

APPENDIX C
2011 and 2012 Field Forms

APPENDIX C

2011 Low-flow Groundwater Sampling Forms

Groundwater Gauging Forms



GROUNDWATER LEVEL DATA FORM

SITE NAME: Fort Totten FIELD STAFF: Page 1 of 1
Emily Pratt, Liz Martin
DATE: 5/4/11 PROJECT #: 10404-03

Well I.D.	Time	TOC Elevation (if known)	Depth to Bottom of Well (ft)	Depth to LNAPL (ft)	Depth to Water (ft)	Comments
MW-1	1023		33.03	ND	17.63	
MW-2	0913		25.98	ND	15.26	
MW-3	0857		31.10	ND	13.21	
MW-4R	0805		12.65	ND	5.97	
MW-5	0951		25.25	ND	18.52	

Measurement reference point: ☐ Ground Surface ☒ Top of Casing (TOC)

Weather Conditions: 50's F, raining, NW wind 0-12 mph.

Other Significant Observations:



GROUNDWATER LEVEL DATA FORM

SITE NAME: Fort Totten

Page 1 of 1
FIELD STAFF: Jason Raimondi, Emily Pratt

DATE: 5/9/11

PROJECT #: 10404

Well I.D.	Time	TOC Elevation (if known)	Depth to Bottom of Well (ft)	Depth to LNAPL (ft)	Depth to Water (ft)	Comments
MW-1	0841		33.05	NA	17.15	
MW-2	1049		26.02	NA	15.55	
MW-3	1158		31.13	NA	13.18	
MW-4	1307		12.67	NA	6.16	
MW-5	1512		25.29	NA	18.63	

Measurement reference point: ☐ Ground Surface ☒ Top of Casing (TOC)

Weather Conditions:

Other Significant Observations:

Monitoring Well Development Forms

WELL DEVELOPMENT LOG

WELL DEVELOPMENT LOG

Low-Flow Groundwater Sampling Forms



Time:	Temp. (°C) (± 3%)	pH (SU) (± 0.1)	Specific Conductance (umhos/cm) (± 3%)	Turbidity (NTUs) (±10% if >1)	D.O. (mg/l) (± 10%)	ORP (mV) (± 10)	Flow Rate (ml/min)	Static water Level	Color/ Clarity	Comments
9:10	14.10	5.98	334	1.18	8.76	210.6	242	19.6	clear	
9:20	13.53	5.99	330	1.68	8.33	195.8	20919	20.78	clear	
9:25	13.68	5.98	329	2.94	8.06	189.5	20919	22.86	clear	
9:30	13.74	5.99	330	3.89	8.17	185.3	21020	22.44	clear	
9:35	13.82	5.98	330	4.10	8.04	182.1	20919	22.96	clear	Re-Cal. Turbidity Sensor
9:40	13.76	5.95	329	0.99	7.82	179.4	164	23.12	clear	
9:45	13.89	5.92	329	1.47	7.15	175.9	162	23.36	clear	
9:50	14.14	5.92	330	0.60	7.48	174.6	162	23.46	clear	
9:55	14.07	5.93	331	0.78	7.37	172.3	162	23.55	clear	
10:00	14.15	5.99	330	0.48	7.41	177.8	164	23.64	clear	
	Parameters Stable									
10:10	Collect sample (JPR)									

[illegible]



LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

Well I.D.: MW-4

Date: 5/9/11

Well Depth (from T.O.C.) = 12.67 ft

Well Diameter (d) = 4 inches

Static Water Level (WL) = 6.16 ft
(from T.O.C.)

Screen Depth unk to unk Feet below grade
Sampler(s): Emily Pratt, Jason Raymond

Height of Water in Well (T):
T = depth (ft) - Static Water Level (ft)

T = 6.51 ft Well Volume: 4.23 x 3 = 12.69 (gallons)

Purging Device: peristaltic pump
Sampling Device: peristaltic pump
Pump Intake (depth below TOC): 11.5 Feet
Actual Purge Volume: 3.5 (Gallons)

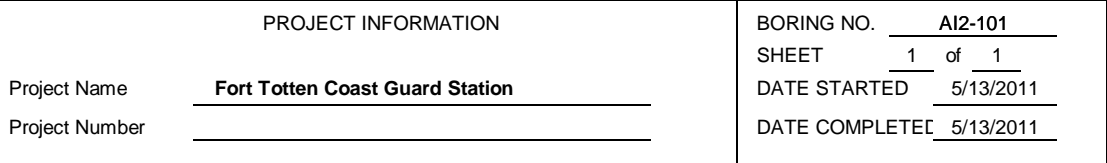
Time:	Temp. (°C) (± 3%)	pH (SU) (± 0.1)	Specific Conductance (umhos/cm) (± 3%)	Turbidity (NTUs) (±10% if >1)	D.O. (mg/l) (± 10%)	ORP (mV) (± 10)	Flow Rate (ml/min)	Static water Level	Color/ Clarity	Comments
<u>1315 EMP</u>										
<u>1315</u>	<u>14.21</u>	<u>6.28</u>	<u>1148</u>	<u>8.64</u>	<u>4.13</u>	<u>204.0</u>	<u>218</u>	<u>6.54</u>	<u>clear</u>	
<u>1320</u>	<u>14.55</u>	<u>6.84</u>	<u>1145</u>	<u>4.21</u>	<u>3.73</u>	<u>187.4</u>	<u>218</u>	<u>6.83</u>	<u>clear</u>	
<u>1325</u>	<u>14.53</u>	<u>6.86</u>	<u>1140</u>	<u>3.26</u>	<u>3.83</u>	<u>178.4</u>	<u>218</u>	<u>7.05</u>	<u>clear</u>	
<u>1330</u>	<u>14.41</u>	<u>6.87</u>	<u>1122</u>	<u>2.70</u>	<u>4.16</u>	<u>164.3</u>	<u>218</u>	<u>7.11</u>	<u>clear</u>	
<u>1335</u>	<u>14.50</u>	<u>6.88</u>	<u>1101</u>	<u>2.04</u>	<u>4.31</u>	<u>153.5</u>	<u>218</u>	<u>7.17</u>	<u>clear</u>	
<u>1340</u>	<u>14.43</u>	<u>6.88</u>	<u>1068</u>	<u>1.65</u>	<u>4.44</u>	<u>148.2</u>	<u>218</u>	<u>7.28</u>	<u>clear</u>	
<u>1345</u>	<u>14.48</u>	<u>6.88</u>	<u>1013</u>	<u>2.19</u>	<u>4.29</u>	<u>138.6</u>	<u>212</u>	<u>7.43</u>	<u>clear</u>	
<u>1350</u>	<u>14.38</u>	<u>6.86</u>	<u>991</u>	<u>1.62</u>	<u>4.40</u>	<u>137.2</u>	<u>206</u>	<u>7.47</u>	<u>clear</u>	
<u>1355</u>	<u>14.43</u>	<u>6.85</u>	<u>965</u>	<u>1.43</u>	<u>4.60</u>	<u>135.7</u>	<u>206</u>	<u>7.55</u>	<u>clear</u>	
<u>1400</u>	<u>14.53</u>	<u>6.83</u>	<u>958</u>	<u>1.57</u>	<u>4.63</u>	<u>134.2</u>	<u>192</u>	<u>7.60</u>	<u>clear</u>	
<u>1405</u>	<u>14.65</u>	<u>6.82</u>	<u>965</u>	<u>0.72</u>	<u>4.67</u>	<u>129.4</u>	<u>192</u>	<u>7.60</u>	<u>clear</u>	
<u>1410</u>	<u>14.80</u>	<u>6.81</u>	<u>968</u>	<u>0.19</u>	<u>4.66</u>	<u>128.7</u>	<u>192</u>	<u>7.62</u>	<u>clear</u>	
<u>1415</u>	<u>14.59</u>	<u>6.80</u>	<u>972</u>	<u>0.60</u>	<u>4.98</u>	<u>129.3</u>	<u>192</u>	<u>7.66</u>	<u>clear</u>	

Parameters Stable (EMP)

Collect sample at 1415

Collect DUP-1 at 1430

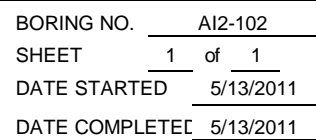
Soil Boring Logs



Boring Location	North of east end of Bayside Street
Drilling Method	Hand Auger
Drilling Equipment	Hand Auger
TOC Elevation (feet)	

Groundwater Levels		
Date	Time	Depth

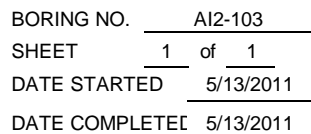
[illegible][illegible]



Boring Location	Northeast of Bldg. 624 (against the fence)
Drilling Method	Hand Auger
Drilling Equipment	Hand Auger
TOC Elevation (feet)	

Groundwater Levels		
Date	Time	Depth

[illegible][illegible]

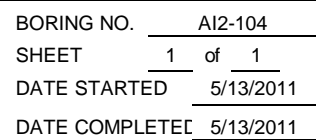


Boring Location	Northeast of Bayside Street
Drilling Method	Hand Auger
Drilling Equipment	Hand Auger
TOC Elevation (feet)	

Groundwater Levels		
Date	Time	Depth

[illegible]

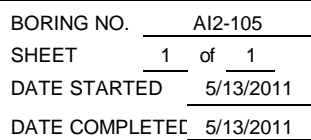
Last Update: 10/10/2007



Boring Location	North of Bldg 624
Drilling Method	Hand Auger
Drilling Equipment	Hand Auger
TOC Elevation (feet)	

Groundwater Levels		
Date	Time	Depth

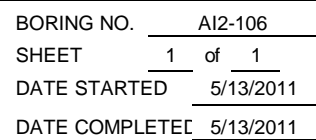
[illegible]



Boring Location	West of Bayside Street
Drilling Method	Hand Auger
Drilling Equipment	Hand Auger
TOC Elevation (feet)	

Groundwater Levels		
Date	Time	Depth

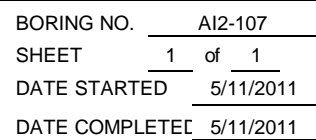
Notes:	
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Boring Location	west of former Bldg. 624
Drilling Method	Hand Auger
Drilling Equipment	Hand Auger
TOC Elevation (feet)	

Groundwater Levels		
Date	Time	Depth

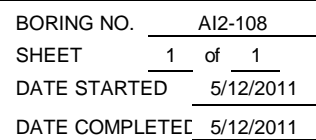
[illegible]



Boring Location	northwest of former Bldg. 624
Drilling Method	Hand Auger
Drilling Equipment	Hand Auger
TOC Elevation (feet)	

Groundwater Levels		
Date	Time	Depth

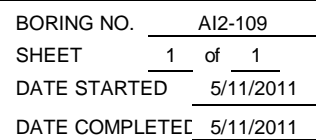
[illegible]



Boring Location	West of Bldg 624, east of Bayside Street
Drilling Method	Hand Auger
Drilling Equipment	Hand Auger
TOC Elevation (feet)	

Groundwater Levels		
Date	Time	Depth

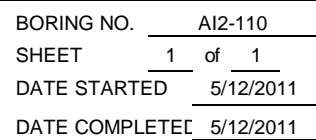
[illegible]



Boring Location	west-southwest of former Bldg. 624
Drilling Method	Hand Auger
Drilling Equipment	Hand Auger
TOC Elevation (feet)	

Groundwater Levels		
Date	Time	Depth

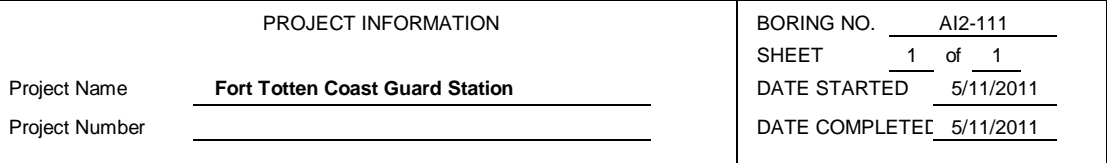
[illegible][illegible]



Boring Location	East of Bldg 264
Drilling Method	Hand Auger
Drilling Equipment	Hand Auger
TOC Elevation (feet)	

Groundwater Levels		
Date	Time	Depth

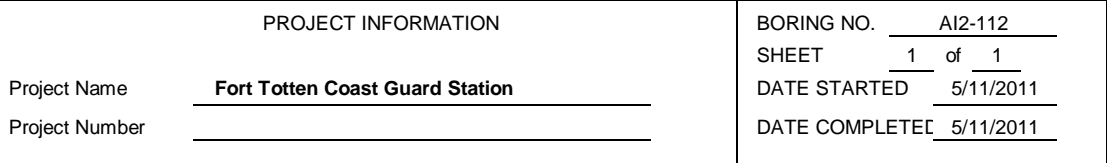
Notes:	1)
	2)
	3)
	4)



Boring Location	southwest of former Bldg. 624
Drilling Method	Hand Auger
Drilling Equipment	Hand Auger
TOC Elevation (feet)	

Groundwater Levels		
Date	Time	Depth

[illegible][illegible]

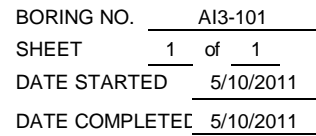


Boring Location	south corner of former Bldg. 624
Drilling Method	Hand Auger
Drilling Equipment	Hand Auger
TOC Elevation (feet)	

Groundwater Levels		
Date	Time	Depth

[illegible]

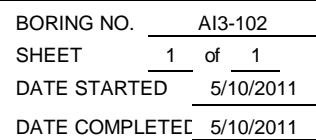
Notes:	
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Boring Location	East of Bldg 614
Drilling Method	Hand Auger
Drilling Equipment	Hand Auger
TOC Elevation (feet)	

Groundwater Levels		
Date	Time	Depth

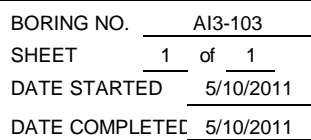
[illegible]



Boring Location	Northeast of Bldg. 612
Drilling Method	Hand Auger
Drilling Equipment	Hand Auger
TOC Elevation (feet)	

Groundwater Levels		
Date	Time	Depth

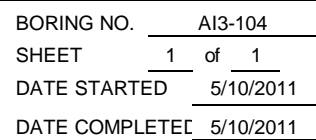
[illegible]



Boring Location	West of Bldg. 612
Drilling Method	Hand Auger
Drilling Equipment	Hand Auger
TOC Elevation (feet)	

Groundwater Levels		
Date	Time	Depth

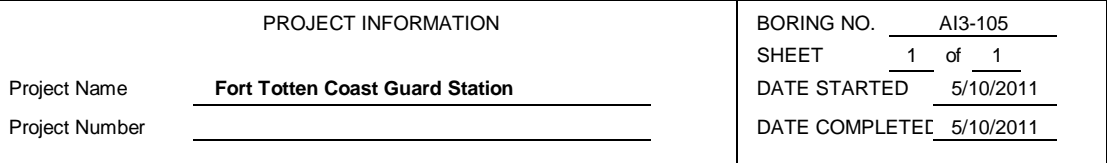
Notes:	1)
	2)
	3)
	4)



Boring Location	East of Bldg. 611 and Bldg. 612
Drilling Method	Hand Auger
Drilling Equipment	Hand Auger
TOC Elevation (feet)	

Groundwater Levels		
Date	Time	Depth

[illegible]

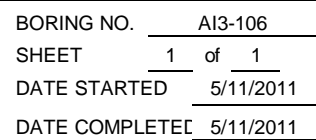


Boring Location	Beneath deck east of Bldg. 611
Drilling Method	Hand Auger
Drilling Equipment	Hand Auger
TOC Elevation (feet)	

Groundwater Levels		
Date	Time	Depth

[illegible]

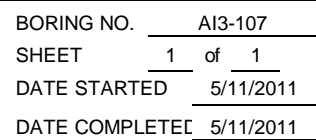
Last Update: 10/10/2007



Boring Location	West of Bldg. 611 (N of flag pole)
Drilling Method	Geoprobe
Drilling Equipment	Geoprobe 54LT
TOC Elevation (feet)	

Groundwater Levels		
Date	Time	Depth

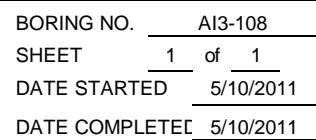
[illegible]



Boring Location	West of Bldg. 610 (W of flag pole)
Drilling Method	Geoprobe
Drilling Equipment	Geoprobe 54LT
TOC Elevation (feet)	

Groundwater Levels		
Date	Time	Depth

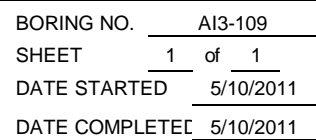
[illegible]



Boring Location	East of Bldg. 610
Drilling Method	Hand Auger
Drilling Equipment	Hand Auger
TOC Elevation (feet)	

Groundwater Levels		
Date	Time	Depth

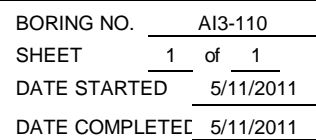
[illegible]



Boring Location	Top of slope east of Bldg. 610
Drilling Method	Hand Auger
Drilling Equipment	Hand Auger
TOC Elevation (feet)	

Groundwater Levels		
Date	Time	Depth

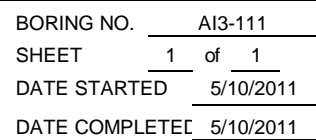
[illegible]



Boring Location	West of Bldg. 110
Drilling Method	Geoprobe
Drilling Equipment	Geoprobe 54LT
TOC Elevation (feet)	

Groundwater Levels		
Date	Time	Depth

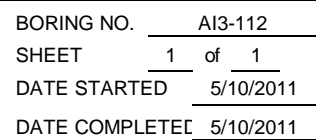
[illegible]



Boring Location	Southwest of Bldg. 610
Drilling Method	Hand Auger
Drilling Equipment	Hand Auger
TOC Elevation (feet)	

Groundwater Levels		
Date	Time	Depth

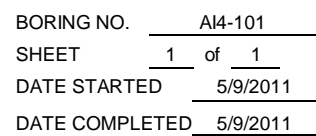
[illegible]



Boring Location	Southeast of Bldg. 610
Drilling Method	Hand Auger
Drilling Equipment	Hand Auger
TOC Elevation (feet)	

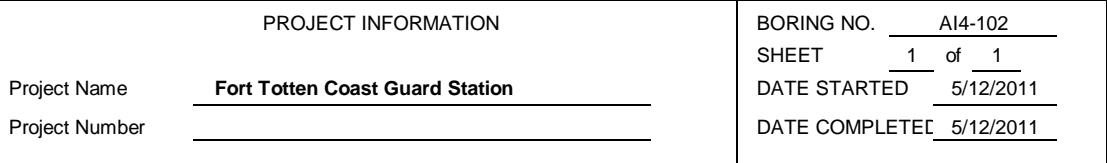
Groundwater Levels		
Date	Time	Depth

[illegible]



Groundwater Levels		
Date	Time	Depth

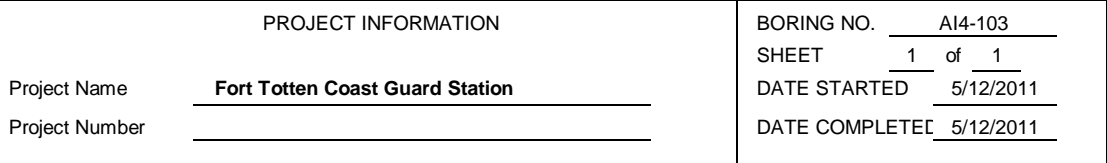
[illegible]



Boring Location	Northeast corner of Bldg. 625
Drilling Method	Hand Auger
Drilling Equipment	Hand Auger
TOC Elevation (feet)	

Groundwater Levels		
Date	Time	Depth

[illegible][illegible]

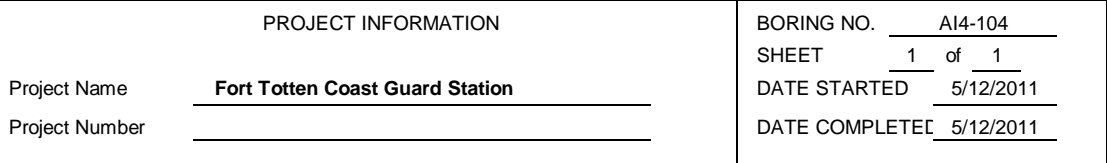


Boring Location	East of Bldg. 625
Drilling Method	Hand Auger
Drilling Equipment	Hand Auger
TOC Elevation (feet)	

Groundwater Levels		
Date	Time	Depth

[illegible]

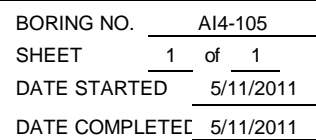
Log A14-103



Boring Location	South of Bldg. 625
Drilling Method	Hand Auger
Drilling Equipment	Hand Auger
TOC Elevation (feet)	

Groundwater Levels		
Date	Time	Depth

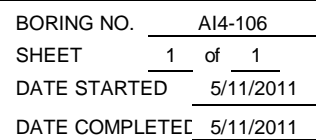
[illegible][illegible]



Boring Location	southeast of Bldg 625
Drilling Method	Hand Auger
Drilling Equipment	Hand Auger
TOC Elevation (feet)	

Groundwater Levels		
Date	Time	Depth

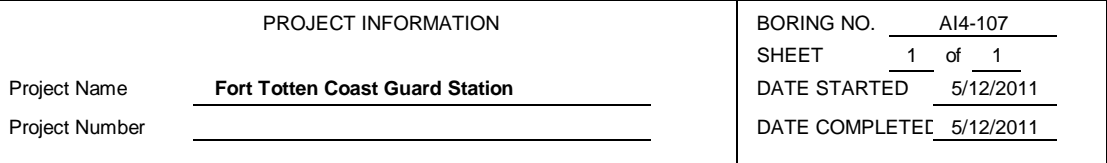
[illegible]



Boring Location	east of Bldg. 625
Drilling Method	Hand Auger
Drilling Equipment	Hand Auger
TOC Elevation (feet)	

Groundwater Levels		
Date	Time	Depth

[illegible]

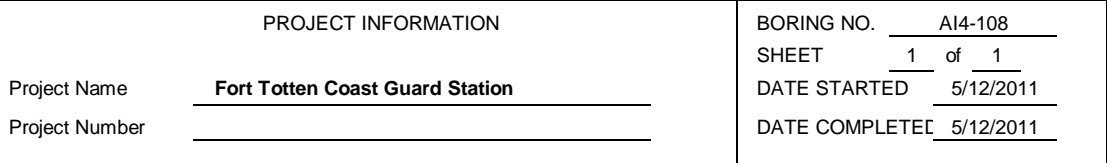


Boring Location	East side of Bayside Street
Drilling Method	Hand Auger
Drilling Equipment	Hand Auger
TOC Elevation (feet)	

Groundwater Levels		
Date	Time	Depth

[illegible]

Log A14-107

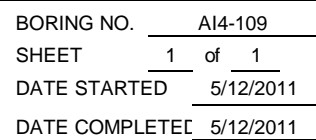


Boring Location	Ctr of field between Bldg 625 and Abbott
Drilling Method	Hand Auger
Drilling Equipment	Hand Auger
TOC Elevation (feet)	

Groundwater Levels		
Date	Time	Depth

[illegible]

Last Update: 10/10/2007

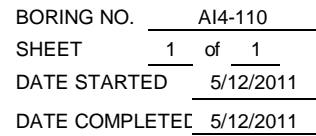


Boring Location	North of Former Bldg. 609
Drilling Method	Hand Auger
Drilling Equipment	Hand Auger
TOC Elevation (feet)	

Groundwater Levels		
Date	Time	Depth

[illegible]

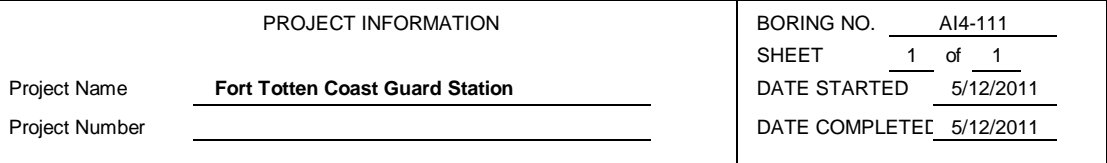
Last Update: 10/10/2007



Boring Location	Corner of Bayside and Abbott Streets
Drilling Method	Hand Auger
Drilling Equipment	Hand Auger
TOC Elevation (feet)	

Groundwater Levels		
Date	Time	Depth

[illegible]

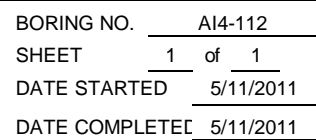


Boring Location	west of former Bldg. 609
Drilling Method	Hand Auger
Drilling Equipment	Hand Auger
TOC Elevation (feet)	

Groundwater Levels		
Date	Time	Depth

[illegible]

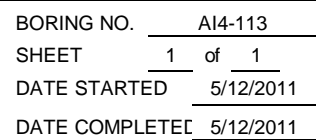
Last Update: 10/10/2007



Boring Location	northeast of Fmr Bldg. 609
Drilling Method	Hand Auger
Drilling Equipment	Hand Auger
TOC Elevation (feet)	

Groundwater Levels		
Date	Time	Depth

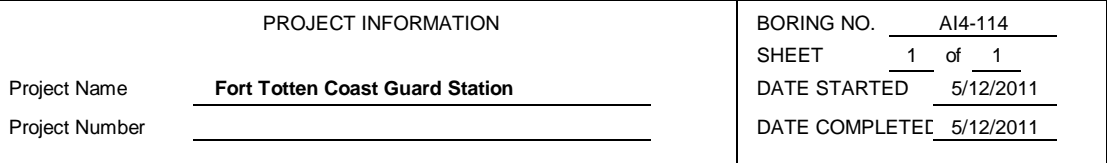
[illegible]



Boring Location	SW corner of former Bldg. 609
Drilling Method	Hand Auger
Drilling Equipment	Hand Auger
TOC Elevation (feet)	

Groundwater Levels		
Date	Time	Depth

[illegible]

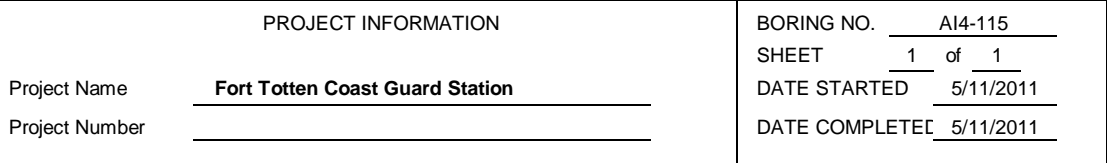


Boring Location	SW corner of former Bldg. 609
Drilling Method	Hand Auger
Drilling Equipment	Hand Auger
TOC Elevation (feet)	

Groundwater Levels		
Date	Time	Depth

[illegible]

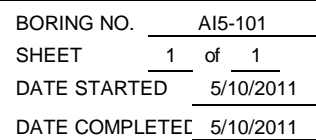
Last Update: 10/10/2007



Boring Location	southeast corner of former Bldg. 609
Drilling Method	Hand Auger
Drilling Equipment	Hand Auger
TOC Elevation (feet)	

Groundwater Levels		
Date	Time	Depth

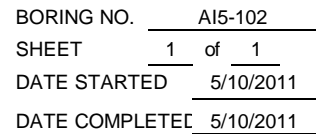
[illegible][illegible]



Boring Location	northeast side of Bldg. 615
Drilling Method	Geoprobe
Drilling Equipment	Geoprobe 54LT
TOC Elevation (feet)	

Groundwater Levels		
Date	Time	Depth

Notes:	1)
	2)
	3)
	4)



Boring Location	northeast side of Bldg. 615
Drilling Method	Geoprobe
Drilling Equipment	Geoprobe 54LT
TOC Elevation (feet)	

Groundwater Levels		
Date	Time	Depth

[illegible]



PROJECT INFORMATION

Project Name **Fort Totten Coast Guard Station**

Project Number

BORING NO. AI5-104

SHEET 1 of 1

DATE STARTED 5/10/2011

DATE COMPLETED 5/10/2011

Boring Co.	<u>Tristate Drilling</u>
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Driller	Wayne Bolger
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Logged By Emily Pratt

Checked By Larry Pannell

Boring Location East side between Bldg 615 and Bldg 614

Drilling Method	Geoprobe
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Drilling Equipment	<u>Geoprobe 54LT</u>
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TOC Elevation (feet)

Groundwater Levels

Date	Time	Depth
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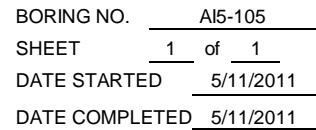
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[illegible]

Notes:

- 1)
- 2)
- 3)
- 4)

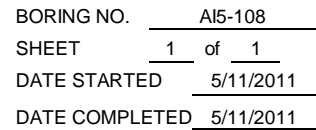


Boring Location	East side between Bldg 615 and Bldg 614
Drilling Method	Geoprobe
Drilling Equipment	Geoprobe 54LT
TOC Elevation (feet)	

Groundwater Levels		
Date	Time	Depth

[illegible]

Last Update: 10/10/2007



Boring Location	east wall btwn Bldg 614 and Bldg 615
Drilling Method	Geoprobe
Drilling Equipment	Geoprobe 54LT
TOC Elevation (feet)	

Groundwater Levels		
Date	Time	Depth

[illegible]



PROJECT INFORMATION

Project Name **Fort Totten Coast Guard Station**

Project Number

BORING NO. AI5-109

SHEET 1 of 1

DATE STARTED 5/10/2011

DATE COMPLETED 5/10/2011

Boring Co.	<u>Tristate Drilling</u>
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Driller	Wayne Bolger
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Logged By	Emily Pratt
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Checked By Larry Pannell

Boring Location northeast corner of Bldg 614

Drilling Method	Geoprobe
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Drilling Equipment	Geoprobe 54LT
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TOC Elevation (feet)

Groundwater Levels

Date	Time	Depth
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[illegible]

Notes:

- 1)
- 2)
- 3)
- 4)

APPENDIX C

2012 Low-flow Groundwater Sampling Forms

Well I.D.: MW-4R

Date: 11/28/12

Well Depth (from T O C) = 12.75 ft soft bottom

Well Diameter (d) = 4 inches

Static Water Level (WL) = 7.61 ft roots on water level meter
(from T.O.C.)

Screen Depth 4.0K to 4.0K Feet below grade
Sampler(s): K. Thomas

Height of Water in Well (T)

pumpstart 0820 130 240ml/min

$$T = \frac{\text{depth (ft)}}{\text{Static Water Level (ft)}}$$

Purging Device: peristaltic pump

$$T = \underline{12.75} - \underline{7.61}$$

Sampling Device: recistaltic pump

T = 5.14 ft Well Volume: 3.5 (gallons)

Pump Intake (depth below TOC): 10 Feet

Actual Purge Volume:	11	(Gallons)
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[illegible]

[illegible]