

Final Base Closure Team (BCT) Meeting Minutes
Fort Ord Operable Unit (OU) – 1 On-Post Groundwater Remediation
Marina, California
10:00 a.m., 16 November 2013

Attendees are noted in the “HTW minutes” section for this meeting at the link below:

http://www.fortordcleanup.com/community/viewmeeting2.asp?document=2013_htw-bct

Treatment Plant Operations

HGL reported that the Northwest Treatment System (NWTS) operated continuously from 3 October 2013 through 6 November 2013. Extraction wells EW-OU1-60-A, EW-OU1-66-A, and MW-OU1-87-A have operated continuously. Extraction well IW-OU1-10-A was restarted on 14 October and will be run intermittently (along with currently idled extraction well MW-OU1-46-A) over the next few months to maintain operability and provide additional data during the next sampling event to monitor overall performance. Total pumping from the NWTS from inception through 6 November was approximately 2,310,000 gallons.

HydroGeoLogic, Inc. (HGL) was informed by Pacific Gas & Electric’s subcontractor Diversified Utility Services Incorporated (DUSI) that the transformer pole at the NWTS was to be replaced on 6 November. Consequently, the NWTS plant was shut down at 0900 on that day. However, at 1000 DUSI called to say the transformer pole replacement was rescheduled. HGL restarted the NWTS at 1030 and will coordinate with DUSI to shut down the NWTS before the transformer pole replacement currently scheduled for 13 November.

Since system startup in 2006, the NWTS has removed approximately 6.0 pounds of total volatile organic compounds, primarily trichloroethene (TCE). An estimated 0.13 pound of TCE has been removed in 2013. The most recent system performance monitoring samples were collected on 18 September 2013 from the following extraction wells:

EW-OU1-71-A MW-OU1-87-A EW-OU1-66-A EW-OU1-61-A

Sample results from these wells and the monitoring wells sampled on 18 – 19 September 2013 are discussed in the following section.

Groundwater Quality Data

There were no changes to the TCE concentrations reported in previous meetings for the preliminary, unvalidated sampling results from the September 2013 sampling event. The preliminary results showed several detections of cis-1,2-dichloroethene as estimated values (J flag) at concentrations below the reporting limit of 0.5 micrograms per liter ($\mu\text{g/L}$). However, the validation process revised these values to be nondetect because cis-1,2-dichloroethene was detected in the trip blank at 0.13 J $\mu\text{g/L}$. The validated results are presented in attached Tables 1A and 1B for the extraction wells listed previously.

The observed TCE concentration trend in extraction well EW-OU1-71-A decreased to 1.9 $\mu\text{g/L}$ from 4.4 $\mu\text{g/L}$ in the previous sample collected a year ago. As shown in Table 1A, the TCE concentration in

the other extraction wells sampled increased by 0.1 $\mu\text{g/L}$ to 0.3 $\mu\text{g/L}$ since the previous sample. These minimal increases indicate essentially stable conditions since the last sampling events in March and June of 2013.

The validated analytical results from the monitoring well samples showed that only TCE and chloroform were detected in any sample. The maximum chloroform concentration was 0.19 $\mu\text{g/L}$. As discussed in the previous Base Closure Team (BCT) meeting, TCE concentrations were very similar to the previous result at each well and varied within $\pm 1 \mu\text{g/L}$. MW-OU1-61-A and MW-OU1-88-A continue to be the only two wells where the TCE concentration exceeded the Aquifer Cleanup Level (ACL) of 5 $\mu\text{g/L}$. In September, the TCE concentration at MW-OU1-61-A declined to 6.7 $\mu\text{g/L}$ while MW-OU1-88-A rose slightly to 6.4 $\mu\text{g/L}$.

Figure 1 shows the TCE concentration contours based on the validated September 2013 data. Based on the recent sampling results, HGL recommended that the following samples be collected in December 2013:

- Monitoring wells MW-OU1-88-A and MW-OU1-61-A
- Extraction wells MW-OU1-87-A and IW-OU1-10-A (restarted on 14 October 2013)

HGL noted that the recommended sampling is consistent with the approach adopted in March 2013 to enable us to more rapidly identify when the cleanup goal is met. After a review of well locations the U.S. Environmental Protection Agency (USEPA), the California Department of Toxic Substances Control (DTSC), the California Regional Water Quality Control Board (RWQCB), and the Army representatives approved the recommendation.

Well Destruction and Former OU-1 Treatment Plant Demolition

The preliminary draft work plan for the destruction of selected monitoring wells and for the former OU-1 source area and off-Post treatment systems was submitted for Army review. Field work is expected to begin next spring in accordance with the schedule constraints of the Habitat Management Plan and after regulatory agency approval of the final work plan. The draft document is planned for submittal in December.

Reporting/Federal Facility Agreement Schedule

All scheduled submittals have been made for primary and secondary deliverables. The status of submitted and anticipated reports for 2012 and 2013 is summarized in Table 2. HGL is preparing the 2013 Annual and Third Quarter Groundwater Monitoring Report for Army review. No comments were received on the 2013 First Quarter Groundwater Monitoring Report and the relevant discussions therein will be incorporated into the annual report without change.

DTSC encouraged the Army to be realistic when projecting document submittal dates. Late submittals create performance tracking issues within DTSC.

Weed Control and Rare Plant Monitoring

University of California Santa Cruz staff are working on the report describing the weed control activities performed in 2013.

Uniform Federal Policy (UFP)-Quality Assurance Project Plan (QAPP)

The existing QAPP for OU-1 is being updated to reflect the UFP format. The draft document is planned for submittal in December. HGL informed the group that the original QAPP was prepared in 2004 and did not follow the UFP format. The upcoming submittal will not be marked in track change because the new format changes the entire document. HGL noted that there is no change in the laboratory methods, reporting limits, or related criteria.

Action Items:

Ongoing:

- Submit draft minutes for previous BCT meeting(s) — complete.
- Submit final minutes for previous BCT meeting(s) — Draft September minutes are in regulatory review. The USEPA, DTSC, and RWQCB approved the draft September minutes without change. Draft October minutes were submitted for review yesterday. RWQCB noted one typographical error but otherwise accepted the draft as final. USEPA stated they did not attend the October BCT meeting and thus would not be commenting. DTSC stated they would respond with any comments tomorrow.
- Prepare update for the next BCT meeting — to be done.

**Fort Ord HTW BCT Meeting
Marina, California
13 November 2013**

OU-1 On-Post Groundwater Remediation

ATTACHMENT 1

Reference Table(s) and Figure(s)

Table 1A
TCE in OU-1 FONR Groundwater Remediation System – Performance Monitoring
BCT Meeting for Former Fort Ord – 16 October 2013

Began:	FONR Extraction Well (listed from south to north)					Boundary Extraction Well (from west to east)				NWTS						
	Nov-10	Oct-07				Jul-06				INFLUENT	MIDPOINT	EFFLUENT				
Date	IW-10	MW-87	EW-71	MW-85	MW-46AD	EW-63	EW-60	EW-66	EW-62							
TCE (µg/L)																
11/9/07	Used as monitoring well until pump installed in October 2010. Pumping began 03 November 2010.	16	13	19	14	ND	ND	1.7	ND	11	ND	ND				
1/18/08		11	11	8.9	8.2	ND	ND	1.2	ND	6.0	ND	ND				
3/18/08		11	14	6.7	5.8	ND	0.29	1.5	ND	5.6	ND	ND				
5/27/08		9.7	18	2.5	6.1	ND	ND	1.8	ND	3.9	ND	ND				
7/21/08		9.1	14	4.4	3.4	ND	0.78	1.4	ND	3.6	ND	ND				
9/29/08		9.3	J 15	J 4.3	J 2.9	J	ND	0.90	J 1.7	J	ND	3.8	J 0.19	J	ND	
12/1/08		5.8	11	2.6	1.6	ND	0.82	0.91	ND	2.7	0.35	J	ND			
1/26/09		5.9	10	2.2	1.2	ND	0.48	J 0.78	ND	2.4	ND	ND	ND			
3/9/09		5.8	9.9	2.1	1.2	ND	0.95	0.86	ND	2.7	ND	ND	ND			
6/11/09		6.9	11	2.4	1.5	ND	0.88	1.7	ND	2.6	0.14	J	ND			
9/15/09		6.8	9.4	1.7	0.78	ND	inactive	1.1	0.036	J	2.3	0.35	J	ND		
12/14/09		6.9	7.5	0.84	not sampled	not sampled	inactive	0.94	not sampled	2.3	0.65	J	ND			
3/22/10		7.2	8.5	0.62	0.55	inactive	ND	0.90	inactive	2.3	ND	ND	ND			
6/21/10		7.4	6.5	0.90	0.40	J	inactive	0.86	0.58	inactive	2.1	ND	ND			
9/20/10		7.7	6.6	0.83	0.35	J	discontinued	0.63	0.49	J	inactive	2.3	not sampled	ND		
12/16/10		5.2	6.9	5.2	0.58	0.28	J	discontinued	0.72	0.42	J	inactive	2.6	0.18	J	ND
3/7/11		5.1	6.0	4.6	0.55	0.60	discontinued	0.87	0.42	J	inactive	2.5	0.59	ND		
6/7/11		4.2	6.1	4.0	0.78	0.63	discontinued	0.76	0.36	J	inactive	2.6	1.0	ND		
9/20/11		4.5	6.2	4.2	1.10	0.38	J	discontinued	0.57	0.36	J	inactive	2.5	1.7	ND	
12/7/11		3.8	5.1	3.7	--	--	discontinued	inactive	0.27	J	inactive	1.8	2.1	0.13	J	
3/15/12	3.7	5.5	3.8	0.70	0.23	J	discontinued	inactive	0.38	J	inactive	0.81	0.32	J	ND	
9/25/12	--	5.3	4.4	--	--	discontinued	inactive	0.19	J	inactive	1.8	0.72	J	ND		
1/8/13	--	5.4	--	--	--	discontinued	ND	0.19	J	inactive	1.54	--	ND			
3/27/13	--	4.8	--	--	--	discontinued	ND	0.23	J	inactive	1.48	--	ND			
6/26/13	--	4.4	--	--	--	discontinued	--	--	J	inactive	1.90	--	ND			
9/18/13	--	4.7	1.9	--	--	discontinued	0.17	J	0.31	J	inactive	--	--	ND		
		Italics (if used) indicate data not yet validated					Bold font indicates concentration > ACL									
Notes:																
ACL - aquifer cleanup level	-- - Not sampled															
µg/L - micrograms per liter																
J - Data qualified as estimated	Blue font indicates the concentration is calculated using the weighted average of the active pumping wells.															
ND - nondetect																
TCE - trichloroethene																
FONR - Fort Ord Natural Reserve																
NWTS - Northwest Treatment System																

Table 1B

cis-1,2-DCE in OU-1 FONR Groundwater Remediation System – Performance Monitoring

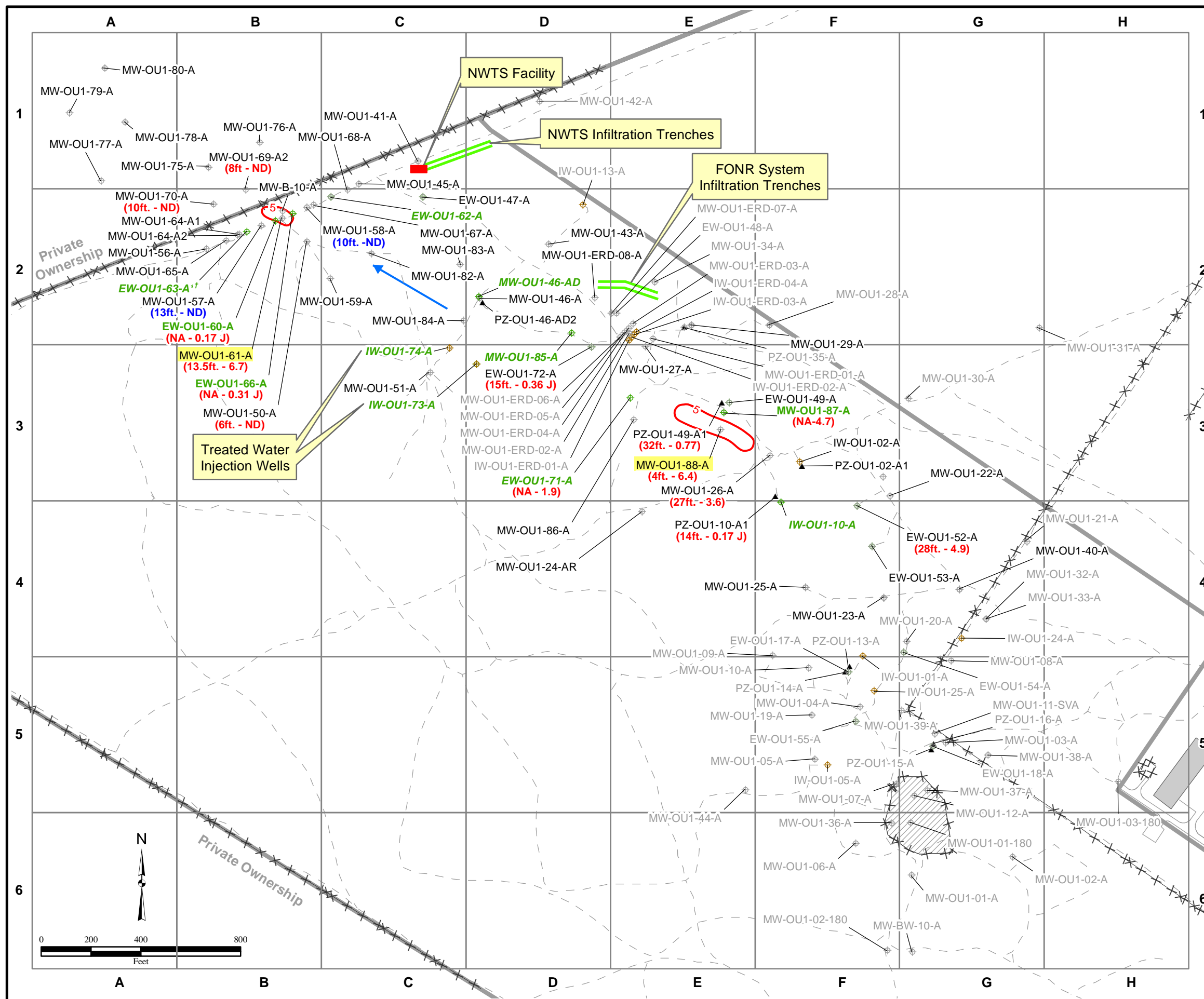
BCT Meeting for Former Fort Ord – 16 October 2013

Began:	FONR Extraction Well (listed from south to north)					Boundary Extraction Well (from west to east)				NWTS								
	Nov-10	Oct-07				Jul-06				INFLUENT	MIDPOINT	EFFLUENT						
Date	IW-10	MW-87	EW-71	MW-85	MW-46AD	EW-63	EW-60	EW-66	EW-62									
cis-1,2-DCE (µg/L)																		
11/09/07	Used as monitoring well until pump installed in October 2010. Pumping began 03 November 2010.	1.9	1.6	2.3	1.70	ND	ND	ND	ND	1.3	ND	ND						
01/18/08		1.20	1.40	1.00	1.20	ND	ND	0.11	ND	0.66	ND	ND						
03/18/08		1.20	1.50	0.74	0.63	ND	ND	ND	ND	0.59	0.11	ND						
05/27/08		0.88	2.10	0.26	0.74	ND	ND	ND	ND	0.36	0.21	ND						
07/21/08		0.80	1.50	0.52	0.37	ND	ND	ND	ND	0.41	0.34	ND						
09/29/08		0.99	1.60	0.54	0.30	ND	ND	0.13	ND	0.42	0.42	0.12						
12/01/08		0.67	1.30	0.33	0.21	J	ND	ND	ND	ND	0.27	J	0.37	J	0.19	J		
01/26/09		0.63	1.20	0.29	J	0.12	J	ND	ND	ND	ND	0.26	J	0.24	J	ND		
03/09/09		0.62	1.20	0.29	J	0.13	J	ND	ND	ND	ND	0.23	J	0.26	J	ND		
06/11/09		0.71	1.10	0.30	J	0.13	J	ND	ND	0.14	J	ND	0.24	J	0.28	J	ND	
09/15/09		0.80	1.00	0.22	J	0.08	J	ND	inactive	0.03	J	ND	0.22	J	0.37	J	0.03	J
12/14/09		0.67	0.65	0.10	J	not sampled	not sampled	inactive	ND	J	not sampled	0.21	J	0.30	J	0.11	J	
03/22/10		0.67	0.79	ND	ND	inactive	ND	ND	inactive	0.20	J	0.11	J	0.13	J			
06/21/10		0.67	0.53	0.14	J	ND	inactive	ND	ND	inactive	0.20	J	0.23	J	ND			
9/20/10		0.66	0.46	J	ND	ND	discontinued	ND	ND	inactive	0.23	J	not sampled	ND				
12/16/10		0.55	0.66	0.35	J	ND	J	ND	discontinued	ND	ND	inactive	0.27	J	0.28	J	ND	
3/7/11	0.37	J	0.52	0.28	J	0.11	J	ND	discontinued	ND	ND	inactive	0.23	J	0.30	J	ND	
6/7/11	0.35	J	0.55	0.29	J	ND	ND	discontinued	ND	ND	inactive	0.18	J	0.31	J	0.15	J	
9/20/11	0.25	J	0.46	J	0.21	J	ND	ND	discontinued	ND	ND	inactive	0.17	J	0.19	J	0.30	J
12/7/11	0.27	J	0.48	J	0.19	J	not sampled	discontinued	inactive	ND	inactive	0.16	J	0.17	J	0.23	J	
3/15/12	0.15	J	0.40	J	0.22	J	0.15	J	ND	discontinued	inactive	ND	inactive	ND	0.24	J	ND	
9/25/12	--	J	0.39	J	0.23	J	--	--	discontinued	inactive	ND	inactive	ND	0.24	J	ND		
1/8/13	--	J	0.35	J	--	--	--	--	discontinued	ND	ND	inactive	0.12	--	--			
3/27/13	--	J	0.34	J	--	--	--	--	discontinued	ND	ND	inactive	0.12	--	--			
6/26/13	--	J	0.31	J	--	--	--	--	discontinued	--	--	inactive	0.27	--	--			
9/18/13	--	J	0.32	J	ND	--	--	--	discontinued	ND	ND	inactive	--	--	0.14	J		
Italics (if used) indicate data not yet validated					Bold font indicates concentration > ACL													
Notes:																		
ACL - aquifer cleanup level				--- Not sampled														
µg/L - micrograms per liter																		
J - Data qualified as estimated				Blue font indicates the concentration is calculated using the weighted average of the active pumping wells.														
ND - nondetect																		
DCE - dichloroethene																		
FONR - Fort Ord Natural Reserve																		
NWTS - Northwest Treatment System																		

Table 2
Current Deliverable Schedule
BCT Meeting for Former Fort Ord, Marina, CA – 20 September 2013

Deliverable Title	Submittal Due	Review Comments Due	Status/Remarks
<i>Primary Deliverables</i>			
Draft 2013 Annual and 3rd Quarter Groundwater Monitoring Report	December 2013	January 2014	In progress.
Draft Well Destruction and Former OU-1 Treatment Plant Decommissioning Work Plan	December 2013	January 2014	In Army review.
<i>Secondary Deliverables</i>			
OU-1 UFP-QAPP	December 2013	January 2014	In progress.
<i>Completed Recent Submittals</i>			
Draft 2012 Annual and 3rd Quarter Groundwater Monitoring Report	December 2012	NA	Submitted 31 December 2012. Waiting for agency comments.
2012 FONR Impact Report	February 2012	NA	Submitted 05 February 2012.
Final 2012 Annual and 3rd Quarter Groundwater Monitoring Report	March 2013	NA	Submitted 21 March 2013.
2013 First Quarter Groundwater Monitoring Report	June 2013	August 2013	Submitted 1 July 2013.

Figure 1
OU-1 FONR A-Aquifer
TCE Concentration in Groundwater
September 2013
Former Fort Ord, CA



Legend

- ⊕ Well
- ⊕ Extraction Well
- ⊕ Injection Well
- ▲ Piezometer or 2-Inch Well
- Groundwater Flow Direction
- ⊕ MW-OU1-21-A Well Destroyed
- ⊕ MW-OU1-88-A Location with March 2013 TCE Concentrations at or above ACL (5 µg/L)
- MW-OU1-57-A Well ID
- (13.5ft. - 6.7) September 2013 TCE Result (µg/L)
- Sample Elevation (feet above mean sea level)
- (13ft. - ND) Jan/Feb/March 2013 Latest TCE Result (µg/L)
- Sample Elevation (feet above mean sea level)
- 5 TCE contour based on September 2013 Data
- - - Trail/Unimproved Road
- × Fence
- Treated Water Infiltration Trench
- Property Boundary
- Building
- ▨ Former Fire Drill Area

Notes:
Units of TCE concentration are in micrograms per liter.
FONR = Fort Ord Natural Reserve
NWTS = Northwest Treatment System
ACL = Aquifer Cleanup Level
ND = nondetect
NA = Depth is not applicable - sample is from pumping well
µg/L = micrograms per liter
Wells shown with an asterisk were not used to develop contour boundaries.
Wells for which no data are posted were not sampled.
J = Estimated value
Green font indicates extraction or injection well.
Italicized font shows pumping suspended.
† = Disconnected extraction well. No longer operable.

\\gst-srv-01\hglgis\Ft_Ord_MSIW\O&M_H10203\
(1)TCE_2013-09.mxd
11/12/2013 CNL
Source: HGL

