Final Fort Ord Operable Unit 1 Meeting Minutes
Groundwater Remediation, Well Destruction, and Treatment Plant Decommissioning
Marina, California
1:30 p.m., 28 February 2014
Prepared by HydroGeoLogic, Inc.

OU-1 Treatment Plant Operations

HydroGeoLogic, Inc. (HGL) reported the Northwest Treatment System (NWTS) operated continuously from 29 January 2014 until 1:50 a.m. today (the morning of 28 February 2014). The power went out at that time because of a storm in the Marina area. HGL will visit the site and restart the NWTS after the BCT meeting concludes. Extraction wells EW-OU1-60-A, EW-OU1-66-A, and MW-OU1-87-A are operating and total pumping from those wells is approximately 19 gallons per minute. Since system startup in 2006, the NWTS has pumped approximately 208 million gallons of groundwater and removed approximately 6.0 pounds of total volatile organic compounds, primarily trichloroethene (TCE). An estimated 0.08 pound of TCE has been removed since the 18 September 2013 sampling event.

OU-1 Groundwater Quality Data

HGL collected the following samples from monitoring wells and the NWTS in December 2013:

- Extraction wells MW-OU1-87-A and IW-OU1-10-A (restarted on 14 October 2013 and shut down on 02 January 2014)
- Monitoring wells MW-OU1-88-A and MW-OU1-61-A

Unvalidated sampling results were presented and discussed at the January Base Closure Team (BCT) meeting. Validated results have been received and the results were unchanged. TCE concentrations were very similar to the previous result at each well and varied within ± 1 micrograms per liter (μg/L). MW-OU1-61-A and MW-OU1-88-A remain the only two wells where the TCE concentration exceeds the Aquifer Cleanup Level (ACL) of 5 μg/L. TCE was the only chemical with a concentration that exceeded the laboratory reporting limit of 0.5 μg/L and it was detected in each well. Concentrations of cis-1,2-dichloroethene were detected in three of the four wells and chloroform was detected in two. The validated sampling results for the NWTS are presented in attached Tables 1A and 1B. Figure 1 presents the TCE concentration contours based on the validated September 2013 data because the December data did not alter the previous TCE concentration contours.

Reporting/Federal Facility Agreement Schedule

All scheduled submittals have been made for primary and secondary deliverables. The status of submitted and anticipated reports for 2014 is summarized in Table 2. We are awaiting comments on the Draft OU-1 2013 Annual and Third Quarter Groundwater Monitoring Report (submitted on 17 January 2014) and the Draft Well Destruction and Former OU-1 Treatment Plant Decommissioning Work Plan (submitted on 11 February 2014). HGL requested that agencies consider the Well Destruction Work Plan to be a higher review priority.

The Draft Unified Federal Program Quality Assurance Project Plan (UFP-QAPP) for OU-1 will be submitted early next week (04 March 2014). The chemistry, reporting, and quality control elements of the UFP-QAPP were changed from the current QAPP only to reflect implementation of *DoD Quality Systems Manual for Environmental Laboratories*, *Version 5.0.* The update is focused on integrating the current OU-1 QAPP into the Fort Ord-wide UFP-QAPP used to support the other Fort Ord operable units.

Weed Control and Rare Plant Monitoring

The 2013 Rare Plant Survey and Habitat Impact Report was submitted to the Army and the University of California Santa Cruz on 24 February 2014.

Well Destruction and Treatment Plant Demolition

The Fort Ord Base Realignment and Closure (BRAC) office determined that snowy plover nesting season schedule constraints do not apply to those wells to be destroyed on California State Park land. Assuming no delays in obtaining regulatory approval for the Well Destruction and Former OU-1 Treatment Plant Decommissioning Work Plan, the well destruction effort is scheduled to begin in May.

Action Items:

- The Army requested that the "Property Owner" label on the permit applications be changed to "Well Owner" before submittal. It was noted that the Army owns the wells but not the various properties.
- Franklin Mark (DTSC) will be transitioning from Fort Ord to another project within DTSC. Dr. Min Wu will be assuming Franklin's role on the OU-1 project.
- HGL should send an electronic version of the Draft QAPP to Dr. Wu for his review.
- HGL should verify that all OU-1 deliverables have been uploaded to GEOTRACKER.
- DTSC indicated they would provide comments on the draft January BCT minutes next week.

Ongoing:

- Submit draft minutes for previous BCT meeting(s)—complete. The draft January meeting minutes have been approved as submitted by the U. S. Environmental Protection Agency and the Regional Water Quality Control Board. We are awaiting approval or comments from the Department of Toxic Substances Control.
- Submit approved final minutes for previous BCT meeting(s) — approval and submittals are complete through December 2013 minutes.
- Prepare update for the next BCT meeting.

Fort Ord HTW BCT Meeting
28 February 2014

Fort Ord Operable Unit 1
Groundwater Remediation, Well Destruction, and Treatment Plant Decommissioning

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 – 28 February 2014

	FONR Extraction Well (listed from south to north)					Boundary Extraction Well (from west to east)				NWTS		
Began:	**Nov-10**	**Oct-07**				**Jul-06**						
Date	**IW-10**	**MW-87**	**EW-71**	**MW-85**	**MW-46AD**	**EW-63**	**EW-60**	**EW-66**	**EW-62**	**INFLUENT**	**MIDPOINT**	**EFFLUENT**
						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
3/9/09		**5.8**	**9.9**	2.1	1.2	ND	0.95	0.86	ND	2.7	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
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	not sampled		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	--	--	inactive	1.90	--	ND
9/18/13	--	4.7	1.9	--	--	discontinued	0.17 J	0.31 J	inactive	2.00	--	ND
12/17/13	2.8	4.2	--	--	--	discontinued	--	--	inactive	1.48	--	--

Notes:

Italics (if used) indicate data not yet validated

Bold font indicates concentration > ACL

ACL - aquifer cleanup level

-- - Not sampled

µg/L - micrograms per liter

J - Data qualified as estimated

ND - nondetect

TCE - trichloroethene

NWTS - Northwest Treatment System

FONR - Fort Ord Natural Reserve

Blue font indicates the concentration is calculated using the weighted average of the active pumping wells.

Table 1B

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

BCT Meeting for Former Fort Ord – 28 February 2014

	FONR Extraction Well (listed from south to north)					Boundary Extraction Well (from west to east)				NWTS		
Began:	**Nov-10**	**Oct-07**				**Jul-06**						
Date	**IW-10**	**MW-87**	**EW-71**	**MW-85**	**MW-46AD**	**EW-63**	**EW-60**	**EW-66**	**EW-62**	**INFLUENT**	**MIDPOINT**	**EFFLUENT**
	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	--	0.39 J	0.23 J	--	--	discontinued	inactive	ND	inactive	ND	0.24 J	ND
1/8/13	--	0.35 J	--	--	--	discontinued	ND	ND	inactive	0.12	--	--
3/27/13	--	0.34 J	--	--	--	discontinued	ND	ND	inactive	0.12	--	--
6/26/13	--	0.31 J	--	--	--	discontinued	--	--	inactive	0.27	--	--
9/18/13	--	ND	ND	--	--	discontinued	ND	ND	inactive	ND	--	ND
12/17/13	ND	0.19 J	--	--	--	discontinued	--	--	inactive	ND	--	--

Notes:

Italics (if used) indicate data not yet validated

Bold font indicates concentration > ACL

ACL - aquifer cleanup level

-- - Not sampled

µg/L - micrograms per liter

J - Data qualified as estimated

ND - nondetect

TCE - trichloroethene

NWTS - Northwest Treatment System

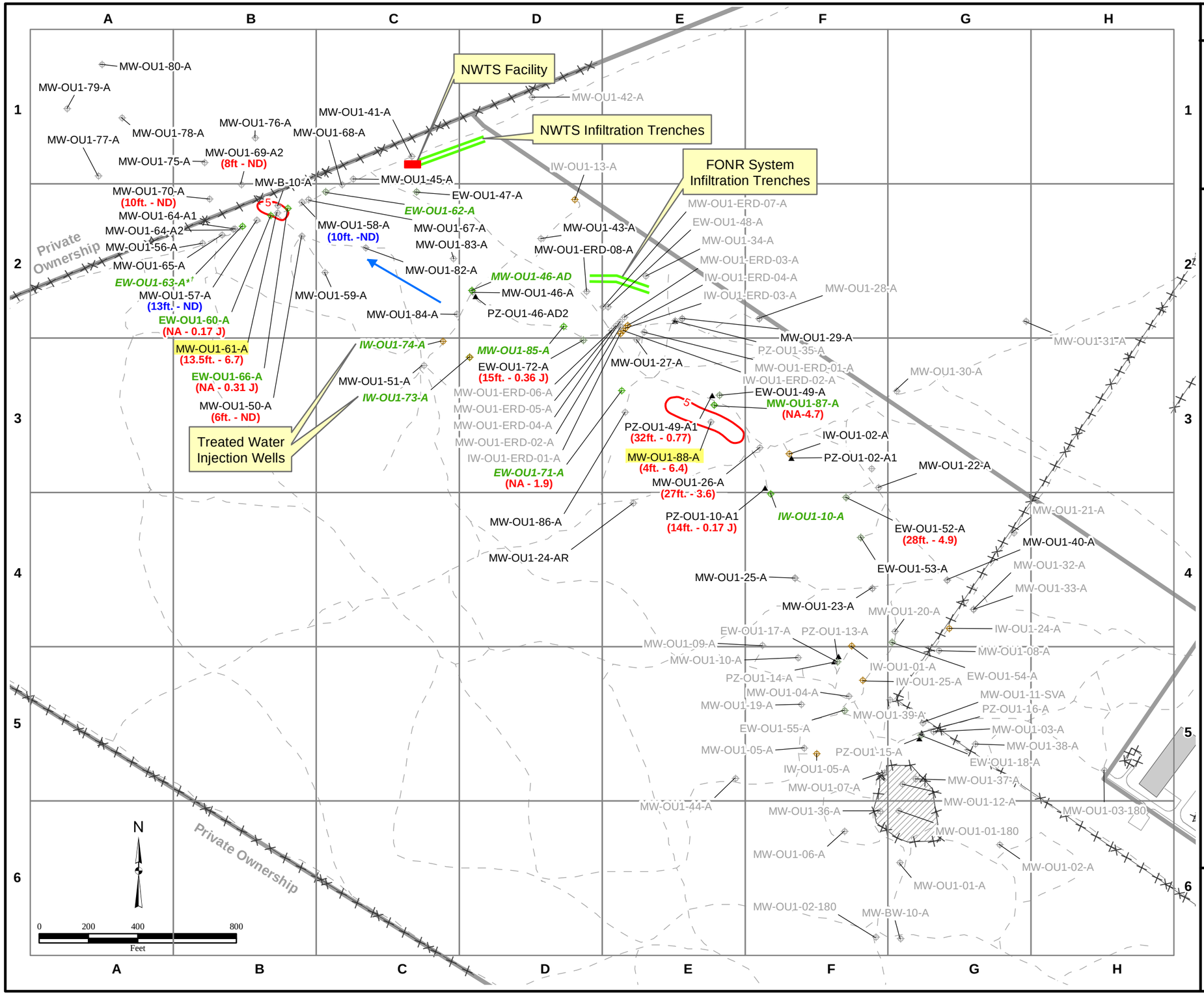
FONR - Fort Ord Natural Reserve

Blue font indicates the concentration is calculated using the weighted average of the active pumping wells.

Table 2
Current Deliverable Schedule
Former Fort Ord, Marina, CA – 28 February 2014

Deliverable Title	Submittal	Review Comments Due	Status/Remarks
Primary Deliverables			
Draft UFP-QAPP	March 2014	May 2014	In preparation.
Secondary Deliverables			
Draft 2013 Annual and 3rd Quarter Groundwater Monitoring Report	January 2014	March 2014	Submitted 17 January 2014.
Draft Work Plan for Well Destruction and Treatment Plant Demolition	February 2014	March 2014	Submitted 11 February 2014
Draft 2014 Semiannual Groundwater Monitoring Report	June 2014	August 2014	Sampling to be completed in March 2014.
Draft Well Destruction and Treatment Plant Demolition Completion Report	August 2014	September 2014	Fieldwork to be completed in June 2014.
Completed Recent Submittals			
Final Memorandum for Record for Optimizing Remediation Pumping	March 2012	February 2012	Accepted as final during July 2012 BCT meeting.
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.
Preliminary Draft Health & Safety Plan – OU-1 O&M / LTM	February 2014	February 2014	Submitted revised document addressing Army comments on preliminary draft.
Preliminary Draft UFP-QAPP	November 2013	February 2014	Army comments addressed.

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

HydroGeoLogic, Inc