

**Appendix D – Field Documentation – Daily Tailgate Safety Meeting Forms, PFAS
Sampling Checklists, Sampling Logs, Test Equipment Calibration Log, Boring
Logs, Photo Logs**

**Groundwater Sampling
Field Documentation**

**Tailgate Safety Meeting Forms
(Groundwater Sampling)**

Calibration Log
(Groundwater Sampling)

TEST EQUIPMENT CALIBRATION LOG

PROJECT NAME <i>TideWater @ JPL</i>				PROJECT NUMBER <i>221128-AA1</i>			
EQUIPMENT NAME	EQUIPMENT NUMBER	DATE/TIME OF TEST	STANDARDS USED	EQUIPMENT READING	CALIBRATED TO: OR WITHIN 10%:	TEMP.	INITIALS
<i>YSI ProQuatro</i>	<i>22C103070</i>	<i>11/28/22 0800</i>	<i>4.0 pH 7.0 pH 10.0</i>	<i>4.08 7.10 10.05</i>	<i>4.0 7.0 10.0</i>	<i>15.1°C</i>	<i>HH</i>
↓	↓	↓	<i>Cond 3900</i>	<i>3977</i>	<i>3900</i>	<i>15.1°C</i>	<i>HH</i>
↓	↓	↓	<i>ORP 240</i>	<i>233.6</i>	<i>240</i>	<i>15.1°C</i>	<i>HH</i>
↓	↓	↓	<i>D.O. 100%</i>	<i>117.6%</i>	<i>100.9%</i>	<i>15.1°C</i>	<i>AA</i>
<i>YSI ProQuatro</i>	<i>22C103070</i>	<i>11/29/22 0700</i>	<i>4.0 pH 7.0 pH 10.0</i>	<i>4.11 7.09 10.04</i>	<i>4.0 7.0 10.0</i>	<i>13.9°C</i>	<i>HH</i>
↓	↓	↓	<i>Cond 3900 ORP 240</i>	<i>3831 249</i>	<i>3900 240</i>	<i>13.9°C</i>	<i>HH</i>
↓	↓	↓	<i>D.O. 100%</i>	<i>115.6%</i>	<i>100.5%</i>	<i>13.9°C</i>	<i>AA</i>
<i>YSI ProQuatro</i>	<i>22C103070</i>	<i>11/30/22 0700</i>	<i>4.0 pH 7.0 pH 10.0</i>	<i>3.95 6.95 10.10</i>	<i>4.0 7.0 10.0</i>	<i>12.9°C</i>	<i>HH</i>
↓	↓	↓	<i>Cond 3900</i>	<i>3977</i>	<i>3900</i>	<i>12.8°C</i>	<i>HH</i>
↓	↓	↓	<i>ORP 240</i>	<i>255</i>	<i>240</i>	<i>12.8°C</i>	<i>HH</i>
↓	↓	↓	<i>D.O. 100%</i>	<i>114.3%</i>	<i>100.6%</i>	<i>12.8°C</i>	<i>AA</i>

**PFAS Checklists
(Groundwater Sampling)**

PFAS SAMPLING CHECKLIST

Site Name SPL Task: _____
Weather (temp/precip): cloudy Date: 11/28/22

Field Clothing and PPE:

- Powder-Free Nitrile Gloves ONLY
- No clothing or boots containing Gore-Tex™
- No clothing or boots treated with water-resistant spray
- Safety boots made from polyurethane and PVC or leather boots covered with overboots
- No materials containing Tyvek®
- Field crew has not used fabric softener on clothing
- Field crew has not used cosmetics, moisturizers, hand cream, or other related products this morning
- Field crew has not applied unauthorized sunscreen or insect repellent
- Sampler don fresh nitrile gloves for each sample collected

Field Equipment

- No Teflon® or LDPE containing materials other than QED brand LDPE
- All sample materials made from stainless steel, HDPE, acetate, silicon, or polypropylene or QED brand LDPE
- No water proof field books, waterproof paper or waterproof bottle labels, waterproof markers/Sharpies®
- No plastic clipboards, binders, or spiral hard cover notebooks

- No Post-It Notes®
- No aluminum foil
- Coolers filled with regular ice only; no chemical (blue) ice packs in possession

Sample Containers

- Containers for PFAS Shipped in separate cooler
- Sample containers made of HDPE or polypropylene
- Caps are unlined and made of HDPE or polypropylene

Wet Weather (as applicable):

- Wet weather gear made of polyurethane and PVC only

Equipment Decontamination:

- "PFAS-free" water on-site for decontamination of sample equipment; no other water sources to be used
- Alconox® or 7th Generation Free & Clear Dish Soap to be used as decontamination cleaning agents

Food Considerations:

- No food or drink on-site with exception of bottled water and/or hydration drinks (i.e., Gatorade® and Powerade®) that is available for consumption only in the staging area

Vehicle Considerations:

- Avoid utilizing areas inside vehicle as sample staging areas

If any applicable boxes cannot be checked, the field team leader shall describe the deviation on the back and work with field personnel to address issues prior to commencing work. See additional information on the back of this form.

Sampling Equipment and Supply Summary (include brand names and serial numbers where available)

Decontamination Fluid Source(s): PFAS-Free Lab water

Soap and other fluids used: Alconox

Gloves: Nitrile - Binder Free Misc: _____

Sampling Equipment: Westbay

Field Team Names: Thinda H, Amer W.

Field Team Leader Signature: [Signature]

PFAS SAMPLING CHECKLIST

Site Name JPL Task: _____
Weather (temp/precip): Cloudy Date: 11/29/22

Field Clothing and PPE:

- Powder-Free Nitrile Gloves ONLY
- No clothing or boots containing Gore-Tex™
- No clothing or boots treated with water-resistant spray
- Safety boots made from polyurethane and PVC or leather boots covered with overboots
- No materials containing Tyvek®
- Field crew has not used fabric softener on clothing
- Field crew has not used cosmetics, moisturizers, hand cream, or other related products this morning
- Field crew has not applied unauthorized sunscreen or insect repellent
- Sampler don fresh nitrile gloves for each sample collected

Field Equipment

- No Teflon® or LDPE containing materials other than QED brand LDPE
- All sample materials made from stainless steel, HDPE, acetate, silicon, or polypropylene or QED brand LDPE
- No water proof field books, waterproof paper or waterproof bottle labels, waterproof markers/Sharpies®
- No plastic clipboards, binders, or spiral hard cover notebooks

- No Post-It Notes®
- No aluminum foil
- Coolers filled with regular ice only; no chemical (blue) ice packs in possession

Sample Containers

- Containers for PFAS Shipped in separate cooler
- Sample containers made of HDPE or polypropylene
- Caps are unlined and made of HDPE or polypropylene

Wet Weather (as applicable):

- Wet weather gear made of polyurethane and PVC only

Equipment Decontamination:

- "PFAS-free" water on-site for decontamination of sample equipment; no other water sources to be used
- Alconox® or 7th Generation Free & Clear Dish Soap to be used as decontamination cleaning agents

Food Considerations:

- No food or drink on-site with exception of bottled water and/or hydration drinks (i.e., Gatorade® and Powerade®) that is available for consumption only in the staging area

Vehicle Considerations:

- Avoid utilizing areas inside vehicle as sample staging areas

If any applicable boxes cannot be checked, the field team leader shall describe the deviation on the back and work with field personnel to address issues prior to commencing work. See additional information on the back of this form.

Sampling Equipment and Supply Summary (include brand names and serial numbers where available)

Decontamination Fluid Source(s): PFAS-Free lab water

Soap and other fluids used: Alconox

Gloves: Nitrile - Powder Free Misc: _____

Sampling Equipment: Westboy

Field Team Names: Thinh H, Arner W

Field Team Leader Signature: _____

PFAS SAMPLING CHECKLIST

Site Name JPL
Weather (temp/precip): Cloudy

Task:
Date: 11/30/22

Field Clothing and PPE:

- Powder-Free Nitrile Gloves ONLY
- No clothing or boots containing Gore-Tex™
- No clothing or boots treated with water-resistant spray
- Safety boots made from polyurethane and PVC or leather boots covered with overboots
- No materials containing Tyvek®
- Field crew has not used fabric softener on clothing
- Field crew has not used cosmetics, moisturizers, hand cream, or other related products this morning
- Field crew has not applied unauthorized sunscreen or insect repellent
- Sampler don fresh nitrile gloves for each sample collected

- No Post-it Notes®
- No aluminum foil
- Coolers filled with regular ice only; no chemical (blue) ice packs in possession

Sample Containers

- Containers for PFAS Shipped in separate cooler
- Sample containers made of HDPE or polypropylene
- Caps are unlined and made of HDPE or polypropylene

Wet Weather (as applicable):

- Wet weather gear made of polyurethane and PVC only

Equipment Decontamination:

- "PFAS-free" water on-site for decontamination of sample equipment; no other water sources to be used
- Alconox® or 7th Generation Free & Clear Dish Soap to be used as decontamination cleaning agents

Field Equipment

- No Teflon® or LDPE containing materials other than QED brand LDPE
- All sample materials made from stainless steel, HDPE, acetate, silicon, or polypropylene or QED brand LDPE
- No water proof field books, waterproof paper or waterproof bottle labels, waterproof markers/Sharpies®
- No plastic clipboards, binders, or spiral hard cover notebooks

Food Considerations:

- No food or drink on-site with exception of bottled water and/or hydration drinks (i.e., Gatorage® and Powerade®) that is available for consumption only in the staging area

Vehicle Considerations:

- Avoid utilizing areas inside vehicle as sample staging areas

If any applicable boxes cannot be checked, the field team leader shall describe the deviation on the back and work with field personnel to address issues prior to commencing work. See additional information on the back of this form.

Sampling Equipment and Supply Summary (include brand names and serial numbers where available)

Decontamination Fluid Source(s): PFAS-Free Lab Water

Soap and other fluids used: Alconox

Gloves: Nitrile - Powder Free Misc: _____

Sampling Equipment: Westbay

Field Team Names: Thinh H., Amer W.

Field Team Leader Signature: [Signature]

Groundwater Sampling Log Sheets

**WESTBAY™ GROUNDWATER MONITORING WELL
WATER LEVEL MEASUREMENT LOG SHEET**

WELL ID: MW-4
 DATE: 11/25/22
 LOCATION: Tidewater Pasadena
 ELEV. TOP OF WESTBAY CASING _____
 WEATHER: Clear
DTW-174.95'

PROBE TYPE Westbay
 SERIAL NO. EMSA502
 PROJECT Tidewater JPL
 OPERATOR(S) T. Hoang
 ATM. PRESSURE (Patm): (start) 19.04 (finish) 14.11
12.82°C 18.33°C

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm ² Outside Casing P2	mH ² O Inside Casing	Trans. Temp. (oC)				
5	513	513	159.74 161.99	161.57	161.99	18.87	340.35	172.65	513	0853
4	390	391	109.19	109.16	109.19	20.03	219.44	170.56	390	0855
3	320	321	78.62	78.93	78.62	20.33	149.70	170.30	320	0857
2	238	238	42.79	43.61	42.79	20.32	68.22	169.78	238	0859
1	148	148	14.21	14.18	14.21	19.29	0.32	147.68	148	0901

Comments: _____

**WESTBAY™ GROUNDWATER MONITORING WELL
WATER LEVEL MEASUREMENT LOG SHEET**

WELL ID: MW-12
 DATE: 11/28/22
 LOCATION: JPL
 ELEV. TOP OF WESTBAY CASING _____
 WEATHER: Clear
 DTW - ~~55.95~~ 173.72'

PROBE TYPE Westbay
 SERIAL NO. 2502
 PROJECT Tidewater JPL
 OPERATOR(S) 11/28/22
 ATM. PRESSURE (Patm): (start) 14.06 (finish) 14.10
15.98 °C 18.19 °C

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi)	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm ² Outside Casing P2	mH ₂ O Inside Casing	Trans. Temp. (oC)				
5	548	547	176.44	149.83	176.44	18.97	313.22	234.78	548	1222
4	436	434	127.67	117.48	127.67	20.64	238.59	197.41	436	1228
3	323	322	78.41	71.19	78.41	20.05	131.80	191.20	323	1230
2	243	241	43.45	37.16	43.45	19.22	53.29	189.71	243	1232
1	140	139	14.16	14.16	14.16	18.48	0.23	139.77	140	1234

Comments: _____

LOW FLOW WELL MONITORING DATA SHEET

Project #: <u>221128-HH1</u>	Client: <u>Tidewater</u>
Sampler: <u>HH</u>	Gauging Date: <u>11/30/22</u>
Well I.D.: <u>MW-15</u>	Well Diameter (in.): 2 3 <u>4</u> 6 8 <u> </u>
Total Well Depth (ft.): <u>74.95</u>	Depth to Water (ft.): <u>40.31</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>(PVC)</u> Grade	Flow Cell Type: <u>No Quatro</u>

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
 Sampling Method: Dedicated Tubing New Tubing Other _____
 Start Purge Time: 0915 Flow Rate: 300ml/min Pump Depth: 65'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
0918	17.6	7.29	607	40	5.69	-31.4	900	40.33
0921	17.3	7.31	597	42	5.23	-46.4	1800	40.33
0924	17.3	7.32	595	35	5.03	-50.5	2700	40.33
0927	17.2	7.34	595	34	4.82	-60.4	3600	40.33
0930	17.2	7.34	593	24	4.87	-62.1	4500	40.33
0933	17.2	7.34	590	22	4.85	-64.9	5400	40.33
0936	17.2	7.35	588	21	4.79	-67.3	6300	40.33
0939	17.2	7.35	584	20	4.75	-71.1	7200	40.33

Did well dewater? Yes <input type="radio"/> No <input checked="" type="radio"/>	Amount actually evacuated: <u>7200ml</u>
Sampling Time: <u>0940</u>	Sampling Date: <u>11/30/22</u>
Sample I.D.: <u>MW-15-113022</u>	Laboratory: <u>See C.O.C</u>
Analyzed for: TPH-G BTEX MTBE TPH-D Other: <u>See C.O.C</u>	
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: <u>22128-HH1</u>	Client: <u>Tidewater</u>
Sampler: <u>HH</u>	Gauging Date: <u>11/30/22</u>
Well I.D.: <u>MW-16</u>	Well Diameter (in.): 2 3 <u>(4)</u> 6 8
Total Well Depth (ft.): <u>284.55</u>	Depth to Water (ft.): <u>283.93</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	Flow Cell Type: _____

Purge Method: 2" Grundfos Pump ~~Peristaltic Pump~~ ~~Bladder Pump~~
 Sampling Method: Dedicated Tubing ~~New Tubing~~ ~~Other~~ _____
 Start Purge Time: _____ Flow Rate: _____ Pump Depth: _____

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
<u>- Insufficient water to sample</u>								
<u>- No Sample</u>								

Did well dewater? Yes No Amount actually evacuated: _____

Sampling Time: _____ Sampling Date: _____

Sample I.D.: _____ Laboratory: _____

Analyzed for: TPH-G BTEX MTBE TPH-D Other: _____

Equipment Blank I.D.: _____ @ _____ Time Duplicate I.D.: _____

**WESTBAY™ GROUNDWATER MONITORING WELL
WATER LEVEL MEASUREMENT LOG SHEET**

WELL ID: MW-17
 DATE: 11/29/22
 LOCATION: JPL
 ELEV. TOP OF WESTBAY CASING _____
 WEATHER: Clear
DTW-212.25'

PROBE TYPE Westbay
 SERIAL NO. EMS 2502
 PROJECT Tidelwater JPL
 OPERATOR(S) T. Hoagy
 ATM. PRESSURE (Patm): (start) 14.03 (finish) 14.11
17.44°C 17.27°C

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi)	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm ² Outside Casing P2	mH ₂ O Inside Casing	Trans. Temp. (oC)				
5	726	726	237.67	176.97	237.67	18.41	375.90	350.10	726	1130
4	582	582	175.33	122.67	175.33	19.00	250.63	331.37	582	1132
3	468	468	125.90	88.44	125.90	18.71	171.66	296.34	468	1134
2	370	370	83.29	49.67	83.29	18.10	82.22	287.78	370	1136
1	250	250	31.11	14.22	31.11	17.48	0.44	249.56	250	1138

Comments: Collar detet 6" above

**WESTBAY™ GROUNDWATER MONITORING WELL
WATER LEVEL MEASUREMENT LOG SHEET**

WELL ID: MMW-24
 DATE: 11/29/22
 LOCATION: JPL
 ELEV. TOP OF WESTBAY CASING _____
 WEATHER: Clear
DTW-253.61'

PROBE TYPE Westby
 SERIAL NO. EMS2502
 PROJECT Tidewater JPL
 OPERATOR(S) T. Hong
 ATM. PRESSURE (Patm): (start) 14.08 (finish) 14.10
14.12°C 2176°C

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi)	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm ² Outside Casing P2	mH ² O Inside Casing	Trans. Temp. (oC)				
5	678	678	198.32	171.55	198.32	19.11	363.28	314.72	678	0804
4	554	554	144.60	124.22	144.60	20.22	254.09	299.91	554	0806
3	435	435	93.01	78.93	93.01	20.77	149.61	285.39	435	0808
2	373	373	66.09	52.35	66.09	21.10	88.29	284.71	373	0810
1	279	279	25.29	14.20	25.29	21.57	0.28	278.72	279	0812

Comments: _____

Photo Log
(Groundwater Sampling)

JPL PFAS SI Groundwater Sampling

Photo Log



Groundwater Sampling (MW-4)



Flushing Westbay® Sample Container Hoses with PFAS-Free Water



Equipment Decontamination



Equipment Decontamination at MW-4



Pouring Groundwater Sample Into Sample Bottle



Collection of Water Quality Parameters



Recording Water Quality Parameters



Groundwater Sample Collection (MW-4)



Groundwater Sample Collection (MW-12)



Groundwater Sample Collection (MW-12)



MW-12 Work Area



Recording Groundwater Quality Parameters (MW-12)

**Soil Sampling
Field Documentation**

**Tailgate Safety Meeting Forms
(Soil Sampling)**

TAILGATE SAFETY MEETING FORM

Date: 11/30/22 Time: 07:00 Job Number: 1335-002

Site Location (Circle One): JPL Mesa (Helipad) + Drainage Basin

Scope of Work: Collect soil samples w/ hand auger + GPS locations

SAFETY TOPICS PRESENTED

Protective Clothing/Equipment: Level D: hard hat, standard work clothing, safety glasses with side shields, safety-toed boots, hearing protection (if necessary), work gloves, traffic vest, etc.

Chemical Hazards:

Physical Hazards: Slips, trips, and falls; traffic, equipment, tools, heat, etc.

Equipment Used: hand auger, decon buckets/eqip., shovel, trowel, etc

Emergency Procedures: JPL Emergency: 818-393-3333; JPL Dispatch: 818-354-3530

Hospital: Huntington Hospital Phone: 626-397-5000 Ambulance Phone: 911

Hospital Address and Route: Huntington Hospital 100 West California Blvd., Pasadena, CA 91105;

Directions: Take the Foothill (210) Freeway east to the California Boulevard exit. Turn left (east) on California Blvd. Turn right into the hospital's main gate.

Noise Impacts and Mitigation: None

Odor Impacts and Mitigation: None

Permits Required: None

ATTENDEES

NAME PRINTED
CEORIC MOSELEY

SIGNATURE
[Signature]

Meeting Conducted by: D. Conner
Site Safety Officer: [Signature]

Signed by: [Signature]
Construction Manager: DJC

**Calibration Log
(Soil Sampling)**

EQUIPCO

RENTALS

RAE SYSTEMS MiniRAE 3000 PID CALIBRATION CERTIFICATE

SERVICE TECHNICIAN: CLB

DATE: 11 / 22 / 2022

INSTRUMENT INFORMATION

RENTAL ID#: RAE3000. 23 SERIAL NUMBER: 596-000474

LAMP: 10.6eV
 11.8eV

CALIBRATION INFORMATION

CALIBRATION GAS 1:

- Isobutylene 100 ppm, in air
 Hexane _____ ppm, in air

RESPONSE TO GAS 1:

100 ppm $\pm 2\%$

LOT#: K-016402

ZERO AIR RESPONSE:

000.0ppm

LOT#: 11222022

Confirmed 100 ppm and 0
ppm responses in field.
11/30/2022 - D. Conner

THANK YOU FOR RENTING FROM EQUIPCO

This instrument has been thoroughly tested by a factory certified service technician before delivery to you.
If you have any questions or difficulties please call us immediately and request technical support.

1-888-234-5678

**PFAS Checklists
(Soil Sampling)**

PFAS SAMPLING CHECKLIST

Site Name JPL PFAS SI Task: _____
Weather (temp/precip): partly cloudy & cool Date: 11/30/2022

Field Clothing and PPE: light breeze

- Powder-Free Nitrile Gloves ONLY
- No clothing or boots containing Gore-Tex™
- No clothing or boots treated with water-resistant spray
- Safety boots made from polyurethane and PVC or leather boots covered with overboots
- No materials containing Tyvek®
- Field crew has not used fabric softener on clothing
- Field crew has not used cosmetics, moisturizers, hand cream, or other related products this morning
- Field crew has not applied unauthorized sunscreen or insect repellent
- Sampler don fresh nitrile gloves for each sample collected

Field Equipment

- No Teflon® or LDPE containing materials other than QED brand LDPE
- All sample materials made from stainless steel, HDPE, acetate, silicon, or polypropylene or QED brand LDPE
- No water proof field books, waterproof paper or waterproof bottle labels, waterproof markers/Sharpies®
- No plastic clipboards, binders, or spiral hard cover notebooks

- No Post-It Notes®
- No aluminum foil
- Coolers filled with regular ice only; no chemical (blue) ice packs in possession

Sample Containers

- Containers for PFAS Shipped in separate cooler
- Sample containers made of HDPE or polypropylene
- Caps are unlined and made of HDPE or polypropylene

Wet Weather (as applicable): N/A

- Wet weather gear made of polyurethane and PVC only

Equipment Decontamination:

- "PFAS-free" water on-site for decontamination of sample equipment; no other water sources to be used
- Alconox® or 7th Generation Free & Clear Dish Soap to be used as decontamination cleaning agents

Food Considerations:

- No food or drink on-site with exception of bottled water and/or hydration drinks (i.e., Gatorade® and Powerade®) that is available for consumption only in the staging area

Vehicle Considerations:

- Avoid utilizing areas inside vehicle as sample staging areas

If any applicable boxes cannot be checked, the field team leader shall describe the deviation on the back and work with field personnel to address issues prior to commencing work. See additional information on the back of this form.

Sampling Equipment and Supply Summary (include brand names and serial numbers where available)

Decontamination Fluid Source(s): Potable water & Arrowhead Distilled water, PFAS-Free water from lab

Soap and other fluids used: Liquinox

Gloves: Touch N Tuff Misc: _____

Sampling Equipment: Stainless steel haulager

Field Team Names: David Lerner & Cedric Moseley

Field Team Leader Signature: [Signature]

Soil Boring Logs



NASA JPL PFAS SI BORING LOG SB-1

Site: Jet Propulsion Laboratory (JPL) Project: NASA JPL PFAS SI Location: Pasadena, CA County: Los Angeles AOPC: AOPC 1 Site: Emergency Landing Facility Project #: 1001335-002	Sampler Type: Hand Auger Boring Diameter: 3-inch Total Depth (ft bgs): 2.00 Geologist: D. Conner, PG Helper: C. Moseley PID Make: Rae Systems PID Model: MiniRae 3000	<table style="width: 100%; border: none;"> <tr> <td style="border: none;"><u>Coordinates</u></td> <td style="border: none;">Latitude: 34.20555</td> </tr> <tr> <td style="border: none;">Elevation: 1527</td> <td style="border: none;">Longitude: -118.17384</td> </tr> <tr> <td style="border: none;">Borehole Abandoned:</td> <td style="border: none;">Monitoring Device Installed:</td> </tr> <tr> <td style="border: none;">Yes <input checked="" type="checkbox"/> No</td> <td style="border: none;">Yes No <input checked="" type="checkbox"/></td> </tr> <tr> <td style="border: none;">Method: Backfilled</td> <td style="border: none;">Type: Not Applicable</td> </tr> <tr> <td colspan="2" style="border: none;">Contract #: W912PL21D0021 Client: USACE/NASA</td> </tr> <tr> <td colspan="2" style="border: none;">Delivery Order #: W912PL21F0046</td> </tr> </table>	<u>Coordinates</u>	Latitude: 34.20555	Elevation: 1527	Longitude: -118.17384	Borehole Abandoned:	Monitoring Device Installed:	Yes <input checked="" type="checkbox"/> No	Yes No <input checked="" type="checkbox"/>	Method: Backfilled	Type: Not Applicable	Contract #: W912PL21D0021 Client: USACE/NASA		Delivery Order #: W912PL21F0046	
<u>Coordinates</u>	Latitude: 34.20555															
Elevation: 1527	Longitude: -118.17384															
Borehole Abandoned:	Monitoring Device Installed:															
Yes <input checked="" type="checkbox"/> No	Yes No <input checked="" type="checkbox"/>															
Method: Backfilled	Type: Not Applicable															
Contract #: W912PL21D0021 Client: USACE/NASA																
Delivery Order #: W912PL21F0046																

Depth (inches)	Sample No.	Sample Int.	Graphic Symbol	USCS	Description	Plasticity	Moisture Content	Color Code*	PID (ppm)
0			Fill	Fill	Grass, roots, topsoil, etc.				
1			Fill	Fill					
2			Fill	Fill					
3			Fill	Fill					
4			Fill	Fill					
5			Fill	SM	SILTY SAND: strong brown (7.5YR 5/6), 80% silt, 15% fine grained sand, 5% coarse-grained sand, loose, non-plastic, angular, dry.	NP	Dry	7.5YR 5/6	4.2
6	SB-1-0.5-113022								
7			Fill						
8			Fill						
9			Fill						
10			Fill						
11			Fill						
12			Fill						
13			Fill	SM	As above.				
14			Fill	SM					
15			Fill						
16			Fill						
17			Fill						
18			Fill						
19			Fill						
20			Fill						
21			Fill						
22			Fill	SM	Color change to light brown (7.5YR 6/3)	NP		7.5YR 6/3	2.5
23	SB-1-2.0-113022								
24			Fill						



NASA JPL PFAS SI BORING LOG SB-2

Site: Jet Propulsion Laboratory (JPL) Project: NASA JPL PFAS SI Location: Pasadena, CA County: Los Angeles AOPC: AOPC 1 Site: Emergency Landing Facility Project #: 1001335-002	Sampler Type: Hand Auger Boring Diameter: 3-inch Total Depth (ft bgs): 2.00 Geologist: D. Conner, PG Helper: C. Moseley PID Make: Rae Systems PID Model: MiniRae 3000	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border-bottom: 1px solid black;"><u>Coordinates</u></td> <td>Latitude: 34.20553</td> </tr> <tr> <td>Elevation: 1525</td> <td>Longitude: -118.17375</td> </tr> <tr> <td>Borehole Abandoned:</td> <td>Monitoring Device Installed:</td> </tr> <tr> <td>Yes <input checked="" type="checkbox"/> No</td> <td>Yes No <input checked="" type="checkbox"/></td> </tr> <tr> <td>Method: Backfilled</td> <td>Type: Not Applicable</td> </tr> <tr> <td colspan="2">Contract #: W912PL21D0021 Client: USACE/NASA</td> </tr> <tr> <td colspan="2">Delivery Order #: W912PL21F0046</td> </tr> </table>	<u>Coordinates</u>	Latitude: 34.20553	Elevation: 1525	Longitude: -118.17375	Borehole Abandoned:	Monitoring Device Installed:	Yes <input checked="" type="checkbox"/> No	Yes No <input checked="" type="checkbox"/>	Method: Backfilled	Type: Not Applicable	Contract #: W912PL21D0021 Client: USACE/NASA		Delivery Order #: W912PL21F0046	
<u>Coordinates</u>	Latitude: 34.20553															
Elevation: 1525	Longitude: -118.17375															
Borehole Abandoned:	Monitoring Device Installed:															
Yes <input checked="" type="checkbox"/> No	Yes No <input checked="" type="checkbox"/>															
Method: Backfilled	Type: Not Applicable															
Contract #: W912PL21D0021 Client: USACE/NASA																
Delivery Order #: W912PL21F0046																

Depth (inches)	Sample No.	Sample Int.	Graphic Symbol	USCS	Description	Plasticity	Moisture Content	Color Code*	PID (ppm)
0			Fill	Fill	Grass, weeds, gravel, etc.				
1			Fill	Fill					
2			Fill	Fill					
3			Fill	Fill					
4			Fill	Fill					
5			Fill	Fill					
6	SB-2-0.5-113022		SM	SM	SILTY SAND: brown (7.5YR 5/3), 80% silt and fine-grained sand, 15% medium-grained sand, 3 - 5% coarse-grained sand, trace fine gravel, dry to slightly moist, angular.	--	Dry to Slightly Moist	7.5YR 5/3	3.9
7			SM	SM					
8			SM	SM					
9			SM	SM					
10			SM	SM					
11			SM	SM					
12			SM	SM					
13			SM	SM					
14			SM	SM					
15			SM	SM					
16			ML	ML	CLAYEY SILT: pale brown (10 YR 6/3), 80 - 90% clayey silt, 15 - 20% fine-grained sand, trace coarse-grained sand.	--		10YR 6/3	
17			ML	ML					
18			ML	ML					
19			ML	ML					
20			ML	ML					
21			ML	ML					
22			ML	ML					
23	SB-2-2.0-113022		ML	ML					2.0
24			ML	ML					



NASA JPL PFAS SI BORING LOG SB-3

Site: Jet Propulsion Laboratory (JPL)	Sampler Type: Hand Auger	<u>Coordinates</u>	Latitude: 34.20553
Project: NASA JPL PFAS SI	Boring Diameter: 3-inch	Elevation: 1521	Longitude: -118.17365
Location: Pasadena, CA	Total Depth (ft bgs): 2.00	Borehole Abandoned: Yes <input checked="" type="checkbox"/> No	Monitoring Device Installed: Yes No <input checked="" type="checkbox"/>
County: Los Angeles	Geologist: D. Conner, PG	Method: Backfilled	Type: Not Applicable
AOPC: AOPC 1	Helper: C. Moseley	Contract #: W912PL21D0021	Client: USACE/NASA
Site: Emergency Landing Facility	PID Make: Rae Systems	Delivery Order #: W912PL21F0046	
Project #: 1001335-002	PID Model: MiniRae 3000		

Depth (inches)	Sample No.	Sample Int.	Graphic Symbol	USCS	Description	Plasticity	Moisture Content	Color Code*	PID (ppm)
0									
1									
2			Fill	Fill	Roots, plants, topsoil, etc.				
3									
4									
5									
6	SB-3-0.5-113022		SM	SM	SILTY SAND: brown (7.5YR 5/3), 80% silt and fine-grained sand, 15% medium-grained sand, 3 - 5% coarse-grained sand, trace fine gravel, dry to slightly moist, angular.	--	Dry to Slightly Moist	7.5YR 5/3	2.8
7									
8									
9									
10									
11									
12									
13									
14									
15									
16			ML	ML	CLAYEY SILT: pale brown (10 YR 6/3), 80 - 90% clayey silt, 15 - 20% fine-grained sand, trace coarse-grained sand.	--		10YR 6/3	
17									
18									
19									
20									
21									
22									
23	SB-3-2.0-113022								2.3
24									



NASA JPL PFAS SI BORING LOG SB-4

Site: Jet Propulsion Laboratory (JPL) Project: NASA JPL PFAS SI Location: Pasadena, CA County: Los Angeles AOPC: AOPC 1 Site: Emergency Landing Facility Project #: 1001335-002	Sampler Type: Hand Auger Boring Diameter: 3-inch Total Depth (ft bgs): 2.00 Geologist: D. Conner, PG Helper: C. Moseley PID Make: Rae Systems PID Model: MiniRae 3000	<u>Coordinates</u> Elevation: 1434 Borehole Abandoned: Yes <input checked="" type="checkbox"/> No Method: Backfilled Contract #: W912PL21D0021 Delivery Order #: W912PL21F0046	Latitude: 34.20456 Longitude: -118.17395 Monitoring Device Installed: Yes No <input checked="" type="checkbox"/> Type: Not Applicable Client: USACE/NASA
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Depth (inches)	Sample No.	Sample Int.	Graphic Symbol	USCS	Description	Plasticity	Moisture Content	Color Code*	PID (ppm)
0				Fill	Debris, gravels, etc.				
1									
2									
3									
4									
5									
6	SB-4-0.5-113022								2.6
7									
8				SM	SILTY SAND: brown (10YR 4/3), 70% fine- to medium-grained sand, 5 - 10% coarse-grained sand, trace fine gravel, slightly moist, angular to subrounded.	--	Slightly Moist	10YR 4/3	
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20				SP	SAND: brown (7.5YR 4/2), 70 - 80% fine- to medium-grained sand, 10 - 20% coarse-grained sand, trace fine gravel, slightly moist.	--	Slightly Moist	7.5YR 4/2	
21									
22									
23	SB-4-2.0-113022								2.9
24									



NASA JPL PFAS SI BORING LOG SB-5

Site: Jet Propulsion Laboratory (JPL) Project: NASA JPL PFAS SI Location: Pasadena, CA County: Los Angeles AOPC: AOPC 1 Site: Emergency Landing Facility Project #: 1001335-002	Sampler Type: Hand Auger Boring Diameter: 3-inch Total Depth (ft bgs): 2.00 Geologist: D. Conner, PG Helper: C. Moseley PID Make: Rae Systems PID Model: MiniRae 3000	<u>Coordinates</u> Elevation: 1432 Borehole Abandoned: Yes <input checked="" type="checkbox"/> No Method: Backfilled	Latitude: 34.20451 Longitude: -118.17401 Monitoring Device Installed: Yes No <input checked="" type="checkbox"/> Type: Not Applicable Contract #: W912PL21D0021 Client: USACE/NASA Delivery Order #: W912PL21F0046
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Depth (inches)	Sample No.	Sample Int.	Graphic Symbol	USCS	Description	Plasticity	Moisture Content	Color Code*	PID (ppm)
0									
1									
2				Fill	Debris from runoff: leaves, pine needles, gravels, grass, etc.				
3									
4									
5									
6	SB-5-0.5-113022								3.4
7									
8									
9				SM	SILTY SAND: brown (10YR 4/3), 70% fine- to medium-grained sand, 5 - 10% coarse-grained sand, trace fine gravel, slightly moist, angular to subrounded.	--	Slightly Moist	10YR 4/3	
10									
11									
12									
13									
14									
15									
16									
17									
18									
19				SP	SAND: brown (7.5YR 4/2), 70 - 80% fine- to medium-grained sand, 10 - 20% coarse-grained sand, trace fine gravel, slightly moist.	--	Slightly Moist	7.5YR 4/2	
20									
21									
22									
23	SB-5-2.0-113022								2.8
24									



NASA JPL PFAS SI BORING LOG SB-6

Site: Jet Propulsion Laboratory (JPL) Project: NASA JPL PFAS SI Location: Pasadena, CA County: Los Angeles AOPC: AOPC 1 Site: Emergency Landing Facility Project #: 1001335-002	Sampler Type: Hand Auger Boring Diameter: 3-inch Total Depth (ft bgs): 2.00 Geologist: D. Conner, PG Helper: C. Moseley PID Make: Rae Systems PID Model: MiniRae 3000	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border-bottom: 1px solid black;"><u>Coordinates</u></td> <td>Latitude: 34.20451</td> </tr> <tr> <td>Elevation: 1426</td> <td>Longitude: -118.17393</td> </tr> <tr> <td>Borehole Abandoned:</td> <td>Monitoring Device Installed:</td> </tr> <tr> <td>Yes <input checked="" type="checkbox"/> No</td> <td>Yes No <input checked="" type="checkbox"/></td> </tr> <tr> <td>Method: Backfilled</td> <td>Type: Not Applicable</td> </tr> <tr> <td colspan="2">Contract #: W912PL21D0021 Client: USACE/NASA</td> </tr> <tr> <td colspan="2">Delivery Order #: W912PL21F0046</td> </tr> </table>	<u>Coordinates</u>	Latitude: 34.20451	Elevation: 1426	Longitude: -118.17393	Borehole Abandoned:	Monitoring Device Installed:	Yes <input checked="" type="checkbox"/> No	Yes No <input checked="" type="checkbox"/>	Method: Backfilled	Type: Not Applicable	Contract #: W912PL21D0021 Client: USACE/NASA		Delivery Order #: W912PL21F0046	
<u>Coordinates</u>	Latitude: 34.20451															
Elevation: 1426	Longitude: -118.17393															
Borehole Abandoned:	Monitoring Device Installed:															
Yes <input checked="" type="checkbox"/> No	Yes No <input checked="" type="checkbox"/>															
Method: Backfilled	Type: Not Applicable															
Contract #: W912PL21D0021 Client: USACE/NASA																
Delivery Order #: W912PL21F0046																

Depth (inches)	Sample No.	Sample Int.	Graphic Symbol	USCS	Description	Plasticity	Moisture Content	Color Code*	PID (ppm)
0									
1				Fill	Debris from runoff: leaves, pine needles, grass, etc.				
2									
3				Fill	Located in depression adjacent to corrugated drain pipe.				
4									
5									
6	SB-6-0.5-113022			Fill					3.6
7									
8				Fill	Topsoil, leaves, roots, pine needles, etc. dark brown (7.5YR 3/2)	--		7.5YR 3/2	
9									
10									
11									
12									
13									
14									
15									
16									
17									
18				SP	GRAVELLY SAND: brown (7.5YR 4/2), 60% fine- to medium-grained sand, 30% coarse-grained sand, 5 - 10% fine gravels, slightly moist, angular to subangular.	--	Slightly Moist	7.5YR 4/7	
19									
20									
21									
22									
23	SB-6-2.0-113022								3.5
24									

**Photo Log
(Soil Sampling)**

JPL PFAS SI Soil Sampling

Photo Log



Soil Sampling and Soil Logging Area



Decontamination Buckets



Soil Sampling Area Looking West



Storm Drain and Sample Technician Pointing at SB-1 Location



Sample Technician Pointing at SB-2 Location Looking East



Sample Technician Pointing at SB-3 Location



View of Catch Basin (and Deer) from Helipad



Field Blanks, PFAS-Free Water, Gloves, and Ziplocks



Catch Basin Soil Sampling (SB-4)



Soil Logging and Decontamination Area



Soil Sampling in Catch Basin (Looking North)



Soil Sampling Locations Relative to Corrugated Drain Looking South