

## Daily Field Log

Site Name: Former Wurtsmith AFB  
 Date: 12-03-21  
 Project Number: 60514613  
 Field Staff: Josh W

Time	Observation/Note
07:30	AECOM onsite at Aerostar field office + Daily tailgate
07:45	Mobilization to BOA WURV027
07:55	Cascade set up rig and Aerostar set up equipment, AECOM in vehicle sorting and filling out paperwork for the day, direct line of sight maintained on all field employees
08:05	Cascade began tripping rods out on WURV027 for decon
08:09	Aerostar in their vehicles, direct line of sight on drillers maintained
08:17	Cascade began drilling on WURV027 Cascade released the screen on WURV027, Aerostar did not check for water down rods prior, Screen 68-71 ft
08:35	Aerostar began peristaltic purging on WURV027, Purge rate is 800 $\frac{mc}{min}$
08:45	AECOM in vehicle for check-in with Jeremiah, Aerostar also in vehicle
09:01	Aerostar measured turbidity as 561 NTU's
09:02	Aerostar measured turbidity as 668 NTU's, looked up flow cell
09:08	Aerostar measured turbidity as 697 NTU's
09:10	Aerostar measured turbidity as 682 NTU's
09:15	Cascade began tripping rods out for decon and to chip in
09:27	AECOM offsite

# Daily Field Log

Site Name: Former Wurtsmith AFB  
Date: 12-03-21  
Project Number: 60514613  
Field Staff: Wls Stambaugh

Time	Observation/Note
0730	AECOM arrive at Aerostar Field office, daily tailgate/safety meeting
0745	Update from Noel on today's agenda, Rockwater will not be running soil or VAS, Cascade will have both rigs running
0750	AECOM mob to WURV5019 to provide oversight for VAS sampling
0755	Cascade begins pushing to 70.0ft bgs
0815	Cascade uses spaghetti rod to open the screen, Aerostar begins setting up for purging
0900	Aerostar collects 70.0ft bgs VAS sample and begins demob of WURV5019
0935	AECOM off site and mob back to Grand Rapids office
<p>End of Report 12-03-21</p>	

Wls Stambaugh

## Daily Field Log

Site Name: Former Wurtsmith AFB  
 Date: 12-02-21  
 Project Number: 60514613  
 Field Staff: Josh W.

Time	Observation/Note
07:30	AECOM onsite at Aerostar field office
07:50	Mobilization to BOA WURV032 and WURV034, teams will push down to 70 ft in an attempt to hit clay and see if there is water yielded by the clay layer
07:52	Noel informed me there has not been word yet on whether they are spiking their samples before centrifuging yet, will let me know when they hear back
08:05	Both teams setting up rigs and field equipment
08:15	Cascade began direct-push on WURV032
08:26	Cascade unlocked screen on WURV032, Aerostar did not check for water down rods prior
08:33	Aerostar began peristaltic pumping on WURV032
08:41	77 ft bgs did not yield water on WURV032, pulled up 2 ft
08:51	Pump did not yield water, pulled up to 70-73 ft bgs and began pumping again
09:10	Cascade pulled rods up another foot on WURV032
09:17	WURV034 team is getting water at 73 ft bgs
09:18	Cascade pulled rods up another foot on WURV032
09:28	Cascade pulled rods up another foot on WURV032 67-70
09:48	Aerostar used WLM to tag water level at 22 ft bgs
10:14	Cascade began tripping rods out on WURV032 for decon, could not get water 67-70 ft bgs, screen was covered in clayey sediment after being pulled out
10:20	Both WURV032 and WURV034 teams prep for mobilization
10:28	Aerostar received word to try again on WURV032

## Daily Field Log

Site Name: Former Wurtsmith AFB  
 Date: 12-02-21  
 Project Number: 60514613  
 Field Staff: Josh W.

Time	Observation/Note
10:30	AECOM in vehicle while Cascade continues decon and preps to push down, Aerostar also in vehicle maintained direct lines of sight on rig
10:43	Cascade began drilling on WURV5032
11:02	Aerostar began peristaltic purging on WURV5032 70 - 73 ft bgs
11:15	AECOM in vehicle for phone call, Cascade and Aerostar setting up on WURV5027
11:25	Cascade began drilling on WURV5027, screen 16-19 ft bgs
11:32	Cascade used WLM to tag water level at <del>18.2</del> ft bgs - 18.2
11:34	<del>Cascade will push</del> Aerostar will attempt to pump
11:39	Aerostar began peristaltic purging on WURV5027, sporadic flow, Aerostar decided to have them push down to 21 ft bgs and attempt again, AECOM in vehicle warming up during push, direct line of sight maintained
11:52	Aerostar tagged water level using WLM at 18.2 ft bgs
11:56	Aerostar began peristaltic purging on WURV5027
12:11	Aerostar measured turbidity as 213 NTU's, hooked up flow cell
12:16	Aerostar measured turbidity as 130 NTU's
12:20	Aerostar measured turbidity as 84.4 NTU's
12:25	Cascade began dripping rods out for decon, AECOM in vehicle warming up as well as Aerostar
12:28	Drillers began drilling on WURV5027 down to 31 ft bgs
12:38	Aerostar began peristaltic purging on WURV5027
12:42	Aerostar measured purge rate as 700 $\frac{mL}{min}$
12:45	Aerostar, AECOM, and Cascade in vehicles while purging
12:53	Aerostar measured turbidity as over 1100 NTU's
13:11	Aerostar measured turbidity as 772 NTU's

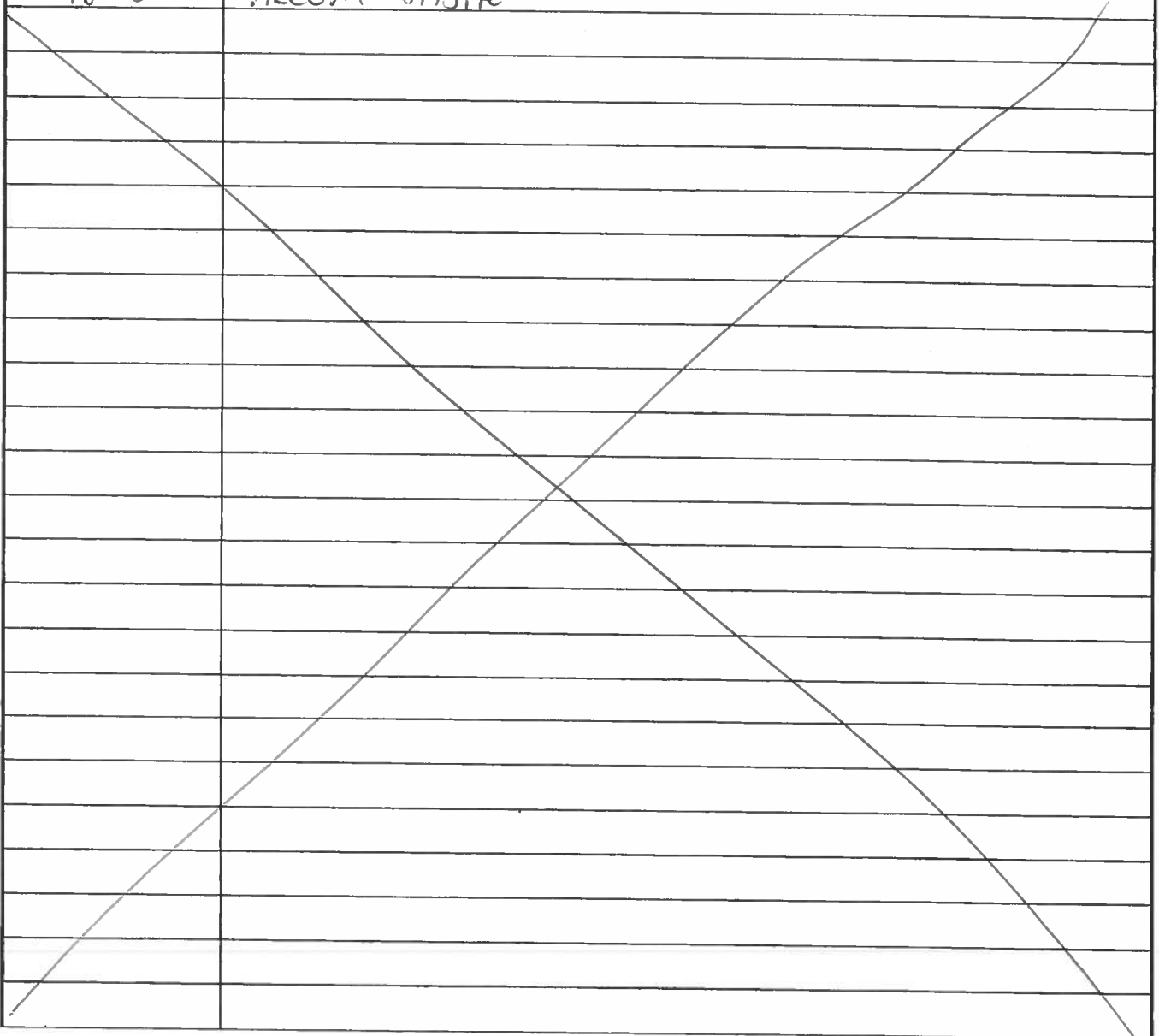
## Daily Field Log

Site Name: Former Wurtsmith AFB  
 Date: 12-02-21  
 Project Number: 6051613  
 Field Staff: Josh W.

Time	Observation/Note
13:15	Aerostar measured turbidity as 609 NTU's
13:28	Cascade began drilling down to 41 ft bgs, AECOM in vehicle to warm up while preparing sampling <sup>(JW)</sup> gear labels
13:35	Cascade unlocked Screen on WURVS027, Aerostar did not check for Water down rods prior
13:40	Aerostar began peristaltic purging on WURVS027, flow rate at 700 $\frac{mL}{min}$
13:59	Aerostar measured turbidity as 766 NTU's, hooked up flow cell
14:05	Aerostar measured turbidity as 809 NTU's
14:06	Aerostar measured turbidity as 775 NTU's
14:15	AECOM in vehicle for phone call with Wes (AECOM), drillers tripping out rods for decon
14:19	Cascade began direct-push on WURVS027
14:32	Aerostar began peristaltic purging on WURVS027 48-51 ft bgs flow rate is 700 $\frac{mL}{min}$
14:35	Aerostar, AECOM, and Cascade in vehicles while purging, direct line of sight maintained
14:50	Aerostar measured turbidity as 513 NTU's, hooked up flow cell
14:56	Aerostar measured turbidity as 599 NTU's
15:05	Cascade began tripping rods out on WURVS027, AECOM in vehicle to warm up while filling out sample labels
15:18	Aerostar took equipment blank on Screen
15:20	Cascade began drilling on WURVS027
15:35	Aerostar began peristaltic purging on WURVS027
15:41	Aerostar measured purge rate as 500 $\frac{mL}{min}$
16:12	Cascade began packing up Aerostar measured turbidity as over 1100 NTU's

# Daily Field Log

Site Name: Former Wurtsmith AFB  
Date: 12-02-21  
Project Number: 60514613  
Field Staff: Josh W.

Time	Observation/Note
16:30	Aerostar measured turbidity as 1080, hooked up flow cell
16:36	Aerostar measured turbidity as over 1100 NTUs
16:45	Aerostar measured turbidity as 970 NTUs
16:50	Aerostar packing up sampling equipment
16:55	AECOM offsite
	

## Daily Field Log

Site Name: Former Wurtsmith AFB  
 Date: 12-02-21  
 Project Number: 60514613  
 Field Staff: WES Stambaugh

Time	Observation/Note
0730	AECOM on site at Aerostar Field office, daily tailgate/safety meeting
0805	Aerostar and Rockwater mob to Alert Aircraft Area to begin direct push on WURSB024
0810	Rockwater warming up Geoprobe
0845	<del>Aerostar and Rockwater begin direct push on WURSB024</del> WPS
0850	Bathroom break
0910	Aerostar and Rockwater begin direct push on WURSB024
0935	Rockwater chips in bentonite and demobs WURSB024, mob to WURSB025
0945	Aerostar and Rockwater begin direct push on WURSB025
1005	Rockwater chips in bentonite and demobs WURSB025, mob to WURSB028
<del>1030</del> <sup>WPS</sup> 1025	Aerostar and Rockwater begin direct push on WURSB028
1100	Rockwater chips in bentonite and demobs WURSB028, mob to WURSB164, WES (Aerostar) on site for consult, Aerostar will take extra sample from 8.0-10.0ft bgs (directly above perched clay layer)
1105	Rockwater bathroom break
1130	Rockwater return from bathroom break, Aerostar and Rockwater begin direct push on WURSB164
1200	Rockwater chips in bentonite and demobs WURSB164, mob to WURSB165, Lunch Break
1230	Return from Lunch break, Aerostar and Rockwater begin direct push on WURSB165
1310	Rockwater chips in bentonite and demobs WURSB165, mob to WURSB013
1330	Aerostar and Rockwater begin direct push on WURSB013

*WES*

## Daily Field Log

Site Name: Former Wurtsmith AFB  
 Date: 12-02-21  
 Project Number: 60514613  
 Field Staff: Wes Stambaugh

Time	Observation/Note
<del>1340</del>	<del>Rockwater encountered refusal from CIPs</del>
1405	Rockwater chips in bentonite and drops WURS3013, mob back to Aerostar Field Office
1410	AECOM mob to WURV5019 to observe VAS sampling, molly. (Aerostar) has pushed to 40.0-50.0ft bgs begin purging 50.0ft bgs @ 1406
1520	Cascade begins pushing down to 60.0ft bgs
1540	Aerostar begins purging at 60.0ft bgs
1646	Aerostar takes VAS sample from 57.0-60.0ft bgs, begin packing up for the day, pushing to 70.0ft bgs tomorrow
1650	AECOM off site
<div style="font-size: 2em; transform: rotate(-30deg); opacity: 0.5;">             End of Report              12-02-21           </div>	

*Wes Stambaugh*



## Daily Field Log

Site Name: Former Hurt Smith AFB  
 Date: 12-07-21  
 Project Number: 60514613  
 Field Staff: Josh W.

Time	Observation/Note
07:05	AECOM onsite at Aerostar field office
07:30	checked in with Noel, Noel told us which boring IDs are being used to correlate depth of clay to the VAS borings completed 11-30-21, noted on respective VAS logs
07:48	Aerostar, AECOM, and Cascade mobilized to WURVS032, and WURVS034, AECOM warming up in vehicles while setting up
08:10	Cascade began hand augering on WURVS032
08:20	Cascade is warming up rig, informed by Aerostar that WURVS019 from 11-30-21 will be completed at a later date as Aerostar had to book airport escort for today
08:27	Cascade began drilling on WURVS032, pushed down to 20 ft bgs then pulled rods up so screen is 14-17 ft bgs
08:41	Aerostar began peristaltic purging on WURVS032, flow rate is $900 \frac{ml}{min}$
08:48	Aerostar hooked up flow cell on WURVS032
08:55	Aerostar measured turbidity as 244 NTUs
08:53	Aerostar measured turbidity as 42 NTUs
08:55	Aerostar measured turbidity as 34.3 NTUs
09:00	Cascade began tripping rods out on WURVS032 for decon
09:13	Aerostar began peristaltic purging on WURVS032, screen 24-27 ft bgs
09:22	Aerostar measured turbidity as 1050 NTUs, flow rate is $850 \frac{ml}{min}$
09:29	Aerostar measured turbidity as 820 NTUs
09:38	Aerostar measured turbidity as 631 NTUs, hooked up flow cell
09:49	Aerostar measured turbidity as 515 NTUs

## Daily Field Log

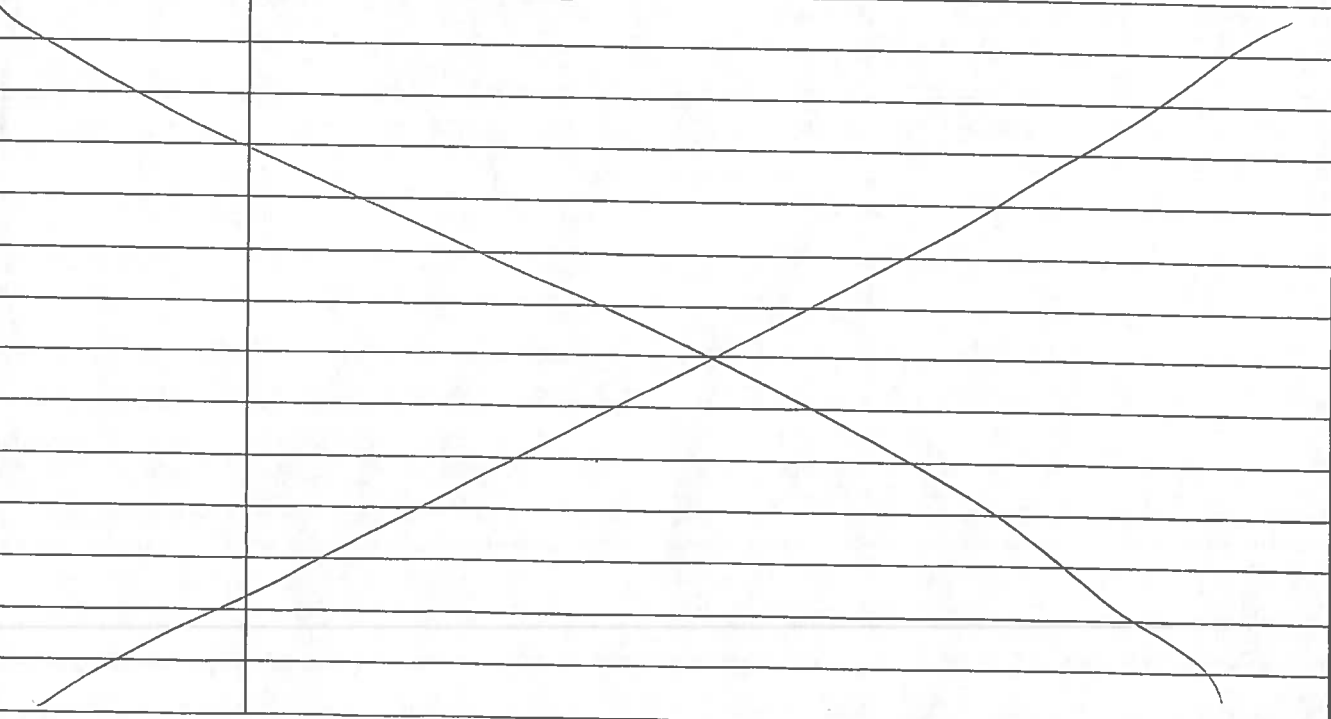
Site Name: Farmer Wurtsmith AFB  
 Date: 12-01-21  
 Project Number: 60514613  
 Field Staff: Jash W.

Time	Observation/Note
09:51	Aerostar measured turbidity as 419 NTUs
10:00	Cascade began tripping out rods for decon, Aerostar and AECOM in vehicles warming up, direct lines of sight maintained
10:04	Cascade began drilling on WURVS032
10:08	Cascade released screen on WURVS032, Aerostar did not check for water down rods prior
10:14	Aerostar began peristaltic purging on WURVS032, 34-37 ft bgs, flow rate is 800 $\frac{\text{mL}}{\text{min}}$
10:35	Aerostar measured turbidity as 861 NTUs
10:49	Aerostar hooked up flow cell
10:51	Aerostar measured turbidity as 921 NTUs
10:52	Aerostar measured turbidity as 879 NTUs
10:55	AECOM in vehicle for work phone call
11:03	Cascade began drilling on WURVS032
11:09	Cascade released screen 44-47 ft bgs
11:20	Jeremiah called for check-in, AECOM in vehicle
11:47	Aerostar measured turbidity as 100 NTUs
12:06	Aerostar measured turbidity as 950 NTUs
12:11	Aerostar measured turbidity as 715 NTUs
12:17	Cascade began tripping rods out on WURVS032
12:19	AECOM and Aerostar in vehicles, direct line of sight on rig
12:28	Cascade began drilling down to 57 ft bgs on WURVS032
12:42	Aerostar began peristaltic purging on WURVS032, AECOM and Aerostar in vehicles warming up while purging, direct lines of sight maintained on rig
12:47	Aerostar measured turbidity over 1100 NTUs

## Daily Field Log

Site Name: Former Wurtsmith AFB  
 Date: 12-01-21  
 Project Number: 60514613  
 Field Staff: Josh W.

Time	Observation/Note
13:00	Aerostar measured turbidity as 846 NTU's on WURV5032
13:09	Aerostar measured turbidity as 737 NTU's, AECOM and Aerostar and Cascade in vehicles while purging, direct lines of sight maintained on rig
13:38	Aerostar measured turbidity as over 1100 NTU's
14:02	Aerostar measured turbidity as 931 NTU's
14:06	Aerostar measured turbidity as 780 NTU's
14:08	Aerostar measured turbidity as 763 NTU's
14:12	Cascade began tripping rods out on WURV5032 for decom
14:26	Cascade began drilling on WURV5032
14:40	Aerostar began peristaltic purging on WURV5032 64-67 ft bgs
15:58	Aerostar measured turbidity as 542 NTU's
16:20	Both rigs packing up for the day
16:35	AECOM off site



## Daily Field Log

Site Name: Former Wurtsmith AFB  
 Date: 12-01-21  
 Project Number: 60514613  
 Field Staff: Wes Starbough

Time	Observation/Note
<del>0730</del> 0730	AECOM arrive at Aerostar Field office; daily tailgate/safety meeting
0745	Conversation with Noel about revisiting soil borings in the Alert Aircraft Area; revisiting 14 different soil borings to get deeper samples, the DTW that was originally tagged was perched water; Rockwater will push down 2' offset from original location
0750	Aerostar and Rockwater on hold for soil borings to wait for new alternator on Geoprobe; AECOM mob to hotel to work on photolog while on hold
0945	AECOM mob back to Aerostar Field office; Aerostar and Rockwater mob to Alert Aircraft Area to run soil borings, all holes planned to run to 2' offset bgs
1025	Aerostar and Rockwater begin direct push on WURS3022
1045	Rockwater chips in bentonite and demobs WURS3022, mob to WURS3020
1100	Aerostar and Rockwater begin direct push on WURS3020
1130	Rockwater chips in bentonite and demobs WURS3020; mob to WURS3019; phone call check-in with Jeremiah (in car)
1150	Aerostar and Rockwater begin direct push on WURS3019
1155	Lunch break; Noel on site at WURS3019
1230	Return from lunch break; Rockwater demobs WURS3019, mob to WURS3018
1240	Rockwater and Aerostar begin direct push on WURS3018
1315	Rockwater chips in bentonite and demobs WURS3018, mob to WURS3017; bathroom break
1335	Return from bathroom break
1340	Aerostar and Rockwater begin direct push on WURS3017
1405	Rockwater chips in bentonite and demobs WURS3017, mob to WURS3016
1430	Aerostar and Rockwater begin direct push on WURS3016

*Wes Starbough*

# Daily Field Log

Site Name: Former Wurtsmith AFB  
Date: 12-01-21  
Project Number: 6Q514613  
Field Staff: vls stambaugh

Time	Observation/Note
1455	Rockwater chips in bentonite and demobs WURS3016; mob to WURS3012
1505	Aerostar and Rockwater begin direct push on WURS3012
1530	Rockwater chips in bentonite and demobs WURS3012, mob to WURS3023
1545	Aerostar and Rockwater begin direct push on WURS3023
1605	Rockwater chips in bentonite and demobs WURS3023, mob back to Aerostar field office; AGCOM offsite
End of Report 12-01-21	



## Daily Field Log

Site Name: Former Worksmith AFB  
 Date: 11-30-21  
 Project Number: 60514613  
 Field Staff: Josh Walker

Time	Observation/Note
09:34	AECOM onsite at WURV5020, Aerostar just pushed down and began peristaltic purging on interval 19 ft/hy
09:40	Have very low flow, sent cascade to grab another peri-pump (JW) masterflex tubing
09:58	Aerostar reattached masterflex and began pumping again at 700 $\frac{ml}{min}$
10:02	Aerostar measured turbidity at 44.3 NTUs
10:05	Aerostar hooked up flow cell and began purging again
10:09	Aerostar measured turbidity as 13.8 NTUs, Aerostar mentioned the YSI readings don't need to be stable, just need to record data twice
10:12	Aerostar measured turbidity as 12.4 NTUs, prepped for sample
10:15	Cascade began tripping rods out for decon
10:25	AECOM in vehicle for call with wes (AECOM)
10:30	AECOM out of vehicle, Aerostar and cascade putting tubing down WURV5020
10:35	Aerostar began peristaltic purging on WURV5020, did not check for water down pad prior to releasing the screen
10:37	Aerostar measured purgerate as 600 $\frac{ml}{min}$
10:42	Aerostar measured turbidity as over 1100 NTUs
10:59	Aerostar measured turbidity as 886 NTUs, hooked up flow cell
11:06	Aerostar measured turbidity as 670 NTUs
11:08	Aerostar measured turbidity as 545 NTUs
11:13	AECOM in vehicle to warm up while sitting out paper work, direct-line of sight on field crew maintained

## Daily Field Log

Site Name: Former Wurtsmith AFB  
 Date: 11-30-21  
 Project Number: 60514613  
 Field Staff: Josh W.

Time	Observation/Note
11:15	Cascade began tripping rods out on WURUS020 for decon
11:23	Cascade began drilling on WURUS020
11:30	Cascade released Screen, Aerostar did not check for water down the rods prior
11:38	Aerostar began peristaltic purging on the 3rd interval
11:47	Aerostar measured Flow rate as 600 $\frac{ml}{min}$
11:53	Aerostar measured turbidity as 613 NTU's
11:54	Aerostar measured turbidity as 594 NTU's and hooked up flow cell
12:02	Aerostar measured turbidity as 710 NTU's
12:15	Aerostar measured turbidity over 1100 NTU's, Noel informed me that he has received permission from the airforce and lab they use to centrifuge their samples. From now on they can sample after turbidity falls below 1000 NTU's and will collect samples after 1 hr of purging, at maximum.
12:21	Aerostar measured turbidity over 1100 NTU's
12:29	Aerostar measured turbidity over 1100 NTU's, AECOM and Aerostar in vehicles to warm up
12:38	Aerostar measured turbidity as 1100 NTU's
12:42	Aerostar measured turbidity as 768 NTU's, will sample
12:50	Cascade began tripping rods out of WURUS020 for decon
13:07	Cascade released No Screen on WURUS020 before Aerostar <sup>(JW)</sup> Aerostar did not check for water in rods before hand
13:11	Aerostar began peristaltic purging on WURUS020

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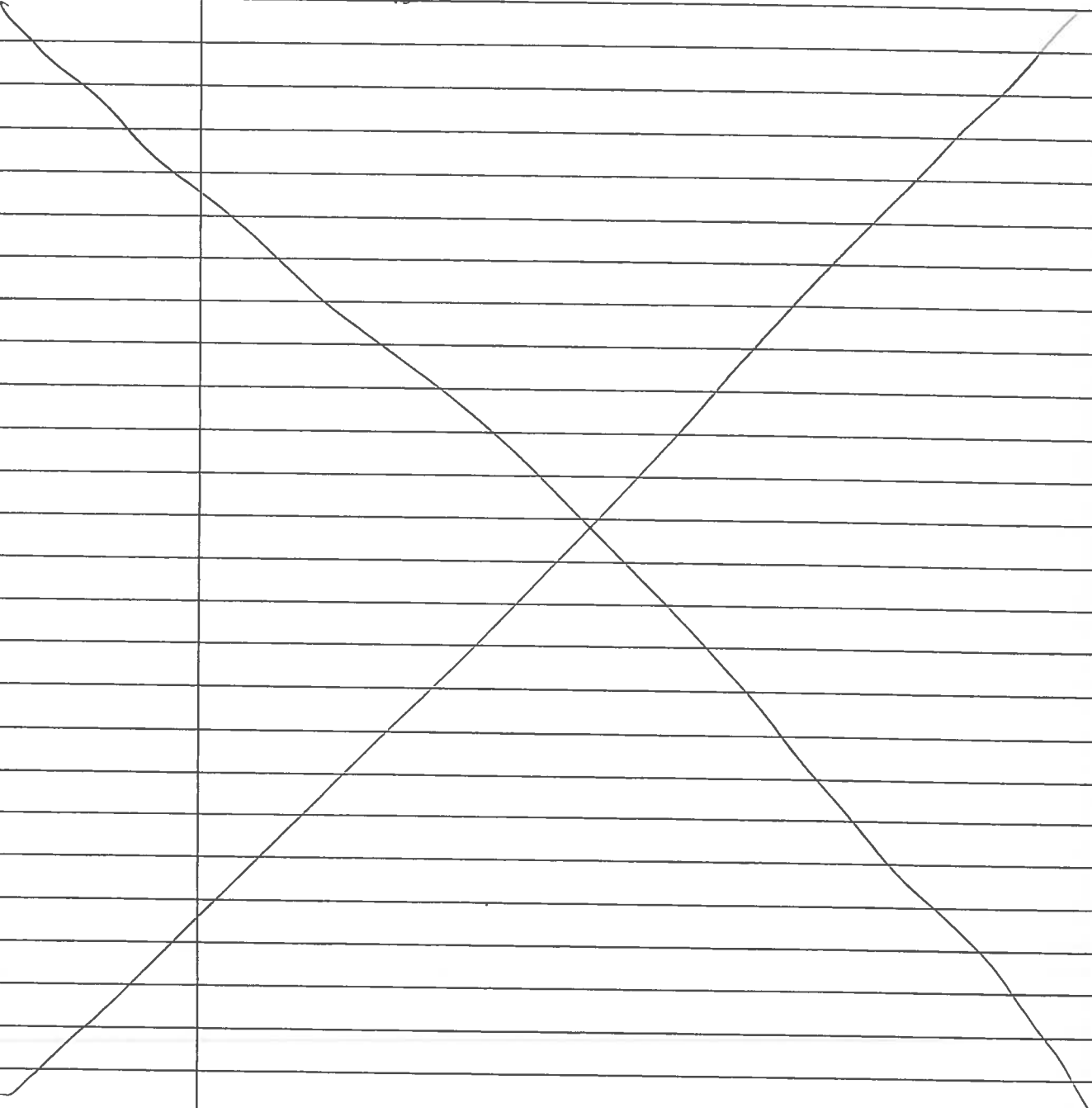
Site Name: Former Worksmith AFB  
 Date: 11-30-21  
 Project Number: 60514613  
 Field Staff: Josh W.

Time	Observation/Note
13:12	Aerostar measured flow rate as 700 $\frac{mL}{min}$
13:18	Aerostar and AECCM in vehicles to warm up while purging
13:20	Cascade hand augering down to 10 ft on WURVS-019, fire hydrant in area, want to make sure they are good to drill, hole moved out of woods from original location
13:30	Aerostar measured turbidity on WURVS020 as over 1100 NTUs
13:37	Aerostar measured turbidity as 892 NTUs on WURVS020
13:44	Aerostar began drilling on WURVS019
13:50	Aerostar measured turbidity as over 1100 NTUs WURVS020
13:55	Cascade released the screen on WURVS019
14:04	Aerostar used WCM to tag water level at 16.40 ft bgs on WURVS019
14:09	Aerostar began peristaltic purging on WURVS019, purge rate is 700 $\frac{mL}{min}$
14:18	Aerostar measured turbidity on WURVS019 as 166 NTUs, Aerostar hooked up flow cell
14:24	Aerostar measured turbidity as 27.7 NTUs on WURVS019, will sample
14:42	Aerostar began peristaltic purging on WURVS020, flow rate 700 $\frac{mL}{min}$
14:45	AECCM and Aerostar in vehicles to warm-up, direct line of sight maintained
15:37	Aerostar measured turbidity as 1060 NTUs
16:12	Aerostar measured turbidity as 213 NTUs
16:24	Cascade began dripping rods out for decon



# Daily Field Log

Site Name: Former Wurtsmith AFB  
Date: 11-30-21  
Project Number: 60.914613  
Field Staff: Josh W.

Time	Observation/Note
16:27	Cascade sealed WURV5020 with bentonite
16:30	Jeremiah called for check-in/update
16:50	AECOM offsite
	

## Daily Field Log

Site Name: Former Wurtsmith AFB  
 Date: 11-30-21  
 Project Number: 60614613  
 Field Staff: Wes Stambaugh

Time	Observation/Note
0745	AECOM arrive at Aerostar Field Office, update chat with wes (Aerostar): Cascade has two rigs for VAS and Rockwater will be doing one last sanitary sewer soil boring
0755	AECOM mob to first VAS location WURV5021,
0800	Arrive at WURV5021, Aerostar update: Cascade and Aerostar pushed to 60.0ft bgs yesterday (11-29-21); Aerostar currently prepping to take 60.0ft bgs sample (VAS), clay layer was reached at ~60.0ft bgs yesterday (11-29-21); will get full sampling info later
0810	Phone call update with Josh (AECOM) (in car)
0820	Cascade begins removing toding and Aerostar packs up equipment; AECOM daily log updates (in car)
0830	Cascade mob to rig #2 location to gather needed equipment
0835	Morning check in with Jeremiah (in car)
0843	Aerostar mob to WURV5020 and begin set up
0845	AECOM mob to WURV5016 (Cascade rig #2); Aerostar and Cascade pushed to 50.0ft bgs yesterday (11-29-21) and took their deepest sample at 40.0ft bgs,
0855	Aerostar begins prep for taking 60.0ft bgs VAS sample
0910	AECOM mob to Aerostar Field office for bathroom break
0920	check in with Noel (Aerostar); Rockwater is drilling two holes for sanitary sewer WUR53160 and WUR53159, these holes were inaccessible until now
0930	AECOM mob to WUR53160
0940	AECOM arrive at WUR53160, Rockwater and Aerostar have already begun pushing currently at 12.0ft bgs
1005	Aerostar and Rockwater demob from WUR53160 and mob to WUR53159; AECOM update daily log and prep for EGLE split sample (in car)
1015	AECOM mob to WUR53159
1030	Rockwater begins direct push on WUR53159; phone update with Josh (AECOM)

*Wes Stambaugh*

## Daily Field Log

Site Name: Former Wurtsmith AFB  
 Date: 11-30-21  
 Project Number: 60614613  
 Field Staff: WES Stambaugh

Time	Observation/Note
1105	Aerostar and Rockwater complete direct push on WURVSD159 mob back to Aerostar field office
1110	AECOM mob to <del>WURVSD20</del> (WPS) WURVSD16
1120	AECOM arrive at WURVSD16; update VAs log with mdly (Aerostar)
1135	AECOM mob to WURVSD20
1200	AECOM Lunch Break and filled up gas
1230	AECOM return from Lunch Break; mob to WURVSD28 to observe Rockwater running VAs
1235	Aerostar and Rockwater begin direct push VAs on WURVSD28 Rockwater is doing continuous coring with a 5 ft screen and spaghetti; rod to open the screen
1255	Afternoon check-in with Jeremiah; updates on Rockwater crew and (WPS)
1300	Rockwater opens the screen to try and check DTW
1315	Aerostar checks DTW but water is not coming through the screen, Rockwater adds more spaghetti; rod to try and open the screen more
1320	Aerostar tries the purging process to see if there is any water in the casing but there is not; Eric (Aerostar) calls Noel to see how they should proceed
1330	Aerostar and Rockwater <del>part</del> begin pulling casing to close screen and push again to 22.0 ft bgs; water might be deeper here than other locations; periodically observe from car to avoid cold stress
<del>1345</del>	<del>Aerostar measured DTW as (WPS)</del>
1400	AECOM bathroom break and Rockwater Lunch Break
1420	Aerostar begins purging at 22.0 ft bgs; purge rate is too slow
1435	Aerostar and Rockwater need more flow so Rockwater is pulling

# Daily Field Log

Site Name: Former Wurtsmith AFB  
 Date: 11-30-21  
 Project Number: 6061463  
 Field Staff: WLS Stambaugh

Time	Observation/Note
1435 cont.	casing to close screen and pushing again to 24.0ft bgs; water level is at 21.0ft bgs and 1.0ft of head is not enough to purge (Eric Alrostar)
1450	Rockwater reaches 24.0ft bgs and uses spaghetti rod to open screen
1500	Rockwater pulls casing higher to open screen more
1535	purging is still too low of a flow, Eric (Alrostar) check-in with Noel to figure out a solution
1550	Noel and Eric decide to end the Rockwater VAs for the day, AECOM mob to WURV5020 with Josh (AECOM)
1620	AECOM off site
<p style="font-size: 2em; transform: rotate(-30deg); opacity: 0.5;">End of Report</p> <p style="font-size: 2em; transform: rotate(-30deg); opacity: 0.5;">11-30-21</p>	

*WLS*

PROJECT: Former Wurtsmith AFB		Soil Boring ID: WURS13013	
BORING LOCATION: Alert Aircraft Area		GROUND SURFACE ELEVATION AND DATUM:	
DRILLING CONTRACTOR: Rockwater	DATE STARTED: 12-02-21	DATE FINISHED: 12-02-21	
DRILLING METHOD: Direct Push	TOTAL DEPTH: 20.0 ft bgs	TOTAL SAMPLES COLLECTED:	
DRILLING EQUIPMENT: Geoprobe	MEASURED DEPTH TO WATER: 18.5 ft bgs	DEPTH OF SATURATED MEDIA: 17.0 ft bgs	
SAMPLING METHOD:		LOGGED BY: W. Stambaugh	

DEPTH (feet)	GENERAL LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	SAMPLE IDs/Notes	
1	<p>see page WPS</p>			
2				
3				
4				
5				
6				
7				
8		<p>↑ first attempt hit refusal see previous records ↑</p>		
9				
10				
11			- WUR11709 (1350)	
12			- EGLE split: SB2112021350 WPS	
13				
14			- WUR11709A (1400)	



PROJECT: Former Wurtsmith AFB		Soil Boring ID: WURSB164	
BORING LOCATION: Alert Aircraft Area		GROUND SURFACE ELEVATION AND DATUM:	
DRILLING CONTRACTOR: Rockwater	DATE STARTED: 12-02-21	DATE FINISHED: 12-02-21	
DRILLING METHOD: Direct Push	TOTAL DEPTH: 20.0 ft bgs	TOTAL SAMPLES COLLECTED:	
DRILLING EQUIPMENT: Geoprobe	MEASURED DEPTH TO WATER: 17.95 ft bgs	DEPTH OF SATURATED MEDIA: N/A	
SAMPLING METHOD:		LOGGED BY: W. Stambaugh	

DEPTH (feet)	GENERAL LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	SAMPLE IDs/Notes
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			

-WUR11791 (1145)

-EGLE split: SB2112021155 WPS  
 (WPS)  
 -WUR11791A (1155)

PROJECT:

Former Wurtsmith AFB

Soil Boring ID: WURSB164

DEPTH (feet)	GENERAL LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	SAMPLE IDs/Notes
16			
17			
18	Σ wlm reading at 17.95ft bgs		
19			
20	<p>EOB at 20.0ft bgs</p> <p>Reason for End { -water table reached -sampling complete</p>		






PROJECT: Former Wurtsmith AFB		Soil Boring ID: WURSB165	
BORING LOCATION: Alert Aircraft Area		GROUND SURFACE ELEVATION AND DATUM:	
DRILLING CONTRACTOR: Rockwater	DATE STARTED: 12-02-21	DATE FINISHED: 12-02-21	
DRILLING METHOD: Direct Push	TOTAL DEPTH: 20.044 bgs	TOTAL SAMPLES COLLECTED: 1	
DRILLING EQUIPMENT: Geoprobe	MEASURED DEPTH TO WATER: N/A Heave	DEPTH OF SATURATED MEDIA: N/A	
SAMPLING METHOD:		LOGGED BY: W. Stambaugh	

DEPTH (feet)	GENERAL LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	SAMPLE IDs/Notes
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
		/ / / / /	- WUR11796A (1245)

PROJECT:

Former Wurtsmith AFB

Soil Boring ID: WUR3B165

DEPTH (feet)	GENERAL LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	SAMPLE IDs/Notes
16			
17			
18			
19			-WUR11796B (131φ)
20	Heave		
	EOB at 20.0ft bgs Reason for End { - water table reached - sampling complete		

PROJECT: Former Wurtsmith AFB		Soil Boring ID: WURS0028	
BORING LOCATION: Alert Aircraft Area		GROUND SURFACE ELEVATION AND DATUM:	
DRILLING CONTRACTOR: Rockwater	DATE STARTED: 12-02-21	DATE FINISHED: 12-02-21	
DRILLING METHOD: Direct Push	TOTAL DEPTH: 20.0 ft bgs	TOTAL SAMPLES COLLECTED:	
DRILLING EQUIPMENT: Geoprobe	MEASURED DEPTH TO WATER: 18.7 ft bgs	DEPTH OF SATURATED MEDIA: N/A	
SAMPLING METHOD:		LOGGED BY: W. Stambaugh	

DEPTH (feet)	GENERAL LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	SAMPLE IDs/Notes	
1	See previous records			
2				
3				
4				
5				
6				-WUR11783 (1035)
7				
8				
9				
10				
11				-WUR11784A (1105) WPS
12				
13				
14				-WUR11784 (1050) WPS



PROJECT:

Former Wurtsmith AFB

Soil Boring ID: WUR53028

DEPTH (feet)	GENERAL LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	SAMPLE IDs/Notes
16			
17			
18			
19			
20	EOD at 20.0 ft bgs		
	Reason for End {		
	- water table reached		
	- sampling complete		

PROJECT: Former Wurtsmith AFB		Soil Boring ID: WURSB025	
BORING LOCATION: Alert Aircraft Area		GROUND SURFACE ELEVATION AND DATUM:	
DRILLING CONTRACTOR: Rockwater	DATE STARTED: 12-02-21	DATE FINISHED: 12-02-21	
DRILLING METHOD: Direct Push	TOTAL DEPTH: 20.0ft bgs	TOTAL SAMPLES COLLECTED: 2	
DRILLING EQUIPMENT: Geoprobe	MEASURED DEPTH TO WATER: 18.25ft bgs	DEPTH OF SATURATED MEDIA: N/A	
SAMPLING METHOD:		LOGGED BY: W. Stambaugh	

DEPTH (feet)	GENERAL LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	SAMPLE IDs/Notes	
1	see previous records			
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				-WUR11769 (0955)
12				
13				
14				-WUR11769A (1000)

PROJECT:

Former Wurtsmith AFB

Soil Boring ID: WURS3025

DEPTH (feet)	GENERAL LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	SAMPLE IDs/Notes
16		/	- EGLE split: 5B2112021000WPS
17			
18	WLM reading at 18.25ft bgs		
19			
20	EOB at 20.0ft bgs		
	Reason for End {		
	- water table reached		
	- sampling complete		

PROJECT: Former Wurtsmith AFB		Soil Boring ID: WUR53024	
BORING LOCATION: Alert Aircraft Area		GROUND SURFACE ELEVATION AND DATUM:	
DRILLING CONTRACTOR: Rockwater	DATE STARTED: 12-02-21	DATE FINISHED: 12-02-21	
DRILLING METHOD: Direct Push	TOTAL DEPTH: 20.0 ft bgs	TOTAL SAMPLES COLLECTED: 3	
DRILLING EQUIPMENT: Geoprobe	MEASURED DEPTH TO WATER: 18.5 ft bgs	DEPTH OF SATURATED MEDIA: N/A	
SAMPLING METHOD:		LOGGED BY: W. Starbaugh	

DEPTH (feet)	GENERAL LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	SAMPLE IDs/Notes
	see previous records		
1			
2			
3			
4			
5			
6			-WUR11763 (0917)
7			
8			
9			
10			
11			-WUR11764 (0925)
12			
13			
14			-WUR11765 (0930) 4A

PROJECT:

Former Wurtsmith AP3

Soil Boring ID: WURS3024

DEPTH (feet)	GENERAL LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	SAMPLE IDs/Notes
16		[Hatched Box]	[Horizontal Line]
17			
18	▽ WLM reading at 18.5 ft bgs		
19			
20	EOB at 20.0 ft bgs		
	Reason for End {		
	-water table reached		
	-sampling complete		



PROJECT: former Wurtsmith AFB		VAS Boring ID: WURUS027	
BORING LOCATION:		GROUND SURFACE ELEVATION AND DATUM:	
DRILLING CONTRACTOR: Cascade	DATE STARTED: 12-02-21	DATE FINISHED: 12-03-21	
DRILLING METHOD: Direct-push	TOTAL DEPTH: 71 ft bgs	TOTAL SAMPLES COLLECTED: 9	
DRILLING EQUIPMENT: Geoprobe 7822 DT	MEASURED DEPTH TO WATER: 18.2 ft bgs	DEPTH OF SATURATED MEDIA:	
SAMPLING METHOD: Low flow	LOGGED BY: Josh W.		

DEPTH (feet)	GENERAL LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	SAMPLE IDs/Notes	
2	Geology not collected, correlated to MPT003, depth of clay is 69.3 ft bgs			
4				
6				
8				
10				
12				
14				
16				
18		▽ measured DTW is 18.2 ft bgs		(18-21.0 ft bgs) - screen Turbidity: 84.4 NTU's Flow rate: 100 $\frac{mL}{min}$ Vol. purged: 4.5 gal WUR10054 (18.0-21.0) @ 12:19
20				
22				
24				
26				(28.0-31.0) ft bgs - screen WUR10055 (28.0-31.0) @ 13:17 Turbidity: 582 NTU's Vol. purged: 6 gal Flow rate: 100 $\frac{mL}{min}$ EGLE: GW2112021317JW
28				
30				

PROJECT:

Former Wurtsmith AFB

VAS Boring ID: WVRU027

DEPTH (feet)	GENERAL LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	SAMPLE IDs/Notes
30			
32			
34			
36			
38		[Hatched Box]	(38.0-41.0 ft bgs) - screen WVR10056 (38.0-41.0) @ 14:07 Turbidity: 775 NTUs vol. purged: 55 gal flow rate: 100 $\frac{mL}{min}$
40		[Hatched Box]	
42			
44			
46			
48		[Hatched Box]	(48.0-51.0 ft bgs) - screen WVR10057 (48.0-51.0) @ 14:57 Turbidity: 602 NTUs flow rate: 100 $\frac{mL}{min}$ vol. purged: 4.5 gal
50		[Hatched Box]	
52			
54			EB - WVR25289 @ 15:20 15:19 <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">JW</span>
56			
58		[Hatched Box]	(58.0-61.0 ft bgs) - screen WVR10058 (58.0-61.0) @ 16:40 flow rate: 100 $\frac{mL}{min}$ Turbidity: 870 NTUs vol. purged: 6.5 gal.
60		[Hatched Box]	
62			
64			FP - WVR101009
66			

PROJECT:

Farmer Wurdsmith AFB

VAS Boring ID: WVRVSDZ7

DEPTH (feet)	GENERAL LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	SAMPLE IDs/Notes
66			
68			
70			
72	EOB @ 71 ft bgs		<p>(68.0 - 71.0 ft bgs) - screen  WVR10058A (68.0 - 71.0) @ 09:10  Flow rate: 1.0 <math>\frac{ml}{min}</math>  Turbidity: 682 NTUs  Vol. purged: 4.5 gal.</p>
74			
76			
78			
80			
82			
84			
86			
88			
90			
92			
94			
96			
98			
100			
102			


PROJECT: Former Wurtsmith AFB		Soil Boring ID: WURS13017	
BORING LOCATION: Alert Aircraft AFB		GROUND SURFACE ELEVATION AND DATUM:	
DRILLING CONTRACTOR: Rockwater	DATE STARTED: 12-01-21	DATE FINISHED: 12-01-21	
DRILLING METHOD: Direct Push	TOTAL DEPTH: 20.0 ft bgs	TOTAL SAMPLES COLLECTED: 2	
DRILLING EQUIPMENT: Geoprobe	MEASURED DEPTH TO WATER: N/A	DEPTH OF SATURATED MEDIA: N/A	
SAMPLING METHOD:		LOGGED BY: W. Stambaugh	

DEPTH (feet)	GENERAL LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	SAMPLE IDs/Notes
1	see previous records		
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			-WUR11729 (1340)
12			
13			
14			-WUR11729A (1345)

PROJECT:

Former Wurtsmith AFB

Soil Boring ID: WURS3017

DEPTH (feet)	GENERAL LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	SAMPLE IDs/Notes
16			
17			
18			
19			
20			

EOB at 20.0 ft bgs

Reason for End { - water level reached  
                                  - sampling complete

PROJECT: Former Wurtsmith AFB		Soil Boring ID: WUR 43018	
BORING LOCATION: Alert Aircraft Area		GROUND SURFACE ELEVATION AND DATUM:	
DRILLING CONTRACTOR: Rockwater	DATE STARTED: 12-01-21	DATE FINISHED: 12-01-21	
DRILLING METHOD: Direct Push	TOTAL DEPTH: 20.0 ft bgs	TOTAL SAMPLES COLLECTED: 1	
DRILLING EQUIPMENT: Geoprobe	MEASURED DEPTH TO WATER: 19.15 ft bgs	DEPTH OF SATURATED MEDIA: N/A	
SAMPLING METHOD:		LOGGED BY: W. Stambaugh	

DEPTH (feet)	GENERAL LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	SAMPLE IDs/Notes
	see previous records		
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
			-WUR11734A (1250)

PROJECT:

Former Wurtsmith ARB

Soil Boring ID: WURS018

DEPTH (feet)	GENERAL LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	SAMPLE IDs/Notes
16			
17			
18			
19			
20	WLM reading at 19.15 ft bgs		
	EOB at 20.0 ft bgs		
	Reason for End {		
	-water table reached		
	-sampling complete		

PROJECT: Former Wurtsmith AFB		Soil Boring ID: WUR3B019	
BORING LOCATION: Alert Aircraft Area		GROUND SURFACE ELEVATION AND DATUM:	
DRILLING CONTRACTOR: Rockwater	DATE STARTED: 12-01-21	DATE FINISHED: 12-01-21	
DRILLING METHOD: Direct Push	TOTAL DEPTH: 20.0 ft bgs	TOTAL SAMPLES COLLECTED: 1	
DRILLING EQUIPMENT: Geoprobe	MEASURED DEPTH TO WATER: 17.66 ft bgs	DEPTH OF SATURATED MEDIA: N/A	
SAMPLING METHOD:		LOGGED BY: W. Stambach	

DEPTH (feet)	GENERAL LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	SAMPLE IDs/Notes
	see previous records		
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
			-WUR11739A (1205)



PROJECT:

Former Wurtsmith AFB

Soil Boring ID: WURS3019

DEPTH (feet)	GENERAL LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	SAMPLE IDs/Notes
16		[Hatched interval]	[Horizontal line]
17			
18	Σ 17.66ft bgs NLM reading		
19			
20			
	EOB at 20.0ft bgs		
	Reason for End {		
	- water table reached		
	- sampling complete		

PROJECT: Former Wurtsmith APB		Soil Boring ID: WUR53020	
BORING LOCATION: Alert Aircraft Area		GROUND SURFACE ELEVATION AND DATUM:	
DRILLING CONTRACTOR: Rockwater	DATE STARTED: 12-01-21	DATE FINISHED: 12-01-21	
DRILLING METHOD: Direct Push	TOTAL DEPTH: 20.0 ft bgs	TOTAL SAMPLES COLLECTED: 1	
DRILLING EQUIPMENT: Caeprobe	MEASURED DEPTH TO WATER: N/A hole collapse	DEPTH OF SATURATED MEDIA: N/A	
SAMPLING METHOD:		LOGGED BY: W. Stamborg	

DEPTH (feet)	GENERAL LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	SAMPLE IDs/Notes
	see previous records		
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
		//	-WUR11744A (1120)

PROJECT:

Former Wurtsmith AFB

Soil Boring ID: WURSIZ020

DEPTH (feet)	GENERAL LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	SAMPLE IDs/Notes
16		//	-EGLE split: SIZ21201120PS
17			
18			
19			
20			
	EOB at 20.0ft bgs		
	Reason for End {		
	-water table reached		
	-sampling complete		


PROJECT: <b>Former Wurtsmith AFB</b>		Soil Boring ID: <b>WURSB022-#5</b>	
BORING LOCATION: <b>Alert Aircraft Area</b>		GROUND SURFACE ELEVATION AND DATUM:	
DRILLING CONTRACTOR: <b>Rockwater</b>	DATE STARTED: <b>12-01-21</b>	DATE FINISHED: <b>12-01-21</b>	
DRILLING METHOD: <b>Direct Push</b>	TOTAL DEPTH: <b>20.0 ft bgs</b>	TOTAL SAMPLES COLLECTED: <b>1</b>	
DRILLING EQUIPMENT: <b>Geoprobe</b>	MEASURED DEPTH TO WATER: <b>17.7 ft bgs</b>	DEPTH OF SATURATED MEDIA: <b>N/A</b>	
SAMPLING METHOD:		LOGGED BY: <b>W. Stambagh</b>	

DEPTH (feet)	GENERAL LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	SAMPLE IDs/Notes
1	see previous records		
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			

PROJECT:

Former Wurtsmith AFB

Soil Boring ID: WURS1302\*2  
(CPS)

DEPTH (feet)	GENERAL LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	SAMPLE IDs/Notes
16			
17			
18	WLM reading at 17.7 ft bgs		
19			
20			
	EOB at 20.0 ft bgs		
	Reason for End {		
	-water table reached		
	-sampling complete		

PROJECT: Former Wurtsmith AFB		Soil Boring ID: WUR53023	
BORING LOCATION: Alert Aircraft Area		GROUND SURFACE ELEVATION AND DATUM:	
DRILLING CONTRACTOR: Rockwater		DATE STARTED: 12-01-21	DATE FINISHED: 12-01-21
DRILLING METHOD: Direct Push		TOTAL DEPTH: 20.0 ft bgs	TOTAL SAMPLES COLLECTED: 2
DRILLING EQUIPMENT: C9 probe		MEASURED DEPTH TO WATER: N/A *leave	DEPTH OF SATURATED MEDIA: N/A
SAMPLING METHOD:		LOGGED BY: w. stan-baugh	

DEPTH (feet)	GENERAL LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	SAMPLE IDs/Notes	
1	SEE PREVIOUS RECORDS			
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				-WUR11759 (1555)
12				-EGLE split: SB211201355WPS
13				
14				-WUR11759A (1605)

PROJECT:

Former Wurtsmith AFB

Soil Boring ID: WURS3023

DEPTH (feet)	GENERAL LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	SAMPLE IDs/Notes
16		[Hatched Box]	EGLE SPIT: <del>SBZ11201</del> WPS
17			
18			
19			
20			
	<p>EOB at 20.0 ft bgs</p> <p>Reason for End {</p> <ul style="list-style-type: none"> <li>- water table reached</li> <li>- sampling complete</li> </ul>		

PROJECT: <b>Former Wurtsmith AFB</b>		Soil Boring ID: <b>WURSB016</b>	
BORING LOCATION: <b>Alert Aircraft Area</b>		GROUND SURFACE ELEVATION AND DATUM:	
DRILLING CONTRACTOR: <b>Rockwater</b>	DATE STARTED: <b>12-01-21</b>	DATE FINISHED: <b>12-01-21</b>	
DRILLING METHOD: <b>Direct Push</b>	TOTAL DEPTH: <b>20.0 ft bgs</b>	TOTAL SAMPLES COLLECTED: <b>1</b>	
DRILLING EQUIPMENT: <b>Geoprobe</b>	MEASURED DEPTH TO WATER: <b>18.55 ft bgs</b>	DEPTH OF SATURATED MEDIA: <b>N/A</b>	
SAMPLING METHOD:		LOGGED BY: <b>W. Stambaugh</b>	

DEPTH (feet)	GENERAL LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	SAMPLE IDs/Notes
	see previous record		
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
			<b>-WUR11724A (1435)</b>



PROJECT:

Former Wurtsmith AFB

Soil Boring ID: WURSB016

DEPTH (feet)	GENERAL LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	SAMPLE IDs/Notes
16		///	EGLE Split: SB21201M35WPS
17			
18			
19			
20			
	<p>WLM reading of 18.55ft bgs</p>		

WLM reading of 18.55ft bgs

EOB at 20.0ft bgs  
Reason for End { - water table reached  
                          - sampling complete

PROJECT: Former Wurtsmith AFB		VAS Boring ID: WURV5032	
BORING LOCATION: BOA		GROUND SURFACE ELEVATION AND DATUM:	
DRILLING CONTRACTOR: Cascade	DATE STARTED: 12-01-21	DATE FINISHED: 12-02-21	
DRILLING METHOD: Direct-push	TOTAL DEPTH:	TOTAL SAMPLES COLLECTED:	
DRILLING EQUIPMENT: Geoprobe 7822 DT	MEASURED DEPTH TO WATER: 14.6 ft bgs	DEPTH OF SATURATED MEDIA:	
SAMPLING METHOD: Low Flow	LOGGED BY: Josh W.		


DEPTH (feet)	GENERAL LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	SAMPLE IDs/Notes	
2	<p>Geology not collected, depth of clay will be determined by pushing down to 75 ft bgs and also correlated to WURV5030 - 71.2 ft bgs</p> <p>DTW measured as 14.6 ft bgs</p>			
4				
6				
8				
10				
12				
14				
14.6				(14.0 - 17.0 ft bgs) - 5 screen WUR 10079 (14.0 - 17.0) @ 8:57 Flow rate: 300 mL/min Turbidity: 34.3 vol. purged: 3 gal.
16				
18				
20				
22				
24				
24.0				(24.0 - 27.0 ft bgs) - 5 screen WUR 10080 (24.0 - 27.0) @ 9:53 Flow rate: 300 mL/min Turbidity: 419 NTUs vol. purged: 7 gal. EGLE: GW2112010953JW
26				
28				
30				

DEPTH (feet)	GENERAL LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	SAMPLE IDs/Notes
30			
32			
34			(34.Φ-37.Φ ft bgs) - screen WUR 1ΦΦ 81 (34.Φ-37.Φ) @ 1Φ:54 flow rate: 3ΦΦ Turbidity: 879 NTU's vol. purged: 8 gal
36			
38			
40			
42			
44			
46			(44.Φ-47.Φ ft bgs) - screen WUR 1ΦΦ 82 (44.Φ-47.Φ) @ 12:14 flow rate: 3ΦΦ $\frac{ml}{min}$ Turbidity: 715 NTU's vol. purged: 9 gal
48			
50			
52			
54			(54.Φ-57.Φ ft bgs) - screen WUR 1ΦΦ 83 (54.Φ-57.Φ) @ 14:1Φ flow rate: 2ΦΦ $\frac{ml}{min}$ Turbidity: 763 NTU's vol. purged: 14 gal. Sample depth: 56 ft bgs
56			
58			
60			
62			vol. purged: 12 gal. (64.Φ-67.Φ ft bgs) - screen
64			WUR 1ΦΦ 83.A (64.Φ-67.Φ) @ 16:Φ1 flow rate: 6Φ $\frac{ml}{min}$ 3ΦΦ $\frac{ml}{min}$ Turbidity: over 11ΦΦ NTU's
66			

PROJECT:

Former Worksmith AFB

VAS Boring ID: WURV5032

DEPTH (feet)	GENERAL LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	SAMPLE IDs/Notes
66			
68			
70			(70.0-78.0 ft 695) - screen WUR10083B @ 12:09 flow rate: 200 $\frac{ml}{min}$ Turbidity: 1000 NTUs vol. purged: 12 gal.
72			
74			
76			
78			
80			
82			
84			
86			
88			
90			
92			
94			
96			
98			
100			

PROJECT: Former Wurtsmith AFB		Soil Boring ID: WURSB012	
BORING LOCATION: Alert Aircraft Area		GROUND SURFACE ELEVATION AND DATUM:	
DRILLING CONTRACTOR: Rockwater	DATE STARTED: 12-01-21	DATE FINISHED: 12-01-21	
DRILLING METHOD: Direct Push	TOTAL DEPTH: 20.0 ft bgs	TOTAL SAMPLES COLLECTED: 1	
DRILLING EQUIPMENT: Geoprobe	MEASURED DEPTH TO WATER: 18.5 ft bgs	DEPTH OF SATURATED MEDIA: N/A	
SAMPLING METHOD:		LOGGED BY: W. Stambaugh	

DEPTH (feet)	GENERAL LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	SAMPLE IDs/Notes
	see previous records		
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
		[Hatched Box]	-WUR11704A (1520)



PROJECT:

Former Wurtsmith APB

Soil Boring ID: WURSBO12

DEPTH (feet)	GENERAL LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	SAMPLE IDs/Notes
16		/	
17			
18			
19	WLM reading at 18.5ft bgs		
20			
	EOB at 20.0ft bgs		
	Reason { -water table reached		
	for End { -sampling complete		

PROJECT: Former Wurtsmith AFB		VAS Boring ID: WURVUS034	
BORING LOCATION: BOA		GROUND SURFACE ELEVATION AND DATUM: _____	
DRILLING CONTRACTOR: Cascade	DATE STARTED: 12-01-21	DATE FINISHED: 12-02-21	
DRILLING METHOD: Direct-push	TOTAL DEPTH: 73 ft bgs	TOTAL SAMPLES COLLECTED: 10	
DRILLING EQUIPMENT: Geoprobe 7822DT	MEASURED DEPTH TO WATER: 14.3 ft bgs	DEPTH OF SATURATED MEDIA: _____	
SAMPLING METHOD: Low flow	LOGGED BY: Josh W.		

DEPTH (feet)	GENERAL LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	SAMPLE IDs/Notes	
2	Geology not collected, depth of clay determined by pushing down to 75 ft bgs and also correlated to WURVUS030 - 71.2 ft bgs			
4				
6				
8				
10				
12				
14		∇ DTW measured as 14.3 ft bgs		(14.0-17.0 ft bgs) - screen
16				WUR10084 (14.0-17.0) @ 08:58 Flow rate: 100 ml/min vol. purged: 4 gal. Turbidity: 204 NTUs
18				
20				
22				
24				
26				(24.0-27.0 ft bgs) - screen WUR10085 (24.0-27.0) @ 09:35 flow rate: 100 ml/min vol. purged: 5 gal Turbidity: 537 NTUs
28				
30				

DEPTH (feet)	GENERAL LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	SAMPLE IDs/Notes
30			
32			
34			(34.0 - 37.0 ft bgs) - screen WVR 10086 (34.0 - 37.0) @ 10:36 vol. purged: 11 gal Turbidity: 1048 NTUs flow rate: 100 mL/min
36			
38			
40			
42			
44			(44.0 - 47.0 ft bgs) - screen WVR 10087 (44.0 - 47.0) @ 11:47 vol. purged: 12 gal. Turbidity: 909 NTUs flow rate: 100
46			
48			
50			EB - WVR 25292 @ 11:57 on screen
52			
54			(54.0 - 57.0 ft bgs) - screen WVR 10088 (54.0 - 57.0) @ 13:54 vol. purged: <del>100 mL</del> <sup>20</sup> 20 gal Turbidity: over 1100 NTUs flow rate: 100 mL/min
56			
58			FD - WVR 10112
60			
62			(64.0 - 67.0 ft bgs) - screen WVR 10088A (64.0 - 67.0) @ 15:59 vol. purged: 10 gal Turbidity: 650 NTUs flow rate: 100 mL/min
64			
66			



PROJECT: Former Wurtsmith VAS Boring ID: WURVS ~~45~~<sup>(51)</sup> 34

DEPTH (feet)	GENERAL LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	SAMPLE IDs/Notes
66			
68			
70			<p>WUR10088B (70.0 - 73.0) @ 10:05            vol. purged: <del>9 gal</del> <sup>(12 gal)</sup> 12 gal            Turbidity: 728 NTU's            flow rate: 100 <sup>ml</sup>/<sub>min</sub>            (70.0 - 73.0 ft bgs) - screen</p>
72			
74	EOB @ 73 ft bgs		
76			
78			
80			
82			
84			
86			
88			
90			
92			
94			
96			
98			
100			
102			

PROJECT: Former Wurtsmith AFB		VAS Boring ID: WURV5020	
BORING LOCATION:		GROUND SURFACE ELEVATION AND DATUM:	
DRILLING CONTRACTOR: Cascade	DATE STARTED: 11-30-21	DATE FINISHED: 11-30-21	
DRILLING METHOD: Direct push	TOTAL DEPTH: 61 ft bgs	TOTAL SAMPLES COLLECTED: 5	
DRILLING EQUIPMENT: Geoprobe T822 DT	MEASURED DEPTH TO WATER: 18.2 ft bgs	DEPTH OF SATURATED MEDIA:	
SAMPLING METHOD: Low flow	LOGGED BY: Josh W.		

DEPTH (feet)	GENERAL LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	SAMPLE IDs/Notes	
2	No Geology collected, depth to clay correlated with HPT boring MW004 - clay at 58 ft bgs			
4				
6				
8				
10				
12				
14				
16				
18		▽ measured DTW as 18.2 ft bgs ▽ R13-D DTW is 19 ft bgs		(18.0-21.0 ft bgs) - Screen
20				WUR11540 (18.0-21.0) @ 10:13 <sup>OP</sup>
22				Turbidity: 12.4 NTU's
24				Flow rate: 100 mL/min
26				Vol. purged: 2.5 gal
28				(28.0-31.0) - Screen
				WUR11541 (28.0-31.0) @ 11:10
				Turbidity: 545 NTU's

DEPTH (feet)	GENERAL LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	SAMPLE IDs/Notes
30			flow rate: 100 mL/min vol. purged: 5 gal.
32			
34			
36			
38			(38.0-41.0 ft bgs) - Screen
40			WUR11542 (38.0-41.0) @ 12:43 Turbidity: 768 NTU's flow rate: 100 mL/min vol. purged: 6.5 gal EGLE: GW211301243JW @ 12:43
42			
44			
46			
48			(48.0-51.0 ft bgs) - Screen
50			WUR11543 (48.0-51.0) - Screen Turbidity: 1040 NTU's flow rate: 100 mL/min vol. purged: 4 gal Sample time: 14:15
52			
54			
56			
58			(58.0-61.0 ft bgs) - Screen
60			WUR11544 (58.0-61.0) @ 16:15 Turbidity: <del>58</del> 128 NTU's flow rate: 100 mL/min vol. purged: 13 gal Sample depth: 60 ft bgs
62	EOB @ 61 ft bgs		
64			

PROJECT: Former Wurtsmith AFB		VAS Boring ID: WURUS019	
BORING LOCATION:		GROUND SURFACE ELEVATION AND DATUM:	
DRILLING CONTRACTOR: Cascade	DATE STARTED: 11-30-21	DATE FINISHED: 12-02-21	
DRILLING METHOD: Direct-push	TOTAL DEPTH: 70.0 ft bgs	TOTAL SAMPLES COLLECTED: 6	
DRILLING EQUIPMENT: Geoprobe	MEASURED DEPTH TO WATER: 16.4 ft bgs	DEPTH OF SATURATED MEDIA:	
SAMPLING METHOD: Low flow		LOGGED BY: Josh W.	


DEPTH (feet)	GENERAL LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	SAMPLE IDs/Notes	
2	Depth to clay correlated to WURUS030 - clay at 71.2 ft bgs			
4				
6				
8				
10				
12				
14				
16		∇ measured DTW at 16.4 ft bgs		
18			▨	(17.0-20.0 ft bgs) - screen flow rate: 2.5 gal/min vol. purged: 2 gal. Turbidity: 27.7 NTUs WUR11535 (17.0-20.0) @ 14:24 WUR11019 - field duplicate
20			▨	
22				
24				
26				
28			▨	WUR11536 @ 15:48 (27.0-30.0 ft bgs) - screen flow rate: 3.0 gal/min Turbidity: 97.9 NTUs vol. purged: 5 gal
			▨	

DEPTH (feet)	GENERAL LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	SAMPLE IDs/Notes
30			
32			
34			
36			
37.0 - 40.0		[Hatched Box]	(37.0 - 40.0 ft bgs) - screen flow rate: 250 mL/min vol. purged: 6 gal Turbidity: 937 NTUs WUR 11537 @ 16:08
42			→ 12-02-21 ↓
44			
46			
47.0 - 50.0		[Hatched Box]	47.0 - 50.0 ft bgs flow rate: 200 mL/min Vol purged: 6 gal Turbidity: 1050 NTU ID: WUR 11538 (1507)
52			
54			
56			
57.0 - 60.0		[Hatched Box]	57.0 - 60.0 ft bgs Flow rate: 300 mL/min Vol. purged: 11 gal Turbidity: > 1100 NTU ID: WUR 11539 (1646)
62			
64			
66			

PROJECT:

Former Wurtsmith AFB

VAS Boring ID: WURV5019

DEPTH (feet)	GENERAL LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	SAMPLE IDs/Notes
<p>68</p> <p>70</p>	<p>600 at 70.0 ft bgs</p> <p>Reason for End { -Target depth reached -sampling complete</p>		<p>67.0 - 70.0 ft bgs</p> <p>Flow rate: 300 mL/min</p> <p>Turbidity: 2110 NTU</p> <p>Vol. purged: 8 gal</p> <p>ID: WUR11540 (0930)</p>

PROJECT: Former Wurtsmith AP3		Soil Boring ID: WURSB159	
BORING LOCATION: CAT665P Sanitary sewer		GROUND SURFACE ELEVATION AND DATUM:	
DRILLING CONTRACTOR: Rockwater	DATE STARTED: 11-30-21	DATE FINISHED: 11-30-21	
DRILLING METHOD: Direct Push	TOTAL DEPTH: 16.0 ft bgs	TOTAL SAMPLES COLLECTED: 1	
DRILLING EQUIPMENT: Geoprobe	MEASURED DEPTH TO WATER: N/A	DEPTH OF SATURATED MEDIA: N/A	
SAMPLING METHOD:		LOGGED BY: W. Stambaugh	

DEPTH (feet)	GENERAL LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	SAMPLE IDs/Notes
1	Topsoil - Dark Brown sandy silty		
2	SAND - Brown/Lt. Brown Fine to med		
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			-WUR06010 (1100)
14			-GGLC split (SB211301100 WPS)

PROJECT:

Former Wurtsmith AFB

Soil Boring ID: WURSB159

DEPTH (feet)	GENERAL LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	SAMPLE IDs/Notes
16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1	<p>EOB at 16.0 ft bgs</p> <p>Reason for End {</p> <ul style="list-style-type: none"> <li>-target depth reached</li> <li>-for sanitary sewer boreholes</li> <li>-sampling complete</li> </ul>		



PROJECT: Former Wurtsmith AFB		Soil Boring ID: WURS3160	
BORING LOCATION: CAT605P: Sanitary sewer		GROUND SURFACE ELEVATION AND DATUM:	
DRILLING CONTRACTOR: Rockwater	DATE STARTED: 11-30-21	DATE FINISHED: 11-30-21	
DRILLING METHOD: Direct push	TOTAL DEPTH: 16.0 ft bas	TOTAL SAMPLES COLLECTED: 1	
DRILLING EQUIPMENT: GPO probe	MEASURED DEPTH TO WATER: N/A	DEPTH OF SATURATED MEDIA: N/A	
SAMPLING METHOD:		LOGGED BY: W. Stambaugh	

DEPTH (feet)	GENERAL LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	SAMPLE IDs/Notes
1	Topsoil - Dark brown sandy silty		
1	SAND - Brn/Lt brn Fine to Med		
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
12	SAND - Lt Brn Fine		
13			
14	SAND - Brn Fine to Coarse		
			- WUR06011 - WUR06011 (950) (WPS)

PROJECT:

Former Wurtsmith AFB

Soil Boring ID: RURS3160

DEPTH (feet)	GENERAL LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	SAMPLE IDs/Notes
16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1	EOB at 16.0ft bgs Reason for End { <ul style="list-style-type: none"> <li>-target depth reached</li> <li>-for sanitary sewer</li> <li>-borehole</li> <li>-sampling complete</li> </ul>		

PROJECT: Former Wurtsmith AFB		VAS Boring ID: <del>WUR5513</del> <sup>(WPS)</sup> WURV5016	
BORING LOCATION: Alert Aircraft Area		GROUND SURFACE ELEVATION AND DATUM:	
DRILLING CONTRACTOR: Cascade		DATE STARTED: 11-29-21	DATE FINISHED: 11-30-21
DRILLING METHOD: Direct Push		TOTAL DEPTH:	TOTAL SAMPLES COLLECTED: 6
DRILLING EQUIPMENT: Cableprobe		MEASURED DEPTH TO WATER: 17.35 ft bgs	DEPTH OF SATURATED MEDIA: N/A
SAMPLING METHOD:		LOGGED BY: W. Stambaugh	

DEPTH (feet)	GENERAL LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	SAMPLE IDs/Notes
1			
2			
3			
4			
5			
6			WUR5513
7			
8			
9			
10			
11			
12			
13			
14			

PROJECT:

Former Wurtsmith AFB

VAS Boring ID: WUR15016

DEPTH (feet)	GENERAL LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	SAMPLE IDs/Notes
16			
17			
18			
19			WUR11520
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			WUR11521
30			
31			
32			

PROJECT:

Former Wurtsmith AFB

VAS Boring ID: WURVSD16

DEPTH (feet)	GENERAL LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	SAMPLE IDs/Notes
34			
35			
36			
37			
38			
39			WUR11522
40			
41			
42			
43			
44			
45			
46			
47			
48			
49			WUR11523 (Q831)
50			47.5 NTU 5gal total purged 250 gal/min

PROJECT:

Former Wurtsmith AFB

VAS Boring ID:

WUR15016

DEPTH (feet)	GENERAL LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	SAMPLE IDs/Notes
52			
53			
54			
55			
56			
57			
58			
59			WUR11524 (1φφ4)
60			2φφ gal/min
61			1φ2φ NTU
62			7 gal purged
63			
64			
65			
66			
67			
68			
			WUR11525

PROJECT: Former Wurtsmith AFB

VAS Boring ID: WURV501b

DEPTH  
(feet)

GENERAL LITHOLOGY DESCRIPTION

SAMPLE  
INTERVAL

SAMPLE IDs/Notes

70

EOB at 70.0 ft bgs

Reason  
for End { Basal clay layer  
reached according to results  
from geologic boring and  
HPT  
- sampling complete

**Project Name:**  
Wurtsmith RI EGLE Oversight

**Site Location:**  
Oscoda, MI

**Project No.**  
60514613

<b>Photo No.</b> <b>1</b>	<b>Date:</b> 11/30/21
<b>Direction Photo Taken:</b>  North	
<b>Description:</b>  Location: CAT605P Sanitary Sewer Line Boring #: WURSB160 5.0 ft offset from Sanitary Sewer	



<b>Photo No.</b> <b>2</b>	<b>Date:</b> 11/30/21
<b>Direction Photo Taken:</b>  Southwest	
<b>Description:</b>  Location: Alert Aircraft Area Boring #: WURVS028 RockWater VAS sampling screen	



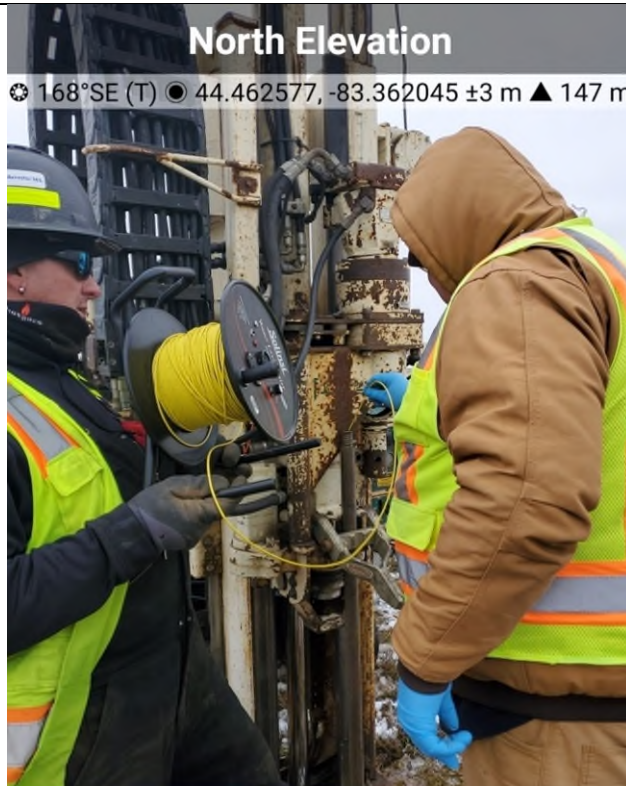


**Project Name:**  
Wurtsmith RI EGLE Oversight

**Site Location:**  
Oscoda, MI

**Project No.**  
60514613

<b>Photo No.</b> <b>3</b>	<b>Date:</b> 11/30/21
<b>Direction Photo Taken:</b>  North	
<b>Description:</b>  Location: Alert Aircraft Area Boring #: WURVS028 Depth to Water Check by Aerostar	



<b>Photo No.</b> <b>4</b>	<b>Date:</b> 12/01/21
<b>Direction Photo Taken:</b>  Southwest	
<b>Description:</b>  Location: Alert Aircraft Area Boring #: WURSB023 Water Level Meter reading by Aerostar	



**Project Name:**  
Wurtsmith RI EGLE Oversight

**Site Location:**  
Oscoda, MI

**Project No.**  
60514613

**Photo No.**  
**5**

**Date:**  
12/01/21

**Direction Photo Taken:**

South

**Description:**

Location: Alert Aircraft Area  
Boring #: WURSB023  
Sample bowl decontamination.



**Photo No.**  
**6**

**Date:**  
12/02/21

**Direction Photo Taken:**

North

**Description:**

Location: Alert Aircraft Area  
Boring #: WURSB164  
14.0 to 16.0 ft bgs  
EGLE Split:  
SB2112021155WPS



**Project Name:**  
Wurtsmith RI EGLE Oversight

**Site Location:**  
Oscoda, MI

**Project No.**  
60514613

<b>Photo No.</b> <b>7</b>	<b>Date:</b> 12/02/21
<b>Direction Photo Taken:</b>  West	
<b>Description:</b>  Location: Alert Aircraft Area Boring #: WURSB165 Water Level Meter reading by Aerostar	



<b>Photo No.</b> <b>8</b>	<b>Date:</b> 12/02/21
<b>Direction Photo Taken:</b>  Southwest	
<b>Description:</b>  Location: Alert Aircraft Area Boring #: WURSB165 Sample bowl decontamination.	



**Project Name:**  
Wurtsmith RI EGLE Oversight

**Site Location:**  
Oscoda, MI

**Project No.**  
60514613

**Photo No.**  
**9**

**Date:**  
12/02/21

**Direction Photo Taken:**

Northwest

**Description:**

Location: Alert Aircraft Area  
Boring #: WURVS019  
Cascade pulling casing to close sample screen.



**Photo No.**  
**10**

**Date:**  
11/30/21

**Direction Photo Taken:**

Northeast

**Description:**

Boring #: WURVS020  
18.0 to 21.0 ft bgs  
Aerostar VAS sample:  
WUR11540



**Project Name:**  
Wurtsmith RI EGLE Oversight

**Site Location:**  
Oscoda, MI

**Project No.**  
60514613

**Photo No.**  
**11**

**Date:**  
11/30/21

**Direction Photo Taken:**

West

**Description:**

Boring #: WURVS020  
Borehole site photo



**Photo No.**  
**12**

**Date:**  
11/30/21

**Direction Photo Taken:**

Northeast

**Description:**

Boring #: WURVS020  
EGLE Split:  
GW2111301243JW



**Project Name:**  
Wurtsmith RI EGLE Oversight

**Site Location:**  
Oscoda, MI

**Project No.**  
60514613

**Photo No.**  
**13**

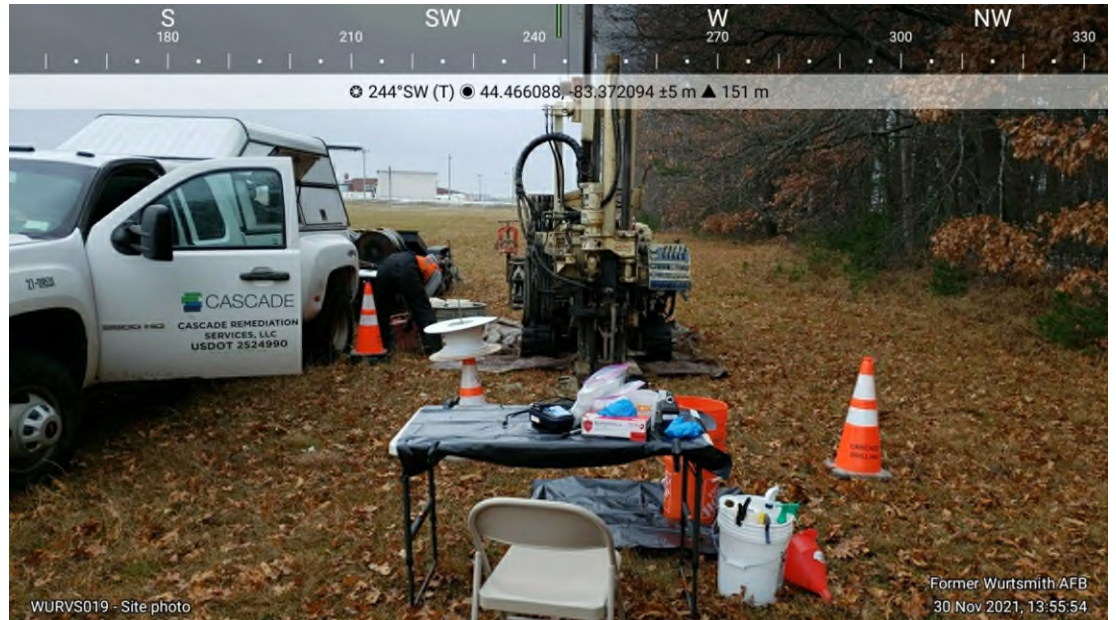
**Date:**  
11/30/21

**Direction Photo Taken:**

Southwest

**Description:**

Boring #: WURVS019  
Borehole site photo



**Photo No.**  
**14**

**Date:**  
12/01/21

**Direction Photo Taken:**

Northeast

**Description:**

Boring #: WURVS032  
Aerostar used water level meter to tag Depth to Water as 14.6 ft bgs



**Project Name:**  
Wurtsmith RI EGLE Oversight

**Site Location:**  
Oscoda, MI

**Project No.**  
60514613

**Photo No.**  
**15**

**Date:**  
12/02/21

**Direction Photo Taken:**

Northeast

**Description:**

Location: BOA  
Boring #: WURVS032  
Borehole site photo



**Photo No.**  
**16**

**Date:**  
12/02/21

**Direction Photo Taken:**

Northeast

**Description:**

Location: BOA  
Boring #: WURVS027  
Aerostar used water level meter to tag Depth to Water as 18.2 ft bgs



**Project Name:**  
Wurtsmith RI EGLE Oversight

**Site Location:**  
Oscoda, MI

**Project No.**  
60514613

**Photo No.**  
**17**

**Date:**  
12/02/21

**Direction Photo Taken:**

North

**Description:**

Location: BOA  
Boring #: WURVS027  
Aerostar takes VAS sample

