

1 June 2021

Mr. Robert Cilek
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

**Subject: Trip Report – Monitoring Well Installation and Investigation-Derived Waste Disposal – May 2021
Former Florida State Fire College
1501 W Silver Springs Blvd, Ocala, Marion County, Florida
ERIC_5641
FDEP Contract HW550, Task Assignment SOL-0A118, Subtasks 4 and 6**

Dear Mr. Cilek,

Geosyntec Consultants, Inc. (Geosyntec) has prepared this Trip Report summarizing the installation of monitoring wells using the rotonic drilling method at the Former Florida State Fire College (FFSFC) located in Ocala, Florida. The objective of this investigation was to assess the extent of groundwater that was previously documented to be affected with per- and polyfluoroalkyl substances. This Trip Report also summarizes the transportation and disposal of investigation-derived waste (IDW). Geosyntec completed activities under Task Assignment SOL-0A118.

Between 17 May and 27 May 2021, Geosyntec completed the following activities at FFSFC:

- Observed a private utility locate to identify any potential subsurface utilities or obstructions;
- Established the staging area at FFSFC for equipment, materials, and IDW;
- Observed the construction of the decontamination pit that was used throughout well installation activities;
- Observed the installation of 8 monitoring wells (DEPMW-1 through DEPMW-8) for the investigation of PFAS-impacted groundwater associated with FFSFC (1 well screened from 20 to 40 feet below land surface [ft BLS], 3 wells screened from 25 to 45 ft BLS, and 4 wells screened from 100 to 120 ft BLS);
- Collected core samples for lithologic description at 4 well cluster locations;
- Collected two equipment blanks (EQB-40 and EQB-41) and one field reagent blank (FRB-7);

FIGURE

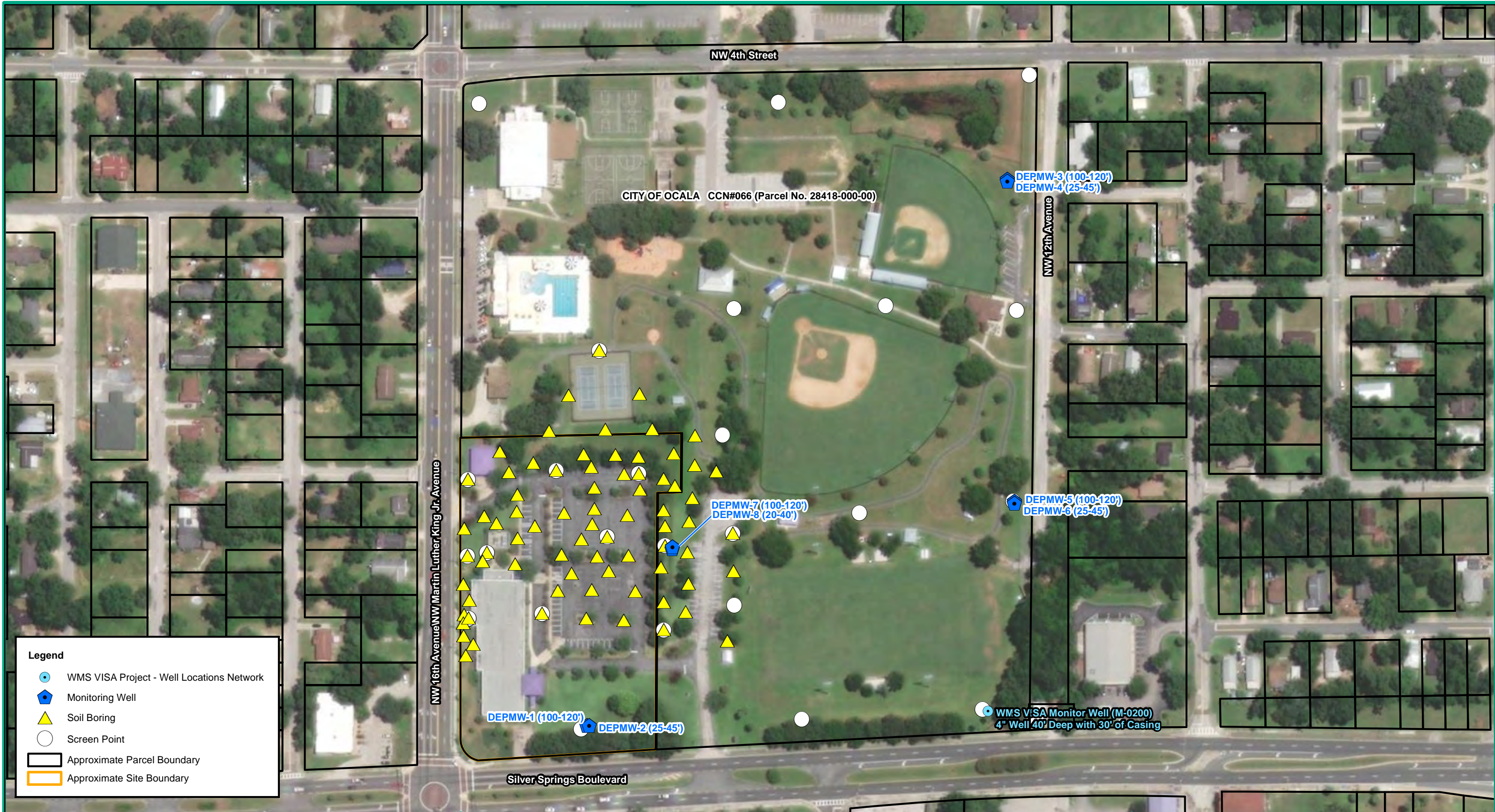


Figure 1
Monitoring Well Location Map
Former Florida State Fire College
1501 West Silver Springs Boulevard
Ocala, Marion County, Florida

Notes:

- Site and parcel boundaries obtained from Florida Department of Revenue Property Tax Oversight website (https://floridarevenue.com/property/Pages/DataPortal_RequestAssessmentRollGISData.aspx), Marion County 2020.
- 2019 World Imagery Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community.



160
 Feet



Date: May 28, 2021

ATTACHMENT A
Field Notes

**Standard Operating Procedure for Groundwater Sampling of Monitoring
Wells and Analysis of Per- and Polyfluoroalkyl Substances**

Attachment A. Daily Sampling Checklist

Date: 5-17-21

Site Name: Former FSFL

Weather (temperature/precipitation): Sunny 85

Please check all boxes that apply and describe any exceptions in the notes section below along with QA/QC methods used to assess potential sample cross-contamination as a result.

Field Clothing and PPE:

- not surface water sampling or sediments sampling
- No water- or stain-resistant boots or clothing (e.g., GORE-TEX®)
 - Field boots (or overboots) are made of polyurethane, PVC, rubber, or untreated leather
 - Rain gear are made of polyurethane, PVC, vinyl, wax-coated or rubber
 - Clothing has not been recently laundered with a fabric softener
 - No coated HDPE suits (e.g., coated Tyvek® suits)
 - Field crew has not used cosmetics, moisturizers, or other related products today
 - Field crew has not used sunscreen or insect repellants today, other than products approved as PFAS-free

Field Equipment:

- Sample containers and equipment in direct contact with the sample are made of HDPE, polypropylene, silicone, acetate or stainless steel, not LDPE or glass
- Sample caps are made of HDPE or polypropylene and are not lined with Teflon™
- No materials containing Teflon™, Viton™, or fluoropolymers
- No materials containing LDPE in direct contact with the sample (e.g., LDPE tubing, Ziploc® bags)
- No plastic clipboards, binders, or spiral hard cover notebooks
- No waterproof field books
- No waterproof or felt pens or markers (e.g., certain Sharpie® products)
- No chemical (blue) ice, unless it is contained in a sealed bag
- No aluminum foil
- No sticky notes (e.g., certain Post-It® products)

Decontamination:

- Reusable field equipment (e.g., dip sampler) decontaminated prior to reuse
- "PFAS-free" water is on-site for decontamination of field equipment
- Alconox®, Liquinox® or Luminox® used as decontamination detergent

**Standard Operating Procedure for Groundwater Sampling of Monitoring
Wells and Analysis of Per- and Polyfluoroalkyl Substances**


Food and Drink:

- No food or drink on-site, except within staging area
- Food in staging area is contained in HDPE or stainless steel container

Notes:

Water proof boots worn, SOPs modified to no water proof boots / over boots during sediment → surface
water sampling

Field Team Leader Name (Print): Boone Abbott

Field Team Leader Signature: 

Date/Time: 5-17-21 1134

**Standard Operating Procedure for Groundwater Sampling of Monitoring
Wells and Analysis of Per- and Polyfluoroalkyl Substances**

Attachment A. Daily Sampling Checklist

Date: 5-18-21

Site Name: Former FSFL

Weather (temperature/precipitation): Sunny 85°

Please check all boxes that apply and describe any exceptions in the notes section below along with QA/QC methods used to assess potential sample cross-contamination as a result.

Field Clothing and PPE:

- not surface water or sediment sampling
- No water- or stain-resistant boots or clothing (e.g., GORE-TEX®)
 - Field boots (or overboots) are made of polyurethane, PVC, rubber, or untreated leather
 - Rain gear are made of polyurethane, PVC, vinyl, wax-coated or rubber
 - Clothing has not been recently laundered with a fabric softener
 - No coated HDPE suits (e.g., coated Tyvek® suits)
 - Field crew has not used cosmetics, moisturizers, or other related products today
 - Field crew has not used sunscreen or insect repellants today, other than products approved as PFAS-free

Field Equipment:

- Sample containers and equipment in direct contact with the sample are made of HDPE, polypropylene, silicone, acetate or stainless steel, not LDPE or glass
- Sample caps are made of HDPE or polypropylene and are not lined with Teflon™
- No materials containing Teflon™, Viton™, or fluoropolymers
- No materials containing LDPE in direct contact with the sample (e.g., LDPE tubing, Ziploc® bags)
- No plastic clipboards, binders, or spiral hard cover notebooks
- No waterproof field books
- No waterproof or felt pens or markers (e.g., certain Sharpie® products)
- No chemical (blue) ice, unless it is contained in a sealed bag
- No aluminum foil
- No sticky notes (e.g., certain Post-It® products)

Decontamination:

- Reusable field equipment (e.g., dip sampler) decontaminated prior to reuse
- "PFAS-free" water is on-site for decontamination of field equipment
- Alconox®, Liquinox® or Luminox® used as decontamination detergent

**Standard Operating Procedure for Groundwater Sampling of Monitoring
Wells and Analysis of Per- and Polyfluoroalkyl Substances**

Food and Drink:

- No food or drink on-site, except within staging area
- Food in staging area is contained in HDPE or stainless steel container

Notes:

water proof boots worn without overboots

SOP modified to no water proof boots or overboots worn only during sediment + surface water sampling

Field Team Leader Name (Print): Boone Abbolt

Field Team Leader Signature: 

Date/Time: 5-18-21 0710

**Standard Operating Procedure for Groundwater Sampling of Monitoring
Wells and Analysis of Per- and Polyfluoroalkyl Substances**

Attachment A. Daily Sampling Checklist

Date: 5-19-21

Site Name: Former FSFC

Weather (temperature/precipitation): Sunny 84

Please check all boxes that apply and describe any exceptions in the notes section below along with QA/QC methods used to assess potential sample cross-contamination as a result.

Field Clothing and PPE:

- not sediment or surface water sampling*
- No water- or stain-resistant boots or clothing (e.g., GORE-TEX®)
 - Field boots (or overboots) are made of polyurethane, PVC, rubber, or untreated leather
 - Rain gear are made of polyurethane, PVC, vinyl, wax-coated or rubber
 - Clothing has not been recently laundered with a fabric softener
 - No coated HDPE suits (e.g., coated Tyvek® suits)
 - Field crew has not used cosmetics, moisturizers, or other related products today
 - Field crew has not used sunscreen or insect repellants today, other than products approved as PFAS-free

Field Equipment:

- Sample containers and equipment in direct contact with the sample are made of HDPE, polypropylene, silicone, acetate or stainless steel, not LDPE or glass
- Sample caps are made of HDPE or polypropylene and are not lined with Teflon™
- No materials containing Teflon™, Viton™, or fluoropolymers
- No materials containing LDPE in direct contact with the sample (e.g., LDPE tubing, Ziploc® bags)
- No plastic clipboards, binders, or spiral hard cover notebooks
- No waterproof field books
- No waterproof or felt pens or markers (e.g., certain Sharpie® products)
- No chemical (blue) ice, unless it is contained in a sealed bag
- No aluminum foil
- No sticky notes (e.g., certain Post-It® products)

Decontamination:

- Reusable field equipment (e.g., dip sampler) decontaminated prior to reuse
- "PFAS-free" water is on-site for decontamination of field equipment
- Alconox®, Liquinox® or Luminox® used as decontamination detergent

**Standard Operating Procedure for Groundwater Sampling of Monitoring
Wells and Analysis of Per- and Polyfluoroalkyl Substances**

Food and Drink:

- No food or drink on-site, except within staging area
- Food in staging area is contained in HDPE or stainless steel container

Notes:

Waterproof boots worn without overboots

SOPs modified to no waterproof boots worn or overboots during surface water & sediment sampling

Field Team Leader Name (Print): Boone Abbott

Field Team Leader Signature: 

Date/Time: 5-19-21 0713

**Standard Operating Procedure for Groundwater Sampling of Monitoring
Wells and Analysis of Per- and Polyfluoroalkyl Substances**

Attachment A. Daily Sampling Checklist

Date: 5-20-21

Site Name: Former P&SFC

Weather (temperature/precipitation): Sunny 84°

Please check all boxes that apply and describe any exceptions in the notes section below along with QA/QC methods used to assess potential sample cross-contamination as a result.

Field Clothing and PPE:

- not relevant
or surface
water sampling*
- No water- or stain-resistant boots or clothing (e.g., GORE-TEX®)
 - Field boots (or overboots) are made of polyurethane, PVC, rubber, or untreated leather
 - Rain gear are made of polyurethane, PVC, vinyl, wax-coated or rubber
 - Clothing has not been recently laundered with a fabric softener
 - No coated HDPE suits (e.g., coated Tyvek® suits)
 - Field crew has not used cosmetics, moisturizers, or other related products today
 - Field crew has not used sunscreen or insect repellants today, other than products approved as PFAS-free

Field Equipment:

- Sample containers and equipment in direct contact with the sample are made of HDPE, polypropylene, silicone, acetate or stainless steel, not LDPE or glass
- Sample caps are made of HDPE or polypropylene and are not lined with Teflon™
- No materials containing Teflon™, Viton™, or fluoropolymers
- No materials containing LDPE in direct contact with the sample (e.g., LDPE tubing, Ziploc® bags)
- No plastic clipboards, binders, or spiral hard cover notebooks
- No waterproof field books
- No waterproof or felt pens or markers (e.g., certain Sharpie® products)
- No chemical (blue) ice, unless it is contained in a sealed bag
- No aluminum foil
- No sticky notes (e.g., certain Post-It® products)

Decontamination:

- Reusable field equipment (e.g., dip sampler) decontaminated prior to reuse
- "PFAS-free" water is on-site for decontamination of field equipment
- Alconox®, Liquinox® or Luminox® used as decontamination detergent

**Standard Operating Procedure for Groundwater Sampling of Monitoring
Wells and Analysis of Per- and Polyfluoroalkyl Substances**

Food and Drink:

- No food or drink on-site, except within staging area
- Food in staging area is contained in HDPE or stainless steel container

Notes:

Waterproof boots worn with no overboots

SOPs modified for boots/overboots to include only surface water & sediment sampling

Field Team Leader Name (Print): Boone Abbott

Field Team Leader Signature: 

Date/Time: 5-20-21 0720

**Standard Operating Procedure for Groundwater Sampling of Monitoring
Wells and Analysis of Per- and Polyfluoroalkyl Substances**

Attachment A. Daily Sampling Checklist

Date: 5-21-21

Site Name: Former FSFC

Weather (temperature/precipitation): Sunny 86°

Please check all boxes that apply and describe any exceptions in the notes section below along with QA/QC methods used to assess potential sample cross-contamination as a result.

Field Clothing and PPE:

Not
sediment or
surface water
sampling

- No water- or stain-resistant boots or clothing (e.g., GORE-TEX®)
- Field boots (or overboots) are made of polyurethane, PVC, rubber, or untreated leather
- Rain gear are made of polyurethane, PVC, vinyl, wax-coated or rubber
- Clothing has not been recently laundered with a fabric softener
- No coated HDPE suits (e.g., coated Tyvek® suits)
- Field crew has not used cosmetics, moisturizers, or other related products today
- Field crew has not used sunscreen or insect repellants today, other than products approved as PFAS-free

Field Equipment:

- Sample containers and equipment in direct contact with the sample are made of HDPE, polypropylene, silicone, acetate or stainless steel, not LDPE or glass
- Sample caps are made of HDPE or polypropylene and are not lined with Teflon™
- No materials containing Teflon™, Viton™, or fluoropolymers
- No materials containing LDPE in direct contact with the sample (e.g., LDPE tubing, Ziploc® bags)
- No plastic clipboards, binders, or spiral hard cover notebooks
- No waterproof field books
- No waterproof or felt pens or markers (e.g., certain Sharpie® products)
- No chemical (blue) ice, unless it is contained in a sealed bag
- No aluminum foil
- No sticky notes (e.g., certain Post-It® products)

Decontamination:

- Reusable field equipment (e.g., dip sampler) decontaminated prior to reuse
- "PFAS-free" water is on-site for decontamination of field equipment
- Alconox®, Liquinox® or Luminox® used as decontamination detergent

**Standard Operating Procedure for Groundwater Sampling of Monitoring
Wells and Analysis of Per- and Polyfluoroalkyl Substances**

Food and Drink:


- No food or drink on-site, except within staging area
- Food in staging area is contained in HDPE or stainless steel container

Notes:

Waterproof boots worn w/o overboots

SDPs modified to only wear overboots/non-waterproof boots during sediment & surface water sampling

Field Team Leader Name (Print): Boone Abbott

Field Team Leader Signature: 

Date/Time: 5-21-21 0734

**Standard Operating Procedure for Groundwater Sampling of Monitoring
Wells and Analysis of Per- and Polyfluoroalkyl Substances**

Attachment A. Daily Sampling Checklist

Date: 5-24-21

Site Name: Former Florida State Fire College

Weather (temperature/precipitation): Sunny 91°F

Please check all boxes that apply and describe any exceptions in the notes section below along with QA/QC methods used to assess potential sample cross-contamination as a result.

Field Clothing and PPE:

no sediment
or sampling
surface water

- No water- or stain-resistant boots or clothing (e.g., GORE-TEX®)
- Field boots (or overboots) are made of polyurethane, PVC, rubber, or untreated leather
 - Rain gear are made of polyurethane, PVC, vinyl, wax-coated or rubber
 - Clothing has not been recently laundered with a fabric softener
 - No coated HDPE suits (e.g., coated Tyvek® suits)
 - Field crew has not used cosmetics, moisturizers, or other related products today
 - Field crew has not used sunscreen or insect repellants today, other than products approved as PFAS-free

Field Equipment:

- Sample containers and equipment in direct contact with the sample are made of HDPE, polypropylene, silicone, acetate or stainless steel, not LDPE or glass
- Sample caps are made of HDPE or polypropylene and are not lined with Teflon™
- No materials containing Teflon™, Viton™, or fluoropolymers
- No materials containing LDPE in direct contact with the sample (e.g., LDPE tubing, Ziploc® bags)
- No plastic clipboards, binders, or spiral hard cover notebooks
- No waterproof field books
- No waterproof or felt pens or markers (e.g., certain Sharpie® products)
- No chemical (blue) ice, unless it is contained in a sealed bag
- No aluminum foil
- No sticky notes (e.g., certain Post-It® products)

Decontamination:

- Reusable field equipment (e.g., dip sampler) decontaminated prior to reuse
- "PFAS-free" water is on-site for decontamination of field equipment
- Alconox®, Liquinox® or Luminox® used as decontamination detergent

**Standard Operating Procedure for Groundwater Sampling of Monitoring
Wells and Analysis of Per- and Polyfluoroalkyl Substances**

Food and Drink:

- No food or drink on-site, except within staging area
- Food in staging area is contained in HDPE or stainless steel container

Notes:

Waterproof boots worn with no overboots

SOPs modified to only need overboots for sediment & surface water sampling

Field Team Leader Name (Print): Boone Abbott

Field Team Leader Signature: 

Date/Time: 5-24-21 1102

**Standard Operating Procedure for Groundwater Sampling of Monitoring
Wells and Analysis of Per- and Polyfluoroalkyl Substances**

Attachment A. Daily Sampling Checklist

Date: 5-25-21

Site Name: Former Florida State Fire College

Weather (temperature/precipitation): Sunny 93°F

Please check all boxes that apply and describe any exceptions in the notes section below along with QA/QC methods used to assess potential sample cross-contamination as a result.

Field Clothing and PPE:

No sediment
or surface water
sampling

- No water- or stain-resistant boots or clothing (e.g., GORE-TEX®)
- Field boots (or overboots) are made of polyurethane, PVC, rubber, or untreated leather
- Rain gear are made of polyurethane, PVC, vinyl, wax-coated or rubber
- Clothing has not been recently laundered with a fabric softener
- No coated HDPE suits (e.g., coated Tyvek® suits)
- Field crew has not used cosmetics, moisturizers, or other related products today
- Field crew has not used sunscreen or insect repellants today, other than products approved as PFAS-free

Field Equipment:

- Sample containers and equipment in direct contact with the sample are made of HDPE, polypropylene, silicone, acetate or stainless steel, not LDPE or glass
- Sample caps are made of HDPE or polypropylene and are not lined with Teflon™
- No materials containing Teflon™, Viton™, or fluoropolymers
- No materials containing LDPE in direct contact with the sample (e.g., LDPE tubing, Ziploc® bags)
- No plastic clipboards, binders, or spiral hard cover notebooks
- No waterproof field books
- No waterproof or felt pens or markers (e.g., certain Sharpie® products)
- No chemical (blue) ice, unless it is contained in a sealed bag
- No aluminum foil
- No sticky notes (e.g., certain Post-It® products)

Decontamination:

- Reusable field equipment (e.g., dip sampler) decontaminated prior to reuse
- "PFAS-free" water is on-site for decontamination of field equipment
- Alconox®, Liquinox® or Luminox® used as decontamination detergent

**Standard Operating Procedure for Groundwater Sampling of Monitoring
Wells and Analysis of Per- and Polyfluoroalkyl Substances**

Food and Drink:

- No food or drink on-site, except within staging area
- Food in staging area is contained in HDPE or stainless steel container

Notes:

Waterproof boots worn with no overboots

SOPs modified to only wear overboots/non-waterproof boots during sediment & surface water sampling

Field Team Leader Name (Print): Boone Abbott

Field Team Leader Signature: 

Date/Time: 5-25-21 0710

**Standard Operating Procedure for Groundwater Sampling of Monitoring
Wells and Analysis of Per- and Polyfluoroalkyl Substances**

Attachment A. Daily Sampling Checklist

Date: 5-26-21

Site Name: Former Florida State Fire College

Weather (temperature/precipitation): Sunny 95°F

Please check all boxes that apply and describe any exceptions in the notes section below along with QA/QC methods used to assess potential sample cross-contamination as a result.

Field Clothing and PPE:

No sediment
or surface water
Sampling

- No water- or stain-resistant boots or clothing (e.g., GORE-TEX®)
- Field boots (or overboots) are made of polyurethane, PVC, rubber, or untreated leather
- Rain gear are made of polyurethane, PVC, vinyl, wax-coated or rubber
- Clothing has not been recently laundered with a fabric softener
- No coated HDPE suits (e.g., coated Tyvek® suits)
- Field crew has not used cosmetics, moisturizers, or other related products today
- Field crew has not used sunscreen or insect repellants today, other than products approved as PFAS-free

Field Equipment:

- Sample containers and equipment in direct contact with the sample are made of HDPE, polypropylene, silicone, acetate or stainless steel, not LDPE or glass
- Sample caps are made of HDPE or polypropylene and are not lined with Teflon™
- No materials containing Teflon™, Viton™, or fluoropolymers
- No materials containing LDPE in direct contact with the sample (e.g., LDPE tubing, Ziploc® bags)
- No plastic clipboards, binders, or spiral hard cover notebooks
- No waterproof field books
- No waterproof or felt pens or markers (e.g., certain Sharpie® products)
- No chemical (blue) ice, unless it is contained in a sealed bag
- No aluminum foil
- No sticky notes (e.g., certain Post-It® products)

Decontamination:

- Reusable field equipment (e.g., dip sampler) decontaminated prior to reuse
- "PFAS-free" water is on-site for decontamination of field equipment
- Alconox®, Liquinox® or Luminox® used as decontamination detergent

**Standard Operating Procedure for Groundwater Sampling of Monitoring
Wells and Analysis of Per- and Polyfluoroalkyl Substances**

Food and Drink:

- No food or drink on-site, except within staging area
- Food in staging area is contained in HDPE or stainless steel container

Notes:

Waterproof boots with no overboots worn

SOPs modified to only wear overboots/non-waterproof during sediment & surface water sampling

Field Team Leader Name (Print): Boone Abbott

Field Team Leader Signature: 

Date/Time: 5-26-21 0844

**Standard Operating Procedure for Groundwater Sampling of Monitoring
Wells and Analysis of Per- and Polyfluoroalkyl Substances**

Attachment A. Daily Sampling Checklist

Date: 5-27-21

Site Name: Former Florida State Fire College

Weather (temperature/precipitation): Sunny 91°F

Please check all boxes that apply and describe any exceptions in the notes section below along with QA/QC methods used to assess potential sample cross-contamination as a result.

Field Clothing and PPE:

- No sediment or surface water sampling*
- No water- or stain-resistant boots or clothing (e.g., GORE-TEX®)
 - Field boots (or overboots) are made of polyurethane, PVC, rubber, or untreated leather
 - Rain gear are made of polyurethane, PVC, vinyl, wax-coated or rubber
 - Clothing has not been recently laundered with a fabric softener
 - No coated HDPE suits (e.g., coated Tyvek® suits)
 - Field crew has not used cosmetics, moisturizers, or other related products today
 - Field crew has not used sunscreen or insect repellants today, other than products approved as PFAS-free

Field Equipment:

- Sample containers and equipment in direct contact with the sample are made of HDPE, polypropylene, silicone, acetate or stainless steel, not LDPE or glass
- Sample caps are made of HDPE or polypropylene and are not lined with Teflon™
- No materials containing Teflon™, Viton™, or fluoropolymers
- No materials containing LDPE in direct contact with the sample (e.g., LDPE tubing, Ziploc® bags)
- No plastic clipboards, binders, or spiral hard cover notebooks
- No waterproof field books
- No waterproof or felt pens or markers (e.g., certain Sharpie® products)
- No chemical (blue) ice, unless it is contained in a sealed bag
- No aluminum foil
- No sticky notes (e.g., certain Post-It® products)

Decontamination:

- Reusable field equipment (e.g., dip sampler) decontaminated prior to reuse
- "PFAS-free" water is on-site for decontamination of field equipment
- Alconox®, Liquinox® or Luminox® used as decontamination detergent

**Standard Operating Procedure for Groundwater Sampling of Monitoring
Wells and Analysis of Per- and Polyfluoroalkyl Substances**

Food and Drink:

- No food or drink on-site, except within staging area
- Food in staging area is contained in HDPE or stainless steel container

Notes:

No overboots / non-waterproof boots worn

SOPs modified to only wear overboots / non-waterproof boots during sediment or surface water sampling

Field Team Leader Name (Print): Boone Abbott

Field Team Leader Signature:  _____

Date/Time: 5-27-21 0835

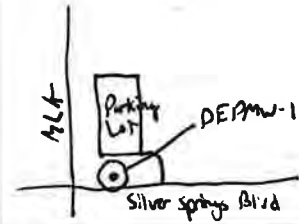
Table 1: Proposed Sampling Locations, Matrices, Analytes, Rationale, and Criteria
Former Florida State Fire College

Location ID	Sample ID	Date and Time	Matrix	Depth (ft BLS)	Drilling Method	Comments
Laboratory Quality Assurance/Quality Control Samples						
Sample Type	Sample ID	Date and Time	Matrix	Equipment sampled		
Equipment Blanks (ratio of 1:10)	EQB-21	3-23-21 1410	Water	DPT Groundwater Sampling Equipment	Boring before: SP-10 (30-40)	Boring after: SP-14 (35-34)
	EQB-22	3-24-21 0835			Boring before: SP-14 (46-36)	Boring after: SP-8 (32-26)
	EQB-23	3-29-21 1445			Boring before: SP-3 (38-30)	Boring after: SP-5 (46-50)
	EQB-24	3-30-21 1405			Boring before: SP-3 (38-30)	Boring after: SP-5 (46-50)
	EQB-25	3-31-21 1347			Boring before: SP-2 (46-50)	Boring after: SP-17 (36-40)
	EQB-26	4-2-21 0916			Boring before: SP-13 (36-40)	Boring after: SP-3 (40-50)
	EQB-27	4-5-21 1541			Boring before: SP-23 (36-40)	Boring after: SP-19 (36-40)
	EQB-28	4-6-21 1308			Boring before: SP-18 (46-50)	Boring after: SP-16 (36-40)
	EQB-29	3-22-21 1355			Boring before: SB-62 (05-2)	Boring after: SB-57 (0-0.5)
	EQB-30	3-23-21 0910	Boring before: SB-64 (4-6)	Boring after: SB-8 (2-4)		
	EQB-31	3-23-21 1100	Boring before: SB-10 (4-6)	Boring after: SB-6 (2-4)		
	EQB-32	3-23-21 1510	Boring before: SB-67 (4-6)	Boring after: SB-45 (4-6)		
	EQB-33	3-24-21 1030	Boring before: SB-27 (4-6)	Boring after: SB-70 (0-0.5)		
	EQB-34	3-24-21 1035	Boring before: SB-73 (2-4)	Boring after: SB-70 (2-4)		
	EQB-35	3-24-21 1150	Boring before: SB-70 (0-0.5)	Boring after: SB-69 (0-0.5)		
	EQB-36	3-24-21 1155	Boring before: SB-70 (2-4)	Boring after: SB-67 (2-4)		
	EQB-37	3-24-21 0838	Boring before: SB-68 (5-10)	Boring after: SB-45 (5-70)		
	EQB-38	3-24-21 0840	Boring before: SB-68 (10-15)	Boring after: SB-45 (10-15)		
	EQB-39	3-24-21 1230	Boring before: SB-45 (10-35)	Boring after: SB-72 (10-15)		
	EQB-40	5-19-21 1236	Boring before: MW-2 (125-45)	Boring after: MW-3 (100-20)		
	EQB-41	5-24-21 1206	Boring before: MW-5 (100-120)	Boring after: MW-6 (25-95)		
	EQB-42					
Field Reagent Blanks	FRB-4	3-24-21 1011		DPT Groundwater Sampling	001062	
	FRB-5			Groundwater Sampling		
	FRB-6	3-24-21 0900		HA + DPT Decontamination	001105, 001062	
	FRB-7	5-19-21 1240		MW Decon	000273	
	FRB-8			Extra		
IDW Samples						
Drum Number	Sample ID	Matrix	IDW Source	Analytes		
	IDW-Soil-202103	Soil	Soil cuttings	PFAS, VOCs, SVOCs, 8 RCRA Metals		
	IDW-Water-202103	Water	Decontamination and purge water			

Notes:

- | | |
|--|--------------------------------------|
| 1 DPT indicates direct push technology | 9 EQB indicates equipment blank |
| 2 ft BLS indicates feet below land surface | 10 FRB indicates field reagent blank |
| 3 SB indicates soil boring | 11 MW indicates monitoring well |
| 4 HA indicates hand auger | |
| 5 PFAS indicates per- and polyfluoroalkyl substances | |
| 6 N/A indicates not applicable | |
| 7 EQB indicates equipment blank | |
| 8 SP indicates screen point | |

Boring No.: DEPMW-1 (100-120) Project No.: FR7522A.01.04 Page 1 of 3
 Site: Former Florida State Fire College Date: 5-17-21
 Tools and Method: Sonic Bit Dia.: 4"
 Total Depth: 120 ft Ground Elev.: - Groundwater Depth: ~34 ft
 Drilling Company: Preferred Drilling Solutions Rig: 8150LS
 Driller: Kent Fowler Logger: Scott Abbott Reviewer:



Boring: DEPMW-1 (100-120)
 Site: Former Florida State Fire College
 Proj. No.: FR7522A.01.04
 Page 1 of 3

Elev. (feet)	Top (Feet)	Lithology Log	Graphic Log	Depth Scale	Std. Pen. Test			Drilling Log
					Blows /6"	Run/Rec.	N	
		0-0.5: silty SAND (SM), brown-dark brown, rockers, organic material, base, some cohesive nodules, very fine-fine, dry	SM					Beginning 1700 HA-0-5ft Sonic starting at 5ft
	0-5 HA	0.5-5: SAND (SP) light brown, loose, fine grained, dry uniform, poorly graded	SP			5/3		
	5-10 Sonic	5-11: Clayey SAND (SC), reddish brown, slightly cohesive, very fine-fine, low plasticity, dry	SC			5/3		
	10-15 Sonic	11-11.5: SAND (SP), light brown, loose, fine grained, dry, poorly graded	SC					1711 4" to 10"
		11.5-13.5: Clayey SAND (SC), reddish brown, slightly cohesive, very fine-fine, low plasticity, dry	SP					1746 6" to 10"
		13.5-20: SAND (SP), light brown, loose, fine grained, dry, poorly graded	SC					1800 8" to 10"
	20-25 Sonic	20-22: Clayey SAND (SC), reddish brown, slightly cohesive, very fine-fine, low plasticity, dry	SP			10/8		
		22-23: SAND (SP), light brown, loose, fine grained, dry, poorly graded	CL					1719 4" to 20"
		23-30: Sandy CLAY (CL), light brown-brown, cohesive, very fine-fine, low plasticity, dry, medium density	SP					1748 6" to 20"
		25: Layer of SP (2")	CL					50 gallons used to drill 6" from 10-20"
	25-30 Sonic	27: medium plasticity, purple mottling	CL			10/8		1802 8" to 20"
	30-35 Sonic	30-34: Clayey SAND (SC), reddish brown, slightly cohesive, very fine-fine, low plasticity, dry	SC					1726 4" to 30"
		34-47: LIMESTONE, white cream, friable, wet, marly, fossiliferous, strong, massive Wackestone and increasing in grain content to Peckstone, cemented disks present	LS			10/10		1750 6" to 30"
	35-40 Sonic							1804 8" to 30"
	40-45 Sonic							rig chatter, broke a rod, threads snapped on 4"
	40-45 Sonic							1741 4" to 40"
	40-45 Sonic							1752 6" to 40" - 50 gallons

the rest of 30-40' core was pulled out on 5-18-21
 1806 8" used to drill 6" from 20-18'
 200 gallons used to drill 8" from 0-40' and drilling on 5-17-21

Boring No.: DEPMW-1 (100-120) Site: Former FSFL Proj. No.: FR7522A-01.04 Page 2 of 3

Boring: DEPMW-1 (100-120) Site: Former FSFL Proj. No.: FR7522A-01.04 Page 2 of 3

Elev (feet)	Top (Feet)	Lithology Log	Graphic Log	Depth Scale	Std. Pen. Test			Drilling Log
					Blows/6"	Run/Rec	N	
40		34-47: LIMESTONE, white/cream, friable, wet, marly, fossiliferous, Wackestone → Packstone, strong						Began drilling 5-18-21 Pulled at rest at 30-46' first then did a 20 ft run
45								
50	80	47-80: sandy LIMESTONE, white-pale brown, wet, marly, fine grained, loosely cemented with some cemented disks, vugs present in cemented fragments, fossiliferous, cemented fragments are strong, Wackestone/Packstone			20/16			0752 4" to 50' 0758 6" to 50'
55								
60								0755 4" to 60' 0801 6" to 60' 100 gallons used from 40-60'
65								
70					20/18			0802 4" to 70' 0808 6" to 70'
75								
80		80-88: Dolomitic LIMESTONE, white-pale brown, marly, fine grained - microporous, talline, very strong, competent sections up to 6" wet						0805 4" to 80' 0810 6" to 80' 100 gallons used from 60-80'
85								
90		88-120: sandy LIMESTONE, white-pale brown, wet, marly, fine grained, fossiliferous, loosely cemented with some cemented disks, vugs present in cemented fragments, Wackestone-Packstone			20/18			rig chatter significantly longer to drill 80-90' 4" to 90' at 0832 6" to 90' at 0849

Elev (feet)	Top (Feet)	Lithology Log	Graphic Log	Depth Scale	Std. Pen. Test			Drilling Log
					Blows/6"	Run/Rec	N	
90		88-120: Sandy LIMESTONE, white pale brown wet, muddy, fine grained, fossiliferous, loosely cemented with some cemented fragments, frags & shells - shell impressions present, frags present, Wadestone-Padestone						4" to 90' at 0832 6" to 90' at 0849
95								20/18
100		frags, shell fragments, frags present in two 4" cemented disks at 100'						4" to 100' at 0845 6" to 100' at 0855 150 gallons used 80-100'
105								
110								20/13 4" to 110' at 0908 6" to 110' at 0920
115								
120		boring ended						4" to 120' at 0914 6" to 120' at 0925 100 gallons used 100-120' 17 bags of 20/30 sand were used and would not come up past 115' PDS gets to get per gravel. 77 bags of per gravel used. 4 more bags of 20/30 (21 total) used to get to 98 ft bls.

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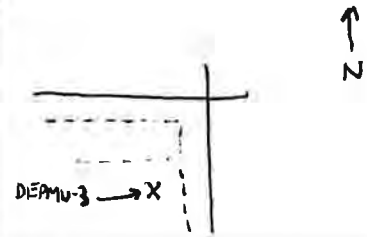
Proj. No.: FR7522A.01.04

Site: Former FSFC

Boring: DEPMV-1 (100-120')

80-100 Sonic Run

Boring No.: DEPMU-3 (100-120) Project No.: FR7522A.01.04 Page 1 of 3
 Site: Former Florida State Fire College (FFSFC) Date: 5-19-21
 Tools and Method: Sonic Bit Dia.: 4"
 Total Depth: _____ Ground Elev.: _____ Groundwater Depth: _____
 Drilling Company: Preferred Drilling Solutions Rig: 8150 LS - Geoprobe
 Driller: Kent Fowler Logger: Boone Abbott Reviewer: _____



Page 1 of 3
 Proj. No.: FR7522A.01.01
 Site: FFSFC
 Boring: DEPMU-3 (100-120)

Elev. (feet)	Top (Feet)	Lithology Log	Graphic Log	Depth Scale	Std. Pen. Test		Drilling Log
					Blows / 6"	Run/Rec. N	
		0-0.5: Silty SAND (SM), brown-dark brown, rootlets, organic material, loose, some cohesive po 2, very fine-fine, dry	SM				Begin drilling 1500 HA 0-5' ft Sonic starting at 5 ft
		0.5-5: SAND (SP), light brown, loose, dry, very fine-fine, uniform, poorly graded	SP			5/5	
5		5-22: Clayey SAND (SC), reddish brown, cohesive, very fine-fine, low plasticity, dry					
10		10-22: SAA, grey-pale brown, orange mottling, dark brown nodules present	SC			15/12	1520 4" to 10' 1538 6" to 10' 1545 8" to 10'
15							
20		22-27.5: Sandy CLAY, greenish grey, very fine-fine, medium-high plasticity, medium density	SC SC				1523 4" to 20' 1540 6" to 20' 1550 8" to 20'
25						10/10	
30		27.5-28.0: SAND (SP), pale brown, very fine-fine, uniform, loose, dry (moisture could have evaporated by heat of drilling) 28: Clayey SAND (SC), pale brown-light brown 28-29: LIMESTONE, grey-pale brown, crystalline, strong-very strong, fossiliferous, fine cherty 29-34: Clayey SAND (SC), reddish brown-pale brown, cohesive, soft, medium plasticity with abundant interbedded chert wet, orange mottling 34-80: LIMESTONE, yellowish brown-pale brown, very soft-salt, loosely cemented, some cemented fragments wet, wackestone, Marly					1534 4" to 30' 1543 6" to 30' 100 gal used to drill 4" + 6" to 30' 1553 8" to 30' 200 gallons used to drill 8" to 30'
35						15/10	
40							1555 4" to 40' 1557 6" to 40'
							1600 8" to 40'

Boring No.: DEPMV-3 (100-120') Site: FFSFC Proj. No.: FR7522A.01.04 Page 2 of 3

Boring: DEPMV-3 (100-120') Site: FFSFC Proj. No.: FR7522A.01.04 Page 2 of 3

Elev. (feet)	Top (Feet)	Lithology Log	Graphic Log	Depth Scale	Std. Pen. Test		
					Blows/6"	Run/Rec	N
90							1555 4" to 40' 1557 6" to 40' 1600 8" to 40' - pulled sample
45							Driller noted soft from 40-80
50							1610 4" to 50' 1621 6" to 50'
55							
60							1612 4" to 60' 1622 6" to 60'
65		65-68: yellowish brown staining				50/ 40	
70		40-90 Sonic Run					1614 4" to 70' 1623 6" to 80'
75		76-77: yellowish brown staining					
80		80-90: No recovery					1615 4" to 80' Rod chopped 5-6 ft from 80-85/86' 1624 6" to 80'
85							Driller noted very soft
90							1619 4" to 90' - pulled cores 40-90' 1625 6" to 90'

Boring No.: DEPMW-3 (100-120) Site: FFSFC Proj. No.: FR7522A.01.04 Page 3 of 3

Elev. (feet)	Top (Feet)	Lithology Log	Graphic Log	Depth Scale	Std. Pen. Test			Drilling Log
					Blows/6"	Run/Rec.	N	
90		<p>90-92: Shell hash, very fossiliferous, wet</p> <p>92-94: Clayey SAND, grey, purple staining, orange mottling, very fine-medium, shell fragments present</p> <p>94-96: LIMESTONE, pale brown, friable, fossiliferous, cemented fragments, wet, rockstone / packstone, ^{wet, cohesive}</p> <p>96-105: Clayey SAND (SC), grey, purple staining, (greenish grey - ^{high} plasticity orange mottling nodules, medium plasticity, wet, cohesive</p>					<p>1619 4" to 90'</p> <p>1625 6" to 90'</p> <p>1625</p>	
95								
100								<p>1642 4" to 100'</p> <p>1646 6" to 100'</p>
105		<p>105-108¹¹⁸: Mottly Dolomitic LIMESTONE, strong, grey-brown, fossiliferous, wet, organic odor, friable with competent cemented sections (disks), recrystallized nodules</p>					<p>30/30</p> <p>driller noted more competent</p>	
110								<p>1643 4" to 110'</p> <p>1649 6" to 110'</p>
115								
120		<p>118-120: ^{dolomitic} LIMESTONE, very strong, brown, cemented, recrystallized, fossiliferous</p> <p>boring ended</p>					<p>rig chatter</p> <p>1644 4" to 120'</p> <p>1651 6" to 120'</p> <p>350 gal used to drill from 30-120'</p>	

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Proj. No.: FR7522A.01.04

Site: FFSFC

Boring: DEPMW-3 (100-120')

Boring No.: DFPMW-S (100-120') Project No.: FR7522A.01.04 Page 1 of 3
 Site: Former Florida State Fire College Date: 5-21-21
 Tools and Method: Sonic Bit Dia.: 4"
 Total Depth: 120' Ground Elev.: _____ Groundwater Depth: ~35 ft
 Drilling Company: Preferred Drilling Solutions Rig: Geoprobe 8150LS
 Driller: Kent Foster Logger: Bone Abbott Reviewer: _____

Boring: DFPMW-S (100-120') Site: FFSFC Proj. No.: FR7522A.01.04 Page 1 of 3

Elev. (feet)	Top (Feet)	Lithology Log	Graphic Log	Depth Scale	Std. Pen. Test		Drilling Log
					Blows /6"	Run/Rec N	
0	0	0-0.5: Silty SAND (SM), dark brown, loose, very fine-fine, organic material, dry, rootlets	SM				Begin chilling 5-21-21
5	0.5	0.5-10: SAND (SP) clayey SAND (SC), reddish brown, loam with cohesive pebbles, very fine-fine, dry	SC			5/5	0-5 HA hand auger Begin sonar at 5' b/s
6		6: white/grey color 2-3"					
10		9: SAA: grey, cohesive 10-20: No recovery	SC			15/5	0816 4" to 10" 0849 6" to 10" 0905 8" to 10"
20							0819 4" to 20" 0853 6" to 20" 0911 8" to 20"
30						20/5	Driller noted that this section felt like dense clay until 35 ft where rig chatter occurred, b/c of this comment + the surrounding area, BA logged the recovered material at 0825 4" to 30' 35' 0855 6" to 30' 0916 8" to 30'
35		35-120: LIMESTONE, whitelcream, wet, friable, horizontally bedded based on fracture planes, loosely cemented with some cemented chinks, fossiliferous, wackestone, sandy, micry	▽				rig chatter
40							0834 4" to 40' 0859 6" to 40' 0918 8" to 40' 500 gallons used 5-40'

Boring No.: **DEPMU-5 (100-120')** Site: **FFSFC** Proj. No.: **FR7522A.01.04** Page 2 of 3

Boring: **DEPMU-5 (100-120')** Site: **FFSFC** Proj. No.: **FR7522A.01.04** Page 2 of 3

Elev. (feet)	Top (Feet)	Lithology Log	Graphic Log	Depth Scale	Std. Pen. Test		
					Blows/6"	Run/Rec.	N
40							0834 4" to 40' 0859 6" to 40' 0918 8" to 40' 500 gallons used 5-40'
45							
50		47-49: yellowish brown, loosely cemented, no fossils, mudstone 48-50: fossiliferous, mudstone 49-50: fossiliferous, mudstone, some cemented fragments pale brown - very pale brown					0923 4" to 50' 0930 6" to 50'
55							
60							40/ 39
65							0925 4" to 60' 0931 6" to 60'
70							0926 4" to 70' 6932 6" to 70'
75							
80		80-85: LIMESTONE, mudstone, slightly cemented - cemented, marly, clay-like, soft, pale brown					0928 4" to 80' 0933 6" to 80' 100 gal used from 40-80'
85		85-100: SAA, wackestone, cemented, friable, pale brown, fossiliferous, marly					20/ 14 rig chatter
90							0954 4" to 90' 1009 6" to 90'

Boring No.: *DEPMW-S (100-120)* Site: *FFSFC* Proj. No.: *FR7522A-01.04* Page 3 of 3

Elev (feet)	Top (Feet)	Lithology Log	Graphic Log	Depth Scale	Std. Pen. Test			
					Blows/6"	Run/Rec.	N	
40		<i>LIMESTONE, sandstone, pale brown, fossiliferous, med, marly, cemented gravel, friable</i>						<i>0954 4" to 90'</i> <i>1009 6" to 90'</i>
95		<i>80-100 Sonic Run</i>					<i>20/14</i>	
100								<i>1000 4" to 100'</i> <i>1012 6" to 100'</i> <i>150 gal used 80-100'</i>
105		<i>105-106: yellowish, reddish brown</i>						
110		<i>110-120: grey, dolomitic</i>					<i>20/14</i>	<i>1032 4" to 110'</i> <i>1038 6" to 110'</i>
115								
120		<i>boring ended</i>						<i>1035 4" to 120'</i> <i>1040 6" to 120'</i> <i>150 gallons used 100-120'</i>

Page 3 of 3

Proj. No.: *FR7522A-01.04*

Site: *FFSFC*

Boring: *DEPMW-S (100-120)*

Boring No.: DEPMW-7 (100-120) Project No.: FR7522A.01.04 Page 1 of 3

Site: Former Florida State Fire College Date: 5-25-21

Tools and Method: Sonic Bit Dia.: 4"

Total Depth: 120' Ground Elev.: _____ Groundwater Depth: ~ 30 ft

Drilling Company: Preferred Drilling Solutions Rig: Geoprobe 8150L S

Driller: Kent Fowler Logger: Basre Abbotts Reviewer: _____

Boring: DEPMW-7 (100-120) Site: FFSFC Proj. No.: FR7522A.01.04 Page 1 of 3

Elev (feet)	Top (Feet)	Lithology Log	Graphic Log	Depth Scale	Std. Pen. Test			Drilling Log
					Blows / 6"	Run/Rec.	N	
0-5	HA	0-0.5: Silty SAND (SM) light brown-dark brown loose, dry, organic material, rustlers, very fine-fine 0.5-3: SAND (SP), light brown, loose, dry, very fine-fine 3-7: Clayey SAND (SC), light brown-grey, orange mottling, cohesive, medium density, low plasticity, very fine	SM SP SC				5/5	Beginning 5-25-21 0-5 Hand auger (HA) Begin sonic at 5' b/s - 0745
7-30	Sonic Run	7-30: Sandy CLAY (CL), grey-greenish grey, cohesive, orange mottling, medium plasticity, dense, very fine sand, intermittent chert pieces (1" - gravel size)	CL				15/8	0754 4" to 10' 0807 6" to 10' 0816 8" to 10'
20-27	Sonic Run	27-30: SMA soft, high plasticity	CL					0755 4" to 20' 0808 6" to 20' 0819 8" to 20'
30-34	Sonic Run	30-32: LIMESTONE, very pale brown-white/cream, wet, friable, loosely cemented with some cemented disks, marly, fossiliferous; horizontally bedded based on fracture planes (disks), wackestone 34: 4" cemented core	LS				20/20	0807 4" to 30' 0809 6" to 30' 0821 8" to 30'
38-40	Sonic Run	38-40: loosely cemented, no fossils or cemented fragments, Mudstone						0804 4" to 40' 0811 6" to 40' 0823 8" to 40' 300 gal used 0-40'

Boring No.: DEPMW-7(100-120') Site: FFSFC Proj. No.: FR7522A.01.04 Page 3 of 3

Elev. (feet)	Top (Feet)	Lithology Log	Graphic Log	Depth Scale	Std. Pen. Test			Drilling Log
					Blows/6"	Run/Rec.	N	
90		30-120 LIMESTONE, very pale brown - white/cream, wet, friable, loosely cemented with some cemented disks, mainly fossiliferous, horizontally bedded based on fracture planes (disks), wackestone						0902 4" to 90' 0920 6" to 90' rig chatter
95		94-98: SAA mudstone, cohesive clay-like, mainly, orangish mottling, dry but could be from evaporation, no cemented fragments, slightly cemented matrix						rig chatter
100								0910 4" to 100' 0923 6" to 100'
105			LS			40/24		Driller noted softer beneath 100 ft bts
110								0914 4" to 110' 0925 6" to 110'
125								0916 4" to 120'
120		boony ended						0916 4" to 120' 0930 6" to 120' 300 gal used 80-120'

Page 3 of 3

Proj. No.: FR7522A.01.04

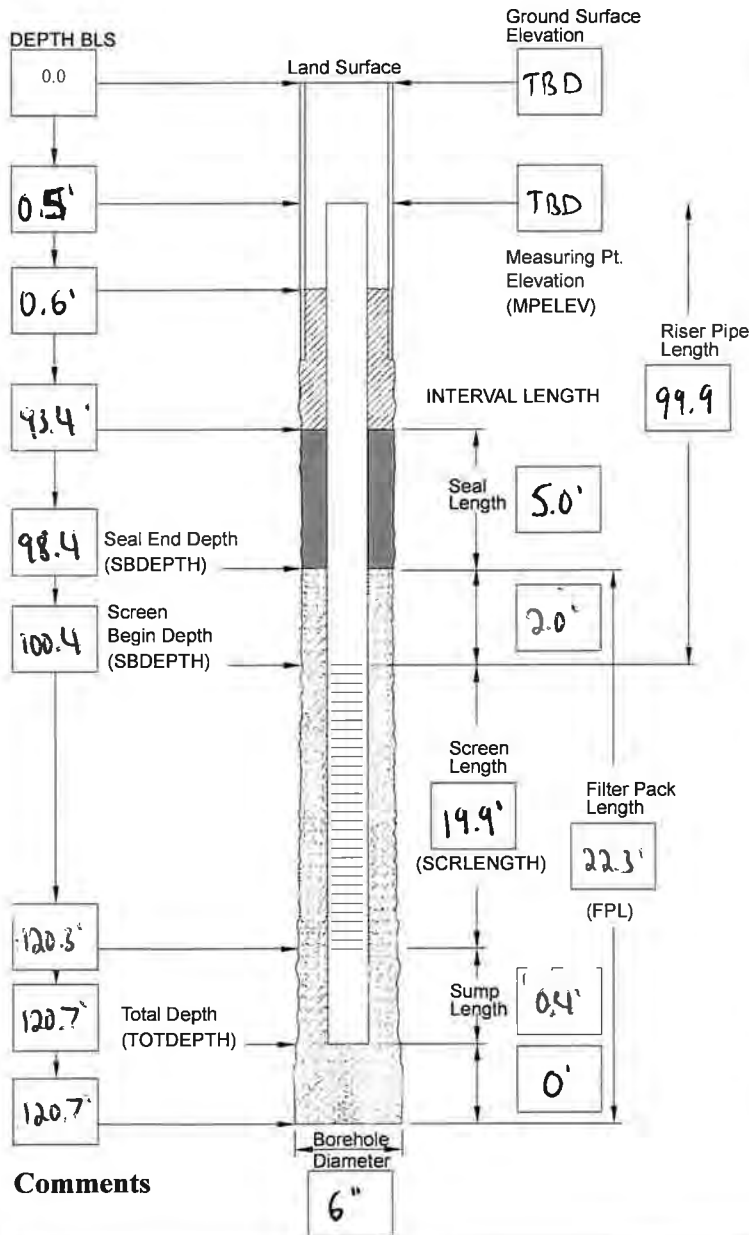
Site: FFSFC

Boring: DEPMW-7(100-120')

WELL CONSTRUCTION LOG STANDARD FLUSH MOUNT

Well I.D.: DEPMW-1 (100-120')
 Drilling Company: Preferred Drilling Solutions (PDS)
 Driller(s): Kent Fowler
 Geologist/Eng./Tech.: Boone Abbott
 Signature: *[Signature]*

Site: Former Florida State Fire College
 Project Number: FR 7522A.01.04
 Installation Method: Sonic
 Casing Installation Date: 5-18-21
 Well Type: Groundwater Monitoring
 Well Completion Method: Flush Mount



Well Completion

Guard Posts (Y /) Date: 5-27-21
 Surface Pad Size: 2 ft x 2 ft

Protective Casing or Cover

Diameter/Type: 8" steel manhole
 Depth BGS: 12" Weep Hole (Y /)

Grout

Composition/Proportions: Portland Type 1/II
4 bags per batch x 6 batches = 24 bags total
 Placement Method: Tremie Pipe

Seal

Date: 5-18-21
 Type: Bentonite
 Source: Isol-Plug
 Set-up/Hydration Time: 1 hour
 Placement Method: Direct Pour
 Vol. Fluid Added: N/A

Filter Pack

Type: 20/30 sand + Pea Gravel
 Source: Standard Sand + Silica Co.
 Amount Used: 21 bags 20/30 + 77 bags Pea gravel
 Placement Method: Direct Pour

Well Riser Pipe

Casing Material: 2" PVC
 Casing Inside Diameters: 2" in.

Screen

Material: PVC
 Inside Diameter: 2" in.
 Screen Slot Size: 0.010 in.
 Percent Open Area: -
 Sump or Bottom Cap (/)
 Type/Length: Bottom Cap / 4.5"

Total Water Volume During Construction

Introduced (Gal): 750
 Recovered (Gal): 165

Reviewed

By: _____ Date: _____

Comments

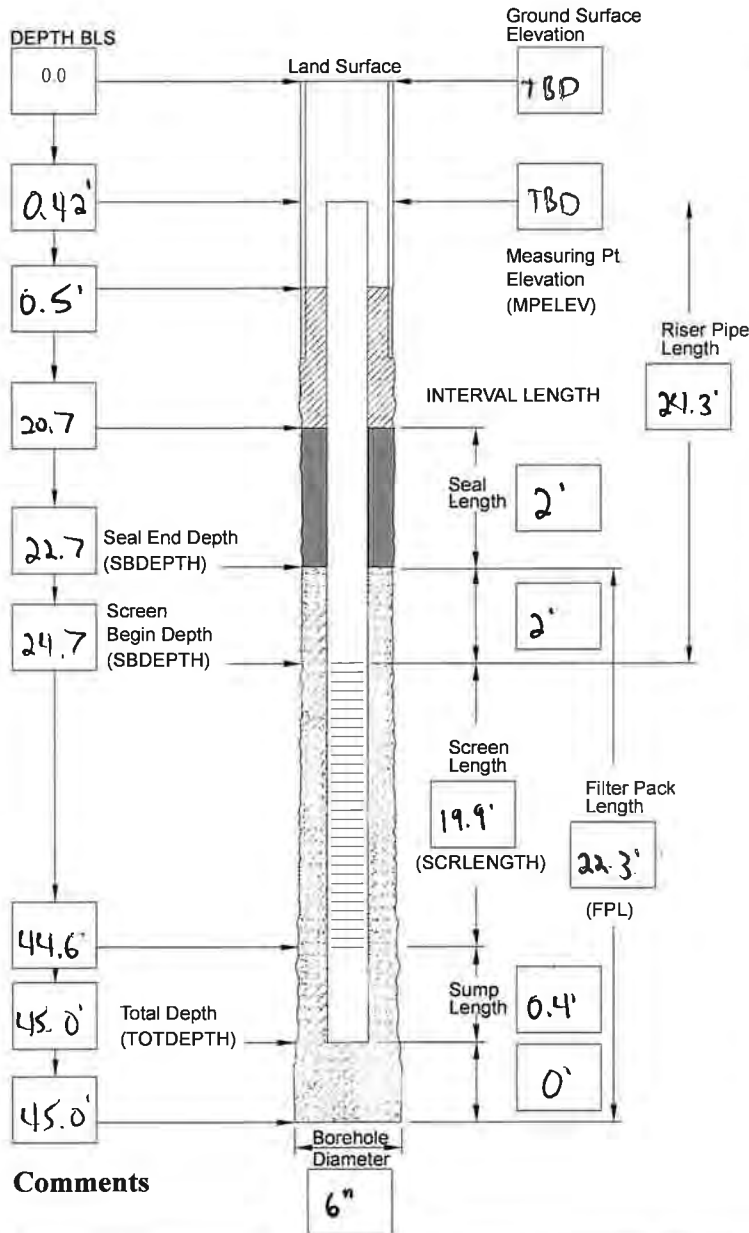
Void encountered at ~115 ft b/s, 77 bags of pea gravel were used to fill void
 Surface casing (8") was drilled to 40' b/s to seal off unit above limestone
 Apparent water level based on soil cores ~34 ft b/s, measured WL on 5-19-21 = 31.16 ft below TOC
 5-19-21: 2 more batches of grout + 20 bags of pea gravel were used to get the grout back up (it dropped overnight + significantly)
 (6 total batches) (97 total)

cap = 4.5" = 0.375'
 screen = 9.9583'
 riser = 10.0'

WELL CONSTRUCTION LOG STANDARD FLUSH MOUNT

Well I.D.: DEPMW-2 (25-45')
 Drilling Company: Preferred Drilling Solutions (PDS)
 Driller(s): Kent Fowler
 Geologist/Eng./Tech.: Boone Abbott
 Signature: [Signature]

Site: Former Florida State Fire College
 Project Number: FR 7522A.01.04
 Installation Method: Sonic
 Casing Installation Date: 5-19-21
 Well Type: Groundwater Monitoring
 Well Completion Method: Flush Mount



Comments

Well Completion

Guard Posts (Y /) Date: 5-27-21
 Surface Pad Size: 2 ft x 2 ft

Protective Casing or Cover

Diameter/Type: 8" steel manhole
 Depth BGS: 12" Weep Hole (Y /)

Grout

Composition/Proportions: Portland Type 1/1
4 bags per batch x 2.5 batches = 10 bags
 Placement Method: Tremie pipe / Direct Pour

Seal

Date: 5-19-21
 Type: 30/65 Sand
 Source: Standard Sand + Silica Co.
 Set-up/Hydration Time: N/A
 Placement Method: Direct Pour
 Vol. Fluid Added: N/A

Filter Pack

Type: 20/30 Sand
 Source: Standard Sand + Silica Co.
 Amount Used: 10 bags
 Placement Method: Direct Pour

Well Riser Pipe

Casing Material: PVC
 Casing Inside Diameters: 2 in.

Screen

Material: PVC
 Inside Diameter: 2 in.
 Screen Slot Size: 0.010 in.
 Percent Open Area: -
 Sump or Bottom Cap (Y / N)
 Type/Length: Bottom Cap / 4.5"

Total Water Volume During Construction

Introduced (Gal): 400
 Recovered (Gal): 165

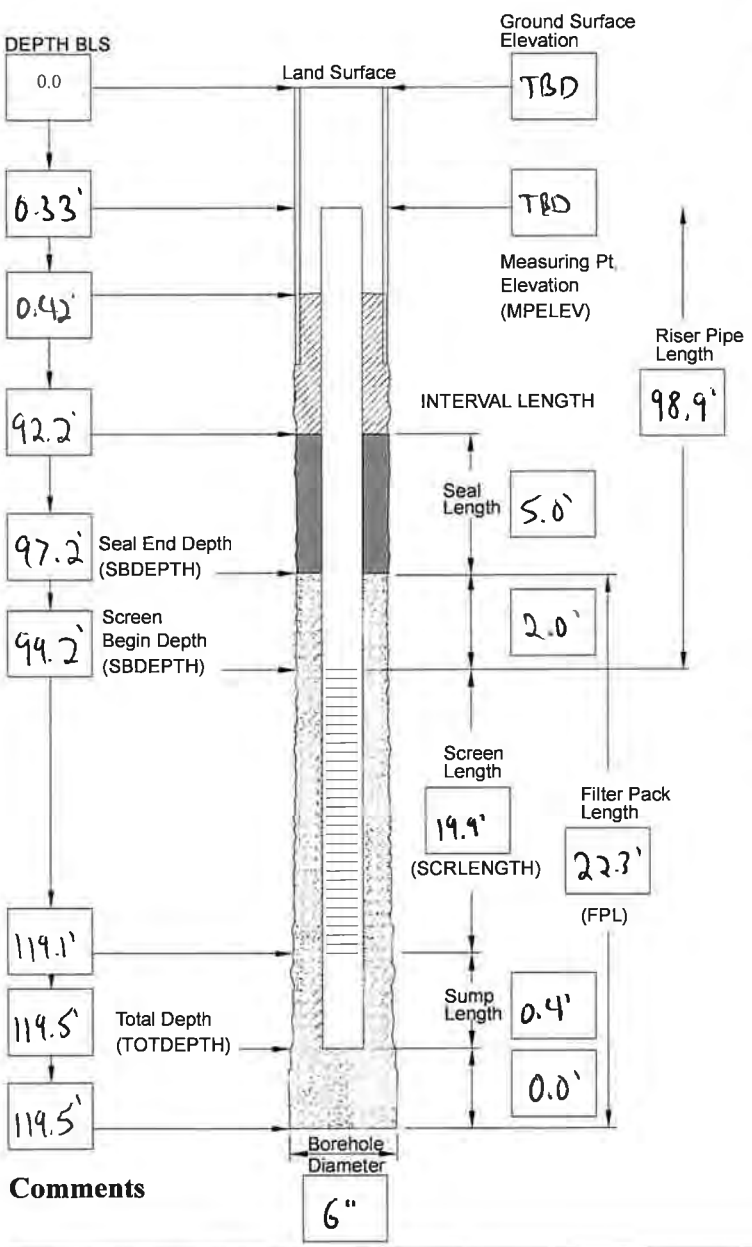
Reviewed

By: _____ Date: _____

WELL CONSTRUCTION LOG STANDARD FLUSH MOUNT

Well I.D.: DEPMW-3 (100-120')
 Drilling Company: Preferred Drilling Solutions
 Driller(s): Kent Fowler
 Geologist/Eng./Tech.: Boone Abbott
 Signature: *[Signature]*

Site: Former Florida State Fire College
 Project Number: FR7522A.01.04
 Installation Method: Sonic
 Casing Installation Date: 5-19-21
 Well Type: Groundwater Monitoring
 Well Completion Method: Flush Mount



Comments

3.5 batches of grout as of 5-20-21
 15 batches of pea gravel as of 5-20-21
 8" drilled to 40' bls for overide casing

Well Completion

Guard Posts (Y /) Date: 5-27-21
 Surface Pad Size: 2 ft x 2 ft
Protective Casing or Cover
 Diameter/Type: 8" steel manhole
 Depth BGS: 12" Weep Hole (Y /)
Grout
 Composition/Proportions: Portland Type 1/11
4 bags per batch x 3.5 batches = 14 total bags
 Placement Method: Tremie Pipe

Seal Date: 5-19-21
 Type: Bentonite - 1 bag
 Source: Hole Plug
 Set-up/Hydration Time: >12 hours
 Placement Method: Direct Pour
 Vol. Fluid Added: N/A

Filter Pack
 Type: 20/30 Sand
 Source: Standard Silica + Sand Co.
 Amount Used: 10 bags
 Placement Method: Direct Pour

Well Riser Pipe
 Casing Material: PVC
 Casing Inside Diameters: 2 in.

Screen
 Material: PVC
 Inside Diameter: 2 in.
 Screen Slot Size: 0.010 in.
 Percent Open Area: -
 Sump or Bottom Cap (Y / N)
 Type/Length: Bottom Cap 14.5"

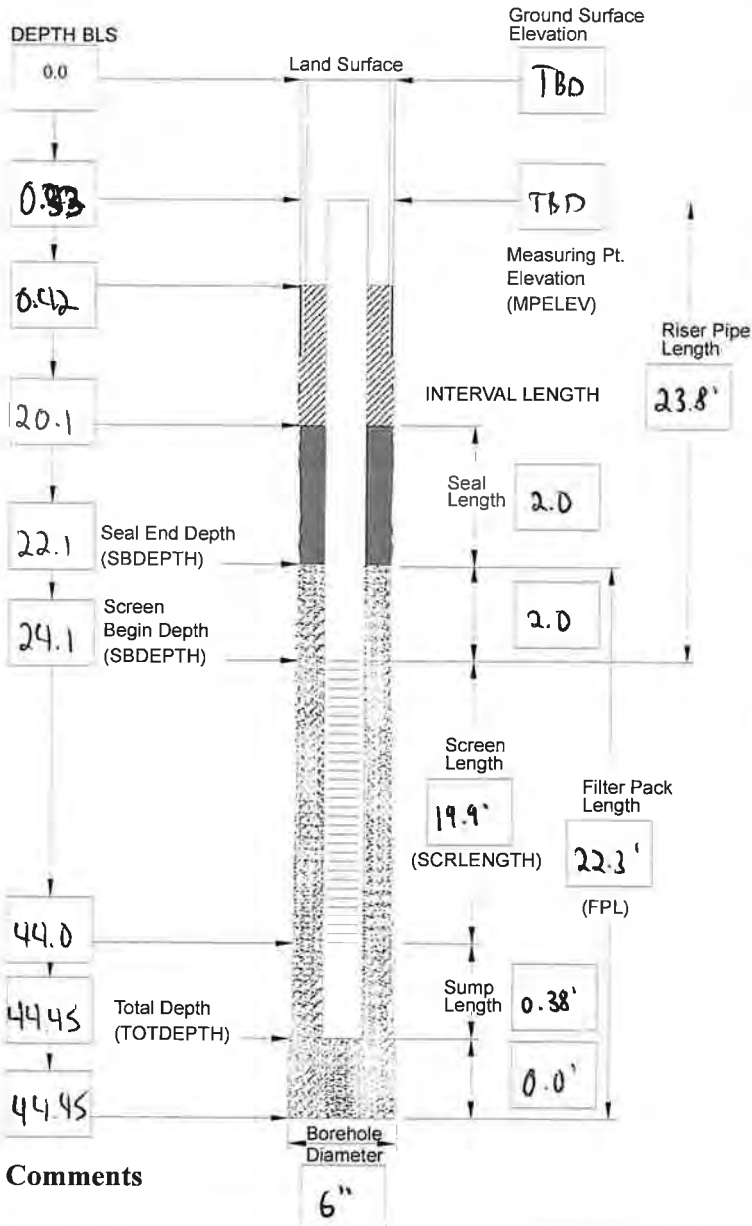
Total Water Volume During Construction
 Introduced (Gal): 650
 Recovered (Gal): 165

Reviewed
 By: _____ Date: _____

WELL CONSTRUCTION LOG STANDARD FLUSH MOUNT

Well I.D.: DEPMJ-4 (25-45')
 Drilling Company: Preferred Drilling Solutions
 Driller(s): Kent Fowler
 Geologist/Eng./Tech.: Boore Abbott
 Signature: [Signature]

Site: Former Florida State Fire College
 Project Number: PK7522A.D.04
 Installation Method: Sonic
 Casing Installation Date: 5-20-21
 Well Type: Groundwater Monitoring
 Well Completion Method: Flush Mount



Well Completion

Guard Posts (Y /) Date: 5-27-21
 Surface Pad Size: 2 ft x 2 ft
Protective Casing or Cover
 Diameter/Type: 8" steel manhole
 Depth BGS: 12" Weep Hole (Y /)
Grout
 Composition/Proportions: Portland Type 1/1/1
4 bags per batch x 1 batches = 4 total bags (99)b
 Placement Method: Tremie Pipe

Seal

Date: 5-20-21
 Type: 30/65 Fine Sand - 1 bag
 Source: Standard Sand - Silica Co.
 Set-up/Hydration Time: -
 Placement Method: Direct Pour
 Vol. Fluid Added: -

Filter Pack

Type: 20/30 Sand
 Source: Standard Sand - Silica Co.
 Amount Used: 10 bags
 Placement Method: Direct Pour

Well Riser Pipe

Casing Material: 2 PVC
 Casing Inside Diameters: 2 in.

Screen

Material: PVC
 Inside Diameter: 2 in.
 Screen Slot Size: 0.010 in.
 Percent Open Area: -
 Sump or Bottom Cap (Y / N)

Type/Length: Bottom Cap 14.5"

Total Water Volume During Construction

Introduced (Gal): 350
 Recovered (Gal): 110

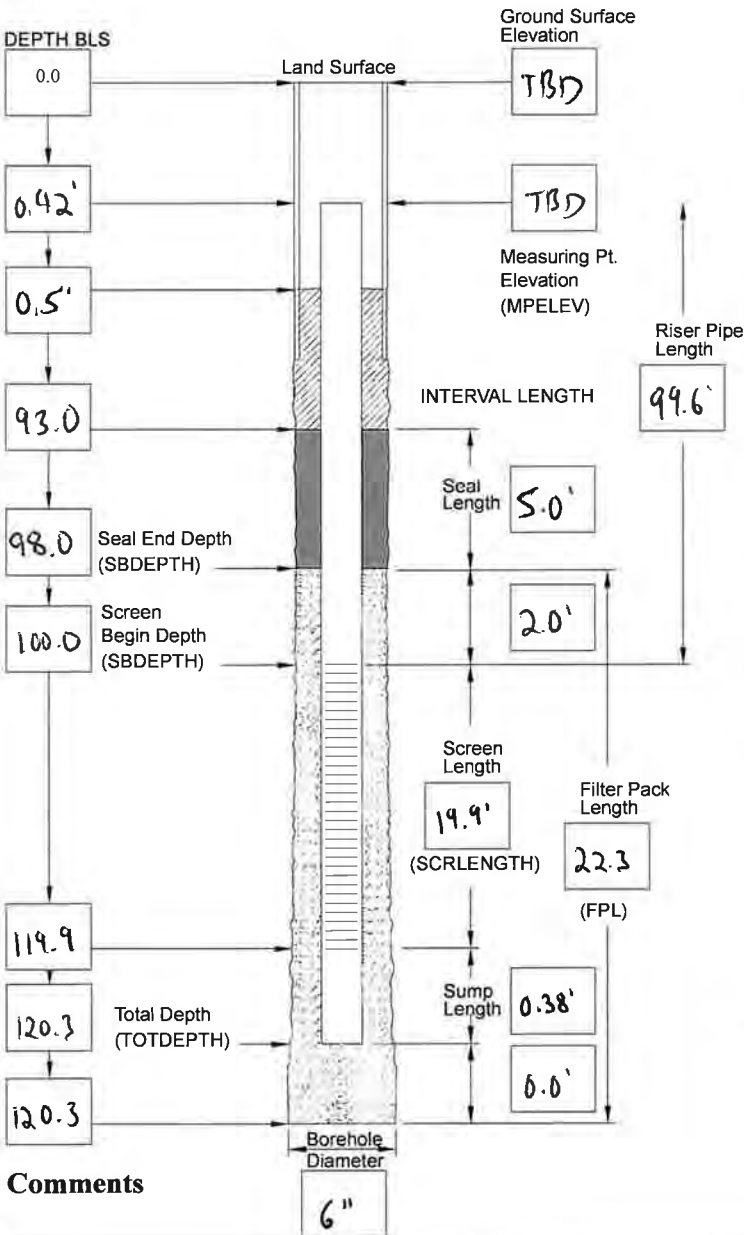
Reviewed

By: _____ Date: _____

WELL CONSTRUCTION LOG STANDARD FLUSH MOUNT

Well I.D.: DEPMW-5 (100-130')
 Drilling Company: Preferred Drilling Solutions
 Driller(s): Kent Fowler
 Geologist/Eng./Tech.: Boone Abbott
 Signature: *[Signature]*

Site: Former Florida State Fire College
 Project Number: FL7522A.01.04
 Installation Method: Sonic
 Casing Installation Date: 5-21-21
 Well Type: Groundwater Monitoring
 Well Completion Method: Flush Mount



Comments

Override 8" to 40' b1s

Well Completion

Guard Posts (Y /) Date: 5-27-21
 Surface Pad Size: 2 ft x 2 ft

Protective Casing or Cover

Diameter/Type: 8" steel manhole
 Depth BGS: 12" Weep Hole (Y /)

Grout

Composition/Proportions: Portland Type 1/11
4 bags per batch x 3 batches = 12 total bags
 Placement Method: tremie pipe

Seal

Date: 5-21-21
 Type: Bentonite
 Source: Hole Plug - 1 bag
 Set-up/Hydration Time: 1 hour
 Placement Method: Direct Pour
 Vol. Fluid Added: N/A

Filter Pack

Type: 20/30 Sand
 Source: Stratford Sand & Silica Co.
 Amount Used: 12 bags
 Placement Method: Direct Pour

Well Riser Pipe

Casing Material: PVC
 Casing Inside Diameters: 2 in.

Screen

Material: PVC
 Inside Diameter: 2 in.
 Screen Slot Size: 0.010 in.
 Percent Open Area: -
 Sump or Bottom Cap (/ N)
 Type/Length: Bottom cap/4.5"

Total Water Volume During Construction

Introduced (Gal): 900
 Recovered (Gal): 165

Reviewed

By: _____ Date: _____

WELL CONSTRUCTION LOG STANDARD FLUSH MOUNT

Well I.D.: DEPMV-6 (25'-15')
 Drilling Company: Preferred Drilling Solutions
 Driller(s): Kent Fowler
 Geologist/Eng./Tech.: Boone Abbott
 Signature: [Signature]

Site: Former Florida State Fire College
 Project Number: FL7522A.01.04
 Installation Method: Sonic
 Casing Installation Date: 5-24-21
 Well Type: Groundwater Monitoring
 Well Completion Method: Flush Mount

Well Completion

Guard Posts (Y /) Date: 5-27-21
 Surface Pad Size: 2 ft x 2 ft
Protective Casing or Cover
 Diameter/Type: 8" steel manhole
 Depth BGS: 12" Weep Hole (Y /)

Grout

Composition/Proportions: Portland Type 1/11
4 bags per batch x 1 batches = 4 total bags
 Placement Method: Tremie Pipe / Direct pour

Seal

Date: 5-24-21
 Type: 30/65 sand
 Source: Standard Sand + Silica Co.
 Set-up/Hydration Time: N/A
 Placement Method: Direct Pour
 Vol. Fluid Added: N/A

Filter Pack

Type: 20/30 sand
 Source: Standard Sand + Silica Co.
 Amount Used: 10 bags
 Placement Method: Direct Pour

Well Riser Pipe

Casing Material: PVC
 Casing Inside Diameters: 2 in.

Screen

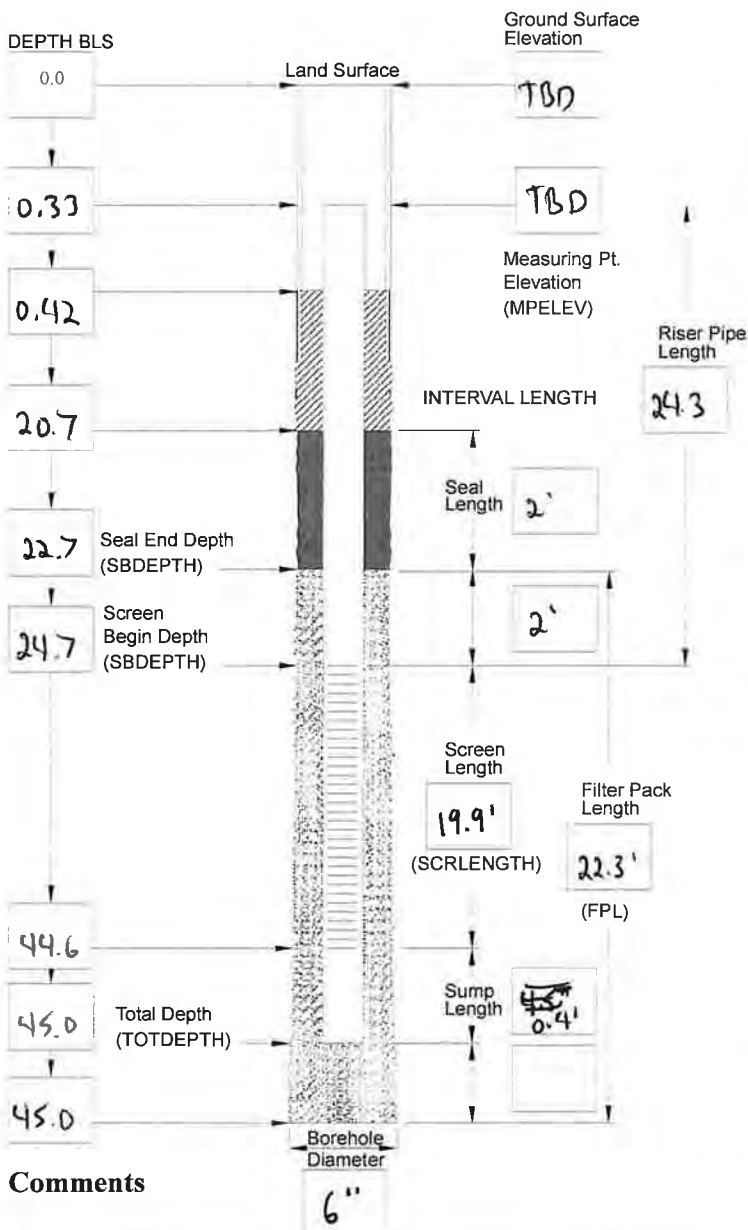
Material: PVC
 Inside Diameter: 2 in.
 Screen Slot Size: 0.870 in.
 Percent Open Area: -
 Sump or Bottom Cap (/ N)
 Type/Length: Bottom Cap / 4.5"

Total Water Volume During Construction

Introduced (Gal): 250
 Recovered (Gal): 165

Reviewed

By: _____ Date: _____

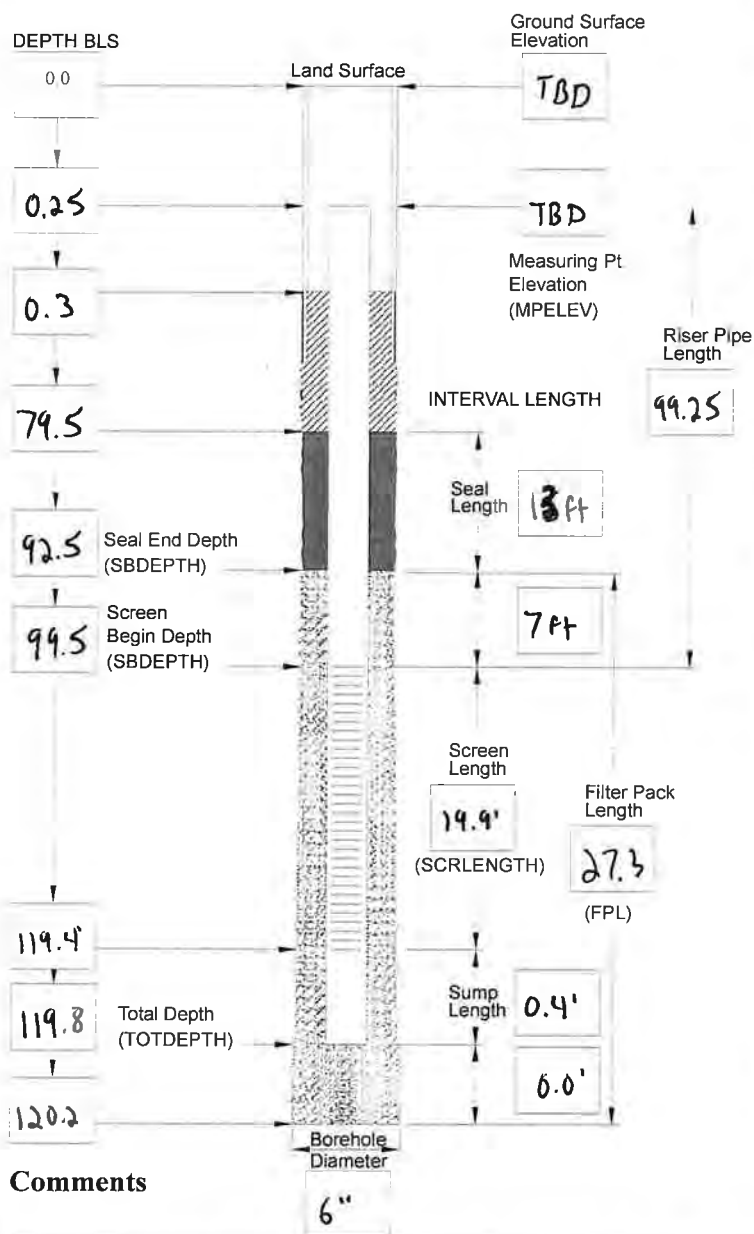


Comments

WELL CONSTRUCTION LOG STANDARD FLUSH MOUNT

Well I.D.: DEPMW-7 (100-120')
 Drilling Company: Preferred Drilling Solutions
 Driller(s): Kent Fowler
 Geologist/Eng./Tech.: Boone Abbott
 Signature: [Signature]

Site: Former Florida State Fire College
 Project Number: FR 7522A.01.04
 Installation Method: Sonic
 Casing Installation Date: 5-25-21
 Well Type: Groundwater Monitoring
 Well Completion Method: Flush Mount



Well Completion

Guard Posts (Y /) Date: 5-27-21
 Surface Pad Size: 2 ft x 2 ft
Protective Casing or Cover
 Diameter/Type: 8" steel manhole
 Depth BGS: 12" Weep Hole (Y /)
Grout
 Composition/Proportions: Portland Type 1/11
4 bags per batch x 3 batches = 12 total bags
 Placement Method: Tremie Pipe

Seal

Date: 5-25-21
 Type: Bentonite
 Source: Hole Plug
 Set-up/Hydration Time: 1 hour
 Placement Method: Direct Pour
 Vol. Fluid Added: N/A

Filter Pack

Type: 20/30 Sand
 Source: Standard Sand & Silica Co.
 Amount Used: See below
 Placement Method: Direct Pour

Well Riser Pipe

Casing Material: PVC
 Casing Inside Diameters: 2 in.

Screen

Material: PVC
 Inside Diameter: 2 in.
 Screen Slot Size: 0.010 in.
 Percent Open Area: -
 Sump or Bottom Cap (/ N)

Type/Length: Bottom Cap 10.375'

Total Water Volume During Construction

Introduced (Gal): 750
 Recovered (Gal): 165

Reviewed

By: _____ Date: _____

Comments

Void encountered around 115 bls. Pea gravel used - 6.5 pallets used, 5 bags hole plug for seal; 14 20/30 on 5/25/21 + 7 20/30 on 5/26/21 used
a 20 foot section of 4" PVC with a belled end was used to bridge the void from 115-95 ft bls.
5-25-21: 6 pallets of pea gravel, got annular space up to 107 ft bls, came back on 5-26-21, 6" casing fell 10' + took well with it.
PDS pulled casing + well came too. PDS reinstalled well to 120 ft but pea gravel fell back to 115 from 107 the day before, that's why
a 20' section of 4" PVC was used to slide over the 2" well to help bridge it + MP. PDS cut slots in the 4" to provide more access
of pea gravel + 1 bag of fine sand to ensure that it was filled above the 4" PVC before installing the seal, large
seal was installed to ensure no grout intrusion since 20' ft was bridged off below

WELL CONSTRUCTION LOG STANDARD FLUSH MOUNT

Well I.D.: DEPMW-8 (20-40')
 Drilling Company: Preferred Drilling Company
 Driller(s): Kent Fowler
 Geologist/Eng./Tech.: Boone Abbott
 Signature: [Signature]

Site: Former Florida State Fire College
 Project Number: FR7S22A.01.04
 Installation Method: Same
 Casing Installation Date: 5-26-21
 Well Type: Groundwater Monitoring
 Well Completion Method: Flush Mount

Well Completion

Guard Posts (Y /) Date: 5-27-21
 Surface Pad Size: 2 ft x 2 ft

Protective Casing or Cover

Diameter/Type: 8" steel manhole
 Depth BGS: 12" Weep Hole (Y /)

Grout

Composition/Proportions: Portland Type 1/11
4 bags per batch x 3 batches = 12 total bags
 Placement Method: Tremie Pipe / Direct pour

Seal

Date: 5-26-21
 Type: 30/65 Fine Sand
 Source: Standard Sand + Silica Co.
 Set-up/Hydration Time: N/A
 Placement Method: Direct Pour
 Vol. Fluid Added: N/A

Filter Pack

Type: 20/30 Sand
 Source: Standard Sand + Silica Co.
 Amount Used: 13 bags
 Placement Method: Direct Pour

Well Riser Pipe

Casing Material: PVC
 Casing Inside Diameters: 2 in.

Screen

Material: PVC
 Inside Diameter: 2 in.
 Screen Slot Size: 0.010 in.
 Percent Open Area: -
 Sump or Bottom Cap (/ N)

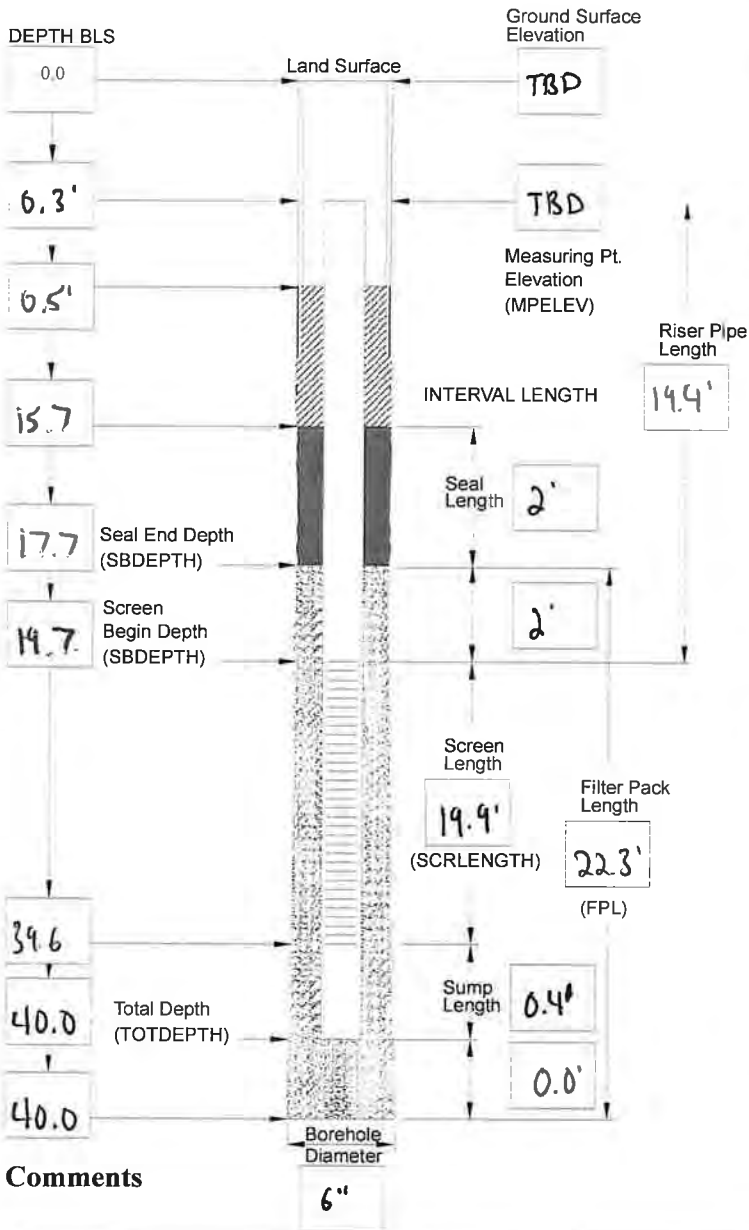
Type/Length: Bottom Cap = 0.375' (0.4')

Total Water Volume During Construction

Introduced (Gal): 200
 Recovered (Gal): 165

Reviewed

By: _____ Date: _____



Comments

[Handwritten]

**Geosyntec Consultants
Water Quality Instrument Calibration Form**

Project/Site: Former Florida State Fire College

Project #: FR7522A.01.04

Field Personnel: Boone Abbott

Water Quality Meter - Model/Serial #:

Turbidimeter - Model/Serial # LaMotte 2020Wc/1776-0212

Dissolved Oxygen	DEP SOP FT 1500	Date	Time	Temp (°C)	Saturation (mg/L) ¹	Reading (mg/L)	Reading (%)	Pass or Fail
Acceptance Criteria: +/- 0.3mg/L								
CAL ICV CCV								P F
CAL ICV CCV								P F
CAL ICV CCV								P F
CAL ICV CCV								P F

Specific Conductance	DEP SOP FT 1200	Date	Time	Standard (mS/cm)	Standard Lot #	Standard Exp. Date	Reading (mS/cm)	Pass or Fail
Acceptance Criteria: +/- 5%								
CAL ICV CCV								P F
CAL ICV CCV								P F
CAL ICV CCV								P F
CAL ICV CCV								P F

pH	DEP SOP FT 1100	Date	Time	Standard (SU)	Standard Lot #	Standard Exp. Date	Reading (SU)	Pass or Fail
Acceptance Criteria: +/- 0.2 SU								
CAL ICV CCV								P F
CAL ICV CCV								P F
CAL ICV CCV								P F
CAL ICV CCV								P F
CAL ICV CCV								P F
CAL ICV CCV								P F
CAL ICV CCV								P F
CAL ICV CCV								P F
CAL ICV CCV								P F

ORP	SOP N/A	Date	Time	Std. mV @ Temp °C	Standard Lot #	Standard Exp. Date	Reading (mV)	Pass or Fail
Geosyntec Acceptance Criteria: +/- 5%								
CAL ICV CCV								P F
CAL ICV CCV								P F
CAL ICV CCV								P F

Specific Conductance Probe Cleaned? Yes No Dissolved Oxygen membrane Changed? Yes No

0.1 - 10 NTU	Std 10 NTU	Date	Reading (NTU)	Pass or Fail
Acceptance Criteria: +/- 10%				
CAL	(ICV) CCV	5-25-21	10.04	(P) F
CAL	ICV (CCV)	5-26-21	10.21	(P) F
CAL	ICV CCV			P F
CAL	ICV CCV			P F

11 - 40 NTU	Std ___ NTU	Date	Reading (NTU)	Pass or Fail
Acceptance Criteria: +/- 8%				
CAL	ICV CCV			P F
CAL	ICV CCV			P F
CAL	ICV CCV			P F
CAL	ICV CCV			P F

41 - 100 NTU	Std ___ NTU	Date	Reading (NTU)	Pass or Fail
Acceptance Criteria: +/- 6.5%				
CAL	ICV CCV			P F
CAL	ICV CCV			P F
CAL	ICV CCV			P F
CAL	ICV CCV			P F
CAL	ICV CCV			P F
CAL	ICV CCV			P F
CAL	ICV CCV			P F
CAL	ICV CCV			P F
CAL	ICV CCV			P F

>100 NTU	Std ___ NTU	Date	Reading (NTU)	Pass or Fail
Acceptance Criteria: +/- 5%				
CAL	ICV CCV			P F
CAL	ICV CCV			P F
CAL	ICV CCV			P F

1. See Table FS 2200-2 on the back of this form

CAL - Initial Calibration
ICV - Initial Calibration Verification
CCV - Continuing Calibration Verification

Allow adequate time for the dissolved oxygen sensor to equilibrate during air calibration
Calibrate specific conductance using at least two standards that bracket the range of expected sample readings (unless readings < 0.1 mS/cm then one standard of 0.1 mS/cm is acceptable)
Calibrate pH using at least two standards (typ. pH 4 and 7) that bracket the range of expected sample readings; always start with pH 7; add a third calibration point if needed (i.e. pH > 7)
If parameter fails to calibrate within SOP acceptance criteria then append sample results with a "J" qualifier

Comments: _____



FIELD DRUM INVENTORY TRACKING LOG

Project No.: FR7522A.01.04

Project Start Date: 5-17-21

Drum Number	Generation Date	Content % Full	Contents (soil, development water, purge water, etc.)	Source Location (Well #, Boring #, etc.)	
1	5-17-21-5-19-21	75%	Drill Mud / Decon Water	DEPMW-1+2	S
2	5-21-21	100%	Soil	DEPMW-5	S
3	5-21-21	30%	Soil	DEPMW-5	S
4	5-21-21	100%	Drill Mud	DEPMW-5	S
5	5-18-21-5-20-21	100%	Soil	DEPMW-3+4	S
6	5-24-21-5-26-21	80%	Drill Mud	DEPMW-7+8	S
7	5-18-21-5-20-21	100%	Soil	DEPMW-3+4	S
8	5-18-21-5-20-21	100%	Drill Mud	DEPMW-3+4	S
9	5-18-21-5-19-21	80%	Soil	DEPMW-2	S
10	5-18-21 5-18-21	100%	Soil	DEPMW-1	S
11	5-18-21	100%	Soil	DEPMW-1	S
12	5-25-21	100%	Development Water	DEPMW-1	
13	5-26-21	100%	Development Water	DEPMW-3	
14	5-25-21	30%	Drill Mud	DEPMW-6	S
15	5-25-21 5-26-21	100%	Development Water	DEPMW-6	
16	5-26-21	100%	Development Water	DEPMW-6	
17	5-26-21	100%	Development Water	DEPMW-5	
18	5-25-21-5-26-21	80%	Drill Mud	DEPMW-7+8	S
19	5-25-21	100%	Decon Water	DEPMW-6 - Decon Pit	
20	5-25-21	100%	Decon Water	DEPMW-5+6 - Decon Pit	
21	5-17-21-5-20-21	100%	Decon Water	DEPMW-1,2,3,4	
22	5-19-21-5-20-21	100%	Decon Water	DEPMW 3+4	
23	5-25-21-5-26-21	80%	Drill Mud	DEPMW-7+8	S

FIELD DRUM INVENTORY TRACKING LOG

Project No.: FR7522A.01.04

Project Start Date: 5-17-21

Drum Number	Generation Date	Content % Full	Contents (soil, development water, purge water, etc.)	Source Location (Well #, Boring #, etc.)
24	5-26-21	100%	Development Water	DEPMW-6
25	5-26-21	100%	Development Water	DEPMW-5
26	5-26-21	100%	Development Water	DEPMW-5
27	5-19-21-5-20-21	40%	Drill Mud	DEPMW-3+4
28	5-19-21-5-20-21	100%	Drill Mud	DEPMW-3+4
29	5-26-21	100%	Development Water	DEPMW-4
30	5-26-21	100%	Development Water	DEPMW-3
31	5-26-21	100%	Development Water	DEPMW-4
32	5-26-21	100%	Development Water	DEPMW-3
33	5-25-21	100%	Development Water	DEPMW-1
34	5-25-21	100%	Development Water	DEPMW-1
35	5-26-21	100%	Development Water	DEPMW-2
36	5-26-21	100%	Development Water	DEPMW-2
37	5-26-21	100%	Development Water	DEPMW-2
38	5-27-21	100%	Development Water	DEPMW-7
39	5-27-21	100%	Development Water	DEPMW-8
40	5-27-21	100%	Development Water	DEPMW-8
41	5-27-21	100%	Development Water	DEPMW-7
42	5-27-21	100%	Development Water	DEPMW-8
43	5-27-21	100%	Development Water	DEPMW-7
44	5-25-21	100%	Soil	DEPMW-7
45	5-25-21	50%	Soil	DEPMW-7
46	5-25-21	75%	Soil/Drill Mud	DEPMW-7

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ATTACHMENT B
Photographic Log

GEOSYNTEC CONSULTANTS
Photographic Record



Client: Florida Department of Environmental Protection

Project Number: FR7522A

Site Name: Former Florida State Fire College (FFSFC)

Site Location: 1501 W Silver Springs Blvd, Ocala, FL

Photograph 1

Date: 17 May 2021 9:17 AM

Direction: W

Comments: Utility locating was performed prior to subsurface activities.



Photograph 2

Date: 18 May 2021 11:38 AM

Direction: N

Comments: View of the drilling decontamination pit. All rods and casing were decontaminated prior to work and after each soil boring using per- and polyfluoroalkyl substance-free water. Equipment blanks were collected from decontaminated tooling.



GEOSYNTEC CONSULTANTS
Photographic Record



Client: Florida Department of Environmental Protection

Project Number: FR7522A

Site Name: Former Florida State Fire College (FFSFC)

Site Location: 1501 W Silver Springs Blvd, Ocala, FL

Photograph 3

Date: 19 May 2021 8:41 AM

Direction: S

Comments: Eight monitoring wells were installed via roto sonic drilling across the site. A water-table monitoring well and a deep monitoring well were paired at 4 locations.



Photograph 4

Date: 18 May 2021 9:27 AM

Direction: NA

Comments: Soil cores were collected from 5 feet below land surface to a total depth of 120 ft at each well pair location.



GEOSYNTEC CONSULTANTS
Photographic Record



Client: Florida Department of Environmental Protection

Project Number: FR7522A

Site Name: Former Florida State Fire College (FFSFC)

Site Location: 1501 W Silver Springs Blvd, Ocala, FL

Photograph 5

Date: 27 May 2021 12:46 PM

Direction: S

Comments: Wells were completed flush to grade and set in an 8-inch diameter manhole set in a 2 ft x 2 ft concrete well pad.



Photograph 6

Date: 27 May 2021 1:09 PM

Direction: E

Comments: Monitoring wells were developed by surging and pumping until 3 drums were filled or the turbidity stabilized below 20 NTUs.



GEOSYNTEC CONSULTANTS
Photographic Record



Client: Florida Department of Environmental Protection

Project Number: FR7522A

Site Name: Former Florida State Fire College (FFSFC)

Site Location: 1501 W Silver Springs Blvd, Ocala, FL

Photograph 7

Date: 27 May 2021 2:56 PM

Direction: E

Comments: Forty-eight drums containing soil cuttings, decontamination water, drilling mud, and development water were staged at the site.



Photograph 8

Date: 27 May 2021 5:05 PM

Direction: E

Comments: All forty-eight drums were removed immediately following the event by the waste hauler.



ATTACHMENT C
Non-Hazardous Waste Manifest

