

## **HTW BCT Meeting Agenda**

Wednesday, January 22, 2014 at 1:30 p.m.

Fort Ord BRAC Conference Room

<b>Item</b>	<b>Action</b>	<b>Comment</b>
<b>Community Relations BCT Minutes Status</b>	<b>Status Update</b>	
<b>OU1 Groundwater Remediation</b>	<b>Status Update</b>	
<b>OU1 Well and Plant Demolition</b>	<b>Status Update</b>	
<b>OU2 and 2/12 Treatment Systems Soil Vapor Treatment Plant Relocation</b>	<b>Status Update</b>	
<b>Other Groundwater Issues</b>	<b>Status Update</b>	
<b>OU2 Landfill Operations &amp; Maintenance Closure</b>	<b>Status Update</b>	
<b>Basewide Range Assessment Lead Reevaluation</b>	<b>Status Update</b>	
<b>Site 39 Remediation Site Restoration</b>	<b>Status Update</b>	
<b>FFA Schedule Document Schedule</b>	<b>Status Update</b>	
<b>Calendar Update</b>	<b>Update</b>	

# U.S. Army Community Outreach Update

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## Long Term Actions Underway:

1. Update all fact sheets – on-going
2. Web site reformat – on-going

## Recent Activities:

1. 11DEC Participated in the FORA ESCA Information Community Meeting
2. Issued BLM Area B Fact Sheet concurrent with Draft BLM Area B RI/FS
3. Closed 2013 Community Survey and began evaluation of surveys(3 interviews, 37 mailed, 45 on-line, 5 from Annual Report)
4. Provided a 7JAN Munitions Safety Presentation to the Peninsula Adventist School (30)
5. Participated in 22FEB14 ESCA Users Group Meeting to present information on BLM Area B RI/FS

## Upcoming Activities:

1. 27JAN Munitions Safety presentation for Toro Park Elementary School (430)
2. TBD Cleanup bus tour for 4-6 community members (requested during 23MAY13 Community Survey interview)
3. TBD Cleanup bus tour for League of Women Voters (may be combined with tour listed above)
4. TBD Provide Munitions Safety presentation to Fort Ord Bicycle, Equestrian Trails Assistance (BETA) organization
5. TBD Provide Munitions Safety presentation to Fort Ord Equestrian Center
6. 1MAR14 Community Involvement Mobile Workshop—landfill, groundwater cleanup, and ESCA
7. 4MAR14 Technical Review Committee—landfill, groundwater cleanup, and ESCA
8. 29APR Earth Day Booth at Presidio of Monterey
9. April: Various local Earth Day events (DMDC, Naval Postgraduate School, California State University Monterey Bay...)

## STATUS: RESPONSE to COMMUNITY COMMENTS (RTC)

AR Number	Title/Subject	Status
BW-2674.2	Comments submitted by Mike Weaver, Fort Ord Community Advisory Group - on the Draft Technical Memorandum Evaluation of Lead Concentrations at Selected Sites, Former Fort Ord, California	In progress
ESCA-0267.2	Comments submitted by community member, Gail Youngblood, on the Group 2 Proposed Plan, CSUMB Off-Campus MRA, FORA ESCA RP	In Progress/Part of CSUMB Off-Campus Group 2 ROD Responsiveness Summary
ESCA-0267.3	Comments submitted by community group member Mike Weaver, Fort Ord Community Advisory Group, on the Group 2 Proposed Plan, CSUMB Off-Campus MRA, FORA ESCA RP - at the June 19, 2013 public meeting	In Progress/Part of CSUMB Off-Campus Group 2 ROD Responsiveness Summary
OE-0793.4	Comments submitted by community member, Mike Weaver, Fort Ord Community Advisory Group, on the Group 2 Proposed Plan, CSUMB Off-Campus MRA, FORA ESCA RP	In Progress/Part of MRS-34 ROD Responsiveness Summary



## **Basewide RI/FS Addendum at Sites 2 and 12 Update, January 2014**

### **Completed**

- Soil gas investigation at the Phase 1B proposed cinema site
  - Four soil borings and 28 soil gas probes installed
  - Soil, groundwater and soil gas samples collected for VOC analysis
  - All 28 probes over drilled and destroyed
- Soil Gas Investigation Report – Phase 1B Cinema
  - Final issued August 12, 2013
  - Letter from DTSC dated August 26, 2013 states comments provided on the draft report were adequately addressed and DTSC has no comments on the final.
- Basewide RI/FS Addendum at Sites 2/12 Work Plan
  - Final issued September 13, 2013
  - Includes QAPP and Site Specific Health and Safety Plan
- Field Work
  - Started September 16, 2013
  - 18 borings, 125 soil gas probes installed and sampled
  - 15 monitoring wells installed and profiled
  - 25 indoor air samples collected
  - 25 sub-slab samples collected
  - 137 soil samples collected
- Letter reports summarizing indoor air and sub-slab analytical data sent to Target and Shea Properties on November 15, 2013

### **Upcoming**

- Baseline risk assessment – draft proposed to be issued March 6, 2014
- Pilot study work plan – draft proposed to be issued April 9, 2014

### **Attachments**

1. Summary of groundwater sample analytical results
2. Sites 2 and 12 TCE/PCE Concentrations, Fourth Quarter 2013
3. Site 12 western sub-slab analytical results
4. Site 12 northern sub-slab analytical results
5. Soil gas plume contour maps (8)
6. Soil gas plume cross sections (4)
7. Soil gas and groundwater plume map
8. 3D soil gas model

## Former Fort Ord Groundwater Treatment Systems Operational Data and Status

BCT Meeting, January 22, 2014

Table 1: OU2 and Sites 2/12 GWTP Treatment Statistics as of December 31, 2013

Monthly Statistics	Volume Treated (gallons)	Average Flow (gallons per minute)	Percent of Time Online	COC Mass Removed (pounds)
<b>OU2</b>				
December 2013	24,902,570	558	100	1.82
Total since October 1995	6.134 Billion			751
<b>Sites 2/12</b>				
December 2013	7,507,500	168	100	0.59
Total since April 1999	1.707 Billion			462

Table 2: December 2013 – OU2 Analytical Results at TS-OU2-INJ

COC	Discharge Limit (µg/L)	Sample Date/ Analytical Results	
		12/2/2013	12/16/2013
1,1-DCA	5.0*	0.70	0.67
1,2-DCA	0.50	0.28	0.26
1,2-DCP	0.50	ND	ND
Benzene	0.50	ND	ND
CT	0.50	ND	ND
Chloroform	2.0*	0.37	0.36
cis-1,2-DCE	6.0*	0.93	1.1
Methylene Chloride	0.50	ND	ND
PCE	0.50	ND	ND
TCE	0.50	ND	ND
VC	0.10	ND	ND

NOTES:

\* Discharge limits for low carbon affinity compounds were increased to the Aquifer Cleanup Level (ACL).

ND The analyte was not detected above the limit of quantitation.

Table 3: December 2013 – Sites 2/12 Analytical Results at TS-212-INJ

COC	Discharge Limit (µg/L) ‡	Sample Date / Analytical Results
		12/23/2013
1,1-DCE	6.0	ND
1,2-DCA	0.50	0.22
1,3-DCP †	0.50	ND
Chloroform	2.0	0.30
cis-1,2 DCE	6.0	0.90
PCE	3.0	ND
TCE	5.0	ND
VC	0.10	ND

NOTES:

ND The analyte was not detected above the limit of quantitation.

NS not sampled.

† The reported value is the sum of both cis- and trans-isomers.

‡ Discharge limits are the ACLs for injection over the plume.

Table 4: December 2013 Key Events for OU2 and Sites 2/12 GWTS

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	5	6	7
8	9 SW INJ VFD (P510) shorted out. INF-OU2-02-180 shut down.	10	11	12	13	14
15	16	17 Fourth Quarter EW Sampling	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

January 2014 Scheduled Events for OU2 and Sites 2/12 GWTS

- OU2 and 2/12 GWTP sampling

Table 5: AES Document Submittals - Status Summary

GWM QAPP 2013 Update, personnel changes and OUCTP post-injection water quality parameter monitoring and new decision rules added. Draft issued November 22, 2013. Comments requested by December 23, 2013. No comments were received (DTSC had no comments).
OUCTP Work Plan Addendum, OUCTP post-injection water quality parameter monitoring and new decision rules. Draft issued to USACE for internal review December 4, 2013.

Table 6: December 2013 OU2 Extraction Well Status (as of December 31)

Well Identification	Comments	Select COC Concentrations (µg/L) 4Q 2013†				
		TCE	PCE	1,2-DCA	VC	CT
<i>Western Network</i>						
EW-OU2-01-A	Offline due to low concentrations, sampled with PDBs	ND	ND	ND	ND	ND
EW-OU2-02-A	Online to capture western TCE plume	0.50	ND	ND	ND	ND
EW-OU2-03-A	Offline due to low concentrations, sampled with PDBs‡	Not Sampled				
EW-OU2-04-A	Online to capture western TCE plume	1.2	ND	ND	ND	ND
EW-OU2-05-A	Adjacent to MW-OU2-40-A**, pump failure	Not Sampled				
EW-OU2-06-A	Adjacent to MW-OU2-40-A**	4.1	0.34	ND	ND	ND
EW-OU2-01-180	No pump in well, sampled with PDBs	7.2	ND	ND	ND	ND
<i>Total gallons extracted: 5,435,440</i>						
<i>Eastern Network</i>						
EW-OU2-07-A	Offline due to low concentrations‡	Not Sampled				
EW-OU2-08-A	Offline due to low concentrations‡	Not Sampled				
EW-OU2-09-A		0.80	0.52	0.55	ND	ND
EW-OU2-10-A		2.4	1.2	0.92	0.11	ND
EW-OU2-11-A	Offline due to biofouling, screen damaged, sampled with PDBs.	1.4	0.84	0.38	ND	ND
EW-OU2-12-A		5.9	1.1	0.76	ND	ND
EW-OU2-13-A		9.4	2.4	2.3	0.058	ND
EW-OU2-02-180	Offline due to breach in well casing	Not Sampled				
<i>Total gallons extracted: 3,120,830</i>						
<i>Shoppette</i>						
EW-OU2-05-180		4.9	0.43	ND	ND	ND
EW-OU2-06-180	Offline due to pump failure	Not Sampled				
EW-OU2-16-A*	Pump cycling due to low water level	6.1	6.0	2.9	0.78	ND
<i>Total gallons extracted: 7,852,200</i>						
<i>CSUMB</i>						
EW-OU2-14-A	Offline due to low concentrations	2.4	0.47	ND	ND	ND
EW-OU2-15-A	Offline due to low concentrations, pump failure	Not Sampled				
<i>Total gallons extracted: 4,100</i>						
<i>Landfill</i>						
EW-OU2-03-180		13.7	0.69	ND	ND	0.17
EW-OU2-04-180	Offline due to low concentrations‡	Not Sampled				
<i>Total gallons extracted: 6,197,000</i>						
<i>Bunker Hill</i>						
EW-OU2-07-180	No pump in well, sampled with PDBs	3.0	0.74	ND	ND	ND
EW-OU2-08-180	Offline due to low concentrations	0.42	0.19	ND	ND	ND
EW-OU2-09-180	OUCTP Upper 180-Foot Aquifer remedy§	ND	0.18	ND	ND	ND
<i>Total gallons extracted: 2,293,000</i>						
<i>Total OU2 gallons treated: 24,902,570</i>						

NOTES:

ND The analyte was not detected above the limit of quantitation.

† Concentrations in bold type exceed the ACL.

‡ Meets QAPP decision rules to be removed from the GWMP.

\* EW-OU2-16-A concentration of 1,1-DCA = 14.1 µg/L.

\*\* MW-OU2-40-A concentration of TCE = 14.2 µg/L.

§ cis-1,2-DCE also detected at 1.4 µg/L.

Table 7: December 2013 Sites 2/12 Extraction Well and Select Monitoring Well Status (as of December 31)

Well Identification	Comments	Select COC Concentrations (µg/L) 4Q 2013†			
		TCE	PCE	cis-1,2-DCE	VC
EW-12-05-180M		4.7	8.5	1.3	ND
EW-12-06-180M		2.9	0.62	1.0	ND
EW-12-07-180M	Offline due to low concentrations	3.3	0.50	1.0	ND
EW-12-03-180U	Offline due to low concentrations, sampled with PDBs‡	Not Sampled			
EW-12-03-180M	Offline due to low concentrations, sampled with PDBs	2.8	0.56	1.2	ND
EW-12-04-180U	Offline due to low concentrations, sample in 3Q13 with PDBs‡	Not Sampled			
EW-12-04-180M	Offline due to low concentrations, sampled with PDBs‡	Not Sampled			
MW-12-17-180U <sup>1</sup>	New MW east of EW-12-06-180M	6.8	0.29	ND	ND
MW-12-14-180M	MW north of and upgradient from EW-12-05-180M	2.3	0.40	0.13	ND
MW-12-09R-180	MW east of and upgradient from EW-12-05-180M	0.46	5.2	ND	ND
MW-12-24-180U <sup>2</sup>	New MW adjacent to MW-12-09R-180	8.1	95.7	ND	ND
MW-12-20-180U <sup>3</sup>	New MW northeast of MW-12-09R-180	0.16	6.4	ND	ND
<i>Total 2/12 Extraction Well gallons treated: 7,507,500</i>					

NOTES:

ND The analyte was not detected above the limit of quantitation.

† Concentrations in bold type exceeded the ACL.

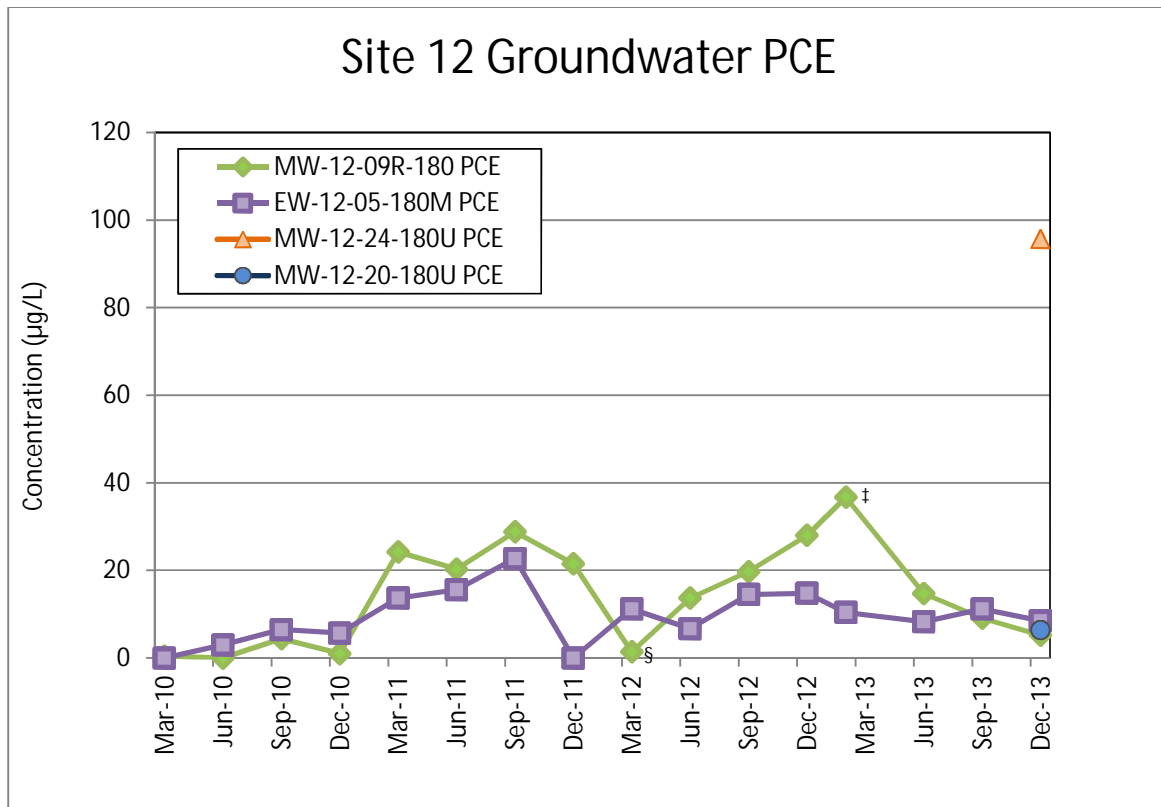
‡ Sampled annually per QAPP decision rules.

\* Meets QAPP decision rules to be removed from the GWMP.

<sup>1</sup> New MW profiled, highest COC concentrations from the 76 and 81 foot below ground surface (ft bgs) samples listed (results same at both bags).

<sup>2</sup> New MW profiled, highest COC concentrations from the 75 ft bgs sample listed.

<sup>3</sup> New MW profiled, highest COC concentrations from the 71 ft bgs sample listed.



§ The PCE detection from MW-12-09R-180 in March 2012 was flagged with a J- qualifier which indicates a low bias.

† The PCE detection from MW-12-09R-180 in March 2013 was flagged with a J+ qualifier which indicates a high bias.





**Other Groundwater Issues  
Fort Ord HTW BCT Meeting  
January 22, 2014**

**December (Q4) Groundwater Data**

- Carbon Tetrachloride (CT) concentrations in the Deployment Area 1A wells were below the aquifer cleanup level (ACL) for the second consecutive quarter
- In Deployment Area 1B, CT concentrations exceed the ACL in only MW-BW-53-A

**December (Q4) Sampling**

- Sampling was performed the week of December 16. Two wells were sampled on January 6, 2014
- With the exception of the two samples collected on January 6, all groundwater data has been validated and loaded to FODIS

**Deliverables**

- The second quarter groundwater monitoring report was issued on December 9, 2013 and was uploaded to Geotracker on December 17
- The 2012-2013 Annual Groundwater Report is undergoing internal review. Submittal of the draft report for agency review is expected in 3 to 4 weeks



**Site 39 Status**  
**Fort Ord HTW BCT**  
**22 January 2014**

**Basewide Range Assessment**

- ITSI Gilbane is preparing the draft of the technical memorandum to describe the sampling and further recommendations for Units 4, 11, and 12 for release on January 27, 2014.
- ITSI Gilbane provided a preliminary draft of the BRA sampling plan for Unit 6 to the Army.
- A BRA sampling plan for Units 10, 7, and 33 will be prepared following the completion of surface MEC removal activities. Preliminary research on former ranges within these 3 units and other background information is nearing completion.

**HA 28**

- Erosion control activities at HA 28 are completed.

**HA 34**

- Erosion control activities at HA 34 are completed except for hydroseeding which will be completed next week.

**HA 37**

- Erosion control activities at HA 37 are completed.

**Site 39 MPPEH/MEC/MD List**

- No MEC removal under Site 39 during December 2013 or January 2014.

**Site 39 Remedial Action Completion Report**

- Site 39 RACR was submitted draft at the end of November. Comments were requested by January 31, 2014.

**Site 12 4th Quarter 2013 Groundwater Monitoring Analytical Results**

Well Name	PDB Station	cis-1,2-DCE	PCE	TCE	VC	Notes
EW-12-03-180M	2	1.2	0.56	2.8	ND	
EW-12-05-180M	NA	1.3	8.5	4.7	ND	
EW-12-05-180M	NA	1.3	8.3	4.6	ND	duplicate sample
EW-12-06-180M	NA	1.0	0.62	2.9	ND	
EW-12-07-180M	NA	1.0	0.50	3.3	ND	
MW-12-01-180	NA	ND	0.62	0.18	ND	
MW-12-01-180	NA	ND	0.56	0.20	ND	duplicate sample
MW-12-07-180	NA	0.40	0.31	2.5	ND	
MW-12-09R-180	1	ND	5.2	0.46	ND	
MW-12-14-180M	NA	0.13	0.40	2.3	ND	
MW-12-15-180M	NA	ND	0.85	0.77	ND	
MW-12-16-180M	NA	4.2	0.17	2.8	ND	
MW-12-16-180M	NA	4.1	0.16	2.8	ND	duplicate sample
MW-12-17-180U	1	ND	0.65	ND	ND	
MW-12-17-180U	1	ND	0.70	ND	ND	duplicate sample
MW-12-17-180U	2	ND	0.28	5.6	ND	
MW-12-17-180U	3	ND	0.29	6.8	ND	
MW-12-17-180U	4	ND	0.29	6.8	ND	
MW-12-18-180U	2	ND	ND	ND	ND	
MW-12-18-180U	3	ND	0.10	ND	ND	
MW-12-18-180U	4	ND	ND	ND	ND	
MW-12-19-180M	1	ND	ND	0.26	ND	
MW-12-19-180M	2	ND	ND	0.29	ND	
MW-12-19-180M	3	ND	ND	0.29	ND	
MW-12-19-180M	4	ND	ND	0.28	0.05	
MW-12-19-180U	2	ND	ND	ND	ND	
MW-12-19-180U	3	ND	ND	ND	ND	
MW-12-19-180U	4	ND	ND	ND	ND	
MW-12-20-180U	2	ND	6.4	0.16	ND	
MW-12-20-180U	3	ND	5.3	0.14	ND	
MW-12-20-180U	4	ND	6.0	0.16	ND	
MW-12-21-180U	1	ND	0.62	ND	ND	
MW-12-21-180U	2	ND	0.60	0.12	ND	
MW-12-21-180U	3	ND	0.41	0.18	ND	
MW-12-21-180U	4	ND	0.27	0.20	ND	
MW-12-22-180U	2	ND	0.36	ND	ND	
MW-12-22-180U	3	ND	0.33	ND	ND	
MW-12-22-180U	4	ND	0.28	ND	ND	
MW-12-23-180U	2	ND	0.23	ND	ND	
MW-12-23-180U	3	ND	0.19	ND	ND	
MW-12-23-180U	4	ND	0.16	ND	ND	
MW-12-24-180U	2	ND	73.6	7.3	ND	
MW-12-24-180U	3	ND	95.7	8.1	ND	
MW-12-24-180U	4	ND	71.4	6.4	ND	

**Site 12 4th Quarter 2013 Groundwater Monitoring Analytical Results**

Well Name	PDB Station	cis-1,2-DCE	PCE	TCE	VC	Notes
MW-12-25-180U	2	ND	2.6	ND	ND	
MW-12-25-180U	3	ND	2.3	ND	ND	
MW-12-25-180U	4	ND	0.83	ND	ND	
MW-12-26-180U	1	ND	0.42	ND	ND	
MW-12-26-180U	2	ND	0.47	ND	ND	
MW-12-26-180U	3	ND	0.37	ND	ND	
MW-12-26-180U	4	ND	0.20	ND	ND	
MW-12-27-180U	2	ND	0.22	ND	ND	
MW-12-27-180U	3	ND	0.22	ND	ND	
MW-12-27-180U	4	ND	0.23	ND	ND	
MW-12-28-180U	2	ND	1.6	0.14	ND	
MW-12-28-180U	3	ND	1.5	0.14	ND	
MW-12-28-180U	4	ND	1.4	0.16	ND	
MW-12-29-180U	2	ND	1.4	ND	ND	
MW-12-29-180U	3	ND	1.4	ND	ND	
MW-12-29-180U	4	ND	1.3	ND	ND	
MW-12-30-180U	2	ND	0.19	0.22	ND	
MW-12-30-180U	3	ND	0.17	0.16	ND	
MW-12-30-180U	4	ND	0.53	0.24	ND	

**HGL Update**  
**Fort Ord Operable Unit 1**  
**Groundwater Remediation, Well Destruction, and Treatment Plant Decommissioning**  
**Marina, California**  
**1:30 p.m., 22 January 2014**

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### **OU-1 Treatment Plant Operations**

HydroGeoLogic, Inc. (HGL) reported the Northwest Treatment System (NWTS) operated nearly continuously from 1 December 2013 through 13 January 2014. The system shut down for approximately 11.25 hours on 5 December 2013 and 11.5 hours on 9 December 2013. On both occasions, the system automatically shut down due to a low pressure alarm at the transfer pump. The cause of the shutdowns is uncertain, but it is believed to be related to the low outdoor temperature (below freezing) on those dates.

Extraction wells EW-OU1-60-A, EW-OU1-66-A, MW-OU1-87-A, and IW-OU1-10-A operated during the period and total pumping from those wells was approximately 27 gallons per minute (gpm). After completing the December sampling event extraction well IW-OU1-10-A was shutdown on 2 January. The current total pumping rate is approximately 20 gpm. Since system startup in 2006, the NWTS has pumped approximately 206 million gallons of groundwater and removed approximately 6.0 pounds of total volatile organic compounds, primarily trichloroethene (TCE). An estimated 0.07 pound of TCE has been removed since the NWTS 18 September 2013 sampling event.

### **OU-1 Groundwater Quality Data**

As agreed at the November Base Closure Team (BCT) meeting, 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)
- Monitoring wells MW-OU1-88-A and MW-OU1-61-A

Preliminary, unvalidated sampling results for NWTS from December 2013 are presented in attached Tables 1A and 1B. The unvalidated analytical results showed that only TCE, cis-1,2-dochloroethene and chloroform were detected in any sample. TCE was the only chemical with a concentration that exceeded the laboratory reporting limit of 0.5 micrograms per liter ( $\mu\text{g/L}$ ) and it was detected in all four wells. Concentrations of cis-1,2-dochloroethene were detected in three of the four wells and chloroform was detected in two.

The observed TCE concentration in extraction well EW-OU1-87-A continued to decrease to 4.2  $\mu\text{g/L}$  from 4.7  $\mu\text{g/L}$  when last sampled in September 2013. Similarly, the TCE concentration in extraction well IW-OU1-10-A continued to decrease to 2.8  $\mu\text{g/L}$  from 3.7  $\mu\text{g/L}$  when last sampled in March 2012. Overall, concentrations were similar to the previous result at each well and decreased by less than 1  $\mu\text{g/L}$ . MW-OU1-61-A and MW-OU1-88-A remained the only two wells where the TCE concentration exceeded the Aquifer Cleanup Level (ACL) of 5  $\mu\text{g/L}$ . In December, the TCE concentration at MW-OU1-61-A declined slightly to 6.3  $\mu\text{g/L}$  and MW-OU1-88-A declined slightly to

6.2  $\mu\text{g/L}$ . Because the December data will not alter the TCE concentration contours generated from the September data, Figure 1 presents the TCE concentration contours based on the validated September 2013 data. Figure 1 will be updated after the December data has been validated.

### **Reporting/Federal Facility Agreement Schedule**

All scheduled submittals have been made for primary and secondary deliverables. The status of submitted and anticipated reports for 2013 and 2014 is summarized in Table 2. The Draft OU-1 2013 Annual and Third Quarter Groundwater Monitoring Report was submitted for regulatory and public review on 17 January 2014. HGL is currently responding to comments received for the preliminary draft Unified Federal Program Quality Assurance Project Plan (UFP-QAPP), the preliminary draft Work Plan for the well destruction and treatment plant demolition efforts, the Health and Safety Plan for the OU-1 groundwater remediation projects and, the Health and Safety Plan for the well destruction project.

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 for Army review on December 30, 2013. The University of California Santa Cruz draft annual report to describe 2013 weed control activities is included as an Appendix therein.

### **Well Destruction and Treatment Plant Demolition**

HGL measured total well depth at wells to be destroyed within OU-1 and at locations where right of entry has been secured. HGL also visited these sites to identify access constraints and assisted the Base Realignment and Closure (BRAC) Office in preparing information to submit to the U.S. Fish and Wildlife Service (USFWS) to determine if the well destruction schedule will be subject to snowy plover nesting season restrictions. HGL also conducted a site reconnaissance to identify potential property ownership and access issues at wells located on non-BRAC land. Work is continuing on preparation of the well destruction permits and coordination with the USFWS.

### **Action Items:**

No new action items.

### **Ongoing:**

- Submit draft minutes for previous BCT meeting(s)—complete.
- Submit approved final minutes for previous BCT meeting(s) — approval complete through December 2013 minutes.
- Prepare update for the next BCT meeting.

**Fort Ord HTW BCT Meeting  
22 January 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 – 22 January 2014**

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.	<b>16</b>	<b>13</b>	<b>19</b>	<b>14</b>	ND	ND	1.7	ND	<b>11</b>	ND	ND					
1/18/08		<b>11</b>	<b>11</b>	<b>8.9</b>	<b>8.2</b>	ND	ND	1.2	ND	<b>6.0</b>	ND	ND					
3/18/08		<b>11</b>	<b>14</b>	<b>6.7</b>	<b>5.8</b>	ND	0.29	1.5	ND	<b>5.6</b>	ND	ND					
5/27/08		<b>9.7</b>	<b>18</b>	2.5	<b>6.1</b>	ND	ND	1.8	ND	3.9	ND	ND					
7/21/08		<b>9.1</b>	<b>14</b>	4.4	3.4	ND	0.78	1.4	ND	3.6	ND	ND					
9/29/08		<b>9.3</b>	<b>15</b>	4.3	2.9	J	ND	0.90	J	1.7	J	ND	3.8	J	0.19	J	ND
12/1/08		<b>5.8</b>	<b>11</b>	2.6	1.6	ND	0.82	0.91	ND	2.7	0.35	J	ND				
1/26/09		<b>5.9</b>	<b>10</b>	2.2	1.2	ND	0.48	J	0.78	ND	2.4	ND	ND				
3/9/09		<b>5.8</b>	<b>9.9</b>	2.1	1.2	ND	0.95	0.86	ND	2.7	ND	ND					
6/11/09		<b>6.9</b>	<b>11</b>	2.4	1.5	ND	0.88	1.7	ND	2.6	0.14	J	ND				
9/15/09		<b>6.8</b>	<b>9.4</b>	1.7	0.78	ND	inactive	1.1	0.036	J	2.3	0.35	J	ND			
12/14/09		<b>6.9</b>	<b>7.5</b>	0.84	not sampled	not sampled	inactive	0.94	not sampled	2.3	0.65	J	ND				
3/22/10		<b>7.2</b>	<b>8.5</b>	0.62	0.55	inactive	ND	0.90	inactive	2.3	ND	ND					
6/21/10		<b>7.4</b>	<b>6.5</b>	0.90	0.40	J	inactive	0.86	0.58	inactive	2.1	ND	ND				
9/20/10		<b>7.7</b>	<b>6.6</b>	0.83	0.35	J	discontinued	0.63	0.49	J	inactive	2.3	not sampled	ND			
12/16/10		<b>5.2</b>	<b>6.9</b>	<b>5.2</b>	0.58	0.28	J	discontinued	0.72	0.42	J	inactive	2.6	0.18	J	ND	
3/7/11	<b>5.1</b>	<b>6.0</b>	4.6	0.55	0.60	discontinued	0.87	0.42	J	inactive	2.5	0.59	ND				
6/7/11	4.2	<b>6.1</b>	4.0	0.78	0.63	discontinued	0.76	0.36	J	inactive	2.6	1.0	ND				
9/20/11	4.5	<b>6.2</b>	4.2	1.10	0.38	J	discontinued	0.57	0.36	J	inactive	2.5	1.7	ND			
12/7/11	3.8	<b>5.1</b>	3.7	not sampled		discontinued	inactive	0.27	J	inactive	1.8	2.1	0.13	J			
3/15/12	3.7	<b>5.5</b>	3.8	0.70	0.23	J	discontinued	inactive	0.38	J	inactive	0.81	0.32	J	ND		
9/25/12	--	<b>5.3</b>	4.4	--	--	discontinued	inactive	0.19	J	inactive	1.8	0.72	J	ND			
1/8/13	--	<b>5.4</b>	--	--	--	discontinued	ND	0.19	J	inactive	<b>1.54</b>	--	ND				
3/27/13	--	4.8	--	--	--	discontinued	ND	0.23	J	inactive	<b>1.48</b>	--	ND				
6/26/13	--	4.4	--	--	--	discontinued	--	--	inactive	<b>1.90</b>	--	ND					
9/18/13	--	4.7	1.9	--	--	discontinued	0.17	J	0.31	J	inactive	<b>2.00</b>	--	ND			
12/17/13	2.8	4.2	--	--	--	discontinued	--	--	inactive	<b>1.48</b>	--	--					
Notes:	<b>Italics (if used) indicate data not yet validated</b>					<b>Bold font indicates concentration &gt; ACL</b>											
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.																	



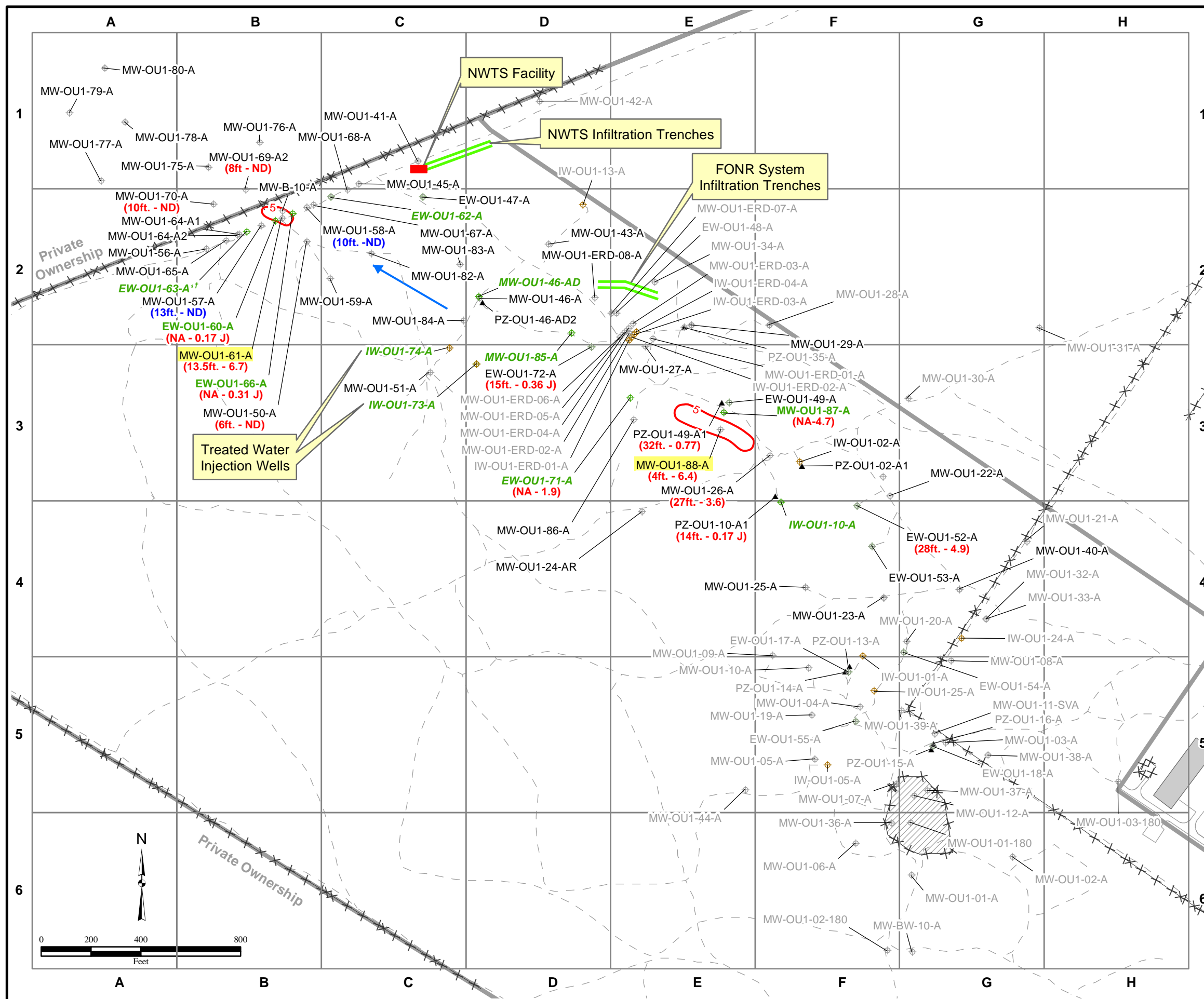
**Table 1B**  
**cis-1,2-DCE in OU-1 FONR Groundwater Remediation System – Performance Monitoring**  
**BCT Meeting for Former Fort Ord – 22 January 2014**

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									
<b>cis-1,2-DCE (µg/L)</b>																		
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	0.26	J	0.24	J	ND			
03/09/09		0.62	1.20	0.29	J	0.13	J	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	0.28	J	ND			
09/15/09		0.80	1.00	0.22	J	0.08	J	ND	inactive	0.03	J	ND	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	0.30	J	0.11	J		
03/22/10		0.67	0.79	ND		ND		inactive	ND	ND		inactive	0.11	J	0.13	J		
06/21/10		0.67	0.53	0.14	J	ND		inactive	ND	ND		inactive	0.23	J	ND			
9/20/10		0.66	0.46	J	ND	ND		discontinued	ND	ND		inactive	not sampled		ND			
12/16/10		0.55	0.66	0.35	J	ND	J	ND	discontinued	ND	ND	inactive	0.28	J	ND			
3/7/11	0.37	J	0.52	0.28	J	0.11	J	ND	discontinued	ND	ND	inactive	0.30	J	ND			
6/7/11	0.35	J	0.55	0.29	J	ND		ND	discontinued	ND	ND	inactive	0.31	J	0.15	J		
9/20/11	0.25	J	0.46	J	0.21	J	ND	ND	discontinued	ND	ND	inactive	0.19	J	0.30	J		
12/7/11	0.27	J	0.48	J	0.19	J	not sampled		discontinued	inactive	ND	inactive	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	0.24	J	ND		
9/25/12	--		0.39	J	0.23	J	--		--	discontinued	inactive	ND	inactive	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:													<b>Italics (if used) indicate data not yet validated</b>			<b>Bold font indicates concentration &gt; ACL</b>		
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 – 6 December 2013**

<b>Deliverable Title</b>	<b>Submittal</b>	<b>Review Comments Due</b>	<b>Status/Remarks</b>
<i><b>Primary Deliverables</b></i>			
None scheduled			
<i><b>Secondary Deliverables</b></i>			
Draft 2013 Annual and 3 <sup>rd</sup> Quarter Groundwater Monitoring Report	January 2014	March 2014	Submitted 17 January 2014.
Draft UFP-QAPP	January 2014	March 2014	In preparation.
Draft Work Plan for Well Destruction and Treatment Plant Demolition	January 2014	February 2014	In preparation.
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.
Preliminary Draft Health & Safety Plan – OU-1 O&M / LTM	5 November 2013	19 November 2013	Responding to Army comments on preliminary draft.
<i><b>Completed Recent Submittals</b></i>			
Final Memorandum for Record for Optimizing Remediation Pumping	March 2012	February 2012	Accepted as final during July 2012 BCT meeting.
Draft 2012 Annual and 3 <sup>rd</sup> Quarter Groundwater Monitoring Report	December 2012	NA	Submitted 31 December 2012. Waiting for agency comments.
Final 2012 Annual and 3 <sup>rd</sup> 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 Work Plan for Well Destruction and Treatment Plant Demolition	5 November 2013	19 November 2013	Army comments received.
Preliminary Draft Health & Safety Plan	5 November 2013	19 November 2013	Army comments received.
Preliminary Draft 2013 Annual and 3 <sup>rd</sup> Quarter Groundwater Monitoring Report	19 November 2013	19 December 2013	Army comments received. Draft Submitted 17 January 2014
Preliminary Draft UFP-QAPP	26 November 2013	10 December 2013	Army comments received.

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



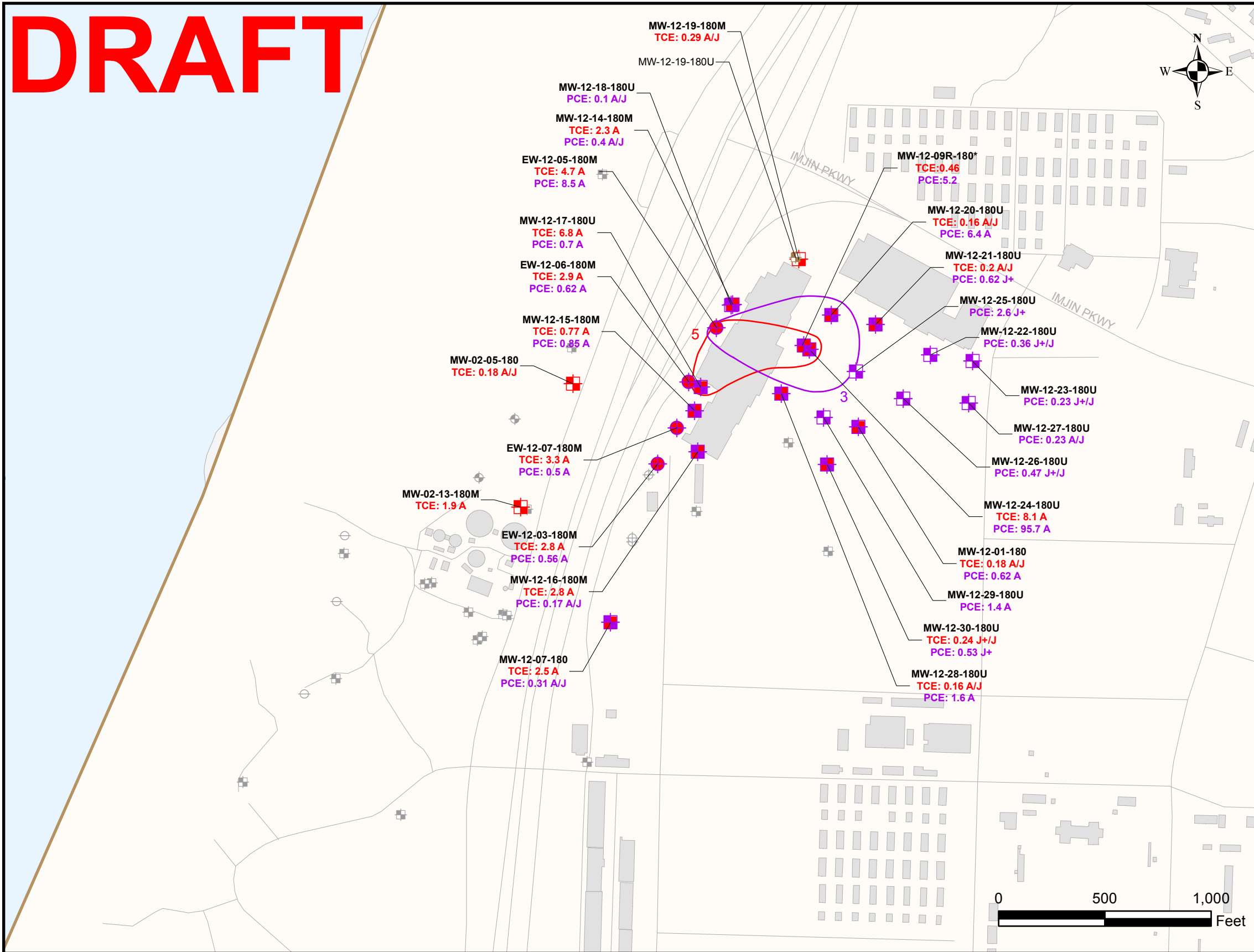
**Legend**

- ⊕ 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

# DRAFT



### EXPLANATION

- Monitoring Well with TCE detection
- Extraction Well with TCE detection
- Monitoring Well with PCE detection
- Monitoring Well with TCE and PCE Detection
- Extraction Well with TCE and PCE Detection
- Monitoring Well - TCE not detected and no other COC ACL exceedances
- Monitoring Well not sampled this quarter
- Piezometer not sampled this quarter
- Extraction Well not sampled this quarter
- Injection Well not sampled this quarter

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

- 5 Trichloroethene (TCE)
- 3 Tetrachloroethene (PCE)

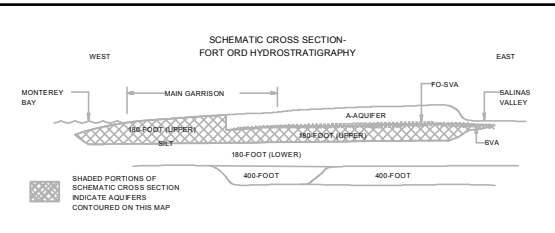
Facilities

Roads

WELL ID (\* Indicates: Sample result not used for contouring)

**MW-12-21-180U**  
TCE: 0.2 A/J  
PCE: 0.62 J+ } TCE and/or PCE concentration (µg/L) with validation/lab qualifier

- ### NOTES:
- (1) SAMPLES WERE COLLECTED BETWEEN DECEMBER 16 AND 19, 2013.
  - (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) OTHER COC ACL EXCEEDANCES DETECTED BEYOND THE EXTENT OF THE TCE PLUME ARE ILLUSTRATED WHEN PRESENT.



DRAWN	RJP	JOB NUMBER	OD13164600
ENGINEER		SCALE	AS SHOWN
CHECKED	DAH	DATE	2/2014
APPROVED	JJF	DATE	2/2014



## Report of Quarterly Monitoring Fourth Quarter 2013 Former Fort Ord, California

TCE/PCE Concentrations and Other COC ACL Exceedances  
Sites 2 and 12, Upper 180-Foot Aquifer  
West of the Fort Ord-Salinas Valley Aquitard  
Fourth Quarter 2013

FIGURE  
**4-1**



**OU2 Landfills and TTU  
Operation and Maintenance  
Status Update  
January 22, 2014**



**Landfill Maintenance**

- Monterey County inspection 10/30 – no issues.
- Annual inspection by P.E. (Mick Williams) 10/30. No issues; minor erosion repairs have been addressed.
- Draft 2012 annual report reviewed by Army. Expect to issue to agencies as Final this month.

**TTU Operations/Landfill Gas Monitoring**

- Operating every other week since 2/6/12 (approx. 90 hrs in each 2 week cycle)
  - Data summary attached
  - Methane at TTU generally downward since beginning of 2013, holding at around 37% last few months; latest reading approx. 38% (graph attached).
  - Current concentration is acceptable. If concentration falls over next few months we will need to reduce operating hours.
  - Methane removed in 2013 18% less than 2012.
  - COCs removed in 2013 12% less than 2012 (90% reduction since 2006)
- No operational problems.

**Thermal Treatment Unit  
Operation Summary  
2006 - 2014**

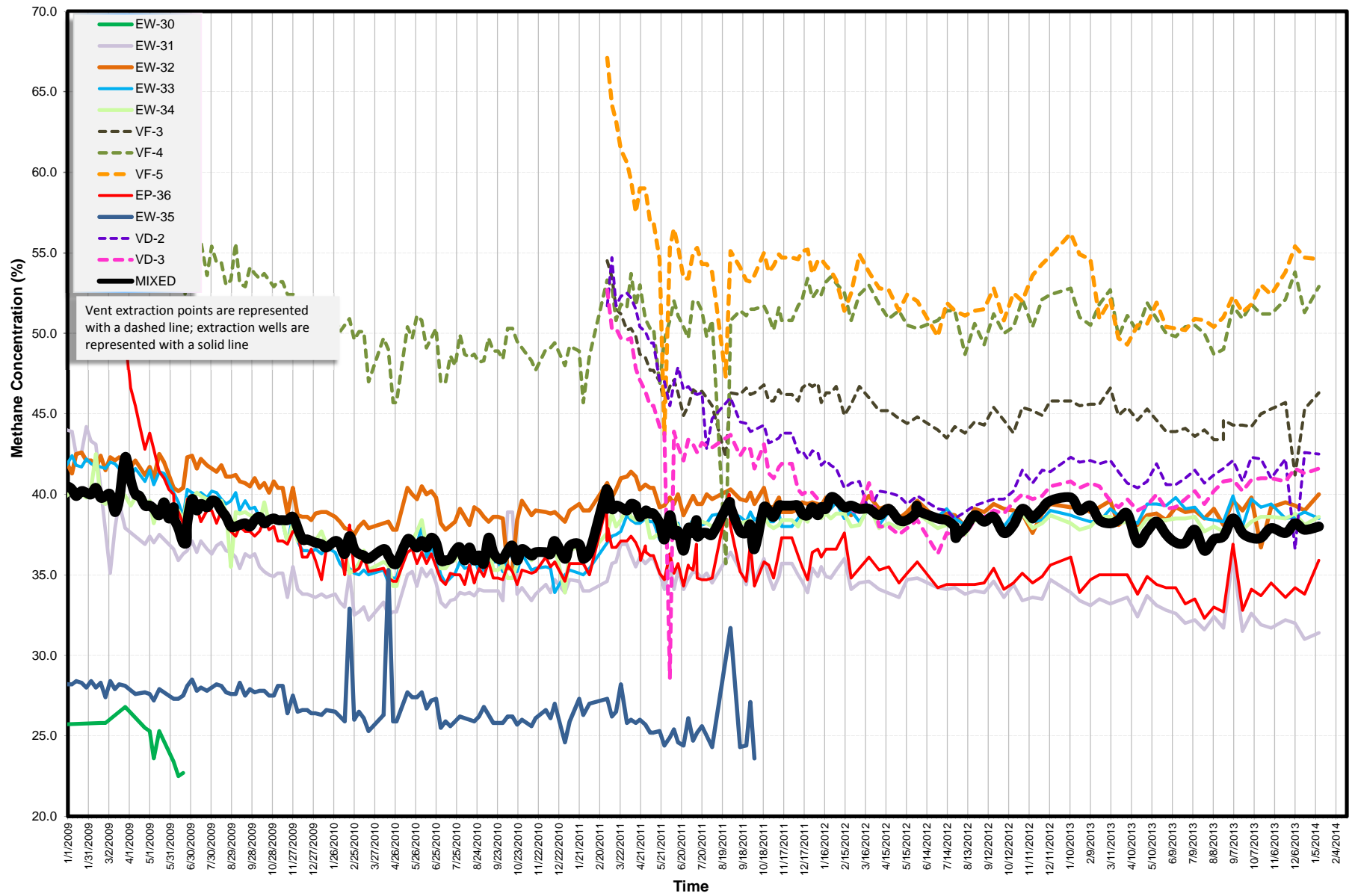
<b>TREATMENT SYSTEM OPERATION SUMMARY</b>	
<b>Treatment System Start Date:</b>	<b>6/4/2001</b>
<b>TTU Start Date:</b>	<b>4/4/2006</b>
<b>Last Reading Date/Time:</b>	<b>1/10/2014 13:48</b>
<b>Historical through 2013 (TTU only):</b>	
Total TTU Hours:	<b>67,872</b>
Total TTU Hours Operated:	<b>23,903</b>
% TTU Operation:	<b>35.2%</b>
Total Pounds of Methane Removed:	<b>2,638,229</b>
<b>Current Year 2014:</b>	
Total Hours:	<b>336</b>
Total Hours Operated:	<b>70</b>
% TTU Operation:	<b>21%</b>
Total Pounds of Methane Removed:	<b>6,245</b>
<b>Cumulative (since TTU startup in 2006):</b>	
% TTU Operation:	<b>35.1%</b>
Total Pounds of Methane Removed:	<b>2,644,474</b>

	<b>Total Pounds Removed</b>	<b>Pounds/week</b>
Pounds of Methane Removed (2007)	<b>532,181</b>	<b>10,206</b>
Pounds of Methane Removed (2008)	<b>288,433</b>	<b>5,532</b>
Pounds of Methane Removed (2009)	<b>448,148</b>	<b>8,595</b>
Pounds of Methane Removed (2010)	<b>212,684</b>	<b>4,079</b>
Pounds of Methane Removed (2011)	<b>228,085</b>	<b>4,374</b>
Pounds of Methane Removed (2012)	<b>229,400</b>	<b>4,399</b>
Pounds of Methane Removed (2013)	<b>187,782</b>	<b>3,601</b>
Pounds of Methane Removed (2014)	<b>6,245</b>	<b>3,123</b>

	<b>Total Pounds COCs Removed</b>
2007	<b>6.2</b>
2008	<b>3.1</b>
2009	<b>3.4</b>
2010	<b>1.4</b>
2011	<b>1.4</b>
2012	<b>1.2</b>
2013	<b>1.1</b>
2014	<b>0.04</b>

<b>EXTRACTION SYSTEM (2013)</b>						
Location	Last Instantaneous Methane Reading (%)	Last Instantaneous Flow Rate Reading (scfm)	Current Methane Removal Rate (lbs/day)	2014 % Operation	2014 Methane Removed (Lbs)	% Contribution of Each Extraction Source
<b>Area E</b>						
EP-36	35.9	25.0	529	21	1536	22%
<b>Area F</b>						
EW-31	31.4	14.0	259	21	753	11%
EW-32	40.0	16.0	377	21	1096	16%
EW-33	38.5	12.0	273	21	791	11%
EW-34	38.6	23.0	524	21	1520	22%
VF-3	46.3	6.0	164	21	476	7%
VF-4	52.9	4.0	125	21	362	5%
VF-5	54.6	1.0	32	21	93	1%
<b>Area D</b>						
EW-35	32.6	0.0	0	0	0	0%
VD-2	42.5	3.0	75	21	218	3%
VD-3	41.6	1.0	25	21	71	1%
<b>MIXED</b>						
MIXED	38.0	96.0	2152	21	6245	100%

TTU Extraction Sources  
OU2 Landfill  
From 01/01/2009 to Present

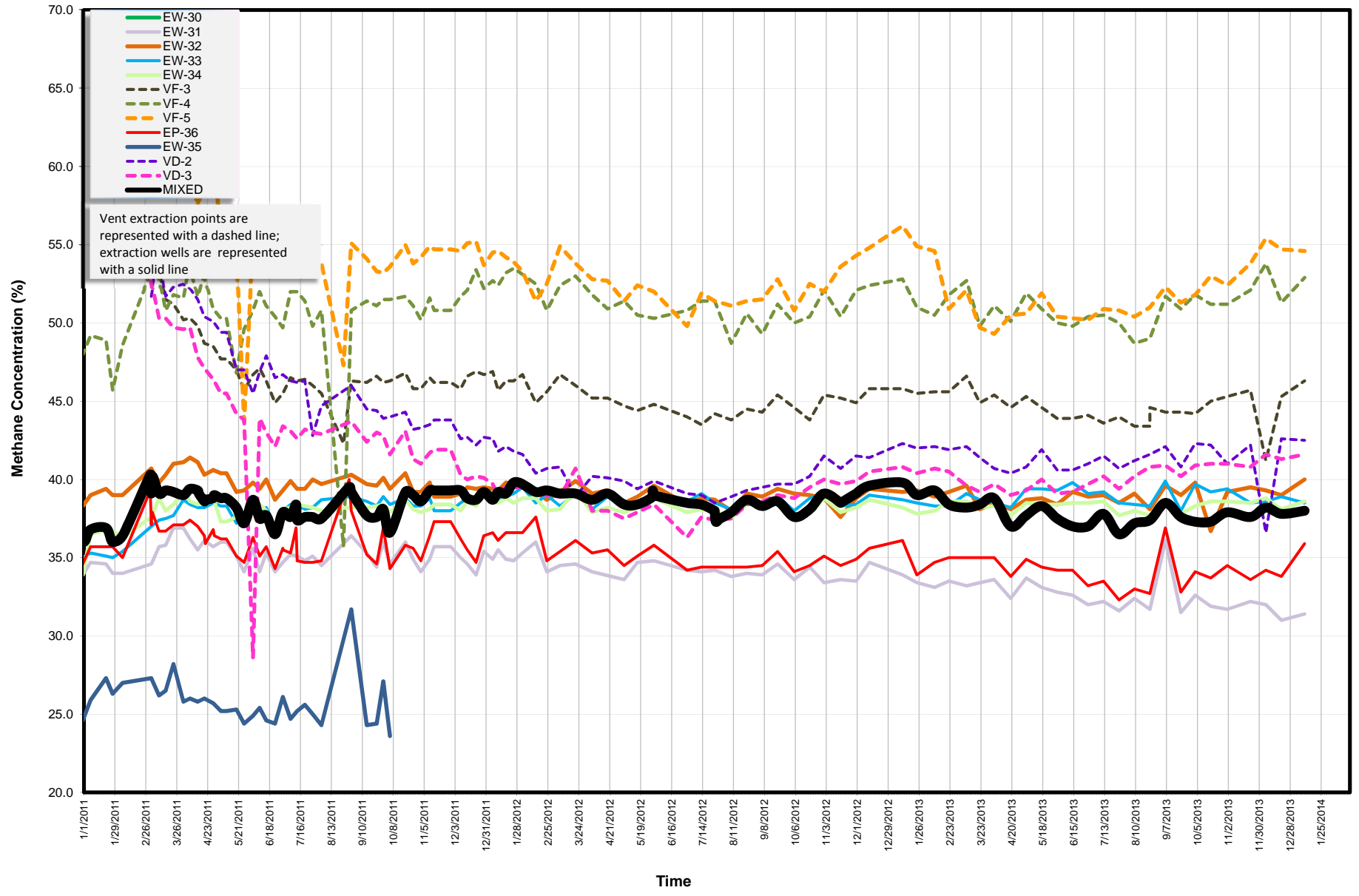




# Methane Concentration vs. Time

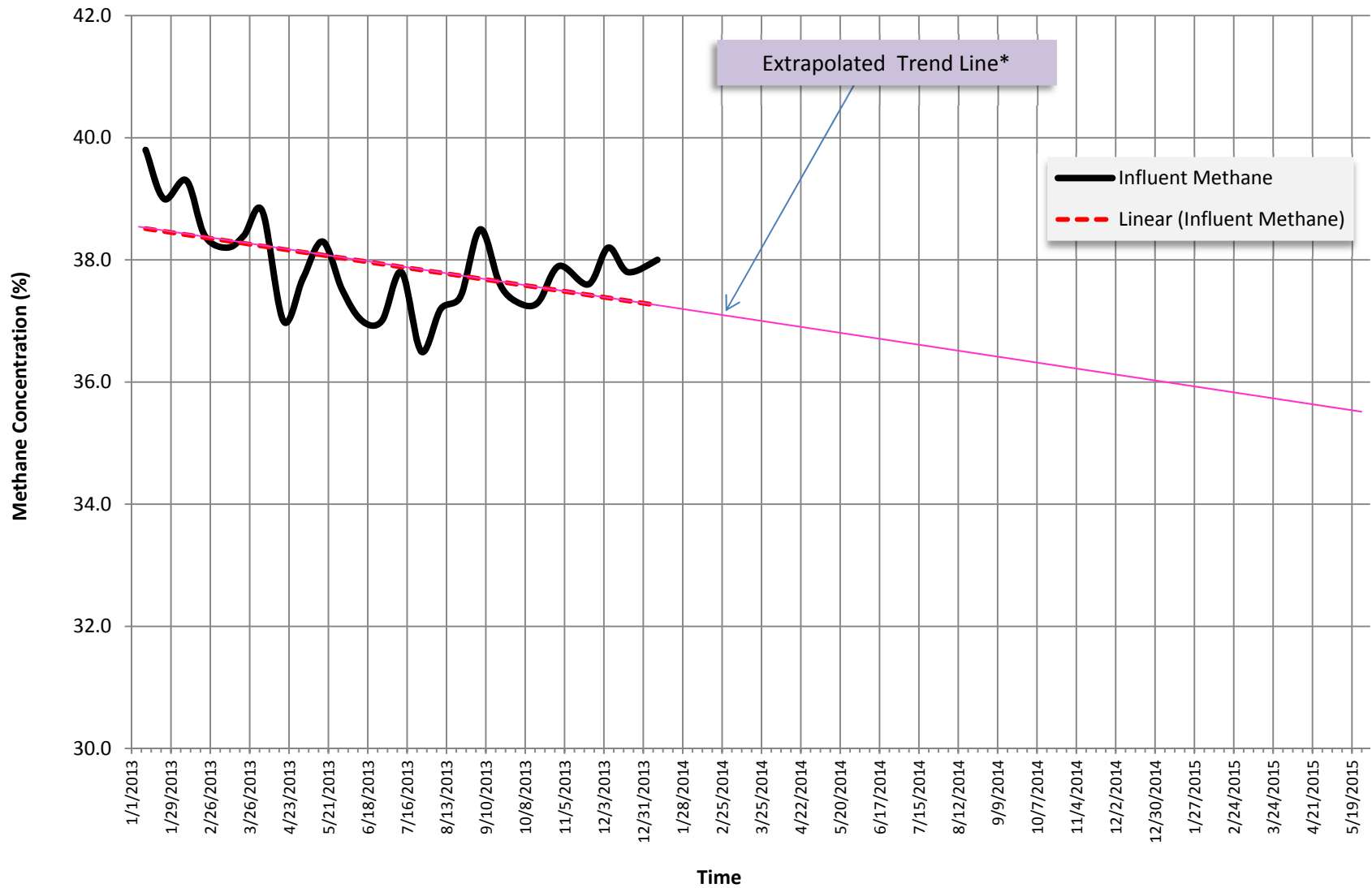
## OU2 Landfill Extraction Sources

### 1/1/2011 to present



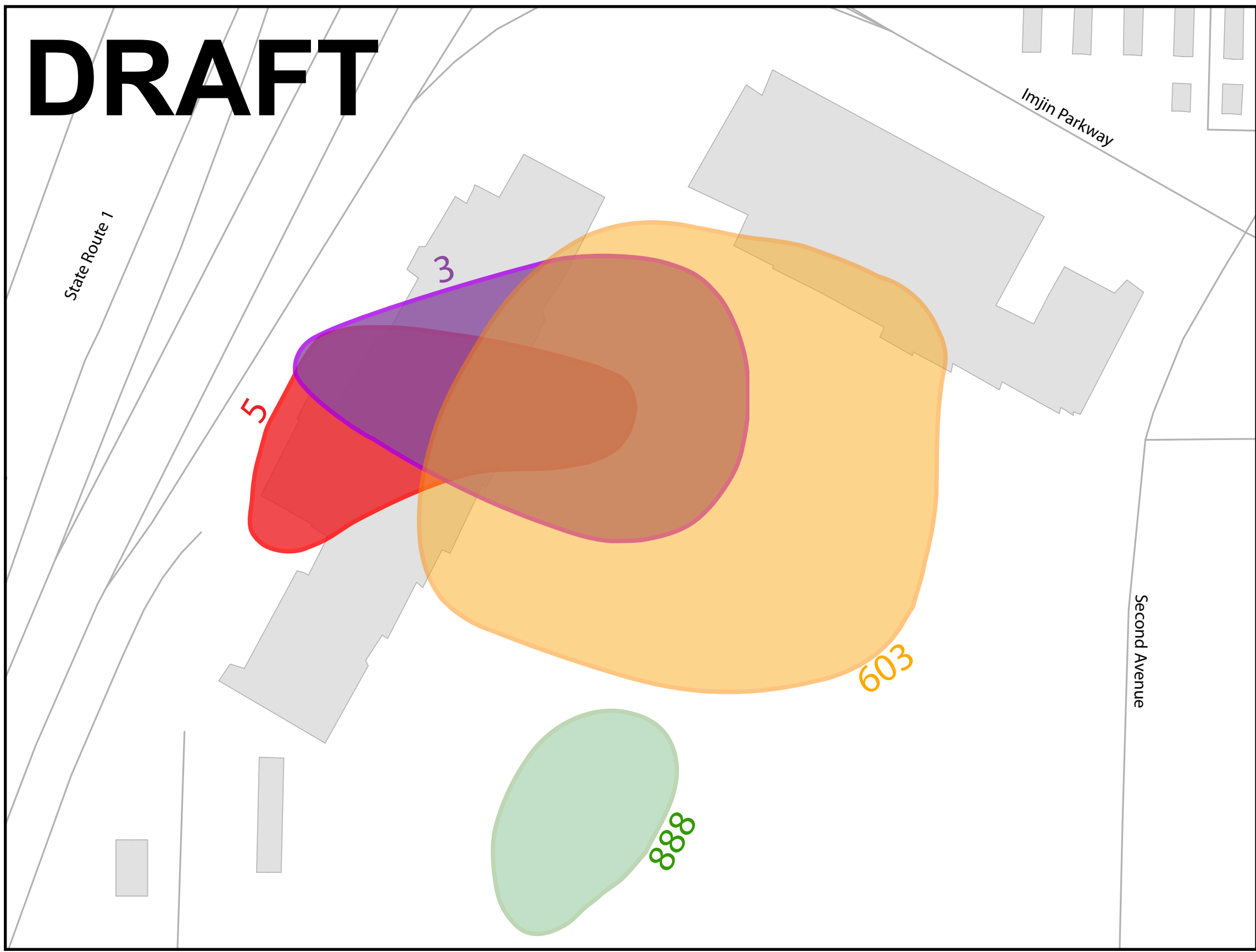


**Methane Concentration vs. Time**  
**OU2 Landfill Extraction Sources**  
**01/01/2013 to present**



\* Trend line generated from all data 1/1/13 to present

# DRAFT



## EXPLANATION

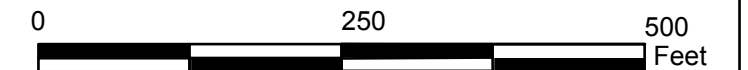
- Facilities
- Roads

Groundwater Chemical of Concern (COC) Contours by Aquifer Cleanup Level (ACL) in ug/L. Contour drawn around highest concentration in wells where multiple samples were taken. Sampled December 2013.

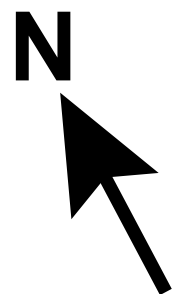
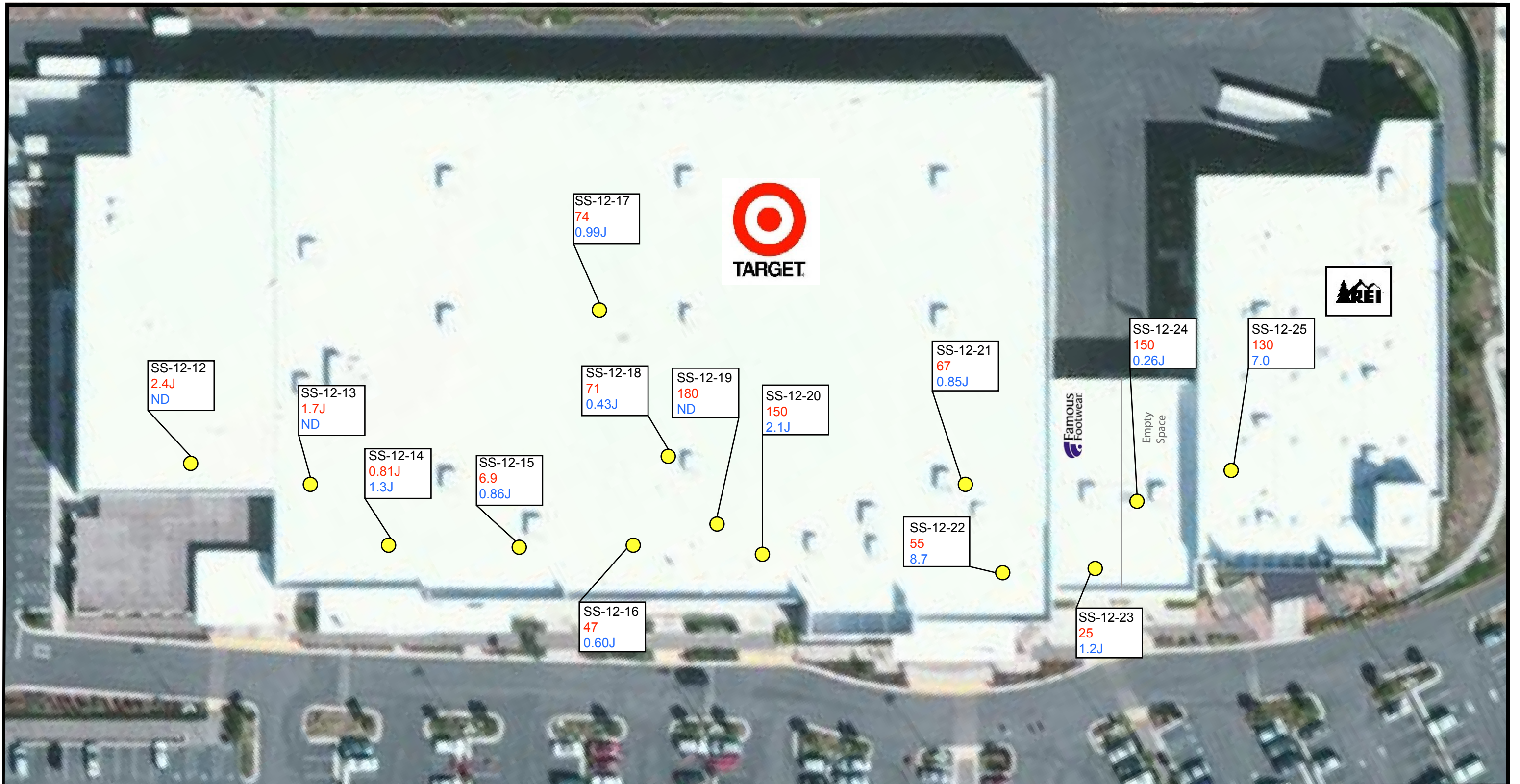
- 3 PCE in ug/L
- 5 TCE in ug/L

Soil Gas 70 feet below ground surface (ft bgs) COC Contours by Soil Gas Screening Level (SGSL) in ug/m<sup>3</sup>. Sampled Sept - Dec 2013.

- 603 PCE in ug/m<sup>3</sup>
- 888 TCE in ug/m<sup>3</sup>







100 Feet

**Legend**

● Sub-Slab Sample Location  
 SS-12-14 and Sample ID (Sep-Oct 2013)

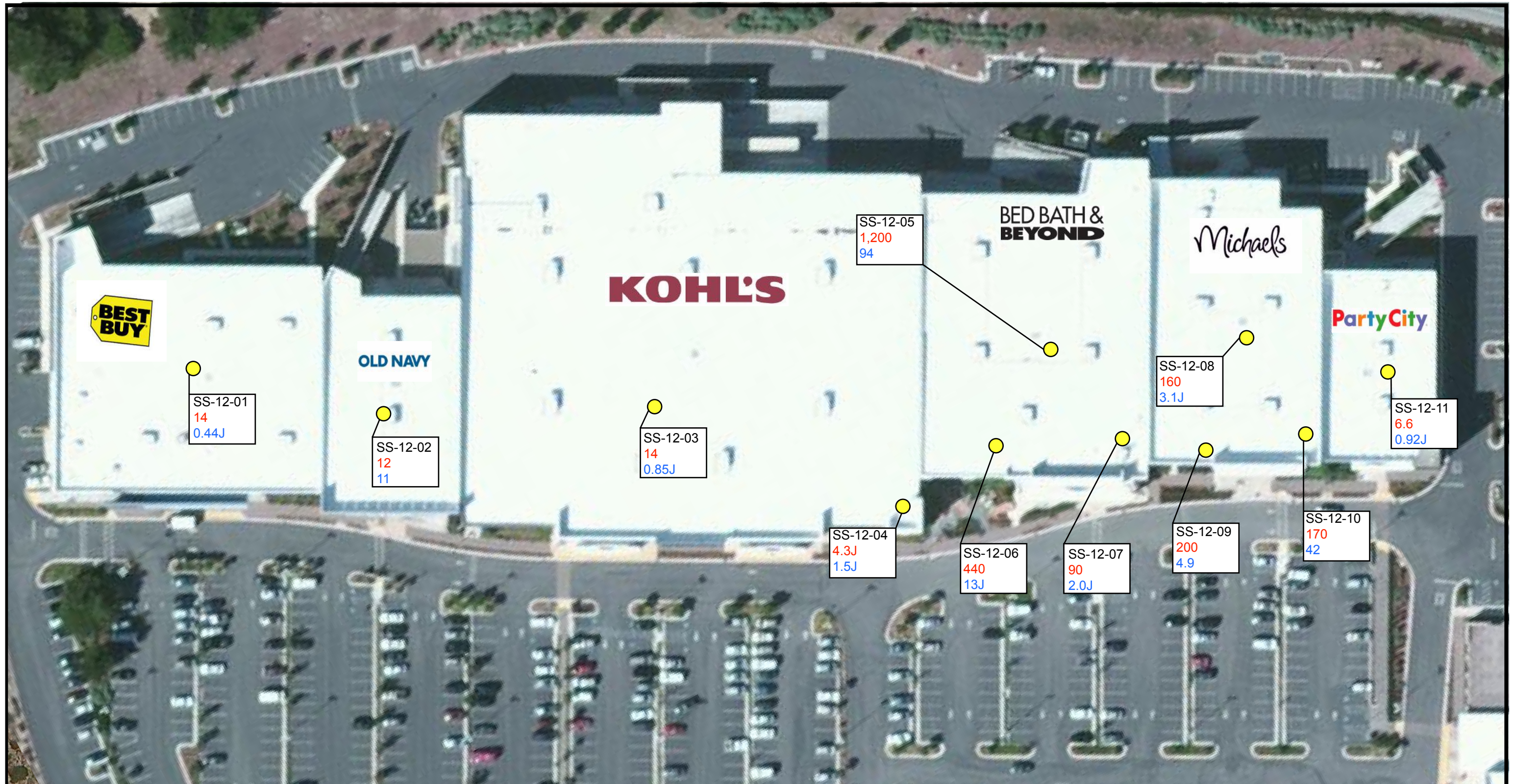
PCE Result (ug/m<sup>3</sup>) - Screening Level 42 ug/m<sup>3</sup>  
 TCE Result (ug/m<sup>3</sup>) - Screening Level 60 ug/m<sup>3</sup>

ND = non-detect

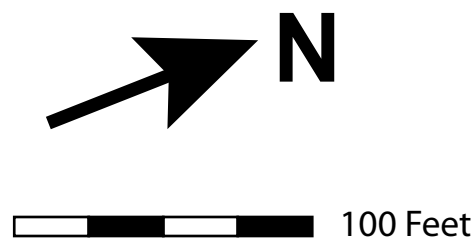
Remedial Investigation/Feasibility  
 Study Addendum Field Work  
 Sites 2/12, Former Fort Ord, California

**Draft Site 12  
 Northern Sub-Slab  
 Samples**





**Ahtna**  
Engineering



**Legend**

- Sub-Slab Sample Location and Sample ID (Sep-Oct 2013)
- PCE Result (ug/m<sup>3</sup>) - Screening Level 42 ug/m<sup>3</sup>
- TCE Result (ug/m<sup>3</sup>) - Screening Level 60 ug/m<sup>3</sup>

Remedial Investigation/Feasibility  
Study Addendum Field Work  
Sites 2/12, Former Fort Ord, California

**Draft Site 12  
Western Sub-Slab  
Samples**



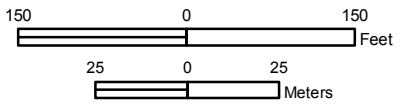


**Legend**

- Sub-Slab Sample Location (1 ft bgs)
- New Monitoring Well Location (installed Sep-Oct 2013)
- Nested Soil Gas Probe Location (10-70 ft bgs)
- Cross-Section Location

**Previous Soil Gas Investigations:**

- ▲ Cinema Investigation June 2013 Soil Gas Sample
- ⊕ April 2013 Soil Gas Sample
- October 2012 Soil Gas Sample
- Monitoring Well
- ⊕ Extraction Well

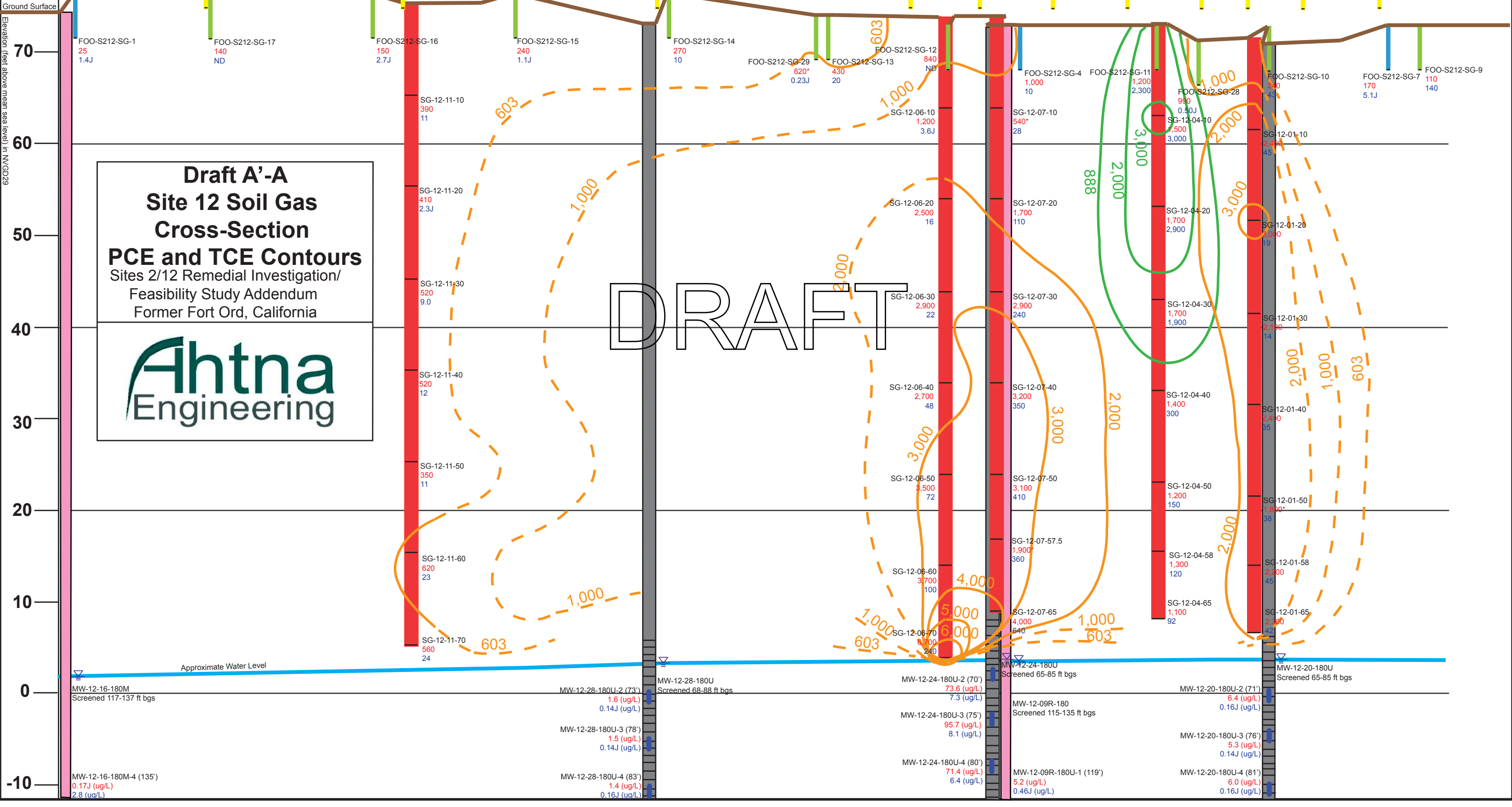


**Draft Site 12 Cross-Section Overview Map**

Remedial Investigation/  
Feasibility Study Addendum at  
Sites 2/12, Former Fort Ord, California



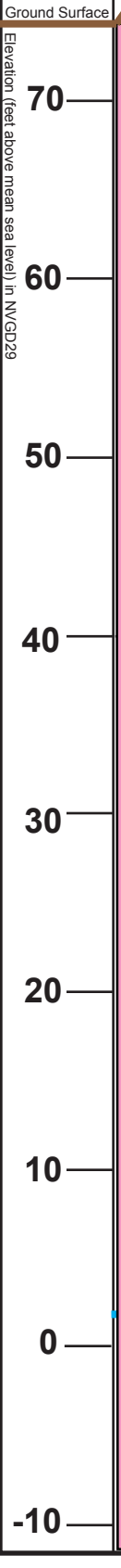




A'

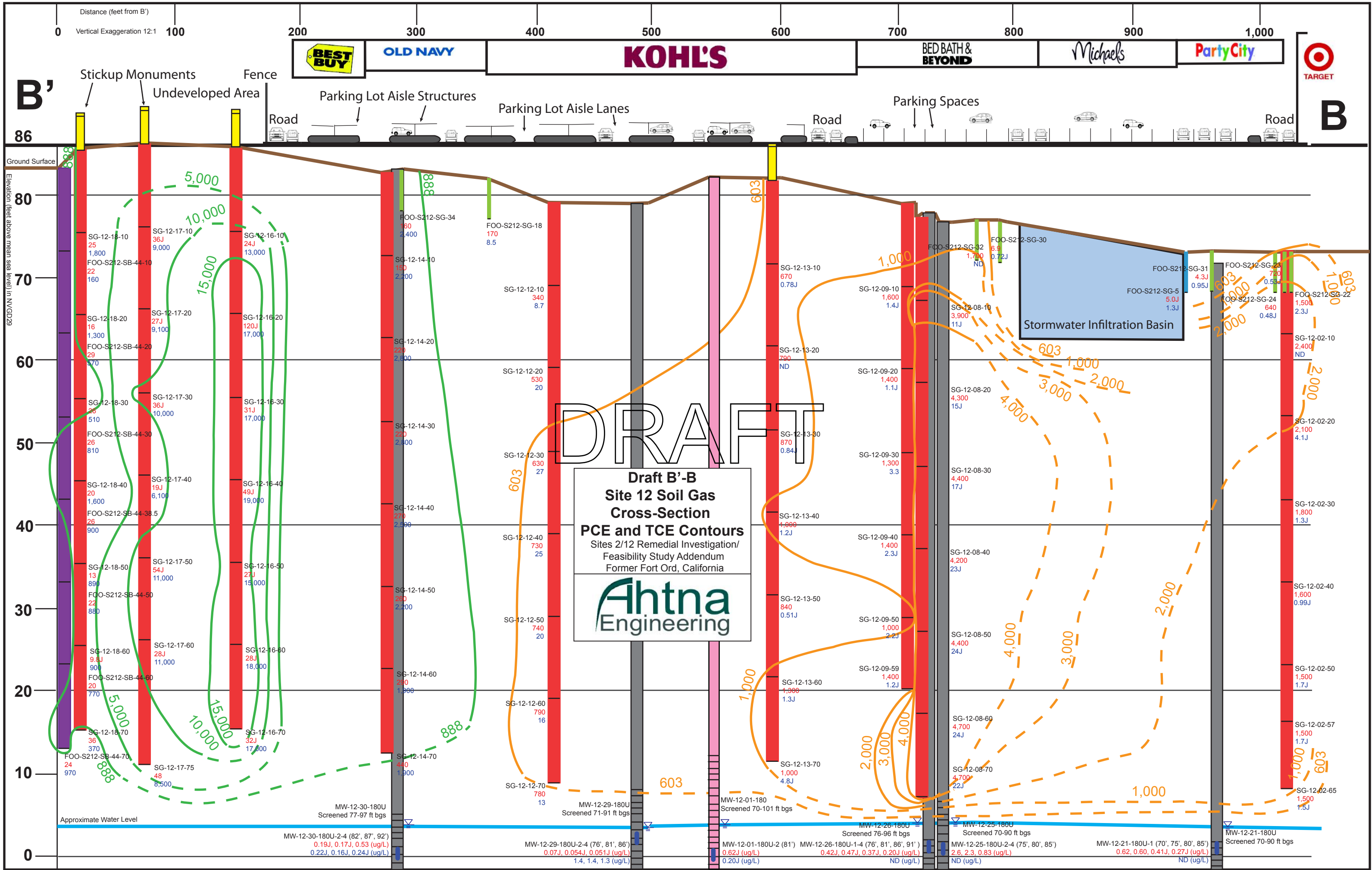
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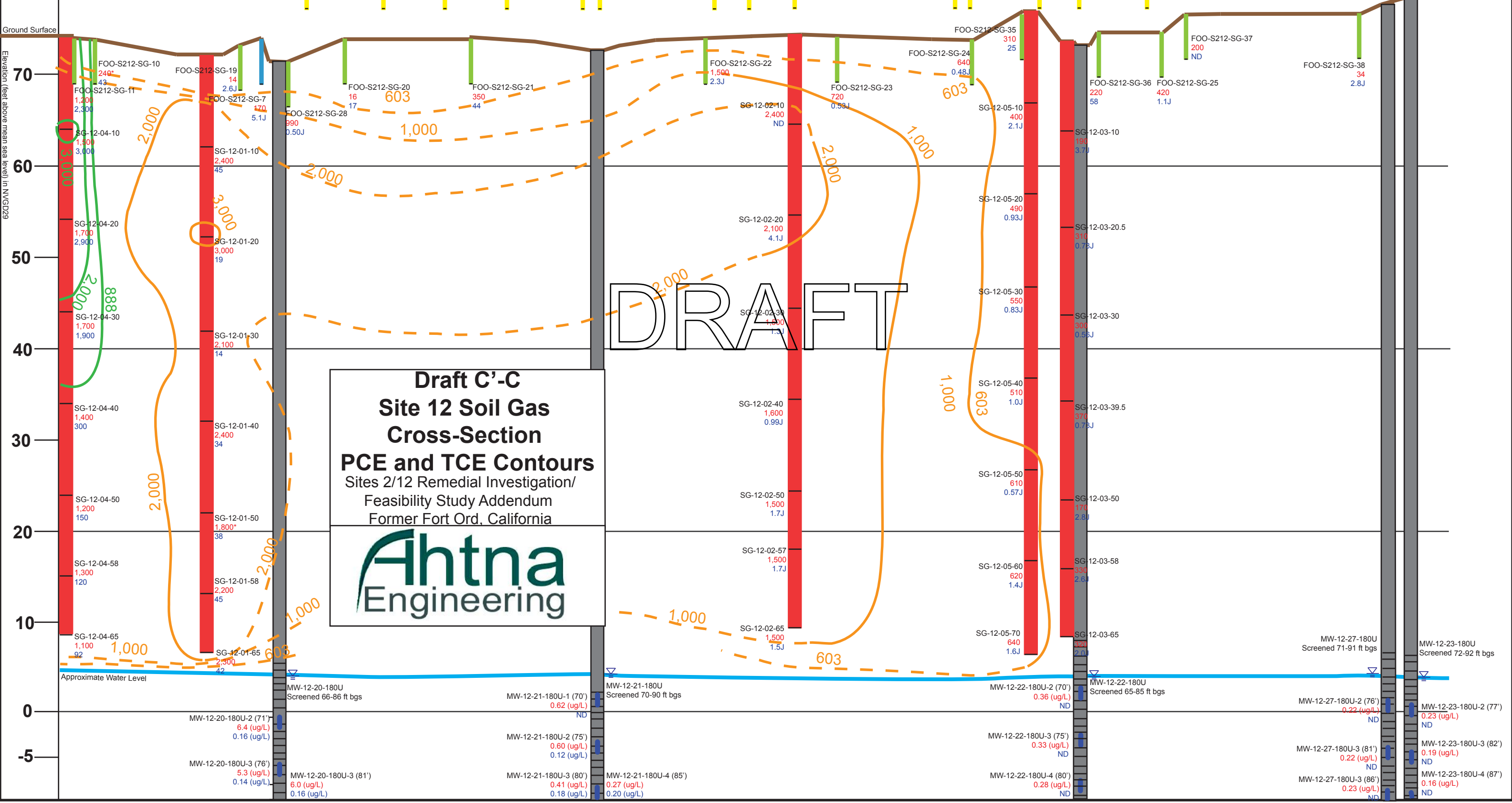
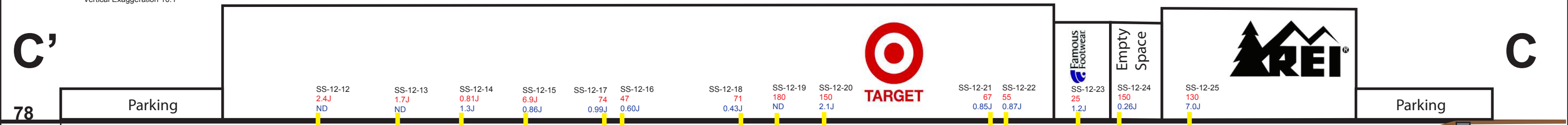
Elevation (feet above mean sea level) in NAVD83



**Draft A'-A**  
**Site 12 Soil Gas**  
**Cross-Section**  
**PCE and TCE Contours**  
 Sites 2/12 Remedial Investigation/  
 Feasibility Study Addendum  
 Former Fort Ord, California

**DRAFT**

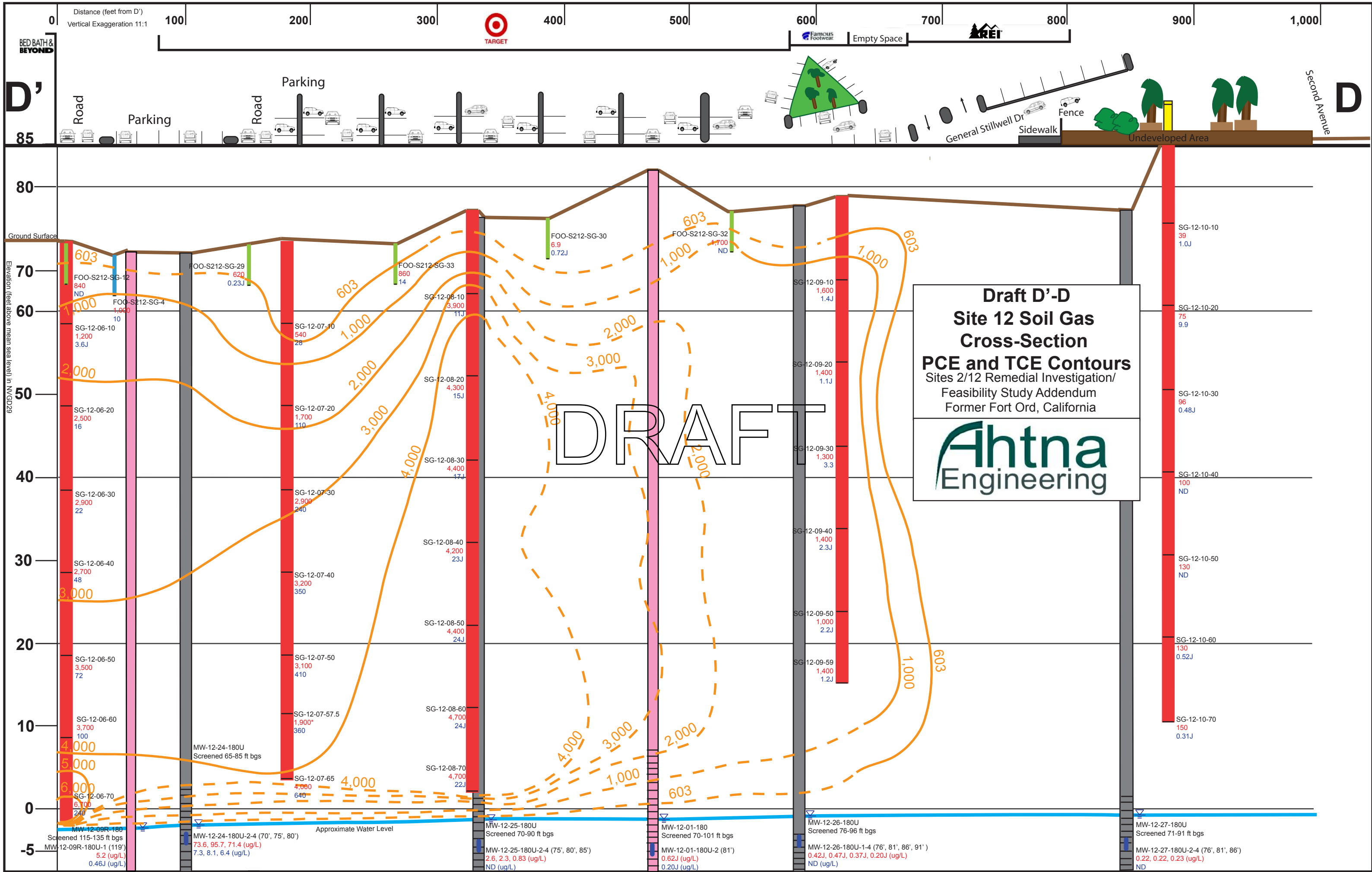




**Draft C'-C  
Site 12 Soil Gas  
Cross-Section  
PCE and TCE Contours**  
Sites 2/12 Remedial Investigation/  
Feasibility Study Addendum  
Former Fort Ord, California

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**Draft D'-D  
Site 12 Soil Gas  
Cross-Section  
PCE and TCE Contours**  
Sites 2/12 Remedial Investigation/  
Feasibility Study Addendum  
Former Fort Ord, California

**Ahtna  
Engineering**

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# Sites 2/12 RI/FS Addendum 3D Soil Gas Model

GMS Software Version 9.0.3

Inverse Distance Weighted Gradient  
Plane Model using 32 nearest points

**DRAFT**

# 3D Model Development

Inverse Distance Weighted (IDW) Interpolation used to model PCE and TCE soil gas plume extents

- Interpolated plane is a weighted average of soil gas data points
- Uses values of nearby points and their distances from point x to determine a value for point x
  - Weight of each point is inversely proportional to its distance from point x
  - The further away the point the lesser its weight in defining the value at point x
- “Bull’s eye” effect that may not be representative
- Best for interpolation of high density or regularly spaced points

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# 3D Model Development

Several options available for IDW interpolation. Tested for Site 12 soil gas:

- Shepard's Method – simplest form of IDW interpolation:
  - Uses least squares method – eliminates or reduces “bull's eye” effect
  - Interpolating surface radially symmetric about each point and tends toward mean value of scatter points
  - Used extensively because of its simplicity
- Gradient Plane Nodal Functions – overcomes limits of Shepard's Method:
  - Surface infers local maxima and minima implicit in the dataset. Must have at least five non-coplanar scatter points to use this method.
- Quadratic Nodal Functions
  - Nodal functions used in IDW interpolation can be higher degree polynomial functions constrained to pass through the scatter point and approximate the nearby points in a least squares manner.
  - The resulting surface reproduces local variations implicit in the dataset, is smooth, and approximates the quadratic nodal functions near the scatter points.

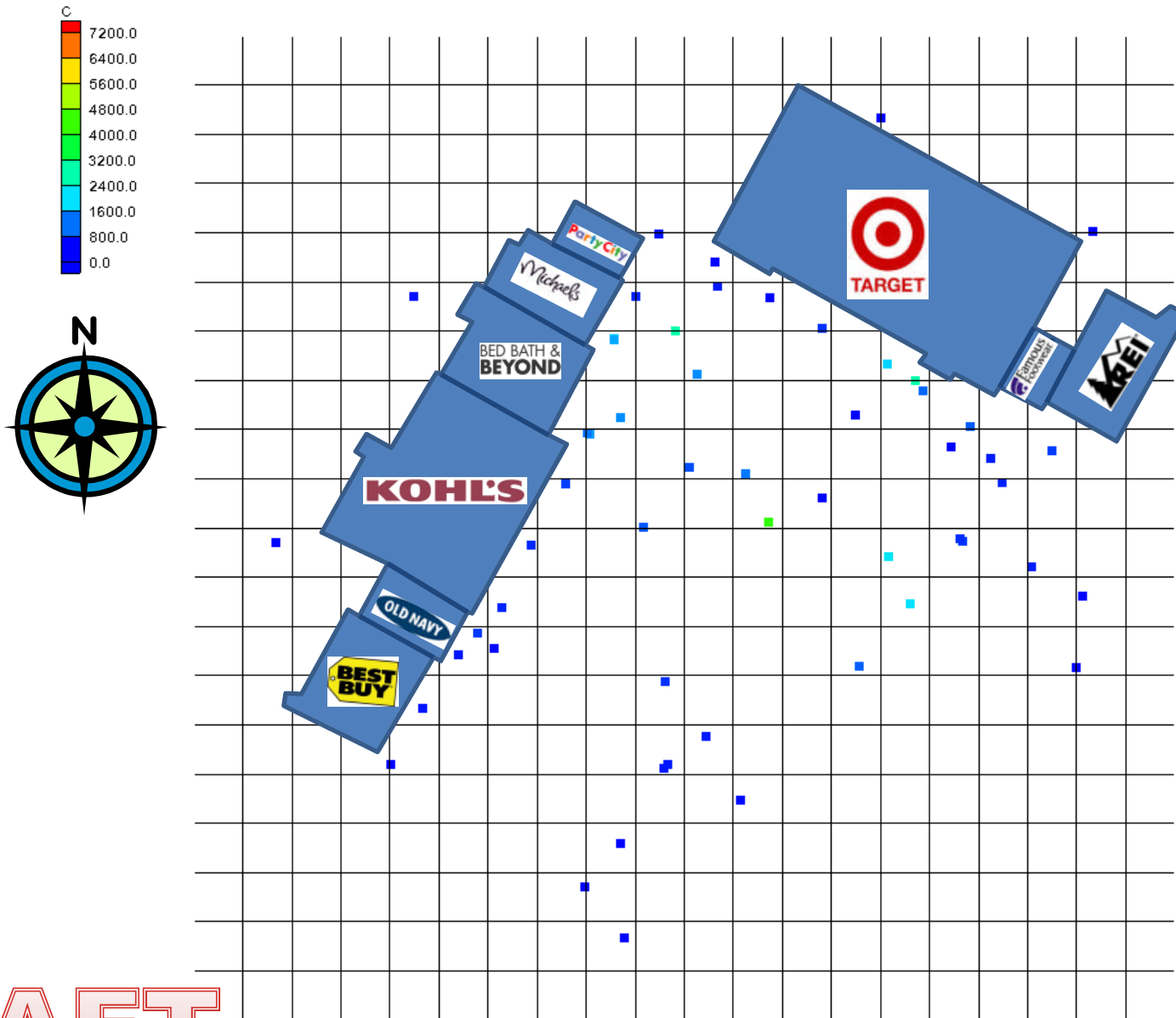
DRAFT

# 3D Model Development

- For each method, GMS allowed use of 32 closest data points or 64 closest data points. Both were tested, resulting in six model runs for each data plane at 10-foot intervals below ground surface (i.e., 42 model runs).
- In some areas there were no data points available for GMS to interpolate the boundaries of the plumes, so the model projected the plumes to the edge of the model domain; however, existing data indicate the plumes are smaller.
- The Gradient Plane is presented here because it was the least problematic in this respect.
- Added data from 5-foot probes completed by U.S. Army Corps of Engineers to bound plumes at that depth.
- Boundary conditions may be added.

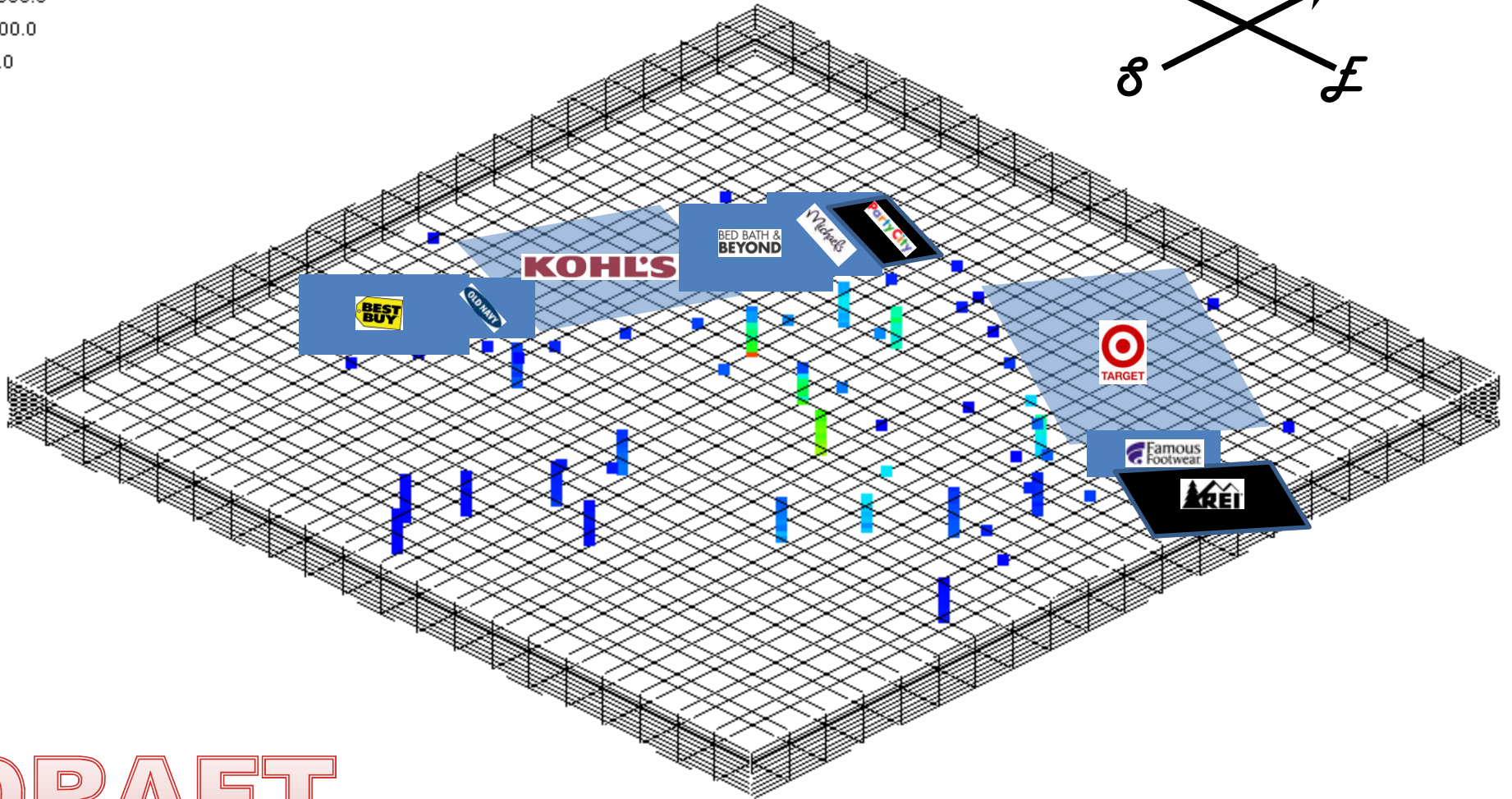
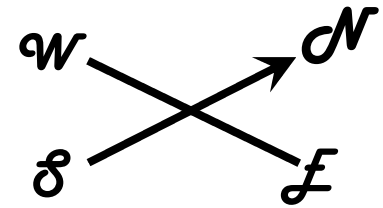
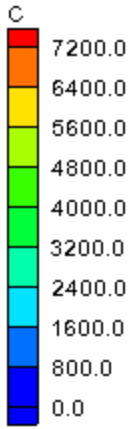
**DRAFT**

Soil gas probe locations (no projection). PCE concentration ranges are color coded.



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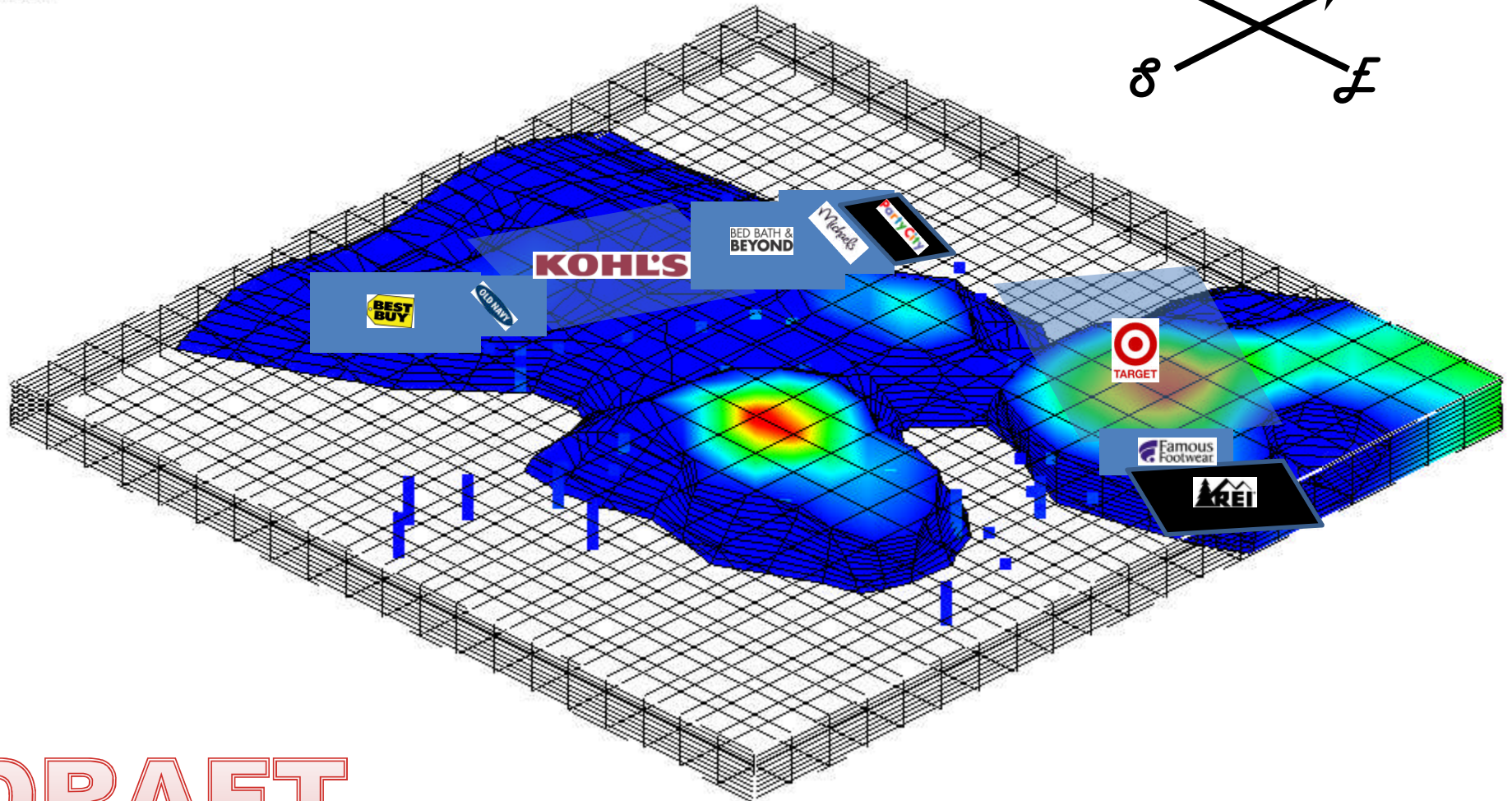
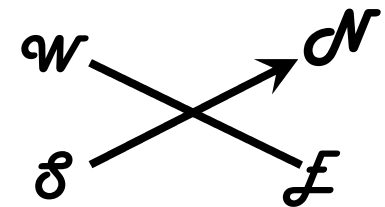
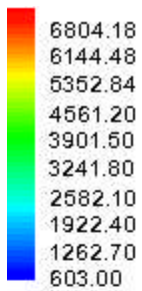
# Soil Gas Probe Locations with PCE concentrations: Oblique View



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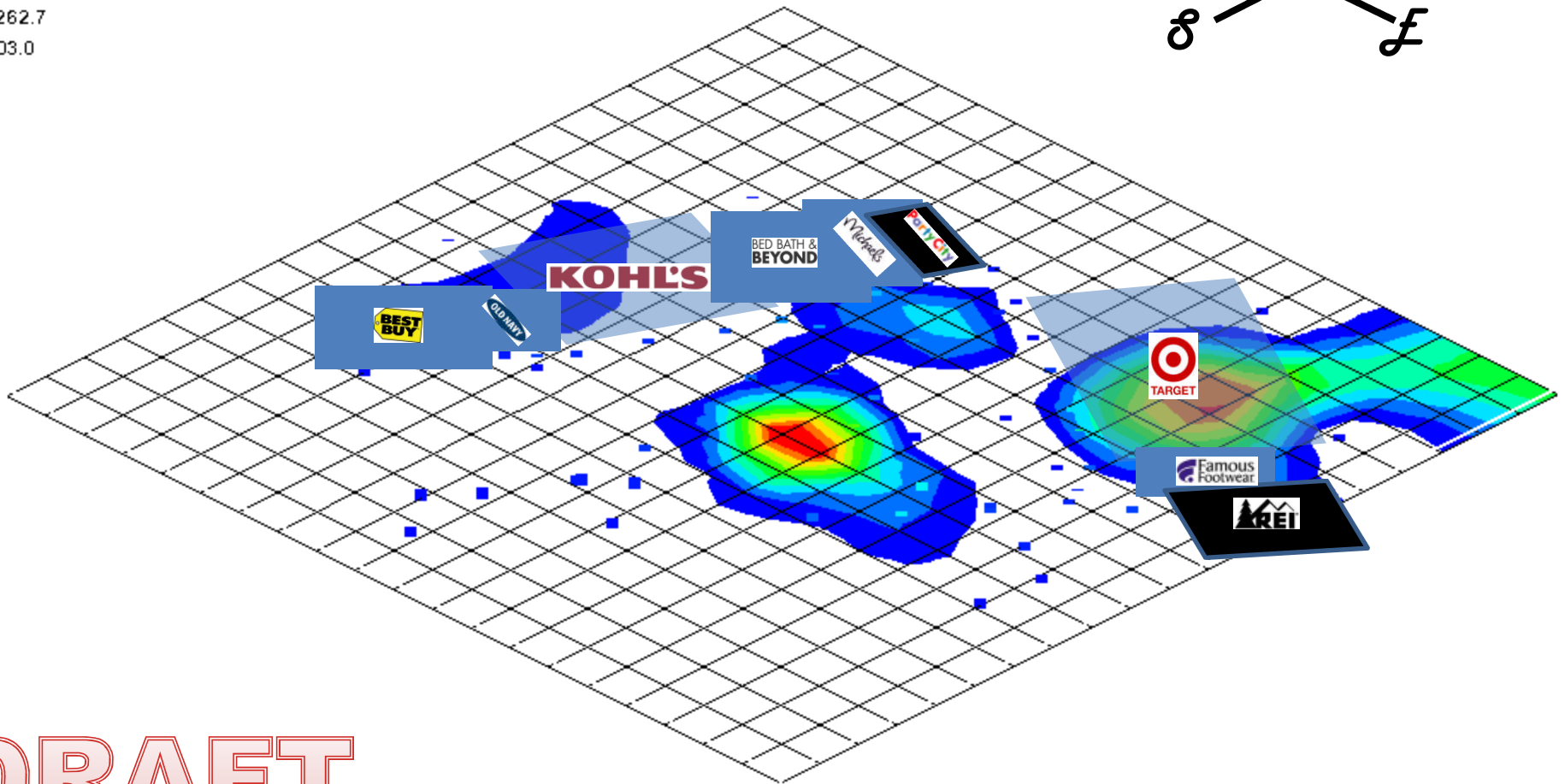
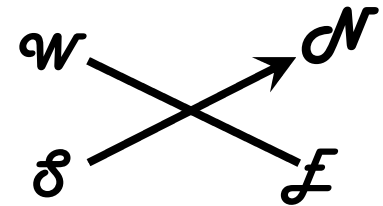
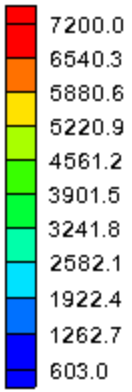
Inverse Distance Weighted Gradient Plane Model of PCE Plume with 32 nearest points used for computation of interpolation weights and computation of nodal function coefficients. Contoured with 603  $\mu\text{g}/\text{m}^3$  as the outer limit.



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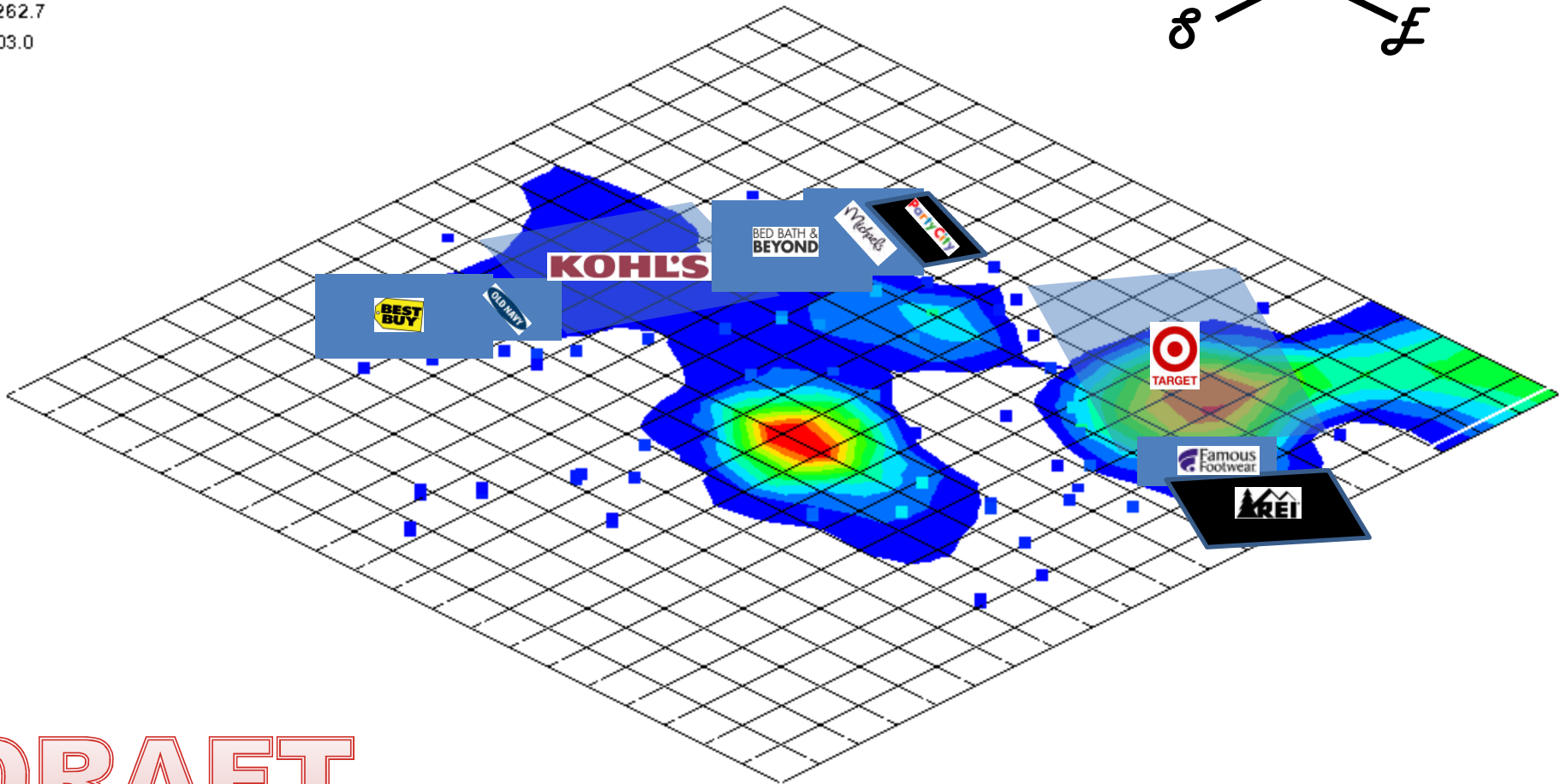
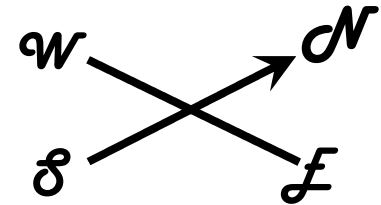
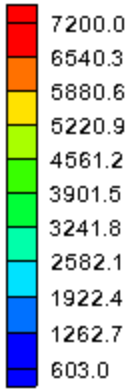


# PCE 3D Model: plane at 10 feet below ground surface (bgs)



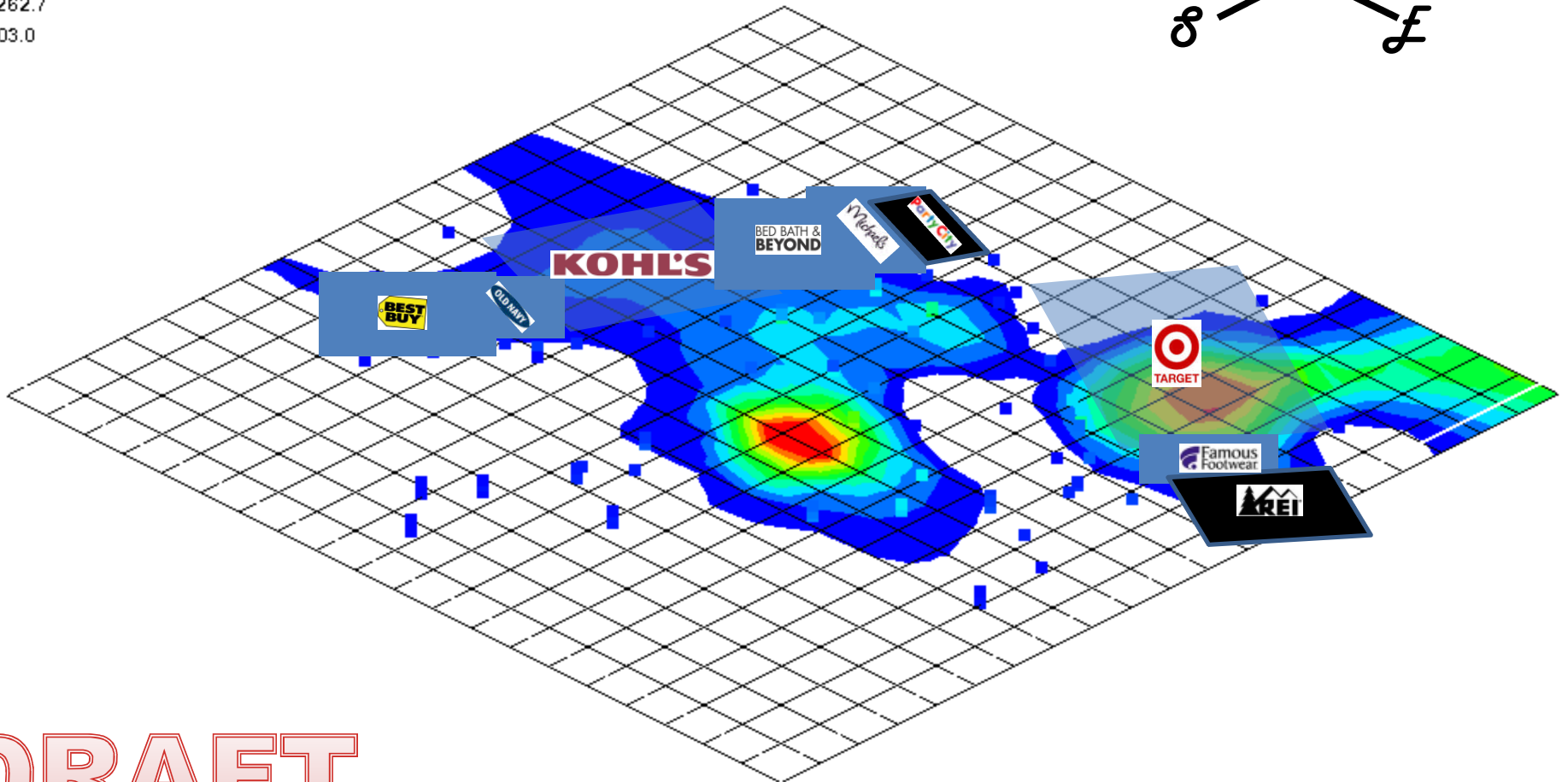
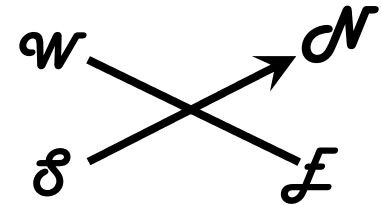
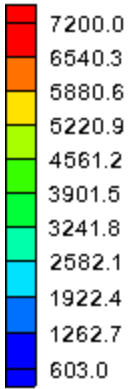
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# PCE 3D Model: plane at 20 feet bgs



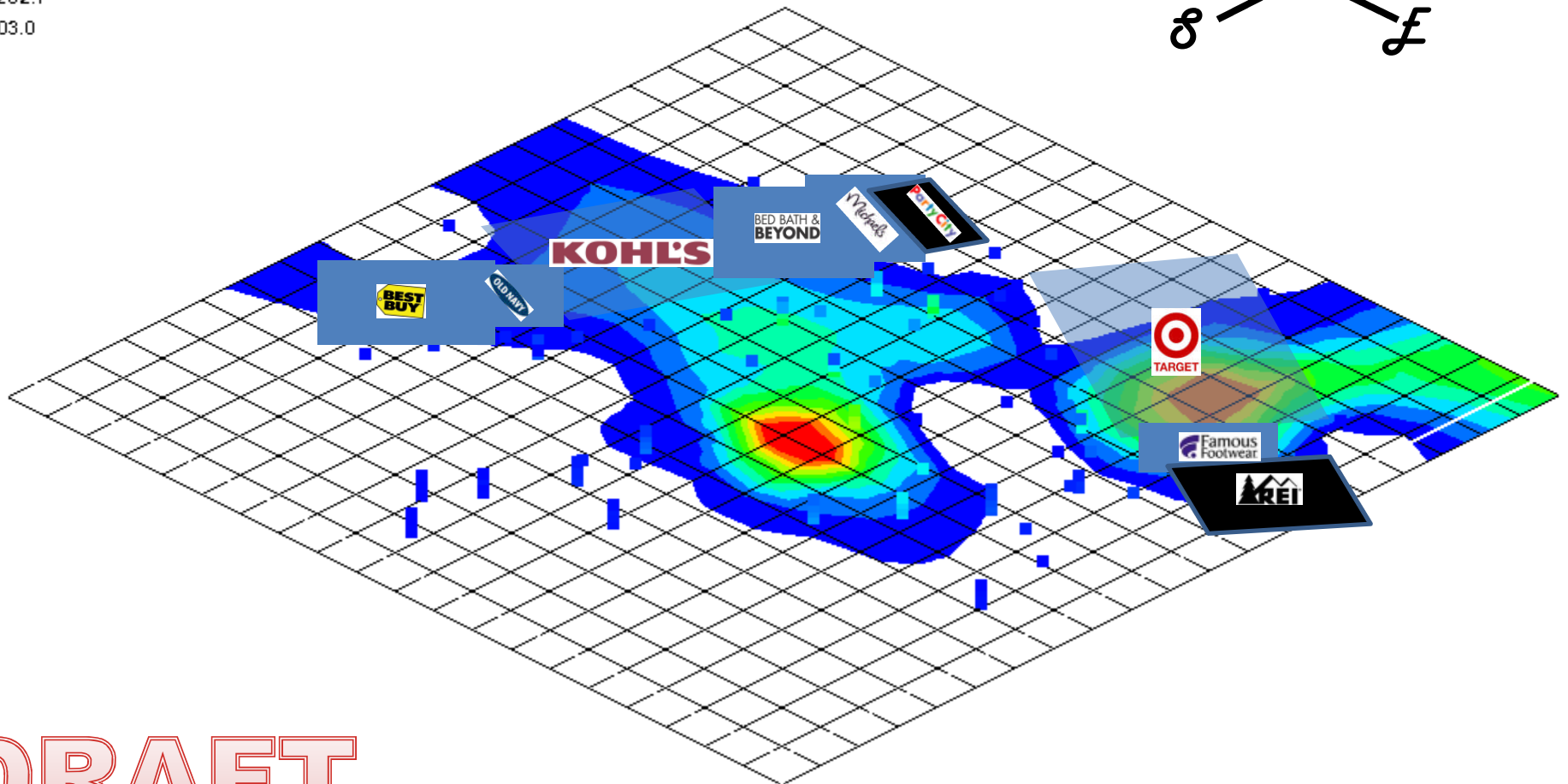
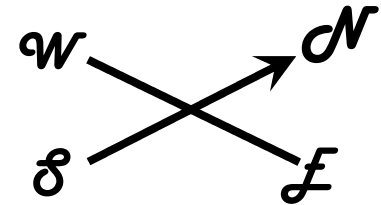
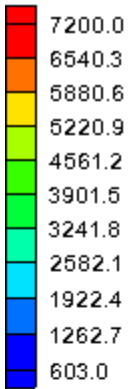
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# PCE 3D Model: plane at 30 feet bgs



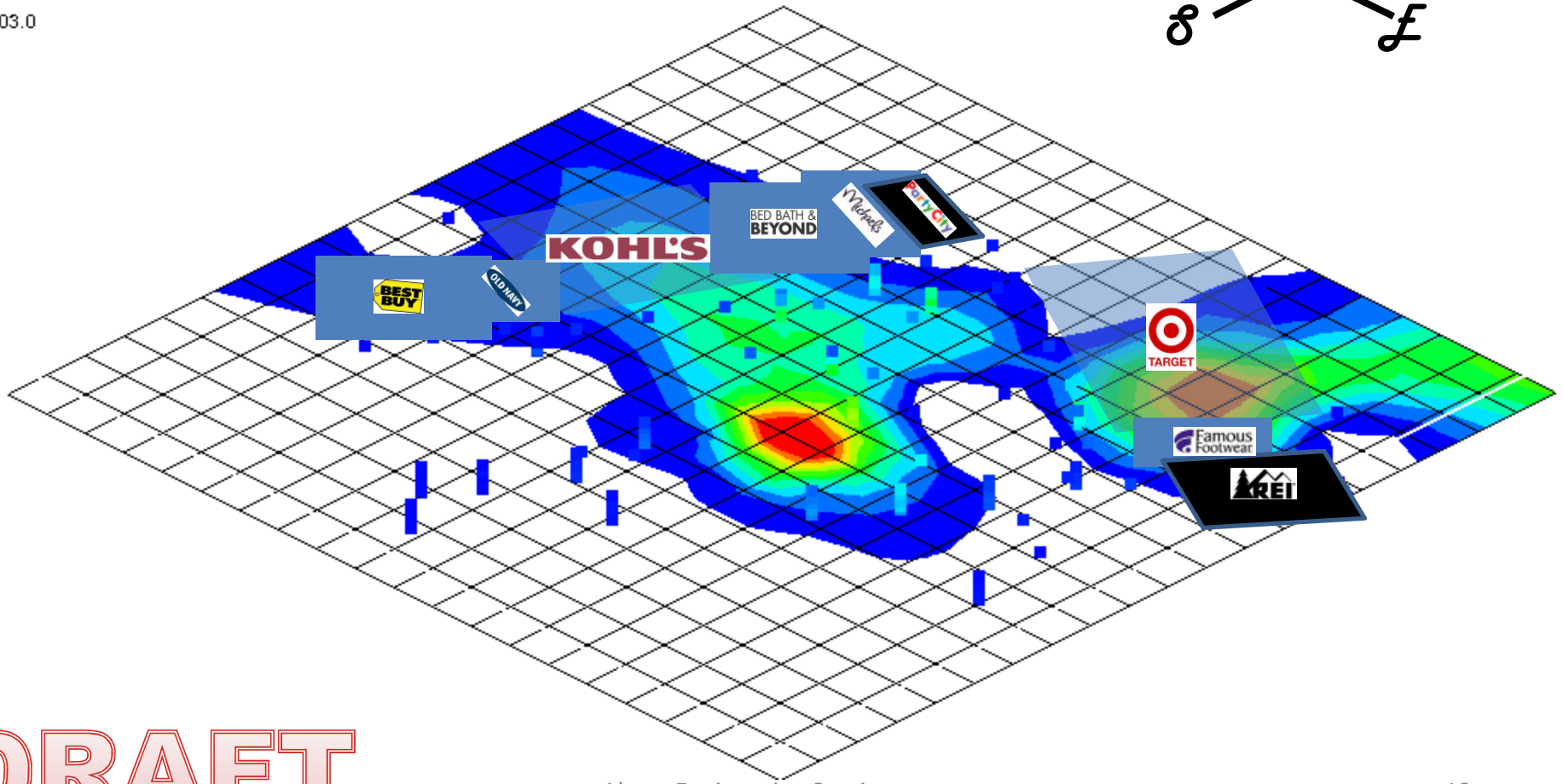
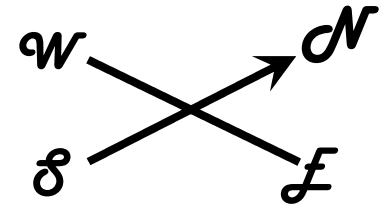
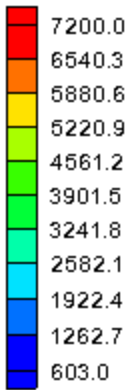
DRAFT

# PCE 3D Model: plane at 40 feet bgs



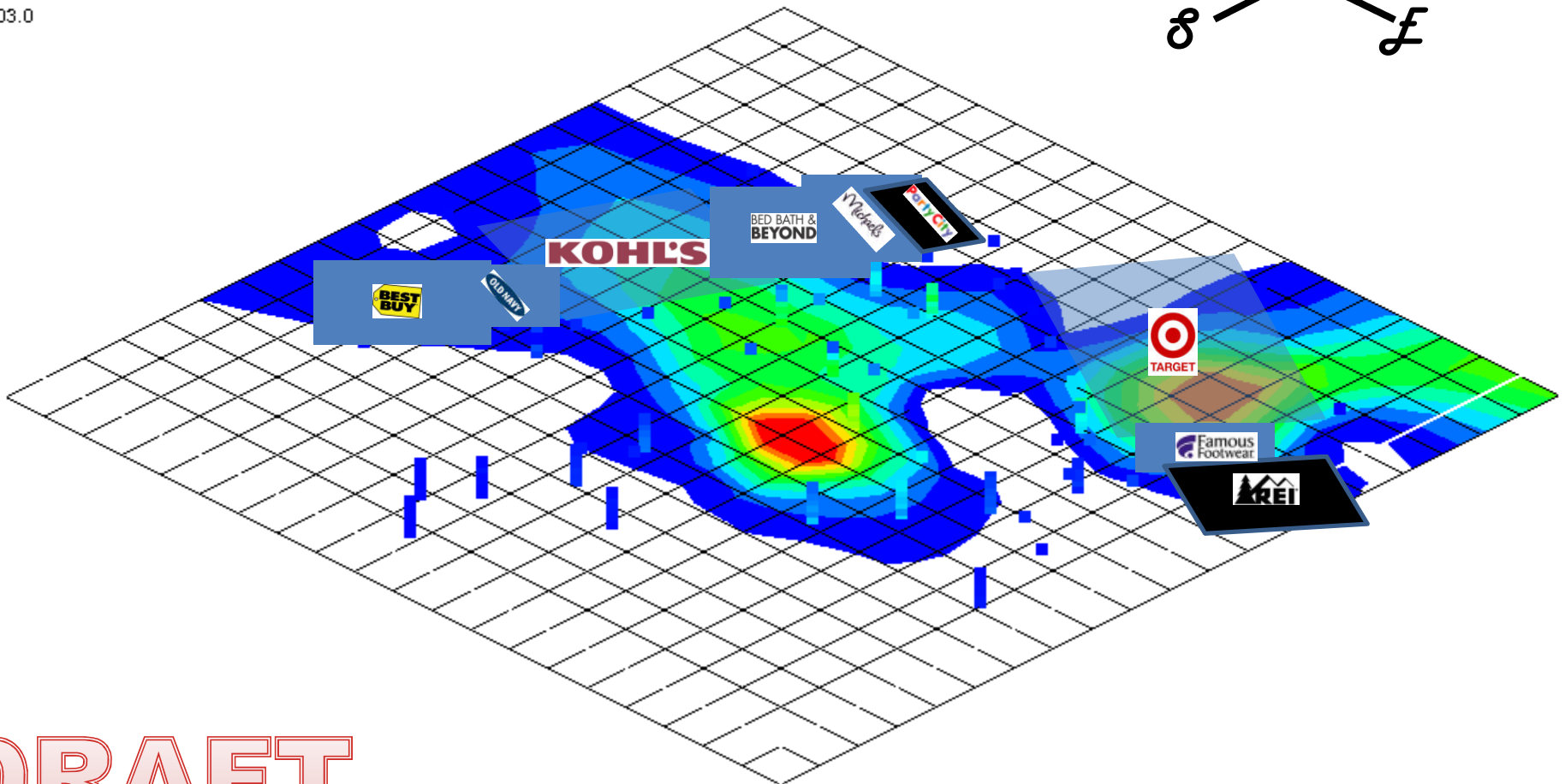
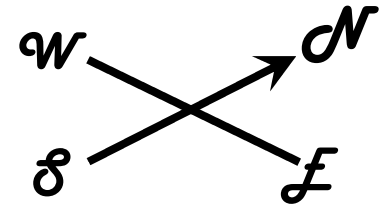
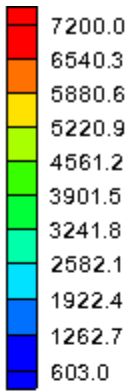
DRAFT

# PCE 3D Model: plane at 50 feet bgs



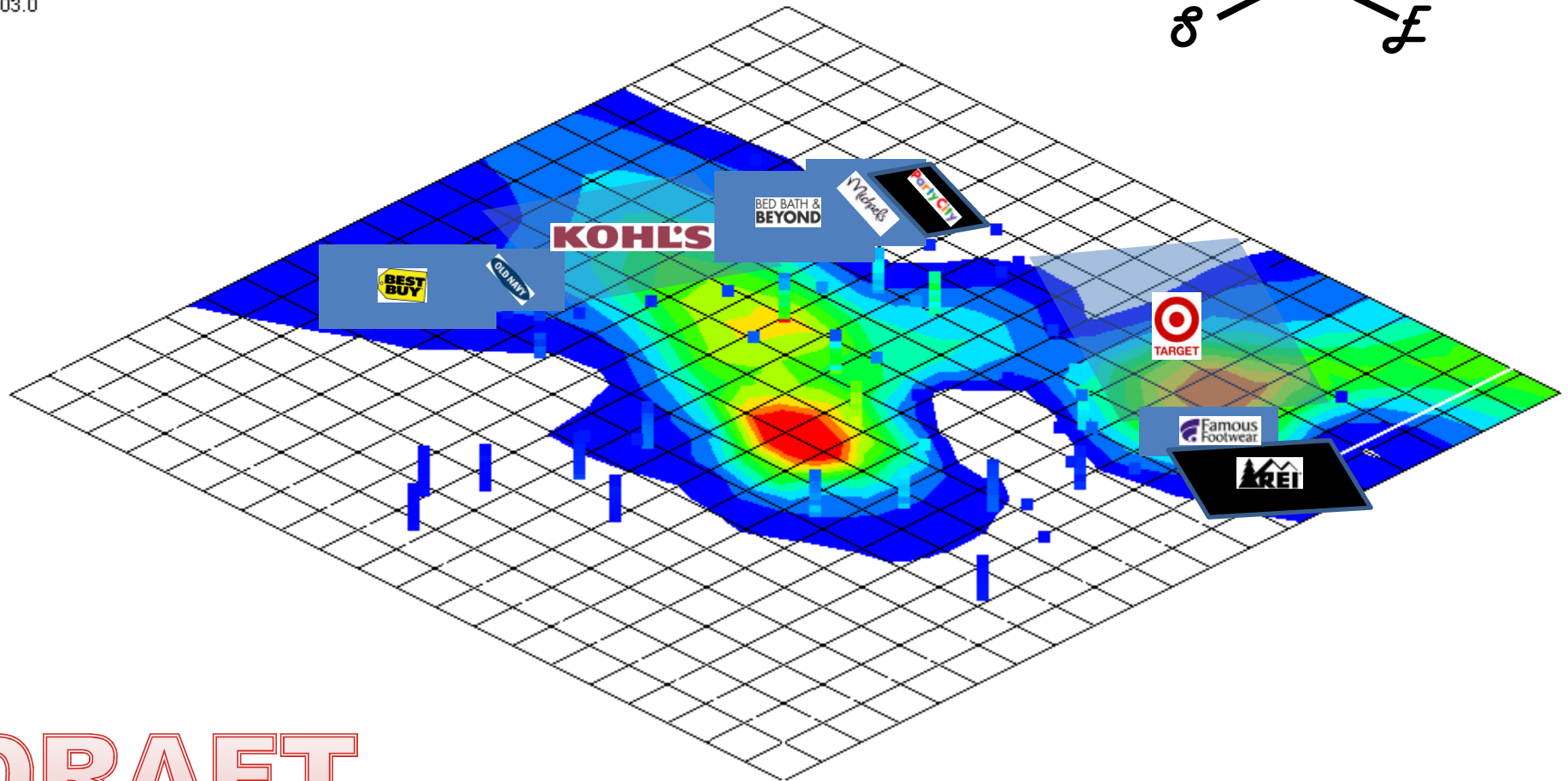
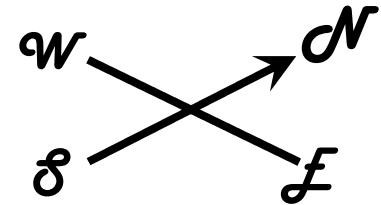
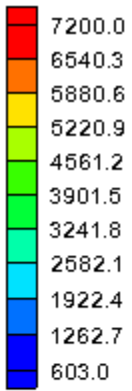
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# PCE 3D Model: plane at 60 feet bgs



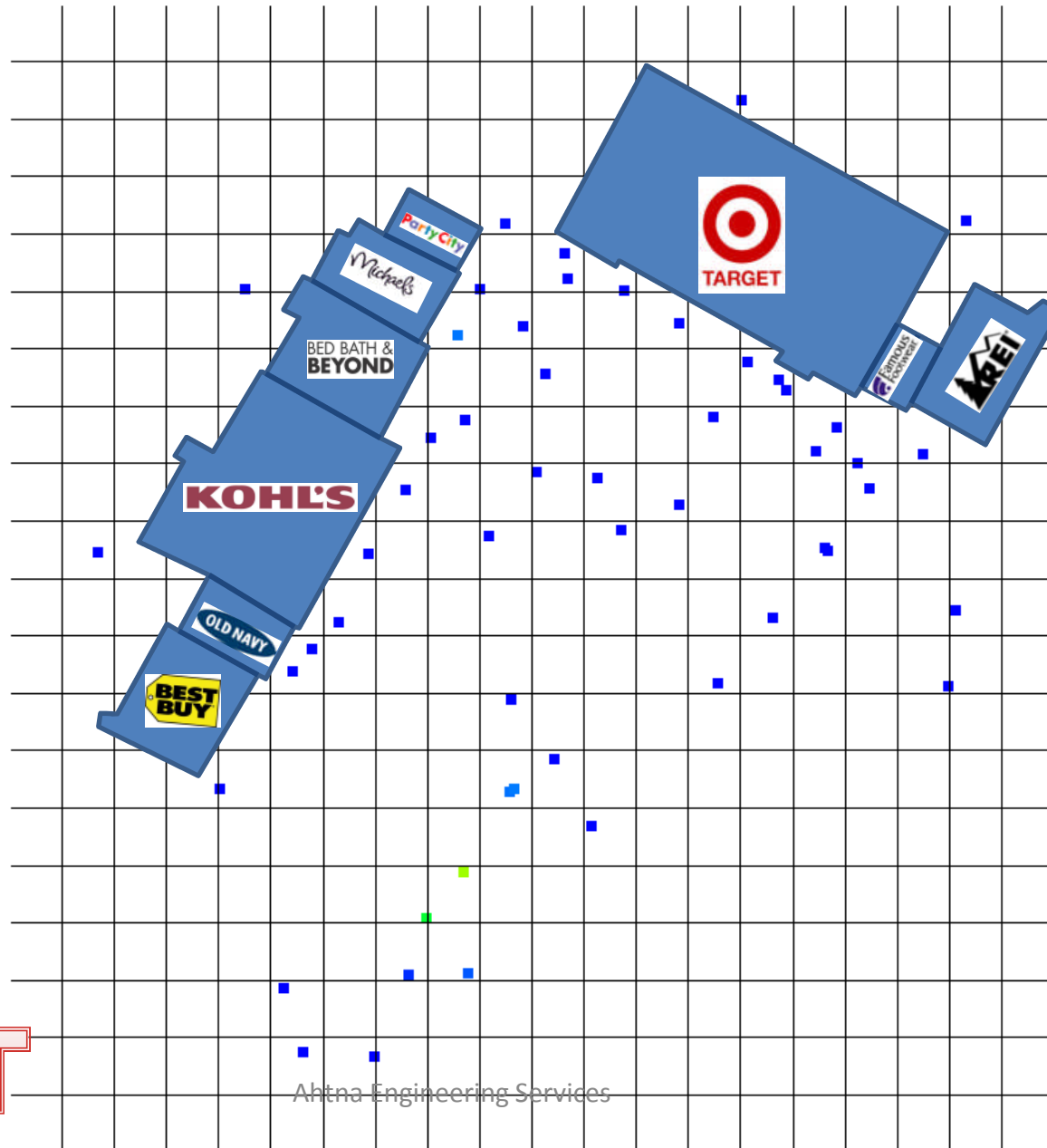
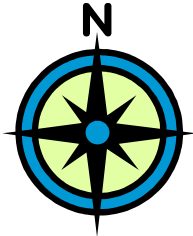
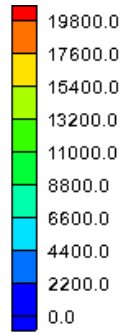
DRAFT

# PCE 3D Model: plane at 70 feet bgs



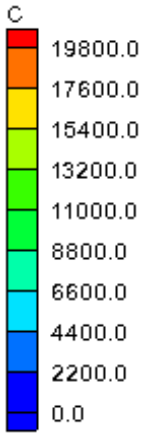
DRAFT

Soil gas probe locations (no projection). TCE concentration ranges are color coded.

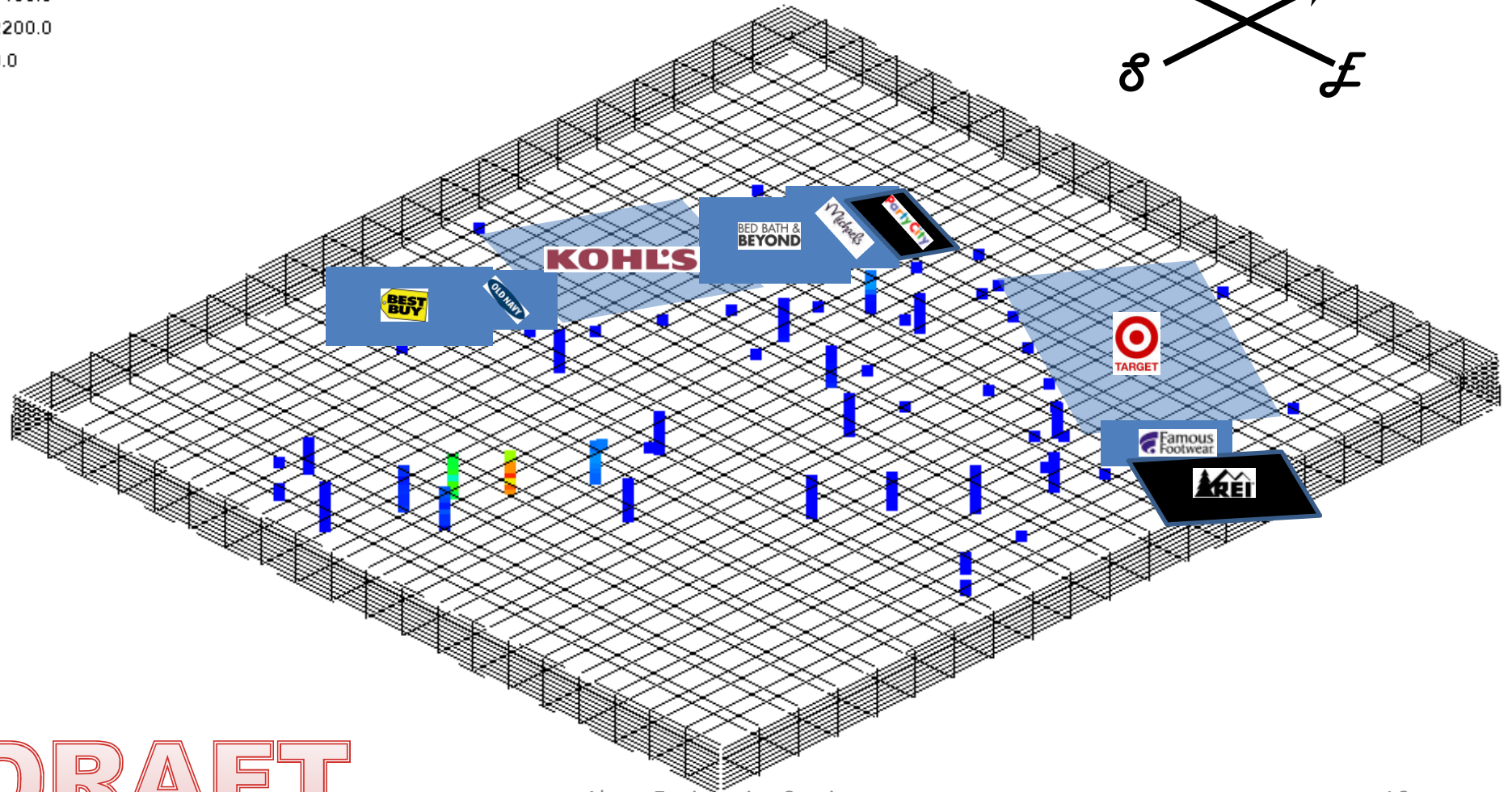
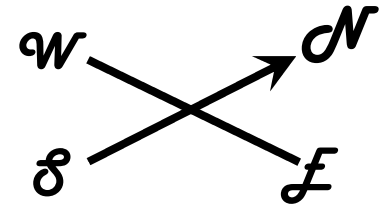


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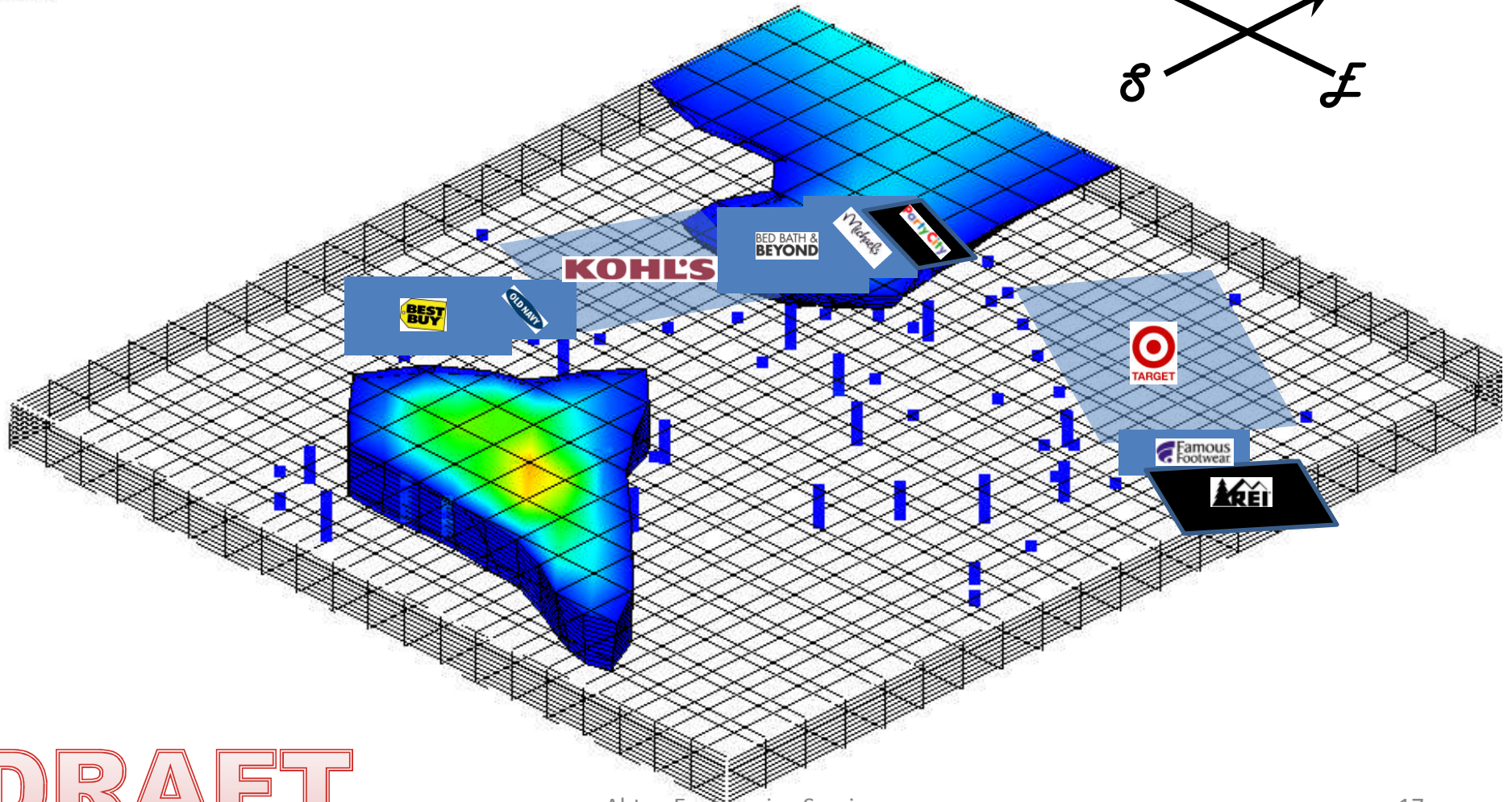
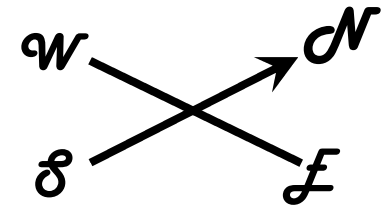


## Soil Gas Probe Locations with TCE concentrations: Oblique View



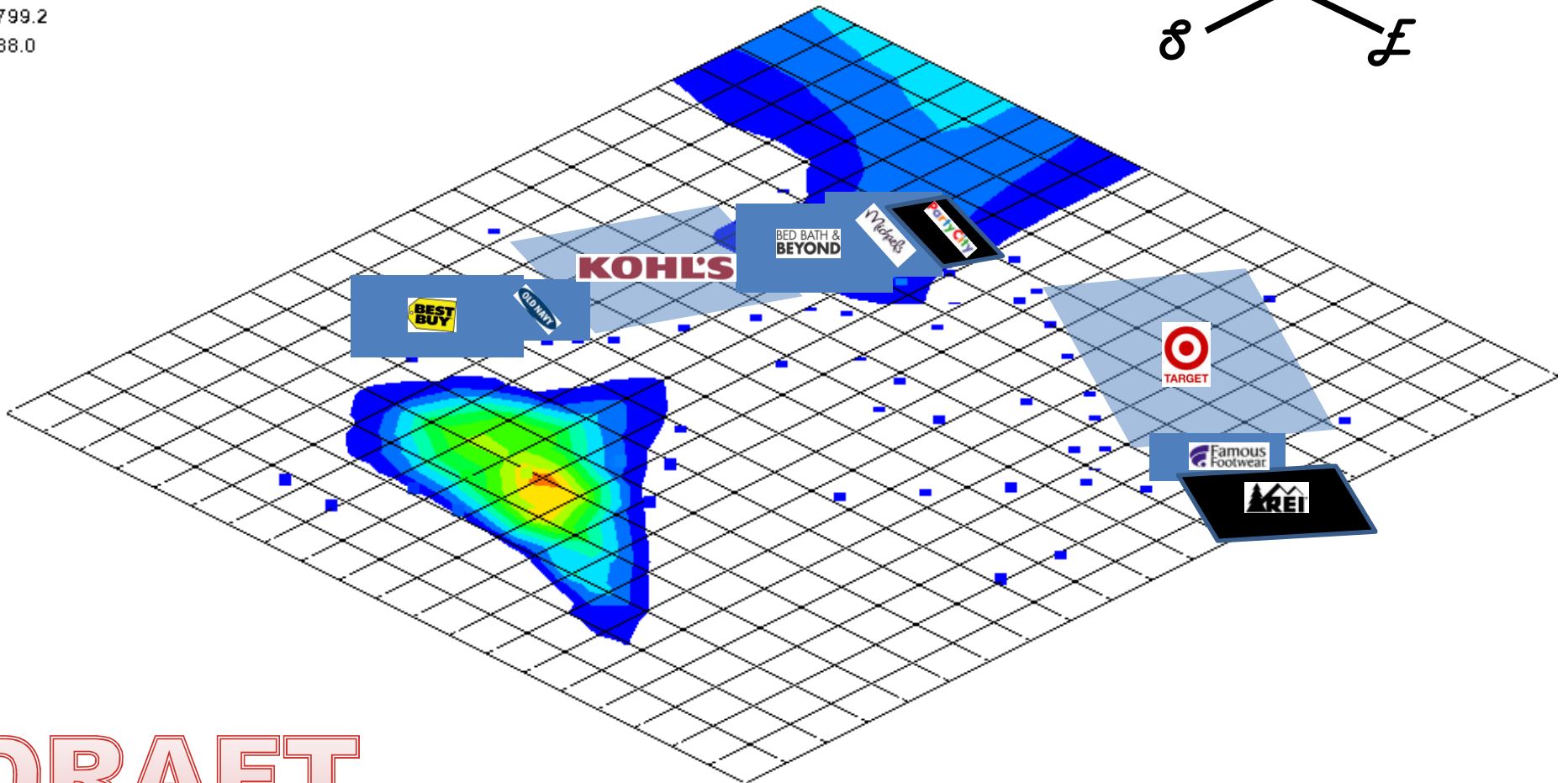
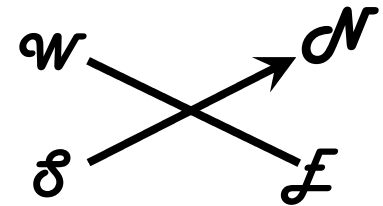
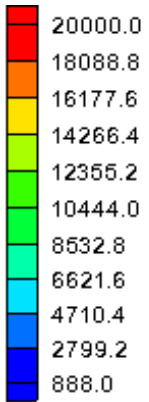
**DRAFT**

Inverse Distance Weighted Gradient Plane Model of TCE Plume with 32 nearest points used for computation of interpolation weights and computation of nodal function coefficients. Contoured with  $888 \mu\text{g}/\text{m}^3$  as the outer limit.



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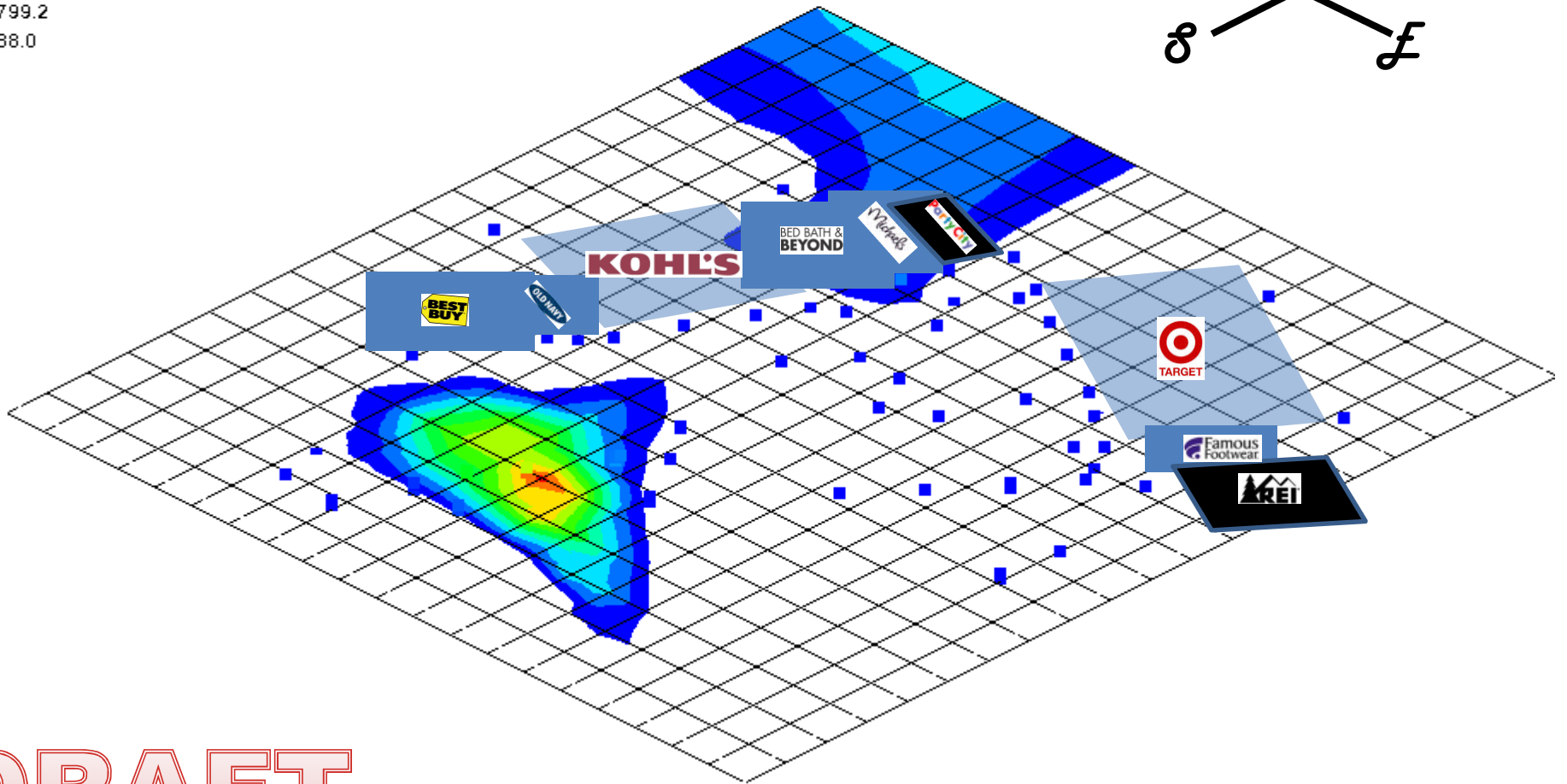
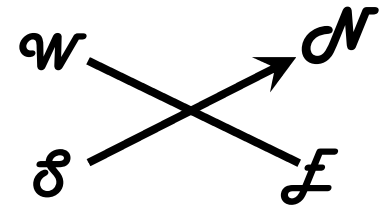
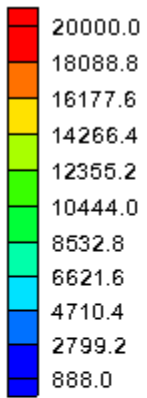
# TCE 3D Model: plane at 10 feet bgs



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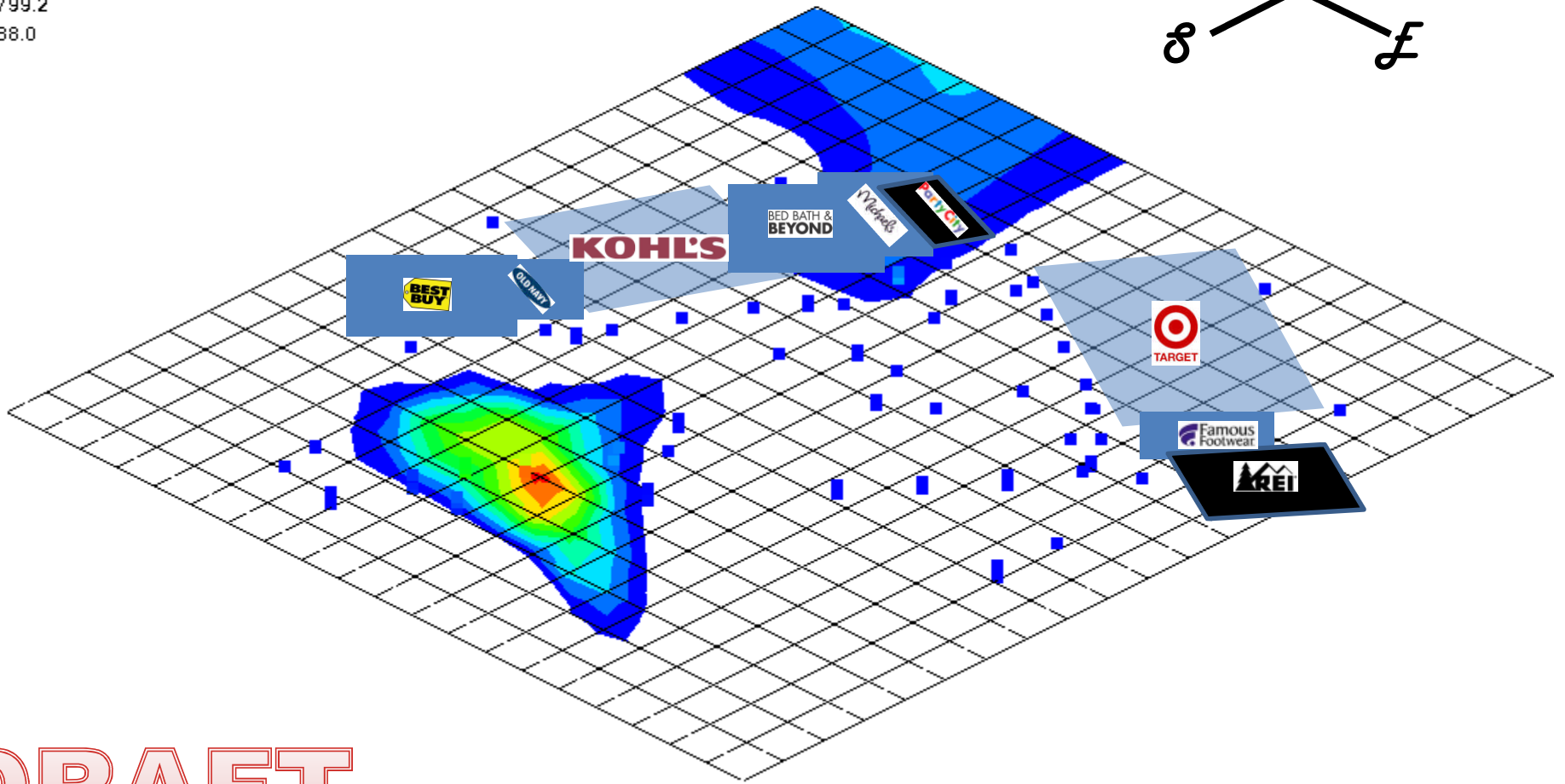
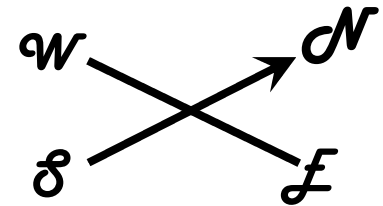
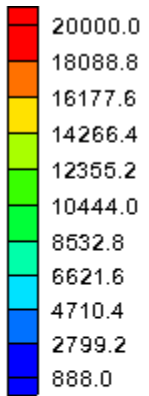


# TCE 3D Model: plane at 20 feet bgs



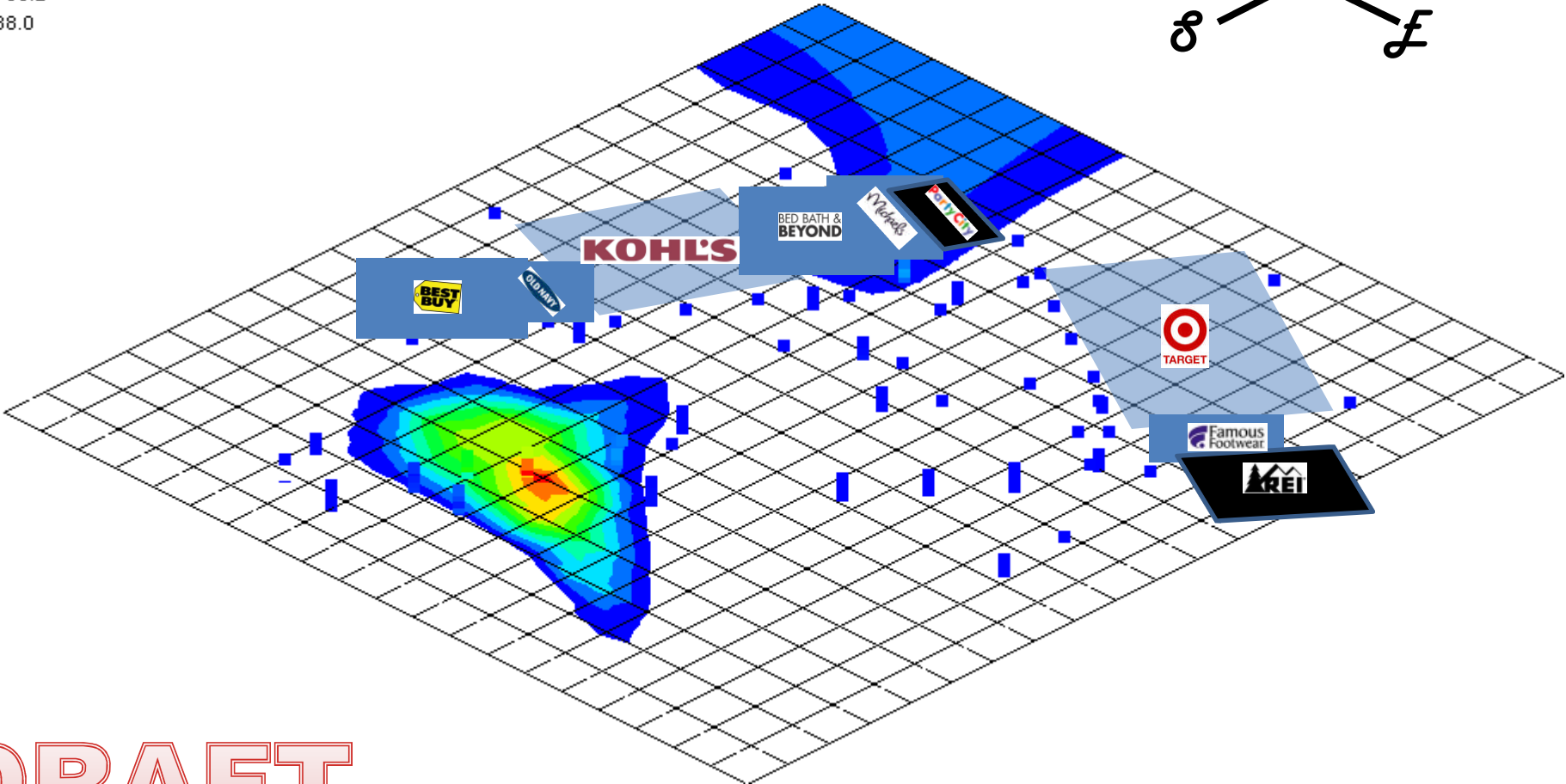
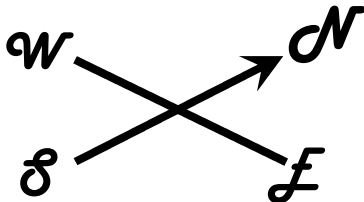
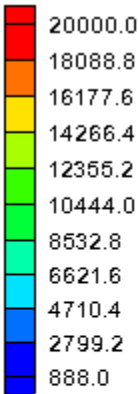
DRAFT

# TCE 3D Model: plane at 30 feet bgs



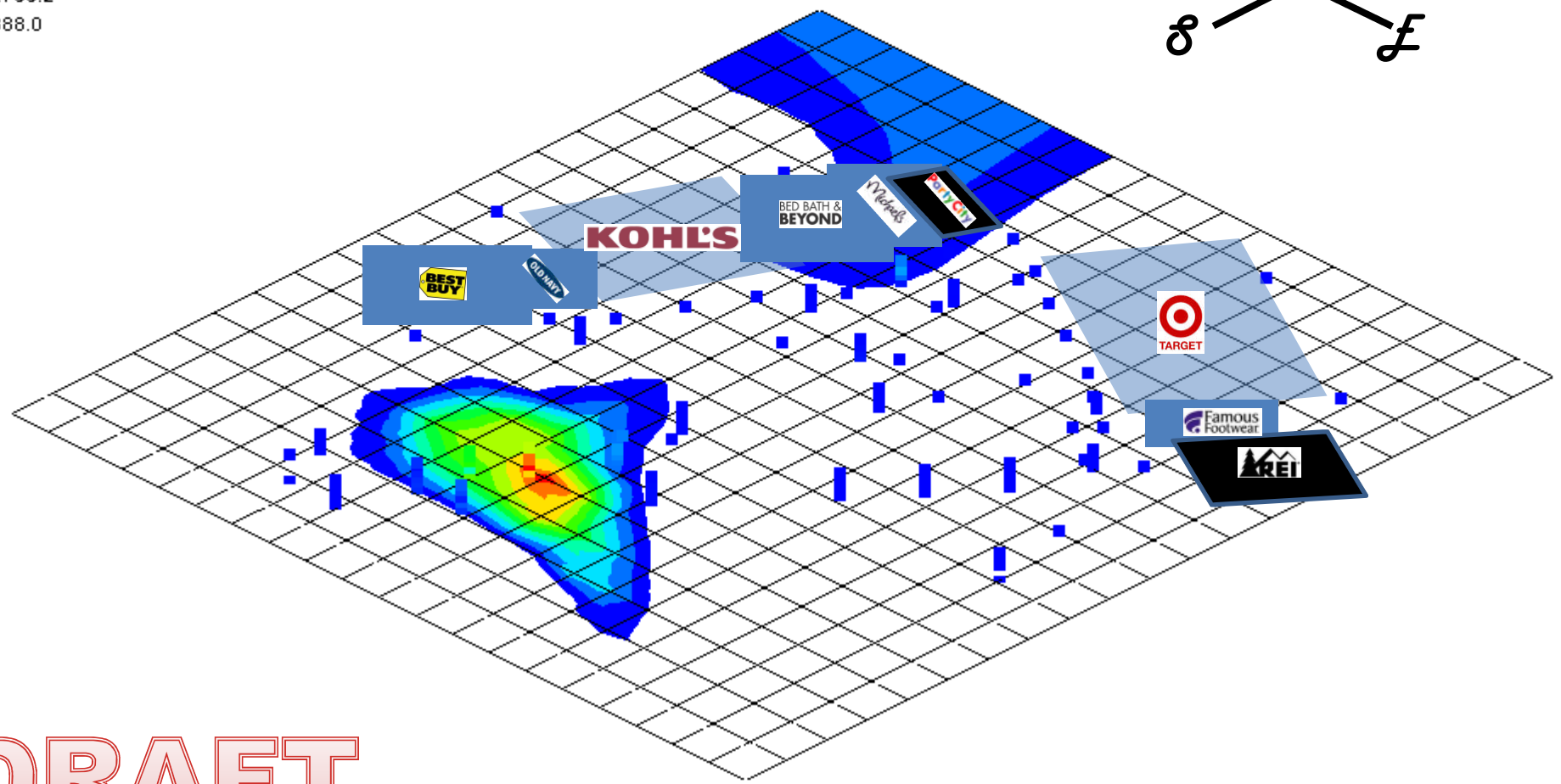
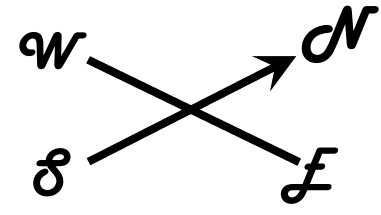
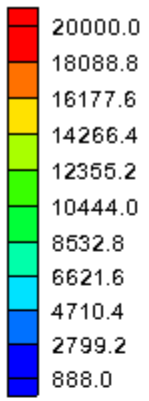
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TCE 3D Model: plane at 40 feet bgs



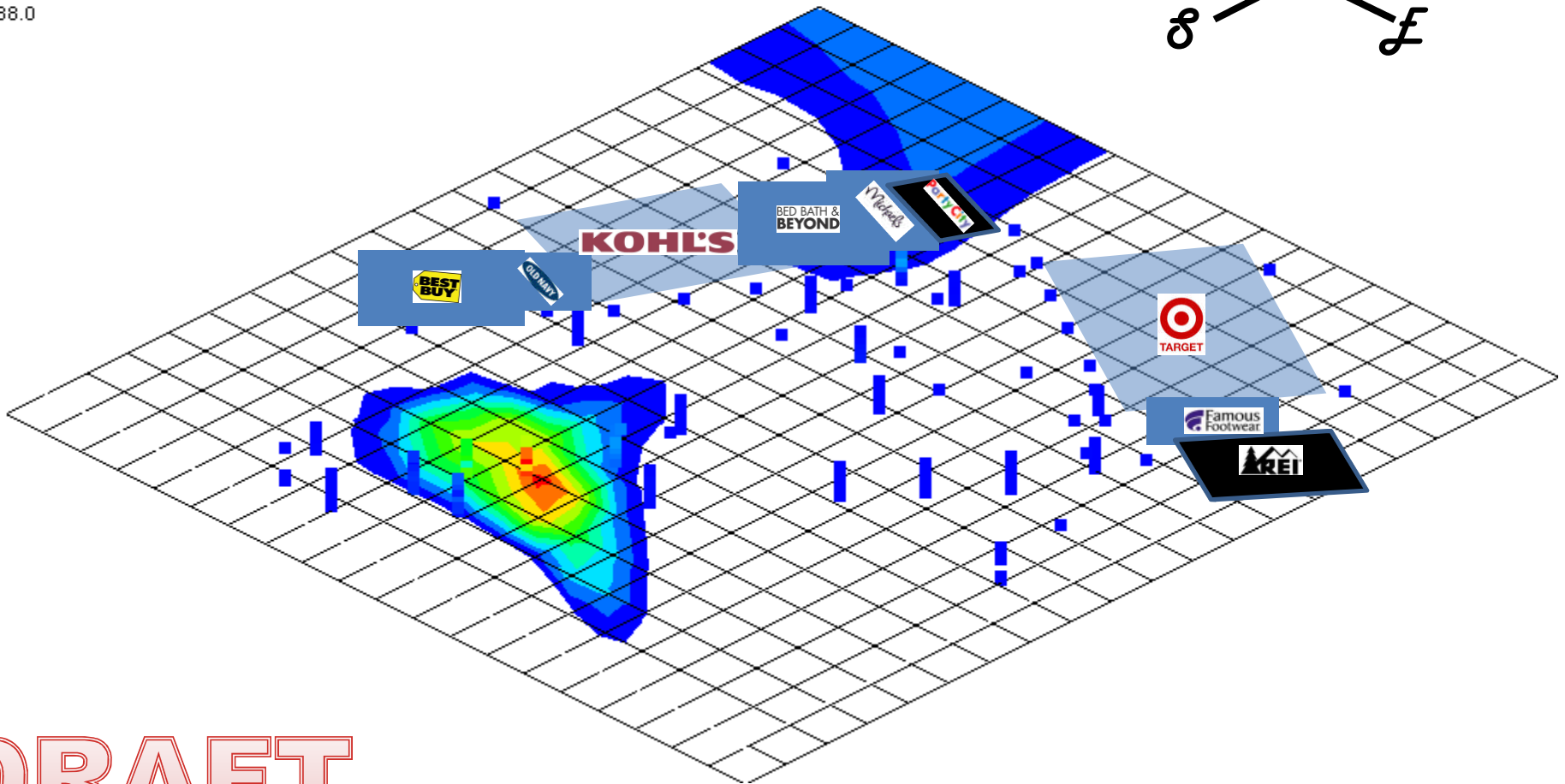
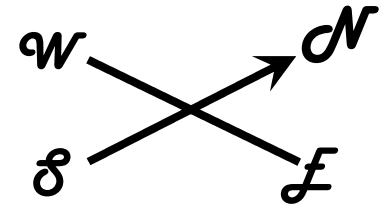
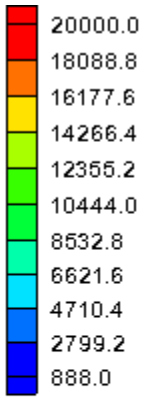
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# TCE 3D Model: plane at 50 feet bgs



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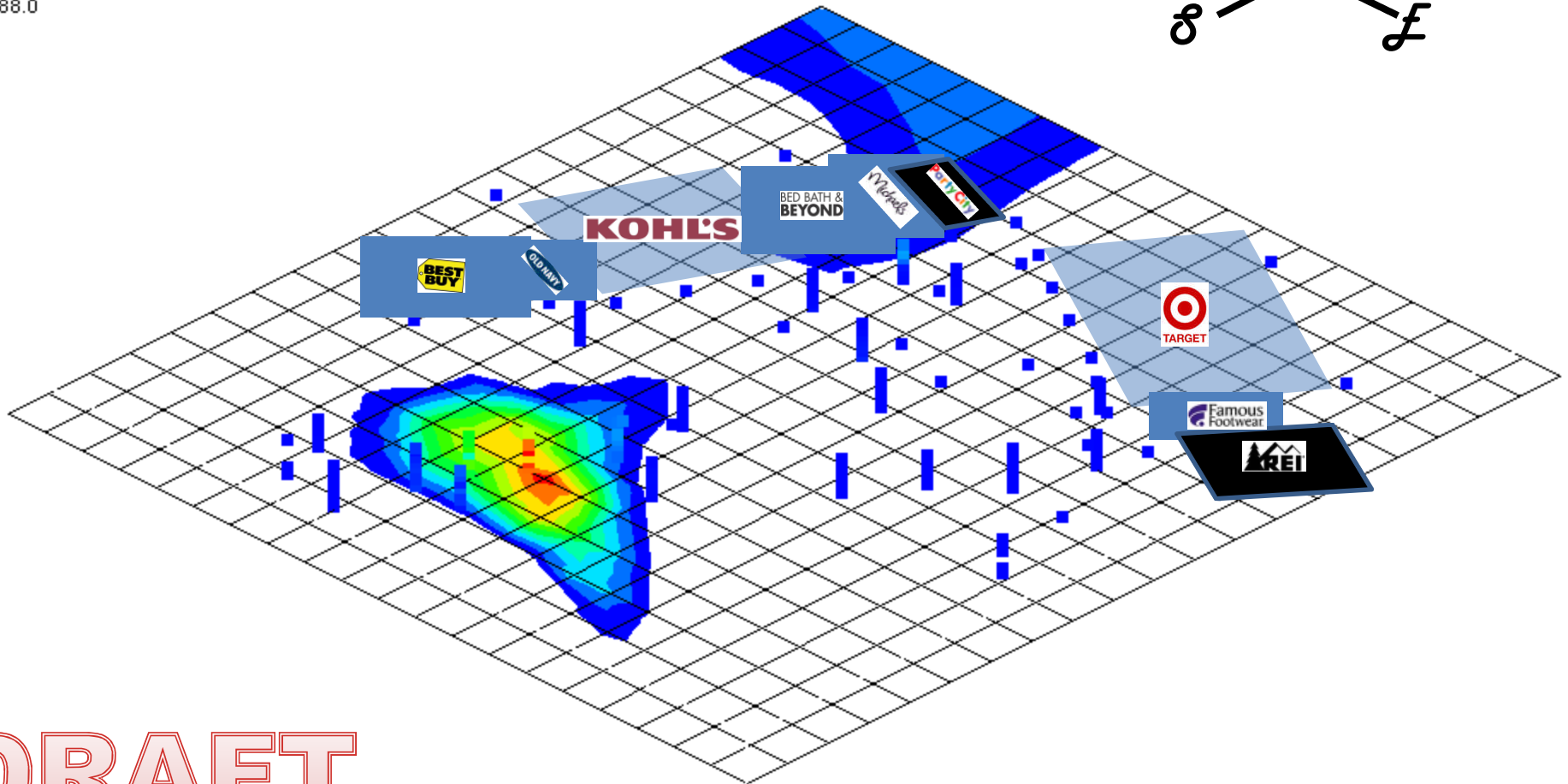
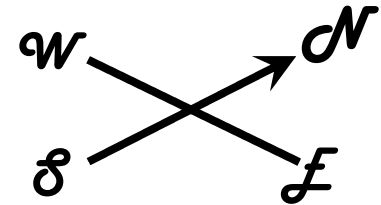
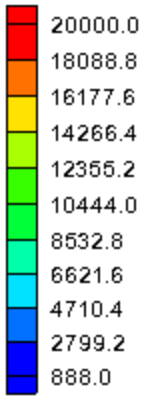
# TCE 3D Model: plane at 60 feet bgs



DRAFT



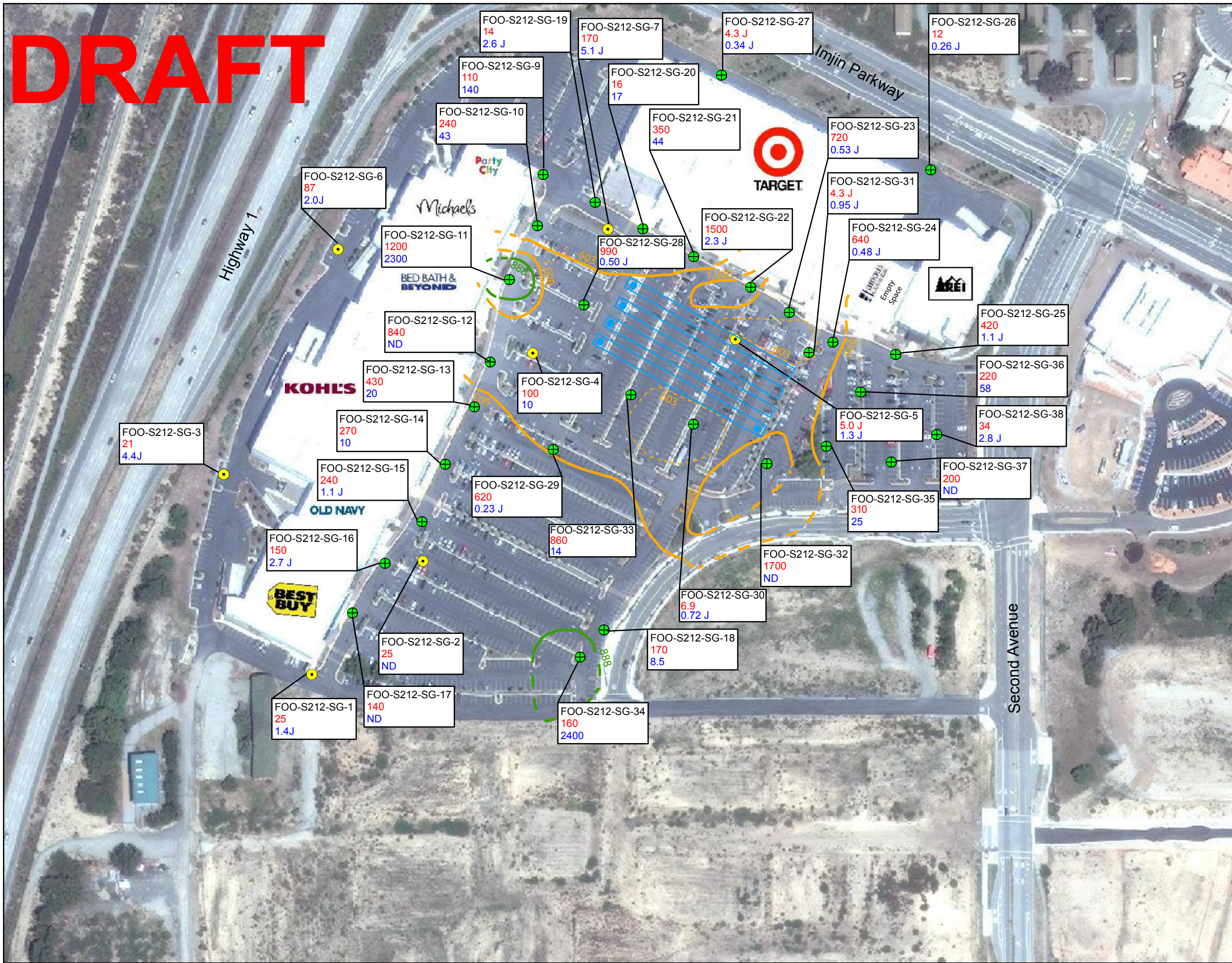
# TCE 3D Model: plane at 70 feet bgs



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# DRAFT



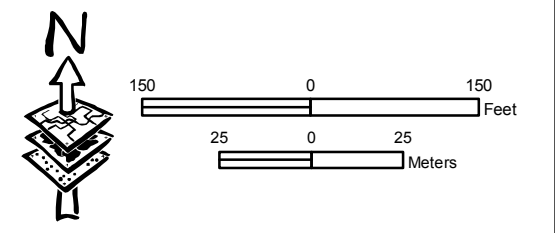
**Legend**

- PCE 5 ft bgs soil gas contour (ug/m<sup>3</sup>)
- - - PCE contour estimated
- - - - - PCE concentrations below screening level
- TCE 5 ft bgs soil gas contour (ug/m<sup>3</sup>)
- - - TCE contour estimated
- ▨ Stormwater Drain Infiltration

**Previous Soil Gas Investigations:**

- April 2013 Soil Gas Sample  
PCE (ug/m<sup>3</sup>)  
TCE (ug/m<sup>3</sup>)
- October 2012 Soil Gas Sample  
PCE (ug/m<sup>3</sup>)  
TCE (ug/m<sup>3</sup>)

PCE screening level 603 ug/m<sup>3</sup>  
TCE screening level 888 ug/m<sup>3</sup>

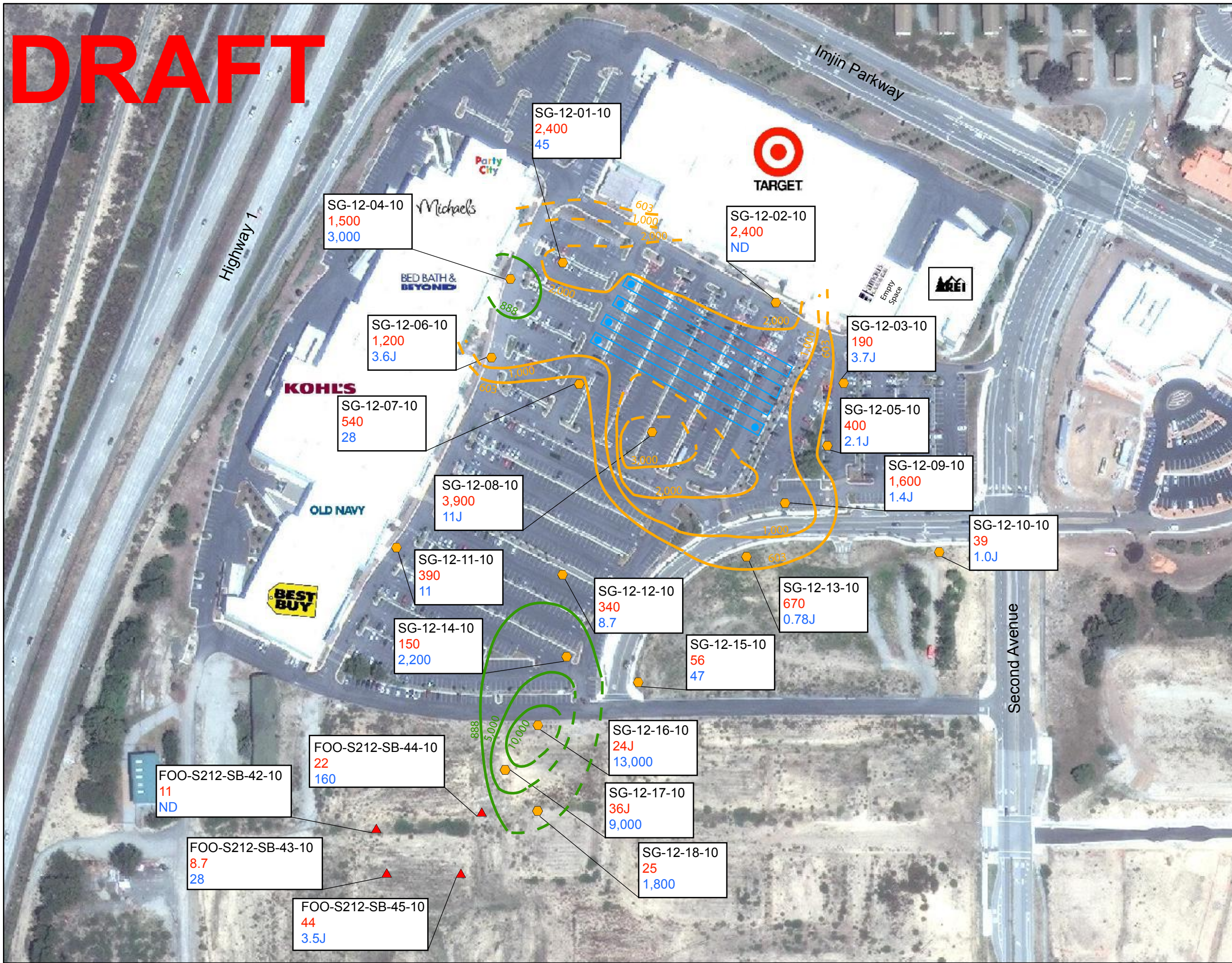


**Draft Soil Gas Samples  
Five Foot Contours**  
Remedial Investigation/  
Feasibility Study Addendum at  
Sites 2/12, Former Fort Ord, California





# DRAFT



- ### Legend
- PCE 10 ft bgs soil gas contour (ug/m<sup>3</sup>)
  - - - PCE contour estimated
  - TCE 10 ft bgs soil gas contour (ug/m<sup>3</sup>)
  - - - TCE contour estimated

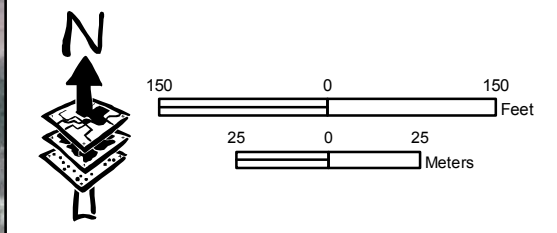
- ▭ Stormwater Drain Infiltration
- ⬡ Soil Gas Probe Sample (Sep-Dec 2013)\*  
(permanent completion)  
PCE (ug/m<sup>3</sup>)  
TCE (ug/m<sup>3</sup>)

Previous Soil Gas Investigations:

- ▲ June 2013 Soil Gas Sample (temporary-probe abandoned)

PCE screening level 603 ug/m<sup>3</sup>  
TCE screening level 888 ug/m<sup>3</sup>

\*Results preliminary and not validated



## Draft Soil Gas Samples Ten Foot Contours

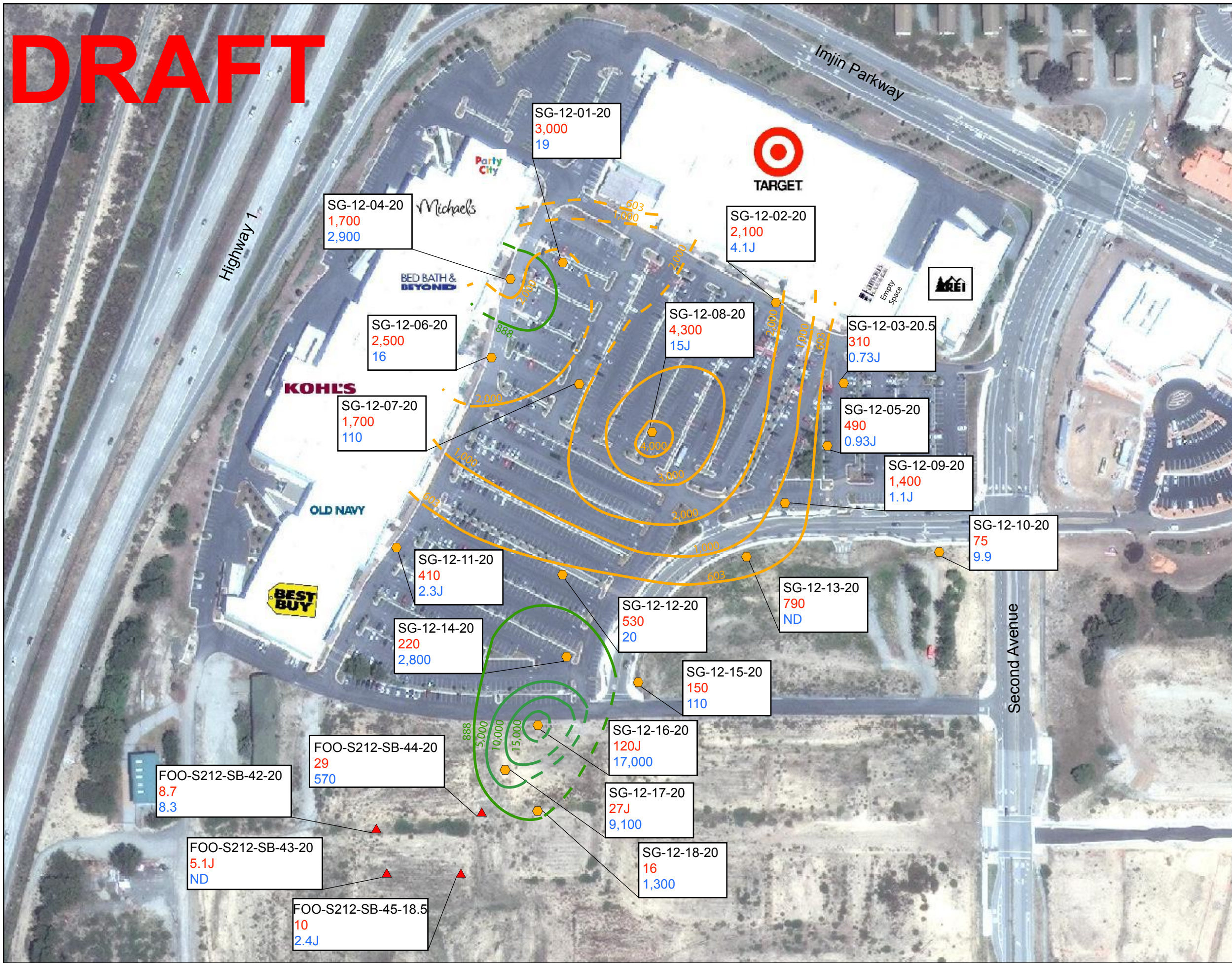
Remedial Investigation/  
Feasibility Study Addendum at  
Sites 2/12, Former Fort Ord, California



Sample ID	PCE (ug/m <sup>3</sup> )	TCE (ug/m <sup>3</sup> )
SG-12-01-10	2,400	45
SG-12-02-10	2,400	ND
SG-12-03-10	190	3.7J
SG-12-04-10	1,500	3,000
SG-12-05-10	400	2.1J
SG-12-06-10	1,200	3.6J
SG-12-07-10	540	28
SG-12-08-10	3,900	11J
SG-12-09-10	1,600	1.4J
SG-12-10-10	39	1.0J
SG-12-11-10	390	11
SG-12-12-10	340	8.7
SG-12-13-10	670	0.78J
SG-12-14-10	150	2,200
SG-12-15-10	56	47
SG-12-16-10	24J	13,000
SG-12-17-10	36J	9,000
SG-12-18-10	25	1,800
FOO-S212-SB-42-10	11	ND
FOO-S212-SB-44-10	22	160
FOO-S212-SB-43-10	8.7	28
FOO-S212-SB-45-10	44	3.5J



# DRAFT



- Legend**
- PCE 20 ft bgs soil gas contour (ug/m<sup>3</sup>)
  - - - PCE contour estimated
  - TCE 20 ft bgs soil gas contour (ug/m<sup>3</sup>)
  - - - TCE contour estimated

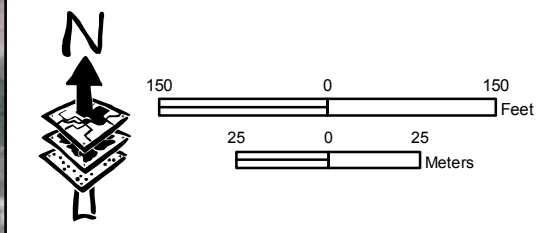
- Soil Gas Probe Sample (Sep-Dec 2013)\* (permanent completion)  
● PCE (ug/m<sup>3</sup>)  
● TCE (ug/m<sup>3</sup>)

**Previous Soil Gas Investigations:**

- ▲ June 2013 Soil Gas Sample (temporary-probe abandoned)

PCE screening level 603 ug/m<sup>3</sup>  
 TCE screening level 888 ug/m<sup>3</sup>

\*Results preliminary and not validated



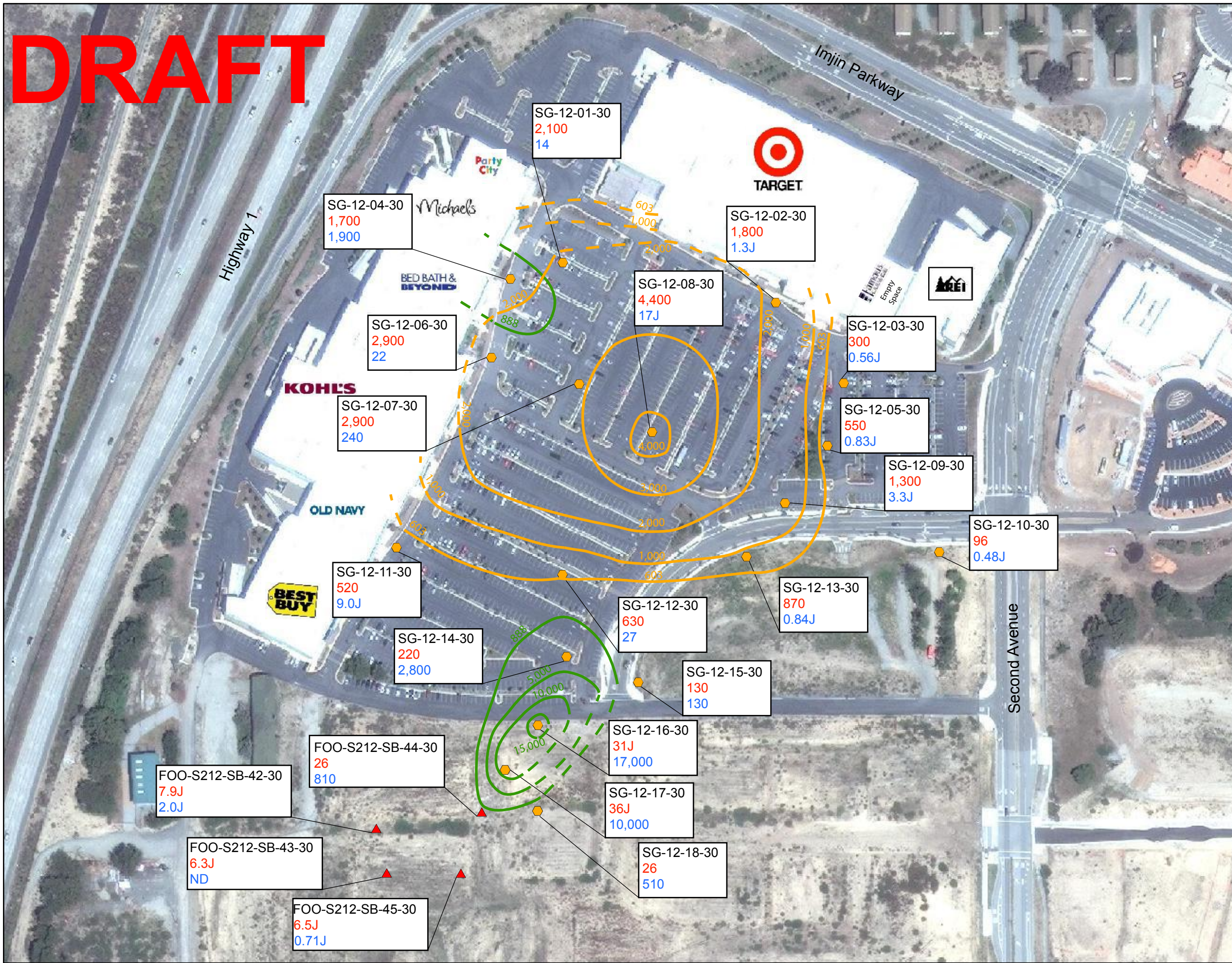
**Draft Soil Gas Samples  
 Twenty Foot Contours**  
 Remedial Investigation/  
 Feasibility Study Addendum at  
 Sites 2/12, Former Fort Ord, California



Sample ID	PCE (ug/m <sup>3</sup> )	TCE (ug/m <sup>3</sup> )
SG-12-01-20	3,000	19
SG-12-02-20	2,100	4.1J
SG-12-03-20.5	310	0.73J
SG-12-04-20	1,700	2,900
SG-12-05-20	490	0.93J
SG-12-06-20	2,500	16
SG-12-07-20	1,700	110
SG-12-08-20	4,300	15J
SG-12-09-20	1,400	1.1J
SG-12-10-20	75	9.9
SG-12-11-20	410	2.3J
SG-12-12-20	530	20
SG-12-13-20	790	ND
SG-12-14-20	220	2,800
SG-12-15-20	150	110
SG-12-16-20	120J	17,000
SG-12-17-20	27J	9,100
SG-12-18-20	16	1,300
FOO-S212-SB-42-20	8.7	8.3
FOO-S212-SB-44-20	29	570
FOO-S212-SB-43-20	5.1J	ND
FOO-S212-SB-45-18.5	10	2.4J



# DRAFT



### Legend

- PCE 30 ft bgs soil gas contour (ug/m<sup>3</sup>)
- - - PCE contour estimated
- TCE 30 ft bgs soil gas contour (ug/m<sup>3</sup>)
- - - TCE contour estimated

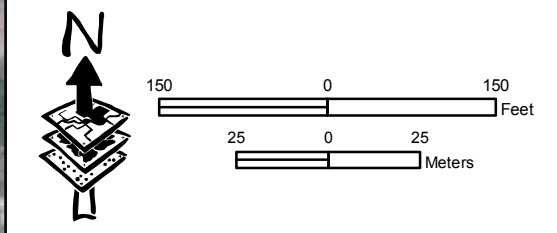
- Soil Gas Probe Sample (Sep-Dec 2013)\* (permanent completion)  
PCE (ug/m<sup>3</sup>)  
TCE (ug/m<sup>3</sup>)

### Previous Soil Gas Investigations:

- ▲ June 2013 Soil Gas Sample (temporary-probe abandoned)

PCE screening level 603 ug/m<sup>3</sup>  
TCE screening level 888 ug/m<sup>3</sup>

\*Results preliminary and not validated



## Draft Soil Gas Samples Thirty Foot Contours

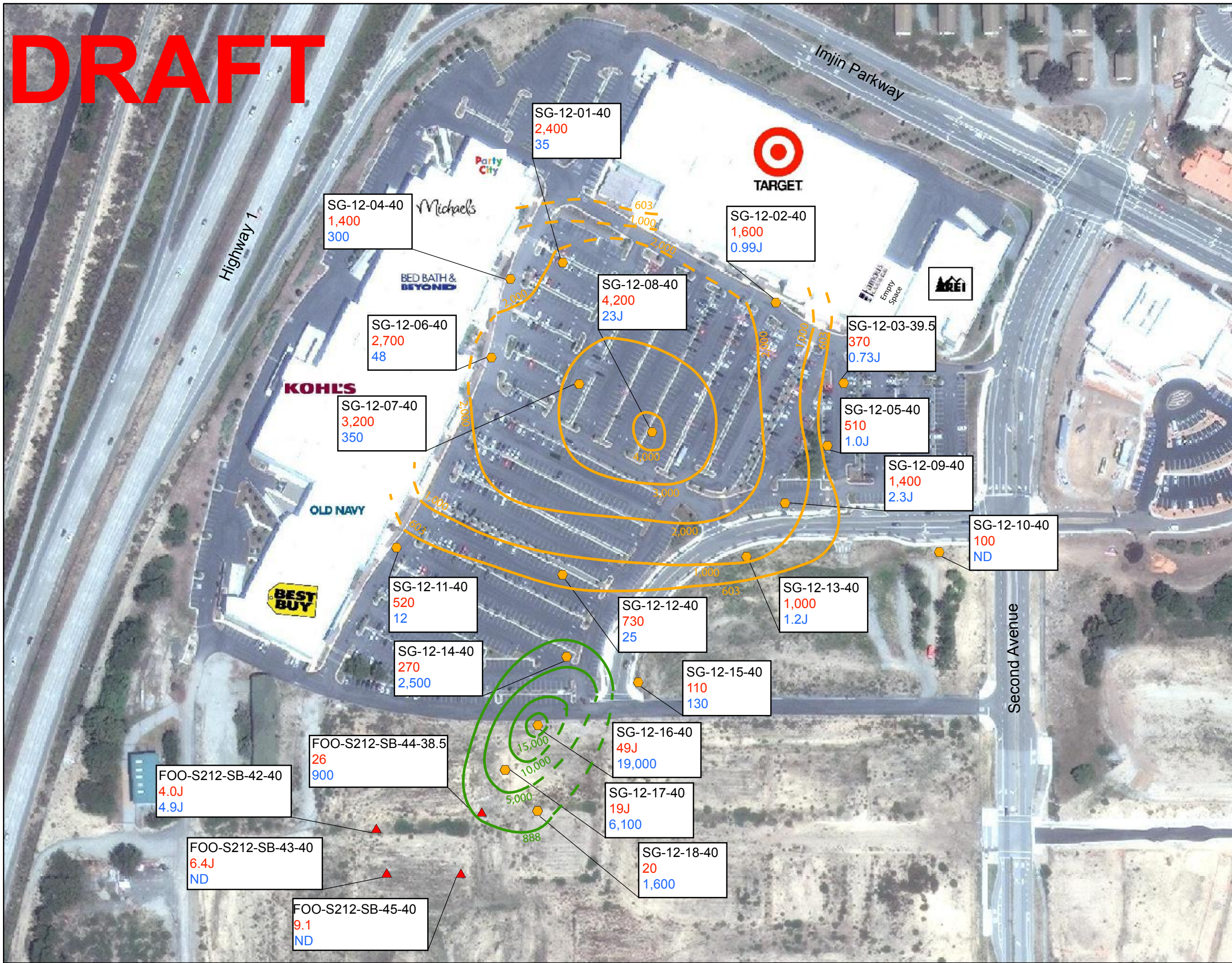
Remedial Investigation/  
Feasibility Study Addendum at  
Sites 2/12, Former Fort Ord, California



Sample ID	PCE (ug/m <sup>3</sup> )	TCE (ug/m <sup>3</sup> )
SG-12-01-30	2,100	14
SG-12-02-30	1,800	1.3J
SG-12-03-30	300	0.56J
SG-12-05-30	550	0.83J
SG-12-08-30	4,400	17J
SG-12-09-30	1,300	3.3J
SG-12-10-30	96	0.48J
SG-12-11-30	520	9.0J
SG-12-12-30	630	27
SG-12-13-30	870	0.84J
SG-12-14-30	220	2,800
SG-12-15-30	130	130
SG-12-16-30	31J	17,000
SG-12-17-30	36J	10,000
SG-12-18-30	26	510
FOO-S212-SB-42-30	7.9J	2.0J
FOO-S212-SB-43-30	6.3J	ND
FOO-S212-SB-44-30	26	810
FOO-S212-SB-45-30	6.5J	0.71J



# DRAFT



### Legend

- PCE 40 ft bgs soil gas contour (ug/m<sup>3</sup>)
- - - PCE contour estimated
- TCE 40 ft bgs soil gas contour (ug/m<sup>3</sup>)
- - - TCE contour estimated

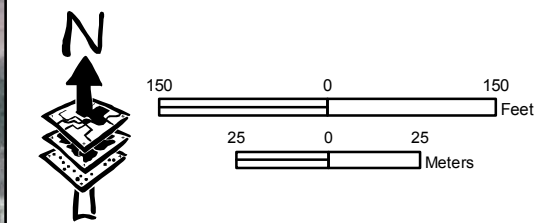
- Soil Gas Probe Sample (Sep-Dec 2013)\* (permanent completion)  
PCE (ug/m<sup>3</sup>)  
TCE (ug/m<sup>3</sup>)

### Previous Soil Gas Investigations:

- ▲ June 2013 Soil Gas Sample (temporary-probe abandoned)

PCE screening level 603 ug/m<sup>3</sup>  
 TCE screening level 888 ug/m<sup>3</sup>

\*Results preliminary and not validated

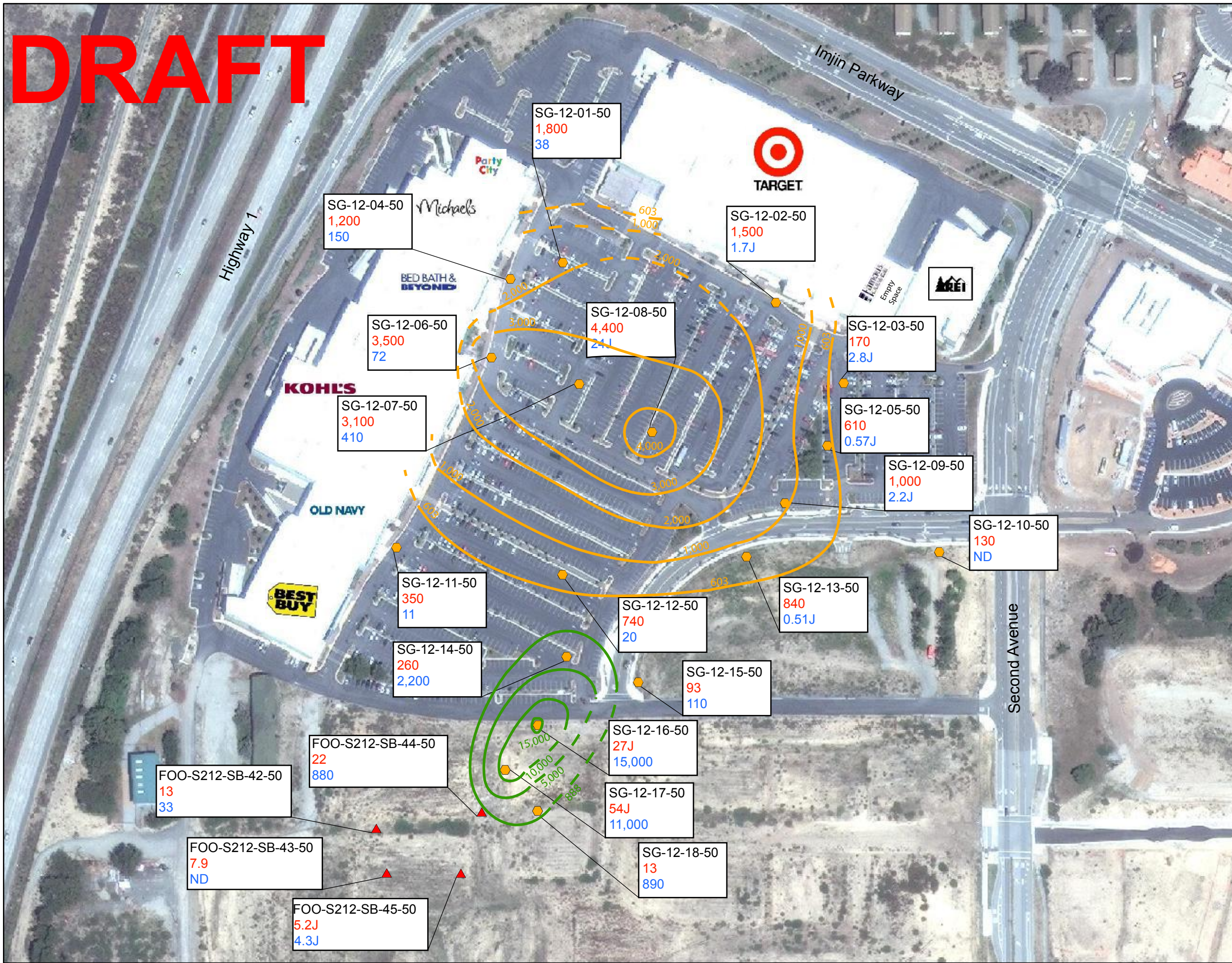


**Draft Soil Gas Samples  
 Forty Foot Contours**  
 Remedial Investigation/  
 Feasibility Study Addendum at  
 Sites 2/12, Former Fort Ord, California





# DRAFT



- Legend**
- PCE 50 ft bgs soil gas contour (ug/m<sup>3</sup>)
  - - - PCE contour estimated
  - TCE 50 ft bgs soil gas contour (ug/m<sup>3</sup>)
  - - - TCE contour estimated

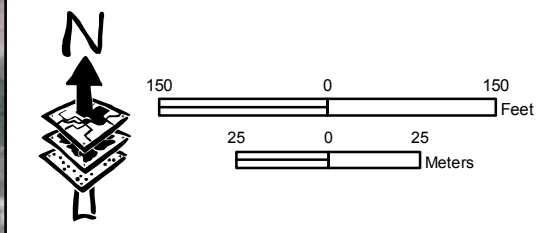
● Soil Gas Probe Sample (Sep-Dec 2013)\*  
(permanent completion)  
PCE (ug/m<sup>3</sup>)  
TCE (ug/m<sup>3</sup>)

**Previous Soil Gas Investigations:**

▲ June 2013 Soil Gas Sample  
(temporary-probe abandoned)

PCE screening level 603 ug/m<sup>3</sup>  
TCE screening level 888 ug/m<sup>3</sup>

\*Results preliminary and not validated

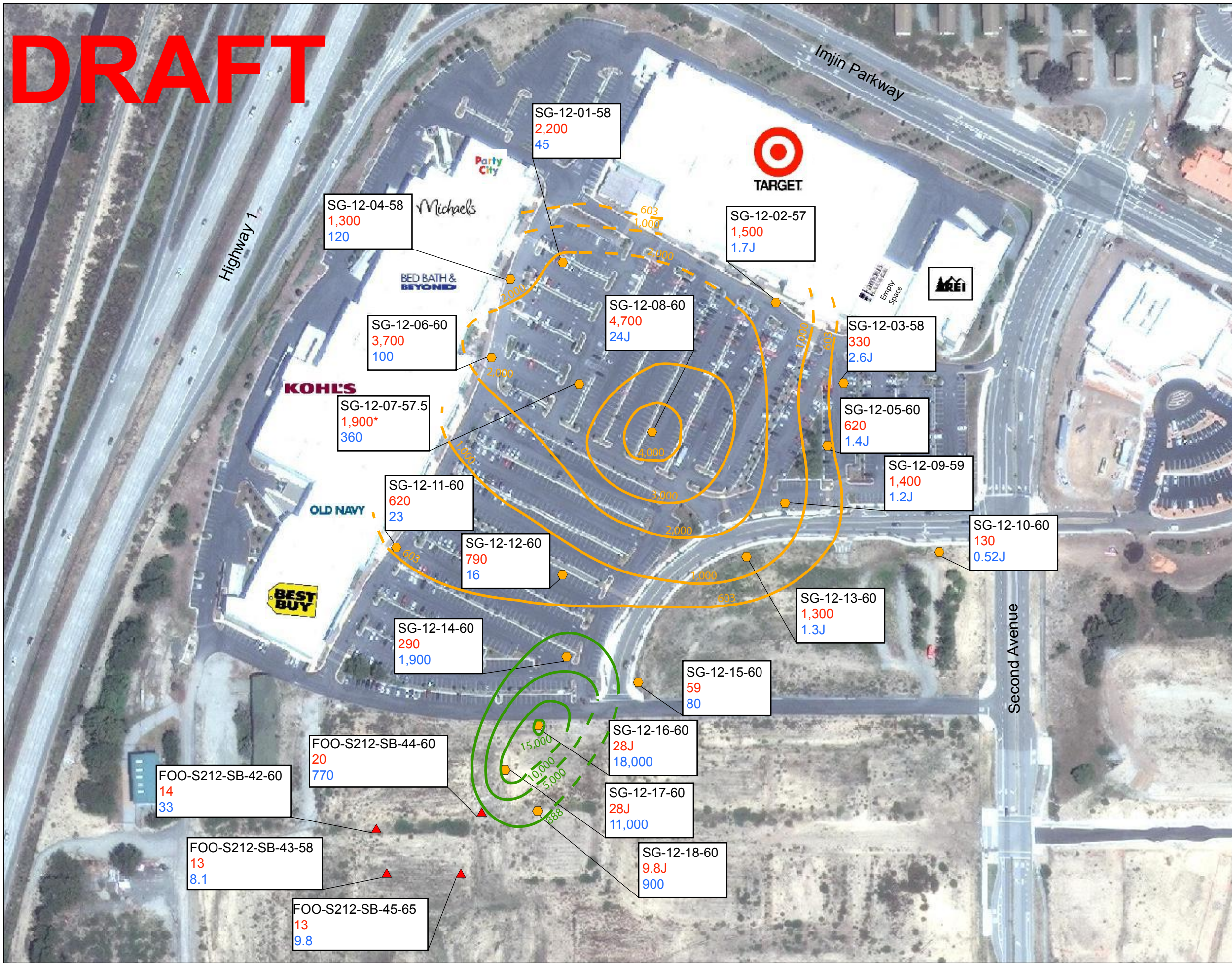


**Draft Soil Gas Samples  
Fifty Foot Contours**  
Remedial Investigation/  
Feasibility Study Addendum at  
Sites 2/12, Former Fort Ord, California





# DRAFT



- Legend**
- PCE 60 ft bgs soil gas contour (ug/m<sup>3</sup>)
  - - - PCE contour estimated
  - TCE 60 ft bgs soil gas contour (ug/m<sup>3</sup>)
  - - - TCE contour estimated
  - Soil Gas Probe Sample (Sep-Dec 2013)\* (permanent completion)  
PCE (ug/m<sup>3</sup>)  
TCE (ug/m<sup>3</sup>)

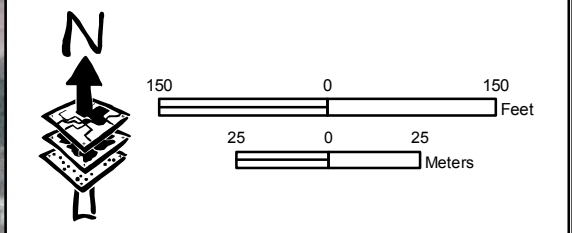
\*SG-12-07-57.5 PCE soil gas data not used in contour

**Previous Soil Gas Investigations:**

- ▲ June 2013 Soil Gas Sample (temporary-probe abandoned)

PCE screening level 603 ug/m<sup>3</sup>  
TCE screening level 888 ug/m<sup>3</sup>

\*Results preliminary and not validated



**Draft Soil Gas Samples  
Sixty Foot Contours**

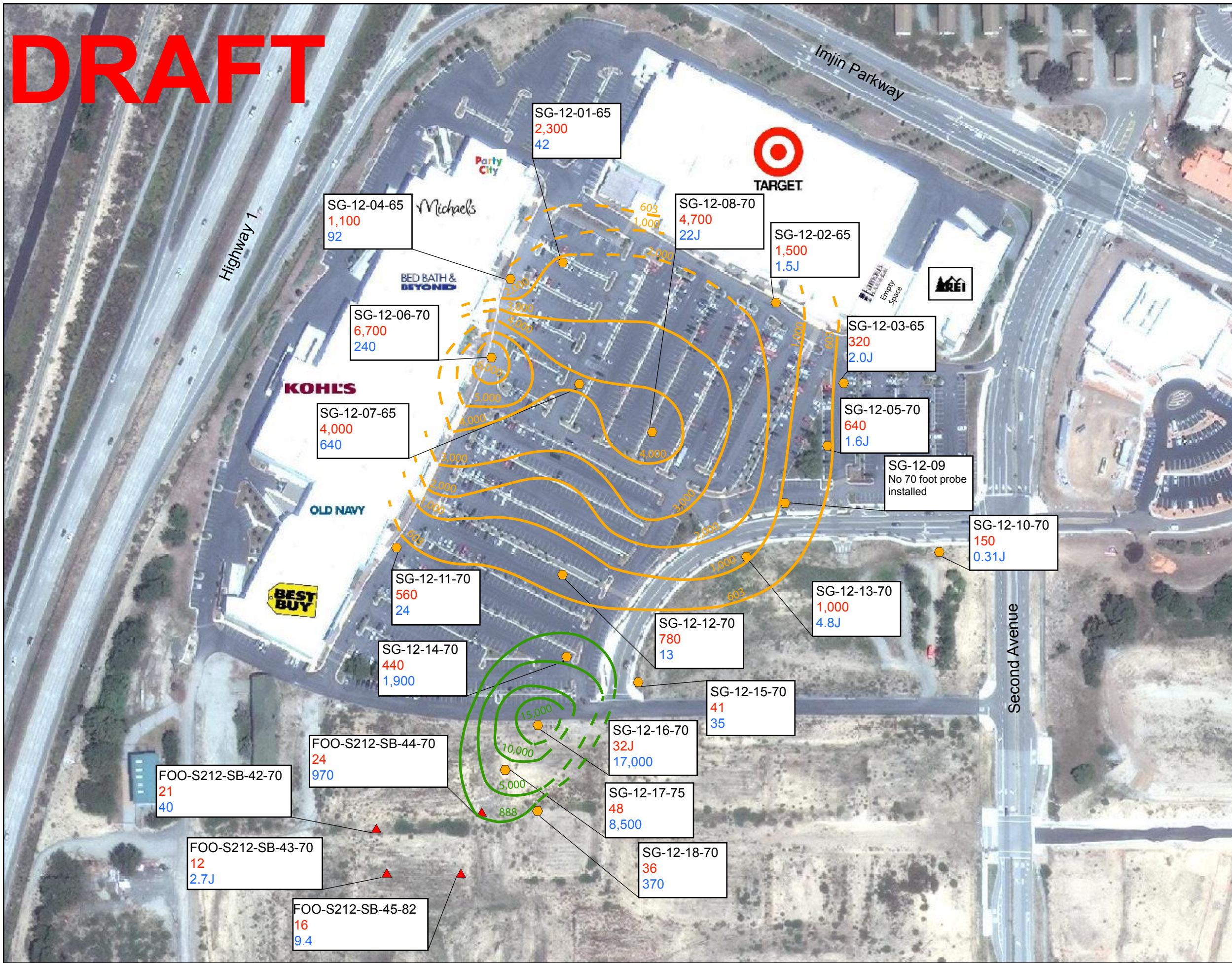
Remedial Investigation/  
Feasibility Study Addendum at  
Sites 2/12, Former Fort Ord, California



Sample ID	PCE (ug/m <sup>3</sup> )	TCE (ug/m <sup>3</sup> )
SG-12-01-58	2,200	45
SG-12-02-57	1,500	1.7J
SG-12-03-58	330	2.6J
SG-12-04-58	1,300	120
SG-12-05-60	620	1.4J
SG-12-06-60	3,700	100
SG-12-07-57.5	1,900*	360
SG-12-08-60	4,700	24J
SG-12-09-59	1,400	1.2J
SG-12-10-60	130	0.52J
SG-12-11-60	620	23
SG-12-12-60	790	16
SG-12-13-60	1,300	1.3J
SG-12-14-60	290	1,900
SG-12-15-60	59	80
SG-12-16-60	28J	18,000
SG-12-17-60	28J	11,000
SG-12-18-60	9.8J	900
FOO-S212-SB-42-60	14	33
FOO-S212-SB-43-58	13	8.1
FOO-S212-SB-44-60	20	770
FOO-S212-SB-45-65	13	9.8



# DRAFT



### Legend

- PCE 70 ft bgs soil gas contour (ug/m<sup>3</sup>)
- - - PCE contour estimated
- TCE 70 ft bgs soil gas contour (ug/m<sup>3</sup>)
- - - TCE contour estimated

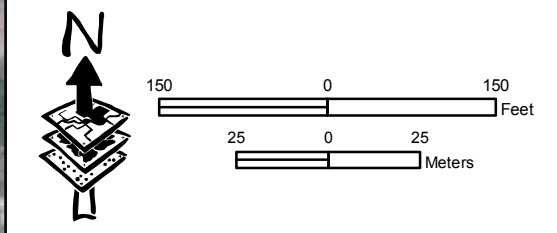
- ⬡ Soil Gas Probe Sample (Sep-Dec 2013)\* (permanent completion)  
PCE (ug/m<sup>3</sup>)  
TCE (ug/m<sup>3</sup>)

### Previous Soil Gas Investigations:

- ▲ June 2013 Soil Gas Sample (temporary-probe abandoned)

PCE screening level 603 ug/m<sup>3</sup>  
 TCE screening level 888 ug/m<sup>3</sup>

\*Results preliminary and not validated



**Draft Soil Gas Samples  
 Seventy Foot Contours**  
 Remedial Investigation/  
 Feasibility Study Addendum at  
 Sites 2/12, Former Fort Ord, California





Fort Ord Deliverables  
HTW BCT, January 22, 2014

ID	Issue Year	Site	Document Title	Version	Issue Date	DocGroup	DocType	Author Org
1	2014	Basewide	2013 Habitat Restoration and Monitoring Report, Non-Remediated Areas, Fort Ord Dunes State Park (Formerly Site 3), Former Fort	DRAFT FINAL	2014-01-30	Other (Non-CERCLA)	External	California State Parks
2	2014	OU2	OU2 Groundwater Treatment Plant Relocation Design	DRAFT FINAL	2014-01-30	Secondary	External	ITSI Gilbane
3	2014	RI Sites	2014 Technical Memorandum of Revegetation Activities	FINAL	2014-01-30	Secondary	External	Burleson Consulting, Inc.
4	2014	Basewide	Technical Memorandum, Evaluation of Lead Concentrations at Selected Sites, Former Fort Ord, Monterey County, California	FINAL	2014-01-30	Secondary	External	ITSI Gilbane
5	2014	OU2	Construction QC and QA Report, OU2 Landfills, Area E Phase 1	DRAFT	2014-01-31	Secondary	External	ITSI Gilbane
6	2014	OU2	Operable Unit 2, Landfill Cap, Remedial Action Completion Report	DRAFT	2014-01-31	Secondary	External	ITSI Gilbane
7	2014	OU1	Well Destruction & OU1 Treatment Plant Decommissioning Work Plan	DRAFT	2014-01-31	Secondary	External	HydroGeoLogic, Inc.
8	2014	Basewide	Quality Assurance Project Plan, Superfund Response Actions, Former Fort Ord, California, Volume 1, Groundwater, Appendix A	FINAL	2014-01-31	Secondary	External	Ahtna
9	2014	OU2	Quality Assurance Project Plan, Superfund Response Actions, Former Fort Ord, California, Volume 3, OU2 Landfill, Appendix A	DRAFT	2014-02-28	Secondary	External	ITSI Gilbane
10	2014	RI Sites	Technical Memorandum, Basewide Range Assessment Investigation, Units 4, 11, and 12, Former Fort Ord, California	DRAFT FINAL	2014-02-28	Secondary	External	ITSI Gilbane
11	2014	RI Sites	Remedial Action Completion Report, Site 39 Inland Ranges Habitat Reserve, Former Fort Ord, California	DRAFT FINAL	2014-02-28	Primary	External	ITSI Gilbane
12	2014	OU1	OU1 UFP-QAPP	DRAFT FINAL	2014-02-28	Secondary	External	HydroGeoLogic, Inc.
13	2014	OU2	OU2 Groundwater Treatment Plant Relocation Design	FINAL	2014-02-28	Secondary	External	ITSI Gilbane
14	2014	OU1	2013 Annual and Third Quarter Groundwater Monitoring Report, Operable Unit 1, Fritzsche Army Airfield Fire Drill Area, Former Fort	DRAFT FINAL	2014-03-30	Secondary	External	HydroGeoLogic, Inc.
15	2014	Basewide	2013 Habitat Restoration and Monitoring Report, Non-Remediated Areas, Fort Ord Dunes State Park (Formerly Site 3), Former Fort	FINAL	2014-03-30	Other (Non-CERCLA)	External	California State Parks
16	2014	RI Sites	Work Plan, Site 12 Pilot Study	DRAFT	2014-03-31	Secondary	External	Ahtna
17	2014	Basewide	Annual Report of Quarterly Monitoring, October 2012 through September 2013, Groundwater Monitoring Program, Sites 2 and 12,	DRAFT	2014-03-31	Secondary	External	Ahtna / AMEC
18	2014	Basewide	Technical Memorandum, Evaluation of Lead Concentrations at Selected Sites, Former Fort Ord, Monterey County, California	DRAFT FINAL	2014-03-31	Secondary	External	ITSI Gilbane
19	2014	OU2	Construction QC and QA Report, OU2 Landfills, Area E Phase 1	DRAFT FINAL	2014-03-31	Secondary	External	ITSI Gilbane
20	2014	OU1	Well Destruction & OU1 Treatment Plant Decommissioning Work Plan	DRAFT FINAL	2014-03-31	Secondary	External	HydroGeoLogic, Inc.
21	2014	OU2	Operable Unit 2, Landfill Cap, Remedial Action Completion Report	DRAFT FINAL	2014-03-31	Secondary	External	ITSI Gilbane
22	2014	OU1	OU1 UFP-QAPP	FINAL	2014-03-31	Secondary	External	HydroGeoLogic, Inc.
23	2014	RI Sites	Technical Memorandum, Basewide Range Assessment Investigations, Unit 6, Former Fort Ord, California	DRAFT	2014-04-30	Secondary	External	ITSI Gilbane

This report shows upcoming documents for 2014.

External reports are those that are in the Administrative Record and made available to the public.

Fort Ord Deliverables  
HTW BCT, January 22, 2014

ID	Issue Year	Site	Document Title	Version	Issue Date	DocGroup	DocType	Author Org
24	2014	RI Sites	Work Plan, Site 12 Pilot Study	DRAFT FINAL	2014-04-30	Secondary	External	Ahtna
25	2014	Basewide	Report of Quarterly Monitoring, Fourth Quarter 2013, Groundwater Monitoring Program, Sites 2 and 12, OU2, and OUCTP	FINAL	2014-04-30	Secondary	External	Ahtna / AMEC
26	2014	RI Sites	Technical Memorandum, Basewide Range Assessment Investigation, Units 4, 11, and 12, Former Fort Ord, California	FINAL	2014-04-30	Secondary	External	ITSI Gilbane
27	2014	OU1	2013 Annual and Third Quarter Groundwater Monitoring Report, Operable Unit 1, Fritzsche Army Airfield Fire Drill Area, Former Fort	FINAL	2014-05-30	Secondary	External	HydroGeoLogic, Inc.
28	2014	RI Sites	Remedial Action Completion Report, Site 39 Inland Ranges Habitat Reserve, Former Fort Ord, California	FINAL	2014-05-30	Primary	External	ITSI Gilbane
29	2014	RI Sites	Work Plan, Site 12 Pilot Study	FINAL	2014-05-30	Secondary	External	Ahtna
30	2014	OU2	Quality Assurance Project Plan, Superfund Response Actions, Former Fort Ord, California, Volume 3, OU2 Landfill, Appendix A	DRAFT FINAL	2014-05-31	Secondary	External	ITSI Gilbane
31	2014	OU2	Construction QC and QA Report, OU2 Landfills, Area E Phase 1	FINAL	2014-05-31	Secondary	External	ITSI Gilbane
32	2014	OU2	Operable Unit 2, Landfill Cap, Remedial Action Completion Report	FINAL	2014-05-31	Secondary	External	ITSI Gilbane
33	2014	Basewide	Annual Report of Quarterly Monitoring, October 2012 through September 2013, Groundwater Monitoring Program, Sites 2 and 12,	DRAFT FINAL	2014-06-29	Secondary	External	Ahtna / AMEC
34	2014	RI Sites	Technical Memorandum, Basewide Range Assessment Investigations, Unit 6, Former Fort Ord, California	DRAFT FINAL	2014-06-30	Secondary	External	ITSI Gilbane
35	2014	OU1	2014 Semi Annual Groundwater Monitoring Report	FINAL	2014-06-30	Secondary	External	HydroGeoLogic, Inc.
36	2014	RI Sites	Technical Memorandum, Basewide Range Assessment Investigations, Unit 6, Former Fort Ord, California	FINAL	2014-07-30	Secondary	External	ITSI Gilbane
37	2014	RI Sites	Technical Memorandum, Basewide Range Assessment Investigations, Units 7, 10, 33, Former Fort Ord, California	DRAFT	2014-07-31	Secondary	External	ITSI Gilbane
38	2014	Basewide	Report of Quarterly Monitoring, First Quarter 2014, Groundwater Monitoring Program, Sites 2 and 12, OU2, and OUCTP	FINAL	2014-07-31	Secondary	External	Ahtna / AMEC
39	2014	OU2	Quality Assurance Project Plan, Superfund Response Actions, Former Fort Ord, California, Volume 3, OU2 Landfill, Appendix A	FINAL	2014-07-31	Secondary	External	ITSI Gilbane
40	2014	RI Sites	Report, Remedial Investigation/Feasibility Study Addendum at Sites 2 and 12	PREDRAFT	2014-07-31	Primary	Internal	Ahtna
41	2014	RI Sites	Report, Remedial Investigation/Feasibility Study Addendum at Sites 2 and 12	DRAFT	2014-08-18	Primary	External	Ahtna
42	2014	Basewide	Annual Report of Quarterly Monitoring, October 2012 through September 2013, Groundwater Monitoring Program, Sites 2 and 12,	FINAL	2014-08-28	Secondary	External	Ahtna / AMEC
43	2014	RI Sites	Technical Memorandum, Basewide Range Assessment Investigations, Watkins Gate Burn Area, Former Fort Ord, California	DRAFT	2014-08-31	Secondary	External	ITSI Gilbane
44	2014	OU1	Well Destruction & OU1 Treatment Plant Decommissioning Completion Report	DRAFT	2014-08-31	Secondary	External	HydroGeoLogic, Inc.
45	2014	OU1	Well Destruction & OU1 Treatment Plant Decommissioning Completion Report	DRAFT FINAL	2014-09-30	Secondary	External	HydroGeoLogic, Inc.
46	2014	RI Sites	Technical Memorandum, Basewide Range Assessment Investigations, Units 7, 10, 33, Former Fort Ord, California	DRAFT FINAL	2014-09-30	Secondary	External	ITSI Gilbane

This report shows upcoming documents for 2014.

External reports are those that are in the Administrative Record and made available to the public.

Fort Ord Deliverables  
HTW BCT, January 22, 2014

ID	Issue Year	Site	Document Title	Version	Issue Date	DocGroup	DocType	Author Org
47	2014	RI Sites	Technical Memorandum, Basewide Range Assessment Investigations, Units 7, 10, 33, Former Fort Ord, California	FINAL	2014-10-30	Secondary	External	ITSI Gilbane
48	2014	RI Sites	Technical Memorandum, Basewide Range Assessment Investigations, Watkins Gate Burn Area, Former Fort Ord, California	DRAFT FINAL	2014-10-31	Secondary	External	ITSI Gilbane
49	2014	Basewide	Report of Quarterly Monitoring, Second Quarter 2014, Groundwater Monitoring Program, Sites 2 and 12, OU2, and OUCTP	FINAL	2014-10-31	Secondary	External	Ahtna / AMEC
50	2014	RI Sites	Report, Remedial Investigation/Feasibility Study Addendum at Sites 2 and 12	DRAFT FINAL	2014-11-07	Primary	External	Ahtna
51	2014	Basewide	Analysis of the 2013 Community Survey and 2013-2014 Community Outreach Program, Fort Ord, California	DRAFT	2014-12-30	Secondary	External	Fort Ord BRAC
52	2014	Basewide	Basewide Range Assessment Tech Memo	DRAFT	2014-12-31	Primary	Internal	ITSI Gilbane
53	2014	RI Sites	Record of Decision Amendment, Basewide Remedial Investigation Sites	DRAFT	2014-12-31	Primary	Internal	Ahtna
54	2014	RI Sites	Proposed Plan, Site 12	DRAFT	2014-12-31	Primary	Internal	Ahtna
55	2014	OU2	Annual Report, 2013, Operations and Maintenance, Operable Unit 2 Landfills, Former Fort Ord, California	FINAL	2014-12-31	Secondary	External	ITSI Gilbane

This report shows upcoming documents for 2014.

External reports are those that are in the Administrative Record and made available to the public.