

## HTW BCT, August 15, 2018

### July 2018 Key Events for OUCTP

- Under review: preliminary draft 2018 Annual Rare Plant Survey Report for the 2015 OUCTP well installations (final/3<sup>rd</sup> report), 2016 OUCTP EISB Deployment Area 3A (2<sup>nd</sup> report), and 2018 well installations (baseline report).

### August 2018 Key Events for OUCTP

- August 3: EW-OU2-09-180 offline due to PLC power failure. Repair in progress.
- August 27-31: Third Quarter 2018 Groundwater Monitoring Program.
- Decommission five OUCTP A-Aquifer monitoring wells and three OUCTP Upper 180-Foot Aquifer monitoring wells.
- Install three OUCTP A-Aquifer monitoring wells, two OUCTP Upper 180-Foot Aquifer monitoring wells, and one OUCTP Lower 180-Foot Aquifer monitoring well.

*Ahtna*

**Table 1.** OUCTP EISB 3A VOC Results

Analyte:	Carbon Tetrachloride										
ACL:	0.5 µg/L										
Well Identification	Baseline	Month 1	Month 2	Month 3	Month 5	Month 6	Month 7	3Q 2017	4Q 2017	1Q 2018	2Q 2018
EW-BW-160-A	1.1 J+	0.86	0.66	0.60	1.3	1.0	1.0	0.64	0.83	0.91	1.2
EW-BW-161-A	0.84 J+	0.67	0.51	0.48 J	0.69	0.47 J	0.47 J	0.38 J	0.19 J	0.15 J	0.15 J
EW-BW-162-A	1.0 J+	0.72	0.59	0.56	0.41 J	0.28 J	0.18 J	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)
EW-BW-163-A	1.2 J+	1.2	0.94	0.89	0.31 J	0.25 J	0.25 J	0.16 J	0.13 J	ND (0.25)	ND (0.25)
EW-BW-164-A	0.92 J+	0.73	0.61 J-	0.59	0.78	0.71	0.89	0.64	0.47 J	0.32 J	0.47 J
EW-BW-165-A	1.2 J+	1.1	0.83	0.82	0.13 J	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)
EW-BW-166-A	1.7 J+	1.4	1.2	1.2	1.4	1.1	1.3	1.5	0.35 J	1.4	1.3
EW-BW-167-A	1.7 J+	1.4	1.1	1.4	1.1	0.71	0.66	0.43 J	0.22 J	0.16 J	0.16 J
EW-BW-168-A	1.3 J+	1.1	0.82	0.77	0.84	0.72	0.80	0.55	0.53	0.48 J	0.46 J
EW-BW-169-A	1.0 J+	0.68	0.63	0.67	0.73	0.42 J	0.80	0.51	0.38 J	0.23 J	0.25 J
MW-BW-16-A	0.60 J+	0.75	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)
MW-BW-57-A	0.45 J+	ND (0.25)	0.26 J	0.32 J	0.26 J	0.24 J	0.31 J	0.17 J	ND (0.25)	ND (0.25)	ND (0.25)
MW-BW-87-A	0.17 J+	ND (0.25)	0.29 J	0.65	0.61	0.34 J	1.6	0.16 J	0.42 J	0.13 J	0.10 J
MW-BW-91-A	ND (0.25)	1.3	0.84	2.3	0.50	0.28 J	0.55	0.59	4.3	3.4	3.3

**Notes:**

There were no detections for either methylene chloride or trichloroethene

ACL: Aquifer Cleanup Level

ND: The analyte was not detected at or above the detection limit

µg/L: micrograms per liter

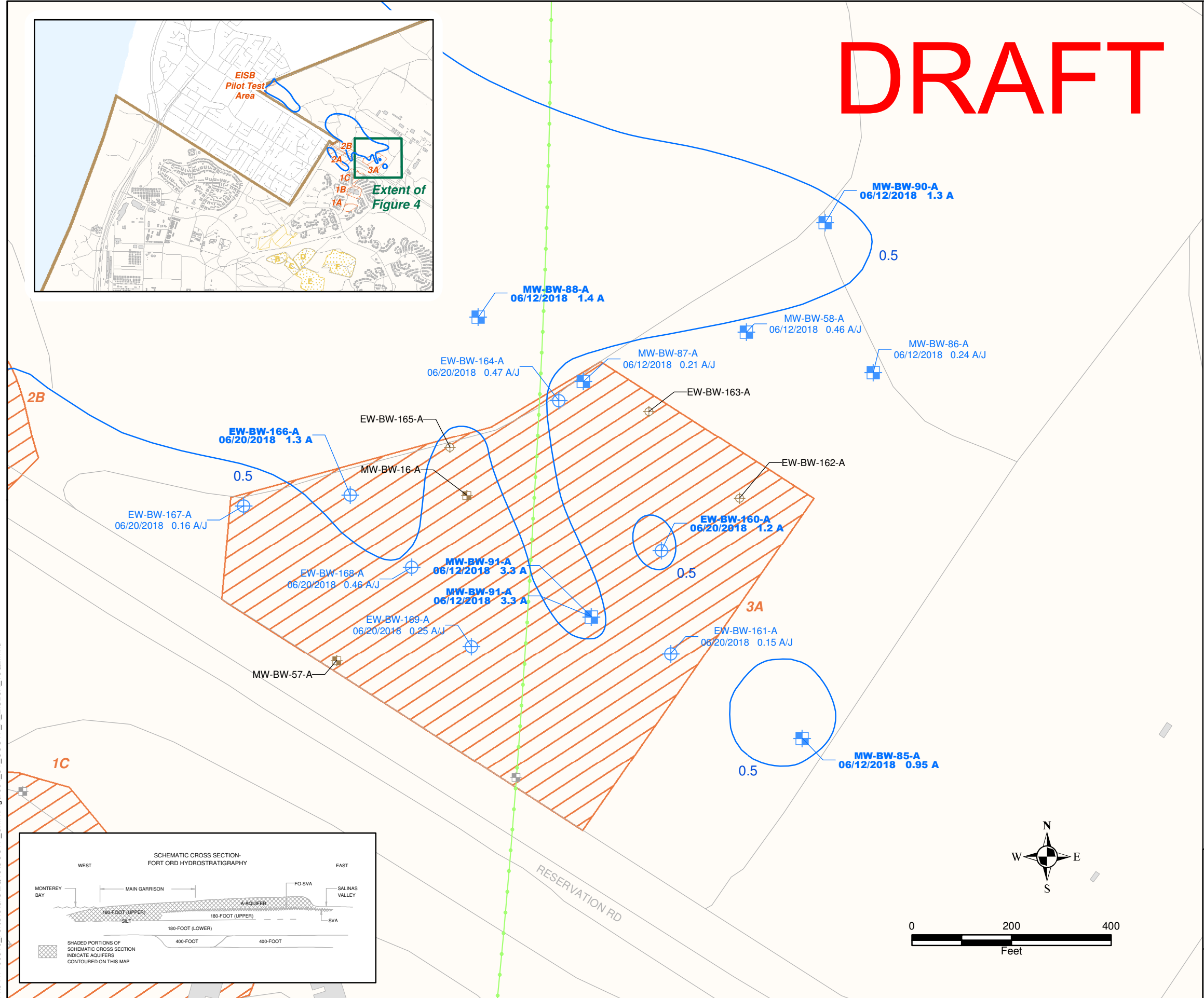
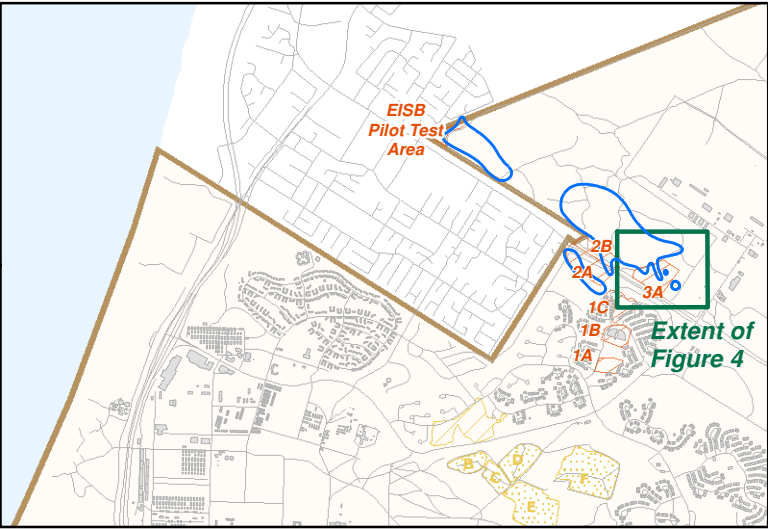
J: Estimated result with a possible low (-) or high bias (+)

Results in **bold** and shaded are concentrations above the ACL

Results in gray are ND



# DRAFT



**EXPLANATION**

- Monitoring Well with CT Detection
- Extraction Well with CT Detection
- Well ID - Bold When ACL Exceeded (\* Indicates: Sample result not used for contouring)
- Baseline and/or quarterly monitoring concentration (µg/L) with validation/lab qualifier. Bold when exceeds the ACL.
- Monitoring Well CT Not Detected
- Extraction Well CT Not Detected
- Monitoring Well Not Sampled This Quarter
- Extraction Well Not Sampled This Quarter

Chemical of Concern (COC) Aquifer Cleanup Level (ACL) Exceedance Contour in µg/L

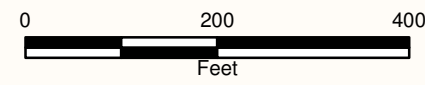
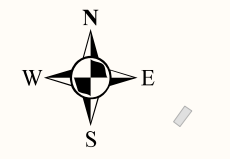
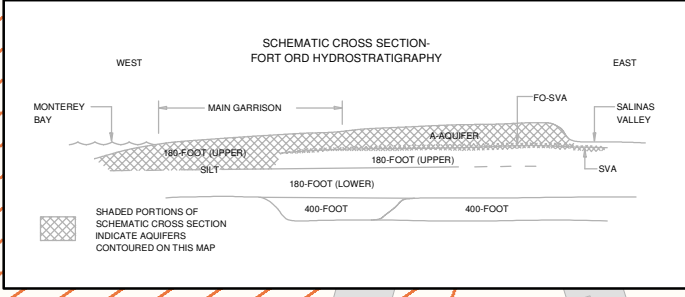
- 0.5 Carbon tetrachloride (CT)
- Enhanced In Situ Bioremediation (EISB) Deployment Area
- Approximate Location of a Groundwater Divide
- Roads
- Facilities
- Former Fort Ord Boundary

Approximate extent of Fort Ord Landfill Areas

- OU2 Landfill Areas B through F
- Area A (clean closed)

**NOTES:**

- (1) Quarterly samples at EISB Deployment Area 3A extraction wells were collected on June 20, 2018. Samples at OUCTP monitoring wells were collected on June 12, 2018.
- (2) Contours are based on one interpretation of the data that were available at the time this report was prepared; other interpretations may be possible.
- (3) Contours based on highest value obtained from multiple bags where applicable.
- (4) Contours near wells not sampled this quarter are inferred from previous analytical data.



**CT CONCENTRATIONS  
EISB DEPLOYMENT AREA 3A  
A-AQUIFER**

Operable Unit Carbon Tetrachloride Plume  
Second Quarter 2018 Groundwater Monitoring Report  
Former Fort Ord, California

	By: TJH	Project No. 8417190510
	Date: 08/08/2018	Figure <b>4</b>

Wednesday, August 08, 2018 3:06:04 PM: I:\thomas.hunt\P\8417190510\_FortOrd\GIS\2018\OUCTP\_GMR\Figure04\_CT\_OUCTP\_A\_EISB3A\_18Q2.mxd

**Table 2.** OUCTP A-Aquifer Select Monitoring Well Data

OUCTP Hydraulic Zone <sup>1</sup>	EISB Deployment Area	Well Identification	Select COC Concentrations (µg/L)					
			1Q 2018	2Q 2018	1Q 2018	2Q 2018	1Q 2018	2Q 2018
			CT		Chloroform		TCE	
ACL:			0.5		2.0		5.0	
1	1C	EW-BW-109-A	1.4	1.7	0.37 J	0.44 J	0.62	0.77
1	N/A	MW-BW-24-A	3.1	4.5	0.58	0.74	1.6	2.3
2	3A	MW-BW-58-A	0.68	0.46 J	0.12 J	ND (0.25)	ND (0.25)	ND (0.25)
2	3A	MW-BW-87-A	0.14 J	0.21 J	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)
2	3A	MW-BW-91-A	3.5	3.3	0.50	0.45 J	ND (0.25)	ND (0.25)
N/A	3A	MW-BW-90-A	0.86	1.3	0.13 J	0.18 J	ND (0.25)	ND (0.25)
3	3A	MW-BW-16-A	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)
3	3A	MW-BW-57-A	ND (0.25)	ND (0.25)	0.81	1.0	ND (0.25)	ND (0.25)
3	N/A	MW-BW-88-A	1.1	1.4	0.40 J	0.48 J	ND (0.25)	ND (0.25)
4	2A	EW-BW-124-A	0.27 J	1.1	1.2	1.5	0.93	1.4
4	N/A	MW-B-12-A	0.64	0.48 J	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)
4	2B	MW-B-14-A	1.8	2.4	0.41 J	0.48 J	0.25 J	0.35 J
4	2B	EW-BW-155-A	0.51	1.4	0.48 J	ND (0.25)	0.54	0.72
4	2A	MW-BW-26-A^	4.4	6.9	0.74	0.78	0.77	0.95
4	N/A	MW-BW-31-A	ND (0.25)	ND (0.25)	0.99	0.96	ND (0.25)	ND (0.25)
4	N/A	MW-BW-32-A	2.2	2.3	0.28 J	ND (0.28)	0.14 J	0.16 J
4	N/A	MW-BW-36-A	0.79	ND (0.25)	1.7	ND (0.95)	ND (0.25)	ND (0.25)
4	N/A	MW-BW-42-A	ND (0.25)	0.18 J	0.16 J	ND (0.25)	ND (0.25)	ND (0.25)
4	N/A	MW-BW-89-A	0.97	1.4	0.37 J	0.41 J	ND (0.25)	ND (0.25)
4	N/A	MW-BW-92-A	1.3	1.6	0.20 J	ND (0.25)	ND (0.25)	ND (0.25)
5	Pilot	EISB-EW-01	0.64	0.69	ND (0.36)	ND (0.31)	ND (0.25)	ND (0.25)
5	Pilot	EISB-EW-09	3.0	2.7	0.31 J	ND (0.27)	ND (0.25)	ND (0.25)
5	N/A	MW-BW-65-A	0.12 J	0.12 J	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)
5	Pilot	MW-BW-66-A	0.95	1.6	0.54	ND (0.33)	ND (0.25)	ND (0.25)
5	N/A	MW-BW-74-A	ND (0.25) [0.29 J]	ND (0.25) [ND (0.25)]	ND (0.25) [ND (0.25)]	ND (0.25) [ND (0.25)]	ND (0.25) [ND (0.25)]	ND (0.25) [ND (0.25)]
5	N/A	MW-BW-49-A	0.94	0.85	0.26 J	0.29 J	ND (0.25)	ND (0.25)
5	N/A	MW-BW-78-A	0.25 J [0.41 J]	0.35 J [0.38 J]	ND (0.25) [ND (0.25)]	0.13 J [0.13 J]	ND (0.25) [ND (0.25)]	ND (0.25) [ND (0.25)]
5	N/A	MW-BW-80-A	0.45 J	0.56	ND (0.25)	0.11 J	ND (0.25)	ND (0.25)

**Notes:**

TCE: trichloroethene  
 CT: carbon tetrachloride  
 µg/L: micrograms per liter  
 ND: The analyte was not detected above the detection limit

NS: not sampled  
 J: Estimated result with a low (-) or high (+) bias  
<sup>1</sup> Hydraulic zones are identified in the Groundwater QAPP.  
 Results in **bold** and shaded are concentrations above the ACL

Results in gray are ND  
 COC: chemical of concern  
 [Results in brackets are from a second deeper passive diffusion bag]  
 ^ downgradient monitoring well MW-BW-30-A sampled annually.

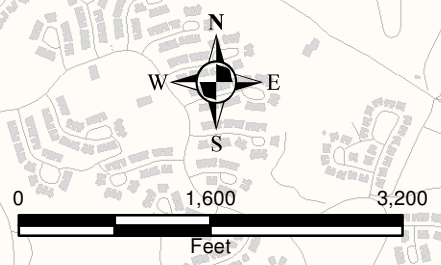
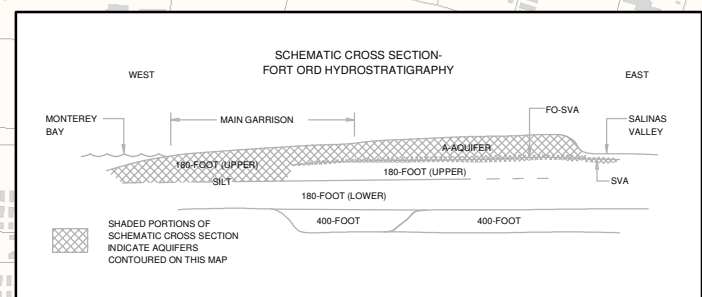
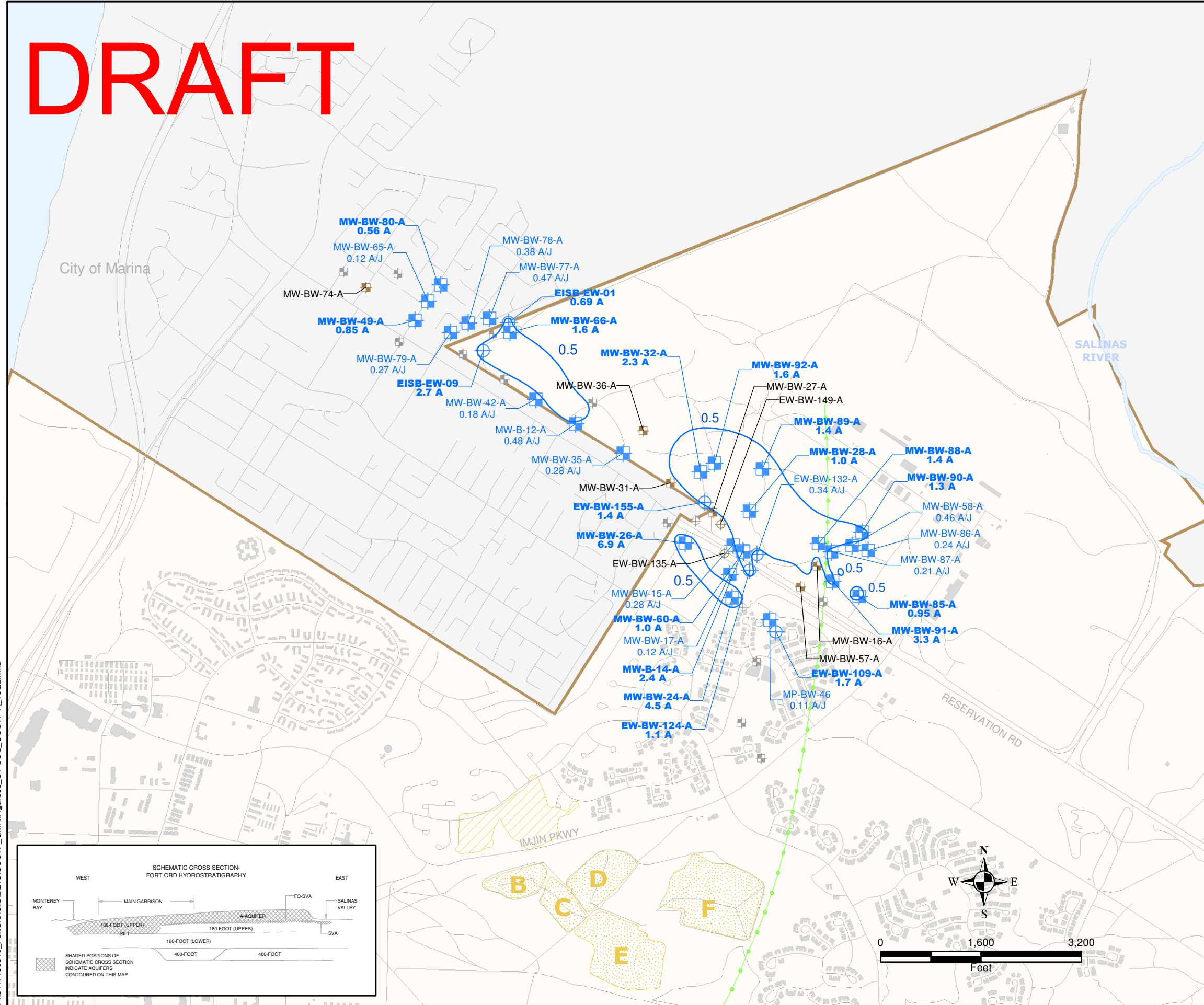
# DRAFT

## EXPLANATION

- Monitoring Well with CT Detection
- Extraction Well with CT Detection
- Well ID - Bold When CT Exceeds the ACL  
(\* Indicates: Sample result not used for contouring)
- CT Concentration (µg/L) and validation/lab qualifier.  
Bold when CT exceeds the ACL.
- Monitoring Well CT Not Detected, and No Other COC ACL Exceedances
- Extraction Well CT Not Detected
- Monitoring Well Not Sampled This Quarter
- Extraction Well Not Sampled This Quarter

- Chemical of Concern (COC) Aquifer Cleanup Level (ACL) Exceedance Contour in µg/L
- 0.5**
- Carbon tetrachloride (CT)
  - Approximate Extent of Landfill Areas
  - OU2 Landfill Areas B through F
  - Area A (clean closed)
  - Approximate Location of a Groundwater Divide
  - Roads
  - Facilities
  - Former Fort Ord Boundary

- NOTES:
- (1) Samples were collected between June 11 and 13, 2018.
  - (2) Contours are based on one interpretation of the data that were available at the time this report was prepared; other interpretations may be possible.
  - (3) Contours based on highest value obtained from multiple bags and/or multiple ports where applicable.
  - (4) Contours near wells not sampled this quarter are inferred from previous analytical data.



CT CONCENTRATIONS  
A-AQUIFER  
Operable Unit Carbon Tetrachloride Plume  
Second Quarter 2018  
Groundwater Monitoring Report  
Former Fort Ord, California

	By: TJH	Project No. 8417190510
	Date: 07/27/2018	Figure <b>3</b>

Friday, July 27, 2018 2:42:05 PM thomas.hunt  
P:\8417190510\_FortOrd\GIS\2018\OUCTP\_GMR\Figure03\_CT-COC\_OUCTP-A\_1902.mxd



**Table 3.** OUCTP Upper 180-Foot Aquifer Select Monitoring Well Data

OUCTP Hydraulic Zone <sup>1</sup>	Well Identification	CT Concentration (µg/L) <sup>2</sup>	
		1Q 2018	2Q 2018
<b>ACL:</b>		<b>0.5</b>	
6	EW-OU2-09-180 <sup>3</sup>	ND (0.25)	ND (0.25)
6	MP-BW-41-231	0.15 J	0.10 J
6	MP-BW-46-170	<b>5.7</b>	<b>4.5</b>
6	MW-BW-52-180	<b>0.98</b>	<b>0.97</b>
6	MW-OU2-64-180	<b>6.9</b>	<b>5.2</b>
6	MW-OU2-67-180 <sup>5</sup>	0.46 J	<b>0.56</b>

**Notes:**

ACL: aquifer cleanup level

COC: chemical of concern

CT: carbon tetrachloride

MCL: maximum contaminant level

ND: The analyte was not detected at or above the detection limit

NS: not sampled

TCE: trichloroethene

µg/L: micrograms per liter

J: Estimated result with a low (-) or high (+) bias

<sup>1</sup> Hydraulic zones are identified in the Groundwater QAPP.

<sup>2</sup> Concentration in **bold** and shaded cell exceeds the Aquifer Cleanup Level (ACL) for CT and the Maximum Contaminant Level (MCL) for TCE. Results in gray are ND.

<sup>3</sup> EW-OU2-09-180 is operated as part of the remedy for the OUCTP Upper 180-Foot Aquifer and is connected to the OU2 GWTP. cis-1,2-DCE was detected in this well at 8.4 µg/L in 2Q17 and 5.3 µg/L in 2Q18.

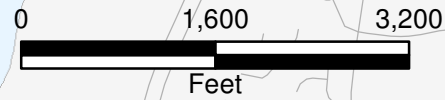
<sup>4</sup> TCE is not a COC in the OUCTP Lower 180-Foot Aquifer (reported for Lower 180-Foot Aquifer with respect to protection of supply wells)

<sup>5</sup> Downgradient well MW-OU2-70-180 sampled annually

**Table 4.** OUCTP Lower 180-Foot Aquifer Select Monitoring Well Data

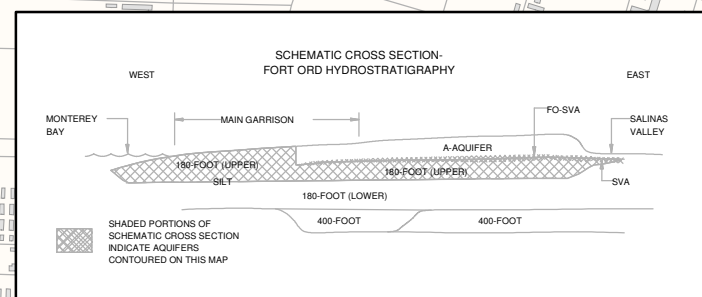
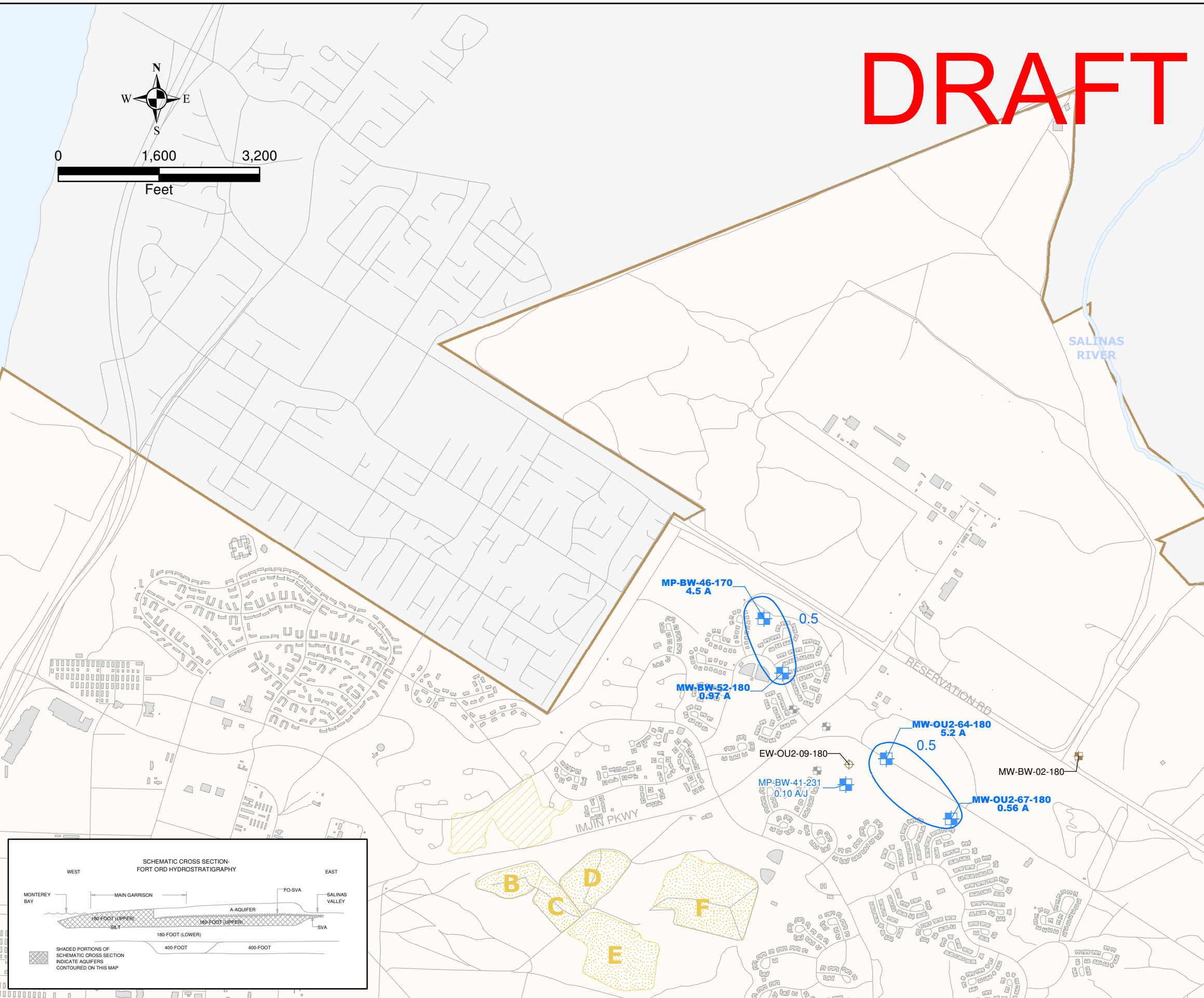
OUCTP Hydraulic Zone <sup>1</sup>	Well Identification	Select COC Concentrations (µg/L) <sup>2</sup>			
		1Q 2018	2Q 2018	1Q 2018	2Q 2018
		CT		TCE <sup>4</sup>	
<b>Limit:</b>		<b>ACL 0.5</b>		<b>MCL 5.0</b>	
7	MP-BW-49-316	<b>2.8</b>	<b>2.0</b>	ND (0.25)	ND (0.25)
7	MP-BW-49-400	ND (0.25)	ND (0.25)	4.3	4.0
7	MP-BW-50-339	0.36 J	<b>0.85</b>	0.21 J	ND (0.25)
7	MP-BW-50-384	0.14 J	0.13 J	2.5	1.8
7	MP-BW-51-405	0.17 J	0.22 J	1.6	2.1
7	MW-OU2-69-180	<b>0.71</b>	<b>0.92</b>	0.13 J	0.13 J
8	AIRFIELD	<b>0.62</b>	<b>0.63</b>	ND (0.25)	ND (0.25)
N/A	EW-OU2-07-180	ND (0.25)	ND (0.25)	2.0	2.4
N/A	FO-29	0.19 J	0.15 J	1.4	1.8
N/A	FO-30	0.16 J	0.18 J	0.54	0.58
N/A	FO-31	ND (0.25)	0.11 J	0.85	0.94
N/A	MP-BW-41-353	ND (0.25)	ND (0.25)	1.6	1.6
N/A	MW-OU2-72-180	ND (0.25)	ND (0.25)	1.3	1.4
N/A	MW-OU2-78-180	ND (0.25)	ND (0.25)	2.1	2.5
N/A	MW-OU2-82-180	ND (0.25)	ND (0.25)	<b>5.3</b>	<b>6.2</b>

# DRAFT



EXPLANATION	
	Monitoring Well with CT Detection
	Extraction Well with CT Detection
	Well ID - Bold When Concentration Exceeds the ACL (* Indicates: Sample result not used for contouring)
<b>MW-OU2-64-180</b> <b>5.2 A</b>	CT Concentration (µg/L) and validation/lab qualifier (red indicates TCE; blue indicates CT) Bold when exceeds the ACL.
	Monitoring Well CT Not Detected
	Extraction Well CT Not Detected
	Monitoring Well Not Sampled This Quarter
Chemical of Concern (COC) Aquifer Cleanup Level (ACL) Exceedance Contour in µg/L	
<b>0.5</b>	Carbon tetrachloride (CT)
Approximate extent of Landfill Areas	
	OU2 Landfill Areas B through F
	Area A (clean closed)
	Roads
	Facilities
	Former Fort Ord Boundary

- NOTES:
- (1) Samples were collected between June 11 and 13, 2018.
  - (2) Contours are based on one interpretation of the data that were available at the time this report was prepared; other interpretations may be possible.
  - (3) Contours based on highest value obtained from multiple bags and/or multiple ports where applicable.
  - (4) Contours near wells not sampled this quarter are inferred from previous analytical data.

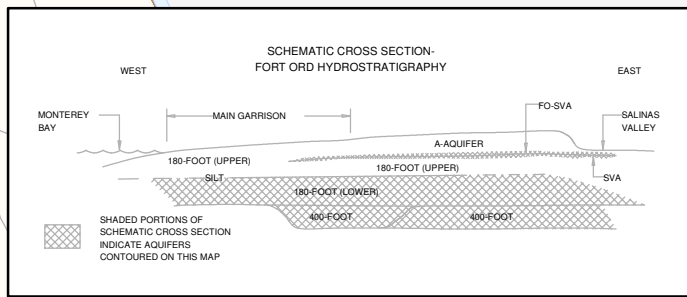
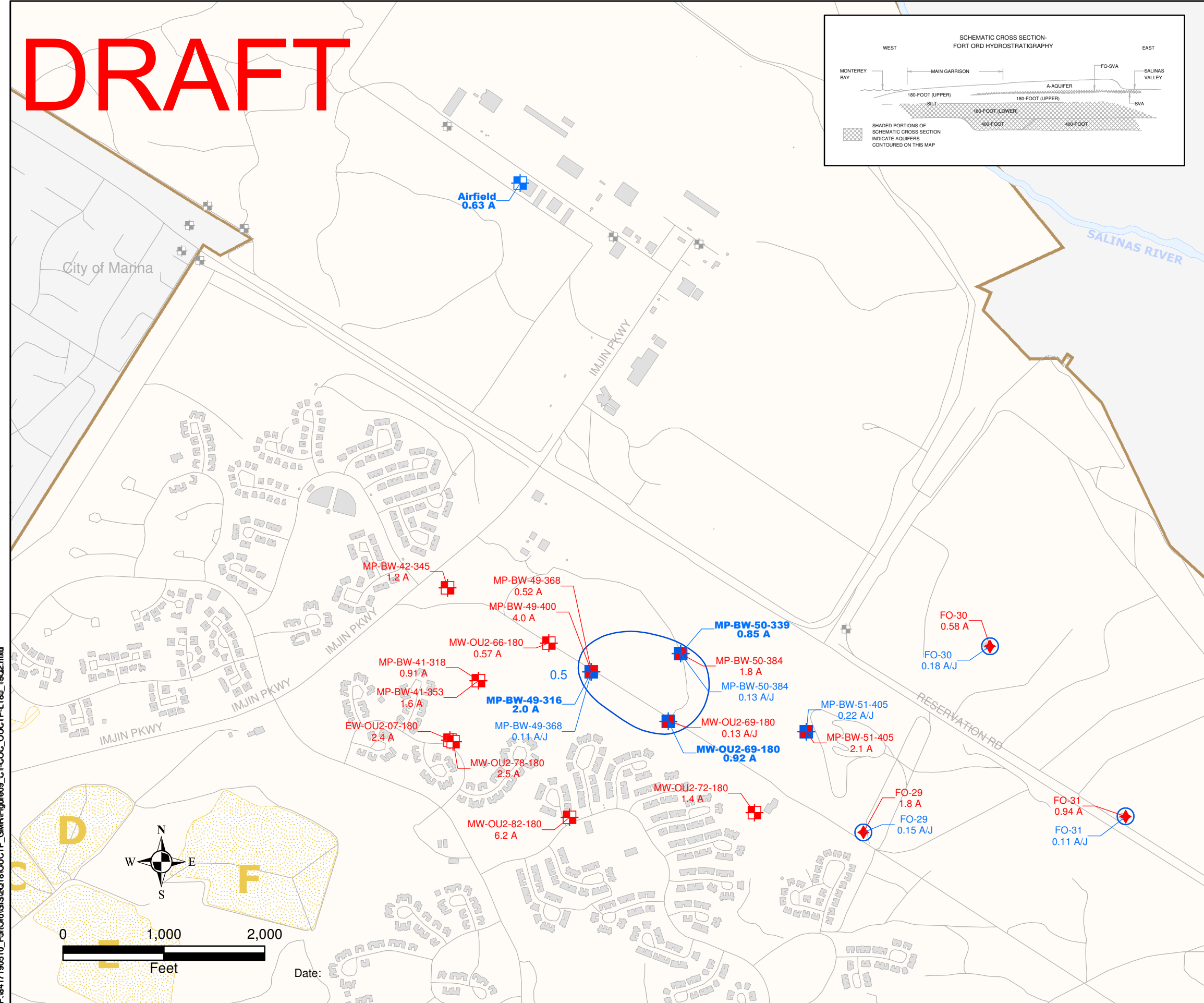


Friday, July 27, 2018 2:46:57 PM reuben.pillsbury P:\8417190510\_FortOrd\GIS\2018\OU2\CT-COC\_OUCTP\_U180\_180Q2.mxd

CT CONCENTRATIONS  
UPPER 180-FOOT AQUIFER  
OUCTP  
Second Quarter 2018  
Groundwater Monitoring Report  
Former Fort Ord, California

<b>wood.</b>	By: TJH	Project No. 8417190510
	Date 07/27/2018	Figure <b>7</b>

# DRAFT



## EXPLANATION

- Monitoring Well with CT Detection
- Monitoring Well with TCE Detection
- Remediation Extraction Well with TCE Detection
- Active Supply Well TCE and CT Detections
- Monitoring Well with TCE and CT Detections
- Well ID - Bold When Concentration Exceeds ACL # Indicates: Multi-port well sampled at more than one depth with no detections.
- Concentration in µg/L and validation/lab qualifier (red indicates TCE; blue indicates CT) Bold when exceeds the ACL.
- Monitoring Well CT Not Detected
- Active Supply Well CT Not Detected
- Monitoring Well Not Sampled This Quarter
- Supply Well Not Sampled This Quarter

Chemical of Concern (COC) Aquifer Cleanup Level (ACL) Exceedance Contour in µg/L

0.5 — Carbon tetrachloride (CT)

- Approximate Extent of Landfill Areas
- OU2 Landfill Areas B through F
  - Area A (clean closed)
  - Roads
  - Facilities
  - Former Fort Ord Boundary

### NOTES:

- (1) Samples were collected between June 12 and 14, 2018.
- (2) Contours are based on one interpretation of the data that were available at the time this report was prepared; other interpretations may be possible.
- (3) Contours based on highest value obtained from multiple bags and/or multiple ports where applicable.
- (4) Supply wells FO-29, FO-30 and FO-31 have been renamed as 29(A), 30(B) and 31(C) respectively. The wells are referred to by the original names in this report for consistency.
- (5) TCE is not a chemical of concern in the OU2 Lower 180-Foot Aquifer.

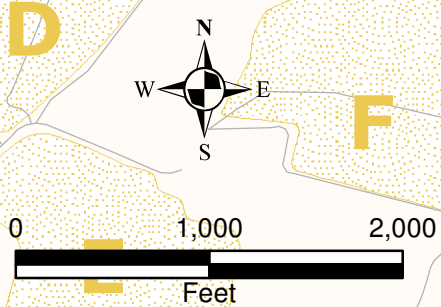
CT AND TCE CONCENTRATIONS  
LOWER 180-FOOT/400-FOOT AQUIFERS  
Operable Unit Carbon Tetrachloride Plume  
Second Quarter 2018  
Groundwater Monitoring Report  
Former Fort Ord, California



By: TJH  
Date: 07/31/2018

Project No. 8417190510  
Figure **9**

Tuesday, July 31, 2018 4:34:57 PM thomas.hunt P:\8417190510\_FortOrd\GIS\2018\OU2\CTP\_GMR\Figure09\_CT-COC\_OUCTP-L180\_1802.mxd



Date: