APPENDIX B

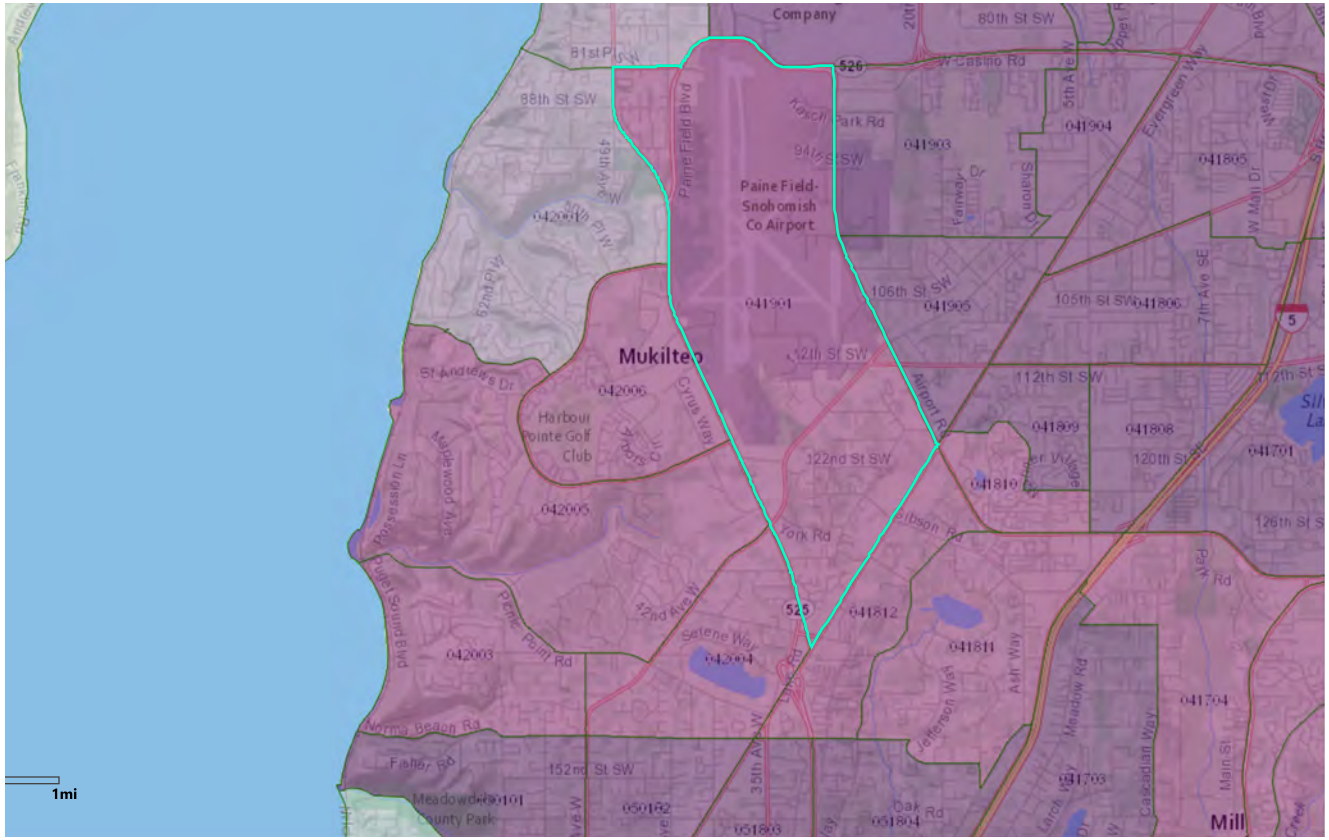
Potential Vulnerable Populations and Overburdened Communities, and Climate Change Impacts Evaluation Results

Washington State Department of Health

Selection: **Date: 02/23/2026 at 9:40 AM**

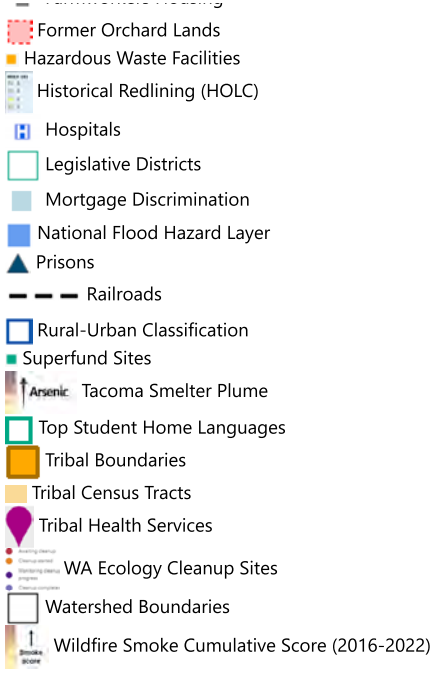
Environmental Health Disparities V2.0 -> Environmental Exposures -> Diesel Exhaust PM2.5 Emissions

Legend: (High) 10 9 8 7 6 5 4 3 2 1 **(Low)**



Legend

- Airport Runways
- Care Facilities - Adult Family Homes
- Care Facilities - Nursing Homes
- City Limits
- Climate Projections ~2050
- County Boundaries
- DCYF Licensed Childcare Centers
- Dry Cleaners (Current and Former)
- Electric Utilities - Investor
- Electric Utilities - Public
- Farmworkers Housing


Former Orchard Lands
Hazardous Waste Facilities
Historical Redlining (HOLC)
Hospitals
Legislative Districts
Mortgage Discrimination
National Flood Hazard Layer
Prisons
Railroads
Rural-Urban Classification
Superfund Sites
Arsenic
Tacoma Smelter Plume
Top Student Home Languages
Tribal Boundaries
Tribal Census Tracts
Tribal Health Services
WA Ecology Cleanup Sites
Watershed Boundaries
Wildfire Smoke Cumulative Score (2016-2022)

National Flood Hazard Layer FIRMette

FEMA

122°16'44"W 47°54'10"N



122°16'7"W 47°53'46"N

Feet

0 250 500 1,000 1,500 2,000

1:6,000

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 2/19/2026 at 10:05 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Select a location to view localized relative sea level rise (RSLR) projections.

Select County (optional)

Snohomish

Select WRIA (optional)

(All)

Select likelihood(s)

- [ ] 0.1%
- [ ] 1%
- [ ] 5%
- [x] 10%
- [ ] 17%
- [x] 50%
- [ ] 83%
- [x] 90%
- [ ] 95%
- [x] 99%

Select greenhouse gas scenario(s)

- [x] High (RCP 8.5)
- [x] Low (RCP 4.5)

Click for full SLR report.



Data Estimated for 47.9°, -122.3°
County: Snohomish
WRIA: 8, Cedar - Sammamish

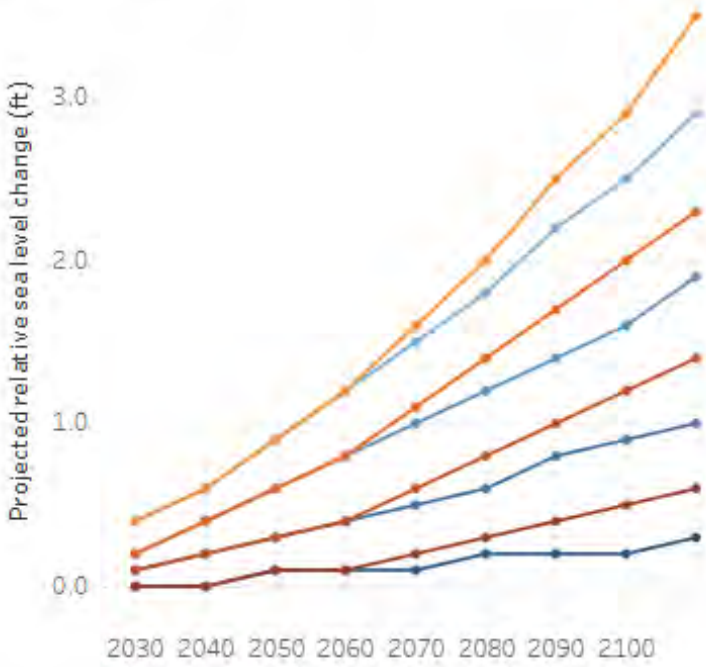
Vertical land movement estimate and uncertainty (1 standard deviation) for this location -0.3 ± 0.4 feet/century (negative values represent land level fall, or subsidence). This number is factored into these RSLR projections.

If there is a **subduction zone earthquake** this area may be subject to an additional land level change of 0.0 feet to -0.1 feet which is NOT factored into these RSLR projections. Coastal subsidence during a subduction zone earthquake would have the effect of RAISING local relative sea level.

RSLR for Selected Location

Projected changes relative to the average sea level over 1991-2009.

Hover for details.



Scenario, Likelihood

- High (RCP 8.5), 10%
- High (RCP 8.5), 50%
- High (RCP 8.5), 90%
- High (RCP 8.5), 99%
- Low (RCP 4.5), 10%
- Low (RCP 4.5), 50%
- Low (RCP 4.5), 90%
- Low (RCP 4.5), 99%

Select projections end year

2100

RSLR Projections (in feet) Shown Above

	High (RCP 8.5)				Low (RCP 4.5)			
Year	10%	50%	90%	99%	10%	50%	90%	99%
2020	0.4	0.2	0.1	0.0	0.4	0.2	0.1	0.0
2030	0.6	0.4	0.2	0.0	0.6	0.4	0.2	0.0
2040	0.9	0.6	0.3	0.1	0.9	0.6	0.3	0.1
2050	1.2	0.8	0.4	0.1	1.2	0.8	0.4	0.1
2060	1.6	1.1	0.6	0.2	1.5	1.0	0.5	0.1
2070	2.0	1.4	0.8	0.3	1.8	1.2	0.6	0.2
2080	2.5	1.7	1.0	0.4	2.2	1.4	0.8	0.2
2090	2.9	2.0	1.2	0.5	2.5	1.6	0.9	0.2
2100	3.5	2.3	1.4	0.6	2.9	1.9	1.0	0.3
2110	3.8	2.5	1.5	0.8	3.3	2.1	1.1	0.3
2120	4.4	2.9	1.7	0.9	3.7	2.3	1.2	0.3
2130	4.9	3.2	1.9	1.0	4.1	2.5	1.2	0.3
2140	5.5	3.6	2.1	1.0	4.6	2.8	1.3	0.2
2150	6.2	3.9	2.2	1.0	5.0	3.0	1.4	0.2

Click here to download the full Excel data tables for this location or select "Crosstab" in the download menu below to export only the values shown here as a .csv.

APPENDIX C

Grain Size and Hydraulic Conductivity Test Data

Adopting the equation form presented in Vukovic and Soro (1992),

$$K = \frac{\rho g}{\mu} N \varphi(n) d_e^2$$

the following values and equations aresubstituted into the appropriate terms to evalute the models listed in the table below. The values of d_e to be entered should be in cm units. The values of *K* calculated have the units cm/s, except for the Alyamani and Sen model (see footnote).

Source	*N*	*φ(n)*	d_e	Applicable Conditions
Hazen simplified (Freeze and Cherry, 1979)	$100\frac{\mu}{\rho g}$	1	d_{10}	uniformly graded sand, n = 0.375 T = 10 °C
Hazen (1892)[a]	6×10^{-4}	$[1 + 10(n - 0.26)]$	d_{10}	0.01 cm < d_{10} < 0.3 cm U < 5
Slichter (1898)[a]	1×10^{-2}	$n^{3.287}$	d_{10}	0.01 cm < d_{10} < 0.5 cm
Terzaghi (1925)[a]	10.7×10^{-3} smooth grains 6.1×10^{-3} coarse grains	$\left(\frac{n - 0.13}{\sqrt[3]{1-n}}\right)^2$	d_{10}	sandy soil, coarse sand
Beyer (1964)[a]	$5.2 \times 10^{-4} \log\frac{500}{U}$	1	d_{10}	0.006 cm < d_{10} <0.06 cm $1 < U < 20$
Sauerbrei (1932)[a] (Vuković and Soro, 1992)	$(3.75 \times 10^{-5}) \times \tau$ $\tau \cong 1.093 \times 10^{-4}T^2 + 2.102 \times 10^{-2}T + 0.5889$	$\frac{n^3}{(1-n)^2}$	d_{17}	sand and sandy clay d_{17} < 0.05 cm
Krüger (1919)[a]	4.35×10^{-4}	$\frac{n}{(1-n)^2}$	$\frac{1}{\sum_{i=1}^{n}\frac{\Delta w_i}{d_i}}$	medium sand U > 5 T = 0 °C
Kozeny-Carmen (1953)[a]	8.3×10^{-3}	$\frac{n^3}{(1-n)^2}$	d_{10} or $\frac{1}{\frac{3}{2}\frac{\Delta w_1}{d_1} + \sum_{i=2}^{n}\Delta g_i \frac{d_i^{g} + d_i^{d}}{2 d_i^{g} d_i^{d}}}$ $d_1 = \frac{1}{\frac{1}{2}\left(\frac{1}{d_i^{g}} + \frac{1}{d_i^{d}}\right)}$	Coarse sand
Zunker (1930)[a]	0.7×10^{-3} for nonuniform, clayey, angular grains 1.2×10^{-3} for nonuniform 1.4×10^{-3} for uniform, coarse grains 2.4×10^{-3} for uniform sand, well rounded grains	$\frac{n}{(1-n)}$	$\frac{1}{\sum_{i=1}^{n}\Delta g_i \frac{d_i^{g} - d_i^{d}}{d_i^{g} d_i^{d} ln\left(\frac{d_i^{g}}{d_i^{d}}\right)}}$	no fractions finer than d = 0.0025 mm
Zamarin (1928)[a]	8.65×10^{-3}	$\frac{n^3}{(1-n)^2} C_n$ $C_n = (1.275 - 1.5n)^2$	$\frac{1}{\sum_{i=1}^{n}\Delta g_i \frac{\ln\left(\frac{d_i^{g}}{d_i^{d}}\right)}{d_i^{g} - d_i^{d}}}$	Large grained sands with no fractions having d < 0.00025 mm
USBR (United States Bureau of Reclamation) (Bialas, 1966)[a]	$(4.8 \times 10^{-4})(10^{0.3})$	1.0	$d_{20}^{1.15}$	Medium grained sands with U < 5; derived for T = 15 °C
Barr (2001)	$\frac{1}{(36)5C_s^2}$ C_s^2 = 1 for spherical grains C_s^2 = 1.35 for angular grains	$\frac{n^3}{(1-n)^2}$	d_{10}	unspecified
Alyamani and Sen (1993)	1300	1.0	$[I_o + 0.025(d_{50} - d_{10})]$	unspecified
Chapuis (2004)	$\frac{\mu}{\rho g}$	$10^{1.291e - 0.6435}$ $e = \frac{n}{1-n}$	$d_{10}^{\left(\frac{10^{(0.5504 - 0.2937e)}}{2}\right)}$	0.3 < n < 0.7 0.10 < d_{10} < 2.0 mm 2 < U < 12 d_{10}/d_5 < 1.4
Krumbein and Monk (1942)	7.501×10^{-6}	$e^{(-1.31 \times \sigma_\phi)}$ $\sigma_\phi = \frac{\frac{d_{84\phi} - d_{16\phi}}{4}}{6.6}$	$2^{\left(\frac{d_{16\phi} + d_{50\phi} + d_{84\phi}}{3}\right)}$	natural sands with lognormal grain size distribution
Shepherd (1989)	142.8, channel deposits 489.6, beach sand 1632, dune sand	1	$d_{50}^{(r/2)}$ r= 1.65, channel deposits r= 1.75, beach sand r=1.85, dune sand	0.0063<d_{50}<2

* indicates formulas were taken from Vuković and Soro, (1992)
N = constant dependent on characteristics of the porous medium
φ(n) = function of porosity
T = water temp. (°C)
g = 980 cm s^{-2}
$\rho = 3.1 \times 10^{-8}\ T^3 - 7.0 \times 10^{-6}\ T^2 + 4.19 \times 10^{-5} T + 0.99985$
$\mu = -7.0 \times 10^{-8}\ T^3 + 1.002 \times 10^{-5}\ T^2 - 5.7 \times 10^{-4} T + 0.0178$
$\tau = 1.093 \times 10^{-4}\ T^2 + 2.102 \times 10^{-2}\ T + 0.5889$
n = porosity as fraction of aquifer volume
d_i^{g} = the maximum grain diameter in fraction *i*
d_i^{d} = the minimum grain diameter in fraction *i*
d_{10} = grain size (cm) corresponding to 10% by weight passing through the sieves
d_{20} = grain size (cm) corresponding to 20% by weight passing through the sieves
d_{50} = grain size (cm) corresponding to 50% by weight passing through the sieves
d_{60} = grain size (cm) corresponding to 60% by weight passing through the sieves
$U = d_{60}/d_{10}$
Δg_i = the fraction of mass that passes between sieves *i* and *i+1* where *i* is the smaller sieve
Δw_i = fraction of total weight of sample with fraction identifier '*i*'
d_i = mean grain diameter of the fraction *i*
$d_{i\phi}$ = mean grain diameter of the fraction *i* in phi units ($\phi = \log_2 (d_e/d_o)$, d_e in mm, d_o = 1 mm)
l_o = x-intercept (grain size) of a percent grain retention curve plotted on arithmetic axes and focussing on data below 50% retained

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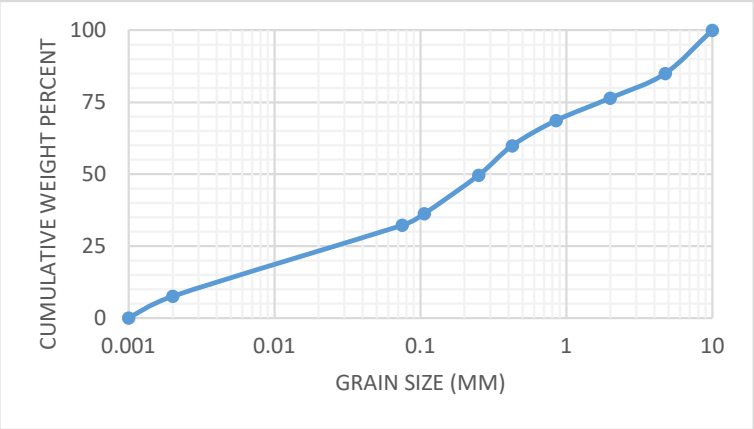
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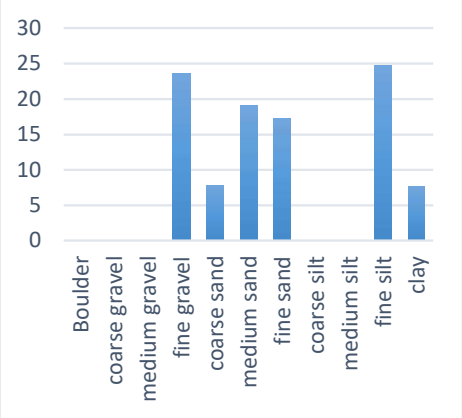
Grain Size Analysis Report Date: 12/3/2018 (Sample Date)

Sample Name: RIDW-1-(49-50)

Mass Sample (g): 27.5093 T (oC) 20

Poorly sorted silty sand with fines





Sieve opening (ps) di (mm)	Mass of retained (mr) (g)	mass fraction (mf)	Percent Passing (pp)
10	0	0	100
4.75	4.1421	0.150571	84.94291
2	2.3377	0.084979	76.44506
0.85	2.1481	0.078086	68.63642
0.425	2.4087	0.087559	59.88048
0.25	2.831	0.102911	49.58941
0.106	3.6789	0.133733	36.21612
0.075	1.0828	0.039361	32.27999
0.002	6.79	0.246826	7.597431
0.001	2.09	0.075974	0

Effective Grain Diameters (mm)		Other Useful Parameters	
d10	0.009	Uniformity Coef.	47.31
d17	0.030	n computed	0.26
d20	0.039	g (cm/s^2)	980.00
d50	0.257	ρ (g/cm^3)	0.9981
d60	0.431	μ (g/cm s)	0.0098
de (Kruger)	0.017	ρg/μ (1/cm s)	9.9327E+04
de (Kozeny)	0.008	tau (Sauerbrei)	1.053
de (Zunker)	0.011	$d_{geometric\ mean}$	0.187
de (Zamarin)	0.015	σ_ϕ	3.704
Io (Alyameni)	0.000		

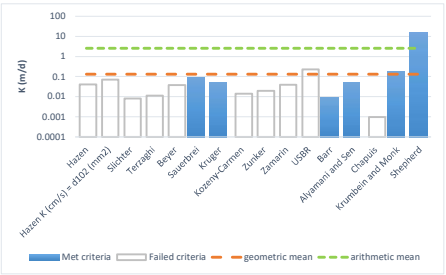
mm	0	% in sample
>64	Boulder	
16 - 64	coarse gravel	
8 - 16	medium gravel	0
2 - 8	fine gravel	23.55494324
0.5 - 2	coarse sand	7.80863199
0.25 - 0.5	medium sand	19.04701319
0.063 - 0.25	fine sand	17.309419
0.016 - 0.063	coarse silt	
0.008 - 0.016	medium silt	
0.002 - 0.008	fine silt	24.6825619
<0.002	clay	7.597430687

K from Grain Size Analysis Report Date: 12/3/2018 (Sample Date)

Sample Name: RIDW-1-(49-50)

Mass Sample (g): 27.5093 T (oC) 20

Poorly sorted silty sand with fines



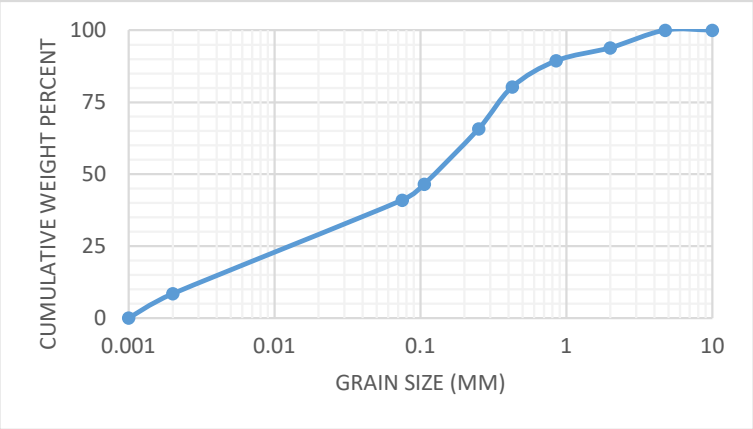
Estimation of Hydraulic Conductivity	cm/s	m/s		de
Hazen	.470E-04	.470E-06		
Hazen K (cm/s) = d_{10} (mm)	.829E-04	.829E-06		
Slichter	.923E-05	.923E-07		
Terzaghi	.132E-04	.132E-06		
Beyer	.439E-04	.439E-06		
Sauerbrei	.104E-03	.104E-05		
Kruger	.575E-04	.575E-06	0.05	
Kozeny-Carmen	.165E-04	.165E-06	0.01	
Zunker	.224E-04	.224E-06	0.02	
Zamarin	.460E-04	.460E-06	0.04	
USBR	.269E-03	.269E-05	0.23	
Barr	.990E-05	.990E-07	0.01	
Alyamani and Sen	.578E-04	.578E-06	0.05	
Chapuis	.112E-05	.112E-07	0.00	
Krumbein and Monk	.204E-03	.204E-05	0.18	
Shepherd	.176E-01	.176E-03	15.17	
geometric mean	.1518E-03	.152E-05	0.13	
arithmetic mean	.300E-02	.300E-04	2.59	

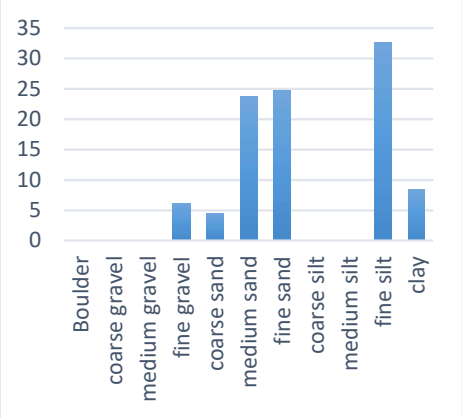
Grain Size Analysis Report Date: 12/7/2018 (sample date)

Sample Name: RIDW-2-(50-52)

Mass Sample (g): 27.6592 T (oC) 20

Poorly sorted silty sand with fines





Sieve opening (ps) di (mm)	Mass of retained (mr) (g)	mass fraction (mf)	Percent Passing (pp)
10	0	0	100
4.75	0	0	100
2	1.6934	0.061224	93.87762
0.85	1.2442	0.044983	89.3793
0.425	2.522	0.091181	80.26118
0.25	4.0174	0.145246	65.73654
0.106	5.3184	0.192283	46.50821
0.075	1.5288	0.055273	40.98094
0.002	9.005	0.32557	8.42396
0.001	2.33	0.08424	0

Effective Grain Diameters (mm)		Other Useful Parameters	
d10	0.006	Uniformity Coef.	37.41
d17	0.021	n computed	0.26
d20	0.028	g (cm/s^2)	980.00
d50	0.132	ρ (g/cm^3)	0.9981
d60	0.207	μ (g/cm s)	0.0098
de (Kruger)	0.015	ρg/μ (1/cm s)	9.9327E+04
de (Kozeny)	0.007	tau (Sauerbrei)	1.053
de (Zunker)	0.009	$d_{geometric\ mean}$	0.074
de (Zamarin)	0.013	σ_ϕ	2.854
Io (Alyameni)	0.000		

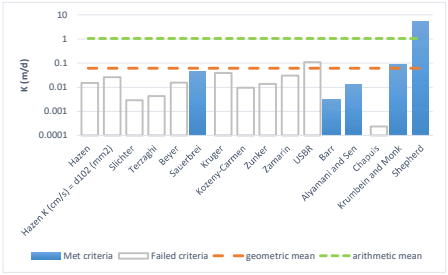
mm	0	% in sample
>64	Boulder	
16 - 64	coarse gravel	
8 - 16	medium gravel	0
2 - 8	fine gravel	6.122375195
0.5 - 2	coarse sand	4.498322439
0.25 - 0.5	medium sand	23.64276624
0.063 - 0.25	fine sand	24.75559669
0.016 - 0.063	coarse silt	
0.008 - 0.016	medium silt	
0.002 - 0.008	fine silt	32.55697923
<0.002	clay	8.423960201

K from Grain Size Analysis Report Date: 12/7/2018 (sample date)

Sample Name: RIDW-2-(50-52)

Mass Sample (g): 27.6592 T (oC) 20

Poorly sorted silty sand with fines



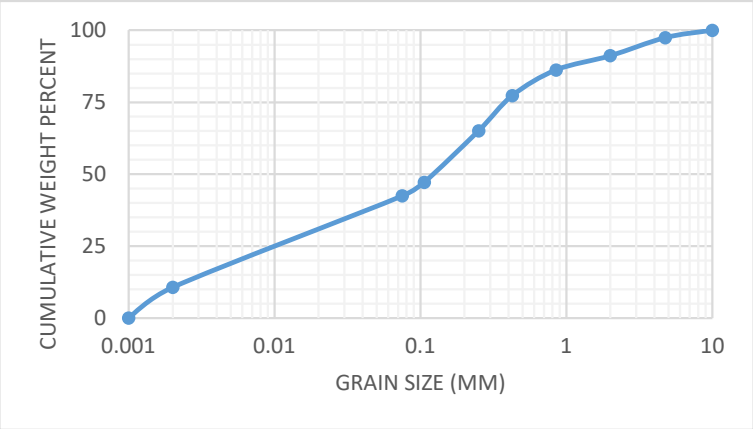
Estimation of Hydraulic Conductivity	cm/s	m/s		de
Hazen	.174E-04	.174E-06		
Hazen K (cm/s) = d_{10} (mm)	.306E-04	.306E-06		
Slichter	.342E-05	.342E-07		
Terzaghi	.488E-05	.488E-07		
Beyer	.178E-04	.178E-06		
Sauerbrei	.530E-04	.530E-06		
Kruger	.444E-04	.444E-06	0.04	
Kozeny-Carmen	.111E-04	.111E-06	0.01	
Zunker	.158E-04	.158E-06	0.01	
Zamarin	.346E-04	.346E-06	0.03	
USBR	.127E-03	.127E-05	0.11	
Barr	.367E-05	.367E-07	0.00	
Alyamani and Sen	.151E-04	.151E-06	0.01	
Chapuis	.276E-06	.276E-08	0.00	
Krumbein and Monk	.984E-04	.984E-06	0.08	
Shepherd	.586E-02	.586E-04	5.06	
geometric mean	.7006E-04	.701E-06	0.06	
arithmetic mean	.121E-02	.121E-04	1.04	

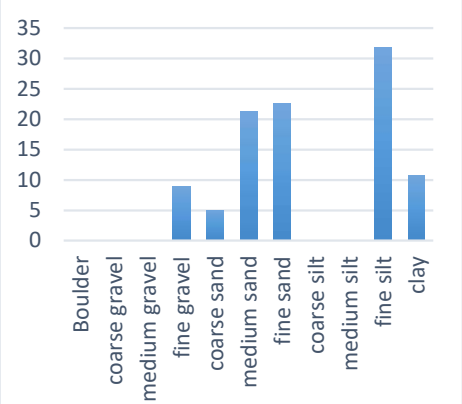
Grain Size Analysis Report Date: 12/11/2018 (sample date)

Sample Name: RIDW-3-(45-47.5)

Mass Sample (g): 54.7683 T (oC) 20

Poorly sorted silty sand with fines





Sieve opening (ps) di (mm)	Mass of retained (mr) (g)	mass fraction (mf)	Percent Passing (pp)
10	0	0	100
4.75	1.4318	0.026143	97.38571
2	3.4314	0.062653	91.12041
0.85	2.6864	0.04905	86.21538
0.425	4.8995	0.089459	77.26952
0.25	6.7216	0.122728	64.99672
0.106	9.7688	0.178366	47.16013
0.075	2.5838	0.047177	42.44243
0.002	17.405	0.317793	10.6631
0.001	5.84	0.106631	0

Effective Grain Diameters (mm)		Other Useful Parameters	
d10	0.002	Uniformity Coef.	108.19
d17	0.017	n computed	0.26
d20	0.023	g (cm/s^2)	980.00
d50	0.129	ρ (g/cm^3)	0.9981
d60	0.210	μ (g/cm s)	0.0098
de (Kruger)	0.012	ρg/μ (1/cm s)	9.9327E+04
de (Kozeny)	0.006	tau (Sauerbrei)	1.053
de (Zunker)	0.008	$d_{geometric\ mean}$	0.075
de (Zamarin)	0.011	σ_ϕ	3.139
Io (Alyameni)	0.000		

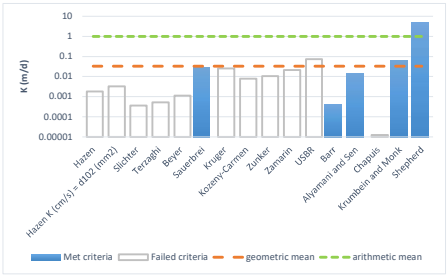
mm	0	% in sample
>64	Boulder	
16 - 64	coarse gravel	
8 - 16	medium gravel	0
2 - 8	fine gravel	8.879589105
0.5 - 2	coarse sand	4.905027178
0.25 - 0.5	medium sand	21.21866116
0.063 - 0.25	fine sand	22.55428779
0.016 - 0.063	coarse silt	
0.008 - 0.016	medium silt	
0.002 - 0.008	fine silt	31.7793322
<0.002	clay	10.66310256

K from Grain Size Analysis Report Date: 12/11/2018 (sample date)

Sample Name: RIDW-3-(45-47.5)

Mass Sample (g): 54.7683 T (oC) 20

Poorly sorted silty sand with fines



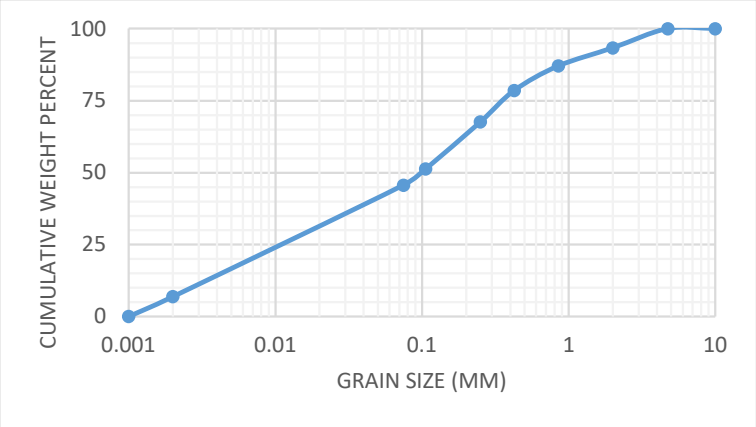
Estimation of Hydraulic Conductivity	cm/s	m/s		de
Hazen	.213E-05	.213E-07		
Hazen K (cm/s) = d_{10} (mm)	.376E-05	.376E-07		
Slichter	.418E-06	.418E-08		
Terzaghi	.596E-06	.596E-08		
Beyer	.129E-05	.129E-07		
Sauerbrei	.321E-04	.321E-06		
Kruger	.299E-04	.299E-06	0.03	
Kozeny-Carmen	.917E-05	.917E-07	0.01	
Zunker	.121E-04	.121E-06	0.01	
Zamarin	.242E-04	.242E-06	0.02	
USBR	.850E-04	.850E-06	0.07	
Barr	.448E-06	.448E-08	0.00	
Alyamani and Sen	.152E-04	.152E-06	0.01	
Chapuis	.143E-07	.143E-09	0.00	
Krumbein and Monk	.693E-04	.693E-06	0.06	
Shepherd	.563E-02	.563E-04	4.86	
geometric mean	.3854E-04	.385E-06	0.03	
arithmetic mean	.115E-02	.115E-04	0.99	

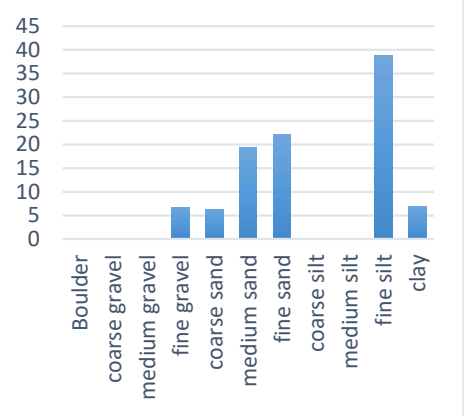
Grain Size Analysis Report Date: 3/19/2019 (sample date)

Sample Name: RISB-51-(7.5-8.5)

Mass Sample (g): 31.6971 T (oC) 20

Poorly sorted silty sand with fines





Sieve opening (ps) di (mm)	Mass of retained (mr) (g)	mass fraction (mf)	Percent Passing (pp)
10	0	0	100
4.75	0	0	100
2	2.113	0.066662	93.33378
0.85	1.9991	0.063069	87.02689
0.425	2.6975	0.085102	78.51665
0.25	3.4477	0.10877	67.63963
0.106	5.1881	0.163677	51.27188
0.075	1.7817	0.05621	45.65086
0.002	12.28	0.387417	6.909149
0.001	2.19	0.069091	0

Effective Grain Diameters (mm)		Other Useful Parameters	
d10	0.008	Uniformity Coef.	23.36
d17	0.021	n computed	0.26
d20	0.027	g (cm/s^2)	980.00
d50	0.099	ρ (g/cm^3)	0.9981
d60	0.183	μ (g/cm s)	0.0098
de (Kruger)	0.017	ρg/μ (1/cm s)	9.9327E+04
de (Kozeny)	0.007	tau (Sauerbrei)	1.053
de (Zunker)	0.010	$d_{geometric\ mean}$	0.070
de (Zamarin)	0.014	σ_ϕ	2.905
Io (Alyameni)	0.000		

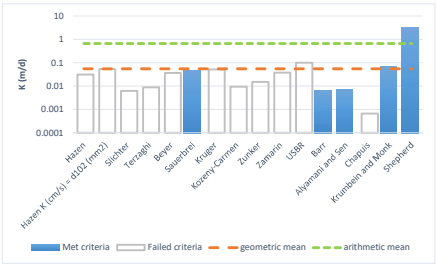
mm	0	% in sample
>64	Boulder	
16 - 64	coarse gravel	
8 - 16	medium gravel	0
2 - 8	fine gravel	6.666224986
0.5 - 2	coarse sand	6.306886119
0.25 - 0.5	medium sand	19.38726256
0.063 - 0.25	fine sand	21.98876238
0.016 - 0.063	coarse silt	
0.008 - 0.016	medium silt	
0.002 - 0.008	fine silt	38.74171454
<0.002	clay	6.909149417

K from Grain Size Analysis Report Date: 3/19/2019 (sample date)

Sample Name: RISB-51-(7.5-8.5)

Mass Sample (g): 31.6971 T (oC) 20

Poorly sorted silty sand with fines



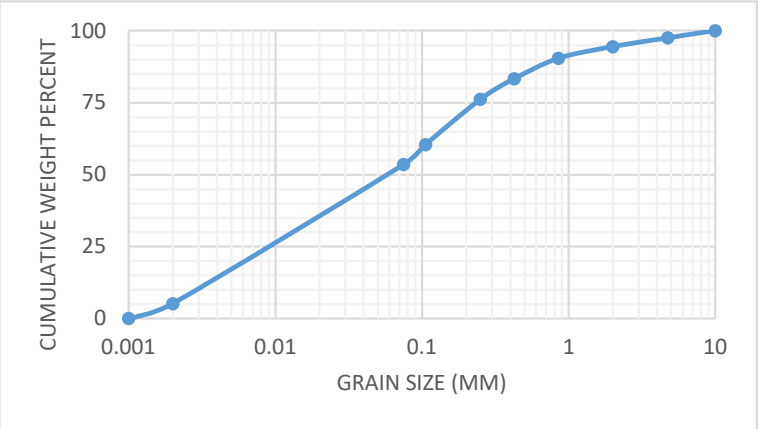
Estimation of Hydraulic Conductivity	cm/s	m/s		de
Hazen	.359E-04	.359E-06		
Hazen K (cm/s) = d_{10} (mm)	.612E-04	.612E-06		
Slichter	.710E-05	.710E-07		
Terzaghi	.103E-04	.103E-06		
Beyer	.421E-04	.421E-06		
Sauerbrei	.542E-04	.542E-06		
Kruger	.599E-04	.599E-06	0.05	
Kozeny-Carmen	.109E-04	.109E-06	0.01	
Zunker	.172E-04	.172E-06	0.01	
Zamarin	.442E-04	.442E-06	0.04	
USBR	.114E-03	.114E-05	0.10	
Barr	.766E-05	.766E-07	0.01	
Alyamani and Sen	.782E-05	.782E-07	0.01	
Chapuis	.784E-06	.784E-08	0.00	
Krumbein and Monk	.802E-04	.802E-06	0.07	
Shepherd	.364E-02	.364E-04	3.14	
geometric mean	.6242E-04	.624E-06	0.05	
arithmetic mean	.758E-03	.758E-05	0.65	

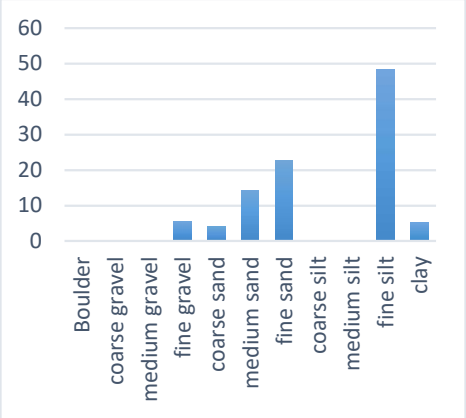
Grain Size Analysis Report Date: 3/19/2019 (sample date)

Sample Name: RISB-51-(24-25)

Mass Sample (g): 29.6232 T (oC) 20

Poorly sorted silty sand with fines





Sieve opening (ps) di (mm)	Mass of retained (mr) (g)	mass fraction (mf)	Percent Passing (pp)
10	0	0	100
4.75	0.7403	0.024991	97.50095
2	0.9092	0.030692	94.43173
0.85	1.1994	0.040489	90.38288
0.425	2.1111	0.071265	83.25637
0.25	2.0987	0.070846	76.17172
0.106	4.6624	0.15739	60.4327
0.075	2.0521	0.069273	53.50536
0.002	14.305	0.482899	5.215507
0.001	1.545	0.052155	0

Effective Grain Diameters (mm)		Other Useful Parameters	
d10	0.009	Uniformity Coef.	11.27
d17	0.020	n computed	0.29
d20	0.024	g (cm/s^2)	980.00
d50	0.070	ρ (g/cm^3)	0.9981
d60	0.104	μ (g/cm s)	0.0098
de (Kruger)	0.020	ρg/μ (1/cm s)	9.9327E+04
de (Kozeny)	0.006	tau (Sauerbrei)	1.053
de (Zunker)	0.010	$d_{geometric\ mean}$	0.053
de (Zamarin)	0.016	σ_ϕ	2.734
lo (Alyameni)	0.000		

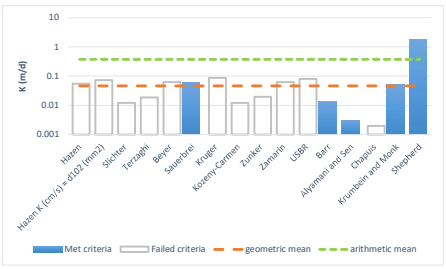
mm	0	% in sample
>64	Boulder	
16 - 64	coarse gravel	
8 - 16	medium gravel	0
2 - 8	fine gravel	5.568270815
0.5 - 2	coarse sand	4.048853601
0.25 - 0.5	medium sand	14.21115882
0.063 - 0.25	fine sand	22.6663561
0.016 - 0.063	coarse silt	
0.008 - 0.016	medium silt	
0.002 - 0.008	fine silt	48.2898539
<0.002	clay	5.215506765

K from Grain Size Analysis Report Date: 3/19/2019 (sample date)

Sample Name: RISB-51-(24-25)

Mass Sample (g): 29.6232 T (oC) 20

Poorly sorted silty sand with fines



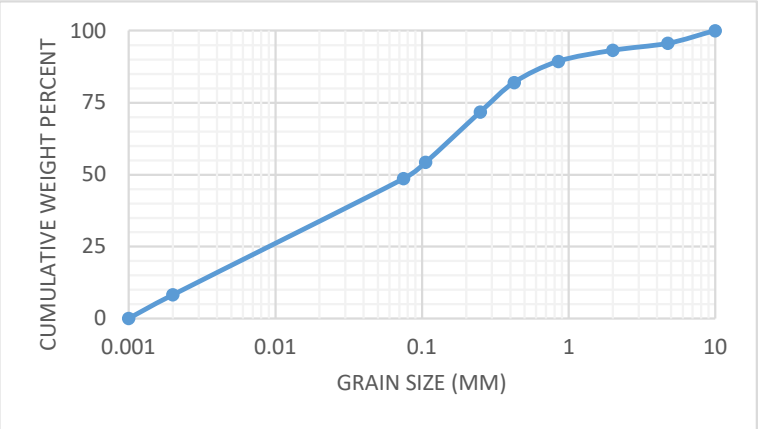
Estimation of Hydraulic Conductivity	cm/s	m/s		de
Hazen	.641E-04	.641E-06		
Hazen K (cm/s) = d_{10} (mm)	.852E-04	.852E-06		
Slichter	.139E-04	.139E-06		
Terzaghi	.217E-04	.217E-06		
Beyer	.725E-04	.725E-06		
Sauerbrei	.709E-04	.709E-06		
Kruger	.998E-04	.998E-06	0.09	
Kozeny-Carmen	.139E-04	.139E-06	0.01	
Zunker	.226E-04	.226E-06	0.02	
Zamarin	.731E-04	.731E-06	0.06	
USBR	.927E-04	.927E-06	0.08	
Barr	.157E-04	.157E-06	0.01	
Alyamani and Sen	.344E-05	.344E-07	0.00	
Chapuis	.232E-05	.232E-07	0.00	
Krumbein and Monk	.575E-04	.575E-06	0.05	
Shepherd	.204E-02	.204E-04	1.76	
geometric mean	.5373E-04	.537E-06	0.05	
arithmetic mean	.437E-03	.437E-05	0.38	

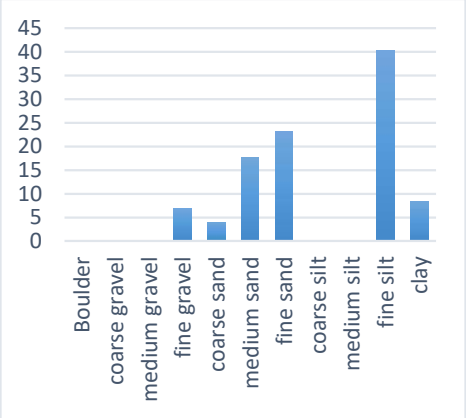
Grain Size Analysis Report Date: 3/22/2019 (sample date)

Sample Name: RISB-31-(6.5-7.5)

Mass Sample (g): 32.2223 T (oC) 20

Poorly sorted silty sand with fines





Sieve opening (ps) di (mm)	Mass of retained (mr) (g)	mass fraction (mf)	Percent Passing (pp)
10	0	0	100
4.75	1.4119	0.043817	95.61825
2	0.7923	0.024589	93.1594
0.85	1.2347	0.038318	89.32758
0.425	2.364	0.073365	81.99104
0.25	3.2886	0.10206	71.78507
0.106	5.6554	0.175512	54.23387
0.075	1.8154	0.05634	48.59988
0.002	12.99	0.403137	8.286187
0.001	2.67	0.082862	0

Effective Grain Diameters (mm)		Other Useful Parameters	
d10	0.005	Uniformity Coef.	30.04
d17	0.018	n computed	0.26
d20	0.023	g (cm/s^2)	980.00
d50	0.083	ρ (g/cm^3)	0.9981
d60	0.153	μ (g/cm s)	0.0098
de (Kruger)	0.015	ρg/μ (1/cm s)	9.9327E+04
de (Kozeny)	0.006	tau (Sauerbrei)	1.053
de (Zunker)	0.009	$d_{geometric\ mean}$	0.061
de (Zamarin)	0.013	σ_ϕ	2.984
Io (Alyameni)	0.000		

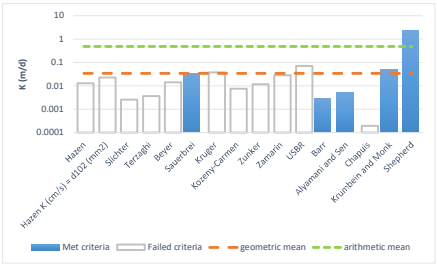
mm	0	% in sample
>64	Boulder	
16 - 64	coarse gravel	
8 - 16	medium gravel	0
2 - 8	fine gravel	6.840604178
0.5 - 2	coarse sand	3.831818337
0.25 - 0.5	medium sand	17.54250938
0.063 - 0.25	fine sand	23.18518542
0.016 - 0.063	coarse silt	
0.008 - 0.016	medium silt	
0.002 - 0.008	fine silt	40.31369579
<0.002	clay	8.286186895

K from Grain Size Analysis Report Date: 3/22/2019 (sample date)

Sample Name: RISB-31-(6.5-7.5)

Mass Sample (g): 32.2223 T (oC) 20

Poorly sorted silty sand with fines



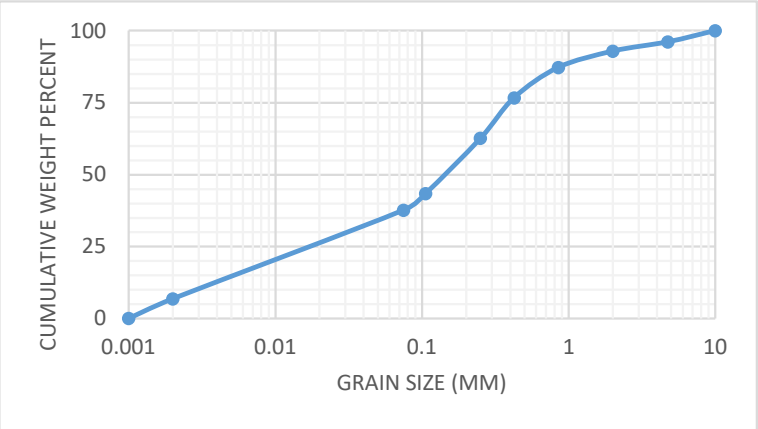
Estimation of Hydraulic Conductivity	cm/s	m/s		de
Hazen	.149E-04	.149E-06		
Hazen K (cm/s) = d_{10} (mm)	.260E-04	.260E-06		
Slichter	.293E-05	.293E-07		
Terzaghi	.420E-05	.420E-07		
Beyer	.164E-04	.164E-06		
Sauerbrei	.375E-04	.375E-06		
Kruger	.435E-04	.435E-06	0.04	
Kozeny-Carmen	.885E-05	.885E-07	0.01	
Zunker	.135E-04	.135E-06	0.01	
Zamarin	.326E-04	.326E-06	0.03	
USBR	.831E-04	.831E-06	0.07	
Barr	.315E-05	.315E-07	0.00	
Alyamani and Sen	.566E-05	.566E-07	0.00	
Chapuis	.224E-06	.224E-08	0.00	
Krumbein and Monk	.550E-04	.550E-06	0.05	
Shepherd	.270E-02	.270E-04	2.34	
geometric mean	.3978E-04	.398E-06	0.03	
arithmetic mean	.561E-03	.561E-05	0.48	

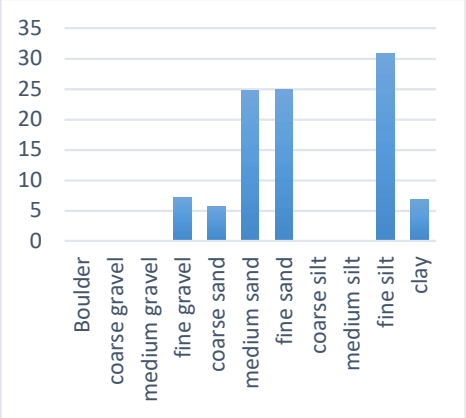
Grain Size Analysis Report Date: 3/22/2019 (sample date)

Sample Name: RISB-31-(14-15)

Mass Sample (g): 30.2344 T (oC) 20

Poorly sorted silty sand with fines





Sieve opening (ps) di (mm)	Mass of retained (mr) (g)	mass fraction (mf)	Percent Passing (pp)
10	0	0	100
4.75	1.1716	0.038751	96.12494
2	0.9804	0.032427	92.88228
0.85	1.7111	0.056594	87.22283
0.425	3.1879	0.105439	76.67888
0.25	4.2644	0.141045	62.57442
0.106	5.7853	0.191348	43.43959
0.075	1.7487	0.057838	37.65578
0.002	9.31	0.307927	6.863043
0.001	2.075	0.06863	0

Effective Grain Diameters (mm)		Other Useful Parameters	
d10	0.009	Uniformity Coef.	24.44
d17	0.026	n computed	0.26
d20	0.033	g (cm/s^2)	980.00
d50	0.155	ρ (g/cm^3)	0.9981
d60	0.231	μ (g/cm s)	0.0098
de (Kruger)	0.018	ρg/μ (1/cm s)	9.9327E+04
de (Kozeny)	0.008	tau (Sauerbrei)	1.053
de (Zunker)	0.011	$d_{geometric\ mean}$	0.093
de (Zamarin)	0.015	σ_ϕ	2.914
lo (Alyameni)	0.000		

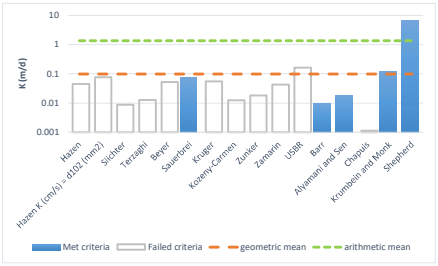
mm	0	% in sample
>64	Boulder	
16 - 64	coarse gravel	
8 - 16	medium gravel	0
2 - 8	fine gravel	7.117720213
0.5 - 2	coarse sand	5.659447517
0.25 - 0.5	medium sand	24.64841373
0.063 - 0.25	fine sand	24.91863573
0.016 - 0.063	coarse silt	
0.008 - 0.016	medium silt	
0.002 - 0.008	fine silt	30.7927394
<0.002	clay	6.863043421

K from Grain Size Analysis Report Date: 3/22/2019 (sample date)

Sample Name: RISB-31-(14-15)

Mass Sample (g): 30.2344 T (oC) 20

Poorly sorted silty sand with fines



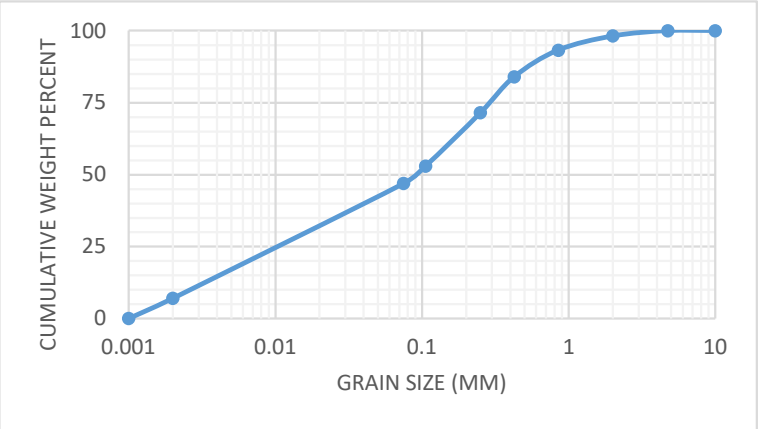
Estimation of Hydraulic Conductivity	cm/s	m/s		de
Hazen	.518E-04	.518E-06		
Hazen K (cm/s) = d_{10} (mm)	.891E-04	.891E-06		
Slichter	.103E-04	.103E-06		
Terzaghi	.148E-04	.148E-06		
Beyer	.603E-04	.603E-06		
Sauerbrei	.825E-04	.825E-06		
Kruger	.642E-04	.642E-06	0.06	
Kozeny-Carmen	.144E-04	.144E-06	0.01	
Zunker	.213E-04	.213E-06	0.02	
Zamarin	.494E-04	.494E-06	0.04	
USBR	.188E-03	.188E-05	0.16	
Barr	.110E-04	.110E-06	0.01	
Alyamani and Sen	.200E-04	.200E-06	0.02	
Chapuis	.131E-05	.131E-07	0.00	
Krumbein and Monk	.141E-03	.141E-05	0.12	
Shepherd	.766E-02	.766E-04	6.61	
geometric mean	.114E-03	.114E-05	0.10	
arithmetic mean	.158E-02	.158E-04	1.37	

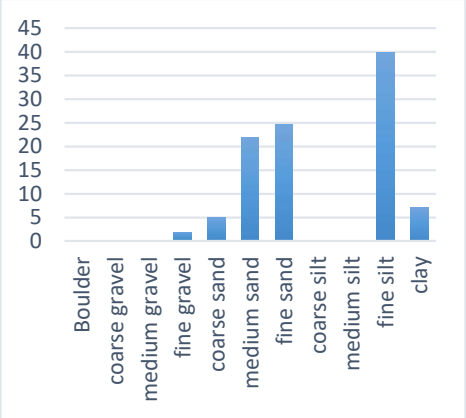
Grain Size Analysis Report Date: 3/25/2019 (sample date)

Sample Name: RISB-11-(16-17)

Mass Sample (g): 30.3158 T (oC) 20

Poorly sorted silty sand with fines





Sieve opening (ps) di (mm)	Mass of retained (mr) (g)	mass fraction (mf)	Percent Passing (pp)
10	0	0	100
4.75	0	0	100
2	0.562	0.018538	98.14618
0.85	1.4894	0.049129	93.23323
0.425	2.8075	0.092608	83.97238
0.25	3.7897	0.125007	71.47164
0.106	5.608	0.184986	52.97304
0.075	1.8342	0.060503	46.92273
0.002	12.09	0.398802	7.042532
0.001	2.135	0.070425	0

Effective Grain Diameters (mm)		Other Useful Parameters	
d10	0.007	Uniformity Coef.	21.68
d17	0.020	n computed	0.26
d20	0.026	g (cm/s^2)	980.00
d50	0.091	ρ (g/cm^3)	0.9981
d60	0.161	μ (g/cm s)	0.0098
de (Kruger)	0.017	ρg/μ (1/cm s)	9.9327E+04
de (Kozeny)	0.006	tau (Sauerbrei)	1.053
de (Zunker)	0.009	$d_{geometric\ mean}$	0.058
de (Zamarin)	0.014	σ_ϕ	2.577
Io (Alyameni)	0.000		

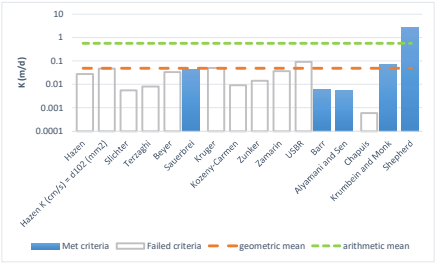
mm	0	% in sample
>64	Boulder	
16 - 64	coarse gravel	
8 - 16	medium gravel	0
2 - 8	fine gravel	1.853818801
0.5 - 2	coarse sand	4.912949683
0.25 - 0.5	medium sand	21.76158967
0.063 - 0.25	fine sand	24.54891509
0.016 - 0.063	coarse silt	
0.008 - 0.016	medium silt	
0.002 - 0.008	fine silt	39.88019449
<0.002	clay	7.042532277

K from Grain Size Analysis Report Date: 3/25/2019 (sample date)

Sample Name: RISB-11-(16-17)

Mass Sample (g): 30.3158 T (oC) 20

Poorly sorted silty sand with fines



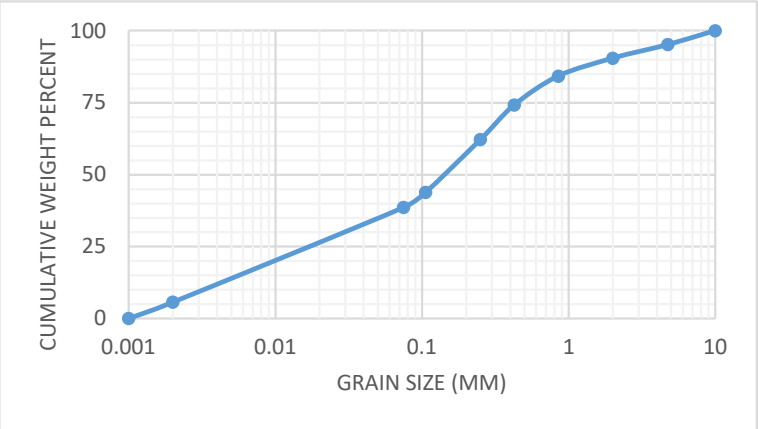
Estimation of Hydraulic Conductivity	cm/s	m/s		de
Hazen	.326E-04	.326E-06		
Hazen K (cm/s) = d_{10} (mm)	.550E-04	.550E-06		
Slichter	.648E-05	.648E-07		
Terzaghi	.939E-05	.939E-07		
Beyer	.387E-04	.387E-06		
Sauerbrei	.511E-04	.511E-06		
Kruger	.576E-04	.576E-06	0.05	
Kozeny-Carmen	.106E-04	.106E-06	0.01	
Zunker	.166E-04	.166E-06	0.01	
Zamarin	.427E-04	.427E-06	0.04	
USBR	.105E-03	.105E-05	0.09	
Barr	.699E-05	.699E-07	0.01	
Alyamani and Sen	.653E-05	.653E-07	0.01	
Chapuis	.693E-06	.693E-08	0.00	
Krumbein and Monk	.846E-04	.846E-06	0.07	
Shepherd	.315E-02	.315E-04	2.72	
geometric mean	.5741E-04	.574E-06	0.05	
arithmetic mean	.661E-03	.661E-05	0.57	

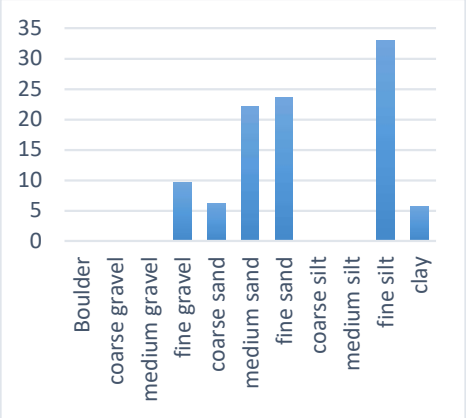
Grain Size Analysis Report Date: 3/25/2019 (sample date)

Sample Name: RISB-11-(34-35)

Mass Sample (g): 29.5678 T (oC) 20

Poorly sorted silty sand with fines





Sieve opening (ps) di (mm)	Mass of retained (mr) (g)	mass fraction (mf)	Percent Passing (pp)
10	0	0	100
4.75	1.4266	0.048248	95.17516
2	1.4022	0.047423	90.43284
0.85	1.8379	0.062159	84.21695
0.425	2.9698	0.10044	74.17292
0.25	3.5574	0.120313	62.14159
0.106	5.4111	0.183007	43.84094
0.075	1.5478	0.052347	38.60619
0.002	9.735	0.329243	5.681857
0.001	1.68	0.056819	0

Effective Grain Diameters (mm)		Other Useful Parameters	
d10	0.012	Uniformity Coef.	20.14
d17	0.027	n computed	0.26
d20	0.034	g (cm/s^2)	980.00
d50	0.154	ρ (g/cm^3)	0.9981
d60	0.233	μ (g/cm s)	0.0098
de (Kruger)	0.021	ρg/μ (1/cm s)	9.9327E+04
de (Kozeny)	0.008	tau (Sauerbrei)	1.053
de (Zunker)	0.011	$d_{geometric\ mean}$	0.100
de (Zamarin)	0.017	σ_ϕ	2.978
lo (Alyameni)	0.000		

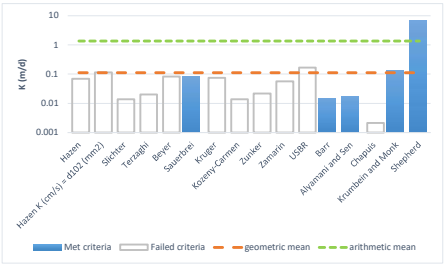
mm	0	% in sample
>64	Boulder	
16 - 64	coarse gravel	
8 - 16	medium gravel	0
2 - 8	fine gravel	9.56716428
0.5 - 2	coarse sand	6.215883495
0.25 - 0.5	medium sand	22.07536577
0.063 - 0.25	fine sand	23.5354
0.016 - 0.063	coarse silt	
0.008 - 0.016	medium silt	
0.002 - 0.008	fine silt	32.92432985
<0.002	clay	5.681856614

K from Grain Size Analysis Report Date: 3/25/2019 (sample date)

Sample Name: RISB-11-(34-35)

Mass Sample (g): 29.5678 T (oC) 20

Poorly sorted silty sand with fines



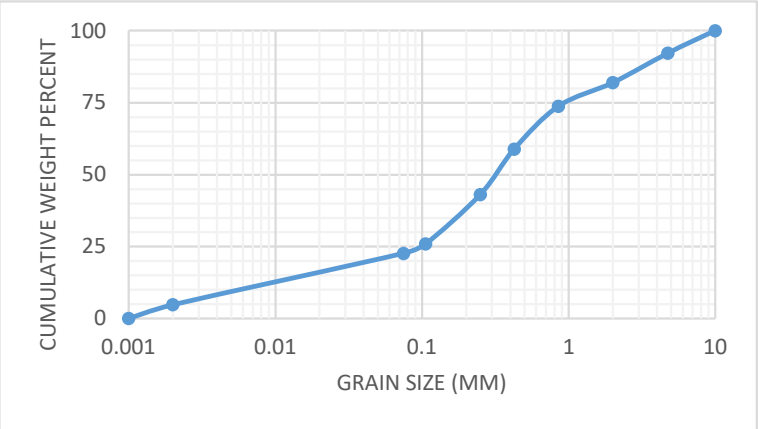
Estimation of Hydraulic Conductivity	cm/s	m/s		de
Hazen	.806E-04	.806E-06		
Hazen K (cm/s) = d_{10} (mm)	.134E-03	.134E-05		
Slichter	.161E-04	.161E-06		
Terzaghi	.235E-04	.235E-06		
Beyer	.965E-04	.965E-06		
Sauerbrei	.937E-04	.937E-06		
Kruger	.874E-04	.874E-06	0.08	
Kozeny-Carmen	.160E-04	.160E-06	0.01	
Zunker	.250E-04	.250E-06	0.02	
Zamarin	.649E-04	.649E-06	0.06	
USBR	.196E-03	.196E-05	0.17	
Barr	.174E-04	.174E-06	0.02	
Alyamani and Sen	.192E-04	.192E-06	0.02	
Chapuis	.249E-05	.249E-07	0.00	
Krumbein and Monk	.150E-03	.150E-05	0.13	
Shepherd	.758E-02	.758E-04	6.55	
geometric mean	.1290E-03	.129E-05	0.11	
arithmetic mean	.157E-02	.157E-04	1.36	

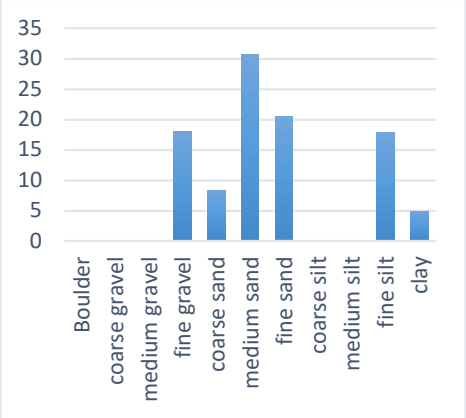
Grain Size Analysis Report Date: 4/5/2019 (sample date)

Sample Name: RISB-48-(14-15)

Mass Sample (g): 29.494 T (oC) 20

Poorly sorted silty sand with fines





Sieve opening (ps) di (mm)	Mass of retained (mr) (g)	mass fraction (mf)	Percent Passing (pp)
10	0	0	100
4.75	2.3001	0.077985	92.20146
2	3.0179	0.102323	81.96921
0.85	2.4361	0.082596	73.70957
0.425	4.3852	0.148681	58.84146
0.25	4.6484	0.157605	43.08097
0.106	5.0516	0.171276	25.95341
0.075	0.9797	0.033217	22.63172
0.002	5.26	0.178341	4.797586
0.001	1.415	0.047976	0

Effective Grain Diameters (mm)		Other Useful Parameters	
d10	0.023	Uniformity Coef.	19.67
d17	0.052	n computed	0.26
d20	0.064	g (cm/s^2)	980.00
d50	0.327	ρ (g/cm^3)	0.9981
d60	0.458	μ (g/cm s)	0.0098
de (Kruger)	0.026	ρg/μ (1/cm s)	9.9327E+04
de (Kozeny)	0.012	tau (Sauerbrei)	1.053
de (Zunker)	0.016	$d_{geometric\ mean}$	0.233
de (Zamarin)	0.023	σ_ϕ	3.130
lo (Alyameni)	0.000		

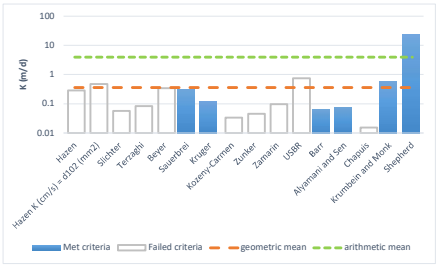
mm	0	% in sample
>64	Boulder	
16 - 64	coarse gravel	
8 - 16	medium gravel	0
2 - 8	fine gravel	18.03078592
0.5 - 2	coarse sand	8.25964603
0.25 - 0.5	medium sand	30.62860243
0.063 - 0.25	fine sand	20.44924391
0.016 - 0.063	coarse silt	
0.008 - 0.016	medium silt	
0.002 - 0.008	fine silt	17.83413576
<0.002	clay	4.79758595

K from Grain Size Analysis Report Date: 4/5/2019 (sample date)

Sample Name: RISB-48-(14-15)

Mass Sample (g): 29.494 T (oC) 20

Poorly sorted silty sand with fines



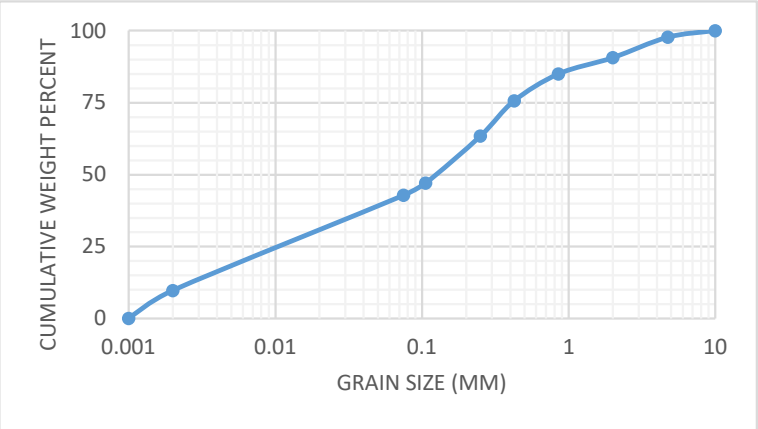
Estimation of Hydraulic Conductivity	cm/s	m/s		de
Hazen	.328E-03	.328E-05		
Hazen K (cm/s) = d_{10} (mm)	.543E-03	.543E-05		
Slichter	.656E-04	.656E-06		
Terzaghi	.959E-04	.959E-06		
Beyer	.394E-03	.394E-05		
Sauerbrei	.347E-03	.347E-05		
Kruger	.138E-03	.138E-05	0.12	
Kozeny-Carmen	.382E-04	.382E-06	0.03	
Zunker	.521E-04	.521E-06	0.05	
Zamarin	.112E-03	.112E-05	0.10	
USBR	.863E-03	.863E-05	0.75	
Barr	.711E-04	.711E-06	0.06	
Alyamani and Sen	.866E-04	.866E-06	0.07	
Chapuis	.178E-04	.178E-06	0.02	
Krumbein and Monk	.672E-03	.672E-05	0.58	
Shepherd	.261E-01	.261E-03	22.56	
geometric mean	.416E-03	.416E-05	0.36	
arithmetic mean	.457E-02	.457E-04	3.95	

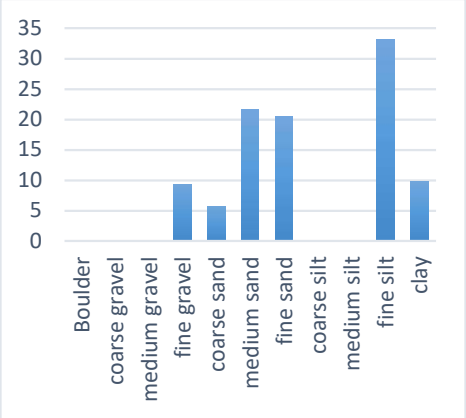
Grain Size Analysis Report Date: 04/02/2019 (sample date)

Sample Name: RISB-27-(39-40)

Mass Sample (g): 27.5217 T (oC) 20

Poorly sorted silty sand with fines





Sieve opening (ps) di (mm)	Mass of retained (mr) (g)	mass fraction (mf)	Percent Passing (pp)
10	0	0	100
4.75	0.62	0.022528	97.74723
2	1.9579	0.07114	90.63321
0.85	1.5737	0.05718	84.91518
0.425	2.5714	0.093432	75.572
0.25	3.3595	0.122067	63.36527
0.106	4.4953	0.163337	47.03162
0.075	1.1539	0.041927	42.83892
0.002	9.105	0.33083	9.755938
0.001	2.685	0.097559	0

Effective Grain Diameters (mm)		Other Useful Parameters	
d10	0.003	Uniformity Coef.	86.79
d17	0.018	n computed	0.26
d20	0.025	g (cm/s^2)	980.00
d50	0.132	ρ (g/cm^3)	0.9981
d60	0.220	μ (g/cm s)	0.0098
de (Kruger)	0.013	ρg/μ (1/cm s)	9.9327E+04
de (Kozeny)	0.006	tau (Sauerbrei)	1.053
de (Zunker)	0.009	$d_{geometric\ mean}$	0.079
de (Zamarin)	0.012	σ_ϕ	3.125
Io (Alyameni)	0.000		

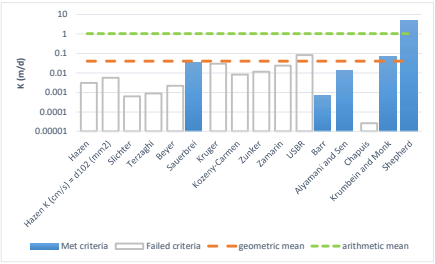
mm	0	% in sample
>64	Boulder	
16 - 64	coarse gravel	
8 - 16	medium gravel	0
2 - 8	fine gravel	9.366790569
0.5 - 2	coarse sand	5.718033406
0.25 - 0.5	medium sand	21.54990426
0.063 - 0.25	fine sand	20.5263483
0.016 - 0.063	coarse silt	
0.008 - 0.016	medium silt	
0.002 - 0.008	fine silt	33.08298543
<0.002	clay	9.755938042

K from Grain Size Analysis Report Date: 04/02/2019 (sample date)

Sample Name: RISB-27-(39-40)

Mass Sample (g): 27.5217 T (oC) 20

Poorly sorted silty sand with fines



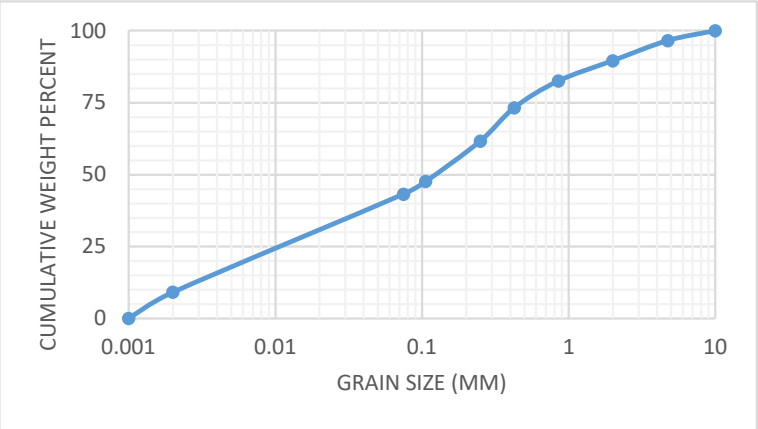
Estimation of Hydraulic Conductivity	cm/s	m/s		de
Hazen	.365E-05	.365E-07		
Hazen K (cm/s) = d_{10} (mm)	.644E-05	.644E-07		
Slichter	.717E-06	.717E-08		
Terzaghi	.102E-05	.102E-07		
Beyer	.253E-05	.253E-07		
Sauerbrei	.379E-04	.379E-06		
Kruger	.347E-04	.347E-06	0.03	
Kozeny-Carmen	.959E-05	.959E-07	0.01	
Zunker	.132E-04	.132E-06	0.01	
Zamarin	.276E-04	.276E-06	0.02	
USBR	.950E-04	.950E-06	0.08	
Barr	.769E-06	.769E-08	0.00	
Alyamani and Sen	.158E-04	.158E-06	0.01	
Chapuis	.306E-07	.306E-09	0.00	
Krumbein and Monk	.773E-04	.773E-06	0.07	
Shepherd	.586E-02	.586E-04	5.07	
geometric mean	.4612E-04	.461E-06	0.04	
arithmetic mean	.120E-02	.120E-04	1.04	

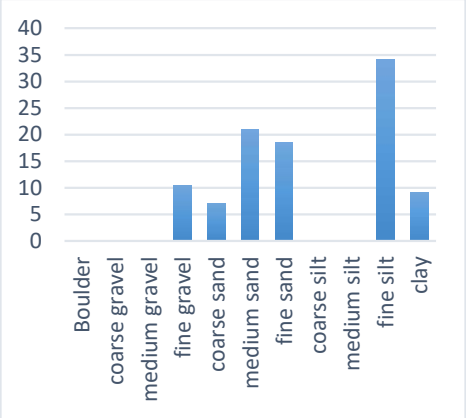
Grain Size Analysis Report Date: 4/2/2019 (sample date)

Sample Name: RISB-27-(44-45)

Mass Sample (g): 28.7248 T (oC) 20

Poorly sorted silty sand with fines





Sieve opening (ps) di (mm)	Mass of retained (mr) (g)	mass fraction (mf)	Percent Passing (pp)
10	0	0	100
4.75	0.9909	0.034496	96.55037
2	2.0094	0.069953	89.55502
0.85	2.0233	0.070437	82.51128
0.425	2.6822	0.093376	73.1737
0.25	3.3112	0.115273	61.64638
0.106	4.0407	0.140669	47.57944
0.075	1.2571	0.043764	43.20309
0.002	9.775	0.340298	9.173258
0.001	2.635	0.091733	0

Effective Grain Diameters (mm)		Other Useful Parameters	
d10	0.004	Uniformity Coef.	61.79
d17	0.019	n computed	0.26
d20	0.025	g (cm/s^2)	980.00
d50	0.131	ρ (g/cm^3)	0.9981
d60	0.233	μ (g/cm s)	0.0098
de (Kruger)	0.014	ρg/μ (1/cm s)	9.9327E+04
de (Kozeny)	0.006	tau (Sauerbrei)	1.053
de (Zunker)	0.009	$d_{geometric\ mean}$	0.084
de (Zamarin)	0.012	σ_ϕ	3.235
Io (Alyameni)	0.000		

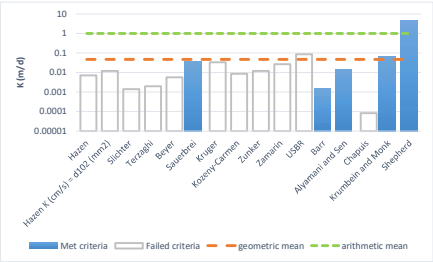
mm	0	% in sample
>64	Boulder	
16 - 64	coarse gravel	
8 - 16	medium gravel	0
2 - 8	fine gravel	10.44498134
0.5 - 2	coarse sand	7.043739208
0.25 - 0.5	medium sand	20.86489723
0.063 - 0.25	fine sand	18.44329639
0.016 - 0.063	coarse silt	
0.008 - 0.016	medium silt	
0.002 - 0.008	fine silt	34.02982788
<0.002	clay	9.173257951

K from Grain Size Analysis Report Date: 4/2/2019 (sample date)

Sample Name: RISB-27-(44-45)

Mass Sample (g): 28.7248 T (oC) 20

Poorly sorted silty sand with fines



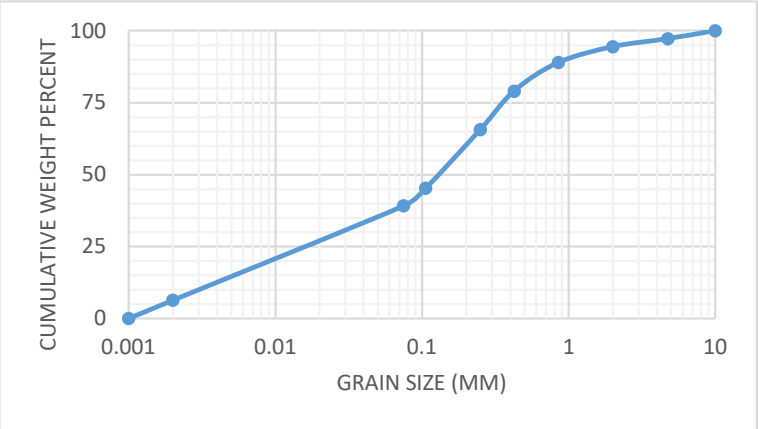
Estimation of Hydraulic Conductivity	cm/s	m/s		de
Hazen	.806E-05	.806E-07		
Hazen K (cm/s) = d_{10} (mm)	.142E-04	.142E-06		
Slichter	.158E-05	.158E-07		
Terzaghi	.226E-05	.226E-07		
Beyer	.668E-05	.668E-07		
Sauerbrei	.414E-04	.414E-06		
Kruger	.385E-04	.385E-06	0.03	
Kozeny-Carmen	.984E-05	.984E-07	0.01	
Zunker	.139E-04	.139E-06	0.01	
Zamarin	.301E-04	.301E-06	0.03	
USBR	.101E-03	.101E-05	0.09	
Barr	.170E-05	.170E-07	0.00	
Alyamani and Sen	.152E-04	.152E-06	0.01	
Chapuis	.935E-07	.935E-09	0.00	
Krumbein and Monk	.764E-04	.764E-06	0.07	
Shepherd	.576E-02	.576E-04	4.98	
geometric mean	.5423E-04	.542E-06	0.05	
arithmetic mean	.118E-02	.118E-04	1.02	

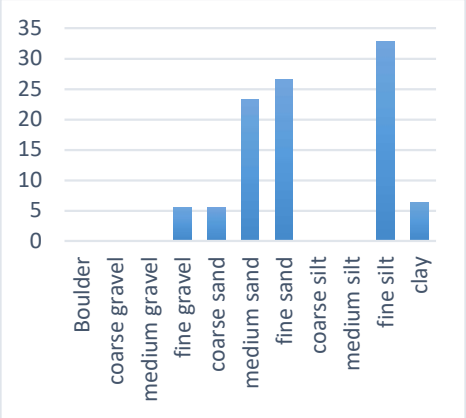
Grain Size Analysis Report Date: 4/3/2019 (sample date)

Sample Name: RISB-42-(19-20)

Mass Sample (g): 28.0319 T (oC) 20

Poorly sorted silty sand with fines





Sieve opening (ps) di (mm)	Mass of retained (mr) (g)	mass fraction (mf)	Percent Passing (pp)
10	0	0	100
4.75	0.7749	0.027644	97.23565
2	0.7851	0.028007	94.43491
0.85	1.5373	0.054841	88.9508
0.425	2.7933	0.099647	78.98608
0.25	3.7393	0.133394	65.64664
0.106	5.7112	0.203739	45.27271
0.075	1.7208	0.061387	39.13399
0.002	9.185	0.327662	6.367745
0.001	1.785	0.063677	0

Effective Grain Diameters (mm)		Other Useful Parameters	
d10	0.010	Uniformity Coef.	20.82
d17	0.026	n computed	0.26
d20	0.032	g (cm/s^2)	980.00
d50	0.139	ρ (g/cm^3)	0.9981
d60	0.210	μ (g/cm s)	0.0098
de (Kruger)	0.019	ρg/μ (1/cm s)	9.9327E+04
de (Kozeny)	0.007	tau (Sauerbrei)	1.053
de (Zunker)	0.011	$d_{geometric\ mean}$	0.084
de (Zamarin)	0.016	σ_ϕ	2.780
Io (Alyameni)	0.000		

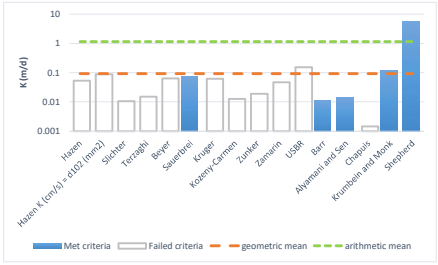
mm	0	% in sample
>64	Boulder	
16 - 64	coarse gravel	
8 - 16	medium gravel	0
2 - 8	fine gravel	5.565088346
0.5 - 2	coarse sand	5.484109176
0.25 - 0.5	medium sand	23.30416418
0.063 - 0.25	fine sand	26.51265166
0.016 - 0.063	coarse silt	
0.008 - 0.016	medium silt	
0.002 - 0.008	fine silt	32.76624132
<0.002	clay	6.367745319

K from Grain Size Analysis Report Date: 4/3/2019 (sample date)

Sample Name: RISB-42-(19-20)

Mass Sample (g): 28.0319 T (oC) 20

Poorly sorted silty sand with fines



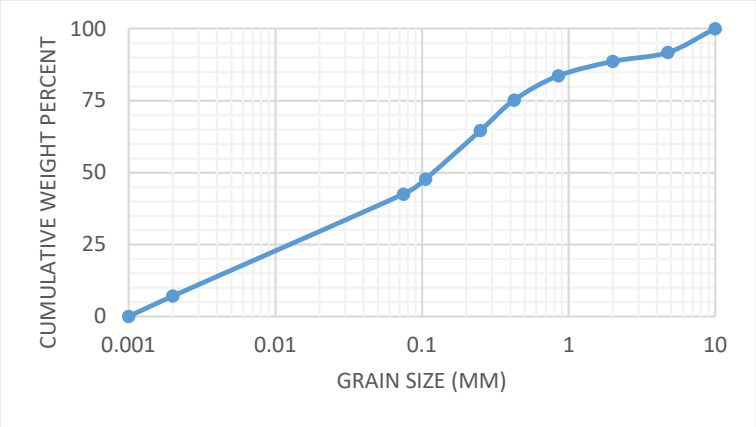
Estimation of Hydraulic Conductivity	cm/s	m/s		de
Hazen	.609E-04	.609E-06		
Hazen K (cm/s) = d_{10} (mm)	.102E-03	.102E-05		
Slichter	.121E-04	.121E-06		
Terzaghi	.176E-04	.176E-06		
Beyer	.726E-04	.726E-06		
Sauerbrei	.834E-04	.834E-06		
Kruger	.721E-04	.721E-06	0.06	
Kozeny-Carmen	.147E-04	.147E-06	0.01	
Zunker	.222E-04	.222E-06	0.02	
Zamarin	.547E-04	.547E-06	0.05	
USBR	.179E-03	.179E-05	0.15	
Barr	.131E-04	.131E-06	0.01	
Alyamani and Sen	.157E-04	.157E-06	0.01	
Chapuis	.167E-05	.167E-07	0.00	
Krumbein and Monk	.137E-03	.137E-05	0.12	
Shepherd	.640E-02	.640E-04	5.53	
geometric mean	.109E-03	.109E-05	0.09	
arithmetic mean	.133E-02	.133E-04	1.15	

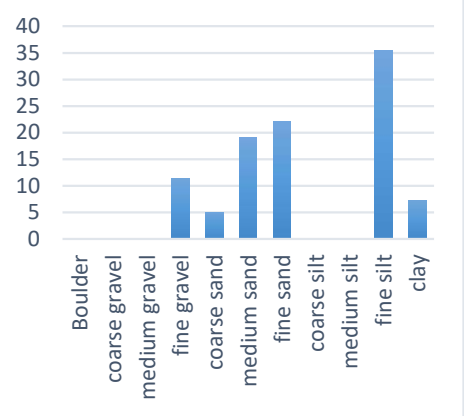
Grain Size Analysis Report Date: 4/3/2019 (sample date)

Sample Name: RISB-42-(11.5-12.5)

Mass Sample (g): 28.3654 T (oC) 20

Poorly sorted silty sand with fines





Sieve opening (ps) di (mm)	Mass of retained (mr) (g)	mass fraction (mf)	Percent Passing (pp)
10	0	0	100
4.75	2.3473	0.082752	91.72478
2	0.8729	0.030773	88.64744
0.85	1.4316	0.05047	83.60044
0.425	2.3958	0.084462	75.15424
0.25	2.9923	0.105491	64.60512
0.106	4.7735	0.168286	47.77652
0.075	1.487	0.052423	42.53421
0.002	10.035	0.353776	7.156606
0.001	2.03	0.071566	0

Effective Grain Diameters (mm)		Other Useful Parameters	
d10	0.008	Uniformity Coef.	26.77
d17	0.022	n computed	0.26
d20	0.029	g (cm/s^2)	980.00
d50	0.125	ρ (g/cm^3)	0.9981
d60	0.211	μ (g/cm s)	0.0098
de (Kruger)	0.017	ρg/μ (1/cm s)	9.9327E+04
de (Kozeny)	0.007	tau (Sauerbrei)	1.053
de (Zunker)	0.010	$d_{geometric\ mean}$	0.090
de (Zamarin)	0.014	σ_ϕ	3.199
Io (Alyameni)	0.000		

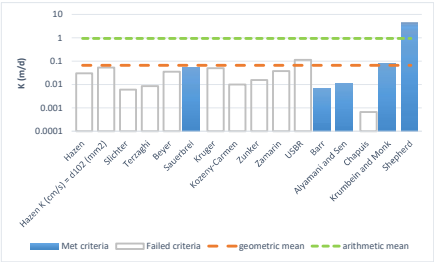
mm	0	% in sample
>64	Boulder	
16 - 64	coarse gravel	
8 - 16	medium gravel	0
2 - 8	fine gravel	11.35256333
0.5 - 2	coarse sand	5.046993873
0.25 - 0.5	medium sand	18.99532529
0.063 - 0.25	fine sand	22.07090328
0.016 - 0.063	coarse silt	
0.008 - 0.016	medium silt	
0.002 - 0.008	fine silt	35.37760793
<0.002	clay	7.156606288

K from Grain Size Analysis Report Date: 4/3/2019 (sample date)

Sample Name: RISB-42-(11.5-12.5)

Mass Sample (g): 28.3654 T (oC) 20

Poorly sorted silty sand with fines



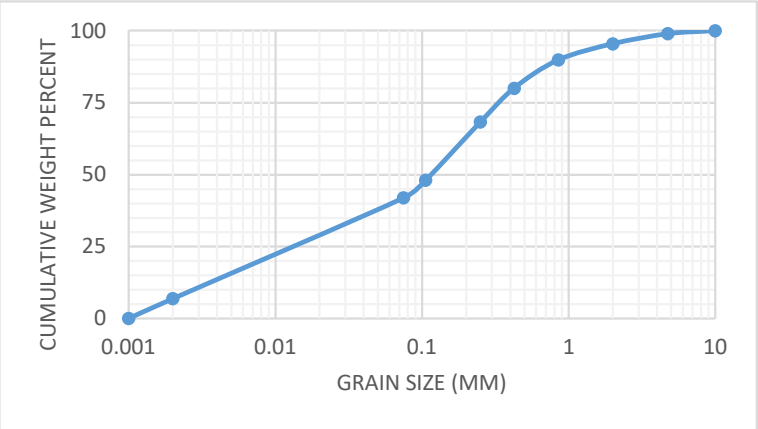
Estimation of Hydraulic Conductivity	cm/s	m/s		de
Hazen	.357E-04	.357E-06		
Hazen K (cm/s) = d_{10} (mm)	.619E-04	.619E-06		
Slichter	.704E-05	.704E-07		
Terzaghi	.101E-04	.101E-06		
Beyer	.406E-04	.406E-06		
Sauerbrei	.598E-04	.598E-06		
Kruger	.578E-04	.578E-06	0.05	
Kozeny-Carmen	.117E-04	.117E-06	0.01	
Zunker	.179E-04	.179E-06	0.02	
Zamarin	.434E-04	.434E-06	0.04	
USBR	.133E-03	.133E-05	0.12	
Barr	.757E-05	.757E-07	0.01	
Alyamani and Sen	.129E-04	.129E-06	0.01	
Chapuis	.770E-06	.770E-08	0.00	
Krumbein and Monk	.905E-04	.905E-06	0.08	
Shepherd	.535E-02	.535E-04	4.62	
geometric mean	.7769E-04	.777E-06	0.07	
arithmetic mean	.110E-02	.110E-04	0.95	

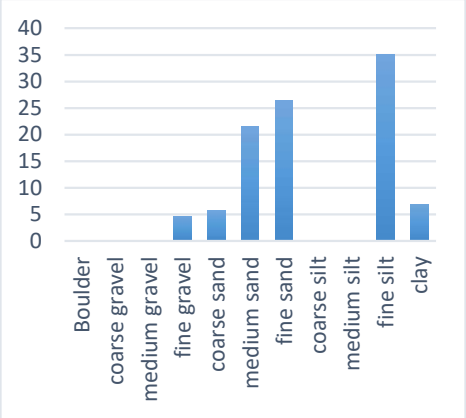
Grain Size Analysis Report Date: 3/28/2019

Sample Name: RISB-07-(14.5-15.5)

Mass Sample (g): 31.6047 T (oC) 20

Poorly sorted silty sand with fines





Sieve opening (ps) di (mm)	Mass of retained (mr) (g)	mass fraction (mf)	Percent Passing (pp)
10	0	0	100
4.75	0.3344	0.010581	98.94193
2	1.109	0.03509	95.43296
0.85	1.7731	0.056102	89.82272
0.425	3.1043	0.098223	80.00044
0.25	3.7155	0.117562	68.24428
0.106	6.374	0.201679	48.07639
0.075	1.9444	0.061522	41.92414
0.002	11.06	0.349948	6.929349
0.001	2.19	0.069293	0

Effective Grain Diameters (mm)		Other Useful Parameters	
d10	0.008	Uniformity Coef.	22.74
d17	0.023	n computed	0.26
d20	0.029	g (cm/s^2)	980.00
d50	0.120	ρ (g/cm^3)	0.9981
d60	0.191	μ (g/cm s)	0.0098
de (Kruger)	0.017	ρg/μ (1/cm s)	9.9327E+04
de (Kozeny)	0.007	tau (Sauerbrei)	1.053
de (Zunker)	0.010	$d_{geometric\ mean}$	0.073
de (Zamarin)	0.015	σ_ϕ	2.742
lo (Alyameni)	0.000		

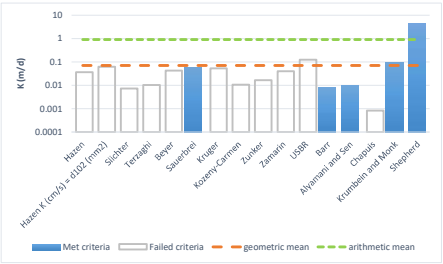
mm	0	% in sample
>64	Boulder	
16 - 64	coarse gravel	
8 - 16	medium gravel	0
2 - 8	fine gravel	4.567042244
0.5 - 2	coarse sand	5.610241515
0.25 - 0.5	medium sand	21.57843612
0.063 - 0.25	fine sand	26.32013593
0.016 - 0.063	coarse silt	
0.008 - 0.016	medium silt	
0.002 - 0.008	fine silt	34.99479508
<0.002	clay	6.929349116

K from Grain Size Analysis Report Date: 3/28/2019

Sample Name: RISB-07-(14.5-15.5)

Mass Sample (g): 31.6047 T (oC) 20

Poorly sorted silty sand with fines



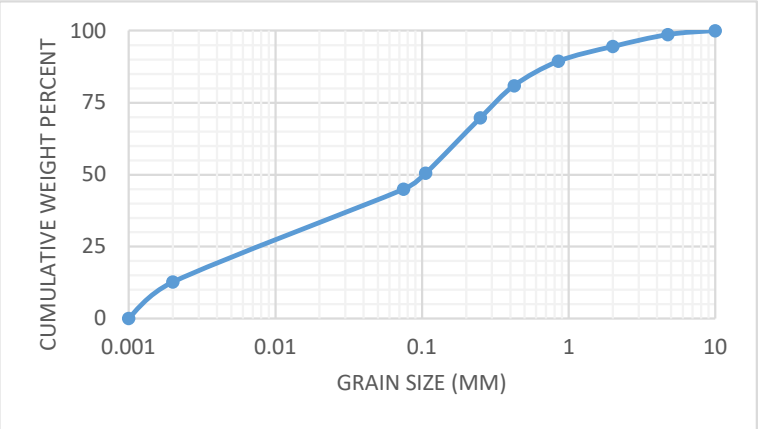
Estimation of Hydraulic Conductivity	cm/s	m/s		de
Hazen	.416E-04	.416E-06		
Hazen K (cm/s) = d_{10} (mm)	.707E-04	.707E-06		
Slichter	.824E-05	.824E-07		
Terzaghi	.119E-04	.119E-06		
Beyer	.490E-04	.490E-06		
Sauerbrei	.654E-04	.654E-06		
Kruger	.612E-04	.612E-06	0.05	
Kozeny-Carmen	.124E-04	.124E-06	0.01	
Zunker	.189E-04	.189E-06	0.02	
Zamarin	.462E-04	.462E-06	0.04	
USBR	.142E-03	.142E-05	0.12	
Barr	.889E-05	.889E-07	0.01	
Alyamani and Sen	.117E-04	.117E-06	0.01	
Chapuis	.968E-06	.968E-08	0.00	
Krumbein and Monk	.109E-03	.109E-05	0.09	
Shepherd	.498E-02	.498E-04	4.30	
geometric mean	.8192E-04	.819E-06	0.07	
arithmetic mean	.104E-02	.104E-04	0.89	

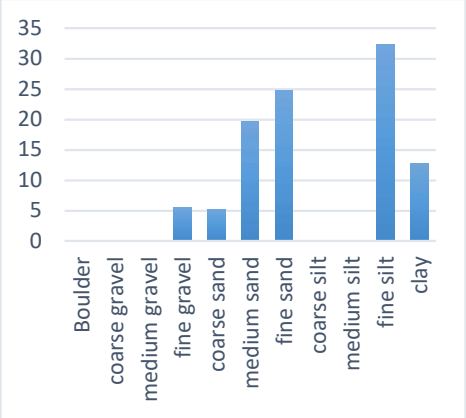
Grain Size Analysis Report Date: 3/28/2019 (sample date)

Sample Name: RISB-07-(29-30)

Mass Sample (g): 31.1483 T (oC) 20

Poorly sorted silty sand with fines





Sieve opening (ps) di (mm)	Mass of retained (mr) (g)	mass fraction (mf)	Percent Passing (pp)
10	0	0	100
4.75	0.423	0.01358	98.64198
2	1.2796	0.041081	94.53389
0.85	1.6103	0.051698	89.36411
0.425	2.6394	0.084737	80.89045
0.25	3.4759	0.111592	69.73125
0.106	5.9993	0.192604	50.47081
0.075	1.7208	0.055245	44.94627
0.002	10.045	0.32249	12.69732
0.001	3.955	0.126973	0

Effective Grain Diameters (mm)		Other Useful Parameters	
d10	0.002	Uniformity Coef.	99.15
d17	0.012	n computed	0.26
d20	0.019	g (cm/s^2)	980.00
d50	0.103	ρ (g/cm^3)	0.9981
d60	0.177	μ (g/cm s)	0.0098
de (Kruger)	0.011	ρg/μ (1/cm s)	9.9327E+04
de (Kozeny)	0.006	tau (Sauerbrei)	1.053
de (Zunker)	0.007	$d_{geometric\ mean}$	0.060
de (Zamarin)	0.009	σ_ϕ	3.105
Io (Alyameni)	0.000		

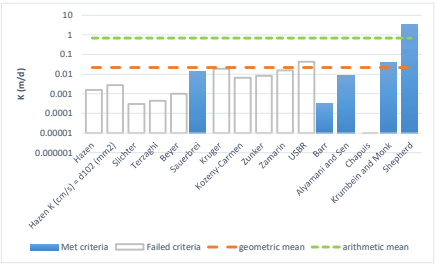
mm	0	% in sample
>64	Boulder	
16 - 64	coarse gravel	
8 - 16	medium gravel	0
2 - 8	fine gravel	5.466108905
0.5 - 2	coarse sand	5.169784547
0.25 - 0.5	medium sand	19.63285316
0.063 - 0.25	fine sand	24.78498024
0.016 - 0.063	coarse silt	
0.008 - 0.016	medium silt	
0.002 - 0.008	fine silt	32.24895099
<0.002	clay	12.69732217

K from Grain Size Analysis Report Date: 3/28/2019 (sample date)

Sample Name: RISB-07-(29-30)

Mass Sample (g): 31.1483 T (oC) 20

Poorly sorted silty sand with fines



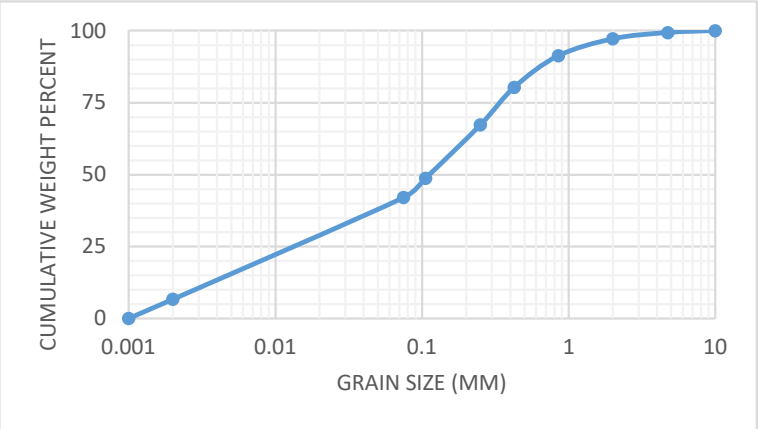
Estimation of Hydraulic Conductivity	cm/s	m/s		de
Hazen	.181E-05	.181E-07		
Hazen K (cm/s) = d_{10} (mm)	.320E-05	.320E-07		
Slichter	.356E-06	.356E-08		
Terzaghi	.507E-06	.507E-08		
Beyer	.116E-05	.116E-07		
Sauerbrei	.161E-04	.161E-06		
Kruger	.219E-04	.219E-06	0.02	
Kozeny-Carmen	.756E-05	.756E-07	0.01	
Zunker	.957E-05	.957E-07	0.01	
Zamarin	.181E-04	.181E-06	0.02	
USBR	.495E-04	.495E-06	0.04	
Barr	.381E-06	.381E-08	0.00	
Alyamani and Sen	.970E-05	.970E-07	0.01	
Chapuis	.114E-07	.114E-09	0.00	
Krumbein and Monk	.455E-04	.455E-06	0.04	
Shepherd	.391E-02	.391E-04	3.38	
geometric mean	.254E-04	.254E-06	0.02	
arithmetic mean	.796E-03	.796E-05	0.69	

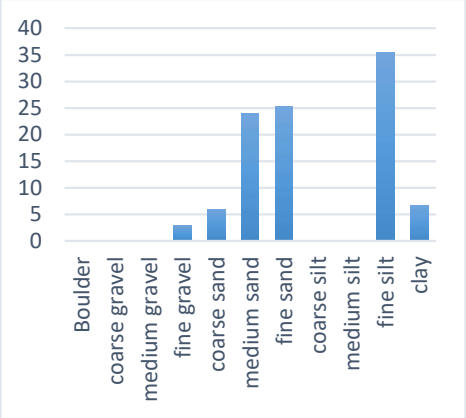
Grain Size Analysis Report Date: 3/29/2019 (sample date)

Sample Name: RISB-19-(8.5-9.5)

Mass Sample (g): 32.0032 T (oC) 20

Poorly sorted silty sand with fines





Sieve opening (ps) di (mm)	Mass of retained (mr) (g)	mass fraction (mf)	Percent Passing (pp)
10	0	0	100
4.75	0.2163	0.006759	99.32413
2	0.6802	0.021254	97.19872
0.85	1.9004	0.059382	91.26056
0.425	3.5163	0.109873	80.27322
0.25	4.1684	0.130249	67.24828
0.106	5.9146	0.184813	48.767
0.075	2.142	0.066931	42.07392
0.002	11.33	0.354027	6.671208
0.001	2.135	0.066712	0

Effective Grain Diameters (mm)		Other Useful Parameters	
d10	0.009	Uniformity Coef.	21.83
d17	0.023	n computed	0.26
d20	0.029	g (cm/s^2)	980.00
d50	0.116	ρ (g/cm^3)	0.9981
d60	0.194	μ (g/cm s)	0.0098
de (Kruger)	0.018	ρg/μ (1/cm s)	9.9327E+04
de (Kozeny)	0.007	tau (Sauerbrei)	1.053
de (Zunker)	0.010	$d_{geometric\ mean}$	0.071
de (Zamarin)	0.015	σ_ϕ	2.673
lo (Alyameni)	0.000		

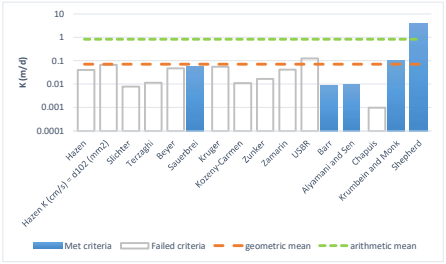
mm	0	% in sample
>64	Boulder	
16 - 64	coarse gravel	
8 - 16	medium gravel	0
2 - 8	fine gravel	2.801282372
0.5 - 2	coarse sand	5.938156184
0.25 - 0.5	medium sand	24.01228627
0.063 - 0.25	fine sand	25.17435756
0.016 - 0.063	coarse silt	
0.008 - 0.016	medium silt	
0.002 - 0.008	fine silt	35.40270973
<0.002	clay	6.671207879

K from Grain Size Analysis Report Date: 3/29/2019 (sample date)

Sample Name: RISB-19-(8.5-9.5)

Mass Sample (g): 32.0032 T (oC) 20

Poorly sorted silty sand with fines



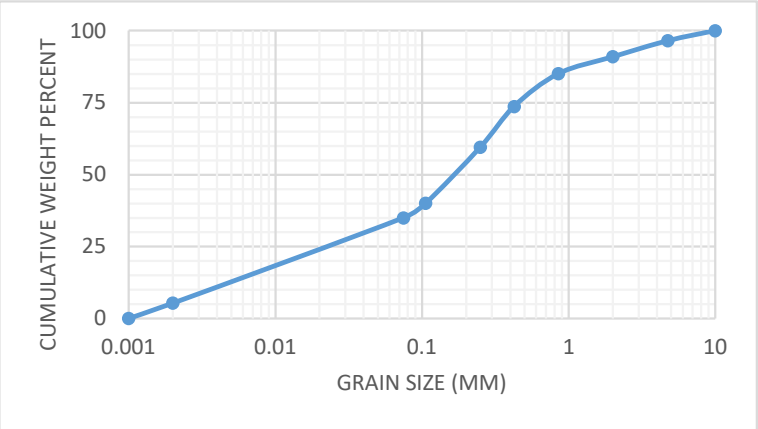
Estimation of Hydraulic Conductivity	cm/s	m/s		de
Hazen	.465E-04	.465E-06		
Hazen K (cm/s) = d_{10} (mm)	.786E-04	.786E-06		
Slichter	.924E-05	.924E-07		
Terzaghi	.134E-04	.134E-06		
Beyer	.552E-04	.552E-06		
Sauerbrei	.677E-04	.677E-06		
Kruger	.650E-04	.650E-06	0.06	
Kozeny-Carmen	.127E-04	.127E-06	0.01	
Zunker	.196E-04	.196E-06	0.02	
Zamarin	.488E-04	.488E-06	0.04	
USBR	.144E-03	.144E-05	0.12	
Barr	.998E-05	.998E-07	0.01	
Alyamani and Sen	.107E-04	.107E-06	0.01	
Chapuis	.114E-05	.114E-07	0.00	
Krumbein and Monk	.114E-03	.114E-05	0.10	
Shepherd	.470E-02	.470E-04	4.06	
geometric mean	.8271E-04	.827E-06	0.07	
arithmetic mean	.981E-03	.981E-05	0.85	

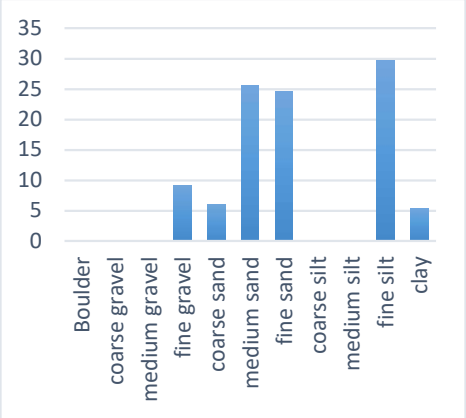
Grain Size Analysis Report Date: 3/29/2019 (sample date)

Sample Name: RISB-19-(14-15)

Mass Sample (g): 32.081 T (oC) 20

Poorly sorted silty sand with fines





Sieve opening (ps) di (mm)	Mass of retained (mr) (g)	mass fraction (mf)	Percent Passing (pp)
10	0	0	100
4.75	1.1116	0.03465	96.53502
2	1.7968	0.056008	90.9342
0.85	1.8958	0.059094	85.02478
0.425	3.6459	0.113647	73.66011
0.25	4.5305	0.141221	59.53804
0.106	6.266	0.195318	40.00623
0.075	1.6144	0.050323	34.97397
0.002	9.51	0.296437	5.330258
0.001	1.71	0.053303	0

Effective Grain Diameters (mm)		Other Useful Parameters	
d10	0.013	Uniformity Coef.	18.94
d17	0.031	n computed	0.26
d20	0.038	g (cm/s^2)	980.00
d50	0.180	ρ (g/cm^3)	0.9981
d60	0.256	μ (g/cm s)	0.0098
de (Kruger)	0.022	ρg/μ (1/cm s)	9.9327E+04
de (Kozeny)	0.008	tau (Sauerbrei)	1.053
de (Zunker)	0.012	$d_{geometric\ mean}$	0.111
de (Zamarin)	0.018	σ_ϕ	2.879
Io (Alyameni)	0.000		

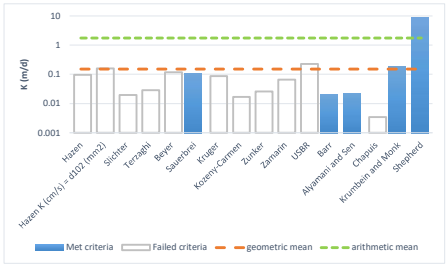
mm	0	% in sample
>64	Boulder	
16 - 64	coarse gravel	
8 - 16	medium gravel	0
2 - 8	fine gravel	9.065802188
0.5 - 2	coarse sand	5.909416789
0.25 - 0.5	medium sand	25.4867367
0.063 - 0.25	fine sand	24.56407219
0.016 - 0.063	coarse silt	
0.008 - 0.016	medium silt	
0.002 - 0.008	fine silt	29.64371435
<0.002	clay	5.330257785

K from Grain Size Analysis Report Date: 3/29/2019 (sample date)

Sample Name: RISB-19-(14-15)

Mass Sample (g): 32.081 T (oC) 20

Poorly sorted silty sand with fines



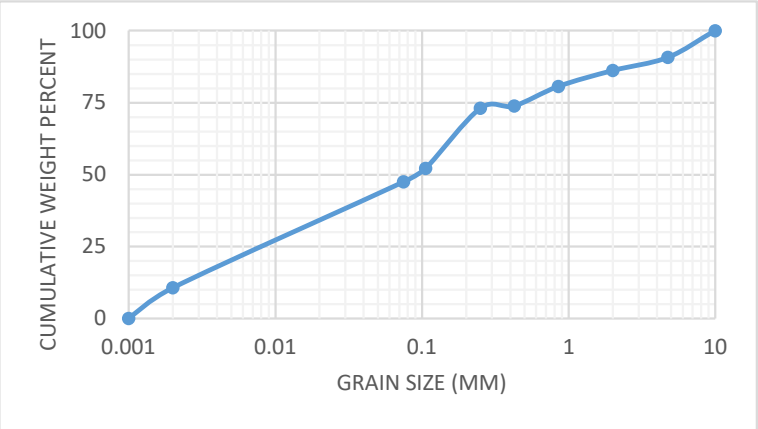
Estimation of Hydraulic Conductivity	cm/s	m/s		de
Hazen	.111E-03	.111E-05		
Hazen K (cm/s) = d_{10} (mm)	.182E-03	.182E-05		
Slichter	.223E-04	.223E-06		
Terzaghi	.327E-04	.327E-06		
Beyer	.134E-03	.134E-05		
Sauerbrei	.123E-03	.123E-05		
Kruger	.100E-03	.100E-05	0.09	
Kozeny-Carmen	.195E-04	.195E-06	0.02	
Zunker	.299E-04	.299E-06	0.03	
Zamarin	.759E-04	.759E-06	0.07	
USBR	.260E-03	.260E-05	0.22	
Barr	.242E-04	.242E-06	0.02	
Alyamani and Sen	.260E-04	.260E-06	0.02	
Chapuis	.395E-05	.395E-07	0.00	
Krumbein and Monk	.210E-03	.210E-05	0.18	
Shepherd	.973E-02	.973E-04	8.41	
geometric mean	.1737E-03	.174E-05	0.15	
arithmetic mean	.202E-02	.202E-04	1.75	

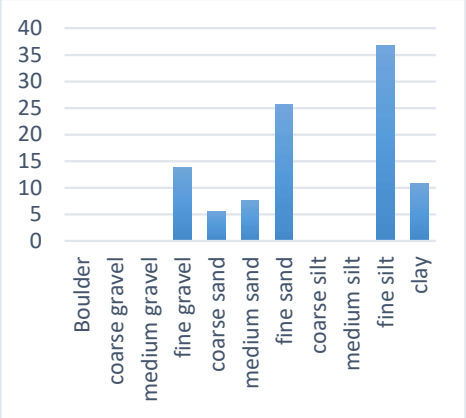
Grain Size Analysis Report Date: 11/10/2022 (sample date)

Sample Name: RIDW-5-(36.5-37.5)

Mass Sample (g): 29.1805 T (oC) 20

Poorly sorted silty sand with fines





Sieve opening (ps) di (mm)	Mass of retained (mr) (g)	mass fraction (mf)	Percent Passing (pp)
10	0	0	100
4.75	2.7181	0.093148	90.68522
2	1.3161	0.045102	86.17501
0.85	1.6254	0.055702	80.60486
0.425	1.9709	0.067542	73.85069
0.25	0.2306	0.007903	73.06043
0.106	6.0942	0.208845	52.17594
0.075	1.3652	0.046785	47.49747
0.002	10.73	0.367711	10.72634
0.001	3.13	0.107263	0

Effective Grain Diameters (mm)		Other Useful Parameters	
d10	0.002	Uniformity Coef.	82.78
d17	0.014	n computed	0.26
d20	0.020	g (cm/s^2)	980.00
d50	0.092	ρ (g/cm^3)	0.9981
d60	0.160	μ (g/cm s)	0.0098
de (Kruger)	0.012	ρg/μ (1/cm s)	9.9327E+04
de (Kozeny)	0.006	tau (Sauerbrei)	1.053
de (Zunker)	0.008	$d_{geometric\ mean}$	0.073
de (Zamarin)	0.011	σ_ϕ	3.597
lo (Alyameni)	0.000		

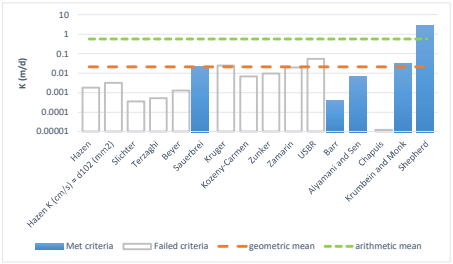
mm	0	% in sample
>64	Boulder	
16 - 64	coarse gravel	
8 - 16	medium gravel	0
2 - 8	fine gravel	13.82498586
0.5 - 2	coarse sand	5.570158154
0.25 - 0.5	medium sand	7.544421789
0.063 - 0.25	fine sand	25.56296157
0.016 - 0.063	coarse silt	
0.008 - 0.016	medium silt	
0.002 - 0.008	fine silt	36.77113141
<0.002	clay	10.72634122

K from Grain Size Analysis Report Date: 11/10/2022 (sample date)

Sample Name: RIDW-5-(36.5-37.5)

Mass Sample (g): 29.1805 T (oC) 20

Poorly sorted silty sand with fines



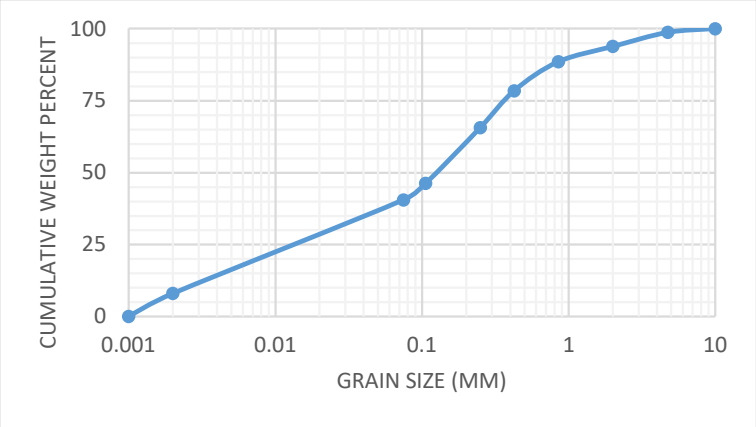
Estimation of Hydraulic Conductivity	cm/s	m/s		de
Hazen	.211E-05	.211E-07		
Hazen K (cm/s) = d_{10} (mm)	.373E-05	.373E-07		
Slichter	.415E-06	.415E-08		
Terzaghi	.592E-06	.592E-08		
Beyer	.151E-05	.151E-07		
Sauerbrei	.245E-04	.245E-06		
Kruger	.289E-04	.289E-06	0.02	
Kozeny-Carmen	.786E-05	.786E-07	0.01	
Zunker	.109E-04	.109E-06	0.01	
Zamarin	.229E-04	.229E-06	0.02	
USBR	.618E-04	.618E-06	0.05	
Barr	.445E-06	.445E-08	0.00	
Alyamani and Sen	.756E-05	.756E-07	0.01	
Chapuis	.142E-07	.142E-09	0.00	
Krumbein and Monk	.360E-04	.360E-06	0.03	
Shepherd	.320E-02	.320E-04	2.77	
geometric mean	.249E-04	.249E-06	0.02	
arithmetic mean	.654E-03	.654E-05	0.56	

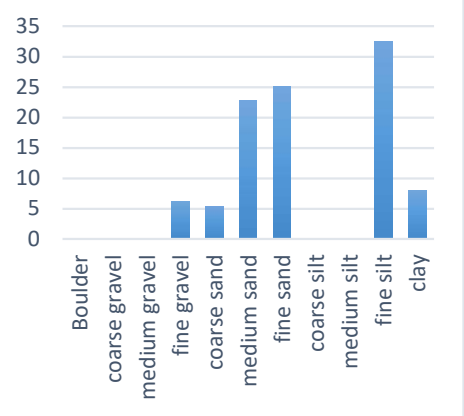
Grain Size Analysis Report Date: 11/16/2022 (sample date)

Sample Name: RIDW-6-(25-26)

Mass Sample (g): 28.0758 T (oC) 20

Poorly sorted silty sand with fines





Sieve opening (ps) di (mm)	Mass of retained (mr) (g)	mass fraction (mf)	Percent Passing (pp)
10	0	0	100
4.75	0.3599	0.012819	98.71811
2	1.3759	0.049007	93.81745
0.85	1.5035	0.053551	88.46231
0.425	2.8215	0.100496	78.41273
0.25	3.5855	0.127708	65.64194
0.106	5.4451	0.193943	46.24766
0.075	1.5994	0.056967	40.55094
0.002	9.13	0.325191	8.031828
0.001	2.255	0.080318	0

Effective Grain Diameters (mm)		Other Useful Parameters	
d10	0.006	Uniformity Coef.	32.42
d17	0.022	n computed	0.26
d20	0.029	g (cm/s^2)	980.00
d50	0.134	ρ (g/cm^3)	0.9981
d60	0.208	μ (g/cm s)	0.0098
de (Kruger)	0.016	ρg/μ (1/cm s)	9.9327E+04
de (Kozeny)	0.007	tau (Sauerbrei)	1.053
de (Zunker)	0.010	$d_{geometric\ mean}$	0.078
de (Zamarin)	0.013	σ_ϕ	2.882
Io (Alyameni)	0.000		

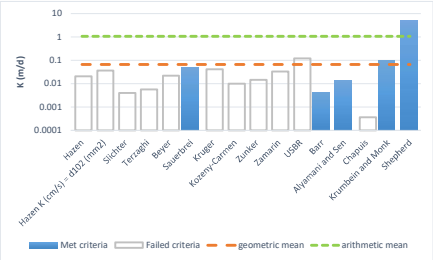
mm	0	% in sample
>64	Boulder	
16 - 64	coarse gravel	
8 - 16	medium gravel	0
2 - 8	fine gravel	6.182548672
0.5 - 2	coarse sand	5.355145713
0.25 - 0.5	medium sand	22.82036487
0.063 - 0.25	fine sand	25.09100364
0.016 - 0.063	coarse silt	
0.008 - 0.016	medium silt	
0.002 - 0.008	fine silt	32.51910898
<0.002	clay	8.031828122

K from Grain Size Analysis Report Date: 11/16/2022 (sample date)

Sample Name: RIDW-6-(25-26)

Mass Sample (g): 28.0758 T (oC) 20

Poorly sorted silty sand with fines



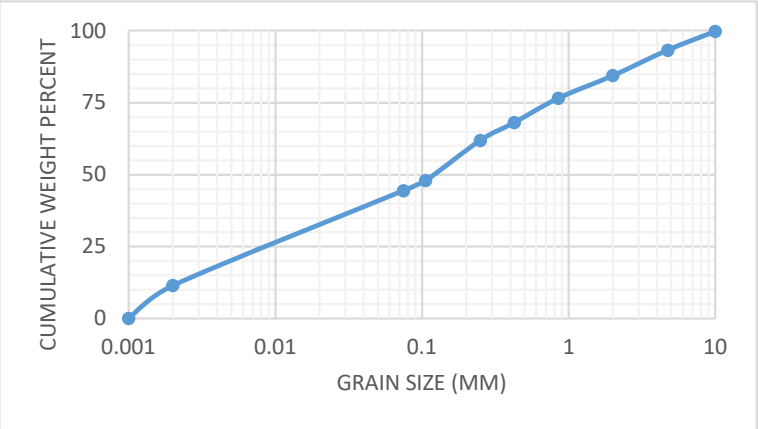
Estimation of Hydraulic Conductivity	cm/s	m/s		de
Hazen	.235E-04	.235E-06		
Hazen K (cm/s) = d_{10} (mm)	.412E-04	.412E-06		
Slichter	.462E-05	.462E-07		
Terzaghi	.660E-05	.660E-07		
Beyer	.253E-04	.253E-06		
Sauerbrei	.579E-04	.579E-06		
Kruger	.482E-04	.482E-06	0.04	
Kozeny-Carmen	.116E-04	.116E-06	0.01	
Zunker	.168E-04	.168E-06	0.01	
Zamarin	.374E-04	.374E-06	0.03	
USBR	.137E-03	.137E-05	0.12	
Barr	.496E-05	.496E-07	0.00	
Alyamani and Sen	.153E-04	.153E-06	0.01	
Chapuis	.423E-06	.423E-08	0.00	
Krumbein and Monk	.104E-03	.104E-05	0.09	
Shepherd	.599E-02	.599E-04	5.17	
geometric mean	.7719E-04	.772E-06	0.07	
arithmetic mean	.123E-02	.123E-04	1.07	

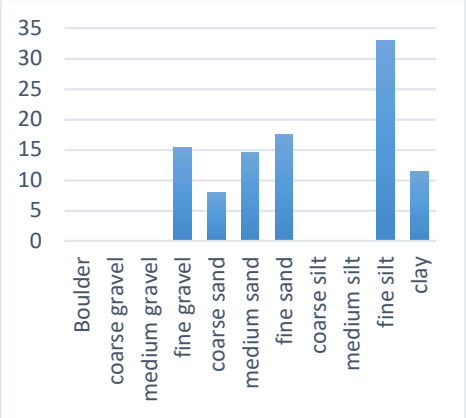
Grain Size Analysis Report Date: 11/16/2022 (sample date)

Sample Name: RIDW-6-(56-57)

Mass Sample (g): 28.076 T (oC) 20

Poorly sorted silty sand with fines





Sieve opening (ps) di (mm)	Mass of retained (mr) (g)	mass fraction (mf)	Percent Passing (pp)
10	0	0	99.75638
4.75	1.8365	0.065412	93.2152
2	2.4747	0.088143	84.40091
0.85	2.2224	0.079157	76.48525
0.425	2.3755	0.08461	68.02429
0.25	1.7221	0.061337	61.89058
0.106	3.918	0.13955	47.9356
0.075	0.9884	0.035204	44.41516
0.002	9.255	0.329641	11.45106
0.001	3.215	0.114511	0

Effective Grain Diameters (mm)		Other Useful Parameters	
d10	0.002	Uniformity Coef.	123.04
d17	0.014	n computed	0.26
d20	0.021	g (cm/s^2)	980.00
d50	0.127	ρ (g/cm^3)	0.9981
d60	0.230	μ (g/cm s)	0.0098
de (Kruger)	0.012	ρg/μ (1/cm s)	9.9327E+04
de (Kozeny)	0.006	tau (Sauerbrei)	1.053
de (Zunker)	0.008	$d_{geometric\ mean}$	0.090
de (Zamarin)	0.010	σ_ϕ	3.661
Io (Alyameni)	0.000		

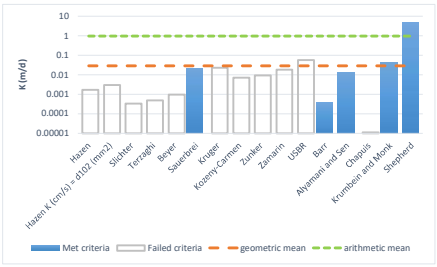
mm	0	% in sample
>64	Boulder	
16 - 64	coarse gravel	
8 - 16	medium gravel	0
2 - 8	fine gravel	15.35546374
0.5 - 2	coarse sand	7.915657501
0.25 - 0.5	medium sand	14.59467161
0.063 - 0.25	fine sand	17.47542385
0.016 - 0.063	coarse silt	
0.008 - 0.016	medium silt	
0.002 - 0.008	fine silt	32.96409745
<0.002	clay	11.4510614

K from Grain Size Analysis Report Date: 11/16/2022 (sample date)

Sample Name: RIDW-6-(56-57)

Mass Sample (g): 28.076 T (oC) 20

Poorly sorted silty sand with fines



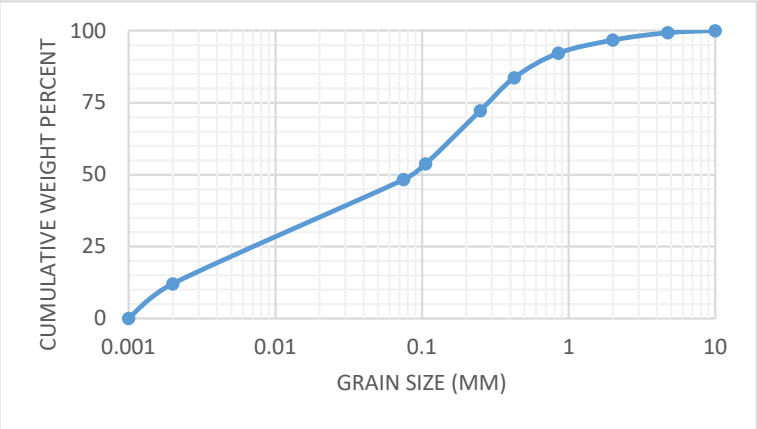
Estimation of Hydraulic Conductivity	cm/s	m/s		de
Hazen	.199E-05	.199E-07		
Hazen K (cm/s) = d_{10} (mm)	.351E-05	.351E-07		
Slichter	.390E-06	.390E-08		
Terzaghi	.557E-06	.557E-08		
Beyer	.110E-05	.110E-07		
Sauerbrei	.239E-04	.239E-06		
Kruger	.265E-04	.265E-06	0.02	
Kozeny-Carmen	.830E-05	.830E-07	0.01	
Zunker	.109E-04	.109E-06	0.01	
Zamarin	.216E-04	.216E-06	0.02	
USBR	.655E-04	.655E-06	0.06	
Barr	.419E-06	.419E-08	0.00	
Alyamani and Sen	.148E-04	.148E-06	0.01	
Chapuis	.130E-07	.130E-09	0.00	
Krumbein and Monk	.500E-04	.500E-06	0.04	
Shepherd	.551E-02	.551E-04	4.76	
geometric mean	.3328E-04	.333E-06	0.03	
arithmetic mean	.112E-02	.112E-04	0.97	

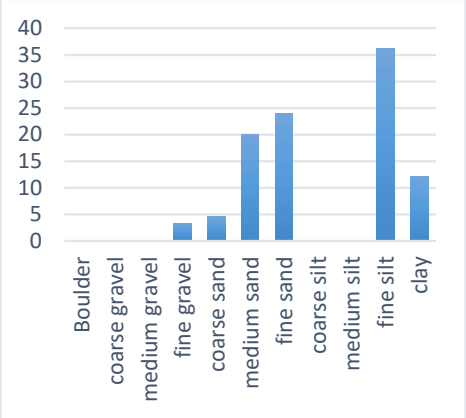
Grain Size Analysis Report Date: 4/3/2019 (sample date)

Sample Name: RISB-42-(6.5-7.5)

Mass Sample (g): 27.6993 T (oC) 20

Poorly sorted silty sand with fines





Sieve opening (ps) di (mm)	Mass of retained (mr) (g)	mass fraction (mf)	Percent Passing (pp)
10	0	0	100
4.75	0.1961	0.00708	99.29204
2	0.7181	0.025925	96.69956
0.85	1.2497	0.045117	92.18789
0.425	2.3773	0.085825	83.60536
0.25	3.1566	0.11396	72.20941
0.106	5.1192	0.184813	53.72807
0.075	1.5123	0.054597	48.26837
0.002	10.025	0.361923	12.07612
0.001	3.345	0.120761	0

Effective Grain Diameters (mm)		Other Useful Parameters	
d10	0.002	Uniformity Coef.	84.72
d17	0.012	n computed	0.26
d20	0.018	g (cm/s^2)	980.00
d50	0.085	ρ (g/cm^3)	0.9981
d60	0.155	μ (g/cm s)	0.0098
de (Kruger)	0.011	ρg/μ (1/cm s)	9.9327E+04
de (Kozeny)	0.005	tau (Sauerbrei)	1.053
de (Zunker)	0.007	$d_{geometric\ mean}$	0.051
de (Zamarin)	0.010	σ_ϕ	2.904
Io (Alyameni)	0.000		

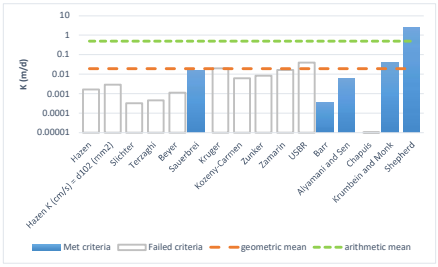
mm	0	% in sample
>64	Boulder	
16 - 64	coarse gravel	
8 - 16	medium gravel	0
2 - 8	fine gravel	3.300444416
0.5 - 2	coarse sand	4.51166636
0.25 - 0.5	medium sand	19.97848321
0.063 - 0.25	fine sand	23.94103822
0.016 - 0.063	coarse silt	
0.008 - 0.016	medium silt	
0.002 - 0.008	fine silt	36.19225035
<0.002	clay	12.07611745

K from Grain Size Analysis Report Date: 4/3/2019 (sample date)

Sample Name: RISB-42-(6.5-7.5)

Mass Sample (g): 27.6993 T (oC) 20

Poorly sorted silty sand with fines



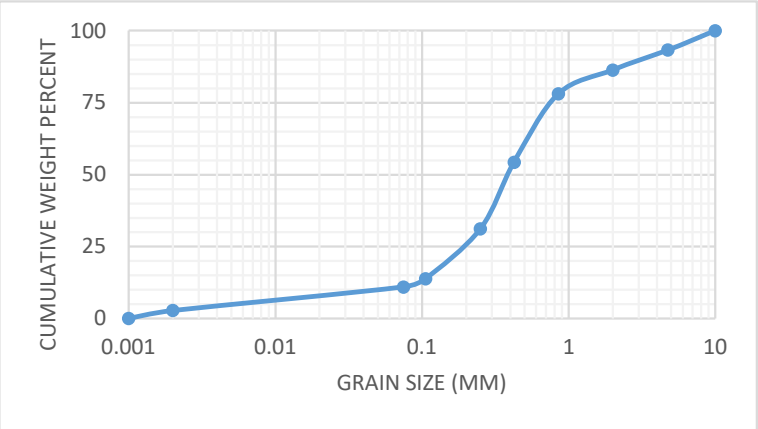
Estimation of Hydraulic Conductivity	cm/s	m/s		de
Hazen	.189E-05	.189E-07		
Hazen K (cm/s) = d_{10} (mm)	.334E-05	.334E-07		
Slichter	.372E-06	.372E-08		
Terzaghi	.530E-06	.530E-08		
Beyer	.133E-05	.133E-07		
Sauerbrei	.167E-04	.167E-06		
Kruger	.234E-04	.234E-06	0.02	
Kozeny-Carmen	.713E-05	.713E-07	0.01	
Zunker	.947E-05	.947E-07	0.01	
Zamarin	.189E-04	.189E-06	0.02	
USBR	.462E-04	.462E-06	0.04	
Barr	.399E-06	.399E-08	0.00	
Alyamani and Sen	.648E-05	.648E-07	0.01	
Chapuis	.121E-07	.121E-09	0.00	
Krumbein and Monk	.437E-04	.437E-06	0.04	
Shepherd	.282E-02	.282E-04	2.44	
geometric mean	.221E-04	.221E-06	0.02	
arithmetic mean	.578E-03	.578E-05	0.50	

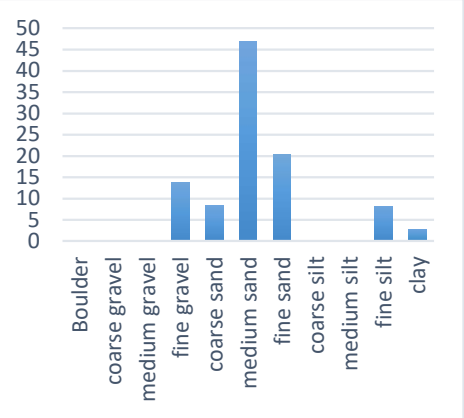
Grain Size Analysis Report Date: 4/5/2019 (sample date)

Sample Name: RISB-48-(5.5-6.5)

Mass Sample (g): 27.9543 T (oC) 20

Poorly sorted gravelly sand with fines





Sieve opening (ps) di (mm)	Mass of retained (mr) (g)	mass fraction (mf)	Percent Passing (pp)
10	0	0	100
4.75	1.8835	0.067378	93.26222
2	1.9336	0.06917	86.34521
0.85	2.3275	0.083261	78.01912
0.425	6.6231	0.236926	54.32653
0.25	6.4747	0.231617	31.16479
0.106	4.8316	0.172839	13.88087
0.075	0.8153	0.029165	10.96432
0.002	2.29	0.081919	2.772382
0.001	0.775	0.027724	0

Effective Grain Diameters (mm)		Other Useful Parameters	
d10	0.066	Uniformity Coef.	7.93
d17	0.132	n computed	0.31
d20	0.157	g (cm/s^2)	980.00
d50	0.392	ρ (g/cm^3)	0.9981
d60	0.527	μ (g/cm s)	0.0098
de (Kruger)	0.043	ρg/μ (1/cm s)	9.9327E+04
de (Kozeny)	0.022	tau (Sauerbrei)	1.053
de (Zunker)	0.030	$d_{geometric\ mean}$	0.341
de (Zamarin)	0.039	σ_ϕ	2.171
lo (Alyameni)	0.000		

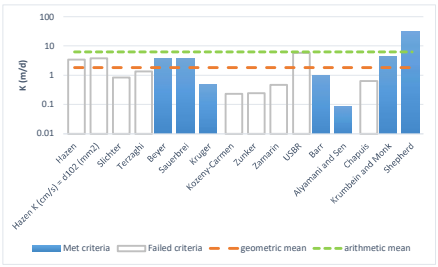
mm	0	% in sample
>64	Boulder	
16 - 64	coarse gravel	
8 - 16	medium gravel	0
2 - 8	fine gravel	13.65478656
0.5 - 2	coarse sand	8.326089367
0.25 - 0.5	medium sand	46.8543301
0.063 - 0.25	fine sand	20.20047005
0.016 - 0.063	coarse silt	
0.008 - 0.016	medium silt	
0.002 - 0.008	fine silt	8.191941848
<0.002	clay	2.772382066

K from Grain Size Analysis Report Date: 4/5/2019 (sample date)

Sample Name: RISB-48-(5.5-6.5)

Mass Sample (g): 27.9543 T (oC) 20

Poorly sorted gravelly sand with fines



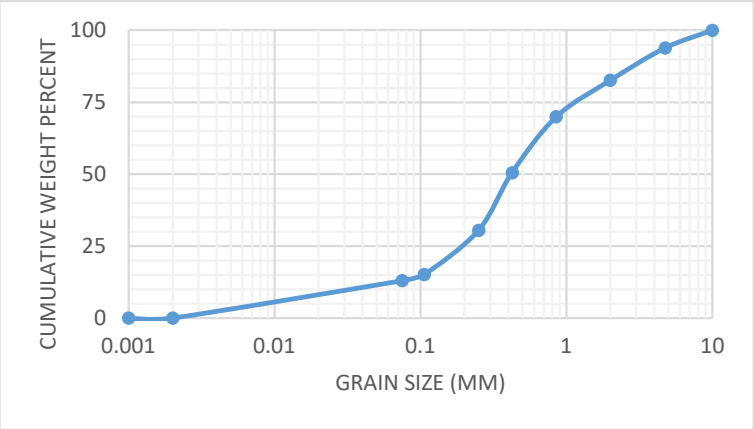
Estimation of Hydraulic Conductivity	cm/s	m/s		de
Hazen	.403E-02	.403E-04		
Hazen K (cm/s) = d_{10} (mm)	.441E-02	.441E-04		
Slichter	.964E-03	.964E-05		
Terzaghi	.159E-02	.159E-04		
Beyer	.410E-02	.410E-04		
Sauerbrei	.445E-02	.445E-04		
Kruger	.540E-03	.540E-05	0.47	
Kozeny-Carmen	.270E-03	.270E-05	0.23	
Zunker	.283E-03	.283E-05	0.24	
Zamarin	.544E-03	.544E-05	0.47	
USBR	.674E-02	.674E-04	5.82	
Barr	.115E-02	.115E-04	0.99	
Alyamani and Sen	.999E-04	.999E-06	0.09	
Chapuis	.745E-03	.745E-05	0.64	
Krumbein and Monk	.503E-02	.503E-04	4.34	
Shepherd	.353E-01	.353E-03	30.49	
geometric mean	.213E-02	.213E-04	1.84	
arithmetic mean	.724E-02	.724E-04	6.25	

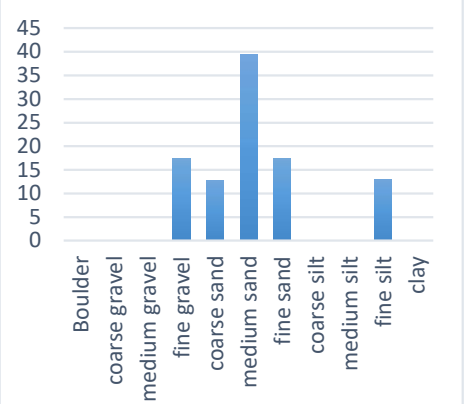
Grain Size Analysis Report Date: 12/6/2018 (sample date)

Sample Name: RIDW-1-(142.5-145)

Mass Sample (g): 26.8049 T (oC) 20

Poorly sorted silty sand low in fines





Sieve opening (ps) di (mm)	Mass of retained (mr) (g)	mass fraction (mf)	Percent Passing (pp)
10	0	0	100
4.75	1.662	0.062004	93.79964
2	3.0057	0.112132	82.58639
0.85	3.4039	0.126988	69.8876
0.425	5.1864	0.193487	50.53889
0.25	5.3712	0.200381	30.50077
0.106	4.1198	0.153696	15.13119
0.075	0.5659	0.021112	13.02001
0.002	3.49	0.1302	0
0.001	0		0

Effective Grain Diameters (mm)		Other Useful Parameters	
d10	0.058	Uniformity Coef.	10.90
d17	0.124	n computed	0.29
d20	0.152	g (cm/s^2)	980.00
d50	0.420	ρ (g/cm^3)	0.9981
d60	0.633	μ (g/cm s)	0.0098
de (Kruger)	0.182	ρg/μ (1/cm s)	9.9327E+04
de (Kozeny)	0.028	tau (Sauerbrei)	1.053
de (Zunker)	0.051	$d_{geometric\ mean}$	0.388
de (Zamarin)	0.115	σ_ϕ	2.240
Io (Alyameni)	0.000		

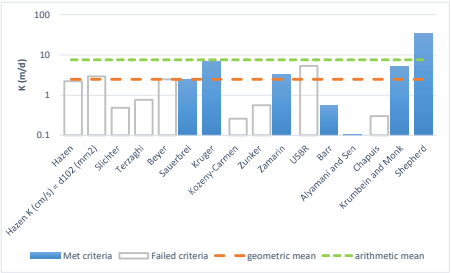
mm	0	% in sample
>64	Boulder	
16 - 64	coarse gravel	
8 - 16	medium gravel	0
2 - 8	fine gravel	17.41360721
0.5 - 2	coarse sand	12.69879761
0.25 - 0.5	medium sand	39.38682853
0.063 - 0.25	fine sand	17.48075911
0.016 - 0.063	coarse silt	
0.008 - 0.016	medium silt	
0.002 - 0.008	fine silt	13.02000754
<0.002	clay	0

K from Grain Size Analysis Report Date: 12/6/2018 (sample date)

Sample Name: RIDW-1-(142.5-145)

Mass Sample (g): 26.8049 T (oC) 20

Poorly sorted silty sand low in fines



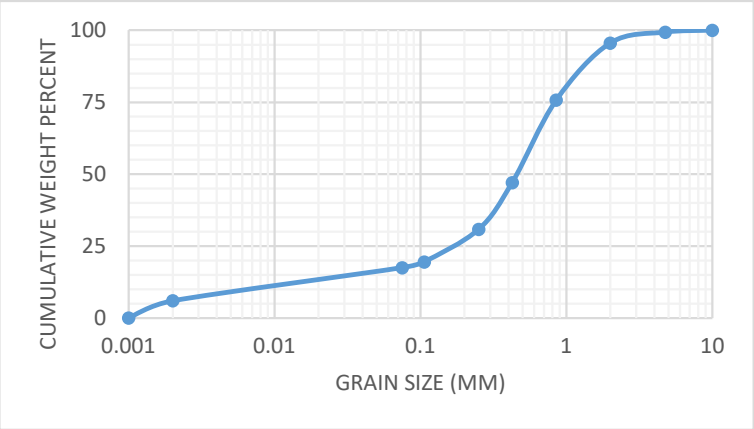
Estimation of Hydraulic Conductivity	cm/s	m/s		de
Hazen	.258E-02	.258E-04		
Hazen K (cm/s) = d_{10} (mm)	.337E-02	.337E-04		
Slichter	.563E-03	.563E-05		
Terzaghi	.886E-03	.886E-05		
Beyer	.289E-02	.289E-04		
Sauerbrei	.284E-02	.284E-04		
Kruger	.812E-02	.812E-04	7.02	
Kozeny-Carmen	.305E-03	.305E-05	0.26	
Zunker	.646E-03	.646E-05	0.56	
Zamarin	.384E-02	.384E-04	3.32	
USBR	.622E-02	.622E-04	5.38	
Barr	.638E-03	.638E-05	0.55	
Alyamani and Sen	.123E-03	.123E-05	0.11	
Chapuis	.349E-03	.349E-05	0.30	
Krumbein and Monk	.596E-02	.596E-04	5.15	
Shepherd	.395E-01	.395E-03	34.17	
geometric mean	.2880E-02	.288E-04	2.49	
arithmetic mean	.872E-02	.872E-04	7.54	

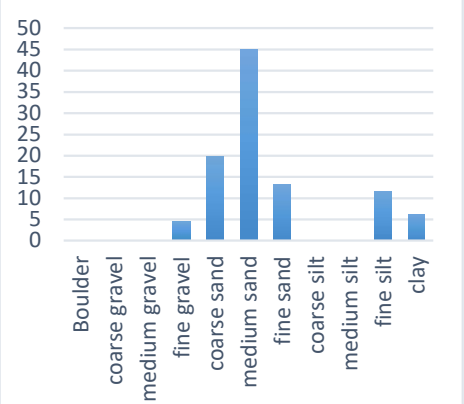
Grain Size Analysis Report Date: 12/10/2018 (sample date)

Sample Name: RIDW-2-(145-147.5)

Mass Sample (g): 55.212 T (oC) 20

Poorly sorted silty sand with fines





Sieve opening (ps) di (mm)	Mass of retained (mr) (g)	mass fraction (mf)	Percent Passing (pp)
10	0	0	100
4.75	0.3694	0.006691	99.33094
2	2.0918	0.037887	95.54227
0.85	10.9419	0.19818	75.7243
0.425	15.8575	0.287211	47.00319
0.25	8.9431	0.161977	30.80544
0.106	6.224	0.112729	19.53253
0.075	1.1093	0.020092	17.52336
0.002	6.36	0.115192	6.00413
0.001	3.315	0.060041	0

Effective Grain Diameters (mm)		Other Useful Parameters	
d10	0.027	Uniformity Coef.	22.59
d17	0.072	n computed	0.26
d20	0.112	g (cm/s^2)	980.00
d50	0.469	ρ (g/cm^3)	0.9981
d60	0.617	μ (g/cm s)	0.0098
de (Kruger)	0.022	ρg/μ (1/cm s)	9.9327E+04
de (Kozeny)	0.013	tau (Sauerbrei)	1.053
de (Zunker)	0.016	$d_{geometric\ mean}$	0.253
de (Zamarin)	0.020	σ_ϕ	2.612
Io (Alyameni)	0.000		

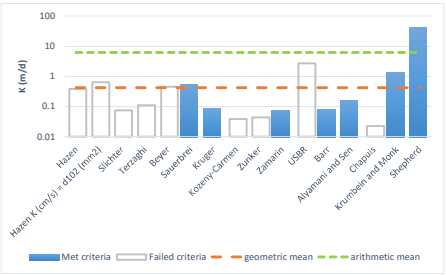
mm	0	% in sample
>64	Boulder	
16 - 64	coarse gravel	
8 - 16	medium gravel	0
2 - 8	fine gravel	4.457726581
0.5 - 2	coarse sand	19.81797435
0.25 - 0.5	medium sand	44.91885822
0.063 - 0.25	fine sand	13.28207636
0.016 - 0.063	coarse silt	
0.008 - 0.016	medium silt	
0.002 - 0.008	fine silt	11.51923495
<0.002	clay	6.004129537

K from Grain Size Analysis Report Date: 12/10/2018 (sample date)

Sample Name: RIDW-2-(145-147.5)

Mass Sample (g): 55.212 T (oC) 20

Poorly sorted silty sand with fines



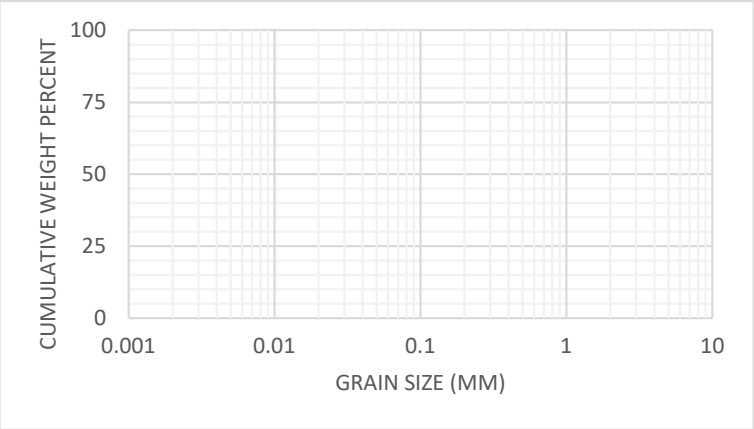
Estimation of Hydraulic Conductivity	cm/s	m/s		de
Hazen	.440E-03	.440E-05		
Hazen K (cm/s) = d_{10} (mm)	.747E-03	.747E-05		
Slichter	.872E-04	.872E-06		
Terzaghi	.126E-03	.126E-05		
Beyer	.519E-03	.519E-05		
Sauerbrei	.636E-03	.636E-05		
Kruger	.101E-03	.101E-05	0.09	
Kozeny-Carmen	.441E-04	.441E-06	0.04	
Zunker	.506E-04	.506E-06	0.04	
Zamarin	.875E-04	.875E-06	0.08	
USBR	.310E-02	.310E-04	2.68	
Barr	.940E-04	.940E-06	0.08	
Alyamani and Sen	.184E-03	.184E-05	0.16	
Chapuis	.265E-04	.265E-06	0.02	
Krumbein and Monk	.156E-02	.156E-04	1.35	
Shepherd	.474E-01	.474E-03	40.99	
geometric mean	.4938E-03	.494E-05	0.43	
arithmetic mean	.716E-02	.716E-04	6.18	

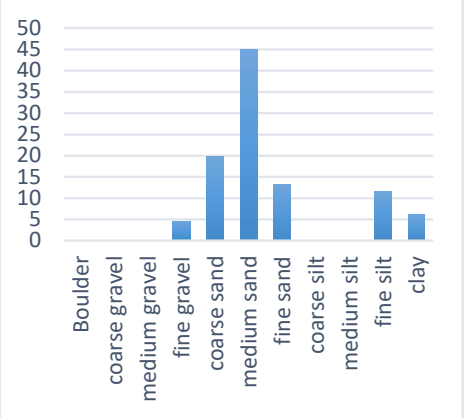
Grain Size Analysis Report Date: 12/11/2018 (sample date)

Sample Name: RIDW-3-(132.5-135)

Mass Sample (g): 55.212 T (oC) 20

Poorly sorted silty sand with fines





Sieve opening (ps) di (mm)	Mass of retained (mr) (g)	mass fraction (mf)	Percent Passing (pp)
10		0	
4.75		0.023802	
2		0.039884	
0.85		0.057048	
0.425		0.085116	
0.25		0.14571	
0.106		0.246444	
0.075		0.045459	
0.002		0.243144	
0.001		0.113393	

Effective Grain Diameters (mm)		Other Useful Parameters	
d10	0.027	Uniformity Coef.	22.59
d17	0.072	n computed	0.26
d20	0.112	g (cm/s^2)	980.00
d50	0.469	ρ (g/cm^3)	0.9981
d60	0.617	μ (g/cm s)	0.0098
de (Kruger)	0.022	ρg/μ (1/cm s)	9.9327E+04
de (Kozeny)	0.013	tau (Sauerbrei)	1.053
de (Zunker)	0.016	$d_{geometric\ mean}$	0.253
de (Zamarin)	0.020	σ_ϕ	2.612
Io (Alyameni)	0.000		

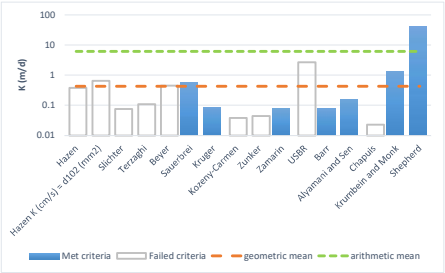
mm	0	% in sample
>64	Boulder	
16 - 64	coarse gravel	
8 - 16	medium gravel	0
2 - 8	fine gravel	4.457726581
0.5 - 2	coarse sand	19.81797435
0.25 - 0.5	medium sand	44.91885822
0.063 - 0.25	fine sand	13.28207636
0.016 - 0.063	coarse silt	
0.008 - 0.016	medium silt	
0.002 - 0.008	fine silt	11.51923495
<0.002	clay	6.004129537

K from Grain Size Analysis Report Date: 12/11/2018 (sample date)

Sample Name: RIDW-3-(132.5-135)

Mass Sample (g): 55.212 T (oC) 20

Poorly sorted silty sand with fines



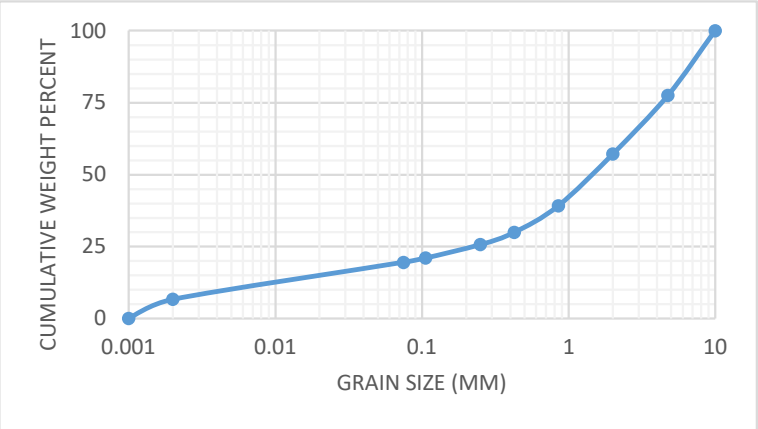
Estimation of Hydraulic Conductivity	cm/s	m/s		de
Hazen	.440E-03	.440E-05		
Hazen K (cm/s) = d_{10} (mm)	.747E-03	.747E-05		
Slichter	.872E-04	.872E-06		
Terzaghi	.126E-03	.126E-05		
Beyer	.519E-03	.519E-05		
Sauerbrei	.636E-03	.636E-05		
Kruger	.101E-03	.101E-05	0.09	
Kozeny-Carmen	.441E-04	.441E-06	0.04	
Zunker	.506E-04	.506E-06	0.04	
Zamarin	.875E-04	.875E-06	0.08	
USBR	.310E-02	.310E-04	2.68	
Barr	.940E-04	.940E-06	0.08	
Alyamani and Sen	.184E-03	.184E-05	0.16	
Chapuis	.265E-04	.265E-06	0.02	
Krumbein and Monk	.156E-02	.156E-04	1.35	
Shepherd	.474E-01	.474E-03	40.99	
geometric mean	.4938E-03	.494E-05	0.43	
arithmetic mean	.716E-02	.716E-04	6.18	

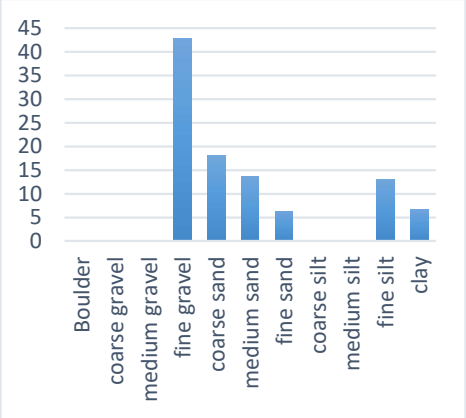
Grain Size Analysis Report Date: 11/11/2022 (sample date)

Sample Name: RIDW-5-(95.5-96.5)

Mass Sample (g): 29.5514 T (oC) 20

Poorly sorted silty sand with fines





Sieve opening (ps) di (mm)	Mass of retained (mr) (g)	mass fraction (mf)	Percent Passing (pp)
10	0	0	100
4.75	6.6534	0.225147	77.48533
2	5.9984	0.202982	57.18714
0.85	5.3226	0.180113	39.17581
0.425	2.7429	0.092818	29.89402
0.25	1.243	0.042062	25.68778
0.106	1.3803	0.046708	21.01694
0.075	0.4358	0.014747	19.54222
0.002	3.805	0.128759	6.666351
0.001	1.97	0.066664	0

Effective Grain Diameters (mm)		Other Useful Parameters	
d10	0.021	Uniformity Coef.	113.93
d17	0.061	n computed	0.26
d20	0.085	g (cm/s^2)	980.00
d50	1.541	ρ (g/cm^3)	0.9981
d60	2.381	μ (g/cm s)	0.0098
de (Kruger)	0.021	ρg/μ (1/cm s)	9.9327E+04
de (Kozeny)	0.012	tau (Sauerbrei)	1.053
de (Zunker)	0.015	$d_{geometric\ mean}$	0.602
de (Zamarin)	0.019	σ_ϕ	3.573
lo (Alyameni)	0.000		

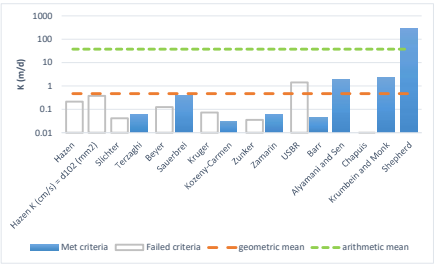
mm	0	% in sample
>64	Boulder	
16 - 64	coarse gravel	
8 - 16	medium gravel	0
2 - 8	fine gravel	42.81286166
0.5 - 2	coarse sand	18.01132941
0.25 - 0.5	medium sand	13.48802426
0.063 - 0.25	fine sand	6.145563324
0.016 - 0.063	coarse silt	
0.008 - 0.016	medium silt	
0.002 - 0.008	fine silt	12.87587052
<0.002	clay	6.666350833

K from Grain Size Analysis Report Date: 11/11/2022 (sample date)

Sample Name: RIDW-5-(95.5-96.5)

Mass Sample (g): 29.5514 T (oC) 20

Poorly sorted silty sand with fines



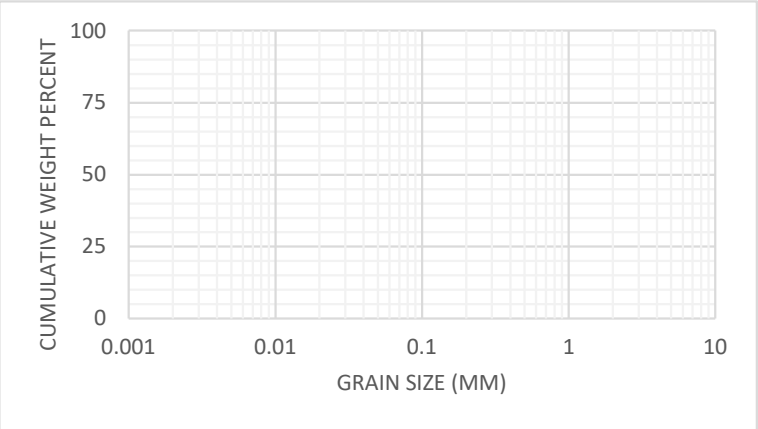
Estimation of Hydraulic Conductivity	cm/s	m/s		de
Hazen	.247E-03	.247E-05		
Hazen K (cm/s) = d_{10} (mm)	.437E-03	.437E-05		
Slichter	.486E-04	.486E-06		
Terzaghi	.693E-04	.693E-06		
Beyer	.145E-03	.145E-05		
Sauerbrei	.430E-03	.430E-05		
Kruger	.837E-04	.837E-06	0.07	
Kozeny-Carmen	.348E-04	.348E-06	0.03	
Zunker	.409E-04	.409E-06	0.04	
Zamarin	.713E-04	.713E-06	0.06	
USBR	.163E-02	.163E-04	1.41	
Barr	.521E-04	.521E-06	0.05	
Alyamani and Sen	.217E-02	.217E-04	1.88	
Chapuis	.116E-04	.116E-06	0.01	
Krumbein and Monk	.250E-02	.250E-04	2.16	
Shepherd	.337E+00	.337E-02	291.51	
geometric mean	.5385E-03	.539E-05	0.47	
arithmetic mean	.428E-01	.428E-03	37.01	

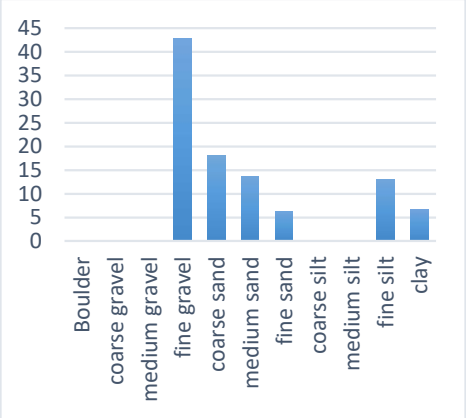
Grain Size Analysis Report Date: 11/14/2022 (sample date)

Sample Name: RIDW-5-(147-148)

Mass Sample (g): 27.2134 T (oC) 20

Poorly sorted silty sand with fines





Sieve opening (ps) di (mm)	Mass of retained (mr) (g)	mass fraction (mf)	Percent Passing (pp)
10		0	
4.75		0.095027	
2		0.211447	
0.85		0.230221	
0.425		0.195701	
0.25		0.076859	
0.106		0.055168	
0.075		0.013945	
0.002		0.086355	
0.001		0.035277	

Effective Grain Diameters (mm)		Other Useful Parameters	
d10	0.021	Uniformity Coef.	113.93
d17	0.061	n computed	0.26
d20	0.085	g (cm/s^2)	980.00
d50	1.541	ρ (g/cm^3)	0.9981
d60	2.381	μ (g/cm s)	0.0098
de (Kruger)	0.021	ρg/μ (1/cm s)	9.9327E+04
de (Kozeny)	0.012	tau (Sauerbrei)	1.053
de (Zunker)	0.015	$d_{geometric\ mean}$	0.602
de (Zamarin)	0.019	σ_ϕ	3.573
Io (Alyameni)	0.000		

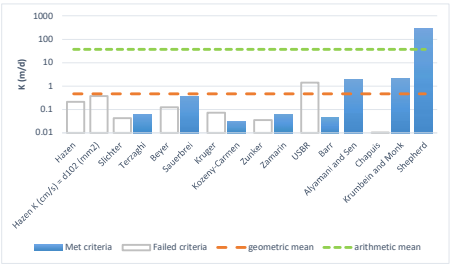
mm	0	% in sample
>64	Boulder	
16 - 64	coarse gravel	
8 - 16	medium gravel	0
2 - 8	fine gravel	42.81286166
0.5 - 2	coarse sand	18.01132941
0.25 - 0.5	medium sand	13.48802426
0.063 - 0.25	fine sand	6.145563324
0.016 - 0.063	coarse silt	
0.008 - 0.016	medium silt	
0.002 - 0.008	fine silt	12.87587052
<0.002	clay	6.666350833

K from Grain Size Analysis Report Date: 11/14/2022 (sample date)

Sample Name: RIDW-5-(147-148)

Mass Sample (g): 27.2134 T (oC) 20

Poorly sorted silty sand with fines



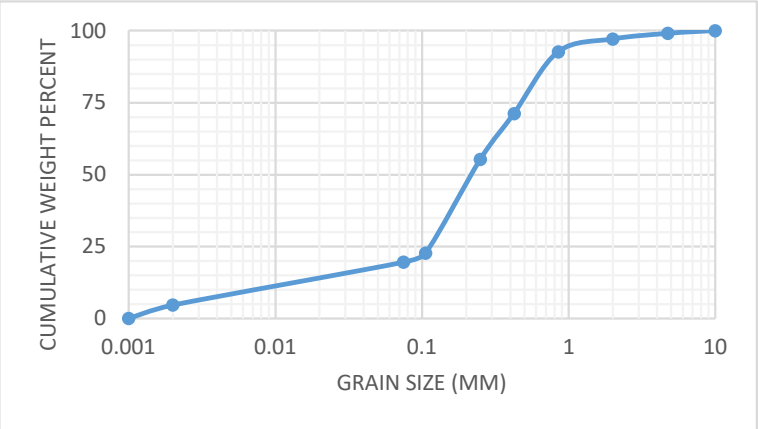
Estimation of Hydraulic Conductivity	cm/s	m/s		de
Hazen	.247E-03	.247E-05		
Hazen K (cm/s) = d_{10} (mm)	.437E-03	.437E-05		
Slichter	.486E-04	.486E-06		
Terzaghi	.693E-04	.693E-06		
Beyer	.145E-03	.145E-05		
Sauerbrei	.430E-03	.430E-05		
Kruger	.837E-04	.837E-06	0.07	
Kozeny-Carmen	.348E-04	.348E-06	0.03	
Zunker	.409E-04	.409E-06	0.04	
Zamarin	.713E-04	.713E-06	0.06	
USBR	.163E-02	.163E-04	1.41	
Barr	.521E-04	.521E-06	0.05	
Alyamani and Sen	.217E-02	.217E-04	1.88	
Chapuis	.116E-04	.116E-06	0.01	
Krumbein and Monk	.250E-02	.250E-04	2.16	
Shepherd	.337E+00	.337E-02	291.51	
geometric mean	.5385E-03	.539E-05	0.47	
arithmetic mean	.428E-01	.428E-03	37.01	

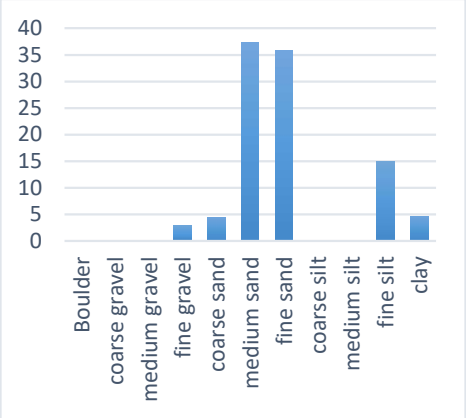
Grain Size Analysis Report Date: 11/16/2022 (sample date)

Sample Name: RIDW-6-(133.5-134.5)

Mass Sample (g): 27.0863 T (oC) 20

Poorly sorted silty sand with fines





Sieve opening (ps) di (mm)	Mass of retained (mr) (g)	mass fraction (mf)	Percent Passing (pp)
10	0	0	100
4.75	0.2476	0.009141	99.08588
2	0.5336	0.0197	97.11589
0.85	1.2062	0.044532	92.66271
0.425	5.8081	0.214429	71.21977
0.25	4.3077	0.159036	55.31616
0.106	8.8219	0.325696	22.74655
0.075	0.8562	0.03161	19.58555
0.002	4.04	0.149153	4.670258
0.001	1.265	0.046703	0

Effective Grain Diameters (mm)	
d10	0.028
d17	0.062
d20	0.079
d50	0.226
d60	0.302
de (Kruger)	0.026
de (Kozeny)	0.013
de (Zunker)	0.018
de (Zamarin)	0.023
Io (Alyameni)	0.000

Other Useful Parameters	
Uniformity Coef.	10.74
n computed	0.29
g (cm/s^2)	980.00
ρ (g/cm^3)	0.9981
μ (g/cm s)	0.0098
ρg/μ (1/cm s)	9.9327E+04
tau (Sauerbrei)	1.053
$d_{geometric\ mean}$	0.155
σ_ϕ	2.201

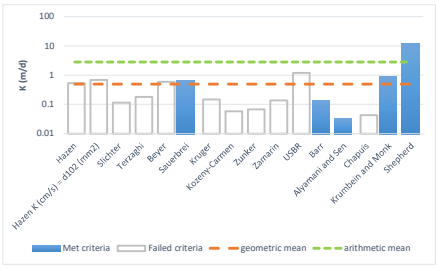
mm	0	% in sample
>64	Boulder	
16 - 64	coarse gravel	
8 - 16	medium gravel	0
2 - 8	fine gravel	2.884114848
0.5 - 2	coarse sand	4.453173745
0.25 - 0.5	medium sand	37.34655527
0.063 - 0.25	fine sand	35.7306092
0.016 - 0.063	coarse silt	
0.008 - 0.016	medium silt	
0.002 - 0.008	fine silt	14.91528928
<0.002	clay	4.670257658

K from Grain Size Analysis Report Date: 11/16/2022 (sample date)

Sample Name: RIDW-6-(133.5-134.5)

Mass Sample (g): 27.0863 T (oC) 20

Poorly sorted silty sand with fines



Estimation of Hydraulic Conductivity	cm/s	m/s		de
Hazen	.609E-03	.609E-05		
Hazen K (cm/s) = d_{10} (mm)	.789E-03	.789E-05		
Slichter	.133E-03	.133E-05		
Terzaghi	.210E-03	.210E-05		
Beyer	.680E-03	.680E-05		
Sauerbrei	.733E-03	.733E-05		
Kruger	.171E-03	.171E-05	0.15	
Kozeny-Carmen	.672E-04	.672E-06	0.06	
Zunker	.786E-04	.786E-06	0.07	
Zamarin	.158E-03	.158E-05	0.14	
USBR	.139E-02	.139E-04	1.20	
Barr	.151E-03	.151E-05	0.13	
Alyamani and Sen	.370E-04	.370E-06	0.03	
Chapuis	.501E-04	.501E-06	0.04	
Krumbein and Monk	.997E-03	.997E-05	0.86	
Shepherd	.143E-01	.143E-03	12.32	
geometric mean	.5665E-03	.567E-05	0.49	
arithmetic mean	.324E-02	.324E-04	2.80	

APPENDIX D

TECT Sample Matrix

Table D-1
TECT Sample Matrix
Paine Field TECT Aerospace Leasehold
Everett, Washington

Sample Location	Field Sample ID	Sample Date	Laboratory Sample ID	Laboratory SDG
AA01	AA01-C23-171120	11/20/2017	1711395-07A	1711395
AA-C19	AA-C19-211022	10/22/2021	P2105652-005	P2105652
AF-1	AF-1-WG-19960105	1/5/1996	NA	NA
Ambient1	AMBIENT 1-20240808	8/8/2024	P2403355-006	P2403355
Ambient2	AMBIENT2-20240809	8/9/2024	P2403355-018	P2403355
B14	B14-15.25-19940415	4/15/1994	NA	NA
B14	B14-22.75-19940415	4/15/1994	NA	NA
B14	B14-3.75-19940415	4/15/1994	NA	NA
B14	B14-6.25-19940415	4/15/1994	NA	NA
B14	B14-6-19940415	4/15/1994	NA	NA
B14	B14-SO-6-20001017	10/17/2000	NA	NA
B14	B14-SO-6-20001017-SP	10/17/2000	NA	NA
B15	B15-10.5-19940415	4/15/1994	NA	NA
B15	B15-12.75-19940415	4/15/1994	NA	NA
B15	B15-15-19940415	4/15/1994	NA	NA
B15	B15-17.75-19940415	4/15/1994	NA	NA
B15	B15-20.25-19940415	4/15/1994	NA	NA
B15	B15-3.25-19940415	4/15/1994	NA	NA
B15	B15-5.25-19940415	4/15/1994	NA	NA
B17	B17-11.5-19940415	4/15/1994	NA	NA
B17	B17-13.25-19940415	4/15/1994	NA	NA
B17	B17-15.75-19940415	4/15/1994	NA	NA
B17	B17-17.75-19940415	4/15/1994	NA	NA
B17	B17-20.25-19940415	4/15/1994	NA	NA
B17	B17-27.75-19940415	4/15/1994	NA	NA
B17	B17-3.75-19940415	4/15/1994	NA	NA
B17	B17-37.75-19940415	4/15/1994	NA	NA
B17	B17-6.5-19940415	4/15/1994	NA	NA
B18	B18-11.25-19940415	4/15/1994	NA	NA
B18	B18-13.25-19940415	4/15/1994	NA	NA
B18	B18-17.75-19940415	4/15/1994	NA	NA
B18	B18-22.75-19940415	4/15/1994	NA	NA
B18	B18-27.75-19940415	4/15/1994	NA	NA
B18	B18-3.75-19940415	4/15/1994	NA	NA
B18	B18-6.25-19940415	4/15/1994	NA	NA
B18	B18-8.75-19940415	4/15/1994	NA	NA
B18	B18-8-19940415	4/15/1994	NA	NA
B19	B19-11.25-19940415	4/15/1994	NA	NA
B19	B19-13.75-19940415	4/15/1994	NA	NA
B19	B19-16.25-19940415	4/15/1994	NA	NA
B19	B19-17.75-19940415	4/15/1994	NA	NA
B19	B19-20.25-19940415	4/15/1994	NA	NA
B19	B19-22.75-19940415	4/15/1994	NA	NA
B19	B19-25.25-19940415	4/15/1994	NA	NA
B19	B19-3.75-19940415	4/15/1994	NA	NA
B19	B19-6.25-19940415	4/15/1994	NA	NA
B19	B19-8.25-19940415	4/15/1994	NA	NA
B22	B22-10.25-19940415	4/15/1994	NA	NA
B22	B22-3.75-19940415	4/15/1994	NA	NA
B22	B22-6.25-19940415	4/15/1994	NA	NA
B22	B22-7.75-19940415	4/15/1994	NA	NA
B22	B22-SO-6.25-20001017	10/17/2000	NA	NA

Table D-1
TECT Sample Matrix
Paine Field TECT Aerospace Leasehold
Everett, Washington

Sample Location	Field Sample ID	Sample Date	Laboratory Sample ID	Laboratory SDG
B22	B22-SO-6.25-20001017_FD-SP	10/17/2000	NA	NA
B22	B22-SO-6.25-20001017-SP	10/17/2000	NA	NA
C19-TP1	C19TP1-SO-0.9-19940214	2/14/1994	NA	NA
C19-TP1	C19TP1-SO-0-19940214	2/14/1994	NA	NA
C19-TP1	C19TP1-W-19940214	2/14/1994	NA	NA
C19-TP2	C19TP2-SO-0.1-19940214	2/14/1994	NA	NA
C19-TP2	C19TP2-SO-0.9-19940214	2/14/1994	NA	NA
C29-B3	C29-B3-SO-10-19960423	4/23/1996	NA	NA
C29-B3	C29-B3-SO-1-19960423	4/23/1996	NA	NA
C29-B3	C29-B3-SO-15-19960423	4/23/1996	NA	NA
C29-B3	C29-B3-SO-7.5-19960423	4/23/1996	NA	NA
C29-B4	C29-B4-SO-1-19960423	4/23/1996	NA	NA
C29-B4	C29-B4-SO-15-19960423	4/23/1996	NA	NA
C29-B4	C29-B4-SO-2.5-19960423	4/23/1996	NA	NA
C29-B4	C29-B4-SO-7.5-19960423	4/23/1996	NA	NA
C29-MW1	C29-MW1-181108	11/8/2018	EV18110063-02	EV18110063
C29-MW1	C29-MW1-20190829	8/29/2019	EV19080210-02	EV19080210
C29-MW1	C29-MW1-20240814	8/14/2024	EV24080099-03	EV24080099
C29-MW1	C29-MW1-241105	11/5/2024	EV24110038-08	EV24110038
C29-MW1	C29-MW1-SO-12.5-19960419	4/19/1996	NA	NA
C29-MW1	C29-MW1-SO-15-19960419	4/19/1996	NA	NA
C29-MW1	C29-MW1-SO-2.5-19960419	4/19/1996	NA	NA
C29-MW1	C29-MW1-SO-5-19960419	4/19/1996	NA	NA
C29-MW1	C29-MW1-WG-19960507	5/7/1996	NA	NA
C29-MW1	C29-MW1-WG-19990224	2/24/1999	NA	NA
C29-MW2	C29-MW2-181108	11/8/2018	EV18110063-04	EV18110063
C29-MW2	C29-MW2-20190905	9/5/2019	EV19090027-05	EV19090027
C29-MW2	C29-MW2-240813	8/13/2024	EV24080092-12	EV24080092
C29-MW2	C29-MW2-SO-10-19960419	4/19/1996	NA	NA
C29-MW2	C29-MW2-SO-15-19960419	4/19/1996	NA	NA
C29-MW2	C29-MW2-SO-2.5-19960419	4/19/1996	NA	NA
C29-MW2	C29-MW2-SO-5-19960419	4/19/1996	NA	NA
C29-MW2	C29-MW2-WG-19990507	5/7/1999	NA	NA
C29-TP1	C29TP1-SO-1.2-19960411	4/11/1996	NA	NA
C29-TP1	C29TP1-SO-2-19960411	4/11/1996	NA	NA
C29-TP2	C29TP2-SO-1.6-19960411	4/11/1996	NA	NA
C29-TP2	C29TP2-SO-3.5-19960411	4/11/1996	NA	NA
C29-TP3	C29TP3-SO-0.4-19960411	4/11/1996	NA	NA
C29-TP3	C29TP3-SO-2-19960411	4/11/1996	NA	NA
C29-TP4	C29TP4-SO-0.8-19960411	4/11/1996	NA	NA
C29-TP4	C29TP4-SO-1.8-19960411	4/11/1996	NA	NA
C29-TP5A	C29TP5A-SO-0.5-19960411	4/11/1996	NA	NA
C29-TP5A	C29TP5A-SO-2.6-19960411	4/11/1996	NA	NA
C29-TP6	C29TP6-SO-1.2-19960411	4/11/1996	NA	NA
C29-TP7	C29TP7-SO-1.4-19960411	4/11/1996	NA	NA
C29-TP8	C29TP8-SO-1-19960411	4/11/1996	NA	NA
DW1	DW-1-181107	11/7/2018	EV18110052-05	EV18110052
DW1	DW1-190912	9/12/2019	EV19090083-02	EV19090083
DW1	DW-1-240604	6/4/2024	NA	EV24060047
DW1	DW1-SO-117-20001212	12/12/2000	NA	NA
DW1	DW1-SO-137-20001212	12/12/2000	NA	NA
DW1	DW1-SO-57.5-20001212	12/12/2000	NA	NA

Table D-1
TECT Sample Matrix
Paine Field TECT Aerospace Leasehold
Everett, Washington

Sample Location	Field Sample ID	Sample Date	Laboratory Sample ID	Laboratory SDG
DW1	DW1-SO-77-20001212	12/12/2000	NA	NA
DW1	DW1-SO-97.5-20001212	12/12/2000	NA	NA
DW1	DW1-WG-19991228	12/28/1999	NA	NA
DW1	DW1-WG-20000308	3/8/2000	NA	NA
DW1	DW1-WG-20011024	10/24/2001	NA	NA
DW1	DW1-WG-20031017	10/17/2003	NA	NA
DW2	DUP-181107	11/7/2018	EV18110052-02	EV18110052
DW2	DW-2-181107	11/7/2018	EV18110052-03	EV18110052
DW2	DW2-190910	9/10/2019	EV19090062-02	EV19090062
DW2	DW-2-240605	6/5/2024	EV24060047-02	EV24060047
DW2	DW2-SO-117-20001212	12/12/2000	NA	NA
DW2	DW2-SO-17-20001212	12/12/2000	NA	NA
DW2	DW2-SO-27-20001212	12/12/2000	NA	NA
DW2	DW2-SO-37-20001212	12/12/2000	NA	NA
DW2	DW2-SO-47-20001212	12/12/2000	NA	NA
DW2	DW2-SO-57-20001212	12/12/2000	NA	NA
DW2	DW2-SO-7-20001212	12/12/2000	NA	NA
DW2	DW2-SO-98.5-20001212	12/12/2000	NA	NA
DW2	DW2-WG-19991228	12/28/1999	NA	NA
DW2	DW2-WG-20000308	3/8/2000	NA	NA
DW3	DW-3-181107	11/7/2018	EV18110052-04	EV18110052
DW3	DW3-190912	9/12/2019	EV19090083-01	EV19090083
DW3	DW3-240813	8/13/2024	EV24080092-13	EV24080092
DW3	DW3-241107	11/7/2024	EV24110056-10	EV24110056
DW3	DW3-SO-136-20001212	12/12/2000	NA	NA
DW3	DW3-SO-151-20001212	12/12/2000	NA	NA
DW3	DW3-SO-36-20001212	12/12/2000	NA	NA
DW3	DW3-SO-66-20001212	12/12/2000	NA	NA
DW3	DW3-SO-7-20001212	12/12/2000	NA	NA
DW3	DW3-SO-76-20001212	12/12/2000	NA	NA
DW3	DW3-WG-20000519	5/19/2000	NA	NA
GP1	GP1-WG-20030320	3/20/2003	NA	NA
GP10	GP10-WG-20030321	3/21/2003	NA	NA
GP11	GP11-WG-20030320	3/20/2003	NA	NA
GP12	GP12-WG-20030320	3/20/2003	NA	NA
GP13	GP13-SO-9-20030320	3/20/2003	NA	NA
GP14	GP14-WG-20030320	3/20/2003	NA	NA
GP15	GP15-SO-3-20030320	3/20/2003	NA	NA
GP15	GP15-WG-20030320	3/20/2003	NA	NA
GP16	GP16-WG-20030320	3/20/2003	NA	NA
GP17	GP17-SO-8-20030320	3/20/2003	NA	NA
GP17	GP17-WG-20030320	3/20/2003	NA	NA
GP18	GP18-SO-2-20030320	3/20/2003	NA	NA
GP18	GP18-SO-9-20030320	3/20/2003	NA	NA
GP18	GP18-WG-20030320	3/20/2003	NA	NA
GP19	GP19-WG-20030320	3/20/2003	NA	NA
GP2	GP2-WG-20030320	3/20/2003	NA	NA
GP20	GP20-WG-20030320	3/20/2003	NA	NA
GP3	GP3-SO-4.5-20030320	3/20/2003	NA	NA
GP3	GP3-SO-8-20030320	3/20/2003	NA	NA
GP3	GP3-WG-20030320	3/20/2003	NA	NA
GP4	GP4-SO-3-20030320	3/20/2003	NA	NA

Table D-1
TECT Sample Matrix
Paine Field TECT Aerospace Leasehold
Everett, Washington

Sample Location	Field Sample ID	Sample Date	Laboratory Sample ID	Laboratory SDG
GP4	GP4-WG-20030320	3/20/2003	NA	NA
GP5	GP5-SO-3-20030320	3/20/2003	NA	NA
GP5	GP5-SO-8-20030320	3/20/2003	NA	NA
GP5	GP5-WG-20030320	3/20/2003	NA	NA
GP6	GP6-SO-2-20030320	3/20/2003	NA	NA
GP6	GP6-WG-20030320	3/20/2003	NA	NA
GP7	GP7-SO-2-20130321	3/21/2013	NA	NA
GP7	GP7-WG-20030321	3/21/2003	NA	NA
GP8	GP8-SO-2-20130321	3/21/2013	NA	NA
GP8	GP8-WG-20030321	3/21/2003	NA	NA
GP9	GP9-SO-2-20130321	3/21/2013	NA	NA
GP9	GP9-WG-20030321	3/21/2003	NA	NA
HMB1	DUP-20240813	8/13/2024	2408099-02	2408099
HMB1	DUP-241106	11/6/2024	2411053-02	2411053
HMB1	HMB-1-181108	11/8/2018	EV18110063-01	EV18110063
HMB1	HMB1-20190829	8/29/2019	EV19080210-03	EV19080210
HMB1	HMB1-240813	8/13/2024	EV24080092-06	EV24080092
HMB1	HMB1-241106	11/6/2024	2411053-01	2411053
HMB1	HMB1-WG-19990224	2/24/1999	NA	NA
HMB1	HMBI-20240813	8/13/2024	2408099-01	2408099
IA01-C19	IA01-C19-211022	10/22/2021	P2105652-001	P2105652
IA01-C23/IAR01C-23	IA01-C23-171120	11/20/2017	1711395-02A	1711395
IA01-C23/IAR01C-23	IAR01-C23-171211	12/11/2017	1712216-05A	1712216
IA02-C19	IA02-C19-211022	10/22/2021	P2105652-002	P2105652
IA02-C23/IAR02C-23	IA02-C23-171120	11/20/2017	1711395-01A	1711395
IA02-C23/IAR02C-23	IAR02-C23-171211	12/11/2017	1712216-06A	1712216
IA03-C19	IA03-C19-211022	10/22/2021	P2105652-003	P2105652
IA03-C23/IAR03-C23	IA03-C23-171120	11/20/2017	1711395-04A	1711395
IA03-C23/IAR03-C23	IAR03-C23-171211	12/11/2017	1712216-03A	1712216
IA04-C23	IA04-C23-171120	11/20/2017	1711395-05A	1711395
IA05-C23/IAR05C-23	IA05-C23-171120	11/20/2017	1711395-06A	1711395
IA05-C23/IAR05C-23	IAR05-C23-171211	12/11/2017	1712216-01A	1712216
IA06-C23/IAR06-C23	IA06-C23-171120	11/20/2017	1711395-03A	1711395
IA06-C23/IAR06-C23	IAR06-C23-171211	12/11/2017	1712216-04A	1712216
IAR04-C23	IAR04-C23-171211	12/11/2017	1712216-02A	1712216
LAI-01	LAI-1_20170503	5/3/2017	1705175A-09A	NA
LAI-03a	LAI-3_20170502	5/2/2017	1705175B-01A	NA
LAI-03a	LAI-3A (3)_20170502	5/2/2017	EV17050031-01	EV17050031
LAI-05	LAI-5 (9)_20170502	5/2/2017	EV17050031-04	EV17050031
LAI-05	LAI-5_20170502	5/2/2017	1705175B-04A	NA
LAI-07	LAI-7 (1)_20170503	5/3/2017	EV17050031-05	EV17050031
LAI-07	LAI-7_20170503	5/3/2017	1705175B-07A	NA
LAI-08	LAI-8_20170502	5/2/2017	1705175B-02A	NA
LAI-09	LAI-9_20170503	5/3/2017	1705175B-08A	NA
LAI-10	LAI-10 (1)_20170502	5/2/2017	EV17050031-02	EV17050031
LAI-10	LAI-10_20170502	5/2/2017	1705175B-03A	NA
LAI-11	LAI-11_20170502	5/2/2017	1705175B-06A	NA
LAI-12	LAI-12 (3)_20170502	5/2/2017	EV17050031-03	EV17050031
LAI-12	LAI-12_20170502	5/2/2017	1705175B-05A	NA
LAI-13	LAI-13 (1.2)_20171005	10/5/2017	EV17100028-14	EV17100028
LAI-13	LAI-13_20171004	10/4/2017	1710233B-09A	1710233B
LAI-14	LAI-14 (1.2)_20171005	10/5/2017	EV17100028-13	EV17100028

Table D-1
TECT Sample Matrix
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Sample Location	Field Sample ID	Sample Date	Laboratory Sample ID	Laboratory SDG
LAI-14	LAI-14_20171004	10/4/2017	1710233B-08A	1710233B
LAI-15	LAI-15 (1.7)_20171005	10/5/2017	EV17100028-12	EV17100028
LAI-15	LAI-15_20171004	10/4/2017	1710233B-07A	1710233B
LAI-16	LAI-16 (2.1)_20171005	10/5/2017	EV17100028-11	EV17100028
LAI-16	LAI-16_20171004	10/4/2017	1710233A-06A	1710233A
LAI-17	LAI-17 (1.7)_20171005	10/5/2017	EV17100028-05	EV17100028
LAI-17	LAI-17_20171004	10/4/2017	1710233B-02A	1710233B
LAI-18	LAI-18 (1.8)_20171005	10/5/2017	EV17100028-06	EV17100028
LAI-18	LAI-18_20171004	10/4/2017	1710233B-03A	1710233B
LAI-19	LAI-19 (2.4)_20171005	10/5/2017	EV17100028-07	EV17100028
LAI-19	LAI-19_20171004	10/4/2017	1710233B-01A	1710233B
LAI-20	LAI-20 (1.2)_20171005	10/5/2017	EV17100028-10	EV17100028
LAI-20	LAI-20_20171004	10/4/2017	1710233B-10A	1710233B
LAI-21	LAI-21 (1.5)_20171005	10/5/2017	EV17100028-09	EV17100028
LAI-21	LAI-21_20171004	10/4/2017	1710233B-05A	1710233B
LAI-22	LAI-22 (1.5)_20171005	10/5/2017	EV17100028-08	EV17100028
LAI-22	LAI-22_20171004	10/4/2017	1710233B-04A	1710233B
LAI-23	LAI-23 (16.5)_20171005	10/5/2017	EV17100028-04	EV17100028
LAI-23	LAI-23_20171006	10/6/2017	1710233B-11A	1710233B
LAI-24	LAI-24 (10.75)_20171009	10/9/2017	EV17100043-02	EV17100043
LAI-24	LAI-24_20171006	10/6/2017	1710233B-15A	1710233B
LAI-25	LAI-25 (15.0)_20171005	10/5/2017	EV17100028-03	EV17100028
LAI-25	LAI-25_20171006	10/6/2017	1710233B-13A	1710233B
LAI-26	LAI-26 (6.5)_20171005	10/5/2017	EV17100028-01	EV17100028
LAI-26	LAI-26 (9.5)_20171005	10/5/2017	EV17100028-02	EV17100028
LAI-26	LAI-26_20171006	10/6/2017	1710233A-12A	1710233A
LAI-27	LAI-27 (8)_20171006	10/6/2017	EV17100028-15	EV17100028
LAI-27	LAI-27_20171006	10/6/2017	1710233B-16A	1710233B
LAI-28	LAI-28 (17.75)_20171006	10/9/2017	EV17100043-01	EV17100043
LAI-28	LAI-28_20171006	10/6/2017	1710233B-14A	1710233B
MW1	B16-10-19940415	4/15/1994	NA	NA
MW1	B16-12.75-19940415	4/15/1994	NA	NA
MW1	B16-23.75-19940415	4/15/1994	NA	NA
MW1	B16-3.75-19940415	4/15/1994	NA	NA
MW1	B16-6.25-19940415	4/15/1994	NA	NA
MW1	MW-1-181105	11/5/2018	EV18110034-01	EV18110034
MW1	MW-1-20190830	8/30/2019	EV19080221-02	EV19080221
MW1	MW-1-240813	8/13/2024	EV24080092-10	EV24080092
MW1	MW-1-241105	11/5/2024	EV24110038-14	EV24110038
MW1	MW-1-241108	11/8/2024	EV24110064-02	EV24110064
MW1	MW1-WG-19940427	4/27/1994	NA	NA
MW1	MW1-WG-19960507	5/7/1996	NA	NA
MW1	MW1-WG-19980224	2/24/1998	NA	NA
MW1	MW1-WG-19990224	2/24/1999	NA	NA
MW1	MW1-WG-20011024	10/24/2001	NA	NA
MW2	B20-10.25-19940415	4/15/1994	NA	NA
MW2	B20-12.5-19940415	4/15/1994	NA	NA
MW2	B20-16.25-19940415	4/15/1994	NA	NA
MW2	B20-17.75-19940415	4/15/1994	NA	NA
MW2	B20-22.75-19940415	4/15/1994	NA	NA
MW2	B20-3.5-19940415	4/15/1994	NA	NA
MW2	B20-5.25-19940415	4/15/1994	NA	NA

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TECT Sample Matrix
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Sample Location	Field Sample ID	Sample Date	Laboratory Sample ID	Laboratory SDG
MW2	B20-7.75-19940415	4/15/1994	NA	NA
MW2	MW-2-181105	11/5/2018	EV18110034-02	EV18110034
MW2	MW-2-20190830	8/30/2019	EV19080210-05	EV19080210
MW2	MW-2-240813	8/13/2024	EV24080092-11	EV24080092
MW2	MW-2-241106	11/6/2024	EV24110056-02	EV24110056
MW2	MW2-WG-19940427	4/27/1994	NA	NA
MW2	MW2-WG-19960507	5/7/1996	NA	NA
MW2	MW2-WG-19980224	2/24/1998	NA	NA
MW2	MW2-WG-19990224	2/24/1999	NA	NA
MW2	MW2-WG-20011024	10/24/2001	NA	NA
MW3	B21-13.25-19940415	4/15/1994	NA	NA
MW3	B21-17.75-19940415	4/15/1994	NA	NA
MW3	B21-3.25-19940415	4/15/1994	NA	NA
MW3	B21-5.25-19940415	4/15/1994	NA	NA
MW3	B21-7.25-19940415	4/15/1994	NA	NA
MW3	MW-3-181105	11/5/2018	EV18110034-03	EV18110034
MW3	MW-3-20190830	8/30/2019	EV19080221-01	EV19080221
MW3	MW-3-240813	8/13/2024	EV24080092-14	EV24080092
MW3	MW-3-241106	11/6/2024	EV24110056-04	EV24110056
MW3	MW3-WG-19940427	4/27/1994	NA	NA
MW3	MW3-WG-19960507	5/7/1996	NA	NA
MW3	MW3-WG-19980224	2/24/1998	NA	NA
MW3	MW3-WG-19990224	2/24/1999	NA	NA
MW3	MW3-WG-20011024	10/24/2001	NA	NA
MW4	MW-4-181107	11/7/2018	EV18110052-01	EV18110052
MW4	MW-4-20190830	8/30/2019	EV19080210-07	EV19080210
MW4	MW-4-20240814	8/14/2024	EV24080099-11	EV24080099
MW4	MW-4-241106	11/6/2024	EV24110056-07	EV24110056
MW4	MW-4-250127	1/27/2025	2501184-06	2501184
MW4	MW4-WG-19940427	4/27/1994	NA	NA
MW4	MW4-WG-19960507	5/7/1996	NA	NA
MW4	MW4-WG-19980224	2/24/1998	NA	NA
MW4	MW4-WG-19990224	2/24/1999	NA	NA
MW4	MW4-WG-20011024	10/24/2001	NA	NA
RIDW-1	GWDUP-1-190128	1/28/2019	EV19010151-02	EV19010151
RIDW-1	RIDW-1-(105-107.5')	12/5/2018	EV18120030-06	EV18120030
RIDW-1	RIDW-1-(135-137.5')	12/6/2018	EV18120030-07	EV18120030
RIDW-1	RIDW-1-(142.5-145')	12/6/2018	EV18120030-09	EV18120030
RIDW-1	RIDW-1-(23-25')	12/3/2018	EV18120030-01	EV18120030
RIDW-1	RIDW-1-(23-25')-MEOH	12/3/2018	EV18120030-10	EV18120030
RIDW-1	RIDW-1-(49-50')	12/3/2018	EV18120030-02	EV18120030
RIDW-1	RIDW-1-(49-50')-MEOH	12/3/2018	EV18120030-11	EV18120030
RIDW-1	RIDW-1-(57.5-60')	12/5/2018	EV18120030-04	EV18120030
RIDW-1	RIDW-1-(57.5-60')-MEOH	12/5/2018	EV18120030-13	EV18120030
RIDW-1	RIDW-1-(81.5-82.5')	12/5/2018	EV18120030-05	EV18120030
RIDW-1	RIDW-1-190128	1/28/2019	EV19010151-04	EV19010151
RIDW-1	RIDW-1-190912	9/12/2019	EV19090083-03	EV19090083
RIDW-1	RIDW-1-20240814	8/14/2024	EV24080099-10	EV24080099
RIDW-1	RIDW-1-241105	11/5/2024	EV24110038-13	EV24110038
RIDW-1	SOIL DUP-1	12/3/2018	EV18120030-03	EV18120030
RIDW-1	SOIL DUP-1-MEOH	12/3/2018	EV18120030-12	EV18120030
RIDW-2	RIDW-2-(105-107.5')	12/8/2018	EV18120038-01	EV18120038

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Sample Location	Field Sample ID	Sample Date	Laboratory Sample ID	Laboratory SDG
RIDW-2	RIDW-2-(125-127.5')	12/10/2018	EV18120038-03	EV18120038
RIDW-2	RIDW-2-(145-147.5')	12/10/2018	EV18120038-04	EV18120038
RIDW-2	RIDW-2-(20-22.5')	12/7/2018	EV18120035-01	EV18120035
RIDW-2	RIDW-2-(37.5-40')	12/7/2018	EV18120035-03	EV18120035
RIDW-2	RIDW-2-(50-52')	12/7/2018	EV18120035-02	EV18120035
RIDW-2	RIDW-2-(90-92')	12/8/2018	EV18120035-04	EV18120035
RIDW-2	RIDW-2-190128	1/28/2019	EV19010151-03	EV19010151
RIDW-2	RIDW-2-190911	9/11/2019	EV19090078-01	EV19090078
RIDW-2	RIDW-2-20240814	8/14/2024	EV24080099-05	EV24080099
RIDW-2	RIDW-2-241105	11/5/2024	EV24110038-15	EV24110038
RIDW-3	RIDW-3-(110-112.5')	12/12/2018	EV18120077-05	EV18120077
RIDW-3	RIDW-3-(12.5-15')	12/11/2018	EV18120077-01	EV18120077
RIDW-3	RIDW-3-(130-132.5')	12/13/2018	EV18120077-06	EV18120077
RIDW-3	RIDW-3-(132.5-135')	12/13/2018	EV18120077-07	EV18120077
RIDW-3	RIDW-3-(45-47.5')	12/11/2018	EV18120077-02	EV18120077
RIDW-3	RIDW-3-(70-72.5')	12/12/2018	EV18120077-03	EV18120077
RIDW-3	RIDW-3-(95-97.5')	12/12/2018	EV18120077-04	EV18120077
RIDW-3	RIDW-3-190128	1/28/2019	EV19010151-01	EV19010151
RIDW-3	RIDW-3-190911	9/11/2019	EV19090078-02	EV19090078
RIDW-3	RIDW-3-20240815	8/15/2024	EV24080104-04	EV24080104
RIDW-3	RIDW-3-241106	11/6/2024	EV24110056-03	EV24110056
RIDW-4	DUP-250721	7/21/2025	2507213-06	2507213
RIDW-4	RIDW-4-(126-127')	9/5/2019	EV19090034-02	EV19090034
RIDW-4	RIDW-4-(24-25')	9/4/2019	EV19090021-01	EV19090021
RIDW-4	RIDW-4-(66-67')	9/5/2019	EV19090034-01	EV19090034
RIDW-4	RIDW-4-190919	9/19/2019	EV19090145-01	EV19090145
RIDW-4	RIDW-4-240813	8/13/2024	EV24080092-09	EV24080092
RIDW-4	RIDW-4-241105	11/5/2024	EV24110038-09	EV24110038
RIDW-4	RIDW-4-250127	1/27/2025	2501184-04	2501184
RIDW-4	RIDW-4-250721	7/21/2025	2507213-05	2507213
RIDW-5	RIDW-5-(136-137')	11/11/2022	EV22110084-02	EV22110084
RIDW-5	RIDW-5-(147-148')	11/14/2022	EV22110087-01	EV22110087
RIDW-5	RIDW-5-(36.5-37.5')	11/10/2022	EV22110079-01	EV22110079
RIDW-5	RIDW-5-(95.5-96.5')	11/11/2022	EV22110079-02	EV22110079
RIDW-5	RIDW-5-230925	9/25/2023	EV23090162-01	EV23090162
RIDW-5	RIDW-5-240813	8/13/2024	EV24080092-05	EV24080092
RIDW-5	RIDW-5-241104	11/4/2024	EV24110038-01	EV24110038
RIDW-5	RIDW-5-250721	7/21/2025	2507213-03	2507213
RIDW-6	DUP-2-240813	8/13/2024	EV24080092-08	EV24080092
RIDW-6	DUP-2-241104	11/4/2024	EV24110038-04	EV24110038
RIDW-6	DUP-SOIL-221116	11/16/2022	EV22110111-01	EV22110111
RIDW-6	RIDW-6-(133.5-134.5')	11/16/2022	EV22110111-02	EV22110111
RIDW-6	RIDW-6-(25-26')	11/15/2022	EV22110098-01	EV22110098
RIDW-6	RIDW-6-(56-57')	11/15/2022	EV22110098-02	EV22110098
RIDW-6	RIDW-6-230925	9/25/2023	EV23090162-02	EV23090162
RIDW-6	RIDW-6-240813	8/13/2024	EV24080092-07	EV24080092
RIDW-6	RIDW-6-241104	11/4/2024	EV24110038-02	EV24110038
RIDW-6	RIDW-6-250721	7/21/2025	2507213-01	2507213
RIDW-7	RIDW-7-20240814	8/14/2024	EV24080099-07	EV24080099
RIDW-7	RIDW-7-241105	11/5/2024	EV24110038-11	EV24110038
RIDW-7	RIDW-7-S-13-14	6/13/2024	EV24060131-01	EV24060131
RIDW-7	RIDW-7-S-16-17	6/13/2024	EV24060131-02	EV24060131

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Sample Location	Field Sample ID	Sample Date	Laboratory Sample ID	Laboratory SDG
RIDW-7	RIDW-7-S-28-29	6/13/2024	EV24060131-03	EV24060131
RIDW-7	RIDW-7-S-41-42	6/13/2024	EV24060131-04	EV24060131
RIDW-7	RIDW-7-S-47-48	6/13/2024	EV24060131-05	EV24060131
RIDW-7	RIDW-7-S-56-57	6/13/2024	EV24060131-07	EV24060131
RIDW-7	RIDW-7-S-66-67	6/13/2024	EV24060131-08	EV24060131
RIDW-8	RIDW-8-240813	8/13/2024	EV24080092-17	EV24080092
RIDW-8	RIDW-8-241105	11/5/2024	EV24110038-07	EV24110038
RIGW-100	RIGW-100-20240814	8/14/2024	EV24080099-02	EV24080099
RIGW-100	RIGW-100-241107	11/7/2024	EV24110056-08	EV24110056
RIGW-100	RIGW-100-S-12-13	6/4/2024	EV24060053-03	EV24060053
RIGW-100	RIGW-100-S-19-20	6/4/2024	EV24060053-04	EV24060053
RIGW-101	RIGW-101-240812	8/12/2024	EV24080092-04	EV24080092
RIGW-101	RIGW-101-241106	11/6/2024	EV24110056-05	EV24110056
RIGW-102	DUP-1-20240814	8/14/2024	EV24080099-06	EV24080099
RIGW-102	DUP-1-241107	11/7/2024	EV24110056-11	EV24110056
RIGW-102	RIGW-102-20240814	8/14/2024	EV24080099-09	EV24080099
RIGW-102	RIGW-102-241107	11/7/2024	EV24110056-09	EV24110056
RIGW-103	RIGW-103-240812	8/12/2024	EV24080092-03	EV24080092
RIGW-103	RIGW-103-241106	11/6/2024	EV24110056-06	EV24110056
RIGW-103	RIGW-103-S-26-27	6/5/2024	EV24060053-07	EV24060053
RIGW-103	RIGW-103-S-39-40	6/5/2024	EV24060053-08	EV24060053
RIGW-104	RIGW-104-240812	8/12/2024	EV24080092-01	EV24080092
RIGW-104	RIGW-104-241107	11/7/2024	EV24110056-13	EV24110056
RIGW-104	RIGW-104-S-31-32	6/4/2024	EV24060053-01	EV24060053
RIGW-104	RIGW-104-S-39-40	6/4/2024	EV24060053-02	EV24060053
RIGW-2	RIGW-2-20240814	8/14/2024	EV24080104-03	EV24080104
RIGW-2	RIGW-2-230926	9/26/2023	EV23090162-04	EV23090162
RIGW-2	RIGW-2-241108	11/8/2024	EV24110064-01	EV24110064
RIGW-3	DUP-PFAS-250127	1/27/2025	2501184-01	2501184
RIGW-3	RIGW-3-20240814	8/14/2024	EV24080099-08	EV24080099
RIGW-3	RIGW-3-230926	9/26/2023	EV23090162-03	EV23090162
RIGW-3	RIGW-3-241105	11/5/2024	EV24110038-12	EV24110038
RIGW-3	RIGW-3-250217	1/27/2025	2501184-02	2501184
RIGW-55	RIGW-55-190415	4/15/2019	EV19040107-01	EV19040107
RIGW-55	RIGW-55-20190905	9/5/2019	EV19090027-03	EV19090027
RIGW-55	RIGW-55-240812	8/12/2024	EV24080092-02	EV24080092
RIGW-55	RIGW-55-240813	8/13/2024	EV24080092-16	EV24080092
RIGW-55	RIGW-55-241105	11/5/2024	EV24110038-06	EV24110038
RISB-01	RISB-01-(16-17')	3/27/2019	EV19030179-03	EV19030179
RISB-01	RISB-01-(9-10')	3/27/2019	EV19030179-02	EV19030179
RISB-01	RISB-01-GW	3/27/2019	EV19030179-01	EV19030179
RISB-02	RISB-02-(11-12')	3/26/2019	EV19030173-08	EV19030173
RISB-03	RISB-03-(11-12')	3/26/2019	EV19030173-06	EV19030173
RISB-03	RISB-03-(2-3')	3/26/2019	EV19030173-04	EV19030173
RISB-03	RISB-03-(29-30')	3/26/2019	EV19030173-05	EV19030173
RISB-03	RISB-03-GW	3/26/2019	EV19030173-07	EV19030173
RISB-04	RISB-04-(2-3')	3/18/2019	EV19030110-04	EV19030110
RISB-05	RISB-05-(2-3')	3/18/2019	EV19030110-01	EV19030110
RISB-05	RISB-05-(9.5-10.5')	3/18/2019	EV19030110-08	EV19030110
RISB-05	RISB-05-GW	3/18/2019	EV19030110-03	EV19030110
RISB-06	DUP-SOIL-190327	3/27/2019	EV19030179-06	EV19030179
RISB-06	RISB-06-(19-21')	3/27/2019	EV19030179-07	EV19030179

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Sample Location	Field Sample ID	Sample Date	Laboratory Sample ID	Laboratory SDG
RISB-06	RISB-06-(2-3')	3/27/2019	EV19030179-05	EV19030179
RISB-06	RISB-06-GW	3/27/2019	EV19030179-04	EV19030179
RISB-07	DUP-SOIL-190328	3/28/2019	EV19030195-04	EV19030195
RISB-07	RISB-07-(14.5-15.5')	3/28/2019	EV19030195-03	EV19030195
RISB-07	RISB-07-(29-30')	3/28/2019	EV19030195-05	EV19030195
RISB-07	RISB-07-GW	3/28/2019	EV19030195-01	EV19030195
RISB-08	RISB-08-(19-20')	3/26/2019	EV19030173-03	EV19030173
RISB-08	RISB-08-(29-30')	3/26/2019	EV19030173-02	EV19030173
RISB-08	RISB-08-GW	3/26/2019	EV19030173-01	EV19030173
RISB-09	RISB-09-(18-19')	3/25/2019	EV19030160-16	EV19030160
RISB-09	RISB-09-(24-25')	3/25/2019	EV19030160-15	EV19030160
RISB-09	RISB-09-(7-8')	3/25/2019	EV19030160-14	EV19030160
RISB-09	RISB-09-GW	3/25/2019	EV19030160-13	EV19030160
RISB-10	RISB-10-(23-24')	3/25/2019	EV19030160-12	EV19030160
RISB-10	RISB-10-(34-35')	3/25/2019	EV19030160-11	EV19030160
RISB-10	RISB-10-(7-8')	3/25/2019	EV19030160-10	EV19030160
RISB-10	RISB-10-GW	3/25/2019	EV19030160-09	EV19030160
RISB-100	RISB-100-GW	5/29/2024	EV24050231-02	EV24050231
RISB-100	RISB-100-S-18-19	5/29/2024	EV24050231-06	EV24050231
RISB-100	RISB-100-S-34-35	5/29/2024	EV24050231-07	EV24050231
RISB-101	RISB-101-GW	5/29/2024	EV24050231-03	EV24050231
RISB-101	RISB-101-S-11-12	5/29/2024	EV24050231-10	EV24050231
RISB-101	RISB-101-S-29-30	5/29/2024	EV24050231-11	EV24050231
RISB-102	RISB-102-S-13-14	5/29/2024	EV24050231-08	EV24050231
RISB-102	RISB-102-S-39-40	5/29/2024	EV24050231-09	EV24050231
RISB-103	RISB-103-GW	5/31/2024	EV24060005-08	EV24060005
RISB-103	RISB-103-S-16-17	5/31/2024	EV24060005-09	EV24060005
RISB-103	RISB-103-S-39-40	5/31/2024	EV24060005-10	EV24060005
RISB-104	RISB-104-GW	5/20/2024	EV24050159-04	EV24050159
RISB-104	RISB-104-S-24-25	5/21/2024	EV24050159-05	EV24050159
RISB-104	RISB-104-S-6-7	5/20/2024	EV24050159-03	EV24050159
RISB-105	RISB-105-GW	5/24/2024	EV24050211-02	EV24050211
RISB-105	RISB-105-S-29-30	5/24/2024	EV24050211-04	EV24050211
RISB-105	RISB-105-S-9-10	5/24/2024	EV24050211-03	EV24050211
RISB-106	RISB-106-GW	5/24/2024	EV24050209-05	EV24050209
RISB-106	RISB-106-S-24-25	5/24/2024	EV24050209-04	EV24050209
RISB-107	RISB-107-GW	5/28/2024	EV24050231-01	EV24050231
RISB-107	RISB-107-S-26-27	5/28/2024	EV24050231-04	EV24050231
RISB-107	RISB-107-S-49-50	5/28/2024	EV24050231-05	EV24050231
RISB-108	RISB-108-GW	5/31/2024	EV24060005-07	EV24060005
RISB-108	RISB-108-S-29-30	5/30/2024	EV24060005-04	EV24060005
RISB-108	RISB-108-S-49-50	5/30/2024	EV24060005-05	EV24060005
RISB-109	RISB-109-GW	5/23/2024	EV24050193-07	EV24050193
RISB-109	RISB-109-S-29-30	5/23/2024	EV24050193-04	EV24050193
RISB-109	RISB-109-S-5-6	5/23/2024	EV24050193-05	EV24050193
RISB-109	RISB-DUP-GW-1	5/23/2024	EV24050193-06	EV24050193
RISB-11	RISB-11-(16-17')	3/25/2019	EV19030166-03	EV19030166
RISB-11	RISB-11-(2-3')	3/25/2019	EV19030166-01	EV19030166
RISB-11	RISB-11-(34-35')	3/25/2019	EV19030166-02	EV19030166
RISB-110	RISB-110-S-16-17	5/23/2024	EV24050193-08	EV24050193
RISB-110	RISB-110-S-29-30	5/23/2024	EV24050193-09	EV24050193
RISB-111	RISB-111-GW-240619	6/19/2024	EV24060163-01	EV24060163

Table D-1
TECT Sample Matrix
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Sample Location	Field Sample ID	Sample Date	Laboratory Sample ID	Laboratory SDG
RISB-111	RISB-111-S-29-30	5/22/2024	EV24050177-01	EV24050177
RISB-111	RISB-111-S-8-9	5/22/2024	EV24050177-02	EV24050177
RISB-112	RISB-112-S-14-15	5/30/2024	EV24060005-02	EV24060005
RISB-112	RISB-112-S-29-30	5/30/2024	EV24060005-03	EV24060005
RISB-112	RISB-112-S-9-10	5/30/2024	EV24060005-01	EV24060005
RISB-113	RISB-113-S-11-12	5/22/2024	EV24050193-01	EV24050193
RISB-113	RISB-113-S-21-22	5/22/2024	EV24050193-02	EV24050193
RISB-113	RISB-113-S-29-30	5/22/2024	EV24050193-03	EV24050193
RISB-114	RISB-114-S-19-20	5/20/2024	EV24050159-02	EV24050159
RISB-114	RISB-114-S-6-7	5/20/2024	EV24050159-01	EV24050159
RISB-115	RISB-115-GW	5/23/2024	EV24050209-03	EV24050209
RISB-115	RISB-115-S-34-35	5/23/2024	EV24050209-02	EV24050209
RISB-115	RISB-115-S-6-7	5/23/2024	EV24050209-01	EV24050209
RISB-116	RISB-116-GW	5/21/2024	EV24050159-07	EV24050159
RISB-116	RISB-116-S-13-14	5/21/2024	EV24050159-09	EV24050159
RISB-116	RISB-116-S-28-29	5/21/2024	EV24050159-08	EV24050159
RISB-116	RISB-116-S-39-40	5/21/2024	EV24050159-10	EV24050159
RISB-117	RISB-117-GW	5/22/2024	EV24050177-03	EV24050177
RISB-117	RISB-117-S-1-2	5/22/2024	EV24050177-04	EV24050177
RISB-117	RISB-117-S-29-30'	5/22/2024	EV24050177-05	EV24050177
RISB-12	RISB-12-(10-10.5')	3/29/2019	EV19040002-01	EV19040002
RISB-12	RISB-12-(19-20')	3/29/2019	EV19040002-02	EV19040002
RISB-12	RISB-12-(24-25')	3/29/2019	EV19040002-03	EV19040002
RISB-12	RISB-12-(41.5-42.5')	4/1/2019	EV19040010-01	EV19040010
RISB-13	RISB-13-(10-11')	3/19/2019	EV19030128-03	EV19030128
RISB-13	RISB-13-(12.5-13')	3/20/2019	EV19030129-04	EV19030129
RISB-13	RISB-13-GW	3/19/2019	EV19030128-04	EV19030128
RISB-14	DUP-GW-190401	4/1/2019	EV19040010-02	EV19040010
RISB-14	DUP-SOIL-190401	4/1/2019	EV19040010-04	EV19040010
RISB-14	RISB-14-(19-20')	4/1/2019	EV19040010-10	EV19040010
RISB-14	RISB-14-(44-45')	4/1/2019	EV19040010-11	EV19040010
RISB-14	RISB-14-(9-10')	4/1/2019	EV19040010-09	EV19040010
RISB-14	RISB-14-GW	4/1/2019	EV19040010-05	EV19040010
RISB-15	RISB-15-(13-14')	3/21/2019	EV19030147-08	EV19030147
RISB-15	RISB-15-(17-18')	3/21/2019	EV19030147-06	EV19030147
RISB-15	RISB-15-(34-35')	3/21/2019	EV19030147-05	EV19030147
RISB-15	RISB-15-(9-10')	3/21/2019	EV19030147-07	EV19030147
RISB-15	RISB-15-GW	3/21/2019	EV19030147-04	EV19030147
RISB-16	RISB-16-(19-20')	4/1/2019	EV19040010-07	EV19040010
RISB-16	RISB-16-(4-5')	4/1/2019	EV19040010-06	EV19040010
RISB-16	RISB-16-GW	4/1/2019	EV19040010-03	EV19040010
RISB-17	RISB-17-(18-19')	3/29/2019	EV19040002-05	EV19040002
RISB-17	RISB-17-(34-35')	3/29/2019	EV19040002-06	EV19040002
RISB-17	RISB-17-(44-45')	3/29/2019	EV19040002-04	EV19040002
RISB-17	RISB-17-GW	3/29/2019	EV19030195-21	EV19030195
RISB-18	RISB-18-(19-20')	3/29/2019	EV19040130-01	EV19040130
RISB-18	RISB-18-(2.5-3.5')	3/29/2019	EV19030195-16	EV19030195
RISB-18	RISB-18-(9-10')	3/29/2019	EV19030195-17	EV19030195
RISB-18	RISB-18-GW	3/29/2019	EV19030195-19	EV19030195
RISB-19	RISB-19-(1.5-2')	3/29/2019	EV19030195-13	EV19030195
RISB-19	RISB-19-(14-15')	3/29/2019	EV19030195-15	EV19030195
RISB-19	RISB-19-(8.5-9.5')	3/29/2019	EV19030195-14	EV19030195

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TECT Sample Matrix
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Sample Location	Field Sample ID	Sample Date	Laboratory Sample ID	Laboratory SDG
RISB-20	DUP-GW-190327	3/27/2019	EV19030179-08	EV19030179
RISB-20	RISB-20-(6.5-7.5')	3/27/2019	EV19030179-10	EV19030179
RISB-20	RISB-20-GW	3/27/2019	EV19030179-09	EV19030179
RISB-201	RISB-201-3.5-4	1/28/2025	EV25010160-01	EV25010160
RISB-201	RISB-201-39-40	1/28/2025	EV25010160-02	EV25010160
RISB-201	RISB-201-GW-250125	1/28/2025	EV25010153-01	EV25010153
RISB-202	RISB-202-11-12	1/28/2025	EV25010160-05	EV25010160
RISB-202	RISB-202-19-20	1/28/2025	EV25010160-06	EV25010160
RISB-202	RISB-202-GW	1/28/2025	EV25010160-04	EV25010160
RISB-203	RISB-203-8-9	1/29/2025	EV25010160-09	EV25010160
RISB-203	RISB-203-GW-250129	1/29/2025	EV25010160-08	EV25010160
RISB-204	RISB-204-19-20	1/29/2025	EV25010160-13	EV25010160
RISB-204	RISB-204-29-30	1/29/2025	EV25010160-14	EV25010160
RISB-204	RISB-204-GW-250129	1/29/2025	EV25010160-12	EV25010160
RISB-205	RISB-205-14-20	1/30/2025	EV25010165-02	EV25010165
RISB-205	RISB-205-GW-250130	1/30/2025	2501226-01	2501226
RISB-21	RISB-21-(12.5-13.5')	3/28/2019	EV19030195-11	EV19030195
RISB-21	RISB-21-(19-20')	3/28/2019	EV19030195-12	EV19030195
RISB-21	RISB-21-GW	4/2/2019	EV19040019-08	EV19040019
RISB-22	RISB-22-(1-2')	3/28/2019	EV19030195-06	EV19030195
RISB-22	RISB-22-(19-20')	3/28/2019	EV19030195-08	EV19030195
RISB-22	RISB-22-(6.5-7.5')	3/28/2019	EV19030195-07	EV19030195
RISB-22	RISB-22-GW	4/2/2019	EV19040019-09	EV19040019
RISB-23	RISB-23-(14-15')	3/28/2019	EV19030195-09	EV19030195
RISB-23	RISB-23-(19-20')	3/28/2019	EV19030195-10	EV19030195
RISB-23	RISB-23-GW	3/28/2019	EV19030195-02	EV19030195
RISB-24	RISB-24-(2-3')	3/20/2019	EV19030129-05	EV19030129
RISB-24	RISB-24-GW	3/20/2019	EV19030129-02	EV19030129
RISB-25	RISB-25-(2-3')	3/20/2019	EV19030129-01	EV19030129
RISB-25	RISB-25-GW	3/20/2019	EV19030129-07	EV19030129
RISB-26	RISB-26-(2-3')	4/2/2019	EV19040019-02	EV19040019
RISB-26	RISB-26-(24-25')	4/2/2019	EV19040019-05	EV19040019
RISB-26	RISB-26-(6-7')	4/2/2019	EV19040019-03	EV19040019
RISB-26	RISB-26-GW	4/2/2019	EV19040019-01	EV19040019
RISB-27	RISB-27-(2-3')	4/2/2019	EV19040019-07	EV19040019
RISB-27	RISB-27-(39-40')	4/2/2019	EV19040019-10	EV19040019
RISB-27	RISB-27-(44-45')	4/2/2019	EV19040019-11	EV19040019
RISB-27	RISB-27-GW	4/2/2019	EV19040019-06	EV19040019
RISB-28	RISB-28-(0.7-1.7')	3/19/2019	EV19030128-11	EV19030128
RISB-28	RISB-28-(11-12')	3/19/2019	EV19030128-06	EV19030128
RISB-28	RISB-28-GW	3/19/2019	EV19030128-02	EV19030128
RISB-29	DUP-SOIL-190319	3/19/2019	EV19030128-09	EV19030128
RISB-29	RISB-29-(11-12')	3/19/2019	EV19030128-10	EV19030128
RISB-29	RISB-29-(24-25')	3/19/2019	EV19030128-12	EV19030128
RISB-29	RISB-29-GW	3/19/2019	EV19030128-05	EV19030128
RISB-30	RISB-30-(19-20')	3/22/2019	EV19030160-05	EV19030160
RISB-30	RISB-30-(9-10')	3/22/2019	EV19030160-06	EV19030160
RISB-30	RISB-30-GW	3/22/2019	EV19030160-07	EV19030160
RISB-31	DUP-SOIL-190322	3/22/2019	EV19030160-01	EV19030160
RISB-31	RISB-31-(14-15')	3/22/2019	EV19030160-02	EV19030160
RISB-31	RISB-31-(2-3')	3/22/2019	EV19030160-04	EV19030160
RISB-31	RISB-31-(6.5-7.5')	3/22/2019	EV19030160-03	EV19030160

Table D-1
TECT Sample Matrix
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Sample Location	Field Sample ID	Sample Date	Laboratory Sample ID	Laboratory SDG
RISB-31	RISB-31-GW	4/9/2019	EV19040076-01	EV19040076
RISB-32	DUP-GW-190322	3/22/2019	EV19030150-06	EV19030150
RISB-32	RISB-32-(14-15')	3/22/2019	EV19030150-02	EV19030150
RISB-32	RISB-32-(4-5')	3/22/2019	EV19030150-03	EV19030150
RISB-32	RISB-32-(6-7')	3/22/2019	EV19030150-04	EV19030150
RISB-32	RISB-32-GW	3/22/2019	EV19030150-05	EV19030150
RISB-33	RISB-33-(2.5-3.5')	3/15/2019	EV19030106-10	EV19030106
RISB-33	RISB-33-(9-10')	3/15/2019	EV19030106-11	EV19030106
RISB-34	RISB-34-(2-3')	3/15/2019	EV19030106-09	EV19030106
RISB-34	RISB-34-(5-6')	3/15/2019	EV19030106-08	EV19030106
RISB-35	RISB-35-(3.5-4.5')	3/14/2019	EV19030106-05	EV19030106
RISB-36	RISB-36-(19-20')	3/21/2019	EV19030147-09	EV19030147
RISB-36	RISB-36-(6-7')	3/21/2019	EV19030147-11	EV19030147
RISB-36	RISB-36-(9-10')	3/21/2019	EV19030147-10	EV19030147
RISB-37	RISB-37-(0.5-1.5')	3/15/2019	EV19030106-06	EV19030106
RISB-37	RISB-37-(9-10')	3/15/2019	EV19030106-07	EV19030106
RISB-38	RISB-38-(9-10')	3/13/2019	EV19030106-01	EV19030106
RISB-38	RISB-38-GW	3/13/2019	EV19030106-02	EV19030106
RISB-39	RISB-39-(11-12')	3/20/2019	EV19030129-09	EV19030129
RISB-39	RISB-39-(24-25')	3/20/2019	EV19030129-10	EV19030129
RISB-39	RISB-39-GW	4/9/2019	EV19040076-02	EV19040076
RISB-40	RISB-40-(19-20')	3/21/2019	EV19030147-01	EV19030147
RISB-40	RISB-40-(2-3')	3/21/2019	EV19030147-03	EV19030147
RISB-40	RISB-40-(9-10')	3/21/2019	EV19030147-02	EV19030147
RISB-40	RISB-40-GW	4/1/2019	EV19040002-07	EV19040002
RISB-41	RISB-41-(1-2')	4/4/2019	EV19040046-01	EV19040046
RISB-41	RISB-41-(19-20')	4/4/2019	EV19040046-04	EV19040046
RISB-41	RISB-41-(5.5-6.5')	4/4/2019	EV19040046-03	EV19040046
RISB-41	RISB-41-GW	4/4/2019	EV19040046-02	EV19040046
RISB-42	RISB-42-(11.5-12.5')	4/3/2019	EV19040031-09	EV19040031
RISB-42	RISB-42-(19-20')	4/3/2019	EV19040031-08	EV19040031
RISB-42	RISB-42-(6.5-7.5')	4/3/2019	EV19040031-07	EV19040031
RISB-42	RISB-42-GW	4/3/2019	EV19040031-06	EV19040031
RISB-43	RISB-43-(14-15')	4/4/2019	EV19040046-06	EV19040046
RISB-43	RISB-43-(3-4')	4/4/2019	EV19040046-05	EV19040046
RISB-43	RISB-43-(6-7')	4/4/2019	EV19040046-07	EV19040046
RISB-43	RISB-43-GW	4/4/2019	EV19040046-08	EV19040046
RISB-44	DUP-SOIL-190405	4/5/2019	EV19040051-09	EV19040051
RISB-44	RISB-44-(10.5-11.5')	4/5/2019	EV19040051-05	EV19040051
RISB-44	RISB-44-(19-20')	4/5/2019	EV19040051-06	EV19040051
RISB-44	RISB-44-(5-6')	4/5/2019	EV19040051-07	EV19040051
RISB-44	RISB-44-GW	4/5/2019	EV19040051-04	EV19040051
RISB-45	DUP-GW-190404	4/4/2019	EV19040046-13	EV19040046
RISB-45	RISB-45-(1.5-2')	4/4/2019	EV19040046-09	EV19040046
RISB-45	RISB-45-(14-15')	4/4/2019	EV19040046-11	EV19040046
RISB-45	RISB-45-(34-35')	4/4/2019	EV19040046-12	EV19040046
RISB-45	RISB-45-GW	4/4/2019	EV19040046-10	EV19040046
RISB-46	RISB-46-(29.5-30.5')	4/3/2019	EV19040031-04	EV19040031
RISB-46	RISB-46-(3-4')	4/3/2019	EV19040031-03	EV19040031
RISB-46	RISB-46-(39-40')	4/3/2019	EV19040031-05	EV19040031
RISB-46	RISB-46-(7.5-8.5')	4/3/2019	EV19040031-02	EV19040031
RISB-46	RISB-46-GW	4/3/2019	EV19040031-01	EV19040031

Table D-1
TECT Sample Matrix
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Sample Location	Field Sample ID	Sample Date	Laboratory Sample ID	Laboratory SDG
RISB-47	RISB-47-(27-28')	4/5/2019	EV19040051-02	EV19040051
RISB-47	RISB-47-(6.5-7.5')	4/5/2019	EV19040051-03	EV19040051
RISB-47	RISB-47-GW	4/5/2019	EV19040051-01	EV19040051
RISB-48	RISB-48-(14-15')	4/5/2019	EV19040051-10	EV19040051
RISB-48	RISB-48-(5.5-6.5')	4/5/2019	EV19040051-12	EV19040051
RISB-48	RISB-48-(9-10')	4/5/2019	EV19040051-11	EV19040051
RISB-48	RISB-48-GW	4/5/2019	EV19040051-08	EV19040051
RISB-49	RISB-49-(24-25')	3/20/2019	EV19030129-08	EV19030129
RISB-49	RISB-49-(6-7')	3/20/2019	EV19030129-03	EV19030129
RISB-49	RISB-49-GW	3/20/2019	EV19030129-06	EV19030129
RISB-50	RISB-50-(13.5-14.5')	3/18/2019	EV19030110-06	EV19030110
RISB-50	RISB-50-(24-25')	3/18/2019	EV19030110-07	EV19030110
RISB-51	RISB-51-(24-25')	3/19/2019	EV19030128-07	EV19030128
RISB-51	RISB-51-(7.5-8.5')	3/19/2019	EV19030128-08	EV19030128
RISB-51	RISB-51-GW	3/19/2019	EV19030128-01	EV19030128
RISB-52	RISB-52-(1.5-2.5')	3/22/2019	EV19030150-09	EV19030150
RISB-52	RISB-52-(10.5-11.5')	3/22/2019	EV19030150-08	EV19030150
RISB-52	RISB-52-(19-20')	3/22/2019	EV19030150-07	EV19030150
RISB-52	RISB-52-GW	3/22/2019	EV19030150-01	EV19030150
RISB-53	RISB-53-(2-3')	3/14/2019	EV19030106-03	EV19030106
RISB-53	RISB-53-(9-10')	3/14/2019	EV19030106-04	EV19030106
RISB-54	RISB-54-(8-9')	3/18/2019	EV19030110-05	EV19030110
RISB-55	RISB-55-(7-8')	3/18/2019	EV19030110-02	EV19030110
RISB-56	RISB-56-(15-16')	9/3/2019	EV19090010-02	EV19090010
RISB-56	RISB-56-(24-25')	9/3/2019	EV19090010-03	EV19090010
RISB-56	RISB-56-GW	9/3/2019	EV19090010-01	EV19090010
RISB-57	RISB-57-(21.5-22.5')	9/3/2019	EV19090010-05	EV19090010
RISB-57	RISB-57-(7.5-8.5')	9/3/2019	EV19090010-04	EV19090010
RISB-57	RISB-57-GW	9/3/2019	EV19090010-06	EV19090010
RISB-58	RISB-58-(24-25')	9/3/2019	EV19090010-07	EV19090010
RISB-58	RISB-58-(7-8')	9/3/2019	EV19090010-08	EV19090010
RISB-58	RISB-58-GW	9/3/2019	EV19090010-09	EV19090010
RISB-59	RISB-59-(12.5-13.5')	8/27/2019	EV19080191-01	EV19080191
RISB-59	RISB-59-(19-20')	8/27/2019	EV19080191-02	EV19080191
RISB-60	RISB-60-(24-25')	8/26/2019	EV19080183-02	EV19080183
RISB-60	RISB-60-(6.5-7.5')	8/26/2019	EV19080183-01	EV19080183
RISB-60	RISB-60-GW	8/27/2019	EV19080183-03	EV19080183
RISB-61	DUP-GW-190828	8/28/2019	EV19080191-12	EV19080191
RISB-61	RISB-61-(29-30')	8/27/2019	EV19080191-07	EV19080191
RISB-61	RISB-61-(6.5-7.5')	8/27/2019	EV19080191-08	EV19080191
RISB-61	RISB-61-GW	8/28/2019	EV19080191-11	EV19080191
RISB-62	RISB-62-(14-15')	8/27/2019	EV19080191-06	EV19080191
RISB-62	RISB-62-(24-25')	8/27/2019	EV19080191-05	EV19080191
RISB-62	RISB-62-GW	8/28/2019	EV19080191-10	EV19080191
RISB-63	RISB-63-(19-20')	8/27/2019	EV19080191-03	EV19080191
RISB-63	RISB-63-(29-30')	8/27/2019	EV19080191-04	EV19080191
RISB-63	RISB-63-GW	8/28/2019	EV19080191-09	EV19080191
RISB-64	RISB-64-(10-11')	8/30/2019	EV19080215-11	EV19080215
RISB-64	RISB-64-(24-25')	8/30/2019	EV19080215-10	EV19080215
RISB-64	RISB-64-GW	8/30/2019	EV19080215-09	EV19080215
RISB-65	RISB-65-(19-20')	8/29/2019	EV19080215-07	EV19080215
RISB-65	RISB-65-(5-6')	8/29/2019	EV19080215-06	EV19080215

Table D-1
TECT Sample Matrix
Paine Field TECT Aerospace Leasehold
Everett, Washington

Sample Location	Field Sample ID	Sample Date	Laboratory Sample ID	Laboratory SDG
RISB-65	RISB-65-GW	8/29/2019	EV19080215-05	EV19080215
RISB-66	DUP-SOIL-190829	8/29/2019	EV19080215-04	EV19080215
RISB-66	RISB-66-(44-45')	8/29/2019	EV19080215-02	EV19080215
RISB-66	RISB-66-(9-10')	8/29/2019	EV19080215-03	EV19080215
RISB-66	RISB-66-GW	8/29/2019	EV19080215-01	EV19080215
RISB-67	RISB-67-(14-15')	8/30/2019	EV19080222-03	EV19080222
RISB-67	RISB-67-(54-55')	8/30/2019	EV19080222-02	EV19080222
RISB-67	RISB-67-GW	8/30/2019	EV19080222-01	EV19080222
RISB-68	RISB-68-(26.5-27.5')	8/28/2019	EV19080202-01	EV19080202
RISB-68	RISB-68-(49-50')	8/28/2019	EV19080202-02	EV19080202
RISB-69	RISB-69-(19-20')	12/1/2022	EV22120005-07	EV22120005
RISB-69	RISB-69-(29-30')	12/1/2022	EV22120005-09	EV22120005
RISB-69	RISB-69-(9-10')	12/1/2022	EV22120005-06	EV22120005
RISB-69	RISB-69-GW-221201	12/1/2022	EV22120005-08	EV22120005
RISB-70	RISB-70-(19-20')	11/30/2022	EV22120005-03	EV22120005
RISB-70	RISB-70-(29-30')	11/30/2022	EV22120005-05	EV22120005
RISB-70	RISB-70-(9-10')	11/30/2022	EV22120005-02	EV22120005
RISB-70	RISB-70-GW-221130	11/30/2022	EV22120005-04	EV22120005
RISB-71	DUP-SOIL-221201	12/1/2022	EV22120015-02	EV22120015
RISB-71	RISB-71-(19-20')	12/1/2022	EV22120015-04	EV22120015
RISB-71	RISB-71-(29-30')	12/2/2022	EV22120015-06	EV22120015
RISB-71	RISB-71-(9-10')	12/1/2022	EV22120015-03	EV22120015
RISB-71	RISB-71-GW-221201	12/1/2022	EV22120015-05	EV22120015
RISB-74	RISB-74-(19-20')	11/21/2022	EV22110140-02	EV22110140
RISB-74	RISB-74-(29-30')	11/21/2022	EV22110140-03	EV22110140
RISB-74	RISB-74-(7-8')	11/21/2022	EV22110140-01	EV22110140
RISB-75	RISB-75-(17-18')	11/22/2022	EV22110140-05	EV22110140
RISB-75	RISB-75-(29-30')	11/22/2022	EV22110140-06	EV22110140
RISB-75	RISB-75-(7-8')	11/22/2022	EV22110140-04	EV22110140
RISB-76	RISB-76-(19-20')	11/22/2022	EV22110154-03	EV22110154
RISB-76	RISB-76-(29-30')	11/22/2022	EV22110154-06	EV22110154
RISB-76	RISB-76-(9-10')	11/22/2022	EV22110154-02	EV22110154
RISB-76	RISB-76-GW-221122	11/22/2022	EV22110154-04	EV22110154
RISB-77	RISB-77-(19-20')	11/23/2022	EV22110154-08	EV22110154
RISB-77	RISB-77-(29-30')	11/23/2022	EV22110154-10	EV22110154
RISB-77	RISB-77-(9-10')	11/23/2022	EV22110154-07	EV22110154
RISB-77	RISB-77-GW-221123	11/23/2022	EV22110154-09	EV22110154
RISB-78	RISB-78-(19-20')	11/29/2022	EV22110168-07	EV22110168
RISB-78	RISB-78-(29-30')	11/29/2022	EV22110169-01	EV22110169
RISB-78	RISB-78-(9-10')	11/29/2022	EV22110168-06	EV22110168
RISB-78	RISB-78-GW-221129	11/29/2022	EV22110168-08	EV22110168
RISB-79	RISB-79-(19-20')	11/29/2022	EV22110168-03	EV22110168
RISB-79	RISB-79-(29-30')	11/29/2022	EV22110168-05	EV22110168
RISB-79	RISB-79-(9-10')	11/29/2022	EV22110168-02	EV22110168
RISB-79	RISB-79-GW-221129	11/29/2022	EV22110168-04	EV22110168
RISB-80	DUP-SOIL-221108	11/8/2022	EV22110065-03	EV22110065
RISB-80	RISB-80-(11-12')	11/8/2022	EV22110065-02	EV22110065
RISB-80	RISB-80-(24-25')	11/9/2022	EV22110065-05	EV22110065
RISB-80	RISB-80-(34-35')	11/9/2022	EV22110065-06	EV22110065
RISB-80	RISB-80-(39-40')	11/9/2022	EV22110065-07	EV22110065
RISB-80	RISB-80-(9-10')	11/8/2022	EV22110065-01	EV22110065
RISB-80	RISB-80-GW-221108	11/8/2022	EV22110066-01	EV22110066

Table D-1
TECT Sample Matrix
Paine Field TECT Aerospace Leasehold
Everett, Washington

Sample Location	Field Sample ID	Sample Date	Laboratory Sample ID	Laboratory SDG
RISG-04	RISG-04-190325	3/25/2019	P1902039-002	P1902039
RISG-05	RISG-05-190325	3/25/2019	P1902039-003	P1902039
RISG-100	RISG-100-191210	12/10/2019	P1907504-001	P1907504
RISG-101	RISG-101-191210	12/10/2019	P1907504-002	P1907504
RISG-102	RISG-102-191210	12/10/2019	P1907504-003	P1907504
RISG-103	RISG-103-211022	10/22/2021	P2105652-004	P2105652
RISG-19	RISG-19-190402	4/2/2019	P1902039-009	P1902039
RISG-204	RISG-204-20240809	8/9/2024	P2403355-014	P2403355
RISG-204	RISG-204-S-1.2-2.5	6/17/2024	EV24060140-02	EV24060140
RISG-205	RISG-205-20240809	8/9/2024	P2403355-015	P2403355
RISG-205	RISG-205-S-4-5	6/17/2024	EV24060140-01	EV24060140
RISG-206	RISG-206-20240807	8/7/2024	P2403355-003	P2403355
RISG-207	RISG-207-20240807	8/7/2024	P2403355-002	P2403355
RISG-208	RISG-208-20240807	8/7/2024	P2403355-001	P2403355
RISG-209	RISG-209-20240808	8/8/2024	P2403355-012	P2403355
RISG-210	RISG-210-20240808	8/8/2024	P2403355-009	P2403355
RISG-211	RISG-211-20240808	8/8/2024	P2403355-007	P2403355
RISG-212	RISG-212-20240808	8/8/2024	P2403355-005	P2403355
RISG-213	RISG-213-20240808	8/8/2024	P2403355-004	P2403355
RISG-214	RISG-214-20240809	8/9/2024	P2403355-013	P2403355
RISG-215	RISG-215-20240808	8/8/2024	P2403355-008	P2403355
RISG-216	RISG-216-20240808	8/8/2024	P2403355-010	P2403355
RISG-217	RISG-217-20240808	8/8/2024	P2403355-011	P2403355
RISG-218	RISG-218-20240809	8/9/2024	P2403355-017	P2403355
RISG-22	RISG-22-190402	4/2/2019	P1902039-011	P1902039
RISG-35	RISG-35-190409	4/9/2019	P1902039-005	P1902039
RISG-36	RISG-36-190409	4/9/2019	P1902039-007	P1902039
RISG-37	RISG-37-190409	4/9/2019	P1902039-001	P1902039
RISG-42	RISG-42-190404	4/4/2019	P1902039-010	P1902039
RISG-50	RISG-50-190409	4/9/2019	P1902039-008	P1902039
RISG-54	RISG-54-190325	3/25/2019	P1902039-004	P1902039
RISG-55	RISG-55-190325	3/25/2019	P1902039-006	P1902039
SCPWD-1	SCPWD-1-181108	11/8/2018	EV18110063-03	EV18110063
SCPWD-1	SCPWD-1-20190829	8/29/2019	EV19080210-01	EV19080210
SCPWD-1	SCPWD-1-20240814	8/14/2024	EV24080099-04	EV24080099
SCPWD-1	SCPWD-1-241105	11/5/2024	EV24110038-10	EV24110038
SCPWD-1	SCPWD-1-WG-19990224	2/24/1999	NA	NA
SCPWD-2	SCPWD-2-181108	11/8/2018	EV18110063-07	EV18110063
SCPWD-2	SCPWD-2-20190905	9/5/2019	EV19090027-02	EV19090027
SCPWD-2	SCPWD-2-20240814	8/14/2024	EV24080099-01	EV24080099
SCPWD-2	SCPWD-2-241104	11/4/2024	EV24110038-05	EV24110038
SCPWD-2	SCPWD-2-SO-11.5-19961223	12/23/1996	NA	NA
SCPWD-2	SCPWD-2-SO-16.5-19961223	12/23/1996	NA	NA
SCPWD-2	SCPWD-2-SO-8.5-19961223	12/23/1996	NA	NA
SCPWD-2	SCPWD-2-WG-19990309	3/9/1999	NA	NA
SCPWD-2	SCPWD-2-WG-20031017	10/17/2003	NA	NA
SCPWD-3	SCPWD-3-181108	11/8/2018	EV18110063-06	EV18110063
SCPWD-3	SCPWD-3-20190905	9/5/2019	EV19090027-01	EV19090027
SCPWD-3	SCPWD-3-20240814	8/14/2024	EV24080104-02	EV24080104
SCPWD-3	SCPWD-3-241104	11/4/2024	EV24110038-03	EV24110038
SCPWD-3	SCPWD-3-SO-11.5-19961223	12/23/1996	NA	NA
SCPWD-3	SCPWD-3-SO-13.5-19961223	12/23/1996	NA	NA

Table D-1
TECT Sample Matrix
Paine Field TECT Aerospace Leasehold
Everett, Washington

Sample Location	Field Sample ID	Sample Date	Laboratory Sample ID	Laboratory SDG
SCPWD-3	SCPWD-3-SO-16.5-19961223	12/23/1996	NA	NA
SCPWD-3	SCPWD-3-SO-18.5-19961223	12/23/1996	NA	NA
SCPWD-3	SCPWD-3-SO-21.5-19961223	12/23/1996	NA	NA
SCPWD-3	SCPWD-3-SO-23.5-19961223	12/23/1996	NA	NA
SCPWD-3	SCPWD-3-SO-28.5-19961223	12/23/1996	NA	NA
SCPWD-3	SCPWD-3-SO-33.5-19961223	12/23/1996	NA	NA
SCPWD-3	SCPWD-3-SO-8.5-19961223	12/23/1996	NA	NA
SCPWD-3	SCPWD-3-WG-19990309	3/9/1999	NA	NA
SCPWD-3	SCPWD-3-WG-20031017	10/17/2003	NA	NA
SCPWD-4	SCPWD-4-181108	11/8/2018	EV18110063-05	EV18110063
SCPWD-4	SCPWD-4-20190905	9/5/2019	EV19090027-04	EV19090027
SCPWD-4	SCPWD-4-20240814	8/14/2024	EV24080104-01	EV24080104
SCPWD-4	SCPWD-4-241107	11/7/2024	EV24110056-12	EV24110056
SCPWD-4	SCPWD-4-SO-13.5-19961213	12/13/1996	NA	NA
SCPWD-4	SCPWD-4-SO-18.5-19961213	12/13/1996	NA	NA
SCPWD-4	SCPWD-4-SO-8.5-19961213	12/13/1996	NA	NA
SCPWD-4	SCPWD-4-WG-19990309	3/9/1999	NA	NA
SCPWD-4	SCPWD-4-WG-20030321	3/21/2003	NA	NA
SCPWD-4	SCPWD-4-WG-20031017	10/17/2003	NA	NA
SU2-FL-0.8	SU2-FL-0.8-SO-19950727	7/27/1995	NA	NA
SU2-NE-0.8	SU2-NE-0.8-SO-19950727	7/27/1995	NA	NA
SU2-NE-W	SU2-NE-W-WG-19950807	8/7/1995	NA	NA
SU2-NW-0.8	SU2-NW-0.8-SO-19950727	7/27/1995	NA	NA
SU-FL-0.5	SU-FL-0.5-SO-19950727	7/27/1995	NA	NA
SU-FL-1.0	SU-FL-1.0-SO-19950727	7/27/1995	NA	NA
SU-FL-W	SU-FL-W-WG-19950807	8/7/1995	NA	NA
SU-NE-0.4	SU-NE-0.4-SO-19950727	7/27/1995	NA	NA
SU-NE-1.0	SU-NE-1.0-SO-19950727	7/27/1995	NA	NA
SU-NW-0.5	SU-NW-0.5-SO-19950727	7/27/1995	NA	NA
SU-NW-1.0	SU-NW-1.0-SO-19950727	7/27/1995	NA	NA
SU-SE-0.5	SU-SE-0.5-SO-19950727	7/27/1995	NA	NA
SU-SE-1.1	SU-SE-1.1-SO-19950727	7/27/1995	NA	NA
SU-SW-0.5	SU-SW-0.5-SO-19950727	7/27/1995	NA	NA
SU-SW-1.0	SU-SW-1.0-SO-19950727	7/27/1995	NA	NA
SW-1.0-W	SW-1.0-W-WG-19950807	8/7/1995	NA	NA
TC-2	TC-2-SO-11.5-19961220	12/20/1996	NA	NA
TC-2	TC-2-SO-13.5-19961220	12/20/1996	NA	NA
TC-2	TC-2-SO-16.5-19961220	12/20/1996	NA	NA
TC-2	TC-2-SO-18.5-19961220	12/20/1996	NA	NA
TC-2	TC-2-SO-23.5-19961220	12/20/1996	NA	NA
TC-2	TC-2-SO-8.5-19961220	12/20/1996	NA	NA
TC-3	TC-3-SO-18.5-19961220	12/20/1996	NA	NA
TC-3	TC-3-SO-23.5-19961220	12/20/1996	NA	NA
TC-3	TC-3-SO-28.5-19961220	12/20/1996	NA	NA
TC-3	TC-3-SO-8.5-19961220	12/20/1996	NA	NA

Acronyms/Abbreviations:

ID = identification
NA = not available because data is historical
SDG = sample delivery group

APPENDIX E

Investigation-Derived Waste Documentation

7-9 509182

Please print or type. Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
WAH000042763	1	800-337-7455	025895688 JJK

GENERATOR

5. Generator's Name and Mailing Address
TECT Aerospace Everett
Att: Andrew Rardin
1515 75th St SW Ste 500
Everett WA 98203
Generator's Phone: 425 503 7472

Generator's Site Address (if different than mailing address)
TECT Aerospace Everett
2933 109th St SW
Everett WA 98204

6. Transporter 1 Company Name
R Transport Inc
U.S. EPA ID Number
WAH000028338

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC
17629 CEDAR SPRINGS LANE
ARLINGTON OR 97812
Facility's Phone: 541 454 2643
U.S. EPA ID Number
ORD089452353

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
X	1. NA3077, Hazardous waste, solid, n.o.s. (Trichloroethylene Soil) 9, PGIII	01	CM	14	T	F002		
	2.							
	3.							
	4.							

14. Special Handling Instructions and Additional Information
1)(T) Profile# OR359811 ERG#171
Container # WMXU 8912

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: On Behalf of Generator Jake Heatherly
Signature:
Month 06 Day 14 Year 24

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Jason Edmonds
Signature:
Month 6 Day 21 Year 24

Transporter 2 Printed/Typed Name: River Nielsen
Signature:
Month 6 Day 25 Year 24

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator)
Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H132			

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name: Liberty Jaquez
Signature:
Month 07 Day 16 Year 24

EPA Form 8700-22 (Rev. 12-17) Previous editions are obsolete. DESIGNATED FACILITY TO EPA's e-MANIFEST SYSTEM

Chemical Waste Management Of The Northwest
17629 Cedar Springs Lane
Arlington, Oregon 97812
541-454-2643
EPA I.D.# ORD089452353

LOAD NO. _____

MANIFEST DOC. NO. _____

INBOUND
T/D: 07:46:17 2024-07-16
ID: 509182 TRK ID: 8912 L14
73020 lb G

OUTBOUND
T/D: 08:05:49 2024-07-16
ID: 509182 TRK ID: 8912 L14
73020 lb G
49100 lb PT
23920 lb N

NET 11.96 TONS

GENERATOR _____

903-ARLINGTON_OR

M-4 509184

Please print or type. Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
WAH000042763	1	800-337-7455	025895692 JJK

GENERATOR

5. Generator's Name and Mailing Address
TECT Aerospace Everett
Att: Andrew Rardin
1515 75th St SW Ste 500
Everett WA 98203
Generator's Phone: 425 508-7472

Generator's Site Address (if different than mailing address)
TECT Aerospace Everett
2933 109th St SW
Everett WA 98204

6. Transporter 1 Company Name
R Transport Inc
U.S. EPA ID Number
WAH000028338

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC
17629 CEDAR SPRINGS LANE
ARLINGTON OR 97812
Facility's Phone: 541 464 2513
U.S. EPA ID Number
ORD089452353

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
X	1. NA3077, Hazardous waste, solid, n.o.s. (Trichloroethylene Soil) 9, PGIII	01	CM	14	T	5002		
	2.							
	3.							
	4.							

14. Special Handling Instructions and Additional Information
1)(T) Profile# OR359811 ERG#171
Container # WMXU 8892

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: On Behalf of Generator Jake Heatherly
Signature:
Month 06 Day 24 Year 24

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Jason Edwards
Signature:
Month 6 Day 21 Year 24

Transporter 2 Printed/Typed Name: Ryan Nielsen
Signature:
Month 6 Day 25 Year 24

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator)
Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H132			

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name: Liberty Jacquez
Signature:
Month 07 Day 15 Year 24

MFE

Chemical Waste Management Of The Northwest
17629 Cedar Springs Lane
Arlington, Oregon 97812
541-454-2643
EPA I.D.# ORDO89452353

LOAD NO. _____

MANIFEST DOC. NO. _____

INBOUND
T/D: 12:03:40 2024-07-15
ID: 509184 TRK ID: 8892 L14
77400 lb G

OUTBOUND
T/D: 12:24:00 2024-07-15
ID: 509184 TRK ID: 8892 L14
77400 lb G
49200 lb PT
28200 lb N

NET 14.10 TONS

GENERATOR _____

903-ARLINGTON_OR

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
WAH000042763	1	800-337-7455	TECT-NR-W-001324

GENERATOR

5. Generator's Name and Mailing Address
TECT Aerospace Everett
1515 75th St SW Ste 500
Everett WA 98203
Att: Andrew Rardin
Generator's Phone: 425 508 7472

Generator's Site Address (if different than mailing address)
TECT Aerospace Everett
2933 109th St SW
Everett WA 98204

6. Transporter 1 Company Name
DH Environmental Inc.
U.S. EPA ID Number
WAH000047217

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
Marine Vacuum Services Inc
1516 S Graham Street
Seattle WA 98108
Facility's Phone:
U.S. EPA ID Number
WAD980971521

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	Non-RCRA, non-DOT (Non-Regulated IDW Water)	01	TT	800	G	
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information
"DH102722 - Purge Water

14. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: On Behalf of TECT Aerospace Jake Heatherly
Signature:
Month: 06 Day: 14 Year: 24

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Jake Heatherly
Signature:
Month: 06 Day: 14 Year: 24

Transporter 2 Printed/Typed Name:
Signature:
Month: Day: Year:

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

DESIGNATED FACILITY

17b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

17c. Signature of Alternate Facility (or Generator)
Month: Day: Year:

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: MVS! Roy
Signature:
Month: 6 Day: 14 Year: 24

169-BLC-O 5 11977 (Rev. 9/09)

TRANSPORTER #1

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
None Required	1	(800) 424-9300	TECT-IDW-61424-01

GENERATOR

5. Generator's Name and Mailing Address

TECT Aerospace Everett
1515 75th St SW Suite 300
Everett, WA 98203
425.508.7472 Attn: Andrew Perdue

Generator's Site Address (if different than mailing address)

2933 109th St SW
~~5220 100th St SE Ste A~~
Everett, WA 98204

Generator's Phone:

6. Transporter 1 Company Name: DH Environmental, Inc. — U.S. EPA ID Number: WAH000047217

7. Transporter 2 Company Name — U.S. EPA ID Number:

8. Designated Facility Name and Site Address

Lafarge North America
5400 W Marginal Way SW
Seattle, WA 98106

U.S. EPA ID Number: N/A

Facility's Phone: (206) 583-5618

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
	1. Material Not Regulated by DOT (non-regulated IDW soil)	20	DM	14000	P	
	2.					
	3.					
	4.					

13. Special Handling Instructions and Additional Information

1) DH-LNO-TECT-IDW- SOIL

14. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: On Behalf of Generator Jake Heatherly — Signature — Month: 06 — Day: 14 — Year: 24

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:

Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Jake Heatherly — Signature — Month: 06 — Day: 14 — Year: 24

Transporter 2 Printed/Typed Name — Signature — Month — Day — Year

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

DESIGNATED FACILITY

17b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) — Month — Day — Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: Justin Tuellmeyer — Signature — Month: 06 — Day: 14 — Year: 24

TRANSPORTER #1

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
None Required	1	(800) 337-7455	TECT-IDW-61424-02

GENERATOR

5. Generator's Name and Mailing Address

TECT Aerospace Everett
1515 75th St SW Suite 500
Everett, WA 98203
425.508.7472 Attn: Andrew Berlin

Generator's Site Address (if different than mailing address)

2933 109 St SW
~~2220 100th St SW STE A~~
Everett, WA 98204

Generator's Phone:

6. Transporter 1 Company Name: DH Environmental, Inc. — U.S. EPA ID Number: WAH000047217

7. Transporter 2 Company Name — U.S. EPA ID Number:

8. Designated Facility Name and Site Address

LaFarge North America
5900 W Marginal Way SW
Seattle, WA 98106
(206) 933-5618

U.S. EPA ID Number: N/A

Facility's Phone:

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	Material Not Regulated by DOT (non-regulated IDW soil)	12	DM	8800	P	
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information

1) DH-LND-TECT-IDW- SOIL
11-55gal
1-16gal

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: Jake Heatherly On Behalf of Generator — Signature — Month: 06 — Day: 14 — Year: 24

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:

Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Jake Heatherly — Signature — Month: 06 — Day: 14 — Year: 24

Transporter 2 Printed/Typed Name — Signature — Month — Day — Year

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

DESIGNATED FACILITY

17b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) — Month — Day — Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: Justin Twellmeyer — Signature — Month: 6 — Day: 14 — Year: 24

TRANSPORTER #1

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
NoneRequired	1	(800) 337-7455	TECT-IDW-61424-03

GENERATOR

5. Generator's Name and Mailing Address

TECT Aerospace Everett
1515 75th St SW Suite 500
Everett, WA 98203
425.508.7472 Attn: Andrew Rardin

Generator's Site Address (if different than mailing address)

2933 109th St SW
5220 100th St SE Site A
Everett, WA 98204

Generator's Phone:

6. Transporter 1 Company Name: DH Environmental, Inc. — U.S. EPA ID Number: WAH000047217

7. Transporter 2 Company Name — U.S. EPA ID Number:

8. Designated Facility Name and Site Address

LaFarge North America
5900 W Marginal Way SW
Seattle, WA 98106

U.S. EPA ID Number: N/A

Facility's Phone: (206) 933-5618

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
	1. Material Not Regulated by CDT (non-regulated IDW soil)	04	DM	3200	P	
	2.					
	3.					
	4.					

13. Special Handling Instructions and Additional Information

1) DH-LND-TECT-IDW- SOIL

14. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: On Behalf of Generator Jake Heatherly — Signature — Month: 06 — Day: 14 — Year: 24

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:

Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Jake Heatherly — Signature — Month: 06 — Day: 14 — Year: 24

Transporter 2 Printed/Typed Name — Signature — Month — Day — Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) — Month — Day — Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: Justin Twellmeyer — Signature — Month: 06 — Day: 14 — Year: 24

TRANSPORTER #1

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number: WAH000042783 | 2. Page 1 of: 1 | 3. Emergency Response Phone: 800-227-7165 | 4. Waste Tracking Number: TECT-MT-061324

GENERATOR

5. Generator's Name and Mailing Address
TECT Aerospace Everett
1515 75th St SW Ste 500
Everett WA 98203
Att: Andrew Rardin
Generator's Phone: 425-608-7472

Generator's Site Address (if different than mailing address)
TECT Aerospace Everett
2933 109th St SW
Everett WA 98204

6. Transporter 1 Company Name: DH Environmental Inc. | U.S. EPA ID Number: WAH000047217

7. Transporter 2 Company Name | U.S. EPA ID Number

8. Designated Facility Name and Site Address
Lenihan Northwest
5400 W Marginal
Seattle WA 98106
U.S. EPA ID Number
Facility's Phone:

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	Non-RCRA, non-DOT (Empty drums)	20	DM	600	P	
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information
1) LNDU-MT-061324

14. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: On Behalf of Generator Jake Heatherly | Signature | Month: 06 | Day: 14 | Year: 24

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Jake Heatherly | Signature | Month: 06 | Day: 14 | Year: 24

Transporter 2 Printed/Typed Name | Signature | Month | Day | Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) | U.S. EPA ID Number
Facility's Phone:

17c. Signature of Alternate Facility (or Generator) | Month | Day | Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: Justin Twellmeyer | Signature | Month: 6 | Day: 14 | Year: 24

TRANSPORTER #1

Please print or type. 5091608 Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
WAH000042763	2	800-337-7455	025895691 JJK

GENERATOR

5. Generator's Name and Mailing Address
TECT Aerospace Everett
1515 75th St SW Ste 500
Everett WA 98203
Att: Andrew Rardin
Generator's Phone: 425 609 7472

Generator's Site Address (if different than mailing address)
TECT Aerospace Everett
2933 109th St SW
Everett WA 98204

6. Transporter 1 Company Name: DH Environmental Inc. — U.S. EPA ID Number: WAH000047217

7. Transporter 2 Company Name: Chemical Waste Management — U.S. EPA ID Number: ORD098045233

8. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC
17629 CEDAR SPRINGS LANE
ARLINGTON OR 97812
Facility's Phone: 541 454 2843
U.S. EPA ID Number: ORD098045233

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
X	1. NA3077, Hazardous waste, solid, n.o.s. (Trichloroethylene Soil) 9, PGIII	05	DM	3500	P	F002		
	2.							
	3.							
	4.							

14. Special Handling Instructions and Additional Information
1)(T) Profile# OR359812-Inc Soil ERG#171
WMKU. 980617

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: On Behalf of Generator Jake Heatherly — Signature — Month 06 Day 17 Year 24

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Jake Heatherly — Signature — Month 06 Day 17 Year 24

Transporter 2 Printed/Typed Name: 9/26 — Signature — Month 6 Day 17 Year 24

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
BMS 8.10.24 ~~H132~~ H141			

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name: Tina Weiser — Signature — Month 7 Day 29 Year 24

EPA Form 8700-22 (Rev. 12-17) Previous editions are obsolete.

DESIGNATED FACILITY TO EPA's e-MANIFEST SYSTEM

MFE

BMS

CWMI

Please print or type. 5091608 Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)	21. Generator ID Number	22. Page 2 of 2	23. Manifest Tracking Number
	WAH000042763		025895691 JJK

24. Generator's Name: TECT AEROSPACE EVERETT

25. Transporter 3 Company Name: UNION PACIFIC RAILROAD — U.S. EPA ID Number: NED001792910

26. Transporter 4 Company Name: PCC — U.S. EPA ID Number: ORQ000041180

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes		
	6.							
	7.							
	8.							
	9.							
	10.							
	11.							
	12.							
	13.							
	14.							

32. Special Handling Instructions and Additional Information

WMXU : 980617

GENERATOR

TRANSPORTER

33. Transporter 3 Acknowledgment of Receipt of Materials

Printed/Typed Name: G. Altheimer — Signature: [signature] — Month: 6 Day: 18 Year: 24

34. Transporter 4 Acknowledgment of Receipt of Materials

Printed/Typed Name: — Signature: — Month: Day: Year:

DESIGNATED FACILITY

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

EPA Form 8700-22A (Rev. 12-17) Previous editions are obsolete.

DESIGNATED FACILITY TO EPA's e-MANIFEST SYSTEM

Ø350

521619

Please print or type. Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
	WAH000042763	1	800-337-7455	027705278 JJK

5. Generator's Name and Mailing Address
TECT Aerospace Everett
1515 75th St SW Ste 500
Everett WA 98203
Att: Andrew Rardin
Generator's Phone: 425 508-7472

Generator's Site Address (if different than mailing address)
TECT Aerospace Everett
2933 109th St SW
Everett WA 98204

6. Transporter 1 Company Name
R Transport Inc
U.S. EPA ID Number
WAH000028338

7. Transporter 2 Company Name
Union Pacific Railroad
U.S. EPA ID Number
NED001792910

8. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC
17629 CEDAR SPRINGS LANE
ARLINGTON OR 97812
Facility's Phone: 541 454-2643
U.S. EPA ID Number
ORD089452353

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
X	1. NA3077, Hazardous waste, solid, n.o.s. (Trichloroethylene Soil) 9, PGIII	01	CM	09	T	F002		
	2.							
	3.							
	4.							

14. Special Handling Instructions and Additional Information
1)(1) Profile# OR359811 ERG#171
Container # WMXU0086786
4PB50 R75 -R03

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Jake Heatherly On Behalf of TECT Aerospace
Signature:
Month: 11 Day: 24 Year: 25

INT'L
16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER
17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Dustin Cowell
Signature:
Month: 11 Day: 25 Year: 25
Transporter 2 Printed/Typed Name: Alisha Lenius
Signature: Alisha Lenius
Month: 11 Day: 25 Year: 25

DESIGNATED FACILITY
18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H132			

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Dawn Dimler
Signature:
Month: 12 Day: 4 Year: 25

EPA Form 8700-22 (Rev. 12-17) Previous editions are obsolete.

DESIGNATED FACILITY TO EPA's e-MANIFEST SYSTEM

Please print or type. 521619 Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)	21. Generator ID Number	22. Page	23. Manifest Tracking Number
	WAH000042763	2	027705278 SSK

24. Generator's Name: TECT Aerospace Everett

25. Transporter 3 Company Name: PCC — U.S. EPA ID Number: ORQ000041180

26. Transporter ____ Company Name — U.S. EPA ID Number:

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes

GENERATOR

32. Special Handling Instructions and Additional Information

TRANSPORTER

33. Transporter ____ Acknowledgment of Receipt of Materials
Printed/Typed Name | Signature | Month | Day | Year

34. Transporter ____ Acknowledgment of Receipt of Materials
Printed/Typed Name | Signature | Month | Day | Year

DESIGNATED FACILITY

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

EPA Form 8700-22A (Rev. 12-17) Previous editions are obsolete.

DESIGNATED FACILITY TO EPA's e-MANIFEST SYSTEM

Please print or type. 521618 Ø30 Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
	WAH000042763	1	800-337-7455	027705279 JJK

5. Generator's Name and Mailing Address
TECT Aerospace Everett
1515 75th St SW Ste 500
Everett WA 98203
Att: Andrew Rardin
Generator's Phone: 425 508-7472

Generator's Site Address (if different than mailing address)
TECT Aerospace Everett
2933 109th St SW
Everett WA 98204

6. Transporter 1 Company Name
R Transport Inc
U.S. EPA ID Number: WAH000028338

7. Transporter 2 Company Name
Union Pacific Railroad
U.S. EPA ID Number: NED001792910

8. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC
17629 CEDAR SPRINGS LANE
ARLINGTON OR 97812
Facility's Phone: 541 454-2643
U.S. EPA ID Number: ORD089452353

9a. HM	9b. U.S. DOT Description (Including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. NA3077, Hazardous waste, solid, n.o.s. (Trichloroethylene Soil) 9, PGIII	01	CM	6 07 Rej. Trans Forslund Idhenzo 0012/15/25	T	F002
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1)(T) Profile# OR359811 ERG#171
4PB50 R-75 RO-3 Container # WMXU0085985

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator/Offeror's Printed/Typed Name: On Behalf of TECT Aerospace Jake Heatherly
Signature:
Month 11 Day 24 Year 25

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Dustin Cowell
Signature:
Month 11 Day 25 Year 25

Transporter 2 Printed/Typed Name: Alisha Lennus
Signature: Alisha Lennus
Month 11 Day 25 Year 25

18. Discrepancy

18a. Discrepancy Indication Space ☒ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Weight corrected per. Trans Forslund Idhenzo 0012/15/25
Manifest Reference Number:

18b. Alternate Facility (or Generator) 12/15/25 U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator) Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H132			

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name: Dawn Dunlap
Signature:
Month 12 Day 4 Year 25

EPA Form 8700-22 (Rev. 12-17) Previous editions are obsolete.

DESIGNATED FACILITY TO EPA's e-MANIFEST SYSTEM

Please print or type 521618

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)	21. Generator ID Number	22. Page	23. Manifest Tracking Number
	WAH000042763	2	027705279 JJK

24. Generator's Name: TECT Aerospace Everett

25. Transporter 3 Company Name: PCL — U.S. EPA ID Number: ORQ000041180

26. Transporter ____ Company Name — U.S. EPA ID Number:

GENERATOR

27a HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes

32. Special Handling Instructions and Additional Information

TRANSPORTER

33. Transporter ____ Acknowledgment of Receipt of Materials
Printed/Typed Name | Signature | Month | Day | Year

34. Transporter ____ Acknowledgment of Receipt of Materials
Printed/Typed Name | Signature | Month | Day | Year

DESIGNATED FACILITY

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

EPA Form 8700-22A (Rev. 12-17) Previous editions are obsolete

DESIGNATED FACILITY TO EPA's e-MANIFEST SYSTEM

Please print or type. 509553 Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of 2	3. Emergency Response Phone	4. Manifest Tracking Number
WAH000042763		800-337-7455	025895690 JJK

GENERATOR

5. Generator's Name and Mailing Address
TECT Aerospace Everett
1515 75th St SW Ste 500
Everett WA 98203
Att: Andrew Rankin
Generator's Phone: 425 500-7472

Generator's Site Address (if different than mailing address)
TECT Aerospace Everett
2933 109th St SW
Everett WA 98204

6. Transporter 1 Company Name: DH Environmental Inc. — U.S. EPA ID Number: WAH000047217

7. Transporter 2 Company Name: Chemical Waste Management — U.S. EPA ID Number: ORD088045363

8. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC
17629 CEDAR SPRINGS LANE
ARLINGTON OR 97812
Facility's Phone: 541 454-2843
U.S. EPA ID Number: ORD088045363

9a. HM	9b. U.S. DOT Description (Including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
X	1. RQ NA3082, Hazardous waste, liquid, n.o.s. (Trichloroethylene, Tetrachloroethylene) 9, PGIII	02	TP	4100 lb	P	F002		
RQ X	2. NA3082, Hazardous waste, liquid, n.o.s. (Trichloroethylene, Tetrachloroethylene) 9, PGIII	03	TP	5600	P	F002		
	3.							
	4.							

14. Special Handling Instructions and Additional Information
1) OR359814-Stab wtr ERG#171 2)(T) OR359813-Inc wtr ERG#171
WOMXU
980659

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: On Behalf of Generator Jake Heatherly — Signature — Month 06 Day 17 Year 24

INTL

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Jake Heatherly — Signature — Month 06 Day 17 Year 24
Transporter 2 Printed/Typed Name — Signature — Month 6 Day 17 Year 24

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H132	H141		

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name — Signature — Month 7 Day 26 Year 24
DMD 7/26/24

EPA Form 8700-22 (Rev. 12-17) Previous editions are obsolete.
DESIGNATED FACILITY TO EPA's e-MANIFEST SYSTEM
MFE
DMS

CWMI

Please print or type. 509553 Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)	21. Generator ID Number	22. Page 2 of 2	23. Manifest Tracking Number
	WAH000042763		025895690 JJK

24. Generator's Name: TECT AEROSPACE EVERETT

25. Transporter 3 Company Name: UNION PACIFIC RAILROAD — U.S. EPA ID Number: NED001792910

26. Transporter 4 Company Name: PCC — U.S. EPA ID Number: ORQ000041180

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes		
	6.							
	7.							
	8.							
	9.							
	10.							
	11.							
	12.							
	13.							
	14.							

GENERATOR

32. Special Handling Instructions and Additional Information

WMXU : 980059

TRANSPORTER

33. Transporter 3 Acknowledgment of Receipt of Materials

Printed/Typed Name: G. Althemer — Signature: GA — Month: 6 Day: 18 Year: 24

34. Transporter 4 Acknowledgment of Receipt of Materials

Printed/Typed Name — Signature — Month — Day — Year

DESIGNATED FACILITY

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

EPA Form 8700-22A (Rev. 12-17) Previous editions are obsolete.

DESIGNATED FACILITY TO EPA's e-MANIFEST SYSTEM

522104

Please print or type. Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
WAH000042763	1	800-337-7455	027705280 JJK

GENERATOR

5. Generator's Name and Mailing Address
TECT Aerospace Everett
1515 76th St SW Ste 600
Everett WA 98203
Att: Andrew Rardin
Generator's Phone: 425 508-7472

Generator's Site Address (if different than mailing address)
TECT Aerospace Everett
2933 109th St SW
Everett WA 98204

6. Transporter 1 Company Name: DH Environmental Inc.
U.S. EPA ID Number: WAH000047217

7. Transporter 2 Company Name: Chemical Waste Management
U.S. EPA ID Number: ORD089452353

8. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC
17629 CEDAR SPRINGS LANE
ARLINGTON OR 97812
Facility's Phone: 541 464-2643
U.S. EPA ID Number: ORD089452353

9a. HM	9b. U.S. DOT Description (Including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ NA3082, Hazardous waste, liquid, n.o.s. (Trichloroethylene, Tetrachloroethylene) 9, PGIII	05	DM	2000	P	F002 D043 per Travis Forslund.
X	2. NA3082, Hazardous waste, liquid, n.o.s. (Trichloroethylene, Tetrachloroethylene) 9, PGIII	04	DM	1600	P	F002
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1) OR359814-Stab wtr ERG#171 2)(T) OR359813-Inc wtr ERG#171
WMXU 540546

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: On Behalf of TECT Aerospace Jake Heatherly
Signature:
Month 11 Day 24 Year 25

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Jake Heatherly
Signature:
Month 11 Day 24 Year 25
Transporter 2 Printed/Typed Name: Aidan Molina
Signature:
Month 11 Day 25 Year 25

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Permission to add the D043 code on line 1 profile OR359814. Per Travis Forslund BG 12/16/25
Manifest Reference Number:

18b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator) Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H100	S039		

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Dawn Dinkle
Signature:
Month 12 Day 18 Year 25

EPA Form 8700-22 (Rev. 12-17) Previous editions are obsolete.

DESIGNATED FACILITY TO EPA's e-MANIFEST SYSTEM

522104

CWMI

Please print or type.

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)	21. Generator ID Number	22. Page 2 of 2	23. Manifest Tracking Number
	WAH000042783		027705280JJK

24. Generator's Name: TECT AEROSPACE EVERETT

25. Transporter 3 Company Name: UPRR — U.S. EPA ID Number: NED001792910

26. Transporter 4 Company Name: PCC — U.S. EPA ID Number: ORQ000041180

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes

GENERATOR

32. Special Handling Instructions and Additional Information

WMXU 540546

TRANSPORTER

33. Transporter 3 Acknowledgment of Receipt of Materials

Printed/Typed Name: G. Altheimer — Signature: [signature] — Month: 12 Day: 13 Year: 25

34. Transporter ____ Acknowledgment of Receipt of Materials

Printed/Typed Name — Signature — Month — Day — Year

DESIGNATED FACILITY

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

EPA Form 8700-22A (Rev. 12-17) Previous editions are obsolete.

DESIGNATED FACILITY TO EPA's e-MANIFEST SYSTEM

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
None Required	1	(800) 337-7455 Republic	TECT-IDW-112425-E

GENERATOR

5. Generator's Name and Mailing Address
TECT Aerospace Everett
1515 75th Pl SW Ste 300
Everett, WA 98203
425.508.7472 Attn: Andrew Rardin

Generator's Site Address (if different than mailing address)
TECT Aerospace Everett
2933 109th St SW
Everett, WA 98204

Generator's Phone:

6. Transporter 1 Company Name: DH Environmental, Inc. — U.S. EPA ID Number: WAH000047217

7. Transporter 2 Company Name — U.S. EPA ID Number

8. Designated Facility Name and Site Address
5400 W Marginal Way SW
Seattle, WA 98106
(206) 933-5618
U.S. EPA ID Number: N/A

Facility's Phone:

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	Material Not Regulated by DOT (non-regulated IDW soil)	16	DM	12,000	P	
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information
1) DH-LND-TECT-IDW- SOIL

INT'L

14. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: x Jake Heatherly (On Behalf of TECT Aerospace) — Signature — Month 11 Day 24 Year 25

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:

Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Jake Heatherly — Signature — Month 11 Day 24 Year 25

Transporter 2 Printed/Typed Name — Signature — Month Day Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) — Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: Justin Twellmeyer — Signature — Month 11 Day 24 Year 25

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number: None Required
2. Page 1 of: 1
3. Emergency Response Phone: (800) 337-7455 Republic
4. Waste Tracking Number: TECT-IDW-112425-02

GENERATOR

5. Generator's Name and Mailing Address: TECT Aerospace Everett
1515 75th St SW Ste 500
Everett, WA 98203
425.508.7472 Attn: Andrew Bardin

Generator's Site Address (if different than mailing address): TECT Aerospace Everett
2933 109th St SW
Everett, WA 98204

Generator's Phone:

6. Transporter 1 Company Name: DH Environmental, Inc.
U.S. EPA ID Number: WAH000047217

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address: 5400 W Marginal Way SW
Seattle, WA 98106
(206) 933-5618
U.S. EPA ID Number: N/A

Facility's Phone:

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	Material Not Regulated by DOT (non-regulated IDW soil)	12	DM	8000	P	
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information
1) DH-LND-TECT-IDW- SOIL

14. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: On Behalf of TECT Aerospace Jake Heatherly
Signature:
Month: 11 Day: 24 Year: 25

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Jake Heatherly
Signature:
Month: 11 Day: 24 Year: 25

Transporter 2 Printed/Typed Name
Signature
Month: Day: Year:

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator)
U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator)
Month: Day: Year:

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: Justin Twellmeyer
Signature:
Month: 11 Day: 24 Year: 25

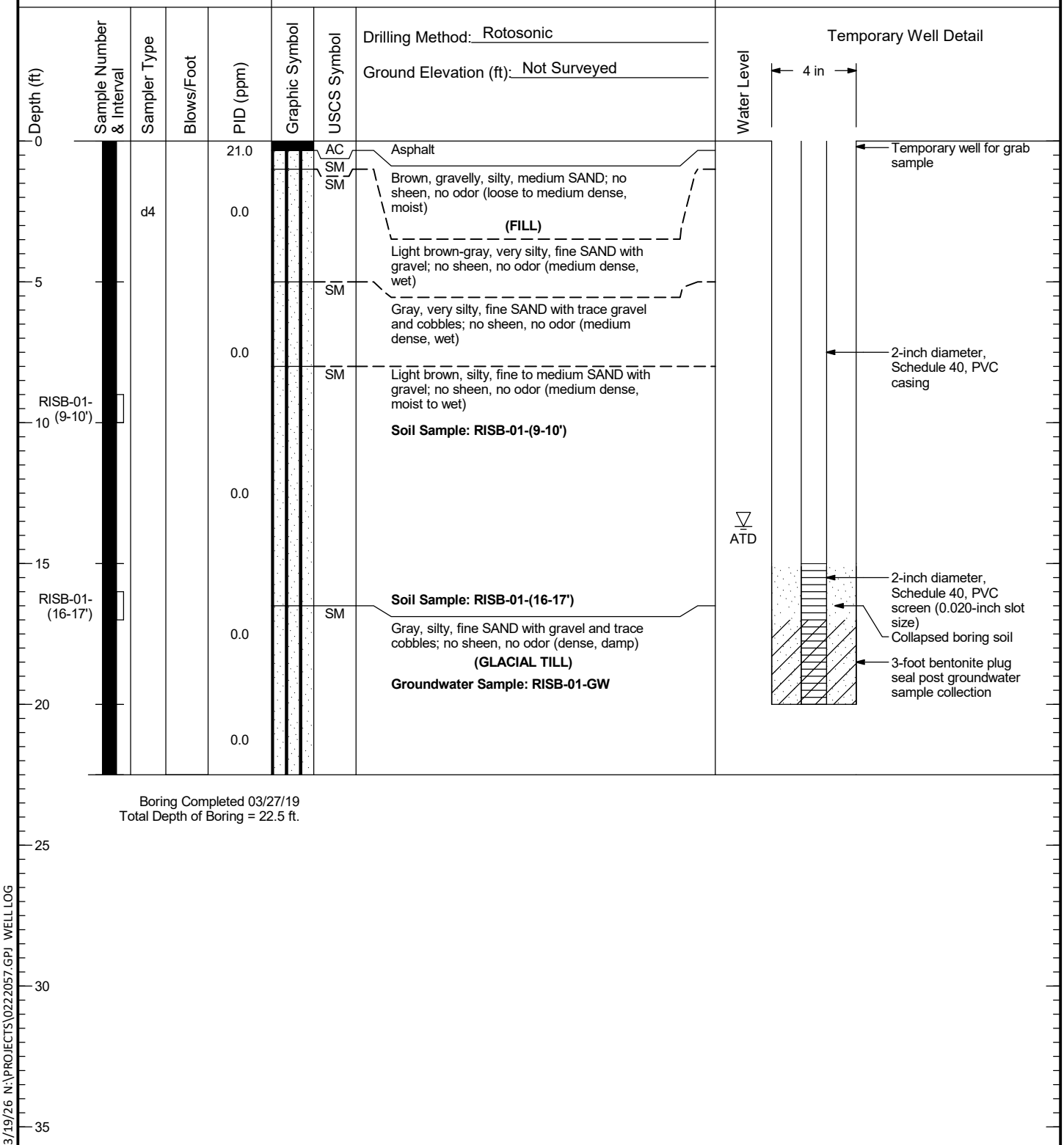
169-BLC-O 5 11977 (Rev. 9/09)

TRANSPORTER #1

APPENDIX F

Boring Logs

RISB-01



Boring Completed 03/27/19
Total Depth of Boring = 22.5 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-01	Figure D-1

RISB-02

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	
0						AC	Drilling Method: Rotosonic Ground Elevation (ft): Not Surveyed Asphalt
		d4		0.0		SM	Gray, silty, fine SAND with gravel; no sheen, no odor (loose to medium dense, damp to moist) **(FILL)**
						PC	Concrete
						SP-SM	Brown-gray, fine to medium SAND with silt; no sheen, no odor (medium dense, wet) **(FILL)**
5				0.0			
						SM	Brown, silty, fine SAND; no sheen, no odor (medium dense, moist to wet)
10	RISB-02-(11-12')						**Soil Sample: RISB-02-(11-12')**
				0.0		SM	Gray, silty, fine SAND with gravel; no sheen, no odor (dense, damp to moist) **(GLACIAL TILL)**
15				0.0			
20							
25							
30							
35							

Groundwater Not Measured.

Boring Completed 03/26/19
Total Depth of Boring = 17.5 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ SOIL BORING LOG

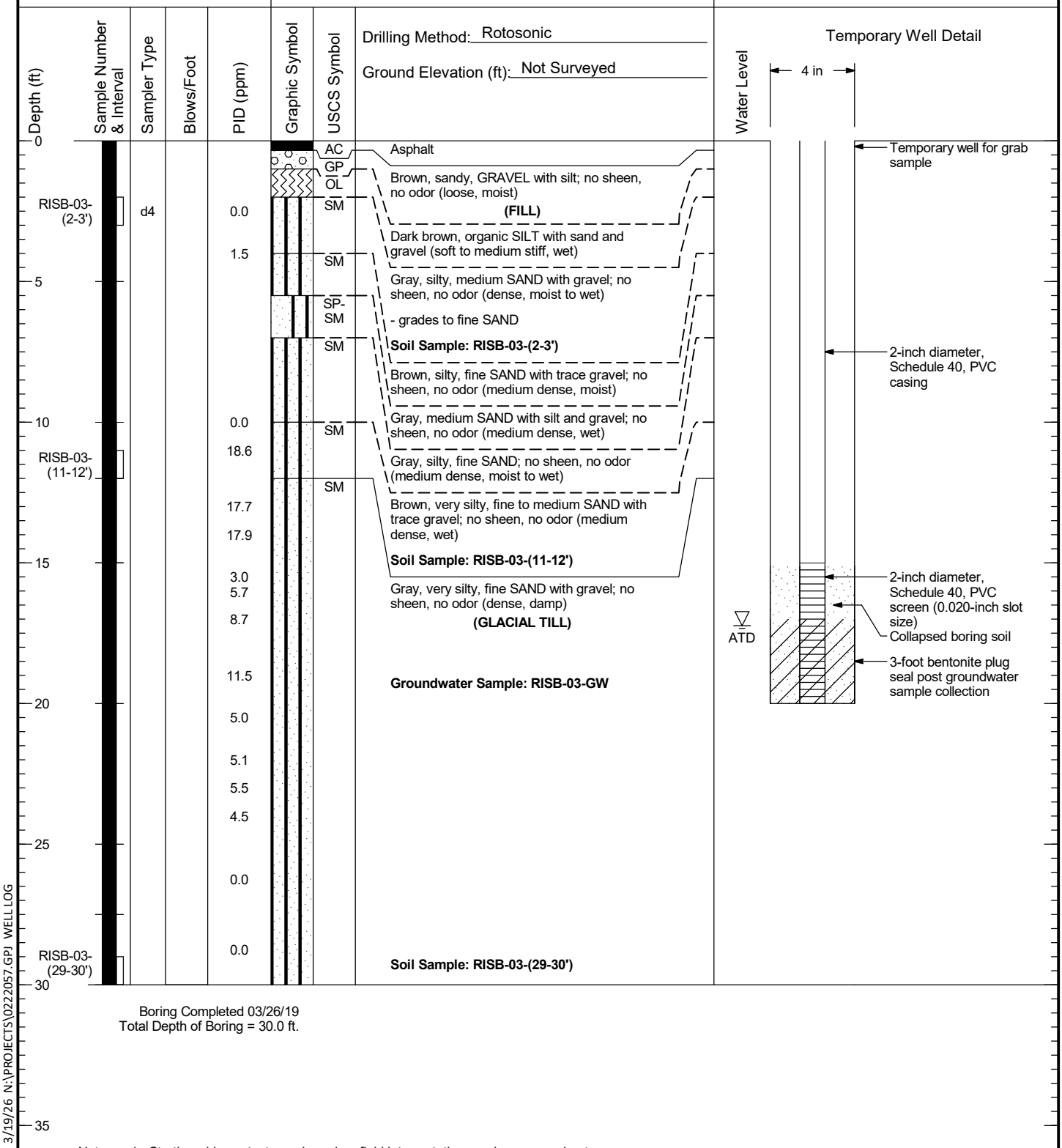
LANDAU ASSOCIATES

TECT Aerospace Leasehold
Everett, Washington

Log of Boring RISB-02

Figure
D-2

RISB-03



Boring Completed 03/26/19
Total Depth of Boring = 30.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-03	Figure D-3

RISB-04

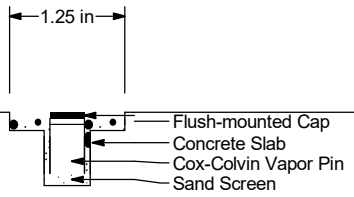
SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Water Level
0						CONC	Concrete
						SP	Brown, fine to medium SAND with trace silt and gravel; no sheen, no odor (loose, damp) **(FILL)** **Soil Gas Sample: RISG-04-190325**
2	RISB-04-(2-3')	d3		0.0		SM	Brown, silty, SAND with trace gravel; no sheen, no odor (loose, damp) - rust mottled **Soil Sample: RISB-04-(2-3')**
4							- rust mottled
6				0.0			
						SM	Brown, very silty, fine SAND with trace gravel; no sheen, no odor (loose, moist)
8							- becomes gray with slight irritant odor
10							

Drilling Method: Geoprobe™

Ground Elevation (ft): Not Surveyed

Groundwater Not Measured.

Vapor Well/implant Detail



Boring Completed 03/18/19
Total Depth of Boring = 8.0 ft.

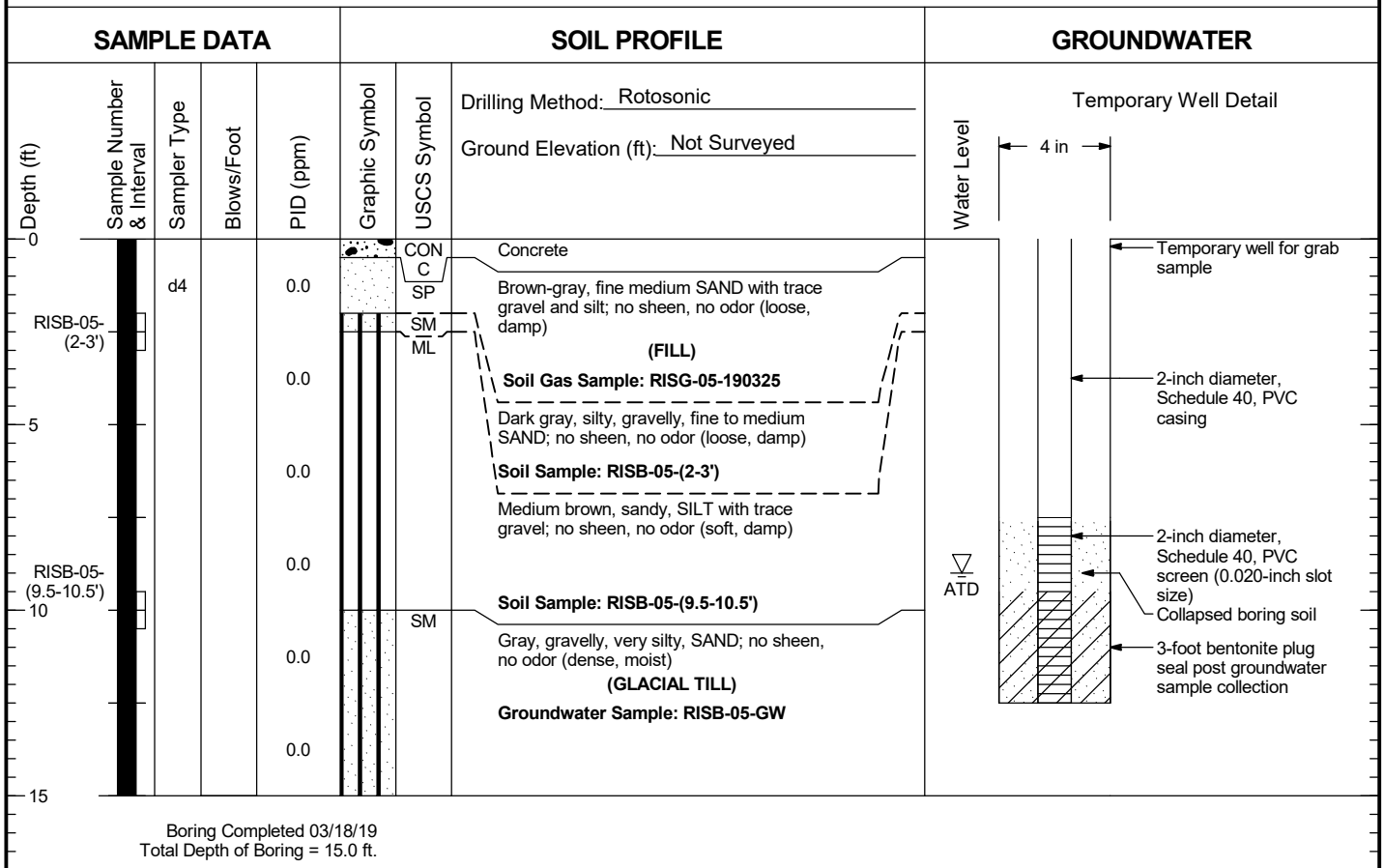
Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Vapor Well/Implant RISB-04	Figure D-4

RISB-05



Boring Completed 03/18/19
Total Depth of Boring = 15.0 ft.

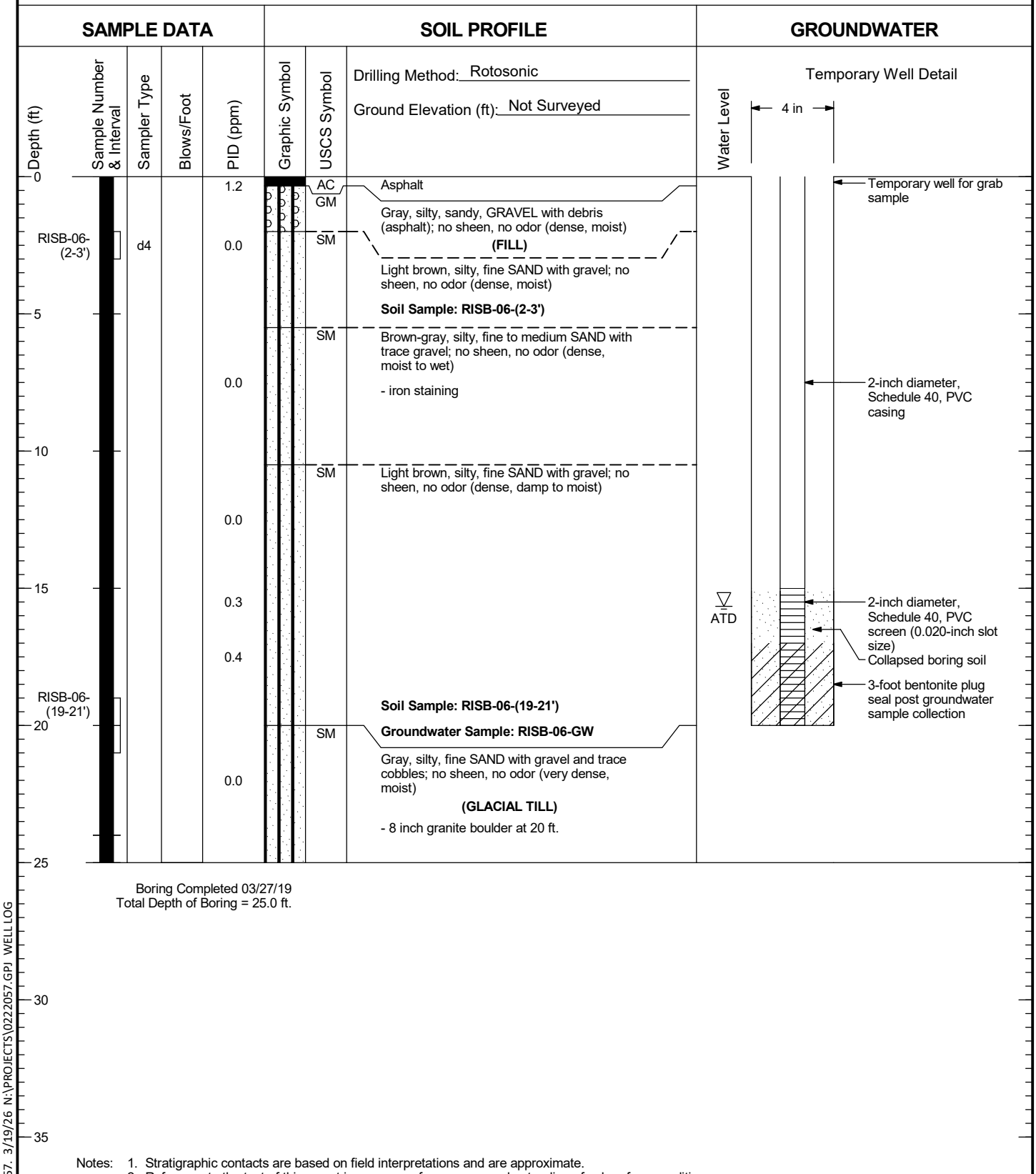
Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-05	Figure D-5

RISB-06



Boring Completed 03/27/19
Total Depth of Boring = 25.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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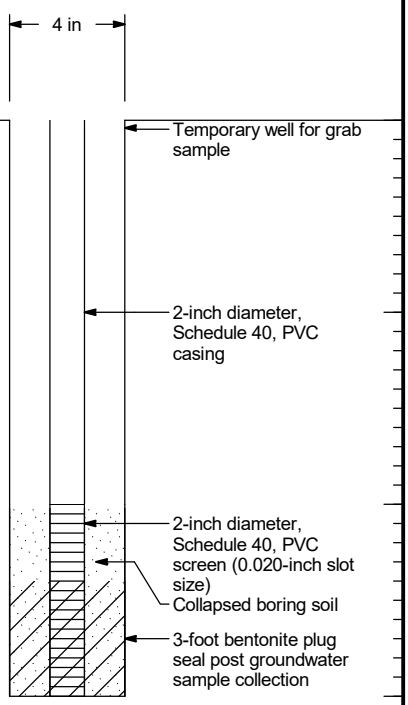
TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-06	Figure D-6

RISB-07

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft): Not Surveyed
0				4.9		AC	Asphalt
		d4		6.8		SP-SM	Brown-gray, fine to coarse SAND with silt, trace gravel, and rust mottles (loose, damp)
				7.4		SM	**(FILL)**
							Gray-tan, silty, fine to medium SAND with trace gravel (loose, damp)
5				26.4			- increase in silt content
						SM	Gray, silty, fine SAND with coarse sand, gravel, and trace cobbles; no sheen, no odor (dense, damp)
				20.0			**(GLACIAL TILL)**
10				88.0			- becomes dark gray and very silty
							- becomes wet
	RISB-07-(14.5-15.5')			151			**Groundwater Sample: RISB-07-GW**
15				GS 6.9 5.1			**Soil Sample: RISB-07-(14.5-15.5')**
				2.3			
				5.7			- becomes very dense with more cobbles
20				1.6			
				4.5			
				1.4			
				4.9			
25							
	RISB-07-(29-30')			GS			**Soil Sample: RISB-07-(29-30')**
30							
35							

Water Level: ATD

Temporary Well Detail



Boring Completed 03/28/19
Total Depth of Boring = 30.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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Everett, Washington

Log of Temporary Well
RISB-07

Figure
D-7

RISB-08

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Rotosonic

Ground Elevation (ft): Not Surveyed

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Description
0				4.6		SM	Grass
				4.9			Light brown, very silty, fine SAND with gravel; no sheen, no odor (dense, moist to wet)
		d4		12.1			**(FILL)**
				7.3			
				6.0			
5				4.4			
				7.3		SM	Gray, silty, fine to medium SAND with gravel; no sheen, no odor (medium dense, damp to moist)
				7.4		SP-SM	
				3.2		SM	Light brown, fine SAND with silt and gravel; no sheen, no odor (dense, moist)
				9.1			Gray, silty, fine to medium SAND with gravel; no sheen, no odor (dense, damp)
10				2.3			**(GLACIAL TILL)**
				3.6			
				7.5			
				3.0			
				4.3			
15				7.1			
				16.0			
				18.4			
				15.3			
	RISB-08-(19-20')			28.2			**Soil Sample: RISB-08-(19-20')**
20				2.4		SP-SM	**Groundwater Sample: RISB-08-GW**
				1.6			Gray, medium SAND with silt; no sheen, no odor (dense, moist to wet)
				9.3		SM	
				7.7			Gray, silty, fine SAND with gravel; no sheen, no odor (dense, damp)
				4.6			
25				0.1			
				0.0			
	RISB-08-(29-30')						**Soil Sample: RISB-08-(29-30')**
30							
35							

Water Level: ATD

Temporary Well Detail

4 in

- Temporary well for grab sample
- 2-inch diameter, Schedule 40, PVC casing
- 2-inch diameter, Schedule 40, PVC screen (0.020-inch slot size)
- Collapsed boring soil
- 3-foot bentonite plug seal post groundwater sample collection

Boring Completed 03/26/19
Total Depth of Boring = 30.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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Everett, Washington

Log of Temporary Well
RISB-08

Figure
D-8

RISB-09

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Rotosonic

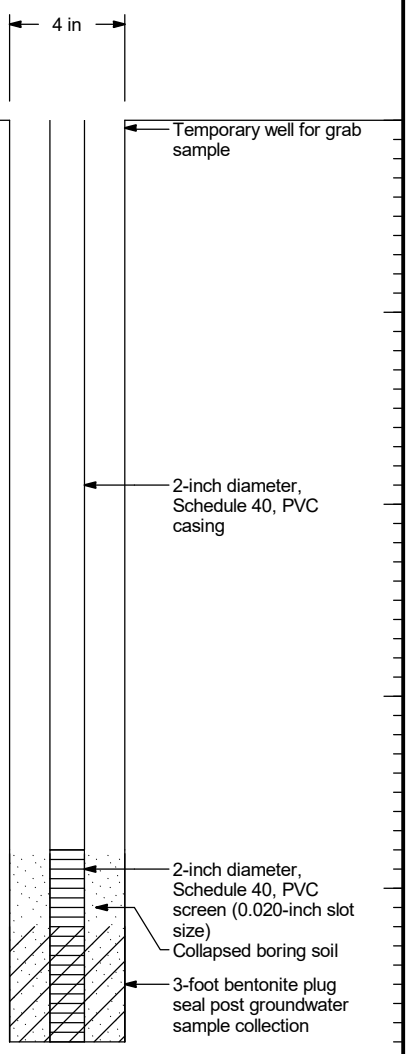
Ground Elevation (ft): Not Surveyed

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Description
0				2.5		SM	Light brown, silty, fine SAND with gravel; no sheen, no odor (dense, moist) **(FILL)**
				2.2			
				2.1			
				3.0			
				5.2			
5		d4		7.7			
				4.0			
	RISB-09-(7-8')			8.2			**Soil Sample: RISB-09-(7-8')**
				3.7		SM	Gray, silty, fine to medium SAND with gravel (reworked till); no sheen, no odor (dense, damp to moist)
				5.5		SM	
10				5.2		SM	Light brown, silty, fine SAND with gravel and trace cobbles; no sheen, no odor
				10.6			
				4.1			Gray, gravelly, silty, fine to medium SAND; no sheen, no odor (dense, damp to moist) **(GLACIAL TILL)**
				4.8			
				7.9			
15				8.5			
				13.9			
				4.4			
	RISB-09-(18-19')			25.3			**Soil Sample: RISB-09-(18-19')**
				19.6			
20				0.5			
				1.5			
				0.1			**Groundwater Sample: RISB-09-GW**
	RISB-09-(24-25')						**Soil Sample: RISB-09-(24-25')**
25						AC	Asphalt

Boring Completed 03/25/19
Total Depth of Boring = 25.0 ft.

Water Level: ATD

Temporary Well Detail



30

35

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
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3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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Everett, Washington

Log of Temporary Well
RISB-09

Figure
D-9

RISB-10

SAMPLE DATA

SOIL PROFILE

GROUNDWATER

Drilling Method: Rotosonic

Ground Elevation (ft): Not Surveyed

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Profile	Water Level
0				0.3		AC	Asphalt	
				1.0		SM		
				0.2		SM	Brown, silty, medium to coarse SAND with gravel; no sheen, no odor (loose, moist)	
		d4		0.2		SM	**(FILL)**	
				0.2			Gray, silty, fine SAND with gravel; slight organic sheen, no odor (medium dense, damp to moist)	
5				0.6				
				0.1			Brown, very silty, fine SAND with gravel and trace cobbles; no sheen, no odor (dense, moist)	
	RISB-10-(7-8')			1.1			**Soil Sample: RISB-10-(7-8')**	
				0.5				
				0.9			- becomes damp to moist	
10				0.4				
				0.8		SM	Gray, very silty, fine SAND with gravel; very slight colorless sheen, no odor (dense, damp)	
				1.3			**(GLACIAL TILL)**	
				0.3				
				0.7			- increase in density	
15				0.6				
				0.9				
				0.8				ATD
				0.7			**Groundwater Sample: RISB-10-GW**	
				0.8				
20				0.7				
				1.1				
				3.2				
	RISB-10-(23-24')			6.2			**Soil Sample: RISB-10-(23-24')**	
25				1.5				
				1.1				
				0.5				
				0.3		SP-SM	Gray, fine to medium SAND with silt and gravel; colorless sheen, no odor (dense, damp to moist)	
30						SM		
							Gray, very silty, fine to medium SAND with gravel and trace cobbles; no sheen, no odor (very dense, damp to moist)	
	RISB-10-(34-35')			0.4			**Soil Sample: RISB-10-(34-35')**	
35								

Temporary Well Detail

4 in

- Temporary well for grab sample
- 2-inch diameter, Schedule 40, PVC casing
- 2-inch diameter, Schedule 40, PVC screen (0.020-inch slot size)
- Collapsed boring soil
- 3-foot bentonite plug seal post groundwater sample collection

Boring Completed 03/25/19
Total Depth of Boring = 35.0 ft.

Notes:
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2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\022057.GPJ WELL LOG

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Everett, Washington

Log of Temporary Well
RISB-10

Figure
D-10

RISB-11

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft): Not Surveyed	
0				32.0		AC	Asphalt	
				0.9		SM	Light brown, silty, fine SAND with gravel and trace cobbles; no sheen, no odor (dense, moist)	Groundwater Not Measured.
	RISB-11-(2-3')	d4		2.5			**(FILL)**	
				2.5			**Soil Sample: RISB-11-(2-3')**	
				4.8				
5				6.6				
				6.7				
				7.6				
				7.3		SM	Light brown, silty, fine SAND with gravel and trace cobbles; no sheen, no odor (loose, moist)	
				2.9		SM	**(WEATHERED GLACIAL TILL)**	
10				1.2			Gray, silty, fine to medium SAND with gravel; no sheen, no odor (dense, moist)	
				1.7			**(GLACIAL TILL)**	
				3.6				
				3.8			- becomes gravelly	
				2.4				
15				179			- becomes with gravel	
	RISB_11-(16-17')			223			**Soil Sample: RISB-11-(16-17')**	
				GS				
				39.0				
				82.0				
				163				
20				4.5				
				3.1				
				3.6				
				10.8				
25				1.2				
				0.6				
				1.3				
				1.2				
				1.5				
30				0.7				
				1.1				
				0.2				
				0.6				
	RISB-11-(34-35')			0.2			**Soil Sample: RISB-11-(34-35')**	
35				GS				

Boring Completed 03/25/19
Total Depth of Boring = 35.0 ft.

Notes:
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222057. 3/19/26 N:\PROJECTS\0222057.GPJ SOIL BORING LOG

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Everett, Washington

Log of Boring RISB-11

Figure
D-11

RISB-12

Drilling Method: Rotosonic

Ground Elevation (ft): Not Surveyed

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Profile	Water Level
0				7.2		AC	Asphalt	
		d4		5.9		SM	Gray-tan, silty, fine to medium SAND with gravel and trace cobbles (loose, damp) **(FILL)**	
				0.0			- have a slight sweet odor	
				6.1				
5				13.2				
				10.2			- becomes dense	
				7.1				
							- becomes medium dense	
				20.9				
10	RISB-12-(10-10.5')						**Soil Sample: RISB-12-(10-10.5')**	
				53.4			- 5 inch thick cobble in core	
						SM		
				50.0			Gray, silty, fine SAND with gravel, silt, and cobbles; no sheen, no odor (dense, moist) **(GLACIAL TILL)**	
				44.8				
15								
				103				
	RISB-12-(19-20')			306			**Soil Sample: RISB-12-(19-20')**	▽ ATD
20								
				110			- becomes very dense	
	RISB-12-(24-25')			254			**Soil Sample: RISB-12-(24-25')**	
25							Gray, silty, fine SAND with gravel, silt, and cobbles; no sheen, no odor (very dense, moist)	
				14.9			- increased sand for 1 foot	
				10.9				
				210				
30							- decrease in cobbles	
				12.3				
							- becomes dense	
				23.0				
35								

Notes:
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222057. 3/19/26 N:\PROJECTS\0222057.GPJ SOIL BORING LOG

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Everett, Washington

Log of Boring RISB-12

Figure
D-12
(1 of 2)

RISB-12

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft): Not Surveyed	Water Level
35				29.0 26.2 9.5			Gray, silty, fine SAND with gravel, silt, and cobbles; no sheen, no odor (very dense, moist)	
40	RISB-12-(41.5-42.5')			27.3 262 1.9			**Soil Sample: RISB-12-(41.5-42.5')**	
				Boring Completed 04/01/19 Total Depth of Boring = 42.5 ft.				
45								
50								
55								
60								
65								
70								

Notes:
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3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\022057.GPJ SOIL BORING LOG

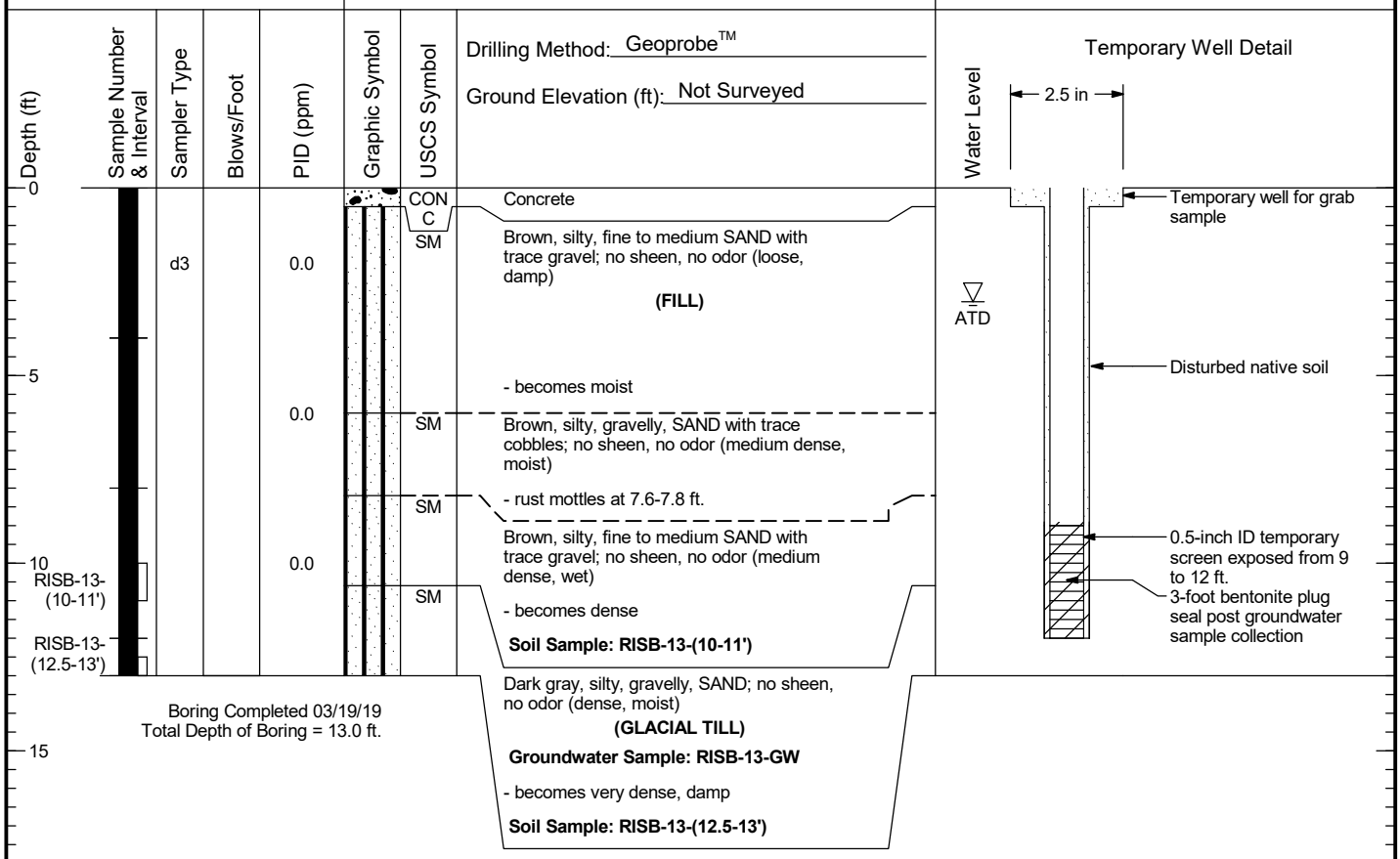
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Everett, Washington

Log of Boring RISB-12

Figure
D-12
(2 of 2)

RISB-13



Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
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222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-13	Figure D-13

RISB-14

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Rotosonic

Ground Elevation (ft): Not Surveyed

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Description
0				0.9		AC	Asphalt
		d4		33.0		SP-SM	Brown, fine to medium SAND with silt and gravel; no sheen, no odor (medium dense, moist)
				44.6		SM	**(FILL)** Brown, silty, fine SAND with gravel; no sheen, no odor (dense, moist)
5							
10	RISB-14-(9-10')			80.7			**Soil Sample: RISB-14-(9-10')**
				100		SM	Gray, silty, fine SAND with gravel; no sheen, no odor (dense, moist) **(GLACIAL TILL)**
15							
20	RISB-14-(19-20')			101			**Soil Sample: RISB-14-(19-20')** - grades to fine to medium sand
				78.1			- back to fine sand **Groundwater Sample: RISB-14-GW**
25				28.6			
				25.4			
30				46.4			- becomes very dense
35							

Water Level: ATD

Temporary Well Detail

4 in

- Temporary well for grab sample
- 2-inch diameter, Schedule 40, PVC casing
- 2-inch diameter, Schedule 40, PVC screen (0.020-inch slot size)
- Collapsed boring soil
- 3-foot bentonite plug seal post groundwater sample collection

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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Everett, Washington

Log of Temporary Well
RISB-14

Figure
D-14
(1 of 2)

RISB-14

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft): Not Surveyed	Water Level
35				23.4		SM	Gray, silty, fine SAND with gravel; no sheen, no odor (dense, moist) **(GLACIAL TILL)**	Temporary Well Detail
				83.7				
40				33.0				
	RISB-14-(44-45')			68.5			**Soil Sample: RISB-14-(44-45')**	
45								

Boring Completed 04/01/19
Total Depth of Boring = 45.0 ft.

50
55
60
65
70

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-14	Figure D-14 (2 of 2)

RISB-15

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Rotosonic

Ground Elevation (ft): Not Surveyed

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Description
0						AC	Asphalt
		d4		0.0		SP-SM / SM	Brown, gravelly, fine to coarse SAND with silt; no sheen, no odor (loose, moist)
						SM	**(FILL)**
				0.0			Gray, silty, fine to medium SAND with gravel, organics, and trace cobbles; no sheen, irritant odor (loose, damp)
5				2.1		SP-SM	Brown, silty, fine SAND with trace gravel; no sheen, no odor (medium dense, damp)
				7.3			Brown, gravelly, fine to medium SAND with silt; no sheen, no odor (loose, dry)
				45.1			
	RISB-15-(9-10')			166.3			**Soil Sample: RISB-15-(9-10')**
10				26.0			
				10.4		SP-SM	Brown, fine to medium SAND with silt and gravel; no sheen, no odor (loose, wet)
				3.0			
	RISB-15-(13-14')			30.1		SM	Brown-gray, silty, fine to medium SAND with gravel; slight sheen, no odor (medium dense, damp)
				65.0			
15				31.4		SM	**Soil Sample: RISB-15-(13-14')**
				26.3			Gray, silty, gravelly, fine to medium SAND with cobbles; no sheen, no odor (dense, dry)
	RISB-15-(17-18)			26.4			**(GLACIAL TILL)**
				77.5			**Soil Sample: RISB-15-(17-18')**
				27.1			**Groundwater Sample: RISB-15-GW**
20				28.9		SM	Gray, very silty, fine to medium SAND with gravel and trace cobbles; no sheen, no odor (dense, damp)
				13.4			
				54.6			
				3.8			
				5.5			
25							
30				0.3			
				0.2			
				0.2			
				0.1			
	RISB-15-(34-35')						**Soil Sample: RISB-15-(34-35')**
35							

Water Level: ATD

Temporary Well Detail

4 in

- Temporary well for grab sample
- 2-inch diameter, Schedule 40, PVC casing
- 2-inch diameter, Schedule 40, PVC screen (0.020-inch slot size)
- Collapsed boring soil
- 3-foot bentonite plug seal post groundwater sample collection

Boring Completed 03/21/19
Total Depth of Boring = 35.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

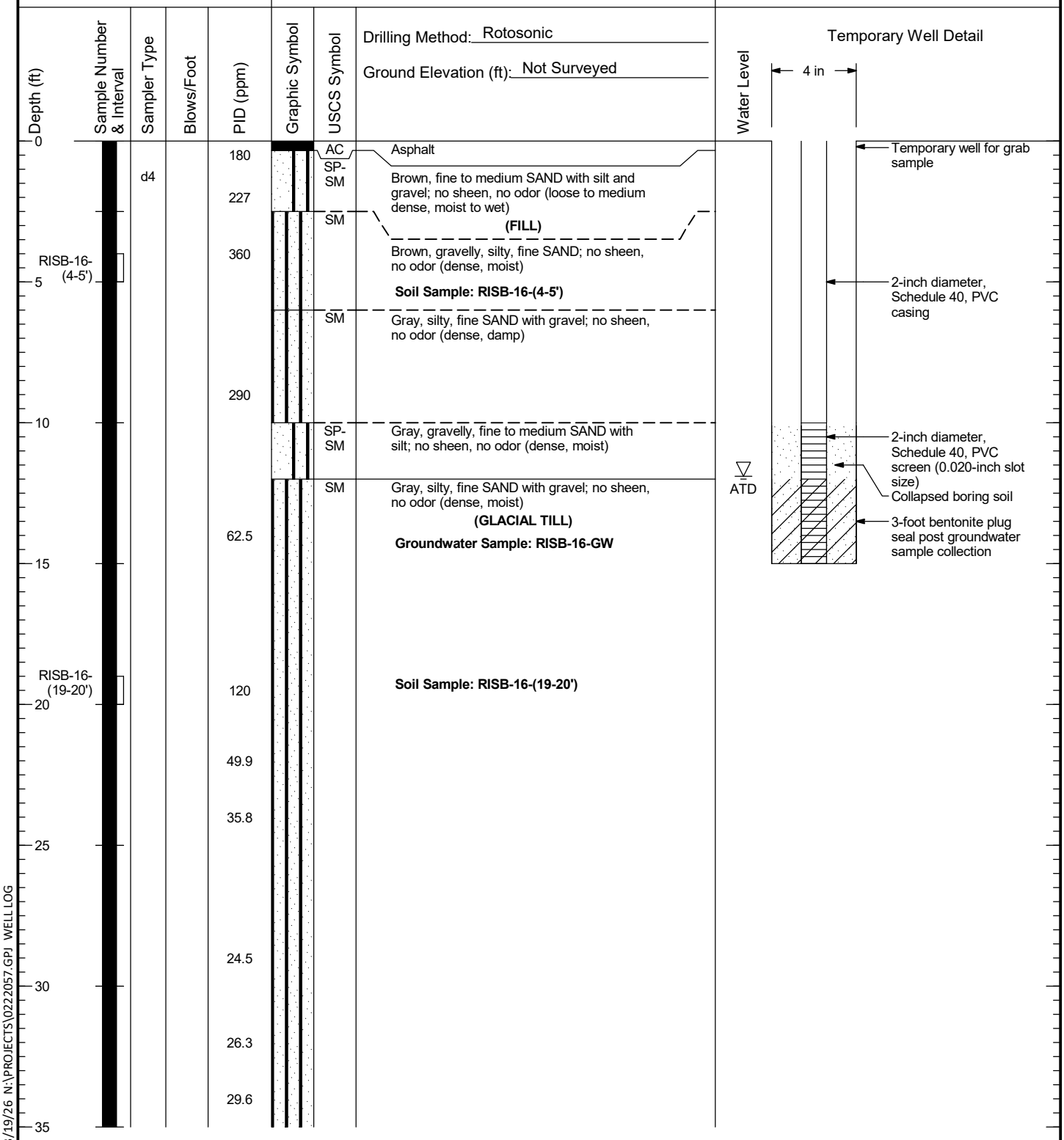
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Everett, Washington

Log of Temporary Well
RISB-15

Figure
D-15

RISB-16



Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-16	Figure D-16 (1 of 2)

RISB-16

SAMPLE DATA				SOIL PROFILE			GROUNDWATER	
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft): Not Surveyed	Water Level
35						SM	Gray, silty, fine SAND with gravel; no sheen, no odor (dense, moist) **(GLACIAL TILL)**	Temporary Well Detail
				24.6				
				51.4				
40								
				34.5				
	RISB-16-(44-45')							
45								

Boring Completed 04/01/19
Total Depth of Boring = 45.0 ft.

50
55
60
65
70

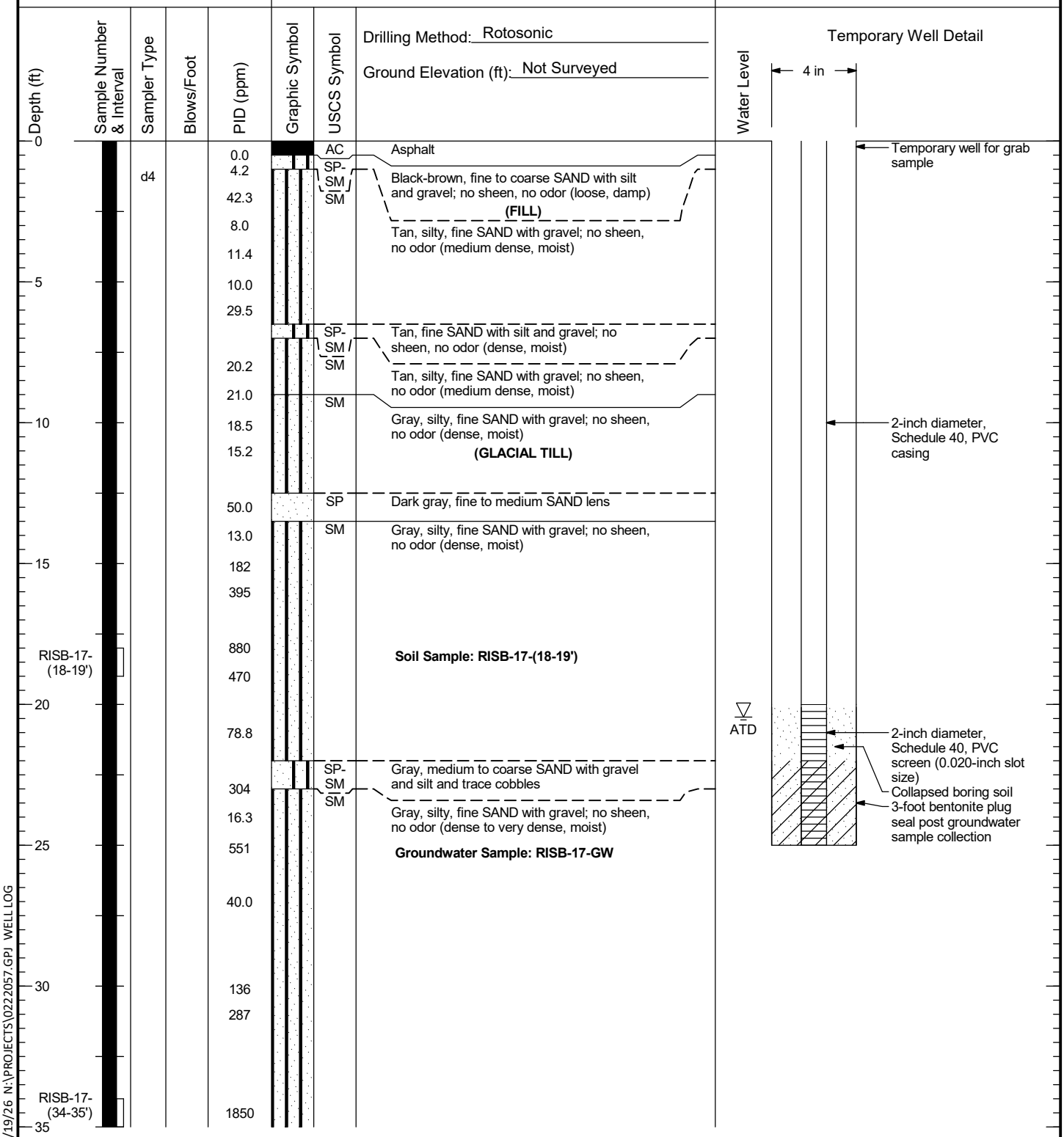
Notes:
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3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-16	Figure D-16 (2 of 2)

RISB-17



Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-17	Figure D-17 (1 of 2)

RISB-17

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Water Level

Drilling Method: Rotosonic

Ground Elevation (ft): Not Surveyed

Temporary Well Detail

35 — SM — **Soil Sample: RISB-17-(34-35')**

Gray, silty, fine SAND with gravel; no sheen, no odor (dense to very dense, moist)

- becomes very dense

1084

40

SP — Gray, medium to coarse SAND coarsening down (dense, damp)

SM — Gray, silty, fine SAND with gravel; no sheen, no odor (very dense, moist)

- increase in cobbles

RISB-17-(44-45') — 385

45 — **Soil Sample: RISB-17-(44-45')**

Boring Completed 03/29/19
Total Depth of Boring = 45.0 ft.

50

55

60

65

70

Notes:
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3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-17	Figure D-17 (2 of 2)

RISB-18

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Rotosonic

Ground Elevation (ft): Not Surveyed

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Profile	Water Level
0						AC	Asphalt	
		d4		0.0		SP-SM	Brown, fine to coarse SAND with gravel and silt; no sheen, no odor (loose, damp)	
	RISB-18-(2.5-3.5')			26.5		SP-SM	**(FILL)** Tan, gravelly, fine to medium SAND with silt; no sheen, sweet odor (medium dense, moist)	
5							**Soil Sample: RISB-18-(2.5-3.5')**	
				0.0		SP-SM	Tan, fine to medium SAND with silt and trace gravel; no sheen, no odor (dense, moist)	
	RISB-18-(9-10')			15.8			**Soil Sample: RISB-18-(9-10')**	
10				3.2		SM	Gray, silty, fine SAND with gravel; no sheen, no odor (dense, damp)	
				3.6			**(GLACIAL TILL)**	
				2.9				
				15.4				
15				0.0				▽ ATD
						SP	Gray, fine to medium SAND with trace silt (medium dense, moist)	
	RISB-18-(19-20')			0.0			**Soil Sample: RISB-18-(19-20')**	
20							**Groundwater Sample: RISB-18-GW**	

Boring Completed 03/29/19
Total Depth of Boring = 20.0 ft.

Temporary Well Detail

4 in

- Temporary well for grab sample
- 2-inch diameter, Schedule 40, PVC casing
- 2-inch diameter, Schedule 40, PVC screen (0.020-inch slot size)
- Collapsed boring soil

25
30
35

Notes:
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2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold
Everett, Washington

Log of Temporary Well
RISB-18

Figure
D-18

RISB-19

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

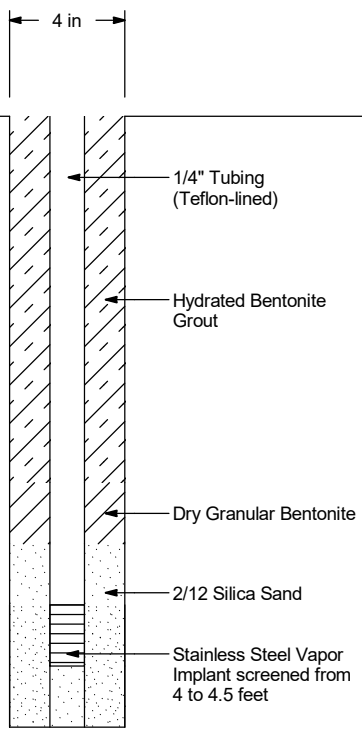
Drilling Method: Rotosonic

Ground Elevation (ft): Not Surveyed

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Description
0						AC	Asphalt
				1.0		SP-SM	Brown, fine to coarse SAND with gravel and silt; no sheen, sweet odor (loose, damp) **(FILL)**
		d4		10.9			
	RISB-19-(1.5-2')					SP-SM	Brownish-black, SAND with silt and organics; no sheen, strong sweet odor (loose, damp)
2						SM	**Soil Sample: RISB-19-(1.5-2')** Brown, silty, fine SAND with cobbles and wood chips; no sheen, organic odor (loose, damp)
				5.0		SM	Tan, silty, fine SAND with gravel and trace roots; no sheen, no odor (medium dense, moist)
4				3.6			**Soil Gas Sample: RISG-19-190402**
				5.5			- becomes very dense
6				14.2			
8				15.8			
				GS		SM	Gray, very silty, fine SAND with gravel; no sheen, no odor (dense, damp) **(GLACIAL TILL)**
	RISB-19-(8.5-9.5')			36.4			**Soil Sample: RISB-19-(8.5-9.5')**
10				0.0			

Water Level: Groundwater Not Measured.

Temporary Well Detail



Notes:
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2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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TECT Aerospace Leasehold
Everett, Washington

Log of Temporary Well
RISB-19

Figure
D-19
(1 of 2)

RISB-19

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Water Level
				1.8		SM	Groundwater Not Measured.
12				0.1			
14	RISB-19-(14-15')			0.3 GS			

Drilling Method: Rotosonic

Ground Elevation (ft): Not Surveyed

Temporary Well Detail

Gray, very silty, fine SAND with gravel; no sheen, no odor (dense, damp)
(GLACIAL TILL)

Soil Sample: RISB-19-(14-15')

Boring Completed 03/29/19
Total Depth of Boring = 15.0 ft.

16
18
20
22

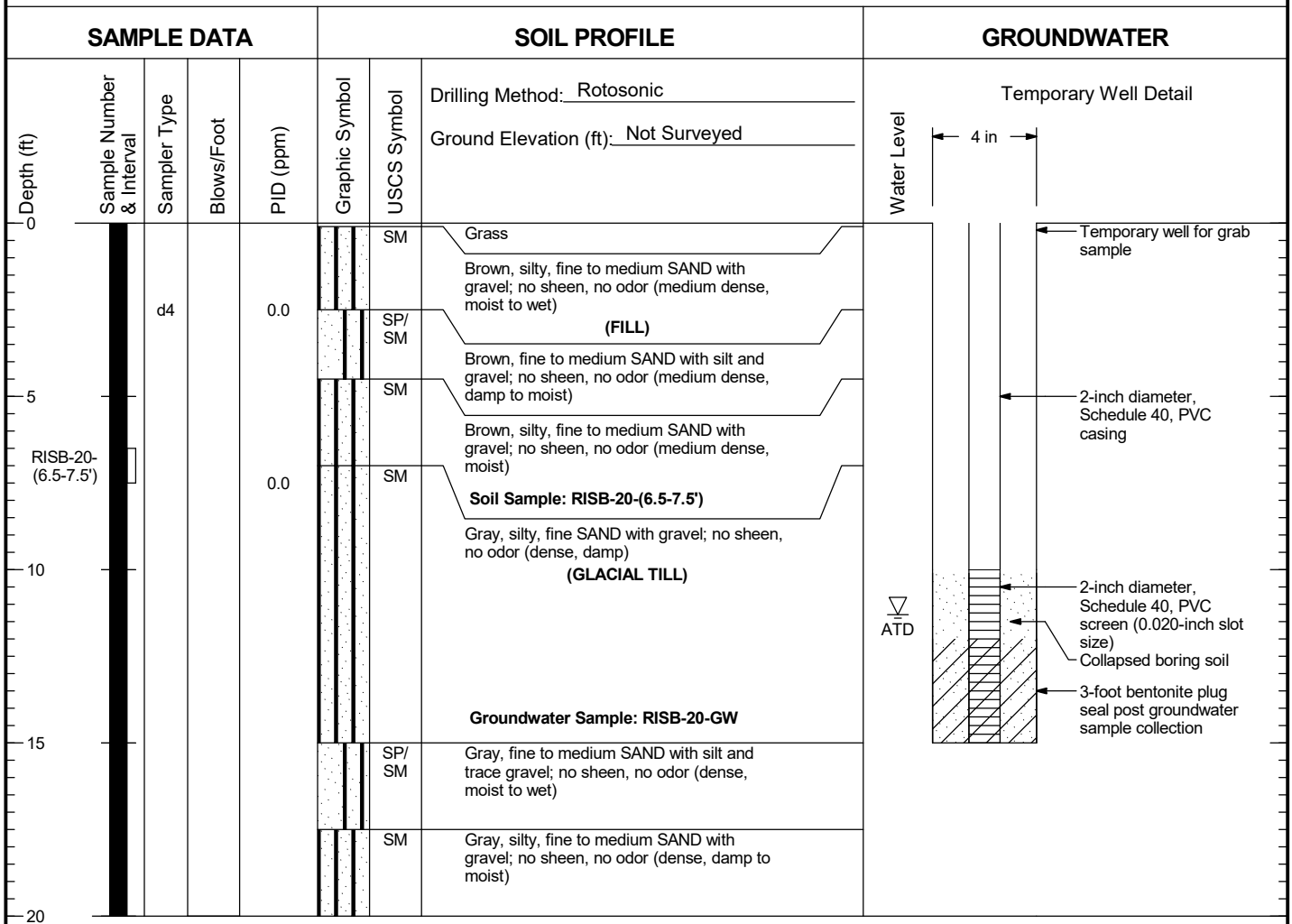
Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-19	Figure D-19 (2 of 2)

RISB-20



Boring Completed 03/27/19
Total Depth of Boring = 20.0 ft.

Notes:
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2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-20	Figure D-20

RISB-21

SAMPLE DATA

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)
0				0.0
		d4		0.3
				0.5
				0.7
				0.6
5				0.9
				1.1
				1.4
				12.1
10				3.1
				11.9
	RISB-21-(12.5-13.5')			27.0
				3.6
15				1.2
				4.2
				1.0
	RISB-21-(19-20')			0.0
20				

SOIL PROFILE

Drilling Method: Rotosonic

Ground Elevation (ft): Not Surveyed

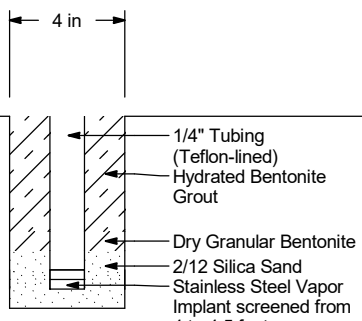
Graphic Symbol	USCS Symbol	Description
	AC	Asphalt
	SP-SM	Brown-gray, medium to coarse SAND with silt and gravel; no sheen, no odor (loose, damp)
	SM	**(FILL)**
	SM	Brownish-black, very silty, fine SAND with gravel; no sheen, no odor (medium dense, damp)
		Tan, silty, fine SAND with gravel and rust mottled throughout; no sheen, no odor (dense, moist)
		Groundwater Sample: RISB-21-GW
	SM	Gray, silty, fine SAND with gravel; no sheen, no odor (very dense, moist)
		(GLACIAL TILL)
		Soil Sample: RISB-21-(12.5-13.5')
		Soil Sample: RISB-21-(19-20')

Boring Completed 03/28/19
Total Depth of Boring = 20.0 ft.

GROUNDWATER

Water Level: Groundwater Not Measured.

Temporary Well Detail



Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-21	Figure D-21

RISB-22

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Rotosonic

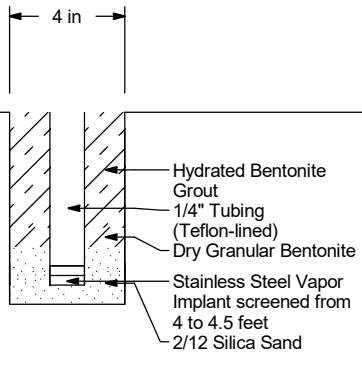
Ground Elevation (ft): Not Surveyed

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Profile
0				0.4		AC	Asphalt
	RISB-22-(1-2')	d4		2.4		SP-SM	Brown-gray, gravelly, SAND with silt; no sheen, no odor (loose, damp) **(FILL)**
						SM	
				5.2			**Soil Sample: RISB-22-(1-2')**
5				7.8			Gray stained, silty, fine SAND with gravel; moderate sheen, petroleum like odor
	RISB-22-(6.5-7.5')			18.0			Tan, silty, fine SAND with gravel (medium dense, moist)
							Groundwater Sample: RISB-22-GW
				12.4			**Soil Gas Sample: RISG-22-190402**
				2.0			**Soil Sample: RISB-22-(6.5-7.5')**
10				1.0		SM	Gray, silty, fine SAND with gravel; no sheen, no odor (dense, damp) **(GLACIAL TILL)**
				6.5			
				2.4			
				3.0			
15				0.9			
				3.3			
				1.0			
20	RISB-22-(19-20')			0.8			**Soil Sample: RISB-22-(19-20')**

Boring Completed 03/28/19
Total Depth of Boring = 20.0 ft.

Groundwater Not Measured.

Vapor Well/implant Detail



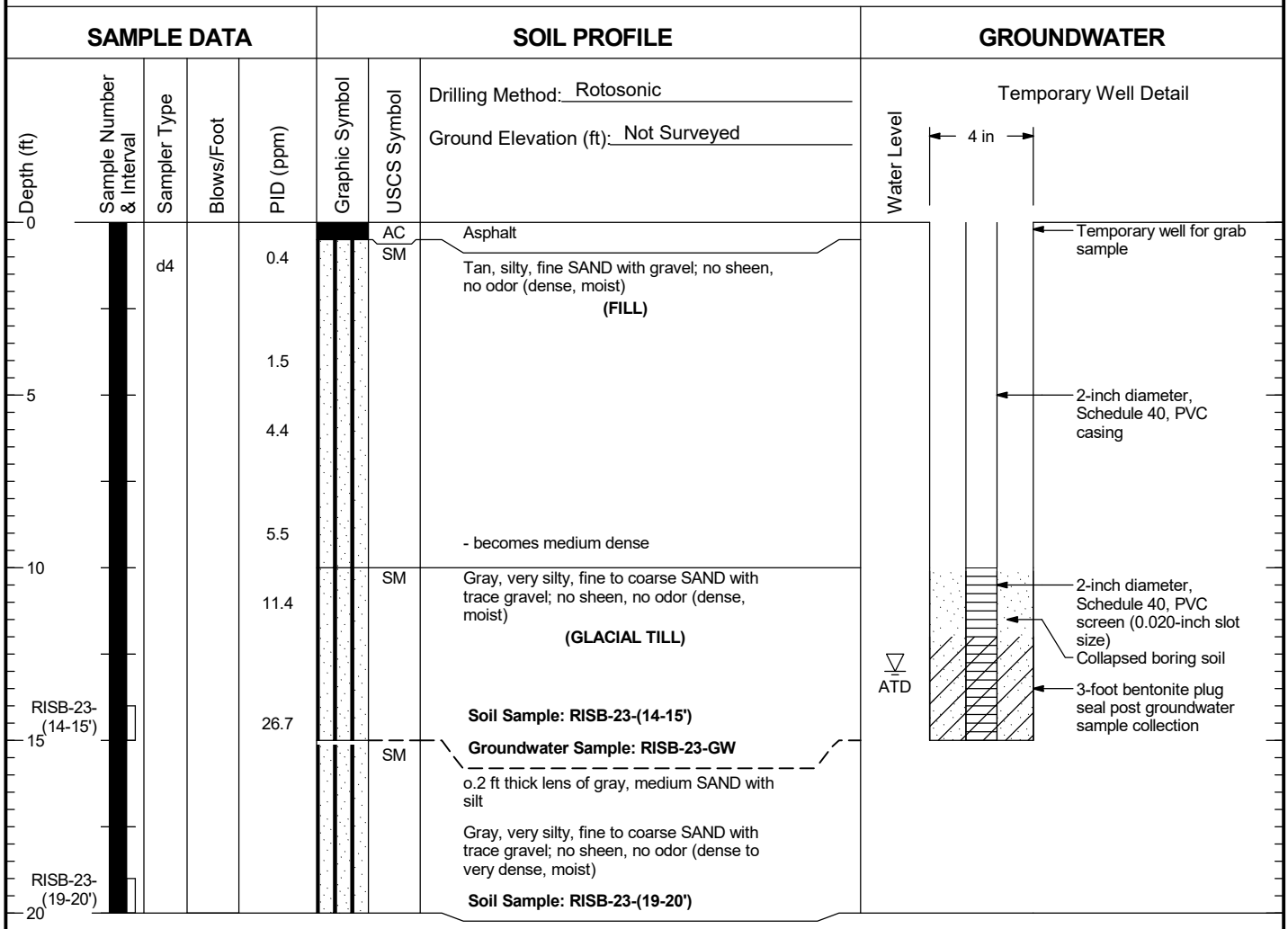
Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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TECT Aerospace Leasehold Everett, Washington	Log of Vapor Well/Implant RISB-22	Figure D-22

RISB-23



Boring Completed 03/28/19
Total Depth of Boring = 20.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

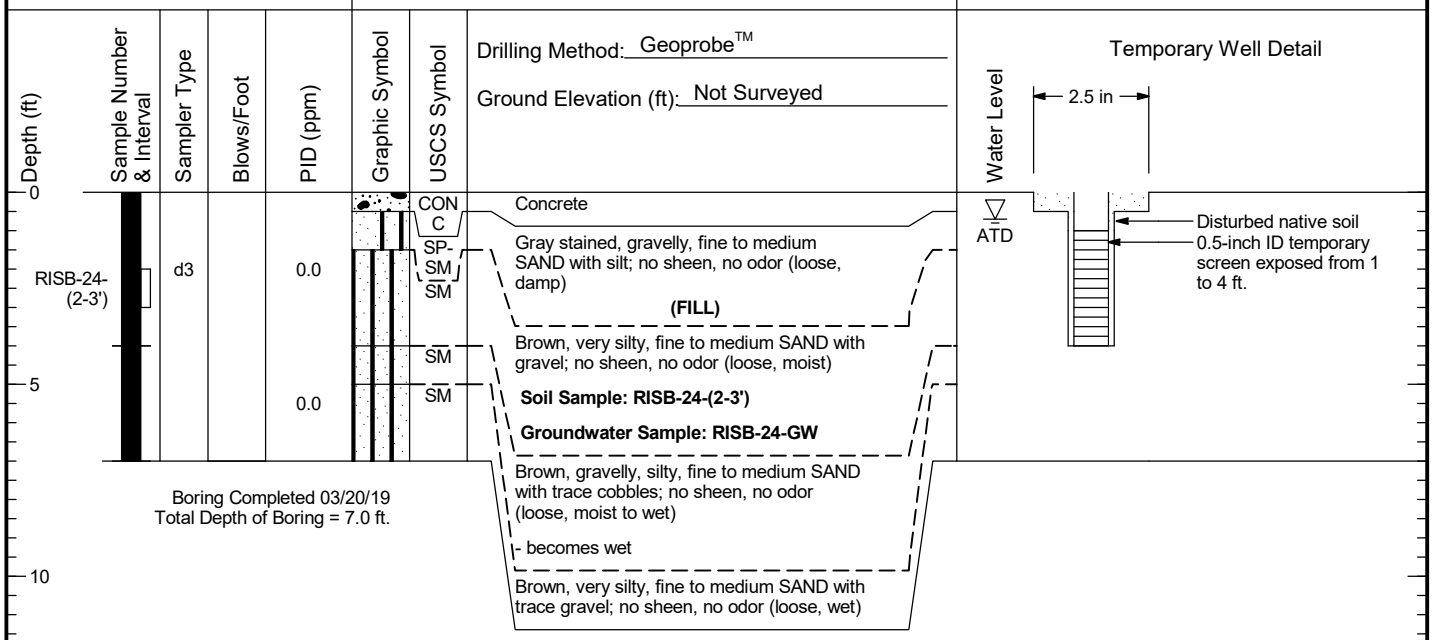
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Everett, Washington

Log of Temporary Well
RISB-23

Figure
D-23

RISB-24



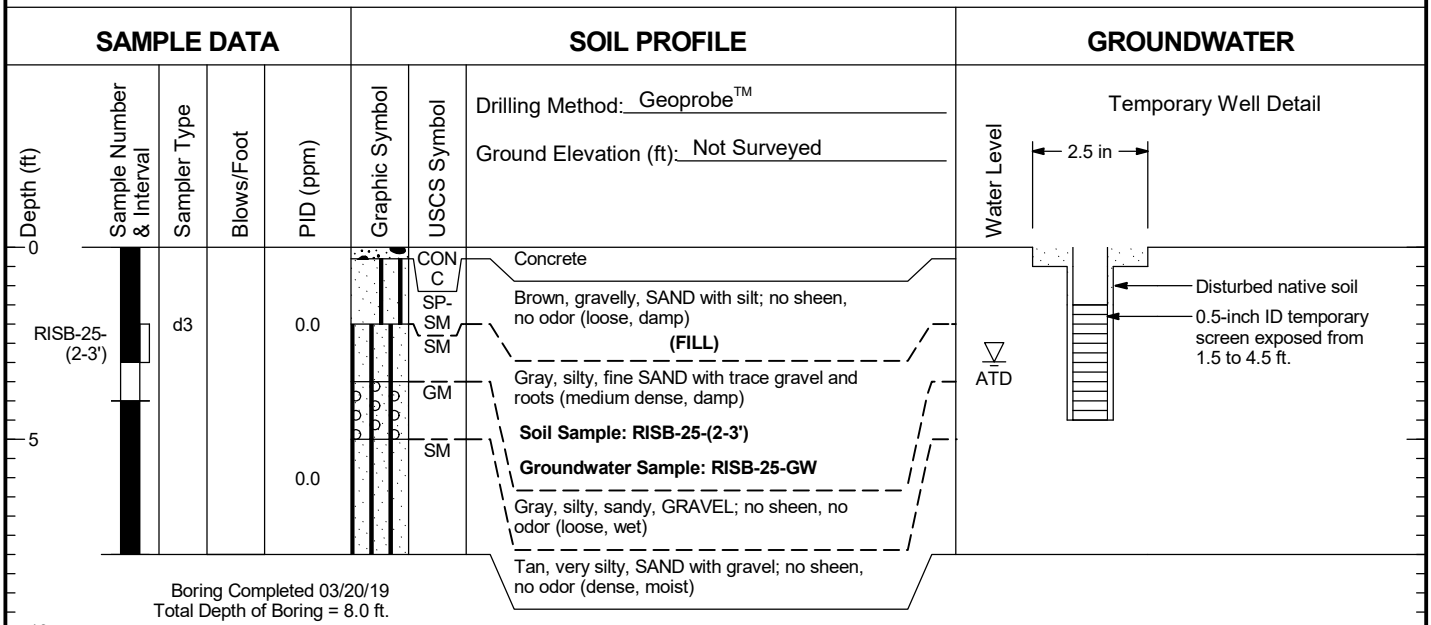
Notes:
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2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-24	Figure D-24

RISB-25



Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-25	Figure D-25

RISB-26

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Rotosonic

Ground Elevation (ft): Not Surveyed

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Description
0				0.5		AC	Asphalt
						SM	Gray-brown, silty, fine to medium SAND with trace gravel; no sheen, no odor (medium dense, moist to wet) **(FILL)**
	RISB-26-(2-3')	d4		2.4			
				3.0		SM	**Soil Sample: RISB-26-(2-3')**
5							Brown, silty, fine SAND with trace gravel; no sheen, no odor (medium dense, moist to wet)
	RISB-26-(6-7')			180			**Soil Sample: RISB-26-(6-7')**
				40.4			
10						SM	Gray, silty, fine SAND with gravel; no sheen, no odor (dense, moist to wet) **(GLACIAL TILL)**
				202			
15							- becomes very dense
				262			
				215			**Groundwater Sample: RISB-26-GW**
20				309			
						SP-SM	Gray, fine SAND with silt and gravel; no sheen, no odor (very dense, damp to moist)
	RISB-26-(24-25')			714			**Soil Sample: RISB-26-(24-25')**
25				670		SM	Gray, silty, fine SAND with gravel; no sheen, no odor (very dense, damp to moist)
				266			
30							- decrease in gravel to trace gravel
				68.3			
				202			
35							

Temporary Well Detail

Water Level

4 in

Temporary well for grab sample

2-inch diameter, Schedule 40, PVC casing

2-inch diameter, Schedule 40, PVC screen (0.020-inch slot size)

Collapsed boring soil

3-foot bentonite plug seal post groundwater sample collection

ATD

Notes:
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2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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TECT Aerospace Leasehold
Everett, Washington

Log of Temporary Well
RISB-26

Figure
D-26
(1 of 2)

RISB-26

SAMPLE DATA				SOIL PROFILE			GROUNDWATER	
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft): Not Surveyed	Water Level
35				14.7		SM	Gray, silty, fine SAND with gravel; no sheen, no odor (very dense, damp to moist) - with cobbles	Temporary Well Detail
40				16.7 9.6				
45	RISB-26-(44-45')			34.7				

Boring Completed 04/02/19
Total Depth of Boring = 45.0 ft.

50
55
60
65
70

Notes:
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2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
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222057. 3/19/26 N:\PROJECTS\022057.GPJ WELL LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-26	Figure D-26 (2 of 2)

RISB-27

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Rotosonic

Ground Elevation (ft): Not Surveyed

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Description
0				2.6		AC	Asphalt
				17.7		SP-SM	Brown, medium SAND with silt and gravel; no sheen, no odor (medium dense, moist) **(FILL)**
	RISB-27-(2-3')	d4				SM	
				33.8		SM	Gray, silty, fine to medium SAND with gravel (reworked till); no sheen, no odor (medium dense, moist)
5						SM	**Soil Sample: RISB-27-(2-3')**
				21.7		SM	Gray and brown, silty, fine to medium SAND with gravel; no sheen, no odor (medium dense, moist)
						SM	Brown, silty, fine SAND with gravel; no sheen, no odor (medium dense, moist)
				12.5		SM	Gray, silty, fine SAND with gravel (reworked till); no sheen, no odor (dense, damp to moist)
10				14.6			
				14.0			Brown, silty, fine SAND with gravel; no sheen, no odor (medium dense, moist to wet)
				17.9			Gray, silty, fine SAND with gravel; no sheen, no odor (dense, damp to moist) **(GLACIAL TILL)**
15				4.4			- with trace cobbles
							- without cobbles
				4.7			- becomes very dense
							- with cobbles
							- without cobbles
20				3.0			
				3.6		SP	Fine to medium SAND lens
						SM	Gray, silty, fine SAND with gravel; no sheen, no odor (very dense, damp to moist)
				4.3			**Groundwater Sample: RISB-27-GW**
25				3.7			
				4.5			
30				6.5			- becomes gravelly
				12.9			
35							

GROUNDWATER

Water Level: ATD

Temporary Well Detail

4 in

- Temporary well for grab sample
- 2-inch diameter, Schedule 40, PVC casing
- 2-inch diameter, Schedule 40, PVC screen (0.020-inch slot size)
- Collapsed boring soil
- 3-foot bentonite plug seal post groundwater sample collection

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold
Everett, Washington

Log of Temporary Well
RISB-27

Figure
D-27
(1 of 2)

RISB-27

SAMPLE DATA				SOIL PROFILE			GROUNDWATER	
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft): Not Surveyed	Water Level
35				3.0		SM	Gray, silty, fine SAND with gravel; no sheen, no odor (very dense, damp to moist) - with gravel	Temporary Well Detail
40	RISB-27-(39-40')			38.9 GS			**Soil Sample: RISB-27-(39-40')** - becomes gravelly	
				23.8				
45	RISB-27-(44-45')			30.4 GS			**Soil Sample: RISB-27-(44-45')**	

Boring Completed 04/02/19
Total Depth of Boring = 45.0 ft.

50
55
60
65
70

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\022057.GPJ WELL LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold
Everett, Washington

Log of Temporary Well
RISB-27

Figure
D-27
(2 of 2)

RISB-28

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Geoprobe™

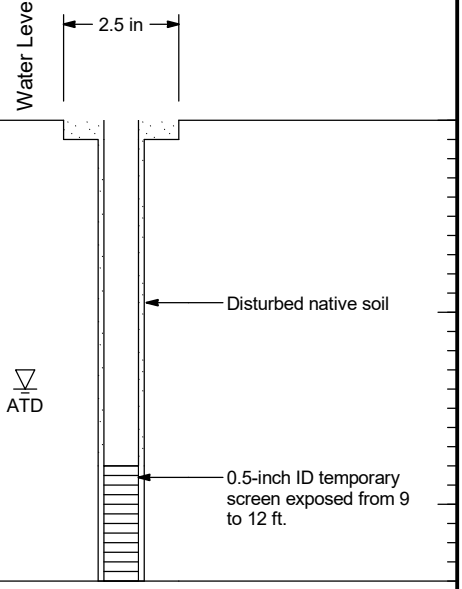
Ground Elevation (ft): Not Surveyed

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Profile
0	RISB-28-(0.7-1.7')	d4		0.0		CONC	Concrete
						SM	- heavy, colorless sheen directly below concrete slab
							Gray, silty, gravely, fine to medium SAND with trace cobbles; slight sheen, slight petroleum odor (loose, dry)
5				0.0		SM	**(FILL)**
							Soil Sample: RISB-28-(0.7-1.7')
							- gray staining
							Tan-brown, very silty, fine SAND with trace gravel (medium dense, damp)
							- becomes moist
10	RISB-28-(11-12')			0.0			- becomes light gray
							Soil Sample: RISB-28-(11-12')
							Groundwater Sample: RISB-28-GW

Boring Completed 03/19/19
Total Depth of Boring = 12.0 ft.

Water Level: ATD

Temporary Well Detail



15 20 25 30 35

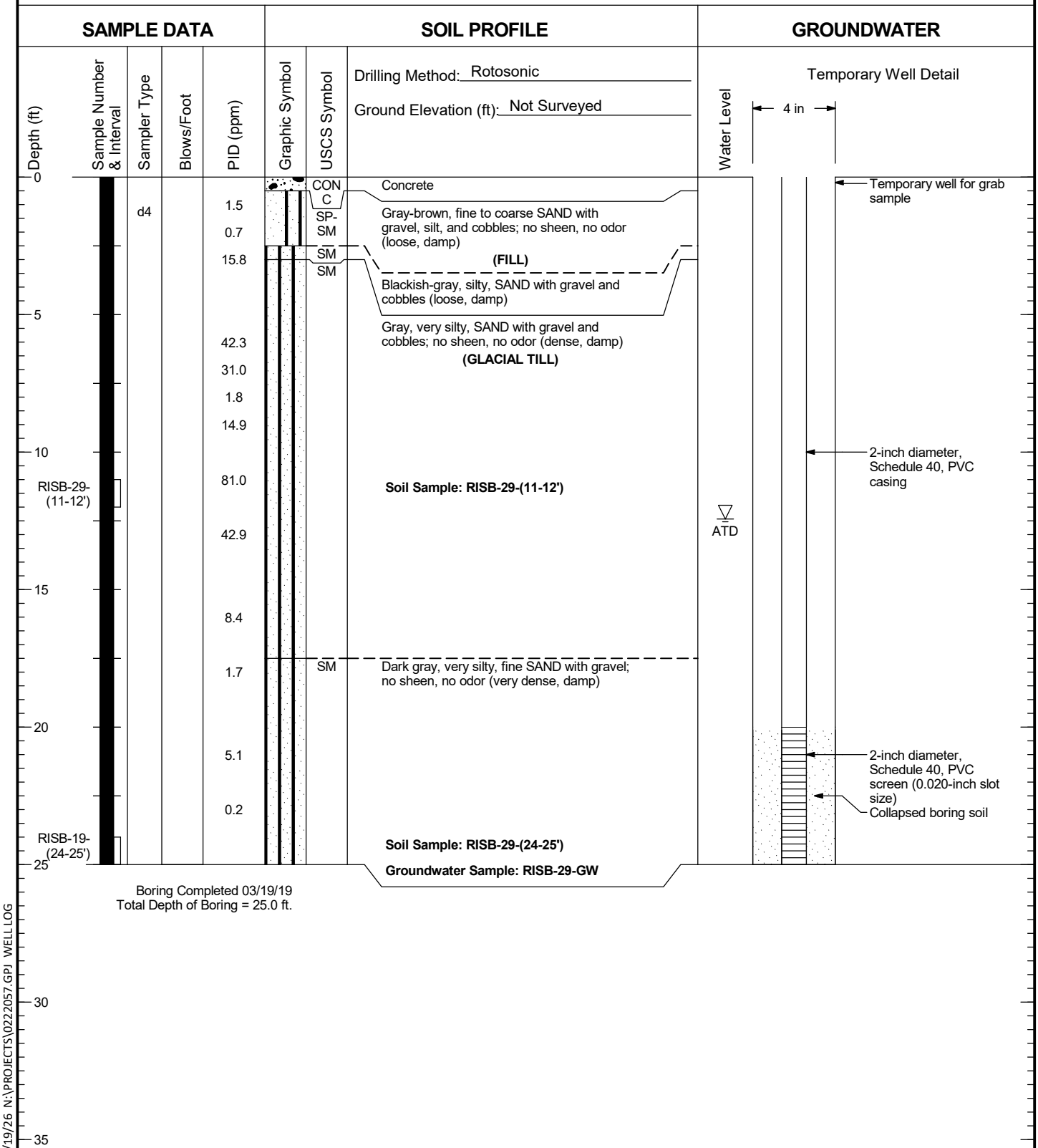
Notes:
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2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-28	Figure D-28

RISB-29



Boring Completed 03/19/19
Total Depth of Boring = 25.0 ft.

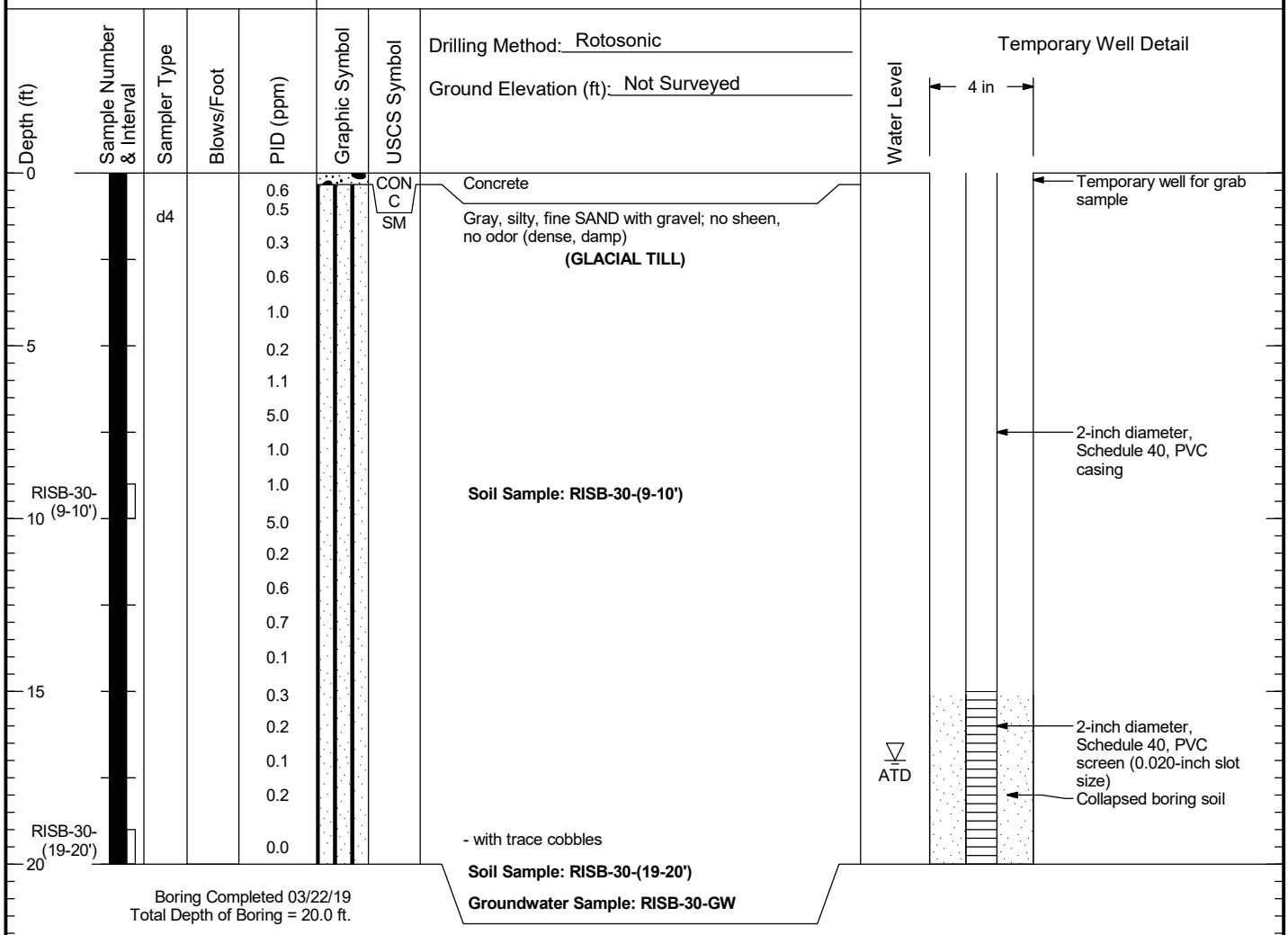
Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-29	Figure D-29

RISB-30



Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
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3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-30	Figure D-30

RISB-31

SAMPLE DATA

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)
0				
		d4		0.8
	RISB-31-(2-3')			0.1
				0.7
				1.0
5				0.7
				1.1
	RISB-31-(6.5-7.5')			GS 2.6
				0.7
				0.8
10				0.2
				0.2
				0.1
				0.1
	RISB-31-(14-15')			0.1
15				GS

SOIL PROFILE

Drilling Method: Rotosonic

Ground Elevation (ft): Not Surveyed

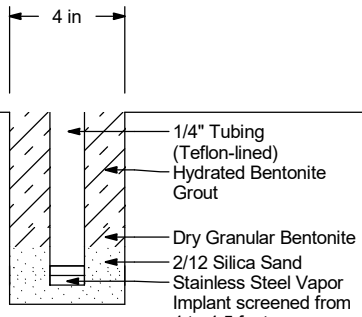
Graphic Symbol	USCS Symbol	
	AC	Asphalt
	SW	
	SM	Brown, gravelly, fine to coarse SAND with cobbles; no sheen, no odor (loose, damp) **(FILL)**
	SP-SM	
	SM	Gray-brown, silty, fine to medium SAND with gravel; no sheen, no odor (medium dense, damp)
		Dark brown, fine to medium SAND with organics and silt (loose, damp)
		Gray, silty and gravelly, fine to medium SAND with cobbles; no sheen, no odor (dense, damp) **(GLACIAL TILL)**
		Soil Sample: RISB-31-(2-3')
		Groundwater Sample: RISB-31-GW
	SM	**Soil Sample: RISB-31-(6.5-7.5')**
	SM	Gray, very silty, fine to medium SAND with gravel; no sheen, no odor (dense, dry)
		Gray, silty and gravelly, fine to medium SAND with cobbles; no sheen, no odor (dense, damp)
		Soil Sample: RISB-31-(14-15')

Boring Completed 03/22/19
Total Depth of Boring = 15.0 ft.

GROUNDWATER

Water Level: Groundwater Not Measured.

Temporary Well Detail



20
25
30
35

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

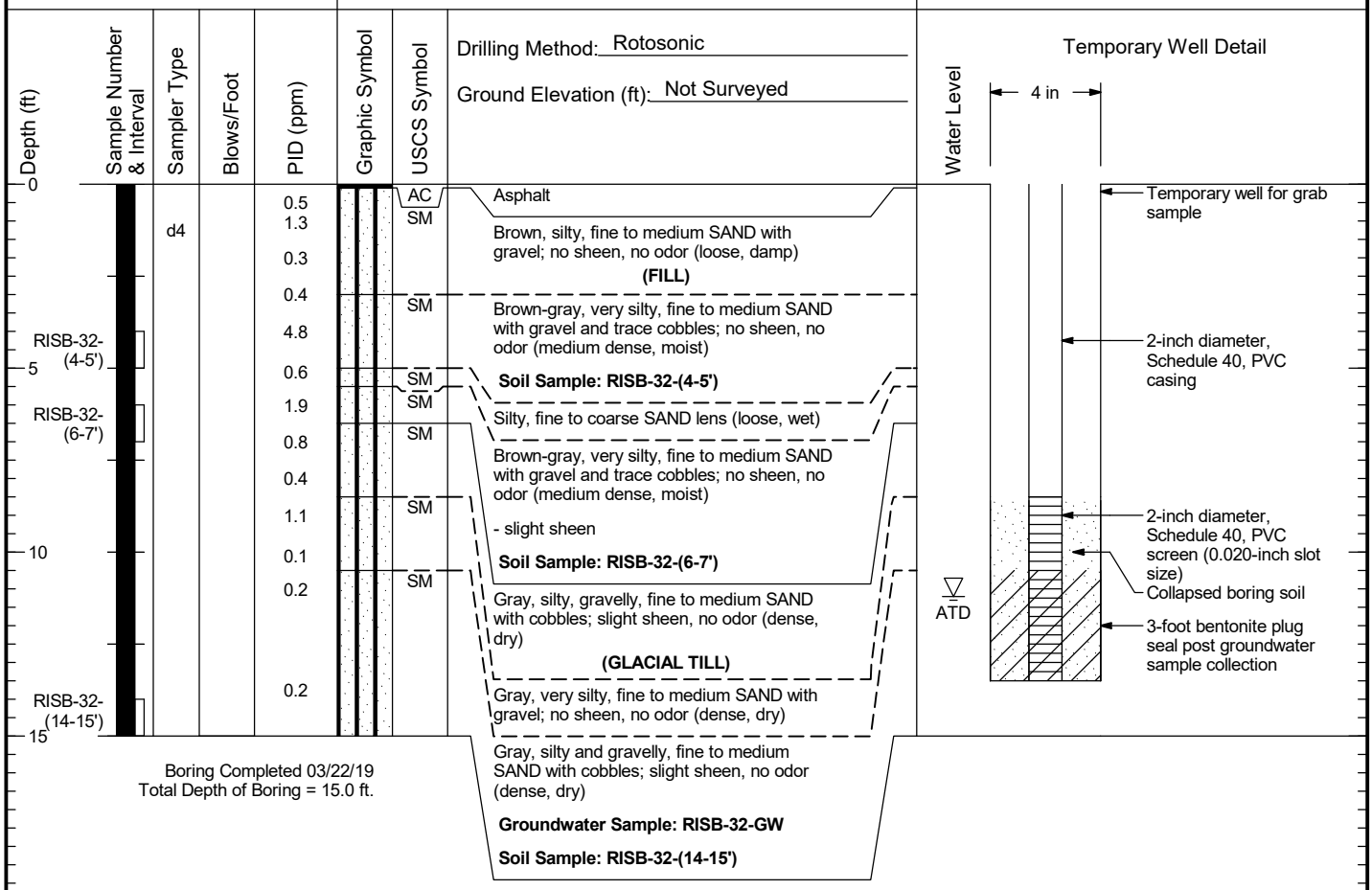
LANDAU ASSOCIATES

TECT Aerospace Leasehold
Everett, Washington

Log of Temporary Well
RISB-31

Figure
D-31

RISB-32



Boring Completed 03/22/19
Total Depth of Boring = 15.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-32	Figure D-32

RISB-33

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft): Not Surveyed
0						CONC	Concrete
	RISB-33-(2.5-3.5')	d3		0.0		SW-SM	Brown, fine to coarse SAND with silt and gravel; very slight colorless sheen, very slight petroleum like odor (medium dense, damp) **(FILL)**
						SM	**Soil Sample: RISB-33-(2.5-3.5')**
5						SM	Tan, very silty, fine SAND with trace gravel (rust mottled); no sheen, no odor (dense, damp)
				0.0			Gray, very silty, fine SAND with gravel; no sheen, no odor (very dense, damp) **(GLACIAL TILL)**
	RISB-33-(9-10')						**Soil Sample: RISB-33-(9-10')**
10							Groundwater Not Measured.

Boring Completed 03/15/19
Total Depth of Boring = 10.0 ft.

15
20
25
30
35

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ SOIL BORING LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold
Everett, Washington

Log of Boring RISB-33

Figure
D-33

RISB-34

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	
0						CONC	Drilling Method: Geoprobe™ Ground Elevation (ft): Not Surveyed Concrete
						SP	Brown, medium to coarse SAND with trace silt and gravel; no sheen, no odor (loose, damp)
	RISB-34-(2-3')	d3		0.0		SM	**(FILL)** - becomes gray - becomes brown with rust mottles **Soil Sample: RISB-34-(2-3')**
5	RISB-34-(5-6')			0.0		SM	Grayish tan, very silty, fine SAND with trace gravel; no sheen, no odor (dense, damp) **Soil Sample: RISB-34-(5-6')**
10							Gray, silty, fine to medium SAND with trace coarse sand and gravel; no sheen, no odor (dense, damp) **(GLACIAL TILL)**

Groundwater Not Measured.

Boring Completed 03/15/19
Total Depth of Boring = 10.0 ft.

15
20
25
30
35

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ SOIL BORING LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold
Everett, Washington

Log of Boring RISB-34

Figure
D-34

RISB-35

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Geoprobe™

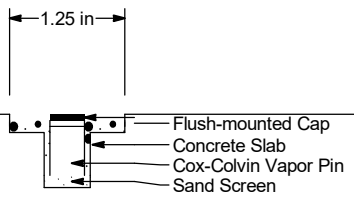
Ground Elevation (ft): Not Surveyed

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Profile
0						CONC	Concrete
2		d3		0.0		SW-SM	Brown-gray, fine to coarse SAND with silt and gravel; no sheen, no odor (loose, damp) **(FILL)** **Soil Gas Sample: RISG-35-190409**
4	RISB-35-(3.5-4.5')						**Soil Sample: RISB-35-(3.5-4.5')**
						SM	Gray, silty, fine SAND with trace gravel; no sheen, no odor (dense, damp) **(GLACIAL TILL)**
6				0.0			
8							
10							

Boring Completed 03/14/19
Total Depth of Boring = 9.0 ft.

Water Level: Groundwater Not Measured.

Vapor Well/implant Detail



Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\022057.GPJ WELL LOG

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TECT Aerospace Leasehold
Everett, Washington

Log of Vapor Well/Implant
RISB-35

Figure
D-35

RISB-36

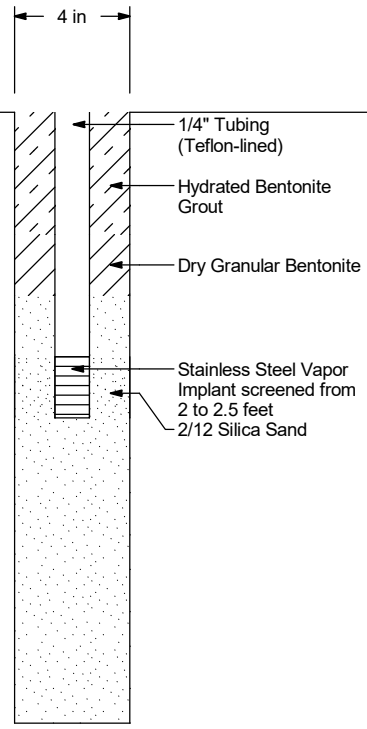
SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Water Level

Drilling Method: Rotosonic

Ground Elevation (ft): Not Surveyed

Depth (ft)	Sample Number & Interval	PID (ppm)	USCS Symbol	
0			AC	Asphalt
		0.3	SM	Gray, very silty, gravelly, fine to medium SAND with trace cobbles; no sheen, no odor (medium dense, damp) **(FILL)**
		0.1		- rust mottling
	d4			
2		0.4		
		0.4		
4		0.8		**Soil Gas Sample: RISG-36-190409**
		0.7	SM	Brown, very silty, fine to medium SAND with gravel; slight sheen, no odor (medium dense, damp)
6		1.1		**Soil Sample: RISB-36-(6-7')**
	RISB-36-(6-7')			
		0.3	SM	Gray, silty, gravelly, fine to medium SAND with trace cobbles; no sheen, no odor (dense, dry) **(GLACIAL TILL)**
8		0.5		
		3.4		**Soil Sample: RISB-36-(9-10')**
	RISB-36-(9-10')			
10		0.3		

Vapor Well/implant Detail



Notes:
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3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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TECT Aerospace Leasehold Everett, Washington	Log of Vapor Well/Implant RISB-36	Figure D-36 (1 of 2)

RISB-36

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft): Not Surveyed	Water Level
				1.1		SM	Gray, silty, gravelly, fine to medium SAND with trace cobbles; no sheen, no odor (dense, dry) **(GLACIAL TILL)**	
12				0.6				
				0.0				
14				0.4			- becomes moist	
				0.7		SM	Very silty, fine to medium SAND with gravel and trace cobbles; no sheen, no odor (dense, moist)	
16				0.3				
				0.1				
18				0.0		SM	Brown-gray, silty, fine SAND with trace gravel; no sheen, no odor (dense, moist)	
				0.1		SM	Very silty, fine to medium SAND with gravel and trace cobbles; no sheen, no odor (dense, moist)	▽ ATD
	RISB-36-(19-20')						**Soil Sample: RISB-36-(19-20')**	
20								

Boring Completed 03/21/19
Total Depth of Boring = 20.0 ft.

Vapor Well/implant Detail

22

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
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3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold
Everett, Washington

Log of Vapor Well/Implant
RISB-36

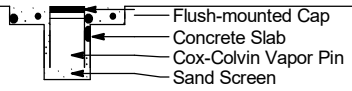
Figure
D-36
(2 of 2)

RISB-37

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft): Not Surveyed
0						CONC	Concrete
	RISB-37-(0.5-1.5')	d3		0.0		SP-SM	Brown, gravelly, medium to coarse SAND with silt; no sheen, no odor (loose, damp) **(FILL)** **Soil Sample: RISB-37-(0.5-1.5')** **Soil Gas Sample: RISG-37-190409** - slight petroleum like odor, no sheen - rock in liner
2							
4						SM	Gray, very silty, fine SAND with trace gravel; no sheen, no odor (dense, damp) **(GLACIAL TILL)**
6							
				0.0			
8							
	RISB-37-(9-10')						**Soil Sample: RISB-37-(9-10')**
10							

Water Level: Groundwater Not Measured.

Vapor Well/implant Detail



Boring Completed 03/15/19
Total Depth of Boring = 10.0 ft.

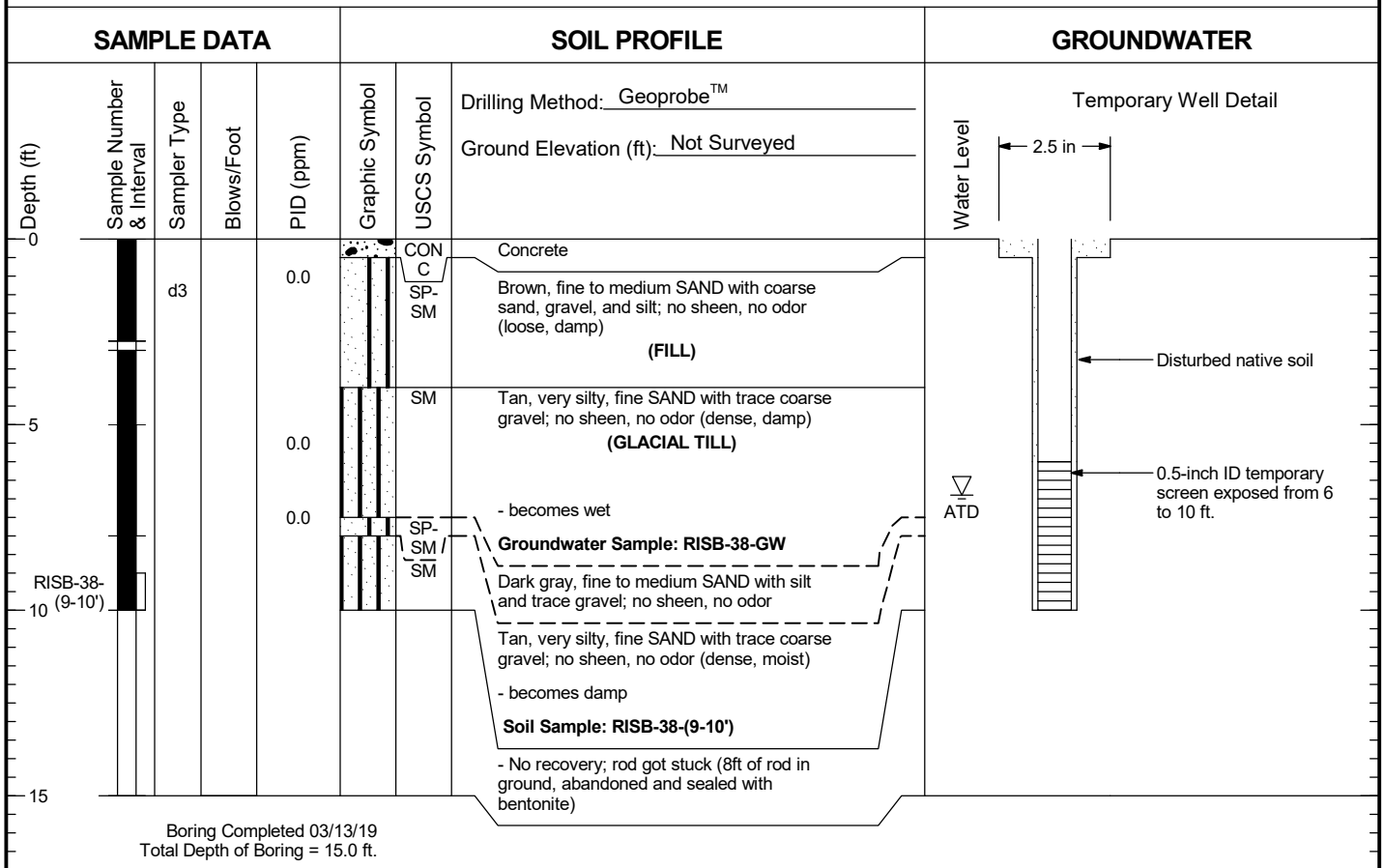
Notes:
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3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\022057.GPJ WELL LOG

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TECT Aerospace Leasehold Everett, Washington	Log of Vapor Well/Implant RISB-37	Figure D-37

RISB-38



Boring Completed 03/13/19
Total Depth of Boring = 15.0 ft.

Notes:
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222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

LANDAU ASSOCIATES

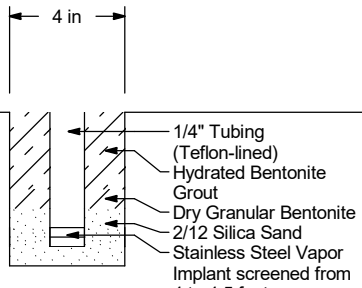
TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-38	Figure D-38

RISB-39

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft): Not Surveyed
0				1.0		AC	Asphalt
		d4		0.6		SM	Gray-brown, silty, gravelly, fine to medium SAND with trace cobbles; no sheen, no odor (loose, dry)
				0.5		SM	**(FILL)**
				1.3		SM	Gray-brown, very silty, fine to medium SAND with trace gravel; no sheen, no odor (medium dense, damp)
5				1.3			**Groundwater Sample: RISB-39-GW**
				0.6			Gray-brown, silty, gravelly, fine to medium SAND with trace cobbles; no sheen, no odor (loose, damp)
				0.4		SM	Brown, very silty, fine to medium SAND with trace gravel and cobbles; no sheen, no odor (medium dense, damp)
				0.5		SM	Gray, silty, gravelly, fine to medium SAND with trace cobbles; no sheen, no odor (dense, damp)
				1.4			**(GLACIAL TILL)**
				1.3			**Soil Sample: RISB-39-(11-12')**
10				1.6			
	RISB-39-(11-12')			1.9			
				0.8			
				0.5			
				1.6			
15				1.6			
				1.2			
				0.2			
				0.6			
				0.6			
20				0.1			
				0.2		SM	Dark gray, very silty, fine SAND with gravel; no sheen, no odor (very dense, moist)
				0.5			
				0.2			
	RISB-39-(24-25')			0.4			**Soil Sample: RISB-39-(24-25')**
25							
30							
35							

Water Level: ATD

Temporary Well Detail



Boring Completed 03/20/19
Total Depth of Boring = 25.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-39	Figure D-39

RISB-40

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Rotosonic

Ground Elevation (ft): Not Surveyed

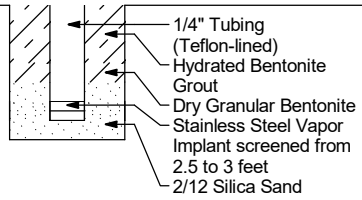
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Description
0				0.2		AC	Asphalt
		d4		0.5		SP-SM	Brown-gray, fine to coarse SAND with silt and gravel; no sheen, no odor (loose, damp)
	RISB-40-(2-3')			0.8		SM	**(FILL)**
				0.3		SM	Dark gray-brown, very silty, fine to medium SAND with organics and trace gravel and cobbles; no sheen, no odor (loose, damp)
5				0.6			**Soil Sample: RISB-40-(2-3')**
				0.4			**Groundwater Sample: RISB-40-GW**
				0.3		SM	Brown-gray, very silty and gravelly, SAND with trace cobbles; no sheen, no odor (loose to medium dense, damp)
				0.6			- gray staining with irritant odor at 3-3.4 ft
	RISB-40-(9-10')			1.0			Gray, silty, gravelly, fine to medium SAND with cobbles; no sheen, no odor (dense, damp)
10				1.3			**(GLACIAL TILL)**
							Soil Sample: RISB-40-(9-10')
15							- large cobbles
							- becomes moist
	RISB-40-(19-20')						**Soil Sample: RISB-40-(19-20')**
20							

Boring Completed 03/21/19
Total Depth of Boring = 20.0 ft.

GROUNDWATER

Water Level: Groundwater Not Measured.

Temporary Well Detail



Notes:
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3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

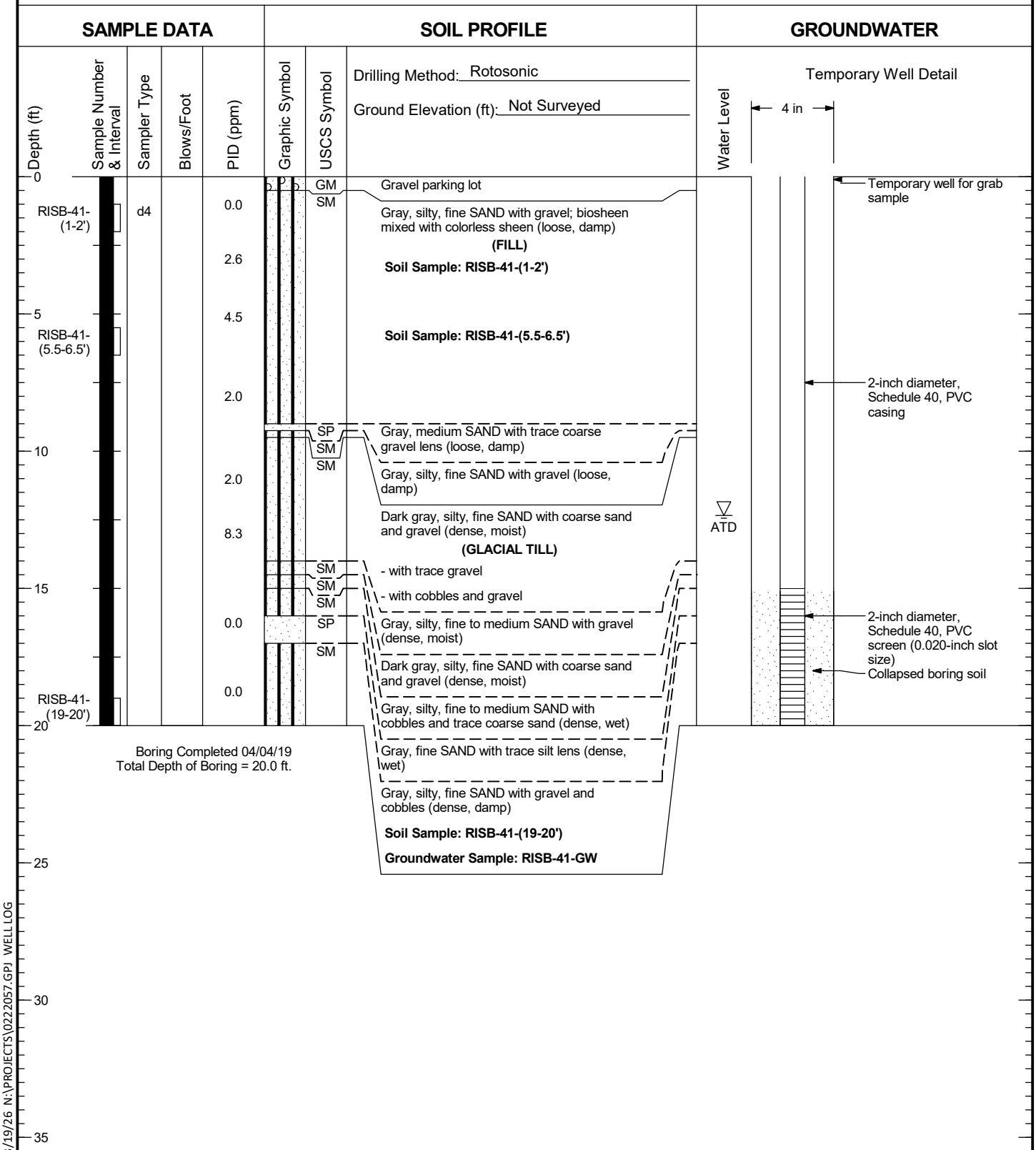
LANDAU ASSOCIATES

TECT Aerospace Leasehold
Everett, Washington

Log of Temporary Well
RISB-40

Figure
D-40

RISB-41



Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

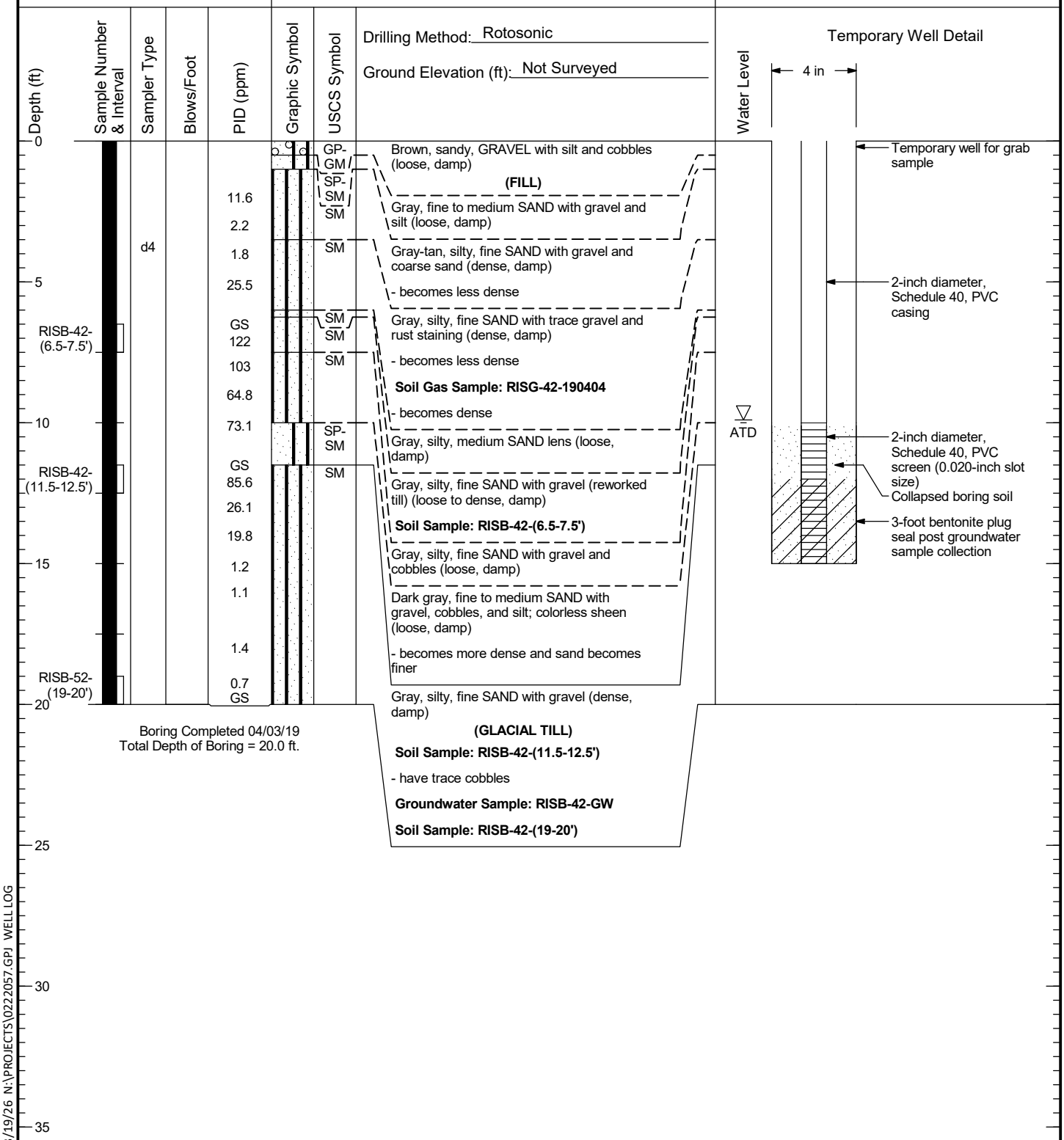
LANDAU ASSOCIATES

TECT Aerospace Leasehold
Everett, Washington

Log of Temporary Well
RISB-41

Figure
D-41

RISB-42



Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-42	Figure D-42

RISB-43

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Rotosonic

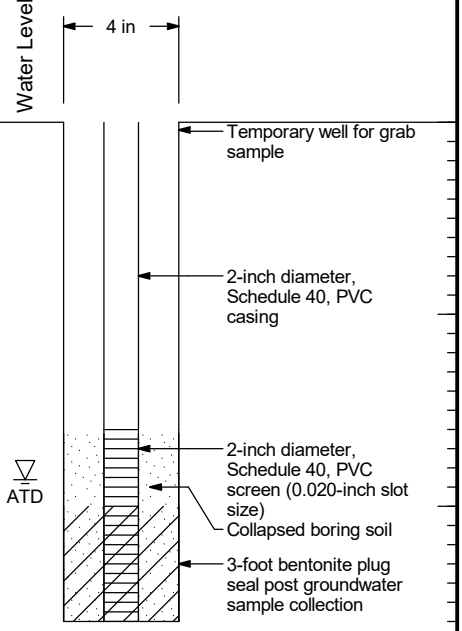
Ground Elevation (ft): Not Surveyed

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Profile
0						CONC	Concrete
		d4		0.0		SM	Tan, silty, fine SAND with gravel; no sheen, no odor (medium dense, damp) **(FILL)**
	RISB-43-(3-4')			0.0			**Soil Sample: RISB-43-(3-4')** - dull, colorless, petroleum like sheen
5						SM	Gray, silty, fine SAND with gravel; no sheen, no odor (dense, moist) **(GLACIAL TILL)**
	RISB-43-(6-7')			0.0			**Soil Sample: RISB-43-(6-7')** - becomes moist to wet
				0.0			
10							**Groundwater Sample: RISB-43-GW**
	RISB-43-(14-15')						**Soil Sample: RISB-43-(14-15')**
15							

Boring Completed 04/04/19
Total Depth of Boring = 15.0 ft.

GROUNDWATER

Temporary Well Detail



20
25
30
35

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-43	Figure D-43

RISB-44

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

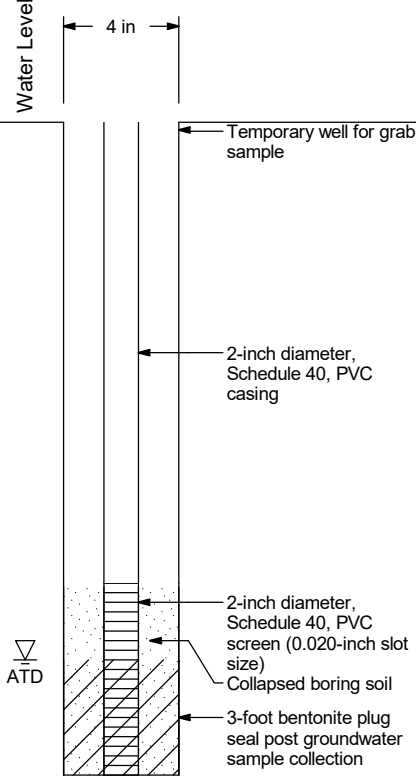
Drilling Method: Rotosonic

Ground Elevation (ft): Not Surveyed

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Description
0						AC	Asphalt
		d4		40.0		SP-SM	Brown, fine to coarse SAND with silt and gravel; no sheen, no odor (loose, damp) **(FILL)**
				20.0		SP-SM	
						SP	Tan, fine to coarse SAND with silt and gravel; no sheen, no odor (loose, damp)
5	RISB-44-(5-6')			80.0		SM	Gray, fine SAND with silt and trace gravel; slight petroleum-like colorless sheen, organic odor (medium dense, damp)
						SM	Brown-gray, silty, fine SAND with gravel and rust mottled; slight petroleum-like colorless sheen, no odor (loose, damp)
				47.0			**Soil Sample: RISB-44-(5-6')**
10	RISB-44-(10.5-11.5')			190			Gray, fine SAND with trace gravel; no sheen, no odor (dense, moist) **(GLACIAL TILL)** **Soil Sample: RISB-44-(10.5-11.5')**
				50.0			
15				150			**Groundwater Sample: RISB-44-GW**
20	RISB-44-(19-20')			8.8			**Soil Sample: RISB-44-(19-20')**

Boring Completed 04/03/19
Total Depth of Boring = 20.0 ft.

Temporary Well Detail



Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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TECT Aerospace Leasehold
Everett, Washington

Log of Temporary Well
RISB-44

Figure
D-44

RISB-45

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Rotosonic

Ground Elevation (ft): Not Surveyed

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Description
0						AC	Asphalt
	RISB-45-(1.5-2')	d4		72.0		SP / SM	Brown-black, gravelly, SAND with trace silt **(FILL)**
				115		SP-SM / SM	Tan, silty, fine SAND with gravel; no sheen, organic odor (medium dense, damp) **Soil Sample: RISB-45-(1.5-2')**
5				180			Gray, gravelly, fine SAND with silt; slight colorless petroleum-like sheen, organic odor (loose, damp)
				134		SM	Tan, silty, fine SAND with gravel (loose, damp) - becomes medium dense and moist - becomes dense
10				3344		SM	Gray, silty, fine SAND with gravel (medium dense, damp) **(WEATHERED GLACIAL TILL)** - becomes less dense and has rust mottles - becomes dense
	RISB-45-(14-15')			>10000			Gray, very silty, fine SAND with gravel; no sheen, sweet odor (dense, moist) **(GLACIAL TILL)**
15						SP	**Soil Sample: RISB-45-(14-15')** - becomes wet and still has a strong sweet, minty odor
						SM / SP / SM	Gray, fine to medium SAND with gravel (dense, wet)
20				24.6			Gray, silty, fine SAND with gravel; strong, sweet, organic odor **Groundwater Sample: RISB-45-GW**
							Gray, fine to medium SAND with gravel (dense, wet)
25							Gray, silty, fine SAND with gravel and trace cobbles (dense, damp)
				17.5			- becomes very dense
				11.7			- becomes dense
30							
				13.5			- increase in cobbles
	RISB-45-(34-35')			15.0			**Soil Sample: RISB-45-(34-35')**
35							

Water Level: ATD

Temporary Well Detail

4 in

- Temporary well for grab sample
- 2-inch diameter, Schedule 40, PVC casing
- 2-inch diameter, Schedule 40, PVC screen (0.020-inch slot size)
- Collapsed boring soil
- 3-foot bentonite plug seal post groundwater sample collection

Boring Completed 04/04/19
Total Depth of Boring = 35.0 ft.

Notes:
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3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold
Everett, Washington

Log of Temporary Well
RISB-45

Figure
D-45

RISB-46

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Rotosonic

Ground Elevation (ft): Not Surveyed

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Profile
0		d4		1.5		AC	Asphalt
				22.0		SP-SM	Gray, gravel, medium to coarse SAND with silt (loose, damp)
						SM	**(FILL)**
	RISB-46-(3-4')						Tan, silty, fine SAND with coarse sand and gravel (loose, damp)
				94.0			- becomes slightly loose to dense
5							**Soil Sample: RISB-46-(3-4')**
							- colorless sheen at 3.5 ft
				140			- becomes sandier with medium sand
	RISB-46-(7.5-8.5')			224		SP	- becomes loose
				209		SP	
						SM	Gray, fine to coarse SAND with trace gravel and silt (loose, damp)
10				156		SM	**Soil Sample: RISB-46-(7.5-8.5')**
				111			Gray, fine to medium SAND with trace silt (loose, damp)
				119		SM	Gray, silty fine to coarse SAND with gravel (loose, damp)
				154			
15						SM	Dark gray, silty, fine SAND with trace gravel (reworked till) (loose, damp)
				92.6			Gray-tan, silty, fine to medium SAND with trace gravel (loose, damp)
							Groundwater Sample: RISB-46-GW
				129			Dark gray, silty, fine SAND with gravel (dense, damp)
20							**(GLACIAL TILL)**
				5.5			- trace cobbles
				211			
25							
				1.2			
	RISB-46-(29.5-30.5')			230			**Soil Sample: RISB-46-(29.5-30.5')**
30							
				0.5			- becomes very dense
							- becomes dense
				0.7			
35							

GROUNDWATER

Water Level: ATD

Temporary Well Detail

4 in

- Temporary well for grab sample
- 2-inch diameter, Schedule 40, PVC casing
- 2-inch diameter, Schedule 40, PVC screen (0.020-inch slot size)
- Collapsed boring soil
- 3-foot bentonite plug seal post groundwater sample collection

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\022057.GPJ WELL LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold
Everett, Washington

Log of Temporary Well
RISB-46

Figure
D-46
(1 of 2)

RISB-46

SAMPLE DATA				SOIL PROFILE			GROUNDWATER	
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft): Not Surveyed	Water Level
35						SM	Dark gray, silty, fine SAND with gravel (dense, damp) **(GLACIAL TILL)**	Temporary Well Detail
				0.1			- becomes very dense	
	RISB-46-(39-40')			1.1			**Soil Sample: RISB-46-(39-40')**	
40								

Boring Completed 04/03/19
Total Depth of Boring = 40.0 ft.

45

50

55

60

65

70

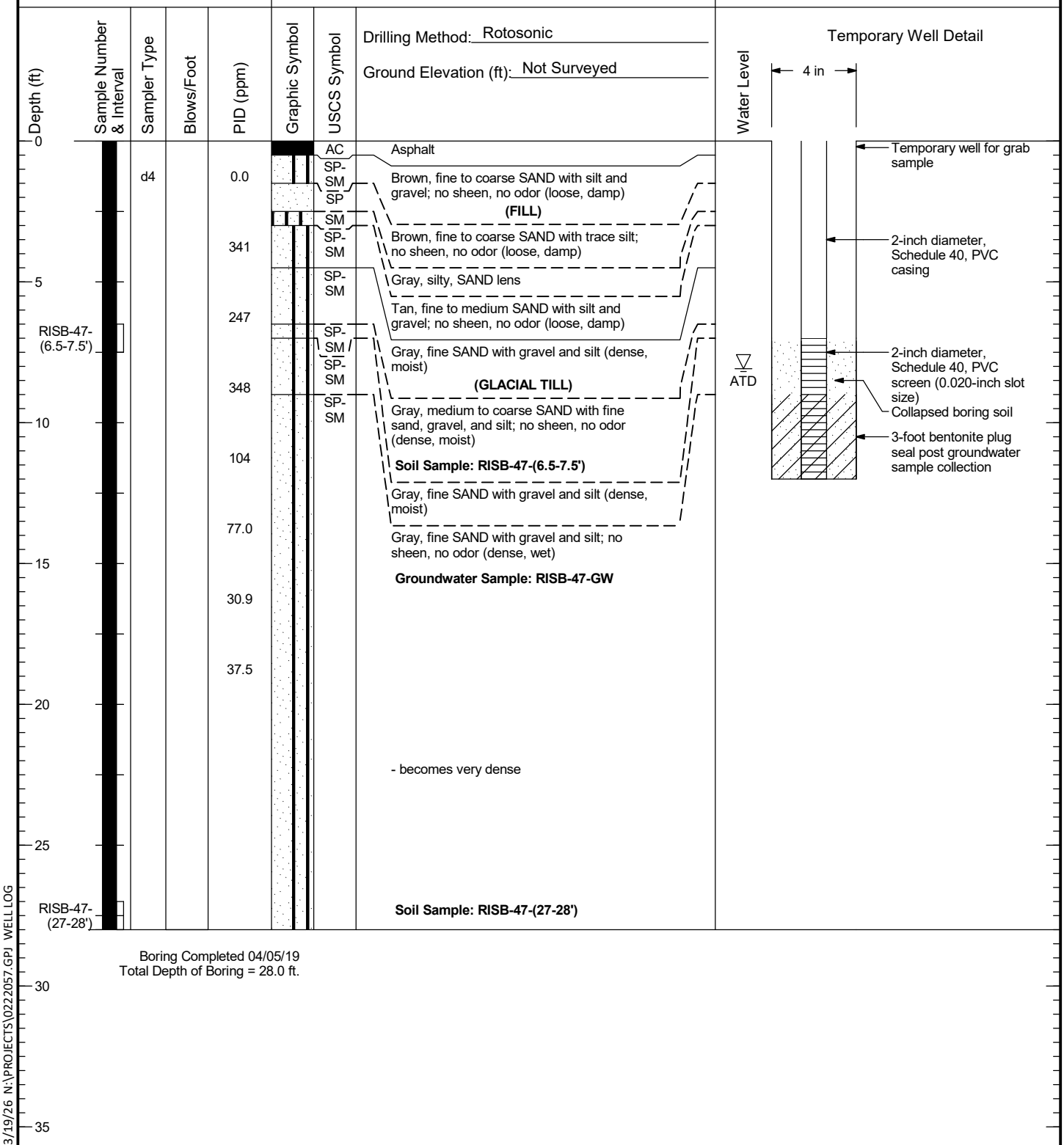
Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\022057.GPJ WELL LOG

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TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-46	Figure D-46 (2 of 2)

RISB-47



Boring Completed 04/05/19
Total Depth of Boring = 28.0 ft.

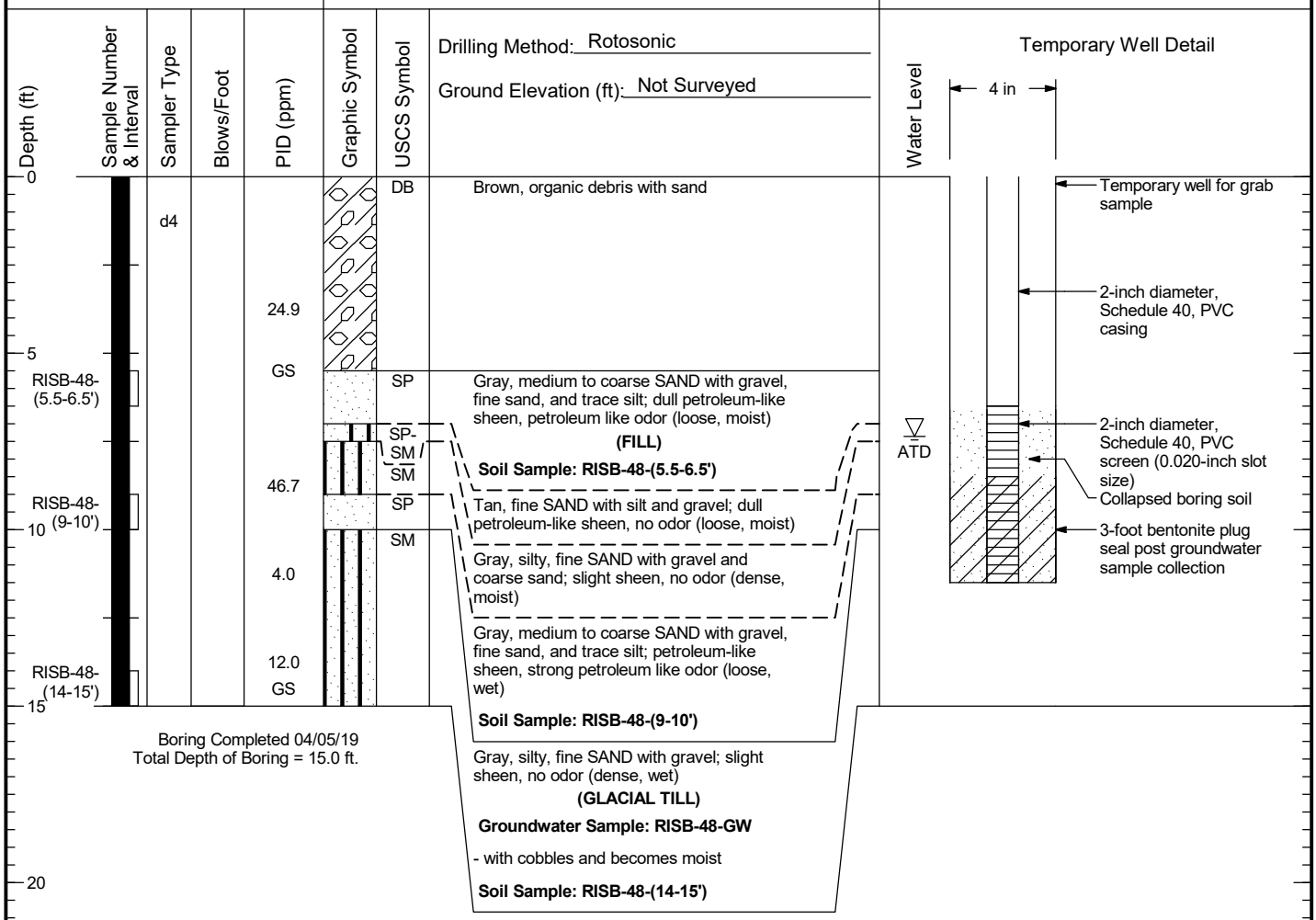
Notes:
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3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\022057.GPJ WELL LOG

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TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-47	Figure D-47

RISB-48



Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-48	Figure D-48

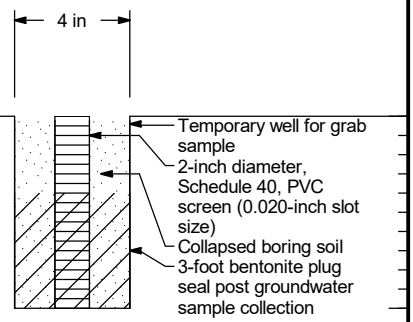
RISB-49

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Water Level
0				0.6		CONC	Concrete
		d4		4.2		SP-SM	Dark brown-gray, fine to medium SAND with silt and gravel; no sheen, no odor (loose, damp)
				5.6		SM	**(FILL)**
				6.6			Dark brown, silty, gravelly, fine to medium SAND with trace cobbles; no sheen, no odor (medium dense, damp)
				6.2			**Groundwater Sample: RISB-49-GW**
5				6.1			- becomes wet
	RISB-49-(6-7')			9.1			**Soil Sample: RISB-49-(6-7')**
				6.5			
				5.4		SM	Dark gray, silty, gravelly, fine SAND with cobbles; no sheen, no odor (dense, dry)
				0.4			**(GLACIAL TILL)**
10				1.0			
				2.6			
				2.0			
				2.4			
				1.3			
15				1.5			
				2.1			
				1.3			
				0.7			
				0.8			
20				0.4			
				0.3			
				0.4			
				0.6			
25	RISB-49-(24-25')			0.4			**Soil Sample: RISB-49-(24-25')**
30							
35							

Drilling Method: Rotosonic

Ground Elevation (ft): Not Surveyed

Temporary Well Detail



Boring Completed 03/20/19
Total Depth of Boring = 25.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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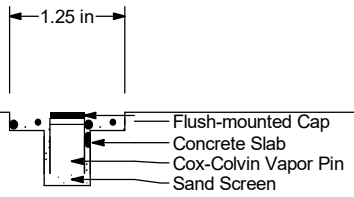
TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-49	Figure D-49

RISB-50

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft): Not Surveyed
0						CONC	Concrete
		d4		0.0		SM	Tan, very silty, fine SAND with trace gravel; no odor (medium dense, damp) **(FILL)** **Soil Gas Sample: RISG-50-190409**
2						SM	Tan, silty, fine to medium SAND with cobbles and gravel; no sheen, no odor (loose, damp)
				0.0			
4				1.2			
6				1.7			
				1.7		SM	Gray, silty, fine to coarse SAND with gravel and cobbles (dense, damp) **(GLACIAL TILL)**
8				0.6			
				0.0			
10				6.9			- becomes moist

Water Level: Groundwater Not Measured.

Vapor Well/implant Detail



Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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TECT Aerospace Leasehold Everett, Washington	Log of Vapor Well/Implant RISB-50	Figure D-50 (1 of 3)

RISB-50

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft): Not Surveyed	Water Level

Vapor Well/implant Detail

Groundwater Not Measured.

SM — Gray, silty, fine to coarse SAND with gravel and cobbles (dense, damp)
(GLACIAL TILL)

12 — 19.8

RISB-50-(13.5-14.5') — 9.7

Soil Sample: RISB-50-(13.5-14.5')

14 — 23.2

9.9

16

18

0.0

0.1

SM — Gray, very silty, gravelly, SAND with trace cobbles; no sheen, no odor (very dense, damp)

20 — 0.4

0.1

22

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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TECT Aerospace Leasehold Everett, Washington	Log of Vapor Well/Implant RISB-50	Figure D-50 (2 of 3)

RISB-50

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Water Level
22				0.5		SM	
						SM	Groundwater Not Measured.
				0.0			
24	RISB-50-(24-25')						

Drilling Method: Rotosonic

Ground Elevation (ft): Not Surveyed

Vapor Well/implant Detail

Gray, silty, fine to medium SAND with gravel and cobbles; no sheen, no odor (dense, damp)

Soil Sample: RISB-50-(24-25')

Boring Completed 03/18/19
Total Depth of Boring = 25.0 ft.

26

28

30

32

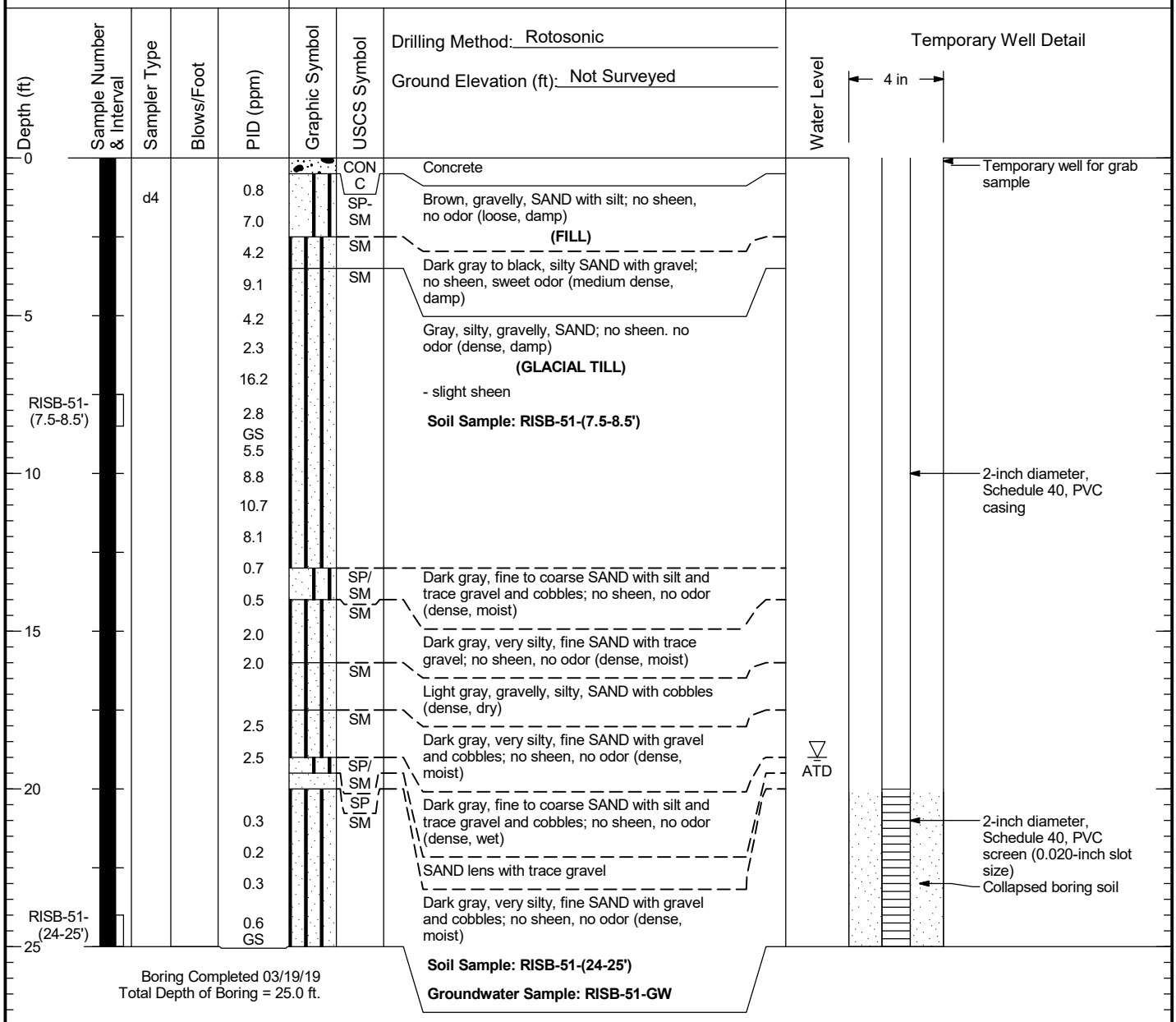
Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\022057.GPJ WELL LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Vapor Well/Implant RISB-50	Figure D-50 (3 of 3)

RISB-51



Boring Completed 03/19/19
Total Depth of Boring = 25.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-51	Figure D-51

RISB-52

SAMPLE DATA

SOIL PROFILE

GROUNDWATER

Drilling Method: Rotosonic

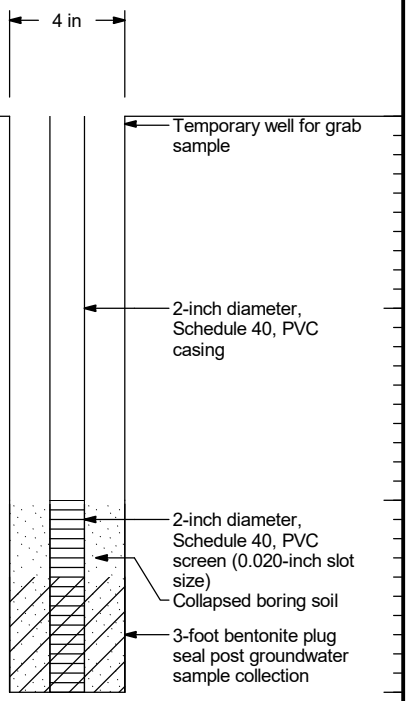
Ground Elevation (ft): Not Surveyed

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Description
0				0.1		AC	Asphalt
		d4		0.3		SP-SM	Brown, gravelly, fine to coarse SAND with silt and trace cobbles; no sheen, no odor (loose, moist)
	RISB-52-(1.5-2.5')			0.2		SM	**(FILL)**
				0.2		SP-SM	**Soil Sample: RISB-52-(1.5-2.5')**
				0.5		SM	
5				0.1		SM	Gray stained, silty, SAND lens; slight dull sheen
				0.3		SM	Brown, gravelly, fine to coarse SAND with silt and trace cobbles; no sheen, no odor (loose, moist)
				0.7			Brown-gray, silty, gravelly, fine to medium SAND; no sheen, no odor (medium dense, moist)
				0.5			
				0.8		SM	Brown, silty, gravelly, fine to medium SAND; no sheen, no odor (loose, damp)
10				2.6			Gray, silty, gravelly, fine to medium SAND with cobbles; no sheen, no odor (dense, damp)
	RISB-52-(10.5-11.5')			2.9			**(GLACIAL TILL)**
				1.0			- becomes moist
				0.7			
				0.9			
15				0.1			Gray, very silty, gravelly, fine to medium SAND with cobbles; no sheen, no odor (dense, dry)
				0.2			
				0.1		SM	**Soil Sample: RISB-52-(10.5-11.5')**
				0.2			**Groundwater Sample: RISB-52-GW**
	RISB-52-(19-20')			0.1			- becomes moist
20							Dark gray, very silty, fine to to medium SAND with gravel and trace cobbles; no sheen, no odor (very dense, moist)
							- becomes damp
							Soil Sample: RISB-52-(19-20')
25							
30							
35							

Boring Completed 03/22/19
Total Depth of Boring = 20.0 ft.

Water Level: ATD

Temporary Well Detail



Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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TECT Aerospace Leasehold
Everett, Washington

Log of Temporary Well
RISB-52

Figure
D-52

RISB-53

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft): Not Surveyed
0						CONC	Concrete
				49(?)		SW-SM	Gray, fine to coarse SAND with gravel and silt; moderate, dull, colorless sheen, strong grease odor (loose, damp) **(FILL)**
	RISB-53-(2-3')	d3		11.0 134(?)		SM	**Soil Sample: RISB-53-(2-3')** - rust mottled
5						ML	Tan, silty, fine SAND with trace gravel; no sheen, no odor
				0.0			Gray, SILT with fine sand and trace gravel; no sheen, no odor (stiff, damp) **(GLACIAL TILL)**
	RISB-53-(9-10')			2.3			**Soil Sample: RISB-53-(9-10')**
10							

Groundwater Not Measured.

Boring Completed 03/14/19
Total Depth of Boring = 10.0 ft.

15
20
25
30
35

Notes:
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2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ SOIL BORING LOG

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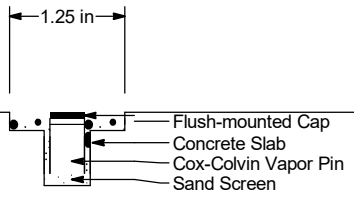
TECT Aerospace Leasehold Everett, Washington	Log of Boring RISB-53	Figure D-53

RISB-54

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft): Not Surveyed
0						CONC	Concrete
		d4		0.0		SP	Gray-tan, medium SAND with trace silt; no sheen, no odor (loose, damp) **(FILL)** **Soil Gas Sample: RISG-54-190325**
2						SM	Tan, silty, fine to medium SAND with gravel (dense, damp)
4				0.0			
6				0.0			
8	RISB-54-(8-9')					SM	Tan, gravelly, silty, medium to coarse SAND; no sheen, no odor (loose, damp) **Soil Sample: RISB-54-(8-9')**
				0.0		SM	Gray, very silty, fine to coarse SAND with gravel and cobbles; no sheen, no odor (dense, moist) **(GLACIAL TILL)**
10							

Water Level: Groundwater Not Measured.

Vapor Well/implant Detail



Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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TECT Aerospace Leasehold Everett, Washington	Log of Vapor Well/Implant RISB-54	Figure D-54 (1 of 2)

RISB-54

SAMPLE DATA				SOIL PROFILE			GROUNDWATER	
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft): Not Surveyed	Water Level	Vapor Well/implant Detail
12				0.0		SM	Gray, very silty, fine to coarse SAND with gravel and cobbles; no sheen, no odor (dense, moist) **(GLACIAL TILL)**	Groundwater Not Measured.	
14				0.0					

Boring Completed 03/18/19
Total Depth of Boring = 15.0 ft.

16
18
20
22

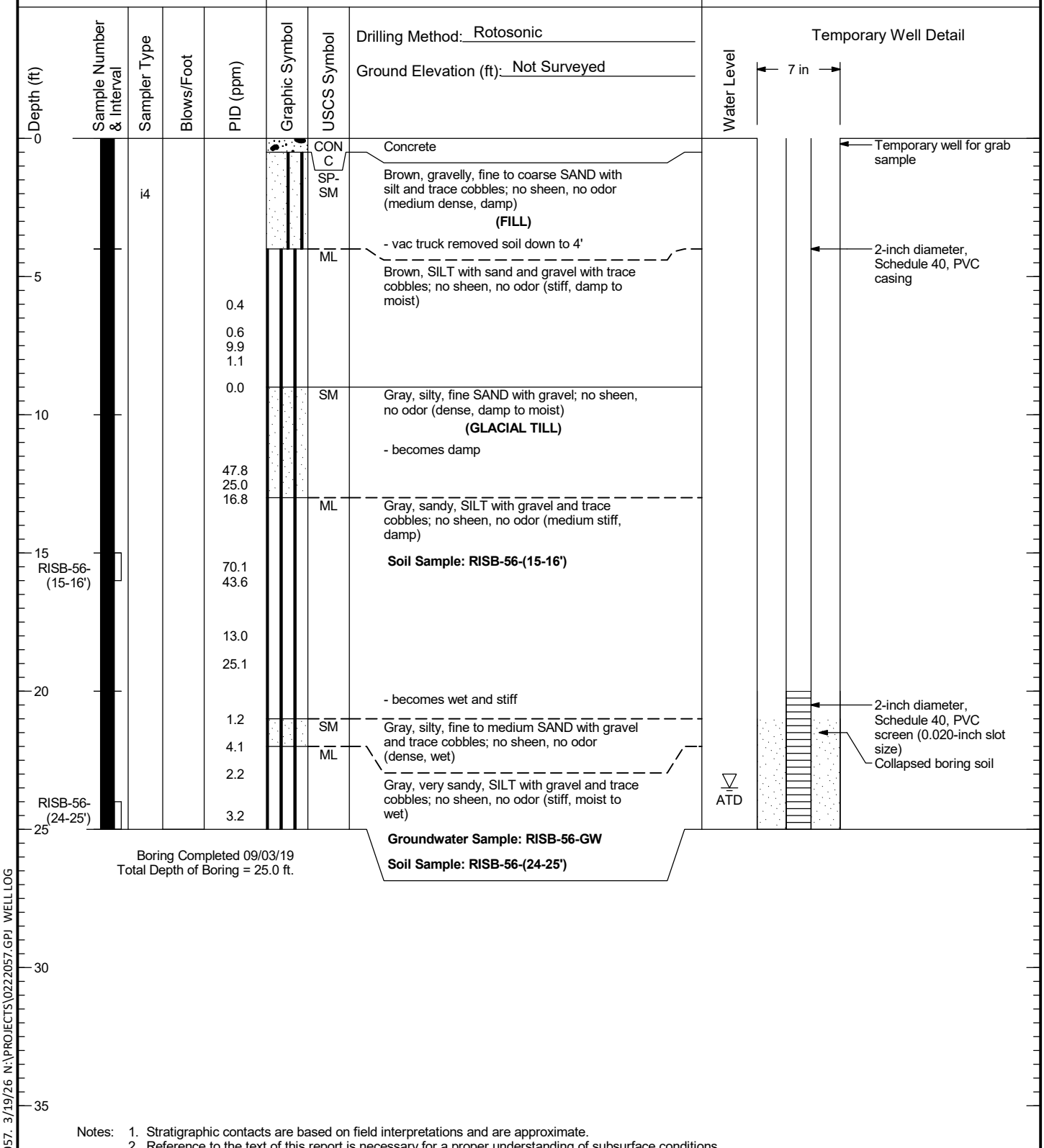
Notes:
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3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Vapor Well/Implant RISB-54	Figure D-54 (2 of 2)

RISB-56



Boring Completed 09/03/19
Total Depth of Boring = 25.0 ft.

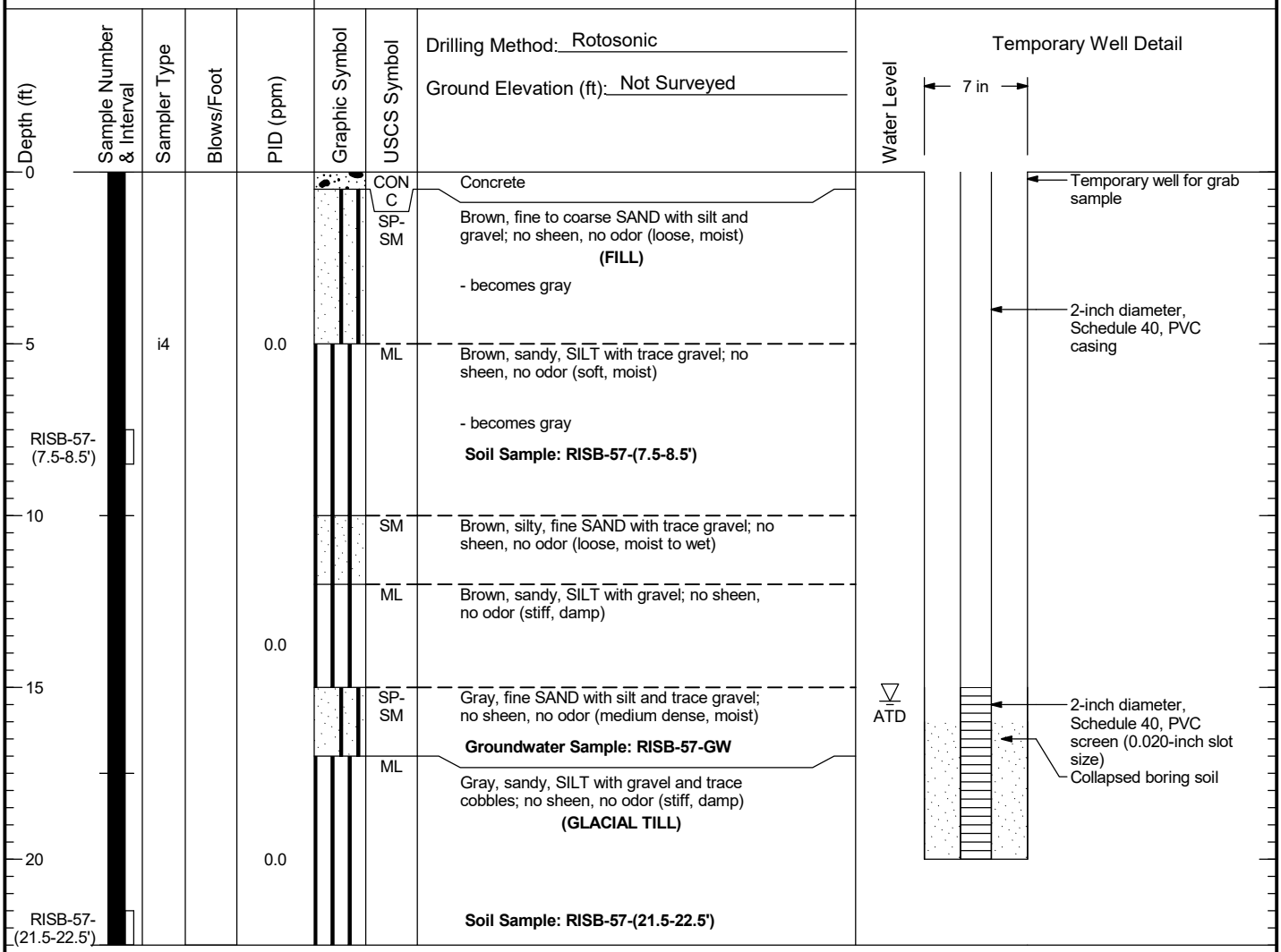
Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-56	Figure D-55

RISB-57



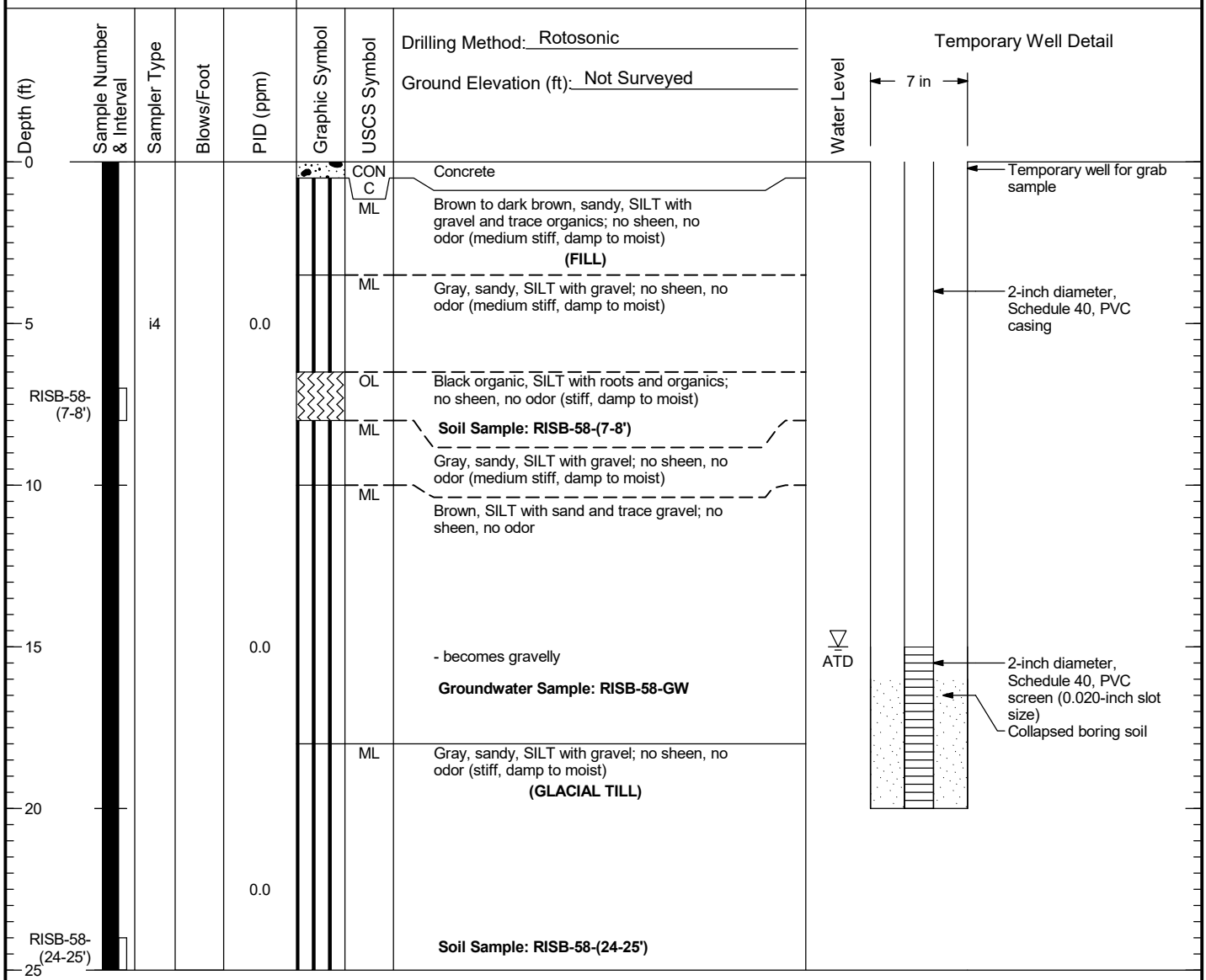
Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-57	Figure D-56

RISB-58



Boring Completed 09/03/19
Total Depth of Boring = 25.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-58	Figure D-57

RISB-58(I)

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Rotosonic

Ground Elevation (ft): Not Surveyed

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Description
0						CONC	Concrete
						SP-SM WD	Brown, gravelly, medium to coarse SAND with silt and debris; no sheen, no odor (medium dense, moist) **(FILL)**
5		i4		0.0			Gray-brown, solid WOOD with silt packed around sides; no sheen, no odor (dense/hard, moist to wet)
10						ML	Gray, sandy, SILT; no sheen, no odor (medium stiff, moist to wet)
						ML	Brown, sandy, SILT with gravel and trace cobbles; no sheen, no odor (stiff, moist to wet)
15							
						ML	Gray, sandy, SILT with gravel; no sheen, no odor (stiff, damp to moist)
20							- abandoned soil boring and redrilled RISB-58 ~5 feet to the east
25							
30							
35							

Groundwater Not Measured.

Boring Completed 09/03/19
Total Depth of Boring = 20.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ SOIL BORING LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold
Everett, Washington

Log of Boring RISB-58(I)

Figure
D-58

RISB-59

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft): Not Surveyed	
0		i4				CONC SM	Concrete Gray, gravelly, silty, fine SAND; no sheen, no odor (vac truck down to 5') (very dense, damp) **(GLACIAL TILL)**	Groundwater Not Measured.
5				0.0		ML	Gray, sandy, SILT with gravel; no sheen, no odor (very stiff, damp)	
				0.0			- becomes damp to moist	
				0.2				
10				0.1			- becomes with gravel and trace cobbles	
				0.0				
	RISB-59-(12.5-13.5')			0.3			**Soil Sample: RISB-59-(12.5-13.5')**	
				0.0				
15				0.2				
				0.0				
				0.0				
				0.0				
	RISB-59-(19-20')			0.0			**Soil Sample: RISB-59-(19-20')**	
20								

Boring Completed 08/27/19
Total Depth of Boring = 20.0 ft.

25
30
35

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ SOIL BORING LOG

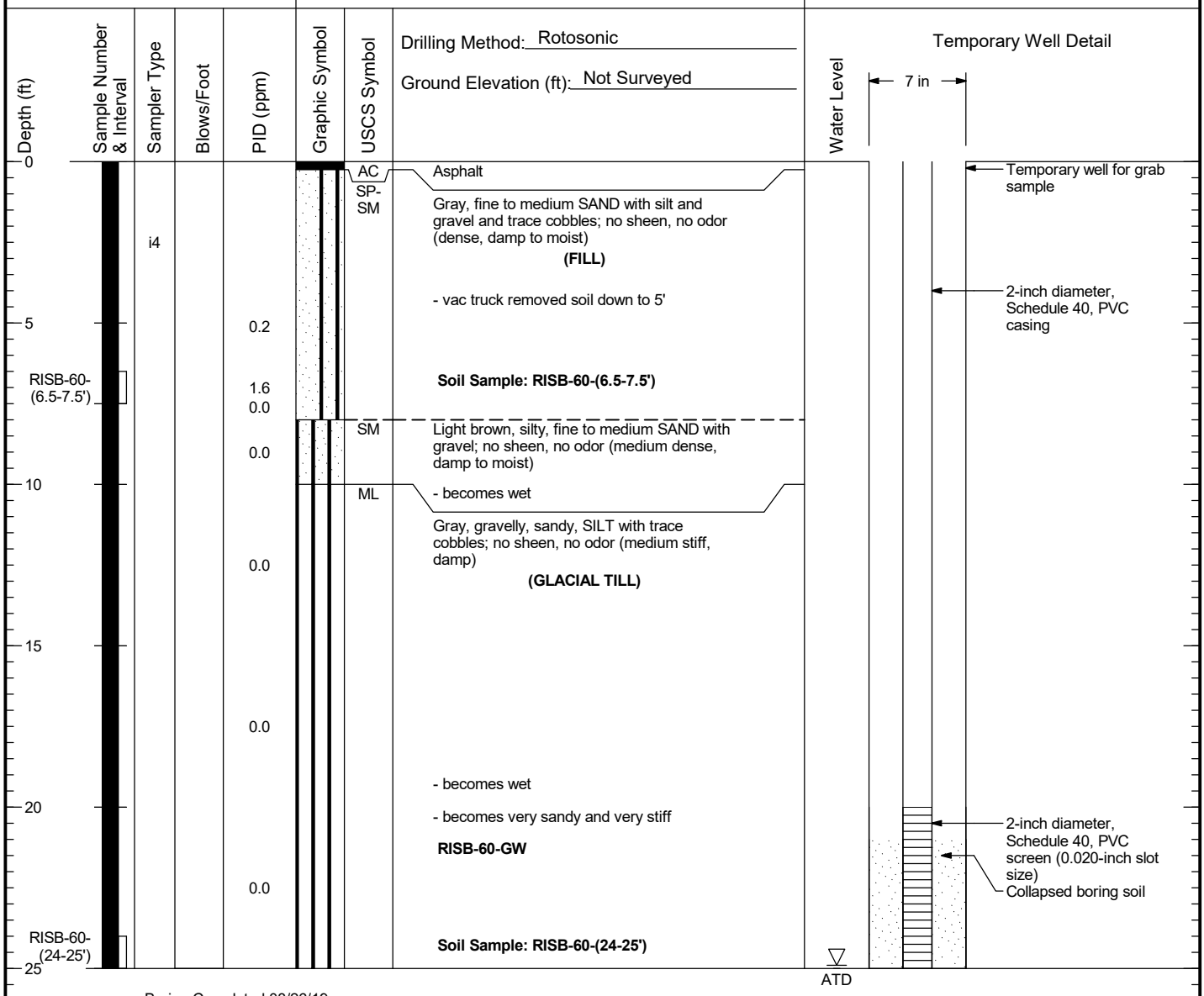
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Everett, Washington

Log of Boring RISB-59

Figure
D-59

RISB-60



Boring Completed 08/26/19
Total Depth of Boring = 25.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-60	Figure D-60

RISB-61

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Rotosonic

Ground Elevation (ft): Not Surveyed

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Description
0						CONC	Concrete
		i4		0.0		ML	Gray, sandy, SILT with gravel and trace cobbles; no sheen, no odor (medium stiff, damp to moist) **(FILL)** - some iron staining
5	RISB-61-(6.5-7.5')			0.0		ML	Gray, sandy, SILT with gravel and trace cobbles; no sheen, no odor (medium stiff, damp to moist) **(GLACIAL TILL)** **Soil Sample: RISB-61-(6.5-7.5')** - becomes damp
10				0.0			- becomes stiff
				0.1			
				0.0			
				0.0			
15				0.0			
				0.1			
				0.0			
				0.0			
20							- becomes hard
				0.0			
25							**Groundwater Sample: RISB-61-GW**
30	RISB-61-(29-30')						**Soil Sample: RISB-61-(29-30')**
35							

Water Level

Temporary Well Detail

7 in

- Temporary well for grab sample
- 2-inch diameter, Schedule 40, PVC casing
- 2-inch diameter, Schedule 40, PVC screen (0.020-inch slot size)
- Collapsed boring soil

Boring Completed 08/27/19
Total Depth of Boring = 30.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\022057.GPJ WELL LOG

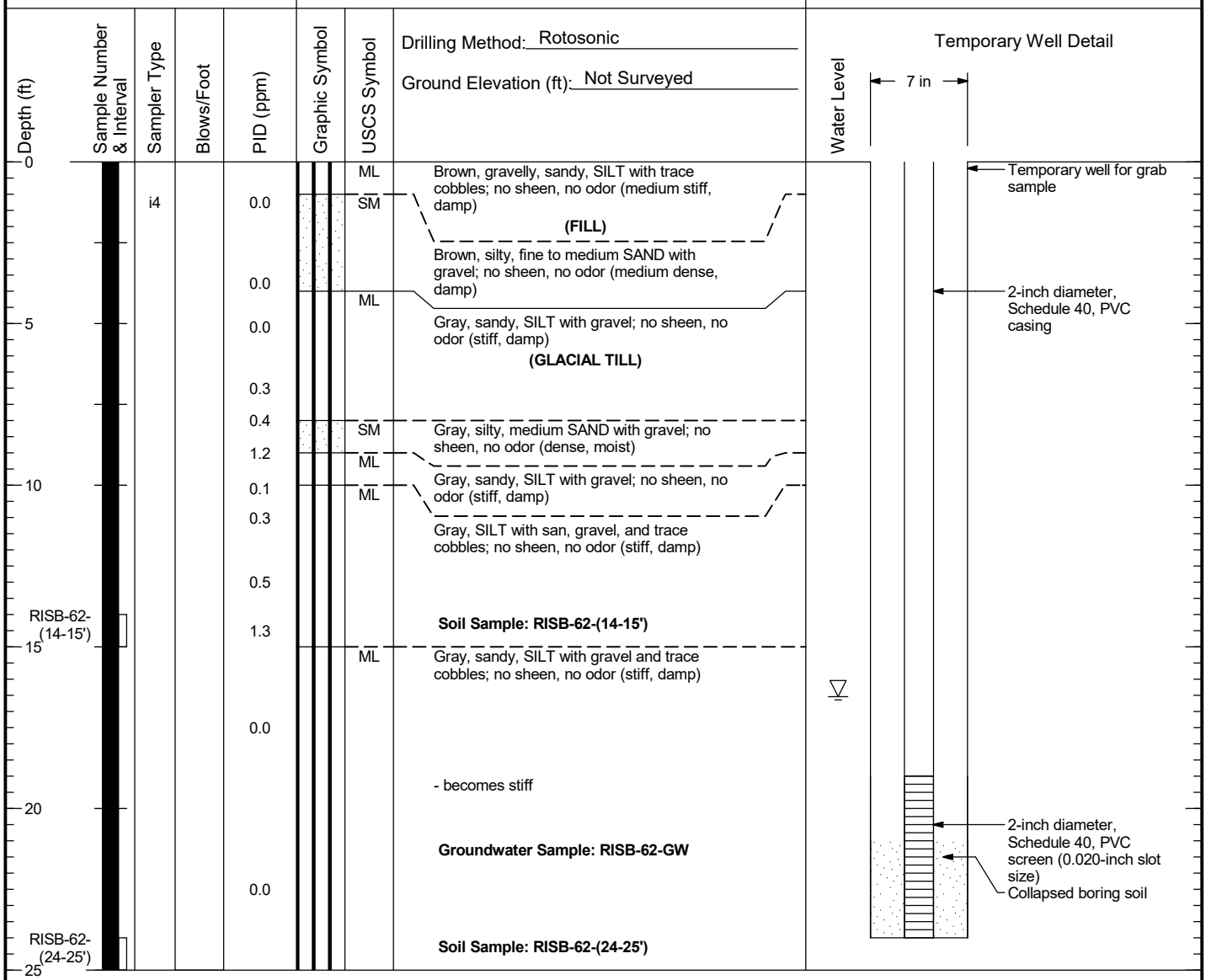
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TECT Aerospace Leasehold
Everett, Washington

Log of Temporary Well
RISB-61

Figure
D-61

RISB-62



Boring Completed 08/27/19
Total Depth of Boring = 25.0 ft.

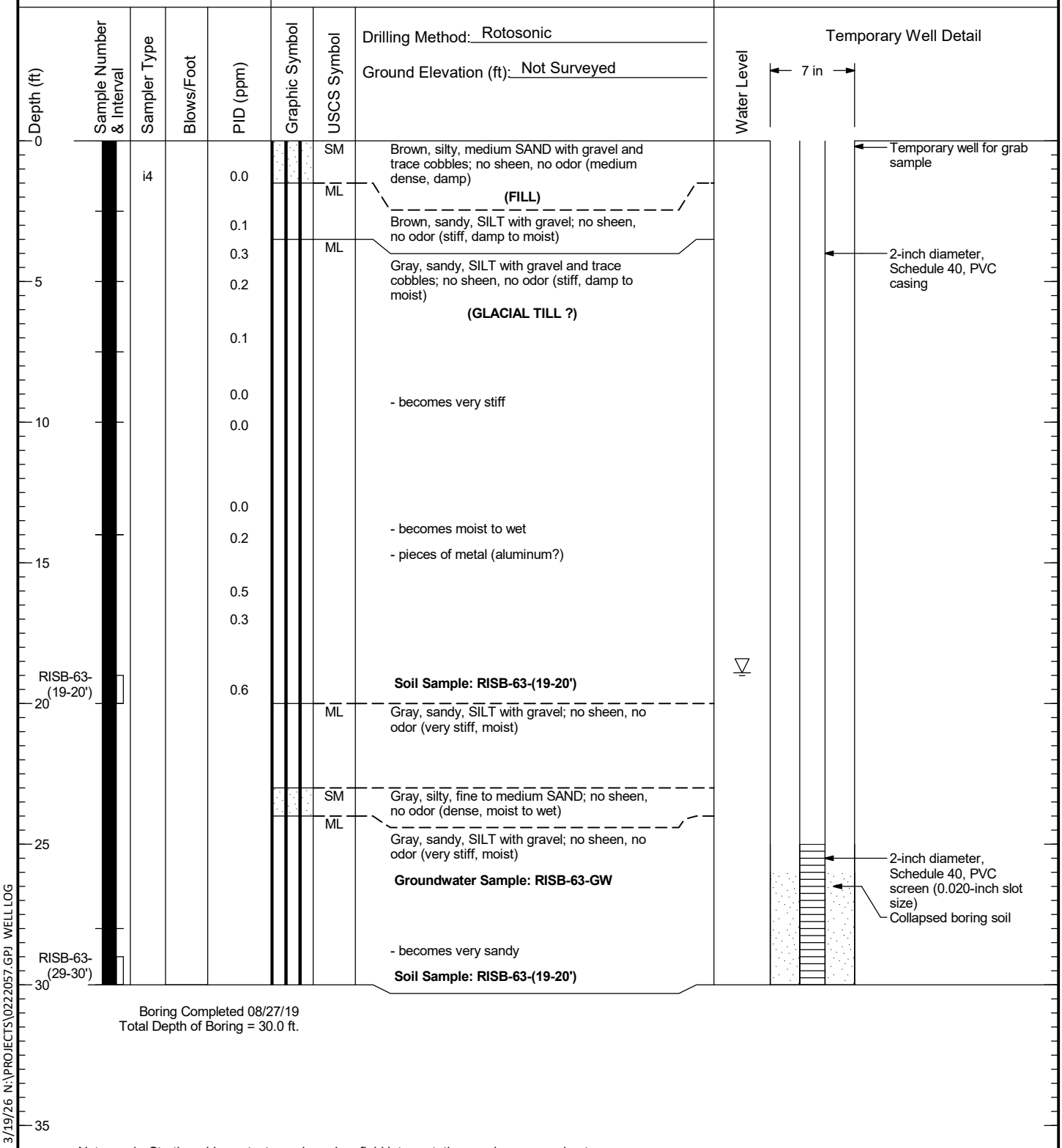
Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-62	Figure D-62

RISB-63



Boring Completed 08/27/19
Total Depth of Boring = 30.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\022057.GPJ WELL LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-63	Figure D-63

RISB-64

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Rotosonic

Ground Elevation (ft): Not Surveyed

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Description
0				0.5		ML	Gray, gravelly, sandy, SILT with trace cobbles; no sheen, no odor (stiff, damp) **(FILL)**
				2.1			
				0.0			
				0.5			
5		i4		0.0			
				1.1			
				0.5			
				0.5			
10	RISB-64-(10-11')			37.7		ML	Gray to brown, sandy, SILT with trace gravel; no sheen, no odor (medium stiff, moist)
				5.8		SP-SM	**Soil Sample: RISB-64-(10-11')**
				0.5		ML	Gray, silty, medium SAND with gravel; no sheen, no odor (dense, moist to wet) **(GLACIAL TILL)**
				0.5			
15				1.4			Gray, SILT with sand and gravel; no sheen, no odor (medium stiff, damp to moist)
				2.3			**Groundwater Sample: RISB-64-GW**
				0.5			
				2.5			
20				1.5			- step down from 6-inch casing to 4-inch core barrel (bentonite seal)
				2.3			
				2.6			- becomes hard
25	RISB-64-(24-25')			2.5			**Soil Sample: RISB-64-(24-25')**

Boring Completed 08/30/19
Total Depth of Boring = 25.0 ft.

Temporary Well Detail

Water Level

7 in

ATD

- Temporary well for grab sample
- 2-inch diameter, Schedule 40, PVC casing
- 2-inch diameter, Schedule 40, PVC screen (0.020-inch slot size)
- Collapsed boring soil

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

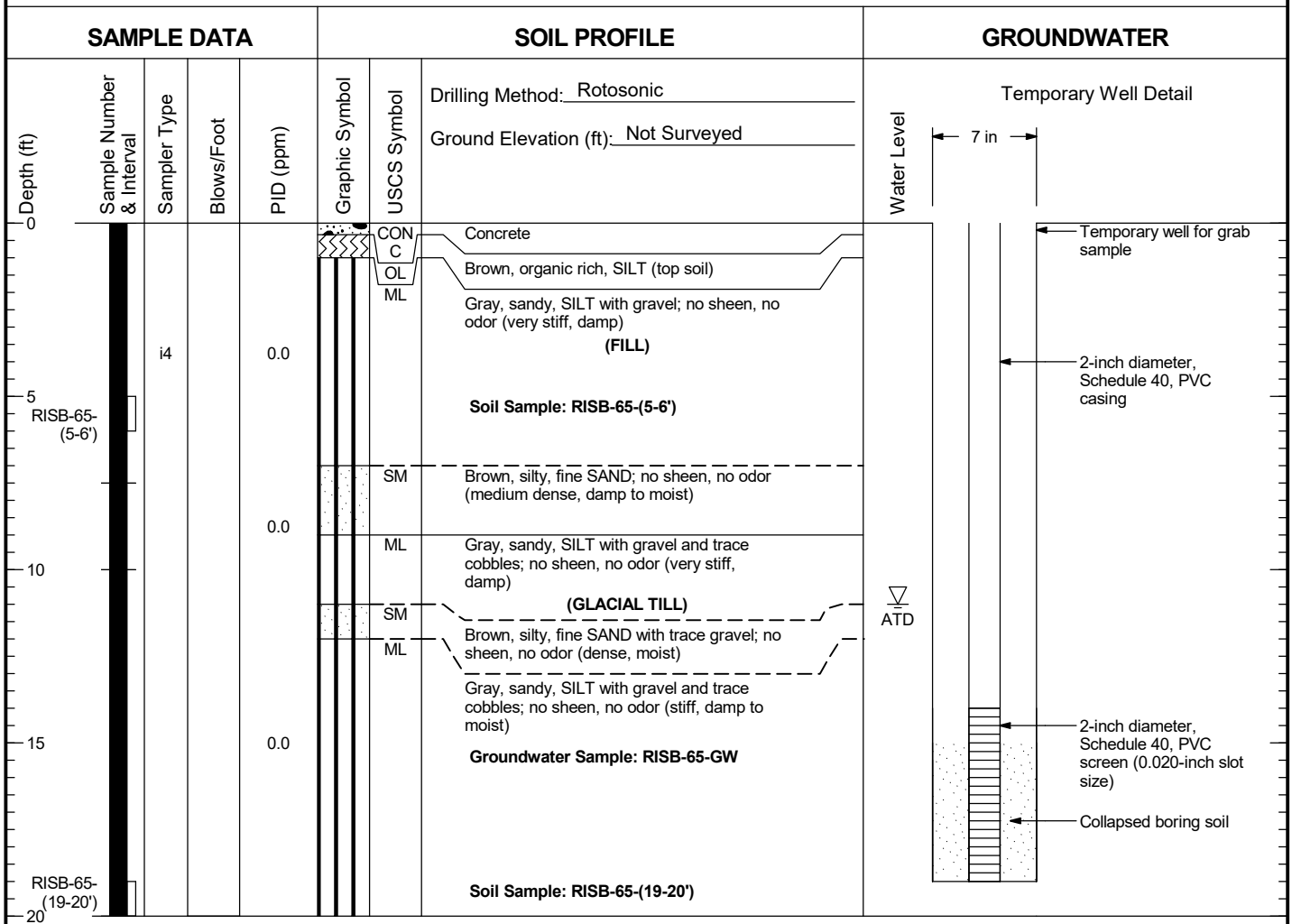
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Everett, Washington

Log of Temporary Well
RISB-64

Figure
D-64

RISB-65



Boring Completed 08/29/19
Total Depth of Boring = 20.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-65	Figure D-65

RISB-66

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Rotosonic

Ground Elevation (ft): Not Surveyed

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Description
0				27.9		CONC	Concrete
				47.3		ML	Brown, SILT with sand and gravel; no sheen, no odor (medium stiff, damp to moist)
		i4					**(FILL)**
				11.5			
				517.5			- becomes sandy
5				390			
				430.8			
				391.6			
	RISB-66-(9-10')			1849			**Soil Sample: RISB-66-(9-10')**
10				336.9		ML	Gray, sandy, SILT with gravel and trace cobbles; no sheen, no odor (very stiff, damp to moist)
				184.6			
				40.1			
				641		ML	Gray, very sandy, SILT with gravel and trace cobbles; no sheen, no odor (very stiff, moist to wet)
15				70.2		SM	
				196.7			Gray, silty, fine to medium SAND with gravel; no sheen, no odor (medium dense, moist to wet)
				89.8		ML	
						SM	**Groundwater Sample: RISB-66-GW**
				999.5		ML	Gray, sandy, SILT with gravel; no sheen, no odor (stiff, damp to moist)
20				568.3			
				539.2			Gray, silty, fine to medium SAND with gravel and trace cobbles; no sheen, no odor (dense, moist)
				336.2		ML	Gray, sandy, SILT with gravel and trace cobbles; no sheen, no odor (medium stiff, damp to moist)
				198.4			**(GLACIAL TILL)**
25				487.6			- step down from 8-inch casing to 6-inch casing (bentonite seal)
				640.4			Gray, SILT with sand and gravel and trace cobbles; no sheen, no odor (stiff, damp to moist)
				161.6			
				40.5			
30				36.3			
				23.2			- becomes sandy
				9.1			- becomes with sand
				5.8			
35							

GROUNDWATER

Water Level: ATD

Temporary Well Detail

7 in

- Temporary well for grab sample
- 2-inch diameter, Schedule 40, PVC casing
- 2-inch diameter, Schedule 40, PVC screen (0.020-inch slot size)
- Collapsed boring soil

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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TECT Aerospace Leasehold
Everett, Washington

Log of Temporary Well
RISB-66

Figure
D-66
(1 of 2)

RISB-66

SAMPLE DATA				SOIL PROFILE			GROUNDWATER	
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft): Not Surveyed	Water Level
35				221.0		ML	Gray, SILT with sand and gravel and trace cobbles; no sheen, no odor (stiff, damp to moist)	Temporary Well Detail
				151.1				
				61.4			- becomes a gravelly, sandy, SILT and wet	
				45.3			- becomes very stiff	
40				36.1				
				4.1				
				3.0				
	RISB-66-(44-45')			3.5			**Soil Sample: RISB-66-(44-45')**	
45								

Boring Completed 08/29/19
Total Depth of Boring = 45.0 ft.

50

55

60

65

70

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-66	Figure D-66 (2 of 2)

RISB-67

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

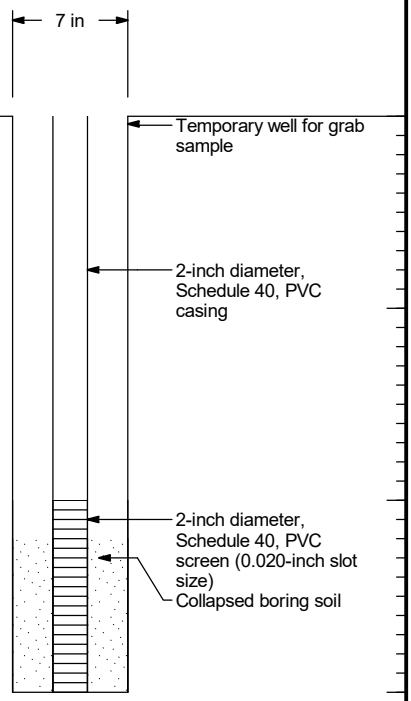
Drilling Method: Rotosonic

Ground Elevation (ft): Not Surveyed

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Description
0				0.5		CONC	Concrete
		i4		2.2		SM	Gray, silty, medium to coarse SAND with gravel; no sheen, no odor (medium dense, moist to wet)
				5.8		SM ML	**(FILL)**
				6.7			Brown, silty, fine SAND with trace gravel; no sheen, no odor (dense, damp to moist)
5				9.2			Brown, sandy, SILT with trace gravel; no sheen, no odor (stiff, damp to moist)
				126.1			
				37.8			- becomes very stiff
				368.4			
10				17.7		SP-SM	Gray, fine to coarse SAND with silt and trace gravel; no sheen, no odor (medium dense, moist to wet)
				223		ML	
						SM	Gray, sandy, SILT; no sheen, no odor (hard, damp to wet)
				107		ML	
	RISB-67-(14-15')			688.6			Brown, silty, fine to medium SAND with trace gravel; no sheen, no odor (dense, wet)
15				455.3			**Groundwater Sample: RISB-67-GW**
				564.7			Gray, sandy, SILT with gravel and trace cobbles; no sheen, no odor (stiff, damp to moist)
				291			**(GLACIAL TILL)**
				135			**Soil Sample: RISB-67-(14-15')**
20				356.7			- step down from 8-inch casing to 6-inch casing (bentonite seal)
				402.1			- becomes hard and moist
				417.3			
				367.1			
25				211			
				114.1			
				331.2			
30				9.2			
				5.8			
				16.6			
35							

Water Level: ATD

Temporary Well Detail



Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-67	Figure D-67 (1 of 2)

RISB-67

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Water Level
35				28.2		ML	
				8.2			
				4.0		SM	
				112.5		ML	
				430.2			
40				214.9			
				180.5			
				19.8			
				110.1			
45				56			
				152.0			
				115.5			
				387.7			
50				5.2			
				3.1			
				3.5			
	RISB-67-(54-55')			3.2			
55							
60							
65							
70							

Drilling Method: Rotosonic

Ground Elevation (ft): Not Surveyed

Temporary Well Detail

Gray, silty, medium SAND with gravel; no sheen, no odor (dense, wet)

Gray, sandy, SILT with gravel and trace cobbles; no sheen, no odor (very stiff, damp to moist)

Soil Sample: RISB-67-(54-55')

Boring Completed 08/30/19
Total Depth of Boring = 55.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-67	Figure D-67 (2 of 2)

RISB-68

Drilling Method: Rotosonic

Ground Elevation (ft): Not Surveyed

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	SOIL PROFILE	GROUNDWATER
0						CONC	Concrete	
						ML	Brown, SILT with sand and gravel; no sheen, no odor (medium stiff, moist) **(FILL)**	Groundwater Not Measured.
		i4		0.0				
5				0.0				
						ML	Brown, sandy, SILT with gravel; no sheen, no odor (medium stiff, damp to moist)	
				0.0				
10				245.8		SP-SM	Brown, medium SAND with silt and gravel and trace cobbles; no sheen, no odor (medium dense, moist to wet)	
				329.0		ML	Brown, SILT with sand and gravel; no sheen, no odor (stiff, damp to moist)	
				46.0				
				73.4				
15				58.3		SP-SM	Brown, fine SAND with silt and gravel and trace cobbles; no sheen, no odor (medium dense, moist to wet)	
				152.7				
						ML	Brown, SILT with sand and gravel; no sheen, no odor (stiff, damp to moist)	
						ML		
				211.3			Gray, SILT with sand and gravel; no sheen, no odor (stiff, damp to moist)	
				33.3				
20				100.4		ML	Brown, gravelly, sandy, SILT with trace cobbles; no sheen, no odor (medium stiff, damp to moist)	
				470.1		ML	Gray-brown, sandy, SILT with gravel; no sheen, no odor (stiff, damp to moist)	
				212.8				
				399.7		ML	Gray, sandy, SILT with gravel and trace cobbles; no sheen, no odor (stiff, damp to moist) **(GLACIAL TILL)**	
25				152.3				
	RISB-68-(26.5-27.5')			478.1			**Soil Sample: RISB-68-(26.5-27.5')** - paint smell and PID reading of 0.7 in driller's breathing zone for ~10 seconds	
				70.3				
				157.4				
30				455.1				
				251.1				
				288.1				
				152.6			- 2 inch sandy lens	
35								

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ SOIL BORING LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold
Everett, Washington

Log of Boring RISB-68

Figure
D-68
(1 of 2)

RISB-68

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft): Not Surveyed	
35				16.1		ML	Gray, SILT with sand and gravel and trace cobbles; no sheen, no odor (hard, damp to moist)	Groundwater Not Measured.
				20.7				
				24.1				
				52.8				
40				37.7			- step down from 8-inch to 6-inch (3' bentonite seal)	
				19.4				
				87.8				
				38.0				
45				3.5				
				1.8				
				2.2				
50	RISB-68-(49-50')			4.1			**Soil Sample: RISB-68-(49-50')**	

Boring Completed 08/28/19
Total Depth of Boring = 50.0 ft.

55

60

65

70

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\022057.GPJ SOIL BORING LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold
Everett, Washington

Log of Boring RISB-68

Figure
D-68
(2 of 2)

RISB-69

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Rotosonic

Ground Elevation (ft): 601.872

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Profile
0				0.0		CONC	**(CONCRETE)**
				0.0		SM	Light brown, silty, fine SAND with gravel; no odor, no sheen (dense, damp to moist) **(FILL)**
5		d4		0.0			
				0.0			- becomes medium dense
10				0.0			**Soil sample: RISB-69-(9-10')** - becomes moist
				0.0			- becomes moist to wet
15		d4		0.0		SM	- fine to medium sand lens, 1", wet Gray, silty, fine SAND with gravel; no odor, no sheen (very dense, damp) **(GLACIAL TILL)**
				0.0			**Groundwater sample: RISB-69-GW**
20				0.0			**Soil sample: RISB-69-(19-20')**
				0.0			
25		d4		0.0			
				0.0			
30				0.0			**Soil sample: RISB-69-(29-30')**
35							

Boring Completed 12/01/22
Total Depth of Boring = 30.0 ft.

GROUNDWATER

Water Level

ATD

Temporary Well Detail

8 in

- Temporary well for grab sample
- 2-inch diameter, Schedule 40, PVC casing
- 2-inch diameter, Schedule 40, PVC screen (0.020-inch slot size)
- Collapsed boring soil

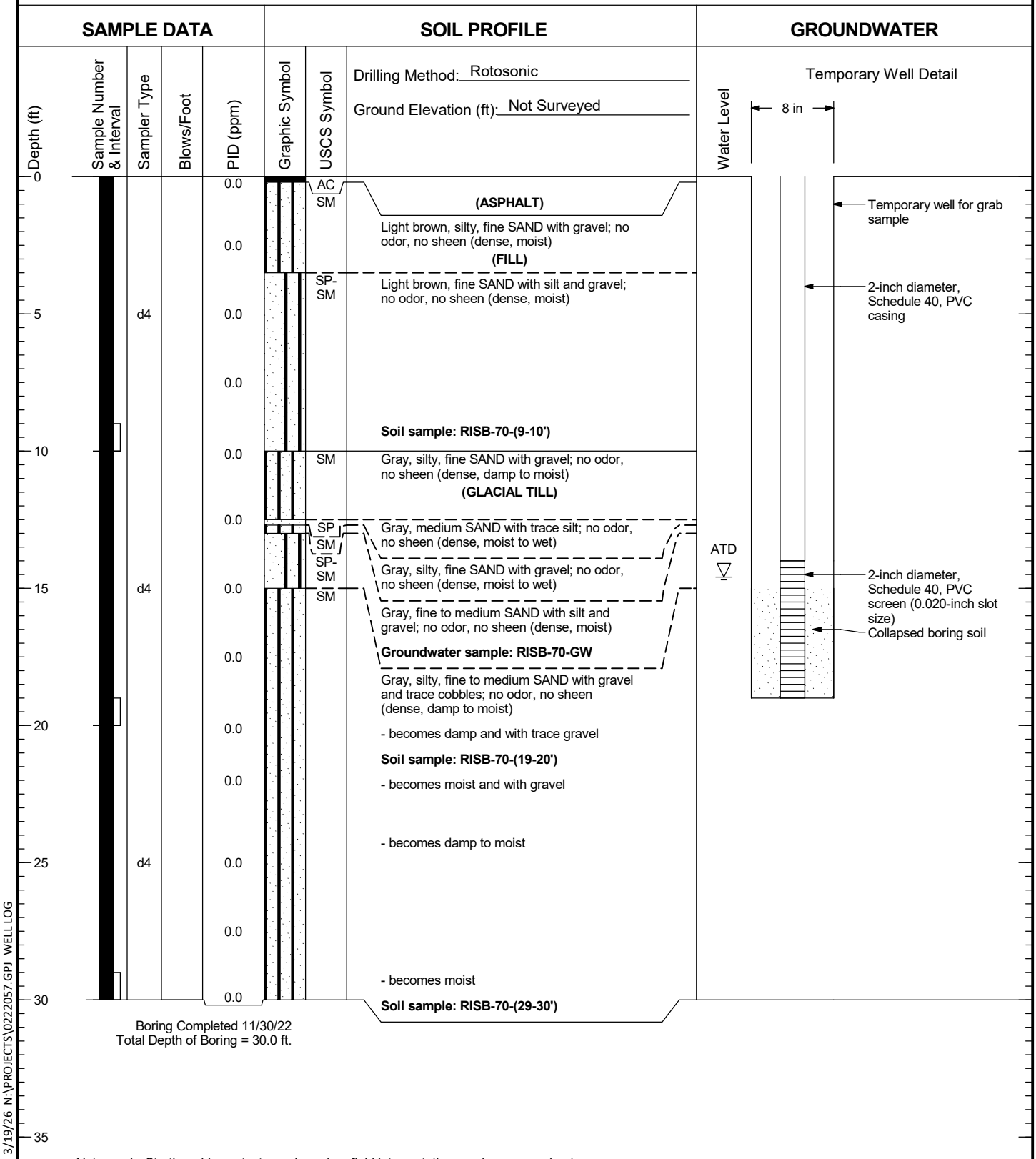
Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-69	Figure D-69

RISB-70



Boring Completed 11/30/22
Total Depth of Boring = 30.0 ft.

Notes:
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3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\022057.GPJ WELL LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-70	Figure D-70

RISB-71

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Rotosonic

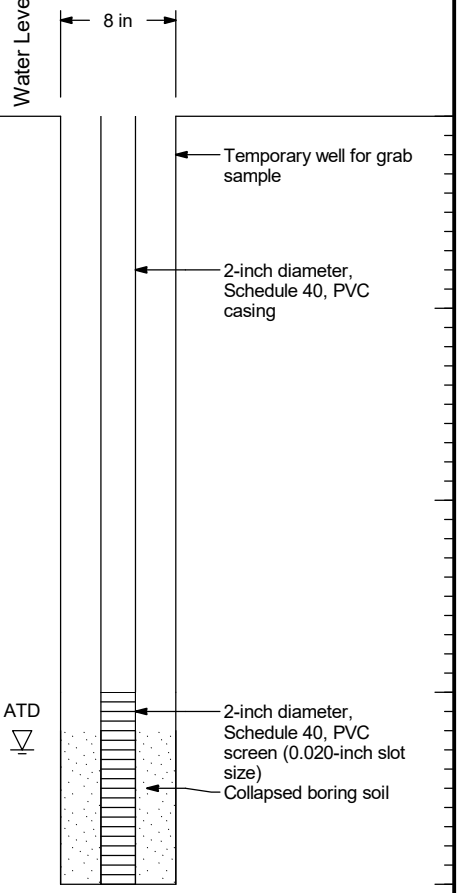
Ground Elevation (ft): 601.802

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Description
0				0.0		AC	
						SP-SM	**(ASPHALT)**
				0.0			Light brown, fine SAND with silt and trace gravel; no odor, no sheen (medium dense, moist)
							(FILL)
							- becomes damp to moist
5		d4		0.0			
				0.0			
							Soil sample: RISB-71-(9-10')
10				0.0			
						SM	Gray, silty, fine SAND with gravel; no odor, no sheen (dense, damp)
				0.0			**(GLACIAL TILL)**
							- with cobbles for 1'
15		d4		0.0			**Groundwater sample: RISB-71-GW**
				0.0			
							Soil sample: RISB-71-(19-20')
20				0.0		SP-SM	Gray, fine SAND with silt and gravel; no odor, no sheen (dense, damp)
				0.0			
25		d4		0.0			- becomes with trace gravel
				0.0			
							Soil sample: RISB-71-(29-30')
30				0.0			

Boring Completed 12/01/22
Total Depth of Boring = 30.0 ft.

Water Level: ATD

Temporary Well Detail



Notes:
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2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-71	Figure D-71

RISB-74

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	
0				13.9		CONC	Drilling Method: Rotosonic Ground Elevation (ft): 600.482 **(CONCRETE)**
				15.8		SP-SM	Brown, coarse SAND with silt and gravel; no odor, no sheen (dense, damp to moist) **(FILL)**
						SP-SM	Gray, fine to medium SAND with silt, gravel and trace cobbles; no odor, no sheen (dense, moist)
5		d4		28.5		SM	**(FILL/GLACIAL TILL)**
						SP-SM	Gray, silty, fine to medium SAND with trace gravel; no odor, no sheen (dense, moist)
				3.9		SM	Gray, fine to medium SAND with silt and trace gravel; no odor, no sheen (dense, moist to wet)
10				56.7		SP-SM	Gray, silty, fine to medium SAND with trace gravel; no odor, no sheen (dense, moist) **Soil sample: RISB-74-(7-8')**
				20.8			- becomes fine sand with trace coarse sand
						SP	Gray, medium SAND with silt; no odor, no sheen (dense, moist)
15		d4		65.5			- becomes fine to medium sand with gravel and cobbles
						SM	Gray, fine SAND with trace silt; no odor, no sheen (dense, wet)
				30.9			Gray, very silty, fine SAND with gravel, cobbles and trace coarse sand; no odor, no sheen (very dense, moist) **(GLACIAL TILL)**
20				75.9			- becomes dry to damp **Soil sample: RISB-74-(19-20')**
				12.3			- becomes moist
25		d4		7.5			- becomes fine to medium sand - damp for 6"
				13.1			- becomes damp to dry with trace cobbles
30				145.0			**Soil sample: RISB-74-(29-30')**

Groundwater Not Measured.

Boring Completed 11/21/22
Total Depth of Boring = 30.0 ft.

35

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\022057.GPJ SOIL BORING LOG

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TECT Aerospace Leasehold
Everett, Washington

Log of Boring RISB-74

Figure
D-72

RISB-75

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	
0				3.7		CONC	Drilling Method: Rotosonic Ground Elevation (ft): 600.488 **(CONCRETE)**
				4.9		GP-GM	Light brown, GRAVEL with silt and sand; no odor, no sheen (loose, moist) **(FILL)**
						SP-SM	Gray, gravelly, coarse SAND with silt; no odor, no sheen (loose, moist)
5		d4		10.4		SP-SM	Gray, coarse SAND with silt and abundant woody organics; no odor, no sheen (dense, moist)
				16.3		ML	Grayish brown, sandy SILT with trace gravel; no odor, no sheen (stiff, moist) **(FILL/GLACIAL TILL)**
10				0.2			- becomes gray with trace cobbles - becomes grayish brown - becomes dark brown and damp to moist
				0.1			**Soil sample: RISB-75-(7-8')** - becomes gray - becomes with trace coarse sand
15		d4		0.1		SM	Gray, very silty, fine SAND with trace gravel and trace coarse sand; no odor, no sheen (very dense, moist) **(GLACIAL TILL)**
				0.0			**Soil sample: RISB-75-(17-18')**
20				0.0		SP-SM	Gray, gravelly, fine SAND with silt and trace cobbles; no odor, no sheen (very dense, damp) - becomes with gravel and without cobbles
		d4		0.0			
25				0.0			
		d4		0.0			
30				0.0			**Soil sample: RISB-75-(29-30')**

Groundwater Not Measured.

Boring Completed 11/22/22
Total Depth of Boring = 30.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
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3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ SOIL BORING LOG

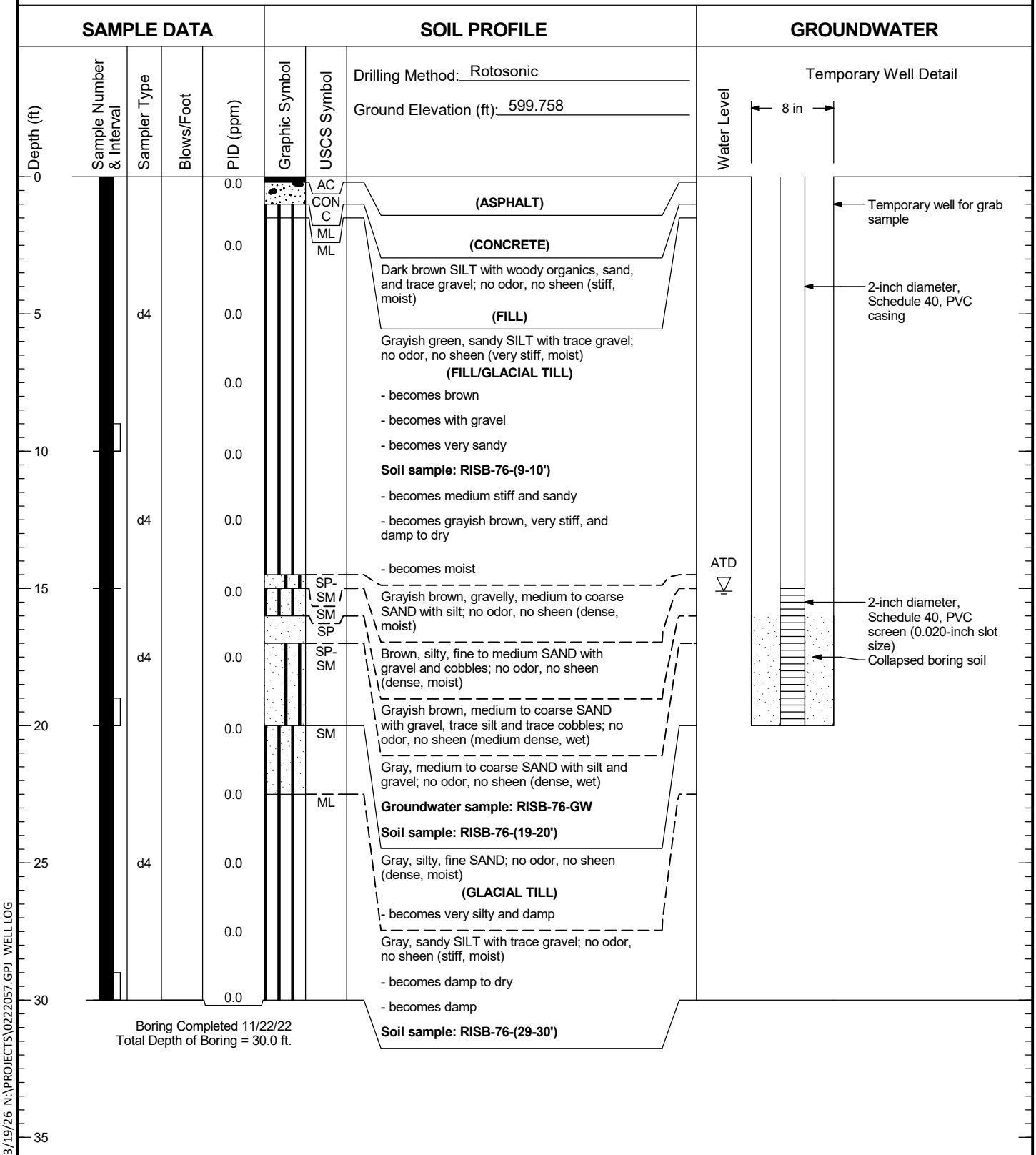
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Everett, Washington

Log of Boring RISB-75

Figure
D-73

RISB-76



Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
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222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

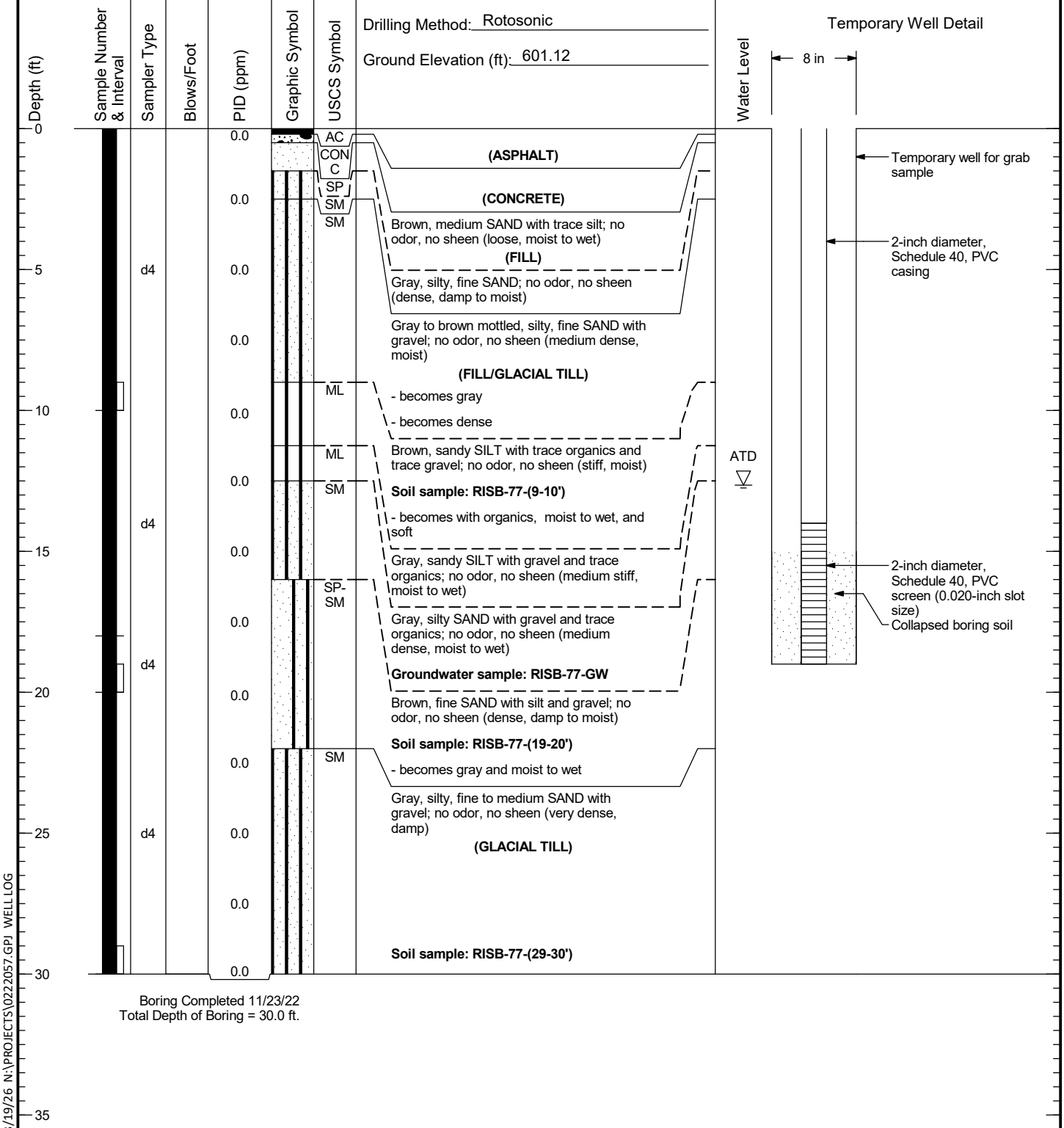
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Everett, Washington

Log of Temporary Well
RISB-76

Figure
D-74

RISB-77



Boring Completed 11/23/22
Total Depth of Boring = 30.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
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222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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Everett, Washington

Log of Temporary Well
RISB-77

Figure
D-75

RISB-78

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Rotosonic

Ground Elevation (ft): 602.06

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Profile
0				0.0		SP-SM	Brown, fine SAND with silt, gravel, and trace cobbles; no odor, no sheen (dense, moist) **(FILL)**
				0.0			
5		d4		0.0			
				0.0		SP	Brown, fine SAND with gravel and trace silt; no odor, no sheen (dense, moist)
10				0.0		SP-SM	Gray, fine to medium SAND with gravel and silt; no odor, no sheen (dense, damp to moist) **(GLACIAL TILL)** **Soil sample: RISB-78-(9-10')** - becomes moist
				0.0			
						SP	Gray, fine SAND with trace silt; no odor, no sheen (dense, moist to wet)
15		d4		0.0		SP-SM	Gray, fine SAND with silt and gravel; no odor, no sheen (dense, damp) **Groundwater sample: RISB-78-GW**
				0.0			**Soil sample: RISB-78-(19-20')**
20				0.0		SP	Gray, fine to medium SAND with trace silt; no odor, no sheen (dense, damp to moist)
				0.0		SP-SM	Gray, fine SAND with gravel and silt; no odor, no sheen (dense, damp to moist)
25		d4		0.0			
				0.0		SM	Gray, silty, fine SAND; no odor, no sheen (dense, damp to moist)
30				0.0			**Soil sample: RISB-78-(29-30')**
35							

Water Level: ATD

Temporary Well Detail

8 in

- Temporary well for grab sample
- 2-inch diameter, Schedule 40, PVC casing
- 2-inch diameter, Schedule 40, PVC screen (0.020-inch slot size)
- Collapsed boring soil

Boring Completed 11/29/22
Total Depth of Boring = 30.0 ft.

Notes:
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222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

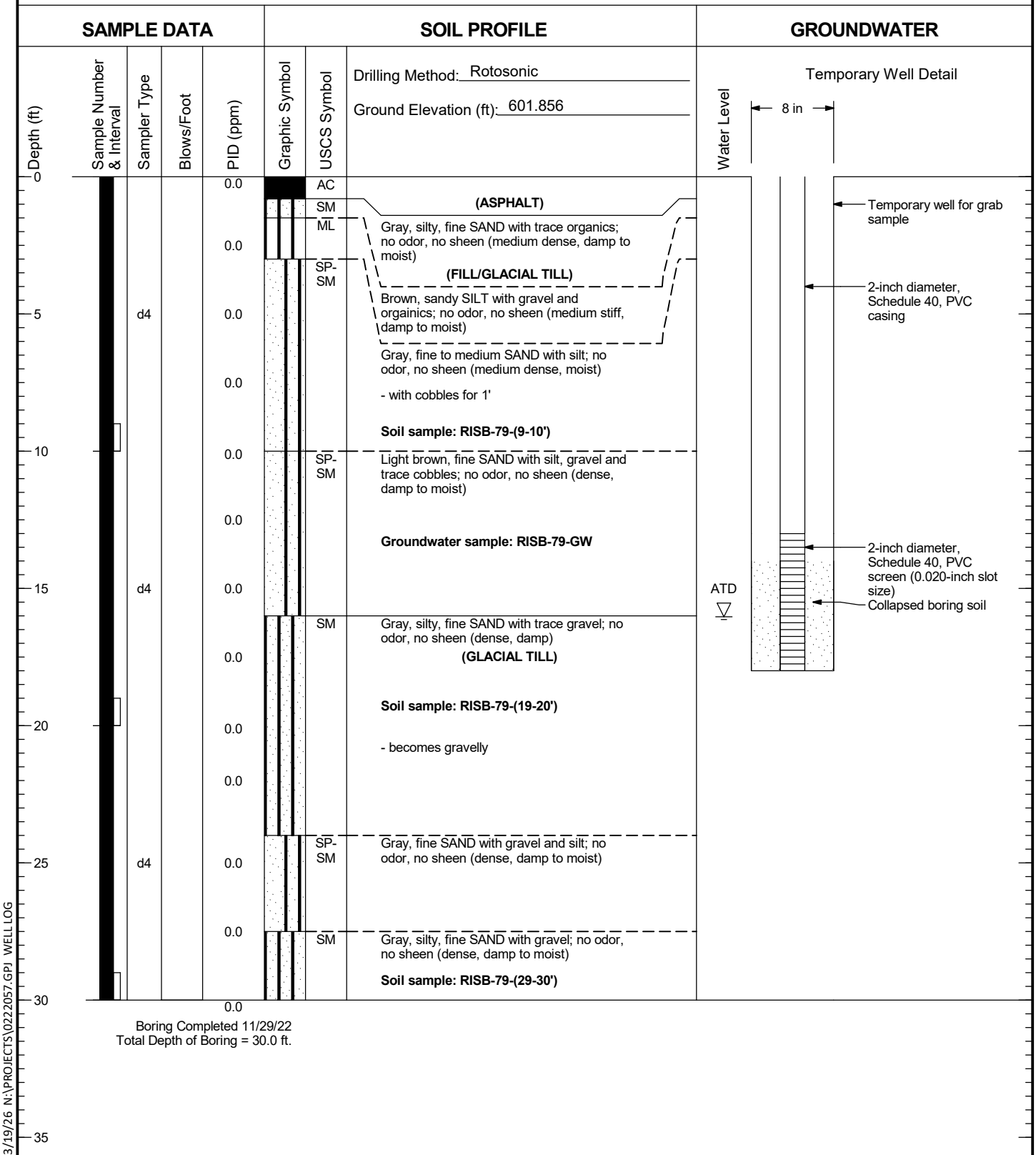
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Everett, Washington

Log of Temporary Well
RISB-78

Figure
D-76

RISB-79



Notes:
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3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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Everett, Washington

Log of Temporary Well
RISB-79

Figure
D-77

RISB-80

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Rotosonic

Ground Elevation (ft): 601.319

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Description
0				5.7		AC	
						SP-SM	**(ASPHALT)**
							Tan, gravelly SAND with silt; no odor, no sheen (dense, damp to moist)
				17.8		SP	**(FILL)**
							Tan, fine SAND with trace silt and trace gravel; no odor, no sheen (medium dense, moist)
5		d4		25.5		SM	
							Tan, silty, fine SAND with trace gravel; no odor, no sheen (dense, moist)
				13.9			
						SP-SM	Gray, fine SAND with silt and coarse sand; sweet odor, no sheen (medium dense, damp to moist)
10				221.6			
				2390		SP-SM	**(FILL/GLACIAL TILL)**
							Soil sample: RISB-80-(9-10')
							Gray, fine SAND with silt and gravel; no odor, no sheen (dense, damp to moist)
				1848			**Soil sample: RISB-80-(11-12')**
15		d4		796.7		SP	Gray, fine SAND with trace silt; no odor, no sheen (dense, damp to moist)
						SP-SM	
							Gray, fine SAND with silt and gravel; no odor, no sheen (dense, moist)
				1364			**Groundwater sample: RISB-80-GW**
				1267			
20							- becomes with trace gravel, medium dense and moist
		d4					
				62.5		SM	Gray, silty, fine to medium SAND with gravel; no odor, no sheen (medium dense, moist)
							(GLACIAL TILL)
25				92.8			- becomes dense, damp, fine sand
		d4					**Soil sample: RISB-80-(24-25')**
				92.4			
30				27.2			- becomes fine to medium wet sand
							- becomes moist
		d4		24.0			**Soil sample: RISB-80-(34-35')**
35							

GROUNDWATER

Temporary Well Detail

Water Level

8 in

ATD

- Temporary well for grab sample
- 2-inch diameter, Schedule 40, PVC casing
- 2-inch diameter, Schedule 40, PVC screen (0.020-inch slot size)
- Collapsed boring soil

Notes:
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2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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TECT Aerospace Leasehold
Everett, Washington

Log of Temporary Well
RISB-80

Figure
D-78
(1 of 2)

RISB-80

SAMPLE DATA				SOIL PROFILE			GROUNDWATER	
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft): 601.319	Water Level
35				9.3		SM	Gray, silty, fine to medium SAND with gravel; no odor, no sheen (medium dense, moist)	Temporary Well Detail
		d4		1.3			**(GLACIAL TILL)** - fine, very silty and damp for 1' - fine, very silty and damp for 1'	
40				0.1			**Soil sample: RISB-80-(39-40')**	
45								
50								
55								
60								
65								
70								

Boring Completed 11/08/22
Total Depth of Boring = 40.0 ft.

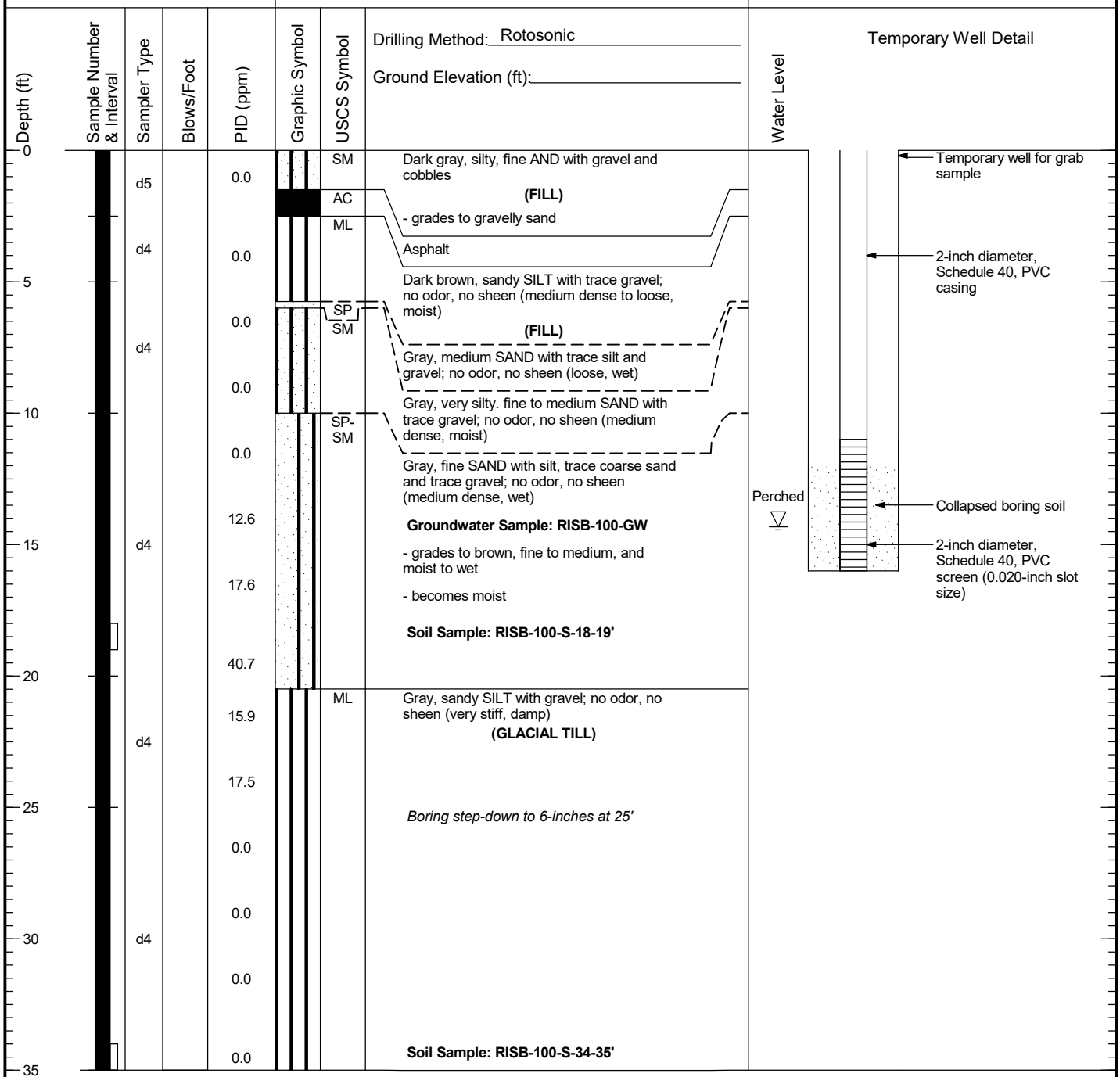
Notes:
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222057. 3/19/26 N:\PROJECTS\022057.GPJ WELL LOG

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TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-80	Figure D-78 (2 of 2)

RISB-100



Boring Completed 05/29/24
Total Depth of Boring = 35.0 ft.

Temporary Well Completed 05/29/24
Total Depth of Temporary Well = 16.0 ft.

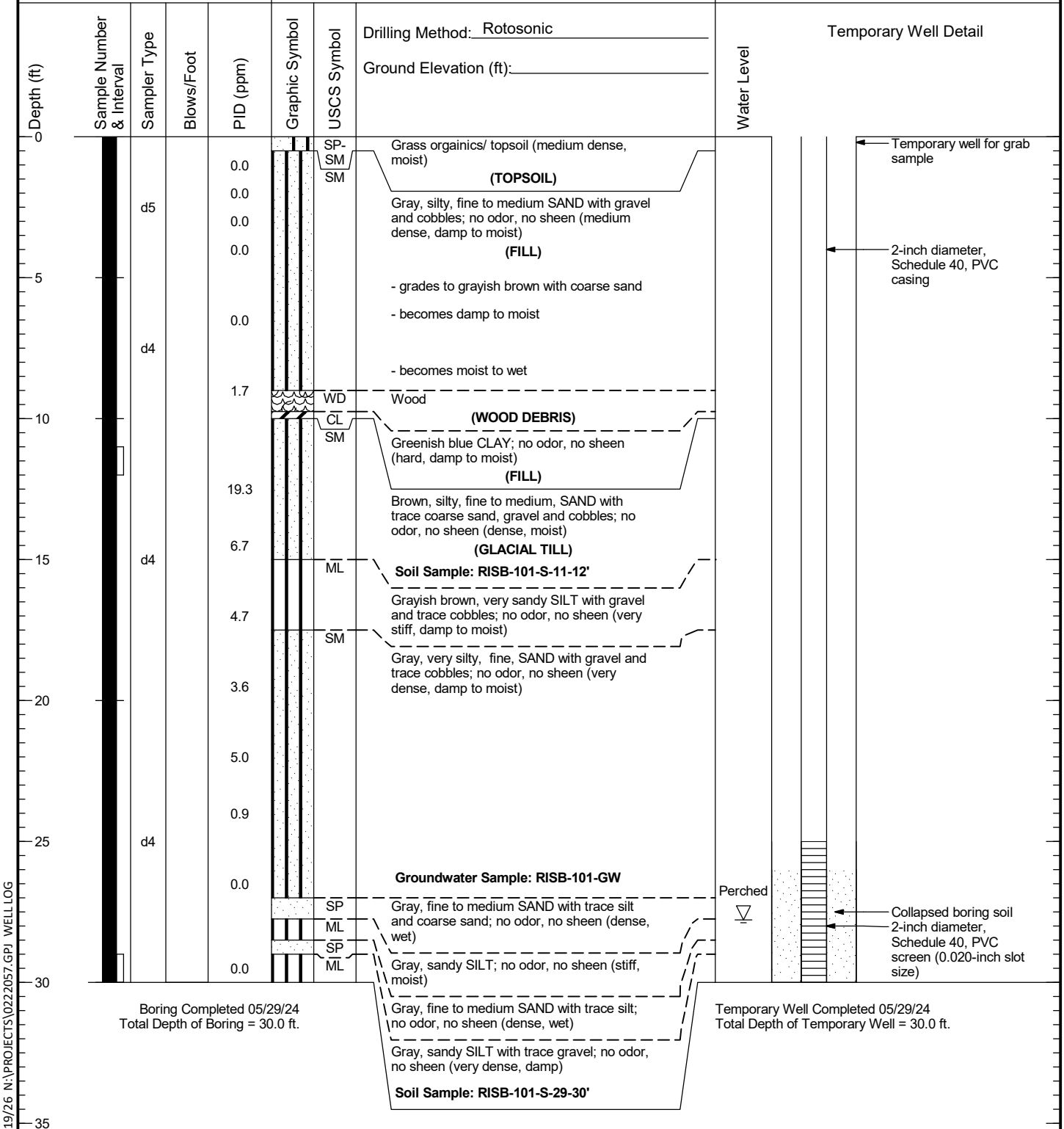
Notes:
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3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\022057.GPJ WELL LOG

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TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-100	Figure D-79

RISB-101



Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-101	Figure D-80

RISB-102

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft):
0				0.0		SP-SM / SM	Grass organics and Brown, fine to medium SAND with silt; no odor, no sheen (medium dense, moist) **(TOPSOIL)**
		d5		0.0 0.0 0.0		SP-SM	Light brown, gravelly, silty, fine SAND; no odor, no sheen (dense, damp to moist) **(FILL)** - grades to silty fine sand with gravel (dense, damp)
5				0.0		SM	Light brown, fine to medium SAND with silt; no odor, no sheen (medium dense, damp to moist) - becomes brown
		d4					Gray, silty, fine SAND; no odor, no sheen (medium dense, wet) - grades grayish brown, fine to medium, with coarse sand, trace gravel and trace wood debris
10				0.0		ML / SM	Light brown and orange mottled SILT with sand; no odor, no sheen (medium stiff, moist)
		d4		0.0		SP-SM / SM	Gray, silty, fine to medium SAND with trace coarse sand and gravel; no odor, no sheen (medium dense to loose, wet) **Soil Sample: RISB-102-S-13-14'**
15				0.0			Brown and orange oxidized, medium SAND with silt and trace gravel; no odor, no sheen (loose, wet)
				0.0		SP-SM / SM	Brown, very silty, fine SAND with trace coarse sand and gravel; no odor, no sheen (medium dense, damp to moist) - becomes grayish brown
20				0.0			Grayish brown, fine to medium SAND with silt, gravel, and trace cobbles; no odor, no sheen (medium dense, moist)
		d4		0.0			Grayish brown, silty, fine to medium SAND with coarse sand and gravel; no odor, no sheen (very dense, damp) **(GLACIAL TILL)** - 3" sandy silt lens - becomes damp to moist for 1' - becomes with trace cobbles
25				0.0			
30						SP-SM / SM	Grayish brown, silty, fine to medium SAND with gravel; no odor, no sheen (very dense, damp to moist)
35							

Groundwater Not Measured.

Notes:
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222057. 3/19/26 N:\PROJECTS\0222057.GPJ SOIL BORING LOG

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TECT Aerospace Leasehold
Everett, Washington

Log of Boring RISB-102

Figure
D-81
(1 of 2)

RISB-102

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft):	
35		d4				SM	Grayish brown, silty, fine to medium SAND with gravel; no odor, no sheen (very dense, damp to moist)	Groundwater Not Measured.
40				0.0			**Soil Sample: RISB-102-S-39-40'**	

Boring Completed 05/29/24
Total Depth of Boring = 40.0 ft.

45
50
55
60
65
70

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\022057.GPJ SOIL BORING LOG

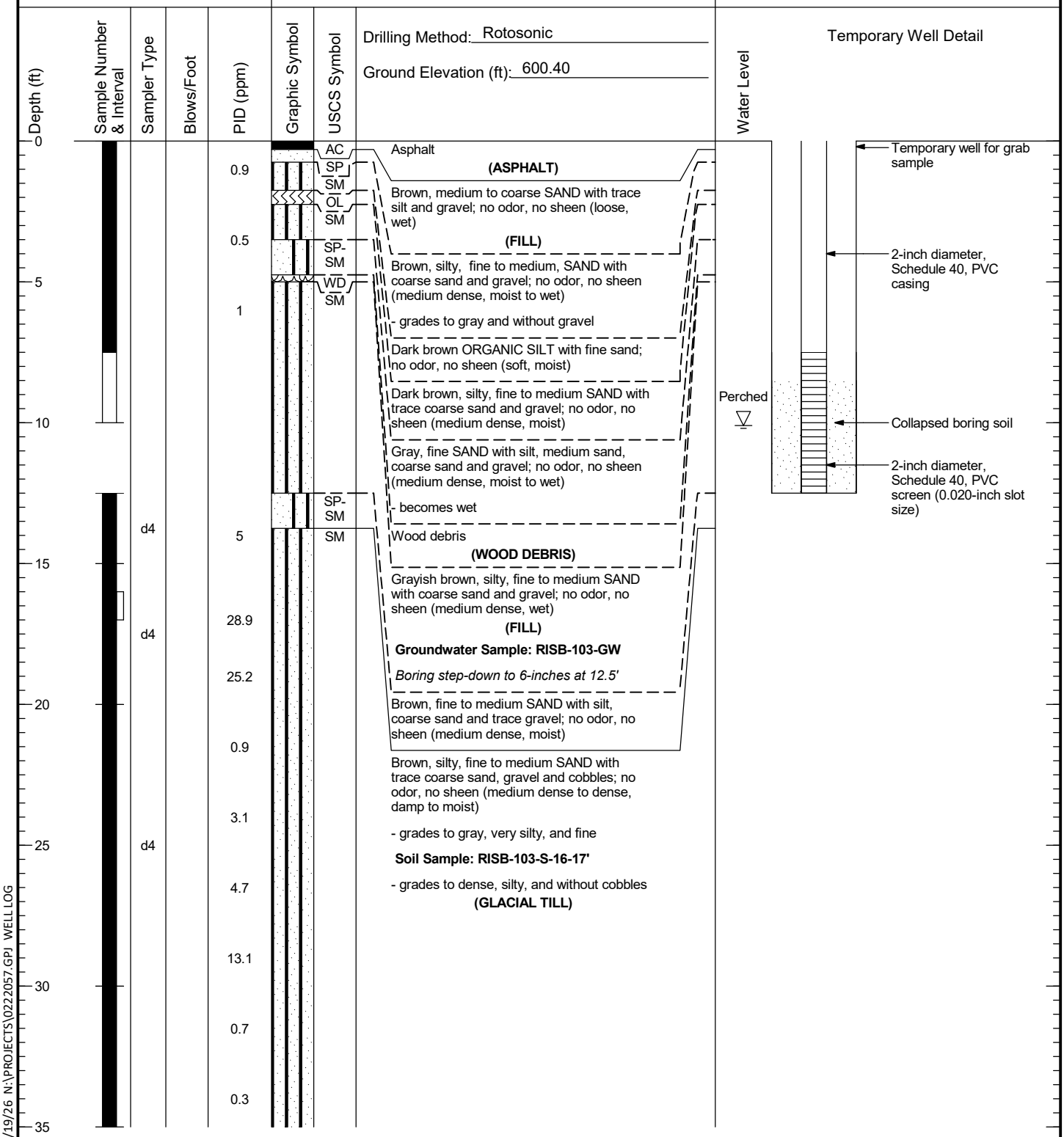
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Everett, Washington

Log of Boring RISB-102

Figure
D-81
(2 of 2)

RISB-103



Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-103	Figure D-82 (1 of 2)

RISB-103

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft): 600.40	Water Level
35		d4		0.4		SM	Brown, silty, fine to medium SAND with trace coarse sand, gravel and cobbles; no odor, no sheen (medium dense to dense, damp to moist)	Temporary Well Detail
40				0.6			**Soil Sample: RISB-103-S-39-40'**	

Boring Completed 05/31/24
Total Depth of Boring = 40.0 ft.

Temporary Well Completed 05/31/24
Total Depth of Temporary Well = 12.5 ft.

45
50
55
60
65
70

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

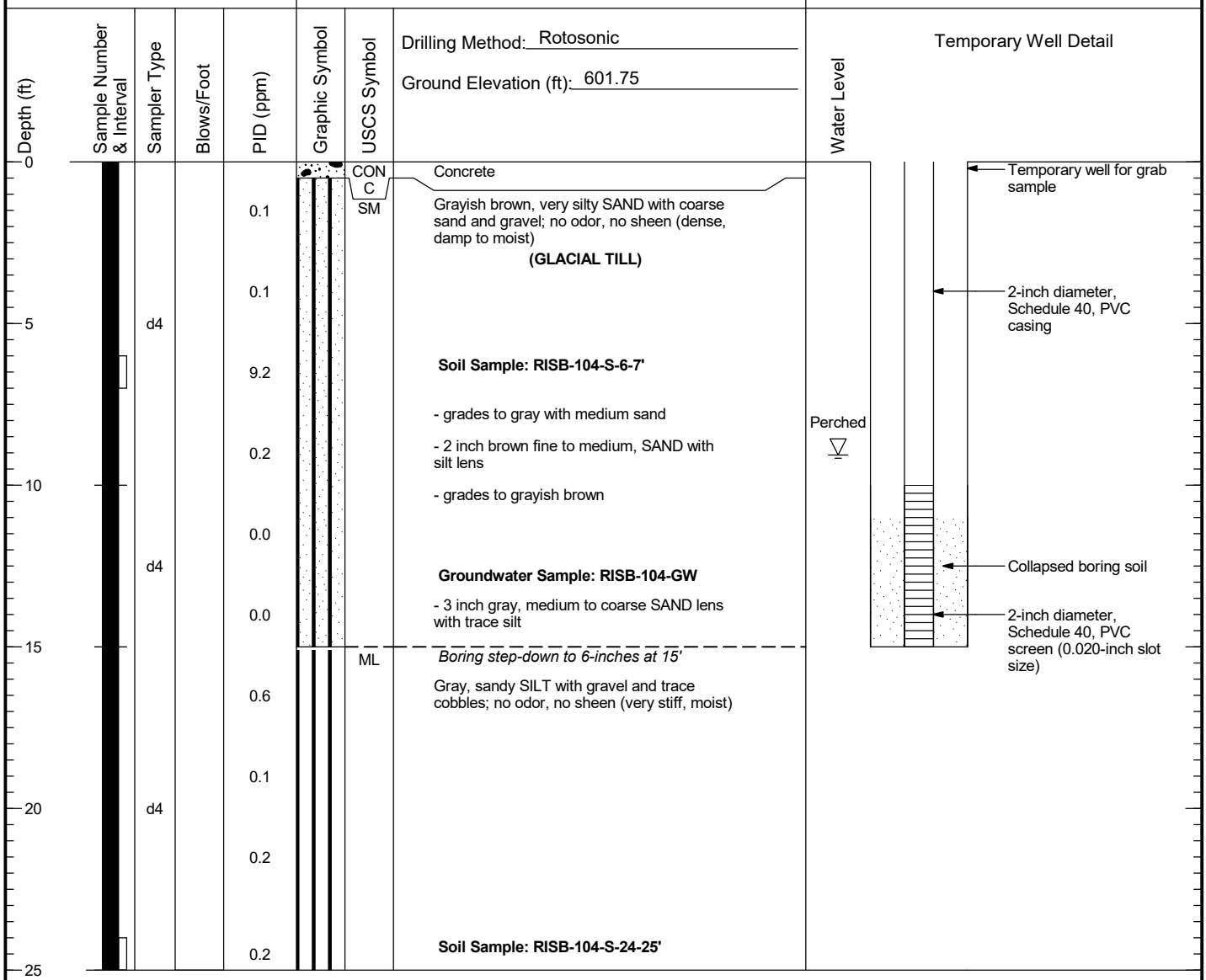
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TECT Aerospace Leasehold
Everett, Washington

Log of Temporary Well
RISB-103

Figure
D-82
(2 of 2)

RISB-104



Boring Completed 05/20/24
Total Depth of Boring = 25.0 ft.

Temporary Well Completed 06/20/24
Total Depth of Temporary Well = 15.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-104	Figure D-83

RISB-105

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Rotosonic

Ground Elevation (ft): 603.49

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Description
0				0.0		SP-SM / ML	Gray, medium to coarse SAND with silt; no odor, no sheen (dense, wet) **(FILL)**
				0.0		SM	Grayish brown, sandy SILT with gravel; no odor, no sheen (medium stiff, moist to wet)
5		d4		0.0			Brown, very silty, fine to medium SAND; no odor, no sheen (dense, moist) **(GLACIAL TILL)**
				0.0			- grades to silty fine sand with gravel
				0.6			- grades to gray, very silty, with gravel
10				0.0			- becomes silty with gravel
				0.0			**Soil Sample: RISB-105-S-9-10'**
				0.0			
15		d4		0.0			**Groundwater Sample: RISB-105-GW**
				0.0			
20				0.0			*Boring step-down to 6-inches at 19.5'*
				0.0			
				0.0			**Soil Sample: RISB-105-S-24-25'**
25		d4		0.0			
				0.0			
30				0.0			
35							

Temporary Well Detail

Water Level

Perched

- Temporary well for grab sample
- 2-inch diameter, Schedule 40, PVC casing
- Collapsed boring soil
- 2-inch diameter, Schedule 40, PVC screen (0.020-inch slot size)

Boring Completed 05/24/24
Total Depth of Boring = 30.0 ft.

Temporary Well Completed 05/24/24
Total Depth of Temporary Well = 19.5 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\022057.GPJ WELL LOG

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TECT Aerospace Leasehold
Everett, Washington

Log of Temporary Well
RISB-105

Figure
D-84

RISB-106

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Rotosonic

Ground Elevation (ft): 603.45

Temporary Well Detail

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Description	Water Level
0		d4		0.0		SP-SM	Brown, fine SAND with gravel and silt; trace sweet odor, no sheen (dense, damp to moist) **(FILL)**	
5		d4		0.0				
10		d4		0.0		SM	- grades to gray, fine to medium, without gravel. Gray, silty, fine SAND with gravel; no odor, no sheen (dense, damp to moist) **(GLACIAL TILL)** **Groundwater Sample: RISB-106-GW**	Perched
15		d4		0.0		SP-SM / SM	Grades to Gray, silty, fine SAND with gravel; no odor, no sheen (dense, damp to moist) *Boring step-down to 6-inches at 15'*	
20		d4		0.0		SP-SM / SM	Gray, silty, fine SAND with gravel; no odor, no sheen (dense, damp to moist). Gray, medium SAND with silt; no odor, no sheen (dense, moist to wet). Gray, silty, fine SAND with gravel; no odor, no sheen (dense, damp to moist)	
25				0.0			**Soil Sample: RISB-106-S-24-25'**	

Temporary well for grab sample

2-inch diameter, Schedule 40, PVC casing

Collapsed boring soil

2-inch diameter, Schedule 40, PVC screen (0.020-inch slot size)

Boring Completed 05/24/24
Total Depth of Boring = 25.0 ft.

Temporary Well Completed 05/24/24
Total Depth of Temporary Well = 15.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

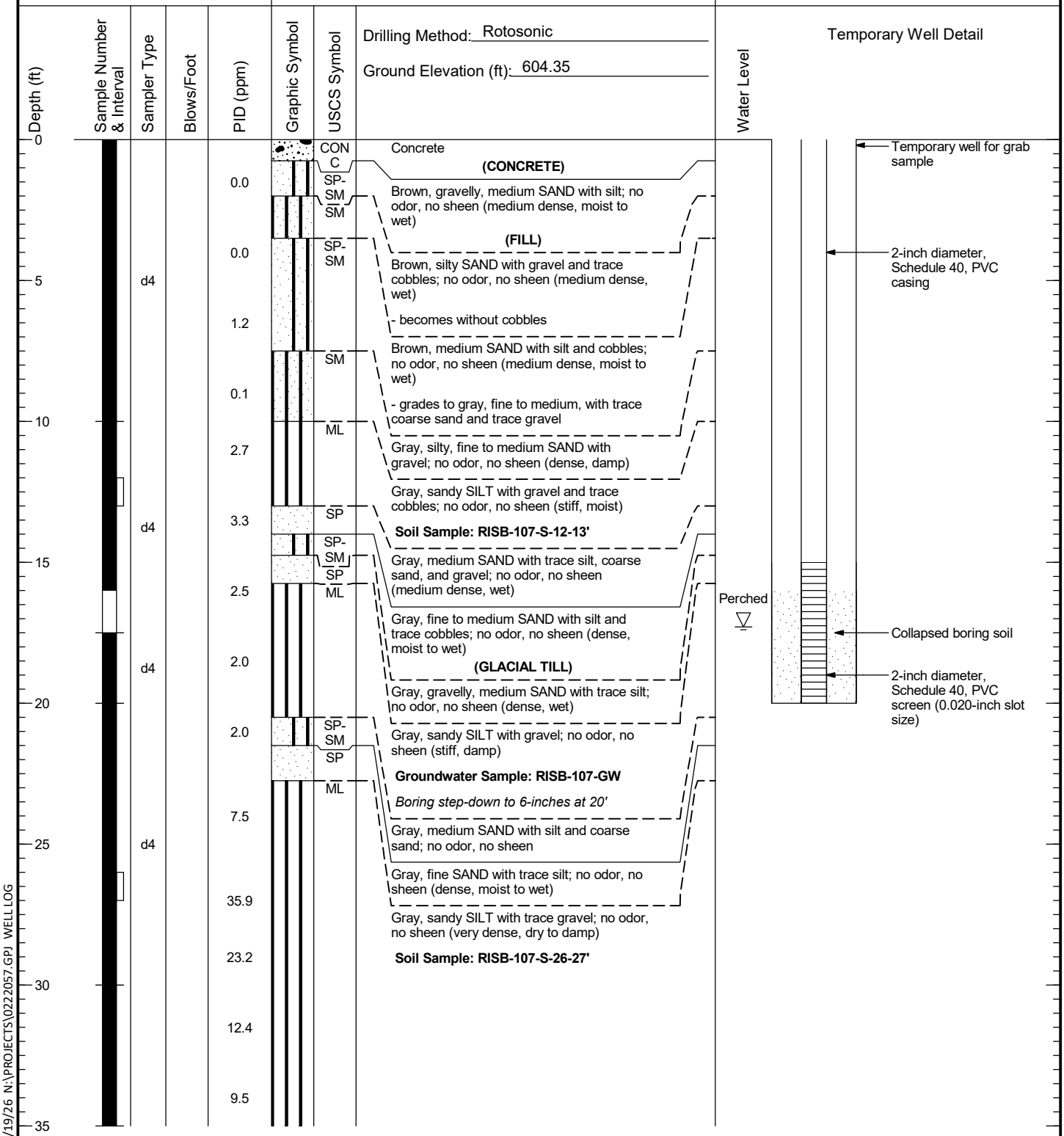
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TECT Aerospace Leasehold
Everett, Washington

Log of Temporary Well
RISB-106

Figure
D-85

RISB-107



Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-107	Figure D-86 (1 of 2)

RISB-107

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Water Level
35		d4				ML	
				8.1			
				6.4			
40				6.7			
				5.5			
45		d4					
				5.9			
50				6			

Drilling Method: Rotosonic

Ground Elevation (ft): 604.35

Gray, sandy SILT with trace gravel; no odor, no sheen (very dense, dry to damp)

Soil Sample: RISB-107-S-49-50'

Temporary Well Detail

Boring Completed 05/28/24
Total Depth of Boring = 50.0 ft.

Temporary Well Completed 05/28/24
Total Depth of Temporary Well = 20.0 ft.

55

60

65

70

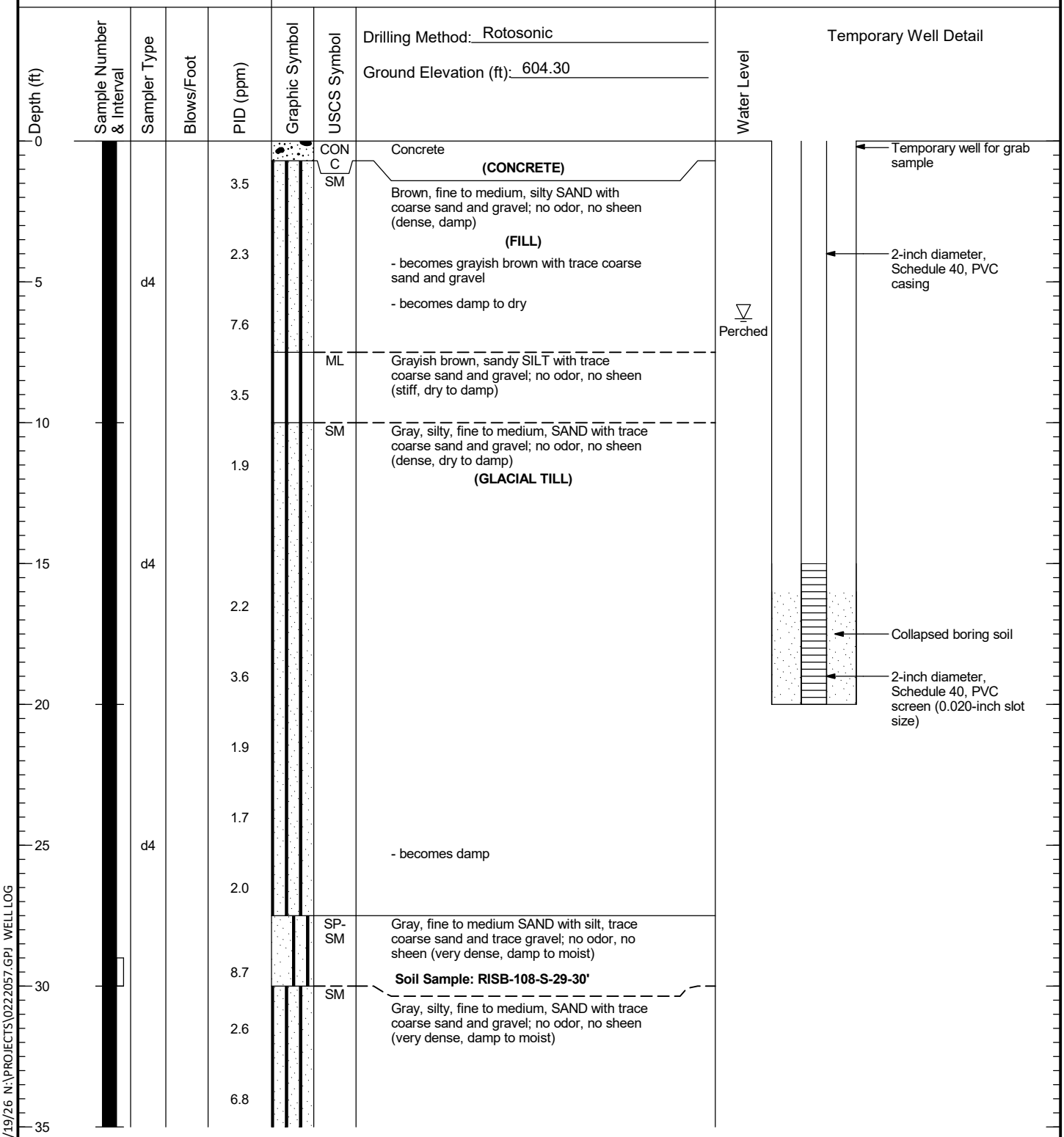
Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\022057.GPJ WELL LOG

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TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-107	Figure D-86 (2 of 2)

RISB-108



Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-108	Figure D-87 (1 of 2)

RISB-108

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Water Level
35		d4		6.7		SM	
				6.3			
40				0.9			
		d4		0.6			
45				1.2			
		d4		2.2			
50				1.0			

Drilling Method: Rotosonic

Ground Elevation (ft): 604.30

Temporary Well Detail

Gray, silty, fine to medium, SAND with trace coarse sand and gravel; no odor, no sheen (very dense, damp to moist)

Soil Sample: RISB-108-S-49-50'

Boring Completed 05/30/24
Total Depth of Boring = 50.0 ft.

Temporary Well Completed 05/31/24
Total Depth of Temporary Well = 30.0 ft.

55
60
65
70

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

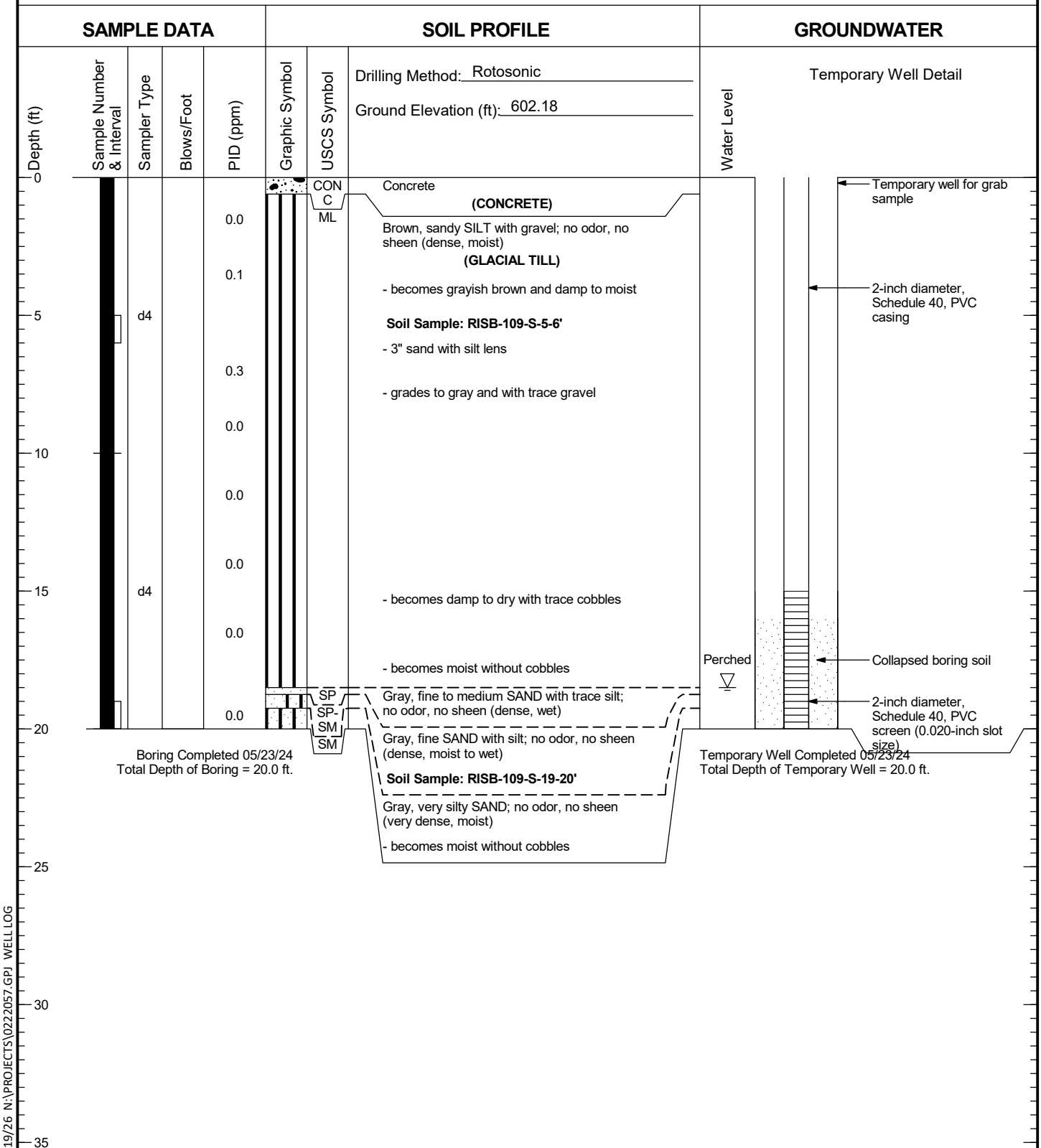
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Everett, Washington

Log of Temporary Well
RISB-108

Figure
D-87
(2 of 2)

RISB-109



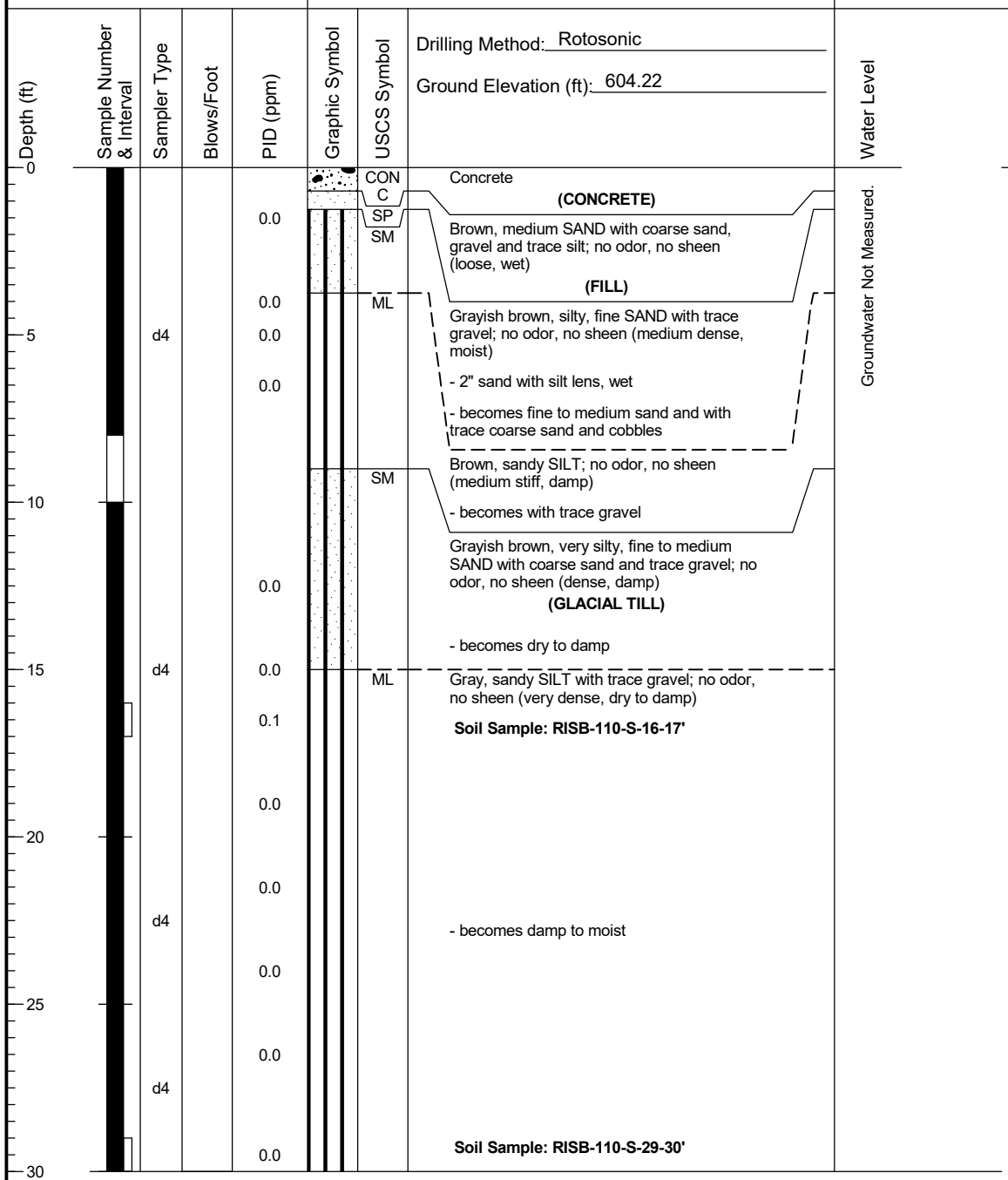
Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-109	Figure D-88

RISB-110



Boring Completed 05/23/24
Total Depth of Boring = 30.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\022057.GPJ WELL LOG

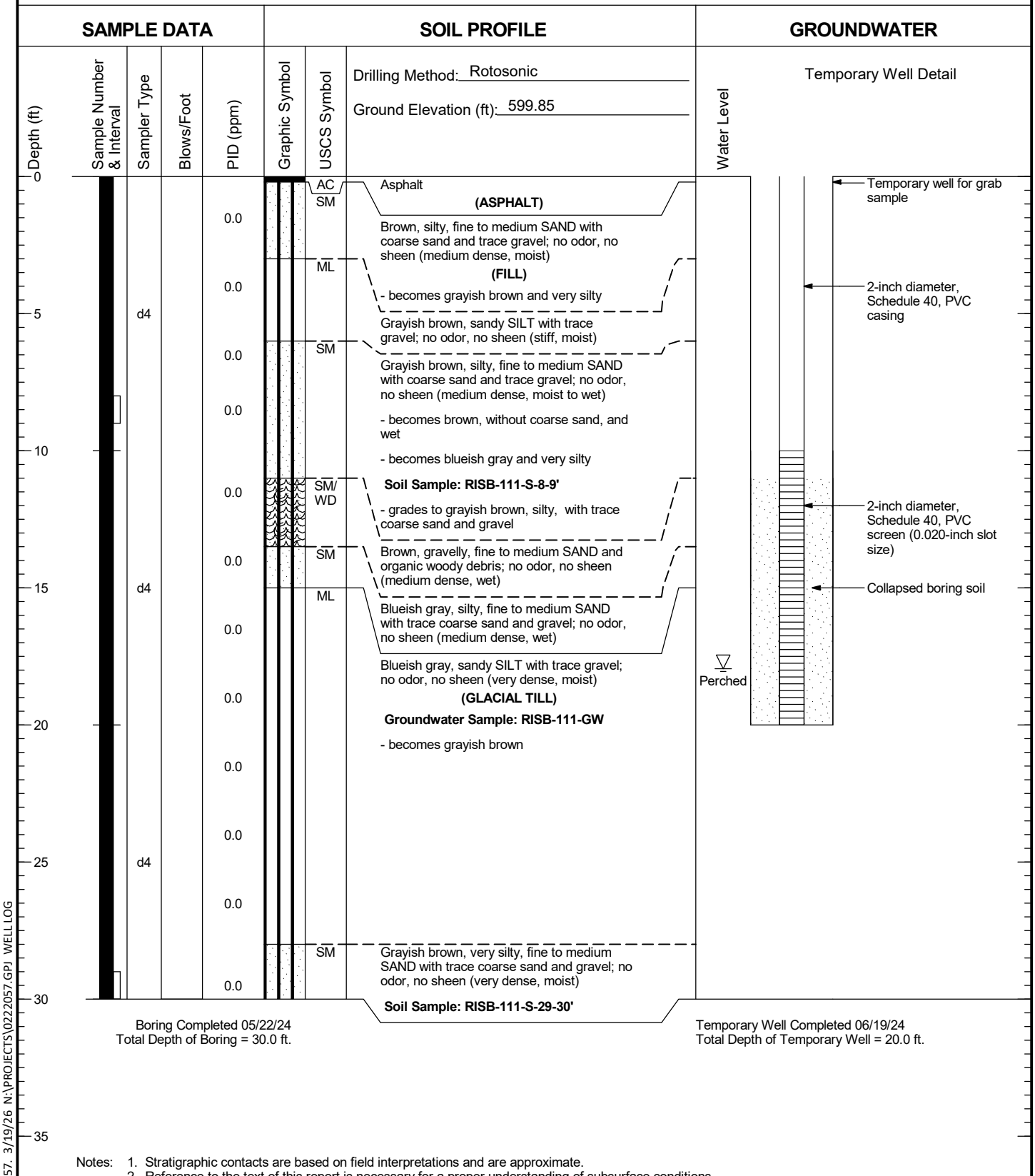
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Everett, Washington

Log of Soil Boring RISB-110

Figure
D-89

RISB-111



Boring Completed 05/22/24
Total Depth of Boring = 30.0 ft.

Temporary Well Completed 06/19/24
Total Depth of Temporary Well = 20.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-111	Figure D-90

RISB-112

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Rotosonic

Ground Elevation (ft): 601.50

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Profile	Water Level
0		d5				SM	Brown, silty, fine to medium SAND with coarse sand and trace gravel; no odor, no sheen (loose, moist to wet) **(TOPSOIL)**	
						SP	Dark brown, medium to coarse SAND with grass roots, trace silt, and trace gravel; no odor, no sheen (loose, moist to wet)	
				1.1			- grades to brown	
5						SM	- becomes gravelly	
		d4		3.4			Gray, silty, fine SAND with medium and coarse and and trace gravel; no odor, no sheen (dense, damp) **(GLACIAL TILL)**	
				15.8		SP	- becomes moist	▽ Perched
10						SM	- becomes moist to wet with gravel	
				18.2			- becomes gravelly	
		d4					- becomes without gravel and damp **Soil Sample: RISB-112-S-9-10'**	
				6.6		SP-SM	Gray, fine to medium SAND with trace silt, coarse sand, and gravel; no odor, no sheen (medium dense, wet)	
15						SP		
				1.1			Gray, silty, fine to medium SAND with trace coarse sand, gravel and cobbles; no odor, no sheen (dense, damp to moist)	
		d4					- becomes damp	
				0.8		SP-SM	- becomes without cobbles	
20						SM	Gray, fine to medium SAND with silt; no odor, no sheen (dense, moist to wet) **Soil Sample: RISB-112-S-14-15'**	
				0.5		SP	*Boring step-down to 6-inches at 15'*	
		d4				SM	Gray, fine SAND with trace medium and coarse sand; no odor, no sheen (medium dense, wet)	
				2.0			Gray, fine SAND with silt and trace gravel; no odor, no sheen (dense, wet)	
25				1.6			Gray, silty, fine SAND with trace gravel; no odor, no sheen (dense, moist)	
		d4					*Boring step-down to 4-inches at 20'*	
				1.0			Gray, fine SAND with trace silt; no odor, no sheen (dense, moist to wet)	
30							Gray, fine to medium SAND with trace coarse sand and gravel; no odor, no sheen (very dense, damp to moist) **Soil Sample: RISB-112-S-29-30'**	
35								

Boring Completed 05/30/24
Total Depth of Boring = 30.0 ft.

Detail

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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Everett, Washington

Log of Soil Boring RISB-112

Figure
D-91

RISB-113

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft): 602.88	
0				0.0		AC	Asphalt	
						ML	**(ASPHALT)**	
				0.0		SM	Gray, sandy SILT with gravel and cobbles; no odor, no sheen (stiff, damp to moist)	Groundwater Not Measured.
							(FILL)	
				0.0			Grayish brown, very silty, fine to medium SAND with gravel; no odor, no sheen (dense, damp)	
5		d4		0.2			- becomes silty with coarse sand and medium dense	
				0.1			- becomes damp to moist	
10						ML	Gray, sandy SILT with gravel; no odor, no sheen (very stiff, dry to damp)	
				0.4			**(GLACIAL TILL)**	
							Soil Sample: RISB-113-S-11-12'	
				0.2				
15		d4					- becomes with trace cobbles	
				0.3				
				0.2				
20							- becomes damp to moist	
							Soil Sample: RISB-113-S-21-22'	
				0.4				
				0.2				
25		d4						
				0.4				
							Soil Sample: RISB-113-S-29-30'	
30				0.1				
35								

Boring Completed 05/22/24
Total Depth of Boring = 30.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\022057.GPJ SOIL BORING LOG

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TECT Aerospace Leasehold
Everett, Washington

Log of Boring RISB-113

Figure
D-92

RISB-114

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Rotosonic

Ground Elevation (ft): 601.17

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Profile	Water Level
0						AC	Asphalt	Groundwater Not Measured.
						SP		
				0.2		ML	Brown, medium to coarse SAND with fine sand, gravel, trace silt and trace cobbles; no odor, no sheen (medium dense, wet)	
						SP-SM	**(FILL)**	
				0.3		ML	Gray SILT with sand, organic wood sticks, trace gravel and trace cobbles; no odor, no sheen (medium stiff, moist)	
5		d4						
				5.6			Gray, fine SAND with silt, coarse sand and trace fine to coarse gravel; no odor, no sheen (medium dense, wet)	
							- becomes without sticks	
				1.6			Brown, sandy SILT with trace gravel; no odor, no sheen (medium stiff, moist)	
10						ML	**Soil Sample: RISB-114-S-6-7'**	
				1.1			Gray, sandy SILT with sand and trace gravel; no odor, no sheen (stiff, damp to moist)	
							(GLACIAL TILL)	
		d4		0.7				
15								
				3.4				
		d4		0.3			**Soil Sample: RISB-114-S-19-20'**	
20							- becomes with gravel and very dense	
25		d4						
30				0.0			**Soil Sample: RISB-114-S-29-30'**	
35								

Boring Completed 05/20/24
Total Depth of Boring = 30.0 ft.

Detail

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\022057.GPJ WELL LOG

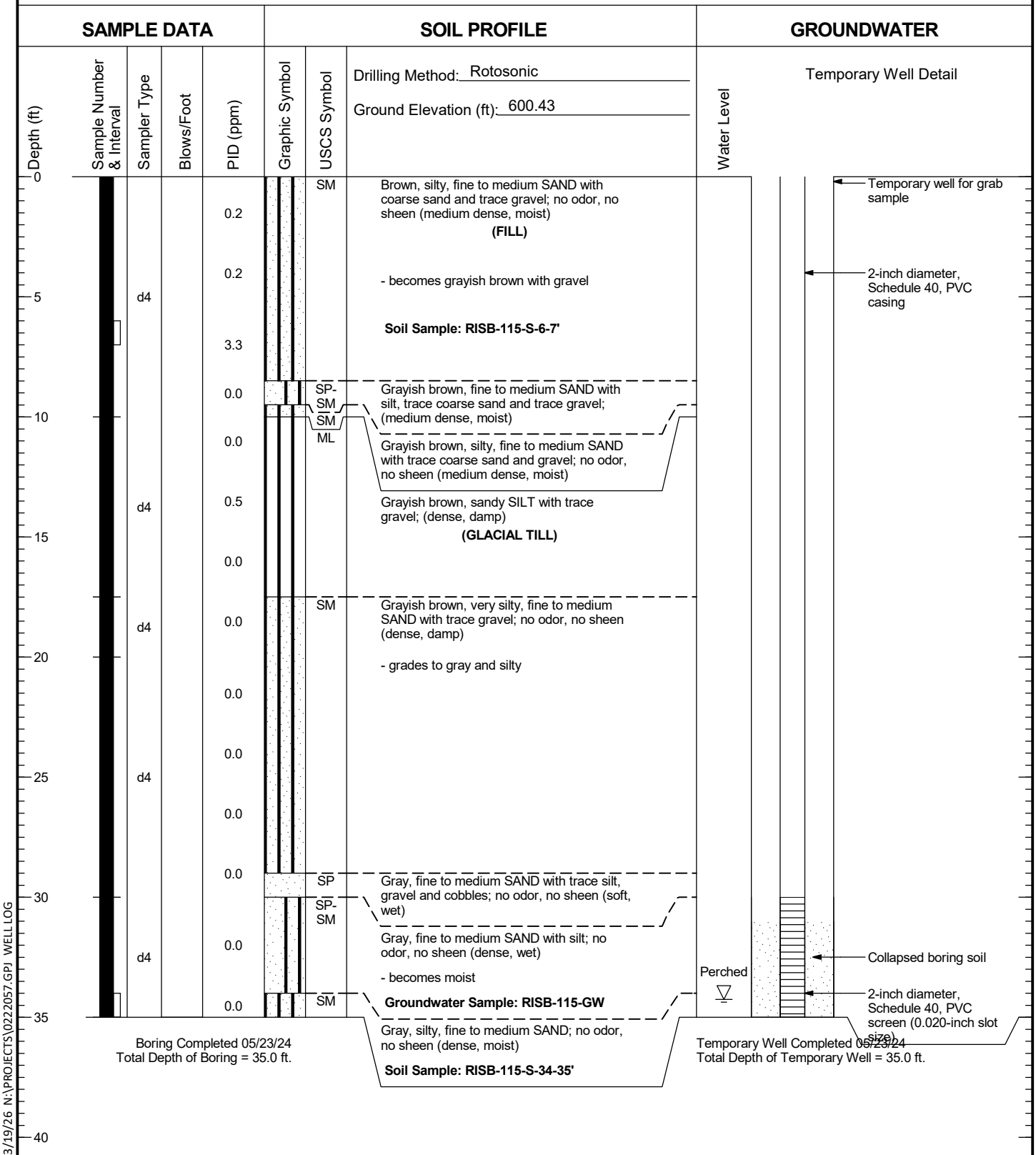
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Everett, Washington

Log of Soil Boring RISB-114

Figure
D-93

RISB-115



Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\022057.GPJ WELL LOG

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TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-115	Figure D-94

RISB-116

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Rotosonic

Ground Elevation (ft): 601.73

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Profile	Water Level
0				1.4		AC	Asphalt	
						SM	Blueish gray with brown mottling, very silty, fine to medium SAND with gravel and trace cobbles; no odor, no sheen (dense, moist)	
				2.1			**(FILL)**	
							- 6 inch, gravelly, sand with silt lens	
5		d4		0.7		ML	Brown, sandy SILT with gravel and black woody organics; no odor, no sheen (dense, moist)	
				1.3				
10							- gradational contact	
				0.5		SM	Grayish brown, fine to medium, very silty SAND with coarse sand and trace organics; no odor, no sheen (medium dense, moist to wet)	Perched
		d4		1.1		SP-SM		
				3.0		SM	Gray, fine to medium SAND with silt and trace coarse sand; no odor, no sheen (medium dense, wet)	
15				0.5			**Soil Sample: RISB-116-S-13-14'**	
		d4					Gray, fine to medium, silty SAND with coarse sand and trace gravel; no odor, no sheen (dense,)	
				0.5			**(GLACIAL TILL)**	
20							**Groundwater Sample: RISB-116-GW**	
				0.0			- grades to very silty sand	
							Boring step-down to 6-inches at 17'	
							- becomes brown	
				0.0			- grades to gray	
25		d4						
				2.0				
							Soil Sample: RISB-116-S-28-29'	
				13.1				
30							- becomes with trace cobbles	
				0.0				
				0.0				
35								

Temporary Well Detail

- Temporary well for grab sample
- 2-inch diameter, Schedule 40, PVC casing
- Collapsed boring soil
- 2-inch diameter, Schedule 40, PVC screen (0.020-inch slot size)

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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Everett, Washington

Log of Temporary Well
RISB-116

Figure
D-95
(1 of 2)

RISB-116

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Water Level
35		d4				SM	
				0.0		ML	Gray, very sandy SILT with gravel and trace cobbles; no odor, no sheen (very stiff, damp to moist)
40				0.0			**Soil Sample: RISB-116-S-39-40'**

Drilling Method: Rotosonic

Ground Elevation (ft): 601.73

Temporary Well Detail

Boring Completed 05/21/24
Total Depth of Boring = 40.0 ft.

Temporary Well Completed 05/21/24
Total Depth of Temporary Well = 17.0 ft.

45
50
55
60
65
70

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

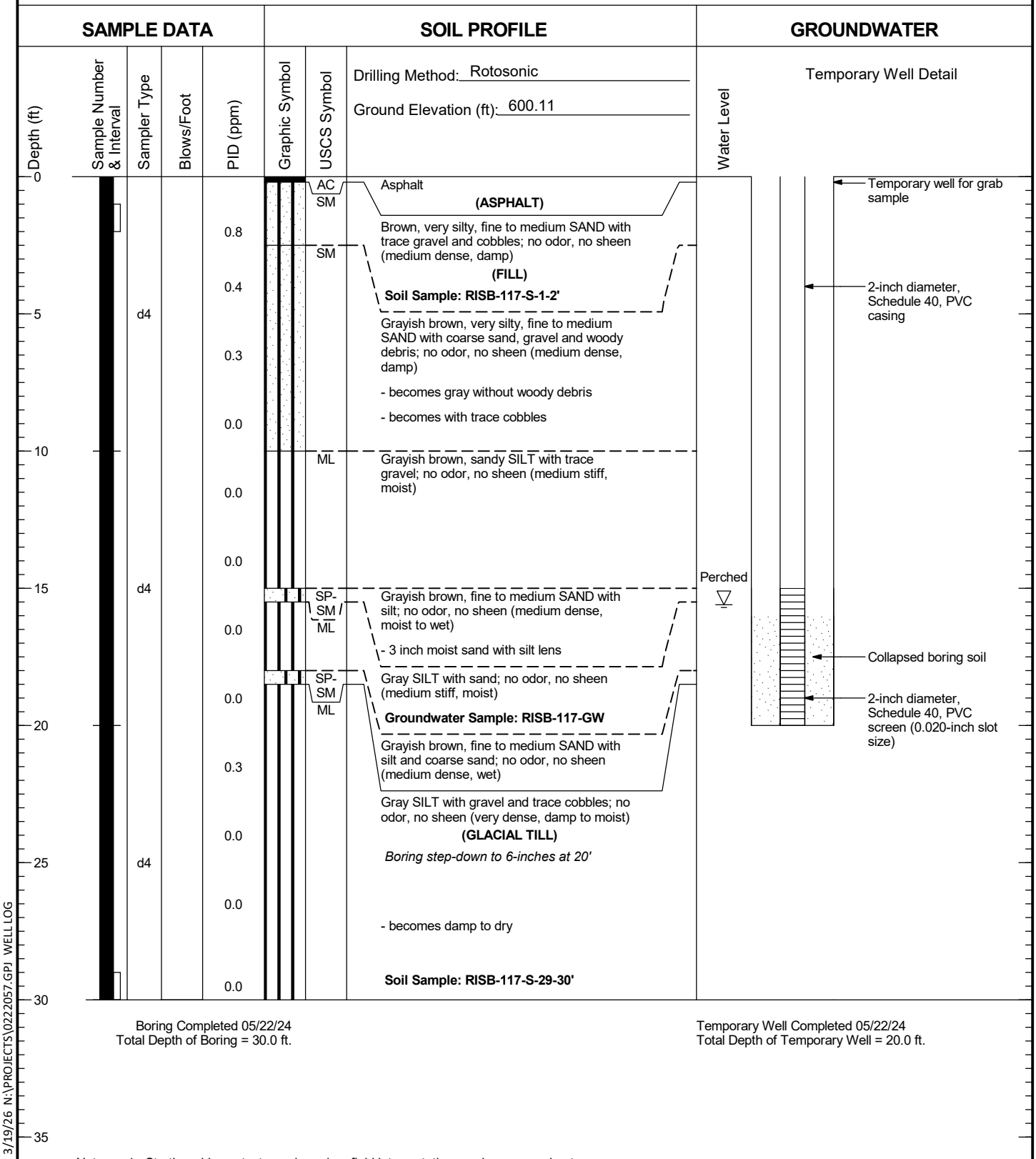
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TECT Aerospace Leasehold
Everett, Washington

Log of Temporary Well
RISB-116

Figure
D-95
(2 of 2)

RISB-117



Boring Completed 05/22/24
Total Depth of Boring = 30.0 ft.

Temporary Well Completed 05/22/24
Total Depth of Temporary Well = 20.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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TECT Aerospace Leasehold
Everett, Washington

Log of Temporary Well
RISB-117

Figure
D-96

RISB-201

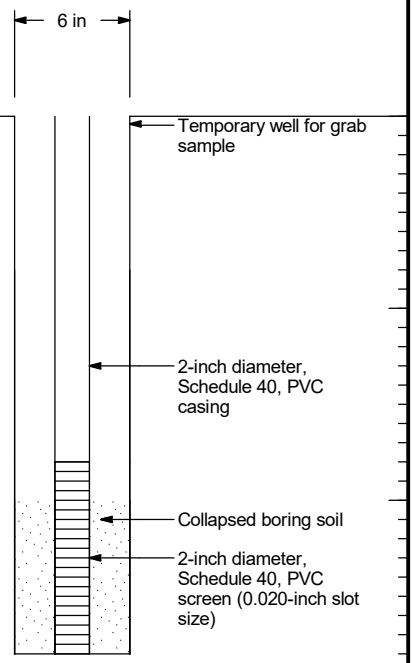
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Profile
							Drilling Method: Rotosonic Ground Elevation (ft): Not Surveyed
0		d5		0.0		SM	Grass
		d5		0.0			Brown, silty, medium SAND with trace fine and coarse sand and organic roots; no odor, no sheen (medium dense, damp) **(FILL)**
		d5		0.0			
		d5		10.0		SP-SM	- without roots
5		d4				SM	- becomes fine to medium sand with coarse gravel, moist to wet
				0.3			Gray-brown, medium to coarse SAND with silt, gravel, and trace wood; inorganic odor, no sheen (medium dense, moist)
		d4		0.6		SP-SM	**Soil Sample: RISB-201-(3.5-4')**
10				0.1		SM	Gray-brown, silty, fine to medium SAND with trace coarse sand, gravel and roots; no odor, no sheen (dense, moist)
							Gray-black, medium to coarse SAND with silt, fine sand, and gravel; inorganic odor, no sheen (medium dense, damp)
				0.2		SP-SM	Brown, silty, fine SAND with medium sand and trace coarse sand and gravel, with orange oxidation; no odor, no sheen (dense, wet)
15		d4				SM	**(GLACIAL TILL (WEATHERED))**
				0.1			Brown, fine SAND with silt and trace cobbles; no odor, no sheen (dense, moist to wet)
				0.1			Brown, silty, fine to medium SAND with coarse sand, trace gravel; no odor, no sheen (dense, damp to moist)
20							- becomes very dense
				0.4		SM	Gray-brown, silty, fine to medium SAND with coarse sand, trace gravel; no odor, no sheen (very dense, damp to moist)
				0.6			**(GLACIAL TILL)**
25		d4				SP-SM	Gray-brown, fine to medium SAND with coarse sand and silt, trace gravel; no odor, no sheen (very dense, damp to moist)
				0.6		SM	
							Gray-brown, silty, fine to medium SAND with coarse sand, trace gravel; no odor, no sheen (very dense, damp to moist)
				0.2			- green and orange mottling
30				0.5			- becomes green with gravel
				0.7		SP-SM	Dark reddish-brown, medium SAND with silt and gravel, trace cobbles; no odor, no sheen (very dense, damp to moist)
35						SM	

GROUNDWATER

Water Level

ATD

Temporary Well Detail



Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold
Everett, Washington

Log of Temporary Well
RISB-201

Figure
D-97
(1 of 2)

RISB-201

SAMPLE DATA				SOIL PROFILE			GROUNDWATER	
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft): Not Surveyed	Water Level
35		d4		0.5		SM	**Soil Sample: RISB-201-(33-34')** Gray, silty, fine to medium SAND with coarse sand and trace gravel; no odor, no sheen (very dense, damp to moist)	Temporary Well Detail
40				0.3			**Soil Sample: RISB-201-(39-40')**	

Boring Completed 01/28/25
Total Depth of Boring = 40.0 ft.

45
50
55
60
65
70

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

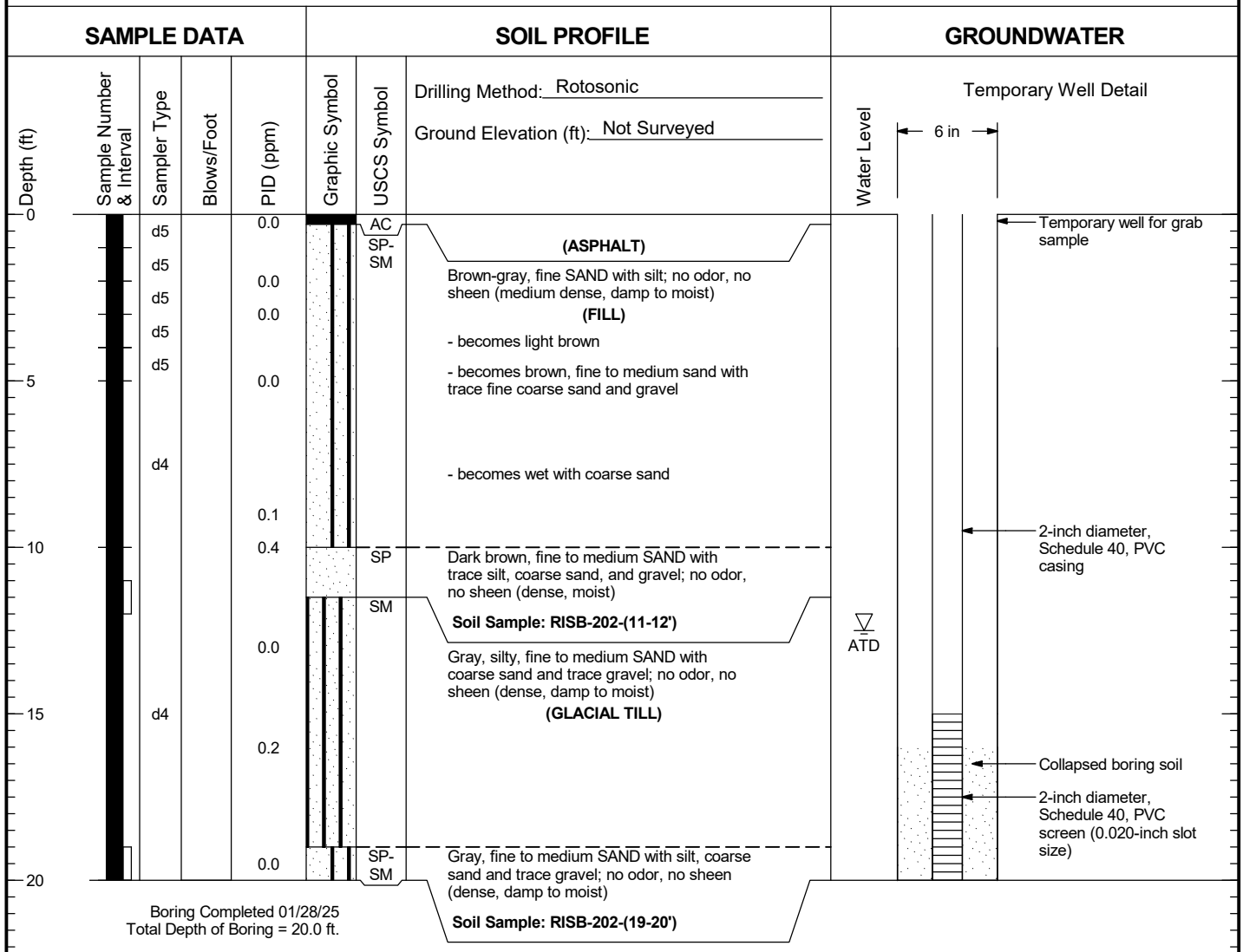
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TECT Aerospace Leasehold
Everett, Washington

Log of Temporary Well
RISB-201

Figure
D-97
(2 of 2)

RISB-202



Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-202	Figure D-98

RISB-203

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Rotosonic

Ground Elevation (ft): Not Surveyed

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Description
0						AC	**(ASPHALT)**
		d5		0.2		SP-SM	Gray, fine to medium SAND with silt and gravel; no odor, no sheen (dense, damp to moist)
				0.1			**(FILL)**
				0.0		SP	Gray, fine to medium SAND with trace silt and coarse sand; no odor, no sheen (medium dense, wet)
5						SP-SM	
				0.1		SM	- becomes fine sand with coarse gravel
		d4					Gray-brown, fine to medium SAND with silt, trace coarse sand and gravel; no odor, no sheen (dense, damp to moist)
						SM	
				0.2			Gray-brown, silty, fine to medium SAND with trace coarse sand and gravel; no odor, no sheen (dense, damp to moist)
10				0.0			
							Gray, silty, fine to medium SAND with coarse sand and gravel; no odor, no sheen (very dense, damp to moist)
				0.1			**(GLACIAL TILL)**
							Soil Sample: RISB-203-(8-9')
15		d4					- with trace gravel
				0.1			
				0.0			**Soil Sample: RISB-203-(19-20')**
20							

Water Level: ATD

Temporary Well Detail

6 in

- Temporary well for grab sample
- 2-inch diameter, Schedule 40, PVC casing
- Collapsed boring soil
- 2-inch diameter, Schedule 40, PVC screen (0.020-inch slot size)

Boring Completed 01/29/25
Total Depth of Boring = 20.0 ft.

25
30
35

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

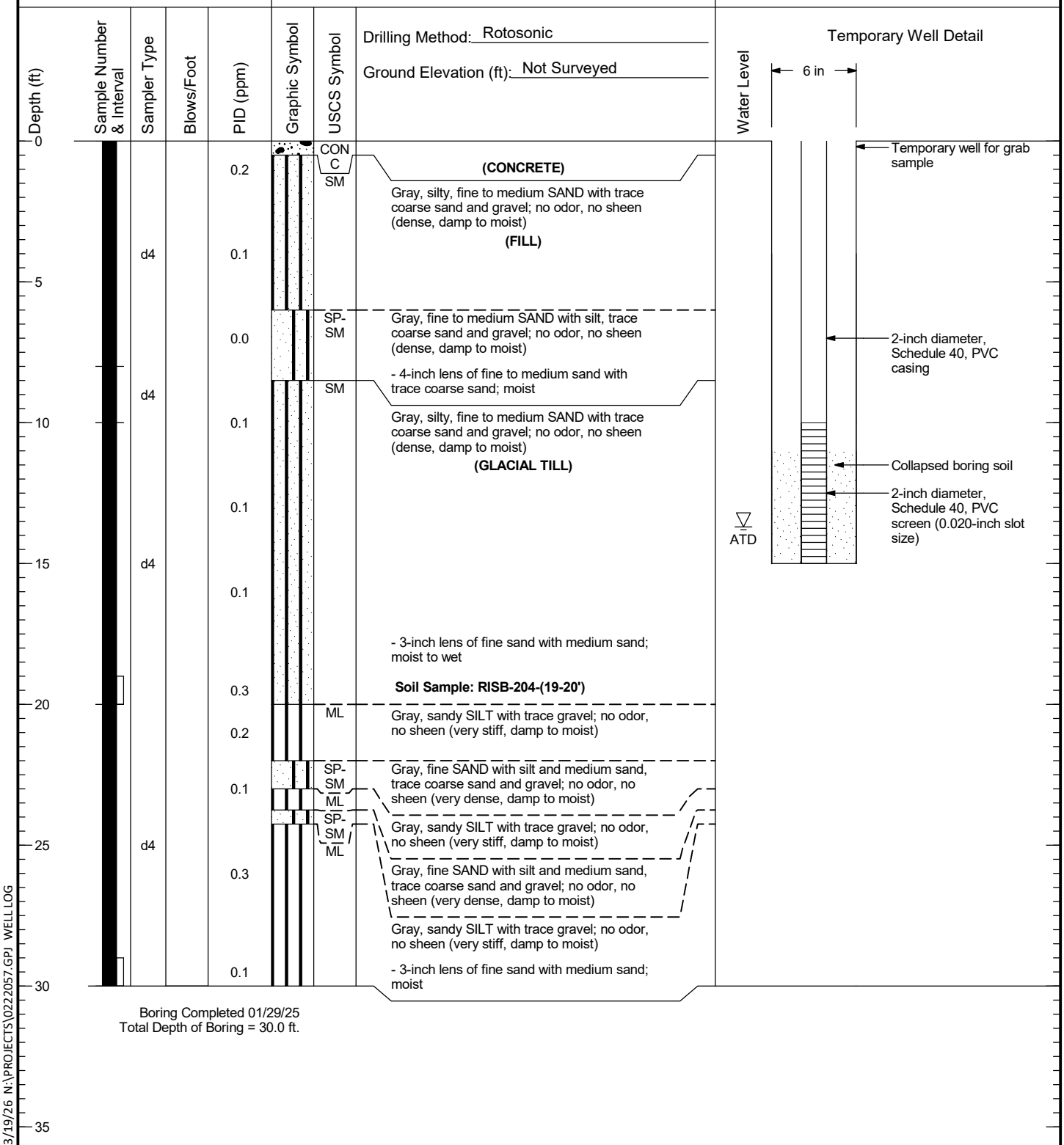
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TECT Aerospace Leasehold
Everett, Washington

Log of Temporary Well
RISB-203

Figure
D-99

RISB-204



Boring Completed 01/29/25
Total Depth of Boring = 30.0 ft.

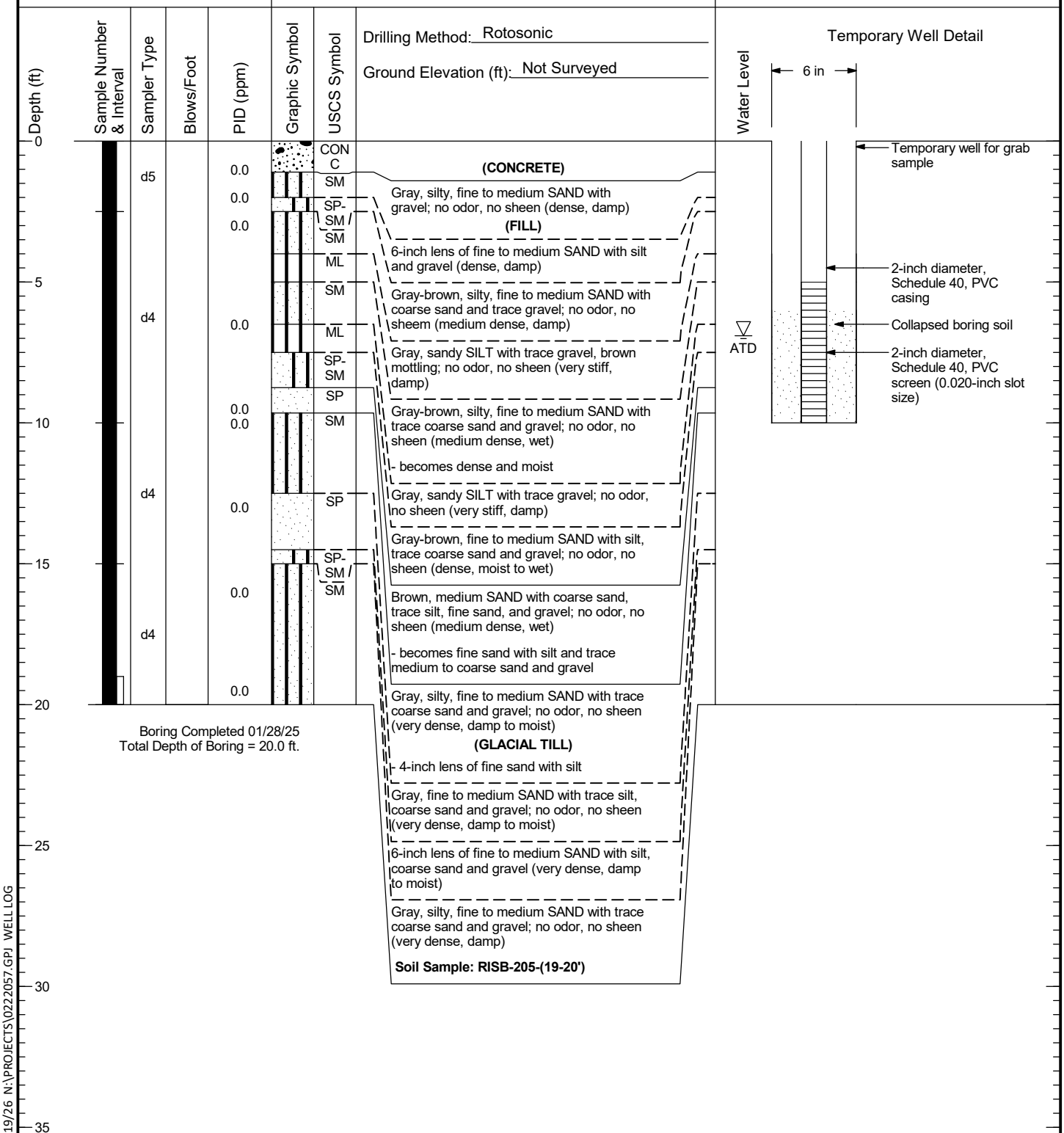
Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-204	Figure D-100

RISB-205



Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Temporary Well RISB-205	Figure D-101

RIGW-1

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Hollow-Stem Auger (Geoprobe)

Ground Elevation (ft): Not Surveyed

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Description
0						AC	Asphalt
						GP-GM SM	Gray, sandy, fine GRAVEL with silt (no odor, no sheen) (dense, damp to moist) **(FILL)**
				0.0		ML	Dark gray, silty, fine SAND with trace gravel (no odor, no sheen) (dense, damp to moist)
						SP-SM	Dark brown SILT with sand and organic material (no odor, no sheen) (stiff, damp to moist)
5							Light brown, fine SAND with silt and trace gravel (no odor, no sheen) (dense, damp to moist)
				0.0			Becomes gray
						SP	Gray, fine SAND with trace silt and gravel (no odor, no sheen) (dense, damp to moist)
10				0.0			
						SM	Light brown, silty, fine SAND with gravel (no odor, no sheen) (very dense, damp to moist) **(GLACIAL TILL)** Becomes moist
15				0.0			
				0.0		SP-SM ML SM	Gray, fine to medium SAND with silt and gravel (no odor, no sheen) (very dense, damp to moist)
20	b1	101/1.5"		0.0		SP	Light brown SILT with sand (no odor, no sheen) (hard, damp to moist)
							Gray, silty, fine SAND with gravel (no odor, no sheen) (very dense, damp to moist)
25							Gray, fine to medium SAND with trace silt (no odor, no sheen) (very dense, damp to moist)

Boring Completed 08/17/21
Total Depth of Boring = 21.5 ft.

Water Level: MM/DD/YY

Monitoring Well Detail (DOE#: BMX 890)

8 in

- Flush-mounted monument with locking cap
- Portland Cement
- Bentonite chips
- 2-inch diameter, Schedule 40, PVC well casing
- 2-inch diameter, Schedule 40, PVC screen (0.010-inch slot size)
- 10/20 silica sand pack
- Threaded end cap
- Bentonite chips

Monitoring Well Completed 08/17/21
Elevation at Top of Monitoring Well Casing = 600.84 ft.
Total Depth of Monitoring Well = 20.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold
Everett, Washington

Log of Monitoring Well RIGW-1

Figure
D-102

RIGW-2

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Hollow-Stem Auger (Geoprobe)

Ground Elevation (ft): Not Surveyed

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Description
0						AC	Asphalt
						SP	Light brown, fine to medium SAND with trace silt (no odor, no sheen) (medium dense, moist) **(FILL)**
				0.0			
5						SM	Light brown, silty, fine SAND with trace gravel (no odor, no sheen) (dense, damp to moist)
				0.0			
							Increase gravel content and becomes very dense
				0.0			
10							
				0.0			
						ML	Gray, sandy, SILT with trace gravel (no odor, no sheen) (dense, damp to moist) **(GLACIAL TILL)**
				0.0			
15							
20							
25							

Water Level: Groundwater Not Measured.

Monitoring Well Detail (DOE#: BMX 877)

3 in

- Flush-mounted monument with locking cap
- Portland Cement
- Bentonite chips
- 1-inch diameter, Schedule 80, PVC well casing
- 1-inch diameter, Schedule 80, PVC screen (0.010-inch slot size)
- 10/20 silica sand pack
- Threaded end cap
- Bentonite chips

Boring Completed 08/17/21
Total Depth of Boring = 15.0 ft.

Monitoring Well Completed 08/17/21
Elevation at Top of Monitoring Well Casing = 599.50 ft.
Total Depth of Monitoring Well = 13.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

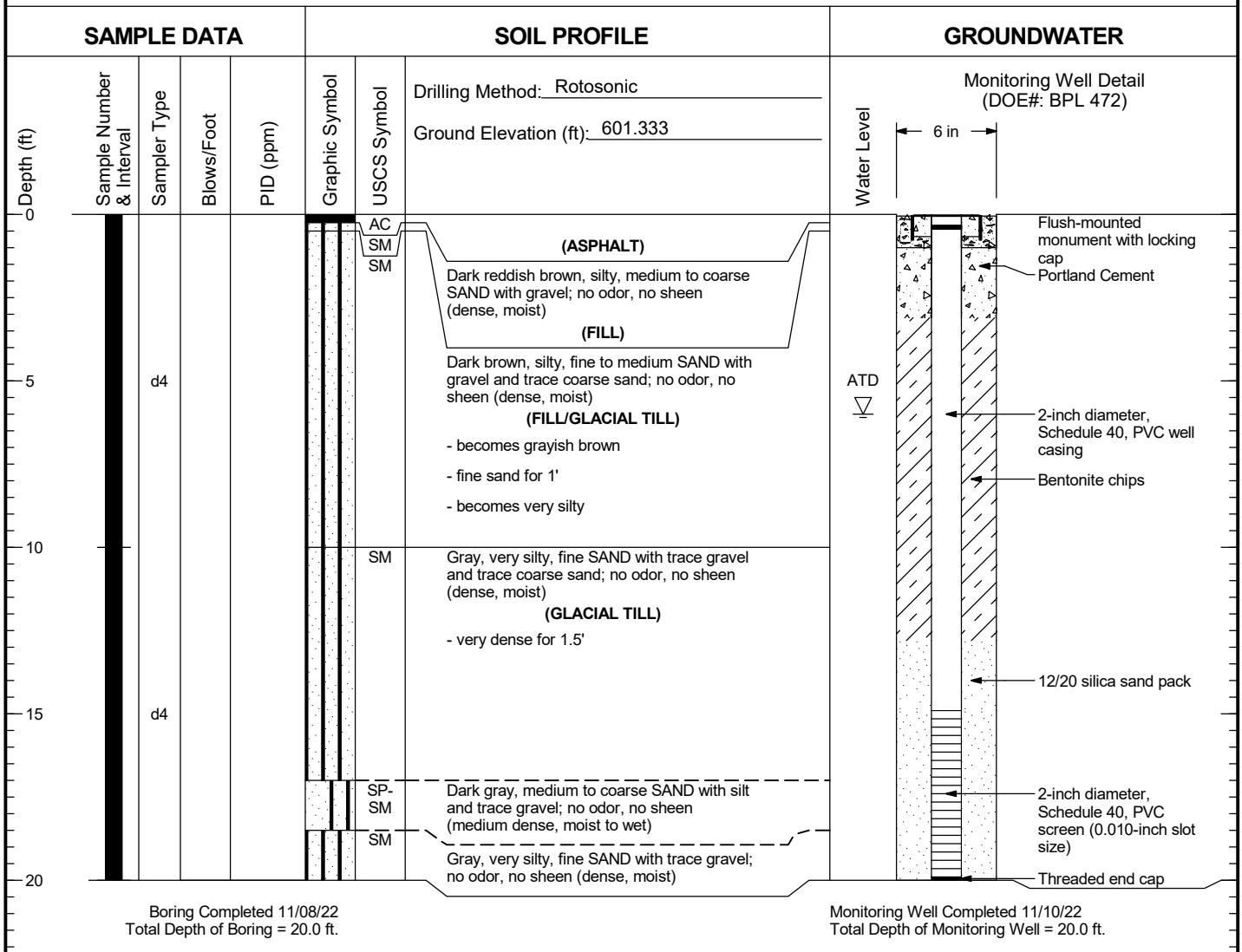
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TECT Aerospace Leasehold
Everett, Washington

Log of Monitoring Well RIGW-2

Figure
D-103

RIGW-3



Boring Completed 11/08/22
Total Depth of Boring = 20.0 ft.

Monitoring Well Completed 11/10/22
Total Depth of Monitoring Well = 20.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Monitoring Well RIGW-3	Figure D-104

RIGW-55

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Geoprobe™

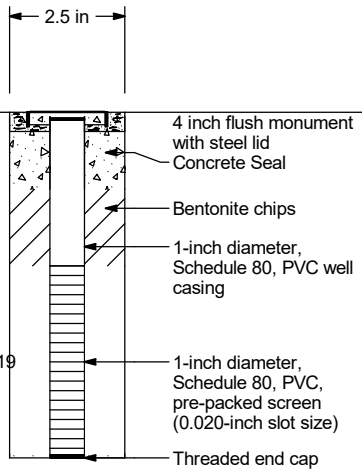
Ground Elevation (ft): Not Surveyed

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Profile
0						CONC	Concrete
		d3		0.0		SP SM ML	Brown, fine to medium SAND with trace silt and gravel; no sheen, no odor (loose, damp) **(FILL)** **Soil Gas Sample: RISG-55-190325**
5				0.0			Brownish, silty, SAND with trace gravel; no sheen, no odor (loose, damp) - rust mottled Brownish, sandy, SILT with trace gravel; no sheen, no odor (soft, damp)
	RISB-55-(7-8')					SM	- becomes moist **Soil Sample: RISB-55-(7-8')**
10				0.0		ML	Brownish, silty, fine to medium SAND with trace gravel; no sheen, no odor (loose, wet)
							Brownish, sandy, SILT with trace gravel; no sheen, no odor (stiff, wet)

Boring Completed 03/18/19
Total Depth of Boring = 12.0 ft.

Water Level: 04/15/2019

Monitoring Well Detail
(DOE#: BMK 281)



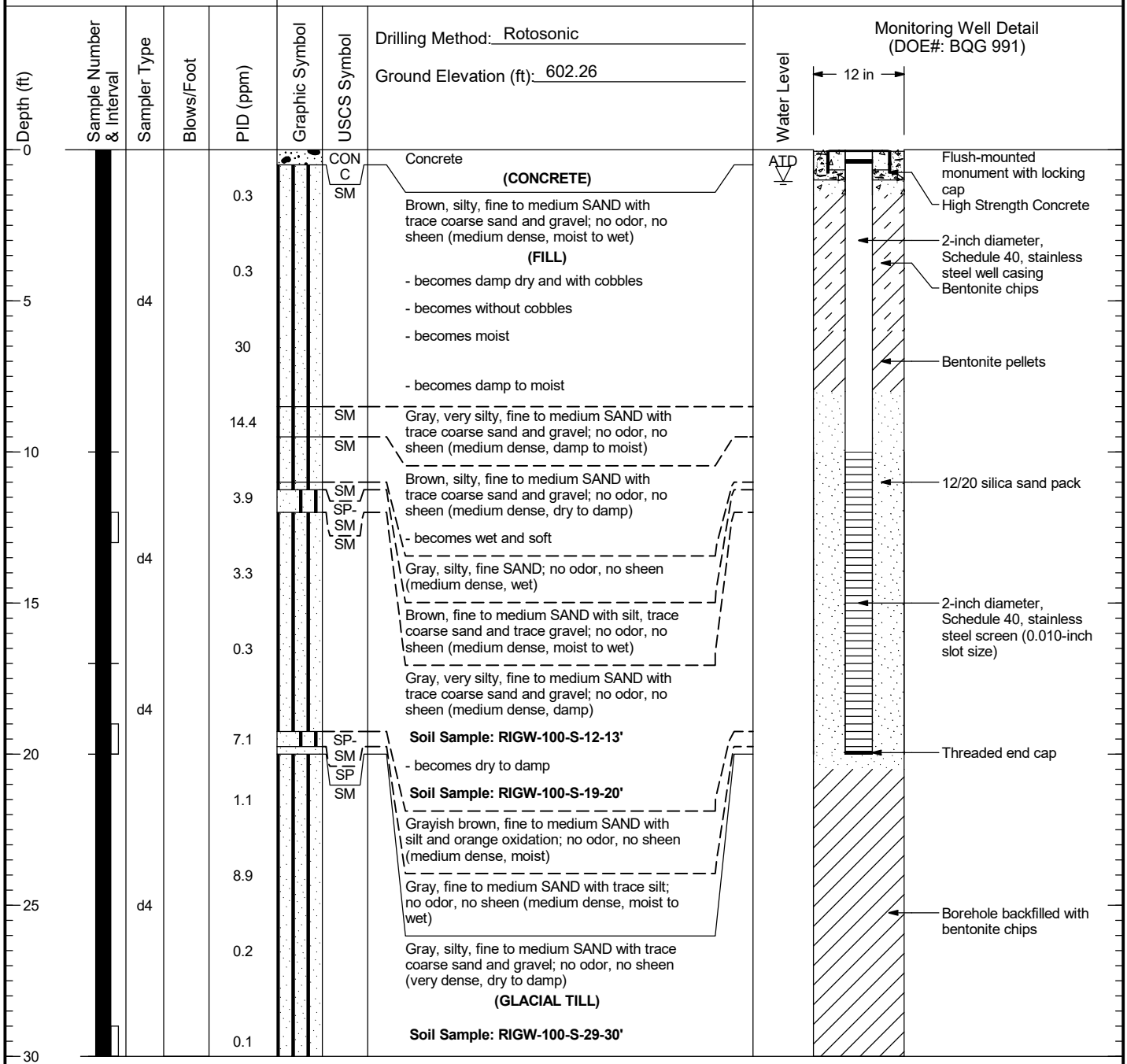
Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Monitoring Well RIGW-55	Figure D-105

RIGW-100



Boring Completed 06/05/24
Total Depth of Boring = 30.0 ft.

Monitoring Well Completed 06/05/24
Elevation at Top of Monitoring Well Casing = 601.91 ft.
Total Depth of Monitoring Well = 20.0 ft.

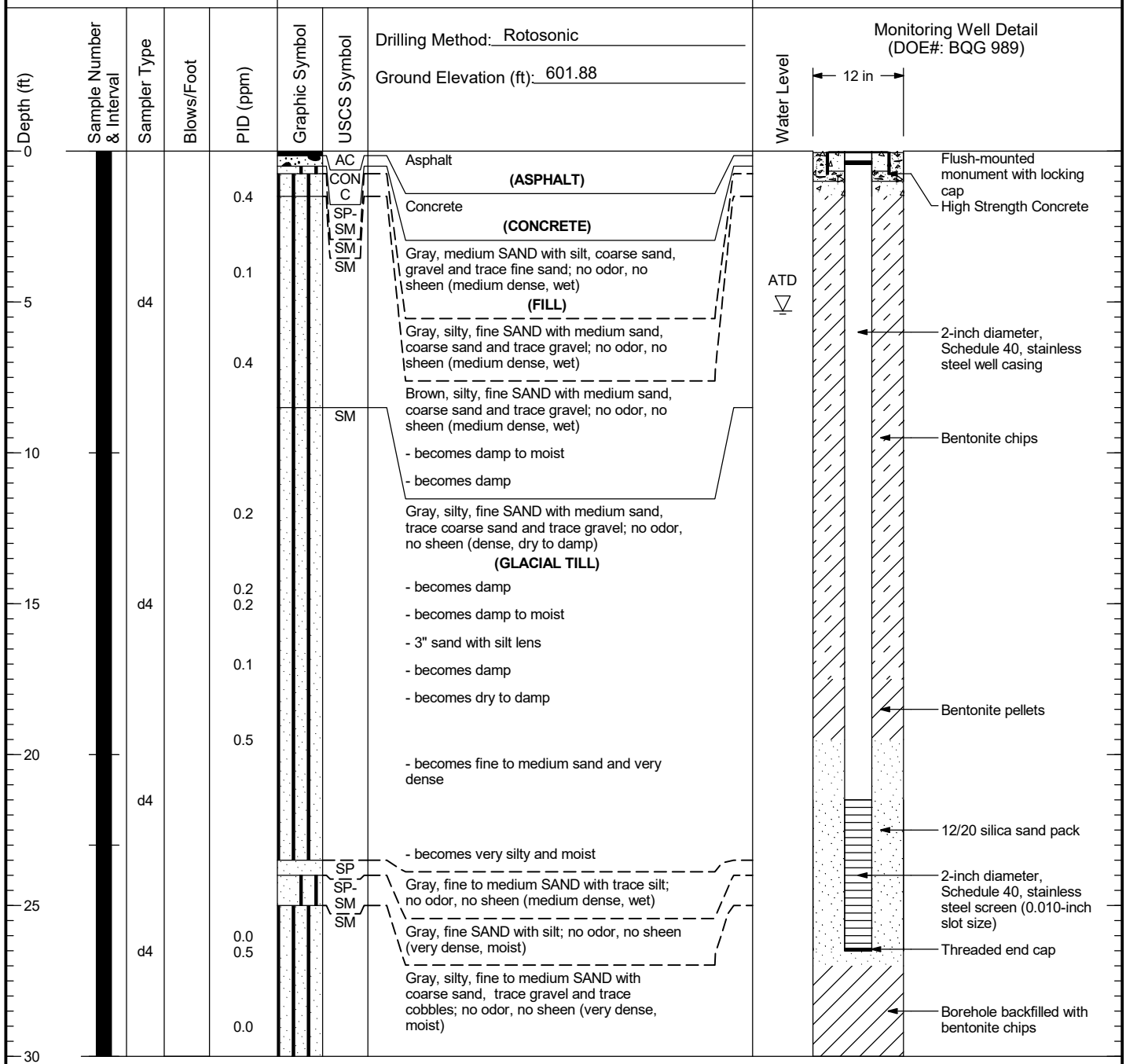
Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/20/26 N:\PROJECTS\0222057.GPJ WELL LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Monitoring Well RIGW-100	Figure D-106

RIGW-101



Boring Completed 06/04/24
Total Depth of Boring = 30.0 ft.

Monitoring Well Completed 06/04/24
Elevation at Top of Monitoring Well Casing = 601.58 ft.
Total Depth of Monitoring Well = 26.5 ft.

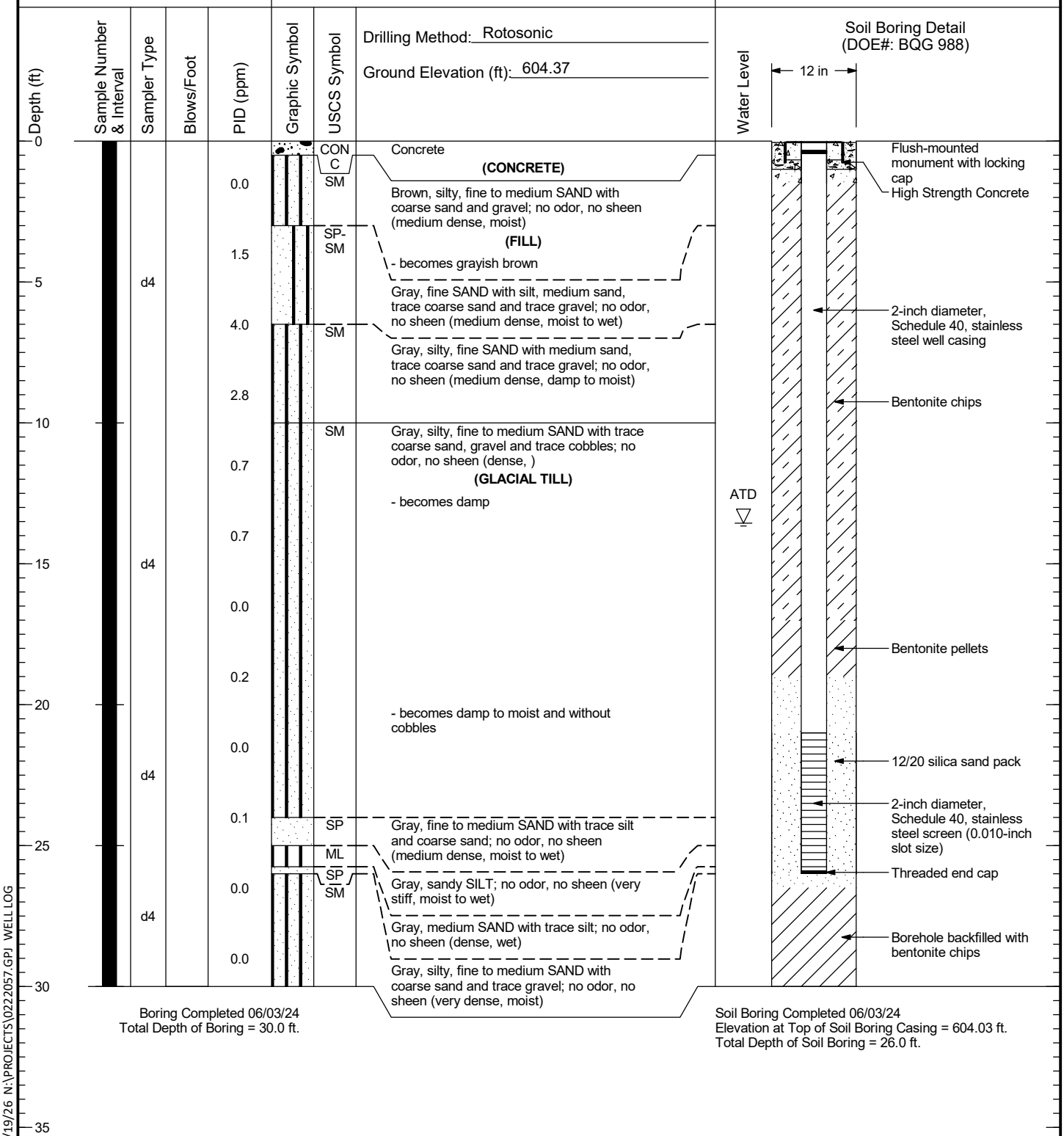
Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Monitoring Well RIGW-101	Figure D-107

RIGW-102



Boring Completed 06/03/24
Total Depth of Boring = 30.0 ft.

Soil Boring Completed 06/03/24
Elevation at Top of Soil Boring Casing = 604.03 ft.
Total Depth of Soil Boring = 26.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\022057.GPJ WELL LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Soil Boring RIGW-102	Figure D-108

RIGW-103

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Rotosonic

Ground Elevation (ft): 604.17

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Description
0						AC	Asphalt
						SP-SM	**(ASPHALT)**
				0.2			Brown, fine to medium SAND with silt and trace coarse sand; no odor, no sheen (medium dense, moist)
				0.6			**(FILL)**
5		d4				SM	Brown, silty, fine to medium SAND with trace coarse sand; no odor, no sheen (medium dense, damp)
				0.6			
						SP-SM	Brown, fine to medium SAND with silt, coarse sand, and trace gravel; no odor, no sheen (medium dense, moist)
				0.1			
10						SM	Brown and orange oxidized, silty, fine to medium SAND with coarse sand and trace gravel; no odor, no sheen (medium dense, moist)
				1.1		SM	
						SP-SM	Grayish brown, very silty, fine to medium SAND with trace coarse sand and gravel; no odor, no sheen (medium dense, damp)
		d4		0.2		SM	Brown, fine to medium sAND with silt, coarse sand and trace gravel; no odor, no sheen (medium dense, moist)
15						SP-SM	Gray, very silty, fine to medium SAND with trace coarse sand and gravel; no odor, no sheen (dense, damp)
				0.1		SM	**(GLACIAL TILL)**
		d4		0.0			Gray, fine to medium SAND with silt, trace coarse sand and trace gravel; no odor, no sheen (dense, damp to moist)
20							Gray, silty, fine to medium SAND with trace coarse sand, gravel and cobbles; no odor, no sheen (very dense, damp to moist)
				0.3			
				1.0			
25		d4					- becomes damp
							Soil Sample: RIGW-103-S-26-27'
				4.1			
				0.0			
30							- becomes with coarse sand
				0.3			
		d4					
35				0.1			

Water Level: ATD

Monitoring Well Detail (DOE#: BQG 992)

12 in

- Flush-mounted monument with locking cap
- High Strength Concrete
- 2-inch diameter, Schedule 40, stainless steel well casing
- Bentonite chips
- Bentonite pellets
- 12/20 silica sand pack
- 2-inch diameter, Schedule 40, stainless steel screen (0.010-inch slot size)
- Threaded end cap
- Borehole backfilled with bentonite chips

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold
Everett, Washington

Log of Monitoring Well
RIGW-103

Figure
D-109
(1 of 2)

RIGW-103

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Water Level
35		d4		0.2		SM	
40				0.3			

Drilling Method: Rotosonic

Ground Elevation (ft): 604.17

Monitoring Well Detail
(DOE#: BQG 992)

Gray, silty, fine to medium SAND with trace coarse sand, gravel and cobbles; no odor, no sheen (very dense, damp to moist)

Soil Sample: RIGW-103-S-39-40'

Boring Completed 06/05/24
Total Depth of Boring = 40.0 ft.

Monitoring Well Completed 06/05/24
Elevation at Top of Monitoring Well Casing = 603.87 ft.
Total Depth of Monitoring Well = 17.5 ft.

45
50
55
60
65
70

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\022057.GPJ WELL LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Monitoring Well RIGW-103	Figure D-109 (2 of 2)

RIGW-104

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Rotosonic

Ground Elevation (ft): 601.63

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Description
0						CONC	Concrete **(CONCRETE)**
						SP	Brown, gravelly, coarse SAND; no odor, no sheen **(FILL)**
							- becomes with gravel and medium to coarse sand
5		d4		0.0		SP-SM	Light brown, fine to medium SAND with silt, trace coarse sand, and trace gravel; no odor, no sheen (medium dense, moist to wet)
				0.1		SM	Light brown, silty, fine to medium SAND with trace coarse sand and gravel; no odor, no sheen (medium dense, moist)
				0.0			
10						SM	- becomes fine sand with medium sand and damp
				0.0			Grayish brown, silty, fine to medium SAND with coarse sand and trace gravel; no odor, no sheen (medium dense, damp)
				0.0			
15		d4					- becomes brown with trace coarse sand, without gavel, and moist for 1 ft
				0.0			
				0.0		SP-SM	Grayish brown, fine to medium SAND with trace silt; no odor, no sheen (medium dense, moist to wet)
20		d4		0.1			Grayish brown, silty, fine to medium SAND with trace coarse sand and gravel; no odor, no sheen (dense, damp)
						SP-SM	**(GLACIAL TILL)** Gray, medium to coarse SAND with gravel and trace silt; no odor, no sheen (dense, wet)
25		d4		0.1			Grayish brown, silty, fine to medium SAND with trace coarse sand and gravel; no odor, no sheen (very dense, damp)
				0.0			
30							- becomes gray with coarse sand, gravel and trace cobbles
				0.3			**Soil Sample: RIGW-104-S-31-32'**
35				0.2			

Water Level: ATD

Monitoring Well Detail (DOE#: BQG 990)

12 in

- Flush-mounted monument with locking cap
- High Strength Concrete
- 2-inch diameter, Schedule 40, stainless steel well casing
- Bentonite chips
- Bentonite pellets
- 12/20 silica sand pack
- 2-inch diameter, Schedule 40, stainless steel screen (0.010-inch slot size)
- Threaded end cap
- Borehole backfilled with bentonite chips

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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TECT Aerospace Leasehold
Everett, Washington

Log of Monitoring Well
RIGW-104

Figure
D-110
(1 of 2)

RIGW-104

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Water Level
35		d4		0.0		SM	
				0.1			
40							
45							
50							
55							
60							
65							
70							

Drilling Method: Rotosonic

Ground Elevation (ft): 601.63

Monitoring Well Detail
(DOE#: BQG 990)

Grayish brown, silty, fine to medium SAND with trace coarse sand and gravel; no odor, no sheen (very dense, damp)

Soil Sample: RIGW-104-S-39-40'

Boring Completed 06/04/24
Total Depth of Boring = 40.0 ft.

Monitoring Well Completed 06/04/24
Elevation at Top of Monitoring Well Casing = 601.30 ft.
Total Depth of Monitoring Well = 23.0 ft.

Notes:
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2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\022057.GPJ WELL LOG

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TECT Aerospace Leasehold Everett, Washington	Log of Monitoring Well RIGW-104	Figure D-110 (2 of 2)

RIDW-1

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Rotosonic

Ground Elevation (ft): _____

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Description
0						AC	Asphalt
		d4		2.0		SP-SM	Gray, medium SAND with silt and gravel; no sheen, no odor (medium dense, damp)
						SM	**(FILL)**
							Light brown, silty SAND with gravel; no sheen, no odor (dense, moist) **(GLACIAL TILL)**
5				8.9			
				3.0			
				17.8			
				8.2			
10						SM	Gray, gravelly, silty fine to medium SAND; no sheen, no odor (dense, damp)
				26.0			
				36.0			
15				22.0			
						SM	Gray, very silty, fine to medium SAND with gravel; no sheen, no odor (dense, damp)
				26.0			
20							
				49.8			
				20.5			
	RIDW-1-(23-25')						**Soil Sample: RIDW-1-(23-25')**
				83.6			
25							
				5.5			
				15.0			
							-becomes wet
30							-becomes damp
				38.9			
						SM	Gray, gravelly, silty, fine to medium SAND; no sheen, no odor (dense, moist)
35							

GROUNDWATER

Water Level

Monitoring Well Detail (DOE#: BLN725)

12 in

Flush-mounted monument with locking cap

Portland Cement

2-inch diameter, Schedule 40, PVC well casing

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold
Everett, Washington

Log of Monitoring Well RIDW-1

Figure
D-111
(1 of 5)

RIDW-1

SAMPLE DATA				SOIL PROFILE			GROUNDWATER	
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft):	Water Level
35				33.5		SM	Gray, gravelly, silty, fine to medium SAND; no sheen, no odor (dense, moist)	
				32.5				
40				40.0				
				67.3				
45				62.9				
				63.5				
	RIDW-1-(49-50')			146 GS			**Soil Sample: RIDW-1-(49-50')**	
50				65.7				
				64.3				
				125.3				
55				90.0				
							Soil Sample: RIDW-1-(57.5-60')	
	RIDW-1-(57.5-60')			145		SP-SM	Gray, fine SAND with silt and fine gravel; no sheen, no odor (dense, damp)	
60				98.9				
				33.7				
65							-becomes dense	
				70.2				
				49.4				
70								

Monitoring Well Detail (DOE#: BLN725)

5% Bentonite grout

2-inch diameter, Schedule 40, PVC well casing

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\022057.GPJ WELL LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold
Everett, Washington

Log of Monitoring Well RIDW-1

Figure
D-111
(2 of 5)

RIDW-1

SAMPLE DATA				SOIL PROFILE			GROUNDWATER	
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft):	Water Level / Monitoring Well Detail (DOE#: BLN725)
70				44.3		SP-SM	Gray, fine SAND with silt and fine gravel; no sheen, no odor (dense, damp)	
				39.8				
75				44.5				
				35.9				
80				33.0				
	RIDW-1-(81.5-82.5')			58.9			**Soil Sample: RIDW-1-(81.5-82.5')**	
				12.6				
85				31.6				
				25.8		SM	Gray, very silty fine SAND with gravel; no sheen, no odor (very dense, damp)	
90				36.6				
				11.6		SP-SM	Tan, fine to medium SAND with silt; no sheen, no odor (dense, damp) **(ADVANCE OUTWASH)**	
						SP-SM	Brown, fine to coarse SAND with gravel and silt; no sheen, no odor (dense, damp)	
95				14.3				
				12.0				
100				21.2				2-inch diameter, Schedule 40, PVC well casing
						SM	Brown, silty, fine to coarse SAND with gravel; no sheen, no odor (dense, damp)	
				91.1			-silt lens (~6 inches)	
105						SM		

Notes:
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3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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TECT Aerospace Leasehold
Everett, Washington

Log of Monitoring Well RIDW-1

Figure
D-111
(3 of 5)

RIDW-1

SAMPLE DATA					SOIL PROFILE			GROUNDWATER	
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft):	Water Level	Monitoring Well Detail (DOE#: BLN725)
105						SM	Brown, silty, fine to coarse SAND with gravel; no sheen, no odor (dense, damp)		5% Bentonite grout
	RIDW-1-(105-107.5')			179.6			**Soil Sample: RIDW-1-(105-107.5')**		
				57.0					
110						SM	Brown-gray, silty, gravelly SAND; no sheen, no odor (dense, damp)		
				167.5					
				50.4					
115									
				133.2					
				106.7					
120									
				80.0					
				74.5		ML	Brown SILT lens (no sheen, no odor) (stiff, damp)		
125						SP-SM	Brown, fine SAND with silt and trace gravel; no sheen, no odor (dense, damp)		
				9.8					
				5.7				ATD ▽	
130									
				37.3					
				68.7					Bentonite chips
135							**Soil Sample: RIDW-1-(135-137.5')**		
	RIDW-1-(135-137.5')			100.9					
				90.2			-becomes wet		
140									

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
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3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\022057.GPJ WELL LOG

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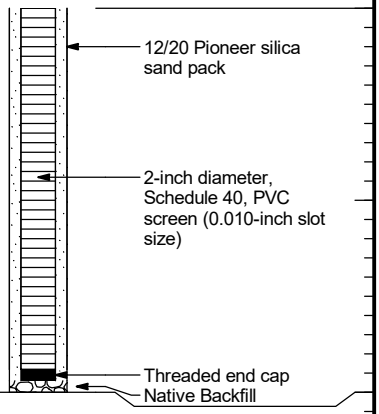
TECT Aerospace Leasehold Everett, Washington	Log of Monitoring Well RIDW-1	Figure D-111 (4 of 5)

RIDW-1

SAMPLE DATA				SOIL PROFILE			GROUNDWATER	
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft):	Water Level
140				7.7		SM	Brown, silty, fine SAND with trace gravel; no sheen, no odor (dense, wet)	
	RIDW-1-(142.5-145')			5.5 GS		SP	Gray-brown, fine to coarse SAND with gravel; no sheen, no odor (dense, wet) **Soil Sample: RIDW-1-(142.5-145')**	
145				5.0				
				6.1				
150								

Boring Completed 12/06/18
Total Depth of Boring = 150.0 ft.

Monitoring Well Detail
(DOE#: BLN725)



Monitoring Well Completed 12/07/18
Elevation at Top of Monitoring Well Casing = 598.88 ft.
Total Depth of Monitoring Well = 150.0 ft.

155
160
165
170
175

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\022057.GPJ WELL LOG

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TECT Aerospace Leasehold Everett, Washington	Log of Monitoring Well RIDW-1	Figure D-111 (5 of 5)

RIDW-2

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Rotosonic

Ground Elevation (ft): _____

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Profile
0						AC	Asphalt
		d4		2.5		SM	**(ASPHALT)**
							Brown, very silty, medium SAND with gravel and coarse sand; no sheen, no odor (medium dense, damp)
				2.0			**(FILL)**
5				9.0			
						SP-SM	Gray, fine to medium SAND with silt and gravel; no sheen, no odor (dense, moist)
				8.6			**(GLACIAL TILL)**
10							-grades to gravelly SAND
				9.8			
				12.8			
15							-moist to wet
				24.4			
						SM	Gray, very silty, fine SAND with gravel; no sheen, no odor (dense, wet)
				13.9			
20							-grades to gravelly, very silty, fine SAND
	RIDW-2-(20-22.5')			41.6			**Soil Sample: RIDW-2-(20-22.5')**
							-grades to with gravel and becomes very dense; no sheen, no odor
				29.0			
25				18.6			
				14.3			
30				19.6			
						SM	
				5.4			
35							

GROUNDWATER

Monitoring Well Detail
(DOE#: BLN726)

Water Level

12 in

Flush-mounted monument with locking cap

Portland Cement

2-inch diameter, Schedule 40, PVC well casing

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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Everett, Washington

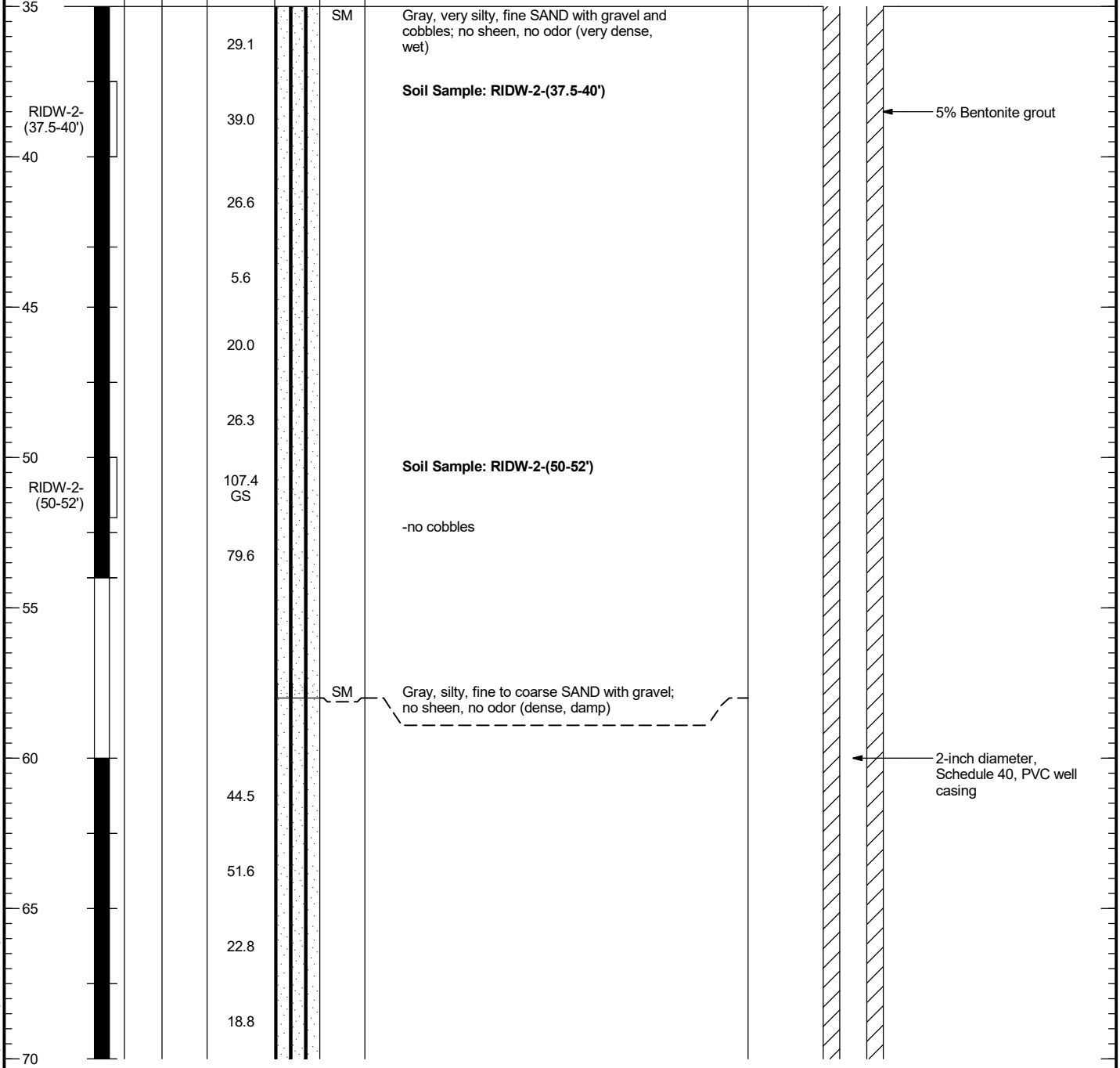
Log of Monitoring Well RIDW-2

Figure
D-112
(1 of 5)

RIDW-2

SAMPLE DATA				SOIL PROFILE			GROUNDWATER	
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft):	Water Level

Monitoring Well Detail
(DOE#: BLN726)



Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\022057.GPJ WELL LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Monitoring Well RIDW-2	Figure D-112 (2 of 5)

RIDW-2

SAMPLE DATA				SOIL PROFILE			GROUNDWATER	
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft):	Water Level	Monitoring Well Detail (DOE#: BLN726)
70				19.8		SM	Gray, silty, fine to coarse SAND with gravel; no sheen, no odor (dense, damp)		
				11.5					
75				10.5					
				35.5					
80				16.0		SM	Brown-gray, very silty SAND with gravel; no sheen, no odor (very dense, damp) **(ADVANCE OUTWASH)** -grades to gravelly and becomes dense		5% Bentonite grout
				34.0					
85				6.7					
				9.8					
90	RIDW-2-(90-92')			62.0		SM	Brown, medium to coarse SAND with silt and gravel; no sheen, no odor (dense, damp) **Soil Sample: RIDW-2-(90-92')**		
				23.1					
95				13.5					
				17.1			-grades to with cobbles		
100				54.9		SM	Gray, silty, fine to coarse SAND with gravel; no sheen, no odor (dense, damp)		2-inch diameter, Schedule 40, PVC well casing
				124.5					
105									

Notes:
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222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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TECT Aerospace Leasehold
Everett, Washington

Log of Monitoring Well RIDW-2

Figure
D-112
(3 of 5)

RIDW-2

SAMPLE DATA					SOIL PROFILE			GROUNDWATER	
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft):	Water Level	Monitoring Well Detail (DOE#: BLN726)
105	RIDW-2-(105-107.5')			168.9		SP	Brown to gray, gravelly, fine to coarse SAND; no sheen, no odor (dense, damp) **Soil Sample: RIDW-2-(105-107.5')**		
110							-with cobbles **Soil Sample: RIDW-2-(112.5-115')**		
115						SM	Brown, silty, fine to medium SAND with gravel; no sheen, no odor (dense, moist)		5% Bentonite grout
120				1.3					
125				55.4			-grades to with trace gravel (dense, moist) **Soil Sample: RIDW-2-(125-127.5')**		
130				35.0 40.7			-with trace cobbles		
135				53.4 11.7		SM SM	Gray, very silty, fine SAND with coarse sand and gravel; no sheen, no odor (dense, moist) Brown-gray, silty, fine to coarse SAND with trace gravel; no sheen, no odor (dense, wet)	ATD ▽	Bentonite chips
140				17.3					

Notes:
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3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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TECT Aerospace Leasehold
Everett, Washington

Log of Monitoring Well RIDW-2

Figure
D-112
(4 of 5)

RIDW-2

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Water Level
140				10.8		SM	
				20.0			
145				33.0 GS			
				39.3			
150							

Drilling Method: Rotosonic

Ground Elevation (ft): _____

Brown-gray, silty, fine to coarse SAND with trace gravel; no sheen, no odor (dense, wet)

Monitoring Well Detail
(DOE#: BLN726)

12/20 Pioneer silica sand pack

2-inch diameter, Schedule 40, PVC screen (0.010-inch slot size)

Threaded end cap

Boring Completed 12/10/18
Total Depth of Boring = 152.0 ft.

Monitoring Well Completed 12/11/18
Elevation at Top of Monitoring Well Casing = 603.66 ft.
Total Depth of Monitoring Well = 152.0 ft.

155

160

165

170

175

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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TECT Aerospace Leasehold
Everett, Washington

Log of Monitoring Well RIDW-2

Figure
D-112
(5 of 5)

RIDW-3

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft):	Water Level
0						AC	Asphalt	
		d4		2.3		SM	**(ASPHALT)** Gray, very silty, fine SAND with gravel; no sheen, no odor (loose, wet)	
						SM	**(FILL)**	
				2.9			Tan, silty, fine SAND with gravel; no sheen, no odor (dense, moist) **(GLACIAL TILL)**	
5				9.7				
						SP-SM	Gray, fine SAND with silt and gravel; no sheen, no odor (dense, moist)	
				22.8				
10						SM	Gray, silty, fine SAND with gravel; no sheen, no odor (dense, damp)	
				13.4				
	RIDW-3-(12.5-15')						**Soil Sample: RIDW-3-(12.5-15')**	
				27.8				
15							-grades to gravelly	
				23.5				
				12.6				
20								
				12.6				
							-grades to with gravel	
				0.7				
25								
				18.7				
							-becomes moist	
				58.0				
30								
				48.3				
				53.0				
35								

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Monitoring Well Detail (DOE#: BLN727)

12 in

Flush-mounted monument with locking cap

Portland Cement

2-inch diameter, Schedule 40, PVC well casing

5% Bentonite grout

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\022057.GPJ WELL LOG

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Everett, Washington

Log of Monitoring Well RIDW-3

Figure
D-113
(1 of 5)

RIDW-3

SAMPLE DATA				SOIL PROFILE			GROUNDWATER	
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft):	Water Level / Monitoring Well Detail (DOE#: BLN727)
35				44.1		SM	Gray, silty, fine SAND with gravel; no sheen, no odor (dense, damp)	
				28.2		SP	Gray, gravelly, fine SAND with trace silt; no sheen, no odor (dense, damp)	
40				32.4			-with cobbles	
				50.5				
45	RIDW-3-(45-47.5')			61.2 GS			**Soil Sample: RIDW-3-(45-47.5')**	2-inch diameter, Schedule 40, PVC well casing
				57.9				
50				8.7				
				3.8				
55				9.2				5% Bentonite grout
				7.4				
60				10.5				
				5.0				
65				24.1		SM	Gray, very silty, fine SAND with gravel and cobbles; no sheen, no odor (very dense, moist)	
				24.2				
70								

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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TECT Aerospace Leasehold
Everett, Washington

Log of Monitoring Well RIDW-3

Figure
D-113
(2 of 5)

RIDW-3

SAMPLE DATA				SOIL PROFILE			GROUNDWATER	
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft):	Water Level
70						SM	Gray, very silty, fine SAND with gravel and cobbles; no sheen, no odor (very dense, moist)	
	RIDW-3-(70-72.5')			26.8			**Soil Sample: RIDW-3-(70-72.5')**	
				24.0				
75								
				46.0				
				28.8				
80						SP-SM	Brown, gravelly, fine SAND with silt; no sheen, no odor (dense, moist) **(ADVANCE OUTWASH)**	
				38.4				
				33.0				
85								
				41.2				
						SM	Gray-brown, silty, fine SAND with gravel; no sheen, no odor (dense, moist)	
				45.0				
90						SP-SM	Gray-brown, gravelly, fine to medium SAND with silt; no sheen, no odor (dense, damp)	
				43.9				
						SM	Brown, silty, medium SAND with gravel; no sheen, no odor (dense, damp)	
				34.3				
95							**Soil Sample: RIDW-3-(95-97.5')**	
	RIDW-3-(95-97.5')			102.3				
				53.8				
100								
				2.0				
				3.4				
105								

Monitoring Well Detail (DOE#: BLN727)

- 5% Bentonite grout
- 2-inch diameter, Schedule 40, PVC well casing

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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Everett, Washington

Log of Monitoring Well RIDW-3

Figure
D-113
(3 of 5)

RIDW-3

SAMPLE DATA					SOIL PROFILE			GROUNDWATER	
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft):	Water Level	Monitoring Well Detail (DOE#: BLN727)
105				9.3		SM	Brown, silty, medium SAND with gravel; no sheen, no odor (dense, damp)		
				4.4		SP-SM	Brown, fine to medium SAND with SILT and gravel; no sheen, no odor (dense, damp)		
110	RIDW-3-(95-97.5')			53.2		SM SP-SM	Gray, silty, fine SAND with gravel (dense, damp) **Soil Sample: RIDW-3-(110-112.5')** Brown, fine to medium SAND with silt and trace gravel; no sheen, no odor (dense, damp)		5% Bentonite grout
				7.1					
115				3.1					
				4.3			- lens of gray, silty, fine SAND with gravel		
120				7.0		SM	Brown, silty, SAND with trace gravel; no sheen, no odor (dense, damp)		
				2.9					
125				8.6			- decrease in gravel		
				12.8					
130	RIDW-3-(130-132.5')			23.4			**Soil Sample: RIDW-3-(130-132.5')**	ATD ▽	
	RIDW-3-(132.5-135')			19.0 GS					
135									Bentonite chips
				6.2					
140									

Notes:
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2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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Everett, Washington

Log of Monitoring Well RIDW-3

Figure
D-113
(4 of 5)

RIDW-3

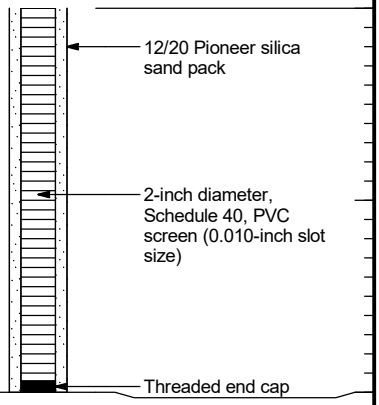
SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Rotosonic

Ground Elevation (ft):

Monitoring Well Detail
(DOE#: BLN727)

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Profile	Water Level
140				5.3		SM	Brown, silty, medium SAND with gravel; no sheen, no odor (dense, damp)	
						SM	Gray, silty, fine to medium SAND with gravel; no sheen, no odor (dense, wet)	
						SM	**Soil Sample: RIDW-3-(132.5-135')**	
				4.9			-grades to with trace gravel	
145							-becomes brown-gray	
				4.0			Gray, silty, fine to medium SAND with gravel; no sheen, no odor (dense, wet)	
							-becomes fine to coarse SAND	
				4.2			-grades to with gravel	
150								



Boring Completed 12/11/18
Total Depth of Boring = 150.0 ft.

Monitoring Well Completed 12/14/18
Elevation at Top of Monitoring Well Casing = 601.47 ft.
Total Depth of Monitoring Well = 150.5 ft.

155
160
165
170
175

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\022057.GPJ WELL LOG

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Log of Monitoring Well RIDW-3

Figure
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(5 of 5)

RIDW-4

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Rotosonic

Ground Elevation (ft): _____

Monitoring Well Detail
(DOE#: BLT-529)

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Profile	Water Level
0						CONC	Concrete	
						ML	Brown-gray, SILT with sand and gravel, iron oxide staining; no sheen, no odor (stiff, dry to damp) **(FILL)**	
		i4		0.0			- thin lenses of fine to medium sand	
5							- pockets of fine to medium sand and becomes damp	
10							- becomes a mix of gray, dark gray, and brown colors	
				0.0				
				0.0		SM	Brown to gray, silty, fine to medium SAND with trace gravel; no sheen, no odor (loose, damp to wet)	
						ML	Dark gray, SILT with gravel; no sheen, no odor (very stiff, damp) **(GLACIAL TILL)**	
15							- lenses of gray, sandy, SILT with gravel and trace cobbles (stiff, damp)	
				0.0			- becomes with sand and very stiff	
20								
	RIDW-4-(24-25')			0.0			**Soil Sample: RIDW-4-(24-25')**	
25							- becomes wet, medium stiff	
				0.0			- becomes damp	
							- becomes very stiff	
							- ~1 inch fine to medium sand lens	
30				0.0			- with trace cobbles	
							- with trace cobbles	
35				0.0				

Water Level: 12 in

- Flush-mounted monument with locking cap
- Portland Cement
- 5% Bentonite grout
- 2-inch diameter, Schedule 40, PVC well casing
- 3 foot bentonite plug

Notes:
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3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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Everett, Washington

Log of Monitoring Well RIDW-4

Figure
D-114
(1 of 5)

RIDW-4

SAMPLE DATA				SOIL PROFILE			GROUNDWATER	
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft):	Water Level / Monitoring Well Detail (DOE#: BLT-529)
35						ML	Dark gray, SILT with gravel; no sheen, no odor (very stiff, damp) **(GLACIAL TILL)**	
40				0.0				
				0.0				
45							- no cobbles and decrease in gravel	
				0.0.			- with pockets of fine to medium sand	
50								5% Bentonite grout
				0.0				
				0.0		SM	Gray, silty, fine to medium SAND; no sheen, no odor (dense, wet)	
55							- increased silt content and with gravel	
						ML	Dark gray, sandy, SILT with gravel and trace cobbles; no sheen, no odor (stiff, wet)	
							- becomes with sand and gravel, very stiff, and damp	
60								2-inch diameter, Schedule 40, PVC well casing
				0.0				
				0.0				
				0.0				
65				0.0		ML	Brown, sandy, SILT with gravel and trace cobbles; no sheen, no odor (stiff, damp to moist) **(ADVANCE OUTWASH)**	
	RIDW-4-(66-67')			1.8 0.0			**Soil Sample: RIDW-4-(66-67')**	
70								

Notes:
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3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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Log of Monitoring Well RIDW-4

Figure
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(2 of 5)

RIDW-4

SAMPLE DATA				SOIL PROFILE			GROUNDWATER	
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft):	Water Level
70				0.0		ML		
				0.0		SM	Brown, silty, fine to medium SAND with trace gravel; no sheen, no odor (dense, moist)	
				1.1				
				0.6				
75						ML	Brown, gravelly, sandy, SILT; no sheen, no odor (stiff, moist)	
						SM	Brown, gravelly, silty, SAND; no sheen, no odor (dense, moist to wet)	
				0.0		SP-SM	Brown, fine to medium SAND with silt and trace gravel; no sheen, no odor (dense, damp to moist)	
80							- becomes medium to coarse SAND	
						SM	Brown, silty, medium to coarse SAND with gravel; no sheen, no odor (dense, moist)	
						SP-SM	Brown, medium to coarse SAND with silt and gravel; no sheen, no odor (dense, moist)	
						SM	Brown, silty, medium to coarse SAND with gravel and trace cobbles; no sheen, no odor (dense, moist)	
85				0.0				
90								
95				0.0				
100						ML	Brown, sandy, SILT with gravel; no sheen, no odor (stiff, moist to wet)	
						SP-SM	Brown, medium to coarse SAND with silt and gravel; no sheen, no odor (dense, moist)	
				0.0		ML	Gray, sandy, SILT with gravel; no sheen, no odor (very stiff to hard, damp)	
105								

Monitoring Well Detail (DOE#: BLT-529)

- 5% Bentonite grout
- 2-inch diameter, Schedule 40, PVC well casing

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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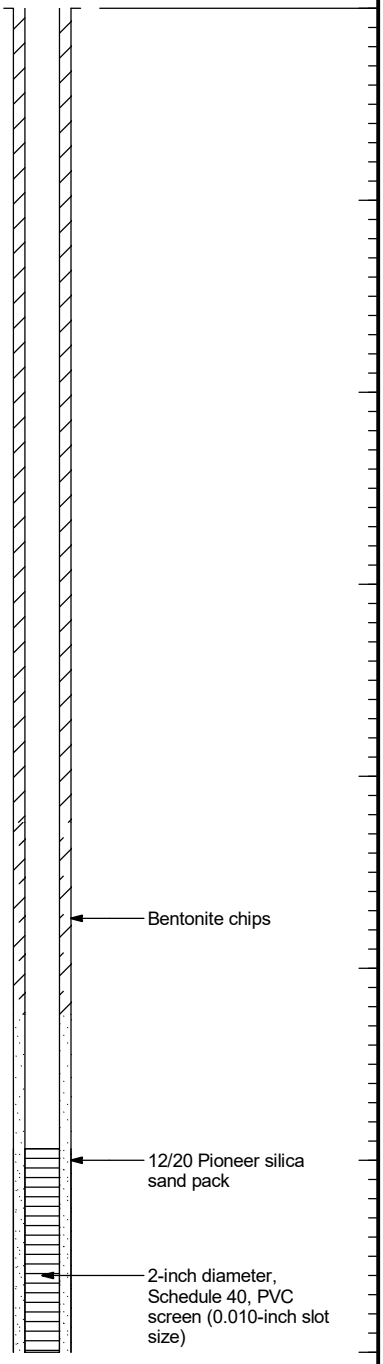
Log of Monitoring Well RIDW-4

Figure
D-114
(3 of 5)

RIDW-4

SAMPLE DATA				SOIL PROFILE			GROUNDWATER	
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft):	Water Level
105				0.0		SP-SM	Brown, fine to coarse SAND with silt and gravel; no sheen, no odor (dense, damp)	
				0.0				
				1.8				
110				0.0				
				0.0				
115				0.3		ML	Brown, SILT with sand and gravel; no sheen, no odor (hard, dry to damp)	
				0.0		SP-SM	Brown, fine to medium SAND with silt and gravel; no sheen, no odor (dense, damp)	
120						SM	Brown, silty, fine to coarse SAND with gravel; no sheen, no odor (dense, damp to moist)	
				0.0				
				1.6				
125				0.0				
				2.3				
				0.3				
				0.0				
130				0.0		ML	Gray, sandy, SILT with gravel; no sheen, no odor (stiff, moist to wet)	ATD
				0.0				
				0.0				
135				0.0				
				0.4				
				0.4				
140								

Monitoring Well Detail
(DOE#: BLT-529)



Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

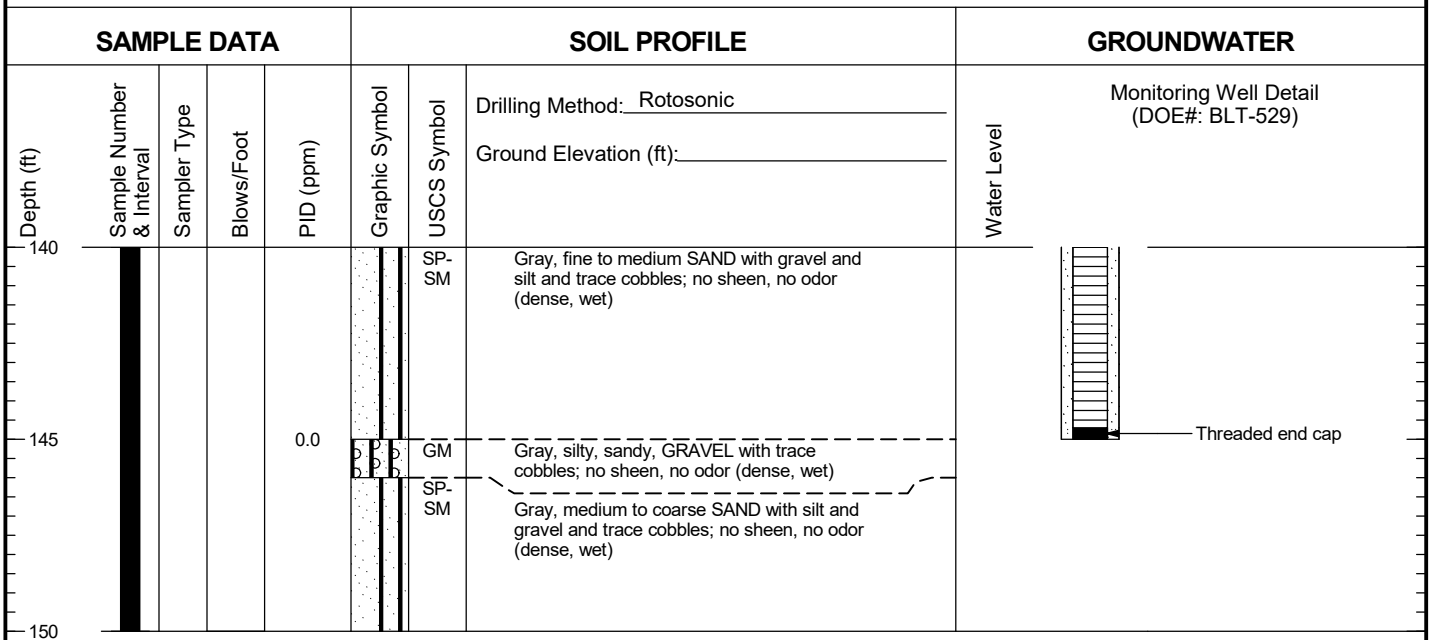
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Everett, Washington

Log of Monitoring Well RIDW-4

Figure
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(4 of 5)

RIDW-4



Boring Completed 09/04/19
Total Depth of Boring = 150.0 ft.

Monitoring Well Completed 09/04/19
Elevation at Top of Monitoring Well Casing = 601.46 ft.
Total Depth of Monitoring Well = 145.0 ft.

155
160
165
170
175

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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TECT Aerospace Leasehold Everett, Washington	Log of Monitoring Well RIDW-4	Figure D-114 (5 of 5)

RIDW-5

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	SOIL PROFILE
							Drilling Method: Rotosonic Ground Elevation (ft): 603.078
0				3.3		CONC	**(CONCRETE)**
						SP	Grayish brown, medium to coarse SAND with trace silt and trace gravel; no odor, no sheen (medium dense, moist)
				5.9		SM	**(FILL)**
5		d4		13.6			Brown, very silty, fine SAND with trace gravel and trace coarse sand; no odor, no sheen (dense, damp to moist)
						SM	Grayish brown, silty, fine to medium SAND with trace coarse sand and trace gravel; no odor, no sheen (dense, damp)
				11.8			**(GLACIAL TILL)**
10				14.5			- becomes gray and without coarse sand
				18.3			- becomes with gravel
15		d4		18.0			
				25.0			- becomes moist
							- becomes without gravel and with trace cobbles
20				24.3			- becomes damp with trace gravel and trace coarse sand
		d4		11.3			
25				11.4			- grayish brown lens with reddish brown mottling, very moist, 2"
		d4		8.4			
30		d4		18.8			- becomes damp to moist and very dense
							- becomes without coarse sand
				42.8			
35							

GROUNDWATER

Water Level

Monitoring Well Detail
(DOE#: BPL 498)

12 in

- Flush-mounted monument with locking cap
- High strength cement
- 5% Bentonite grout
- 2-inch diameter, Schedule 40, PVC well casing

Notes:
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2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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TECT Aerospace Leasehold
Everett, Washington

Log of Monitoring Well RIDW-5

Figure
D-115
(1 of 5)

RIDW-5

SAMPLE DATA				SOIL PROFILE			GROUNDWATER	
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft): 603.078	Water Level / Monitoring Well Detail (DOE#: BPL 498)
35		d4		64.4		SM	- becomes with gravel	
				GS			Grayish brown, silty, fine to medium SAND with trace coarse sand and trace gravel; no odor, no sheen (dense, damp)	
				124			**(GLACIAL TILL)**	
							- becomes with cobbles	
							Soil sample: RIDW-5-(36.5-37.5')	
40				10.4			- becomes with trace cobbles and with coarse sand	5% Bentonite grout
							- becomes without coarse sand	
				29.2			- becomes fine sand	
							- becomes moist	
		d4						
45				24.8				2-inch diameter, Schedule 40, PVC well casing
				29.4				
50				16.8				
				29.6				
		d4						
55				69.8				
				54.9				
							- becomes with trace coarse sand	
60				29.1		ML	Light gray, very sandy SILT with trace gravel and trace coarse sand; no odor, no sheen (loose, dry)	2-inch diameter, Schedule 40, PVC well casing
						SM		
		d4		71.2			Grayish brown, silty, medium SAND with gravel and trace coarse sand; no odor, no sheen (very dense, moist)	
							- becomes with trace cobbles, damp to moist	
65				51.5				
		d4				SP-SM	Brown, medium SAND with silt and gray silt lenses; no odor, no sheen (very dense, moist)	
				58.9			**(ADVANCE OUTWASH)**	5% Bentonite grout
							- becomes without gravel	
70								

Notes:
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222057. 3/19/26 N:\PROJECTS\022057.GPJ WELL LOG

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Everett, Washington

Log of Monitoring Well RIDW-5

Figure
D-115
(2 of 5)

RIDW-5

SAMPLE DATA				SOIL PROFILE			GROUNDWATER	
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft): 603.078	Water Level / Monitoring Well Detail (DOE#: BPL 498)
70				29.8		SP-SM	Brown, medium SAND with silt and gray silt lenses; no odor, no sheen (very dense, moist)	
		d4		57.6			**(ADVANCE OUTWASH)** - becomes with trace gravel	
							- oxidized lenses	
							- sand lenses without silt	
75				62.5			- becomes grayish brown without gravel	
				58.0			- becomes brown with gravel	
		d4					- becomes with reddish oxidation	
							- grayish brown silty sand lens with trace cobbles, 6"	
80				41.2			- becomes brown medium to coarse sand with trace gravel	
				30.5			- grayish brown silty sand lens with trace cobbles	
85		d4		23.8		SP	Grayish brown, medium to coarse SAND with trace silt; no odor, no sheen (very dense, damp to moist)	
				44.6		SP-SM	Grayish brown, medium SAND with silt and trace gravel; no odor, no sheen (very dense, damp to moist)	
90				24.2			- brown medium to coarse sand lens with trace silt, 6"	5% Bentonite grout
				62.2			- becomes gravelly and with gravel	
							- becomes without cobbles	
95		d4		139.4 GS		SP	Grayish brown, gravelly, medium SAND with trace silt; no odor, no sheen (dense, damp to moist)	2-inch diameter, Schedule 40, PVC well casing
				83.1		SP-SM	Grayish brown, gravelly, medium to coarse SAND with silt; no odor, no sheen (dense, damp to moist)	
100				21.5				
				29.1			- becomes dry to damp for 1'	
105								

Notes:
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3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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Everett, Washington

Log of Monitoring Well RIDW-5

Figure
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(3 of 5)

RIDW-5

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft): 603.078	Water Level	Monitoring Well Detail (DOE#: BPL 498)
105		d4		41.8					2-inch diameter, Schedule 40, PVC well casing
						SP	Brown, medium SAND with gravel, trace silt and trace cobbles; no odor, no sheen (dense, damp to moist)		
				9.6					
110				43.6		SP-SM	Grayish brown, fine to medium SAND with silt and trace gravel; no odor, no sheen (dense, moist)		5% Bentonite grout
				94.8			- silty sand lens, 1'		
							- becomes dry to damp		
115		d4		21.1		SM	Grayish brown, silty, fine to medium SAND with trace gravel and trace coarse sand; no odor, no sheen		
				46.1			- becomes very silty		
							- sand with silt lens, 1'		
120				46.6		ML	Light gray, sandy SILT with trace gravel; no odor, no sheen (dense, dry)		
						SM	Grayish brown, silty, fine to medium SAND with trace coarse sand and trace gravel; no odor, no sheen (dense, damp to moist)		
		d4		121.4					
125				114.9		ML	Gray, sandy SILT with trace gravel; no odor, no sheen (very stiff, moist)		
				135.7		SP-SM	Brown, fine to medium SAND with silt and trace coarse sand; no odor, no sheen (very dense, damp)		
							- grayish brown silty sand lens, 1'		
130		d4		28.8			- grayish brown silty sand lens, 1'		
						SP	Brown, fine SAND with trace coarse sand; no odor, no sheen (very dense, dry)	ATD ▽	
				50.1		SP-SM	Brown, medium SAND with trace coarse sand and trace gravel; no odor, no sheen		
							- becomes dry		
135				95.8			**Soil sample: RIDW-5-(136-137')**		Bentonite chips
				214.2		ML	Light brown, sandy SILT with trace gravel; no odor, no sheen (loose, dry)		
						SM	Grayish brown, silty, fine to medium SAND; no odor, no sheen (dense, moist)		
140						SP-SM			

Notes:
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3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

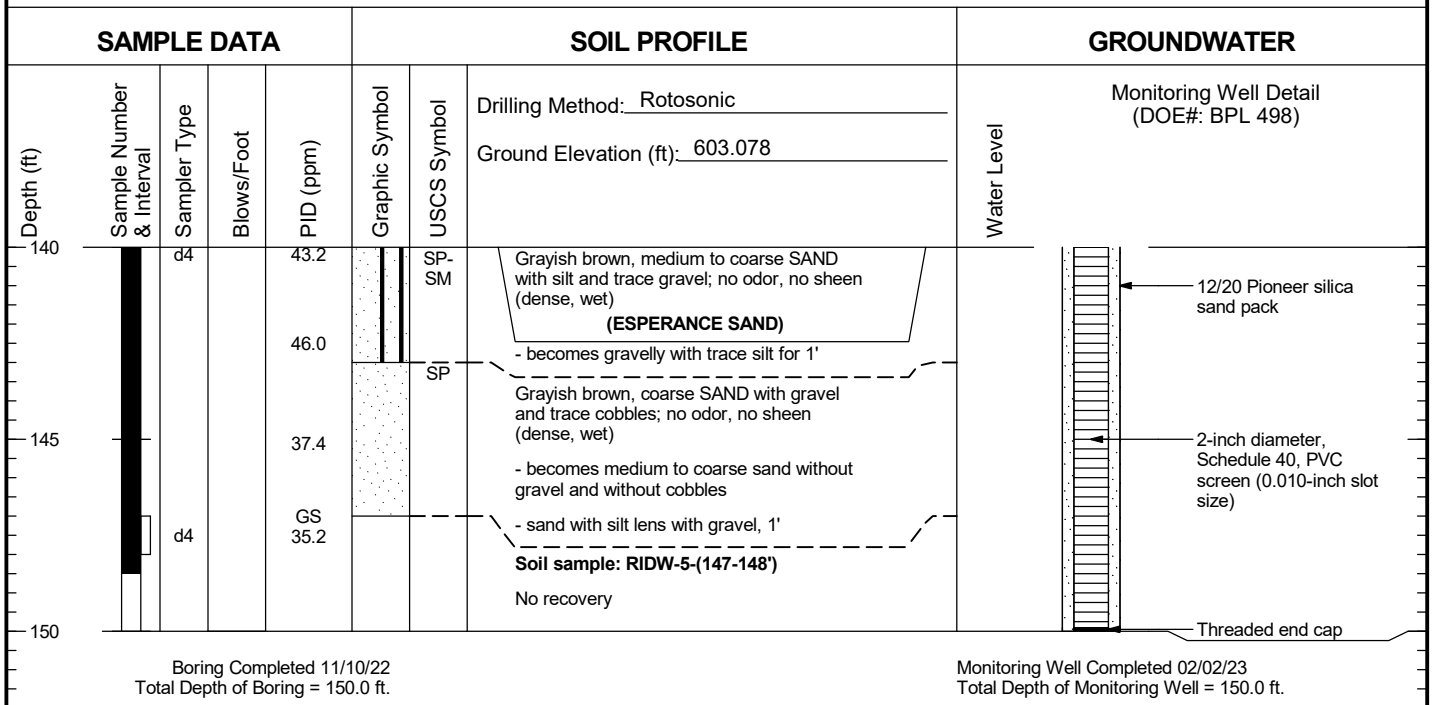
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Log of Monitoring Well RIDW-5

Figure
D-115
(4 of 5)

RIDW-5



Boring Completed 11/10/22
Total Depth of Boring = 150.0 ft.

Monitoring Well Completed 02/02/23
Total Depth of Monitoring Well = 150.0 ft.

155
160
165
170
175

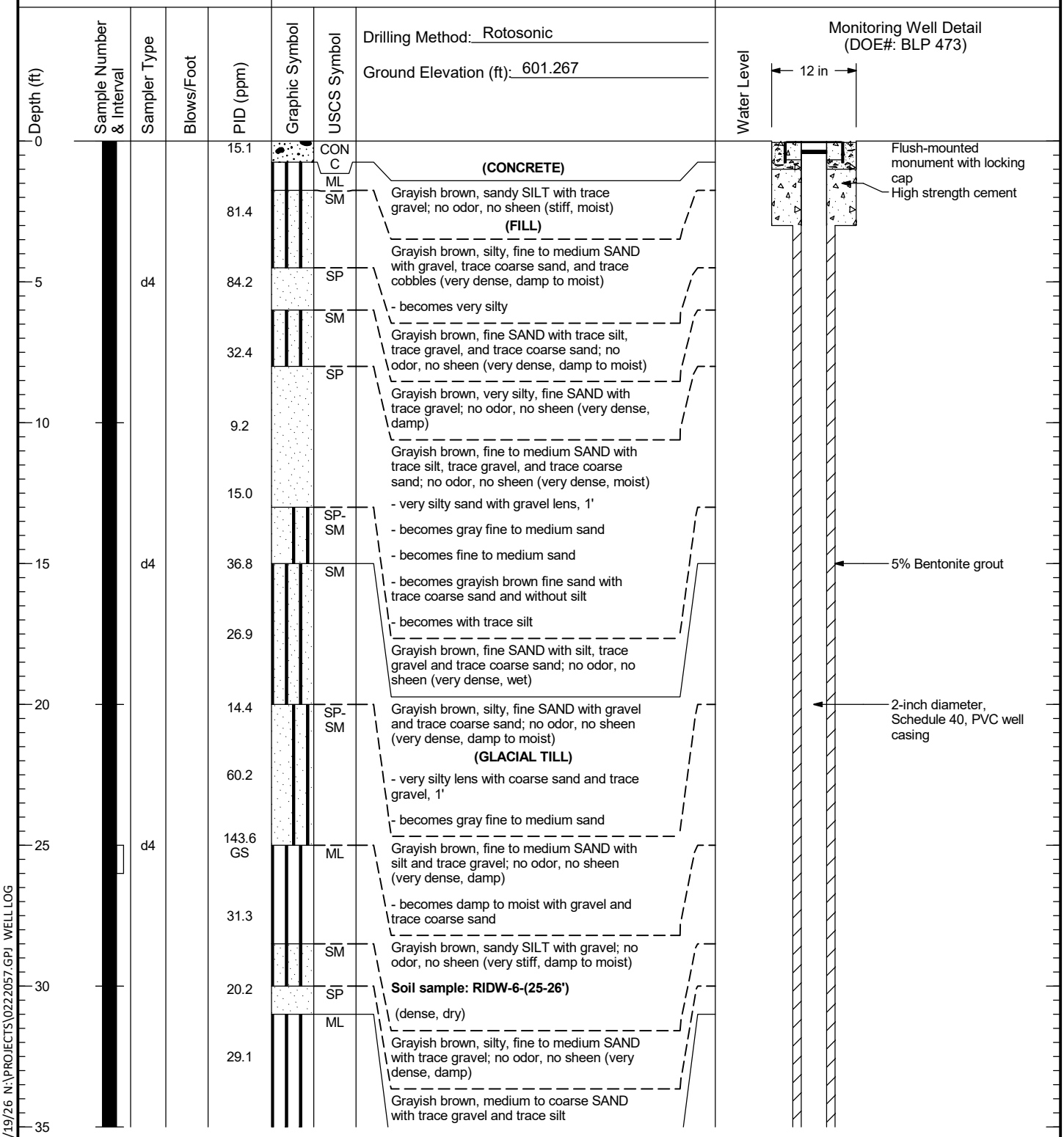
Notes:
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2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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TECT Aerospace Leasehold Everett, Washington	Log of Monitoring Well RIDW-5	Figure D-115 (5 of 5)

RIDW-6



Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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TECT Aerospace Leasehold Everett, Washington	Log of Monitoring Well RIDW-6	Figure D-116 (1 of 5)

RIDW-6

SAMPLE DATA				SOIL PROFILE			GROUNDWATER	
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft): 601.267	Water Level / Monitoring Well Detail (DOE#: BLP 473)
35		d4				ML	- becomes with cobbles	
						SM	Grayish brown, sandy SILT with gravel; no odor, no sheen (hard, damp to moist)	
				125.2			Grayish brown, silty, fine to medium SAND with gravel, cobbles, and trace coarse sand; no odor, no sheen (very dense, damp)	
40				49.9				5% Bentonite grout
				56.8				
45		d4		121.6			- becomes without cobbles and with coarse sand	2-inch diameter, Schedule 40, PVC well casing
				68.0			- becomes dry to damp - becomes with cobbles	
50				49.5			Grayish brown, very silty, fine to medium SAND with gravel, trace cobbles, and trace coarse sand; no odor, no sheen (very dense, dry to damp)	
				97.2			- becomes dry and gravelly	
55		d4		102.0				
				GS 114.8			- becomes with cobbles **Soil sample: RIDW-6-(56-57')** - becomes with gravel	
60				29.7		ML	Gray, sandy SILT with gravel and trace cobbles; no odor, no sheen (very stiff, damp)	2-inch diameter, Schedule 40, PVC well casing
		d4		48.0				
						SM	Grayish brown, silty, medium to coarse SAND with gravel; no odor, no sheen (very dense, damp)	
65				4.4		SP-SM	Dark greenish brown, fine to medium SAND with silt; no odor, no sheen (very dense, damp to moist)	5% Bentonite grout
		d4		12.3			- gray sandy silt lens with trace cobbles, 4" - becomes with trace gravel	
70								

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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Everett, Washington

Log of Monitoring Well RIDW-6

Figure
D-116
(2 of 5)

RIDW-6

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft): 601.267	Water Level	Monitoring Well Detail (DOE#: BLP 473)
70				65.9		SM	Brown, silty, medium to coarse SAND with gravel; no odor, no sheen (very dense, moist) **(ADVANCE OUTWASH)**		
				13.0			- becomes with trace gravel		
75		d4		17.4			- becomes with gravel and damp to moist		
				18.2		SP-SM	Brown, medium to coarse SAND with silt and gravel; no odor, no sheen (very dense, moist)		
							- becomes with oxidation		
80				29.7		SM	Reddish brown, silty, fine to medium SAND with trace coarse sand; no odor, no sheen (very dense, damp to moist)		
				34.3		SP-SM	Brown, medium to coarse SAND with silt and gravel; no odor, no sheen (very dense, damp to moist)		
							- becomes grayish brown		
85		d4		37.4			- becomes with cobbles		
				95.1			- fine to medium sand lens with trace silt, 6" - gravelly lens, 1'		
90				46.4		SP	Brown, medium SAND with trace silt and trace coarse sand; no odor, no sheen (very dense, damp)		5% Bentonite grout
				83.9		SP-SM	Brown, medium to coarse SAND with silt; no odor, no sheen (very dense, damp to moist)		
95		d4		53.6		GM	Brown, silty, fine GRAVEL with coarse sand; no odor, no sheen (very dense, moist)		2-inch diameter, Schedule 40, PVC well casing
				32.4		ML	Brown, sandy SILT with gravel; no odor, no sheen (very stiff, moist) - sand with silt lens with coarse sand, 1'		
100				3.1		SM	Brown, silty, medium SAND with trace coarse sand; no odor, no sheen (very dense, moist)		
				42.3			- sand with trace silt and trace gravel lens, 1' - sand with silt and trace gravel lens, 1'		
105									

Notes:
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3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

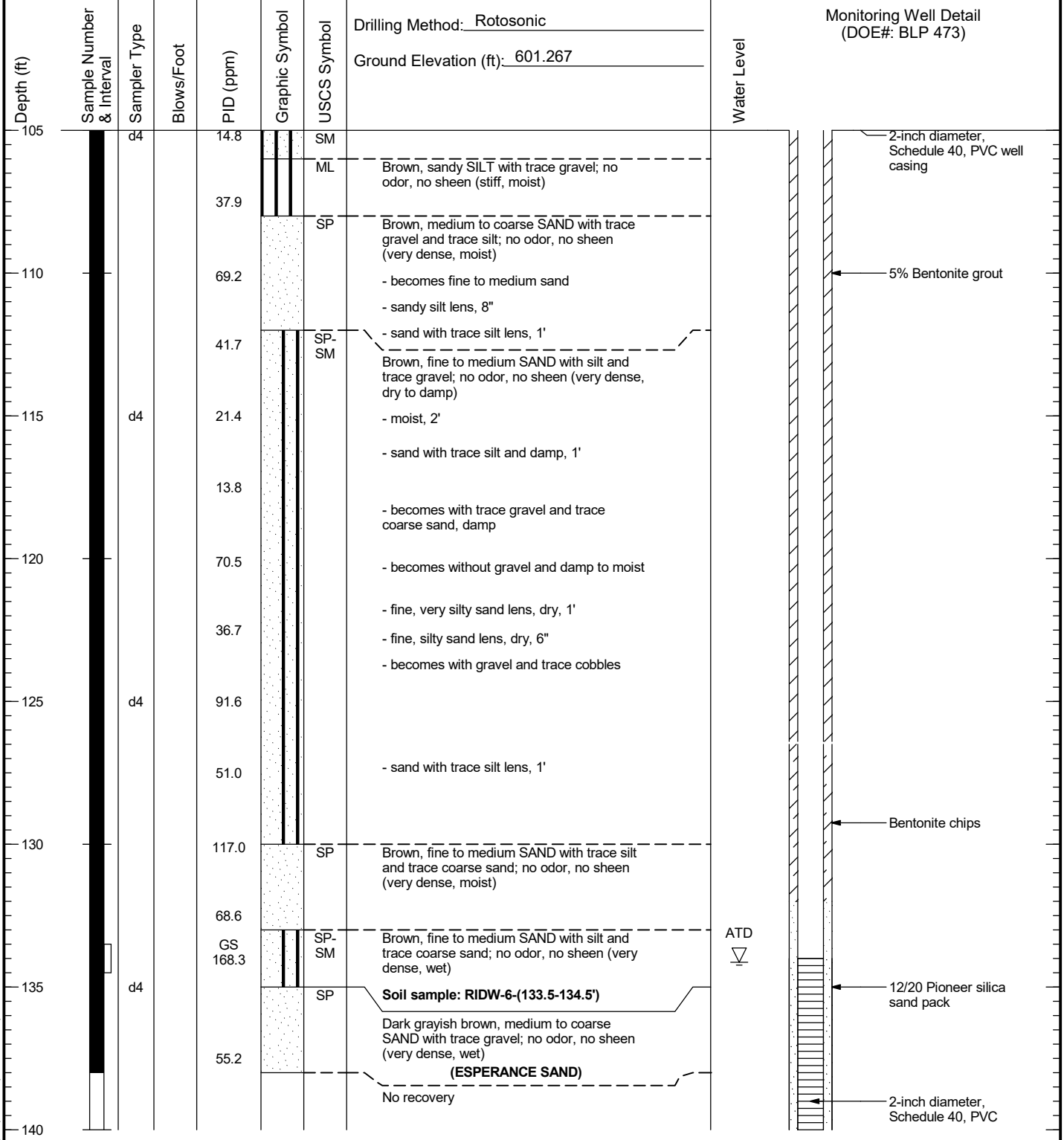
LANDAU ASSOCIATES

TECT Aerospace Leasehold
Everett, Washington

Log of Monitoring Well RIDW-6

Figure
D-116
(3 of 5)

RIDW-6



Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
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222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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Log of Monitoring Well RIDW-6

Figure
D-116
(4 of 5)

RIDW-6

SAMPLE DATA					SOIL PROFILE			GROUNDWATER	
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft): 601.267	Water Level	Monitoring Well Detail (DOE#: BLP 473)
140		d4					No recovery		screen (0.010-inch slot size) Threaded end cap
145							Boring Completed 11/15/22 Total Depth of Boring = 144.0 ft.		Monitoring Well Completed 11/18/22 Total Depth of Monitoring Well = 144.0 ft.
150									
155									
160									
165									
170									
175									

Notes:
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3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\022057.GPJ WELL LOG

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Log of Monitoring Well RIDW-6

Figure
D-116
(5 of 5)

RIDW-7

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Water Level

Drilling Method: Rotosonic

Ground Elevation (ft): 600.52

Monitoring Well Detail (DOE#: BQG 994)

12 in

Depth (ft)	Sample Number & Interval	Sampler Type	PID (ppm)	USCS Symbol	Soil Description
0				AC	
			0.4	SP-SM/SM	**(ASPHALT)**
					Brown, fine to medium SAND with coarse sand, silt, and trace gravel (medium dense, moist to wet)
			0.6		**(FILL)**
5		d4			Gray, silty, fine SAND with medium to coarse sand and angular gravel; no odor, no sheen (medium dense, moist)
			1.1		- becomes brown with trace coarse sand and trace gravel
					- becomes damp to moist
			2.1		
10					- becomes gray-brown and fine to medium-grained
			74.5		
				SM	Gray, silty, fine SAND with trace gravel; no odor, no sheen (dense, moist)
			156		**(GLACIAL TILL)**
15		d4			
			126		
			115		
20					- with coarse sand
			1.6		
			0.6		
25		d4			
			1.0		
				SP-SM/SM	Gray, medium SAND with fine and coarse sand, silt and trace gravel; no odor, no sheen (wet)
			1.9		
30					Gray, silty, fine to medium SAND with coarse sand and trace gravel; no odor, no sheen (dense, moist)
			0.1		- becomes very dense with trace coarse sand and damp to moist
			0.7		
35					

Flush-mounted monument with locking cap

High strength cement

Bentonite chips

5% Bentonite grout

2-inch diameter, Schedule 40, stainless steel well casing

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\022057.GPJ WELL LOG

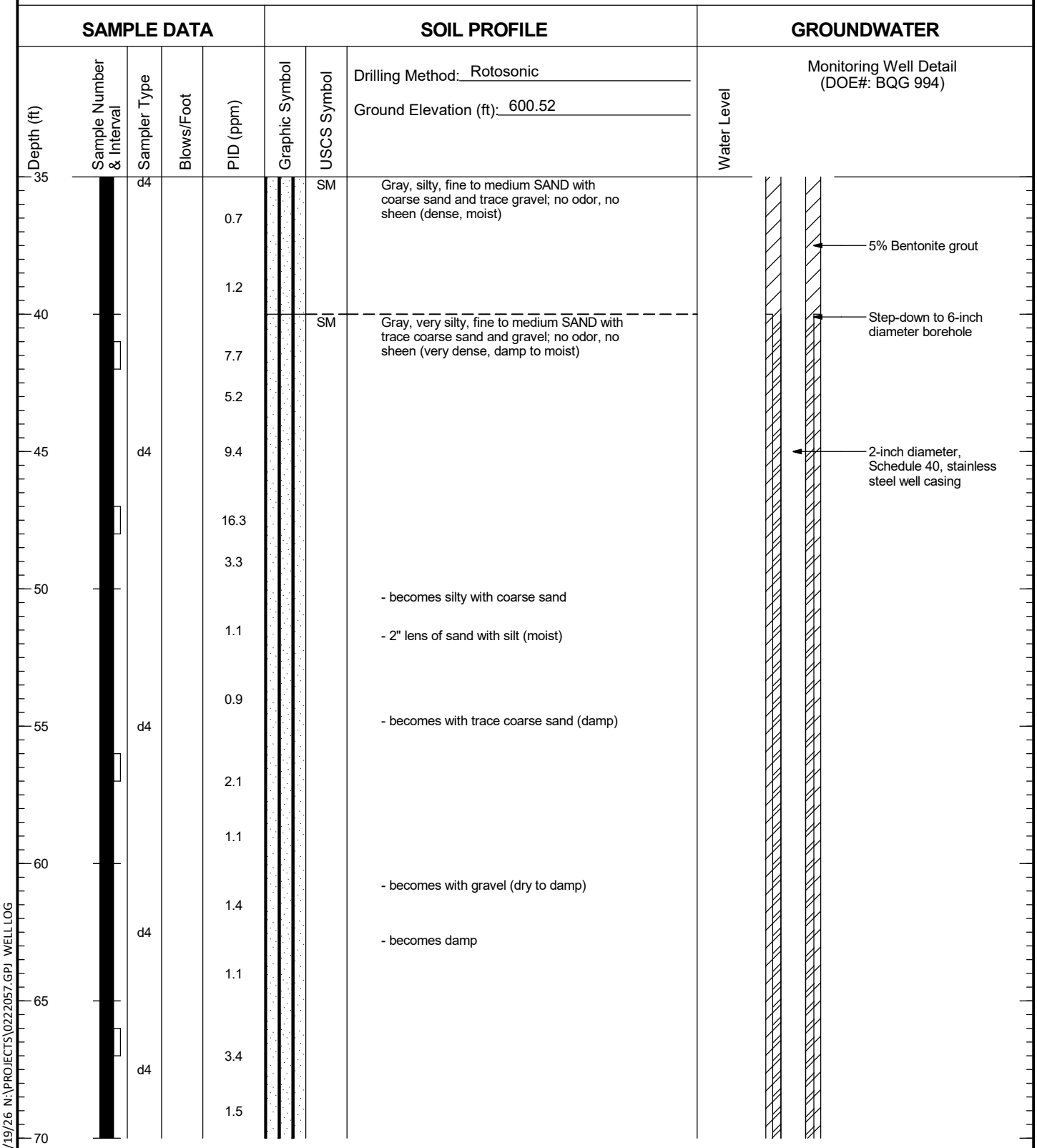
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TECT Aerospace Leasehold
Everett, Washington

Log of Monitoring Well RIDW-7

Figure
D-117
(1 of 5)

RIDW-7



Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\022057.GPJ WELL LOG

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TECT Aerospace Leasehold Everett, Washington	Log of Monitoring Well RIDW-7	Figure D-117 (2 of 5)

RIDW-7

SAMPLE DATA				SOIL PROFILE			GROUNDWATER	
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft): 600.52	Water Level
70						SM	Gray, very silty, fine to medium SAND with trace coarse sand and gravel; no odor, no sheen (very dense, damp to moist)	
				1.2			- becomes damp to moist	
				1.0				
75		d4						
				1.2				
				1.3				
80							- becomes with coarse sand and trace gravel	
				1.0			- becomes gray-brown	
				1.1				
85		d4				SM	Brown, silty, fine to medium SAND with gravel and coarse sand (damp to moist)	
				1.0			**(ADVANCE OUTWASH)**	
							- becomes with silt and moist	
				1.7				
90						SP-SM	Brown, medium SAND with silt and coarse sand and trace gravel (dense, damp to moist)	
				1.4		SM	Brown, silty, medium SAND with coarse sand and trace gravel (dense, dry to damp)	
				1.7		SP-SM	Brown, medium SAND with silt, coarse sand, and trace gravel (dense, damp to moist)	
95		d4				SM		
				0.9		SP-SM	Brown, silty, medium SAND with coarse sand and trace gravel (dense, dry to damp)	
						SM	Brown, medium SAND with silt, coarse sand, and trace gravel (dense, damp to moist)	
				1.1				
100						SP-SM	Brown, silty, medium SAND with coarse sand and trace gravel (dense, dry to damp)	
				1.2			Brown, medium SAND with silt, coarse sand, and gravel; no odor, no sheen (dense, damp to moist)	
		d4				SM		
				1.1				
105								

Monitoring Well Detail (DOE#: BQG 994)

- 5% Bentonite grout
- 2-inch diameter, Schedule 40, stainless steel well casing

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

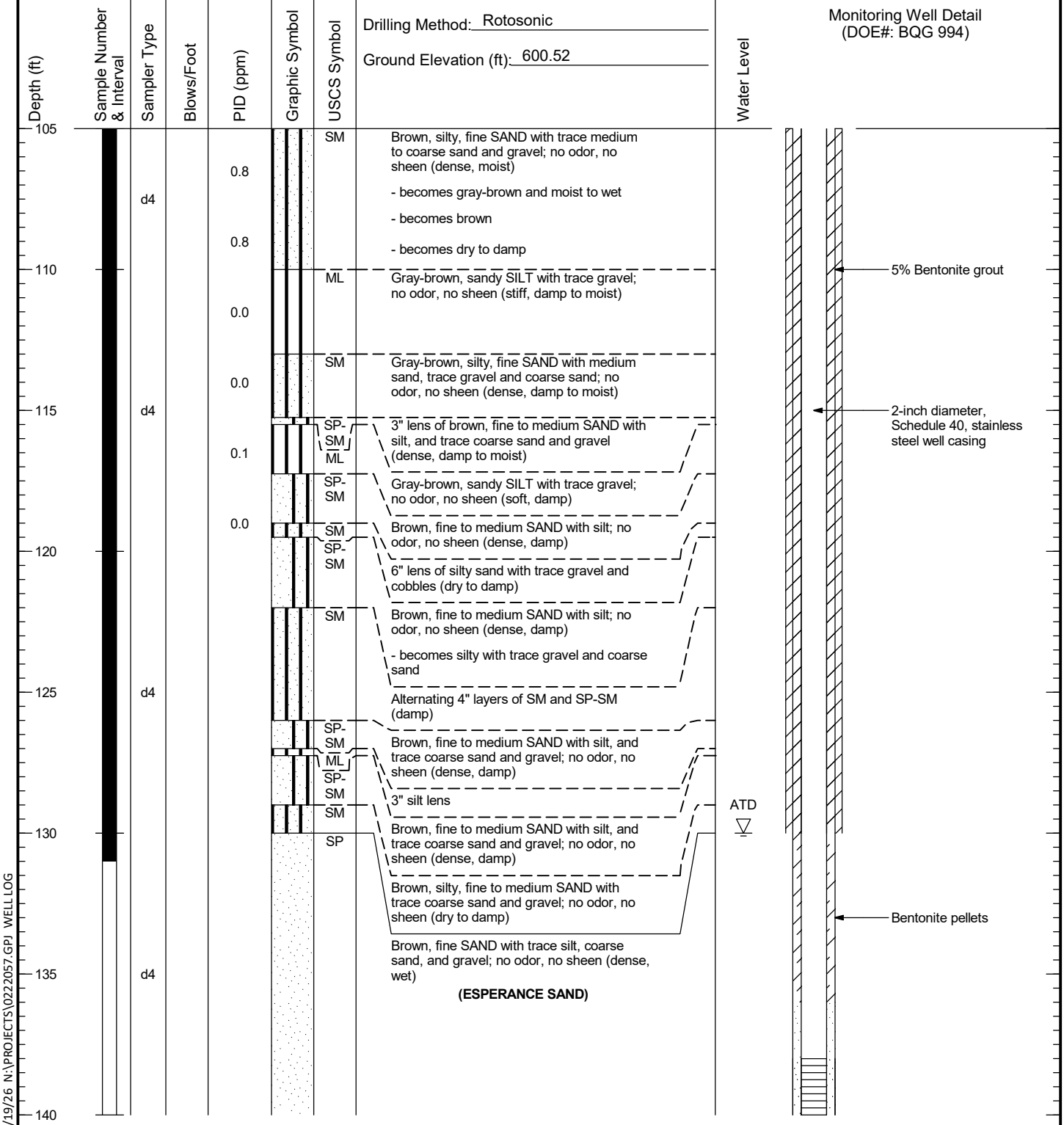
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TECT Aerospace Leasehold
Everett, Washington

Log of Monitoring Well RIDW-7

Figure
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(3 of 5)

RIDW-7



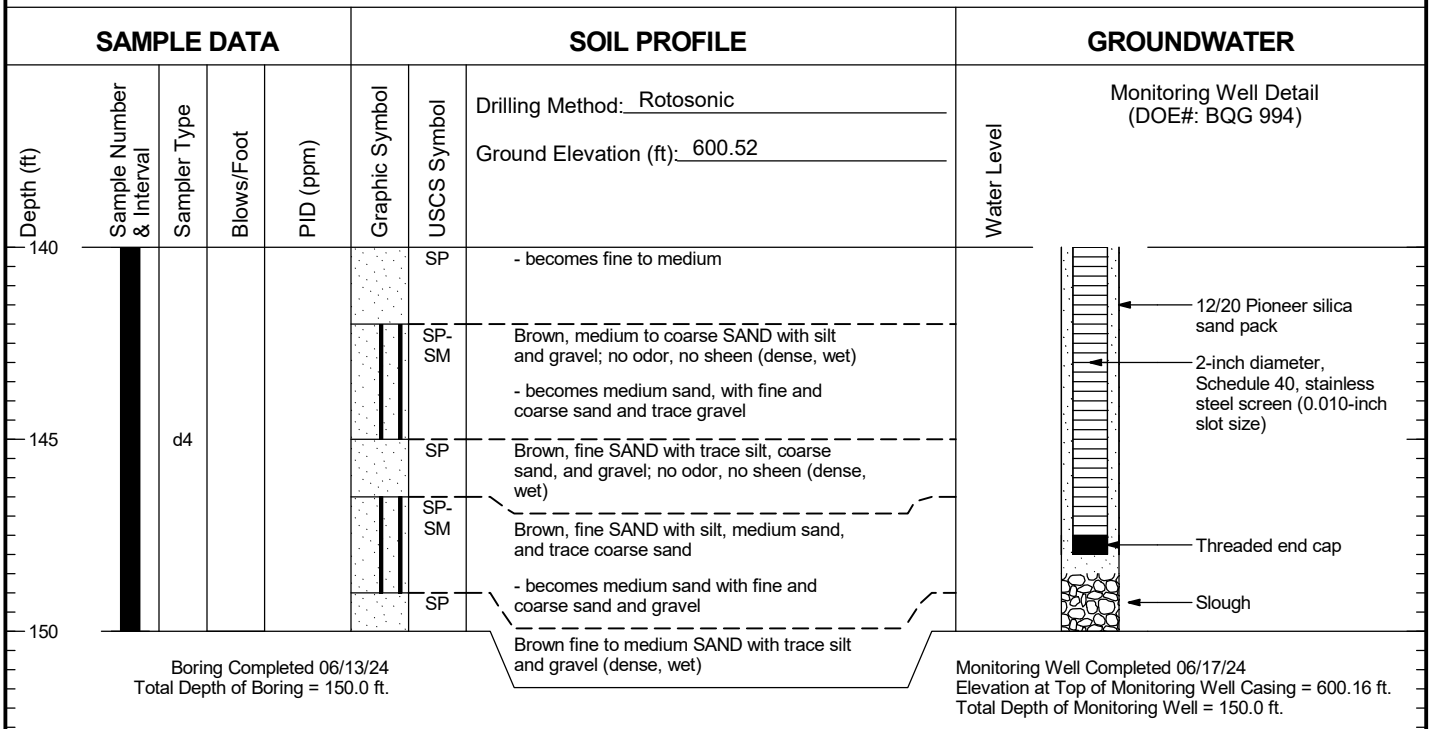
Notes:
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3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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TECT Aerospace Leasehold Everett, Washington	Log of Monitoring Well RIDW-7	Figure D-117 (4 of 5)

RIDW-7



Notes:
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3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Monitoring Well RIDW-7	Figure D-117 (5 of 5)

RIDW-8

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft): 602.29	Water Level
0				0.1		SM	Brown, silty, fine to medium SAND with coarse sand and trace gravel; no odor, no sheen (medium dense, moist) **(FILL)**	
						SP-SM / SM	- becomes grayish brown with trace coarse sand	
		d4		2.1			Grayish brown, fine to medium SAND with silt, trace coarse sand, and trace gravel; no odor, no sheen (medium dense, moist)	
5				1.8			Gray, silty, fine to medium SAND with coarse sand and trace gravel; no odor, no sheen (medium dense, damp to moist)	
		d4		23.4			- becomes grayish brown and moist - becomes with trace coarse sand and damp - 2" sand with silt lens broken up and moist	
10				50.2			- becomes fine sand without coarse sand and gravel	
						ML / SM	Gray, sandy SILT; no odor, no sheen (stiff, damp to moist) **(GLACIAL TILL)**	
		d4		42.7			Gray, silty, fine to medium SAND with coarse sand and trace gravel; no odor, no sheen (dense, damp to moist)	
15				0.3				
				0.1				
20				2.2				
						SP-SM / SM	Gray, fine to medium SAND with silt, trace coarse sand, and trace gravel; no odor, no sheen (dense, damp to moist)	
		d4		1.8			Gray, silty, fine to medium SAND with trace coarse sand and trace gravel; no odor, no sheen (dense, damp)	
25				0.6				
						SP-SM / SM	Gray, fine to medium SAND with silt, trace coarse sand, and trace gravel; no odor, no sheen (dense, damp)	
				0.9			Gray, silty, fine to medium SAND with trace coarse sand and trace gravel; no odor, no sheen (dense, damp to moist)	
30				0.2		SP / ML	Gray, medium SAND with fine sand, trace coarse sand and trace gravel; no odor, no sheen (dense, wet)	
				0.4			Gray, sandy SILT with trace gravel; no odor, no sheen (very stiff, damp)	
35								

Monitoring Well Detail (DOE#: BQG 993)

12 in

Flush-mounted monument with locking cap

High strength cement

Bentonite chips

5% Bentonite grout

2-inch diameter, Schedule 40, stainless steel well casing

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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TECT Aerospace Leasehold
Everett, Washington

Log of Monitoring Well RIDW-8

Figure
D-118
(1 of 5)

RIDW-8

SAMPLE DATA				SOIL PROFILE			GROUNDWATER	
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft): 602.29	Water Level
35		d4		0.1		ML	Gray, sandy SILT with trace gravel; no odor, no sheen (very stiff, damp) - becomes with coarse sand, gravel and trace cobbles	
				0.4				
40				0.9		SM	Gray, silty, fine to medium SAND with coarse sand and trace gravel; no odor, no sheen (very dense, damp to moist)	
				0.3				
45		d4		0.5				
				0.3			- becomes with gravel	
50							- becomes grayish brown with angular gravel	
		d4						
55						SP-SM	Grayish brown, fine to medium SAND with silt, coarse sand and gravel; no odor, no sheen (very dense, damp to moist)	
		d4				SM	Grayish brown, silty, fine to medium SAND with coarse sand, gravel, and trace cobbles; no odor, no sheen (very dense, dry to damp)	
60								
65		d4				SP-SM SM	Brown, gravelly, fine to medium SAND with coarse sand and silt; no odor, no sheen (very dense, moist) Grayish brown, silty, fine to medium SAND with coarse sand, gravel, and trace cobbles; no odor, no sheen (very dense, damp to moist)	
70						SP-SM	Brown, fine to medium SAND with silt, coarse sand and trace cobbles; no odor, no	

Monitoring Well Detail (DOE#: BQG 993)

- 5% Bentonite grout
- Step-down to 6 -inch diameter borehole
- 2-inch diameter, Schedule 40, stainless steel well casing

Notes:
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3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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TECT Aerospace Leasehold
Everett, Washington

Log of Monitoring Well RIDW-8

Figure
D-118
(2 of 5)

RIDW-8

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Rotosonic

Ground Elevation (ft): 602.29

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Water Level
70						SP	
75		d4					
80							
85		d4					
90						SP/SM	
95		d4					
100							
105		d4					

sheen (very dense, damp to moist)

Brown, fine to medium SAND with trace silt; no odor, no sheen (dense, moist)
(ADVANCE OUTWASH)

Dark brown, medium SAND with silt, fine sand, coarse sand, and trace gravel interebedded with silty sand and sand with silt; no odor, no sheen (dense, damp to moist)

- becomes brown

Monitoring Well Detail
(DOE#: BQG 993)

5% Bentonite grout

2-inch diameter, Schedule 40, stainless steel well casing

Notes:
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2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\022057.GPJ WELL LOG

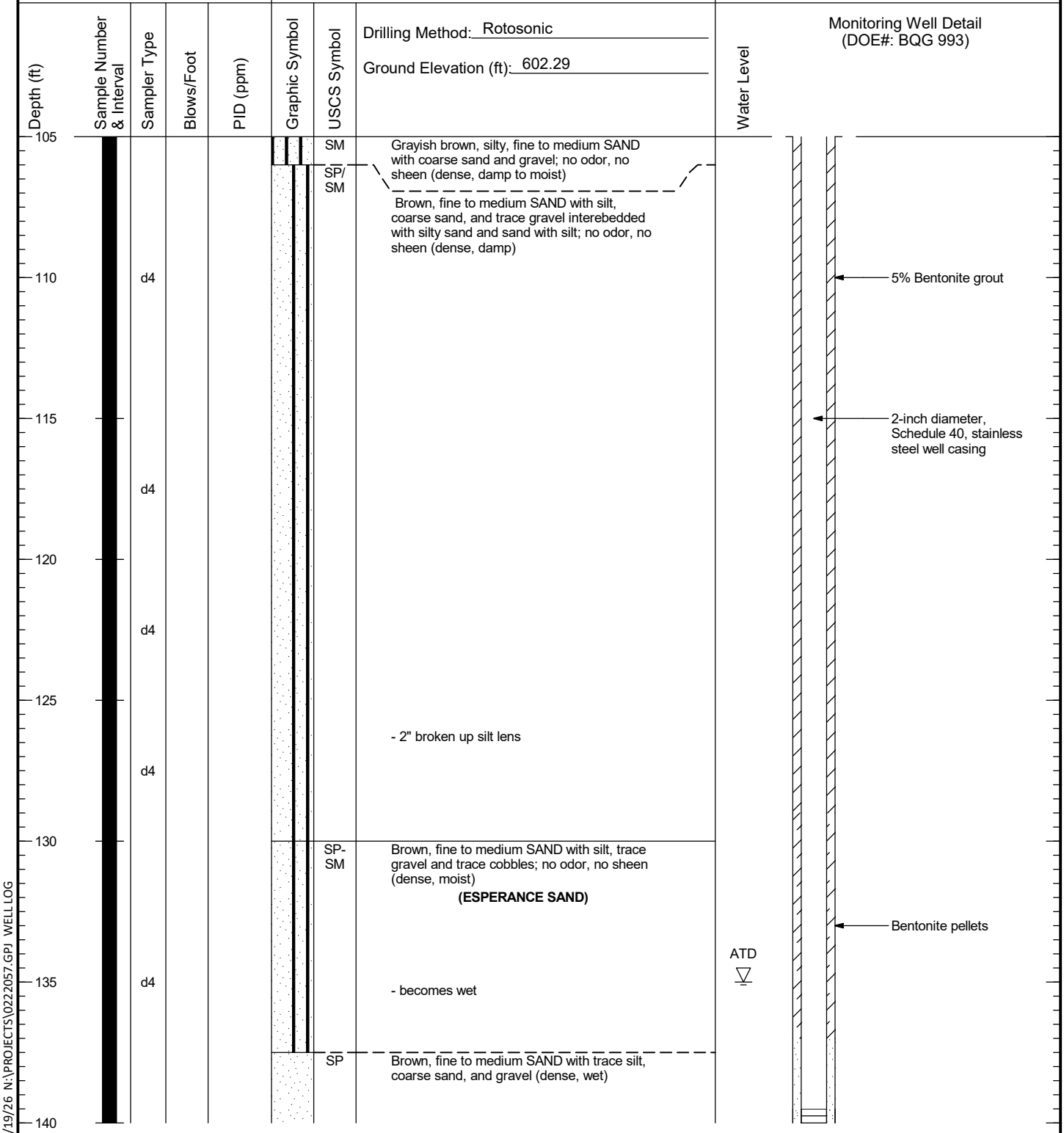
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Everett, Washington

Log of Monitoring Well RIDW-8

Figure
D-118
(3 of 5)

RIDW-8



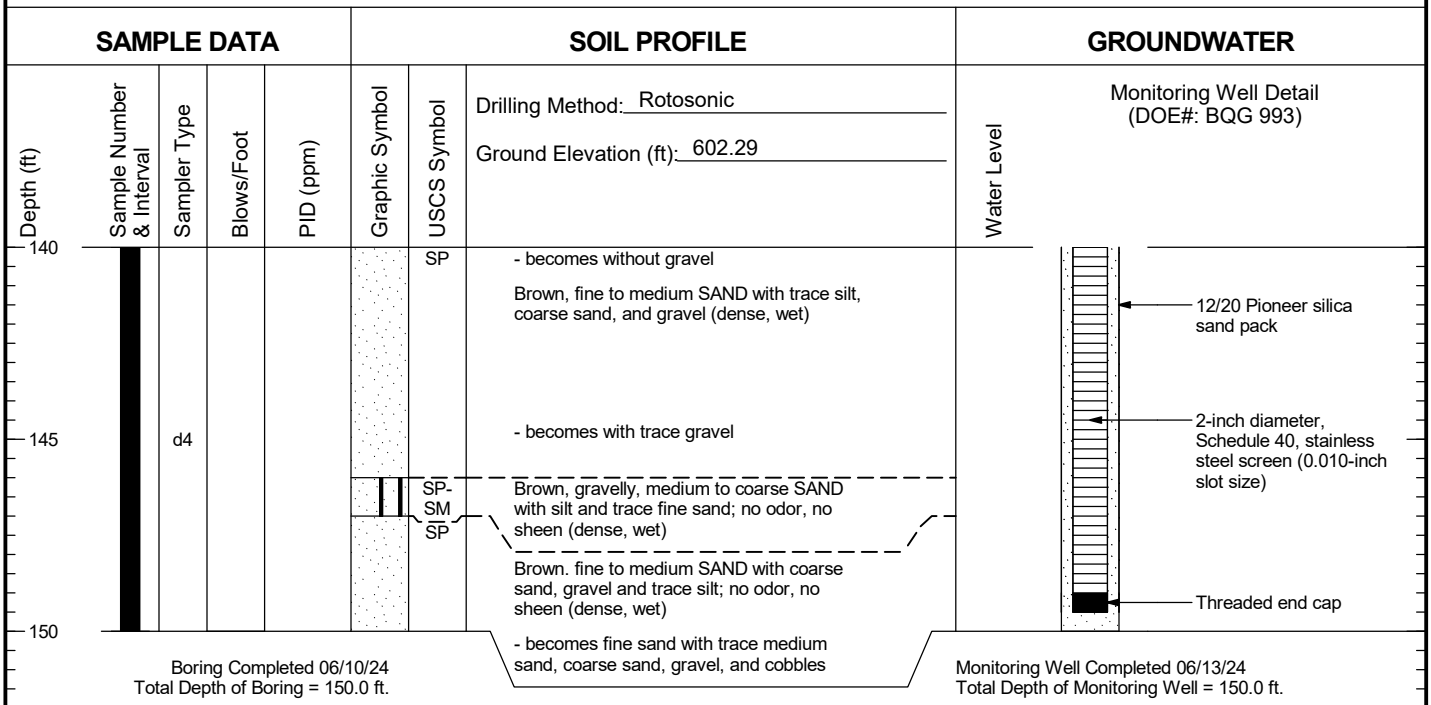
Notes:
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3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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TECT Aerospace Leasehold Everett, Washington	Log of Monitoring Well RIDW-8	Figure D-118 (4 of 5)

RIDW-8



155
160
165
170
175

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
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222057. 3/19/26 N:\PROJECTS\0222057.GPJ WELL LOG

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TECT Aerospace Leasehold Everett, Washington	Log of Monitoring Well RIDW-8	Figure D-118 (5 of 5)

RISG-05

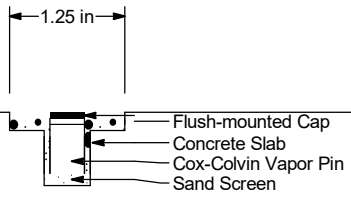
SAMPLE DATA | **SOIL PROFILE** | **SOIL GAS/VAPOR**

Drilling Method: Rotosonic

Ground Elevation (ft): Not Surveyed

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Profile
0						CONC	Concrete
		d4		0.0		SP	Brown-gray, fine medium SAND with trace gravel and silt; no sheen, no odor (loose, damp) **(FILL)** **Soil Gas Sample: RISG-05-190325**
2	RISB-05-(2-3')					SM	Dark gray, silty, gravelly, fine to medium SAND; no sheen, no odor (loose, damp) **Soil Sample: RISB-05-(2-3')**
						ML	Medium brown, sandy, SILT with trace gravel; no sheen, no odor (soft, damp)
4				0.0			
6				0.0			
8				0.0			
	RISB-05-(9.5-10.5')						**Soil Sample: RISB-05-(9.5-10.5')**
10						SM	Gray, gravelly, very silty, SAND; no sheen, no odor (dense, moist) **(GLACIAL TILL)**

Vapor Well/implant Detail



Notes:
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2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/20/26 N:\PROJECTS\0222057.GPJ VAPOR WELL/IMPLANT

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TECT Aerospace Leasehold
Everett, Washington

Log of Vapor Well/Implant
RISG-05

Figure
D-119
(1 of 2)

RISG-05

SAMPLE DATA				SOIL PROFILE			SOIL GAS/VAPOR
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft): Not Surveyed	Vapor Well/implant Detail
12				0.0		SM	Gray, gravelly, very silty, SAND; no sheen, no odor (dense, moist) **(GLACIAL TILL)** **Groundwater Sample: RISB-05-GW**	
14				0.0				
16								
18								
20								
22								

Boring Completed 03/18/19
Total Depth of Boring = 15.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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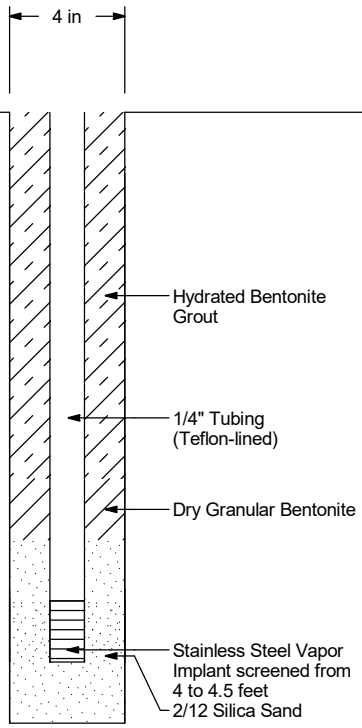
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TECT Aerospace Leasehold Everett, Washington	Log of Vapor Well/Implant RISG-05	Figure D-119 (2 of 2)

RISG-22

SAMPLE DATA				SOIL PROFILE			SOIL GAS/VAPOR
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft): Not Surveyed
0				0.4		AC	Asphalt
				2.4		SP-SM	Brown-gray, gravelly, SAND with silt; no sheen, no odor (loose, damp) **(FILL)**
	RISB-22-(1-2')	d4					**Soil Sample: RISB-22-(1-2')**
2						SM	Gray stained, silty, fine SAND with gravel; moderate sheen, petroleum like odor
				5.2		SM	Tan, silty, fine SAND with gravel (medium dense, moist)
4							**Groundwater Sample: RISB-22-GW** **Soil Gas Sample: RISG-22-190402**
				7.8			
6	RISB-22-(6.5-7.5')			18.0			**Soil Sample: RISB-22-(6.5-7.5')**
8				12.4			
				2.0			
						SM	Gray, silty, fine SAND with gravel; no sheen, no odor (dense, damp) **(GLACIAL TILL)**
10				1.0			

Vapor Well/implant Detail



Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/20/26 N:\PROJECTS\0222057.GPJ VAPOR WELL/IMPLANT

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TECT Aerospace Leasehold Everett, Washington	Log of Vapor Well/Implant RISG-22	Figure D-120 (1 of 2)

RISG-22

SAMPLE DATA				SOIL PROFILE			SOIL GAS/VAPOR
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft): Not Surveyed	Vapor Well/implant Detail
				6.5		SM	Gray, silty, fine SAND with gravel; no sheen, no odor (dense, damp) **(GLACIAL TILL)**	
12				2.4				
14				3.0				
				0.9				
16				3.3				
18				1.0				
	RISB-22-(19-20')			0.8			**Soil Sample: RISB-22-(19-20')**	
20								
22								

Boring Completed 03/28/19
Total Depth of Boring = 20.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/20/26 N:\PROJECTS\0222057.GPJ VAPOR WELL/IMPLANT

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TECT Aerospace Leasehold Everett, Washington	Log of Vapor Well/Implant RISG-22	Figure D-120 (2 of 2)

RISG-42

SAMPLE DATA | **SOIL PROFILE** | **SOIL GAS/VAPOR**

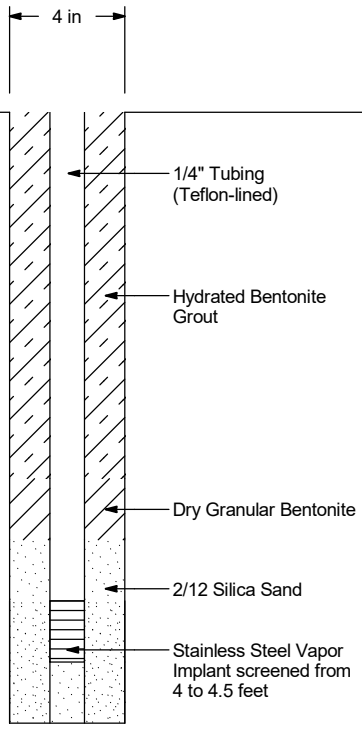
Drilling Method: Rotosonic

Ground Elevation (ft): Not Surveyed

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Description
0						GP-GM	Brown, sandy, GRAVEL with silt and cobbles (loose, damp)
							(FILL)
						SP-SM	Gray, fine to medium SAND with gravel and silt (loose, damp)
						SM	Gray-tan, silty, fine SAND with gravel and coarse sand (dense, damp)
2				11.6			- becomes less dense
				2.2		SM	Gray, silty, fine SAND with trace gravel and rust colored layers (dense, damp)
		d4					
4				1.8			- becomes less dense
							Soil Gas Sample: RISG-42-190404
				25.5			- becomes dense
6						SM	Gray, silty, medium SAND (loose, damp)
						SM	Gray, silty, fine SAND with gravel (reworked till) (loose to dense, damp)
	RISB-42-(6.5-7.5')						**Soil Sample: RISB-42-(6.5-7.5')**
				122			
						SM	Gray, silty, fine SAND with gravel and cobbles (loose, damp)
8				103			
				64.8			
10						SP-SM	Dark gray, fine to medium SAND with gravel, cobbles, and some silt (loose, damp)
				73.1			

SOIL GAS/VAPOR

Vapor Well/implant Detail



Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/20/26 N:\PROJECTS\0222057.GPJ VAPOR WELL/IMPLANT

LANDAU ASSOCIATES

TECT Aerospace Leasehold
Everett, Washington

Log of Vapor Well/Implant
RISG-42

Figure
D-121
(1 of 2)

RISG-42

SAMPLE DATA					SOIL PROFILE			SOIL GAS/VAPOR
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft): Not Surveyed	Vapor Well/implant Detail
						SP-SM	Dark gray, fine to medium SAND with gravel, cobbles, and some silt (loose, damp)	
						SM	- becomes more dense and sand becomes finer	
	RISB-42-(11.5-12.5')							
12				85.6			Gray, silty, fine SAND with gravel; colorless sheen (dense, damp) **(GLACIAL TILL)** **Soil Sample: RISB-42-(11.5-12.5')**	
				26.1			- with trace cobbles	
14				19.8			**Groundwater Sample: RISB-42-GW**	
				1.2				
16				1.1				
				1.4				
18								
				0.7			**Soil Sample: RISB-42-(19-20')**	
	RISB-52-(19-20')							
20								
22								

Boring Completed 04/03/19
Total Depth of Boring = 20.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/20/26 N:\PROJECTS\0222057.GPJ VAPOR WELL/IMPLANT

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TECT Aerospace Leasehold Everett, Washington	Log of Vapor Well/Implant RISG-42	Figure D-121 (2 of 2)

RISG-55

SAMPLE DATA | **SOIL PROFILE** | **SOIL GAS/VAPOR**

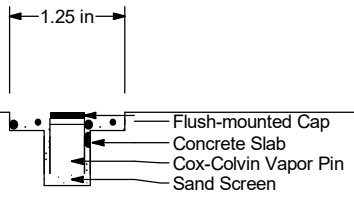
Drilling Method: Geoprobe™

Ground Elevation (ft): Not Surveyed

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Profile
0						CONC	Concrete
						SP	Brown, fine to medium SAND with trace silt and gravel; no sheen, no odor (loose, damp) **(FILL)** **Soil Gas Sample: RISG-55-190325**
						SM	Brown, silty, SAND with trace gravel; no sheen, no odor (loose, damp)
2		d3		0.0			- rust mottled
						ML	Brown, sandy, SILT with trace gravel; no sheen, no odor (soft, damp)
4							- moist
6				0.0			**Soil Sample: RISB-55-(7-8')**
	RISB-55-(7-8')						
8						SM	Brown, silty, fine to medium SAND with trace gravel; no sheen, no odor (loose, wet) **Groundwater Sample: RISB-55-GW**
10				0.0			
						ML	Brown, sandy, SILT with trace gravel; no sheen, no odor (stiff, wet)

SOIL GAS/VAPOR

Vapor Well/implant Detail



Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/20/26 N:\PROJECTS\0222057.GPJ VAPOR WELL/IMPLANT

LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Vapor Well/Implant RISG-55	Figure D-122 (1 of 2)

RISG-55

SAMPLE DATA				SOIL PROFILE			SOIL GAS/VAPOR
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft): Not Surveyed	Vapor Well/implant Detail
						ML	Brown, sandy, SILT with trace gravel; no sheen, no odor (stiff, wet)	
12								

Boring Completed 03/18/19
Total Depth of Boring = 12.0 ft.

14

16

18

20

22

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/20/26 N:\PROJECTS\0222057.GPJ VAPOR WELL/IMPLANT

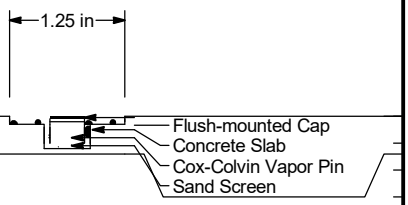
LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Vapor Well/Implant RISG-55	Figure D-122 (2 of 2)

RISG-100

SAMPLE DATA				SOIL PROFILE			SOIL GAS/VAPOR
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Hand Implements Ground Elevation (ft): Not Surveyed
0							

Vapor Well/implant Detail



Boring Completed 12/10/19
Total Depth of Boring = 0.7 ft.

5

10

15

20

25

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/20/26 N:\PROJECTS\0222057.GPJ VAPOR WELL/IMPLANT

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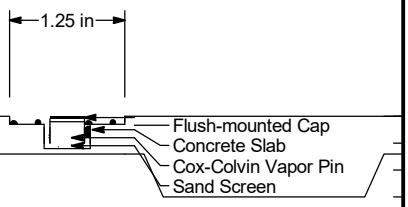
TECT Aerospace Leasehold Everett, Washington	Log of Vapor Well/Implant RISG-100	Figure D-123

RISG-101

SAMPLE DATA				SOIL PROFILE			SOIL GAS/VAPOR
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Hand Implements Ground Elevation (ft): Not Surveyed
0							

Boring Completed 12/10/19
Total Depth of Boring = 0.7 ft.

Vapor Well/implant Detail



5
10
15
20
25

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/20/26 N:\PROJECTS\0222057.GPJ VAPOR WELL/IMPLANT

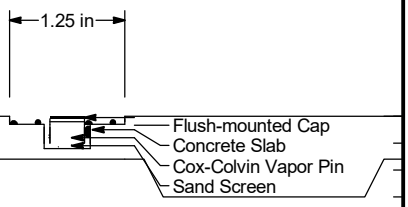
LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Vapor Well/Implant RISG-101	Figure D-124

RISG-102

SAMPLE DATA				SOIL PROFILE			SOIL GAS/VAPOR
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Hand Implements Ground Elevation (ft): Not Surveyed

Vapor Well/implant Detail



Boring Completed 12/10/19
Total Depth of Boring = 0.8 ft.

0
5
10
15
20
25

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/20/26 N:\PROJECTS\0222057.GPJ VAPOR WELL/IMPLANT

LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Vapor Well/Implant RISG-102	Figure D-125

RISG-203

SAMPLE DATA | **SOIL PROFILE** | **SOIL GAS/VAPOR**

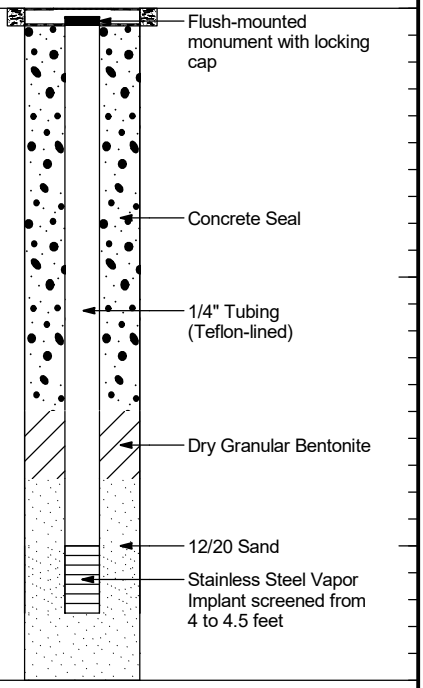
Drilling Method: Rotosonic

Ground Elevation (ft):

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Description
0						AC	**(ASPHALT)**
						SP-SM	Light brown to gray, fine to medium SAND with silt and gravel; no odor, no sheen (medium dense, moist) **(FILL)**
				0.8			
2							
				0.6			
4							
6							
8							
10							

Boring Completed 06/17/24
Total Depth of Boring = 5.0 ft.

Vapor Well/Implant Detail
(ECY#: BQG 997)



Vapor Well/Implant Completed 06/17/24
Total Depth of Vapor Well/Implant = 5.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/20/26 N:\PROJECTS\0222057.GPJ VAPOR WELL/IMPLANT

LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Vapor Well/Implant RISG-203	Figure D-126

RISG-204

SAMPLE DATA

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)
0				
		d4		0.9
2				
				0.7
4				
6				
8				
10				

SOIL PROFILE

Drilling Method: Rotosonic

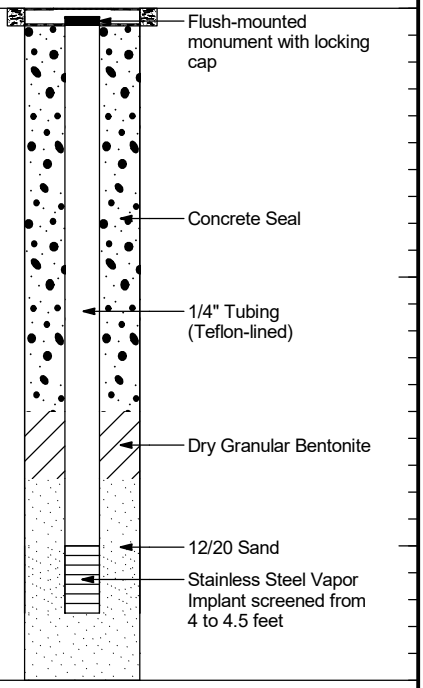
Ground Elevation (ft): _____

Graphic Symbol	USCS Symbol	
	AC	
	SP-SM	**(ASPHALT)**
	AC	Brown, medium to coarse SAND with gravel and silt; no odor, no sheen (moist)
	SM	**(FILL)**
		(ASPHALT)
	SP-SM	Dark brown, silty, fine SAND with gravel; no odor, no sheen (medium dense, moist)
		(FILL)
		Orange-brown, medium SAND with gravel and silt; no odor, no sheen (dense, damp)
		(GLACIAL TILL)
		Soil sample: RISB-204-5-(1.5-2.5')
		- becomes light brown and fine sand
		- grades to moist

Boring Completed 06/17/24
Total Depth of Boring = 5.0 ft.

SOIL GAS/VAPOR

Vapor Well/implant Detail
(ECY#: BQG 996)



Vapor Well/Implant Completed 06/17/24
Total Depth of Vapor Well/Implant = 5.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/20/26 N:\PROJECTS\0222057.GPJ VAPOR WELL/IMPLANT

LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Vapor Well/Implant RISG-204	Figure D-127

RISG-205

SAMPLE DATA | **SOIL PROFILE** | **SOIL GAS/VAPOR**

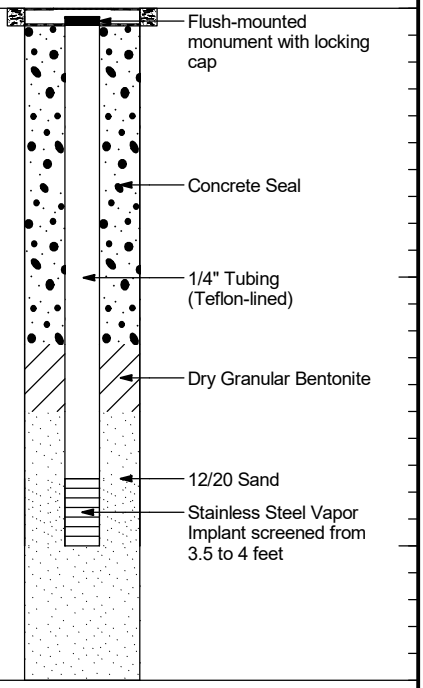
Drilling Method: Rotosonic

Ground Elevation (ft):

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Description
0						SP-SM	Light brown, fine SAND with silt and gravel; no odor, no sheen (medium dense, damp to moist) **(FILL)**
				0.4			
2							
4		d4					- grades to medium sand **Soil sample: RISB-205-5-(4-5')**
				0.6			- becomes wet - grades to fine sand
6							
8							
10							

Boring Completed 06/17/24
Total Depth of Boring = 5.0 ft.

Vapor Well/Implant Detail
(ECY#: BQG 995)



Vapor Well/Implant Completed 06/17/24
Total Depth of Vapor Well/Implant = 5.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/20/26 N:\PROJECTS\0222057.GPJ VAPOR WELL/IMPLANT

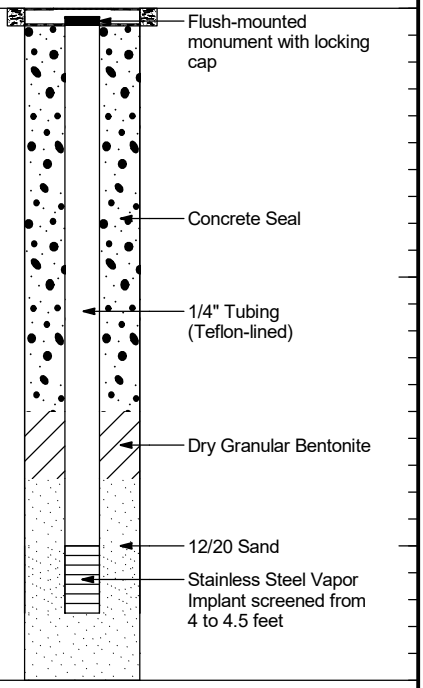
LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Vapor Well/Implant RISG-205	Figure D-128

RISG-206

SAMPLE DATA				SOIL PROFILE			SOIL GAS/VAPOR
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft):
0						CONC	**(CONCRETE)**
				2.7		SM	Dark gray, silty, fine to medium SAND with gravel; no odor, no sheen (dense, moist) **(FILL)**
2				5.4			- trace brick and wood debris
						SP-SM	Gray, fine SAND with gravel and silt; no odor, no sheen (dense, damp to moist) **(GLACIAL TILL)**
4				7.5			
6							
8							
10							

Vapor Well/implant Detail
(ECY#: BQG 808)



Boring Completed 06/18/24
Total Depth of Boring = 5.0 ft.

Vapor Well/Implant Completed 06/18/24
Total Depth of Vapor Well/Implant = 5.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/20/26 N:\PROJECTS\0222057.GPJ VAPOR WELL/IMPLANT

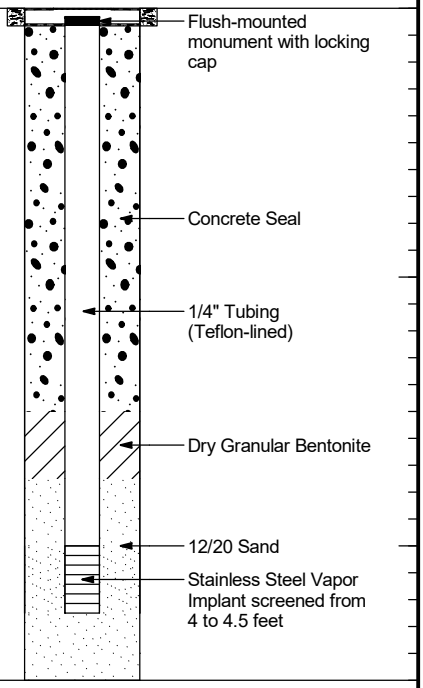
LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Vapor Well/Implant RISG-206	Figure D-129

RISG-207

SAMPLE DATA				SOIL PROFILE			SOIL GAS/VAPOR
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft):
0						CONC	**(CONCRETE)**
				2.4		SP-SM	Brown, gravelly, fine to medium SAND with silt and cobbles; no odor, no sheen (dense, moist) **(FILL)**
2				2.6			
						SP-SM	Gray, fine SAND with silt and gravel; no odor, no sheen (dense, moist) **(GLACIAL TILL)**
4				2.4			
6							
8							
10							

Vapor Well/implant Detail
(ECY#: BQG 807)



Boring Completed 06/18/24
Total Depth of Boring = 5.0 ft.

Vapor Well/Implant Completed 06/18/24
Total Depth of Vapor Well/Implant = 5.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/20/26 N:\PROJECTS\0222057.GPJ VAPOR WELL/IMPLANT

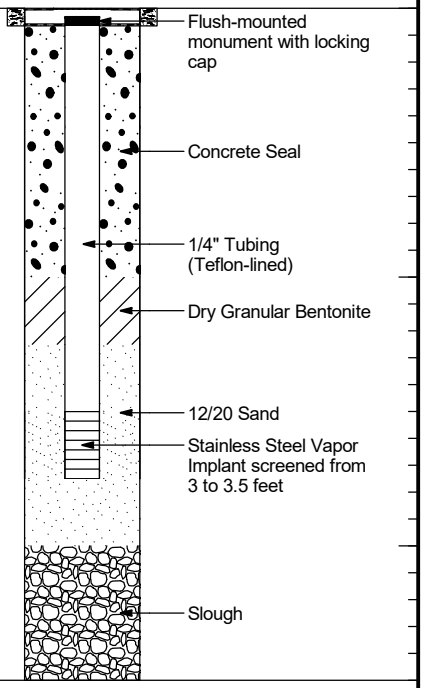
LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Vapor Well/Implant RISG-207	Figure D-130

RISG-208

SAMPLE DATA				SOIL PROFILE			SOIL GAS/VAPOR
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft):
0						CONC	**(CONCRETE)**
				2.0		SP-SM	Light brown, fine SAND with silt and gravel; no odor, no sheen (medium dense, damp to moist) **(FILL)**
2				2.5			- grades to moist, fine to coarse, with cobbles
						SM	Brown, silty, fine to medium SAND with gravel, cobbles and debris (medium dense, moist to wet) - becomes wet
4				3.4		SP-SM	Brown, fine SAND with silt and gravel (medium dense, wet)
6							
8							
10							

Vapor Well/implant Detail
(ECY#: BQG 806)



Boring Completed 06/18/24
Total Depth of Boring = 5.0 ft.

Vapor Well/Implant Completed 06/18/24
Total Depth of Vapor Well/Implant = 5.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/20/26 N:\PROJECTS\0222057.GPJ VAPOR WELL/IMPLANT

LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Vapor Well/Implant RISG-208	Figure D-131

RISG-209

SAMPLE DATA | **SOIL PROFILE** | **SOIL GAS/VAPOR**

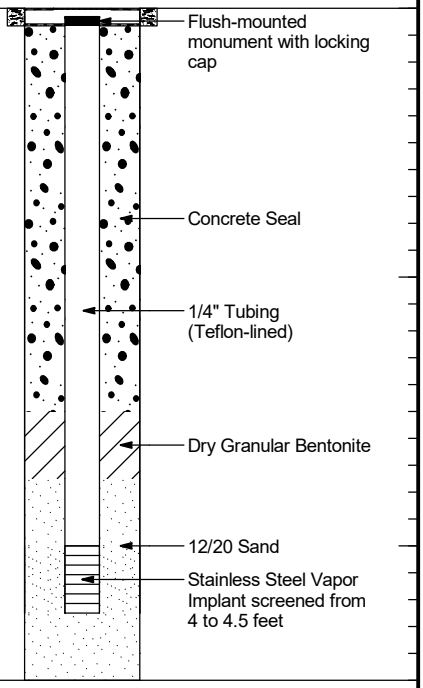
Drilling Method: Rotosonic

Ground Elevation (ft):

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Description
0				2.8		AC	**(ASPHALT)**
						SM	Gray, silty, fine to medium SAND with gravel; no odor, no sheen (dense, damp to moist) **(FILL)**
2				6.4			
						SP-SM	Light brown, fine to medium SAND with silt and gravel; no odor, no sheen (dense, damp to moist)
4				6.9			- becomes moist
6							
8							
10							

Boring Completed 06/18/24
Total Depth of Boring = 5.0 ft.

Vapor Well/implant Detail
(ECY#: BQG 999)



Vapor Well/Implant Completed 06/18/24
Total Depth of Vapor Well/Implant = 5.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/20/26 N:\PROJECTS\0222057.GPJ VAPOR WELL/IMPLANT

LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Vapor Well/Implant RISG-209	Figure D-132

RISG-210

SAMPLE DATA | **SOIL PROFILE** | **SOIL GAS/VAPOR**

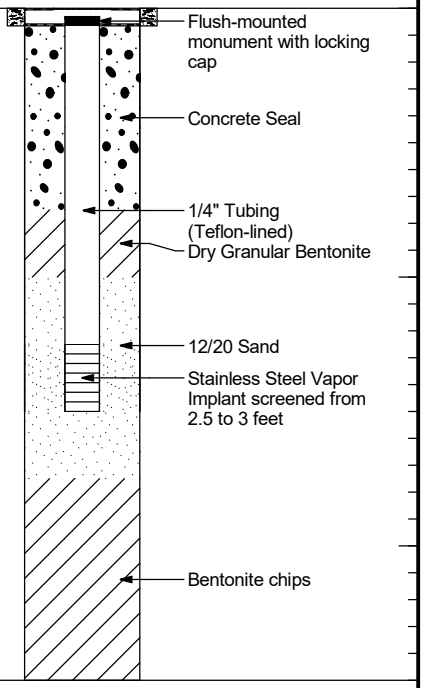
Drilling Method: Rotosonic

Ground Elevation (ft):

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Description
0				0.1		CONC	**(CONCRETE)**
						SP-SM	Light brown, fine to medium SAND with silt and gravel; no odor, no sheen (dense, damp) **(FILL)**
				0.4			
2							
				0.9		ML	Gray, sandy SILT with gravel; no odor, no sheen (very stiff, damp) **(GLACIAL TILL)**
4				0.1			
6							
8							
10							

Boring Completed 06/18/24
Total Depth of Boring = 5.0 ft.

Vapor Well/implant Detail
(ECY#: BQG 998)



Vapor Well/Implant Completed 06/18/24
Total Depth of Vapor Well/Implant = 5.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/20/26 N:\PROJECTS\0222057.GPJ VAPOR WELL/IMPLANT

LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Vapor Well/Implant RISG-210	Figure D-133

RISG-211

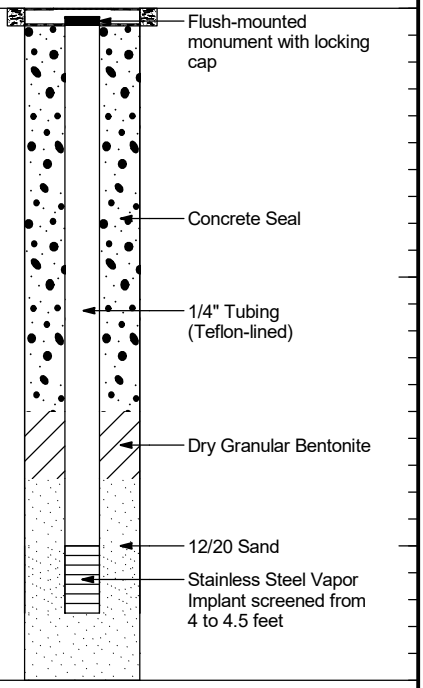
SAMPLE DATA | **SOIL PROFILE** | **SOIL GAS/VAPOR**

Drilling Method: Rotosonic

Ground Elevation (ft):

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Description
0				152		AC	**(ASPHALT)**
						SP-SM	Light brown, fine SAND with silt; no odor, no sheen (medium dense, damp) **(FILL)**
2				387		SP-SM	Light brown, gravelly, fine to medium SAND with silt and trace cobbles; no odor, no sheen (dense, damp to moist) **(GLACIAL TILL)**
				141			
4							- grades to fine SAND with gravel (dense, damp)
6							
8							
10							

Vapor Well/implant Detail
(ECY#: BQG 803)



Boring Completed 06/18/24
Total Depth of Boring = 5.0 ft.

Vapor Well/Implant Completed 06/18/24
Total Depth of Vapor Well/Implant = 5.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/20/26 N:\PROJECTS\0222057.GPJ VAPOR WELL/IMPLANT

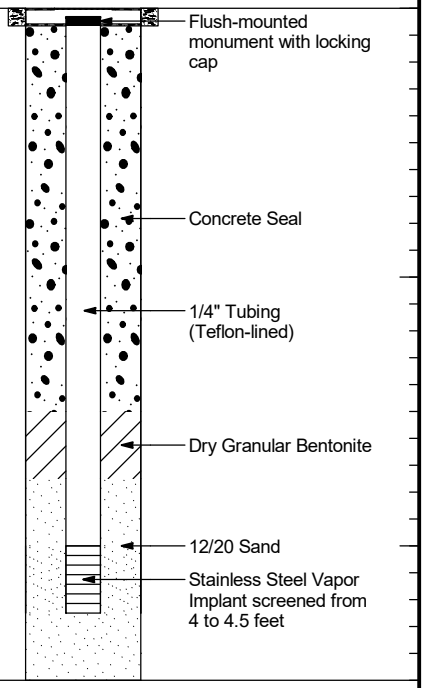
LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Vapor Well/Implant RISG-211	Figure D-134

RISG-212

SAMPLE DATA				SOIL PROFILE			SOIL GAS/VAPOR
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft):
0						AC	**(ASPHALT)**
				3.3		SP-SM	Gray, gravelly, medium to coarse SAND with silt; no odor, no sheen (dense, damp to moist) **(FILL)**
2				3.3		SM	Light brown, silty, fine SAND with trace gravel; no odor, no sheen (dense, moist to wet)
						SP-SM	Gray, fine SAND with silt and gravel; no odor, no sheen (dense, damp to moist) **(GLACIAL TILL)**
4				3.7			
6							
8							
10							

Vapor Well/implant Detail
(ECY#: BQG 810)



Boring Completed 06/19/24
Total Depth of Boring = 5.0 ft.

Vapor Well/Implant Completed 06/19/24
Total Depth of Vapor Well/Implant = 5.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/20/26 N:\PROJECTS\0222057.GPJ VAPOR WELL/IMPLANT

LANDAU ASSOCIATES

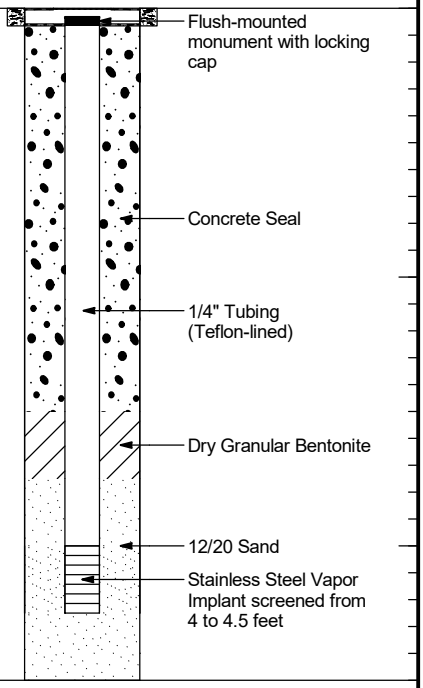
TECT Aerospace Leasehold Everett, Washington	Log of Vapor Well/Implant RISG-212	Figure D-135

RISG-213

SAMPLE DATA				SOIL PROFILE			SOIL GAS/VAPOR
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft):
0						AC	**(ASPHALT)**
				0.7		SP-SM	Gray, gravelly, fine to medium SAND with silt; no odor, no sheen (dense, damp) **(FILL)**
2				7.9		SM	Brown, silty, fine SAND; no odor, no sheen (dense, moist) - trace black silty sand mottling from 2.5 to 2.8 ft
4				2.9		SP	Gray, fine SAND with trace silt (dense, damp) **(GLACIAL TILL)**
6							
8							
10							

Boring Completed 06/19/24
Total Depth of Boring = 5.0 ft.

Vapor Well/Implant Detail
(ECY#: BQG 809)



Vapor Well/Implant Completed 06/19/24
Total Depth of Vapor Well/Implant = 5.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/20/26 N:\PROJECTS\0222057.GPJ VAPOR WELL/IMPLANT

LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Vapor Well/Implant RISG-213	Figure D-136

RISG-214

SAMPLE DATA | **SOIL PROFILE** | **SOIL GAS/VAPOR**

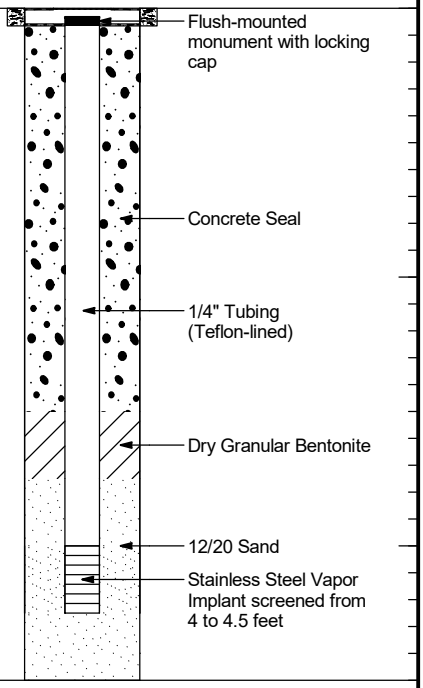
Drilling Method: Rotosonic

Ground Elevation (ft):

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Description
0						AC	**(ASPHALT)**
						SP-SM	Dark gray, fine to medium SAND with silt and gravel; no odor, no sheen (medium dense, damp to moist)
						SM	**(FILL)** Dark gray, silty, fine to medium SAND; no odor, no sheen (dense, moist to wet)
2				51.2			- with brown mottling
				23.3			- becomes dark brown
4				82.2			- becomes light brown with organics
6							
8							
10							

Boring Completed 06/18/24
Total Depth of Boring = 5.0 ft.

Vapor Well/implant Detail
(ECY#: BQG 804)



Vapor Well/Implant Completed 06/18/24
Total Depth of Vapor Well/Implant = 5.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/20/26 N:\PROJECTS\0222057.GPJ VAPOR WELL/IMPLANT

LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Vapor Well/Implant RISG-214	Figure D-137

RISG-215

SAMPLE DATA

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)
0				0.9
2				1.3
4				31.7
6				
8				
10				

SOIL PROFILE

Drilling Method: Rotosonic

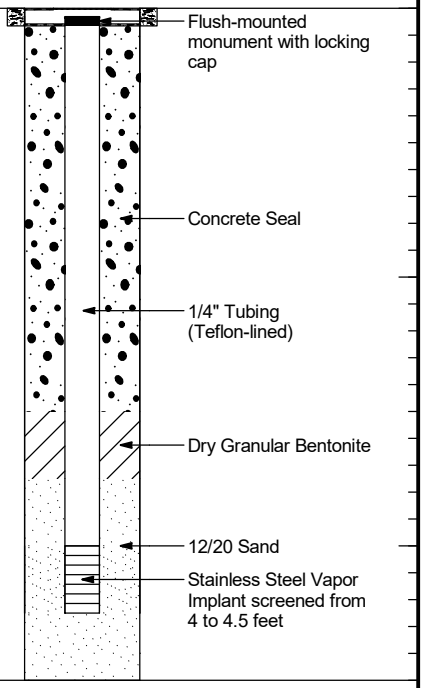
Ground Elevation (ft):

Graphic Symbol	USCS Symbol	Description
	AC	**(ASPHALT)**
	SP-SM	Light brown, fine to medium SAND with silt and gravel; no odor, no sheen (dense, damp) **(FILL)**
	SP	Light brown, fine to medium SAND with gravel; no odor, no sheen (medium dense, damp to moist)
	SP-SM	Light brown, fine SAND with silt and gravel; no odor, no sheen (dense, damp)

Boring Completed 06/18/24
Total Depth of Boring = 5.0 ft.

SOIL GAS/VAPOR

Vapor Well/implant Detail
(ECY#: BQG 801)



Vapor Well/Implant Completed 06/18/24
Total Depth of Vapor Well/Implant = 5.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/20/26 N:\PROJECTS\0222057.GPJ VAPOR WELL/IMPLANT

LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Vapor Well/Implant RISG-215	Figure D-138

RISG-216

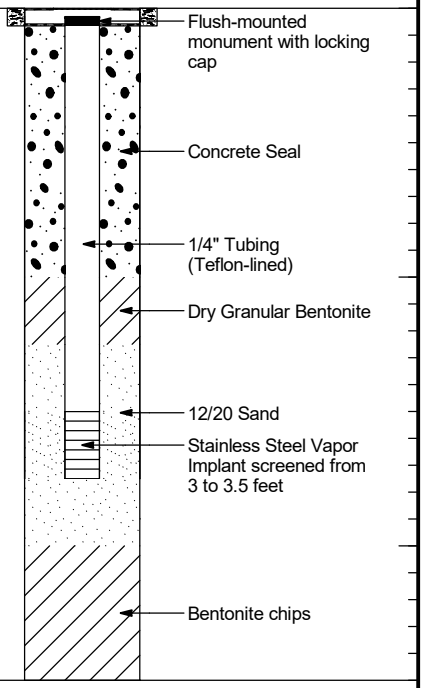
SAMPLE DATA | **SOIL PROFILE** | **SOIL GAS/VAPOR**

Drilling Method: Rotosonic

Ground Elevation (ft):

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Description
0						AC	**(ASPHALT)**
				0.2		SP-SM	Light brown, fine to medium SAND with silt and gravel; no odor, no sheen (dense, damp) **(FILL)**
2				0.4			
4				16.7		SM	Gray, gravelly, silty, fine to medium SAND; no odor, no sheen (very dense, damp) **(GLACIAL TILL)**
6							
8							
10							

Vapor Well/implant Detail
(ECY#: BQG 802)



Boring Completed 06/18/24
Total Depth of Boring = 5.0 ft.

Vapor Well/Implant Completed 06/18/24
Total Depth of Vapor Well/Implant = 5.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/20/26 N:\PROJECTS\0222057.GPJ VAPOR WELL/IMPLANT

LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Vapor Well/Implant RISG-216	Figure D-139

RISG-217

SAMPLE DATA

Depth (ft)

Sample Number & Interval

Sampler Type

Blows/Foot

PID (ppm)

SOIL PROFILE

Graphic Symbol

USCS Symbol

Drilling Method: Rotosonic

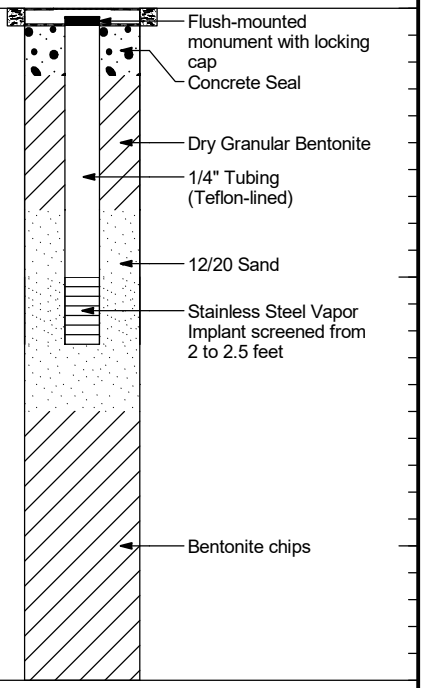
Ground Elevation (ft):

USCS Symbol	Description
AC	**(ASPHALT)**
SM	Light gray, silty, fine to medium SAND with gravel; no odor, no sheen (medium dense, damp) **(FILL)**
SP-SM	Gray, medium SAND with silt and trace gravel; no odor, no sheen (dense, moist) **(GLACIAL TILL)**
SM	Gray, gravelly, silty, fine to medium SAND; no odor, no sheen (dense, damp)

Boring Completed 06/19/24
Total Depth of Boring = 5.0 ft.

SOIL GAS/VAPOR

Vapor Well/implant Detail
(ECY#: BQG 811)



Vapor Well/Implant Completed 06/19/24
Total Depth of Vapor Well/Implant = 5.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/20/26 N:\PROJECTS\0222057.GPJ VAPOR WELL/IMPLANT

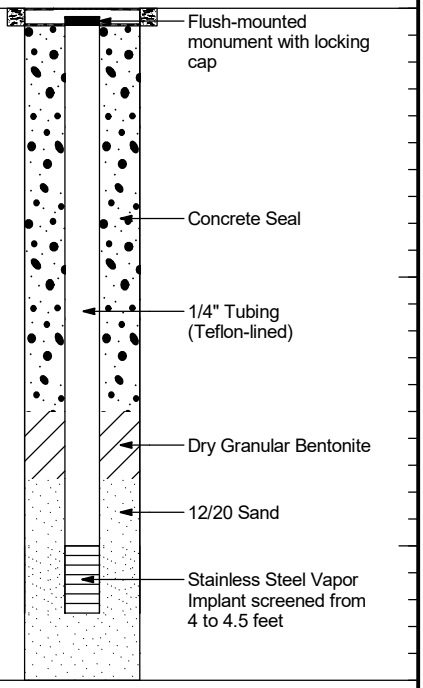
LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Vapor Well/Implant RISG-217	Figure D-140

RISG-218

SAMPLE DATA				SOIL PROFILE			SOIL GAS/VAPOR
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Rotosonic Ground Elevation (ft):
0						CONC	**(CONCRETE)**
				19.3		SM	Dark gray, silty, fine to medium SAND with gravel; sweet odor, no sheen (medium dense, moist) **(FILL)**
2				54.3			- becomes moist to wet
						SM	Gray, silty, fine SAND with gravel; no odor, no sheen (dense, damp) **(GLACIAL TILL)**
4				17.1			
6							
8							
10							

Vapor Well/implant Detail
(ECY#: BQG 805)



Boring Completed 06/18/24
Total Depth of Boring = 5.0 ft.

Vapor Well/Implant Completed 06/18/24
Total Depth of Vapor Well/Implant = 5.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222057. 3/20/26 N:\PROJECTS\0222057.GPJ VAPOR WELL/IMPLANT

LANDAU ASSOCIATES

TECT Aerospace Leasehold Everett, Washington	Log of Vapor Well/Implant RISG-218	Figure D-141

APPENDIX G

Terrestrial Ecological Evaluation and Wildlife Hazard Management Plan for Paine Field

Terrestrial Ecological Evaluation Form

Washington State Department of Ecology – Toxics Cleanup Program

Under the Model Toxics Control Act[1] (MTCA), the Department of Ecology (Ecology) requires a terrestrial ecological evaluation (TEE) if hazardous substances are released to the soil at a site. In this case, you must take one of these three actions as part of your site investigation and cleanup.

1. Document an exclusion from further evaluation under WAC 173-340-7491.[2]
2. Conduct a simplified evaluation under WAC 173-340-7492.[3]
3. Conduct a site-specific evaluation under WAC 173-340-7493.[4]

This form documents the TEE type and results for your Site. You must fill out and submit this form to Ecology to complete your remedial investigation. Completing this form alone isn't enough to document your evaluation. You still need to document your analysis and the basis for your conclusion in a cleanup plan or report. For more information, contact the Ecology cleanup project manager assigned to your Site, visit our Terrestrial Ecological Evaluations[5] webpage, or see our draft TEE guidance.[6]

Part 1 Site name and identifying information

Identify the Site being documented for an evaluation.

Site name: TECT Aerospace Everett

Site address: Snohomish County Airport, 3220 100th St SW, Everett, WA 98204

FSID:[a] 17392 VCP ID:[b] AO No. DE 21781

Part 2 Evaluator name and contact information

Provide the name and contact information for the person who conducted the evaluation.

Name: Gerald Ninteman

Title: Senior Principal Engineer

Organization: Landau Associates, Inc.

Mailing address: 155 NE 100th St, STE 302

City: Seattle State: WA Zip: 98125

Email: jninteman@landauinc.com Phone: 425-329-0272

[a] Facility/Site ID (FSID) assigned by Ecology

[b] Voluntary Cleanup Program (VCP) project ID assigned by Ecology

Part 3 Document evaluation type and results

3A Exclusion from further evaluation

3A-1 Does the Site qualify for an exclusion from further evaluation? (✓ one)

☐ Yes (go to next question).

☑ No or Unknown (go to Section 3B).

3A-2 What is the basis for the exclusion? (✓ all that apply, then skip to Part 4)

Point of compliance: WAC 173-340-7491(1)(a)

All soil contamination is, or will be, deeper than at least:*

☐ 15 feet below ground surface.

☐ 6 feet below ground surface or other Ecology-approved depth, and institutional controls are used to manage remaining contamination.

Barriers to exposure: WAC 173-340-7491(1)(b)

☐ All contaminated soil is, or will be, covered by physical barriers (e.g., buildings or pavement) that prevent exposure to plants and wildlife, and institutional controls are used to manage the remaining contamination.*

Undeveloped land: WAC 173-340-7491(1)(c)

☐ Less than 0.25 acres of contiguous# undeveloped land± are located on or within 500 feet of any area of the Site, and any of the following chemicals is present:

chlorinated dioxins or furans, PCB mixtures, DDT, DDE, DDD, aldrin, chlordane, dieldrin, endosulfan, endrin, heptachlor, heptachlor epoxide, benzene hexachloride, toxaphene, hexachlorobenzene, pentachlorophenol, or pentachlorobenzene.

☐ For sites not impacted by any of these chemicals, less than 1.5 acres of contiguous undeveloped land exists on or within 500 feet of any area of the Site.

Background concentrations: WAC 173-340-7491(1)(d)

☐ Concentrations of hazardous substances in soil do not exceed natural background levels defined in WAC 173-340-200[7] and WAC 173-340-709.[8]

* An exclusion based on future land use must have an Ecology-acceptable completion date for any future development.

\# Contiguous undeveloped land is not fragmented into smaller areas by highways, extensive paving, or similar structures that could hinder wildlife access to such areas.

± Undeveloped land is not covered by buildings, roads, pavement, or other barriers that would prevent wildlife from feeding on plants and other food sources in or on the soil.

3B Simplified evaluation

3B-1 Does the Site qualify for a simplified evaluation? (✓ one)

- [x] Yes (go to next question).
- [ ] No or Unknown (skip to Section 3C).

3B-2 Did you conduct a simplified evaluation? (✓ one)

- [x] Yes (go to next question).
- [ ] No (skip to Section 3C).

3B-3 Was further evaluation necessary? (✓ one)

- [ ] Yes (go to next question).
- [x] No (go to Question 3B-5).

3B-4 If further evaluation was necessary, what did you do? (✓ one)

- [ ] Used the MTCA Table 749-2[9] concentrations as cleanup levels (skip to Part 4).
- [ ] Conducted a site-specific evaluation (skip to Section 3C).

3B-5 If no further evaluation was necessary, what was the reason? (✓ all that apply, then skip to Part 4).

Exposure analysis: WAC 173-340-7492(2)(a)

- [ ] The total area of Site soil contamination is not more than 350 square feet.
- [x] The current or planned land use makes wildlife exposure unlikely, based on MTCA Table 749-1.[10]

Pathway analysis: WAC 173-340-7492(2)(b)

- [ ] No potential exposure pathways from soil contamination to ecological receptors are complete.

Contaminant analysis: WAC 173-340-7492(2)(c)

- [ ] No contaminant listed in MTCA Table 749-2 is, or will be, present from ground surface to 15 feet deep at concentrations that exceed the values listed in MTCA Table 749-2.
- [ ] No contaminant listed in MTCA Table 749-2 is, or will be, present in the upper 6 feet (or alternative depth, if approved by Ecology) at concentrations that exceed the values listed in MTCA Table 749-2, and institutional controls are used to manage remaining contamination.
- [ ] No contaminant listed in MTCA Table 749-2 is, or will be, present in the upper 15 feet at concentrations likely to be toxic or have the potential to bioaccumulate, as determined using Ecology-approved bioassay results.
- [ ] No contaminant listed in MTCA Table 749-2 is, or will be, present in the upper 6 feet (or alternative depth, if approved by Ecology) at concentrations likely to be toxic or have the potential to bioaccumulate, as determined using Ecology-approved bioassay results, and institutional controls are used to manage remaining contamination.

3C Site-specific evaluation

A site-specific evaluation process consists of: 1) formulating the problem, and 2) selecting the methods for addressing the identified problem. Both parts require Ecology consultation and approval – see WAC 173-340-7493(1)(c). For more information, see our draft TEE guidance.

3C-1 Was there a problem? – see WAC 173-340-7493(2)? (✓ one)

- ☐ Yes (go to next question)
- ☐ No (select the reason here, then go to 3C-5):
  - ☐ No issues were identified during the problem formulation step.
  - ☐ Issues were identified and resolved by cleanup actions for protecting human health.

3C-2 What did you do to resolve the problem? – see WAC 173-340-7493(3)? (✓ one)

- ☐ Used concentrations listed in MTCA Table 749-3 as cleanup levels (go to Question 3C-5).
- ☐ Used one or more methods listed in WAC 173-340-7493(3) to evaluate and resolve the identified problem (go to next question).

3C-3 If you conducted further site-specific evaluations, what methods did you use – see WAC 173-340-7493(3)? (✓ all that apply)

- ☐ Literature surveys.
- ☐ Biomarkers.
- ☐ Site-specific field studies
- ☐ Soil bioassays.
- ☐ Weight of evidence.
- ☐ Wildlife exposure model

Other Ecology-approved methods – please specify:

3C-4 What was the result of those evaluations? (✓ one)

- ☐ No problems were identified.
- ☐ Identified a problem and established site-specific cleanup levels.

3C-5 Has Ecology approved both your problem formulation and problem resolution steps? (✓ one)

- ☐ Yes Identify the Ecology staff who approved those steps:
- ☐ No (go to Part 4).

Part 4 Submit to Ecology

Email this completed form to the cleanup site manager assigned to your site.

ADA Accessibility

Ecology is committed to providing people with disabilities access to our information and services by meeting or exceeding the requirements of state and federal laws.

To request an ADA accommodation, email ecyadacoordinator@ecy.wa.gov, call (360) 407-7170, or call Ecology through the Washington Telecommunication Relay for services including text telephone (TTY) at 711 or through your preferred relay service provider. Visit Ecology's Accessibility & the Americans with Disabilities Act[15] webpage for more accessibility information.

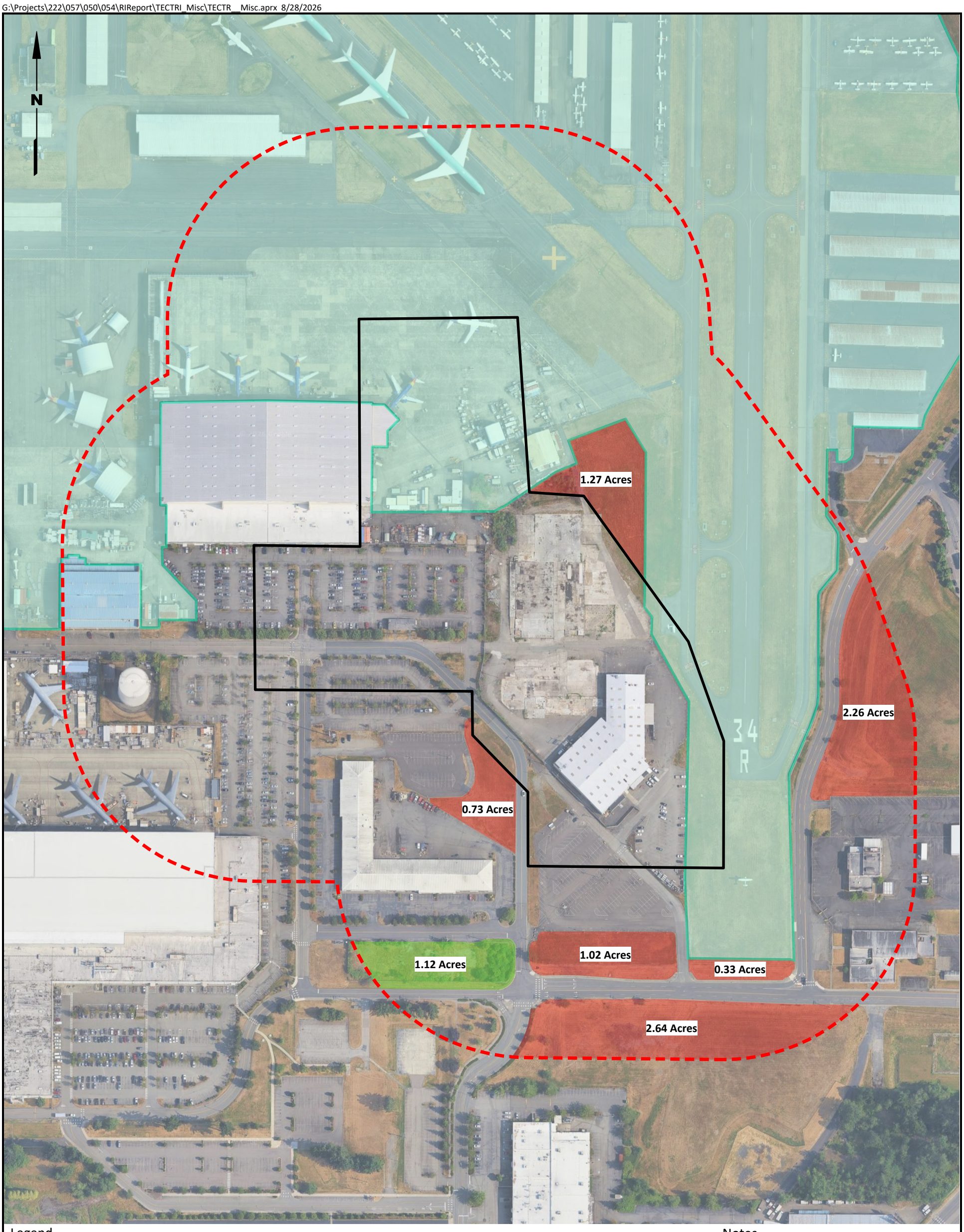
[1] https://app.leg.wa.gov/WAC/default.aspx?cite=173-340&full=true
[2] https://app.leg.wa.gov/WAC/default.aspx?cite=173-340&full=true#173-340-7491
[3] https://app.leg.wa.gov/WAC/default.aspx?cite=173-340&full=true#173-340-7492
[4] https://app.leg.wa.gov/WAC/default.aspx?cite=173-340&full=true#173-340-7493
[5] https://ecology.wa.gov/regulations-permits/guidance-technical-assistance/terrestrial-ecological-evaluation
[6] https://apps.ecology.wa.gov/publications/SummaryPages/1909051.html
[7] https://app.leg.wa.gov/WAC/default.aspx?cite=173-340&full=true#173-340-200
[8] https://app.leg.wa.gov/WAC/default.aspx?cite=173-340&full=true#173-340-709
[9] https://app.leg.wa.gov/WAC/default.aspx?cite=173-340&full=true#173-340-900
[10] https://app.leg.wa.gov/WAC/default.aspx?cite=173-340&full=true#173-340-900
[11] mailto:VCP-NWRO@ecy.wa.gov
[12] mailto:VCP-SWRO@ecy.wa.gov
[13] mailto:VCP-CRO@ecy.wa.gov
[14] mailto:VCP-ERO@ecy.wa.gov
[15] https://ecology.wa.gov/about-us/accessibility-equity/accessibility

Table 749-1

Simplified Terrestrial Ecological Evaluation-Exposure Analysis Procedure

Estimate the area of contiguous (connected) undeveloped land on the site or within 500 feet of any area of the site to the nearest 1/2 acre (1/4 acre if the area is less than 0.5 acre).	
1) From the table below, find the number of points corresponding to the area and enter this number in the field to the right.	
Area (acres) / Points 0.25 or less / 4 0.5 / 5 1.0 / 6 1.5 / 7 2.0 / 8 2.5 / 9 3.0 / 10 3.5 / 11 4.0 or more / 12	7
2) Is this an industrial or commercial property? If yes, enter a score of 3. If no, enter a score of 1	3
3)[a] Enter a score in the box to the right for the habitat quality of the site, using the following rating system[b]. High=1, Intermediate=2, Low=3	3
4) Is the undeveloped land likely to attract wildlife? If yes, enter a score of 1 in the box to the right. If no, enter a score of 2.[c]	2
5) Are there any of the following soil contaminants present: Chlorinated dioxins/furans, PCB mixtures, DDT, DDE, DDD, aldrin, chlordane, dieldrin, endosulfan, endrin, heptachlor, benzene hexachloride, toxaphene, hexachlorobenzene, pentachlorophenol, pentachlorobenzene? If yes, enter a score of 1 in the box to the right. If no, enter a score of 4.	4
6) Add the numbers in the boxes on lines 2-5 and enter this number in the box to the right. If this number is larger than the number in the box on line 1, the simplified evaluation may be ended.	12

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Legend

- Site Boundary
- Buffer 500-ft
- Approximate Airport Operations Boundary
- Undeveloped Land off Airport Property
- Undeveloped Land on Airport Property Managed for Wildlife

0 250 500

Scale in Feet

Notes

1. All land inside the Air Operations Area (AOA) is considered developed land for purposes of completing the TEE and is therefore not highlighted in this figure.
2. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Data Sources: AGI 1999; Landau Associates 2006; Google Earth Pro.

LANDAU ASSOCIATES

TECT Aerospace Everett, Washington	**Undeveloped Land for Simplified TEE**	Figure G-1

Wildlife Hazard Management Plan

SEATTLE PAINE FIELD INTERNATIONAL AIRPORT

9901 24th Pl W
Everett, WA 98204-1390

In Cooperation With:

UNITED STATES DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE
WILDLIFE SERVICES
720 O'Leary St NW
Olympia, WA 98502

July 2015 *(revised February 2026)*

Federal Aviation Administration
Northwest Mountain Region Airports Division
APPROVED
Mar 02 2026
Inspector

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LIST OF ACRONYMS

ADO	Airports District Office
AGL	Above Ground Level
AIRMAN	Airport Information Report Manager
AMA	Aircraft Movement Area
AOA	Aircraft Operations Area
APHIS	Animal and Plant Health Inspection Service
ARTS	Airport Road Transfer Station
ATCT	Air Traffic Control Tower
ATIS	Automated Terminal Information Service
AWM	Airport Wildlife Manager
CFR	Code of Federal Regulations
EO	Executive Order
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulations
MBTA	Migratory Bird Treaty Act
MOU	Memorandum of Understanding
NOTAM	Notice to Airmen
PAE	Seattle Paine Field International Airport
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
WDFW	Washington State Department of Fish and Wildlife
WHMP	Wildlife Hazard Management Plan
WHWG	Wildlife Hazard Working Group
WS	Wildlife Services

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EXECUTIVE SUMMARY

Pursuant to CFR Title 14 Federal Aviation Regulations (FAR) Part 139.337(f), Seattle Paine Field International Airport developed this Wildlife Hazard Management Plan (WHMP) in cooperation with the U.S. Department of Agriculture's Wildlife Services program to comply with regulations set forth by the Federal Aviation Administration (FAA). This WHMP will be reviewed periodically by the Wildlife Hazard Working Group and will be updated if circumstances merit. All changes made to this WHMP will be sent to the FAA for approval.

This WHMP places emphasis on identification and abatement of wildlife hazards within the airfield environment. Additional wildlife attractants (e.g., lakes, ponds, landfills, etc.) within 5 miles of the airfield are also addressed, because they attract wildlife in a manner that could jeopardize safety of air traffic operating into and out of Paine Field.

Paine Field takes immediate measures to identify and mitigate wildlife hazards on airport property whenever they are detected or whenever airport management is advised that hazardous conditions exist. This WHMP outlines steps for monitoring, documenting, and reporting potential wildlife hazards and strikes at the airport. Protocols for responding to hazardous wildlife situations are presented, including roles and responsibilities of airport personnel. Wildlife control procedures for birds and mammals are also discussed.

Habitat on and around the airfield is managed in a manner that is non-conducive to hazardous wildlife, and the WHMP outlines priorities for habitat management, including target dates for completion.

Most wildlife is afforded some type of protection under State or Federal regulations; therefore, special permits may be required. The WHMP outlines laws and regulations governing the harassment and/or take of various types of wildlife. Paine Field's permit status for each type of wildlife is presented in tabular format, and a copy of the Federal migratory bird depredation permit is included in Appendix B.

Paine Field maintains an adequate supply of resources for dispersing and controlling wildlife, including frightening devices (e.g., pyrotechnics and propane cannons), wildlife restraint equipment (e.g., traps, catch poles), and firearms. Airport personnel are trained to properly identify wildlife and apply wildlife deterrent equipment in a safe and efficient manner, as outlined in this Plan (AC 150/5200-36B, Qualifications for Wildlife Biologist Conducting Wildlife Hazard Assessments and Training Curriculums for Airport Personnel Involved in Controlling Wildlife Hazards on Airports).

Paine Field developed a monitoring plan to detect and respond to wildlife hazards that may unexpectedly occur on the airport. A decision model has been developed to accurately assess the level of wildlife hazards and to augment implementation of appropriate control responses under various circumstances (see Section 5.7).

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SIGNATORIES

The following Wildlife Hazard Management Plan for Seattle Paine Field International Airport has been reviewed and accepted by the FAA. It will be become effective with the following signatures:

Emily Phillipe, Acting Airport Director	Date 3/4/26
FAA Airport Certification Inspector	Date

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PREFACE

This WHMP was written to fulfill the requirements of CFR Title 14 FAR Part 139.337(f) for PAE. This Plan is intended specifically for the Snohomish County Airport's use to monitor and reduce wildlife hazards.

DISTRIBUTION OF WILDLIFE HAZARD MANAGEMENT PLAN

NAME / POSITION / PHONE	AGENCY / ADDRESS
Airport Director, Paine Field (425) 388-5125	Seattle Paine Field International Airport 9901 24th Pl W Everett, WA 98204-1390
Deputy Airport Director/Airfield, Paine Field (425) 388-5125	Seattle Paine Field International Airport 9901 24th Pl W Everett, WA 98204-1390
Environmental Project Manager/Airport Wildlife Manager (AWM), Paine Field (425) 388-5115	Seattle Paine Field International Airport 9901 24th Pl W Everett, WA 98204-1390
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Airport Certification Safety Inspector NW Mountain Region (425) 227-2607	Federal Aviation Administration/Airports Division 2200 S. 216th Street Des Moines, WA 98198
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TABLE OF REVISIONS

This WHMP is incorporated into the PAE Airport Certification Manual. The bottom of each page contains a date in the footer, which is the date that the particular page was printed. The latest dated page will be the most current for the policy. The master document is contained with the airport's FAR Part 139 Certification Manual that resides in the Operations office. Revisions to this plan will be recorded on the revisions page below.

DATE	PAGE	REVISION
4-1-15	*ii*	Exec. Summary-removed certain dispersal methods in paragraph 5
4-1-15	*iii*	Signatories-changed airport director name
4-1-15	*iv*	Preface-changed name of Airport Director and Ops Superintendent
4-1-15	*v*	Table of Revisions-updated
4-1-15	6	Bullet #5-changed "intervention sheet" to "AIRMAN" database
4-1-15	15	3.7.1 – modified language about Big Game (deer)
4-1-15	19	Format problem - Added a missing section heading, "Reporting…."
4-1-15	19	3.12 – removed City of Everett from permit requirements
4-1-15	21	Added footnote 7
4-1-15	21	Table 2 – updated item #8 and footnote 8
4-1-15	22	4.1.3 – sentence 2, replaced, "will be" with "has been"
4-1-15	23	4.2.1 – added last two sentences addressing Alpha Pond monitoring
4-1-15	24	4.2.2 – added language regarding standing water/construction sites
4-1-15	25	Added grass seed mixture to footnote 11
4-1-15	28	Paragraph 3; changed language to indicate present tense
4-1-15	30	5.1 – changed "intervention sheet" to AIRMAN database
4-1-15	30	5.1 – sentence beginning, "Completed forms…" was removed
4-1-15	31	5.3.1 – Added language about raptor trapping
4-1-15	34	7.1 – added last sentence addressing WHWG meetings
4-1-15	34	7.2 – changed language regarding AIRMAN database
4-1-15	36	9.2.1 – language about point count survey modified to reflect new survey type (driving)
4-1-15	36	9.2.2 – added language about updated data collection (GPS) methods
4-1-15	A	Updated aerial photo
4-1-15	B	Appendix B – updated copies of permits
10-21-19	iv	Updated names and contact information
10-21-19	10	Table 1 - Updated permits acquired
10-21-19	15	3.7.2 - Updated small game species and problems

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DATE	PAGE	REVISION
10-21-19	29	5 – Changed “Daily wildlife intervention sheet” to Airman, three times in paragraph
10-21-19	30	5.1 – Changed “Daily wildlife intervention sheet” to Airman, twice in paragraph.
10-21-19	31	5.3.1 Changed “Red-tailed Hawks” to “raptor species”.
10-21-19	33	6.1 – Removed Daily Wildlife Intervention Reports Sheets from list of supplies.
10-21-19	33	6.2 – Removed Daily Wildlife Intervention Reports Sheets from list of supplies.
10-21-19	B	Appendix B – updated copies of permits
12-13-21	Iv	Updated contact information
12-13-21	v	Updated contact information
12-13-21	41	Updated contact information
07-28-22	2	Updated AC’s and Cert Alerts
07-28-22	4	Updated WHWG
07-28-22	5	Fixed language, updated whom receives snarge kits
07-28-22	8	Updated AC’s
07-28-22	9	Updated AC’s
07-28-22	10	Updated Cert Alerts
07-28-22	17	Updated T&E Species and language
07-28-22	18	Updated T&E species and language
07-28-22	22	Updated habitat management projects
07-28-22	23	Updated habitat management projects
07-28-22	24	Updated hazardous offsite locations
07-28-22	30	Updated language
07-28-22	32	Removed outdated information from overview
07-28-22	34	Fixed grammatical errors and updated language
07-28-22	36	Updated USDA-WS hours and AC’s
07-28-22	39	Updated survey type to current standard
07-28-22	Appendix B	Updated depredation/banding permits
07-28-22	Iv, V	Removed names, only using position titles and contact info
07-28-22	4	Removed Snohomish Co Sheriff from the WHWG
07-28-22	Ii	Updated appendix listing
10-9-24	All	Airport Name Change
10-11-22	Vii	Updated Page Numbers
10-11-22	Appendix B	Updated Permits

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10-21.24	9	Updated AC
10-31-24	31	Updated eagle permit to reflect new USFWS ruling
10-31-24	Appendix B	Updated Permits
5-14-25	16	Language added for trapping
5-14-25	29	Removed maintenance from first paragraph.
5-14-25	30	Removed maintenance from patrol team.
5-14-25	33	Removed maintenance from paragraph 6.2.
2-25-26	Table of Contents	Removed “AND FIRE DEPARTMENT” from 2.2-page 6
2-25-26	iv	Removed Fire Department Chief and address from Distribution of plan.
2-25-26	4	Removed PAE Fire Department, ARFF.
2-25-26	30	Removed PAE fire department personnel from paragraph 5.1
2-25-26	31	Updated contact Phone Number for WS assistance
2-25-26	37	Removed ARFF from paragraph 9.2.3
2-26-26	iv	Changed Superintendent to Airport Operations and Security Division Manager
2-26-26	5	Removed Superintendent
2-26-26	45	Changed Superintendent to Airport Operations and Security Division Manager

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1.0 - INTRODUCTION

OVERVIEW

A wildlife hazard management plan (WHMP) addresses the responsibilities, policies, and procedures necessary to reduce wildlife hazards at an airport. Recognizing hazards wildlife pose to aircraft and human lives, the Federal Aviation Administration (FAA) requires that airports which incur bird-aircraft strikes conduct a Wildlife Hazard Assessment (WHA) and possibly implement a WHMP according to Code of Federal Regulations (CFR) Title 14 FAR part 139.337(f) (a complete copy of Part 139.337 can be found on the internet at: www.faa.gov), which includes:

1. *The persons who have the authority and responsibility for implementing the WHMP.*

2. *A list prioritizing the following actions identified in the wildlife hazard assessment and target dates for their initiation and completion.*
    i. *Wildlife population management*
    ii. *Habitat modification, and*
    iii. *Land use changes.*

3. *Requirements for and, where applicable, copies of local, State, and Federal wildlife control permits.*

4. *Identification of resources to be provided by the certificate holder for implementation of the WHMP.*

5. *Procedures to be followed during air carrier operations that at a minimum includes—*
    i. *Designation of personnel responsible for implementing the procedures;*
    ii. *Provisions to conduct physical inspections of the aircraft movement areas and other areas critical to successfully manage known wildlife hazards before air carrier operations begin;*
    iii. *Wildlife hazard control measures; and*
    iv. *Ways to communicate effectively between personnel conducting wildlife control or observing wildlife hazards and the air traffic control tower.*

6. *Procedures to review and evaluate the wildlife hazard management plan every 12 consecutive months or following an event described in paragraphs (b)(1), (b)(2), and (b)(3) of Part 139.337 (wildlife hazard management), including:*
    i. *The plan's effectiveness in dealing with known wildlife hazards on and in the airport's vicinity and*
    ii. *Aspects of the wildlife hazards described in the wildlife hazard assessment that should be reevaluated*[1].

[1] If an event described in 139.337 paragraphs (b)(1), (b)(2), or (b)(3) occurs, the WHWG will meet and discuss how the plan specifically deals with the species involved with that event. If needed, changes to the plan will be made.

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7. *A training program conducted by a qualified wildlife damage management biologist to provide airport personnel with the knowledge and skills needed to successfully carry out the wildlife hazard management plan required by paragraph (f(7)) of this section.*

In addition to the requirements stated above, CFR Title 14 FAR part 139.337(f) outlines procedures and personnel responsibilities for notification regarding new or immediate hazards and describes the rapid response procedures for addressing new or immediate wildlife hazards. Section (f) is extremely important because it allows the WHMP to be promptly modified and updated to address new situations or changing circumstances. To augment compliance with CFR Title 14 FAR part 139.337(f), the FAA issued AC No: 150/5200-38 to provide guidance to airports in developing WHMPs. This AC contains a sample outline that was followed in the development of this WHMP.

1.1 PROBLEM SPECIES

The species generally considered to present the greatest threats to aviation at PAE are birds with flocking tendencies or of relatively large size, such as waterfowl, gulls, starlings, and raptors. Large mammals, such as deer, coyotes, and feral dogs present a hazard at PAE. However, they are not as common at PAE and the airport has a standard wildlife resistant perimeter fence, as referred to in CertAlert No. 16-03. Juvenile and migratory individuals also pose high risks for aviation because of their general unfamiliarity with the airport environment.

1.2 PURPOSE AND SCOPE

Enhancing aircraft operations is a primary objective at PAE. Accomplishing this objective entails careful monitoring of potential wildlife hazards on and around the airport, including all aspects of arriving and departing aircraft in the vicinity of PAE. As part of its safety efforts, PAE intends to implement and maintain a WHMP according to CFR Title 14 FAR Part 139.337(f) to address potential wildlife hazards at PAE and surrounding areas, including emphasis on hazards within approximately 2 miles of the airfield (see Appendix C). In addition to addressing general wildlife hazards, the WHMP will present specific protocols for monitoring and responding to unforeseen wildlife hazards that may arise on or around airport property.

It is important to note that Part 139.337(f) underscores the need for a flexible WHMP that can be quickly adapted to changing circumstances. In rare cases, immediate actions that are not addressed in the WHMP may be necessary to ensure the safety of airport patrons. The WHMP provides PAE with the discretion and capability to respond to these situations, while providing guidance for compliance with applicable Federal, State, and municipal laws or regulations. The latitude afforded PAE management when administering the WHMP is discussed in CFR Title 14 Part 139.113, which states that:

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> ***"In emergency conditions requiring immediate action for the protection of life or property, involving the transportation of persons by air carriers, the certificate holder may deviate from any requirement of Subpart D of this part to the extent required to meet that emergency. Each certificate holder who deviates from a requirement under this paragraph shall, as soon as practicable, but no later than 14 days after the emergency, report in writing to the Regional Airports Division Manger stating the nature, extent, and duration of the deviation."***

The WHMP will be reviewed and updated at least every 12 consecutive months to ensure it still pertains to conditions at the time of review. It may also be revisited more often if situations arise, or hazards exist that merit evaluation.

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2 - AUTHORITY

FAR 139.337(f)(1) A list of the individuals having authority and responsibility for implementing each aspect of the plan.

PAE's Airport Director has the authority and responsibility of designating an Airport Wildlife Manager (AWM) to implement this WHMP. All appropriate departments and associated agencies have responsibilities outlined in this WHMP and must incorporate such responsibilities into their programs. Clear communication among airport personnel is essential for this WHMP to succeed. Personnel working at the airport will communicate resource needs, recommendations, and progress to the designated AWM. The Airport Director will ensure FAA approves of this WHMP and that this WHMP and amendments, comply with Federal, State, and local laws and regulations.

2.1 WILDLIFE HAZARD WORKING GROUP (WHWG)

The Wildlife Hazard Working Group is represented by:

- Airport Director and/or Deputy Airport Director(s)
- Airport Environmental Project Manager (a.k.a. Airport Wildlife Manager)
- PAE Operations
- Designated Airfield Maintenance Personnel
- USDA-APHIS-Wildlife Services (WS) Biologist at PAE

The WHWG is responsible for reviewing this WHMP, as it relates to each member's respective departmental duties. Members of the WHWG who conduct wildlife hazard management on a daily basis shall meet at least every 12 consecutive months. These members include the AWM, Airport Operations, Maintenance, and the WS biologist. In addition, the WHWG monitors activities, status, and makes recommendations to the AWM, who in-turn reviews and grants approval if satisfied with the progress of this WHMP.

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2.2 PERSONS RESPONSIBLE FOR IMPLEMENTING THE PLAN

AIRPORT DIRECTOR and/or DEPUTY AIRPORT DIRECTOR(S)

- Establish a WHWG for PAE.
- Supervise and monitor wildlife control activities as outlined in this WHMP.
- Disseminate information and assignments through the WHWG.
- Pre-approve and coordinate landscape changes, beforehand, with the AWM to ensure wildlife attractants are prevented.
- Provide public relations support for wildlife control activities as necessary.

AIRPORT ENVIRONMENTAL PROJECT MANAGER (a.k.a. AWM)

- Alleviate all attractants deemed an imminent hazard and, if necessary, coordinate a runway closure to remedy wildlife hazards.
- Ensure wildlife control personnel operating on the Aircraft Operations Area (AOA) are properly trained in accordance with FAA regulations. Such training includes radio communications, driving on the AOA, and safe use of firearms and pyrotechnics.
- Monitor facilities and tenant concerns for wildlife problems.
- Keep a log of all wildlife strikes and control actions and forward reports to FAA as necessary.
- Make wildlife strike report forms or snarge kits are readily available to airfield operations personnel, stakeholders, pilots, and encourage submission of the forms to the appropriate governmental agencies and the WHWG.
- Ensure wildlife attractants are reduced through habitat modifications. Work with airport maintenance to alter wildlife habitat as needed.
- Review all plans involving changes in land use or new airport structures/facilities to avoid inadvertently attracting wildlife to the area and consult with a Wildlife Damage Biologist.
- Conduct frequent physical inspections of areas critical to wildlife damage management and involve a Wildlife Damage Biologist with land use planning and mitigation efforts.

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- Obtain depredation permits to control migratory birds, and if necessary, mammals, from Federal or State wildlife agencies.

- Update this WHMP as needed.

AIRPORT OPERATIONS, MAINTENANCE DEPARTMENT

- Report all known wildlife strikes to the AWM and/or the WS Airport Biologist.

- Warn the Air Traffic Control Tower (ATCT) and pilots of known wildlife hazards.

- Coordinate the issuance of Notices to Airmen (NOTAM). In addition, have the ATCT advise pilots on Automated Terminal Information Service (ATIS).

- Inspect AOA for wildlife activity and strikes and maintain a record of the action.

- Harass wildlife from AOA when appropriate, as outlined in Chapter 5.

- Record all wildlife activity and interventions on the AIRMAN Wildlife Database and report to the AWM or the WS Airport Biologist.

- Maintain ditches and fields to ensure proper drainage, thereby avoiding pooling and accumulation of refuse and standing water on the airport.

- Assist with, or issue contract for habitat modifications addressed in the Wildlife Hazard Assessment (WHA), such as vegetation maintenance along ditches, brush removal, and tree pruning.

- Install and maintain netting or wire grids over ponds, ditches, and other water areas as determined necessary by the AWM.

- Maintain the perimeter fence line to exclude mammals such as deer, coyotes, fox, and feral dogs.

- Assist with wildlife control activities involving field rodents, rabbits, bird abatement, and other programs.

- Inform the AWM of rodents and other wildlife found in and around buildings.

- Rodent-proof buildings, dumpsters, and other refuse containers to the extent feasible.

- Review designs of new structures/facilities with the AWM and/or WS Airport Biologist during the planning stages for input on designs that are unattractive to wildlife.

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FEDERAL AVIATION ADMINISTRATION

- When requested, assist PAE in reviewing proposed land use changes, construction plans, and mitigation projects for potential wildlife hazards to aircraft.
- ATCT will notify PAE staff (and if needed, aircraft traffic) of observed wildlife hazards.
- Review changes or edits to the WHMP.

USDA-APHIS-WS (as contracted)

- Assist PAE personnel in monitoring the airport environment for wildlife hazards, taking corrective action if necessary, and recording/submitting all findings to the AWM.
- Inform and advise the AWM of wildlife management activities, habitat modification needs, and imminent wildlife hazards that require the issuance of a NOTAM or runway closure.
- Assist in training of airport personnel in the safe handling and proper use of wildlife dispersal methods and equipment as dictated by AC 150/5200-36B.
- Coordinate wildlife control activities with Federal and State wildlife agencies and municipal law enforcement.
- Assist in reviewing proposed land use changes, construction plans, and mitigation projects for potential wildlife hazards to aircraft.
- Provide operational assistance to PAE with wildlife hazards deemed unsafe by PAE and/or WS.

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3 - LAWS AND REGULATIONS

FAR 139.337(f)(3) Requirements for and, where applicable, copies of local, State, and Federal wildlife control permits.

OVERVIEW

Federal, State, and local governments administer laws and regulations that manage wildlife and their habitat. Several laws affect wildlife hazard abatement at airports and wildlife control personnel at PAE must understand and comply with these regulations. Permits are necessary for a successful control program and will be obtained as required, by the AWM. CFR Title 50, RCW Chapter 77, and WAC Chapter 232-12 define the categories of wildlife and regulations related to their management. Table 1 summarizes species and permit requirements pertinent to PAE.

3.1 WASHINGTON WILDLIFE REGULATIONS

Several Washington State government agencies have regulations that affect wildlife hazard abatement at airports. Pertinent regulations can be found in the WAC-232-12 and the RCW 77. Snohomish County and municipal regulations can also affect PAE's wildlife management program. State wildlife laws involving resident birds, mammals, reptiles, and amphibians, as well as State Threatened and Endangered species, are generally administered by the Washington State Department of Fish and Wildlife (WDFW).

3.2 FEDERAL REGULATIONS

Several Federal regulations, including the Migratory Bird Treaty Act (MBTA), Lacey Act, Endangered Species Act, Eagle Protection Act, National Environmental Policy Act, and Federal Insecticide, Fungicide, and Rodenticide Act regulate various aspects of PAE's wildlife management activities. Additional regulations that affect wildlife control activities at PAE are found in the CFR Title 50, and several Federal agencies may be responsible for their implementation. Federal wildlife laws are typically administered by the U.S. Fish and Wildlife Service (USFWS) and primarily involve migratory birds and Threatened and Endangered species.

3.3 FAA REGULATIONS, ADVISORY CIRCULARS, AND CERTALERTS

The FAA is the Federal agency responsible for developing and enforcing air transportation safety regulations. Many of these regulations are codified in the Federal Aviation Regulations (FARs). The FAA also publishes a series of guidelines for airport operators to follow called Advisory

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Circulars (ACs). ACs in the 150 series deal with airport safety issues, including wildlife hazards. In addition to FARs and ACs, the FAA periodically issues CertAlerts for internal distribution and to provide recommendations on specific issues for inspectors and airport personnel.

3.3.1 Advisory Circulars

AC 150/5200-32C Wildlife Strike Reporting
This AC explains the importance of reporting collisions between aircraft and wildlife, more commonly referred to as wildlife strikes. It also explains recent improvements in the FAA's Wildlife Strike Reporting system, how to report a wildlife strike, what happens to the wildlife strike report data, how to access the FAA National Wildlife Strike Database (NWSD), and the FAA's Feather Identification program.

AC 150/5200-33C Hazardous Wildlife Attractants on or Near Airports
This AC provides guidance on certain land uses that have potential to attract hazardous wildlife on or near public-use airports. It also discusses airport development projects (including airport construction, expansion, and renovation) affecting aircraft movement near hazardous wildlife attractants.

AC 150/5200-34A Construction or Establishment of Landfills near Public Airports
This AC contains guidance on complying with Federal requirements regarding the construction or establishment of landfills near public airports.

AC 150/5200-36B Qualifications for Biologist Conducting Training Curriculums for Airport Personnel Involved in Controlling Wildlife Hazards on Airports
This AC describes the qualifications for wildlife biologists who conduct Wildlife Hazard Assessments (WHA) for airports, and it addresses the minimum wildlife hazard management curriculum for the initial and recurrent training of airport personnel who implement Wildlife Hazard Management Plans (WHMPs).

3.3.2 CertAlerts

No. 04-09 MOU between FAA and USDA WS
This CertAlert describes the Memorandum of Agreement between the FAA and USDA WS. The FAA recognizes the expertise of USDA WS in dealing with wildlife hazards to aviation.

No. 016-03 Recommended Wildlife Exclusion Fencing

This reminds airport operators of the importance of controlling deer on and around airfields and having appropriate fencing to exclude them from within the airfield.

No. 06-07 Concerns Regarding Habitat Projects for Threatened and Endangered Species
Airport operators must decline habitat management techniques that jeopardize aviation safety. Adopting such techniques could violate their obligations and subject them to an FAA

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enforcement action and possible civil penalties under 49 U.S.C. 44706, as implemented by 14 CFR 139.337.

98-05 Grasses Attractive To Hazardous Wildlife

Airport operators should ensure that grass species and other varieties of plants attractive to hazardous wildlife are not used on the airport.

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Table 1 ***Wildlife Categories in Washington State, and permits necessary for lethal control as required by Federal and State wildlife agencies. The table also shows whether PAE has current Federal or State permits for each category. It should be noted that RCW 77.36.030 (trapping or killing of wildlife causing damage - emergency situations) provides for the trapping or killing of wildlife (with exception of Threatened, Endangered, and Federally protected species) by property owners without State permits, if the wildlife are damaging property or posing a threat to human life.***

Category	Species	State Permit Required[2]	State Permit Obtained	Federal Permit Required	Federal Permit Obtained
MIGRATORY BIRDS:					
Game	Waterfowl, doves, snipe, and crows	No	N/A	Yes	Yes
Non-game	All species excluding migratory game, non-migratory, and domestic animals	No	N/A	Yes	Yes
Depredation Order[3]	Crows, magpies, blackbirds, cowbirds, and grackles	No	N/A	No	N/A
NON-MIGRATORY BIRDS:					
Game	Quail, pheasant, grouse, partridge, and turkey	Yes	No	No	N/A
Invasive/Exotic	Those species listed under Executive Order # 13112 including starlings, house sparrows, and feral pigeons	No	N/A	No	N/A
DOMESTIC BIRDS:	Poultry, domestic ducks, and domestic geese	No	N/A	No	N/A
MAMMALS:					
Big game	Deer species, elk, black bear, moose, bighorn sheep, mountain goat, and cougar	Yes	No	No	N/A
Small game	Rabbit species, coyotes, mink, river otter, fox, raccoon, beaver, muskrat, badger, yellow-bellied marmot, opossum, and bobcat	Yes	Yes	No	N/A
Non-game	All other species except domestic and those listed as Threatened or Endangered	Yes	N/A	No	N/A
Domestic	Dogs, cats, and livestock	No	N/A	No	N/A
REPTILES AND AMPHIBIANS:	All reptiles and amphibians except those listed as Threatened or Endangered	Yes	No	No	N/A
THREATENED AND ENDANGERED:	Those species listed and protected by Federal/State laws	Yes	No	Yes	No

[2] Control actions requiring a State permit are coordinated through the Regional Biologist with the WDFW, but airports may take immediate action to abate wildlife hazards without a permit.
[3] May be taken without permits "when concentrated in such numbers and manner as to constitute a health hazard or other nuisance" (50 CFR §21.43 & 21.46).

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3.4 MIGRATORY BIRDS

3.4.1 Game

Migratory game birds (ducks, geese, coots, gallinules, snipe, and mourning doves) are regulated under Federal law by the USFWS. These regulations allow for the non-lethal harassment of migratory birds without a permit except while incubating eggs. A permit is required to lethally take any migratory bird. Migratory bird permits are not valid for eagles nor threatened and endangered species, which require separate permits for lethal take and harassment. Although states can impose more restrictive regulation than federal law on migratory birds, WDFW currently does not.

3.4.2 Non-game

Migratory non-game birds are all species except game birds, resident non-game birds, and domestic and exotic birds, including gulls, vultures, herons, egrets, etc. and are regulated under federal law by the USFWS. These regulations allow harassment of migratory birds when the birds are damaging property, but a permit is required for lethal take. Migratory bird permits are not valid for eagles nor threatened and endangered species, which require separate permits for lethal take and harassment. Although states can impose more restrictive regulation than federal law on migratory birds, WDFW currently does not.

3.4.2.1 Migratory Bird Depredation Permit for PAE (CFR 50, Part 13)

A depredation permit to take federally protected migratory birds can be obtained by completing a federal Fish and Wildlife License/Permit Application and submitting it to USFWS. The USFWS may also require that a Migratory Bird Damage Project Report completed by WS accompany the permit application. PAE has a current federal permit (Appendix C) to take all migratory birds except eagles and threatened or endangered species. WDFW allows the take of these species under the federal permit without obtaining an additional State permit. The airport designated AWM is responsible for annually renewing the depredation permit and will submit a report to the USFWS within 10 days of its expiration date, detailing the species and number of individuals taken under the permit.

3.4.2.2 Control of Depredating Birds (CFR 50, Part 21.41)[4]

(a) ***Permit requirement.*** Except as provided in 21.42 through 21.46, a depredation permit is required before any person may take, possess, or transport migratory birds for depredation control purposes. No permit is required merely to scare or herd depredating migratory birds other than endangered or threatened species or bald or golden eagles.

[4] Section 3.4.2.2 is quoted directly from the text in CFR 50, Part 21.41.

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(b) ***Application procedures.*** Applications for depredation permits shall be submitted to the appropriate special agent in charge (see 13.11 (b) of this Subchapter). Each such application must contain the general information and certification by 13.12 (a) of this Subchapter plus the following additional information:

(1) A description of the area depredations are occurring;

(2) The nature of the crops or other interests being injured;

(3) The extent of such injury; and

(4) The particular species of migratory birds committing the injury.

(c) ***Additional permit conditions.*** In addition to the general conditions set forth in Part 13 of this Subchapter B, depredation permits shall be subject to the following conditions:

(1) Permittees may not kill migratory birds unless specifically authorized on the permit.

(2) Unless otherwise specifically authorized, when permittees are authorized to kill migratory birds, they may do so only with a shotgun not larger than No. 10 gauge fired from the shoulder, and only on or over the threatened area or area described on the permit.

(3) Permittees may not use blinds, pits, or other means of concealment, decoys, duck calls, or other devices to lure or entice birds within gun range.

(4) All migratory birds killed shall be retrieved by the permittee and turned over to a bureau representative or his designee for disposition to charitable or worthy institutions for use as food, or otherwise disposed of as provided by law.

(5) Only persons named on the permit are authorized to act as agents of the permittee under authority of the permit.

(d) ***Tenure of permits.*** The tenure of depredation permits shall be limited to the dates which appear on its face, but in no case shall be longer than one year.

3.4.3 Depredation Order

Depredation Orders allow take, without an individual permit, provided evidence clearly shows that specific species are causing, or are about to cause, serious damage to crops or other specific interests. Depredation Order birds are (crows, magpies, blackbirds, cowbirds, grackles, and jays) that are protected under the MBTA but may be taken when they are concentrated in such numbers and manner as to constitute a health hazard or other nuisance. Under the Depredation Order (50 CFR § 21.43 and 21.46), no federal permit is required to remove these species. The State of Washington recognizes the Depredation Order and does not require a state permit under these conditions.

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3.4.3.1 Depredation Order for Blackbirds, Cowbirds, Grackles, Crows, Magpies & Jays (CFR 50, Part 21.43 and Part 21.46)[5]

CFR 50, Part 21.43

You do not need a federal permit to control the species listed in the table below if they are committing or about to commit depredations on ornamental or shade trees, agricultural crops, livestock, or wildlife, or when concentrated in such numbers and manner that they are a health hazard or other nuisance: Blackbirds (Brewer's, Red-winged, Yellow-headed), Cowbirds (Brown), Grackles, Crows, and Magpies.

(a) You must attempt to control depredation by species listed under this depredation order using non-lethal methods before you may use lethal control.

(b) In most cases, if you use a firearm to kill migratory birds under the provisions of this section, you must use nontoxic shot or nontoxic bullets to do so. See Sec. 20.21(j) of this chapter for a listing of approved nontoxic shot types. However, this prohibition does not apply if you use an air rifle, an air pistol, or a 22 caliber rimfire firearm for control of depredating birds under this order. (c) If you exercise any of the privileges granted by this section, you must allow any federal, state, tribal, or territorial wildlife law enforcement officer unrestricted access at all reasonable times (including during actual operations) over the premises on which you are conducting the control. You must furnish the officer whatever information he or she may require about your control operations.

(d) You may kill birds under this order only in a way that complies with all state, tribal, or territorial laws or regulations. You must have any state, tribal, or territorial permit required to conduct the activity.

(e) You may not sell, or offer to sell, any bird, or any part thereof, killed under this section, but you may possess, transport, and otherwise dispose of the bird or its parts.

(f) Any person or agency acting under this depredation order must provide to the appropriate Regional Migratory Bird Permit Office an annual report for each species taken. You can find the addresses for the Regional Migratory Bird Permit Offices in Sec. 2.2 of Subchapter A of this chapter. You must submit your report by January 31st of the following year, and you must include the following information: (1) Your name, address, phone number, and e-mail address; (2) The species and number of birds taken; (3) The months in which the birds were taken; (4) The state(s) and county(ies) in which the birds were taken; and (5) The general purpose for which the birds were taken (such as for protection of agriculture, human health and safety, property, or natural resources).

CFR 50, Part 21.46

Landowners, sharecroppers, tenants, or their employees or agents actually engaged in the production of nut crops in Washington and Oregon may, without a permit, take scrub jays (*Aphelocoma coerulescens*) and Steller's jays (*Cyanocitta stellen*) when found committing or about to commit serious depredations to nut crops on the premises owned or occupied by such persons; Provided:

(a) That scrub jays and Steller's jays may only be taken pursuant to this section between August 1 and December 1 in any year, in the Washington counties of Clark, Cowlitz, and Lewis; and the Oregon counties of Benton, Clackamas, Lane, Linn, Marion, Multnomah, Polk, Washington, and Yamhill.

[5] Section 3.4.3.1 is quoted directly from the text in CFR 50, Part 21.43 and Part 21.46.

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(b) That scrub jays and Steller's jays taken pursuant to this section shall not be transported or sold or offered for sale except that, such transportation within the area, as may be necessary to bury or otherwise destroy the carcasses of such birds is permitted: Provided, That the Director of the State agricultural department, college, or other public institution may requisition such scrub jays and Steller's jays killed as may be needed for scientific investigations.

(c) That such birds may be taken only by trapping or shooting and on areas where serious depredations are being or are about to be committed.

(d) That any person exercising any of the privileges granted by this section shall permit at all reasonable times, including during actual operations, any federal or state game or deputy game agent, warden, protector, or other law enforcement officer free and unrestricted access over the premises on which such operations have been or are being conducted; and shall furnish promptly to such officer whatever information he may require, concerning said operations.

(e) That nothing in this section shall be construed to authorize the killing of such migratory birds contrary to any state laws or regulations; and that none of the privileges granted under this section shall be exercised unless the person possesses whatever permits as may be required for such activities by the states of Washington and Oregon.

(f) That any person authorized by this section to exercise the privileges granted therein shall maintain records of the number of birds killed on the premises and shall submit a report thereof, on or before December 31 of each year, to the appropriate special agent in charge.

3.5 NON-MIGRATORY BIRDS

3.5.1 Game

Although non-migratory game birds (grouse, turkey, quail, partridge, and pheasant) are not managed by the MBTA (and no federal permit is required for take) they are protected by WDFW and a state depredation permit is required prior to take unless immediate danger exists.

3.5.2 Invasive/Exotic

Invasive/Exotic species are defined as an alien species whose introduction causes, or is likely to cause, economic or environmental harm or harm to human health. Executive Order No. 13112 allows for the take of starlings, feral pigeons, monk parakeets, and house sparrows without a permit.

3.6 DOMESTIC BIRDS

Current State and Federal laws do not require a permit to control these species (domestic ducks, domestic geese, domestic poultry, etc.). Domestic waterfowl may become a problem if they are abandoned on or around airport property. Only wildlife personnel trained to distinguish between domestic and wild waterfowl should take these species. If other species of feral birds are observed at PAE, the AWM should be contacted for assistance with control methods.

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3.7 MAMMALS

3.7.1 Big game

Big game mammals are defined as those species that are hunted for sport, recreation, or consumption. Infrequently, Black-tailed deer gain access to the AOA and will require control in these instances. If applicable, a State permit will be obtained prior to any control activity. Threatened or endangered animals are not covered under this provision.

3.7.2 Small game

Several species of small game mammals such as rabbits, beaver, raccoon, opossum, and coyote are present at PAE and may require management. Of these, beavers and coyotes present the greatest threat to aviation. Beavers have periodically dammed ditches and small ponds at PAE thus creating larger areas of open water attractive to local and migratory waterfowl. State permits are required to take small game species when specific removal methods and techniques are used. PAE holds, and will continue to maintain, a mammal trapping permit from WDFW that allows for the trapping of small game species. This permit is reported on annually, and renewed every three years.

3.7.3 Non-game

Non-game species include mountain beaver, rodents, bats, and all those except big game, small game, domestic, and those species listed as Threatened or Endangered. It is unlikely that non-game species will require management at PAE. However, should these animals pose a hazard or cause damage to property, a permit will be obtained from WDFW prior to management actions.

3.7.4 Domestic

For the purposes of this document, feral and free-ranging dogs, cats, and other domestic animals are considered “wildlife” because of the hazards they pose to aircraft. No Federal or State permits are required for control of these species as they are regulated under municipal laws.

3.8 THREATENED AND ENDANGERED SPECIES

The Federal Endangered Species Act (Sec. 2 [16 U.S.C. 1531]) and Washington State Endangered Species Act protect animal and plant species potentially threatened with extinction. These acts classify species as Endangered or Threatened. An Endangered Species is defined as “any species or subspecies that is in danger of extinction throughout all or a significant portion of its range.” A Threatened Species is defined as “any species or subspecies that is in danger of becoming an Endangered species within the foreseeable future throughout or over a significant

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portion of its range." Once listed, a threatened or endangered species cannot be taken or harassed without a special permit. Eagles are also afforded protection under the Bald and Golden Eagle Protection Act (16 U.S.C. 668). In Washington State, several additional species are given special protection by being listed as a State Threatened or Endangered species. If a significant hazard exists with a listed species, either USFWS or WDFW, depending on the protective status of the species involved, will be contacted for assistance. In many cases only personnel from these or other agencies (e.g. Wildlife Services) may obtain a permit to take individuals of a Threatened or Endangered Species.

3.8.1 Endangered Species List

USFWS and WDFW maintain updated lists of endangered and threatened species. WDFW's current listing of state and federally endangered, threatened, and sensitive species can be accessed on the Internet at ***http://www.wdfw.wa.gov/wlm/diversty/soc/soc.htm***. Wildlife management personnel at PAE are familiar with listed species and their potential occurrence at PAE. Some of these species, particularly bald eagles, may present hazards to air traffic at PAE, and permits are required to harass them. In most cases, permits will not be granted to lethally remove members of a threatened or endangered species. PAE wildlife management personnel have learned to identify listed species and understand the regulatory permitting processes required for their management. Habitat critical to listed species is regulated by the USFWS and WDFW and these regulations should be reviewed to determine their effects on PAE's habitat modification plans.

Recent listings of endangered salmonid species may affect the design of current and future construction projects at PAE. PAE should work closely with federal, state, and local agencies to ensure that protected salmonid species are not adversely affected and that salmon enhancement projects do not inadvertently result in increased wildlife hazards to aircraft. Salmon habitat improvement and/or mitigation projects will be carefully reviewed by the AWM and if necessary, WS and the FAA, to ensure that projects do not increase wildlife hazards. PAE should keep an updated listing of threatened and endangered species in the WHMP and should review this list prior to implementing construction projects that may adversely affect listed species.

3.8.2 Avoiding Impacts to Threatened and Endangered Species

Marbled murrelets, northern spotted owls, bull trout, lynx, gray wolf, and grizzly bear may occur in Snohomish County, but none have been observed on airfield property. The proposed actions outlined in this WHMP would involve application of the most appropriate, effective, and biologically sound wildlife control methods available. This approach is known as Integrated Wildlife Damage Management, includes technical assistance and direct control in the form of habitat management, exclusion, non-lethal harassment, and lethal reinforcement to alleviate wildlife hazards.

Habitat management generally provides the best long-term approach for reducing wildlife attractants on an airfield. Habitat management measures are discussed in Chapter 4 of this

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WHMP, and include elimination of standing water, planting alternative ground covers on the airfield, removal of fruit and berry producing vegetation, thinning roost trees, structural exclusion (e.g., netting), and incorporating wildlife considerations in the early planning stages of new construction projects. Furthermore, FAA CertAlert No. 06-07 discusses the need for certificated airports to decline requests by state wildlife agencies that encourage habitat for state-listed threatened and endangered species and species of special concern on airports. PAE will adhere to the recommendations in this CertAlert. Other direct control efforts such as physical harassment and pyrotechnic hazing generally provide a more immediate response to hazardous situations. Wildlife hazard abatement procedures employed at PAE are discussed in Chapter 5 of the WHMP, and include, pyrotechnic hazing, recorded distress calls, vehicular harassment, nest removal, selective trapping, and shooting with. Airport personnel are routinely trained in bird species identification, with a special emphasis placed on threatened, endangered, and sensitive species.

3.8.3 Eagle Permits

On February 12th, 2024, the U.S. Fish and Wildlife Service changed guidance on when an eagle permit would be necessary for the harassment of bald and golden eagles. This guidance stated that the use of nonlethal methods to disperse eagles away from a site does not constitute eagle disturbance unless it is adjacent to an in-use nest and disrupts eagle breeding activity. The intent of hazing is to deter eagle depredation to reduce threats to human or eagle health and safety by temporarily displacing individual eagles from a location. The Service recommends nest buffers of 660 feet for bald eagles and 1 mile for golden eagles.

Due to this ruling, PAE will no longer need an eagle depredation permit to harass bald eagles from the airfield. PAE must stay diligent in their harassment of eagles, so they do not create a nest with in the 660 feet buffer zone. If a nest is constructed, follow procedures in CFR 50, Part 22.23 for instruction on obtaining an eagle harassment permit.

3.9 REPTILES & AMPHIBIANS

Non-protected reptiles and amphibians can be taken with a permit or appropriate fishing license. At their current abundance, these species are not a major attractant to hazardous wildlife.

3.10 REPORTING CONTROL ACTIONS

PAE must submit a report to the USFWS detailing the number of individual migratory birds taken to fulfill the requirements of the Federal Depredation Permit. The report is generated from USDA and PAE computerized databases containing all control actions at PAE.

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3.11 HABITAT CONSERVATION

USFWS and WDFW are responsible for species conservation and recovery plans. These plans require the identification of critical habitat when it is associated with the decline of a species. Habitat modifications may be prohibited in areas where critical habitat has been designated or where such changes could result in the inadvertent take of an Endangered species. Consultation with USFWS and WDFW biologists will help determine, on a case-by-case basis, whether critical habitat is affected by airport projects, and if so, the necessary mitigation. However, CertAlert No. 06-07 (section 3.3.2) mandates that airport operators must not create wildlife habitat which may attract hazardous wildlife.

3.12 WETLANDS MITIGATION

Wetland modifications may require permits from various agencies, including USFWS, U.S. Army Corps of Engineers (USCOE), Department of Ecology (Ecology), and/or Snohomish County. Pre-development mitigation may be required for issuance of a permit. The FAA has outlined a series of procedures (refer to the publication on wetland mitigation banking in the FAA's wildlife section homepage [***http://www.faa.gov/airports_airtraffic/airports/environmental/policy_guidance/media/wetland_banking.pdf***]) for mitigating wetland impacts resulting from project development.

3.13 PESTICIDE APPLICATOR LICENSE

Authorization to use restricted-use pesticides for the removal of hazardous wildlife (e.g., blackbirds, starlings) or prey-base (e.g., rodents, rabbits, insects, earthworms, and weeds) should be limited to Certified Pesticide Operators or persons under their direct supervision. A person must pass an exam administered by the Washington State Department of Agriculture (see directory in Chapter 10) to obtain the necessary license to apply restricted-use pesticides. Use of all pesticides must strictly adhere to the pesticide label and must follow U.S. EPA, Ecology, and Snohomish County guidelines.

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4 - HABITAT MANAGEMENT

FAR 139.337(f)(2) ***A list prioritizing the following actions identified…and target dates for their initiation and completion…***

OVERVIEW

Habitat management provides the most effective long-term remedial measure for reducing wildlife hazards on, and near, airports. Habitat management includes the physical removal, exclusion, or manipulation of areas that are attractive to wildlife. The goal is to make the environment uniform and unattractive to wildlife species that are considered the greatest hazard to aviation. Habitat modifications will be monitored carefully to ensure they reduce wildlife hazards and do not create new attractants for other wildlife species. Table 2 lists a series of both habitat and non-habitat based action items/priorities, with target dates for completion.

Table 2 *Management priorities for projects to reduce wildlife hazards at PAE, along with the target dates for completion or date that each project was completed. Note that some of the projects may have already been implemented or completed, but because they require a continued effort (e.g., brush removal from drainage ditches); they are listed as "ongoing".*

PAE WILDLIFE MANAGEMENT PROJECTS	TARGET DATE	DATE COMPLETED
1. Maintain wildlife-resistant fencing around airfield perimeter[6]	Ongoing	
2. Clear and maintain ditches throughout airfield to enhance drainage and eliminate temporary standing water	Ongoing	
3. Install and maintain exclusionary devices on all detention ponds that warrant doing so due to excessive wildlife use	Ongoing	
4. Grade or fill tire ruts (which may accumulate water) in AOA caused by vehicles and heavy equipment	Ongoing	
5. Evaluate potential wildlife hazards associated with new construction	Ongoing	
6. Maintain updated depredation permits	Ongoing	
7. Train employees in the safe and effective application of wildlife dispersal measures as defined by AC 150/5200-36B	Ongoing	
8. Convert Smuggler's sediment to detention ponds	September 2010	Summer 2014[7]
9. Minimize gaps under mechanical gates on the perimeter fence	As Funding is Available	
10. Bravo Pond construction project	Spring 2017	Fall 2019

[6] Fence lines are inspected monthly, and any damaged or breached fence is repaired in a timely matter.
[7] Due to projected land development the Smuggler's pond conversion has been delayed. Currently, the Smuggler's pond is not attracting wildlife significant enough to pose a threat to aviation safety. Monitoring of the site will continue and should conditions change, the WHWG will discuss options for alleviating potential wildlife hazards.

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PAE WILDLIFE MANAGEMENT PROJECTS	TARGET DATE	DATE COMPLETED
11. Alpha Pond rehabilitation project	Ongoing	
12. Grasshopper insecticide application	As Needed	
13. Clover mitigation	Ongoing	

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4.1 ATTRACTANTS

4.1.1 General Zone and Critical Zone

The *General Zone* for PAE is defined as the area within a five-mile radius of runway 16R-34L centerline. Wildlife attractants in this area such as golf courses, parks, and lakes could potentially impact PAE air traffic safety operations, particularly those attractants that lie within the approach and departure patterns. The objective of this WHMP is to actively reduce attractive wildlife habitat on property under the control of PAE while working cooperatively with adjacent property owners to discourage land-use practices that might increase wildlife hazards. Some of the most prominent attractants on the property include Swanson Wetland Mitigation, Wetland 25, and the forested area on the west side of runway 16R-34L. Off-site attractants include Lake Boeing, Harbor Point Golf Course, Paine Field Community Park, and Walter Hall Golf Course.

The area within a 10,000-foot radius of runway 16R-34L centerline is delineated as the *Critical Zone* (see aerial photo in Appendix A). Within the *Critical Zone*, arriving and departing aircraft are typically operating at or below 500 feet above ground level (AGL), an altitude that corresponds with the most bird activity. Due to the fact that approximately 92% of all civil bird-aircraft strikes occur under 3,000 feet AGL wildlife abatement efforts are primarily concentrated within this area.

4.1.2 Edge Displacement

Edges are the places where different habitats meet and are often most attractive to wildlife because most animals biological needs can be met in a relatively small area. Much of the "edge" at PAE consists of a forest-grassland transition that has been pushed back to a distance of approximately 400 feet (on average) from active runways by PAE maintenance.

4.1.3 Airport Building Projects

The AWM will participate in the initial and early phases of all airport building projects to avoid any inadvertent increase in wildlife hazards resulting from architectural or landscape changes. This participation has been especially important during construction and use of the Airport Road Transfer Station (ARTS). Additional effort will be required to ensure that new projects and construction activities are designed in a manner that minimizes wildlife attractants. The FAA's Airports District Office (ADO) reviews proposed construction activities for potential wildlife attractions when the FAA Form 7460-1 application is submitted and may also solicit input from WS.

4.1.4 Non-airport Land-use Projects

Whenever possible, the Airport Director and/or AWM will actively participate in land-use decisions and landscape changes to avoid inadvertent creation of wildlife hazards to aircraft. The ADO and Safety and Standards Branch of the FAA Region (refer to directory in Chapter 10) will provide technical guidance to PAE in addressing land-use compatibility issues. If PAE or the FAA requests assistance from WS (as per a Memorandum of Understanding between FAA and Wildlife Services), then WS may provide technical and/or operational assistance in addressing issues or concerns associated with the proposed project or land-use change. Proposed projects that will likely increase bird numbers within flight zones will be discouraged or

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mitigated to a safe level. Land uses that may be incompatible include, but are not limited to, developments such as water reservoirs, parks with artificial ponds, wetlands, waste handling facilities, and wildlife refuges/sanctuaries. These types of land-use changes will be monitored for compatibility by working with the local planning authorities.

4.2 WATER MANAGEMENT

Overview

PAE has several small, existing detention ponds on airport property; with several more being planned in future construction projects. Any newly constructed pond that is designed for capturing sedimentation will be converted to detention ponds within 18 months. In addition, small drainage ditches and canals on the airfield attract a moderate number of birds and mammals throughout the year, especially during winter when migratory waterfowl pass through the area. Open water on PAE property will be netted, grid-wired, covered, and/or planted wherever significant wildlife use warrants doing so. These sites will be monitored closely to ensure that hazardous species do not use the sites. Temporary open water areas will be monitored by the WHWG (see section 2.2) and covered or removed when necessary[8]. Water sources outside of PAE property, but within the *Critical Zone* of PAE, will be monitored, and PAE will work with local agencies and landowners to help deter hazardous wildlife.

4.2.1 Wetlands

Several small streams and wetlands naturally occur on or in the vicinity of the airport, and are attractive to wildlife. Any future wetland mitigation resulting from airport construction projects will be implemented as far away from the airfield as possible, unless it can be demonstrated with reasonable certainty that the mitigation would not likely increase wildlife hazards and will comply with criteria described in FAA Advisory Circular 150/5200-33C. For example, Swanson wetland mitigation has been planted with a shrub/scrub plant association to deter waterfowl. Due to their proximity to runway 16R-34L, both Swanson Wetland Mitigation and Wetland 25 (naturally occurring wetland) will continue to be monitored closely for wildlife activity. If wildlife associated with either of these sites become hazardous to airport operations, the AWM will take the appropriate action to deter and/or remove individual animals that threaten aircraft safety. Further, future airport development and added impervious surfaces may lead to additional runoff into the pond parallel to the northern portion of Alpha taxiway (Alpha Pond). Additional water in the Alpha Pond may potentially attract waterfowl due to increased surface water. This pond will continue to be closely monitored to ensure that wildlife do not utilize it in manner which would create a hazard to aircraft operations.

4.2.2 Temporary Standing Waters and Ditches within the AOA

During winter and spring months, small depressions (tire ruts), created by vehicles operating within the infield areas, can fill with water for short periods of time and attract dabbling ducks. PAE personnel will discourage

[8] Temporary open water may be covered with nets, wire, or obscured by vegetation. For example, certain vegetative species have been planted in high density in ponds associated with areas of water detention.

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driving on any unpaved surfaces during periods of high precipitation to avoid ruts in the soil. Where ruts are found, PAE maintenance will fill and/or grade the damaged area. In areas where there are larger pools, the land will be filled or graded such that water consistently drains into ditches[9]. Ditches should be appropriately sloped so that water does not pool and leaves the airfield in a reasonably short amount of time. Ditches that pool attract hazardous wildlife and should be covered, in whole or part, using a wire grid system or other barrier (e.g., polyester netting). To minimize other areas of standing water, PAE has added language in its construction bid packages requiring that as part of construction process the contractor is responsible for proper grade and drainage at each site.

4.3 VEGETATION MANAGEMENT

Overview

PAE contains diverse vegetation types, some of which are highly attractive to wildlife. The most effective approach to reducing this attraction in the *Critical Zone* is to remove all unnecessary trees, shrubs, weeds, and plants and establish non-seed bearing or small-seeded grass. The AWM will review all plantings on PAE property and exclude those species that produce edible fruits, nuts, or berries if these plants create an attraction to hazardous wildlife. Plant species of particular concern include blackberries (*Rubus spp.)* and Scot's broom (*Cytisus scoparius*) because of their invasive characteristics or wildlife-attracting qualities. PAE's airfield generally has an abrupt transition between the infield grass and forested areas, thus minimizing the amount of attractive shrubs and herbaceous cover available to wildlife. PAE maintenance will continue to monitor and maintain these transition zones.

4.3.1 Grass Management

Other than paved areas, grass will be the primary cover inside the perimeter security fence. FAA Certalert No. 98-05 advises, "Airport operators should ensure that grass species and other varieties of plants attractive to hazardous wildlife are not used on the airport". Grasses that produce large seeds, and are known to be attractive to wildlife, will be avoided and a homogenous grass cover will be the objective when planting new areas at PAE. Furthermore, the use of clover will be avoided in any replanting efforts. Seed-producing, invasive weeds, such as blackberries and Scot's broom, will be removed as needed.

4.3.1.1 Grass Type

The type of grass used within the perimeter fence and between the runways should produce small or no seeds, but still be able to establish itself as a thick, monotypic stand and prevent erosion. The selected ground cover should withstand drought, flooding, and other normal climatic conditions, and be somewhat unpalatable to grazers such as waterfowl and deer. The grass should also harbor relatively few insects and rodents that may

[9] Some ditches adjacent to runways, roads, and taxiways are designed as biofiltration swales to treat storm-water runoff. Modification of these ditches must be made using accepted engineering designs for water quality treatment, or alternative treatment measures.

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attract raptors, owls, starlings, and other hazardous wildlife species. Several varieties of tall fescue (*Festuca arundinacea*), if allowed to grow to a height of 8-14 inches, have been found to be unattractive to Canada geese because of a fungus harbored by the plant. Fescue will generally preclude other more attractive grass species from invading the airfield[10]. Whenever possible, grass mixtures indigenous to the Pacific Northwest will be used at PAE when replanting as part of a construction or mitigation project, provided the seed mixture does not pose a significant wildlife attraction. Because clover is highly desirable to various wildlife species, it will not be used in any seed mix at the airport. PAE will work with Ecology to ensure selected grass meets erosion control standards and objectives.

4.3.1.2 Grass Height

Grass height throughout the airfield will be maintained at a height best suited to deter wildlife hazards except around runway and taxiway marker lights where it will be cut to 3 inches for purposes of visibility. The on-site WS Airport Biologist will be consulted for recommendations of the best grass height based on the status of current hazardous wildlife species. Grass height will be maintained throughout the mowing season, with the first mowing activities beginning when the infield is firm enough to allow equipment access and the grass is sufficiently long enough to merit cutting.

4.3.1.3 Mowing

Mowing is quite attractive to several species of birds and mammals because it exposes food sources such as rodents, insects, worms, and seeds. When grass cutting is being conducted and large flocks of birds are attracted to the area, mowing will stop until the birds have been successfully hazed from the vicinity. Mowing regimes will be coordinated with the AWM.

[10] PAE is one of a few select airports that participated in a national study funded by the FAA to develop an airport ground cover that is unattractive to wildlife. This study consisted of a series of test plantings that were monitored for wildlife use, as well as potential secondary attractants including seed production, insect populations, rodent abundance, and nesting habitat. Results showed that many fescue spp. were unattractive to grazing wildlife but most could not be successfully established in NW climate conditions.

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4.3.2 Ditch-side Vegetation

Herbaceous vegetation growing on the edges of ditches or other wetlands may provide preferred habitat for species considered hazardous to aircraft. In a manner permitted by wetland laws and regulations, rock (e.g., quarry spoils, rip-rap), and in some instances, shrubs or grass, can be used to replace undesirable plants, slow erosion, and conceal a base flow of water from wildlife, but the situation should be examined on a case-by-case basis. PAE should identify existing waterway conditions that may attract wildlife and develop an appropriate plan to reduce the hazard. Modification of ditch-side vegetation in mitigation areas should be consistent with mitigation plans and Section 404 and 401 permit conditions, if applicable. Modification of ditch-side vegetation outside of mitigation areas may be subject to other environmental regulations (see Section 3.11).

4.3.3 Ornamental Landscaping

Landscaping at the airport can affect tourism, business, and the overall impression of the PAE vicinity to visitors; therefore, landscaping should be aesthetically pleasing. It must, however, not compromise the airport's more important responsibility of air safety. Trees and shrubs that offer hunting perches, roosting and loafing sites, nesting cover, and food for birds and other wildlife will be removed. Ornamental trees and bushes used to enhance airport aesthetics will be kept to a minimum, and varieties that are unattractive to wildlife will be selected. Species that produce edible fruits, nuts, or berries will be discouraged on PAE property. PAE will monitor the use of ornamental trees by birds to determine whether there is a need for the trees to be thinned, topped, or removed. All proposed landscape plans and plant lists associated with new development at PAE will be reviewed and approved by the USDA Airport Biologist before being implemented.

4.4 STRUCTURE MANAGEMENT

Overview

Structures provide cover and hunting perches for wildlife. If wildlife is considered when a building is designed, costly control measures can be avoided. Buildings should not provide nesting, perching, or roosting sites for birds and should inhibit access by mammals such as rodents and cats. To avoid wildlife conflict issues with new development, all building plans will be reviewed by the USDA Airport Biologist prior to construction to ensure no new bird roosting, nesting, or perching sites are being inadvertently created.

4.4.1 Airfield Structures

Airfield structures such as runway lights, ramp and taxiway signs, ILS equipment, and light poles are used as hunting and loafing perches for birds such as raptors, crows, starlings and gulls. Lights attract insects at night, and in turn, bats and nighthawks. Structures found to routinely attract birds in a hazardous manner may be fitted with wire coils or porcupine wire (e.g., Nixalite) to deter use.

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4.4.2 Abandoned Structures

When possible, structures not pertinent to aircraft operations and no longer in use should be removed. This may include abandoned houses, sheds, machinery, light poles, and survey markers/stakes. Such structures are attractive to rodents, small birds, and rabbits and, in turn, attract raptors, coyotes and other predators that can become a significant hazard. Structures used for crash-fire training are considered to be pertinent to air operations and are generally compatible with safe aircraft operations.

4.5 FOOD/PREY-BASE MANAGEMENT

Overview

Rodents, rabbits, insects, earthworms, and other invertebrates are highly attractive to many species of birds and mammals and should be controlled where feasible. Handouts, trash, and scattered debris also provide food for wildlife. The modification or management of a wide variety of habitats such as wildlife-attracting vegetation and removal of abandoned structures will reduce populations of potentially hazardous wildlife by limiting shelter, food, and prey availability.

4.5.1 Rodents

Mice and voles at PAE appear to be the primary attractants of raptors and coyotes, but will occasionally attract herons and other predators. Historically, rodent populations at PAE have been relatively low, but the AWM will continue to monitor populations and will conduct control programs if rodent abundance increases to levels where excessive predatory species are attracted.

4.5.2 Insects and Other Invertebrates

Insects and other invertebrates (e.g., earthworms, grasshoppers, spiders, etc.) may attract many species of wildlife at PAE, particularly starlings, gulls, kestrels, and crows. Insect populations will be monitored periodically to determine if they are present in sufficient numbers to attract wildlife. If control is deemed necessary, a Washington State University Cooperative Extension agent can help select the best pesticide or control method. Habitat management may keep much of the prey population in check, but PAE will continue to monitor these populations for outbreaks.

4.5.3 Trash, Debris, and Handouts

Trash and debris are often responsible for attracting species such as gulls, crows, and pigeons. PAE maintenance will continue to conduct trash and FOD (foreign object debris/damage) collection sweeps on the airfield, especially after high winds. Trash receptacles and dumpsters on airport property shall remain closed at all times. Furthermore, members of the WHWG will periodically monitor off-airfield dumpster sites (commercial dumpsters at local businesses and restaurants) to ensure that scavenging wildlife are not being attracted to garbage enclosures. The public and airport employees will not be allowed to feed birds or mammals around the airport. When people are observed feeding birds, PAE will discuss, with them, the problems caused by feeding wildlife and signs will be posted to educate the general public. Additionally, contractors, food venders, catering companies and others who feed wildlife shall be issued warnings and fined for persistent violations.

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Currently, the Airport Road Transfer Station (ARTS) has not served as an attractant to scavenging wildlife. However, a Memorandum of Understanding (MOU) between Snohomish County Public Works and PAE has been set forth to address potential wildlife issues at the ARTS site. Within the MOU, Public Works acknowledges that wildlife, particularly birds; pose a safety hazard to airport operations. PAE will ensure that Public Works takes all measures necessary to prevent wildlife attractions during the construction and operation of the transfer station. In the event that ARTS attracts wildlife, Public Works shall immediately remove the attractant and persistent individuals hazardous to aircraft operations. Public works will cooperate fully with PAE, FAA, and WS to alleviate wildlife hazards associated with the transfer station.

Public Works maintains procedures to reduce wildlife attractants and has designed and installed the following items:

- Mechanisms such as grates are installed to prohibit garbage from being tracked out of the transfer station.
- Spikes, exclusionary wires, or other bird deterrent devices are installed on the building and light posts, per recommendation of PAE.
- Garbage is washed off all vehicles inside the transfer station.
- Storm water is detained in vaults.
- At a minimum, Public Works inspects the site three times a day for FOD. Roads approaching the site are inspected at least twice a day for FOD. All inspections are documented and kept at the site.
- New landscaping installed on the premises shall not attract wildlife. The Airport Director shall approve all landscaping plans.
- Existing rules, that all customers have their loads enclosed within their vehicles or contained by tarps, netting, or other covers, are strictly enforced. Removal of tarps on loads outside of the facility is permitted provided that they do not attract wildlife.
- Odor and residence time of solid and liquid waste at the facility is minimized.
- No putrescible waste is handled or stored outside in an open container at any time, for any reason, or in a partially enclosed structure accessible to wildlife.
- Public Works shall disclose and deliver to PAE copies of any wildlife reports, tests, studies or other documentation relating to any investigation of the premises for wildlife.

Any site recommendations, from PAE representatives, shall be promptly reviewed and implemented by Public Works. In the event Public Works is unable to control wildlife hazards to the satisfaction of PAE, the transfer station will be closed until the hazard condition no longer exists.

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5 - WILDLIFE CONTROL PROCEDURES

FAR 139.337(f)(5) ***Procedures to be followed during…operations that at a minimum includes-***

139.337(f)(5)(i) ***Designation of personnel responsible for implementing the procedures;***

Personnel responsibilities are described and delineated in Chapter 2.

139.337(f)(5)(ii) ***Provisions to conduct physical inspections of the aircraft movement areas and other areas … before…operations begin;***

Airport Operations and/or Maintenance personnel should frequently conduct physical inspections of movement areas and other areas critical to wildlife hazard management as part of their daily protocol. Airport Operations personnel will document all observed wildlife and record the data into Airman. (Appendix B). All Airman entries should be entered into the database daily. The AWM, in conjunction with a Wildlife Damage Biologist, should also conduct physical inspections of critical areas and report wildlife activity into Airman. During periods of exceptionally heavy wildlife activity (e.g., migratory periods, outbreaks of insects etc.), Airport Operations shall work with the AWM to issue a NOTAM.

139.337(f)(5)(iii) ***Wildlife hazard control measures;***

OVERVIEW

Wildlife that is identified as hazardous during and after the completion of the recommended habitat modifications should be abated using appropriate dispersal and removal techniques. Wildlife hazards at airports are extremely variable and complex. Therefore, it is essential to adopt a flexible, innovative, and adaptive approach to managing such hazards. Airport personnel are trained to identify hazardous wildlife at PAE (refer to Chapter 8), and should select dispersal methods that are appropriate and effective for each individual species.

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5.1 WILDLIFE PATROL

PAE's wildlife patrol team consists of the AWM, Airport Operations Specialists, and the WS representative on site. The patrol team monitors and responds to wildlife hazards on the airfield and coordinates their activities through the AWM. The patrol team also reports all observations of wildlife activity and enters their encounters in the AIRMAN Wildlife Database. Routine runway sweeps are conducted at least once per day, and the presence of any dead animals found from strikes or suspected strikes are recorded into Airman (Appendix B). All dead birds or mammals found on, or within 250 feet of, any runway will be considered the result of a strike unless the death was obviously due to some other cause. Other wildlife-related activities (e.g., notable hazards, animals killed or dispersed, unusual wildlife behavior, etc.) are documented in Airman. Wildlife remains that are found and not identifiable will be bagged, labeled (e.g., time and date found, location on runway, person who found remains, etc.), and placed in a freezer for later inspection and identification. Wildlife strikes at PAE are recorded and submitted electronically by the AWM or USDA Airport Biologist to the FAA at *http://wildlife-mitigation.tc.faa.gov/wildlife/strikenew.aspx*.

5.2 GENERAL WILDLIFE HAZARD ABATEMENT

Wildlife hazards will be analyzed by wildlife control personnel to determine practical solutions. The initial response for most species will be to haze them with frightening devices, followed by the removal of persistently hazardous individuals when necessary. A primary key to successful wildlife hazard abatement programs is persistence and innovation. Techniques should be applied based on safe, effective, practical, environmental, and social considerations. Most control techniques retain their effectiveness when used judiciously and in conjunction with other methods. Some methods such as pesticides or padded leg-hold traps are only effective and legal for certain species and situations. Therefore, the methods chosen will depend largely on the specific situation at hand. Finally, personnel involved in direct control should be aware of potential zoonotic diseases wildlife carry and take appropriate precautions.

5.3 BIRD ABATEMENT

Several species of birds present at PAE represent the most significant potential for causing damaging strikes. Migratory bird species are the primary concern at PAE. Juvenile birds may constitute an unusual wildlife hazard because of their general unfamiliarity with the airport environment at PAE. The "Prevention and Control of Wildlife Damage" manual discusses a number of methods that may be used to haze birds from the airport. As previously stated, the integration of multiple methods should be employed for maximum effectiveness.

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5.3.1 Raptor Trapping

Working with USDA-WS, PAE has found success in reducing potentially hazardous raptor species by using a trap/translocation program. Over the years, USDA has trapped and translocated dozens of raptors of different species. Each bird is fitted with a unique leg band and released at suitable locations off Airport property. Should a raptor return to PAE, it can be identified by its leg band number.

5.4 MAMMAL ABATEMENT

Potential mammal hazards at PAE have been reduced through habitat modifications and the construction of fencing and other exclusionary devices. Currently, PAE has installed secure fence in areas where large mammals, such as deer and coyotes, have been known to access the airfield. However, some large mammals may still have access to the airfield due to gaps under the fences and mechanical gates. Smaller mammals still exist on the airfield in low to moderate densities, and can provide an attraction to larger mammalian predators and raptors. The AWM will monitor rodent and rabbit populations.

5.5 USDA-APHIS-WS ASSISTANCE

WS provides a Wildlife Biologist that assists PAE with wildlife abatement activities on the airport. WS personnel may assist with other wildlife hazards as needed. Differences exist between bird and mammal control techniques and require specialized experience and permits that WS can provide. Wildlife Services can be contacted at (360) 621-1473 for assistance with problems involving wildlife hazards.

5.6 ANIMAL CONTROL ASSISTANCE

Snohomish County and City of Everett Animal Control are available to help with free-ranging dogs and cats. However, if a feral animal poses an immediate threat to aviation, PAE wildlife control personnel will treat the feral animal just as they would a wild animal and attempt to remedy the situation immediately.

5.7 APPROACH FOR IMPLEMENTING CONTROL MEASURES

Given the extremely variable and complex nature of wildlife hazards at airports, it is essential to adopt a flexible, innovative, and adaptive approach to managing hazards as they arise.

When a wildlife hazard is detected, the observer should take immediate action to resolve the situation. Methods used to reduce the hazard(s) should be used in combination with one another until the wildlife hazard is abated or removed.

Concurrent with the immediate action required to resolve a given situation at a given moment is a long-term management approach. This long-term approach is required to resolve reoccurring problems and is comprised primarily of managing people (e.g., training, public education, reviewing proposed construction plans) and

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managing habitat/prey populations (e.g., modify vegetation, exclude/remove attractants). If the frequency of hazardous situations and/or the risks to aviation increase, more assertive actions will be proposed, planned, reviewed and implemented. For example, PAE may begin selective thinning of vegetation, increasing the intensity of the modifications as needed to include replanting new species and/or removing certain undesirable species. The most extreme scenario would include reducing or eliminating larger areas of vegetation where conditions are deemed necessary based on a proactive management approach. Proactive management includes evaluating PAE data and records of communication to develop creative, effective, and cost-efficient solutions to reduce the degree to which direct control actions are needed in the future. The amount of effort and planning required to implement more insistent project plans is expected to increase with the environmental significance of the proposed action. Therefore, dramatic changes to the habitats near the airfield, such as altering hydrology at mitigation sites, are highly unlikely. PAE will consult with the appropriate regulatory agency to identify alternative means to rectify recurring problems well before modifying the hydrology of wetlands or riparian areas.

139.337(f)(5)(iv) *Ways to communicate effectively between personnel…and air traffic control tower;*

All wildlife control personnel are equipped with radios and have proper training to contact the ATCT. If an immediate hazard exists, airport personnel should coordinate with the ATCT, and if necessary, delay or detain arriving or departing air traffic until the hazard is eliminated. In extreme cases, the runway may need to be closed temporarily, at the discretion of Airport Operations or the ATCT. Although the ATCT cannot be expected to monitor all wildlife hazards on the airfield and still direct air traffic, tower personnel should immediately notify Airport Operations if pilots report hazards or any such hazards are observed from the ATCT.

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6 - RESOURCES

FAR 139.337(f)(4) ***Identification of resources that the certificate holder will provide to implement the plan.***

OVERVIEW

Habitat management and wildlife control supplies can be purchased from several companies and the AWM shall keep an adequate supply of equipment on hand.

6.1 AIRPORT SUPPLIES

Supplies normally stocked at the airport include:

Copies of the recent WHMP
15 mm screamers, bangers, whistlers
Cleaning kits for all firearms
Rat/mouse snap traps
Pellet rifle and pellets
Garbage bags
Prevention of Wildlife Damage reference material
15 mm pyrotechnic pistol launchers
12 gauge shotgun and steel shot ammunition
Field guide for local bird identification
Binoculars
Latex gloves
Freezer to preserve carcasses found on runways

6.2 AIRPORT OPERATIONS

The Airport Operations vehicles are stocked with the supplies listed below to facilitate an immediate response to wildlife hazards. Vehicle operators are responsible for responding to emergency calls from the ATCT to disperse wildlife from the AOA. At a minimum, supplies to be maintained in these vehicles include:

15 mm pyrotechnic pistol launchers
Binoculars
Latex gloves & Garbage bags
15 mm pyrotechnics (bangers, whistlers, etc.)
Bird identification field guide

6.3 USDA-APHIS-WS ASSISTANCE

Some supplies, such as starling traps, vertebrate pesticides, and chemical capturing agents, may be available through WS. The use of some control methods, such as alpha-chloralose for waterfowl, and DRC-1339 for starlings, are restricted to certified WS personnel only. PAE currently has a Cooperative Service Agreement with WS to assist PAE personnel in applying appropriate pesticides, deterring, removing, and dispersing hazardous wildlife from the airfield and adjacent areas. A WS Biologist spends approximately 40 hours a week on site conducting wildlife hazard abatement activities. PAE also requests assistance from WS for the annual training of their staff in accordance with AC 150/5200-36B.

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7 - EVALUATION

FAR 139.337(f))(6) ***Procedures to review and evaluate the wildlife hazard management plan every 12 consecutive months…***

OVERVIEW

At a minimum, this WHMP will be evaluated and updated every 12 consecutive months. The WHWG at PAE will determine the relative effectiveness of the WHMP and monitor the status of hazard reduction projects, and their completion dates.

7.1 MEETINGS

Members of the WHWG who conduct wildlife hazard management on a daily basis will meet annually, but may convene more regularly, as determined by the AWM. These meetings would also take place when a damaging strike has occurred so the WHMP can be reviewed and modified if necessary.

7.2 WILDLIFE STRIKE/ACTIVITY DATABASE

The AWM and/or WS Airport Biologist will maintain a database of survey information, wildlife strikes, and abatement activities on the airfield and surrounding areas. Information from these databases will be used to identify trends and monitor changes in wildlife hazards. If unacceptable increases in wildlife usage of habitat at PAE are observed, the cause shall be determined and the WHMP modified to address the problem. Daily wildlife interventions are entered into a computerized database (AIRMAN) and reviewed for accuracy by the AWM and/or Airport Biologist.

7.3 AIRPORT DEVELOPMENT

Airport project plans will be reviewed by the AWM to ensure that new developments will not inadvertently result in increased wildlife hazards. If appropriate, the AWM will coordinate designs with the FAA and WS (Section 4.4) as was demonstrated with the construction of the ARTS.

7.4 FAA INVOLVEMENT

FAA Regional Certification Inspectors and personnel from the ADO should be invited to make comments on the WHMP and to attend annual meetings on its modifications.

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8 - TRAINING

FAR 139.337(f)(7) ***A training program conducted by a qualified wildlife damage management biologist to provide airport personnel with the knowledge and skills...***

OVERVIEW

Training is essential for personnel involved in wildlife hazard abatement activities. The AWM will ensure that all personnel working in a wildlife deterrence capacity are properly trained in wildlife species identification and the use and application of hazard abatement methods.

8.1 STANDARD TRAINING

Wildlife hazard abatement personnel are trained in curtailing wildlife hazards at airports, including an overview of laws associated with wildlife control, techniques used for prey-base reductions, and effective use of firearms and pyrotechnics (including hands-on training). Airport communications and driver training are also provided to all employees involved in wildlife abatement operations that may require them to operate in the AMA.

8.2 USDA-APHIS-WS TRAINING

As per AC 150/520036B, the on-site WS Airport Biologist will provide training courses for wildlife hazard abatement personnel. The purpose of the course is to familiarize airport operations personnel in basic wildlife identification and dispersal techniques. All personnel who have responsibility in dispersing wildlife at PAE will obtain this training every 12 consecutive months.

8.2.1 Supplemental Training for Boeing-Everett and Neighboring Businesses

Due to the cooperative nature, great number of employees, and proximity and size of its site, Boeing-Everett Company can assist PAE with reducing wildlife hazards. PAE will work with Boeing management to provide general training for Boeing employees who work on or near the airfield. This training may include; habitat management, refuse disposal, anti-feeding policies, proper collection of bird strike remains, and any other pertinent topics relating to wildlife hazard management. This training will also maintain open communication between Boeing and PAE. Furthermore, if other neighboring businesses are identified as potential cooperators, then PAE will make every effort to provide training and/or information related to wildlife hazards to them as well.

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9 - MONITORING HAZARDS AT PAINE FIELD

9.1 PURPOSE AND NEED FOR MONITORING

The purpose of the monitoring program is to detect and immediately abate wildlife hazards on airport property. When wildlife is observed and appropriate control methods are implemented, the behavioral responses exhibited by each species are noted. This approach helps ensure aircraft safety and provides valuable behavioral response data for a given control method.

This plan is based upon a comprehensive biological evaluation of the situation. If wildlife abundance increases near the AOA, so does the wildlife strike hazard. The ecology of hazardous wildlife must be evaluated in combination with the entire dynamic of species' abundance, body size, and behavioral traits. To assess the risk of wildlife-aircraft collisions (strikes), notable attributes such as direction and altitude of wildlife movements in relation to aircraft, flocking characteristics, frequency of visits to a given site, duration of visits, and activity while on site (e.g., nesting and breeding activity, loafing, feeding, soaring, etc.), should be recorded. This wildlife trend data will assist in determining a correlation between wildlife activity, cover type, and hazards.

9.2 MONITORING METHODS

9.2.1 Formal Surveys

Formal surveys are conducted regularly during both day and night time hours by the AWM and/or WS Biologist on location. These surveys are conducted as transient (other wise known as "driving") surveys on a predetermined route around the airfield. Pertinent data is recorded for all wildlife observations during this time and logged into the Airman database. This data is then be analyzed to help determine wildlife trends on the airfield as needed.

9.2.2 Habitat Use

In previous years, airport staff used a map of PAE which was overlaid with an alphanumeric grid so that precise locations of individuals/groups could be plotted. However, PAE has updated and improved its data collection methods to include concise GPS coordinates to record wildlife use (e.g., abundance, behavioral activities). The wildlife use data can be correlated with the cover type to determine which cover type achieves the desired effect of precluding hazardous wildlife. Steps can be taken to modify those cover types which attract wildlife.

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9.2.3 Incidental Observations

Beyond the parameters of the brief formal survey periods, incidental observations of wildlife activity are recorded. The AWM, WS Biologist, and Operations personnel are most likely to record incidental observations. These incidental observations will likely provide some of the most valuable information of wildlife use on the airfield. During incidental observations, actions will be taken to reduce any hazards and record the animals' response to direct control.

9.3 MONITORING/RECORDING WILDLIFE HAZARD ABATEMENT METHODS

The most effective abatement methods for which specific types of hazardous wildlife typically respond, have been, and will continue to be, well documented. When wildlife does not respond as anticipated, an incremental or tiered approach to reducing the hazards will be used. This approach requires adaptive management that will take increasingly more drastic steps, including humane lethal reinforcement. It is anticipated that wildlife hazards associated with the airfield can be effectively reduced using proven management methods. However, it is conceivable that some habitat alterations such as adding or clearing vegetation or altering hydrologic regimes on a site may become necessary to curtail persistently hazardous wildlife activity. PAE will continue to monitor, record, and assess all wildlife hazard abatement methods so future management actions can be decided in a practical and efficient manner.

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2 - AGENCY DIRECTORY

REGULATORY AND ENFORCEMENT

U.S. Fish and Wildlife Service (Permitting)
Migratory Bird Permits
911 NE 11th Ave.
Portland, OR 97232-4181
(503) 872-2715

U.S. Fish and Wildlife Service (T&E Species)
Western Washington Office
510 Desmond Drive SE, Suite 102
Lacey, WA 98503
(360) 753-9440

Washington State Department of Fish and Wildlife (Law Enforcement and Permitting) – Region 4
16018 Mill Creek Blvd
Mill Creek, WA 98012
(425) 775-1311 ext 115

Washington State Department of Fish and Wildlife (T&E Species)
600 Capitol Way North
Olympia, WA 98501-1091
(360) 902-2694 – T&E Section, NRB Office-5th floor

Washington State Department of Ecology (Wetland Management)

Northwest Regional Office
3190 160th Ave SE
Bellevue, WA 98008
(425) 649-7000

Federal Aviation Administration (FAA)
2200 S. 216th Street
Des Moines, WA 98198

Safety and Standards Branch
(425) 227-2607
Seattle Airports District Office (ADO)
(425) 227-2650

TECHNICAL ASSISTANCE

U.S. Department of Agriculture – Wildlife Services
720 O'Leary St., NW
Olympia, WA 98502
(360) 753-9884 – Olympia
(425) 508-0037 – Everett
(360) 337-2778 – Poulsbo

Washington State Department of Agriculture (Pesticides Management)
P.O. Box 42589
Olympia, WA 98584
(360) 902-2010

MUNICIPAL AGENCIES

City of Everett
2930 Wetmore Ave.
Everett, WA 98201
(425) 257-8731
(425) 257-8400 – Police
(425) 257-6000 – Animal Control

Snohomish County Sheriff's Department
3601 109th Street SW
Everett, WA 98204
(425) 438-1077

City of Mukilteo
4480 Chennault Beach Rd
Mukilteo, WA 98275
(425) 355-4141 ext. 226

Seattle Paine Field International Airport
9901 24th Pl W
Everett, WA 98204-1390
Airport Operations and Security Division Manager
(425) 388-5110
Environmental Manager
(425) 388-5115

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APPENDICIES

Appendix A – Aerial Photo of Snohomish County Airport

(1 page)



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United States Department of the Interior
U.S. GEOLOGICAL SURVEY
EASTERN ECOLOGICAL SCIENCE CENTER
AT THE PATUXENT RESEARCH REFUGE
BIRD BANDING LABORATORY
12100 BEECH FOREST ROAD STE-4037
LAUREL, MD 20708-4037
301-497-5790

FEDERAL BIRD BANDING PERMIT

Permittee: **Personal**	**Permit Number:**	**Action:**	**Action Date:**	**Issue Date:**	**Valid Until:**
LAURENCE SCHAFER	23388	Renew	09/22/2025	07/13/2005	09/30/2028
4240 MERIDIAN ROAD NE	**Signature of Issuing Official**				
OLYMPIA, WA 98516	**Signature of Permittee** Laurence M. Schafer				

Permittee agrees to band in accordance with the general conditions of this permit and with the specific authorization/s listed below:

Permittee is Authorized To Band:

All Raptors Except Eagles
Ducks
* Threatened and Endangered species are not included in groups unless specified.

Bald Eagle
Golden Eagle

In the States of:

WA *

With Special Authorization to:

Band
Mark without banding
Take mouth swabs
Hand capture
Use Baited traps
Use Bal-chatris
Use Bow nets
Use Cannon nets
Use Dho-gazas
Use Hand nets
Use Mist nets
Use Net guns
Use Noose Carpets and Snares
Use Padded foot/leg-hold traps
Use Pneumatic nets
Use Rocket nets
Swedish Goshawk Trap

Comments: POLE TRAPS; HARNESSED NON-NATIVE ROCK DOVES AND STARLINGS; VERBAIL TRAPS

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Permittee: Personal	Permit Number:	Action:	Action Date:	Issue Date:	Valid Until:
LAURENCE SCHAFER	23388	Renew	09/22/2025	07/13/2005	09/30/2028
4240 MERIDIAN ROAD NE	Signature of Issuing Official				
OLYMPIA, WA 98516	Signature of Permittee: Laurence M. Schafer				

Permittee agrees to band in accordance with the general conditions of this permit and with the specific authorization/s listed below:

23388 - CI NICHOLAS BORCHERT — USDA - WILDLIFE SERVICES 720 O'LEARY ST NW OLYMPIA, WA 98502

Is Authorized To Band:

All Raptors Except Eagles
* Threatened and Endangered species are not included in groups unless specified.

In the States Of:

WA *

With Special Authorization to:

Band
Mark without banding
Take mouth swabs
Hand capture
Use Baited traps
Use Bal-chatris
Use Cannon nets
Use Dho-gazas
Use Hand nets
Use Mist nets
Use Net guns
Use Noose Carpets and Snares
Use Padded foot/leg-hold traps
Use Rocket nets
Swedish Goshawk Trap

Comments:

POLE TRAPS; HARNESSED NON-NATIVE ROCK DOVES AND STARLINGS; VERBAIL TRAP

23388 - FA DYLAN TAYLOR — USDA - WILDLIFE SERVICES 720 O'LEARY ST NW OLYMPIA, WA 98502

Is Authorized To Band:

All Raptors Except Eagles
* Threatened and Endangered species are not included in groups unless specified.

Bald Eagle
Golden Eagle

In the States Of:

WA *

With Special Authorization to:

Band
Mark without banding
Take mouth swabs
Hand capture
Use Baited traps
Use Bal-chatris
Use Bow nets
Use Cannon nets
Use Dho-gazas
Use Hand nets
Use Mist nets
Use Net guns
Use Noose Carpets and Snares
Use Padded foot/leg-hold traps
Use Rocket nets
Swedish Goshawk Trap

Comments:

POLE TRAPS; HARNESSED PIGEONS, NON-NATIVE ROCK DOVES AND STARLINGS; VERBAIL TRAP

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Washington Department of FISH and WILDLIFE

PERMIT TO TRAP PROBLEM ANIMAL

PERMIT #2025-228

Permit Valid From 1/1/2026 Through 1/1/2029

PERMITTEE **Andrew Rardin**
Snohomish County Airport

Address 9901 24th PL W, Suite A
CityStZip Everett, WA 98204
Email: andrew.rardin@snoco.org
Telephone (425) 388-5115

WHO WILL DO TRAPPING:
☐ Permittee WCO#:
☑ Other (Identify Below)
USDA WS Personnel

SPECIES	NUMBER
Coyote	55
Beaver	12

METHOD AUTHORIZED:
☑ Conibear-type trap in water
☑ Padded foothold trap
☐ Nonstrangling-type foot snare

County: Snohomish

Location to be trapped:

Additional GPS locations may be found on the original application

GPS Location: 47.90812 -122.27714

Permit Conditions:

1. Any trap or device authorized under this permit shall be checked at least every twenty-four (24) hours.
2. Every trap or device authorized under this permit shall have attached to its chain or to the trap or device a legible metal tag with either the WDFW identification number of the trapper or the name and address of the trapper in English letters not less than one-eighth inch in height.
3. Padded foot-hold traps must have both jaws covered with rubber having a minimum one-eighth inch thickness.
4. It is unlawful to knowingly offer to sell, barter, or otherwise exchange the raw fur of a mammal or a mammal that has been trapped pursuant to this permit.
5. Any animal trapped pursuant to this permit shall be immediately released or be lethally dispatched according to current American Veterinary Medical Association (AVMA) Guidelines for Euthanasia, and AVMA Guidelines for the Depopulation of Animals. Wildlife trapped which are not the target species shall be released unharmed except for Conibear-type traps in water.
6. The carcass of any animal taken under this permit must be properly disposed of in a lawful manner.
7. It is unlawful to trap, harass, or otherwise control wildlife on the property of another for a fee or other consideration without a Wildlife Control Operator (WCO) certification and permit.
8. This permit does not authorize trespass.
9. Permits may be denied or suspended in the operations and management of protecting threatened or endangered species as designated under RCW 77.08.010 and RCW 77.36.030
10. A copy of this permit must be in the immediate possession of the person trapping pursuant to the permit.
11. A report of animals taken under this permit shall be submitted by the permittee to WDFW, Wildlife Conflict Program, PO Box 43141, Olympia, WA 98504, or specialtrapping@dfw.wa.gov within 10 days of the expiration date of the permit.
12. Airports must report annually within the issue month of their three year permits.
13. WDFW Law Enforcement Department will be tracking and may inspect permit locations for compliance of non-lethal measures and proper use of traps.

Issued by 
Kyla West, Wildlife Conflict Section

Date 1/1/2026

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DEPREDATION AT AIRPORTS

Permit Number: MB748313

Version Number: 6

Effective: 2026-01-01 **Expires:** 2026-12-31

Issuing Office:

Department of the Interior

U.S. FISH AND WILDLIFE SERVICE

MB Wild Take Unit
5275 Leesburg Pike
Falls Church, Virginia 22041-3803
MBPermits_take@fws.gov

Digitally signed by

JENNIFER URMSTON

Digitally signed by JENNIFER URMSTON
Date: 2026.02.13 11:41:15 -08'00'

Migratory Bird Permit Specialist

Permittee:

SNOHOMISH COUNTY AIRPORT
3220 100TH ST SW
EVERETT, WA 98204

Name and Title of Principal Officer:

Joshua Marcy AIRPORT DIRECTOR

Authority: Statutes and Regulations: 16 U.S.C 703-712 50 CFR Part 13, 50 CFR 21.100

Location where authorized activity may be conducted:

Snohomish County Airport property.
Records kept at address above.

Reporting requirements:

ANNUAL REPORT DUE: 1/31 You must submit an annual report to your Regional Migratory Bird Permit Office each year, even if you had no activity, by uploading it to ePermits. Form can be found at: https://fwsepermits.servicenowservices.com/fws Under "Search Applications" find your permit type and the Annual Report Form link is under the "Are there Reporting Requirements" section. Submit your completed report form in ePermits by navigating to the "My Permits and Requests" page section, select the "Permit Reports" tab and click on the Report link an associated with your Permit number and Year. Use the paperclip icon to upload a signed PDF of your form and any supplemental documentation.

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DEPREDATION AT AIRPORTS
Permit Number: MB748313
Version Number: 6
Effective: 2026-01-01 **Expires:** 2026-12-31

Authorizations and Conditions:

Last Full Review: 2024 **Next Full Review: 2029**

Migratory Bird Permit Office Contact: MBPermits_take@fws.gov

A. To resolve or prevent threats to human safety and/or aircraft safety at airports or airfields, you are authorized to take, temporarily possess, and transport the migratory birds specified below.

1. Additional authorization is required for bald eagles, golden eagles, and bird species federally or state listed as threatened or endangered (t/e) (FWS Endangered Species (http://www.fws.gov/endangered)).

Take of Birds of Conservation Concern (BCC) requires additional notification (see A(5) below). A list of BCC species can be found at: 2021 Birds of Concern (https://www.fws.gov/media/birds-conservation-concern-2021.pdf)

For information on the presence of bird species at your airport, we recommend using IPAC (https://ipac.ecosphere.fws.gov/).

2. Lethal Take:
up to 300 Migratory Birds (except eagles, t/e, and BCC species)

3. Active Nest Take (including egg destruction/addling):
up to 20 Migratory Bird nests (except eagles, t/e, and BCC species)
4. Trap-Relocate:
up to 50 Migratory Birds (except eagles, t/e, and BCC species)

5. Emergency Take:
You are authorized to exceed the take authorized in 2-4 above in emergency situations and/or to take BCC species. You must notify your Migratory Bird Permit Office (contact information above Condition A) within 48 hours and include the following information:

i. Emergency situation description, including date and time
ii. Species and number of bird(s) taken
iii. Method of take

A response from the office is not expected nor required. You will be contacted only if further

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coordination is appropriate.

6. To minimize the lethal take of migratory birds, you are required to continually apply non-lethal methods in conjunction with lethal control. All take must be done as part of an integrated wildlife damage management program that implements nonlethal management techniques. You may not use this authority for situations in which migratory birds are merely causing a nuisance.

7. Do not report the following activities under your Airport Depredation permit. If activities are conducted under a Depredation Order, Conservation Order, or other regulatory authorization or permit you should conduct activities in accordance with those authorizations and reporting requirements. Canada goose nests should be taken and reported under the Resident Canada Goose registration system (https://epermits.fws.gov/eRCGR/)).

B. Methods. You may use the following methods of take. The use of any of the below methods is at your discretion for each situation.

1. Firearms. Shotguns, rifles, and professional air rifles are authorized. Shotguns used must be no larger than 10-gauge and must be fired from the shoulder. Nontoxic ammunition (e.g. bullets and shot) must be used if humane and feasible. If nontoxic ammunition is not humane or feasible, lead ammunition may be used. If lead ammunition is used, bird remains must be disposed of in a manner that prevents further introduction of lead in the environment. Use of lead ammunition is prohibited over water. Firearm use must be in accordance with all other applicable laws and ordinances.

Paint ball guns may be used to haze birds but are not an authorized firearm for take. You may not use blinds, pits, or other means of concealment, decoys, duck calls, or other devices to lure or entice migratory birds into gun range.

2. Lethal and/or live traps. All trapping must be under humane and healthful conditions (50 CFR 13.41 and 50 CFR 21.6).

Pole traps (padded-jaw and Verbail-design) may be used to capture raptors when other reasonable and appropriate methods have been employed and fail to alleviate the problem. Pole traps used between sunrise and sunset must be checked at least every 2 hours. Pole traps used between sunset and sunrise must be checked at least once during the night, not including set-up and take-down. Checks may be in person, by camera, or by other remote-sensing technology such as trap transponders. During inclement weather (e.g., extreme precipitation or temperatures), pole traps must continuously monitored or closed. The Service recommends the tether on pole traps be long

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enough for raptors to land on the ground and stand on their feet.

Pole Trap Reporting Requirements

1. Injury or death due to pole trapping must be reported to your Migratory Bird Permit Office within 72 hours (contact information above Condition A).

2. Non-target capture in a pole trap must be reported to your Migratory Bird Permit Office within 72 hours (contact information above Condition A).

3. Annual Report: report each raptor captured with a pole trap, including target and non-target species, trap type (padded-jaw or Verbail set), the date taken, if injured or killed during trapping, and the final disposition (released, transferred including permit number of recipient, euthanized) of the bird (see MBPM-4, 2022).

Trap-and-euthanized birds count toward the lethal take authorized under Condition A of your permit. If birds are trapped and released, birds must be released in suitable habitat in an area where they are unlikely to pose a depredation threat. When appropriate, birds should be relocated a distance sufficient to minimize potential for return to the capture site. This permit does not authorize retaining birds in captivity longer than 24 hours. Additional state and/or tribal authorization may be required for release. The Service recommends banding or marking released raptors under a USGS Bird Banding permit prior to release.

If a bird is not appropriate for release to the wild, it may be transferred as non-releasable to an individual or entity authorized to receive live birds, such as for educational use or to a licensed falconer. Approval from your Migratory Bird Permit Office is required PRIOR to transferring birds. Transferred birds count toward the lethal take authorized under Condition A, as they are removed from the wild population. Contact your Migratory Bird Permit Office prior to placement to request authorization (contact information above Condition A).

3. Nest Take. Viable eggs may be oiled, addled, or destroyed. Eggs must be oiled using only 100% corn oil, a substance exempt from regulation by the Environmental Protection Agency. Eggs may be addled in any humane manner (see 6 below). Nests, including viable eggs, may be destroyed by any humane method, provided they are completely destroyed and eggs and/or nests are not retained after destruction.

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Report take as number of active nests (not number of eggs). Do not report inactive nests taken (nests with no viable eggs or chicks present). No federal authorization is required for the take of inactive migratory bird nests.

4. Registered animal drugs (excluding nicarbazin), pesticides, and repellents. Must be humane and used in accordance with label instructions. Additional state and/or tribal authorization may be required for use.

5. Falconry Abatement. Migratory birds may be killed by abatement falconry birds. Birds killed by falconry abatement count toward the lethal take authorized under Condition A. Additional state and/or tribal authorization may be required.

6. Any live birds trapped or otherwise in-hand must be in humane and healthful conditions (50 CFR 13.41 and 50 CFR 21.6). Birds euthanized must follow the American Veterinary Medical Association Guidelines on Euthanasia (https://www.avma.org/sites/default/files/2020-02/Guidelines-on-Euthanasia-2020.pdf).

C. Sick, injured, or orphaned migratory birds. You may possess and immediately transport any birds found sick, injured, or orphaned to a federally permitted rehabilitator or licensed veterinarian for care. You do not need to report these birds (50 CFR 21.76(a)), except:

Birds injured by your activities must be humanely euthanized or transferred immediately to a federally permitted migratory bird rehabilitator or a licensed veterinarian for medical care at the permittee's expense. You must report any birds injured by your activities on your Annual Report.

D. Salvage. Salvage activities are authorized under 50 CFR 21.16 Authorization—salvage (https://www.ecfr.gov/current/title-50/section-21.16). Any person may salvage migratory bird specimens under the conditions set forth in the regulation. The regulation includes conditions for timelines, record keeping, methods of disposal, and the additional requirements for salvage of bald eagle and golden eagle specimens and species listed as threatened or endangered under the Endangered Species Act.

For a list of threatened and endangered species in your state, visit the U.S. Fish and Wildlife Service's Threatened and Endangered Species System (TESS) at: Endangered Species (http://www.fws.gov/endangered/)

If you suspect birds were illegally killed or if five or more birds are found dead, you must notify the Service Office of Law Enforcement (see 50 CFR 10.22 (https://www.ecfr.gov/current/title-50/section-10.22) for contact information) prior to salvaging the birds and follow the instructions provided.

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E. Disposition of dead migratory birds. Migratory birds, nests, or eggs taken under this permit must be disposed of by one of the following:

1. Donated to an individual or entity authorized by permit or regulation to receive donated birds (i.e. scientific, educational, or tribal use);
2. Completely destroyed in accordance with local laws and ordinances;
3. Retained for diagnostic or personnel training purposes;
4. Retained and used as effigies; or
5. If the species is a migratory game bird and suitable for consumption, donated to a public charity.

F. Reporting.

Immediate Notification. You must immediately notify your Migratory Bird Permit Office at the contact information above Condition A about:

1. Emergency Take (Condition A(5))

Annual Report. You must submit an annual report (Form 3-202-9). You must report take by species (e.g. ring-billed gull, Canada goose) and method (e.g. kill, nest take, trap-release, trap-relocate, DRC-1339).

Pole Trapping. See Condition B(2) for additional pole trapping notification and reporting requirements.

G. Subpermittees. A subpermittee is an individual to whom you have provided written authorization to conduct some or all of the permitted activities in your absence. As the permittee, you are legally responsible for ensuring that your subpermittees are adequately trained and adhere to the terms of your permit. The following subpermittees are authorized: USDA/APHIS/Wildlife Services and Airport Personnel on file

In addition, any other person who is (1) employed by or under contract to you for the activities specified in this permit, or (2) otherwise designated a subpermittee by you in writing, may exercise the authority of this permit.

You and any subpermittees must carry a legible paper or electronic copy of this permit and display it upon request whenever you are exercising its authority. Subpermittees must be at least 18 years of age. You are responsible for maintaining current records of who you have designated as a subpermittee, including copies of any designation letters provided to individuals not named above.

H. You and any subpermittees must comply with the below Standard Conditions. These standard conditions are a continuation of your permit conditions and must remain with your permit. **These standard conditions are nationwide and may not be modified for individual permits.**

1. All of the provisions and conditions of the governing regulations at 50 CFR part 13 and 50 CFR part 21.100 are conditions of your permit. Failure to comply with the conditions of your permit could be cause for suspension of the permit. If you have questions regarding these conditions, refer to the

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regulations or, if necessary, contact your migratory bird permit issuing office. For copies of the regulations and forms, or to obtain contact information for your issuing office, visit: Migratory Birds Permit Types and Forms (https://www.fws.gov/program/migratory-bird-permit/permit-types-and-forms)

2. General conditions set out in Subpart B of 50 CFR 13, and specific conditions contained in Federal regulations cited above, are hereby made a part of this permit. All activities authorized herein must be carried out in accord with and for the purposes described in the application submitted. Continued validity, or renewal of this permit is subject to complete and timely compliance with all applicable conditions, including the filing of all required information and reports.

3. The validity of this permit is also conditioned upon strict observance of all applicable foreign, state, local tribal, or other federal law.

4. Valid for use by permittee named above.

5. Explosive Pest Control Devices (EPCDs) are regulated by the Bureau of Alcohol, Tobacco, Firearms, and Explosives (ATF). If you plan to use EPCDs, you require a Federal explosives permit, unless you are exempt under 27 CFR 555.141. Information and contacts may be found at Federal Firearms and Explosives License Types Fact Sheet (https://www.atf.gov/resource-center/fact-sheet/fact-sheet-federal-firearms-and-explosives-licenses-types)

6. If you encounter a migratory bird with a Federal band issued by the U.S. Geological Survey Bird Banding Laboratory, Laurel, MD, report the band number to the Bird Banding Laboratory (http://www.reportband.gov/).

7. You are responsible for obtaining appropriate, prior, written landowner permission for activity (take or release) of any migratory birds, nests, or eggs on lands where you are not the landowner or custodian.

8. You must maintain records as required in 50 CFR 13.46 and 50 CFR 21.100. All records relating to the permitted activities must be kept at the location indicated in writing by you to the migratory bird permit issuing office.

9. Acceptance of this permit authorizes the U.S. Fish and Wildlife Service to inspect any wildlife held, and to audit or copy any permits, books, or records required to be kept by the permit and governing

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regulations.

10. You may not conduct the activities authorized by this permit if doing so would violate the laws of the applicable State, county, municipal or tribal government or any other applicable law.

For suspected illegal activity, immediately contact USFWS Law Enforcement (https://www.fws.gov/program/office-of-law-enforcement/contact-us) 1-844-FWS-TIPS (397-8477).

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