

**Former Fort Ord Operable Unit (OU)-1 – Base Closure Team (BCT) Meeting
Status Update
Groundwater Remediation, Well Destruction, and Treatment Plant Decommissioning
Marina, California
19 November 2015**

OU-1 On-Post Activities for 16 October through 11 November 2015

Prepared by HydroGeoLogic, Inc., Roy Evans, Project Manager

Attendees: (to be revised after meeting)

Individual	Attended?	Individual	Attended?
James Specht, USACE		Grant Himebaugh, RWQCB	
Teresa Rodgers, USACE		Edward Ticken, AMEC	
Alex Kan, USACE		Jeff Fenton, AMEC	
Bonnie McNeill, USACE		Derek Lieberman, Ahtna	
Cory Koger, USACE		Brad Clark, Ahtna	
Jonathan Whipple, USACE		Holly Dillon, Ahtna	
William Collins, BRAC		Megan Gehrke, Ahtna	
Tom Ghigliotto, Chenega ¹		Kevin Ghalambor, Burleson	
Melissa Broadston, Chenega ¹		Peter Kelsall, CB&I	
Bart Kowalski, Chenega ¹		Steve Crane, Kemron	
Cary Stiebel, Chenega ¹		Erin Caruso, Gilbane	
Judy Huang, EPA		Larry Friend, Gilbane	
Martin Hausladen, EPA		Kevin Siemann, Gilbane	
Kimberly Gettman, DTSC		Monique Perry, Gilbane	
Min Wu, Ph.D., DTSC		Roy Evans, HGL	
Steve Sterling, DTSC		Kevin Wierengo, HGL	
Edward Walker, DTSC		Gage Dayton, Ph.D., UCSC	
X = attended in person or by telephone; blank indicates absent from the meeting			

¹Chenega staff supporting the BRAC
Ahtna = Ahtna Engineering Services
BRAC = Base Realignment and Closure Fort Ord Office
CB&I = Chicago Bridge & Iron, Inc.
DTSC = California Department of Toxic Substances Control

EPA = U.S. Environmental Protection Agency
HGL = HydroGeoLogic, Inc.
RWQCB = Regional Water Quality Control Board
UCSC = University of California, Santa Cruz
USACE = U.S. Army Corps of Engineers

OU-1 Treatment Plant Operations

In accordance with the Exit Strategy decision logic based on sampling results, the northwest treatment system (NWTs) remains offline. Since system startup in 2006, the NWTs has pumped approximately 212 million gallons of groundwater and removed approximately 6.0 pounds of total volatile organic compounds, primarily trichloroethene (TCE). HGL inspected the treatment plant on 06 November 2015 and operated the sump pump to ensure all recent rainwater was transferred to the influent tank.

OU-1 Groundwater Sampling and Analytical Results

The third Attainment Monitoring event samples were collected between 01 and 06 October. Table 1 presents the analytical results from the first three Attainment Monitoring events. Figures 1 and 2 show the TCE and the perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS) results, respectively, for each well. All sampling results were similar to or slightly less than the second round of Attainment Monitoring and remain below the respective cleanup or screening targets. The next sampling effort is scheduled to occur 10 - 15 December 2015.

Reporting/Federal Facility Agreement Schedule

The status of ongoing and anticipated reports for OU-1 is summarized in Table 2. Ongoing efforts are as follows:

- Responses to EPA comments on the Draft Technical Memorandum presenting the PFOA / PFOS Sample Results for Attainment Monitoring Event #1 were accepted and the final document was submitted on 26 October 2015.
- The Draft 2015 Annual Groundwater Monitoring Report was submitted to the regulatory agencies on 15 October 2015. Comments are due on 16 November.
- The Draft Uniform Federal Policy Quality Assurance Project Plan Revision 2 (UFP-QAPP) Revision 2 was sent to regulatory agencies on 14 October. Comments are due on 16 November.

The draft UFP-QAPP Revision 2 includes the modification to the attainment monitoring well network for PFOA/PFOS sampling and revisions to the data validation and analytical processes related to updates of the Department of Defense Quality Systems Manual. The Army proposes that any agency comments be resolved quickly and incorporated into the December sampling effort (10 to 15 December). This timetable could result in performing the 4th Attainment Monitoring sample collection before the draft final UFP-QAPP is submitted.

OU-1 Weed Control and Rare Plant Monitoring

UCSC completed field observations of weed populations in selected areas to evaluate the overall effectiveness of past weed control activities. UCSC submitted a data summary report. The Army and HGL are developing recommendations regarding future weed control efforts.

New Action Items:

- Resolve UFP-QAPP comments quickly.

Ongoing:

- Submit draft minutes for previous BCT meeting(s)—Draft October minutes have been approved by RWQCB at the time this update was prepared.
- Submit final minutes for previous BCT meeting(s)—complete through September 2015.

TABLE 1 - OU-1 ATTAINMENT MONITORING ANALYTICAL RESULTS

Analyte	TCE			PFOA			PFOS		
Aquifer Cleanup Level or Screening Value	5 µg/L			400 ng/L			200 ng/L		
Sample Event #	1	2	3	1	2	3	1	2	3
Sample Date(s)	5/8/2015	7/17/2015	10/2/2015	5/11/2015	7/20/2015	10/5/2015	5/11/2015	7/20/2015 & 7/24/15	10/5/2015
Well Identification	Groundwater Concentration: TCE in µg/L; PFOA and PFOS in ng/L								
EW-OU1-53-A	1.6	1.8	1.3	14 J-	13.0	9	UJ-	ND	ND
EW-OU1-52-A	3.8	3.7	3.0	3 J-	4.0	4	UJ-	ND	ND
PZ-OU1-10-A1**	3.3	2.5	2.0	120 J-	Not sampled	Not sampled	UJ-	Not sampled	Not sampled
IW-OU1-02-A	1.8	1.8	1.8	9 J-	10.0	7	UJ-	ND	ND
MW-OU1-26-A	2.5	2.5	2.3	34 J-	44.0	42	7 J-	12.0	15
MW-OU1-88-A	4.0	3.2 J-	3.9	270 J-	230.0	180	64 J-	62.0	37
					260.0*	200*		72.0*	44*
PZ-OU1-49-A1	1.8	2.0	2.2	7 J-	8.0	9	UJ-	ND	ND
MW-OU1-61-A	3.9	4.4	3.7	3 J-	3.0	2 J	UJ-	ND	ND
	4.4*	4.3*	3.7	4* J-			UJ-		

Notes:

Italicized text, if present, indicates laboratory analytical results that have not yet been validated

** PZ-OU1-10-A1 was deleted from the sampling network for PFOA and PFOS after Event #1

µg/L = micrograms per liter

* = Duplicate

ND = Not detected

ng/L = nanograms per liter

OU1 = Operable Unit 1

TCE = trichloroethene

PFOA = perfluorooctanoic acid

PFOS = perfluorooctane sulfonate

U = Not detected

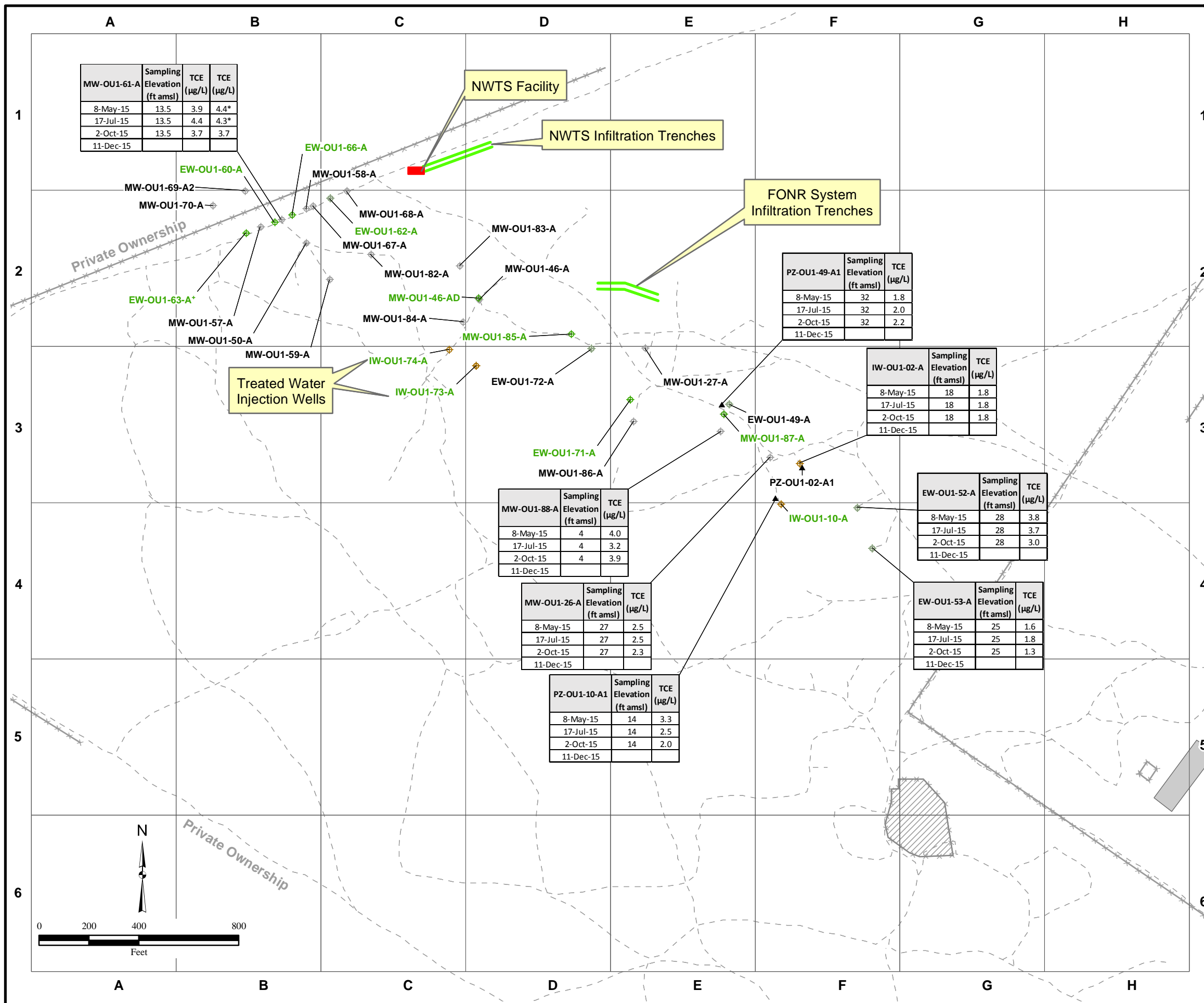
J- = Potential low bias in reported result

Table 2
Current Deliverable Schedule
Former Fort Ord, Marina, CA – 19 November 2015

Deliverable Title	Submittal	Review Comments Due	Status/Remarks
<i>Primary Deliverables</i>			
None Pending			
<i>Secondary Deliverables</i>			
Final PFOA/PFOS Sampling Results Technical Memorandum	26 October 2015	Not Applicable	Final Submitted
Draft 2015 Annual Groundwater Monitoring Report ¹	15 October 2015	16 November 2015	In Agency review
Final UFP-QAPP Revision 2	14 October 2015	16 November 2015	In Agency review
<i>Completed Recent Submittals</i>			
Final UFP-QAPP	May 2014	Received	Submitted 29 May 2014
Final Work Plan for Well Destruction and Treatment Plant Demolition	April 2014	NA	Submitted 04 April 2014
Draft Health & Safety Plan – OU-1 O&M/LTM	May 2014	Received	Draft accepted as Final
Draft Well Destruction and Treatment Plant Demolition Completion Report	August 2014	September 2014	Draft accepted as Final Submitted 03 October 2014
Draft 2014 Annual Groundwater Monitoring Report	December 2014	January 2015	Accepted as Final without Comment
Final Exit Strategy Technical Memorandum	March 2015	April 2015	Draft Final approved without comment. Change pages distributed 12 May 2015
Site Safety and Health Plan Update	March 2015	Not Applicable	Army approved revisions
Final UFP-QAPP Revision 1	March 2015	April 2015	Draft Final approved without comment. Change pages distributed 14 May 2015
2015 Semiannual Groundwater Monitoring Report ¹	07 August 2015	10 September 2015	Accepted without comment

¹ The Semiannual Groundwater Monitoring Report is submitted as a final document but review comments are accepted. Any comments are addressed in the Annual Groundwater Monitoring Report.

Figure 1
Attainment Monitoring Summary
TCE Concentrations in
OU-1 A-Aquifer
Former Fort Ord, CA



Legend

- ⊕ Monitoring Well
- ⊕ Extraction Well
- ⊕ Injection Well
- ▲ Piezometer or 2-Inch Well

MW-OU1-70-A Well Identification Name

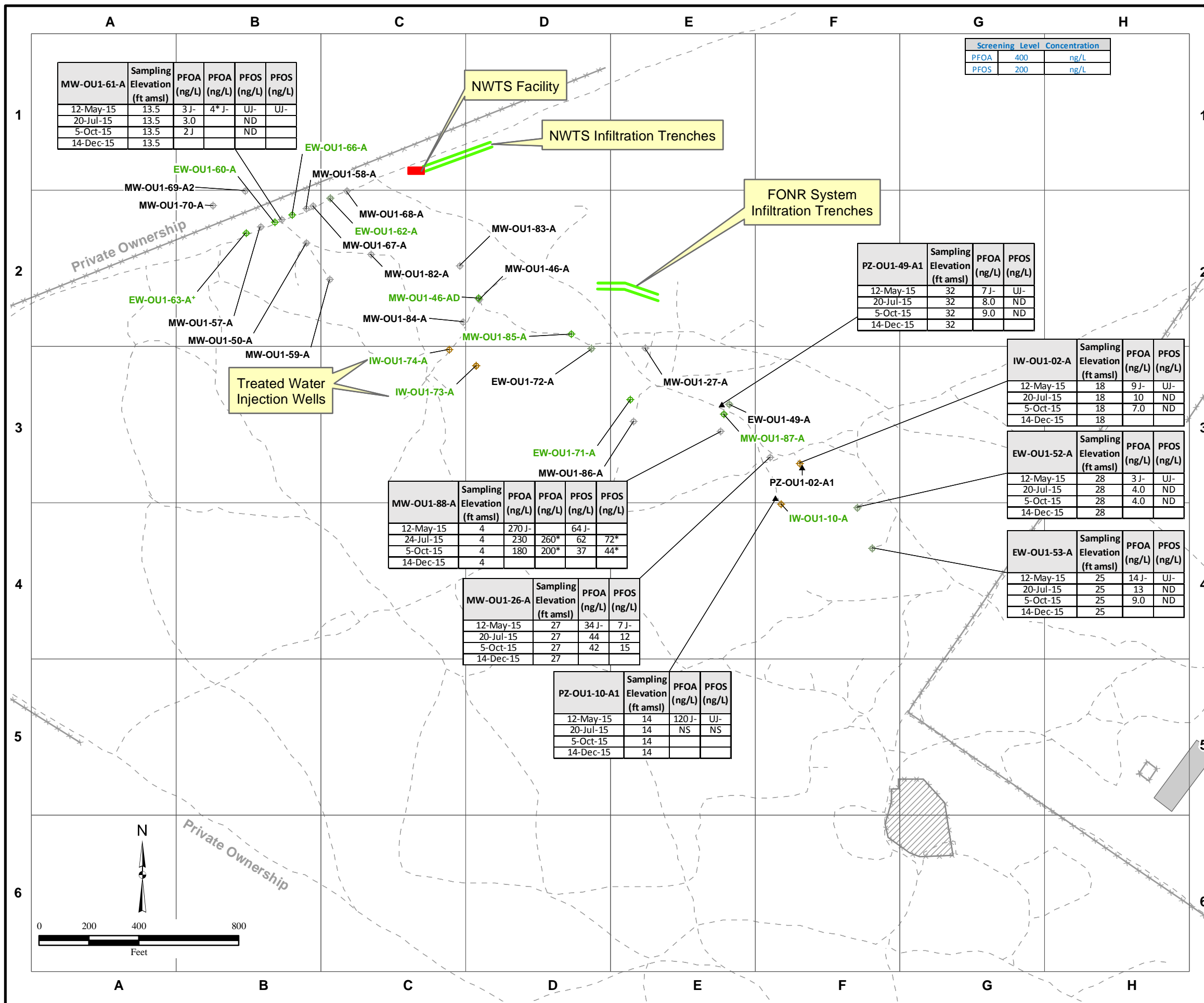
- - - Trail/Unimproved Road
- ⋯ Fence
- Treated Water Infiltration Trench
- ▨ Former Fire Drill Area
- Structure
- NWTS Facility

Notes:
 Well labels in green font indicate extraction or injection well.
 Wells not sampled are not part of Attainment Monitoring Network.
 * = Duplicate Sample
 † = Indicates disconnected extraction well. No longer operable.
 ft amsl = feet above mean sea level
 µg/L = micrograms per liter
 NWTS = Northwest Treatment System
 FONR = Fort Ord Natural Reserve

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 (01)AttainMS_TCE_OU1_A-Aq.mxd
 11/9/2015 TB
 Source: HGL



Figure 2
Attainment Monitoring Summary
PFOA and PFOS Concentrations
in OU-1 A-Aquifer
Former Fort Ord, CA



Legend

- Monitoring Well
- Extraction Well
- Injection Well
- Piezometer or 2-Inch Well
- MW-OU1-70-A Well Identification Name
- Trail/Unimproved Road
- Fence
- Treated Water Infiltration Trench
- Former Fire Drill Area
- Structure
- NWTS Facility

Notes:
 Well labels in green font indicate extraction or injection well.
 Wells not sampled are not part of Attainment Monitoring Network.
 *=Duplicate Sample
 +=Indicates disconnected extraction well. No longer operable.
 ft amsl=feet above mean sea level
 FONR=Fort Ord Natural Reserve
 J=Estimated Result
 J-=Sample result biased low
 ND=Nondetect
 NS=Not Sampled
 ng/L=nanograms per liter
 NWTS=Northwest Treatment System
 PFOA=Perfluorooctanoic Acid
 PFOS=Perfluorooctane Sulfonate
 UJ-=Not detected; Sample result biased low

\\gst-srv-01\HGLGIS\Ft_Ord_MSIW\OU-1 Attainment_Monitoring_Event_1-4\ (02)PFOA_PFOS_Concens_Mon_Summary_Prelim.mxd
 11/9/2015 TB
 Source: HGL

