

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

OU-1 On-Post Activities for 14 August through 4 September 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 McNeil, USACE		Derek Lieberman, Ahtna	
Cory Koger, USACE		Brad Clark, Ahtna	
William Collins, BRAC		Holly Dillon, Ahtna	
Tom Ghigliotto, Chenega ¹		Megan Gehrke, Ahtna	
Melissa Broadston, Chenega ¹		Kevin Ghalambor, Burleson	
Bart Kowalski, Chenega ¹		Peter Kelsall, CB&I	
Cary Stibel, Chenega ¹		Steve Crane, Gilbane	
Lewis Mitani, EPA		Erin Caruso, Gilbane	
Martin Hausladen, EPA		Larry Friend, Gilbane	
Kimberly Gettman, DTSC		Kevin Siemann, 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.

Lightning struck the NWTS transformer during the night on 06 August. PG&E replaced transformer on 12 August. HGL is testing to identify the repairs needed to restore full automatic batch operation. Well EW-OU1-60-A will not be repaired and this well will remain off-line as agreed by all parties at the August Base Closure Team (BCT) meeting. HGL has determined:

- Automatic system operation is restored.
- The Variable Frequency Drive (VFD) at well EW-OU1-66-A was rendered inoperable by the lightning strike. This VFD will have to be repaired to establish hydraulic boundary.
- Extraction well IW-10-OU1-A is not functioning properly and will be further investigated.
- The remaining extraction wells along the main path of former plume travel—wells MW-OU1-87-A, EW-OU1-71-A, MW-OU1-85-A, and MW-OU1-46-AD—are operable.

The Army proposes that EW-OU1-66-A VFD repairs be postponed unless future attainment monitoring sample results indicate that hydraulic control needs to be re-established at the former Fort Ord northwest boundary. The repair work is estimated to require a few days after the necessary replacement parts are obtained and the electrical subcontractor is available. The overall repair period could require 2 to 4 weeks.

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).

OU-1 Groundwater Sampling and Analytical Results

The second Attainment Monitoring event samples were collected between 17 and 24 July. The validated analytical results for PFOA/PFOS are summarized below:

- Results at each well remain below the PHA screening values and varied by no more than 40 parts per trillion from Round 1 results at each well.
- Field blank, trip blank, and equipment blank were ND for both chemicals.
- Results suggest that delay in extraction of Round 1 samples did not bias those analytical results.

The validated analytical results for VOC sample were also very similar to Attainment Monitoring 1 results. All VOC concentrations were below the ACL cleanup targets.

- Maximum TCE at 4.4 micrograms/liter ($\mu\text{g/L}$) at MW-OU1-61-A. This is identical to previous result (considering duplicates on same status as parent samples). This is fourth consecutive value below ACL (second in the Attainment Monitoring program).
- TCE at MW-OU1-88-A (last well to meet ACL) dropped from 4.0 $\mu\text{g/L}$ to 3.2 $\mu\text{g/L}$. This is also the fourth consecutive value below the ACL and second within the Attainment Monitoring program.
- TCE at PZ-OU1-10-A1 dropped from 3.3 $\mu\text{g/L}$ to 2.5 $\mu\text{g/L}$
- TCE at all other wells was $\pm 0.2 \mu\text{g/L}$ in comparison to Attainment Monitoring #1.

Table 1 presents the results from the first two Attainment Monitoring events. Figure 1 shows the PFOA and PFOS results for each well. The next sampling event will occur 01 October (Thursday) to 06 October (Tuesday).

Reporting/Federal Facility Agreement Schedule

The status of relevant submitted and anticipated reports for OU-1 is summarized in Table 2. The draft 2015 Fort Ord Natural Reserve Impact Assessment and Habitat and Rare Plant Species Survey Results Report is being prepared. The Draft Technical Memorandum presenting the PFOA / PFOS Sample Results for Attainment Monitoring Event #1 and the Semiannual 2015 groundwater monitoring report are being reviewed by the regulatory agencies and the public comments on these submittals are due September 8 – 10.

The draft Uniform Federal Policy Quality Assurance Project Plan (UFP-QAPP) update will be submitted for regulatory review in late October. The update will include 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 (due in late November) on the draft version of the UFP-QAAPP 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 UF-QAPP is formally 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. HGL is evaluating the data to assess the effectiveness of past weed control actions.

Action Items:

- None.

Ongoing:

- Submit draft minutes for previous BCT meeting(s)—Draft minutes for August were approved without comment by all regulatory agencies.
- Submit final minutes for previous BCT meeting(s)—complete through July 2015.

Table 1
OU-1 Attainment Monitoring Sample Results, Former Fort Ord, CA

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

Notes:

µg/L = micrograms per liter
 ng/L = nanograms per liter
 * = Duplicate

J- = Potential low bias in reported result
 ND = Not detected
 OU1 = Operable Unit 1

PFOA = perfluorooctanoic acid
 PFOS = perfluorooctane sulfonate
 RL = reporting limit

TCE = trichloroethene
 U = Not detected

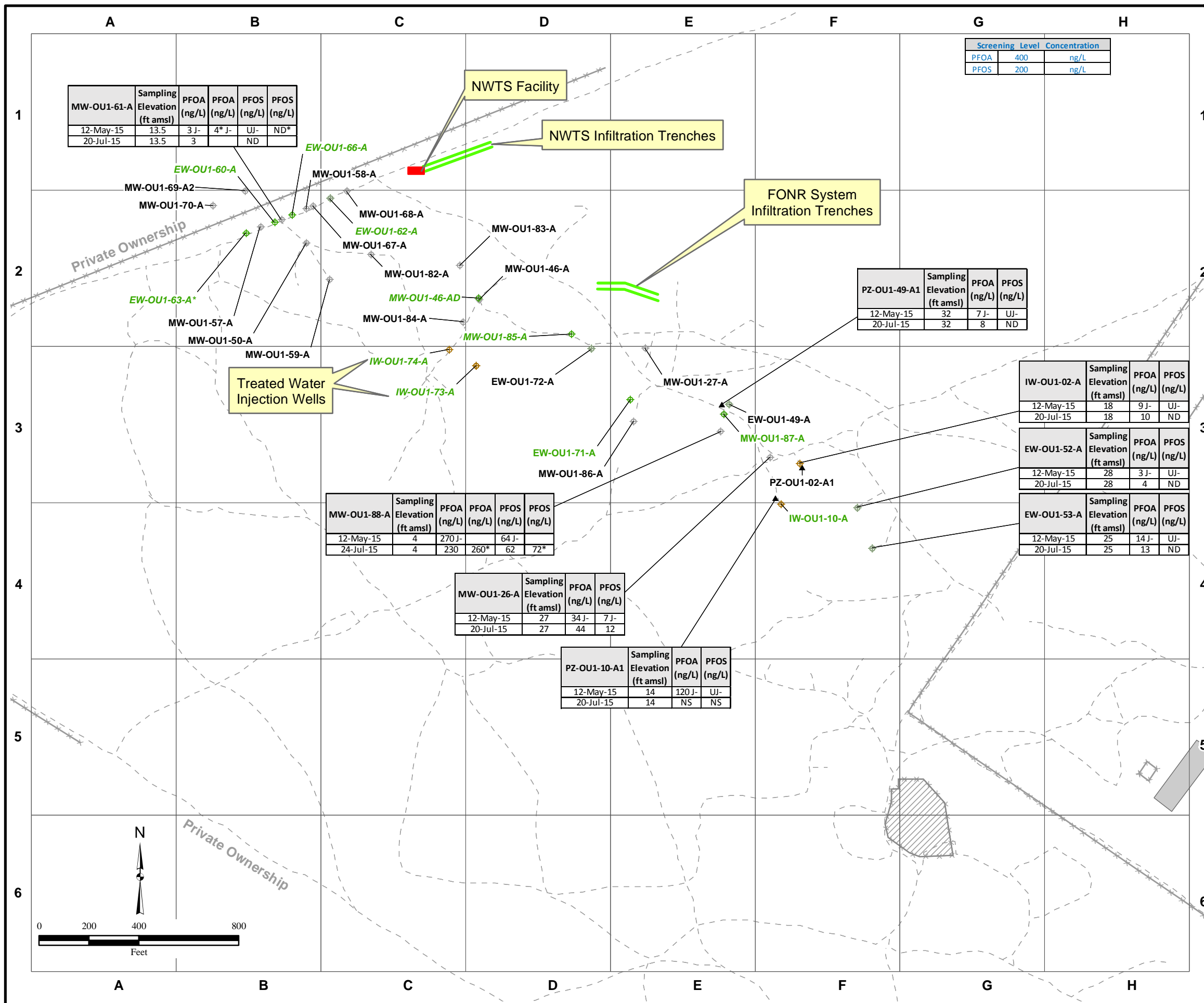
** PZ-OU1-10-A1 was deleted from the sampling network for PFOA and PFOS after Event #1
Italic font, if present, indicates preliminary, unvalidated data

Table 2
Current Deliverable Schedule
Former Fort Ord, Marina, CA – 10 September 2015

Deliverable Title	Submittal	Review Comments Due	Status/Remarks
<i>Primary Deliverables</i>			
None Pending			
<i>Secondary Deliverables</i>			
Draft PFOA/PFOS Sampling Results Technical Memorandum	Scheduled for 22 September 2015	08 September 2015	Draft in Agency review
2015 Semi-Annual Groundwater Monitoring Report ¹	07 August 2015	10 September 2015	In Agency review
Draft 2015 Annual Groundwater Monitoring Report ¹	Scheduled for 15 October 2015	November 2015	On hold pending completion of scheduled sampling.
<i>Completed Recent Submittals</i>			
Draft UFP-QAPP	March 2014	May 2014	Submitted 04 March 2014
Final UFP-QAPP	May 2014	Received	Submitted 29 May 2014
Final 2013 Annual and 3rd Quarter Groundwater Monitoring Report	April 2014	NA	Submitted 04 April 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 Exit Strategy Technical Memorandum	December 2014	February 2015	Comments received 20 February 2015
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.

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
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
- NWTS Facility

Notes:
 Well labels in green font indicate extraction or injection well.
 Italicized font shows pumping suspended.
 Wells not sampled are not part of Attainment Monitoring Network.
 * =Duplicate
 ft amsl=feet above mean sea level
 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

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 ()PFOA_PFOS_Concens_Mon_Summary_Prelim.mxd
 8/12/2015 SS
 Source: HGL

