79	- 4
300	STAB		0.622	2.32	2.57	52	8.9	16.97	
		1	ALGN.						
mple inf	ormation: metho	od, container	number, size	, and type, pre	eservative use	ed.			
_	Ana	lysis		Prese	rvative		ontainer requirem	ents	No. of contain
	PFAS			26	°L	25	0 mL	HOPE	2
						1			
				1					
servatio	ns/Notes:								
mp Star	t Time: 1210	7							
Bladder	Initial Fill Tim	e(FT: sec):	-		Final Fill Tin	-		Air Monitoring	BZ W
	Initial Dischar		sec).~		Final Discha			VOC (ppm)	000
		•			i mai Dische	nge mile.		H2S (ppm)	0.0 0.
mersible	<b>Initial Control</b>	Setting(Hz):	65		Final Contro	I Setting(Hz):		LEL (%) CO (ppm)	0.0 0.0
			22.4			i soung(nz).		O2 (%)	20.9 20
			10		Purge Rate:	0-03			20.9
			1		101.91.1111				
mp Dept	th:		1						
nole /Ti	me: [300								
MSD	NA		3					( )	-
nature(s)	): ADANN	1 1	b			1	Duplicate ID: A	(A	
	New	4							
LU	LIUATIO	ins in	r pu	mp	CONTR	en BO	× ···		
							. CA	USING	
IN CON	- SISTEN	VI FL	ON' NES	ME K	CEPING	SAME	HE		
NABL	-5 TO 1	GET F	=Low ,	NITHOUN	DRU	aw Down			

		SM		GROUNDWA	TER SAMPL	ING DATA SH	EET			
Client:	NAVFAC			Proj	ect Number:	695610CH.04.	FI.FS	Page: 1	of 1	
ation:	Ault Field					MW4-1				
Lvent:	Phase 2 SI				Sample ID:	VI AF.	-MW4-B	3-1219		
Date:	12/11/19		· <u> </u>	Sam	pling Team:	P. Butly	Pr. G. Gai	dney		
Weather:	cloudy,	405, br	peze	•						
		,		•				WIT & L	10.	
Total Dept		163	FT.(BTOC)			Me	easuring Device:	WLI: Solin	ist fine:	<u> #04226</u>
Depth to w			FT.(BTOC)					Horiba: Pir	10#214	14
Water Colu		2,29	FT.					1 MultiRA	F. P.	OTH 4491
		0.163	GAL/FT.			Well Dia.	Volume	MALCINA	L, 111	
Well Volur		-:00	GAL.			(inches)	(gallons/foot)			
<b>Total Purg</b>	e Vol.: _5	450 mL	GAL.			1	0.041			
	0		D	11011		1.25	0.064			
Purge Dev	vice: Ve	ripump:	Pinet	16066		2	0.163			
						4	0.653			
			0.12.0.0	and the second se		ATION CRITE	and the second se			
		Temp.	Cond.	DO	pН	ORP	Turbidity	DTW		
Par	rameter	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC		
~	uitorie	10.4	±0.01 (if <1)	±0.05 (if <1)		140	±10 % or	10.2 //		
C	riteria	±0.1	±0.02 (if >1)	• • •	±0.1	±10	≤ 10 NTU	±0.3 (low flow)		
las lie					ELD PARAN	ETERS				
	Purge Vol.	Temp.	Cond.	DO	pH	ORP	Turbidity	DTW	Color /	Odor /
Time	mL (gals) 09	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC	Comr	
0935	0	11.74	0,570	4,01	6,69	187	6.0	5,93		no adop
0938	450	12164	0.567		6.69	186	0.0	6.57	CIEWY/	
0930	850	12,68	0.562	3:32 3:09		182	8.0		i 1	
0942	1250		<u></u>		7.00			6.68	1	
		12,73	0,561	3.00	7.15	181	0.0	7,16		
0950	1650	12.86	0.563	2.90	7.22	129	0.0	7,49	1	<u>`</u>
6951	Excessive	drawdo	wn, wil	purge	dry ft b toc					
0955	Note th		able at	~8,00	1+ 5 toc	at 400mL/		low and resta		
0958	4250	14,43	0.554	3,06	7.31	179	0.0	8,00	Clear, v	10 odo n
1001	4850	14.45	0,551	3,10	7,33	179	0.0	8.00	11	
1004	5450	14.43	0.549	3,17	7,34	18.0	0:0	8.00	<u> </u>	
	All para		ble, proc		sample					
Sample info	ormation! metho	od, container	number, size,	and type, pre	eservative use	ed.				ř.
	Ana	lysis		Prese	rvative		ontainer requiren	nents	No. of co	ontainers
	PFAS			$\leq 6$	OC	250	ML HPP	E	2	
17-1-1			7							
-							and an entry			
Observatio	ns/Notes:		1							
Pump Star	rt Time: 0 ዓ	30						Air Monitoring	BZ	WH
	Initial Fill Tim		N	Δ	<b>Final Fill Tir</b>	ne:	ŅA	VOC (ppm)	0	G
	Initial Dischar		sec): Ĭ		Final Discha		1	H2S (ppm)	Ŏ	O
2100001	arearia				. man provin			LEL (%)	0000	00 0 0 20.9
Suhmersihle	Initial Control	Setting(Hz)	)		<b>Einal Control</b>	Setting(Hz):	1	CO (ppm)	0	0
Cabinersible		ocuny(112).				// Jennig(112).	199	O2 (%)	20,9	20.4
					Durge Date:	0024	100 11	JZ ( /0)	12011	201
							150 mL/min			
Dum Der	th: 15 Ft	. Ltar			/	@0938 ≈	(00 mL/m: n			
Aub neb	(1; C) + (	5.00			C C	@ nasn=	400mL1	1		
Comple (T	1005				/	Drass ~	(00 mL/min 400 mL/min 200 mL/mi	'n		
	ime: 1005				(					
	NA	<del>रू की</del>					Duplicate ID:	NA		
Signature(s	i): Davel	Bulle								

### ch2m;

C	12/	<b>N</b> .			J					
		SM		GROUNDWA	TER SAMPL	ING DATA SH	IEET			
Client:	NAVFAC			CALL AND A CONTRACT OF A CALL	Contraction of the second s	695610CH.04		Page: \	of L	
	Ault Field				Well ID:	MW10-				
Event:	Phase 2 SI				Sample ID:	WI-AD	F- MWIO-B	8-1219		
Date:	12/10/19		·	Sam		D, But		aranen		
Weather:	cloudy,	405,10	ght rain							
Total Dant		1.83					easuring Device:	Wet TI Sali	ist Die	04226
Total Dept	$\frac{1}{\sqrt{2}}$	1.0)	FT.(BTOC)			IVIE	easuring Device:	1/ 1/ 1011	NOT THE	101236
Depth to w Water Colu		4,96	FT.(BTOC)					Horiba: P	inest 21	414
water Con		9,87	FT. GAL/FT.		ſ	Well Dia.	Volume	MultiRAE	Pinp.	HUUNA
Well Volun		6.45	GAL/FT.							4-1-1-100
Total Purg			GAL.			(inches)	(gallons/foot) 0.041	4		
rotal Pury			- C			1.25	0.041	4		
Purge Dev	iaal D		: Pine=	H 16866		2	0.064	4		
Pulge Dev	ice. <u>r</u>	errpamp	. vine .	TIGOUL		4	0.165	•		
					. l	4	0.053	]		
	1	a da de la colo		PARAMET	R STABILIZ	ATION CRITE	RIA			-
		Temp.	Cond.	DO	pH	ORP	Turbidity	DTW	1	
Par	ameter	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC		
				±0.05 (if <1)			±10 % or		-	
Cı	riteria	±0.1	±0.02 (if >1)		±0.1	±10	≤ 10 NTU	±0.3 (low flow)		
211 - 22					IELD PARAM	ETERS			11	11-1-1-1-1
	Purge Vol.	Temp.	Cond.	DO	pН	ORP	Turbidity	DTW	Color	/ Odor /
Time	inL (gals)	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC		ments
1422	0	13,99	0,276	2.84	7.72	110	16.6	5.07		2000 p. 50
1425	600	15.88	0,266	1,26	6.92	145	19,5	5,16	particle	
1428		16.43	0,262	1.07	6.95	140	17.6	5,22	Put IL DIC	1
1431	1500	16.64	0,259	0.91	6.87	140	15,1	5,27	1	• •
1434	1950	16.76	0.258	0.83	6.85	139	11.4	5,34		
1438	2350	16.73	0,257	0,78	6,91	133	7,4	5,38		1
1442	2750	16,56	0,257	0,74	6.81	136	4,2	5.44		1
1446	3150	16,49	0,257	0.72	6,85	132	3,9	5,49	1	
1450	3550	16,59	0,256	0.72	6.81	131	3.5	5,54		1
. (20		m5 5%0	ble, p		40 3an			5.21	-	
	Mill pour		10.0 / p	TUCC CO	FO Four					
Sample info	ormation: metho	od, container	number, size,	and type, pre	eservative use	d.				
	Ana				rvative		ontainer requirem	nents	No. of c	ontainers
	PEAS	<b>-</b>		26	00		OmL HDP			2
									1	
								a second and the		
						1			2	
Observation	ns/Notes: Bio	film OI	n batto	om of	Jolyg					
					r · J					
Pump Star	t Time: 142	26						<b>Air Monitoring</b>	BZ	WH
Bladder	<b>Initial Fill Time</b>	e(FT; sec):	N	~	<b>Final Fill Tim</b>	ne:	NA	VOC (ppm)	0	8
Bladder	<b>Initial Dischar</b>	ge Time(DT;	sec): /		<b>Final Discha</b>	rge Time:		H2S (ppm)	0	0
		-				-		LEL (%)	0	0
Submersible	<b>Initial Control</b>	Setting(Hz):	L		<b>Final Contro</b>	I Setting(Hz):	1	CO (ppm)	0	0
		J(/-				••••		02 (%)	20,9	20.9
					Purge Rate:	@14202:	200mL/min 150mL/min 100mL/min			
		5 1			(	211222	150m1/41			
mp Dep	th: 12 Ft	- btor			(	W1423~	- unul min			
1	. , .				(	D1434 %	100mL/min			
	me: 1455				-					
	MA NA						Duplicate ID:	NA	- dig-	

Client:	NAVFAC		e		and the second se	AMPLING DAT er: 695610CH.0		Page:	of j	
	: Ault Field					D: MW-14		mer	- 1	
Event:	Phase 3 SI			1.1	Sample II	DINALACA	nw-14-083	11/1-AG	7-111	1411 1000
Date:	8/14/20	20		Sa	mpling Tean	n: G. Guidas	C, A.Vogt		a rein	14-080
Weather:	Sunny, C	lear, 53°F	<u></u>	2		<u>cr: saciaric</u>	1, H. () (			
Total Dep		17.63	FT.(BTOC)			N	leasuring Device	: Salingt #	=122	_
Depth to		() 11. 78	FT.(BTOC)					SN: 045-6		
Water Co	lumn:	5.85	FT.					20:0400		
		(x) 0.163	GAL/FT.			Well Dia.	Volume			
Well Volu		0.95	GAL.			(inches)	(gallons/foot)			
Total Pur	ge Vol.:	2.65	GAL.			1	0.041	1		
						1.25	0.064	1		
Purge De	vice:	Monsoor				2	0.163	1		
		(-10260	9			4	0.653			
	19.20° 1			PARAMET	FP STARIL	ZATION CRITE				
		Temp.	Cond.	DO	pH	ORP	Turbidity	DTW	The second secon	
Pa	rameter	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC		
	Criteria	1400/		±0.05 (if <1	Y	The second second	±10 % or			
	Sinteria	±10%	±3%	±10% (if >1	4 + 1 2	±10	≤ 10 NTU	±0.3 (low flow)		
	I Dime Ma				FIELD PARA				1	
Time	Purge Vol		Cond.	DO	pH	ORP	Turbidity	DTW	Colo	/ Odor /
2017-7	(gals)	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC	Cor	nments
0827	0.64	16.00	0.638	0.06	6-11	-80	156	11.83	Slightly	Cloudy, hyde
	0.85	15.95	0.641	0.05	6.16	-88	0116	11.93	.,	3.7
2835	1.06	15.84	0.642	0.05	6.18	-92	0142-115	11.83		
0840	1.33	16.18	0.640	0.05	6.19	-93	96.2	11.84	(	
0845	1.59	16.25	0.626	0.03	6-19	-92	83.4	11.84	-	
0850	1-86	16.08	0.648	0.02	6.21	-98	120	11.85		
2853	2.01	16.15	0.659	0.01	6.23	-99	118	11.85	100	
0856	2.17	16.36	0.664	0.00	6.24	-101	71.8	11.85	Cleas, 4	llow, hyd
2859	2.33	16.47	0.671	0.00	6.25	-104	48.0	11-84	1	
0902	2.49	16.58	0.678	0.00	6.26	-106	47.7	4.84		
0405	2.65	16.61	0.685	0.00	6.27	-107	50.4	11.84		
ample im		thod, containe	r number, size							
-	PEAS	nalysis			ervative		Container requirem	ients	-	containers
	1171)			560	C	St 250	ML HOPE		2	
heervatio	ne/Notos: a	1.1	A.1							
			VLI Cam	e out w	th Slir	ne smelli	ng of hydro	carbon		
	rt Time: 08					A States		Air Monitoring	BZ	WH
		me(FT; sec):			Final Fill Ti	ime: NA		VOC (ppm)	O.D	max 2.5
Bladder	Initial Disch	arge Time(D1	; sec): NA		<b>Final Disch</b>	arge Time: N	A	H2S (ppm)	0.0	0
								LEL (%)	0.0	ŏ
ubmersible	Initial Contr	ol Setting(Hz)	1:10.2		<b>Final Contr</b>	ol Setting(Hz):	84	CO (ppm)	0.0	ŏ
			4.01				Varia .	02 (%)	20.9	20.9
					Purge Rate	:0.05 g	am	(/0)	1.00	1
					a second	es j	T			
in the second	oth: 15 ft									
ump Dep		)	ask			()a				
	ime: 0910	the second se				1 11/1				
mple /Ti	ime: 0910	W-14-0920	MS	WEAF M	W-14-123	Man	Duplicate ID: 4	A		
mple /Ti	ime: 0910 N-AF-M B): Der	WHY-0820 WA Marro	men	W-AF M	W-14-082	ANSO	Duplicate ID: N	A	-	

	and the second	SM		GROUNDWA	TER SAMPL	ING DATA SH	IEET			
Client:	NAVFAC			Proje		695610CH.04		Page: \	of \	
ation:	Ault Field				Well ID:	MW15-	B23			
Event:	Phase 2 SI						-MW15-B2	3-1219		
Date:	12/11/1			Sam	pling Team:	PiBut	ler, GiG	ardner		
Weather:	Cloudy,	405,6	reeze	•						
Total Dept	h. 19	1.51	FT.(BTOC)			Me	easuring Device:	WILL Sol	ust Pine	. #04226
Depth to w		7.83	FT.(BTOC)			INIC	asunny Device.	Horiba: Pin	est 214	14
Water Colu			FT.							
water Con		0.68	GAL/FT.		1	Well Dia.	Volume	MultiRAE	i Pineza 4	4400
Well Volur	<u>(×)</u>	6,97	GAL			(inches)	(gallons/foot)			
Total Purg		ecci al s	GAL. 08			1	0.041			
Total Puly						1.25	0.064			
Purge Dev	ico: D		Pipes	# 16866	^	2	0.163			
Fulge Dev		er i pacorp	11110		C 1	4	0.653			
							0.000			¥
				PARAMETE	R STABILIZ	ATION CRITE	RIA			
		Temp.	Cond.	DO	рН	ORP	Turbidity	DTW	· · · · · · · · · · · · · · · · · · ·	
Par	rameter	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC		
		.0.4	±0.01 (if <1)	±0.05 (if <1)	.0.4	140	±10 % or			
C	riteria	±0.1		±0.2 (if >1)	±0.1	±10	≤ 10 NTU	±0.3 (low flow)		
				the second s	ELD PARAN	ETERS			400	
<b>T</b> '	Purge Vol.	Temp.	Cond.	DO	pН	ORP	Turbidity	DTW	Color /	Odor /
Time	mL (gals)	l °C	mS/cm	mg/L	SU	mV	NTU	ft BTOC	Comm	
0836	0	11,22	0,432	2,59	5.75	247	185	7,97	Clordy, M	order, particl
0839	600	12.02	0.421	1,15	5.97	236	131	8.02		
0842	1200	12.36	0,418	0.95	6.07	228	63.2	8,07	l	· · · · · · · · · · · · · · · · · · ·
0845	1800	12.59	0,416	0.84	6,15	220	30.8	8,15	Clearnood	dor particles
0848		12:49	0,415	0.79	6,19	213	24,4	8,19	Υ.	\ //
0851	2550	12,48	0.414	0.73	6,25	208	10,0	8,24		1
0854	2925	12,54	0,413	0.70	6.27	206	G,O	8,29	4	
08 57	3300	12.48	0,413	0.66	6.31	203	6.3	8.33	ti	
0900	3675	12,45	0.412	0.65	6.34	202	4,0	8.36	4	
	Ail para	ins sto	bleior	oceed	to sam	p(P				
			/•			0				
Sample inf	ormation: meth	od, container	number, size							
	Ana	alysis			rvative		Container requirem		No. of co	ntainers
	PFA	)		<u> </u>	<u>~</u>	250	ML HDPE		2	
01 11	(6.1									
Observatio	ns/Notes:									
Dumm Char	tTime. AR	72						Air Monitoring	BZ	WH
	rt Time: $O_{\mathcal{B}}$								DL	
	Initial Fill Tim	•	NA		Final Fill Tir		NA	VOC (ppm)	6	8
Bladder	Initial Discha	rge lime(Di;	; sec):		Final Discha	arge lime:		H2S (ppm)	0	õ
					Election to			LEL (%)	000	0
Submersible	Initial Control	i Setting(Hz):	4		FINAL CONTRO	ol Setting(Hz):	-	CO (ppm)	20.0	00000
					Durra Data		0.11	O2 (%)	1	
					rurge Kate		200  mL/min			
Dump Day	the ic Ai	1 \$				608452	= 125mLlmin			
Aub neb	oth: 16 Pi	r 510C								
Samal- /T	ima Od' a									
MS/MSD	ime:09:00			1			Duplicate ID:	NA		
	NA s): Davie	But	)	L			Duplicate ID.	<u>1- / 1</u>		
Jugiature	V. TTalle	2 Dal	Ce.							

			G	ROUNDWATE	R WELL SA	MPLING DAT	A SHEET		
Client:	NAVFAC					: 695610CH.04		Page: 1	of \
	: Ault Field				Well ID	: MW-20			
Event:	Phase 3 SI			E	Sample ID	: WAFE	MW-20-08	20(m) WI-	ASZ-MWZ00-0
Date:	8/14/2020	2		Sam	pling Team	: G. Gardo	er, A-Vogt	<u> </u>	H3 L · ! L ··· Loo ·
Neather:	Partly Ci	budy 60	F	_		<u>Critores</u>			
Total Dep	oth: hard bottom);	5.19	FT.(BTOC)			M	longuring Davies		1.122
Depth to			FT.(BTOC)			ivi	leasuring Device	: Solinst #	FILL
Vater Co		4.64	FT.						
	(x	0.163	GAL/FT.			Well Dia.	Volume	T.	
Vell Volu		2.76	GAL.			(inches)	(gallons/foot)		
otal Pur	ge Vol.:	4.40	GAL.			1	0.041	120	
			-			1.25	0.064		
urge De	vice: /	Monsoor	1			2	0.163		
						4	0.653		
								1	
		-				ATION CRITE	RIA		
D	a line and	Temp.	Cond.	DO	рН	ORP	Turbidity	DTW	
Pa	rameter	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC	
(	riteria	±10%	±3%	±0.05 (if <1)	±0.2	±10	±10 % or	10.2.0.0.0.	
		-10/10	10/0	±10% (if >1)	a we have		≤ 10 NTU	±0.3 (low flow)	
		-			ELD PARAM	METERS			
Time	Purge Vol.	Temp.	Cond.	DO	pH	ORP	Turbidity	DTW	Color / Odor /
3.5	(gals)	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC	Comments
020	0.78	14.29			-0.7				20051
25 6	1.18	19.23	0.589	1.08	6.49	-104	23.8	10.6	CLEAR
026	1.58	14.07	0.592	0.66	649	-107	17.2	10.6	17
1029	1.98	13.95	0.516	0.31	6.48	-111	4.7	10.6	11
1032		12.88	0.599	0.22	648	-113	2.1	10.6	11
635	2.78	17.85	0.601	0.13	6.47	-114	0.0	10.6	()
038	3.18	13.9494	0.605	0.06	6.47	-115	0.0	10.6	

Zx

47-116

6-47-117

6.47 -117

6.

Preservative

5 6°C

46°C

0.00

00.0

0,600

0.600

7 D. 616 ( ACHIEVED

Sample information: method, container number, size, and type, preservative used.

11

• (

U

No. of containers

2

2

10.6

10.6

10.6

HOPE

HOPE

0.0

0.0

0.0

250 mL

250 mL

Container requirements

Observations/Notes:

(DUPLICATE)

1041 3.58

1044 7.98

1047 4.38

STABILITY

PFAS

13.96

13.47

13.97

PFAS

Analysis

Pump Start Time: [D] 4 Bladder Initial Fill Time(FT; sec):		lonitoring	BZ	WH
Bladder Initial Discharge Time(DT; sec):		(ppm)	0	00
- secj.		(ppm)	0	
Submersible Initial Control Setting(Hz): 6.6	Final Control Setting(Hz):		0	0
	02 /0/		209	20.9
1-01-01-01-0	Purge Rate: 5-00 mL/nin	<i>v</i> 1		1~~ 1
Pump Depth: 12.5				
mple/Time: 1050			(AD)	
Signature(s):	Duplicate ID: w1-A1	r my	20	
Signature(s).	W1. A52.	- MW-	20P-	0520

Client:	NAVEAO		G			MPLING DAT				
and shows and	NAVFAC			Pro	ject Number	: 695610CH.04	4.FI.FS	Page:	of 1	
	: Ault Field				Well ID	: MW-21				
Event:	Phase 3 SI			4.	Sample ID	: WI- A52-	-MW-21-08:	20		
Date:	8/13/202			Sar	mpling Team	: G. Gaidne	C. A. Vegt			
Veather:		8°F		-			. ).			
fotal Dep		.85	FT.(BTOC)			M	leasuring Device	· Salinst +	+172	
Depth to		7.98	FT.(BTOC)					#50:045		-
Nater Co	and the second second	5.87	_FT.					<u>** )1.0-13</u>		
	<u>(x</u>	0.163	GAL/FT.			Well Dia.	Volume	1		
Nell Volu	PERCENTER IN THE	0.96	_GAL.			(inches)	(gallons/foot)			
Total Pur	ge Vol.: 3	-48	GAL.			1	0.041			
		10				1.25	0.064			
Purge De		Monsoon	9			2	0.163			
	<u>_</u> (-	-102609				4	0.653			
				DIDING						
		Temp.	Cond.	DO DO	the second s	ZATION CRITE	and the second se			
Pa	rameter	°C	mS/cm		pH	ORP	Turbidity	DTW		
				mg/L ±0.05 (if <1)	SU	mV	NTU	ft BTOC	-	
C	Criteria	±10%	±3%		+ 1 /	±10	±10 % or	±0.3 (low flow)	1	
		+	1	±10% (if >1)	IELD PARAI	Carlo Participante	≤ 10 NTU	1		
	Purge Vol.	Temp.	Cond.	DO	pH	ORP	Turkiditu			
Time	(gals)	°C	mS/cm	mg/L	SU	mV	Turbidity	DTW	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	/ Odor /
600	0.64	16.76	0.627	1.02	6.43	-82	NTU 0.0	ft BTOC		ments
605	1.05	16.01	0.624	0.53	6.39			8.03	Clear,	vo od
610	1.46	15.11	0.627	0.28	6.35	-86	38.5	8.03		-
1615	1.86	15.05	0.629	0.09	6-31	- 96	42.1	8.03		-
1620	2.27	15.02	0.630	0.08	6-31		34.	8.04		
1625	2.67	15.01	0.627	0.04	6-29	-90		8.04		-
630	3.08	14.97	0.628	0.03	6.29	-92	48.6	8.04		
635	3.48	14.97	0.628	0.04	6.29	-92	50.1 48.3	8.04		_
	Parameters		0.200	001	0.001	12	18.3	8.04		
		2100	1				1			
1.20				1						
ample inf	ormation: metho	od, container	number, size	, and type, pre	eservative use	ed.				
	Ana	lysis			rvative		ontainer requirem	ients	No. of c	ontainer
									110. 01 0	ontanio
hearvatio	ns/Notes:			1			a shine			
Docivatio	no/Noles.									
ump Star	t Time: 1575	7 rat	2. 310 mL	(					1.1.1.1.1	
Bladder	Initial Fill Time	e/FT· sec)	ArA MILI	mill	Final Fill Th			Air Monitoring	BZ	WH
Bladder	Initial Dischar	an Timo/DT			Final Fill Tin			VOC (ppm)	0	0
Diduudi	inter Dischar	ac much	, secj. 10/4		Final Discha	arge Time: NA		H2S (ppm)	00	0
Ibmersible	Initial Control	Setting/Hz)	54			10.00 00.5		LEL (%)	0	00
			. 2 - 1		Final Contro	I Setting(Hz):		CO (ppm)	0	0
Final	PTWES	2.00			Durma Datas	en 1-7		02 (%)	20.9	20.0
		21.00			ruige Rate:	0.08 gpr	7			
ump Dep	th: 10.0									
	10.0									
	me: 1640									-
mple /Ti										
S/MSD	NA ): +1640 H	· ~ ^		1		1	Duplicate ID: N	Å		-

### ch2m;

	SM		GROUNDWA	TER SAMPL	ING DATA SH	EET	and the loss of the	-	
Client: NAVFAC			Project Number: 695610CH.04.FI.FS Page:   of						
ation: Ault Field Event: Phase 2 SI Date: 12/12/19				Well ID:					
			•	Sample ID:	VI-4F. M.V. 618- GW- 1219 T. Chalmers, A. Vogt				
			Sam	pling Team:					
	Weather: 40°5 Overcast/Rain			1					
	-	<i>x</i>					11. 1. 0	N	
Total Depth:	14.92				Me	easuring Device:	<u>Solinst</u> P er: Hoviba	ne #1	272
	) 8.87	FT.(BTOC)				WQ Met	er: Hoviba	Pine #	199
Water Column:	6.05	FT.					•		
	x) 0.(63	GAL/FT.			Well Dia.	Volume			
Well Volume:	0.99	GAL.			(inches)	(gallons/foot)			
Total Purge Vol.: x3 2.97 GAL. Purge Device: <u>Peristal fic Pump P</u>			ine # 44667		1	0.041			
					1.25	0.064			
					2	0.163			
_					4	0.653			
the second s									
	Toma	Cond			ATION CRITE				
Deremeter	Temp.	Cond.	DO	pН	ORP	Turbidity	DTW		
Parameter	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC	-	
Criteria	±0.1		±0.05 (if <1)	±0.1	±10	±10 % or	$\pm 0.3$ (low flow)		
		±0.02 (if >1)				≤ 10 NTU			
				ELD PARAN					0.1
Time Purge Vol.	1 .	Cond.	DO	рН	ORP	Turbidity	DTW	Color /	
(gais)	0°	mS/cm	mg/L	SU	mV	NTU	ft BTOC	Comr	nents
	Purges						-		,
1300 0.60	12:29	0.588	7.05	8.32	106	111	9.70	Clar/N	00d
1305 0.75	12.05	0.586	6.75	8.29	109		12 <del>].0</del> -100	<u>'n</u>	-
1315 1.05	12.01	0.586	8.84	8.29	111	51.6	10.1	ų	
1325 1.35	11.93	0.588	8.45	8.28	112	43.1	10.13	11	
1335 1.65	11.87	0.589	5.70	8.27	[1]	31.4	10.23	11	
1345 1.95	11.80	0.594	5.69	8.28	106	22,3	10.41	V	
1355 2.25	11.80	0.593	3.38	8.28	100	15.0	10.57	11	
405 2.55	11.79	0.589	4.88	8.28	87	7.8	10.69	ห	
415 2.85	11.73	0.584	4.85	8.27	82	5.8	10.77	11	
1425 3.5	11.72	0.585	4.81	8.28	79	5.0	10.01	η	
Sample information: met	hod, container	number, size,			ed.				
Analysis			Preservative		Container requiren				ontaine
PFAS QSMUS. 1 Tab BIS			£6°C		250 mL		HDPE Z		
			¢						
Observations/Notes:									
Pump Start Time: 12	240						Air Monitoring	BZ	WH
Bladder Initial Fill Ti	me(FT; sec):	N	4	<b>Final Fill Tir</b>	ne:	N/A	VOC (ppm)	0.0	0.0
Bladder Initial Disch		sec): /		<b>Final Discha</b>	arge Time:	i	H2S (ppm)	0.0	0.
		·			-		LEL (%)	0	0
Submersible Initial Contr	ol Setting(Hz):			Final Contro	I Setting(Hz):	$\checkmark$	CO (ppm)	ō	õ
		*			V(* -=)*		02 (%)	20.9	Z0.
				Purge Rate:	100 ml	luara	()		æ,
, ,	NO NI	1 400			100 mL 0.03 g				
Pump Depth: XA	60 12 At	. PLOC			0.03 90	a /m A			
······································	-				2				
Sample /Time: 143	0								
MS/MSD NA	· · · · · · · · · · · · · · · · · · ·					Duplicate ID:	VA		
Signature(s):		M -					• 1	· · ··· · -··-	
	- A G	1							

ch		<b>A</b> .	1	Carrow	al la lo	ter Sa	imple 51	reat	
		SM		- Company and the second		C. Martin and Statements	-	eci	
Client: NA	VFAC				/ELOPMENT ect Number:				
tion: Aul	It Field	D			Well ID:	WI-AF- M	W-619		
			Sampling		Sample ID:			1 1 2	
Date: Weather:	40%	119 Overco	st/Rain	Sam	pling leam:	T-C	nalmers,	A. Vogt	
_	-10-)	Naw	/					Horiba P	Dine # 19912
Tatal Dautha		Before	After						
Total Depth: Depth to wate	er: (-)	15.35		FT.(BTOC) FT.(BTOC)		ме	Date and Time:	JULIAST 1	PINC #12726
Water Column		9.69		FT.			Bute und Third.	10/10/11	<u> </u>
	(X)	0.163		GAL/FT.		Well Dia.	Volume		
Well Volume: Total Purge V	01	1.58 4.74		GAL. GAL.		(inches)	(gallons/foot) 0.041		
Total Fulge V		-				1.25	0.041		
Purge Device:	Per	istaltic	Pump Pin	v#		2	0.163		
A in Montéorine			MIL. PA	E Pinet		4	0.653		
Air Monitoring Was well surg				ng entire scree	n?	N/A	Sampling		
-			3.11						
Surge and bai	il equipmen	it:	MA,	Samplin	/				
P	Purge Vol.	Temp.	Cond.	DO	pH	ORP	Turbidity		
Time '	(gals)	°C	mS/cm	mg/L	SU	mV	NTU	Other: $\underline{PTW}$	Color / Odor / Comments
Stabilizator		± 0.1	± 0.01 (if <1)	± 0.05 (if <1)	± 0.1	± 10	<±10%	± 0,3 ft	
			± 0.02 (if >1)	± 0.2 (if >1)	± 0.1	10	or ≤10 NTU		
	Becin D.S	Purge 10,72	1.10	1.87	8,08	101	3.3	7.99	Clear No Color
	J.75	10.85	1.10	1.73	8.07	76	2.4	8.80	u
1515	1.0	10.85	1,10	1.68	8.07	41	2.7	9.55	4
1520	1.25	10.89		1.61	8.06 8.07	18	2.3	10.23	11
1530	1.75	10.92	1.11 -	1.5	8.04	- 11	2.5	10.8	1
1535 :	2,0	10.88	1.11	1.76	8.02	-18	2.4	11.04	1\
1540	2,25 2,5	10,88	(. 1)	1.75	8.03	-21	2.6	11.18	NI
1545 1550 -	45	10.81	1.12 AMPLE	1.78	8.01 CTEP	-19	3.4	11.34	11
1000			ATTL	COLLE	UICP				
		,							
Final 2	2.5	10.81	1.12	1.78	8.01	-19	3.4	11.34	Clear/NoOdor
Observations/N			e Start Time:	1455	0.01		Purge Rate:	180 ml/	min / 0.05 gal/m
Same	ole I			MW-619	1- GW.	1219 (9	0.1550	Air Monitoring:	BZINH
	•				~ ~ ~			VOC (ppm) = H2S (ppm) =	0.0 0.0
								LEL(%) =	0.0 0.0
5								CO (ppm) =	0 0
								O2 (%) =	20,9 20,9
		15	/	1					
Signature(s):		=//	1/	K					
		6			1				

<b>M</b>		SM		ODOUNDWA	TED CAMPI		IFFT		
Client:	NAVFAC			12 4 5 5 5 5 5 5 5 5 5 5		ING DATA SH 695610CH.04		Page: (	ofi
	Ault Field			. Fiuj			-MW-620	raye. (	
Event:	Phase 2 SI				Sample ID:	WT-AF-	-MW-620-	12.19	
Date:	12(07/10	9		Sam		DiButl			
Weather:	Cloudy, 4					PIPUTT		<u>unei</u>	
Total Dept Depth to v	th: water: <u>(-)</u>	8,68	FT.(BTOC) FT.(BTOC)	-		Me	easuring Device:	Horiba: P	ine # 21414
Water Col		4,12	FT.				1 1/1	M. 14: RAE	: Pinp # 44900
		0.163	GAL/FT.			Well Dia.	Volume		
Well Volu	me:	0.67	GAL. CAL. OG.	1 1		(inches)	(gallons/foot)	-	
Total Purg	ge Vol.:	3 mt	ANAL: CO	~ (		1	0.041		
	. 0		D +1	6961		1.25	0.064		
Purge Dev	vice: <u>Pe</u>	eri pump	; Pinett	2000		2	0.163		
						4	0.653	]	
	A		1.201.20	PARAMET	ER STABILIZ	ATION CRITE	RIA		
		Temp.	Cond.	DO	рН	ORP	Turbidity	DTW	
Pa	rameter	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC	
	Criteria	.0.1	±0.01 (if <1)	±0.05 (if <1)	10.1	140	±10 % or	102 (low flow)	
L L	riteria	±0.1	±0.02 (if >1)	±0.2 (if >1)	±0.1	±10	≤ 10 NTU	±0.3 (low flow)	
					IELD PARAN	ETERS			
	Purge Vol.	Temp.	Cond.	DO	pН	ORP	Turbidity	DTW	Color / Odor /
Time	mL (gats)-0	l °C	mS/cm	mg/L	s∪	mV	NTU	ft BTOC	Comments
1314	150 600		1.07	8.01	7.17	116	4.2	4.82	Clear, no odor
1319	+50-1350	the second s	1.07	7.62	6.91	131	5.0	5.03	
1324		10.72	1.07	7.48	6.93	132	6.3	5.18	1
1329	2350	10.75	1.07	7.24	6.98	131	7.4	5.38	
1334	2850	10.72	1.07	7.23	7.02	125	5.6	5.49	+ +
1340				(. 2 )	(. V.F	(**	<u></u>		1
+347-13	350 Finish	ny any	110w to re	Course Tec	et revoved	DTW= 4.97	(Linhor		
1513	Recovered to		4,97 101		of I Lovey	D100- (011	FI 010-	· · · · ·	1
1515	NA	11.01	1.07	7.44	7.54	103	9.1	4.47	
Comple inf	formation, math	ad container	number oizo	and time are					
Sample III	formation: meth		number, size		rvative		Containor requirer	onto	No. of containers
		lysis					Container requirem		2
	PFAS			20			LOWC CIP	16	
Observatio	ons/Notes: Dr	WL contin	ives to drap	When pure:	ing at 100 m	LIMA. Wil	1 Pump dry and	allow to recov	er Ugs
-		0		· · · · · · · · · · · ·		Contract.	, j, j		
	Int Time: いう				Electre El The			Air Monitoring	
	r Initial Fill Tim		NA	+	Final Fill Tin		NA	VOC (ppm)	6 0
Bladder	r Initial Dischar	rge Time(DT	; sec):		Final Discha	irge lime:		H2S (ppm)	
			1		-			LEL (%)	0 0 0
Submersible	Initial Control	Setting(Hz)			Final Contro	ol Setting(Hz):	-	CO (ppm)	
								02 (%)	20.9 20.9
					Purge Rate:	initial®	1310 150 mL/m	Q	
-		14-1				1319:100	milmin		
mp Dep	pth: 7 Fl	PL019				1340. 110.	···· (max)	1. A.	
Sample /T	Time: 1020					1347: 850	millmin (topu	rg= dry)	
	Time: 1520	1				1 - 11. 050	mumin		
INI2/INI2D	NI-AE-MW-620-	-1219-M5/014	D				Duplicate ID: N	М	

Signature(s): David Buth

		SM		CROUNDWA	TED CAMDI	ING DATA SH	ICET			
Client:	NAVFAC					695610CH.04		Page: \	ofl	
	Ault Field		· · · · · · · · · · · · · · · · · · ·				-MW-621	Tage. (		
Event:	Phase 2 SI			-	Sample ID:	WI.AF	MW-621	-1219		
Date:	12/07			Sam			ler, G. G.			
Weather:		1,40°, ra;	λ	-		TT DUT				
				-				met T + C. l +	+ 0	1 7 A U 2 L
<b>Total Dept</b>		9.62	FT.(BTOC)			Me	easuring Device:	whI: Solin		
Depth to w		(·) 4.49	FT.(BTOC)					Horiba: P	ine#	21414
Water Colu	umn:	5.13	FT.					MultiRAE	: Pine:	# 44901
		(x) 0,163	GAL/FT.			Well Dia.	Volume			
Well Volur		0.84	GAL.			(inches)	(gallons/foot)			
<b>Total Purg</b>			GAL:09			1	0.041			
		Peri pump !	D	6866		1.25	0.064			
Purge Dev	lce:	Peri pump.	T IN CAP			2	0.163			
						4	0.653			
1000				DARAMETE	R STARILIZ	ATION CRITE	RIA			
		Temp.	Cond.	DO	pH	ORP	Turbidity	DTW		
Par	rameter	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC	+	
	<u>.</u>			±0.05 (if <1)			±10 % or			
C	riteria	±0.1	1 1 1	±0.2 (if >1)	±0.1	±10	≤ 10 NTU	$\pm 0.3$ (low flow)		
12.1.2.1		D. C. T. GILLER	1=0.02 (		IELD PARAM	ETERS			July States	
<b>-</b> .	Purge Vo	Temp.	Cond.	DO	pН	ORP	Turbidity	DTW	Color	/ Odor /
Time	mL (gats)	°C	mS/cm	mg/L	S∪	mV	NTU	ft BTOC	Com	ments
1033	0	(0.68	0.641	1.05	6.95	-17	33,1	4,58	(lear, no	odor
1036	450	(0.80	0.639	6.29	6.68	-35	27.3	4,57		()
1039	900	10.81	0.936	0.05	6.67	-39	19.8	4.57	1	1
1042	1350		0.633	0.00	6.67	-40	18.2	4,57	11	
1045	1800	0.87	0.631	0.00	6.67	-42	14.8	4.57	17	
1048	2250	10.88	0.629	0.00	6.68	- 43	Ilel	4,57	17	
1051	2700	10.89	0.626	0.00	6.69	-44	9.1	4.60	1	
1054	3150	10.01	0.626	0.00	6.70	- 45	8.0	4.60	11	
1057	3600	10.91	0.626	6.00	6.72	- 46	9,2	4.60	. 1/	
Sample info		ethod, containe	r number, size			ed.			he of a	
		Analysis			rvative		Container requiren		NO. OF C	ontainers
	PFAS			56	<u> </u>	23	ioml HDF	E		
Observatio	ns/Notes			L					1	
Pump Star	rt Time: 🕴	030						Air Monitoring	BZ	WH
		Time(FT; sec):	NA	2	Final Fill Tin	ne:	NA	VOC (ppm)	0	0
		charge Time(D)	[: sec): /		Final Discha			H2S (ppm)	0	0
		J	,,					LEL (%)	0	0
Submersible	Initial Con	trol Setting(Hz	): 1		Final Contro	I Setting(Hz):	ト	CO (ppm)	0	0
			,					O2 (%)	20.9	20.4
					Purge Rate:	(e) 10 33 ~	150 mL/min	· · /		
1.16	_	1 1 1 1 1					1.24			
mp Dep	oth: 7 f	+ btoc								
Sample /T		00								
MS/MSD	NA						Duplicate ID:	NA		
Signature(s	s): Dave	of Butle								

### alagaaa.

		<b>YU</b> <sub>SM</sub>		CROUNDW/		ING DATA SH	IECT			
Client:	NAVFAC					695610CH.04		Page: \	of	
	Ault Field			. Floj			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	raye. (		
⊑vent:	Phase 2 SI			·	Sample ID:		- MW-Q22 -	1219		
Date:	12/07/	19		Som			er, G. Gar			
Weather:	Cloudy, 41			Jaii	iping ream.	PLDUTIS	er, 0. 0ar	aner		
Total Dept	th: 1	1.85	FT.(BTOC)			Me	easuring Device:	WLI: Solias		
Depth to v		1.60	FT.(BTOC)					Horiba: Pi	ne# 2	1414
Water Col		10.25	FT.					MultiRAE	· · Para	+
		0.163	GAL/FT.			Well Dia.	Volume	MAINTAE	- 1 MC -	- 4940
Well Volu		1.67	GAL.	1		(inches)	(gallons/foot)			
Total Purg	ge Vol.:	1050	GAL.	L		1	0.041			
			GAL. C M		66	1.25	0.064			
Purge Dev	vice: P	eri pur	np: Pin	e # 140	e u	2	0.163	]		
						4	0.653			
-						ATION CRITE	DIA			
		Temp.	Cond.	DO	pH	ORP	Turbidity	DTW	1	
Do	rameter	°C	mS/cm	mg/L	SU	♥ OKF mV	NTU	ft BTOC		
Fä		<u> </u>		±0.05 (if <1)		111V	±10 % or			
C	riteria	±0.1	1		±0.1	±10		$\pm 0.3$ (low flow)		
			±0.02 (if >1)				≤ 10 NTU	. ,		-
		-			IELD PARAN					101
Time	Purge Vol.	Temp.	Cond.	DO	рН	ORP	Turbidity	DTW	1	/ Odor /
	mL (gais)	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC		ments
09.02	0	11,27	0,480	1,10	6.26	(35	105	2.33	Slightly c	loudy no od
0905	600	11.00	0.479	0.35	6.39	32	118	3,15		11'
0908	1200	10.89	0,480	0.20	6.43	٩	143	3.30	۱	1
6911	1800	10.90	0.482	0.16	6.50	-3	122	3,40		1
0918	2250	10.82	0.488	0.22	6.60	-14	142	3,22		11
0921	2700	10.74	0.492	0.12	6.56	-15	136	3,23	•	1
0924	3(50	10.60	6.495	6.08	6.56	-19	140	3.23		1
0927	3600	10.68	0.499	0.04	6.57	-24	139	3.21	1	1.
0930	4050	10.65	0.501	0.04	6.57	-27	138	3,20	1	1
Sample inf	formation: metho	od, container	number, size,	and type, pre	eservative use	ed.				
	Ana	lysis		Prese	rvative		ontainer requiren		No. of c	containers
	PFAS	-			00	250	nL HDPI	2	2	
					3					
Observatio	ns/Notes D	110	A 69 14 10 3	1,011	arrial	6415	e aures to	change de l	ower RP	Mhaudi
0917	esume purg	er ve pr	egg ure 11	Well ON	- I I I VI I A	unis pana		change to l	Seren and	Sector States
	rt Time: •ac							Air Monitoring	BZ	I WH
	Initial Fill Time		N	4	Final Fill Tin		NA	VOC (ppm)	O	6
			· · · · · · · · · · · · · · · · · · ·						õ	6
Bladder	Initial Dischar	ge lime(Di;	sec):		Final Discha	irge Time:	1	H2S (ppm)		A
		• • • • •	1		-			LEL (%)	0	
Submersible	Initial Control	Setting(Hz):	-		Final Contro	I Setting(Hz):	-	CO (ppm)	0	6
						(		O2 (%)	20.9	20.9
					Purge Rate:	€ 0900 ≈	200 m Llmin	1 1.	1 1	
		htoc.		1.1		(peri pu	mp won't go	slower, chaz	90 10 10	y ur
Pump Dep	oth: 10 ft			1.1		RPM he	ad@ 0915			
						WOQ182	150 m L/m:	n		
Sample /T	ime: 0935	•								
MS/MSD	NA						Duplicate ID:	NA		

MS/MSD NA Signature(s): Daved Butle

						LING DATA SH				
Client:	NAVFAC			Proj	,	695610CH.04		Page: I	of )	
	Ault Field						-MW-623			
Event:	Phase 2 SI	<i><b>N</b></i>					-MW-623			
Date:	12/12/1		a 6 1	San	npling Team	DiButl-	er, G. Gau	dnen		
Weather:	6-109 C	loudy, 4	019, breez		•					
Total Dep	th: 🧲	5.18	FT.(BTOC)	-obstruc	tion	Me	easuring Device:	Horiba : P	9t Pinct	#042265
Depth to		4.52	FT.(BTOC)					Horiba : P	ine# 211	414
Water Co		1.66	FT.			144 11 151		MultiRAE	: Pinot	+44915
		0.163	GAL/FT.			Well Dia.	Volume	I COULTER TO	, () ()((+	
Well Volu		0,27	GAL.			(inches)	(gallons/foot)	-		
Total Purg		900mL	GAL.Co			1.25	0.041	-		
Purge De	vice D	No S DIA HA	pi Pine -	# 1686	G	2	0.064	4		
i uige be		eripum	PI FINE -	# (EDE	<u>v</u>	4	0.653			
						L	0.000	1		
				PARAMET	ER STABILIZ	ATION CRITE	RIA			
	.*	Temp.	Cond.	DO	рН	ORP	Turbidity	DTW		
Pa	rameter	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC		
	riteria	±0.1	±0.01 (if <1)	±0.05 (if <1)	±0.1	±10	±10 % or	+0.2 (low flow)		
	interia	10.1	±0.02 (if >1)	±0.2 (if >1)	±0.1	±10	≤ 10 NTU	±0.3 (low flow)		
					IELD PARA			New York		
Time	Purge Vol.	Temp.	Cond.	DO	pH	ORP	Turbidity	DTW		/ Odor /
	n-(gals)	<u>0°</u>	mS/cm	mg/L	SU	mV	NTU	ft BTOC		ments
1051	6	10,28	0.489	3,32	6.8	9	273	4.60		cloudy, no oco
1055	500	10,29	0.989	1,28	6.62	-19	126	4.65		u "
1103	900	10.26	0.481	0.86	6.62	-19	72,9	4.69	11	
1107	1300	10.21	0.974	0.64	6.63	-14	35,4	4.72		<u> </u>
	2100	10,16	0.468	0,28	6.63	-7	30,5	4.73		· · · · · · · · · · · · · · · · · · ·
(115	2500	10,10	0.964	0,12	6,64	-7	22,6	4.76	Clear, w	
1119	2900	10,04	0.964	0,08	6.65	-0	21.8	4,76	L	
	AHI-PO		vans st			tosampi				
						l'o zee y	· · · · · · · · · · · · · · · · · · ·			
Sample int	formation: metho	od, container	number, size,	, and type, pro	eservative us	ed.				
		lysis			rvative		ontainer requiren			ontainers
	PFAS			<u> </u>	600	250	UNL HOP	EL .	2	
			200			1 march				
			day in the							
Observatio	no/Notoo: 6		1 1				1 1 11		L	
Observatio	ns/noles. Jui	ge bloc	le Stuck	in wt	a, b =	depth to	obstruction	١		
Pumn Sta	rt Time: しのイ	7						Air Monitoring	BZ	WH
	Initial Fill Time		NA		Final Fill Ti	me:	A	VOC (ppm)	0	
	Initial Dischar	• • •	sec):		Final Disch		NA	H2S (ppm) .	0	00
		3(2.),						LEL (%)	0	0 0 20.9
Submersible	Initial Control	Setting(Hz):	1		Final Control	ol Setting(Hz):		CO (ppm)	0	0
							Č.	O2 (%)	20.9	20.9
					Purge Rate:	C1047212	S. 1/mar		2 0 1	
		. 1			-	Olan-	Jm-[min			
Pump Dep	oth: Gff (	stac				@ (055~1	loomL/min			
	ime: 1125						D		3 7 6	
MS/MSD	NA		0				Duplicate ID:	AU		
Signature(	s): Doured	1 But	$\sim$							

Client:	NAVFAC	SM				ING DATA SH 695610CH.04		Page: į	of (	
	Ault Field					WHAF-M		raye.		
	Phase 2 SI			·	Semple ID:	WFWFF-DI	W-674			
Event:		1.0			Sample ID:	WI-HE-W	11-624-12	219		
Date:	12/08/201			. Sam	pling leam:	D. Butler,	(n. Crardyer			
Weather:	Cloudy, 40	15, Breeze	2	-						
Total Dept		2.46	FT.(BTOC)			Me	easuring Device:	WLI: Solins-	+ Pine=	# 20435
Depth to v		2.42	FT.(BTOC)					Horiba. Pine-	#21414	
Water Col	umn: _/c	0.04	FT.					MultiRAE: 1	2	
	(x)	0.163	GAL/FT.			Well Dia.	Volume	י <i>יאייור אב</i> י <i>ו</i>	The I 9	4900
Well Volur		2.07	GAL.			(inches)	(gallons/foot)			
Total Purg			GAL.			1	0.041	1		
						1.25	0.064	1		
Purge Dev	vice: P.	-15/11/1	0	+1/.0/.1		2	0.163	1		
i uige bei	<u>1e</u>	ri Marri I	pump pro	H 10806		4	0.653	-		
			<u></u>			4	0.055	]		
				PARAMETE	ER STABILIZ	ATION CRITE	RIA		and the	
		Temp.	Cond.	DO	pН	ORP	Turbidity	DTW		
Par	rameter	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC		
				±0.05 (if <1)			±10 % or			
С	riteria	±0.1		±0.2 (if >1)	±0.1	±10	≤ 10 NTU	±0.3 (low flow)		
			Sec. Sec.	F	ELD PARA	IETERS	1014.010.30			
T!	Purge Vol.	Temp.	Cond.	DO	pН	ORP	Turbidity	DTW	Color	/ Odor /
Time	(gals)	l °C	mS/cm	mg/L	SU	m∨	NTU	ft BTOC	Corr	nments
1457	0	10.71	1-03	2.18	7.54	-93	33.2	2.57	_	landy no colo
141501	800	12.02	1.03	0.29	7.32	-97	33.0	2.57	Sir Jring of	tray in a
1504		12.08	1.04	0.11	7.30	-97	25.3	2.57	<del> </del>	<del> </del>
			1					2.57		<u>+</u> −−−−−
1507	1800	12.12	1.06	0.00	7.28	-96	17.9		<u> </u>	2-
1510	2400	12.11	1.08	0.00	7.26	-94	13.5	2.57	flear, n	o odor
1513	3000	12.11	1.10	0.00	7.25	-92	11.2	2.58	$\vdash$	
1516	3600	12.12	1.11	0.00	7.24	-91	10.2	2.59		
	4200	12.19	1.12	0.00	7.23	-90	8.8	2.59		
1522	4800	12.22	1.12	0.00	7.23	-91	8.5	2.59		
									<u> </u>	
Sample inf	ormation: meth		number, size					and a second second		
		lysis			rvative		container requirem	nents		containers
	PF195-18			<u> </u>		250-mL	HDPE		2	
		-			<u>, ,</u>				<u> </u>	
Observatio	na/Notaai									
Observatio	Ins/INULES.									
	rt Time: 14:5							Air Monitoring	BZ	WH
Bladder	Initial Fill Tim	e(FT; sec): 4	VA		<b>Final Fill Tir</b>	ne: NA		VOC (ppm)	0	0
Bladder	Initial Discha	rge Time(DT;	; sec): NA			arge Time: Nr	A	H2S (ppm)	0	0
			, , .					LEL (%)	0	0
Submersible	Initial Control	Setting(Hz)	100		Final Contro	ol Setting(Hz):	Arn	CO (ppm)	0	6
			- <i>11 (11</i>				TA AL	O2 (%)	209	20.9
					Purge Rate:	@ 1458 200	omumin	52 (70)		1 2 Br 7
					•					
mp Dep	oth: 11 ft bto	C C								
Sample /Ti	ime: 1525									
MS/MSD	NA						Duplicate ID:	NA		
Signaturo/c	<u> </u>		W.	L			Duplicate ID.			

Signature(s): Drover But

		SM	G	ROUNDWATI	ER WELL S	AMPLING DAT	A SHEET		
Client:	NAVFAC					r: 695610CH.0		Page:	of 2
	Ault Field				Well II	: MW-62	5	rage.	
Event:	Phase 3 SI			2.1	Sample II	: WHAE	-MW-625	OF CZON	
Date:	8/15/202	20		- San	noling Tean	nº 10 ilout	, G. Courda	-08 20	
Weather:	Clear Sky	, 56 %	2	-		In Digt	1 (7. Louidin	er	
Total Dep Depth to Water Col	th: water: <u>(</u> lumn:	59.20	_FT.(BTOC) _FT.(BTOC) FT.			M	leasuring Device		# (102 435
	()	x) 0.163	GAL/FT.			Well Dia.	Volume	PID # 0	102924
Well Volu	me:	1.08	GAL.			(inches)	(gallons/foot)	1	
Total Purg	ge Vol.:	7.12	GAL.			1	0.041		
	10 Jun 19					1.25	0.064	-	
Purge Dev	vice: /	Monsoon #	1 ( 107 .	608		2	0.163	-	
and the		OMEDIL	5 = +(1	071.9		4		-	
	0	011111-0-0	call the	00001		4	0.653	1	
				PARAMET	ER STABILI	ZATION CRITE	RIA		
	and the second second	Temp.	Cond.	DO	pН	ORP	Turbidity	DTW	1
Pa	rameter	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC	
C	riteria	±10%	±3%	±0.05 (if <1)	+117	±10	±10 % or	±0.3 (low flow)	
			1	±10% (if >1)	IELD PARA		≤ 10 NTU	(W 10W)	
Time	Purge Vol.	Temp.	Cond.	DO	pH	ORP	Turbiditu		
Time	(gals)	°C	mS/cm	mg/L	SU	100 C C C C C C C C C C C C C C C C C C	Turbidity	DTW	Color / Odor /
1820	0.500	14.44	0.713	1. Q5-	6.80	mV	NTU	ft BTOC	Comments
1825	6.975	14.50	0 700			-241	21000	34.50	CLOODY /MILUX
0830	1.45	14.80	1.733	0.53	20.E	-276	438	34.50	11
0835	1.93			1.27	7.16	-298	122	35.950	74,75
0840	2.38		0.755	0.22	7.23	-312	340	34.48	
0845		14.80	0.763	0.16	7.26	-320	220	34.47	
	2.85	14.69	0.775	0.13	7.27	-322	189	34.54	
2850	3.33	14.71	0.779	0.09	7.30	-326	152	34.54	Slightly Cloudy
285B	3.80	14.73	0.781	0.01	7.31	-330	137	34.48	- jug cloudy
0900	4.28		0.782	0.05	7.33	-334	142	34.55	
905	4.75	14.76	0.784	0.03	7.33	-336	123	34.48	
2910	5.23	14.78	0.789	0.01	7.35	-33/2	87.1	34.55	
ample info	ormation: meth	od, container	number, size	, and type, pre	servative us	ed.			A CONTRACTOR
	Ana	alysis		Preser	vative		ontainer requirem	nents	No. of containers
+	FAS			≤ 60	C		OML HOPE		Z
-									
bservation	ns/Notes: Ele	vated ges n	readings; a	llow to ive	nt				
	t Time: 08 15								ALL ALL
	Initial Fill Tim				Final Fill Tir			Air Monitoring	BZ WH
Bladder	Initial Dischar	rge Time/DT	-(202					VOC (ppm)	0.0 0.1-20
Diduudi	initial Discila	ge mile(DI;	sec).		Final Discha	arge Time: 🕤		H2S (ppm)	0.0 2030.
hmorsible	Initial Control	Cattine (11-)	11.2			alarri tanan		LEL (%)	0.0 3000
Intersible	Initial Control	Setting(Hz):	11.6		Final Contro	ol Setting(Hz):	10.7	CO (ppm)	0.0 6330
								02 (%)	20.9 20.9
					Purge Rate:	360mL	10.		and a financial
ump Dept	h: 54 1	FT BTOC	_			0.095	gal/nin		
mple /Tir	me.								1
S/MSD	NA,	- 1					D 10 10 10 1		Sector Sector
ignature(s)	Mann	HX Ma	almen				Duplicate ID: 🔿	A	
gradio (b)	- AUVU	AN DON	- and						

01			G			MPLING DAT				
Slient:	NAVFAC			Pro	ject Number	: 695610CH.04	1.FI.FS	Page: 2	of 2	
Event:	Ault Field Phase 3 SI			_	Well ID	: MW-6.	25			
Date:	S/15/24			-	Sample ID	WI-AF	-MW-62	5-0920		
	Sum	Clear 56	e /=	_ San	npling leam	: A.Vogt,	G. Gardnei			
				-		-			-	
Total Dep	and the second	59.20	FT.(BTOC)			M	easuring Device	: Solinst H	-122 51	1.04565
Depth to v Water Co		-) 34.14	FT.(BTOC)					Horibon # 1		
water Co		25.06	FT.			[ W II B'		PID # C.	-1029	) //
Nell Volu		x) 0.163 4.08	GAL/FT.			Well Dia.	Volume	1.	10-10	~ 9
otal Pur		212	GAL.			(inches)	(gallons/foot) 0.041			
	3- · · · · · · _	- uft	_ 0/12.			1.25	0.041			
Purge De	vice:	honsoon #	(-102	8		2	0.163			
1.40.00	*	Controller à				4	0.653	1		
-		AL SAL				-	0.000	1		
					ER STABILIZ	ZATION CRITE	RIA		-	
		Temp.	Cond.	DO	pH	ORP	Turbidity	DTW		
Pa	rameter	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC		
C	Criteria	±10%	±3%	±0.05 (if <1)	±0.2	±10	±10 % or	±0.3 (low flow)		
		1	1	±10% (if >1)			≤ 10 NTU	=0.0 (1011 11011)		
	Purge Vol.	Temp.	Cond.	DO F	IELD PARA	and the second se	1 + 12.00	1	1 0 1	
Time	(gals)	°C	mS/cm		pH	ORP	Turbidity	DTW	100000000000000000000000000000000000000	/ Odor /
915	5.70	14.79	0.791	mg/L	SU 7-35	mV -339	NTU	ft BTOC		nments
920	6.18	14.77	0.793	0.00	7.36	-340	61.6	34.55	Clear	
0925	6.65	14.88	0.792	0.00	7.33	-340	52.3	34.55		
0930		14.8	0.795	0.00	7.35	-341	48.5	34.61	-	
0935	63						40.2	11.01		
	-	Parame	ters s	Inble			1	12	1	
		2		1000				1	-	
-		1								
							1			
-		-		1						
ample inf	formation: met	hod, container	number size	and type pro	convotivo vo	ad				
	An	alysis	number, size	Prese		The second se	ontainor requiren	anta	I No of	
P	FAS			1600			Container requiren	ients		containers
							IL HDIE		idan.	
									1	-
										-
bservatio	ons/Notes:									
umm Cha	4 T	-								0.00
	rt Time: 091	ጋ ne(FT; sec):  ~						Air Monitoring	BZ	WH
		arge Time(DT;			Final Fill Tir			VOC (ppm)	00	0.1-00
Diaddei	initial Discha	arge rime(D1;	sec): _		Final Discha	arge Time:		H2S (ppm)	0.0	2.0.20
ubmersible	Initial Contro	ol Setting(Hz):	11-2		Final Contro	Sotting/Us).	107	LEL (%)	0.0	3-30.8
	initial control	octang(nz).	er -		rinal contro	ol Setting(Hz):	10.1	CO (ppm)	0.0	63-20.
					Purge Rate	360 m4	limite	02 (%)	20.9	20.9
ump Dep	th: 54					0.095	Jpm			
mple /Ti	ime: 0939	5	-							
S/MSD	-M	2 N	1			-	Duplicate ID: -	-		
ignature(s	. ten	at V ba	rober							

Client:	NAVFAC		G			MPLING DAT			
	: Ault Field			Pro	ject Number	: 695610CH.0	4.FI.FS	Page: †	of I
Event:	Phase 3 SI		-	-	Well ID	: MW-63	26		
Date:	8/14/202	~		- 0	Sample ID	: WI-AF-,	MW-626	-0820	
Weather:			-	San	npling leam	G. Gardr	rel, A.Vog	1	
Total Day	The second s	29-91 59.1	[			-			-
Depth to	oth: bottoin	120.71				N	leasuring Device	: Solinst	#122
Water Co	water	29.4	FT.(BTOC)				Contraction of the second	HORIBAH	C102485
mater 00	V S- MV SIZE	00.163	_FT. GAL/FT.			W-ILD'	1	7PID#CI	
Well Volu	Ime:	4.79	GAL/FT.			Well Dia.	Volume		02129
Total Pur		9.00	GAL.			(inches)	(gallons/foot)		
12 - 20 - 20	• · · · · · · -	1-00	Solat	600	1	1 1.25	0.041	-	
Purge De	vice:	Monsoon	Lantra	UNPEC 1	12808)	2	0.163		
	C	ONTROLL	ERHC	102808	7	4	0.653		
				The Real Property lies				4	
		Temp.	Cond.	DO DO		ATION CRITE			
Pa	arameter	°C	mS/cm	mg/L	pH SU	ORP	Turbidity	DTW	
		10000	1	±0.05 (if <1)	1	mV	NTU ±10 % or	ft BTOC	
C	Criteria	±10%	±3%	±10% (if >1)	+(1)2	±10	±10 % or ≤ 10 NTU	±0.3 (low flow)	
					IELD PARAM	METERS			La serie dese
Time	Purge Vol.	Temp.	Cond.	DO	pH	ORP	Turbidity	DTW	Color / Odor /
	(gals)	0°	mS/cm	mg/L	SU	mV	NTU	ft BTOC	Comments
1535	0-96	25.12	0.651	0.89	7.02	-159	21000	29.84	Very Cloudy
1540	1.36	24.61	0.661	0.54	7.10	-165	21000	29.82	Jin
1355	7.56	23.63	0.600	5.72	7.78	-204	698	29.89	3.0
1600	2.96	27.29	0.664	0.21	7:79	206	671	29.88	ix .
1605	3.36	27.04	0-665	0.12	7.77	-216	476	29.89	1.4
1610	3.76	22.85	0.663	0.10	7.74	-2.20	779	29.99	
1615	4.16	22:71	0.665	0.17	7.72	-236	161	29.88	
1620	4.50	22.63	0.665	0.12	7.20	- 278	170	29.89	1.
1625	4.96	22.54	0.669	0.12	7.69	-227	125	29.83	N.
630	5.36	22.57	0.677	0.10	7.64	-710	-79.7	29.94	- AV
sample inf	formation: meth	od, container	number, size,	and type, pre	servative use				
	PFAS	alysis		Preser			Container requirem		No. of containers
	PFIES			46	20	250	O-L HD	PE	Z
			1						
									1
Observatio	ins/Notes:								
ump Star	t Time: 152	2						Same to a second	Line & mer
	Initial Fill Tim		rA	1.1	Final Fill Tim	a life		Air Monitoring	BZ WH
Bladder	10-00-00-00-00-00-00-00-00-00-00-00-00-0	ge Time(DT;	sec)://t			rge Time: MA	F	VOC (ppm)	0.0 0.0
Bladder Bladder	Initial Dischar				i indi Discha	ige time. with		H2S (ppm)	0.0 0.0
Bladder	Initial Dischar				Final Control	Setting(Hz):		LEL (%) CO (ppm)	and the second se
Bladder		Setting(Hz):	9.7						0.0 4-200
Bladder	Initial Dischar	Setting(Hz):	9.7						209 1
Bladder		Setting(Hz):	9.7					02 (%)	20.9 20.9
Bladder ubmersible	Initial Control		4.7			0-08 91			20.9 20.9
Bladder ubmersible	Initial Control		9.7						20.9 20.9
Bladder iubmersible Pump Dept	Initial Control th: 5 <sup>–</sup> 4 ૬	T BTGC	9.7						20.9 20.9
Bladder Submersible Pump Dept	Initial Control th: 54 $\in$ me: 17 24	T BTGC	4.7			0-0891		02 (%)	20.9 20.9

Slient:	NAVFAC					AMPLING DATA r: 695610CH.04		Page: て	of 2	24
	Ault Field			-		): MW - 1		ruge. C		
Event:	Phase 3 SI				Sample ID	: WI-AF-	- mw - 62	6- 0820		-
Date:	8/14/2	050		Sar	npling Tean	1: G. GARD	MER A.			
Weather:	CLEAR .	SK4 66'	۶F							
Total Dep		59.11	FT.(BTOC)			м	easuring Device	SOLING	# 127	z
Depth to water Col		127.71	FT.(BTOC)					HORIDA A	4 CI	074
water Col	and the second se	29.4	FT. GAL/FT.			1		PIDAC	10797	4
Well Volu	me.	4.79	GAL/FT.			Well Dia.	Volume			
Total Purg		9.00	GAL.			(inches)	(gallons/foot)	-		
		1.00	GAL.			1.25	0.041			
Purge Dev	vice:	NONSOON	HCL	07 609			0.064			
0.000	C	ONTROLL	FR #	C107 SI	no	2	0.163			
	-		-LA II	CIVES	<u>o</u> b		0.000	1		
					ER STABILI	ZATION CRITE	RIA		1994	
·		Temp.	Cond.	DO	рН	ORP	Turbidity	DTW		
Pa	rameter	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC		
C	riteria	±10%	±3%	±0.05 (if <1)	+(1)	±10	±10 % or		1	
		-1.970	-0.0	±10% (if >1)			≤ 10 NTU	±0.3 (low flow)		
	Durge Mal	T			IELD PARA					
Time	Purge Vol.,	Temp.	Cond.	DO	pH	ORP	Turbidity	DTW	Color	/ Odor
1635	(gals) n		mS/cm	mg/L	SU	mV	NTU	ft BTOC	Con	nments
1640	\$ 6.16	22.02	0.673	0.07	7.63	-231	16.7	29.93		
1645	6.56	21.55	0.672		7.63	-276	62.2	59.93		N.
1650	6.96	21.82	0.670	0.06	7.58	-241	58.4	29.85		
1655		21.70	0.675	2	7.66	-240	54.8	21.72		
1700	7.76	21.65	0.673	50.0	1.63	-240	40.6	29.93		
	8.16	21.51	6. 672	0.00	7.59	-244	32.4	29.94		
	8.56	21,41	0.673	0.00	7.61	-246	33.00	29,94		1
	8.96	21.33	6.677	0.00	7.60	-244	37.6	29.87	1.	
		STAI	ILITY		VED	211	52.0	C 1/ 07		1
						1			-	
Sample info	ormation: meth	od, container r	number, size,	and type, pre	eservative us	ed.				
	Ana	alysis		Prese	rvative	C	ontainer requirem	ients	No. of c	ontaine
	PFA	\$		26	°L	25	0 ml L	IDPE	2	
				1000						
	_		-						1	
Observation	ns/Notes									
	t Time: 150							Air Monitoring	BZ	W
Bladder	Initial Fill Tim	e(FT; sec): ~			Final Fill Ti	me: _		VOC (ppm)		6.0
Bladder	Initial Discha	rge Time(DT;	sec):			arge Time: .		H2S (ppm)	0.0	0.0
								LEL (%)	0.0	
Submersible	Initial Control	Setting(Hz):	9.7		Final Contro	ol Setting(Hz):	107	CO (ppm)	0.0	6.6
		1			ALL CARD	5,		O2 (%)	20.9	20.
					Purge Rate:				-011	1 20.
					and a state of the second					
Pump Dept	th: 54 F	1 BLOC								
	me: 1721	0								
mole /Ti										
	NAA				-		Duplicate ID:	VA		

Client: NAVF	AC	G			MPLING DAT			
Lot of the second se			Pro		r: 695610CH.0		Page: 1	of 1
cation: Ault F				Well ID	: MW-62	.7		
Event: Phase			20 A A	Sample ID	:WI-AF-	MW-627	-0820	
Date: <u>8/15</u>	12020		Sa	mpling Team	A Waat	G. Garda	01	
Weather: Sul	VNY, 70's				a vegi	17- C/01 007	er	
Total Depth:	58.59	ET (BTOC)	Hard bofter	M		and the second	: Solinst #1	12 51/04
Depth to water:	() 38.24	FT.(BTOC)			IV	leasuring Device		
Water Column:	2035	_FT.					Horebon # C	-102485
futor obtainin.					L IN WAL	1	- PID # (	-102924
Well Volume:	(x) 0.163	GAL/FT.			Well Dia.	Volume		
	3.32	_GAL.			(inches)	(gallons/foot)		
Total Purge Vol.:	5.00	GAL.			1	0.041		
Arrest Shiring a					1.25	0.064		
Purge Device:	Monsoor	1 # 6-1	22808		2	0.163		
	Controller.			7	4	0.653	-	
				-		0.000	<u>_</u> ;	
				ER STABILI	ZATION CRITE	RIA		
Designed	Temp.	Cond.	DO	pН	ORP	Turbidity	DTW	1
Parameter	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC	
Criteria	±10%	±3%	±0.05 (if <1)	) .0.2	1.011	±10 % or	1 10	
There	10/0	10/0	±10% (if >1)	) ±0.2	±10	≤ 10 NTU	±0.3 (low flow)	
				FIELD PARA	METERS			
Time Purg	e Vol. Temp.	Cond.	DO	pH	ORP	Turbidity	DTW	Color / Odor
(ga	als) °C	mS/cm	mg/L	SU	mV	NTU	ft BTOC	and a second
1035 1.	1 19.74	0.371	58.0	7.53	-261	STO	38.28	Comments
1040 1.6	5 19.17	0.381	0.42	7.55	-787	411		CLOUDY
1045 2.		0.38%	0.72	7.57			38.28	
1050 2.		0.387	0.14	7.57	- 300	257	38.30	50
1055 7.		0.391		7.59	- 301	113	38.30	\.
1100 3.8		0.394			-700	79.7	78.76	11
1105 4			0.09	7.60	-298	47.0	38,30	
the second se		0.422	0.05	7.59	- 300	28.9	38.70	11
1110 4.0	19.01	0.470	0.04	7-57	-298	264	38.30	1.
1115 9.1		0.418	0.04	7.60	- 703 6	WWW . 10.0	38.30	L.
1120 64.	19.48	0.414	6.07	7.60	-295-	9.1	38.31	4
		0.415	0.07	7.00	- 294	5.1	38,30	11
Sample information	: method, container	number, size	, and type, pro	eservative use	ed.		2~	
	Analysis			ervative		ontainer requiren	ients I	No. of containe
PFA			≤6	Print Edge page 560			ADPE	Z.
					0,5			-
Observations/Note:	r:			-				
Pump Start Time:	1024						Air Monitoring	BZ   W
Bladder Initial F	ill Time(FT; sec):			<b>Final Fill Tin</b>	ne:		VOC (ppm)	
Bladder Initial	ischarge Time(DT;	sec):		Final Discha			H2S (ppm)	0.0 6.0
	and the second second			a state of the state of the				0.0 0.0
Submersible Initial C	ontrol Setting(Hz):	11.8		Final Contro	ol Setting(Hz):	10-47	LEL (%)	0.0 00
and the second of		1. 0			Setting(Hz):	48-14.2	CO (ppm)	0.0 6.0
				Purgo Pata	1120	1	02 (%)	20.9 20.0
				i urge itate:	420 mL	(men		2-03%
Pump Depth: 54	iv .				0.11 gpi	n/A		
And A DESCRIPTION OF A	£				Serie Spi	U I		
ample /Time: \ \	30							
	30	-		-		Duplicate ID: 54	I-AF-Mw	1-0-

Client:	NAVFAC		G			MPLING DATA 695610CH.04		Page: 1	of J
ocation:	Ault Field			-	Well ID:	MW-62	0	rage. I	UI I
Event:	Phase 3 SI				Sample ID:	WI-AF-	MW-628-	007 -	
Date:	8/17/2	1020-8/	1812020	Sar	npling Team	A. VOGT	/ Gy. GrAi	DATER	
Weather:	12.205	UNNY-SOI	ME CLOUD!	5			7 01- 0171		
Tatal Day		5.90 ha	rd bottom FT.(BTOC)					Complete States	
Total Dep	- B. Seconda					M	easuring Device		4045651
Depth to w		153.02	FT.(BTOC)					PIDACI	02924
Water Col	Cardena a Card	12.88	_FT.			r		HORIDAH	102485
Well Volu	<u>_</u>	x) 0.163	GAL/FT.			Well Dia.	Volume		
		2.10	GAL.			(inches)	(gallons/foot)		
Total Purg	je vol.:	4	GAL.			1	0.041		
Purge Dev	diana a	TONSOON	+ / 107	119		1.25	0.064		
Fuige Dev					-	2	0.163		
	<u>c</u>	OMROLL	ERAC	106808	-	4	0.653	1	
				PARAMET	ER STABILIZ	ATION CRITE	RIA		
		Temp.	Cond.	DO	pH	ORP	Turbidity	DTW	
Pa	rameter	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC	
C	riteria	±10%	±3%	±0.05 (if <1) ±10% (if >1)	1 +(1)	±10	±10 % or ≤ 10 NTU	±0.3 (low flow)	
				F	IELD PARAM	IETERS			
Time	Purge Vol.	Temp.	Cond.	DO	pН	ORP	Turbidity	DTW	Color / Odor /
	(gals)	O°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC	Comments
1346	0.16	18-97	0.674	1.25	7.49	-62	296	55-2	Cloudy
1350	0.31	10.85	0.674	1.14	7.56	-60	190	55.53	11
1755	0.46	16-55	0.672		7.61	- 70	147	56.06	11
1400	0.61	16.90	0-667		7.64	-72	149	56.45	N
1405	0.76	17:65	0.672	1.19	7.67	-77	140	56.84	s 1
1410		17.77	0.675	1.22	7.69	-74	134	57.08	λī
1415	0.1.06	18.14	0.674	1.17	7.71	-75	117	57.25	()
1425	1.71	18.29	0.681	1.30	7.72	-77	967	57.62	<u>k i</u>
1445	SWIT			AME	VFF		PUMP	1	
0945		6.93	+0	7URG 15 3.55	6.6	~ETH0 46	D.		10
No. of Concession, Name of	ormation: meth	hod, container				90	810		Very Cloud
e ampie uni		alysis	HUMBEL, SIZE.		rvative	and the second se	optoiner regulase		N. C. L.
1	PEAS	aryois		± 6			ontainer requirem		No. of containe
	E PHD			- 6	L	23	50 mL H	DPE	2
	-						-		
Observation	ns/Notes: C	0V40	NOT P	VICHE	~17400	DRAW	DOWN. 5	WITCHING	TO PUNG
Pumn Star	t Time: 091	de isur	7						1 4 M
Riaddor	Initial Fill Tin	no/ET: scale			Final Fill T			Air Monitoring	BZ WH
		arge Time(DT;	cocl-		Final Fill Tin		o 3	VOC (ppm)	0.0 0.1
Diauder	initial Discila	age mile(D1;	sec).		Final Discha	rge Time: —		H2S (ppm)	0.0 1.0
Submersible	Initial Contro	I Setting(Hz):	1-		Einal Contra	Cattlendury	13	LEL (%)	0.0 0.0
Sabinorabic	initial contro	n Setting(nz):	15		Final Contro	I Setting(Hz):	1 -	CO (ppm)	0.0 36-
					Durne Data	0		02 (%)	70.9 20
1.131					Purge Rate:	2.03 gp	N		
Pump Dept	th: 1.0				1420=	9.03 gp. 80 mir.	~in		
						0.021	yrn		
mple /Ti .S/MSD	me: 0950								
Signature(s	1: Dor	A M	Inen				Duplicate ID: A	/A.	
	11 11/1/	MIN IMAN	an I I III I						

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Olivert		SM	GI		and the second	MPLING DATA			
Client:	NAVFAC		-	_ Proj		695610CH.04		Page:	of
Event:	Ault Field Phase 3 SI			-i.)		MW-620			
Date:				-	Sample ID	WI-AF-	MW-629-0	1820	
	8/17/2020	1000		_ San	ipling leam	G. Crardin	er, A.Vogt		
weather.	Clear Sky	, 69%	1 hadden	-20		-	7		
Total Dep Depth to v	water: <u>(</u> -	9.4 har	FT.(BTOC)			M	easuring Device	SOLINST PID+1 C	# 04565
Water Col	lumn:	24.69	FT.						A 2 102485
		0163	GAL/FT.			Well Dia.	Volume	7 10 12 113/2 1	1 2 102 985
Vell Volu		.02	GAL.			(inches)	(gallons/foot)		
Total Purg	ge Vol.:	3	GAL.			1	0.041		
			1 010	- 1 - 0		1.25	0.064		
Purge Dev	vice:	NOUSOON	ACIO	2607		2	0.163		
	C	ONTROL	LERT	C1028	58	4	0.653		
						-		-0	
				PARAMETI	ER STABILIZ	ATION CRITE	RIA		
		Temp.	Cond,	DO	pН	ORP	Turbidity	DTW	
Pa	rameter	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC	
	riteria	1100/	1.20/	±0.05 (if <1)	and a state of the		±10 % or		
- C	illeria	±10%	±3%	±10% (if >1)	±0.2	±10	≤ 10 NTU	±0.3 (low flow)	
					IELD PARAM	<b>METERS</b>	, sie in e		
Time	Purge Vol.	Temp.	Cond.	DO	pН	ORP	Turbidity	DTW	Color / Odor /
Time	(gals)	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC	Comments
615		71.60					into .	IL DIOO	Commenta
622	0.2	23.76	0.702	0.64	2.71	-88	726	49.9	CLOUDY
629		15.37	0.716	0.96	7.84	-176	364	51.3	CLOUDI
1636		15.34	0.617	0.77	7.85	-141	369	54.12	
1643	LARG		OW-CEL	L LE					6
	METHO		UW CEL		mn. S	WITCHIN	G TO P	THE DE	N
1000		val at	50% of	initial.	Proceed	to faire			
028	- Tellor Te	17.44	0.819	1.60	7.47	to sampi	384		c lauri
000		11-11	0.811	1.00	1.91	5	287		cloydy
	12				-				
ample inf	ormation: meth	and container	number eize	and tune are					and the second second
ample in		alysis	number, size			1		17. 1. 22 17 12 10 10 10 10 10 10 10 10 10 10 10 10 10	
-	PFAS	alysis		1 1 1	rvative		ontainer requirem		No. of containers
	PFID			260	6	250 n	12 HOPE	1	ユ
	-								
_									
h	AL / A			1					
oservatio	ns/Notes: W?	11 purged	dry on	8/17. 8/1	8-well r	ecoverd +	0 50% of	initial Wi	Lafter 17 h
umn Cto	+ Times 1 / .	A 7-	1.20						ALCORE ALCORE
ump sta	rt Time: 1 () (	25						Air Monitoring	BZ WH
	Initial Fill Tin				Final Fill Tir			VOC (ppm)	0.0 0.0
Bladder	Initial Discha	rge Time(DT;	sec):		<b>Final Discha</b>	arge Time: —	-	H2S (ppm)	0.0 0.0
								LEL (%)	
ubmersible	Initial Contro	Setting(Hz):	12		<b>Final Contro</b>	Setting(Hz):	13	CO (ppm)	
			242.2			QV/-		02 (%)	20.9 20.9
					Purge Rate:	100 m	1/10	[]	120-1 120-1
	-				95				
ump Dep	th:65			163	c= 100 ~L/1	Nº 0.02	spm		
	- OF ST						100		
ample /T	ime: 1030								
S/MSD	NA.	4					Duplicate ID: 1/	· A	
Signature(s		A Min	Ines				- upiloute 10. 70	1	
	- Coron	A CEVU	with						

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011 1	MANEAO		GI	and the second sec		MPLING DAT				
Client:	NAVFAC			- Pro		: 695610CH.04		Page: ì	of	
	Ault Field		-	-	Well ID	WI-AF.		70		
Event:	Phase 3 SI	20			Sample ID	WI-AF		50-082		
Date: Weather:	S/19/20 CLOUDY		0 -	San	npling Team	: A. VOG	5/G. G	ARDNER		
		1	30	-					_	
Total Dep			FT.(BTOC)			м	easuring Device	: SOLINST	#04	565
Depth to v			FT.(BTOC)				Contraction of the second	PIDHCI	5950	4
Water Col	20 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	6.16	_FT.				1. 2. 0 mm	HORIBA	CID	741
Wall Value	<u>(</u> )					Well Dia.	Volume		010	210
Well Volu		1.004	GAL.			(inches)	(gallons/foot)			
Total Purg	ge vol.:		GAL.			1	0.041			
Purge Dev	deo:			1.797-		1.25	0.064			
Fulge De	vice. <u>1</u>	ETTI. PU	mr fil	142168		2	0.163			
			-			4	0.653	1		
		5		PARAMET	ER STABILIZ	ZATION CRITE	RIA			-
-	And the party of	Temp.	Cond.	DO	pН	ORP	Turbidity	DTW		
Pa	rameter	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC		
C	riteria	±10%	±3%	±0.05 (if <1)	+0.7	±10	±10 % or	±0.3 (low flow)		
				±10% (if >1)	1 wild the	1	≤ 10 NTU	1 TO'2 (IOM IIOM)	1	
	Durgo Vol	Tama	1 01	Contraction of the second s	IELD PARAI	and the second se				
Time	Purge Vol.	Temp.	Cond.	DO	pH	ORP	Turbidity	DTW		r / Odor /
1702	(gals)	0°.05	mS/cm	mg/L	SU	mV	NTU	ft BTOC		nments
705	0.575	18.43	0.756	59.0	5.94	- 64	16.4	6.52	CLA	
705	0.869	17.04	0.715	0.49	6.11	-108	4:3	6.52		
1211	1.142	16.59	0.716	0.29	6.17	-117	0.0	6.52	-	11
1714		16.23	0.719	0.16		-119	0.0	6.52		1,
1717	1.688	16.17	0.718	0.13	6.23	-123	0.0	6.52		11
1720		16.14	0.716	0.12	6.24	-123	0.0	6.52	-	11
	2.234	15.98	0.714	0.09	6.25	-123	0.0	6.52		11
	2.507	15.83	0.717	0.07	6.26	-123	0.0	6.52		17
	STADI		ACHIE				0.0	Unit	12.000	- 5-
Sample inf	ormation: meth	od, container	number, size,			ed.				
	Ana	alysis		Prese	rvative	C	ontainer requirem		No. of	container
	PFA	45		26	C	250	ML HOP	E	1	
										-
Observatio	ns/Notes:									
		2.0								
-ump Star	t Time: 165 Initial Fill Tim	1						Air Monitoring	BZ	WH
Bladder	Initial Fill Tim	ne(FT; sec): ~	and the second se		Final Fill Tir			VOC (ppm)	0.0	0.2
Bladder	Initial Discha	rge Time(DT;	sec):		Final Discha	arge Time: —		H2S (ppm)	0.0	0.0
ubmorsible	Initial Contro	Cottin - (11-)			-			LEL (%)	0.0	00
oubmersible	Initial Contro	i Setting(Hz):	*		Final Contro	ol Setting(Hz):	-	CO (ppm)	0-0	9.0
					Burner B. C.			02 (%)	20.9	20.
					Purge Rate:	300 0	-/min			
Pump Dep	th: 11.5	FT BT OC				0.079	gpm			
	2.000									
mple /Ti	me: 1730	)								
	NA	)			_		Duplicate ID:	•		

Client:	NAVFAC	·	GI	and the second se	the second se	MPLING DATA 695610CH.04		Page: 1	of 7	- F 2
	Ault Field		-		Well ID-	MW-6	21	Page:	of 7	•
Event:	Phase 3 SI	A			Sample ID:	WI-AF-	21 MW-631-	-0820		
Date:	8/18/20	020		Sam	pling Team:	A. Woat	G- Gardy	ner		-
Weather:		1.68°F			The second	The vogi)	U- Uaran			-
Total De	)	ha	rd bottom				the section of	C 10 -1 21	122 4	1
Total Dep		9.60	FT.(BTOC)			M	easuring Device:	Dolinst #	Lot Si	V. Ogs
Depth to water Co		10.31	FT.(BTOC)					PID C-10	2924	
water co			FT.				1 10 1	Hosiba #	6-10	485
Well Volu			GAL/FT.			Well Dia.	Volume			
Total Purg		4.77	GAL.			(inches)	(gallons/foot)	-		
rotarr arg	ge voi		OAL.			1.25	0.041			
Purge De	vice:	Monsoon	# (-10)	2609		2	0.163			
		Controller				4	0.653			
		corritories -	H ( -10.	-308			0.000			
Ê					The second se	ATION CRITE				
	and a start	Temp.	Cond.	DO	pH	ORP	Turbidity	DTW		
Pa	rameter	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC	-	_
C	riteria	±10%	±3%	±0.05 (if <1)	+117	±10	±10 % or	±0.3 (low flow)		
		1		±10% (if >1)			≤ 10 NTU			-
	Purge Vol.	Tomo	Cond.	the second se	IELD PARAM	and the second se	T Total	I DTW	I or	101 1
Time	(gals)	Temp. °C	mS/cm	DO	pH	ORP	Turbidity	DTW	a second s	/ Odor /
1220	0-30	18-69	1.24	mg/L 2-33	SU 7.36	mV	NTU	ft BTOC		nments
1225	0.4	18.43	1.27	1.00	7.35	-20	730	10.95	Cloudy	
1230	0.5	18.63	1.29	1.45	7.34	-21	768	11.08	4	_
1235		19.01	1.30	1.38	7.34	-23	824	11.35	4	-
1240	0.7	19.27	1.29	1.46	7.34	-24	840	11.62	11	
12.45	0.83	19.24	1.29	1.41	7.34	-24	805	11.70	4	
1250	0.93	19.42	1.30	1.52	7.34	-24	765	11.69	11	
1255	1.03	19.50	1.31	1,33	7.74	-24	757	11.75	× 2	
300	1,13	19.88	1.30	1.48	7.34	-7 6	722	11.90	14	
1305	1,25	20.07		1,42	7.35	-25	677	11.91	h.	
1310	1.35	20.27	1.70	1.39	7.75	-26	575	11.91		
sample inf	formation: meth	od, container	number, size							
		alysis		Preser		C	container requirem			containers
	PFAS	-		50	°C	250	me HDI	θE	2	
Observatio	ons/Notes:									
		Ach								
ump Sta	rt Time: 12	06-120	8					Air Monitoring	BZ	WH
Bladder	Initial Fill Tim	ne(FT; sec):	-		Final Fill Tin	ne: —		VOC (ppm)	0.0	O. I
	Initial Discha		sec):			rge Time: -	41. J	H2S (ppm)	0.0	7.8
	and the second							LEL (%)	0.0	6
Submersible	Initial Contro	I Setting(Hz):	6.6		Final Contro	Setting(Hz):	6.3		0.0	499
								02 (%)	20.7	20.3
					Purge Rate:	80 mL/m	in			1.0.7
Dume De-	th. 2 ~				1	80 mL/m, 20.02 gi	pm			
-ump Dep	oth: 35					JI -	A Series			
	ime: 1340									
imple /T					t the state		-			
S/MSD )	AL-AF-A	16/- 1-1	1720. 405	N		7 4 4				
S/MSD )	WI-AF-A	nw - 631-	-A	WI-AF.M	V - 631-08	20-100	Duplicate ID: /	r4		

Client:	NAVEAC		G			MPLING DATA				
cation:	NAVFAC Ault Field		-	_ Proj	ect Number	695610CH.04	I.FI.FS	Page: 2	of 2	
Event:	Phase 3 SI		-	-	Well ID	MW- 63	1			
Date:	8/18/2	D C n	-	- Sam	Sample ID	WI-A F-	MW-631	- 0580 -		
		68 . 7		_ Sall	iping ream:	A. VOGT	r / G. G	ARDNER		-
otal Dept	Contract of the second s	39.60	FT.(BTOC)			Me	easuring Device:	SOLINST -	#12	2
epth to v Vater Col		29.25	_FT.(BTOC) FT.					PID # C.	102 92	24
	(x	0-163	GAL/FT.			Well Dia.	Volume	HIDRIDA #	C-1021	185
Vell Volui otal Purg		4.27	GAL.			(inches)	(gallons/foot)			
otarrurg	je vol		GAL.			1	0.041			
urge Dev	vice: M	NOOSNON	# 0-10	609		1.25	0.064			
	and the second sec			808501		2	0.163 0.653			
- 600 ( )				DADAMETE	DOTADILIZ	ATION CRITE				
		Temp.	Cond.	DO	pH	ORP	Turbidity	DTW		
Par	rameter	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC		
C	riteria	±10%	±3%	±0.05 (if <1) ±10% (if >1)	±0.2	±10	±10 % or ≤ 10 NTU	±0.3 (low flow)		
					ELD PARAN	ETERS				
Time	Purge Vol.	Temp.	Cond.	DO	pН	ORP	Turbidity	DTW	Color	/ Odor /
10.23	(gals)	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC		ments
315	1,45	50.57	1.30	1.47	7.75	-26	545	12.01	1.	
320	1.55	20.61	1.29	1,37	7-36	-27	540	12.05	11	1
325	1.65	20.66	1.30	1.38	7.37	-26	443	12.05	11	
1730	1.70	20.76	1.30	1.43	7.77	-28	415	12.10	11	
TABL	1.75	20.20	1.30	1.47	7.17	-26	611	12.16	1	60 C
1401	<u>-11</u> 74	CHIEVE	D							
	2									
ample info	ormation: metho	od, container i	number, size	, and type, pre	servative use	d.				
	Ana	lysis		Preser	vative		ontainer requirem	ents	No. of co	ontainers
	PFAS	-		56	°C	250.	~L HD	PE	2	
oservatior	ns/Notes:									
1mm Ct	Time: 120	8							12	
unp Stan	Initial Fill Time	e(FT; sec):			Final Fill Tim			Air Monitoring VOC (ppm)	BZ U-0	0.1
Bladder		ge mie(D1;			Final Discha	rge Time: -		H2S (ppm)	0.0	7.8
Bladder Bladder	Initial Dischar						1 -	LEL (%)	0.0	6
Bladder Bladder		Setting(Hz):	6.6	I	inal Contro	Setting(Hz):		CO (ppm)	0.0	499
Bladder Bladder	Initial Dischar	Setting(Hz):	6.6					CO (ppm) O2 (%)	20.7	
Bladder Bladder bmersible	Initial Dischar Initial Control	Setting(Hz):	6.6			80 mL/	(min		1 1 1 2 1 1 2 1 1 2 1 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2	20.3
Bladder Bladder bmersible Imp Dept	Initial Dischar Initial Control h: つら	Setting(Hz):		1			(min		1 1 1 2 1 1 2 1 1 2 1 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2	
Bladder Bladder bmersible Imp Dept mple /Tir	Initial Dischar Initial Control h: うら me: うちの		6	ı Ø	Purge Rate:	80 mL/ ≈ 0.02	SPL	02 (%)	1 1 1 2 1 1 2 1 1 2 1 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2	
Bladder Bladder bmersible mp Dept mple /Tir	Initial Dischar Initial Control h: ふら <u>me: いろくの</u> ハームモー へい		6	ı Ø	Purge Rate:	80 mL/ ≈ 0.02	(min	02 (%)	1 1 1 2 1 1 2 1 1 2 1 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2	

C/	12/	N:							
			1 2 2 2 2		VELOPMENT			The second second	
Client:	NAVFAC			Pro	ect Number:	695610CH.0	4.FI.WI	1	
Event:	Ault Field			- · · ·	Well ID:	WI-AF-	WT-0		
Date:	Well develop			- San	Sample ID: pling Team:		1.1015 A	4. Vagt	
Weather:	40.2			- 541	ihuud reau.	B.O.			1.010
	- <u>-</u>			-				& Horiba	Pine # 21290
T.4.15		Before	After				Device:	Salinat .	PIAC # 12726 0925
Total Dep Depth to v	th:	19.93	14.93			M	Date and Time:	12/7/19	0825
Water Col	water: (•)	1.67	3.29	FT.(BTOC) FT.			Date and Time.	<u></u>	
	(x	0.163	0.163	GAL/FT.		Well Dia.	Voîume		
Well Volu	me:	0.54	0.54	GAL.		(inches)	(gallons/foot)		
Total Purg	je Vol.:	5.4		GAL.		1	0.041		
Purge Dev	(la.).	11				1.25	0.064 0.163		
i dige Dev	/ice:	Monsoo	N			4	0.653		
Air Monito	ring Equipme	nt:	MULERA	E pine #	131.39			,	
		,	• •					$-\alpha$	
Was well s	surged and bai	iled in 2-3 foo	ot intervals alo	ong entire scree	en?	No,	Entire	577 3	screer
	bail equipmer			sable		, ,			
The second			V						
	Purge Vol.	Tomp	Cond	DO	pH	ORP	Turbidity		a i i a la l'ammante
Time	(gals)	Temp. °C	Cond. mS/cm	mg/L	SU	mV	NTU	Other:	Color / Odor / Comments
Stabilize				± 0.05 (if <1)			< ± 10%		
	aton Criteria	± 0.1	± 0.02 (if >1)		± 0.1	± 10	or ≤10 NTU		
08:25	Begin 5	avae B		iled 33	a				1101
0835	3	11.19	0.175	0,11	6.90	71	Max		Murky/Ne Oder
08:55		purge					104		Clear/NO aler
0925	18	11.23	0.151	0.00	7.46	-64	42.3		II II
0940	33 48	12.09	0.146	1.39	7.63	76	24.6		1
0955	63	11.99	0.140	0.72	7.81	-16	11.7		9
1005	73	12.01	0.145	2.84	7,69	16	129		//
1025	93	12.18	6.145	0.09	7.30	22	10.9		<u> </u>
1635	103	12,17	0.149	0.56	7.26	36	6.4		U
1040	108	12.18	0.151	0.59	7.27	35	6.5 4.9		1
1043	113	1215	0.150	0.66	7.27	34	4.9		''
									i
Final									
Observation	s/Notes:	Puror	Start Time:	COFA	2255		Durgo Poto:	1 ga/r	
0030142001	3/110163.	Furge		6050	0055		Fulge Rale.	1 941/0	BZJWH
- 11	1 0	p. 1		. 09		_		Air Monitorina:	
Colle	cred	QW 3	ample	at $100$	WF-AF	-WTO1	-GW-1219	VOC (ppm) =	0.0 0.0
<b>.</b>	1 1 1	1	, '					H2S (ppm) =	0.0 0.0
Col	ected	oluplica	atc Sama	ple at c	2900	WI-AF-	WTO1-GWP-12	(%) ≃	0 0
		r			120		Purge Rate: -GW-1219 WTO1-GWP-12	CO (ppm) =	0 0
						1.3		02 (%) =	20.9 20.9
									( ) (
Signature(s):	46		235						
(0)	130								
1	2								

Scanned by CamScanner

Client				WELL DEV	ELOPMENT	DATA SHEE	Π	1 1	
	NAVFAC Ault Field			Proje		695610CH.0			
-	Well developm	ont					T-02		
Date:	1 - 1 - 1	ent 9	_	•	Sample ID:		,		(
Weather:	1 10 1	Rain		Sam	pling Team:		Imers,	A. Vegt	
-		SAU				B. OL	Jens_	1	- +
		Before	After					Hor. ba	Pine# 21290 Pine# 12726 9 0805
Total Depth		29.87	29.87	FT.(BTOC)		Me	asuring Device:	Solinst	Pinc# 12726
Depth to wa		11.48	11.53	FT.(BTOC)			Date and Time:	12/7/1	9 0805
Water Colu		18.39		FT.					
Well Volum	ъ. _( <u>v)</u>	0.163		GAL/FT.		Well Dia.	Volume		
Total Purge		30.0		GAL. GAL.		(inches)	(gallons/foot)		
<b>J</b>				GAL.		1.25	0.041		
Purge Devi	ce: <u>M</u>	ena N	lonscon			2	0.163		
				11-		4	0.653		
Air Monitor	ing Equipmer	nt:	Muff; F	AE Piret	43639				
Wee well of	urged and he!						1.	<u> </u>	
was well st	irged and bai	led in 2-3 foc	ot intervals alo	ng entire scree	n?	No, 2	entire :	5ft 50	wen
Surge and I	bail equipmer	nt:	Diana	sable t	rlor				
••••••••••••••••••••••••••••••••••••••			- Pispos	1900 0					
			He Selfier	FIE		ETERS			1
Time	Purge Vol.	Temp.	Cond.	DO	pН	ORP	Turbidity	Other:	Color / Odor / Comments
	(gals)	°C	mS/cm	mg/L	SU	mV	NTU	Other:	Color / Odor / Comments
Stabiliza	ton Criteria	± 0.1		± 0.05 (if <1)	± 0.1	± 10	< ± 10%		
0805	Bacing	here to	± 0.02 (if>1) bail, bo				or ≤10 NTU		
0855	12	11.42	0.253	2.48	7.22	-38	95.6		clear/No Colar
0920	62	11.55	0.247	1.12	7.53	10	23.1		4
0940	102	11.70	0.242	1.60	7.48	91	11.9		11
0950	ilz	11.62	0,247	1.36	7,83	114	8.9		0
0957	126_	11.64	6.241	1.32	7.79	137	7.2		
1002	136	11.56	6.245	1.51	7.75	136	7.4		1(
Final	na/Nataor	Dur	ge Start Time:	0850			Purce Rate:	Zgal/v	
Observation									BZINH
1	late	of Gu	150MA	le + M	SIMSE	of In	010	Air Monitoring:	
1			•		-/			VOC (ppm) =	
\	WI-AF	-wto	2-GW-	-1219				H2S (ppm) =	
			- / .	1.1710	MSIN	15D		LEL (%) = CO (ppm) =	0 0
	WI-A	F-WT	02-94	1-1219				02 (%) =	208 0
									20.9
Signature(s	):							a de la de l	
	0								
				. Mini					
				No.					

Client:	NAVFAC					ING DATA SH 695610CH.04		Page: t	of 2	
	Ault Field			. FIUJ			F-14 103	i aye. v	of 2	
	Phase 2 SI							141-10:4		
Lvent:							-WT03-0			
Date: Weather:	12/11/19		No.	. Sam	ping (eam:	PiButl	er, viba	rdner		
weather.	Cloudy,		ind							
Total Dept	th: 9.81 €	1.880	FT.(BTOC)			M	easuring Device	WLI: Solin	ist Pine	# 042
Depth to v	vater: (·)	8.44	FT.(BTOC)				-	Horiba! Pi		
Water Col	umn:	1.37	FT.							
	(x)	0.163	GAL/FT.			Well Dia.	Volume	MultiRA	E. Pine	2444
Well Volu		3.22	GAL.			(inches)	(gallons/foot)			
Total Purg	je Vol.: 픽	100mL	GAL. OP			1	0.041	1		
-						1.25	0.064	1		
Purge Dev	vice:	er: pum	pi Pine:	# 16866	>	2	0.163			
	-					4	0.653	1		
								-		
P S		-				ATION CRITE				
		Temp.	Cond.	DO	pН	ORP	Turbidity	DTW		
Pai	rameter	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC	maine	
C	riteria	±0.1		±0.05 (if <1)	±0.1	±10	±10 % or	±0.3 (low flow)		
		±0.1	±0.02 (if >1)	±0.2 (if >1)			≤ 10 NTU			
	1-21-12				ELD PARAM					13,1434
Time	Purge Vol.	Temp.	Cond.	DO	pН	ORP	Turbidity	DTW		Odor /
	n L (gats)	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC		ments
1443	0	10,20	0.288	1.70	5.96	(44	0.0	8.49	Clear,	no odo
1447	400	10,23	0.288	1.15	5.41	192	0.0	8.49	1	
1451	800	10.22	0,288	0.85	5.31	212	0.0	8,49	M	
1455	1200	10,17	0,288	0.72	5,27	226	0.0	8,49	M	
1459	1600	10,19	0,288	0.67	5121	238	0.0	8.49		
1503	2000	10.23	0,288	0.64	Silq	247	0.0	8.49	- Le	
1507	2400	10.24	0.288	0.55	5,17	252	0.0	8.50	t	1
1511	2800	10127	0,289	0.49	5,16	257	0.0	8.50	i	
15 15	3200	10.31	0,290	0.43	5,14	2501	0,0	8.51	11	
1519	3600	10,30	0.290	0,32	5,12	260	0.0	8,51	11	
1523	4000	10.28	0,291	0.34	5,14	261	0.0	8,52		
Sample inf	ormation: metho		number, size,	and type, pre	eservative use	d.		1		
	Ana	lysis		Prese		C	ontainer requirer	nents	No. of c	ontainers
	PFAS		-	1	00	250	mL HDPE		2	
-			-							
Observatio	ne/Notoe:					-				
JUSCIVALIO	13/140(23.									
Pump Star	t Time: 143	9						Air Monitoring	BZ	I WH
	Initial Fill Tim		NA		Final Fill Tin	יפי	NA	VOC (ppm)		
	Initial Dischar				Final Discha			H2S (ppm)	000	0
Diauuel		ac ime(D1)	300).		i illai Disulla	age inne.		LEL (%)	Õ	Ō
Suhmersihle	Initial Control	Setting/Uz).		-	Final Contro	I Setting(Hz):	1	CO (ppm)	σ	GOC O 20 9
JUDITICI SIDIC		Jeung(nz).	c			· Setting(TZ):			20.9	20 9
					Durna Data	ALIDA -		O2 (%)		
					r urge riald.	~14392	100 m L / mi	ч		
Pump Den	th: 9.5ft	btoc								
Sample /T	ime: 1530									
MS/MSD	NA						Duplicate ID:	NA		
		Buth			*					

Client: ation: ation: Date: Date: Weather: Total Dept Depth to w Water Col Well Volue Total Purge	Phase 2 SI         Cloud         Cloud         water:       (-)         lumn:       (x)         me:       (x)         ge Vol.:       40	9 <u>7</u> , 40 <sup>15</sup> , <u>9</u> ,214 <u>1,37</u> <u>0,163</u> <u>0,22</u> <u>100 mL</u>	FT.(BTOC) FT.(BTOC) FT. GAL/FT. GAL. GAL.	Proj	ect Number: Well ID: Sample ID: pling Team:	WI-AB DiButi	FI.FS F-WT03 -WT03- ( er, G. Ga easuring Device:	WLI: Sol Horiba: P	of 2 inst Pinetle ine d 2141 AE: Pinetle	4
				PARAMETE	ER STABILIZ	ATION CRITE	RIA			
		Temp.	Cond.	DO	pН	ORP	Turbidity	DTW		
Pa	rameter	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC		
С	riteria	±0.1		±0.05 (if <1) ±0.2 (if >1)	±0.1	±10	±10 % or ≤ 10 NTU	±0.3 (low flow)		
					IELD PARAN					
Time	Purge Vol.	Temp.	Cond.	DO	pН	ORP	Turbidity	DTW	Color / Odor /	
	mL(gals)	<u> </u>	mS/cm	mg/L	SU	mV	NTU	ft BTOC	Comments	
1527	4400	10,27	0,291	0.32	5.14	261	0.0	8.52	Clear, no od	or
<	Ail par	ams st	able,	proceed	to 5a1	npip				
Sample inf	formation: metho	od, container	number, size	, and type, pre	eservative use	ed.				
		lysis		Prese	rvative		container requirem		No. of containe	ers
	PFAS	>		<u> </u>	soc.	25	Oml HS	DPE	2	
Observatio	ons/Notes:									-
Bladder Bladder	rt Time: しいき Initial Fill Tim Initial Dischar Initial Control	e(FT; sec): rge Time(DT;	1	-	Final Fill Tir Final Discha		NA	Air Monitoring VOC (ppm) H2S (ppm) LEL (%) CO (ppm)	BZ W 000000000000000000000000000000000000	H
	oth: 9,5 F						= 100m L/mi	02 (%)	20.9 20	9
Sample /T										
							Duplicate ID:	NA		-
Signature(	s): David	Buth		· · · · · · · · · · · · · · · · · · ·				· · · · · · · · · · · · · · · · · · ·		

		SM		GROUNDWA	TER SAMPL	ING DATA SH	IEET			
Client:	NAVFAC					695610CH.04		Page: 1	of j	
ation:	Ault Field				Well ID:	WY-AD	F-WT04			
⊾vent:	Phase 2 SI				Sample ID:	WI-AF	-WT04-0	2W-1219		
Date:	12/11/1	9		Sam	pling Team:	D. Butl	er, G. Ga	undner		-
Weather:	Cloudy, 40	nº, wind								
Total Dept Depth to w	vater: (-)	29,33 7,91	FT.(BTOC) FT.(BTOC)			Me	asuring Device:	Horiba: Pir		
Water Col		21,42	FT.					7 MultiRAE	P'rott 4	4900
		0,163	GAL/FT.			Well Dia.	Volume	/ millerie		11,00
Well Volur		6001	GAL.			(inches)	(gallons/foot) 0.041	4		
Total Purg		800 mL	CAL.CO			1.25	0.041	-		
Purge Dev	vice: D	Dumi	p: Pine	++ 1686	6	2	0.163	-		
r uige Dev	100. 1	er: pum	- TINE	AL 1000	Ø	4	0.653	-		
						*		_		
				PARAMETE	R STABILIZ	ATION CRITE		1		
		Temp.	Cond.	DO	рΗ	ORP	Turbidity	DTW		
Par	rameter	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC	1	
С	riteria	±0.1	1 1 1	±0.05 (if <1) ±0.2 (if >1)	±0.1	±10	±10 % or ≤ 10 NTU	±0.3 (low flow)		
					ELD PARAN	IETERS				
Time	Purge Vol.	Temp.	Cond.	DO	pН	ORP	Turbidity	DTW	Color /	Odor /
Time	mL (gats)	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC	Comm	
1349	0	16,48	0,435	612	7,45	-124	6213	7.94	Sightlyd	
1352	600	10,49	0,445	0.24	7.44	-160	50.4	7.95	slight sult	ur eder
1355	1200	10,48	0,446	0,00	7,45	-166	42,5	7:95	V 11	
1358	1800	10,47	0.447	0.00	7.46	-169	37,3	7.95		
1401	2400	10,47	0.448	0.00	7.47	-170	32.6	7.95	<u> </u>	
1404	3000	10,47	0.447	0.00	7,48	-172	35,7	7.95	4	
1407	3600 4200	10,45	0.448	0,00	7.49	-173	47,9	7,95	11	
1410		10,45	0,447	0.00	7.49	-174	52.8	7.95		
1413	4800	10.45	0,448	0.00	7.50	-174	51.6	7,95		
	All paran	13 Star	re, pro	reed to	sample					
Sample inf	formation: meth	nd container	number size	and type pre	servative use	he		1		
		lysis	number, size		rvative		Container requirer	ments	No. of co	ntainers
	PFAG	19313		≤60			SOML HPP		2	
,			-	~~ 0			onte la j	<u>b.</u>		
1										
								-		
	ons/Notes:									
Observatio	ons/Notes:									
Observatio		-17						Air Monitoring	BZ	WH
Observatio Pump Sta	ons/Notes: rt Time: 13		۵ <i>.</i> ۴		Final Fill Tir	ne:	NA	Air Monitoring VOC (ppm)	0	WH 8
Observatio Pump Stan Bladder	rt Time: 13	e(FT; sec):	; sec):		Final Fill Tir Final Discha		NA		0	WH 8
Observatio Pump Stan Bladder	rt Time: 13 Initial Fill Tim	e(FT; sec):	مر ہے ; sec):				NA	VOC (ppm)	0	WH 80 0
Observatio Pump Star Bladder Bladder	rt Time: 13 Initial Fill Tim	e(FT; sec): rge Time(DT	·*-		Final Discha		MA	VOC (ppm) H2S (ppm)	0000	0000
Observatio Pump Star Bladder Bladder	rt Time: 13 Initial Fill Tim Initial Dischar	e(FT; sec): rge Time(DT	·*-		Final Discha	arge Time: bl Setting(Hz):		VOC (ppm) H2S (ppm) LEL (%) CO (ppm) O2 (%)	0	WH 8 0 20.9
Observatio Pump Star Bladder Bladder	rt Time: 13 Initial Fill Tim Initial Dischar	e(FT; sec): rge Time(DT	·*-		Final Discha	arge Time: bl Setting(Hz):		VOC (ppm) H2S (ppm) LEL (%) CO (ppm) O2 (%)	0000	0000
Observatio Pump Star Bladder Bladder Submersible	rt Time: 13 Initial Fill Tim Initial Dischar Initial Control	e(FT; sec): rge Time(DT Setting(Hz)			Final Discha	arge Time: bl Setting(Hz):	NA 	VOC (ppm) H2S (ppm) LEL (%) CO (ppm) O2 (%)	0000	0000
Observatio Pump Star Bladder Bladder Submersible	rt Time: 13 Initial Fill Tim Initial Dischar	e(FT; sec): rge Time(DT Setting(Hz)			Final Discha	arge Time: bl Setting(Hz):		VOC (ppm) H2S (ppm) LEL (%) CO (ppm) O2 (%)	0000	0000
Observatio Pump Star Bladder Bladder Submersible Pump Dep	rt Time: 13 Initial Fill Tim Initial Dischar Initial Control	e(FT; sec): rge Time(DT Setting(Hz)			Final Discha	arge Time: bl Setting(Hz):		VOC (ppm) H2S (ppm) LEL (%) CO (ppm) O2 (%)	0000	0000
Observatio Pump Star Bladder Bladder Submersible Pump Dep Sample /T	rt Time: 13 Initial Fill Tim Initial Dischar Initial Control oth: 27 f	e(FT; sec): rge Time(DT Setting(Hz)			Final Discha	arge Time: bl Setting(Hz):	200 mL/m;	VOC (ppm) H2S (ppm) LEL (%) CO (ppm) O2 (%)	0000	0000
Observatio Pump Star Bladder Bladder Submersible Pump Dep	rt Time: 13 Initial Fill Tim Initial Dischar Initial Control oth: 27 f <u>"ime: 14: 15</u> NA	e(FT; sec): rge Time(DT Setting(Hz)			Final Discha	arge Time: bl Setting(Hz):		VOC (ppm) H2S (ppm) LEL (%) CO (ppm) O2 (%)	0000	0000

		SM		GROUNDWA	TER SAMPL	ING DATA SH	EET		
Client:	NAVFAC			Proje	ect Number:	695610CH.04.	FI.FS	Page: \	of 2
ntion:	Ault Field				Well ID:	WI-A	F-wrog	ć	
Event:	Phase 2 SI				Sample ID:	WI-AF.	W705-6	-W-1219	
Date:	12/0	8/19		Sam			Ler, G. 60		
Weather:	Cloud	AND A DECIDENT	preeze	•					
Total Dept	:h:	9.81	FT.(BTOC)			Me	asuring Device:	WLI: Soli	inst Pine#204
Depth to w	vater:	(.)5.84	FT.(BTOC)					Horiba ! P	ine# 21414
Water Colu	umn:	3.97	FT.					AL IS DAT	E: Pine# 4490
		(x) 0.163	GAL/FT.			Well Dia.	Volume	1 Mallinno	:, TINE+1-1740
<b>Well Volur</b>	ne:	0,65	GAL.			(inches)	(gallons/foot)		
Total Purg	e Vol.:		GAL.			1	0.041	1	
		· · · · · · · · · · · · · · · · · · ·				1.25	0.064	1	
Purge Dev	vice:	Peri pump	Pinett	16866		2	0.163	1	
a ge bet						4	0.653	1	
		-						1	
		T				ATION CRITE		DTW	
_		Temp.	Cond.	DO	рН	ORP	Turbidity	DTW	
Par	rameter	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC	
C	riteria	±0.1		±0.05 (if <1) ±0.2 (if >1)	±0.1	±10	±10 % or ≤ 10 NTU	±0.3 (low flow)	
			<u> </u>		ELD PARAN	ETERS	Constant a	STERE V THE	
	Purge Vo	ol. Temp.	Cond.	DO	pН	ORP	Turbidity	DTW	Color / Odor /
Time	mh (gats)		mS/cm	mg/L	SU	mV	NTU	ft BTOC	Comments
1318	0	11.36	0,774	2.09	7.32	74	187	5,90	Slightly cloudy, no adea
1321	600	11.61	0.774	1.49	7,20	71	171	5,94	11
1324		11.68	0.774	1.35	7,17	72	132	5,95	
1327	1500		0,774	1,17	7.16	74	106	5.9.5	14
1330	1300	11.74	0.775	1,12	7,16	77	75,0	5,96	11
1333	2400		0,178	1.07	7.16	79 61,50		5,97	
1336	2850		0,777	1.09	7.16	81	48.8	5,97	
1339	3300		0.775	0.83	7.17	82	43,4	5,97	11
1342	3750		0.776	0.84	7.17	83	39,1	5.97	clear, no odor
1345	4200		01176	0,72	7.18	84	34.3	5.98	(1
1348	4650		0,778	0,86	7.18	85	26.9	5.48	1
		ethod, containe					46.1	2.90	
Sample init		Analysis	Humber, Size		rvative		ontainer requiren	nents	No. of containers
	PFA			$\leq 6$			OmL HD-		2
Observatio	ns/Notes:			19000					
Dumm Cha	d Theorem 1							Air Monitoring	BZ   WH
	rt Time: \			^			1.0	Air Monitoring	
		Time(FT; sec):	N <sup>4</sup>		Final Fill Tir		NA	VOC (ppm)	0 00
Bladder	Initial Disc	charge Time(D1	; sec):		Final Discha	arge lime:		H2S (ppm)	00 00
							1	LEL (%)	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Submersible	Initial Con	trol Setting(Hz)	):		Final Contro	ol Setting(Hz):	4	CO (ppm)	2011 2014
						0 5 1	. /	O2 (%)	20.4 20.9
					Purge Rate:	@1316~2	00  mL/min		
						@1371~	150  mL/min		
mp Dep	oth: 8 f	4 btoc				G1)41~			
Sample /Ti	ime: 141	00							
MS/MSD	AIA		10000				Duplicate ID:	NA	
Signature(s	s)· D.	J. 2.10							

	SM		GROUNDWA		ING DATA SH	IFFT			
Client: NAVFAC			Contract and the second second second	and the second se	695610CH.04		Page: 2	of 2	
ation: Ault Field					WJ-AF		i uge.		
Event: Phase 2 SI			•	Sample ID:	INT TAT	E NUT OF	11-1214		
	a			Sample ID:	WE AI	F-WT05-6	W-1219		
Date: 12/08/19 Weather: Cloudy		reeze	Sam	pling leam:	Dibuti	er, G. Ga	raner		
Total Depth: Depth to water: (-	9.81	FT.(BTOC) FT.(BTOC)	-		Me	easuring Device:	WLJ: Soli Horiba: Pi		
Water Column:	3.97	FT.						-	
	0.163	GAL/FT.			Well Dia.	Volume	Multi RA	E! Pin	1440
Well Volume:	0.65	GAL.			(inches) (gallons/f				
	GUOML	GAL OF			1	0.041	1		
	BUCME	ORE		1.25 0.064					
Den Denter D		10104	11.060				-		
Purge Device:	Peri pump	. Fine II	10006		2	0.163			
					4	0.653	]		
			PARAMETE	R STABILIZ	ATION CRITE	RIA			
	Temp.	Cond.	DO	pН	ORP	Turbidity	DTW		
Parameter	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC		
			±0.05 (if <1)			±10 % or			
Criteria	±0.1			±0.1	±10		±0.3 (low flow)		
		$1\pm0.02$ (IT >1)	±0.2 (if >1)			≤ 10 NTU			
				IELD PARAM		T = 1 + 14		Ostan	O dan /
Time Purge Vol.	Temp.	Cond.	DO	pН	ORP	Turbidity	DTW		Odor /
m (gals) C	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC		ments
1351 5160	11.83	0,779	0.84	7.19	86	23.8	5.98	Clear	no odor
1354 5550	11.82	0,781	0.88	7,19	9 87 20.6 5.98		i.	1	
1357 6000	11.94	0.781	0.83	7,19	88	20:0 5.98			
1400 6600	11.81	0,783	0.87	7,20	89	19,9	5,98	١	1
							· · · · · · · · · · · · · · · · · · ·		
							· · · · · · · · · · · · · · · · · · ·		
Sample information: met	hod container	number size	and type pre	servative us	he				
	alysis	110111001, 5120		rvative		Container requiren	nents	No. of c	ontainers
PFAS				;°C		50 mL HD		2	
[ 6/1 3					-	JUME MP			
		100			_				
Observations/Notes:					-				
									1.000
Pump Start Time: 1	316						Air Monitoring	BZ	WH
Bladder Initial Fill Tir			•	Final Fill Tir	20.	NA	VOC (ppm)	0	0
		N	4					0	ŏ
Bladder Initial Discha	arge IIme(DI	; sec):		Final Discha	arge i ime:		H2S (ppm)	ŏ	000
		1					LEL (%)		0
Submersible Initial Contro	ol Setting(Hz):	: 1		Final Contro	ol Setting(Hz):	-	CO (ppm)	0	
				Dunga D. (	0.010	2000 1/424	O2 (%)	20.0	2019
				Purge Kate:	@ 1510 ~	200m L/min			
mp Depth: 8 ft	btoc				@1321~	150m L/min			
Sample /Time: 140	0								
MS/MSD MA						Dunlicato ID:	NA		
WO/WOU MA		and the second second	Sector and and a sector and a			Duplicate ID:	71 10		

Signature(s):

		SM		GROUNDWA	TER SAMPL	ING DATA SH	EET			
Client:	NAVFAC			Proje	ect Number:	695610CH.04.	FI.FS		of	
ntion:	Ault Field				→ Well ID:	WI-AF	-WT06-0	W-1219		
Event:	Phase 2 SI				Sample ID:	WI-AF.	WTOB			
Date:	12/08/1	9					ler, G.G.	ardner		
Weather:	Cloudy,	40'5, 6	reeze		-		· · · · · ·			
Total Dant						Me	acuring Device:	WLI: Solinst	Phatt 201	436
Total Dept	in:	45	FT.(BTOC)	60)		IALC	asunny Device.			
Depth to w Water Colu	valer:	0.8 psi 45	FT.(BTOC) \					Horiba: Pi		
water con		0.163	GAL/FT.			Well Dia.	Volume	MultiRAS	E: Pinett	4490
Well Volur		7,33	GAL			(inches)	(gallons/foot)			
Total Purg			GAL.			1	0.041			
rotal Fulg		DUUML	UAL. U			1.25	0.064	1		
Purge Dev	vice: /	vA-ar	tesian			2	0.163			
ruige Dev	/ice	Vigenal	10/10/1			4	0.653			
						<del>_</del>	0.000	1		
Sector State			-	PARAMETE	R STABILIZ	ATION CRITE	RIA			Sheely (1
		Temp.	Cond.	DO	pН	ORP	Turbidity	DTW		
Par	rameter	°C	mS/cm	mg/L	sυ	mV	NTU	ft BTOC		
	•. •			±0.05 (if <1)		. 40	±10 % or	100 (1-11 (1-11)		
C	riteria	±0.1	±0.02 (if >1)		±0.1	±10	≤ 10 NTU	±0.3 (low flow)		
					ELD PARAN	ETERS	The second second	COMPANY AND		1.52
	Purge Vol.	Temp.	Cond.	DO	pН	ORP	Turbidity	Pres DTW 05	Color / O	dor /
Time	mL (gals) 03	IRET °C	mS/cm	mg/L	SU	mV	NTU	Poi #BTOG-0	Comme	ents
1219	0	-7-6-709	0,358	3,05	7.68	-16	44.0	0.8	Clear, no a	odet
1222	600	10.63	0.362	0.22	7.89	-70	44,1	0.8	11	
1225	1200	10,64	0,363	0.01	7,98	- 91	45.7	0.8	( <u>)</u>	
1228	1800	10,72	0.364	0.00	8.03	-105	48.8	0,8	7.1	
(23)	2400	10.79	0.365	0.00	8.07	-115	49.7	0.0	51	
1234	3000	10.84	0.365	0.00	8.09	-122	50,3	6.8	<u></u>	
1237	3600	10.92	0.367	0,00	Bill	-127	52:5	0.8	3.4	
1240	4200	10.99	0.369	0.00	8.11	-132	5219	0.8	1	
1243	4800	11.02	0,372	0.00	8,11	-138	52,9	0+8		
	All para	ms sta	ble, pro	cred to	sampl	e				
Sample inf	ormation: meth	od, container	number, size	, and type, pre	eservative use					ALL S
		alysis			rvative		container requirer		No. of con	tainers
	PFAS			$\leq 6$	°C	2	250 mL H	DPE	2	
					-				ļ	
									<u> </u>	
Observatio	ons/Notes:									
0.0		10							1	14/11
	rt Time: 12		,	A				Air Monitoring	BZ	WH
	Initial Fill Tim		M	$\sim$	Final Fill Ti		NA	VOC (ppm)	0	00
Bladder	Initial Discha	rge Time(DT	; sec):		Final Disch	arge Time:		H2S (ppm)	0	
			5				1	LEL (%)	0	0
Submersible	Initial Contro	I Setting(Hz)	: 1		Final Control	ol Setting(Hz):	*	CO (ppm)	20.9	20.9
						0.01		O2 (%)	201-1	2011
					Purge Rate:	@ 1216 2 :	200mllmin			
		L.								
mp Dep	oth: NA . d	Ir Tesia	n							
Sample /T		2					Duall 1 1D	MA		
MS/MSD	NA			L			Duplicate ID:			
Signature(	s):									

		SM		GROUNDWA	TER SAMPL	ING DATA SH	IEET			
Client:	NAVFAC			Proj		695610CH.04		Page: į	of #	
ation:	Ault Field				Well ID:	WI-AF	-WTOT		¥.	
vent:	Phase 2 SI						=-WT07-C	-w-1219		
Date:		90 DI	12/17	Sam			ier, G. Ga			
	Cloudy		ain		9.00	- ipur				
		1.0 1						10.01		
Total Dept	th: <u>1</u>	5.07	FT.(BTOC)			M	easuring Device	: WLI: Solin	at Pin	= # 0422
Depth to w	vater: (·	19.40	FT.(BTOC)					Horiba: P.	ine H21	414
Water Col		5.67	FT.					100 A 200 A 200		
		x) 0. (63	GAL/FT.			Well Dia.	Volume	y MultiRA	Ei Pine	# 4440
Well Volur		0.92	GAL.			(inches)	(gallons/foot)			
Total Purg		0.7-	GAL.			1	0.041	-		
			1.50			1.25	0.064	1		
Purge Dev	vice:	Por: Du M	np ! Pin	pHi686	SC.	2	0.163	-		
uige Dev	100.	- per		CALEUR	Ŷ	4	0.653	-		
	-					4	0.055			
6 - S				PARAMET	ER STABILIZ	ATION CRITE	RIA			
		Temp.	Cond.	DO	pН	ORP	Turbidity	DTW		
Pa	rameter	°C	mS/cm	mg/L	s∪	mV		ft BTOC		
				±0.05 (if <1)			±10 % or			
C	riteria	±0.1		±0.2 (if >1)	±0.1	±10	≤ 10 NTU	±0.3 (low flow)		
2			120.02 (11 - 1)		ELD PARAN	IETERS				
	Purge Vol.	Temp.	Cond.	DO	рH	ORP	Turbidity	DTW	Color /	Odor /
Time	nL (gats)	°C I	mS/cm	mg/L	SU	mV	NTU	ft BTOC		nents
0855	1000	9.77	1.59	2.94	6.46	-40	18.5	9.70	Cleanna	
0858	1600	10.08	1.58	0.63	6.58	-59	15.8	9.81	Clargen	CHOY
0902	2000	10.20	1.58	0.34	4.65	-68		9.521		· · · · · ·
0905	2300		-		6.71	1	10.4			
90905	2700	10.27	1.57	0.23		-74	7.3	9.85		
		10-31	1.50	0.17	6.75	-78	4.9	9.90		
0912	3000	10.32	1.56	0:12	6.78	-81	4.4	9.92		
0915	3300	10.34	1.55	0.09	6.80	-83	4.1	9.94		
0918	3600	10.34	1.55	0.03	6.82	-84	3.4	9.95		
92	3900	10.34	1.54	0.00	6.84	-85	3.	9.99		
2924	4200	10.37	1.54	0.00	6.85	-87	2.9	10.02		
Completing										
sample init		nou, containe nalysis	r number, size		rvative use		Container requirer	nente	No of c	ontainers
		AS		460		····				Jildiners
	<b>P</b> P	77		560		XX 250	D-ML HDPE			
		2.								
Ohaanstia		-	_							
Observatio	Ins/inoles:									
Pump Star	rt Time: 08	550					in the	Air Monitoring	BZ	WH
	Initial Fill Ti			-0	Final Fill Tir	no:	A	VOC (ppm)		-
		arge Time(DT		4	Final Discha		NA		8	6
Diauuei	initial Disch	arge mile(Di	, secj.		Final Discha	arge rime.		H2S (ppm)	0	0000
		- 1.0 - 441 (1.1)			<b>E</b>	10 11 11 1		LEL (%)	0	0
Submersible	Initial Contro	ol Setting(Hz)	: ~		Final Contro	ol Setting(Hz):	ــــ	CO (ppm)		-
						0.000		O2 (%)	20.9	20.9
					Purge Rate:	@0850 20	com Umin			
Dame - D	Ab. 111 F	it btc	JC			0958 100				
Pump Dep		1					~ <i>[</i> '' ''']			
Sample /T	ime: 09.30									
MS/MSD	NA						Duplicate ID:	NA		
Signature(s	s): Davz	Buth	1996 (Sec. 1997)	a state of the sta			100 M 100 M 100 M 100			

1000				GROUNDWA	TER SAMPL	ING DATA SH	IEET		
Client:	NAVFAC			Proje		695610CH.04		Page: \	of l
tion:	Ault Field					WI-AF.			
Event:	Phase 2 SI						-WT08-G		
Date:	12/12/19			Sam	pling Team:	DiBut	ler, G. G	ardner	
Weather:	cloudy,	40 19,1	ain					A second second	
Total Dept	h. ( '	40	FT.(BTOC)			M	easuring Device	WLI Soling	+ Pinet O
Denth to y	notor Pro LH		FT.(BTOC)	DE aci			easuring Device.		ine# 25314
Water Colu	water: Pies He	GA	FT.	- 171					
		0.63	GAL/FT.			Well Dia.	Volume	MultiKAE	# 449 00
Well Volur		6,52	GAL.			(inches)	(gallons/foot)		
Total Purg		OC mt	GAL.			1	0.041		
iotai i dig		OU Wat	UNL.C			1.25	0.064	1	
Purge Dev	vice: A	JA-art	P3:04			2	0.163	-	
i dige bei			11111			4	0.653	1	
						L	0.000	1	
2		10.2		PARAMETE	R STABILIZ	ATION CRITE	RIA		
		Temp.	Cond.	DO	pН	ORP	Turbidity	DTW	
Par	rameter	°Ċ	mS/cm	mg/L	SU	mV	NTU	ft BTOC	
				±0.05 (if <1)			±10 % or		
C	riteria	±0.1		±0.2 (if >1)	±0.1	±10	≤ 10 NTU	$\pm 0.3$ (low flow)	
					ELD PARAN	ETERS	<u> </u>		
-	Purge Vol.	Temp.	Cond.	DO	pН	ORP	Turbidity	Pres DTW	Color / Odor /
Time	m (gals)	°C	mS/cm	mg/L	SU	mV	NTU	နှ <del>ို ft BTOC</del>	Comments
0859	0	9155	0,348	0.00	6,94	7	4,3	1,95	Clear, no adon
	7506060	9.88	0.344	0.00	7,15	-39	4.9	1.95	EL EL
	150012000	10.04	0,342	0.00	7,31	-28	4.7	1.95	4
0408	1801-52586	10,29	0.341	0.00	7.37	-96	4.8	1.99	LT.
0911	20000000		0,340	0.00	7.42	-112	4.7	1.95	4
0914	3750	10,56	0,339	0.00	7.44	-124	4.6	1.95	4
0917	4500	10,67	0.339	0.00	7.46	-132	4.1	1.95	4
0920	5250	10.78	0339	0.00	7148	-140	4.0	1,95	l,
0923	6000	10.88	0,339	0.00	7.49	-145	3.5	1.95	11
0426	6750	10,90	0,339	0.00	7,50	-149	311	1.95	11
0929	7500	10,98	0.339	0,00	7.51	-155	2,7	1.95	· · · · · · · · · · · · · · · · · · ·
Sample info	ormation: metho		A						
	Anal				vative		Container requiren	nents	No. of containers
	PFAI	<b>4</b>		560		250			2
		- Car							
		1214	Contraction of			1			
Observatio	ns/Notes: Ai	para	m9 5ta	6:1:76	A				
		1.157							
Pump Star	rt Time: <del>() <b>8</b>5 (</del>	- OD 0	856					Air Monitoring	BZ WH
Bladder	Initial Fill Time	e(FT; sec):	NA	λ.	<b>Final Fill Tir</b>	ne:	NA	VOC (ppm)	0 0
Bladder	Initial Dischar	ge Time(DT;	sec):		<b>Final Discha</b>	arge Time:	1	H2S (ppm)	
								LEL (%)	0000
Submersible	<b>Initial Control</b>	Setting(Hz):	L L		<b>Final Control</b>	ol Setting(Hz):	1	CO (ppm)	0
							-	02 (%)	20.9 20.9
					<b>Purge Rate:</b>	200 ml/	nites		
	1.4.3	1				@ 0856	250 mL	lmin	
🗂 mp Dep	th: NA-a	rtesian				- 0/0	The - 1 - 1 -	•	
1	400	C							
Sample /Ti		2							
MS/MSD	NA		<u>^</u>				Duplicate ID:	~A	
Signature(s	s): Pauro	Bul	Y-						

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		JM				ING DATA SH	Canada Sala and Sala		IN STATE	
Client:	NAVFAC			Proj		695610CH.04		Page: 1	of V	
	Ault Field				Well ID:		- 09			
Event:	Phase 2 SI	1						-G-W-121	9	
Date:	12/12	19		Sam	pling Team:	T. Cha	Imers;	A. Vogt		
Weather:	4005	Rain								
Total Dept	th:	15.49	FT.(BTOC)			Me	easuring Device:	Solinst j leter: Horib	Pine #	127
Depth to v			FT.(BTOC)			hate	or Quality M	leter: Horib	a Pine #	+1991
Nater Col		3.02	FT.				•			
	<u>(x)</u>		GAL/FT.			Well Dia.	Volume			
Well Volu		0.49	GAL.			(inches)	(gallons/foot)			
lotal Purg	је Vol.: х3_	1.48	GAL.			1	0.041	4		
Purge Dev	vices Per	istalfic 1	2 0.	# 441	667	1.25 2	0.064	•		
Pulge Dev		15191110	ump pr		001	4	0.653			
						<del>_</del>	0.000	1		
Section 14				PARAMETE	ER STABILIZ	ATION CRITE	RIA			
		Temp.	Cond.	DO	рН	ORP	Turbidity	DTW		
Pa	rameter	<u>°C</u>	mS/cm	mg/L	SU	mV	NTU	ft BTOC		
C	riteria	±0.1		±0.05 (if <1)	±0.1	±10	±10 % or	±0.3 (low flow)		
			±0.02 (if >1)				≤ 10 NTU	2010 (1011 11011)		
			<u> </u>		IELD PARAM			I DTH		01
Time	Purge Vol.	Temp.	Cond.	DO	pH	ORP	Turbidity	DTW	Color /	
0950	(gals)	<u>0°</u>	mS/cm	mg/L	SU	mV	NTU	ft BTOC	Comr	nents
1007	Begin	Purae 11.74	6.835	7.06	7.96	166	56.1	13.20	clear/	No Oc
1014	0.71	11.52	0.842	6.92	7.98	168	55.0	13.91	11	10000
1020	0.89	11.36	0.826		7.99	169	61.5	14.36	11	
1026	1.07	11.26	0.792	5.13	7.98	170	240	14.65	Murky	/No (
1030		urged	dN.				Sec. D. Sec.			
0835	01 12/13			21 Ft b	toc la	0% rech	large = 12	77 ft 640	CCUrre	atlyzi
	Per discussi						les first.			• <u> </u>
0857	NA	6,16	0.996	8,30	5.91	250	78.6	13,95	Mostly de	as, no c
										5
Sample inf	ormation: meth	od container	number size	and type, pre	eservative us	ed.				
o ampio mi		alysis			rvative		Container requiren	nents	No. of co	ontainers
	PFAS			560	2°C		250mL HD	PE	え	
				the factor						
1.4.8.				1. A.						
	(h.) -	_			2					
Observatio	ons/Notes:									
Dump Sta	rt Time: 00	750						Air Monitoring	BZ	WH
	Initial Fill Tim		1.1	A	Final Fill Ti	me.	1	VOC (ppm)	0.0	00
	Initial Discha		sec).	7	Final Disch		NA	H2S (ppm)	0.0	00
Didddol		ige inne(bi)				arge rime.		LEL (%)	0	
Submersible	Initial Contro	Settina(Hz):	$\checkmark$		Final Contro	ol Setting(Hz):		CO (ppm)	0	00
		J( -/-						O2 (%)	200	20.0
					Purge Rate:	10 mL/2	nia		· cer-1	-
	. 1.	60 MIL DI	14.0		-	110 mL/n 0.03gal	Imia			
Pump Dep	oth: N/A	14+	tbtoc			5-034	7			
0	ime: 085	0 00 1	2/13/19						•	
Sample /T	Ime: 000 NA	0 ch (	+1.1.1				Duplicate ID:	A . A		
MS/MSD Signaturo(	s): Daize	10-10		I			Duplicate ID:	NA		
Signature(	S). Daire	1 purg	_							

			1202200			ING DATA SH				
	NAVFAC			Proj		695610CH.04		Page: (	of \	
	Ault Field					WT-				
	Phase 2 SI				Sample ID:	W1-AF-	WT-10-6			
	740°5	Rain		Sam	pling Team:	T- Ch	almers,	A. Vogt		
Weather:	7 12/12	/19								
Total Dept	h:	45.0	FT.(BTOC)			Me	asuring Device:	Salinst P.	n #1	2726
	ater: Pres (.)		FT (BTOC)	B Dal		1 10	n A atai	Solinst P. Horiba F	ing the	9917
Water Colu	imn:		FT.	0			x merer.			
		) 0.163				Well Dia.	Volume	1		
Well Volun		7.34	GAL.			(inches)	(gallons/foot)			
Total Purg	e Vol.: x 3	22.02	GAL.			1	0.041	1		
-	0_	45	11 . 24		11111	1.25	0.064	1		
Purge Devi	ice: PZ	ristallic	Pump Pit	e#44	67 00	2	0.163	]		
		Artesi		-		4	0.653			
	and the second sec							and the second		
			.P.s.			<b>ATION CRITE</b>		Carlo Carlo		
_		Temp.	Cond.	DO	рН	ORP	Turbidity	DTW		
Par	ameter	<u>°C</u>	mS/cm	mg/L	SU	mV	NTU	ft BTOC	_	
Cı	riteria	±0.1	±0.01 (if <1)	· · ·	±0.1	±10	±10 % or	$\pm 0.3$ (low flow)		
			±0.02 (if >1)				≤ 10 NTU			
		2 - 1 - 2			ELD PARAN					
Time	Purge Vol.	Temp.	Cond.	DO	рН	ORP	Turbidity	DTW	Color /	
	(gals)	<u>°C</u>	_mS/cm	mg/L	SU	mV	NTU	ft BTOC	Comr	nents
1055	Beginl									410
1100	0.25	10.67	0.450	0.0	8,28	-153	10.7	-	Clear/	No Con
1105	0.50	10.61	0.452	0.0	8.28	-160	10.8		· · · ·	
1110	0.75	10.61	0.453	0.0	8.29	-167	11.3	-	<u>u</u>	
1115	1.0	10.61	0.454	0.0	8.29	-173	11.3	-	<u>tí</u>	·····
1120	1.25	10.61	0.455	0.0	8.29	-179	11.7		<u> </u>	
1125	1.50	10.60	0.455	0.0	8.29	-183	1.7	-	P	
		+					· · · · · · · · · · · · · · · · · · ·			
		+								
		+					· · · · · · · · · · · · · · · · · · ·	h		
ample info	ormation: meth	od container	number size	and type pre	servative use	he		A start generative start		
		alysis	number, 5/20,	and the second	rvative		ontainer requiren	nents	No of co	ontainers
PF	AS	arjoio					2 mL +1D		Z	Sintainere
	10			V	-			-		
Observation	ns/Notes:									
ump Star	t Time: 10	55					(	Air Monitoring	BZ	WH
	Initial Fill Tim		N/A	<b>4</b>	<b>Final Fill Tin</b>	ne:	N/A	VOC (ppm)	0.0	0.0
Bladder	Initial Discha	rge Time(DT;	sec):		<b>Final Discha</b>	arge Time:	1	H2S (ppm)	0.0	0.0
						-	1	LEL (%)	0	0
Submersible	<b>Initial Contro</b>	I Setting(Hz):			<b>Final Control</b>	ol Setting(Hz):	$\checkmark$	CO (ppm)	C	0
								O2 (%)	20.9	20.9
					Purge Rate:	2 <i>00</i> Ml 0.05 g	1/min			
						0.05 9	allinin			
Pump Dept	th: <b>),//</b> A									
	•									
	me: (130	· · · · · · · · · · · · · · · · · · ·								
AS/MSD	NA						Duplicate ID: 🔨	I A		
Signature(s		- Vi	- he							
	10	Cos a	-0							

		SM		GROUNDWA	TER SAMPL	ING DATA SH	IEET			
Client:	NAVFAC			Proje		695610CH.04		Page: 1	of 2_	
ation:	Ault Field				Well ID:	WI-AF.	-WTII			
Event:	Phase 2 SI				Sample ID:	WI-AF	-WTII-GI	N-1219		-
Date:	12/11/1	q		Sam		PiBut		rdner		
Weather:	cloudy,		878	•			1-01-0			
		'						ITI CI	the Di	
Total Dept		9.15	FT.(BTOC)			Me	easuring Device:	WLI: Soli	nst Pin	e#0724
Depth to v		3.71	FT.(BTOC)					Horiba: Pin		
Water Col	umn:	5,44	FT.					Multip	AF Pin	A 11100
	(x)	0.163	GAL/FT.			Well Dia.	Volume	Marine	11 - 1 (m	
Well Volu	me:	0.89	GAL.			(inches)	(gallons/foot)	1		
<b>Total Purg</b>	je Vol.:	4.5	GAL.			1	0.041			
-	1000					1.25	0.064	]		
Purge Dev	vice:	Peripum	P. Pine	# 160666		2	0.163	1		
Ŭ		1		11		4	0.653	1		
				7.11 Sec.	A					
					R STABILIZ	<b>ATION CRITE</b>		100		
		Temp.	Cond.	DO	pН	ORP	Turbidity	DTW		
Pa	rameter	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC	-	
	nite ni e	.0.1	±0.01 (if <1)	±0.05 (if <1)	.0.4	140	±10 % or	10.2 (10.1.10.1.)		
C	riteria	±0.1	±0.02 (if >1)	• • •	±0.1	±10	≤ 10 NTU	±0.3 (low flow)		
		and the			ELD PARAN	ETERS				
	Purge Vol.	Temp.	Cond.	DO	pН	ORP	Turbidity	DTW	Color /	Odor /
Time	" (gals)	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC		ments
1121	~ <del>~~~~~</del>	10.44	0.922	7,49	7.26	193	18.0	3.77	Clear, N	
1125	400	6.77	0926	7,30692		183	isit	3.85		
	600	10,70	0.929	6.8-1	7.44	105	12.5	3.91		
1128		· · · · · · · · · · · · · · · · · · ·	0.431				12.2	3,98		
1132	1200	10.64	0.933	666		174		4.06	• •	
1136		10,57		6.56	7.48	170	10.9 915		1	· · · · · · · · · · · · · · · · · · ·
1140	2000	10.53	6.434	6.37	7.47	163		4,14	<u> </u>	
1144	2400	10:52	0.932	6.26	7,46	146	9,1	4,22	11	
1148	2800	10,50	0.930	6.14	7.45	127	7.8	4,32		
1152	3200	10,45	0,924	5,86	7.44	91	7.2	4,58	4	
1156	3600	10,41	0.923	5.65	7.43	70	3.9	4.72	i	1
1157	Excessiv		wn and		mpany	slower,1	VII purge	dry		
Sample inf	ormation: meth	od, container	number, size	, and type, pre	eservative use	ed.	V			
	Ana	alysis			rvative		Container requirer	nents	No. of c	ontainers
	PFAS			£6	°C	250	ML HDPE		2	
Observatio	ons/Notes:									
-										
Pump Sta	rt Time: ししい	.7						Air Monitoring	BZ	WH
Bladder	Initial Fill Tim	ne(FT: sec):	NA		<b>Final Fill Tir</b>	ne:	NA	VOC (ppm)	0	60
Bladder	Initial Discha	rge Time(DT	sec):		Final Disch		1	H2S (ppm)	0	0
Bidduoi								LEL (%)	0	
Submornible	Initial Contro	Sotting/47).			<b>Einal Control</b>	ol Setting(Hz):	. 1	CO (ppm)	0	0
Submersible		i Jeuny(HZ):				s secong(112).	·	O2 (%)	0 0 0 0 20.9	000000000000000000000000000000000000000
					Dures Deta	QUITA		52 (/0)	1	· /
					rurge kate:	Contra	100 mL/min			
Dum D	oth: 8 ft	1 tar		@ 115G $\approx$ 500 mL/min						
mp Det	m: D TT									
		1 00 12	112/19							
Sample /T	ime: 0920	J ON 12	11-11		- Change		Duall ( ID )	M		
MS/MSD	NA s): David						Duplicate ID: /	117		
Signature(	s): David	Bulla								

		SM		GROUNDWA	TER SAMPL	ING DATA SH	IEET			
Client:	NAVFAC			Proj		695610CH.04.		Page: 2	of Z	
121	Ault Field					WI-AF				
	Phase 2 SI						-WTII-G-W			
Date:	12/11/10			Sam			er, G. Gar			
Weather:	_ Cloudy,	40'5, br	eeze		12/12/1	91. Cha	/	4. Vegt		
Total Dept Depth to w		9,15	FT.(BTOC) FT.(BTOC)			Me	easuring Device:	WLJ: Solin Horiba: Pin	est Pin	P#1042264
Water Colu		5.44	FT.					MultiRA		
		0.163	GAL/FT.			Well Dia.	Volume	MULTI PU		2199 100
Well Volun		0.89	GAL.			(inches)	(gallons/foot)			
Total Purg		4.5	GAL.			1	0.041			
	ioo: D	2.5. Duine	p: Pine	+16866		1.25 2	0.064			
Purge Dev		cri pum		4110000		4	0.653			
							0.000	1		
				PARAMET	<b>ER STABILIZ</b>	ATION CRITE	RIA			
		Temp.	Cond.	DO	pН	ORP	Turbidity	DTW		
Par	ameter	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC	-	New and
C.	riteria	±0.1	±0.01 (if <1)	±0.05 (if <1)	±0.1	±10	±10 % or	±0.3 (low flow)		
		10.1	±0.02 (if >1)	±0.2 (if >1)			≤ 10 NTU			
			30.00		IELD PARAM			in the second second	- Julion	1111
Time	Purge Vol.	Temp.	Cond.	DO	рН	ORP	Turbidity	DTW		r / Odor /
	(gals)	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC		nments
1211	weil		dry i w	ill wai	t for 9	0% recha	ge (DTW=	4,25 + 61	(C)	
1310	Recharge		DTWZ	7.80 Fth	toc, wil	l return	to sample.	omorrow,		
00000			otalon			Z i	VL: 3.60	<u></u>	<u> </u>	
0900	-12/12/14	n Arriv	<u>e at i</u>	ell, b	egia se	Fispo -	VC- 5.60	P		
						· · · · · · · · · · · · · · · · · · ·			<u> </u>	
							ł			
						ź			1	
Sample info	ormation: meth		number, size							
		lysis			rvative		Container requiren			containers
	PFAS	)		≤ (j	. °C	250	ML HOPE		2	n
		1.1.1.								
Observatio	ns/Notes:					t			1	
Observation	13/10/03.									1.5
Pump Star	t Time: 110	7						Air Monitoring	BZ	WH
	Initial Fill Tim		NA	\	<b>Final Fill Tir</b>	ne:	NA	VOC (ppm)	000	G
Bladder	Initial Discha	rge Time(DT	; sec):		<b>Final Discha</b>	arge Time:		H2S (ppm)	0	0
Submersible	Initial Control	Setting(Hz)	L		Final Contro	ol Setting(Hz):	1	LEL (%) CO (ppm)	0	0 0 20,9
								02 (%)	20,9	2019
					Purge Rate:					9
n Den	th: 8 f.+	BYOC								
	ime: 0920		A						5	
Sample /Ti	ime: 0920	) on 12	112/14						_	
		<u>^</u>					Duplicate ID:	NA		
	s): Aniza	Bully								

Client:	NAVFAC Ault Field Phase 2 SI			Proj	ect Number: Well ID: Sample ID:	ING DATA SH 695610CH.04 WI-AF- WI-AF-	.FI.FS	w-1219	of	
	(oudy, th: vater: @ <del>()</del>	40' 161 26	<u>-ℓ¢⊋ と</u> _FT.(BTOC) _ <del>FT.(BTOC)</del> ( _FT.					Horiba: P MultiPAI	ine #2	531 <b>4</b> # 4490
Well Volu Total Purg	me: (x) je Vol.: ~	0.163	_GAL/FT. _GAL. _GAL.			Well Dia. (inches) 1 1.25	Volume (gallons/foot) 0.041 0.064			
Purge Dev	rice: <u>N</u>	uA-art	esian			2 4	0.163 0.653	]		
Line and	212.25		1.1.1.1.1.1.1	PARAMETE	ER STABILIZ	ATION CRITE	RIA	1. Le 3. 10		
		Temp.	Cond.	DO	рĤ	ORP	Turbidity	-DTW-Press	ure	
	rameter riteria	°C ±0.1		mg/L ±0.05 (if <1)	SU ±0.1	mV ±10	NTU ±10 % or	+ft BTOC PSI ±0.3 (low flow)		
		L	[±0.02 (if >1)	±0.2 (if >1)			≤ 10 NTU	,		
	Durne Vel	Τ			IELD PARAN		Trank Later		Calar	Oder
Time	Purge Vol. ML <del>(gals) 0</del> 8	Temp. °C	Cond. mS/cm	DO mg/L	pH SU	ORP mV	Turbidity NTU	-DTW-Press		Odor /
1135	300	9.43	1.12	0.00	6.51	137	0.0	0.6	Clear, r	TU oda
1138	750	9.44	1.09	0.00	7.22	7	0.0	0.6		
1141	1100 1201		1.09	0.00	7.34	-42	0.0	0.6		<u> </u>
1144	1550-1650		1.08	0.00	7.44	-69	0.0	0.6		
1147	+900-2100		1.08	0.00	7.52	-91	0.0	0.6		
1150	2550	9.83	1.08	0.00	7.56	-106	0.0	0.6		1
1153	3000	9.90	1.08	0.00	7.57	-112	0.0	0.6		1
1156	3450	9.92	1.08	0.00	7.59	-117	0.0	0.6		<u>+</u>
1159	3900	9.96	1.08	0.00	7.60	-122	0.0	0.6		
Sample inf	ormation: meth	od container	number size	and type nre	servative use	ad				
Campic III		alysis	Humber, Size		rvative		Container requiren	nents	No. of cr	ontainers
	PFAS		· · · · · · · · · · · · · · · · · · ·	56			ML HDPE		2	, incamore
		,		~~~	••••					
Observatio	ns/Notes:									
Bladder	rt Time: ((名 Initial Fill Tim Initial Discha	ne(FT; sec):	; sec):		Final Fill Tir Final Discha		NA	Air Monitoring VOC (ppm) H2S (ppm) LEL (%)	BZ 0 0 0	WH 00 00 20: 0
	Initial Control					b <b>l Setting(Hz):</b> 150 mL/m		CO (ppm) O2 (%)	020.9	20.0
)	ime: 12:00									
MS/MSD	NA .						Duplicate ID: 🗸	I-AF-WT12-	GWP-12	19@13
Signature(s	s): Dourd	P. the		<u> </u>						

Évent: Date: Weathe	n: Ault Field Phase 3 SI 07/24 75°F	Sunny	y	San	ject Number Well ID Sample ID	5. Fite A. Sea	4.FI.WI I ZF-BHOI SIMMONS	Page: 1 -GW-4 e: Horiba	
Total De Doctation States C (Helf Vol. Total Pos	vision: ] vision: ] ume: ] ge Vol.:	40 2.5 x)0.653 1.6 4.89	GAL/FT. GAL, GAL, GAL,	\$D beft	2	Pipe Dia. (inches) 1 1.25	Volume (gallons/foot) 0.041 0.064	Multika	CIO28
Purge De	vice:	Balle	er (ai	sposable	•) .	2	0.163 0.653	A_	
	19 <sup>2</sup>	Temp.	Cond.	DO	R STABILIZ	ORP	RIA Turbidity	I DTW	
Pa	rameter	°C	mS/cm	mg/L	рн SU	mV	NTU	ft BTOC	
C	riteria	±10%	±3%	±0.05 (if <1) ±10% (if >1)	±0.2	±10	±10 % or ≤ 10 NTU	±0.3 (low flow)	
	1.0			FI	ELD PARAM				- manual and
Time	Purge Vol. (gals)	Temp. °C	Cond. mS/cm	DO ma/l	pH	ORP	Turbidity	DTW	Color / Odor /
13:55	initial	21.46	0.418	mg/L 6.02	SU 8.17	-598	NTU 71000	ft BTOC	Comments Turbid/M
14:00	Baileo	a dru	t with	1 ~1.	5 gal	1 1 1		rechard	neters.
	5:20 B	.#. p	Ireyed a	slry. AV	rech	srge. S	ample	d vou	me.
		1	umber, size,	and type, pres	ervative used	d.			
Sample info	rmation: metho	d, container n		Preserv	ative C	250	OmL H	PE	No. of containers
Sample info 53	Anal	ysis	S	1					
53 Observation	Anal 7 Moc s/Notes:	ysis	S	1	_				
Dbservation Dbservation Biadder I Biadder I Biadder I	Anal Anal Moc s/Notes: Time: 13 nitial Fill Time nitial Discharg nitial Control S	:50 (FT; sec): e Time(DT; s Setting(Hz):	ec):	A Fi Fi			NA	Air Monitoring VOC (ppm) H2S (ppm) LEL (%) CO (ppm) O2 (%)	BZ WH QO QO QO QO QO QO QO QO QO QO QO QO QO
Deservation Bladder I Bladder I Bladder I Untersible I Untersible I Untersible I	Anal Anal Moc s/Notes: Time: 13 nitial Fill Time nitial Discharg nitial Control S Screen Interv Screen Interv	:50 (FT; sec): re Time(DT; s Setting(Hz):	ec): N/	A Fi Fi	nal Dischar	ge Time: Setting(Hz):		VOC (ppm) H2S (ppm) LEL (%) CO (ppm)	2012 12 20.9 2012 12 20.9 2012 12 20
53	Anal 7 Moc	ysis	S						

Slient:	NAVFAC	-	G			MPLING DAT		the second	51	
cation				- Pro		695610CH.04		Page:	of \	
Event:	Phase 3 SI			-	Well ID: Sample ID:		- BH02- 6	W-25	_	
Date:	7/20/			Sar	mpling Team:	PiButle	r, A, Seay	1, 51 Fitz.	rimmon	5
Weather	clear,	7019, br					1	/		_
Total De Depth to Water Co	water: (-	38	FT.(BTOC)	BAGS		М	easuring Device:	Horiba	Pine#21	269
Water of		10.653	GAL/FT.			Pipe Dia.	Volume	1		
Well Volu	ume:	8.03	GAL.			(inches)	(gallons/foot)			
Total Pur	ge Vol.:		GAL.			1	0.041	1		
	10.00	a	. +			1.25	0.064			
Purge De	vice:	Geosqu	iri			2	0.163	-		
					-	4	0.653	L		
				PARAMET	ER STABILIZ	ATION CRITE	RIA			
	. Ci	Temp.	Cond.	DO	pН	ORP	Turbidity	DTW		
Pa	rameter	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC	_	
C	riteria	±10%	±3%	±0.05 (if <1)	+112	±10	±10 % or	±0.3 (low flow)		
-	-	1	1	±10% (if >1)	1.	ETEDO	≤ 10 NTU			-
	Purge Vol.	Temp.	Cond.	DO	pH	ORP	Turbidity	DTW	Color /	Odor /
Time	(gals)	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC	Comr	
1018	4	17.83	0.008	14,14	7.02	- 431	>999	31.00	Mudd	
023	12-500	15.44	0.918	4.48	8.02	-505	7999	31.00	1	1.
1024	Stop pu		llow re	charge.						
1041	Restart	phimp	- 400	0	0.211	600	- 400	28.50	1	-
1042	20	15.74	0.906 , hole di	3,53	8,34	-608	7999	31.00	• (	
1057	Well		greet	Begin	pump	to sar	nple	29.20	-	
	hou		cy-c.c	m0	F	10 0 4	1			
	1.11			1 1 1				-		
-										
ample info	mation: metho	od. container	number, size.	and type, pre	servative used	d.		-	-	
	Anal			Preser	vative		ontainer requirem	ents	No. of co	ontainers
	PFAS			400	-	25	so me HDP	E	2	
										_
										_
bservation	s/Notes					-				
Joorvation	0110100.									
mp Start	Time: 101	5	140					Air Monitoring	BZ	WH
Bladder	initial Fill Time	(FT; sec):	Y		Final Fill Time		NA	VOC (ppm)	0	0
Bladder	nitial Discharg	ge Time(DT;	sec):	1	Final Dischar	ge Time:		H2S (ppm)	0	0
					Final Canterl	Cotting(U)		LEL (%)	0	0
omersible	nitial Control S	Setting(Hz):	1		Final Control		~	CO (ppm)	and	20,9
			~		Purge Rate	1211	in (varial	102 (%)	with	2011
dropunch	Screen Interv	al: 20	LIGE N	VA '	ango mato.	-1 -/ m	( varia)	ole)		
mp Denth	1:35 ft	14 .		hole						
	20 24	o begs		1.1			100			
mple /Tim	11 00	2	WT	-AF-	BHO2	-GW-	35			

		SM	GF	ROUNDWATER	GRAB SAL	MPI ING DAT	ASHEET			
Client:	NAVFAC					695610CH.04		Page:	of (	
cation:	Ault Field			-	Well ID:	BHOS		i agei 1		
Event:	Phase 3 SI				Sample ID:					
Date:	7.16.20		_	Samp	oling Team:	Annika S	eary			
Weather:	58° F, Sli	they over	ast	2		Lindsey P	aumann			
Total Dept	th:	45.42	FT.(BTOC)				easuring Device	interface	ashe.	
Depth to v			FT.(BTOC)			IAI	easuring Device.	WHO Fall	probe	
Water Col		0.95	FT.							
		x) +391.469				Pipe Dia.	Volume	1		
Well Volur		1.39	GAL.			(inches)	(gallons/foot)	1-111	1 01	
Total Purg	je Vol.:	4.18	GAL.			1	0.041	e 6=1.469		
						1.25	0.064	1		
Purge Dev	vice:	Geo Sal	rivit		4.00	2	0.163			
	_				- 4 E	4	0.653	]		
				and the second	1100	and the second second				
1		1				ATION CRITE				
1		Temp.	Cond.	DO	pH	ORP	Turbidity	DTW		
Par	rameter	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC		
C	riteria	±10%	±3%	±0.05 (if <1)	±0.2	±10	±10 % or	±0.3 (low flow)		
-				±10% (if >1)		and the second s	≤ 10 NTU	20.0 (1011 11011)	-	
	Durne Val	Trees	Qual		ELD PARAN		-			10111
Time	Purge Vol.	Temp.	Cond.	DO	pH	ORP	Turbidity	DTW		/ Odor /
0920	(gals)	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC		ments
0950	01	on - dr					1	45.62	Ø.95++	- Water Collen
quist	pump	on - av	4							
-										
						-				
						1				
Sample inf	ormation: met	hod, container	number, size	, and type, pres	servative use	ed.		11 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	-	
		alysis		Preserv			Container requiren	nents	No. of c	ontainers
		AS								
						-				
Observatio	ins/Notes:									
-										
Pump Star								Air Monitoring	BZ	WH
	Initial Fill Ti				Final Fill Tin			VOC (ppm)		1
Bladder	Initial Discha	arge Time(DT;	sec):	, F	inal Discha	arge Time:		H2S (ppm)		
		10						LEL (%)		
Submersible	Initial Contro	ol Setting(Hz):			-inal Contro	ol Setting(Hz):		CO (ppm)		
								02 (%)		
Hudronun	ab Carson Int	an al a			Purge Rate:					- 1
Pump Dep	ch Screen Int	erval:								
rump Deb	All.									
Imple /T	ime:	-								
S/MSD		d					Duplicate ID:			
Signature	ship	12 AxAn		1			Duplicate ID.			
- gridingle	- Alle									

0.95 ft water column, will purge well dry and allow for recharge overnight 0958 - Pump did not produce any Gul; driller believes it is sludge.

		-	GR			PLING DATA		Service and		
Client:	NAVFAC			- Proj	ect Number:	695610CH.04	.FI.WI	Page:	of )	
Event:	Ault Field Phase 3 SI			- 1		BHOG	pulda (au)	110		
Date:	7.21.20			Sam	onling Team:	Sharana	BHO9-GW	-10		
Weather:	Towe tos, c	Vert		- Jan	iping ream.	Annika		MORS		
				-	1.		1	111 - 10-	C	
Total Dept		4.6	FT.(BTOC)			Me	easuring Device:	INL INTOP	ace	
Depth to v		12.4	FT.(BTOC) FT.							
Water Col		D.163	GAL/FT.			Pipe Dia.	Volume	1	. 1 . 11	. 1.
Well Volu		0.35	GAL.			(inches)	(gallons/foot)	1	2.4 14	1.6
Total Purg		1.07	GAL.			1	0.041		-12	
roturi urg		1.47			- 23	1.25	0.064		-	و
Purge Dev	vice: di	sposable	briler		a 43	2	0.163	1		
	00	quance	owned	-	in ni	4	0.653			
										2
1	IT SHERE		and the second			ATION CRITE			ALC: 2	1
	and the second	Temp.	Cond.	DO	pH	ORP	Turbidity	DTW		
Pa	rameter	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC	-	
C	riteria	±10%	±3%	±0.05 (if <1)	+117	±10	±10 % or	±0.3 (low flow)		
-			-	±10% (if >1)		ETEDO	≤ 10 NTU	1		-
	Durgo Vol	Tomp	Cond	DO F	IELD PARAN	ORP	Turbidity	DTW	Color / C	)dor/
Time	Purge Vol.	Temp. °C	Cond. mS/cm,	mg/L	pH SU	mV	Turbidity NTU	ft BTOC	Color / C	
1700	(gals)	19.15	10.51Ø	2.40	6.57	-182	2999	12.4	MURKY	
1700	Samp		0.510	6.94	4.37	101	- 11	16.7	110010910	adruss
1144	Samp	u -								
							-		1	
-	-									
									-	
0 1 1			the state of the s		L. C.	-	-			-
Sample in	formation: meth		r number, size	e, and type, pre	rvative use		Container requiren	onto	No. of con	tainars
Mala	nod 537	alysis	191.71	LeC				lents	As 42	
NICTI	noabot	MODITE	HJ-10)	40	/	this by	C Poly		ns 70	-
									-	
Observatio	ons/Notes:								-	
Pump Sta	rt Time:		A1.					Air Monitoring	BZ	WH
Bladder	Initial Fill Tim	ne(FT; sec):	NA		<b>Final Fill Tir</b>	ne: NA	1.	VOC (ppm)	Ø.Ø	Ø.Ø
Bladder	Initial Discha	rge Time(D1	; sec): NA	2	<b>Final Discha</b>	arge Time:	VA	H2S (ppm)	1	1
			1.				1.1.	LEL (%)		1
Submersible	Initial Contro	Setting(Hz)	INA		Final Contro	ol Setting(Hz)	AN	CO (ppm)		1.
			1.					02 (%)	VI	V
	and man	. 10 .	12 FLh	24	Purge Rate:	NA				
Hydropun	the Screen Inte	erval: 10-	12110	5		1. 1 A				
Pump De	pth: disposal	ple bailt	r lowered	9						
and a large		to	1.ft bas							
S/MSD	Ime:		5	1			Duplicate Du	1 NG PILLA	-(-119 1.1	
	(s): Awar	1 chr.	. ^	1	-		Duplicate ID: W	J-AF-BHp9	-GWT-10	-
Signature	S. Church	yo Ka	V							
(	1 ()	1								

~

1	C. AND	am	GF	ROUNDWATE	R GRAB SAM	MPLING DAT	A SHEET			
Client:	NAVFAC			Proj	ect Number:	695610CH.04	4.FI.WI	Page: (	of	
-	Ault Field			-	Well ID:	BHOC.	BHOLD			
Event:	Phase 3 SI			and taken	Sample ID:	WI-AF-	BHOLD- GW	1-31		
Date:	7.16.20	\$	-	Sam	pling Team:	Annika	Seary			
Weather:	SBOF, slig	inthy overc	ust	_		Lindsay	Baumann			
Total Dep	th:	32.2	FT.(BTOC)			M	easuring Device:	VIAL	-	
Depth to v		24.2	FT.(BTOC)				cuburing berice.	in Lotace	0.0100	Diard
Water Col		8	FT.					intertace	proce	CALL.
	(x)	1-469	GAL/FT.			Pipe Dia.	Volume	Horiba	Dina	DL4
Well Volu		11.75	GAL.			(inches)	(gallons/foot)	TIONDA	1 Q	04545
Total Purg	ge Vol.:	35.25	GAL.			1	0.041	le = 1.L	161	
		78				1.25	0.064	1		
Purge Dev	vice:	Geo Sav	nirt			2	0.163	21/2 qu filled	nartz	
		1.	-		1	4	0.653	filled	in 30	) sec.
				- I come				1		
	1.5713	-				ATION CRITE		and the second second		
		Temp.	Cond.	DO	pН	ORP	Turbidity	DTW		
Pa	rameter	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC		
C	riteria	±10%	±3%	±0.05 (if <1) ±10% (if >1)	±0.2	±10	±10 % or ≤ 10 NTU	±0.3 (low flow)		
Q					ELD PARAM	ETERS		and an and a second second		
Time	Purge Vol.	Temp.	Cond.	DO	pH	ORP	Turbidity	DTW	Color	Odor /
Time	(gals)	°C	mS/cm	mg/L	SU	mV	AKNTU	ft BTOC		ments
0755	Beginpurge	e 15.18	0.474	1.58	7.64	-409	2999-375	24.2		dorless
8800	dry; allo		ame			12.		61.5	3.011	0011685
D848	30	12.55	0.474	1.36	7.95	-308	>999	24.0	brown	
BBBS	tanits	1						- · · P	Diogoni	
6856										->
, ,	,									
		~					-			
			1							
ample inf	ormation: metho		number, size			d.		Server States		
	Ana	lysis		Preser	vative	C	Container requirem	nents	No. of c	ontainers
			-							
hooristie	no/Materi									
bservatio	ns/notes:									
ump Star	t Times									and a
	Initial Fill Time		NA			in the second se	NA	Air Monitoring	BZ	WH
					Final Fill Tim		141.	VOC (ppm)	φ	Ø
Diaduer	Initial Dischar	ge nme(D1;	sec):	1	Final Discha	rge lime:		H2S (ppm)	Ø	0
ubmorpible	Initial Control	Catting/U-).	1.					LEL (%)	Q	00000
Initiel Sible	initial control	Setting(HZ).	V		Final Contro	Setting(Hz):		CO (ppm)	2	P. O
					Durne Dete		1	02 (%)	120.8	10.8
vdronun	ch Screen Inter	AIA Isva	4 4 4 4	- lad	Furge Rate:	10.5/10	sing \$-30	Ci		
ump Den	th' The	Val. INAL	Note opt	en bevolu	00 ++	ogs Ca	sing y- sq	77)		
amp beh	th: ~31f	tbas								
mple /Ti	-10	t J								
S/MSD	NO	2					Duplicate ID. I	TAC DUN	1	1
Signature(s	Anile	Thur					Duplicate ID: W	1-AF-BHOL	-am-	01
	The	Stand								
( )	100	y								

	NIN THE		GR	OUNDWATE	A CRATHER AND A COMPANY	President and the second second	A PERSONAL PROPERTY AND ADDRESS OF ADDRESS O	NON NO	The de	-
lient: cation:	NAVFAC			Proje		695610CH.04		Page:	of 1	_
	the second s				Well ID:				_	-
Date:	Phase 3 SI			BOAD	Sample ID:	N-LW	F-BHO1-	GW-29	CONTRACTOR OF	_
Neather:	7/14/20 (lear)			Sam	pling Team:	DiButle	er, A.sea	YIL Bay	mann	
100000	1	10, 00	reeze		1				To Balance	
Total Depth Depth to w Water Colu	ater: (-)	240 20	FT.(BTOC)	~2,5ft	stickup	Me	easuring Device:	Horiba P with Pi	me# 04	5451
Well Volum	(x	12:9 10:653 8:42	FT. GAL/FT. GAL. 3	well wal = 2	5.26 991	Pipe Dia. (inches)	Volume (gallons/foot)			
Total Purge	e Vol.:	~20	GAL.	COM 16 YO	, v	1	0.041	1		
	59 5	and the				1.25	0.064	1		
Purge Devi	ice: (	Geosgu	rirt		52.	2	0.163			
	A	Vote- NO CO	atrol bo	x, pump or	sly	4	0.653			
		has on/of	4	, v						
		Tema	Cond			ATION CRITE		DTW		
Dar	ameter	Temp. °C	Cond.	DO ma/l	pH SU	ORP	Turbidity	ft BTOC		
		i santa an	mS/cm	mg/L ±0.05 (if <1)		mV	NTU ±10 % or	CALADA AN PROPERTY		-
Cr	riteria	±10%	±3%	±0.05 (if <1) ±10% (if >1)	±0.2	±10	± 10 % 01 ≤ 10 NTU	±0.3 (low flow)		
-	14.4 . T	No. C. Martin			IELD PARAM	ETERS	1 2101110	State of the local division of the local div	1	-
40.8	Purge Vol.	Temp,	Cond.	DO	pH	ORP	Turbidity	DTW	Color /	Odor /
Time	(gals)	°C	mS/cm	ma/L	SU	mV	NTU	ft BTOC	Comr	nents
0909	10	14.60	0,395	18,97	6.16	56	2999	18.20	Opuque,	no olo
0917	Pump	stopped	WL 2	20ft.		amp to	check fo	clog.	in the	
0920	Pump		ting, Y:	1 goes to		ther pum	Pi	V		
0931	Restdrt	w/ new	- (decon	nealpu	mp.		0			
10935	210	-	10 10 10 <u>1</u> 0 10	-1		-	-	23,20	1 +	_
0937	Zone d		ppump	Discuss			ill wait	for recharge	,0.1	
Ima	will no		fored	91 (24)	st bi		w recharg			-
1025	Recharg		- FFII	97 6471	211 6	OCTI FE	pian pa	np and		
1024	~20	16.01	0374	7.85	7.20	53	7999	24,5	Opaque,	no oclo
			1			1				-
Sample inf	ormation: meth		number, size	, and type, pre	eservative use	d.	New Jacobier			
BACK T	An	hod, container alysis	number, size	Prese	rvative	C	Container requirer			ontainers
BACK T			number, size	e, and type, pre Prese 4°C	rvative	C	Container requiren		No. of co 2	ontainers
BACK T	An		number, size	Prese	rvative	C				ontainers
	An PFAS	alysis		Presei 4ºC		250	ome HD	PE	2	
Observatio	An PFAS Ins/Notes: He ff@32 7/ nt Time: 09	ole was	drilled ermitten	to set	D 40 ft rate du.	bg1 on sil	7/13, Tags ts clogging	ect w/ obs pump, Air Monitoring	2 Tru chio   BZ	
Observatio գէ ۲4 Pump Star Bladder	An PFAS Ins/Notes: He ft%32 7/ rt Time: 09 Initial Fill Tir	ole was 14. Int 05. me(FT; sec):	drilled ermitten N	to set	nvative Фцоft Fatedu Final Fill Tin	bgi on te to sil	ome HD	ect w/ obs Alf Monitoring VOC (ppm)	2 Truðio BZ O	a WH
Observatio գէ ጉዛ Pump Star Bladder	An PFAS Ins/Notes: He ft%32 7/ rt Time: 09 Initial Fill Tir	ole was	drilled ermitten N	to set	D 40 ft rate du.	bgi on te to sil	7/13, Tags ts clogging	ect w/ obs pump, Air Monitoring VOC (ppm) H2S (ppm)	2 Truðio BZ O	a WH
Observatio	An PFAS Ins/Notes: He Ffb32 7/ Intial Fill Tir Initial Discha	ole was 19. Int OS me(FT; sec): arge Time(DT	drì(led «rm;Hen N; sec):	to set	rvative Фр. 40 ft Fate du Final Fill Tin Final Discha	691 04 691 04 e (0 51) ne: arge Time:	7/3, Tags ts clogging NA	ect w/ obs Air Monitoring VOC (ppm) H2S (ppm) LEL (%)	2 Tručio BZ 00 C	4 WH ODO
Observatio	An PFAS Ins/Notes: He Ffb32 7/ Intial Fill Tir Initial Discha	ole was 14. Int 05. me(FT; sec):	drì(led «rm;Hen N; sec):	to set	rvative Фр. 40 ft Fate du Final Fill Tin Final Discha	bgi on te to sil	7/3, Tags ts clogging NA	ect w/ obs Alf Monitoring VOC (ppm) H2S (ppm) LEL (%) CO (ppm)	2 Tructio BZ 00 0 0 0 0	4 WH 000 0
Observatio	An PFAS Ins/Notes: He Ffb32 7/ Intial Fill Tir Initial Discha	ole was 19. Int OS me(FT; sec): arge Time(DT	drì(led «rm;Hen N; sec):	to set	Final Fill Tin Final Contro	د کے 2 کے 2 کے 2 کے 2 کے 2 کے 2 کے 2 کے 2	7/3, Tags ts clogging NA	ect w/ obs Air Monitoring VOC (ppm) H2S (ppm) LEL (%)	2 Tručio BZ 00 C	4 WH 000 0
Observatio	An PFAS Ins/Notes: He F+932 7/ Initial Fill Tir Initial Fill Tir Initial Discha Initial Contro	ole was 14, ±nt OS me(FT; sec): arge Time(DT ol Setting(Hz):	drilled ermitten ; sec): : -	to set	rvative Фр. 40 ft Fate du Final Fill Tin Final Discha	د کے 2 کے 2 کے 2 کے 2 کے 2 کے 2 کے 2 کے 2	7/3, Tags ts clogging NA	ect w/ obs Alf Monitoring VOC (ppm) H2S (ppm) LEL (%) CO (ppm)	2 Tructio BZ 00 0 0 0 0	4 WH 000 0
Observatio	An PFAS Ins/Notes: He F+932 7/ Initial Fill Tir Initial Fill Tir Initial Discha Initial Contro	ole was 19, Int OS me(FT; sec): arge Time(DT ol Setting(Hz): terval: NA- .S At 6t	drilled ermitten ; sec): : -	to set	Final Fill Tin Final Contro	د کے 2 کے 2 کے 2 کے 2 کے 2 کے 2 کے 2 کے 2	7/3, Tags ts clogging NA	ect w/ obs Alf Monitoring VOC (ppm) H2S (ppm) LEL (%) CO (ppm)	2 Tructio BZ 00 0 0 0 0	4 WH 000

leather:	clear, 6	io's, bree	20				r, A. Sea		many
otal Dept epth to w /ater Colu	vater: (-)	24	FT <del>.(BTOC)</del> FT <del>.(BTOC)</del> FT	@ bg 1 7/ @ bg 5 7/	14,444	+ 7/15 M	easuring Device:	Horiba Pi WLI Pin	et 024678
Vell Volur otal Purg urge Dev	(x) ne: e Vol.:	1,469	GAL/FT. GAL. GAL.			Pipe Dia. (inches) 1 1.25 2 4	Volume (gallons/foot) 0.041 0.064 0.163 0.653	6	1,469
	Statistics.		and a second	PARAMETER	R STABILIZA	TION CRITE	RIA		
Pa	rameter	Temp. °C	Cond. mS/cm	DO	pН	ORP	Turbidity	DTW # PTOC	
	riteria	±10%	±3%	mg/L ±0.05 (if <1) ±10% (if >1)	SU ±0.2	mV ±10	NTU ±10 % or ≤ 10 NTU	ft BTOC ±0.3 (low flow)	
100000	A CARGE CON	AND DESCRIPTION	CANARA CANAR		LD PARAM	ETERS			
Time	Purge Vol. (gals)	Temp. °C	Cond. mS/cm	DO mg/L	pH SU	ORP mV	Turbidity NTU	ft BTOC O	Color / Odor / Comments
1705	50	Pumped	vell a	leto rem	let rec	harge or	ed rernight	DRY	Murky
0743	SO SI Pump of	well techo 14, 8,9 F	0.388	4,56	7.02	mp-67	OOR	35.60	Murky
Sample int		od, container	number, siz	e, and type, pres			Container requirem		No. of container
	PFAS	19313	-	HOC			Oml HDP		No. of container
Pump Sta Bladder Bladder Submersible	ons/Notes: 0 t sample art Time: 17C r Initial Fill Tim r Initial Dischar a Initial Control	ック re(FT; sec): rge Time(DT; l Setting(Hz):	sec):		Final Fill Tin Final Discha Final Contro	ne: rge Time: I Setting(Hz)		Air Monitoring VOC (ppm) H2S (ppm) LEL (%) CO (ppm) O2 (%)	BZ         WH           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           20         0

7/14

Client:			G	ROUNDWAT	er grab sa	MPLING DAI	A SHEET		
A DESCRIPTION OF THE OWNER OF THE	NAVFAC			Pro	ject Number:	695610CH.0	4.FI.WI	Page:	of
Jcation:	Ault Field			2.00	Well ID:	BHIØ		THE LALL C	
vent:	Phase 3 SI			3	Sample ID:	WT	AF- BHILD-	-GW-11.5	
Date:	7.22.20	D		Sa	npling Team:	Annika	SCALY	1.1	10 1000
Veather:	LOS OVER	Cast				Shann	on Fitzsimn	ADS WILLY	server salons
	100	CO.K		T		-0.000 ava 4	Lessuring David	invector	1897 29744
otal Dep			FT.(BTOC)			W	leasuring Devic	Hanles	# 29744_
Jeptn to v	water: Q. II-	172.25	FT.(BTOC)						
Water Col		3.15	FT.				Volume	7	
	2	x) 0.163	GAL/FT.		1	Pipe Dia.			
Vell Volur		0.5	GAL.		-	(inches)	(gallons/foot) 0.041		
otal Purg	je Vol.:	1.5	GAL.		ŀ	1	0.064	-	1
in an an	int. 1	N. S. S. S.			ŀ	1.25	0.163	4-2:1	n. casing
urge Dev	rice:	tisposab	le baile	ex .		<u></u>			0
		and the second	A Least		. L	(4	0.653	-	
	-	To grant		PARAMET		TION CRITE	RIA	W Part I	
		Temp.	Cond.	DO	pH	ORP	Turbidity	DTW	
Par	rameter	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC	and the second second
		1.5.01	1 Children	±0.05 (if <1)	10		±10 % or	+0.2 /low flow	
C	riteria	±10%	±3%	±10% (if >1)	±0.2	±10	≤ 10 NTU	±0.3 (low flow)	
-					ELD PARAME	TERS		A STATISTICS	A CONTRACT
-	Purge Vol.	Temp.	Cond.	DO	pН	ORP	Turbidity	DTW	Color / Odor /
Time	(gals)	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC	Comments
2:40	~1,5	17 37	0.391	2,99	6.80-	440	71000	11.5	Turbid / Mude
		<b>GEEDWOOL</b>	1 A 10						
mple info	mation: metho	od, container r	umber, size,		servative used.		1.2		and the second second
	Anal		1	Preser	the second se		ontainer requirem		No. of containers
			51181	None,	4.0	2	som l HDI	ř	2
531	Mod	PFAS		7					
531	Mod	. FFIF:	/	· · · · · ·					
531	Mod	. FFIR:		,, r					
					Distance				
		tempted	sub	nasible	pump	but r	not enau	oh va	ter in 8#.
servations	s/Notes: At	tempter		nasible	pump roje.	but r		0	ter in 8#.
servations mp Start Bladder Ir	s/Notes: AL Time: nitial Fill Time	temptec Sect (FT; sec):	sub boiler N/A	nersible			not enau N/A	Air Monitoring	ter in 18#. BZ   WH
servations mp Start Bladder Ir	s/Notes: At	temptec Sect (FT; sec):	sub boiler N/A	nersible to pr	rge.'			Air Monitoring VOC (ppm)	ter in 18#.
servations mp Start Bladder In Bladder In	s/Notes: AU Time: nitial Fill Time nitial Discharg	fempfec Seci (FT; sec): ge Time(DT; s	sub boiler N/A	nersible to pr	inal Fill Time:			Air Monitoring VOC (ppm) H2S (ppm)	ter in 18#. BZ   WH
servations mp Start Bladder In Bladder In	s/Notes: AL Time: nitial Fill Time	fempfec Seci (FT; sec): ge Time(DT; s	sub boiler N/A	norsible to pu F	inal Fill Time:	e Time:		Air Monitoring VOC (ppm) H2S (ppm) LEL (%)	ter in 1837. BZ WH
mp Start Bladder In Bladder In	s/Notes: AU Time: nitial Fill Time nitial Discharg	fempfec Seci (FT; sec): ge Time(DT; s	sub boiler N/A	nersible to pu F F	inal Fill Time: inal Discharg inal Control S	e Time:	N/A	Air Monitoring VOC (ppm) H2S (ppm) LEL (%) CO (ppm)	ter in 18#. BZ   WH
servations mp Start Bladder Ir Bladder In mersible In	s/Notes: A Time: nitial Fill Time nitial Discharg	fcmpfec (FT; sec): ge Time(DT; s Setting(Hz):	subi boiler N/A sec):	ngrsible to pu F F	inal Fill Time: inal Discharg	e Time:	N/A	Air Monitoring VOC (ppm) H2S (ppm) LEL (%)	ter in 18#. BZ   WH
mp Start Bladder Ir Bladder In mersible In	s/Notes: A Time: nitial Fill Time nitial Discharg nitial Control S Screen Interv	(FT; sec): (FT; sec): ge Time(DT; s Setting(Hz): val: 11 - 1	sub boiler N/A sec):	ngrsible to pu F F	inal Fill Time: inal Discharg inal Control S	e Time:	N/A	Air Monitoring VOC (ppm) H2S (ppm) LEL (%) CO (ppm)	ter in 18#. BZ   WH
Bladder In mersible In	s/Notes: A Time: nitial Fill Time nitial Discharg nitial Control S Screen Interv	(FT; sec): (FT; sec): ge Time(DT; s Setting(Hz): val: 11 - 1	sub boiler N/A sec):	ngrsible to pu F F	inal Fill Time: inal Discharg inal Control S	e Time:	N/A	Air Monitoring VOC (ppm) H2S (ppm) LEL (%) CO (ppm)	ter in 18#. BZ   WH
servations mp Start Bladder Ir Bledder In mersible In tropunch np Depth:	s/Notes: At Time: nitial Fill Time nitial Discharg nitial Control S Screen Interv : 11.5	tempted (FT; sec): ge Time(DT; s Setting(Hz): ral: 11-1 St b	sub boiler N/A sec):	ngrsible to pu F F	inal Fill Time: inal Discharg inal Control S	e Time:	N/A	Air Monitoring VOC (ppm) H2S (ppm) LEL (%) CO (ppm)	ter in 18#. BZ   WH
servations mp Start Bladder In Bladder In mersible In ropunch np Depth:	s/Notes: At Time: nitial Fill Time nitial Discharg nitial Control S Screen Interv : 11.5 e: 12.4	tempted (FT; sec): ge Time(DT; s Setting(Hz): ral: 11-1 St b	sub boiler N/A sec):	ngrsible to pu F F	inal Fill Time: inal Discharg inal Control S	e Time: Setting(Hz):	NA	Air Monitoring VOC (ppm) H2S (ppm) LEL (%) CO (ppm)	ter in 18#. BZ WH
servations mp Start Bladder In Bladder In mersible In mersible In Iropunch np Depth: mple /Time MSD	s/Notes: At Time: nitial Fill Time nitial Discharg nitial Control S Screen Interv : 11.5	tempted (FT; sec): ge Time(DT; s Setting(Hz): ral: 11-1 St b	sub boiler N/A sec):	ngrsible to pu F F	inal Fill Time: inal Discharg inal Control S	e Time: Setting(Hz):	N/A	Air Monitoring VOC (ppm) H2S (ppm) LEL (%) CO (ppm)	ter in 18#. BZ   WH
servations mp Start Bladder In Bladder In mersible In Iropunch np Depth:	s/Notes: At Time: nitial Fill Time nitial Discharg nitial Control S Screen Interv : 11.5 e: 12.4	tempted (FT; sec): ge Time(DT; s Setting(Hz): ral: 11-1 St b	sub boiler N/A sec):	ngrsible to pu F F	inal Fill Time: inal Discharg inal Control S	e Time: Setting(Hz):	NA	Air Monitoring VOC (ppm) H2S (ppm) LEL (%) CO (ppm)	ter in 18#. BZ   WH

lient:						MPLING DATA	ASHEET			
	NAVFAC			Pro		695610CH.04	.FI.WI	Page:	of	
	Ault Field			_	Well ID:	BHID				
vent:	Phase 3 SI		- Winner				4-BH10-	GW-43	41	
te:	7.22-1	20:7.23	3.20	San	pling Team:	Shannon	Fitzsimn	nons		
ather:	lele F, DO	AFTLY CLOU	udu		+	Annika	seav			
al David		40	FT (PTOC)	457.2 42 hyd	3.20			A	01 1	
al Dept			FT.(BTOC)	Ja hyd	uppunch	Me	easuring Device:	KIL mete	rSolonist	_
oth to v	vater: boring (-)	21.0	FT.(BTOC)	42				Vine Rento	1 189 12	
ter Col		M	FT.	143	9=Wollune					
	<u>(x</u>	0.653	GAL/FT.	.143	a - Wolume	Pipe Dia.	Volume			
ell Volur		12.4	GAL.	0.40	1 1-	(inches)	(gallons/foot)			
tal Purg	je Vol.:	37	GAL.	× 3	- al	1	0.041			
		2204	- Geo Sau	417 1-14	67 300	1.25	0.064			
rge Dev		22.20	- Sump P	HUS !!		2	0.163			
	7	·23·20	Geo S	quirt]		4	0.653			
	-			DADAMET	CD OTADU IZ	ATION ODITE	DI I	-		
		Temp.	Cond.	DO	pH	ATION CRITE ORP	Turbidity	DTW	T	
Par	rameter	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC		
		and the second second		±0.05 (if <1)		1000	±10 % or	1.		-
C	riteria	±10%	±3%	±10% (if >1)	+ 1 /	±10	≤ 10 NTU	±0.3 (low flow)		
		North Comments	1000		IELD PARAN	ETERS				-
-	Purge Vol.	Temp.	Cond.	DO	pH	ORP	Turbidity	DTW	Color / Odor	.1
Time	(gals)	°C	mS/cm	mg/LAS	SU	mV	NTU	ft BTOC	Comments	
1:25	3	13.35	Ø.560		6.75	-57	233	IL BIOC	murky/deau	
		10.05	2.200	-57	4.75	-01	695		mun ny/ciew	10000
				1						-
				1				1		-
								1		-
								1		
										-
	·		1	1		1	1			
-		1				-				
							1			
mple infe	ormation: meth		number, size							
	Ana	alysis		Prese	rvative	C	ontainer requirem		No. of contain	ers
	Ana		number, size			C	iontainer requirem		No. of contain	ers
	Ana	alysis		Prese	rvative	C				ers
	Ana	alysis		Prese	rvative	C				ers
537	Ana	Alysis PEAS	18	Prese None	rvative ,4°C	25	ID ML H	DPE		ers
537	Ana	alysis		Prese None	rvative	25				ers
537	Ana Miad ns/Notes: C	Alysis PEAS	18	Prese None	rvative ,4°C	25	ID ML H	DPE Shead	2_	
537 servatio mp Star	Ana Miad ns/Notes:	ased	B#	Prese None	rvative ,4°C	25 25 7/23	ID ML H	DPE Dhead Air Monitoring	2_	ers /H
servatio mp Star Bladder	Ana Mind ns/Notes: C nt Time: 14 Initial Fill Tim	alysis PFAS ased : 20 ne(FT; sec):	B# V	Prese None to 40	rvative チーン テート Final Fill Tin	25 7/23   ne:	ID ML H	DPE Əheəd Air Monitoring VOC (ppm)	2_	
servatio mp Star Bladder	Ana Mirad ns/Notes: C	alysis PFAS ased : 20 ne(FT; sec):	B# V	Prese None to 40	>ft.	25 7/23   ne:	ID ML H	DPE ahead Air Monitoring VOC (ppm) H2S (ppm)	2_	
ervatio np Star Bladder Bladder	Ana Nicol ns/Notes: C nt Time: 14 Initial Fill Tim Initial Discha	alysis PFAS • 20 re(FT; sec): rge Time(DT	18 BH ; sec):	Prese None to 40	Final Fill Tin Final Discha	25 7/23 ( ne: irge Time:	ID ML H	DPE Shead Air Monitoring VOC (ppm) H2S (ppm) LEL (%)	2_	
ervatio np Star Bladder Bladder	Ana Mind ns/Notes: C nt Time: 14 Initial Fill Tim	alysis PFAS • 20 re(FT; sec): rge Time(DT	18 BH ; sec):	Prese None to 40	Final Fill Tin Final Discha	25 7/23   ne:	ID ML H	DPE ahead Air Monitoring VOC (ppm) H2S (ppm) LEL (%) CO (ppm)	2_	
ervatio np Star Bladder Bladder	Ana Nicol ns/Notes: C nt Time: 14 Initial Fill Tim Initial Discha	alysis PFAS • 20 re(FT; sec): rge Time(DT	18 BH ; sec):	Prese None to 40	rvative チャン チャン Final Fill Tin Final Discha Final Contro	25 7/23 ( ne: irge Time:	ID ML H	DPE Shead Air Monitoring VOC (ppm) H2S (ppm) LEL (%)	2_	
ervatio np Star Bladder Bladder nersible	Ana Micol Ins/Notes: C Initial Fill Tim Initial Discha Initial Control	Alysis PEAS • 20 re(FT; sec): rge Time(DT I Setting(Hz)	18 BH ; sec):	Prese None to 40	Final Fill Tin Final Discha	25 7/23 ( ne: irge Time:	ID ML H	DPE ahead Air Monitoring VOC (ppm) H2S (ppm) LEL (%) CO (ppm)	2_	
servatio mp Star Bladder Bladder mersible	Ana Mical Ins/Notes: C Initial Fill Tim Initial Discha Initial Control ch Screen Inte	Alysis PEAS • 20 re(FT; sec): rge Time(DT I Setting(Hz)	18 BH ; sec):	Prese None to 40	rvative チャン チャン Final Fill Tin Final Discha Final Contro	25 7/23 ( ne: irge Time:	ID ML H	DPE ahead Air Monitoring VOC (ppm) H2S (ppm) LEL (%) CO (ppm)	2_	
servatio np Star Bladder Bladder mersible	Ana Mind Ins/Notes: C In Time: 14 Initial Fill Tim Initial Discha Initial Control Ch Screen Inte	alysis PEAS a Sed : 20 re(FT; sec): rge Time(DT I Setting(Hz) rval: 4 (	18 BH ; sec):	Prese None to 40	rvative チャン チャン Final Fill Tin Final Discha Final Contro	25 7/23 ( ne: irge Time:	ID ML H	DPE ahead Air Monitoring VOC (ppm) H2S (ppm) LEL (%) CO (ppm)	2_	
servatio mp Star Bladder Bladder mersible dropund mp Dep	Ana Mind Ins/Notes: C In Time: IA Initial Fill Tim Initial Discha Initial Control ch Screen Inte	alysis PEAS a Sed : 20 re(FT; sec): rge Time(DT I Setting(Hz) rval: 4 (	18 BH ; sec):	Prese None to 40	Final Fill Tin Final Discha	25 7/23 ( ne: irge Time:	ID ML H	DPE ahead Air Monitoring VOC (ppm) H2S (ppm) LEL (%) CO (ppm)	2_	
servatio mp Star Bladder Bladder mersible fropund mp Dep nple /Ti	Ana Mind Ins/Notes: C In Time: IA Initial Fill Tim Initial Discha Initial Control ch Screen Inte	alysis PEAS a Sed : 20 re(FT; sec): rge Time(DT I Setting(Hz) rval: 4 (	18 BH ; sec):	Prese None to 40	Final Fill Tin Final Discha	25 7/23 ( ne: irge Time:	pushed HP	DPE Jhe Jd <u>Air Monitoring</u> VOC (ppm) H2S (ppm) LEL (%) CO (ppm) O2 (%)	2_	
servatio mp Star Bladder Bladder mersible dropund mp Dep nple /Tii /MSD	Ana Mind Initial Fill Tim Initial Fill Tim Initial Discha Initial Control ch Screen Inte th: 44 ime: 9:2 NA	alysis PEAS a Sed : 20 re(FT; sec): rge Time(DT I Setting(Hz) rval: 4 (	18 BH ; sec):	Prese None to 40	Final Fill Tin Final Discha	25 7/23 ( ne: irge Time:	pushed HP	DPE ahead Air Monitoring VOC (ppm) H2S (ppm) LEL (%) CO (ppm)	2_	
servatio mp Star Bladder Bladder mersible dropund mp Dep mple /Tii /MSD nature(s	Ana Mind Ins/Notes: Control Initial Fill Time Initial Dischar Initial Control Ch Screen Inter th: 41 ime: 9:2 NA	alysis PEAS a sed : 20 re(FT; sec): rge Time(DT I Setting(Hz) rval: 4 (	BH ; sec):	Prese None to 40	rvative チャン チャン Final Fill Tin Final Discha Final Contro Purge Rate:	C 25 7/23 J ne: urge Time: I Setting(Hz):	Duplicate ID:	DPE ahead <u>Air Monitoring</u> VOC (ppm) H2S (ppm) LEL (%) CO (ppm) O2 (%)	ВZ W 90 Д 20.9 20	E
servatio mp Star Bladder Bladder mersible dropund mp Dep nple /Ti /MSD nature(s	Ana Mind Ins/Notes: Control Initial Fill Time Initial Dischar Initial Control Ch Screen Inter th: 41 ime: 9:2 NA	alysis PEAS a sed : 20 re(FT; sec): rge Time(DT I Setting(Hz) rval: 4 (	BH ; sec):	Prese None to 40	rvative チャン チャン Final Fill Tin Final Discha Final Contro Purge Rate:	C 25 7/23 J ne: urge Time: I Setting(Hz):	Duplicate ID:	DPE ahead <u>Air Monitoring</u> VOC (ppm) H2S (ppm) LEL (%) CO (ppm) O2 (%)	ВZ W 90 Д 20.9 20	E
servatio np Star Bladder Bladder mersible Iropund np Dep nple /Ti /MSD nature(s	Ana Mind Ins/Notes: Control Initial Fill Time Initial Dischar Initial Control Ch Screen Inter th: 41 ime: 9:2 NA	alysis PEAS a sed : 20 re(FT; sec): rge Time(DT I Setting(Hz) rval: 4 (	BH ; sec):	Prese None to 40	rvative チャン チャン Final Fill Tin Final Discha Final Contro Purge Rate:	C 25 7/23 J ne: urge Time: I Setting(Hz):	Duplicate ID:	DPE ahead <u>Air Monitoring</u> VOC (ppm) H2S (ppm) LEL (%) CO (ppm) O2 (%)	ВZ W 90 Д 20.9 20	E
ervatio np Star Bladder Bladder mersible Iropund np Dep nple /Ti MSD nature(s	Ana Misid Ins/Notes: C Initial Fill Time Initial Dischar Initial Control Ch Screen Inter th: $41$ ime: $9:2$ NA S: 2.2 3.20	alysis PEAS a sed : 20 re(FT; sec): rge Time(DT Setting(Hz) rval: 4 ( 0 purge : purge	BH ; sec):	Prese None to 40 /A	rvative チャン チャン Final Fill Tin Final Discha Final Contro Purge Rate:	C 25 7/23 J ne: urge Time: I Setting(Hz):	pushed HP	DPE ahead <u>Air Monitoring</u> VOC (ppm) H2S (ppm) LEL (%) CO (ppm) O2 (%)	ВZ W 90 Д 20.9 20	E

		SM	GF	ROUNDWATE	R GRAB SAM	MPLING DATA	A SHEET	Section 1	1.150	
Client:	NAVFAC		-	Proje		695610CH.04	I.FI.WI	Page:	of	
	A LONG & C. INSTOCK					BH12				
Event:	Phase 3 SI			-	Sample ID:	WI-AF.	BH12.GW	.11		
Date:	1.23.			Sam	pling Team:	Annika	Seay			
Weather:	59° F, 01	iciast				Shann	on fitzsin	ZNOMA		
Total Dept Depth to v	vater: (-).	8.3	FT.(BTOC) FT.(BTOC)			M	easuring Device:		WI me	ter
Water Col			FT. 2.7 GAL/FT.			Ding Dia	Volumo	1		
Well Volu		0.44	GAL/FT.	11		Pipe Dia.	Volume			
		-	GAL.			(inches)	(gallons/foot)			
Total Purg	je vol	1.32	GAL.			105	0.041			
		lisposal	le ba	:100		1.25	0.064			
Purge Dev	/ice: _0	nsposae	de da	TICV		(2	0.163	0		
						4	0.653			
-	-	-		PARAMETE	P STARILIZ	ATION CRITE	DIA			-
-		Temp.	Cond.	DO	pH	ORP	Turbidity	DTW	The second second	
Da	rameter	°C	mS/cm		SU	mV	NTU	ft BTOC		
Fal	ameter	U	mo/cm	mg/L ±0.05 (if <1)	30	IIIV	±10 % or	IL BIOC		
C	riteria	±10%	±3%	and the second se	±0.2	±10	and the second s	±0.3 (low flow)		
			H-COLOR	±10% (if >1)			≤ 10 NTU	1.5.1		
	Dunne Met	Terre	Oral		ELD PARAN		I Tout the	DTH	1 01 10	dand
Time	Purge Vol.	Temp.	Cond.	DO	pH	ORP	Turbidity	DTW	Color / Oc	
	(gals)	0°	mS/cm	mg/L	SU	mV	NTU	ft BTOC	Comme	
1150		16.80	0.860	5.03	6.83	-108	>999	8.3	murky,0	dorles
1155	Samp	le -								
Sample inf	formation: metho	od, container	number, size	, and type, pre	eservative use	ed.		Children and	The second	
	Ana	lysis			rvative	. (	Container requiren	nents	No. of cont	ainers
Meth	nod 537-	ModCPE	45-18)	ZAts	4°C	AUZX	250 mL pol	14	2	
1							1			
Observation	(Nister)				-					-
Bladder	rt Time: Notes. Initial Fill Tim Initial Dischar	e(FT; sec):	NA sec):		Final Fill Tir Final Discha	arge Time:	1	Air Monitoring VOC (ppm) H2S (ppm) LEL (%)		<u>wн</u> Ø. Ø
	Initial Control the Screen Interpth: $1 + 5 + 7$		1/	32	Final Contro Purge Rate:	ol Setting(Hz)	1	CO (ppm) O2 (%)		V
		-								
ample /T	ime: 1155							11		-
.IS/MSD	NA	1					Duplicate ID:	VA		-
Signature(	s) AAAA	10250	4							
X	LA	L X	-							
1 /	TH	1								

ult Field nase 3 SI					695610CH.04		Page:	of	
				Well ID:-	WI AF.	BHIZ			
				Sample ID:	WALL AF	BARG	W-39		
7.23.20	)		Sam	pling Team:	Shann	ion fitzsin	nmons		
el'F, over	cast					a Seal			
		FT (PTOC)	· · · · ·				Salaralle	11 marts	
1	40	FT.(BTOC)			M	easuring Device:	JOIONIST K	IL meter	<u> </u>
							XX 1997	2	
		FI.		r	D' D'	1 Malana	1		
	(D 16 3	GAL/FI.	1						
	7-165	GAL. 4.1			(inches)				
IOI .: KV	0.901	GAL. 15	1		1.05				
	in all	. last .	Ats	-					
			TV						
_(	all squ	Airt			4	0.653			
			BABAMET	D OT A DU IT					
	Tomp	Cond					DTW		
notor									
	L				MV		ILBIOC	-	
eria	±10%	±3%		±0.2	±10		±0.3 (low flow)		-
		and a state of			ETEDE	SIUNIU		-	
Purgo Vol	Toma	Cond				Turkiditu	DTW	Color	10der /
(yais)	111 02				mv			Com	docless
5 - 14.82 0.1041							9.5		
40 15 13.93 0.642 mple				4.7 F	3	600	9.5	greyic	icang,o
e 1440 ABS									
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tions moth	and anothing	aumhar size	and time new						
		number, size				Container requiren	nents	No of	containers
		FAS-10		I Valive			icittà		ontainers
19 22 +	Moels	143 18)	70		Pory	LSPINL		F	
	-								
					1				
/Notes:									
1110	Б						and the second		1 25
ime: \4 L	2	. ^		and the state of the	1.4				WH
itial Fill Tim	e(FT; sec):	NT		Final Fill Tin	ne: NR	1.1.		Ø.Ø	0.0
itial Dischar	rge Time(DT	; sec): NA		Final Discha	rge Time:	J A		1	1
	-			2.50.00					
itial Control	Setting(Hz)	:NA		Final Contro	Setting(Hz)	: NR		V	
					et 1	1	02 (%)		V
C	128	UMPL	has	Purge Rate:	Q.4ga/1	ATTAL			
Screen Inte	rval: 30	1p15	Leg-						
. 39	2								
· 144T	Ø								
C.   V V		20.000	WILAT.	BIL12-101-0	20-1450	Dunlicate ID: K	IA		
- URI	L'ON	41	MICHT	up - ava	-24- Wal	Dupiloate ID. P			
710000	The seal	1				1			
111.	21	7							
	n: (x) /ol.: (x) /ol	er: $(\cdot)_{HZ} = \frac{4}{9.5}$ n: $(\cdot)_{HZ} = \frac{4}{9.5}$ $(\cdot)_{HZ} = \frac{1}{9.5}$ $(\cdot)_{HZ} = \frac{1}{9.5}$	er: $(1)_{4/2} = 4.5$ FT.(BTOC) n: $A_{5/30-5}$ FT. (x) $O$ IL 3 GAL/FT. GAL. 4.9 FOL: $K^{3} = 0.494$ GAL. 15 E. <u>Aispostole bailer</u> Geb Squirt neter °C mS/cm Fria ±10% ±3% Purge Vol. Temp. Cond. (gals) °C mS/cm 14.82 Ø.1041 15 I3.93 Ø.1042 Purge Vol. Temp. Cond. (gals) °C mS/cm III.82 Ø.1041 III.82 Ø.104	er: $(1)_{M} \ge 3 + 9 \le FT. (BTOC)$ n: $M \ge 3 - 5 \le FT.$ (X) $(D)$ $ L \ge GAL/FT.$ GAL. $4 - 9^{+}$ GAL. $4 - 9^{+}$ fol.: $K \ge 0 - 4 + 4 \le 0$ $M \ge 0 - 4 + 4 \le 0$ $M \ge 0 - 4 + 4 \le 0$ $M \ge 0 - 4 + 4 \le 0$ eria $\pm 10\%$ $\pm 3\%$ $\pm 0.05$ (if <1) $\pm 10\%$ (if >1) Purge Vol. Temp. Cond. DO (gals) °C mS/cm mg/L $= 14, 82 = 0 \cdot 1.041 = 3.78$ $15 = 13.93 = 0 \cdot 1.042 = 3.92$ $= 14, 82 = 0 \cdot 1.041 = 3.78$ $15 = 13.93 = 0 \cdot 1.042 = 3.92$ $= 14, 82 = 0 \cdot 1.041 = 3.78$ $15 = 13.93 = 0 \cdot 1.042 = 3.92$ $= 14, 82 = 0 \cdot 1.041 = 3.78$ $15 = 13.93 = 0 \cdot 1.042 = 3.92$ $= 14, 82 = 0 \cdot 1.041 = 3.78$ $15 = 13.93 = 0 \cdot 1.042 = 3.92$ $= 14, 82 = 0 \cdot 1.041 = 3.78$ $15 = 13.93 = 0 \cdot 1.042 = 3.92$ $= 14, 82 = 0 \cdot 1.041 = 3.78$ $= 14, 92 = 0 \cdot 1.041 = 3.78$ $= 14, 94 = 0 \cdot 1.041 = 3.78$ = 14,	er: $()_{AZ} = 4.5$ FT. (BTOC) n: $AU = 30.5$ FT. (X) (D) IL 3 GAL/FT. GAL. 4.97 GAL. 15 GAL. 15 GAL. 15 GAL. 15 Cond. DO pH mainer $C$ mS/cm mg/L SU pria $\pm 10\% \pm 3\% \pm 0.05$ (if <1) $\pm 0.2$ $\pm 10\%$ (if >1) $\pm 0.2$ FIELD PARAM Purge Vol. Temp. Cond. DO pH (gals) $C$ mS/cm mg/L SU $IU = 14.82$ $O \cdot I_0 = 11$ $3.78$ $F \cdot I_0 = 1$ $IU = 14.82$ $O \cdot I_0 = 11$ $3.78$ $F \cdot I_0 = 1$ $IU = 14.82$ $O \cdot I_0 = 11$ $3.78$ $F \cdot I_0 = 1$ $IU = 14.82$ $O \cdot I_0 = 11$ $3.78$ $F \cdot I_0 = 1$ $IU = 14.82$ $O \cdot I_0 = 11$ $3.78$ $F \cdot I_0 = 1$ $IU = 14.82$ $O \cdot I_0 = 11$ $3.78$ $F \cdot I_0 = 1$ $IU = 14.82$ $O \cdot I_0 = 11$ $3.78$ $F \cdot I_0 = 10$ $IU = 14.82$ $O \cdot I_0 = 11$ $3.78$ $F \cdot I_0 = 10$ $IU = 14.82$ $O \cdot I_0 = 11$ $3.78$ $F \cdot I_0 = 10$ $IU = 14.82$ $O \cdot I_0 = 11$ $3.78$ $F \cdot I_0 = 10$ $IU = 14.82$ $O \cdot I_0 = 11$ $O \cdot I_0 = 10$ $IU = 14.82$ $O \cdot I_0 = 11$ $O \cdot I_0 = 10$ $IU = 14.82$ $O \cdot I_0 = 11$ $O \cdot I_0 = 10$ $IU = 14.82$ $O \cdot I_0 = 11$ $O \cdot I_0 = 10$ $IU = 14.82$ $O \cdot I_0 = 11$ $O \cdot I_0 = 10$ $IU = 14.82$ $O \cdot I_0 = 11$ $O \cdot I_0 = 10$ $IU = 14.82$ $O \cdot I_0 = 11$ $O \cdot I_0 = 10$ $IU = 14.82$ $O \cdot I_0 = 11$ $O \cdot I_0 = 10$ $IU = 14.82$ $O \cdot I_0 = 11$ $O \cdot I_0 = 10$ $IU = 14.82$ $O \cdot I_0 = 11$ $O \cdot I_0 = 10$ $O \cdot I_0 = $	er: $(1/4/2/4/9.5)$ FT. (BTOC) n: $A^{W}/30.5$ FT. (N) $(1/L)^{S}$ GAL/FT. (II) $(1/L)^{S}$ GA/FT. (II) $(1$	er: $(M_2^2 4_2^2 + 5_1^2, FI, (BTOC)$ m: $M_2^2 3_2 - 5_1^2, FI$ (a) $(U_2^2 - 5_1^2, GAL, H, A^+)$ (a) $(U_2^2 - 5_1, U_2^2, U$	er. $(J_{A} \neq A \neq S \in FI.$ iii: $M \neq 20 \leq FI.$ iv) $O = 12 \leq GAL \in H, A \neq FI.$ iv) $O = 12 \leq GAL \in H, A \neq FI.$ iv) $O = 12 \leq GAL \in H, A \neq FI.$ iv) $O = 12 \leq GAL \in H, A \neq FI.$ iv) $O = 12 \leq GAL \in H, A \neq FI.$ iv) $A \neq 20 \leq FI.$ iv) $A \neq 20$	er: $D_{AZ}ZA_{S}Z$ FT. (BTOC) $M_{ZZC-S}$ FT. (BTOC

		SM	GF	ROUNDWATE	R GRAB SAM	MPLING DATA	A SHEET	Section 1	1.150	
Client:	NAVFAC		-	Proje		695610CH.04	I.FI.WI	Page:	of	
	A LONG & C. INSTOCK					BH12				
Event:	Phase 3 SI			-	Sample ID:	WI-AF.	BH12.GW	.11		
Date:	1.23.			Sam	pling Team:	Annika	Seay			
Weather:	59° F, 01	iciast				Shann	on fitzsin	ZNOMA		
Total Dept Depth to v	vater: (-).	8.3	FT.(BTOC) FT.(BTOC)			M	easuring Device:		WI me	ter
Water Col			FT. 2.7 GAL/FT.			Ding Dia	Volumo	1		
Well Volu		0.44	GAL/FT.	11		Pipe Dia.	Volume			
		-	GAL.			(inches)	(gallons/foot)			
Total Purg	je vol	1.32	GAL.			105	0.041			
		lisposal	le ba	:100		1.25	0.064			
Purge Dev	/ice: _0	nsposae	de da	TICV		(2	0.163	0		
						4	0.653			
-	-	-		PARAMETE	P STARILIZ	ATION CRITE	DIA			-
-		Temp.	Cond.	DO	pH	ORP	Turbidity	DTW	The second second	
Da	rameter	°C	mS/cm		SU	mV	NTU	ft BTOC		
Fal	ameter	U	mo/cm	mg/L ±0.05 (if <1)	30	IIIV	±10 % or	IL BIOC		
C	riteria	±10%	±3%	and the second se	±0.2	±10	and the second s	±0.3 (low flow)		
			H-COLOR	±10% (if >1)			≤ 10 NTU	1.5.1		
	Dunne Met	Terre	Oral		ELD PARAN		I Tout the	DTH	1 01 10	dand
Time	Purge Vol.	Temp.	Cond.	DO	pH	ORP	Turbidity	DTW	Color / Oc	
	(gals)	0°	mS/cm	mg/L	SU	mV	NTU	ft BTOC	Comme	
1150		16.80	0.860	5.03	6.83	-108	>999	8.3	murky,0	dorles
1155	Samp	le -								
Sample inf	formation: metho	od, container	number, size	, and type, pre	eservative use	ed.		Children and	The second	
	Ana	lysis			rvative	. (	Container requiren	nents	No. of cont	ainers
Meth	nod 537-	ModCPE	45-18)	ZAts	4°C	AUZX	250 mL pol	14	2	
1										
Observation	(Nister)				-					-
Bladder	rt Time: Notes. Initial Fill Tim Initial Dischar	e(FT; sec):	NA sec):		Final Fill Tir Final Discha	arge Time:	1	Air Monitoring VOC (ppm) H2S (ppm) LEL (%)		<u>wн</u> Ø. Ø
	Initial Control the Screen Interpth: $1 + 5 + 7$		1/	32	Final Contro Purge Rate:	ol Setting(Hz)	1	CO (ppm) O2 (%)		V
		-								
ample /T	ime: 1155							11		-
.IS/MSD	NA	1					Duplicate ID:	VA		-
Signature(	s) AAAA	10250	4							
X	LA	L X	-							
1 /	TH	1								

ult Field nase 3 SI					695610CH.04		Page:	of	
				Well ID:-	WI AF.	BHIZ			
				Sample ID:	WALL AF	BAR-G	W-39		
7.23.20	)		Sam	pling Team:	Shann	ion fitzsin	nmons		
el'F, over	cast					a Seal			
		FT (PTOC)	· · · · ·				Salaralle	11 marts	
1	40	FT.(BTOC)			M	easuring Device:	JOIONIST K	IL meter	<u> </u>
							XX 1997	2	
		FI.		r	D' D'	1 Malana	1		
	(D 16 3	GAL/FI.	1						
	7-165	GAL. 4.1			(inches)				
IOI .: KV	0.901	GAL. 15	1		1.05				
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			TV						
_(	all squ	Airt			4	0.653			
			BABAMET	D OT A DU IT					
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	L				MV		ILBIOC	-	
eria	±10%	±3%		±0.2	±10		±0.3 (low flow)		-
		and a state of			ETEDE	SIUNIU		-	
Purgo Vol	Toma	Cond				Turkiditu	DTW	Color	10der /
(yais)	111 02				mv			Com	docless
5 - 14.82 0.1041							9.5		
40 15 13.93 0.642 mple				4.7 F	3	600	9.5	greyic	icang,o
e 1440 ABS									
				-					
tions moth	and appreciate	aumhar size	and time new						
		number, size				Container requiren	nents	No of	containers
		FAS-10		I Valive			icittà		ontainers
19 22 +	Moels	143 18)	70		Pory	LSPINL		F	
	-								
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/Notes:									
1110	Б						and the second		1 25
ime: \4 L	2	. ^		and the state of the	1.4				WH
itial Fill Tim	e(FT; sec):	NT		Final Fill Tin	ne: NR	1.1.		Ø.Ø	0.0
itial Dischar	rge Time(DT	; sec): NA		Final Discha	rge Time:	J A		1	1
	-			2.50.00					
itial Control	Setting(Hz)	:NA		Final Contro	Setting(Hz)	: NR		V	
					et 1	1	02 (%)		V
C	128	UMPL	has	Purge Rate:	Q.4ga/1	ATTAL			
Screen Inte	rval: 30	1p15	Leg-						
. 39	2								
· 144T	Ø								
C.   V V		20.000	WILAT.	BIL12-101-0	20-1450	Dunlicate ID: K	IA		
- URI-	L'ON	41	MICHT	up - ava	-24- Wal	Dupiloate ID. P			
710000	The seal	1				1			
111.	21	7							
	n: (x) /ol.: (x) /ol	er: $(\cdot)_{HZ} = \frac{4}{9.5}$ n: $(\cdot)_{HZ} = \frac{4}{9.5}$ $(\cdot)_{HZ} = \frac{1}{9.5}$ $(\cdot)_{HZ} = \frac{1}{9.5}$	er: $(1)_{4/2} = 4.5$ FT.(BTOC) n: $A_{5/30-5}$ FT. (x) $O$ IL 3 GAL/FT. GAL. 4.9 FOL: $K^{3} = 0.494$ GAL. 15 E. <u>Aispostole bailer</u> Geb Squirt neter °C mS/cm Fria ±10% ±3% Purge Vol. Temp. Cond. (gals) °C mS/cm 14.82 Ø.1041 15 I3.93 Ø.1042 Purge Vol. Temp. Cond. (gals) °C mS/cm III.82 Ø.1041 III.82 Ø.104	er: $(1)_{M} \ge 3 + 9 \le FT. (BTOC)$ n: $M \ge 3 - 5 \le FT.$ (X) $(D)$ $ L \ge GAL/FT.$ GAL. $4 - 9^{+}$ GAL. $4 - 9^{+}$ fol.: $K \ge 0 - 4 + 4 \le 0$ $M \ge 0 - 4 + 4 \le 0$ $M \ge 0 - 4 + 4 \le 0$ $M \ge 0 - 4 + 4 \le 0$ eria $\pm 10\%$ $\pm 3\%$ $\pm 0.05$ (if <1) $\pm 10\%$ (if >1) Purge Vol. Temp. Cond. DO (gals) °C mS/cm mg/L $= 14, 82 = 0 \cdot 1.041 = 3.78$ $15 = 13.93 = 0 \cdot 1.042 = 3.92$ $= 14, 82 = 0 \cdot 1.041 = 3.78$ $15 = 13.93 = 0 \cdot 1.042 = 3.92$ $= 14, 82 = 0 \cdot 1.041 = 3.78$ $15 = 13.93 = 0 \cdot 1.042 = 3.92$ $= 14, 82 = 0 \cdot 1.041 = 3.78$ $15 = 13.93 = 0 \cdot 1.042 = 3.92$ $= 14, 82 = 0 \cdot 1.041 = 3.78$ $15 = 13.93 = 0 \cdot 1.042 = 3.92$ $= 14, 82 = 0 \cdot 1.041 = 3.78$ $15 = 13.93 = 0 \cdot 1.042 = 3.92$ $= 14, 82 = 0 \cdot 1.041 = 3.78$ $= 14, 92 = 0 \cdot 1.041 = 3.78$ $= 14, 94 = 0 \cdot 1.041 = 3.78$ = 14,	er: $()_{AZ} = 4.5$ FT. (BTOC) n: $AU = 30.5$ FT. (X) (D) IL 3 GAL/FT. GAL. 4.97 GAL. 15 GAL. 15 GAL. 15 GAL. 15 Cond. DO pH mainer $C$ mS/cm mg/L SU pria $\pm 10\% \pm 3\% \pm 0.05$ (if <1) $\pm 0.2$ $\pm 10\%$ (if >1) $\pm 0.2$ FIELD PARAM Purge Vol. Temp. Cond. DO pH (gals) $C$ mS/cm mg/L SU $IU = 14.82$ $O \cdot I_0 = 11$ $3.78$ $F \cdot I_0 = 1$ $IU = 14.82$ $O \cdot I_0 = 11$ $3.78$ $F \cdot I_0 = 1$ $IU = 14.82$ $O \cdot I_0 = 11$ $3.78$ $F \cdot I_0 = 1$ $IU = 14.82$ $O \cdot I_0 = 11$ $3.78$ $F \cdot I_0 = 1$ $IU = 14.82$ $O \cdot I_0 = 11$ $3.78$ $F \cdot I_0 = 1$ $IU = 14.82$ $O \cdot I_0 = 11$ $3.78$ $F \cdot I_0 = 1$ $IU = 14.82$ $O \cdot I_0 = 11$ $3.78$ $F \cdot I_0 = 10$ $IU = 14.82$ $O \cdot I_0 = 11$ $3.78$ $F \cdot I_0 = 10$ $IU = 14.82$ $O \cdot I_0 = 11$ $3.78$ $F \cdot I_0 = 10$ $IU = 14.82$ $O \cdot I_0 = 11$ $3.78$ $F \cdot I_0 = 10$ $IU = 14.82$ $O \cdot I_0 = 11$ $O \cdot I_0 = 10$ $IU = 14.82$ $O \cdot I_0 = 11$ $O \cdot I_0 = 10$ $IU = 14.82$ $O \cdot I_0 = 11$ $O \cdot I_0 = 10$ $IU = 14.82$ $O \cdot I_0 = 11$ $O \cdot I_0 = 10$ $IU = 14.82$ $O \cdot I_0 = 11$ $O \cdot I_0 = 10$ $IU = 14.82$ $O \cdot I_0 = 11$ $O \cdot I_0 = 10$ $IU = 14.82$ $O \cdot I_0 = 11$ $O \cdot I_0 = 10$ $IU = 14.82$ $O \cdot I_0 = 11$ $O \cdot I_0 = 10$ $IU = 14.82$ $O \cdot I_0 = 11$ $O \cdot I_0 = 10$ $IU = 14.82$ $O \cdot I_0 = 11$ $O \cdot I_0 = 10$ $O \cdot I_0 = $	er: $(1/4/2/4/9.5)$ FT. (BTOC) n: $A^{W}/30.5$ FT. (N) $(1/L)^{S}$ GAL/FT. (II) $(1/L)^{S}$ GA/FT. (II) $(1$	er: $(M_2^2 4_2^2 + 5_1^2, FI, (BTOC)$ m: $M_2^2 3_2 - 5_1^2, FI$ (a) $(U_2^2 - 5_1^2, GAL, H, A^+)$ (a) $(U_2^2 - 5_1, U_2^2, U$	er. $(J_{A} \neq A \neq S \in FI.$ iii: $M \neq 20 \leq FI.$ iv) $O = 12 \leq GAL \in H, A \neq FI.$ iv) $O = 12 \leq GAL \in H, A \neq FI.$ iv) $O = 12 \leq GAL \in H, A \neq FI.$ iv) $O = 12 \leq GAL \in H, A \neq FI.$ iv) $O = 12 \leq GAL \in H, A \neq FI.$ iv) $A \neq 20 \leq FI.$ iv) $A \neq 20$	er: $D_{AZ}ZA_{S}Z$ FT. (BTOC) $M_{ZZC-S}$ FT. (BTOC

Date:	Phase 3 SI           7.24.2           56°F, C           h:           rater:           1	0 12 12 3.15 x) 0.163		Pro	Well ID	Pipe Dia.	BH13. GIL		of AL moter #189 29744
Well Volun Total Purge Purge Devi	ne: e Vol.:	0.51 1.54 disposable	GAL.			(inches) 1 1.25 2 4	0.041 0.064 0.163 0.653		
1				PARAMET	ER STABILIZ	ATION CRITE	RIA Turbidity	DTW	
Para	ameter	Temp. °C	Cond. mS/cm	DO mg/L	pH SU	mV	NTU ±10 % or	ft BTOC	
	iteria	±10%	±3%	±0.05 (if <1)	10.2	±10	≤ 10 NTU	±0.3 (low flow)	and the second second
1.914	the bar	Maria and	100 C	F	IELD PARAN	ORP	Turbidity	DTW	Color / Odor /
Time	Purge Vol. (gals)	Temp. °C	Cond. mS/cm	DO mg/L	pH SU	mV	NTU >997	ft BTOC 9.2	Comments
Ø85Ø	3	15.86	1.37	Ø.83	6.38	-172			3. 1
<u> </u>									
	Ana	nod, container r alysis Mod (PFAS		and type, pre Preser 4° C	Valuvo		Intainer requireme	ents	No. of containers
Bladder In ubmersible In ydropunch ump Depth	Time: NJ nitial Fill Tim nitial Dischar nitial Control	e(FT; sec): ge Time(DT; s Setting(Hz): val: ( () - 1 FL (3)	V		Final Fill Tim Final Dischar Final Control Purge Rate:	ge Time:		Air Monitoring VOC (ppm) H2S (ppm) LEL (%) CO (ppm) O2 (%)	$\begin{array}{c c} \mathbf{BZ} & \mathbf{WH} \\ \emptyset. \phi & 0. \phi \\ \downarrow & \downarrow \\ \downarrow & \downarrow \\ \downarrow & \downarrow \\ \end{pmatrix}$

VFAC It Field ase 3 SI	ø	G	Pro	ject Number: Well ID: Sample ID:	695610CH.0 BH13 WIV-AF Shanno	4.FI.WI BH13-C	Page:   1/W · 41 Mon S	of
r. 7.	40	FT.(BTOC) FT.(BTOC)	3	0			WIL met	the solonist
					(inches) 1	(gallons/foot) 0.041		29744
_	Geo Sa	wirt			2	0.163	2	
-			DADAMET	D STARIL 17		PIA	-	
	Temp.	Cond.	DO	pH	ORP	Turbidity	DTW	
eter	°C	mS/cm	mg/L	SU	mV			
ia	±10%	±3%	±10% (if >1)	±0.2	±10	≤ 10 NTU	±0.3 (low flow)	
	1 J		F			T and fully	DTW	Color / Odor /
		and the second sec	And a second					Comments
B	13.22	0.376	6.69	7.09	-9	129	8.95	grey to cleared
15		Ø. 39\$	1.54	7.95	-80	22	13.32	clear odories
	1000							
tion: metho	d, container	number, size,	and type, presen	vative used	0	ontainer requiren	nents XL	No. of containers
537-N	Nod (PFA	5-18)	4.C		AB2X	- 2Stemi	- potytiple	2
tes:								
I Fill Time I Discharg	(FT; sec):	~	1		ge Time:		Air Monitoring VOC (ppm) H2S (ppm) LEL (%) CO (ppm) O2 (%)	BZ WH
	VFAC         It Field         ase 3 SI         ····································	It Field ase 3 SI $(-24.2\phi)$ $(-24.2\phi)$ $(-24.2\phi)$ $(-24.2\phi)$ $(-24.2\phi)$ $(-26.2\phi)$	NVFAC It Field ase 3 SI $f: 24.2\phi$ g1 F, Cloudy f: (1) g.95 FT. (BTOC) f: 31.05 FT. g1.05 FT. g1.05 FT. g1.05 GAL. g1.05 GAL. g2.0.376 GAL. g1.05 GAL. g1.05 GAL. g2.0.376 GAL. g2.0.376 GAL. g1.05 GAL. g2.0.376 GAL. g1.05 GAL. g2.0.376 GAL. g1.05 GAL. g2.0.376 GAL. g1.05 GAL. g2.0.376 GAL. g2.0.376 GAL. g2.0.376 GAL. g2.0.376 GAL. g1.05 GAL. g2.0.376 GAL.	VFAC       ORCONDUCTION         It Field       Pro         ase 3 SI       San $E' 24 \cdot 2\phi$ San $el^+F_1$ , CLOWAY       San $fl 0 = 1005$ FT. $(M \otimes 0, 163)$ GAL/FT. $oll.:$ $5$ $GAL$ . $GAL$ $Gal.$ $DO$ $gals$ $fl 0 = 100$	VFAC       Orougon of the set of the	VFAC       Orderation         It Field       Project Number: 6956100H.0         ase 3 SI       Sample ID: $:24 \cdot 2\phi$ Sample ID: $el T_{c}$ Cabedy       Arin: $u \downarrow \phi$ FT.(BTOC)         r: $:13, \phi$ D $:13, \phi$ D       FT. $:15, \phi$ GAL       Inches) $:16, 00, 00, 00, 00, 00, 00, 00, 00, 00, 0$	WFAC       UNCONDUCTION       Project Number: $695610CH 047 JHEI         It Field       model       BF 13         ase 3 SI       Sample ID: VAI - AF - BH13 - C         Sampling Team:       Shannon Lit 23 Ino         at F, Choldy       Measuring Device         r:       U \oplus FT.(BTOC)       Measuring Device         r:       U \oplus FT.(BTOC)       Measuring Device         r:       U \oplus FT.(BTOC)       Measuring Device         it:       SI.005       FT.         (N) O. UGS GAL/FT.       Pipe Dia.       Volume         (inches)       (gallons/foot)       1       0.041         125       0.064       2       0.163         4       0.653       4       0.653         PARAMETER STABILIZATION CRITERIA         ter       Temp.       Cond.       DO       PH       ORP       Turbidity         ia       ±10%       ±3%       ±0.05 (if <1)$	WFAC       UROUGHT Project Number: 995610CH:04 FLW       Page:         If Field       Well ID: $\mathcal{B}(F, 13)$ Sampling Team: $\mathcal{B}(F, 13)$ Sampling

Client: Data Date: Weather Total Dep Depth to Water Co Well Volu Total Pur Purge De	Phase 3 Si Phase	22 28.5 13.5	FT.(BTOC FT.(BTOC FT.(BTOC FT. GAL/FT. GAL. GAL. GAL.	Sa	Well ID Sample ID	: 695610CH. BH14 : WILAT : Shanne Annik	BHILL GWI BHILL GWI A FITZSI MIMA A SEAY	ens Solonistk Hoxba *	of AL Meter XX 1 29 744
		Temp.		PARAMET	ER STABIL 17	ATION CRIT		1	
- 74	rameter riteria	°C ±10%	Cond. mS/cm ±3%	mg/L ±0.05 (if <1)	SU	ORP mV	Turbidity NTU	DTW ft BTOC	
201	Purge Vol.		1	±10% (if >1)	±0.2	±10	±10 % or ≤ 10 NTU	±0.3 (low flow)	
Time	(gals)	Temp. °C	Cond.	00	PH	ORP	and the second second		Carlon and a
1325	1 F	22.34	mS/cm Ø.498 Ø.454	mg/L 7.32.	5U 6.94 7.02	mV -106 -78	Turbidity NTU >999 >191	DTW ft BTOC	Color / Odo Comments
								9.2	Bray, edm
		2.2.2.1	-					-	
Sample infor	mation: metho Analy	d, container r	umber sizo	and two	Sec. 1				
Methols	Analy	vsis	amber, size,	Presen	servative use		and the second		
HIGHTON S	37-Mod	PFAS-18)		400		2	Sontainer requirem	ents	No. of contain
Observations/	1							10000	-
Pump Start Ti Bladder Init Bladder Init ubmersible Init	me: NA tial Fill Time(I ial Discharge	FT; sec): Time(DT; s etting(Hz):	V	F	inal Fill Tim inal Dischar inal Control urge Rate:	e: ge Time: Setting(Hz):		Air Monitoring VOC (ppm) H2S (ppm) LEL (%) CO (ppm) O2 (%)	BZ ₩ Ø.Ø Ø.

lient: NAVFAC		GR	OUNDWATE	R GRAB SA	MPLING DAT	A SHEET	1	
			- Proj	ect Number:	695610CH.04	I.FI.WI	Page:	of
vent: Phase 3 SI			-	Well ID:	BH12 I	34111		0
ate: 7.24.20			-	Sample ID:	VIII hT	21111 611	101	
leather: 64°F, clou	11		Sam	pling Team:	Sladian av	Fitzsimmo	.41	
atal D		Y	<u>.</u>		AMANIKA	" HTESIMMO	ns	
otal Depth:	40	FT.(BTOC)			Annika	seary		
Pepth to water: (-) Vater Column:	32	FT.(BTOC) FT. GAL/FT.			M	easuring Device	Solonist k Hoviba X2	11 meter × 180 9744
en volume:					Pipe Dia.	Volume	1	
otal Purge Vol.:	16	GAL.			(inches)			
	10	GAL.			1	(gallons/foot)		
urge Device: (	Geo Sai				1.25	0.041		
_	700 201	hirt				0.064		
					(2	0.163		
Sector Sector Sector					4	0.653		
			PARAMETE	R STADIL 17	ATION CRITE			
Parameter	Temp.	Cond.	DO	pH	ATION CRITE		and an a state of the state of the state	N. S. C. L.
raranteter	°C	mS/cm	mg/L	SU	ORP	Turbidity	DTW	
Criteria	±10%		±0.05 (if <1)	50	mV	NTU	ft BTOC	
	10%	±3%		±0.2	±10	±10 % or		
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	The second second	±10% (if >1)			≤ 10 NTU	±0.3 (low flow)	
				ELD DADAT				
Time Purge Vol.	Temp	Cond	F	ELU PARAM	ETERS	HELD BURNING	NO BUTTLE COMMENT	
Time Purge Vol.	Temp.	Cond.	DO	ELD PARAM pH	ORP	Mar and Sta		
1420 (gals)	°C	mS/cm	mg/L	pH SU	ORP	Turbidity	DTW	Color / Odor /
1420 (gais) 143010 Ø	°C 15.87	mS/cm	DO mg/L 5.69	pH SU	ORP mV	Turbidity NTU	DTW ft BTOC	Color / Odor /
1420 (gals)	°C	mS/cm	mg/L	pH	ORP	Turbidity		Color / Odor / Comments

a ranger sample	17.65 t.70	-123 82	9	grey sulfuration
Sample information: method, container number, size Analysis Method 537, Mod (PFAS-18)	, and type, preservative use Preservative しん。 C	ed. Container requiren 25007 HPPE AU	nents HDPE	No. of containers
		HU		

Observations/Notes:

Pump Start Time: 1430 MA NA Air Monitoring VOC (ppm) Bladder Initial Fill Time(FT; sec): Final Fill Time: BZ WH Bladder Initial Discharge Time(DT; sec): **Final Discharge Time:** Q-Q 0.0 H2S (ppm) LEL (%) Submersible Initial Control Setting(Hz): Final Control Setting(Hz): CO (ppm) 02 (%) Purge Rate: ft bys Hydropunch Screen Interval: 41Pump Depth: 41 40 - 42S/MSD NA Duplicate ID: NA Signature(s). AN



lient: NAVEAC	Egg a sta	GRU	JUNDWAT	er grab san	APLING DATA	ASHEET	and the second second		1
cation: Ault Field			Pro	ject Number: Well ID:	695610CH.04	I.FI.WI	Page: 1	of	
vent: Phase 3 SI				Sample ID:	1111	BH19.1214.	49		
ate: 7.28.	20		Sar			n Fitzsimn	nons		
leather: lele Fi	char			1.5	Annik				
otal Depth: Depth to water:	50 0AH943	FT.(BTOC) FT.(BTOC) FT.				easuring Device:	Wel m Honil	A. 10-1	18972
Vell Volume:	(x) Ø.163	GAL/FT.		1	Pipe Dia.	Volume	1		
otal Purge Vol.: 중,ᇿ	23-56 400	GAL			(inches)	(gallons/foot) 0.041			
	234.901	47			1.25	0.041			
urge Device:	disposal	ok bail	Pr	2.10	2	0.163	1		
	LAD POSKE	in our	u	2	4	0.653			
	A STATE		PARAMET	ER STABILIZ	ATION CRITE	RIA	14 T	120	10-11-
Territory St.	Temp.	Cond.	DO	pH	ORP	Turbidity	DTW		
Deserveden	00					and the second second			

Para	ameter	-0	mS/cm	mg/L	SU	l mV	NTU	ft BTOC	
Cr	iteria	±10%	±3%	±0.05 (if <1)	±0.2	±10	±10 % or	±0.3 (low flow)	
	C. DOLLARS	1000	And Market	±10% (if >1)	1.1.1		≤ 10 NTU		
	Purge Vol.	Tomp	Cond		ELD PARAM		Turkida	DTW	
Time	-	Temp.	Cond.	DO	pH	ORP	Turbidity	DTW	Color / Odor /
155	(gals) 3,5	°C 16.97	mS/cm	mg/L 6.59	SU (2)	mV	HINTU	ft BTOC	Comments
		16.11	1.46	9.59	Lili	61	֯ >999	NA-	murky, odo
200	sampl	e							
-		19-5-1							
					1				
			and the state	and time and	conveting .	4			
ple info	mation: metho		number, size	, and type, pre Preser	servative use	ea.	Container	No. 20 and	
	Anal		121	U°C	valive	12	Container require		No. of containers
iethod	1537-Mo	A LEFAS	10)	40		4	PMLHL	PE	2
Bladder II Bladder II nersible II	Time: NA hitial Fill Time hitial Discharg hitial Control S	ge Time(DT; Setting(Hz):			Final Fill Tir Final Discha Final Contro Purge Rate:	rge Time:		Air Monitoring VOC (ppm) H2S (ppm) LEL (%) CO (ppm) O2 (%)	BZ WH Φ.Φ Φ.Φ
nple /Tim MSD ( ature(s):	NA IC	W	Dailer	ALS .	4. 0		Duplicate ID:	NA	
(		P	7	- 04 p	tempte	ed grate	0 41 41	- bap (hyd	vopunch scree \$-42.ftbgs

U

Rose hydroplinch to. 37-39 ft bas ino Gkl. Continue drilling to Soffiogs to take sample

lient:			Gr	And a state of the	and the second sec	MPLING DAT	and the contract of the second s	and the second s	
	NAVFAC			_ Proj		695610CH.04	1.FI.WI	Page:	of
vent:	Ault Field Phase 3 SI			-0	Well ID:	BHZO	PILOL (a)	. 111	
ate:		*			Sample ID:	WI.At.	BH:26.64	1.41	
	7.28.24 63°F, SW	p		- Sam	pling ream:	Shanno	ntitzsimm	lons	
cather.				-77		Anniko		1	1.1.
otal Dept		40'	FT.(BTOC)			M	easuring Device	Solonist	+WI meter
epth to v		37	FT.(BTOC)				A	BUSE	18972
later Col		3	FT.		1.1				Winder 18972 C102485
All Males		Ø.163	GAL/FT.			Pipe Dia.	Volume	Honbe	
ell Volution	Contraction of the second s	· Q.45	GAL.		1.0	(inches)	(gallons/foot)		
Jairuig	Contraction of the	1.5	GAL.			1	0.041	-	
urge Dev	vice: A	is Operated	e baile	1		2 -	0.163	-	
ange ber		sperator	e Duic		9	4	0.653		
				-	1		0.000	1	
	and the second	1993		PARAMETE	R STABILIZ	ATION CRITE	RIA	a dian	Set of the set
-	Section 1	Temp.	Cond.	DO	pН	ORP	Turbidity	DTW	
Pa	rameter	°C	mS/cm	mg/L	SU	mV	NTU	ft BTOC	
C	Criteria	±10%	±3%	±0.05 (if <1)	±0.2	±10	±10 % or	$\pm 0.3$ (low flow)	
-	A PROPERTY AND A		Contraction of the second	±10% (if >1)	10000		≤ 10 NTU		
4.01.	Purge Vol.	Temp.	Cond.	DO FI	ELD PARAM	ORP	Turbidity	DTW	Color / Odor /
Time	(gals)	°C	mS/cm	mg/L	pH SU	mV	Turbidity NTU	ft BTOC	Comments
100	MA3	20°		1.67	7.28	-128	2989	46	aver, murry odo
105	Sample		1.1.	1 el				<u> </u>	Did'ungal's
	- un up u								
	1			1					
									6
mple inf	formation: metho	d, container	number, size	, and type, pre	servative use	d.			
	formation: metho Analy	ysis		Preser	servative use vative	C	ontainer requirem		No. of containers
	Anal	ysis		e, and type, pre Preser ↓↓⊳℃	servative use vative	C	ontainer requirem		No. of containers
		ysis		Preser	servative use vative	C			
	Anal	ysis		Preser	servative use vative	C			
letha	Anal <u>)</u> 52537-Ma	ysis		Preser	servative use vative	C			
letha	Analy DA 537-Mc ons/Notes:	ysis Dd (PFAS		Preser	servative use vative	C			
Netho servatio	Analy Da 537-Ma	ysis Dd (PFAS		Preser	servative use vative	250	oml HDP		2-
Netho servatio	Analy Da 537-Ma Ins/Notes: Int Time: N	ysis Dd (PFAS		Preser <u>4</u> ¢C	servative use vative	250	DML HOPE	Air Monitoring VOC (ppm)	BZ WH
servatio	Analy ad 537-Ma ons/Notes: rt Time: N Initial Fill Time	ysis A (PFAS A (FT; sec):	(8)	Preser UPC		258 	DML HOPE	Air Monitoring	2-
servatio mp Star Bladder Bladder	Analy ad 537-Mc ons/Notes: rt Time: N Initial Fill Time Initial Discharg	ysis d (PFAS (FT; sec): ge Time(DT;	sec):	Preser <u>4</u> °C	Final Fill Tim	rge Time:	2 ml HDP	Air Monitoring VOC (ppm) H2S (ppm) LEL (%)	BZ WH
servatio mp Star Bladder Bladder	Analy ad 537-Mc ons/Notes: rt Time: N Initial Fill Time Initial Discharg	ysis d (PFAS (FT; sec): ge Time(DT;	sec):	Preser <u>4</u> °C	Final Fill Tim	258 	and Hope	Air Monitoring VOC (ppm) H2S (ppm) LEL (%) CO (ppm)	BZ WH
servatio mp Star Bladder Bladder mersible	Analy and 537-Me ons/Notes: rt Time: N Initial Fill Time Initial Discharg Initial Control S	ysis d (PFAS (FT; sec): ge Time(DT; Setting(Hz):	sec):	Preser <u>4</u> °C	Final Fill Tim Final Dischar Final Control	rge Time:	and Hope	Air Monitoring VOC (ppm) H2S (ppm) LEL (%)	BZ WH
servatio mp Star Bladder Bladder mersible	Analy and 537-Me ons/Notes: rt Time: N Initial Fill Time Initial Discharg Initial Control S	ysis d (PFAS (FT; sec): ge Time(DT; Setting(Hz):	sec):	Preser <u>4</u> °C	Final Fill Tim Final Dischar Final Control	rge Time:	and Hope	Air Monitoring VOC (ppm) H2S (ppm) LEL (%) CO (ppm)	BZ WH
servatio mp Star Bladder Bladder mersible	Analy and 537-Me ons/Notes: rt Time: N Initial Fill Time Initial Discharg Initial Control S	ysis d (PFAS (FT; sec): ge Time(DT; Setting(Hz):	sec):	Preser <u>4</u> °C	Final Fill Tim Final Dischar Final Control	rge Time:	and Hope	Air Monitoring VOC (ppm) H2S (ppm) LEL (%) CO (ppm)	BZ WH
servatio mp Star Bladder Bladder	Analy and 537-Me ons/Notes: rt Time: N Initial Fill Time Initial Discharg Initial Control S	ysis d (PFAS (FT; sec): ge Time(DT; Setting(Hz):	sec):	Preser <u>4</u> °C	Final Fill Tim Final Dischar Final Control	rge Time:	and Hope	Air Monitoring VOC (ppm) H2S (ppm) LEL (%) CO (ppm)	BZ WH
servatio mp Star Bladder Bladder omersible dropund mp Dep	Analy An	ysis d (PFAS (FT; sec): ge Time(DT; Setting(Hz):	sec):	Preser <u>4</u> °C	Final Fill Tim Final Dischar Final Control	rge Time:	and Hope	Air Monitoring VOC (ppm) H2S (ppm) LEL (%) CO (ppm)	BZ WH
Netho servatio mp Star Bladder Bladder omersible dropund mp Dep mple /Ti	Analy An	ysis d (PFAS (FT; sec): ge Time(DT; Setting(Hz):	sec):	Preser <u>4</u> °C	Final Fill Tim Final Dischar Final Control	rge Time:	A L	Air Monitoring VOC (ppm) H2S (ppm) LEL (%) CO (ppm)	BZ WH
boservatio Deservati	Analy An	ysis d (PFAS (FT; sec): ge Time(DT; Setting(Hz):	sec):	Preser <u>4</u> °C	Final Fill Tim Final Dischar Final Control	rge Time:	and Hope	Air Monitoring VOC (ppm) H2S (ppm) LEL (%) CO (ppm)	BZ WH
boservatio mp Star Bladder Bladder bmersible dropund mp Dep mple /Ti	Analy An	ysis d (PFAS (FT; sec): ge Time(DT; Setting(Hz):	sec):	Preser <u>4</u> °C	Final Fill Tim Final Dischar Final Control	rge Time:	A L	Air Monitoring VOC (ppm) H2S (ppm) LEL (%) CO (ppm)	BZ WH
Aetho servatio mp Star Bladder Bladder omersible dropund mp Dep mple /Ti S/MSD	Analy An	ysis d (PFAS (FT; sec): ge Time(DT; Setting(Hz):	sec):	Preser <u>4</u> °C	Final Fill Tim Final Dischar Final Control	rge Time:	A L	Air Monitoring VOC (ppm) H2S (ppm) LEL (%) CO (ppm)	BZ WH
servatio mp Star Bladder Bladder omersible dropund mp Dep mple /Ti S/MSD	Analy An	ysis d (PFAS (FT; sec): ge Time(DT; Setting(Hz):	sec):	Preser <u>4</u> °C	Final Fill Tim Final Dischar Final Control	rge Time:	A L	Air Monitoring VOC (ppm) H2S (ppm) LEL (%) CO (ppm)	BZ WH
servatio mp Star Bladder Bladder omersible dropund mp Dep mple /Ti S/MSD	Analy An	ysis d (PFAS (FT; sec): ge Time(DT; Setting(Hz):	sec):	Preser <u>4</u> °C	Final Fill Tim Final Dischar Final Control	rge Time:	A L	Air Monitoring VOC (ppm) H2S (ppm) LEL (%) CO (ppm)	BZ WH

Appendix E Synoptic Water Level Data Sheets

C	12	M	1:
N.O.BORAD	SECTOR .	1.5.000	

WATER LEVEL DATA SHEET

Client: Location: Event: Date: Weather:

NAVFAC NW Ault Field Ault Field Phase SI avercast 15/19 40

Tem Chalmers Measuring Device: Solinst, Pine # 12726

695610CH.04.FI.W

of

Page:

**Project Number:** 

Sampling Team:

and the second second	*Air Monitoring	A A A A A A A A A A A A A A A A A A A	DTW	TD	
Location	(npm, %)	Time	(Ethtoc)	(Etbtoc)	Odor / Comments (Access & Well Conditions; NAPL or DNAPL presence)
PZ-01	0.0	0843	11.68	14.95	
2-02	0,0	0846	11.55	29.95	
2-03	0.0	0858	08,35	9.90	
Z-04	0.0	0900	7.88	29.31	
2-05	0.0	1005	5.59	9.84	
7-06		1002		45.00	Artesium: 0.8 PSI
2-07	0.0	0929	9.29	15.25	Time: 0910
Z-08	-	0912	-	40.00	Artesian: 1.91 PSI
PZ-09	0,0	1029	11.82	15.37	
2-10	-	1033	-	45.00	Artesian: 0.6 PSI
2-11	0.0	1019	3.28	9,14	
PZ-12		1013	1	26.00	Artesian: 0.95 PSI
11-616					- Abandoned
1W-618	0.0	1057	681	14,89	
W-619	0.0	1051	5.92	15.37	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1W-620	6.0	1042	4,38	8.67	
1W-621	0.0	0957	4.06	9.59	
W-622	0.0	0950	1.69	11.78	
1W-623	0.0	(937	4.82	7.05	To is on top of surge block.
W-624	0,0	0927	2.16	12-44	
16-83	0.0	0946	2.83	16.99	
6-26B		1024	-	-	Artesian: 1.0 PSI
WO-B8	0.0	1109	4.56	14.96	Artesian: 1.0 PSL Zof 3 bolts, bolts stripped, gooey white subs Old JPlug
W4-B3	0,0	1117	5.58	17.64	Old JPIng
W15-B23	0.0	1120	7.63	18.53	well Pad & manunent cracked and
					lot's eyelits, lot's bolts, bolt stripped
	allocation in the				
				illine i va ince	÷ 1
			1		14
	11				
			1		
			1	1.000	

\*All Clear: VOC = 0.0ppm, CO = 0.0ppm, H2S = 0.0ppm, LEL = 0%, O2 = 20.9%

\* signs of surface water intrusion

WATER LEVEL DATA SHEET

Client:	
Gilent,	
Location:	
Event:	
Deter	
Date:	
Weather:	
wedulet.	

ch2m

NAVFAC NW	
Ault Field	
Ault Field Phase 3 SI	
9-9-20	
Sila 75	

SHEET		
Page:	of	
Project Number:	95610CH.04.FI.WI	
Sampling Team:	Li Baumann	

Measuring Device: Solonist WI M Model 101

MW-14       121       1229       12.07       17.61       Soft Bottom         MW-21       Ø       (238       8.22       13.25       soft Bottom         MW-44       Ø       0       1248       9.28       39.66       Medium Bottom       Weithoe very soft othe         MW-630       Ø, Ø       1318       7.00       12.81       hard bottom       Medium         I-AF-MW-626       Ø, Ø       1333       29.42       58.20       Med Bottom       Kom         I-AF-MW-627       Ø, 2       1352       38.12       58.59       Med Bottom         I-AF-MW-2       Ø, Ø       I+10       1557       15.51       Med Bottom         AF-MW-629       Ø, 2       14:32       53.98       64.80       Med       Bottom         AF-AW-629       Ø, 5       14:43       43.06       69.45       Soft bottom<				FIELD	MEASUREME	NIS
MW-20 0.28.0 1218 11.90 15.13 Rust on Probe, there have bottom MW-14 121 1229 12.07 17.61 Soft Bottom MW-21 00 1238 8.22 13.25 Soft Bottom W1-AFAW-631 0.0 1248 9.28 39.66 redium Bottom Weither very soft ocho W1-AFAW-630 0.0 1318 7.00 12.81 have bottom Weither very soft ocho W1-AFAW-630 0.0 1333 29.47 58.20 Med Bottom 1-AF-MW-626 0.0 1333 29.47 58.20 Med Bottom 1-AF-MW-625 1.2 1343 33.94 59.00 Soft bottom 1-AF-MW-627 0.2 1352 38.12 58.59 Med Bottom 14-10 455t 45.51 Med Bottom 14-10 455t 45.51 Med Bottom 14-10 455t 45.51 Med Bottom - 14.95 - -AF-MW-629 0.2 14:32 53.98 64.80 - AF-AW-629 0.2 14:32 53.98 64.80 - AF-AW-629 0.5 14.44 43.06 69.45 Soft bottom - AF-AW-629 0.5 14.44 43.06 69.45 Soft bottom	Location		Time	the second se		Odor / Comments (Access & Well Conditions; NAPL or DNAPL presence)
MW-14 121 1229 12.07 17.61 Soft Battom MW-21 00 1238 8.22 13.25 soft Battom WH-AFAW-631 0.0 1248 9.28 39.66 medium Battom (Neither very soft ocho WI-AFAW-630 0.0 1318 7.00 12.81 hard bettom HAF-MW-626 0.0 1333 29.42 58.20 med Battom I-AF-MW-625 1.2 1343 33.94 59.00 Soft battom IAFAW-627 0.2 1352 38.12 58.59 Med Battom I4-MW-2 0.0 I410 455t 45.51 Med Battom I4-MW-628 0.2 14:32 53.98 64.80 -AF-MW-629 0.5 14.44 4306 69.45 Soft battom t Field Wall#II 0.0 I5:07 129.36 176.00 — In-floce water level meter	MW.20	0.20.0	1218	11.90	15,13	Rust on probe, thank have bottom
из-АFAN-631 0.0 1248 9.28 39.66 medium Bottom Weithon very soft or ho WI-AFAN-630 0.0 1318 7.00 12.81 hard bettom I-AF-MW-626 0.0 1333 29.42 58.20 med Bottom I-AF-MW-625 I.2 1343 33.94 59.00 Soft bettom IAFAW-627 0.2 1352 38.12 58.59 Med Bottom I4FAW-627 0.0 14.10 455t 45.51 Med Bottom I4-MW-2 0.0 14.10 455t 45.51 Med Bottom - 14.9.95 - - AF-MW-629 0.2 14.32 53.98 64.80 - AF-MW-629 0.5 14.44 43.06 69.45 Soft bottom t Field Well#I 0.0 15:07 129.36 176.00 - In-flace water level metor			1229	12.07	17.61	
WI-AFANIE 30       0,0       1318       7.00       12.81       hand bettern         I-AF-MW-626       0,0       1333       29.47       58.20       Med Bettern         I-AF-MW-625       1.2       1343       33.94       59.00       Soft bettern         I-AF-MW-627       0.2       1352       38.12       58.59       Med Bettern         IAF-MW-627       0.2       1352       38.12       58.59       Med Bettern         I4F-MW-2       0.0       1410       4557       45.51       Med Bettern         I4-MW-2       0.0       1410       4557       45.51       Med Bettern         AF-MW-628       0.2       14:32       53.98       64.80       64.80         -AF-AW-629       0.5       14:32       53.98       64.80       69.45         -AF-AW-629       0.5       14:44       43.06       69.45       Soft bettern         + Field Well##1       0.0       15:67       129.36       176.00       Jp-flace water level metee	MW-21	00		8.22	13.25	soft Bottom
I-AF-MW-626 Q. Q 1333 29.47 58.20 Med Bottom I-AF-MW-625 I. 2 1343 33.94 59.00 Soft bottom I-AF-MW-627 Q. 2 1352 38.12 58.59 Med Bottom I-4F-MW-627 Q. 2 14.10 455t 45.51 Med Bottom I-4F-MW-628 Q. 2 14.32 53.98 64.80 -AF-MW-629 Q. 2 14.32 53.98 64.80 -AF-MW-629 Q. 5 14.44 43.06 69.45 Soft bottom t Field Well#I Q. Q 15.07 129.36 176.00 In-flace water level metoe	WI-AFAN-631	0-0	1248	9.28	39,66	medium Bottom Weither very soft or ha
IAFAW-625 I.2 1343 33,94 59,00 Soft bottom IAFAW-627 0.2 1352 38.12 58.59 Med Bottom I4-MW-2 0.0 1410 455t 45.51 Med Bottom 	W1-AF+W630	0,0		7.00	12.81	hard bottom
IAFAW-627 0.2 1352 38.12 58.59 Med Bottom 14-MW-2 0.0 1410 455t 45.51 Med Bottom 	1-AF-MW-626	0.0	-	1		
14-MW-2 0.0 1410 455t 45.51 Med Bottom -AF-MW-628 0.2 14:32 53.98 64.80 -AF-MW-629 0.5 14:44 4306 69.45 Soft bottom t Field Well#1 0.0 15:07 129.36 176.00 - In-floce water ievel metor	1-AF-MW-625	1.2		33,94	59,00	
-AF-MW-628 0.2 14:32 53.98 64.80 -AF-MW-629 0.5 14:44 43.06 69.45 Soft bottom t Field Well#I 0.0 15:07 129.36 176.00 In-flace water level meter	1-AF-4W-627	0.2			1	
-AF-MW-628 0.2 14:32 53.98 64.80 -AF-MW-629 0.5 14:44 43.06 69.45 Soft bettom t Field Well#I 0.0 15:07 129.36 176.00 ID-Place water level meter	14-MW-2	0.0	1410		45.51	Med Bottom
-AF-MW-629 0.5 14:44 4306 69.45 Soft bottom t Field Well#I 0.0 15:07 129.36 176.00 - In-Place water ievel meter			1		r	
t Field Well#I D. D 15:07 129.36 176.00 - In-Place water level meter	the second se					
t Field Will#1_ 0.0 IS:87 129.56 176.00 In-floce water level metric field will#1 			-	1. 1		
		0.0	15:07	129.36	1/6.00	
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1110		1110		1		

Appendix F Survey Report

#### **Jacobs**

Set Monitoring Wells

Whidbey Island Naval Air Station - Ault Field

Oak Harbor, WA

Survey Date: December 2019

New Wells Point Id	Northing	Easting	Top of Metal Case Elev	Top of PVC Casing Elev
MW-618	496967.91	1194695.95	19.801	19.368
MW-619	496227.49	1195171.36	14.903	14.556
MW-620	495358.31	1195723.73	12.834	12.412
MW-621	494574.28	1196246.58	12.998	12.585
MW-622	493662.97	1196181.80	12.159	11.756
MW-623	493640.40	1196835.13	16.956	16.559
MW-624	492880.61	1197461.02	14.518	14.069
WT-01	498728.67	1198139.25	28.563	28.002
WT-02	498728.94	1198149.80	28.316	27.880
WT-03	497674.02	1201883.27	13.611	13.243
WT-04	497667.78	1201870.65	13.060	12.540
WT-05	494154.15	1196696.47	12.491	12.002
WT-06*	494143.98	1196700.02	12.657	12.474
WT-07	496945.15	1199048.86	11.142	10.808
WT-08*	496945.00	1199058.50	11.072	10.850
WT-09	495819.01	1195690.23	13.277	13.028
WT-10*	495822.65	1195676.41	13.258	13.182
WT-11	495462.73	1196867.23	9.480	9.010
WT-12*	495466.55	1196883.86	9.662	9.536

Note: \* Indicates Artisan Well. The PVC elevations for these wells are on the top of the nut/nipple.

Existing Wells Point Id	Northing	Easting	Ground Elev	Top of Metal Case Elev	Top of PVC Casing Elev
MW10-B8	495858.05	1193433.21		22.702	22.297
MW15-B23	495854.44	1193641.21		25.271	24.945
MW16-26B*	495667.29	1195931.89	10.849	12.407	12.319
MW4-B3	495899.86	1193584.84		25.721	25.505
MW-H6B3	493445.63	1195384.97		13.985	13.630
Note: * Indicates Ar	tisan Well. The	PVC elevations for	these wells a	re on the top of th	e nut/nipple.

#### Notes:

1. HORIZONTAL DATUM: NAD83/11, WASHINGTON STATE PLANE COORDINATE SYSTEM, NORTH ZONE NAD83/11 US SURVEY FOOT

HORIZONTAL COORDINATES WERE OBTAINED BASED UPON 'PORTER-A' NGS COORDINATES ON DATA SHEET

2. VERTICAL DATUM: NAVD88

BENCHMARKS USED (PER NGS DATA SHEETAND NAVY CONTROL SHEET)

PORTER A	NAVD 88 ELEV: 35.204	*STANDARD BRONZE DISK STAMPED "PORTER A, 1974" SET IN CONCRETE BLOCK
	NGVD 29 ELEV:	
RUN30	NAVD 88 ELEV: 15.990	*MONUMENT NOT FOUND
	NGVD 29 ELEV:	
	*Run30 was used for conversio	n reference for 'PORTER A' from Navy Control NGVD29 to NAVD88 only
TORPEDO	NAVD 88 ELEV: 137.78	*STANDARD BRONZE DISK STAMPED "TORPEDO, 1951" SET IN CONCRETE BLOCK

3. EQUIPMENT USED: LEICA GS15 RECEIVER, LEICA DNA10 DIGITAL LEVEL



#### **Jacobs**

Set Monitoring Wells

Whidbey Island Naval Air Station - Ault Field Oak Harbor, WA Survey Date: September 2020

New Wells Point Id	Northing	Easting	Top of Metal Case Elev	Top of PVC Casing Elev
MW-625	493823.75	1191426.38	54.849	54.518
MW-626	493848.59	1191363.63	50.339	50.113
MW-627	493762.09	1191378.75	59.098	58.790
MW-628	489175.66	1188474.02	96.092	95.668
MW-629	489238.69	1188272.09	98.407	98.056
MW-630	501230.40	1193964.12	13.012	12.604
MW-631	496852.43	1192022.05	18.715	18.399

Existing Wells			Ground	Top of Metal Case	Top of PVC Casing	
Point Id	Northing	Easting	Elev	Elev	Elev	
14-MW-2	492473.10	1193664.33	30.471	33.211	32.841	-
AW1	485260.26	1188245.42		142.813	143.136	*Note: Case elevation is on Pump Flange below PVC point
MW14	496845.98	1191685.64		17.965	17.709	
MW20	497027.79	1191707.86		16.661	16.470	
MW21	497059.85	1191925.43		14.223	13.918	
N29-22D	489250.60	1188284.45	98.19	100.145	99.858	

Notes:

 1. HORIZONTAL DATUM: NAD83/11, WASHINGTON STATE PLANE COORDINATE SYSTEM, NORTH ZONE NAD83/11

 US SURVEY FOOT

 HORIZONTAL COORDINATES WERE OBTAINED BASED UPON 'PORTER-A' NGS COORDINATES ON DATA SHEET

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PORTER A	NAVD 88 ELEV: 35.204	*STANDARD BRONZE DISK STAMPED "PORTER A, 1974" SET IN CONCRETE
	NGVD 29 ELEV:	
RUN30	NAVD 88 ELEV: 15.990	*MONUMENT NOT FOUND
	NGVD 29 ELEV:	
	*Run30 was used for conversion	reference for 'PORTER A' from Navy Control NGVD29 to NAVD88 only
FIRE	NAVD 88 ELEV: 97.87	*STANDARD BRONZE DISK STAMPED "FIRE, 1951" SET IN CONCRETE BLOCK
SLUG	NAVD 88 ELEV: 135.52	*STANDARD BRONZE DISK STAMPED "SLUG, 1994" SET IN CONCRETE

3. EQUIPMENT USED: LEICA GS15 RECEIVER, LEICA DNA10 DIGITAL LEVEL



Appendix G Field Notes

+ NAS	WET FIELD WI OLF P 202 t COUP	H.1 SI		11/06/19 695610.04.FI.WI 900NVT1		
NEATHER S	PARTLY	CLOUDY T	SUNNY,	LOW 40'S TO MID		
	50'1°F,	NNW TO	WNW wi	ups @ 2-4 mph.		
URPOSE	DEMOI	BILIZATION	J TASKS P	FOR NASWI CLF		
	PH.1	SI (wen ,	NSTALL) AM	D MOBILIZATION		
_	TO AU	LT FIELD I	PH-251 (1	VELL INSTALL) +		
	SITE	Recow wl	Druken Sc	BCONTRACTORS.		
STAFF:	JANICE	HURTON (	TM)/CHZH	1		
_	MARK E	NOO (FIEL	O COURDINA	TOD/CHZM		
	DAVID F	BUTLER (SI	SHO)/CHZ	m		
	TON CI	MALMERS (	FTL) /CH:	em		
	CAJEY	WALLACE	(LEAD DRI	unan)/YELLING J		
	RAMOY	Јонизси (	HELDER)/1	12		
	MARK	VAN OUNT (	AILFIELD A	Invacer)/NASW.		
	Eme (	AILFIELD	CONTROLLE	2)/NASWI		
07:00	0.1.	1105				
000	ALL STARF MEET @ ODO, ANTRIELD MANAGEMEN BLOG # 385. DISCUSS PH-2 LOGISTICS &					
			35 P4-2 L	OGISTICS 3		
DATE	SCHEDULE		0.54			
11/07	P2 3-4	TION	IDATE IV/13	LOCATION		
"leg	P2 7-8		1/13	P2 11-12		
"109	MW-622		"/is	P2 9-10		
110	MW-621		"/16	MW-624 MW-623 (PEJDING)		
"hu	DAY OFF		11/17	MW-616 + 620		
"/12	P2 5-6		"/18	DAY OFF		

NASWI AF PH.2 SI 11/06/19 NASWI OUT DH-1 SI MW-618/MW-619 3 PZ 1-2 TO BE CONFLETED THE WEEK OF THE 1875, PENDINS FLICH + OPS SCHEDULE OF ODO CLOSURE OF MOSACENT TAXIWAYS / RUN WAYS . POSSIBLE COMPLETION OVER WEEKEND . WILL PROVIDE WHIDBEY TOWER CONTROLICES A UPDATED CUPY OF - TEMP CONST WAIVEL FIGURE #1 OT30 CH2M (DAVIO BUTLER) ISSUED WHIDBUY TOWER RADIOS EM-9 \$ 10. ALSO ISSUED BARRIEL GATE KEY # 5. 0745 YELLOW JACKET STAFF MOB TO CHEVRON THEN OLF FOR DEMOB ACTIVITIES. J. MORTON MOB TO MEET WI NTR'S CHARLIE ESCOLA & STEVE SKEENAN. M. ENDO, D. BUTLER, TO CHALMES MOB TO BLOG # 103 \$ NOSC # 2739 - TO DISCUSS VEHICLE ACCESS COMOS AND ONE EXTRA WHIOBEY ISLAND RADIO FOR WELL DEVELOPMENT CREW-0845 M. ENDO @ OLF COUPENILLE. YS STAFF ON-SITE & GATE. HSSE TAIL GATE FOR BOTH OLE + AF TASKS (PTSP). 0900 YJ BEGIN DEMOB ACTIVITIES FROM OLF TO AULT FIELD - LOAD Equip + SUPPLIED, TRANSER DECCIS HEG TO MOLEN TANK # A3072 IM.

1106/19.

NASWI AF PH.2 SI NASWI OLF PH.I SI 11/06/19 · D. BUTLEL \$ T. CHALMERS TAKE UN-RESTRECTED AVOC COURSE. · M. ENDO CHECKIN WI L. BAUMANN FOR BEGGINNING OF WELL DEVELOPMENT OF NEW PH. ) WELLS GOLF (SEE OLF FIELD NUTES). 0948 18" OF IDW WATER IN ADLER TANK #A3872IM = 3,412.6 GAL · YJ TRANSFOL & SSOCAL OF DECCI H20 TO POLER. 1110 YS COMPLETE LOADING 12 LOAD. TO M. ENDO C. WALLACE 1 R. JOHNSON MOB TO EAST LANDOW YARD & AULT FIELD. ARMINE & EAST LAYDOWN YARD (ELY), UNLOAD 1145 EquiPMENT & SUPPLIES. D. BUTLER & T. CHALMELS AREIVE Q ELY. 1155 1236 COLLEGION SOFTWARE CRASH ENON ON ALLTERA IPAD # FOFSBZUL FLMM. CONTACT R. QNAGHINE GALLTONA. => NO SCLUTION. 1250 ALL STAFF MOB TO AIR FIELD FOR DRILLER SITE WALK OF ALL PROPOSED BONEHOLE LOCATIONS. 1455 CONDLETE SITE WALK. MOB TO ELY. 1565 ACTIVE O EAST LAYDOUSN YARD. ma 11/06/19

NASUS OLE PH. 1 5	i i ilocliq
LOCATION	DRILLER REMARKS
MW -624	OK, MOD MATS MAY BE REQUISE
MW-623	OK
MW-622	OK, MM
P2 5-6	OK
MW-621	MW-621 REVISED LOCATIOD, OK
MW-616	MW-616 REVISED ALTENDATE LOCATO
	PRIFESNED.
P2 11-12	ORIGINAL LOCATION NOT POSSIBLE,
	PZ 11-12 REVISED LOCATION CHOSE
Mw-620	MW-620 REVISED ALTERNATE LOCAT
	Pare Encles
PZ 9-10	OK, The
Mu-619	MW -619 REVISED, OK
MW-618	MW-618 REVISED LOCATION PREF
	014-
MW - 617	MW-617 REVISED LOCATON ONLY,
	The IF POSSIBLE & ALL, WEATHEN
	PENDING
P2 1-2	OK
PZ 3-4	OK , REQUEST MOVE SET SOUTH
	= OK, WITHIN APS APPROVAL AN
PZ 7-8	OK.
1610 YJ C. MPL	THE OFF LOADING & ELY. D. BUILSE
Tarmara	ins wer to out will us start.

NASWI AF Ph. 25F NASWI OLF Ph. 15F 11/06/19 1615 D. Butler drops Ti Chalmers off at hotel so T. Chalmers can 1640 D. Butler and drillers arrive at OLF. Drillers begin loading more supplies, 1720 All 5 taff off site. L. Baumann checks out u/ ODO. Devet Verg

NAGWZ Ault Field Ph2 SI NAGWE OLF AN 1 SI 11/7/19 695610.04, FI.WI onk Harber + Coupeville, WA 9000NVT1 Task! Finish monument at MW205, continue moving supplies to Ault Field Weather: Partly cloudy, fog (AM), 403. 50's, breeze Staff ! Jacobs : David Bitler /55HO, Tom Chalmers /55HO YJ: Casey Wallace/Driller, Randy Johnson / Helper 0700 All staff on site, check in wlodo. Flight ops scheduled at OLF from 11:30-13:45 and from 17:50-21:00, Notify ODO that supplies are still being moved and drilling will not likely begin at Ault Field today. 0715 Conduct PTSP, discussed driving sately and pinch points 0725 Drillers Legin loading supplies to move to Ault Field 0735 D, Butler and T. Chalmers begin cleaning out tote w/ residual sectiment from 0850 Drillers go to install monument at MW205. 1000 Finish monument install at MW 205 1020 Charlie Escola/NAVFAL on site 1045 Drillers Finish loading supplies. D. Butler and T. Chalmers Finish cleaning tote ~1 GW03 studge conly trace sed remains).

11/19

1050 All staff head to Aut Field, C. Escola off site, had discussed progress at OLF and plan for Autt Field, 1120 Arrive at East Laydown yard, begin offloading supplies, 1200 Drillers break for lunch 1230 Done with lunch, head to OLF 1305 Back at OLF, drillers begin loading supplies 1405 C. Wallace heads to dump then Ault Field 1410 D.Butler, T. Chalmeirs, and R. Johnson head to Ault Field East lay down with rest of the equipment 1445 Arrive at East laydown, begin unloading supplies 1450 Ci Wallace arrives at East laydown 1455 D. Butler goes to get barrier key 1530 D. Butler back at East laydown. Checked out barrier key 5 and notified Mark VanDort and Clint Church that we will set up at PZ 7-8, Mark VanOort tells D. Butler that the sweeper is not available on the weekend. DiButler notifies J. Horton about sweeper restriction.

11/1/19

1530 anti Will plan to use mud maits when accessing locations over the weekend, possibly use the hose on the drill rig to clean tires. J. Horton will call M. Van Cort and discuss, 1540 J. Horton spoke u/ M.VanOart, ok to use water to clean tires. Need to avoid any large clumps of mud/grass or other debris. 1555 Hard to P27-8 1600 D.Butler checks in w/ Weapons Handling OPO, notifies of work at PZ 7-8 1620 All vehicles at PZ7-8, begin staging and hand clearing at P28 1720 Finished hand clearing P28 to 5Ft 1725 Drillers off site, CH2M goes to return barrier key. 1745 Key returned, All staff offite. Dudette 11/Thq

NORWI Auth Field Ph.2 51 Li 18/19 695610,04,54 Oak Harber, WA Task: Drilland install at PZ07-8 Weather: Cloudy, 40°- 50°, breeze Staff: Jacobs: David Butler/155HO, Tom Chalmers /FTL YJ: Casey Wallace/Driller, Randy Johnson Atelper 0645 D. Butler and T. Chalmers check in at OPO, notify of work at PZ7-8 and check out barrier key 5 0700 All staff meet at East lay down 0705 Conduct PTSP and discuss plan for the day. Discussed ending time to avoid working at night. 0715 YJ begin loading well construction supplies onto pickup trailer, will have all materials necessary to avoid multiple trips 0730 Calibrate Mult: RAE 0750 Hoad to PZ07-8 0755 D. Butler checks in w/ Weapons 000 0800 Arrive at PZOT-8, begin hand clearing P207 0835 Finish hand clearing to 5ft bgs (PZ7). Begin setting up rig at PZOB 0920 Begin drilling at PZ08 1025 Finish drilling to BOFT. D. Butler calls Peter Lawson and Heather Perry to discuss screen interval,



11/8/19

1040 Unable to contact P. Lawson, Discussed screen w/ H. Perry, Will likely target 19-22.5 ft unit (interbedded sand eclay), but H. Perry will try to confirm of P. Lawson. H. Perry mention & asks if we need to confirm screens w/ Kendra Leibman, P.Butler calls J. Horton. J. Horton will call and ask. 1050 Call from J. Horton, J. Horton had called K. Leibman, K. Leibman would like to be involved ul screen selection, H. Perry will call and discuss w/ Ki Leibman. 1125 Receive direction from Hiperry. Will drill loft more to see if we get into sandier material seen in MW605& MW606 logs, 1155 Finished drilling to 40ft, Sund encountered in bottom 5ft. Will screen 30-400 35-40ft. Break for lunch, 1230 Back from lunch. Begin setting well, screen from 35-40ft. 0950 Collect WI-AF-WT-08-5B-13 For PFAS analysis. Sample collect at air luater interface in silty sand material w/ shell fragments. (Late entry into log book.)

1345 PUC casing, filter pack, and bentonite seal installed. Driller notes that well is arterian. Does not have the proper top seal/pressure gauge for an artesian well. Casing currently sealed w/ a J-plug. D. Butler Notifies H. Perry & J. Horton. C. Wallace looks up requirements for Arterian wells in WA, 1410 Unable to determine if construction requirements differ for artesian wells if well is monitoring of @ or drinking. C. Wallace and D. Butler mable to contact anyone in the office who might know. Will move to PZOT. PZOB is sealed w/ a J-plug: 1430 C. Wallace spoke u/ Noel Phillips with the WA Dept. of Erology, Neel Phillips agreed that using a pressure gauge and value after the gauge is appropriate. C. Wallace will get purts at Home Depot this evening May need a bigger vault to fit everything. Continue setup at PZOT.



- Holigo 4/08/19 1455 Begin drilling at PZ07/WT07 1525 Finish drilling PZ07 to 16 ft bgs. Will install well with screen from 10-15 per earlier discussion w/ P. Lawson and H. Perry. YJ begins well install. 1515 Collect WI-AF-WI-07-6B-12 at air/water interface in PZ07. 1600 finished installing casing, filter pack, and bentonitechips. Beg in packing up and moving equipment off hole to install monument, 1630 Begin installing monuments at PZ07 and PZ08. 1650 D.Butler and C. Wallace take rig back to East lay down xard 1700 D.Butler and C. Wallace back at P207-08, Drillers have placed wooden forms around wells but will not have time to place concrete tonight. Marked wells with deliniators. 1705 All staff head to East lay down. 1720 CH2M go to return key to ODO, Aff off site. Weekig Davet Butte ++18/19 EF all staff off site.

NASWI Aut Field Ph2 SI nloakg Eastice H. OH.FI.W Oak Harbor, WA Task: Drill and install MWGZZ, complete install at PZO7 and 08 weather: Cloud, 40's to 50', light showers, breeze Staff: Jacobs: David Butler/51 HD, Tom Chalmers/Fil YJ: Casey Wallace, Randy Johnson 0645 D, Butler and Ti Chalmers check in w/ ODO, notify of work at MW-622 and check out barrier key 6 to complete work at \$207-08. 0700 All staff meet at East laydown. YJ loads extra pipe onto a truck to send back to Portland. 0715 Conduct PTSP, discussed airfield driving and fatigue 0720 Calibrate MultiRAE 0745 Charlie Escola/NAUFAC on site 0805 Drillers Finish loading casing and supplies onto truck. D.B. Her and Ri Johnson offite to take truck of supplies to Acorn Motor Inn, and deliver truck to Brandon Daniels/15. T. Chalmers and C. Wallace, tay at East huy down. CiWallace begins deconnorg casing and rods. 0835 D. Butler and R. Johnson buck onsite

1109/19 2910 Head to MW-622 Afinished loading other supplies to and decouning ], C. Escola stays at East lay down 0940 Bagin studing at MW-622. Did FOO check and notified tower. 01550 Utilized and mate while staging to avoid rutting and FOD 0955 D. Butler and C. Wallace go to East laydown to get hupport truck, T. Chalmers and R. Johnson continue staging and begin hand clearing, 1015 DiButler and Ci Wallace back at MW-622. Continue hand cleaning and retup. 1035 Collect WI-AF-FBOI- 110919, Field blank for the week 1105 Collect WI-AF-MW-622-5B-02 at air/water interface, Collected from side wall of hand clear hole after exposing Fresh surface lused a gloved hand), 1120 Finish hand clearing to Sft bgs. Set up to drill. 1145 Begindrilling from 5ft bys 1215 Complete drilling to 30ft basi Driller advancing casing and cleaning out the hole,

wloglig

1245 Finished advancing casing to 30ft, Driller had to use water pressure due to heaving sands, Break For lunch. 1310 D. Butler discusses well construction w/ Peter Lawson. After confirming minimum well seal requirements w/ C. Wallace (no minimum thickness required in WA for resource protection welly), P. Lauson directs to set the screen from 7-12ft, 1320 Back from lunch, Begin well install, 1330 p. Butler goes to get a 2x4 for the well pud frame from the laydown yard. 1340 D. Butler back at MW-622, 1420 Finish constructing well. Used 3 bags of bentonite chips to backfill, 2.5 bags of sand for the fact, and 3 bags of chips for the seal, Begin demote moving rigs off the hole to install the monument, 1515 Finished moving rigs off hole, begin nonument install 1610 Finished constructing monument, pack up rest of equipment.

uloalig 1615 Move support rig and pickup to lay down 1620 Go to get drilling 1635 BOD Prilling moved to the lay down, 1645 DiButler and Ci Wallare head to PZ08 to see how artesian well trio + OR. Johnson bying decon, of G 1710 Di Butler and Ci Wallace back at laydown, well head apparatus fits and will function, will need to be tightened and will need to apply PFAS-free thread scalarit to avoid leaks. Will consider using a fern-co compression fitting so that the head is removeable. will also look into a smaller range 1720 All staff off site, DiButler and Tichalmers go to return barrier key to 000, Davel But Illoglig

ullolig NASWI Ault Field Ph25I 695610CH. OT. FTWI Oak Harbor, WA Task: Drill and install MW-621, install monuments at PZ07-08 Weather! Clear, 50's, breeze Staff: CH2M: David Butler 155HO, Tom Chalmers / FTL YJ: Lasey Wallace, Randy Johnson 0645 DiButler and Ti Chalmers check in u/ 000, notify of work at MW-621, check out barrier Kex # 5 0700 All staff on site, conduct PTSP, discussed fatigue and IDW management 0715 YJ dumps IDW drams From MW-622 into hopper for temp storage 0730 Calibrate MultiRAE 0800 Done dumping drams and loading supplies for the day, mobe to MW-621 0830 Arrive at nov-622, stage drilling and pickup. DiButler and C. Wallace go to get support rig. T. Chalmers and R. Johnson continue set up. 0850 D. Butler and C. Wallace back 0855 Begin hand clearing mw-621 0950 Complete hand clearing to 5ft, bogin 1020 Begin drilling at MW-621

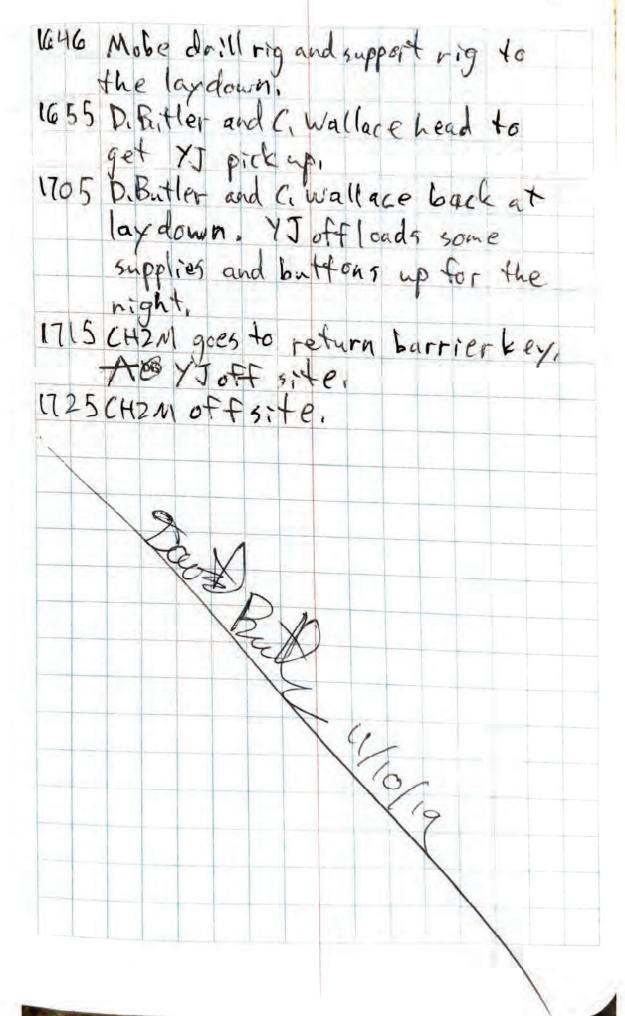
11/10/14

1040 Pause to replace grip pads on rig jaws 1045 Resume de illing 1105 Finish drilling to 30ft. Driller, advancing casing. DiButler calls Peter Lawson to discuss screen, Decide to set screen from 5-10 ft, No other good areas, Clay From 6.5 +0 30. 1120 Drillers finish advancing casing, Begin setting the well, 1125 Collect wI-AF-MW-621-5B-05 at air/water interface. Duplicate at 1130. 1200 Finished backfilling and installing well. Drillers break for lunch. (H2M mobe to ODO to discuss scheduler 1225 CH2M back at MW-621, Discussed working on Monday since it is veterans day and will be quiet. Received approval from Mark Van Ourt (airfield manager), Will move to MW-all this afternoon and complete on Monday. Possibly move to mw-620 after, Notify Janice Horton of schedule change approval (had previously discoved and received approval from f. Horton).

11/10/19

1230 7J back from lunch, Begin moving righ off hole to install the monument, 1300 Begin installing monument. 1355 Finish installing monument at MW-621. Mobe to MW-616. 1400 Begin set up at mul-tes MW-616 1410 Begin hand, clearing MW-614 1510 Finish hand clearing begin setting np to drill 1525 Begin drilling at MW-GIG 1600 Complete drilling to 30 ft. YJ advancing casing and cleaning out the hole, 1610 D.B. Her calls P. Lawson, discuss core and where to sample. will sample at 7 ft in clayer wilt interbuck. will wait to set the well until tomorrow, 1615 YJ Finishes advancing the casing and cleaning out the hole. Begindemober 1620 collect wI-AF- MW-616-5B-07 " approx. air/water interface, collected MS/MSD, 1645 YJ done breaking down from hole. Hole secured for the night (casing lost in groundly

11/10/19



NASWI Aut Field Ph 253 ululuq Gassloch, or, Esting Oak Harbor, WA Task: Drill and install MW-620, install MW-GIG, and install PZ07-08 Weather; Cloudy, 40"-50", breeze Staff: (H2M: David Butler (55 HD, Tom Chalmers / ETL 1J: Casey Wallace, Randy Johnson 0630 CH2M checks in w/ 000, notifies of work at mw-620 and MW-616 and checks out barrier key 6 0645 All staff meet at laydown, conduct PTSP, discussed decon procedures and hand tool use 0700 YJ begins emptying dreams and decon. (HDM calibrates MultiRAE. 0730 Pumped water from top of hopper 1 (seil and water from MW-622) into a dirty water tote YJ had. 0835 Done decoming, Take drill rig and support rig to MW-620. 0855 Drill rig and support truck at MW-620, D. Butler, C. Wallace, and R. Johnson go to laydown to get pickup and fork |: Ft. 0920 DiButter, Ciwallace, R. Johnson back at MW-620. Begin hand clearing to 5ft. 60

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0925 Call from Janice Horton, Discussed plan for wells MW-616 and MW-620. will will MW-620 and see if the same conditions are encountered as at MW-616. Also discussed IDW storage, Will need more drums or roll off scon. Filled 5 drums brought from OLF and about 3/4 of one hopper already. 1005 Finish hand clearing to 5ft bgs at MW-620. Begin settingup rigs. 1040 Begin drilling MW-620 from 5Ft, using 4in core barrel & Gin casing 1110 Finish drilling to 30ft, drillers advancing casing and cleaning hole. DiButler calls Pilawson and H. Perry, no answer, D. Butler calls J. Horton. J. Horton will discuss hole conditions with P. Lawson and decide where to screen due to large amount of lay. 1120 YJ Finished advancing casing. Begin prepping for well construction and other clean up activities while waiting for a decision on the screen interval.



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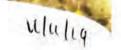
1200 Break for lunch 1230 Back from Lunch , still waiting on decision on screen. D. Butler talks w J. Horton 1240 and P. Lawson. Originally thinking to set screen 3-8ft, but after discussion of convallace will set 4-9 ft to give a thicker bentonite seal. Also discuss collecting additional soil samples at deeper depths to get more data. P. Lawson looking into rosts, Collect WJ-AF-MW-620-5B-06, 1300 sample collected in day below air/ water interface due to core bag w/ exact interface being saturated al drill water, water was used to force cores out of core barrel, 1255 YJ begins constructing MW-620 1330 Finished installing well, Backfilled, install PUC casing, sand, and seal. Begin moving off hole to install monument. 1340 Begin installing monument 1355 D. Butler and T. Chalmers recon path through grass to MW-GLG.



11/11/19

1400 Path to MW- 616 clear. During recon removed hole cover from MW-Gilb and noted that 6 in drill casing was full of water. D. Butler attempts to call P. Lawson, no answer. D. Butler calls H. Perry, H. Perry defers to P. Lawson, will contact him and let him know, 1415 Collect wI-AF-MW-620-3B-15, sample in clay for vertical profile 1420 Collect WI-AF-MW-620-5B-20 sample in clay for vertical profile 1425 complete monument install at MW-620, Begin moving to MW-GIG to abandon well, 1430 Call From P. Lawson, P. Lawson confirms that we will abandon MW-616 and that mater in easing is likely from lower artesian aquifer. 1445 Set up at MW-GIG, beg: n abandoning using chip 1525 Finished abandoning MW-616. Filled w/ chips from 30 to 5.5.f. Used native soil and grass to cover surface, 1530 Mobe drill rig and support rig to lay down 1540 D.B. Hler, C. Wallace, and R. Johnson go to get pickup and forklift





1600 Back at lay down, get supplies to install monumerity at P207 and 08. 1620 Hend to P207 and 08 1630 Arrive PZOT and Od, begin install at P208 Cartesian well) and PZ07 1640 D. Butler and R. John son go to get stamp kit 1650 P.Butler and R. Johnson back at P207-08 1710 Finish installing WTO7 (P207) pad 1720 Head back to lay down 1740 YJ off site, CH2M goes to return barrier key, 1750 CH2M offsite Dect Ki \$ 11/4/19

NAGWI Ault Field Ph 2 5F ulillig oak Harbor, wa 6456100H.04, FI, WI Task: Prill and install PSO PZOS-06 weather: cloudy, 40's-50's, breeze staff: (H2M: David Butler/8HO, Tom Chalmers/FTL YJ: Casey Wallace, Randy Johnson Clau Harbors: Ted Crosier 0630 DiButler receives call from Ted Crosier (Claim Harbors delivery driver). He is on site at the lay down and will wait for CH2M before dropping box, 0640 CH2M on site, conduct PTSP w/ T. Cossier, Discussed dropping procedures and staying clear of the "line of fire". 0645 YJ on site. Conduct PTSP, discussed flight line driving w/ more activity. Discussed placement of rolloff u/ YJ and Clean Harbors. 0655 (lean Harborg begins dropping box. Needs to lower box, remove totes and secondary, then re-load box and build secondary before placing box. 0700 P. Butler goes to check in w/000. YJ decoming casing and prepping for day, 0730 DiButler back at laydowni Calibrate Mult: RAE. 0000 Finished staging colloff and toter. T. crosser working on puperwork.

4/13/19 0805 YJ transfers contents of temporary storage tote (IDW water and decon water from MW-622, MW-621, MW-614, MW-6201 into "H1" tote (~200 gal) 0015 T. Crossier finishes paperwork, Dropped off rolloff#25170 ( good condition, no residual soil, liner installed) and 5 empty 275 gal totes. YJ dumps hopper from MW-620 (~ 12 full) and hopper from MW-622 (~2/3 full) into rolloff. Also dump "potentially contaminated" trash (plastic, core bags, gloves) into roll off. 0820 T. Crosier off site. 0840 Head to PZ05-04 0900 Arrive PZ05-06, stage rig5 0905 D. Butler, C. Wallace, and R. Johnson go to get pickup and fork lift 0935 D. Butler, (Wallace, and R. Johnson back at PZ05-06. Meet Steve Skeehan (NAUFAC) at the laydown, discussed project status and any issues. Steve skeehan offsite after discussion. 0940 Begin hand clearing PZOG. 1030 Finish hand clearing to 5ft, begin setting up to drive



11/13/19

1100 Begin durilling P206 from 5ft 135 Collect wI-AF-WT-06-5B-07 +M5/M5D from air/water interface (140 Finish drilling to 40ft, D.Butler calls Peter Lawson, sand observed in bottom 2ft, Per discussion w/ P. Lowson, will drill to 45ft and set screen in sand 1145 YJ breaks for lunch 1220 YJ back from lunch continue drilling from 40 ft 1240 Finish drilling to 46ft, drillerg advancing casing and cleaning out hole 1255 Finish advancing casing and cleaning out hole, begin setting well, screen from 40 to 45 ft bgs 1420 Finished installing WTOG (PZOG). Begin breaking down to move over to wros (PZOS). Note: Driller confirms that well WTOG is artesian. 1435 Begin hand clearing witos 1515 Complete hand clearing wros to Sft bgs. Begin installing monument at wTOG. 1555 Finish installing nonument for w TOG, will have to add artesian well head later. Continue cleaning up.

uluzla 1600 Mobe drill rig and support rig to laydown 1625 D. Butler, C. Wallace, and R. Johnson go to get pickup and fork lift 1645 Back at lay down 1730 Done dumping IDW (I full hopper from WTOG) and transferring worker from WTOG) and transferring worker from wtoG) and transferring worker offsite. All staff 153/

NASWI Ault Field Ph2 SI 11/14/19 Oak Harbor, WA 6956 10CH, 04, FIWE Task! Drill and install wTO5, WTU, and WT12 weather; Cloud, 40's-50", breeze Staff: CH2M: David Buitler/SSHO, Tom Chalmers/ETL YJ: Casey Wallace, Randy Johnson 0635 CH2M checks in w/ 000 and Mark Van Oort, notify of work for day 0645 All staff meet at lay down 0650 Conduct PTSP, discussed ergonomics and muscloskeletal injury 0710 YJ begins decon of casing and prep For theday, Calibrate MultiPAE, 0815 Head to wros uldrillrig & supportrig 0840 Drilling and support rig at wT05, D.Butler, C. Wallace, and R. Johnson jo toget pickup and forklift. 0910 D. Butler, C. Wallace, and R. Johnson back at wtos, set up for drilling. 0935 Bagin drilling at wTOS from SFt 0945 Finish drilling to 1681. YJ advancing casing and cleaning out the hole. 0955 Collect WI-AF-WT05-5B-08 at air/water interface 1005 7J finishes cleaning out hole, Begin installing well, screen & to 11 ft, 1030 C. Wallace notifies D. Butler that bottom of screen is closer to 10.5ft, due to slight measurement error,

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1035 Finished installing well, screen 5=5 to 10,5 ft. Begin breaking down rigs to move off hole. 1045 Begin installing monument at wros 1125 Finish nonument at w105, begin moving to wTII-12. 1150 All vehicles at wTIL-12, begin hand clearing wT12 1230 Finish hand clearing a Gin diam hole to 5 ft. Advanced to Gft w/ 2 in diam hand anger to look for first water and lithologic changes. None observed compared to 5ft. YJ breaks for lunch. 1245 Collect WI-AF-EBOI-111419, equipment blank from deconned hand anger 1250 Collect wI-AF-WT-12-5B-05 at air/water interface (~5ft bgs) using hand auger 1305 YJ back from lunch, continue 1330 Begin drilling from 6ft w/ 4in core burrel and Gin casing 1410 Finish drilling to 20 ft, 175 advancing casing and cleaning hole

11/14/19

1415 D. Butler calls Peter Lanson, no answer. D. Butler calls Heather Perry, discuss different lithology at this location and if want to drill deeper, 1420 Decide to drill 5ft deeper and see if encounter same artesian as wifer. 1435 Drill to 36 Ft, encounter same material (fine grained silt/saud). D. Butler calls P. Lawson. 1450 Per discussion of P. Lawson, will screen 21-26 ft in poorly graded sand below till naterial and above fine silty material (loess?) in bottom of hole. YJ begins constructing well. 1550 Finished installing well. Arterian conditions not noted. Begin breaking down rigs, 1620 Mobe drill rig and support rig to laydown 1635 Go to get pickup and fork lift 1205 Back at laydown 1715 All staff leave lay down, CH2M goes to get OLF key Checkedant OLF Key #1, (1+21) offinite 1735

11/14/19

1740 D.B. ther drops T.Chalmers off at notel and goes to OLF, to let YJ in the gite so they can pick up their porta-potty. 1810 D.B. ther arrives at OLF 1815 YJ at OLF. 1830 Depart OLF. End of day, Jer. 1/14/19

NASWI Auth Reld Ph2 SF alisleg Gak Harber, wa GASGIOCH . OH.FL.WI Task: Finish WT12 and drill and install wT11 Weath er; cloudy, 50's, wind staff: CH2M: David Butler/SSHO, Tom Chalmers/FTL 0135 YJ: Casey Wallace, Randy Johnson 0685° (H) M checks in w/000 and returns OLF berti 0645 All staff meet at laydown 0655 Conduct PTSP, discussed hazards due to moderate wind and rash 0705 YJ removes water from hopper used resterday (from wtos oud wt12) and places in tote "H1". Then dumps soil in rolloff. 0715 YJ begins decon and loading for day 0820 Head to WTIL w/ drill rig and support rig 0840 Arrive WTIL, staging rigs 0845 D. Butler, C. Wallace, R. Johnson go to get pickup and fork lift 0915 D.Butler, C. Wallace, and R. Johnson back at WTIL, continue set up 0925 Begin hand clearing will 1000 Finish hand clearing to St. Notomater beginning to trickle into hole at 5 ft, Decon Wind anger and collect sumple, 1005 Collect WI-AF-EBOI-111519, equipment blank from decorned hand auger

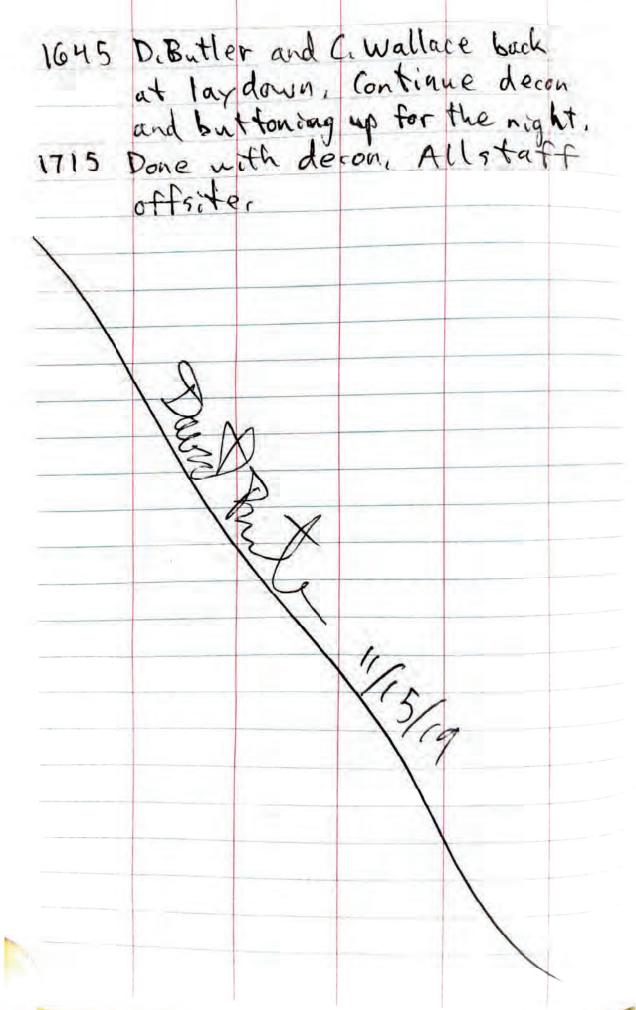


11/15/19 1010 Collect WI-AF-WT-11-58-05 at air/water interface (~5746gs) using handauge 1011 Begin set up to drill 1045 Begin Grilling WILL From 5 ft 1055 Finish drilling to 15ft at WTII, Driller advancing casing and cleaning out the hole, 1100 DiButler calls Peter Lawson and Heather Perry, no answer. DBAtler calls Janice Horton, discuss different lithology at will us will, no sand at about 5 Ft to screen in, but water observed at 541. 1105 Discussed well construction of J. Horton, will screen 4-9 ft. e. 15 begins constructing well. 1145 Finish installing well, begin breaking down rigs and moving off hole, 1205 Drill rig can't make it up the slope from the will-12 drilling location, 1215 Able to pulldrill vig up using 1225 Support rig out of wTIV-12 location. Begin de FODing to go back to hydown and meet other YJ employee with more supplies.

11/15/19

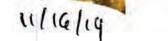
1255 Done cleaning tires lused hose 1305 Back at laydown, Ci Wallace off site to get truck from Brandon Paniels /YJ 1330 C. Wallace back on site al truck of supplies (pallet of beston letter and pipe for OLF replacement well) 1400 Done loading supplies to take offsite, C. Wallace off site to take truck to B. Daniels, R. Johnson dumps hopper from will (~13 full) into for rolloff, water transferred to "HI", 120 C. Wallace back on site, head back to WT 11-12 M30 Back at the wTII-12, cleaning mud offother vehicle tires 1500 Finished cleaning tires go to build WT 11 # 12 monuments 1600 Finish installing monuments for will \$ 12. While installing wT12, artesian conditions were noted. Not noted during drilling or install, 1610 Take support truck and pickup to lardown 1625 At laydown, R. Johnson Legins decon of cosing, D. Butler and C. Wallace go toget drill rig.

11/15/19

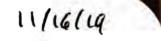


NASWI Ault Field Ph 25I 11/16/19 Oak Harbor, WA 4956 10CH 04, FI.W] Task! Drill and install wTO1-02 Weather ! Cloudy, 50°, wind, rain Staff: CH2M: David Butler KSHO, Tom Chalmers/FTL YJ: Casey Wallace, Randy Johnson 0645 All staff meet at la CB 0630 CH2M checks in w/ ODO, confirms work at wTOI-02, check out barrier Key #5 0645 Allstaff meet at laydown, conduct PTSP, discussed weather hazards and working near runway 7-25 0700 Mobe drill rig and support rig to wTOI-02 0715 Rigs at wTO1-02, Di Butler, C. Wallace, and R. Johnson go to get pickup & forklift. T. Chalmers calibrates Mult: RAE. 0740 D. Butler, C. Wallare, R. Johnson back at witches 0745 Begin hand clearing WT02 0855 Finish hand clearing a 2 ft diam hole to 5ft. Begin setting up to drill, 0920 Begin drilling from 5ft bg s 1000 Finish drilling to 30ff, YJ advancing rasing and cleaning out the hole, Di Butler contacts Peter Lawson, 1015 Per discussion w/ P. Lawson, will target 25-30 ft for screen at wroz and likely 8-12ft for wTOL.





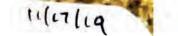
1016 YJ begins prepping to construct the well. 1025 YJ begins constructing wTO2 1120 Finish installing WT02, begin breaking down rigs to nove off hole. 1135 Begin hand clearing WTO1 1200 Finish hand clearing WTO1 405ft bgs, Begin setting up on hole, 1210 Break for I unch 1240 Back From Lunch, prep to drill 1250 Begin drilling at wto1 at 5 from 5 ft 0945 Collect w IAF-w T02-5B-11 at air/water interface (late entry into 19) 1305 Finish drilling to 15 ft. YJ advancing casing 1315 Collect WIAF WTO1-5B-13 at dir/water interface, 1316 Perdiscussion w/ P. Lawson will screen 10-15 to ensure saturated screen the confining layer observed l, 1320 YJ done advancing casing and cleaning 1400 Finished installing wtol, begin bracking down to move off hole



1410 Begin installing monuments at wto1 9 02 1500 Finished installing monuments at 1505 Take pickup and forklift to laydown 1520 DiButler, C. Wallace, and R. Johnson go to get drill rig and box truck 1540 Back at laydown, dump 1.25 hoppers into roll off, no significant water. 1600 YJ begins Leconning 1640 YJ done decomming, Dumps tote of deconvater into empty tote, Label tote "H2", Decon water From WT05, WT06, WT11, WT12, wTOI, and wto2. 1650 Done buttoning up for the night, YJ offaite, CH2M goes to return key, 1205 CH2M officte Daes PRU 1/10/19

NASWI Aut Field Ph 251 Whiles Oak Harbor, wA 645610CH.04.FI.WI Task: Droll and install MW-Glor MW-GIB, complete pad at wros Weather: cloudy, 50%, wind, wain staff: CH2M: David Butler 19540, Tom Chalmers/FTL YJ: Casey Wallere, Randy Johnson 0630 CH2M checks in 1000 and checks out barrier bex OG45 Allstaff meet at lay down, conduct PTSP discussed colditress 0700 Moberig and box truck to MW-Gi7 0720 Reconned MW-GUT, too wet to access today. Wincheck later inweek, 0730 Rigandbox truck at MW-618, access ok. D. Butler, C. Wallace, and R. Johnson go to get pick up and fork 1:ft. 0735 Load extra hopper onto pickuptrailer 0245 Leave laydown w/ pickup and forklift 0805 D. Butler, C. Wallace, and R. Johnson back at MW-618 0815 Begin hand clearing MW-618 0855 Finish hand clearing MW -618 +05ft, Begin setting up to drill. 0930 Begin drilling mw-618 from 5ft 0950 Collect wI-AF- MW-618-90-11 at air/water inteface.





1000 Finish drilling to 26 ft. YJ advancing casing and cleaning out the hole, 1005 Finished advancing rasing. D.Butler calls Peter Lawson to dising screen, 1015 Per discussion w/ P. Lawson, will screen 10-15 ft to capture best permeable zone, YJ begins well install, 110 Finished installing well. Begin moving rigs off hole, 1125 Rigs moved offhole. Begin installing monuments 03 1215 Finish installing MW-618 monument. 1220 YJ breaks for lunch 1250 YJ back from Lunch, Continue packing np. 1315 Head to nw-lelg to begin hand clearing to 5ft. 1320 Begin hand clearing MW-G19 1340 Collect WI-AF-MW-G19-58-02 at air/water interface. May be perched water. Noted water seeping into hole above clay with 1420 Finish hand clearing MW-619 to Sft. Backfilled w/ native soil.



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1425 Head to wrok and wriz, to attach artesian well heads. 1955 Unable to attach well head to WT12. Will need different fittings to make assembly shorter, will abo need to add more concrete to bottom of completion. Head back to MW-G18 to get YJ equipment and move to lay down 1510 Move pick up and fork lift to laydown 1530 D.Butler, C. Wallace, and Fill to R.Johnson go to get rig and box truck 1555 Back at lay down, get supplies to complete wtoo well pud, 1600 Head to wros 1010 At wTO8, coo begin monument install 1615 Replaced pressure gauge on wi08 well head w/ 0-30 psi gauge. Reading 22 pri. Will need a lower range gauge for an accurate reading (0-5pr:?) 1650 Finish monument for wros, head to laydown 1710 Dumped hopper into rolloff, pumped water into tote 'M1' 125 All staff offsite. (H2M returns key, David Bute 11/17/19

NAGUES Ant Field Ph25I Make Oak Harbor, WA 695610 H.OH. FI. WI Task! Dilland install MW-619 & MW-623 Weather cloudy, 50's, light rain, light wind Staff: CHIM: David Butler, Tom Chalmers YJ: Lager Wallace, Randy Johnson, Brian Owens 0630 ctt211 checks in ul opo 0645 All staff meet at lay down, corduct PTSP, discussed active runnars and utilities near now -623, Did site HES brief w/ Brian Owens 0710 R. Johnson begins decon. To Chalmers calibrates MyltiRAE, 0725 DiButler, Gwallace, and B. Owens go to hand clear MW-623. T. Chalmers & R. Johnson continue decon 0740 Cont Begin hand clearing MW-623 0800 D. Butler calls J. Horton & L. Kathin, rected receive confirmation to continue hand cleaning and drill 623 0820 Collect WI-AF-11W-623-5B-03 at air/water interface. Possibly a perched 0840 Finish hand clearing MW-623 to 5Ft, head back to lay down, 0845 Meet Thechalmers and R. Johnson at gutel04 and the second

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0846 D. Butter, T. Chalmers, and R. Johnson take box trude to MW-Gig 0900 Box truck at MW-619, head back to lay down 0905 Buck at lay down, All 5 toff take rig, pickup, and forklift to MW-GIG 0925 Arrive at MW-619, begin setup 0940 Support rig gets stuck while setting up at MW-aid. Attempting to get unstuck, 1000 Mark Van Oort and Jim Coleman on site. Notify CH2M and YJ that there are utilities in the area and would like to avoid digging to get unstuck, Will bring out another vehicle and supplies to help get unstuck, All staff stop work to wait for Novy 1010 Navy back on site ul large tractors 1015 Rig unstuck, will use Forklift to handle casing at this location. 1026 Navy off site. Continue Act up: 1030 D.B. Hernottfier J. Horton of getting stuck and Wavy agging tance. Also discussed schedule.





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1035 Begin drilling at MW-619 from SFt 1100 Finish drilling to 26ft. Di Butler attempts to call Peter Lawson and Heather Perry, no answer Make field call to set well 11-16Ft. Drillers advancing casing and cleaning out hole. Finish cleaning out hole. Begin 1110 constructing well, 1120 Jim Coleman WI NAGWI OPS back on site Instructs CH2M and YJ to drive shoulder of ECHO to Juliet and remove FOD at Juliet, Will then call for sweepor, 1055 Gliet WI-AF-MW-619-5B-11 at air-Chater interface. Actual water table, (Late entry into log book) 1125 Jim Coleman offsite, 1150 Finish installing MW-619, begin breaking down from hold, 1155 Forkliff becomes stuck while topino Attempting to unstick, 1215 Forklift unstack, YJ breaks for lunch, CH2M goes to ODO



WIRING

1240 (HZM back at MW-G19, Checked out burrier key 5 and spoke wi Mark Van Oort about plan for the week, will go to PZ03-04 next, 1245 XJ back From lunch, continue break down, 1300 Begin constructing MW-619 well pad 1345 Finished constructing MW-619 monument. Move to Juliet for de-FODing. 1430 All vehicles at Juliet, Box truck got stuck coming off grass onto shoulder of Echo, Begin de-FoDing all tires. 1500 Finished de-FODing tires. Take vig, box truck, and pick up to laydour, 1515 D. Butler and R. Johnson go to get forklift 1535 D. Britler and Rutchy son buck at lay down. Dump hopper into volloff (~2/3-full), No water pumped off (loss than I'm in hoppet), 1545 P. Butler, C. Wallace, and B. Owens jo to hand clear PZ 03-04. 1555 Begin hand clearing PZ04 1640 Finish hand cleaning PZO4 to 584, head back to lay down.

S. C. CALLON whalig 1645 All staff back at laydown, 1700 YJ offsite, CH2M goes to return barrier key, 1715 Key returned, CH2M offsite, 1/19/19

NASWS Ault Field Ph 2.5 I 11/20/19 Oak Harber, WA GRSGLOCH OUP INT Task: Drillandiastall WT03-04 Weather: Clear, 30-40's, light breeze Staff: CH2M: David Butler, Tom Chalmers YJ: Casey Wallace, Randy Johnson, Brian Owens 0630 (H214 checks inw/ 000 and checks out barrier key 5 0645 All staff meet at laydown, Conduct PTSP, discussed backing and limited access at wros-04 0700 Mobe drid rig, box truck, and pickup to wt03-04 0715 Vehicles at wT03-04, D. Butler and R.Johnson go to get forklift. T. Chalmers calibrates MultiRAE. C. Wallare and B. Quens begin set up. 0730 D. Butler and R. Johnson back at WT03-04, Continue set up. 0750 Bagin drilling at wtoy from 5ft 0320 Complete drilling to 30ft. YJ advancing cusing and cleaning hole, 0840 YJ done advancing casing. Begin constructing well. Made a field call to screen 25-30ft. 0925 Finished installing well. Being Begin moving off hole.



11/20/19

0945 Begin hand claring wTO3 1025 Finish hand clearing wTO3 to 5ft. Begin setting up to drill. 1045 Beg in drilling from 5ft 1055 Finish drilling to 15ft. YJ advancing casing and cleaning out the hole. 1110 Done advancing casing, Begin well construction, Willscreen 5-10ft. 1105 Collect WJ-AF-WT03-5B-08 at air/water interface. FD at 1110, 0810 Collect WI-AF-WT04-55-08 at air/water interface (late entry intonoites) 1135 Finish installing well, Begin moving rigs off hole. 1155 Finished moving off hole, begin installing monuments, 1215 YJ breaks for lunch 1245 YJ back From Lunch, Continue building well pads. 1310 D.Butler and R.Johnson take forklift to laydown 1325 D.B. Her and R. Johnson buck at wro3-64 1340 Mobe rest of equipment to lay down, well pads for wro3 and 04 complete, 1345 Back at laydown, Begin decon and dump hopper.

nbolig

1350 Di Butler und Ci Wallace go to der Precon remaining locations, T. Chalmers, R. Johnson, and B. Quens decon, dump hopper, and pump tote of deron water into tote "MI" (~125gal). 1445 D. Butler and C. Wallace back at lay down. MW-623 and MW-624 access ok (hard ground and close to pavement so can layout mudmats). PZ09-10 access of (dredge materials dry and gravels are below nw-GLT still questionable (soft on pavement side near Golf and top of mound where location is, is hummocky with some hard spots and some soft ]. 1500 hard spons and some sof JI 1300 All staff go to hand clear wT09-10. Begin hand clearing wrog and 10. 1400 Finish hand clearing will to 5ft and wt 09 to 5ft ielo Backfilled holes winative material. Head back to laydown, 1630 Allstaff back at laxdown. 1650 Done buttoning up for right YJ officite. 1705 CH2M returned barrier key offisite Doub But 11/20/19

NASWI Ault Field Ph23I ubilig Oak Harbor, WA 645610CH,04,FI.WI Task: Drillandimitall PZ09-10, repair ruts at mw-619 Weather: Clear, 30 - 40's breeze staff: CH2M: David Butler, Tom Chalmers YJ : Casey Wallace, Randy Johnson, Brian Owens 0635 CH2M checks in w/ 000 0045 All staff meet at lay down, conduct PTSP, discussed site access and cold stress 0710 Head to PZ09-10 0730 Arrive at PZO9-10 w/ drill rig, box truck, and pickup. Begin setting up. 0732 Box truck gets stuck will settingup. IJ didn't bring mud mats even though (42M recommeded they bring them, 0745 Box truck unstuck, pulled out using drill rig, Continue set up. Di Butler and R. John son go to get forklift, 0815 DiButler and R. John son buck at \$209-10 0823 Begin drilling at wt10 (P210) from 5ft using 4 in core barrel and Gin caring 0830 Bottom of 6-16 ft run fell out, frying to retrieve ul flapper bit 0840 Successfully retrieved boiten of run. Bettoin two bags mix w/ sluff from top of hole (topsoil and roots),

11/21/19 0850 Drill to 30ft. YJ advancing casing and cleaning hole 0855 D. Butler calls H. Perry and P. Lawson, no answer. D. Butler calls J. Horton, 0910 Discussed drilling deeper at with, will go to 40ft. Discussed sampling will collect in small sand at rleft, Discussed wrog (shallow well) screen, Will see if different lithology when at wrog and try to contact P. Lawson and H. Perry since no good upper unit observed, 0915 Collect WI-AF-WI-10-5B-06 at approx airfuater intertary, not obvious in core 0925 Pull 30-40ft, (ore had falled out and possibly been pushed by a rock per driller. Only 3ft of run recor red and portion recovered is mixed up due to multiple drilling attempts, D.B. Ha calls J. Horton to discuss, 0935 Per discussion with Horton will drill 5 more feet to try and verify material to set screen in. 60

11/21/19

0936 YJ resumes drilling. 1000 Pull 40-46ft run. 5/6ft recovery Sands and gravels, Will screen 40-45Ft, YJ beging well construction of advancing casing and cleaning out hole. 1030 Finish advancing casing and cleaning out hole. Driller notes arterian conditions and heaving sands. Begin constructing well. 1130 Finish installing well, Begin moving off hele, WT10 is artesian. 1150 Drill rig slipping in mud while trying to set upon wrog. DO C. Wallace notifies Di Butler of potential for running into will while trying to back up. C. Wallace thinks that mud mats wontwork. D. Butler calls J. Horton to discuss. 1200 J. Horton recommends attempting location w/ mad mats, D.B.Her notifies C. Wallace, C. Wallace agrees to try with mud maits. YJ breaks for lunch, 1230 Kendra Leibman calls D. Butler, is on the island and would like to come out to the site at ~13:00.

nhalig 1235 YJ back from Lunch. Prep to 1300 DiButter goes to 000 to meet Ki Leibman, T. Chalmers and VI continue de- 60 Ding and then go to get mud mats. 1410 While touring with Ki-eibman, attempt to access NW-619, told by whidber control tower that there is an emergency in progress and to hold position. 1420 IJ meet mo DiButler and K. Leibman on the site ramp, waiting for all clear from tower. 1430 cleared to access MW-619, D.B. tler and Ki Leibman reconsite. T. Chalmers and 1J go to wt09-10, 1440 Done reconning MW-619, ruts will need to be fill, D. Butler drops Ki Leibman backat ODO, Ki Leibman offsite 1450 p. Butler back at wrog-10. VJ 1455 Mats successful, rig at wrog, set up to drill,



11/21/19

1505 Begin drilling at WTOG 1515 Complete drilling to 16ft. YJ advancing casing and cleaning out hole 1520 Consulted w/ P. Lawson and H. Perry. Decide to screen 5-15 ft for best chance of water. YJ beging install, 1545 Finish Installing WT09, begin break down, 1600 Drill rig becomes stuck willow while moving off hole. Mud mats not used whole way while demosing, 1620 XJ unsticks drillrig by pulling with forklift. Bagin de-FODing, 1710 D. Butler and R. Johnson take forklift to lay down 1525 Collect WJ-AF-WT-09-5B-06 at approx. air/water interface, FD at 1530, Chate entry into log book,) 1725 D. Butler and R. John son back at w109-10 1810 Allstaff head back to lay down. Called sweeper to follow us out. 1836 Allstaff offsite Fuel Bith 11/21/19



11/25/19 NAGWI Ault Field Ph 251 645610(H,04, FI.WI Oak Harbor, WA Task' Repair Leaks at wells wros and wriz Neather: Partly cloudy, 40%, word Staff: David Butler 0645 D. Butler purchases supplies at Home Depot 0730 theck in w/ 000 and check out burier Key 0810 Arrive Wit12, conduct PTSP, set up "semi-lone worker" protoco of Mark Endo, will call every 2 hours 1020 Fixed leak at WT12, Well was leaking out of casing joint above bentonite, but within concrete, Remove concrete Chot set due to water), removed upper PVC (~ 4 in section), cleaned threads, and reattached. Left well with well plug in casing. Artesian well head sitting in monument Crotattached), Go to measure flow at wtio, 1030 Arrive WTLD 1050 Flow at WT10 2200mL/min (had correct threaded adaptor and tubing today). Note: also measured flow at WT122200 m 4 min

11/25/19 1105 Finished de FOD ing, head to wros 125 Arrive wt08 1210 Determined that the artesian well head assembly is leaking. Attempted to tighten to remove leaks, but no success (too many fittings), Additionally, the assembly is not efficient (too many adaptors) and doesn't fit in the box well, Will replace and in the future. Head to Involum to dump trash. D40 Done dumpting trash. Notified Janice Horton, Mark Endo, and Peter Law son of well status, 60 to opo to return key. 1250 Di Butler offsite. Deort +2E 1/25/19





December 2,2019, Aut Field Well development, cinhor. Purpose: IDW delivery (totes + vermiculite), continuation of well development. Grew: Tom Chalmers (Jacobs), Brian Ouens (Yellow Jacket), Clean Harbors Weather: 40°s, overcast 0700: Conduct tailgate safety w/ Tec Crosier, disguess lifting & organomics 0730: Ted Crosier (dean harbors) concludes drop-off of 5 water totes \$ 12 bags of Vermiculity I sign order receipt. 0740 Clean Harbor off side 0807: Talk to Janice Horton & discuss stratagy & logistics. Decide to utilize YJ & get to the wells in which they can be the most effective. Will further discuss w/ Briane Owens. 1045: Receive message from Brian Duens that he is roughly 1.5 hrs away. 1215: Check in w/ ODO. 1226: YJ arrives on site. 1240: Calibrate PID & Water Quality Meter (WAM). 1315: Gate to airfield would not grant access. 1325: Sent 15 back to laydown as I visit ODO to inquire.

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1337: Talked to ODO about access issue they could not look into our access card due to the fact that it is issued by NAVIA not ODO. ODO triccl calling NAVFAC. Loyd (Butter?) on our behalf, No tosuce I got the barrier gate Key so we could work away from the flight line for now. 1355 - Arrive at WT-04, begin setup. 1405: Begin Surge w/ stainless steel bailer. 1415: complete surge of bailer, begin to set up the Mega Monscon pump. 1940: Begin set up on WT03, will use a bailer on WTO3 while WTOY is pumped whethe Megg Monsoon, 1600: Parameters stable at WT-04, begin break down. 1617: Decan Mega Monsoon in field. 1620: Input Mega Monsoon into WTOR 1625: WTO3 is not keeping up up the pump, pump is serging but producing roughly 0.5 gal/min 1645; Took last parameters on WT-03

Scanned by CamScanner

for the day. Developed well for Z hours. Will pull pump & clear stield. 1700: YJ & Jacobs of field anea. Return to landown to unload. 1710: YJ off site. 1735: Scanned & sent documents from the day to Janice Horton. Jacobs off lavdown area. 1750: Returned barrier gate to ODO, Was Instructed by Clint Church to see Hoyd Potter (NAVFAC) in the morning regarding access card issue. Jacobs off site for the day.

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12/3/2019, Aut Field Well Development, T. Chalmers Purpose: Monitoring Well & Piczometer development. Weather: 40°5 overcast Crew: Tom Chalmers (Jacobs), Brian Owens (Valau Jack) 0700: Visit the NAVFAC access card office, was told that our access cauds are good & the issue vesterday was due to a gate problem 0725: Check in w/ ODO \$ check out barrier gate Key #5. 0730: Arrive at lay down yard. 0745: YS on site, security stopped and checked YJ's truck at gate 0755: Calibrate Horiba \$ PID. 0800: Conduct tailagte, Topic: flight line driving \$ awaveness. 0815: Pumped IDW from mobile tote to Tote L1. 0835: Arrive at WT-03, begin setup. 0858: Begin to purge WT-03, pump is surging and not able to keep a steady flow. 1100: Complete development at WT-03, begin breakdown 115: Return to Lay down to pump IDW into Tote L 1 \$ decon

1146: complete IDW transfer & decon, Head to airfield. 1205: Arrive at PZ-05 \$ PZ-06, begin sotup. Will attempt to develope both wells simultaneously. 1218: Remove well cap from Artesian well PZ-06, were able to drop pump & begin purge with out any spillage. Set the pump to voughly 4 gal/min. 1227: Begin Surging & bailing on PZ-05 1253: After Surging & bailing, drop pump into PZ-05. 1300: Geotech geo squirt would not turn on using the controller. Hooked it up directly to the battery & ave getting ~ 49a/min flow. 1304: PZ-05 pumped dry. 1309: Got controller to work on PZ-05, able to slow flow to ~Zgal/min 1343: Stop both pumps, tote is full & will be taken to the laydown to be pumped. Artesian well head is put back onto PZ-06 1409: Return to laydown to pump IDW into tote H4

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12/4/19, Aut Field Well Development, T-chalmers Purposa: Monitoring well & Piezemeter development Weather: 40°s Rain Cnew: T. Chalmers (Facobs) Brign Owen (Yellow Jucket) 0700: Daily Check in w/ ODO. Discussed closing runnay 7-25 w/ Mark Van Oort, he says it SHOULD not be a problem but they will get it officiallized in the next fen days 0720: Arrive at Lay dawn yard. YJ on site 0800: PTSP signed, meters calibrated, daily stratagy discussed. Also discussed amount of totes to order with Junicz Horton (8 & another secondary containment). 0830: Arrive at MW-620, begin Setup. 0840: Begin surge \$ bail on MW-620 0908: Well bailed dry, will let it sit for 10 minutes then continues 0918: Renai Ressured bailing. 0950: Well (MW-620) continues to be bailed dry, we are taking the approach of bailing for 5 to 10 minutes, then letting it recharge for 5 to 10 mins. 1240: Complete development on MW-620.

Scanned by CamScanner

MW-620 did not develope to turbidity NTUS, well was worked on until > 10 x Volume was purged \$ for 4 hours. 1250: Mobilize to MW-618 1300 Arrive at MW-618, begin setup. 1305: Begin surge & bail w/ disposable bailer. 1320: MW-618 bailed dry, water in column was likely from drilling not ground water. When Will let the well re-charge for 15 minute & take another WL to attempt to get a more realistic water column \$ thus Purge Volumer 1340: After 15 minute recharge 1.54 ft of nater in column. We will take the approach to bailing well day then letting it racharge for 10 minutes, then bailing, \$ 50 on. 1405: MW-618 producing very slawly, will let it recharge for 15 minutes between bailing dry. 1445: Decided to stop development on MW-618 for the day. Well not producing well and want to use YJ elsew 1455: Mobilize to MW-624

1505: Arrive at MW-624, begin setup: 1513: Begin surge & bail. 1535: Geosquirt pump inserted into well 1635: MW-624 development complete, begin breakdown. 1650: Arrive at Laydam to transfer IDV. 1700: IDW transferred to Tate H6. 1705: Yellow Jacket off site. 1715: All clocuments from the day scanned and sent. Jacobs off site for the day. 12/4/19

12/5/19, Ault Field Well Development, T. Chalmers Purpose: Monitoring well & Paizometer development. Weather: 40's overcast/Rain Crew: Tan Cha (mers (Jacobs), Brian Owens (Klaw Jacket) 0700: Daily checkin w/ 000 0715: Arrive at laydown, YJ on site. 0730: Sign PTSP, calibrate meters. 0750: Mobilize to Weapons Handling for debrieffing. 0810; Concluded debriefing from weapons bandling, nobilize to PZ07-08. 0815: Arrive at PZ-07-08, begin setup. 0850: Open PZ-08 3 insert Mega Monsoon 0855: At ~ 5.3 gal/min pump is not able to keep up w/ Artesian Plow. 0905: Line is set to the well bead manifold but there is not enough head to make it into the tote (~ 5'9" high) 0915: System is set up where water flows into a bucket on the ground, then the monsoon pumps water from the bucket into the tate. 0918: Surge & bail begins on PZ-07 1005: Development complete on PZ-08

1010: Artesian well head attached to PZ-08 pressure gauge read 2 PSi. 1015: Bailing continues on PZ-07, Recharge is slow but keeping up up a slow bail. 1045: Inserted (decound) geotech geo squint, into PZ-07, want to see if the well will Keep up. 1120: Talked to Kaleb Heezen from Clean Harbors, he is having trouble getting on base to deliver the totes + secondary containment. 1220: Development complete on PZ-07 1240: Arrive at laydown to meet Clean Harbors (Kaleb Heezman) for Tote delivery. Signed APP & PTSP. 1315: IDW drop off complete, received receipt from Clean Harbors, Clean Harbors off site. 1400: Arrive at MW-618, will take WL at MW-619 then continue development at MW-618 1410: WL of MW-619: 5.64' TD: 15.53 1435: MW-618 development resumes. 1435: Well bailed dry, will continue w/

intervals of vecharge \$ bailing dry. 1625; Finished development of MW-168 for the day. Has been slowly but Steadily dropping in NTUS, should be able to get it dear at later date. 1690: Return to Laydown to transfer IDW. 1645: VJ off site for night. 1650: All documents from day scanned \$ sont. MOC: Return gate Key to ODO. Jacobs off site for the day.

12/6/19, Aut Field Well Development, T. Chalmers Purpose: Monitoring vell & Piezometer development. Crew: Town Chalmers Gacobs) Watter: 40's overcast 1230: Vellow Jacket (B.Onens) \$ Jacobs (Echalmers) arrive at laydown yard to stage development trailer for tomorrows work. 1245: YJ off site for day. 1315: Discussed and received confirmation from ODO that runnay Z-25 will be shut down from 0700-1600 tomorrow (12/7/19) for us to work at lotations PZ-01-02 1345: Visited Rublic Works to see if they could help me get the vadio working, No one around that can help, been told to try back on Monday morning 1355: Attempted to access flightline at Hanger 9, access denied. 1400 Arrive at MW-618, Discoverce we are having issues w/ both NASWI EM10 \$ PW 08 radios. Will have both looked at Monday morning, 1535: Finished w/ development on MW-618 for the day.

1545: Arrive attache laydown to transfor IDW. 1550: All documents from the day scenned & sent. Jacobs off site for day.

12/1/19, Ault Field Well Development, T. Chubners Rivpose Monitoring Well & Piezoneter Development Weuther: 40's Rain Crewin Tan Chalmers, Aaron Vogt (Jacobs) Brian Owens (Yellow Jacket) OTCO: Arrive at laydown YJ on site, Sign PTSP & organize equitment w/ David Butter \$ Gerrif Grandmer (Jacobs). 0800: Arrive at PZ-01-02, begin styp 0805: Begin surge & bail on PZ-OZ. 0825: Begin surge & bail on PZ-01 0850: Deploy Mega Mansoon clown PZ-02 \$ Mouscan dawn PZ-01 0850: Begin Purge on PZ-02 0855: Begin Purge on PZ-01 1002 Development complete on PZ-02 1010: Collect Sample + M5/5D for PZO2 WI-AF-WTOZ-GW-1219, WI-AF-WTOZ-GW-1219M5/MSD. 1045: Development complete on PZ-01. 1100: Collect sample + duplicate from PZ-01 WI-AF-WTO1-GW-1219, WI-AF-WTO1-00-1219 (0900) 1115: Collect equipment blank then Maga monsoon. WI-AF-EB02-120719 125: Collect equipment blank trom monscon WI-AF-EB03-120719.

1140: Return to laydown to transfer IDW 1230 Complete paper work & sample organization. Head to MW-623 1245: Arrive at MW-623 1250- Begin surge & bail on MW-623 1300: Bailed well day, recharge is very stow. we hooked up the peristaltie pump \$ are able to get~ 150 mL/min. 1400: YJ off site. 1615 Finish development on MW-623 For day collected sample even though stabilization not reached, will disco ~ Project manager if this sample will be used. ID: WT-AF-MW-623-6W-1219. @1620. 1635 Equitment blank taken on 1/2" tubbing Used for Mega Monsoon : WI-AF-EBOH-120719@140, Equitment blank taken on 3/8" tubbing used for peristaltic pump: WI-AF-EB05-120719@1645 1.700: Return to laydown, transfer IDW from MW-623 into tote HG. Jacobs off site for days.

NASWI An H Field Ph25I 12/07/19 615610 CH.04, FI.FS Oak Harbor, WA Task: Groundwater sampling at 621 and 622 Weather: Cloudy, 40°, rain, light wind Staff: David Butler, Gerrit Gardner 0645 Check in w/ 000. Notify of development work at wTO1-02 and MW-623, Notify of sampling at MW-621 and 622, 'Check out barrier key #5. 0700 Meet all staff at laydown (development and GW); (onduct group PTSP, discussed flightline and weather hazards, 0720 Transfer equipment to development team (Tom Chalmers, Aaron Vogt, and Brian Owens (YJ). 0740 Calibrate MultiRAE and Horiba 0800 Head to MW-622 0815 Arrive MW-622, begin setup 0900 Begin purging uw-622 0935 Collect WI-AF-MW-622-1219 FOR PEAS only 1010 Head to MW-621 1015 Arrive mw-622, begin setup 1030 Begin purging MW-622 1100 Collect WT-AF-MW-621-1219 For PFAS only



12/07/19

110 Collect WI-AF-AND- EB01-120719 Equipment blank from 1/4 in tubing. 1120 Done at MW-621, head to 000. 1130 Done at 000. Head to 16-26B, 1145 Arrive 16-26B. Break for Junch, 1215 Back from Lunch, Begin setting up at 16-268, 1240 while setting up at 16-26B, it was noted that the well is artesian with a high flow rate. Since we do not have a spare artesian well head, the well was re-sealed with the well plug and sampling will be conducted at a later date. 1250 Head to MW-620 1255 Arrive MW-620, begin setup 1310 Begin purging MW-620 1340 MW-620 not keeping up, excessive 1350 Well purged dry. Waiting for recharge 1430 Go to take more bottles to T. Chalmers and A. Vogt. 1500 Back at MW-620 1520-00 1515 Fully recharged proceed to



12/07/19 1520 Collect WI-AF-MW-620-1219 and <u>MS/MSD</u> for PFAS only 1545 Done packing up, head to laydown 1600 Offloaded ~ logal of purge water into tote HG 1615 DiButler and goes to return barrierkey, Gigardner offsite. 1625 Barrier Key returned, AButler off site Derthough 12/07/19

12/8/19, Ault Field Well Development, T. Chalmers Purpose: Maniforing Well & Piezometer development Weather: 40's overcast crew: T. Chalmers, A. Vogt orce: Arrive at laydown yard 0750: Organize gear and secure tote in the pickup. Head to airfield. 0800: Anive at MW-623, begin setup, will spend ranghly I hour on well to see if it will clear up any further. 0810: Begin bailing. 0825: Bailed roughly 3 gal from Well, depg peri pump 0846: Begin purge up peri pump at ~1002/min 0854: Monsoon pump used on PZ-01 on 12/8/19 was Pine # 15622. 1000: Took final reading AT MW-623, NT45 Maked out meter (>1000), Pack up goar 3 move en 1030: Arrive at MW-619, begin 1040: Begin Surge MW-619 1100: Brgin bailing NW-619 120: Begin Purge ~/ poripump a roughly 30 3 oz/min

1515: Development complete on MW-623, Spent 4 hrs, NTUS < 20. 1530: Arrive at MW-623, going to utilize the last hour of weekend to surge \$ bail on well. 1550: Surge block is stuck down well 1600: David Butler & Gerrit Gravduer grive thelp thy to get surge block lose w no luck. 1645: Arrive at the Depot to agrive supplies nearessary to remove surge black from MW-623. 1710: Aquire supplies. Head back for day. 

NASWI Ault Field Ph 211 12/08/19 Oak Harbor, WA 695610CH.04, FI.FS Task: Continue GW sampling weather: Cloudy, 40's, breeze Staff: David Butler, Gerrit Gardner 0640 D. Butler checks in w/ 000. Notify of planned work locations for well development and GW samp. 0710 All staff meet at laydown. 0720 Conduct group PTSP, discuss fatigue and new tasks. 0730 Calibrate MultiRAE and Horiba 0750 Head to 16-26B 0810 Arrive 16-2608, begin set up and constructing arterian well head 0845 Done attaching arterian well head. Also tagged TD (70.3.4+ btoc). Used hand pump to pamp water coming out of well into jug (~ logal). Begin purge at 16-26 B. 0920 Collect WI-A16-16-26B-1219 0930 Collect WI-A16-16-26BP-1219, dupat well 16-26B 0950 Finished packing up. Will leave artesian well head on 16-26B per discussion w/ J. Horton, Go to dump IDW.

12/08/19

1010 transferred 13 gal from 16-26B into "HG" tote. Head to HE-B3. 1025 Arrive HG-B3, Well location in field doesn't match what is shown on the map. Call Mark Endo ISEA (Mark did the well recon) to confirm well location is correct, Mark confirms well is located between the two big hangar doors near a fire hydrant. 1030 Begin setting up at HG-B3 1048 Begin purging HG-B3 1110 Collect WI-AIG-HG-B3-1219 1125 Done packing up, head to wtos. 06 1130 Arrive Wtos- 06. Break for lunch 1200 Back from lunch, begin setup at wrog 1216 Begin purging wrob, artesian well 1245 Collect WI-AF-WT06-GW-1219 1250 Pack up from wroe and move to wros 1316 Beginper purging WT05 1400 Collect wI-AF-WY05-6-W-1219 1415 Done packing up. Head to obofor break.

12/08/19

1425 Done at ODO. Head to MW-G24, 1430 Arrive MW-624, begin setup, 1455 Begin purging MW-624. 1525 Collect WI-AF-MW-624-1219 1540 Done packing up. Go to meet up us development crev at MW-623. 1620 Assisted development crew w/ trying to get surge block unstack from MW-623, unsuccessful. Development crew will go to Home Depot to get more supplier tonight and attempt unsticking tomorrow. D. Butler and G. Gardner go to laydown. 1640 Transferred 6gal of purge water from H6-B3, WT05, WT06, and MW-623 into "H6" tate. 1645 D. Butler and G. Gardner offite Daug Buter 12/08/19

12/a/18, Ault Field Well Development, T. Chalmers Europese: Maritoring well & Piezometer Development Weather: 40's Thick Fog Crew: Tom Chalmers, Aaron Vogt 0725: Arrive at laydown for calibration \$ tailgate meeting after visiting ODO. 0800: PTSP signed, equitment calibrated, head to airfield. 0310: Arrive at MW-623, will begin to work on freeing the stuck surge block. 0345: Hooked anto the surge block w/our anchor line, while trying to pull up on The surge block our line snapped. 2900: We doubled up an our anchor line and are again booked up to the surge block, Our fears now are as follows = The design of the actual surge block relys on a length of anchor line ran through PVC w/ a washer on each end. With our anchor live doubled up if we apply up words tensile pressure the single anchor line running through the surge block 15 the "weak link" and it snapped the Surge block will be much more difficult

to remarch 0905: contacted Junice Horton for guidence. No answer left message 1000 there not heard back from Janice, secured well & associated anchor likes, will move on & return at later time. 1010: Arrive at PZ-11-12, begin setup. 1020: Replace pressure gauge on WT-12 well head w/ 0-3 psi pressure gauge 1030: Discussed MW-623 surge block situation, she will discuss further \$ let us know what she decides to do moving forward. 1045: Remove well cap & deploy Monsoon pump down PZ-12, begin development. 1110: Begin Surge of PZ-11 1125: Begin bail of PZ-11 1206: Begin Purge of PZ-11. 1445: Development complete on PZ-12. 1500: Artesian well head attached to PZ-IZ 1600: Development complete on PZ-11, Parameters did not stable, Raughly 6 x well volume was purged & 4 hr time limit was net.

1625 Depart from airfield to laydown. 1635 Arrive at laydown to transfor IDW. 1635 IDW successfully transferred 1655 tow successfully transferred wast tracking accounted for, Jacobs off site for day. 9

12/10/19, Ault Field Well Develgement, T. cholmes. Purpose Monitoring Well & Piezometer Development Weather: 40°s overcont Thew: Tow Chalmers, Aaron Vogi 0700: Arrive at laydown to organize \$ calibrate. 0730: Discuss turther scheduling Field crew & Janice Horton + Kade Q755: Head to flightline. 0815: Arrive at PE-09-10, begins 0850: Begin Purge of PZ-10. 0910: Begin Surge of PZ-09 0925: Begin bail of PZ-09 0935: PZ-09 is bailed dry 1030: PZ-09 has recharged bailed dry 1048: PZ-10 Development complete. 1055: Antesian well head w/ PRESSUR gauge \$ Ball valve. 1115: Head to laydown to transfer 1220: IDV transferred vante tracking updated. 1315: Return to WT-09 (PZ-09). 1350: Development on PZ-to complete

PZ-FOR WL was 14 51 after roughly 3 hours of vecharge, development complete after 4 hours of work. 1425: Arrive at MW-619 to sample. 1455: Begin purge of MW-619. 1550: Sample MW-619, Sample ID: WI-AF-MW-619-GW-1219 1615: Arrive at lardown to Transfer IDW 3 update waste tracking. 1700: All documents from the a an scanned & sent- Jacobs a Ste for day. 19

NASWE Ault Field Ph255 12/10/19 695610CH .04, FI. K Oak Harbor, WA Task : Continue GW Sampling weather: Cloudy, 40's, light rain Staff : David Butler, Gerrit Gardner 1330 Di Butler and G. Gardner arrive at ODO and return OLFKey, Morning was spent sampling at OLF, see OLF notes. 1345 Recon locations of wells MW4-B3, MW15-B-23, and MW10-B8 1355 All wells located. Go to setup at MW10-BB. 1420 Begin purging MW10-BB 1455 Collect wi - AF- NW10-B8-1219 1505 Done cleaning up from MW 10-88, Go to lay down to dump water. 1530 Transferred ~1 gal into "MI" tote 1540 D. Butler and G. Gardner offsite, Dand Butle 12/10/19

NASWI Ault Field Ph 2 SI 12/11/19 Oak Harbor, WA 69561001+.04.FI.FS Task: Continue GW sampling Weather: Cloudy, 40°, wind, rain in PM Staff: David Butler, Gerrit Gardner 0715 D. Butler checks in w1000 and notifies of work at wT03-04 and wT07-08. check out barrier key#6. 0730 D. Butler arrives at laydown, prep for the day 0740 Calibrate MultiRAE and Horibas 0745 G. Gardner on site 0800 Conduct PTSP, discussed noise protection and weapons handling check in 0810 Go to weapons handling to check in 0811 Notified by Navy personnel at gate along weapons handling road that they are beginning an excerce exercise and we can't access the wells in the vicinity. Go to . sample remaining wells near ODO, 0820 Arrive at MW15-B23, begin setup 0900 Collect WJ-AF-MW15-B23-1219 0915 Done packing up from muls-B23, go to MW4-B3 and begin setup

12/11/19 1005 Collect WI-AF-MW4-B3-1219 1020 Done packing up. Go to laydown to dumpwater and get field blank bottles. 1030 Dumped ~ 3 gal into "MI" tote 1035 Done at laydown, Weapons hand ling gate still closed. Head to wells in RSL on flightline. 1100 Arrive WT11 and WT12, begin setup 1117 Begin purging WT11 1133 Begin purging WT12 1140 Collect WI-AF-FB01-121119, field blank for GW sampling 1157 Excessive drawdown at wful, will purge dry 1200 Collect WI-AF-WT12-GW-1219 and FD WI-AF-WT12-GWP-1219, FD at 1300, 1230 Done cleaning up from WT12. Break for lunch. 1300 Back from Lunch, Check Whin WTIL. 1310 DTW in WTIL=7.8 ft bloc. Recharge is flow. Will return to well tomorrow. Head to WT03-04.

12/11/19

1330 Arrive WT03-04, Begin setting up at WT04. 1347 Begin purging WT04 1415 Collect WI-AFTWT04-GW-1219 1420 Pack up from WT04, move to WT03 1430 Only 1:37 ft of water in wTO3, D. Butler attempts to contact Janice Horton, Peter Lawson, and Heather Perry to confirm sampling or if need to modify procedure since sop requires 3 ft (1 ft above intake and 2ft below). No answer to calls, Will attempt sampling ul intake slightly above bottom of well, 1439 Begin purging WT03 1530 Collect WIF-A F-WT03-GW-1219, no draudown at well 1545 Done cleaning up, head to laydown 1550 Transferred ~3gal from wto3404 Into tote "L1", Transferred 4.5gal from will \$ 12 to tote "H6". 16056. Gardher ottsich 000, to return key to 000, 1625 Key returned. DiButler offsite, David Butter 12/11/19 1605 G. Gardner offsite, D. Butler goes

NASWI Ault Field Ph 251 12/12/19 Oak Harbor, WA Gas GLOCH. OH, FJ.FS Taski Continue GW sampling Weather: Cloudy, 40's, rain, mod wind Staff: David Butler, Gerrit Gardner 0715 DiButler checks in w/000, notifies r of work for the day and checks out barrier key #6 0730 D. Butler, T. Chalmer, and A. Vogt arrive at lay down, preptor day 0745 G. Gardner on site 0750 Calibrate MultiRAE and Horibas 0800 Conduct PESP. Discussed plan for the day and weather, 0815 Head to WT07-08 0825 Signed in w/ Weapong Handling, no operations today. 0830 Arrive wro7-08, begin set up 0850 Begin purging WT07 0856 Begin purging WT08 0930 Collect WI-AF-WT07-6W-1219 0935 Collect WI-AF-WT08-GW-1219 0950 Done packing up. Go to check out w/ Weapons Handling, 1000 Checked out n/ Weapons. Go to laydam. 1010 Transferred ~ Ugal into "L2" tote. Head to MW-623.

12/12/19

1030 Arrive MW-623, begin retup 1047 Begin purging MW-623. Intake set on top of stuck surge block. 1125 Collect WI-AF-MW-623-1219 1130 Begin trying to unstick surge block 1240 Unable to unstick surge block, Ved a better book to grab carabiner on top of plock. Unable to pump well dry w/ peri pump. Pumped ~ 4 gal and didn't expose top of block. Done packing up. Head back to laydown. 1250 Dumped ~3.5gal into "H6" tote. 1300 Begin organizing supplies in prep for de mobe. 1335 Done organizing for now. Go to hotel to get IDW coolers, D.B. tler goes to return key to ODO, 1400 D. Butler and G. Gardner back at hotel, Inventory IDW bottles that have arrived and pre-label for IDW sampling tomorrow, 1615 Done with bottles, End ofday, Parent Bather 12/12/19

12/12/19, Ault Field GW Sampling, T. Chalmers Purpose: Monitoring, Well + Piczameter GW Sampling. Weather 40's Rain Crew: Tom Chalmers, Aaron Vog 0730: Arrive at laydown 0800 Sign PTSP, Colibrate meters, organizz equitment for day. 0830: Arrive at wT-11, beg in setup 0920: Collect sample, WI-AF-WT-11-GW-1219. 2935: Arrive at WT-09, begin setup. 0950: Begin Purge 1030: Well Purged dry, no sample collected. 1040; Bagin setup on WT-10 1055 Begin Purgz of WI-10. 1130: collect sample, WI-AF-WT-10-GW-1219. 1155: Arrive at MW-618, begin Setup 1240: Begin Purge at MW-618. 1430: Collect Sample, WI-AF-MW-618-GW-1219 1500: Arrive at laydown 1535: IDW transferred, documents from the day scanned. Jacobs off site for the dar /

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12/13/19 NASWI Ault Field Ph2SI 6956104 Oak Harbor, WA Task: Finish GW sampling, beg in IDW sampling Weather: Cloudy, 40°, wind Staff: David Butler, Gerrit Gardner 0715 D. Butler and G. Gardner meet at hotel, lond IDW coolers 0720 Head to laydown 0730 Arrive at bydown unload coolers and prep for day. Calibrate Mult: RAE and Horiba. 0745 T. Chalmers arrives at laydown 0800 Conduct PTSP, discussed rushing and fatigue 08 15 P. Butler and G. Gardner head to with 08 35 Arrive at wTO9. DTW = 13.21 Ftbb which is only ~75% of the static water column recharged. D.Butler calls H. Perry. 0840 H. Perry directs to proceed w/ sampling since well will not be fully recharged (or 90%) within 24 hours, will collect sample first and then one set of params due to limited water column. 0850 Collect WI-AF. WT-09-GW-1219.

12/13/19

0900 Begin packing up. Also reattached well ID plate to WTIO using construction adhesive. 0920 Depart WTO9. Begin de-FODing. 0945 Back at laydown. Begin IDW sampling, 0950 Transferred O.lgal to "H3" tote 1030 Collect IDW Sample WI-AF-IDW-SOØ1-1219 from IDW drums. 100 Collect WI-AF-IDW-5002-1219, IDV sample from rolloff #25170 1130 Collect WI-AF-IDW-AQ01-1219, IDW sample from "HI" tote 1140 G. Gardner off site to get ice 1155 G. Gardner back on site 1200 Collect WI-AF- IDW-A Q02-1219, IDW sample from "H2" to te 1230 Collect WI-AF-JDW-AQ 03-1219, JDW sample from "Hy" tote @ "H3" tote 1300 Collect WI-AF-IDW-AQ04-1219, IDW sample from "H4" tote 1315 Collect WI-AF-IDW-AQ05-1219, IDW sample from "HS" tote 1345 Collect WJ-AF-JDW-AQ06-1209, IDW sample fron "H6" tote



12/13/19 1415 Collect WI-AF-IDW-AQ07-1219, IDW sample from "M1" tote 1500 Done packing, Go to Pony Mailing to drop off, 1520 All 10 cotto coolers dropped off (8 to GCAL, 2 to Battelle), Head back to laydown to pack up supplies, 1535 Back at lay down. 1600 Done packing up supplies, All staft offsite. Der B. 2/13/

12/13/19, Ault Field Surveying, T. Chalmers Purpose: Survey Manifering Well & Piezowater locations. Weather: 40°s Overcast Crew: Town Chalmers, Kenny Kong 0730: check in w/ ODO & check out barrier Key #6. 0745: Arrive at Jaydam 0815: Kenny Kong arrives on site 0830: Instraments calibrated. 0900: Discuss plan of action w/ Kenny, bead out to begin survey. 0925: Using "Leap Frag" appleach, at MW-607 as starting point for exterior well loop. 1007: Take point on WT-08, will use the top of the value on top of well head as point (Kennys suggestion). 1018: PZ-07, 50 theres no confusion: he tack one shot of WT-08 well casing then 2 shots on well head, then one shot on WT-07 well casing then 2 shots on well begin second loop from MW-607.

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1119: Take Shot of WT-04, Casingwell-well, then wt-03, casing-well-well. 1240: Took shots of WT-OI casing wellwell & WT-OZ casing -well-well. 1345: Complete 2nd loop, at MV-607, containing PZ-01-02 \$ PZ-03-04. 1400: Head to Charles Parter to survey locations mar ODO. 1500: After multiple unsuccessful attempts to locate a survey monument of which we can use to survey the 3 well beating outside of the airfield boundaries Kenny decided to call it a day so he can get to his computer & acquire more / better information, 1515: Return barrier Key to ODO. Piscussed walking the Hightline w/ Mark Van Oort. We have the green light to do so. 1530: Daily documents scanned. Dacobs off site for day.

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NASWE Ant Field Ph 2 11 12/14/19 Oak Harbor, wA (95610CH Task: IDW sampling Weather: Cloudy, 40's, breeze Staff: David Butler 0725 D. Butler arrives at laydown, prep for day 0735 Tom Chalmers and Kenny Kong (survey crew) on eite 0740 Conduct group PTSP, discussed flightline access (for survey crew) and weather conditions 0800 Collect WI-AF-IDW-AQ08-1219 IDW sample from "LI" tote 0830 Collect WI-AF-IDW-AQ09-1219, IDW sample from "L2" tote 0900 Collect WI-AF-IDW-AQ10-1219 IDW sample from "L3" tote 0930 Collect WI-AF-IDW-AQ11-1219, IDW sample from "H7" tote 0945 Collect WI-AF-IDW-AQ12-1219, IDW sample from "H 8" tote 1000 Done w/ IDW sampling. Begin packing up, 1050 Done cleaning up. Added one bag of rermiculife to rolloff to absorb small amount of water. All IDW containers ok, All secondary containments ok, Head to OLF.

12/11/19

1140 Arrive at OLF. Had stopped at ODQ whileat Ault field to check out key and notify of work, Break for lunch. 1200 Back from lunch. Prep for IDW sampling. 1230 Collect WI-CU-IDW-AQ01-1219, IDW sample from "H1" tote 1330 Collect WI-W- IDW-AQ02-1219, IDW sample from "H2" tote. Only 2 VOAs for TLLP VOCS (impreserved 8260c) due to breakage. 1430 Collect WI-W-AQ03-1219, IDW sample from "H3" Lote. Only 2 VOAs for TCLP VOCS (unpreserved 8260C) due to breakage. 1450 Done - / IDW sampling, Begin packing up. 1530 Done packing up, Also performed weekly IDW inspection. All containers and secondaries ok, No water on top of roll off tarps, Go to return key to ODO, 1605 Keys returned to 000. D.Butler offsite. Dankte 12/14/19

12/14/19, Ault Field Surveying, T. Chalmers Parpose: Elevation survey on flight, line Wew: Tom Chalmers, Kenny Kong Weather: 40°5 Rain/Overcast 0715: Check in w/ ODO, check out barrier Key # 5 OTTO Arrive at landown David Butter on site. 0745: Kenny Kong on site sign \$ scan PTSP, head to girfield. 0830 Failed to find starting point on SE Side of the round. Will move to Charles Porter & attempt to find Survey Monument There, 0900: Located Survey Monument "Charles Porter B, however the cap has been removed & Surveyor says it can not be used. 0915: Survey Monument "Charles Porter A" exists! We will be able to use it as a starting point. I will go on a quick vecon to see best place to enter the airfield. 2920: There is a turnstyle at

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410 which can use to enter carfield Monuent Charles Porter A. 1000: Get shots of H6-13, Wall casing-rell-ad 1030 complete loop 3 containing well H6-B3. 1045: Begin loop of through the giv field 109: shot MV622, WE C-WW. 1123: Shot MW-624, C-W-W. 1136: 5ht MW-623, Contract 146: 5hot PZ-06, Cut-WH 151 Shot \$2-05, C-WW. 1203: Shot MW-621, C-W-W 1228: Shot P2-12, C, WH-WH. 1240-2 Shot PZ-11, CW-W 1312: Shot MW-620, C-W-W 1322; Shot 16-26B, concrete padedge of metal casing - WH-WH. 1330: Shot PZ-09, C-W-W. 1335 Shot PZ-10, C-WH-WH. 1342: Shot MW-619, C-W-W 14001 Shot MW-618, C-W-W 1452: Complete loop 4 at Jocation H6-B3.

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Loop 4 consists of: MW-622, MW-624, M 623, PZ-05-00, MW-621, PZ-11-12, MWS PZ-09-10, MW-619, & MUSET81 Loop 5 begins at location designate -1514 while Surveying top 4 Location is 8 ODO building, on ramp, near where airfield managers truck parks. 1526: Shot MW10-B8, Cow-Win 1534: Shot MW4-B3, 6-W-W 1539 - Shot MW15-BZ3, C-1 1548: Finish 100p 5 (consisting of Mulle-B8 MW4-B3, \$ MW15-BZ3) at -15 and designated location at which it beginn 1555: Kenny Kong off Site. K F 1600: Return Perimeter Key # 5 to ODO. Jacobs off Site, (C= casing of avel, W= Well, WH= Well Hand) 119 1.80

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12/15/19, Ault Field Surveying, T. Chalmer, Purpose: Location survey on Ault Field Weather: 40°s arcast Crew: Tom Chalmers, Kenny Kong 0715: Check in w/ 000 \$ check at #5 Key. 0730: Arrive at lay down. 0745: Kenny Kong gavives on site. PTSP Signed, meter calibrated. 0825: Got anterra set up over Charles Porter A". Drop off my truck at laydown So I can ride up Kenny & only have I vehicle 0847: GPS locate PZ-01 OB48: GPS PZ-OZ 0901: GPS PZ-03 0903: GP5 PZ-04 0913 GPS PZ-07 0915: GPS PZ-08 0932: GPS MV-624 0940: GPS MW-623 0949: GPS H6-B3 0953: GPS MW-622 0959: GPS MW-621 1004: GPS PZ-06 1007: GPS PZ-05

1015: GPS PZ-12 1020: GPS PZ-11 1025: GPS 16-26B 1031= GPS PZ-09 1034: GPS PZ-10 1645: GPS MW-620 1052: GPS MW-619 1058: GP5 MW-618 1111: GPS MW10-B8 1113: GPS MW4-B3 1115 GPS MW15-BZ3 130: Return barrier Key # 5 to 000\$ dreck out OLF Key #3 1135: Kenny stops at Survey Monument "Charles Porter B" & takes location masurent for future reference. 1150: Surveying anteng removed From Chairles Porter A" 1200: Depart from Auff Field, head to OLF 1225: Arrive at OLF, begin to setup Survey antena at Survey Manurent Emprille Sign PTSP & AHA. 1305: Iry to access to

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radar building \$ GW03/MW22X. OLF Keys don't Fit lock. Called ODO \$ they have the key for me to check out. 1315: Leave to get the Key from ODO while Kenny begins survey. 1415: Return to OLF radar building y Key #6. Key does not fit lock. 1425: Meet back up w/ Kenny, he has location data measure at the 7 of 8 vells (8th being the well, GW03/MW2ZX, inside the fenced area. 1430: Kenny disassembles survey autena. We will the begin an elevation loop to location MWF7M. 1440: Begin survey loop 1 at survey Monument Coupville 1508: Shot 3 masurments at Muritm well caring, well, well. 1521: Complete loop 1 containing MW-17M. 1530: Pack up equitment and Teave OLF for The day. 1605: Return Key #6 Key to 000, Keep OLF Key for furtive work. End of Vay.

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NASWI-AnIt /OLF \$ /26/20 Recon /White Lining 695610 CH/9000 NUT1 Task: Recon and mark drilling locations, white line for utility locate Weather: Partly cloudy, 60's breeze Haff: CH2M . David Butler 1020 D. Butler arrives at 000 at Ault Field, Conduct PTSP, Lone Worker check in w/ J. Horton. 1030 Check in w/ Mark VanOort and ODO, notify of work at BH12-14. Get ok to walk onto and grass on other side of airfield 1040 Head to BH12-14. 1145 Finish marking BH12-14 (notified ODO when done). Also finished marking \$H09-11. 1150 Go to mark BH18 coordinate w/ Blog 420 staff. 1210 Adjusted BH18 location west into grass due to utilities in area and tate limited access at facility. 60 to mark BH 15-17, 1235 Done marking BHIS-17. Go to mart BH19 \$ 20.

6/26/20

1255 Recycle Center is closed due to COUID-19, Attempted calling to get access, but no answer, so left a message, Break for lunch. 1330 Back from lunch, Inspect IDW at Clover Valley. 1335 All tanks and drums ok. Go to mark BH 03-08. 1430 Done marking BH03-08. Slightly adjusted locations of BHOS and BHOT (<25ft) due to thick veg, Note: we have a lock on Area 29 south gate, but it is stuck. Bring a new and cut old. Also may need brush chear past gate, Go to recon culvert under Clover Valley Rd. 1450 Located culvert, Lone worker checkin w/ J. Horton. (Had also checked in at 1200), bo to Home Depot to buy more paint. 1535 Arrive at Golf Course , Check in at club house. 1610 Done marking BHOI and 02. Had to adjust both loss north due to trees

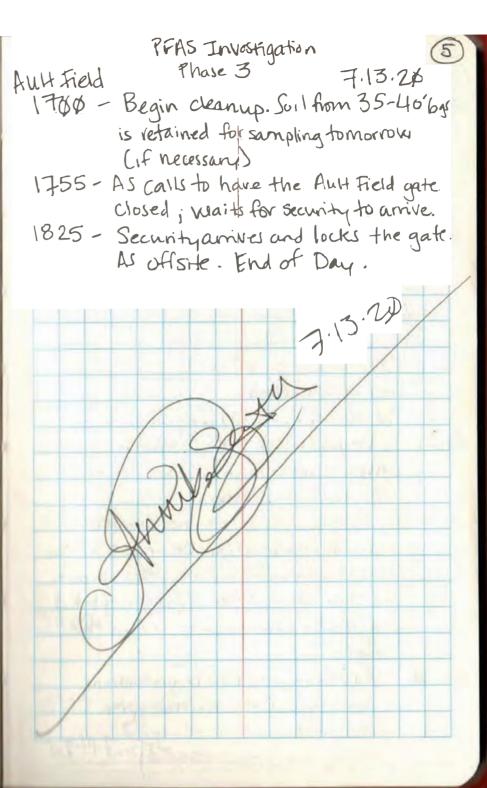
6126/20

1610 Head to OLF. 1640 Arrive at OLF, 1650 white lined mw 18M. Already staked by M. Endo, Access from road to the south is difficult due to berm and differen Access from WA20 likely difficult due to traffic. Maybe access through field. Go to inspect fractank, Notify 000. 1715 Frac tank and secondary de. Attempted to measure sediment on bottom of tank, none detected, but difficult to measure, check out w/ 000. 1720 D. But ler heads back to Bellevue. Dout BAD GOGDO

Ault field PFAS Investigation Phase 3 7.13.20 - Project : Ault Field - Task | Activity for the day Obtain base passes; begin setting up equipment at staging yard; begin drilling - Personnel : Jacobs Engineering Annika Seay (geologist, logbook scribe) (AS) Janice Horton (assistant) (JH) - Sylocontractors: Yellow Jacket Drilling (YJD) - PN· 695618CH. ØH. FI.FK - Meather: le2° F, clear, light wind \$7\$\$\$ + Annika Seay (AS) meets Janice Horton (JH) Lindsey Bauman (LB), and Ye low Jacket Drilling (YJD) at the Ault Field badge office. AS and YJD get their base passes; JH and LB mobe to sites for inspection. 0920 - AS receives base pass and mober to lay down area 125- A arrives. JH onsite; mobes hu/ NTD to visit boring locations. (Confd) 57320

	and the second	
1	(2) PF Investigation 20	PFAS Investigation (3)
N.	Avilt Field PF Investigation 7.13.13	Aut Field Phase # 3 7.13.20
	(pai (ontid) As stays at lay down yard	1300 (cont'd) - Guard says replacement
	with the YJD crew that is	should arrive in ~20 minuter
R	Setting up.	AS will call security office if no
	1120 - YJD ready to mobe to first	replacement has arrived by then.
	drilling location. As calls base	replacement has arrived by then. JH informs \JD of this
	security for access to Aust Field Ra	1320 - AS calls security for a guard to
	Clover Valley gate.	open the gate.
	1130 - The officer that arrives informs	1330 - Guard arrives and opens the gate
	us that he must open and shut	As discusses any alternatives to
	the gate each time it is accessed.	having a guard open/shut the
	YJD discusses with him that many	gate. Guard will inquire Guard
Į.	trips in and out are needed. He	is onsite now and will stay as long
	calls superior who says someone has	ar possible.
	to be there when the gate is	1340 - Guard informs AS that a compromise
	open. As relays info via text: to	has been eached for the gate.
	JHand LB.	Jacobs will call to be allowed
	Base security contact *:	access in the morning, where then
	360.257.3127	the lock will be "dummy locked"
	1200 AS waits at Ault Fiel Kd gate	chung the day. Jacobs will call
	While YJD begins mobilizing to	at the end of the day to have the
	th site	, gate locked!
	1300 - Guad at Auit Field gate is	1130 - Drillers set up for duilling (Area 30)
	called away and has to lock	LB hold HSE meeting (see PTSP).
	the gate, no marning as to	1445 AS and IB CALL Palor Lawkon the
	his demanure.	discuss the plan for this site. 3-90
	AS 7.13 20	XG3 TU
1		

Ð	PFAS Investigation
Ault Fiel	DITION
	- AS Calibrates MultiRAE
-	$(C1\phi 28pl)$
	Fresh dir cal: Pass
	Isobutylene: 99.7ppm
	Cal. Value = 100ppm
Calues:	Multi Gas:
18 28070	0xy: 18%. CO: 50 ppm
SOPPM	CO: SC ppm
50%	LEL 5170
10ppm 1545	- Drivers begin COTR
1553	Begin logging soilet
1	(see boring log for details)
1430 -	- Drillers reach 20' bas and ho
Als	where the been produced.
	As and LB consult Peter Lawson FL
	who instructs to go to 40 bas to
	see what the lithology is and
14uc	look for groundwater.
AS	- Between 35-40 ft bys is Wet,
-	Sandy. As and LB Call PL to Consult. PL says to let it sit overnight
	and see if materis in the boring
	tomorrow. Call him with the
	findings to discuss further AS 7.13.20
-	1-15-20

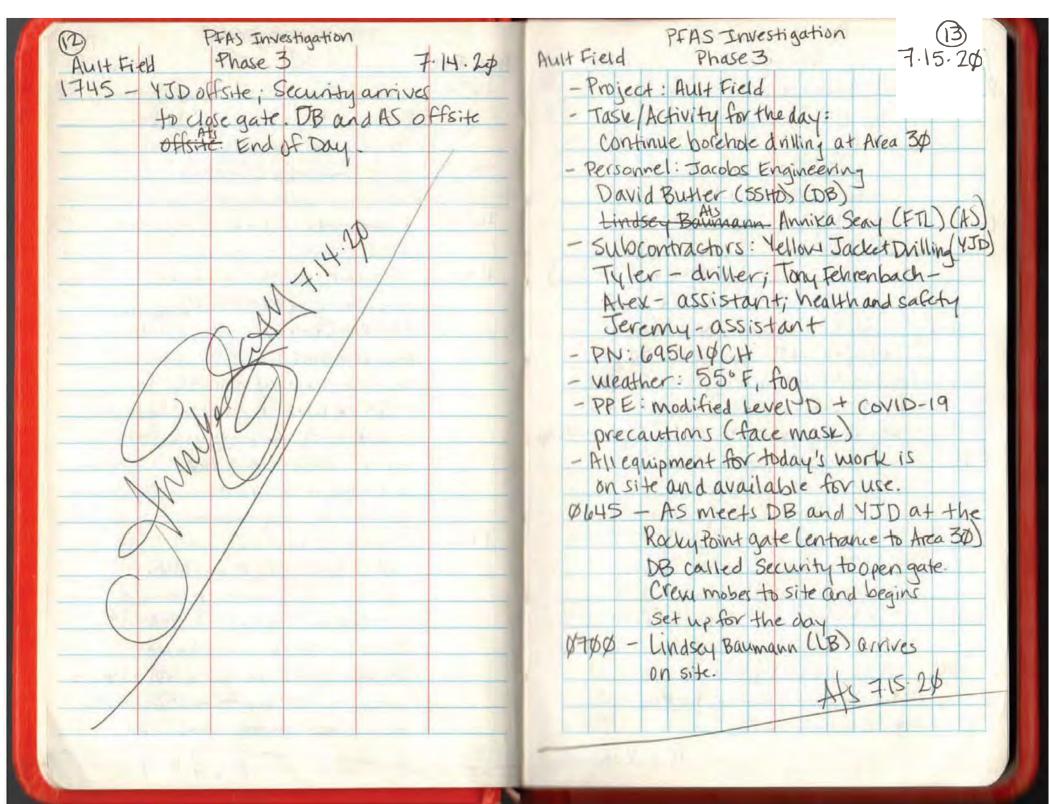


(b) PFAS Investigation	1PHS LINESHIGHTUN (7)
Aut Field Phase 3 7.14.20	Ault Field Phase 3 7.14.20
- Project Auttriad	0700 - Lindsey Baumann (LB) anives.
- Task/Activity for the day: see if 07R	Prep for HS meeting. YJD Still
is producing GWI, and can be a	moleing and setting up equipment.
Viable mei	\$745 - David from Jacobs arrives to
- Personnel · Jacobs Engineering	peterm crane inspection
David Butlet - SSHO (DB)	1218/00 - Darvel of site; field onene holds
Linder Baumann - SSHO (LB)	health and safety meeting (see
Annika Seay - FTL (AS)	FIDE). L'OCUSS:
- Subcontractors: Tyler: driller, Alex & Jereny hopes	- the major bip hezardsion
Yellow Jacket Drilling (YJD)	1815 Wales & Bonna A Bonna (Bonna 97)
- PN: 695616CH. 04. FI FK	PETS - Wetch is present in the boring.
- Weather 55°F, clear. - PPE: Modified Level D An equipment for lay's work is available and on site.	DB consults Peter Lawson CPLY
Ob15 - David Butler (PB) and Annika Stay (AS)	Hole sloughed to 24 fect bigs;
Mast at latel: anote to lace to clank	0830 - set up for purging the welland
Meet at hotel; mobe to base to show As the drilling locations.	
10645 - Getting on base was not an option	01845 - LB offsite to meet w/ utility leaster.
due to the long line DB shows AS the	DB calibrates & Hunka (see cal log
"Golf course" site, then they mobe	Exidentils). YJD Sets up to purge
to the Clover Valley / Ault Field Rd	of themell.
gate. As calls security to open the	0903 - Begin purging. Ix well casing
gate.	Volume = ~ Sigallons. 3 vicil
Ble 5B - Gate is open; YJD begin morning	volumes millattempt to be purged.
Activities. DB and AS begin prop	10905 - Water is very brown
for the day. AS 7.14:20	DTW- 14 le ft has. We imped to thes
<u></u>	NIFA. HACHIS dry Eminutes taken 57.14.20

No. of Concession, No. of Conces	And in the local division of the local divis
<ul> <li>PFAS Investigition</li> <li>Auit Field Phase 3 7.14.20</li> <li>P910 - Waster is not purging anymore, but the WL indicator detects</li> <li>Water. Troublishoot and pumps</li> <li>Water again (raised pump)</li> <li>Take Honiba measurements</li> <li>(see Gwarab data sheet):</li> <li>-Temp: 14.60 °C</li> <li>- Cond: 0.395 mS/cm</li> <li>- D0: 18.97 may i</li> <li>- pit. 6.16 (SU)</li> <li>- ORP: 51e mV</li> <li>Water begins to Slow to a stop</li> <li>YJD troubleshoots (raising /lowering the pump). ~ 1× well volume has</li> <li>been purged. YJD pulls pump to clean out (decon will be performed before lowering it back into the boring)</li> <li>0920 - YJD determines that the pump is suntched out with new, deconned pump.</li> <li>Ø930 - New pump lowered; water draws immediately. Continue purging to reach 3x well volume DTW: 21 ft bas</li> </ul>	Aut field Phase 3 Aut field Phase 3 Aut field Phase 3 9935 - pump stops pnaucing. Pump is stopped and baring is allowed to recharge. M. 5x weivolwes purged \$949 - DTW = 23 ft bas \$949 - Collect soil sample. \$950 - Collect soil sample. \$950 - Collect soil sample. \$950 - WIL = N22 ft bas ft bas for analys; sof: - 557 Method 537 Mod Well continues vecharge. \$950 - WIL = N22 ft bas field crew considers the recharge rate and deidesto ottempt sampling. \$950 - WIL = PHOT -GW -24 for analysis of: - Method 357 - Mod (PFAS-18) \$950 - YJD Sets up to run casing to 40 feet bas. \$950 - YJD Sets up to run casing to 40 feet bas. \$950 - MIL = N22 ft bas. \$950 - YJD Sets up to run casing to \$950 - YJD Sets up to run casing to \$950 - YJD Sets up to run casing to \$950 - YJD Sets up to run casing to

10	and the second se		and the second
(10)	PFAS Inves	tigation	
Ault Field	Phase 3	3	7.14.20
	collect field k	plank so	ample:
	WI-AF-FBØI-		
	for analysis o	-	
	-Method 357	F. Mod	(PFAS-18) AL
			at Area 30-07-1
	BHØZ Begiv		
	IS and DB Call		
	Tiffany Hill CT		
	bout sample		
a a	Jo answer. M.	essage	left
	JD continue		
	Casing set p		3
and the second se	Drillers break	for lun	ch.
	Lunch break or		
12 10	At Avea 30-BI	108	in our up
			e horing to
5	reet bas.	ning in	e berning is
1330 -	continue han	aure	ina banina
1415 -	continue hand take TD@b	Mind	Eft bo
1115	Begin rig setup	finder	lina lap
1	28°F, Clear, light	p lor an	J
1450 -1	Begin drilling	AL YOINC	
	Boring is day t	TDE	FUDIDAS
T	B calls PL to	relay.	PLinstructs
	O drive 10 mor		- HUITMENS
	C CIVINE IP INOT	encer.	At 5 7.14.20
-			11311120

PFAS Investigation 7.14.20 Phase 3 AuttField 1630 - YJD has been cleaning out the boning before advancing caring. Way hard drilling; a pullarized rock Was seen in the ~ 37 ft bys. 1640 - Laber tote GWXI (GW from BHO7) 1645 - View and log the soil from 4\$ -5\$ bas (See boning log for details) shallow Att No GW. DB consults PL; arbedrock Vidge is in this area. The pulvanzed rock that was seen in the boing @ 37ft bas is the beginning of the bedrock. PL instructs that the dvillers should clean the hole out and allow it to sit overnight to see if it fills with groundwater. 1715 - Collect sample SB WI-AF-BH08-34AK-34 from ~ 34' bas for analysis of. - Method 537 - Mod (PFAS-18) Clean up site for the evening. This bonny did not have a Gut interface Zone, as no GW was found. The sample was collected from moist sand found, per PL. Ats 7.14 20



PFAS Invertigation PFAS Investigation Phase 3 Ault Field Phase 3 7.15.20 7.15.20 Auit Find X #755-Stabilization parameters for Hold health and safety meeting Ø715 BHOB GINISAMPICARE: (see PTSP). Discuss: 0745 (ontid) - temp: 18.9 14.89 °C - fog - cond: 0.308 - coller weather entry Do: 4.50 Continue setting up. - pH: 7. p2 0735 - 36-4Afs DB takes WL& TD - turbidity: 2999 NTU @ BH\$8 . - DTW: 35.6 feet bgs (ft bgs) A duplicate sample was assigned - ID 40.6 feet bys to this location, but due to lack N 5 feet of whater. Note from of Gul, the duplicate sample will 07-14.20: 4JD pumped ~ 50 gal be moved to another location. of mater into boring and purged ALS 1815 - Begin hand cleaning BHOG it out - DTw after purging when to 5 feet bys -24 At logs. dry. Prior purging, Dim= 24 by \$930 - Hand clearing complete. Set up to begin sampling sampling \$745 - plug in pump, mater draws 1945 - Begindvilling, Soil is logged (see immediately. Apperance. MURKY, brown DTW after sample: Collect sample 38 Ftbgs bonng log for details) 1815 - Collect equipment blank collect sample KIL AE BHO8-GW-35 WI-AF-EBØ1-071520 for analysis of: for analysis of : - Method 537-Mod (PFAS-18) - Method 537-Mod (PFAS-18) Note: Brum#3 began on 7.13 20 This sample covers yesterday's dalling 1830 - LB offsite. Drilling reaches TD; (conf) \$750 - Begin mobe to Inca 24 plus \$815 - Begin hand cleaning Bitter A no water. Consult Peter Lawson (PL) to 5 feet bas Atr . LEFAIS AU 7.15.20 At s 7.15.20

	PFAS Investigation	
Aut Fie	Id Phase 3 7.15.20	Auttie
1030(	PFAS Investigation Phase 3 7.15.20 Cont'd) - Bedrock is seen at ~40 feet bys.	1319
	PL advises setting casing and waiting to	
	see if the boring fills with mater.	
	YJD sets casing to 3,0 feet bas-	134
16576 -	- collect soil sample	
-1-1	WII-AF-BHOL-58-35	
	from ~35 feet bas for	
	analysis of:	
	- Method 537-Mod (PFAS-18)	14¢
1055 -	- casing set; DTW taken: ~34'bgs	
	(This could be water from pushing	
	the soil out of the barrels)	144
1100 -	- Begin site cleanup and the	
	begin mobe to Area 29.	
1105 -	- Begin and fill JOW Drums	
	- AUSD&5: BHOL	
	- SD * L: BHØL	
1130 -	- continue setup at Area. 29.	
	- Break for lunch-	141
1220	- Begin hand augering at	
Ats	Avea 29-BH05	
1230		
1255	- confinue set up. YJD decons	1
	equipment. NC 7.15.20	-
	the the	
in the second second		-

	PFASInvestigation	(7)
Field		7.15.20
315-Be	gindvilling @ ATD BHO	5
Se	oil is logged (see boring 1	09
fo	r details)	-
	leach TD of 410 ft bass, 1	NOGW.
	Clay is still dominant in the	
	DB Calle PL; drilling will	
	to 500 feet bas in an attempt -	
	shallow bedrockvidge.	
	Reach 50'bas: no GW.	DB
	Consults w/ PL and Janic	
	Cossing is set to 30 feet	bgo.
140 -	Collect sample	0
	WI-AF-BH05-SB-44	L
	from ~44 feet logs for an	nalysis of:
1.31	- Method 537 - Mod (	PFAS. 18)
	casing with be left in - 7	Boning Will
	sit overnight to see if it	recharg
like	fills with GWI.	
445-	Begin decon and mobiliz	ation to
	The next Area 29 location DB takes DTW at BHG	
_	DB takes DTW at BHO	851-
-	- DTW=244 feet ba	5
	Water was used to extract s casing, and the detected Give baing is suspected to be ass	oil from the
	casing, and the detected Git	tin the
	being is suspected to be ass	ociated with
	that? Ats	7.15.20

PFAS Investigation PFAS Investigation Phase 3 Phase 3 Ault Field 7-15-20 7-15-20 HE AUITField Project = Ault Field 1355 - Boring [BH03] is cleared to 5 feet bas. 烘13 Task/Activity for the day: Continue setting up for drilling See if Givi samples can be 63°F, clear, windy 14 HAID - YJD does rig maintenance. collected at BHT 08 & BHTOS; begin drilling at Bttp 3 1430 - YJD done drilling for the day, did not begin drilling BHD3 today. Personnel: Jacobs Engineering Annika Seay-FTL (AS) YJD leaves site for the day Lindsey Baumann-SSHØ (LB) DB and AS mobe to BHOS Subcontractors : Yellow Jacket Drilling (450) to label a partially full drum Tyler Turpin - driller left at the site. SD \* 7 Alex Forman - assistant 144 \$ - collect equipment blank Jenemy Walker - assistant W12. AF. EB\$2.071520, Aaron Adams - Supervisor from sample tubing (YJD provider) Tony Fehrenbach - H&S Supervisor for analysis of: PN - 695610CH - Method 537 - Mod (PFAS-18) Weather: 58° slightly overcast 1455 - Security is called to close PPE: modified Level D, Covid-19 precautions the Rocky Point gate. (face mask) 1700 - Security arrives; closes gate. All equipment for the days work is DB and AS call into a team on site and available. meeting. Ø645 - AS on site to call security Trother 7-15-10 1705 End of Day. to open the Rocky Point gak for site access. YJD arrives. amely 0700 - LB onsite. Prep for safety meeting.

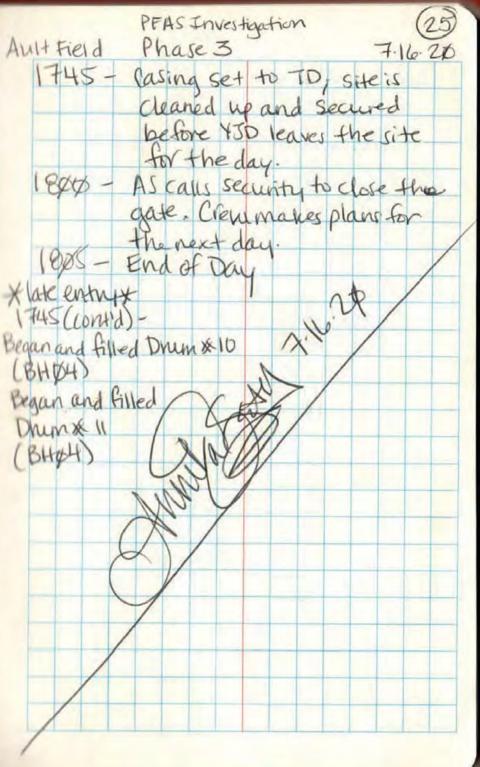
PFAS Investigation PFAS Investigation (2)Phase 3 Phase 3 Ault-Figd 7.16.20 Ault Field 7-16-20 \$705 - Hold heath and safety DTW=24 Ft 645. \$835meeting (see PTSP). Discuss: Prep to take sample. 0840-- not smoking near the collect sample WI. AF. BHOG. GW-31 nid from 31ftbas for wearing masks when working welin 6 ft of analysis of: each other. - Method 537-Mod (PFAS. 18) Tyler alerts Jacobs that he Ø845 - collect sample duplicate Will not be able to drill after WI-AF-BHOG. GWP.31 Mc start at BH03 because from 31 ft bas for analysis of: Casing shoes are all in the LB calibrates Honiba & Multi Open borings (see calibrates) Bre - Method 537-Mod (PFAS-18) 0850 -YJD mobes to decon pump. 0715 Mobe to BHOLE AS & LB mobe to BHOS \$745 - Take measurements at BHOLE and set up to sample. - DTW : 24.2 Ft bas 0920 -DTW and TD at (BHOS) - TD: 32.2 ft bas -DTW: 44.67 - TD : 45.62 Set up to purge. Begin purge. 0755 AS consults Heather Peny about Ø 800this (stand-in for Peter Lawson) Water stops; well day. Allow for recharge. As calls She advises to purge day and Heather Perry Cleter Lawson allow recharge i check WL at is in a meeting). Message was end of day. left 6936 Time is taken to droon kill probe \$825 Check WL : asit is very coated in mud. -DTU =19.8 ft box. Continue recharge. AS 7. 16:20

(22)	PFAS Investigation
AUH F	PFAS Investigation Field Phase 3 7.16.20
	- Rump Started. No pressure; no
	water Nothing is produced.
	Well will be tagged this afternoon
	for sampling if water is present
1025	- Begin drilling @BH\$3
	(5-foot hand clearance was done
	hesterian)
	yesterday) Soil is loggel (see bois los G. A. L. il)
1050 -	Soil is logged (see boring logfor datails) - Veach 40 feet bys- No GW;
-17-7	lithology is all class Counting
	lithology is all day. Continue
1100	drilling. - Verich lath Carl bac- a- Cul
	- reach let feet bas; no GWI, all
1	Clay. Consult Peter Lawson(2)
	go to 70 feet bys, then let him
1130 -	Know what we find.
1.04	At 70ft by sino Gul. As
-	Communicated this through text to
1135 -	Peter Lawson.
1105	PL advises to leave the hole open
1145 -	and see where GW infiltrates.
11-15 -	AS texts PL about casing off; no answer. YJD takes lunch.
	no answer. ISD takes lunch.
	AS & LB continue at site.
	Take DTW: 44.75ft bas
	Ats 7.16-20
	· ~
-	

PFAS Investigation	0
IL Field Diana 30	(23)
IALU	110-2¢
Vyl:AF.BH63-SB-47	
thom H7 ft legs for	
analysis of.	6.
- Method 537. Mod (PFA:	5-18)
DTW is taken: ~44.75.	tt bas
1215 - Drillers return; casing needs	to
be set to atleast 30 feet bg	Si
This is the last of of their	
Casinghan order is supposed -	o
arrive by 2.P.M. today.	
1245 - Casing set begin mobe	to
BHOY Mhis one will be drill	ed
to 40 feet bas, then PLO	r
Aeather Penny CHPD will be	
contacted with lithology perults	
1330 - continue mobe to BH64,	
Begin and fill SD& 8: BH\$3	
Begin and fill SDA 9: BHP3	S
1400 - Beain drilling @ EHQY	
The boing was hand cleared	
to 5 feet bas this morning.	
Soil is logged (see boing log)	
1430 - Read TO OF 190 Fet bas TO	TA).
Charles I I I I I	
1 1/157	.16.20

AL

PFAS Investigation Aut Field Phase 3 7.16.20 1500 - HP consults PL; confinue to boing to leg ft bas: check for any GW in the lithology. If not, let well sit 1555 Continue advancing BH04 Hoff - Collect field blank WI-AF-FBO2-071620 for analysis of: - Method 537-Mod (PFAS-18) 1605 - GW is Observed at ~54 feet bas. PL, HP consulted. PL ok with screen from 65-55 feet bys. No sump; I centralizer at the top of the screen. 1610 - collect sample W1-AF- \$ 8404-58-54 for analysis of -Method 357-Mod (PFAS-18) 1620 - Tony Tchrenbach retrieves the casing shoes that arrived today. Drillers set up to case BHOH 1630 - Casing started. 1700 - continue setting casing. Ats 7.16.20



PFAS Investigation 26) PFAS Investigation (27) Phase 3 Phase 3 7.17.20 7.17.20 Ault Field - Project: Ault Field Q 700 -Conduct tailgate HELS meeting: - Task/Activity for the day: (see PTSP). Discuss: attempt to collect samples at - Mask use BHO3 and BHOS; set a well a + BH-04 - COVID-19 precautions/procedures - good eraphonnic practices - Personnel: Jacobs Engineering Annika Seay - FTL (AS) Field ream Lead observed Nesterday. Lindsay Banmann - 35H\$ (LB) site (7715 - LB on site. Mobe to BH031 safety& heath officer \$720 - Veny thick mud is filling Subcontractors: Yellow Jacker Drilling (YJD) Tony Fehrenbach - hearth & safety Super. observed. YJD sends a bailer Tyler Turpin - duller (T) down and retrieves 1x pull, Alex Forman - assistant (AF) clear mater. Only mend after Jeremy Walker - assistant (JW) that. TI says that he can - DN: 695610CH Set casing to total depth, clean - weather: 57° F, clear, windy out the hole, then lefit - PPE: Level D, modified, COVID-19 Sit to see if reater infiltrates precantions (face masks) As relays into back to Jacobs - Equipment fortoday's work is on site Ø735-Mobe to BHOS - Hact has and available for use. 10645 - AS meets YJD at the site gate; been sitting since 7.15.20; still Call security to open the gate. LB no GW observed, AS Selays info back to Jacobs management. has communicated that she will \$745- set up to pegin setting a yell be anyving after 7 A.M. at BHOY AS conducts H&S Meeting. (See well installation. (See well install form) 5.7.17

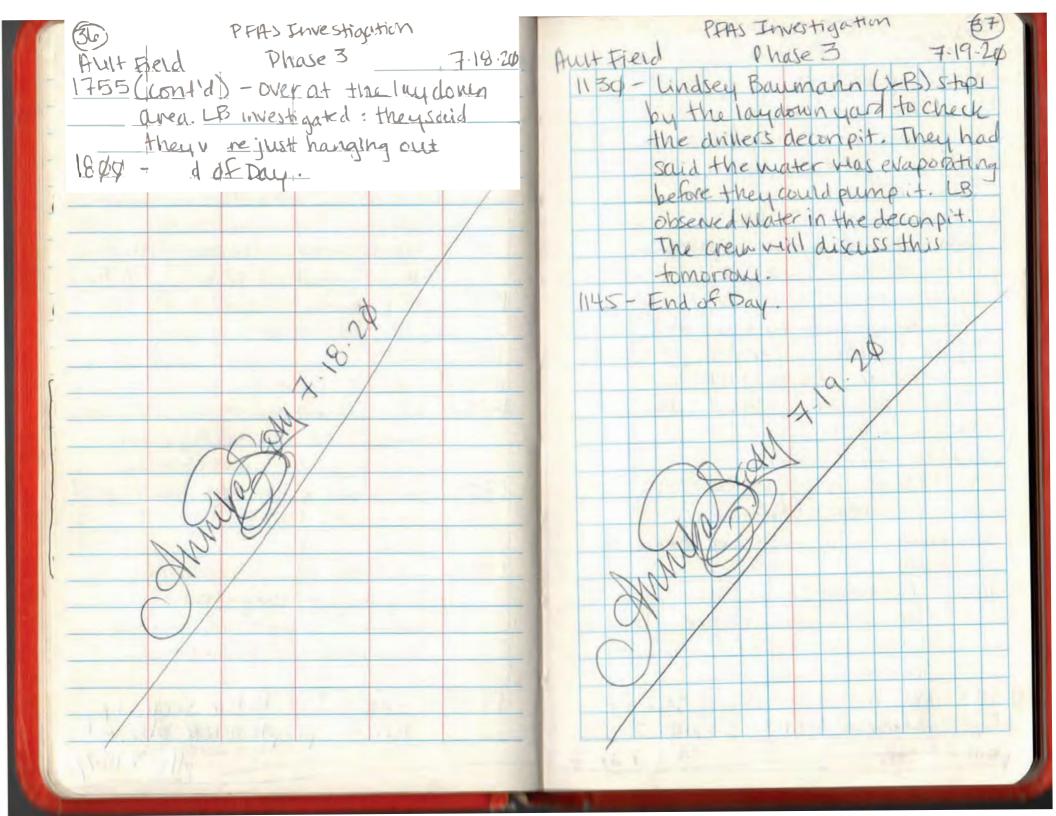
(29) PFAS Investigation	PFAS Investigation (29)
AultField Phase 3 7.17.20	Aultfield Phase 3 7.17.20
\$815 - lower screen to depth of	1930 (contid) - cooler is shipping.
- 55-65 ft bas-	1100 - driving casing @ BH031
- Screen: Ø. \$2\$-inch machine	1145 - Reach G7 ft bas with casing;
slotted	tag WL: indicator sounds at
\$830 - Begin adding sand filterpack:	57 ft bap, but the probe is
- 12/20 Industrial sand	Coated in mud when it is reeled in.
- Quantity used: 5 X-5016-bags	AS consults W/ Peter Laxison (PL)
52.10 ft bas, top of filter pack	1230 - Wel indicator sounds at ~ 57 ft bogs,
\$92\$ - Begin adding bentonite seal:	but the probe is covered in mud.
- 318 Bertonite Hole Plug	Per PL, let the boing sit avernight.
- Quantity used: 10x-5016 bags	Begin mobe to abandon BH051
[. 00] Bentonite seal and bentonite chips	1305 - Begin abandoning Bttp5 ] casing
AS group, top @ 5 ft bgs.	is pulled, bentonite chips to
=3 Discussed the plan forward with	NIFT basi
	1310 - complete 18to5 about casing
BH@3]: case to TD of Fo ft bys,	1220 pull, add bentonite
[Fi] Clean out boring and try to get	1320 - Mobe to \$HOB ; begin put
E3 a mater level	1339 - begin pulling caring at BH09
-BHOS abandon.	1335 - grout up BHT081; mobe to
\$945 - grouting complete. Begin nobe to	BHOFT) BHOTT
1030 - LB offsite to ship samples. AS Calls	1340 - Dull casing.
	1350 - arout borehole. Mobe to
Battelle contact Jon to confirm	TRHTHA A THINK
Saturday delivery address, and to let them know that Issample	Ats 7-17:20
AS	Same States

PFAS Investigation PFAS Investigation 31 Phase 3 Ault Field Phase 3 7.18.20 7.17.20 Aut Field 1410 -- Project : Ault Field Complete grouting. All 3 - Task/Activity for the day: complete Avea-30 bonnys have been BHO'S as MAT- MII-AF-MWI-629; abandoned. 1420 decon equipment; mobe to next site Begin mobing all equipment / Supplies not needed at A +629 - Personne . Jacobs Engineering Avea 29 BHO3 Jour of the - Annika Seay EFTE (AS) area and into the lay down area - Lindsey Balimann - SSHIP (LB) for decon. The rig is set up at Subcontractors: Yellow Jacket Drilling - Tony Fehrenbach, hearth & safety BH03 for further field activities. supervisor (TF) 15ØØ -+ Tyler Turpin, driller (TT) continue mobe. 66° F, clear, wind - Alex Forman assistant (AF) - Jeremy Malker, assistant (JW) 1600 - continue mobe and decon. -PN: 695619CH AS and UB discuss future site - Weather: 57°F, clear, light wind plans W/PL. 1645 - AS does JOW management (Jabels where perioded during - PPE: Modified Level D, COVID-19 precautions (face masks) drum transfer by the drum - Equipment for today's work is on site and available for use. + Dicker 1730 - YJD done for the day. As OTOP - AS meets LBand YJD at the Site gate. AS calls security to calls security to lock gate. open the gate. YJD is prepping 1819 -As calls security to Confirm ETA LB offsite. for the day's Work, 1820 -Security annives to lock gase; 7.18.20 AS offsite. End of Day.

(32) PFAS Investigation	PEAS Investigation (33)
Aut Field Phase 3 7.18.20	Auttriald Phase 3 7.18.20
Ø716 - Security arrives to open the gate.	\$745 (conta) - to Jacobos David Butter (03)
Hold daily tailgate meeting (see	and this one will be returned for
PTSP). Discuss:	à replacement.
- mell labeled "pinch points"	01800 - Begin cleaning out BH03
on the rig	Correction from yesterday: the
- taking breaks when	Casing is at the TD of 70 ft bis;
needed	As misunderstood this as 67 ft by
- stay hydrated	when TT said there was
1 - good hygiene in the field	~ 3-foot of simud in the casing.
- radiological safety: the	0815 - Casing is cleared. ~180 gallons
next site is a plane cash	of mater there purged.
site	Prep to set wen-
\$730 - Prep for well building at	(1830 - Bearn setting WII-AF-MW 629)
BHQ3 and for the rest of the	(see well construction log for
day	details)
\$745 - AS takes measurements at	- Screen: p. p2p-inch machine
ABA W.I-AF-MW628].	sided set from 70-60 ft bas
-DTVI: 46.8 ft BTOC	\$850 - filter pack:
- TD : 64.8 ft Broc	- 12/2\$ industrial sand
When reeling up the measuring	- Quantity used : 4x Sto 15 Digs
tape, the spool detached from	top of filter pack at 58 ft bag
the base. Closer inspection revealed	0935-Set seal above filterpouk and
that the point of attachment	grout to top
had nested through, and the	- 3/8" Bentanite Hale plugonips
spool broke off. LB communicates	- Quantity Used: - ATS 7.18.20
Ats 7.18.20	TIST: 181-201

6	and the second se
उप	PFAS Investigation
Autti	eld Phase 3 7.18.20
Ø935(	contil) - note that the bentonite
intra-1	chips where used in lieu of a
	arout slurry.
1000	- WI-AF-MW629 is set.
	Begin site cleanup.
10045	- As offsite-
1115 -	- As back on site. Creve will be out
	of the Rockey Boint gate for the
	afternoon, returning this aloning.
	Security is called and they are
	aping to state a large it call back
	going to chose a lock it; call back when we need back in. Security
	also confirms that Jacobs does
	not need to valit for the gate to
	be locked.
1145 -	Drilles break for lunch.
1215 -	
1245 -	Continue decon and mobe.
	Than JW mobe to do
	Surface completions Well cards
	Will be placed on each completion:
	- Kleil ID
	- installation date
	- total depth 10.20
	- total depth - screen depth HE 7.18.20 Secunty has not locked the HE 7.18.20
0	Security has not locked the AFE are; As calls to cancel.
3	

a second second	
	PFAS Investigation (35)
Aut Field	Phase 3 7.18.20
1345-	continue surface completions and
	prep to more to new site
1445-	continue surface completions
	and prop to make to new site.
	That AF-MULI-628 will not be
	completed to day due to too
	much mater in the casing. This
	Will be completed Monday, 20 July
1545 -	Equipment/supplies moved to
	Plane Crash site.
1615 -	TE offsite for the day. Continue
1645	Well pad construction.
1715-	Wey pad was able to be completed
	at WII-AF-MULLEZS; water
	was not present when re-checked.
ITØØ -	- Well pad construction complete
	at Wiz-AF-Miki-629
	Cleanupsite.
1710 -	· YJD offsite. As calls security to
	lock the gate; they instruct AS to
	remain at the gate until an officer
	arrives and it is confirmed to be
MEC	locked.
1765	- Gate locked. Before security
	arrived, people where observed
	Ats 7.18.20
	,

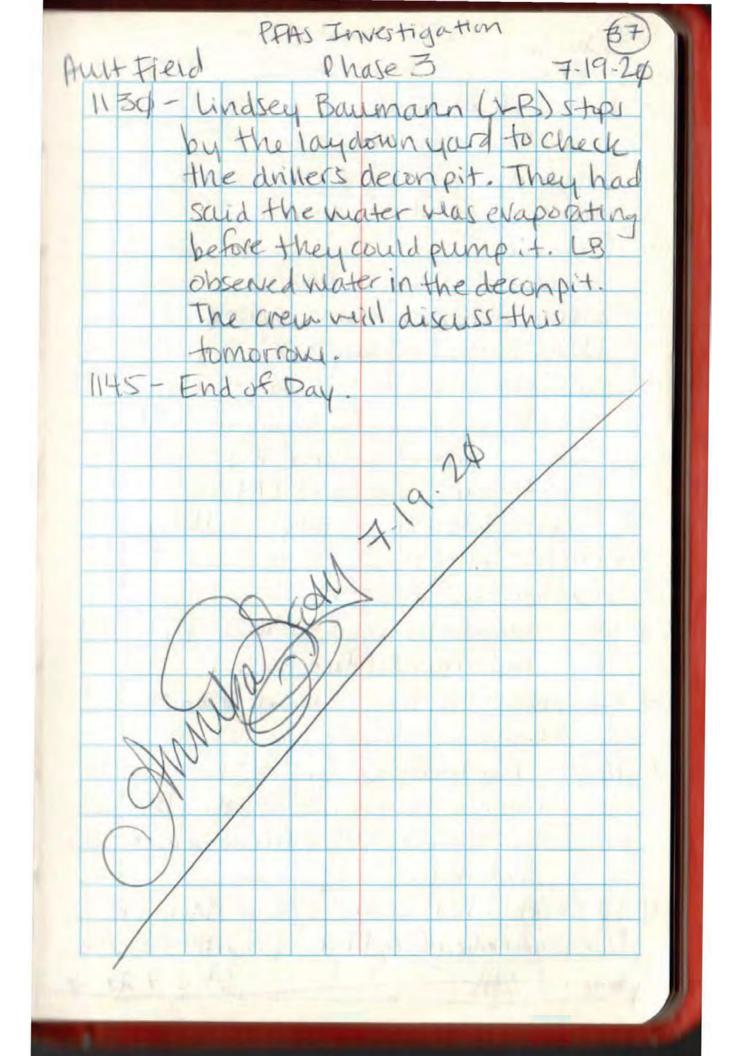


PFAS Investigation PFAS Investigation 31 Phase 3 Ault Field Phase 3 7.18.20 7.17.20 Aut Field 1410 -- Project : Ault Field Complete grouting. All 3 - Task/Activity for the day: complete Avea-30 bonnys have been BHO'S as MAT- MII-AF-MWI-629; abandoned. 1420 decon equipment; mobe to next site Begin mobing all equipment / Supplies not needed at A +629 - Personne . Jacobs Engineering Avea 29 BHO3 Jour of the - Annika Seay EFTE (AS) area and into the lay down area - Lindsey Balimann - SSHIP (LB) for decon. The rig is set up at Subcontractors: Yellow Jacket Drilling - Tony Fehrenbach, hearth & safety 1BH03 for further field activities. supervisor (TF) 15ØØ -+ Tyler Turpin, driller (TT) continue mobe. 66° F, clear, wind - Alex Forman assistant (AF) - Jeremy Malker, assistant (JW) 1600 - continue mobe and decon. -PN: 695619CH AS and UB discuss future site - Weather: 57°F, clear, light wind plans W/PL. 1645 - AS does JOW management (Jabels where perioded during - PPE: Modified Level D, COVID-19 precautions (face masks) drum transfer by the drum - Equipment for today's work is on site and available for use. + Dicker 1730 - YJD done for the day. As OTOD - AS meets LBand YJD at the Site gate. AS calls security to calls security to lock gate. open the gate. YJD is prepping 1819 -As calls security to Confirm ETA LB offsite. for the day's Work, 1820 -Security annives to lock gase; 7.18.20 AS offsite. End of Day.

(32) PFAS Investigation	PEAS Investigation (33)
Aut Field Phase 3 7.18.20	Auttriald Phase 3 7.18.20
Ø716 - Security arrives to open the gate.	\$745 (conta) - to Jacobos David Butter (03)
Hold daily tailgate meeting (see	and this one will be returned for
PTSP). Discuss:	a replacement.
- mell labeled "pinch points"	01800 - Brain cleaning out BH03
on the rig	Convection from yesterday: the
- taking breaks when	Casing is at the TD of 70 ft bis;
needed	As misunderstood this as 67 ft by
- stay hydrated	when TT said there was
1 - good hygiene in the field	N3-foot of simual in the casing.
- radiological safety: the	0815 - Casing is cleared. ~180 gallons
next site is a plane cash	of mater there purged.
site	Prep to set well-
\$730 - Prep for well building at	Ø1830 - Bearn setting WII-AF-MW629
BHQ3 and for the rest of the	(see well construction log for
day	details)
\$745 - AS takes measurements at	- Screen: p. p2p-inch machine
AGA [W.I-AF-MW628]:	sided set from 700-600 ft bas
-DTVI: 46.8 ft BTOC	\$85\$ - filter plack:
- TD : 64.8 ft Broc	- 12/2\$ industrial sand
When reeling up the measuring	- Quantity used : 4x S\$15 Dags
tape, the spool detached from	top of filter pack at 58 ft baga
the base. Closer inspection revealed	\$935 - Set seal above filterpouk and
that the point of attachment	graut to top
had nested through, and the	- 319" Bentanite Hole plugenips
spool broke off. LB communicates	- Quantity Used: - ATS 7.18.20
Ats 7.18.20	7157101201

(34) PEAS Investigation	PENCE
	PFAS Investigation (35)
Ault Field Phase 3 7.18.20	Aut Field Phase 3 7.18.20
\$935 (cont'd) - note that the bentonite	1345- continue supplie completions and
Chips where used in lieu of a	
grout slurry.	prep to more to new site
	1445 - continue surface completions
1000 - TWI-AF-MULLE29 is set.	and prop to more to new site.
Begin site cleanup.	Wit-AF-MWI-628 Will not be
1045 - As offsite-	completed today due to too
1115 - AS back on site. Creve will be out	much mater in the casing. This
of the Rockey Point gate for the	will be completed Monday, 20 July
1 afternoon, returning this aloning.	1545 - Fair accomplete monary, 24 sury
Security is called and they are	1545 - Equipment/supplies moved to
going to close a lock it; call back	Plane Crosh site.
going to cruce a fock in Can back	1615 - TE offsite for the day. Continue
when we need back in. Security	1645 Well pad construction.
also confirms that Jacobs does	1715 - Wey pad was able to be completed
not need to wait for the gate to	at WII-AF-MULLOZE ; water
be locked.	was not present when re-checked.
1145 - Drillers break for lunch.	1700 - Well pad construction complete
1215 - Continue de con and mater	at Wit-AF-Mil-629
1245 - Tran JW mobe to do	
l' Surface compretions Well cards	Cleanupsite.
will be placed on each completion:	1710 - YJD offsite. AS calls security to
- Kleri ID	lock the gate; they instruct As to
	remain at the gate until an officer
- installation date	arrives and it is confirmed to be
- total depth - screen depth JE 7.18.20	locked.
- screen depth 1 7.18.4	1755 - Gate locked. Before security
gar; As calls to cances.	arrived, people were observed
yar, hocalis to caricel.	Ats 7.18.20
	7115 1 10.40

and the second se



	and the second se
(40)	PFAS Invertigation
Ault Fie	1d Phase 3 boring 7.20.20
1000 -	- Take DTWN 25.7ftbyD;
	pump set at N35-36 ft bap
	TO of drilling = 4\$ ft bap "
	Purge N24 gallons before sampling
1815 -	- Pump on; mater daws immediately
	(Silty, broken)
1020	DTW: 3) ft bgs; pump stops,
	producing water. Troubleshoot, get
1.1.4.4	water to purge again.
1925 -	Pump stopped drawing water;
ittad	allow for recharge
	DTWI: 31 ft bgs, continue
	lecharge
1040 -	- beginpurging again; water draws
+laren	immediately
	My Ats
	- dry. allow for recharge.
ΠΦΦ	- Collect GW sample WI-AF-BHO2-GW-35
	from 35 ft bas
	for analysis of:
	- Method 537-Mod (PFAS-18)
	Begin mobe to BHTPI
1130 -	- Drillers break for Tunch.
1200 -	- 1 - 1 alos Contra A An
.7.1	At s 7.20.20

	PFAS Invotigation (41)
wit Field	Phase 3 7.2420
1205-	start and fill soil drum
	X12
	Begin hand clearing BHGE
	to 5 feet bas.
-	& DB offsite.
1225-	hand clearing complete. Set
	up to divil.
1240 -	up to drilling BHOL (seeboing loy)
1250 -	Reach 20 ft bgs; did not see
	potential water bearing unit like
	at BHOZ ~ 20 ft bys. Continue
10 11	to SOFT bys.
1300 -	Water bearing zone not present
	in 200-30 ft bas but the bottom
	(n30ft) is a very losse, moist sand.
1216	Advance to 40 ft bas
1320 -	- Reach 41% ft bgs. Lithology not
-1 -1-	Very promising but ~1' of GW
	is present in the boring. Allow the
	boning to settle, then a Gul sample will be attempted.
1325 -	Collect soil sample
1020	WI.AF.BHOI-SB-Z9
	from -29 ft bas for analysis of:
1.1	from -29 ft bas for analysis of: -Method 357-Mod (PFAS-18)
No.	Ats 7.20.20
	1107.20.20

PEAS Investigation HZ PEAS Investigation Ault Field Phase 3 Phase 3 7.20.20 7.20.20 Aut Field 1325 (cont'd) - decon pump for an 1530 - SI backonsite. equipment blank. YJD Continues chan up of site, ALI 137-1330 - collect field blank mobilizing to WWTP. \* \* LATE ENTRY \*\* OFFSITE ON BASE CEEW WII-AF-EB\$3-072020 from the dviller's sample pump 15:10 S. Fitzsimmons onbase with TT/ for analysis of: operator for WWTP BH LOCATONS - Method 537-Mod (PFAS-18) to confirm rig is allowed in area 1345 - DTW: 37.5ft bas to be left/operating tomorrow. set up to purge and sample Scott Lemike (bldg 420) confirmed DAT IT uses a bailer instead of the okay. Jim Allen (worker at NWTP) expressed concern for utility locate. pump because 14ØØ -VI gal purged and the boring 15:30 S.Fitzsimmons calls D.Bufler. is draw dry. Allow for recharge Confirms locate with as-builts Start and fill soil drum \*13 1545 - Mobe out of area, back to the 1430 - recharging slowly laydown yard. Begin decon. 1440 - Trand SF off site to go to the 79. F, clear, light wind 1630 - continue decon and mobe prep next site (Waste Water Treatment Plant) to survey areas 1700 - mobe to WWTP to stage for the drillers to atobe Stage equipment, 1745 - Equipment is staged. Make plans Continue purging 1520 - collect sample to meet tomorow. 750 - End & Day: 7.20.20 WI-AF-BHOI-GWI-40 from ~40 feet bas for analysis of: - Method 537 Mod (PFAS 18) Ats 7:20.20

PFAS Investigation PEAS Investigation Ault Field Phase 3 Auit Field Phase 3 7.21.20 7.21.20 - Project : Ault Field \$710 - Hold daily thilgate meeting (see PTSP). Discuss: - Task/Activity for the day: -stay hydrated ja restroom advance two borings; collect soil and Giul Samples from each. is available on site. COVID-19 self checks A third location will be installed as a monitoring well. look over utilities in the area; 07300-- Personnel: Jacobs Engineering Jim, the WUTP operator is Annika Seay - FTL (AS)on site and advises crew on Shannon Fitzsivnmons - SSHO (SF. Water lines in the area. Conflict appears to exist at some - Subcontractors: Yellow Jacket Drilling locations. SF calls Jacobs Tony Fehrenbach - HS superviser (TF) management to consult. Tyler Turpin - diller (TT) \$745 - NAVFAC Steven Kterstern visits Alex Forman - assistant (AF) Jeremy Walker-assistant (JW) site to verneve viell beis left for him by David Butter. Steven Reenan Auff site. - PN: 695610CH 08 ØØ -- Meather : 59°F, clear, light wind SF confirms that utilities - PPE: Modified Level D + COVID-19 precautions (face mask) are not in conflict; boring 0810 - Equipment for today's more is Begin hand cleaning BHOPS; this location was moved on site and available. N5 ft N due to a possible 0700 - Field crew meets at the utility conflict. Wastewater Treatment SF calibrates NSI and MULTIRAE Plant (WWITP) K 7.21.20 (see calibration logs)

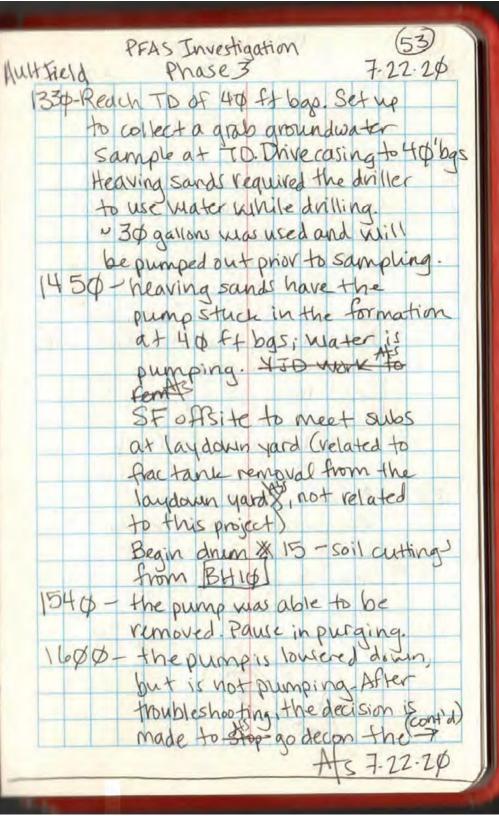
100 C	A REAL PROPERTY OF A REAP	
(46)	PFAS Investigation	PFAS Investigation (47)
U	Phase 3 7.21.20	Ault Field Phase 3 7.21.20
0854 -	very hard soil; still hand clearing	1150 - Begin hand cleaning to
0034	Jim at Whil TP says he closes	5 feet bas
	the LET RANGE PLAN	1310 - BHII cleaned to 5 feet bas.
	the gate at 530 P.M.	May balaars BUS Plug
NOUL	NI foot bas cleared.	Move-to clear BH\$ BH101
Ø984	- SF offsite to get ice. Peter Lawson	1320 - Steve Skeehan stops by briefly
	(PL) communicates that	1420 - Continue hand cleaning BH10
	Janice Hornton will be onsite	15 Prepfordrilling
	today to assist with the well	1320 - continue cleaning BHID
- 1	placement.	Ats continue prop to drill. Rigis
\$945-	TH communicates that she	1415 Set up on BHOP
	Will not be onsite today, but the	the 1330 - begin drilling @ Bttop9
	Well assignment is discussed:	AD+4000 1400 - reach To pt bas. Sand
	BHID will be set as a Well.	is seen in lithology, wet at ~7.5 bys
D950-	- TF offsite; the YJD trailer	Etting driven to 10 ft ; a
4.4	needs maintenence and TF is	water was observed in boning
	vetrieving parts.	~1 ft water column
1015 -	continue hand clearing @ 25ftby	No water is retrieved when the
1115 -	Company (and cleaning to s)	
1110	Continue hand cleaning	bailer is lowered.
	CBH09 Due to the tough	1615 - Set casing to 10 ft bas.
	nature of the hand cleany,	Allow well to sit.
	it is decided to hand clear	1625 - Water not able to be build;
	all 3 boring locations today,	set up for drive a head sampler.
1	prior to starting any drilling.	11e45 - collect field blank
1140	- BHO9 hand cleared to 5 FI bgs.	W-AF-FB01-072120
	Main Har RHIII	AS DIP - Method 537-Mod (PFAS-18)
-	Move 10 print AS 7.21.20	\$5, D Method 537 - Mod [PFAS- [8]

PFASINVestigation (49 PEAS Investigation 48) Phase 3 Ault Field 7-22-20 Phase 3 7.21.20 Auttidd - Project : Ault Field X late entry X Task/ Activity for the day: 1630 - collect soil sample WI-AF-BH09-5B-9.5 advance BHIQ, collect Gul and soil samples; advance BHIL and from 9.5 ft bas for collect a soil sample before analysis of: 一一一一一 - Method. 537 Mod (PFAS-18) Completing as a monitoring well. 1700 - collect groundwater sample. - Personnel: Jacobs Engineering WI-AF-BH09-SB-GW-10 Annika Seay - FTL CAS) from with the for analysis Shannon Fitzsimmons - SSHO (SF Subcontractors: Yellow Jacket Dvilling of: Tony Fehrenbach - HS supervisor -Method 537-Mod (PFAS-18) Begin site cleanup; WeberTP Tyler Turpin - dviller Allex Forman-assistant (AF) gate closes at 1730. Jeremy Walker-assistant (JUP) Begin Drum ×14 - BHOP PN: 695619CH 730- Creve makes plans to meet Weather: 57°F, partly cloudy tomorrow offsite. 1.21.20 PPE: modified Level D + COVID-19 End of Day. precautions (face masks) Equipment for today's work is on site and available for use. \* atcenturt Ø700 - Field crew meets at the Waste Water Treatment Plant 1705-collect (MLATP) Sample duplicate \$ 7.22.20 AB WIT AF BHOR-SI WI-AF-BHOD-GW-16 from 10 bgs for analysis of: - Method 537 Mod (PFAS 18)

PFAS Investigation (50) phase 3 7.22.20 AuttField Ault Field Q7Q5 - Hold daily tailgate safety meeting (see PTSP), Discuss: - COVID-19 precautions and self testing - pinch points - hydration Set up at BHII 0715-SE calibrates MultiPAE and Horiba (see cal logs for details) 0810 - Begin dvilling [BHI] (see boning log for details 0820 - Givis observed at ~9.5ft box Well JD-Take WIL in borehole - it collapsed. Depth of screen will be AKS 8-13 ft bas. 10825 - Begin casing to depth to build 1045the swell Collect SB at 9 St (grab) \$830-WI - AF - BH11-58-9 for analysis of: - Method 537-Mod (PFAS-18) \$855 - Sands heaved to 12 Ft bags 145 When setting the well. Bull screen and casing and clear boring to set the both of the screen at 13 ft 6001 Ats 7-22-20

PFAS Investigation Phase 3 7.22.20 0905 - Screen is lowered to depth (13ftba) SF takes Julto the flightline to begin hand cleaning the boning locations. ODO is notified. \$915 - Begin building the filter pack: \$915-12/20 Industrial Sand toAU Ats 2X 50 16 bags AS 8-16 ftbys \$925-318" Bentonite holeplug depth A. 1×5016 bag Seal is set above the filter pack to NBF+ bas (0930 - Well set; begindleanup and 7 mobe to BHYO WIAF. MW. 1030 Jul goes to hand auger the three borings in the Lagoon. 1040 - Begin drilling BHID sand is we fat 19ft bas; Set up to hydropunch. screen from 10-12 ft bgs 130 - Wil meter is not sounding to indicate hitting GUI. A replacement has been sant to the AJD takes lunch. Af 7.22 E 7.22.20

PFAS Investigation 52) Phase 3 7.22-20 Ault Field Only No in of water is observed  $12\phi\phi -$ (used tape to see where water hit) The will drive the hydropunch dowin further to see if more water will infiltrate. SF back on site. 1210 - Bottom of screen at 12.5 Ft bas Collect SB at 9.5 ft 1200 WI-AF-BHID-SB-9.5 tor analysis of: - Method 537 Mod (PFAS-18) 1225 - pump lowerd. Not pulling Water. Troubleshoot. 1230 - pump is not pulling enough Mater. Switch to disposable bailer. 245-- collect grab GWI sample WI-AF-BHIG-GW-1 @ 11 Ret logs for analysis OF - Method 537-Mod (PFAJ-18) 1255 - Continue drilling to a TD=40f+bas (See boring log for details ALS 7.22.20



PEAS Investigation 54 Aut Field Phase 3 7.22.20 7.22.20 A AS -Drw 6.58 Ats 14.15 Ats 1600 (cont'd) - hydropunch (the crew currently only has I hydroprench; the second on site was defective and a replacement is en voute) and take the grabsample at TD in the morning. 1630 - Clean up site for the evening. Mobe to lay down yard ( Clover Valley ) to decon equipment. (YJD) take measurements at MW-630 - DTW: 6.58 ft bas - TD: 14.15 ft bys 1700 -At decon area: the decon equipment needs maintenance before it can be used. YJD leave to get materials; crew will reconvine tomonoxe. End of Day. 7.22.20 171Qhase

PFAS Investigation 7.23.20 Phase 3 - Project: Ault Field Task/Activity for the day: Collect grab GW sample @ BHID, then abandon boring. Mobe to the Former SIvdge Lagoon and advance 3 borings, graticity Revals soil samples to be Faken, Jacobs Engineering Als - Personnel: Hellow Jacker Dritting CYJE Annika Seay - FTL (AS) Shannon Fitzsimmons -SSHO LSF Subcontractors: Yellow Jacket Drilling Tony Fehrenbach - Hs super. Tyler Turpin - driller Alex Forman - assistant Jeromy Malker - assistant - PN: 6956 10CH whather: 57°F, overcast, windy - Equipment for today's work is on site and available for use. - PPE: Modified Level D + COVID -19 precautions (face macks) \$700 - Creve meets at decon area. Hold tailgate meeting (see PTSP) Discuss: - Covid-1 Cheels - stipstips fall

PFAS Investigation 56 Auitfield Phase 3 7.23.20 7:35 Collect EB on Hydropunch 2550cisted to BH109 7/21/20 GW Sample WI-AF-EB04-072320 collect EB on Hydropinch 7:45 associated to BHID 7/22/20 GW Sample WI-AF-EB\$5-\$72320 X late entry X 0715 - VJD decons the hydro punches Used 7.21.20 and 7.22.20 for collection of equipment blanks. \$8\$\$ - MODE to WHITP. 0815 - Begin prop for grab GW sample at BH 101, 40 ft bas. \$845- Begin pumping: ~2 gallons needed to purge before sampling. The 30 gal throm yesterday has been purged. \$855- Stoke purged dry. Allow for recharge. 0900 - mater produces, then dries up. Very slow recharge. \$930- collect England sample WI-AF-BHID-GW-41 From 41ft logo for analysis of: - Method 537 Mod (See grab G la sheet for details) At 7.23.20

PFAS Investigation 7.23.26 Aust Field Phase 3 (D940 - Begin site cleanup. Abandon bonings w/ bentonite chips. 1000 - Begin mobe to the Former Sludge Lagoons. BHIZ 1125. Begin drilling BH12 see boring log for details 1135 - GILLENIP Ft bas, Set up for hijdropunch. 1145 - collect soil sample JULI AF. BH12-SB. 9.5 from 9.5 feet bas for analysis of: -Method 537-Mod 1155 - collect grab GW sample WII. AF. BHIZ. GWI. 11 @ ] I ft bas for analysis Ot -Method 537-Mod 1315 - Reach TD of 40 ft bas; diillers take lunch. 345 - Take measurements at BHIZI (Drillers lunch over) DTW: 38.8 Ft bas 4600 TD - 40 Ft bas + Baildry Allow recharge. Autraly~ 1/4 gallon purged Ato 7.23:

A CONTRACT OF A	
50 PFAS Investigation Auffield Phase 3 7-23.20	AultField Als PFA Phase 3 7.23.20
Aug Field Phase 3 7-23.20	AUIFField APPFA Phase 3 7.23.20
1410 - no GIN absend in the boning.	1530 - AS offsite to return the
	faulty Horiba and WIL. SF
Drillers pulls the hydroprench upsidowing to the to infiltrate water into	stays with duillers as they
What has his in This shill 4th ft has	Als mobe.
Water is rising. Disstill 40ft by	14-1600 - AS back; mailing at
1425- Begin pumping.	decon area for drillers to
1440- collect sample WILAF: BHIZ-GUL 39	decon the hydropunch for
from 39 feet bas Coump	EB colle n.
intake depth) for analysis	1630-Drillers no ingon well pad
of: (See grab Give sheet for details)	for BH-11 Well
- Method 537-Mod	Chill A.F. MWI. 630 AS mobes
collect sampled MS/MSD	there.
WILAF BH12. GW-39-MS	1739 - Clean up for the day; What TP
WI AF. BHIZ-GW-39-MSD	operator arriver to close the
from 39 ft bas for abal of	gate. SF offsite to return Keys
from 39 ft bys for analysis	to ODO (Keys were retrieved
- Method 537-Mod	prior to work this morning)
	and checks out for the day
1450 - pull hydropunch and casing. Decide not to start another	1750 - Make plans to meet at the
boving today blc decon, mobilization	VIII D Law and V
Would not leave enough time	1800 - End OF Day 7.23.20
to complete a boring and	Jan til
mobe all equipment off the	
aveajos is required by ODD for	Stand
work near the flightline. Il	
work near the flightline. AS 7.23.20	17-

PFAS Investigation Phase 3 PHAS Investigation 60) 7.24.20 7-24.20 Ault Field Phase 3 AultField \$715 - Begin mobe and setup at - Project : Ault Field tormer sludge lagoons - Task / Activity for the day: Advance BHP Band BHi3 to depth, SF calibrater Horiba, Bee collect soil and Gulsamples at calsheet for details. each location Ø820 - Begin duilling @ [BH13 See boring log for details - Personnel: Jacobs Engineering Annika Seay - FTL (AS) Ø830 - met @ ipft bas. Drive Shannon Fitzsimmons - SSHO (SF) - Subcontractors: Vellow Jacket Dvilling (YJD) hydro-punch Collect Field Blank for 0845 Tony Fehrenbach - HS supervisor Former Studge Lagoons at BHIB WI-AF-FBØ1-Ø7242Ø Tyler Turpin - driller Alex Forman - assistant Collect Eulgrab somple D854 Jeremy Walker - assistant WIL AF. BHIJ GWI. 1 - PN: 6956 ipch at lifect bas Chydropunch - Weather: 55°F, overcast Screen from 10-12 ft bas) - PPE : Modified Level D + COVID-19 for analysis of precautions (face masks) - Method 537 Mod (PFAS-18) - Equipment and supplies for today's 0855 - Collect grab soil at 9.5 ft Work is on site and available. WI-AF-BH13-SB-9.5 0700 - Field crew meets at the NI-AF-BH13-SB-9.5-MS WILTP. WI-AF-BH13-SB-9.5-MSD \$7\$5- Hold daily tailgate safety Meeting. Discuss: 0920 - collect equipment blank -COVID19 Setf checks-Beacon on Vehicles for 7/23 off deconned sub PUMP WI-AF-EBDG-072420 - fatique

PFAS Investigation PFAS Investigation 62) Ault Field Phase 3 7.24.20 Phase 3 Ault Field 1210 - Breakfor lunch. Ø950 - reach TO of 40 ft bas. 1240 - Check ML@ BH14 dry. Set up to collect Givigab Advance to 2\$ ft bas Sample. 1305 - GWC-11 ft bas 1010 - Start pump to purge 15 gal set up to bail 3x well (see Gulgralosample sheet volumes (see Gingiabsample for details 1015 - Collect GW sample sheet 1310 - collect soil sample WI-AF-BH13-GW-41 at 41 ft bass Chydropunch WILL AF. BHIH.SB.11 @ 11 ft bas for analysis Screen from 40-42 ft bas) of for analysis of: - Method 537 Mod (PFAS. 18) - Method 537 - ModePFAF-18) 1\$25 1345-Collect grab Gulsample WI. AF. BH14. G.K.I. ZJ Begin cleanup of avea; decon both hydropunches. @ 21 ft bas (hudropunch Screen from 20-22 ft bar) Mobe to BH14 - Mobe and sctup at BH141 11001400 continue drilling to TD of 1140 - Begin dvilling @[BHI4] 40 ft bas # TED collect EB # to on the 1150 - Reach 1\$ ft bas; core is 1405damp@ 9.5-16 ftbgs pump associated with Push hydropunch to 12 Ft bas The the BHILL GUL Sampler: EBØ7 (screen is 10- 12.87 bgs, WI.AF. EBOTE 072420 pump@ 11 ft bas) Preser A for analysis of: 1155 - No water. N 1.54 is detected - Method 537 Mod (PFAS-18 by WIL meter. IT troubleshoots, 1430 - Collect WI-AF-BHH-GW-40 boing will sit during lynch for vecharge, Ats 7.24-20

63

7.24.20

(64) PFAS Investigation Phase 3 7.24.20 Ault Field 1446 - Begin site cleanup; abandon boring w/ bentonite chips 1515 - SF offsite. 1540 - All equipment has been removed from the former studge lagoons The gate is locked. 1550 - Mode to WINTP to pack up the supplies staged there. SE back onsite. AS Chilite, Als AS mobes to lay down yard; 1620field crew en voute. 1630 - Field cremanives. Unloads, decons. 1720 - AS offsite. St stays wil YJD @ decon. 1725- Endof Day 50m7-24-24 MM

65 PFAS Investigation Phase 3 7-25-20 AultField - Project : Ault Field - Task Activity for the day: Avea 27: Advance three borings (BH15, BHIL, & BHIZ) to ground water and complete as monitoring wells. - Personnel: Jacobs Engineering Annika Seay - FTE (AS) Shannon Fitzsimmons-SSHO (F) Subcontractors: Yellow Jacket Dilling (XJD) TONY Fehrenbach - 45 Superviso (CTF) Tyler Turpin-driller (TI Alex Forman - assistant CAF Deveny Walker-assistant (JW) PN: 695610CH - Weather: 55°F, partly sunny - PPE: Modified Level D+ COVID19 precautions (face masks) - Equipment and supplies for today's Mork is onsite and available. \$700 - Field crew meets at the Clover Valley Laydown yard (CVL \$705 - Hold daily tailgate safety meeting (see PTSP). Discuss: - veorking in a high profile area COND-19 self checks 37.25.2¢

(66) PEAS Investigation	PFAS Investigation (67)
Aut Field Phase 3 7.25.20	Aultriad Phase 3 7.25.20
Ø715-Mobe to Avea 27; begin	1930 - collect grab soil sample duplicate
	WI-AF-BHIT-SBP.53
staging equipment and	from 53 ft bas for analysis
hand cleaning boring locations.	from 53 ft bgs for analysis
\$745-SF offsiteto return to CVL	- Method 537 Mod (PFAS-18)
for oversight involving IDW	ILLE D'ILLE CONTRACTOR FUICA
vemoral for another project.	1115 - Driller required water to flush
Drillers setting up on BHIFI	out the boring due to mud.
\$840 - Collect Area 27 Field Blank:	Gallons used: 75 gallons
WI.AF. FB01. 072520	1130- Begin setting monitoring Well
for analysis of:	WIPAF. MUL- tost af 1625
- Method 537-Mod (PFAS-18)	former boning BHI71 TS
0845 - TF affsite for the day:	Cee well install completion diagram
Continue setup@ BH13	for details). Screen: Ø. 1020-inch
Ø855 - Begin drilling BHIF	machine slotted from 50-60 ft bas
\$950 - Reach 50 ft bgs; no Gul.	1140 - Begin building the filter pack:
Consult vi Jacobs Management	- 12/20 industrial sand
tam. Continue until GM	- quantity: 4 X 50-16 bags
is found@BHI7].	- depth: 50-48 ft bas
1005 - GW is abserved in the	1205 - Begin building the seal above the filter pack, and adding
50-60 foot nun@~53'bas.	the filter pack, and adding
Prep. to set a well. Boring complete.	bentonite chips to v3ft Win
1025 - callect grab soil sample	ground surface
WI AF. BHIT. SB. 53	- 3/8" Bentonite chier Holeolua
@ 53 ft bas for analysis of:	- manity: 425 12×5015 mas
- Method 537 Mod (PFAS-18)	- depth: 48-55+ bas Af 7.25.20
ALX 7-25-20	Att.
1-2	

(68) PEAS Investigation	Aust Field PFAS Invatigation (69)
AultField Phase 3 7.25.20	PHASED 4.75.70
1230- Well AF. MW. 625 Installation	1540-Dam X25-BHIZAS
complete. Break for lunch.	AU JUI. AF. MW. 625 surface
Driller informs AS that we do	sconglations
not have enough water to	Hetticompietion will not
complete another melli if the	be completed today due to
Same conditions at BHIF	the lack of Water left on
are at the other this site	Site. The Hincomplet
borings.	Theft completion is secured
1315 - Begin mobe to next location	for the duration until
BHILD. Lunchover.	drilling vesumes.
Drum * 21 = BHI7, full	1630 - AS offsite for the day.
Drum *22: BH17, full	SF remains onsite until
Tote * 2: BHI7	cleanup is complete and
1420 - Begin drilling @ BH16]	all equipment and supplies
See boring log for details	tefting left onsite are secured for the duration
Drum X 23 BH16, full	secured for the duration
prum × LA BHIL , tul	until dvilling renume.
1515 - Reach TD of 60ft bas.	End of Day- 1.25.20
GWI observed ~ 53 ft bas.	ut 7.
1520 - Take grab GWI sample WII: AF-BHIL-SB-53	Con Con
WILLAF- BHIL. SB-D2	
C DS ft bas tov analyss ot.	mys
153 d = D	
1330 Begin cleanup. Do mett sufface	
C 53 ft bas for analysis of: - Method 53 7 Mod 1530 - Begin cleanup. Do totett sufface completion Chr. AF. MN1.1025 AS 7.25.20	
A-57-03-20	

PFAS Investigation Authad PFAS Investigation Phase 3 7.27.20 Phase 3 -Project: Ault Field 7-27-24 AUHField - Task Activity for the day: 0730 - hold daily tailgate safety meeting (see PTSP) Discuss Atto complete BHILD as monitoring -traffic amareness safety MILLING F. Maril 1926 ; advance BHIS to a maniforing ground mater while working in a high profile area. and complete as a monitoring well. - plant for mobe to next site. - Personnel: Jacobs Engineering Prepto set well 0300-Annika Scay - FTL (AS) UN. AF. MU. 626 at boning Shannon Fitzsimmons- (SF) STHO Subcontractors: Mellow Jacket Drilling take measurements at Tyler Turpin - duiller (TT MULAFMW1625 Alex Forman-assistant (AF) TW1: 35.37 ff BTOC Jeremy Walker-assistant (Ju) Tony tehrenbach - HS super (TE)AA 59.85 Ft BTOC casing is ~ I ft above ground - PN: 695610CH Surface completion as - meather: le3"Fickear flush mount to be completed - PPE: Modified Level D + COVID 19. -today. precautions (face masks) \$815 - sand is heaving TD to Equipment: all equipment for todays 59 At bas. AS okays Mork is on site and available. Setting screen from 49-siftby \$700 - Field crew meets at Clover Valley Ø82Ø -Begin setting the salel Laydown Yard (CVL) and preps WIL AF. Mid-624 for the day's work see well completion diagram 6715 - Mobe to Avea 27. for details AJS 7.27.20 27.20

72 Arest Field Phase 3 PFAS Investigation 7-27.20 \$825 - Buildfilterpach -12/20 industrial sand - quantity used: 4 x 500 16 bags Sand: 49-47 filbys 0900-Building seal and grout to top - 3/8" Bentonite Hoteplug \$ - quantity used : 0935 - Wellfull AF. Marl. Lezin installation complete. Mobe to BHIS J. Set up to drill Chand cleannie completed 1030 - NAVFAC Steve Skeehan stops by to check progress. Brief visit. 1040 - Sheehagoffsite. Begin duilling BHLS (see boing log for details) 1129 -Observe GHI @ N47 ft bas in lithology. 1146 - Collect soil grabsample WH. AF. BHIS-58.47 from 47 ft bas for analysis - Method 537-Mad 1145 - Discuss findings WI Jacobs Management. Continue (7)20

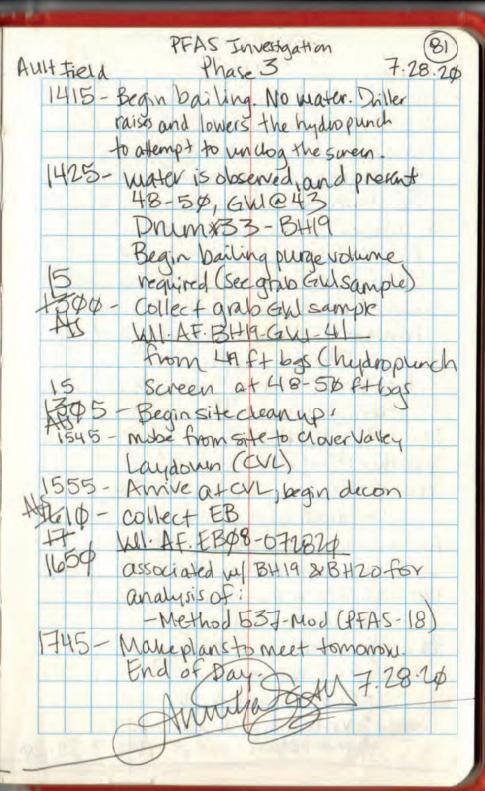
PEAS Investigation Phase 3 7.27.20 Aut Field 1145 (contra) - divilling to log ft bys, and complete the well like the other two set at Avea 27: screen from 50-60Ft bas Break for Innch offer Veaching TD of let ft bas Drum # 25 - Surface completion # 1215-Drum \$26-BH15 1245 Unch over Set up to HJ 1315 build promitaing well WIAF MW 627 1315 - Lower screen to depth (50-60 St bas) See well completion diagram for details 1320 - Begin building well filler pack - 12/20 industrial sand - quartity used 5x50 (47 Ath. 1400 - Begin building seal Elerace) -3 8 Bentonite Hoteplug - quantity -12 × 50 16 base 1415 - complete Jul AF. MILL 62+1 Begin Site cleaning Surface WI- AF. MW-627 at WILLE MW. 625

(74) PFAS Investigation Ault Field Phase 3 7.27.20 1500 - SF offite to provide oversight for FRAC lance removal for My another project. Ats Continue site cleanup. Sufface completion done at WII-AF-MUI-lezla Move to WI AF-MUL-627 for sur completion 1700- Sulface completions done Load up and mobeto CNL 1715 - Annive at CVL. Decon and prep for work tomorrow. 1740 - End of Day

FFAS LUNC . J (76) PEAS Investigation 728.20 Phase 3 Ault Field Ault Field Phase 3. 727.20 - Project: Ault Field 1500 - St offile to provide oversight Task activity for the day: Advance two bonings at Area 14; for FRAC tank removal for Als Collect soil and ground water grab -another project. Ats Continue site cleanup. 630- Shifale completion done at samples. - Personnel: Jacobs Engineering WI-AF-MW-626. Move to Annika Seay-FTLZAS) WI AF MW-627 for surface Shannontilizsimmons-SSHO (SF) - Subcontractors: Yellow Jacket Drilling (YJD) completion 1700- Sulface completions done. Aavon Adams - HS supervisor (AA) load up and mobeto Tyler Turpin - driller (TT) WL. Alex Forman-assistant (AF) 1715 - Arrive at CVL. Decon and prep Jeremy Klaiker-assistant (JW) for work tomorrow. 1740 - End of Day - PN: 695614CH 7.27.24 - Weather: 55°F, partly sunny - PPE: Modified Level D+ COVID-19 precautions (face masks) - All equipment and supplier for today's mork are on site and available tor use. Ø700 - Field craw meets at Clover Valley Laydown (CVL) yard (5710- Hold daily tailgate meeting (see PTSP). Discuss: - COVID 19 self checks - complacency - mobilization 7.28.20

PFAs Investigation Phase 3 TTAS Investigation Auit Field Phase 3 7.28-20 7.28.20 AultField Ø720 - Stand AA mobe to site Arealy 0945 - begin drilling BH2\$ 1015 - Gill observed in 310-49 ft bas to confirm parting and staging set up to use hydropurch areas. Q740 - SFand AA back on site. 1020 - Collect soil grab sample WI.AF. BHEG-BSB-30 Continue prep to mobe to from 30 ft bas for analysis Avea 14. D745 - Label dryms: of: - Method 537-Mod (PFAS-18) Dx 28 - hebbish - full DXX 29 - dhillesh - full 1\$30 - Hydropunch @4p-42 ft bas Dax 30 - millish - full DTW= 37 ft bas Begin bailing required purger volume (~2 gallons) 0815-Mobe to Avea 14. 1100 \$820-Anive at Avea 14. Begin collect field blank setting up to begin drilling. \$845 - Tal measurements WIL AF 877 FB-072820 1105 @ MH= 14-MW-2 collect grab GW sample HILL AS -DTW: 14.35ft bas WI AF-BH20-GWI.41 - TD: 46.30 ft. from 41 54 bgs (hydropunch Scheen 40-42ft bas 1115 Report into back to Jacobs Nº 1130 Begin clean up and mobe to Management to see if this poset up at BH19] AA and 3×F Will effect boing tepths. STASF mobe to Frmr. Bldg. 420 YJD hand clears borings m × E and to scope out areas to park s E and equipment and store supplies BHIG and BHZ\$ to 5Ft bgs each. States this afternoon. At. 7. 0915 -Jacobs manadement communic ats 2-grab Gud, 1-soilgrab At: 7.28.20 s 7.28.20

the second se	1240.00
(B) PEAS Investigation	
	7.2.8.26
* late entry from 7.27.20:*	
- N75 gallons of mater mas used by	1714
the dillers when advance setting	
WI. AF. MW. le Zle and WI. AF. MW 6-	17
This will need to be purged during	01-
development.	
1145 - break for lunch	
1215 - Unch over Set up to drill.	
1225 - Begin dhilling BH19	
(see boing log for details)	
1310 - GWCN37 ft barper	
littale in last ant - Non -	
lithology, but not a Very	
large water bearing zone. Punch to 40-42 ft bas.	
1320 - No Water in boning.	
Move hydropunch up to	
37-39 ff bgs-Allow	
1340 NO GUI Guinfiltration.	
1340-NO GUL Contact Jacobs	
Managementidecide toyo to	- A
50 ft bas to find a more	
productive zone.	
	ser
Take measurements;	
NI ft Water. 48 50 ft b. hudropunch screen Atc	gs and
- Als	7.28.24



PFASINvestigation PEAS Investigation 82 July 29 202 Ault Field 7.29.20 Phase 3 Phase 3 Ault Field \$715- prep to mobe to Bldg 420. - Project : Ault Field \$745 - mobe to Bldg 420; begin staging - Task/Activity for the day: equipment Advance BHi8 at Bldg 420 to \$890- Begin hand cleaning BH18 1 to groundwater and complete as a 5 feet bas. monitoring well; collect a soil sample. BH18 Cleared set up to drill 0930-- Personnel: Jacobs Engineering 0945 - Begin duilling BH18 Annika Seay - FTL (AS) See boring tog for details Shannon Fitzsimmons - SQLO (SF) 1815 - A+ 20 ft bas; somewater - Subcontractors: Yellow Jacket Drilling (YJD) at 20 ft bas; continue to Aaron AAJ Adams - HS Supervisor AA 30 ft bys Tyler Turpin-duiller (TT \$25- At 30 ft bas: some zones of Alex Forman - assistant (AF) Allaveseen, but in between Jeremy Walker - assistant (JW) confining units Continue to - PN: 695610CH 46ft bgs. Drum \*34-BH18-ful - Weather: 54°F, overcast, fog - PPE: modified Level D + COVID 19 1030 - At 40 Pt bas; Zones of precautions (face masks) Water production are seen at - All equipment and supplies for today's 34ft bas and 37ft bas, More is an site and available for use. but not much Gul is observed 0700 - Field crew meets at Clover Valley in the boing. Peter Lawson Laydoven (CVL). Consulted: wait NIhr for rechase. Ø705- Hold health and sately meeting 130 - AS communicates with Jacobs (see PTSP). Discuss: management that the boring is slowly - COVID 19 self checks Vecharging. Get OK to set, sureen - visibility (fogfrom 30-44 ft bog 115+71:2 57.29.2¢ - mobilization

PFAS Investigation PFASInvestigation 84) 7 29.20 Phase 3 Phase 3 Ault Field Ault Field 7.29.20 140 - collect soil grab sample KII. AF. SB18-34 Drim \* 35 - B#18- fill 1245 - Break for Innch 1315 - Confide completion at Als from 34Ft by for analysis of: WILAF MW. 631 - Method 537-Mod (PFAS-18) Begin site cleanup. 1400 - Continue Surface completion and 1150 - collect field blance KII AF. FB\$ 1.072920 site cleanup. Pack samples for shipment. for analysis of: -Method 537 Mod (PFAS-18) 1500 - SF offsite to ship samples. 1155 - Begin building 1520 - surface completion done. 155050 WII. AF. MW. 63 (a) BH18 Mobe to CVL Anive at CVL. Parkequipment (see well completion diagram) 16ØQand make plans to meet - surcen: \$.\$2\$-inch machine spited tomorrow morning. - depth: 40-30 ft bas 1630-1200 - Begin building filler pack - 12/20 industrial sand Return to hotel to do papernersk End of Day 7-29.20 - quantity used: 5x5016 bags ) where filter pack depth: 30-28 ft by mutto 1230- Begin building seal and grout to ~5 ft bas (note: 3/8" bentonite chips used from top of filter pack to v5 ft bas; no grout slumy -3/8" bentonite holeolug chips AFS quantity used: 545 9 × 50 16 bags AS7.24.29

	0CH.04.FI.WI 8/10/2020	695610CH.04.FI.WI S/1020
Lask :	Well development	yetting more
Personn	el: C. Gardner (Jacobs); J. Davis (yellow Jack)	1500 Mob to MW-625
Locatio	n: Hult Field, Oak Hulber, WA	1515 Begin Surging MW625
veather	: Fog in AM, Slear, Sunnin PM	15 30 Finish baling Surging begin beiling
0810	G. Gardner Meet ) Davis of	1555 Firish bailing, set up pamp
	Clover Valley Laydown Yard.	Kols Begin pumping, see development log
	unlad coolers & sampling supplies	for parameters
	by IDW totes	1830 Stop pumping; Turbdity 15 5/11 ~ 700 NT
0830	Mob to Area 29	will continue pumping tomorrow morning
0840	Road plate + skid Steer will not	1845 OFF-Site
	arrive until tomorrow; need road plate	
	to access MW-629 and 628	
0855	Mob to Area 27 via Charles Porter	2020
	Gate	102
0915	Arrive at Area 27, Icrate wells.	
	J. Davis set up trailer at MW-026	
0925	Hts meeting	N207
0945		
1010	Finish Surging, begin builing	Petro
1055	Firvsh balling, ~ Scallons bailed	may
11.15	Begin pumping ~2.3 gpm; see development log	
13/0	Finish pumping, remove pump	
1345	Finish pumping; remove pump off-site to empty tank at IDW	
1350	only 2 300-gal totes are empty	
	J. Davis Call A. Adams to ask about	

NASWI	Ault Field Phose 3 PFAS SI CH.CU.FI.WI SIII/202-	NASWI Ault Field Phase 3 51 695610CH.04.FI.WI 8/11/2020
	-1-1-0-0	1420 Finish surging, stort builing
Tusk .	Monitoring will development	1430 Finish bailing, ~2 gallons bailed
Pirsonni	1. G. Gascher (Jacobs); ). Davis (Yellow Jaket)	Sct up pump
Laation	Ault Field, Var Hurber, WA	1450 Begin pumping 20.25 ypm
Weather	- Cloudy, Fuggy in AM, 56°F	1950 Begin pump 19
	Sunny, Ogin 11	1500 well purges dry 1520 G. Gardner drive to noter to get
0700	Meet at Area 27 Hots meeting	15-20 G. Gardine arrest tubing.
0722	Resume pumping at MW-625	1540 G. Guidner return to Area 29
0758	Finish development, stop pumping	Set up sampling pump
	Act Off	1630 Begin pumping ~0.08 ypm
0740	Begin surging + Bailing at MW-627	Land Milling de Charge harge
0758	Finish pumping at MW-625, 89.9 gelac	1718 well purges dry, slow recharge will allow to recharge aver night
0830	Firish bailing at MW-627, "4gal"	1500 J. Davis Begins Surging MW-629
	pailed	1530 Finish surging MW-629; Begin bailing
0847	Buy in pumping at MW-627, See	( 15 30 11951 sugging 11 (2)) MW-629
	doilelooment log	1600 Finish bailing MW-629. will begin pumping
1140	Stop pumping tinished developing	
	MIN-617, 45 12 gel purged	tomorrow morning
	Pock up to Mob to Area 29	1800 Off-site
1200	Lunch	
1300	M-10 + Area 29	PIN
1315	Reference road plate from Clover Her Valley Laydown Yard	2020
100	Villa Landon Yard	×0
122		Legt 1
1320	Set up spread rig at MW-628	
1330	Begin Surging MW-628	
1400	Degin surging into load	

NASWI Ault Field Phose 3 PFAs 51(45610CH 04.FI.W)8/12/2000Task: Monitoring Well development8/12/2000Pasonnel: Jacobsi G. Chardner, A. Vogt95610CH.04FI.WIYellow Jacket: J. Davis.9000000000000000000000000000000000000	
Task: Monitoring Well development <u>Pasonnel</u> : Jacobs: G. Chardner, A. Voyt <u>yellow Jackiet</u> : J. Davis. 2600 meet at Claver Valley laydown yard Hat 5 Meeting 2620 Mob to Area 29 augus to be formation surd i 100 Cell P. Lawson to discuss optic Decide to add Clain water to well and surge and bail again augus to be formation surd is that 5 Meeting 2620 Mob to Area 29 augus to be formation surd is 100 Cell P. Lawson to discuss optic Well and surge and bail again augus to be formation surd is 100 Cell P. Lawson to discuss optic Decide to add Clain water to well and surge and bail again augus to be formation surd is that 5 Meeting 2620 Mob to Area 29 augus to be formation surd is 100 Cell P. Lawson to discuss optic 100 Cell P. Lawson to discuss optic 100 Cell and surge and bail again 100 Ce	0
Personnel: Jacobs: G. Chardner, H. Vogt yellow Jacket: J. Davis. Goo next at clover valley laydown youd Hot 5 Meeting C620 Mob to Area 29 augus to be formation sand i than filter pack 100 Cell P. Lawson to discuss optic Decide to add Clain where to well and surge and buildagain augus to be formation sand i than filter pack 100 Cell P. Lawson to discuss optic Decide to add Clain where to well and surge and buildagain augus to be formation sand i that 5 Meeting C620 Mob to Area 29 augus to Mob to Area 29 augus to Bayin pumping at MW-629 with developing and 100 Add ~ 8 add to Mot Clean	00
yellow Jacket: J. Davis. above next at clover valley laydown youd 1100 Cell P. Lawson to discuss optimistic to the sold clain writer to the sold clain writer to the sold clain writer to the sold build again above Bayin pumping at MW-629 with developing and build and surge and build again above cleans	the
100 Cell P. Lawson to discuss optimities of the solution of th	
0620 Mob to Area 29 aby Bayin pumping at MW-629 with developing and 120 Add ~ 8 surge and bail again	ns.
aby Bayin pumping at MW-629 with developing and 120 Add ~ Real to AW rect	-
0640 Bagin pumping at MW-629 with deviloping 1120 Add ~ 8 gal to Aw Clean 0645 Well purges dry's Slow recharge. 1120 Hold ~ 8 gal to MW-629.	J
0704 will allow MW-629. Water to MW-629.	
V/O4 will allow $V/M - lot a - lot$	
0709 Will allow MW-629 to recharge which DTW=28.62	
W pump MW-628. 1130 Begin Surging	
- A- Vigt off-site to purchase sup	nlic 9
0721 Resume pumping My-628 at Grocery Store + Home Depot. 0805 well dry 1145 Finish Surging	-
	-
Terminate development at MW-628 ait with water	79
0835 Mob to MW-629 DIV-67.C	n
080900 Restart pumping with sampling Stop bailing	*
pump. Pump is pulling sand with water 1230 DTW= 64.50	
0913 Well is dry's Allow to recharge Call No Badon to Large about who	Hine,
1000 Attempt to pump again to try to pump some more, Devic	0
- to terminat and anot lift	
- wave to say face / W-Q+9	
1050 Pump is stuckin will 1245 Clean up site	
1045 Able to disladge + remove pump 1330 Remove road plate	
AB I DE	

NAS whichbey Island Phase 3 pEAS SI 69501000 04. FI. WIJOY. FI Juse 8/13/2020 NASWI Ault Field Phase 3 PFAS SI 645 GOCH OU.FI.WI Task: Menitoring Well development, Gw Sampling 8/19 8/1220 1345 ). Davis remove casing filling ditch Personnel: G. Gardner, A. Vogt -vation: Hult Field, Oak Harbor, WA 1400 Transfer -140 gallons to 10w tote 1415 Mob to UNTP MW MUCOMW-630 Weather: Mostly clear, high of 68 of low of 52 °F, winds from usu 8mp. 1430 Assemble surge block 1445 Surge block will not yet past juint at top of screen. call N. Badon 0600 Meet in hotel lobby 0620 Mab to Ault Field him Charles Porter tu discussoptions 0630 Arrive at wwtp-MW-630 1515 (lean up 1545 Mob to MW-603) Calibrate Horiba and PID. 1600 Air monitoring device and indicates 0700 prepare surge and bail equipment high LEL, co, and H25 0730 Begin Surging + Bailing. LEL: 30% 0845 Finish Surging and builting (0. 314 ppm Prepare to pump H25: 7.7 ppm 0900 unable to yet pump past the choice Leave well open to breathe raint at the top of the screen over night 0/15 pack up and mob to MW-631 1610 Mob to Home Depot to get supplies to surge and bail while we want for to fix surge block. hear from N Badon. 1700 Finish building alternative surge block 600 Besin Surge + Bacil End of Field Activities 1205 Finish bailing -15 gallons 8/12/2020 Anit Day Note. J. Dun's offiste set up pump 1245 A voit mob to ent transfer 15 get purge water to totes at clover valley Note: (- Escola 1300 cell with N. Badon, P. Lawson t 5. skeanan on-site for site visit at 0930, Off-site at 0935 - Het 8/12/200 and H Perry to discuss difficulties

NAS Whidbey Island Ault Field Phase 3 PFASSI NAS Whidbey Island Ault Freid Phase 3 PFAS SI at MW-630. 2 MW Pumping at MW-631 begins at Tasis: Cuoundwater Sampling Stuff: G. Gardiner, A. Vogt 1413 Well runs dry for 3rd time. End ocation. Ault Field, Oak Harbor, WA Weather: (lear, Sunny, high of 70°F, low of 52°F 1449 Mob to Clover Velley, Prep for GW sampling Winds from SE 5 mph 1530 Mob to Former Wirtp MW-21 1000 Meet in hotel lobby, Mob to Ault Field 0620 Seal Hts meeting. Discussion 1540 Drop pump down well 1552 Begin purging see sample data sheet for about sun exposure and protection 0630 Search for MW-14 and MW-20 1640 Collect Sample W-AF-MW-21-0820) 0715 Calibrate Horiba and PID. 1650 Clean up 08 0730 Mob to MW-14 1701 Mob to Clover Valley Lagdarry rd 0800 Lower pump into well 0815 Begin purging, see sample dect sheet (Stop to get ice) 1730 Collect EB from pump tur de tuils 0910 collect sample WI-AF MW-14-0820 W-AF-EB01-081370) ASE MS. / WI-AFEMW-14-0820-MS 1735 Collect EB From tubing 0130 MSD. W1-4 RMW-14-0820-MSD WI-AF-EB02-081320 0950 Collect EB from pump WI-AF- EB01-081420+ 1750 OFF-Site 0945 Resume search for MW-20 End of Field Activities 0950 Locate MW-ZO \$13/2020 Henrit Landner 0955 Mos 10 MW-20 1005 Put pump down well 1014 Begin purging 1050 Collect sample W1-A52-MW-20-0820

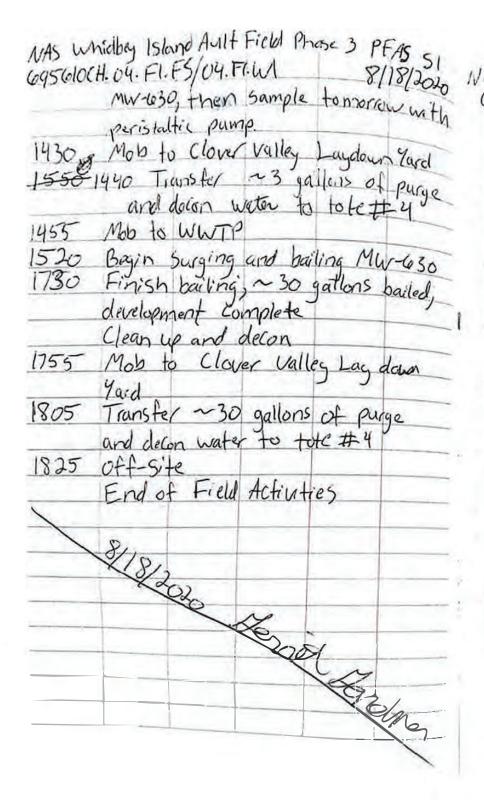
NAS whidbey Island AultField Phase 3 PEADSI was whichbey Island AultField Phase 3 PEADSI NAS whichbey Island AultField Phase 3 PEADSI 10055 Collect FID WEAS2-MW-20P-08200 CH5 Gloch 04. FI.FS from tubing Lot # 265 695610CH.04. FI.ES 1055 Collect FD WI-A52-MW-20P-0820 8/14/2020 1605 collect EB from tubing Lot # 2658309 1100 Clean up and decon 1720 collect sample WI-AF-MW-626-0820 W-AF-EB02-0314201 1115 Mob to Area 14 1130 Locate 14-MW-2 1725 Clean up and decon 1725 Clean up und use Valley Laydown Yord Set up for sampling Note: -25 gallons of purge and decon 1200 Put pump in well writer were transferred to tote 1210 Begin purging; see Sample data sheet for details #4 1300 Collect Sample W- 414-MW-2-0820 1810 OFF-5:te End of Field Activities 1315 Clean up and decon 1333 Mob to Gallery Golf Course 1345 Talk to Club house attendent about Stand a accessing pump house 337 to callect Sample from Aut Field well #1 Manager is not available to give us the Keys, leave our contact into and mob to clover valley Laydown yard. 415 Lunch Janknut 1445 Mob to Area 27 1500 set up at MW-626 Begin purging, see sample data 1523 Sheet for details. (all from B- Lund Lindgren Golf Course manager. He will leave keys 1530 to gate at club house desk

NAS Whidbey Island Ault Field Phone ?	NAS whidbey Island Aut Field Phase 3 PFAS SI 645610(F.04.FI.FS 8/15/2000
645010 CH. OH. FI. FS PIAS SI	was whidbey Island Hart Mich 8/15/2020
	645610CH.04.FI.FS STITUD
Start. C. Company SSUN	
Location: Ault Field, Oak Harbor, WA	1210 Mob to clover valley
Weather . Clear Sky him Harbor, WA	The full of the fu
Weather . Clear Sky, high of 74°F, lowof 56°F winds from NWW 2-4 mak	1215 Water to tote # 4.
Winds from NUW 2-4 mph Closo Meet in hotel Jobby Mah to She	1220 Mob to Callery Croit Cours 375 337
Mob to Clover Valley	alia Va. to Deverig
0645 Hts meeting	ant rall MASUL Security
0645 Hts meeting, discuss lifting heavy totes full of water	
0700 Mob to Area 27	121- Sounds officer Hirrors of gains in
0715 Calibrate Horiba and PID	officer ages vior vive in the
0730 Set up at MW-625	Access pumphouse through golf course
0810 put pumpin well	1350 Begin Flushing spigot closest to well head. Need to turn Knob on pump
0815 Begin purging, see sample data	Control box to "hand" to use get water
sneet for details	
0935 Collect Sample WHAF-MW-625-0820	1400 from spigot 1355 Collect sample [WI-GC-W1-0820]
0940 Clean up and decon	1400 Discharge Flushed water from bucket
0950 Move to MW-627	to ground outside pumphouse.
set up sampling area	1410 Mob to Golf Course Club house, return
1019 Put pump in well	Key
1074 Begin purging; see sample date sweet	1415 Mob to Clover Valley Laydown yard 1420 update drum Jabels
for dotails	1420 update dram labels
1132 Colloct Sanolo IWI-AF-MW-621-08201	1430 1445 Mob to get photos of ground around
1150 Callert EB Front Purpo WHAF-EBO-02520	wells at Area 29, wwTP, and former warp
1200 Collect FD [WI-AF-MW-627P-0820]	1430 1445 Mob to get photos of ground arcune wells at Area 29, wwTP, and former wwTP 1507 Cannot Access MW-630, road Closed
AS	

8/15/2020 6956/0CH.04.FI.FS PITT was whiches Island Ault Field Phase 3 PEAS SI 8/17/2020 1510 Mob to holel Task - Croundwater Sampling (monitoring well End of Field Activities Staff: G. Gardner (55HO); A. Vogt (FTW) Location: Mult Field, Oak Harbor, WA weather: scattered clouds, high of 75 °F, low of 57 °E, winds from SW 7 mph 0725 Meet at clover valley Loydown yourd. - Don PPE - lood supplies into truck 0745 Calibrate Huriba and MultiRAE 0800 H+S meeting; discuss importance of Changing gloves frequently 0815 Mob to Alca 29. 0820 Carry supplies and set up at MW-628 0900 put pump dawn well 0910 Attent to start pump; pump is not working May Marine botters may ret have sufficient Charge to run pump. 0920 return to hotel to charge marine battery 1040 Buttery is charged Mob to MW-628 1100 Attempt to run pump. Battery not able to sustain pump when under load 1120 connates control bix reading unstable Voltage autput

NAS Whidbey Island Ault Field Phase 3 AFAS SI G956602 A. 04- EL-ES 1120 connect control box to truck batter 1000 NAS whidbey Island Ault Field Phase 3 PEAS SI is stable parlane to truck batter to puge dry sampling method to puge dry Allow to recover 1120 connect control box to truck battery, voltage is stable. Problem is likely that the 8/17/2020 100 well is dry. Allow to recover marine batters is old and faulty. It will overnight, will collect sample run the pump at lower Voltage, but will fail under 2-13 volts 1200 call N. Badon. <u>celler</u> discuss options when well has recovered to 90% 1655 clean up and decon 1715 Mob to Clover Valley Laydown and decon water to to te # 4 for for getting a new buttery. 1230 Mob to store to buy new marine 1730 OFF-site End of Field Activities 1300 Lunch 1340 Begin pusging MW-628 with 1440 Excessive draw down at minimal 8017/2020 flow, charge to purge dry method 1456 Well is dry. will allow to recover over night and context sample with after Here Aller 1500 Claim up aix decon 15-15 Mob to MW-629 1555 Lower punip into well Begin purging MW-629; 500 Sample 1605 data sneet for details well has excessive drawdown with 2 100 ml/min flow rates put chage 1640

NAS Whidbey Island Aut Field Phase 3 PFAS SI 695610.09. Ft. FS/04: FI.WI 8/18/2020 NAS Whidbey Island Ault Field Phase 3 PFAS SI 695610CH. D4. FI. FS/04. FI. WI 8/18/2020 Task' Monitoring well sampling, Mwcleulament 0925 Receive permission to sample MW-Staff G. Grandmer (SSHO), A Voy + (FTU) 62% and MW-629 withat waiting Location: Ault Field, Oak Hurbor, WA to for 90% recovery Weather Partly Cloudy, high of 72 F, low of 56 °F, wird From SW, 13 mph 0930 deplay pump in riv 70-55 6252 0950 Collect Sample WI-AE-MW-625-0500 0930 deploy pump in MW 70 25 0710 Meet in notel lobby 1000 Mob to MUT 629 1020 Deploy pump in well 1030 collect sample [w1-AF-MW-629-0820] Mab to Clover Valley Laydown Lard 0730 Calibrate Horiba and MultiRAE I Have trouble changing multiRE 1035 Clean up and decon Buttery pack. 1100 Mob to WWTP 0815 Ht 5 meeting. Topic use of hand 1125 Set up at MW-631 1130 Elevated gas readings; allow well to tools, right tool for the task 0830 Mob to Area 29 vent 0840 Carry Supplies to MW-628 0853 Check DTW. DTW= 5587 1150 Deploy pump in well 631 1208 Begin purging water level mas not yet recovered 1340 Collect Sample WI-AF-MW-630-0820 to 90 % of initial level MS: W-AF-MW-631-0820-15 65.9-55.87=10.03 MSD: WHAF-MW-631-0820-MSD 10.03=17.88= 0.77 1350 Clean up and decon WL is only 77% of initial 1405 Take Field blank 0900 Check OTWat MW-629 WI-AF- FB01-081820 1415 Take EB off pump DTW- 57.17 64.4-5717-12.23 WI-AF-EBOI-081820 17.23 = 74.69 - 0.50 1420 Messaye from N. Budon. Will WLis Caly 55% reconced attempt to use bailers to develop.



NAS Whidley Island Ault Field Phase 3 PFAS SI 695610CH. OU.FI. FS/04.FI.10/04.FI.W.8/19/2020 Task IDW Sampling, monitoring well sampling, monitoring well development Staff. G. Gardner (SSHO), A. Vogt (FTL) Locution Ault Field, Oak Hurber, WA Weather Mostly clear skies, high of 73 F low of 59 °F, winds from SE 4 mph 0630 A. Vogt mob to Pine - Environmental to pickup peristultic pump 0700 G. Gardner obtain IDW Sampling supplies from hotel Front desk 0730 Mob to Clover Valley Laydown Yard 0745 Begin Sample management + QC 1000 Finish Sample management Re-label drums due to fuded lubels 1100 Begin Sampling Soil IDW 1115 A. Woyt returns with peristultic pump 1230 Collect Soil IDW Sample-Composite From drums #1 - #10 WI-AF-10W-50\$1-081920 13309 A Vogt Mob to MW-630 to Check turbidity-1330 Collect IDW Sail sampling compose te from drums # 11-100 #20 WI-AF-IDW-7 00 A vost return to clow 50\$2-081920

NAS whichbey Island Ault Field Phase 3 PFAS SI 695010CH.04.FI.ID/04.FI.FS \$ 8/19/2020 Collect Soil IDW Sample From drums #21-#28 + #32-#33 1430 WI-AF-10W-50\$3-081920 Collect Soil IDW Sample from 1575 drums # 34-#36 601-AF-10W-SOØ4-081920 1550 Collect IDW water sample WI-AF-IDW. from totes # | and #2 /AQQL-081920/ 620 Mob to MW-630 1630 set up at well Calibrate Horiba and PLD 1656 Begin purging MW-630, SKe sample data sheet for details Take EB from 14" tubing 1715 WHAF- EBOI-081920 730 Collect Sample WHAF-MW630-0870 Clean up and decon 1740 1745 Mob to Clover Valley 1757 Transfer ~ 25 gallons lof Purge und decon water to tote # 4 Collect IDW water Sample From 1800 totes #3 and #4 WFAF-10W-AQ92-081920 Clean up, decon, pack coolers off-site, demob to ware house 1815 850 8/19/2020 Devit Servin