DEPARTMENT OF THE ARMY
US ARMY ENGINEER DISTRICT (ALASKA)
PO BOX 6898
JBER, ALASKA 99506-6898

REPLY TO
ATTENTION OF

30 October 2012

CEPOA-EN-G-CIH

MEMORANDUM THRU CEPOA-EN-G

FOR CEPOA-PM-ESP (Brock)

SUBJECT: Report of Chemical Findings, Building 35-752, Fort Richardson, AK (12-073)

1. Executive Summary: The U.S. Army Corps of Engineers, Alaska District, Engineering Division, Geotechnical Engineering Services Branch, Chemistry and Industrial Hygiene Section (CEPOA-EN-G-CIH) was tasked by the Environmental Branch (CEPOA-PM-ESP) to collect groundwater samples at Building 35-752 on Joint Base Elmendorf Richardson (JBER), Alaska. The objective of this sampling event was to provide data indicating that the No Further Action (NFA) remedy selected in the Operable Unit E Record of Decision (OUE ROD) is continuing to be protective of human health and the environment. The regulatory agencies (Alaska Department of Environmental Conservation [ADEC] and the Environmental Protection Agency [EPA]) and the Army agreed that continued monitoring of this site is necessary to ensure that the NFA decision continues to be protective.

2. References.

   a. Alaska Department of Environmental Conservation (ADEC), 18 AAC 75 Oil and Other Hazardous Substances Pollution Control, October 9, 2008.

   b. Department of Defense Environmental Data Quality Workgroup (DoD EDQW), DoD Quality Systems Manual, Version 4.2, October 2010.

   c. SGS, Sample Delivery Group 1122522

   d. US Army Corps of Engineers (USACE), Sampling and Analysis Plan, JBER Richardson Former Building 35-752 Groundwater Monitoring (12-073); June 2012.

   e. US Army Garrison, Alaska, Remedial Design Work Plan, Operable Unit E, Fort Richardson, September 2006.

3. Background.

   The Building 35-752 site is located on JBER, Alaska (Figure 1). The eastern part of the current facility was formally known as Fort Richardson, and provides housing for resident military personnel and their dependents, and employment and services for civilians from the

surrounding area. Building 35-752 is located approximately 1/3 of a mile south of Davis Highway, in a relatively undeveloped part of JBER that includes high-frequency transmitter antennas. Building 35-752 is currently vacant and a locked chain-link fence surrounds the area to restrict access. However, access to the monitoring wells is not restricted.

Building 35-752 is a former generator/power supply building for a high-frequency transmitter facility. Several volatile organic compounds (VOCs), most notably trichloroethylene (TCE), have been detected at the site at concentrations that exceed the Federal maximum contaminant limits (MCLs) and ADEC cleanup levels (Ref 2.a, Table C). Other fuel-related contaminants and metals have been detected as well.

4. Field Activities and Observations.

Seven groundwater samples, two equipment blanks, one duplicate, and a trip blank were collected on 21-24 June 2012. USACE chemist Mike Utley (CEPOA-EN-G-CIH) and intern Alona Schue (CEPOA-PM-ESP) performed all sampling activities. The project location is presented in Figure 1 and well locations are presented in Figure 2. Attachment 2 provides the sample summary and presents all the analytical data collected for this event. Attachment 3 contains the chains of custody generated for the project and the ADEC data quality review sheets, Attachment 4 contains the field notes and Attachment 5 contains the purge logs of the sampling event. Samples were collected as prescribed in the Sampling and Analysis Plan (SAP, ref. 2.d) using a submersible pump. Wells AP-2982, AP-2983, AP-2987, AP-3231, AP-3232, AP-3458, and AP-3503 were sampled.

Most of the wells were in good condition. AP-3503 appears to have jacked – the inner casing extended above the outer casing by about one inch (see Photo #5), possibly causing damage to the casing. Due to an apparent bend in the well casing, the 2 inch submersible pump would not reach the desired pumping depth. As a result, a peristaltic pump was procured and utilized for this well only. AP-2982 is listed in the construction log as a stickup, but field observations proved differently. The well is actually a flushmount (see Photo #6). Lastly, the bentonite used in AP-3231 is very near the surface of the soil. A leg of a table used for sampling purposes became coated with bentonite during sampling of that well (see Photos #9 and #10). All other wells were in good condition. Also, the used 1-gallon oil can (approximately ¼ full) originally identified in 2008 was again found next to well AP-2983.

5. Investigation Derived Waste.

Investigation-derived waste consisting of plastic bags, nitrile gloves, and sample tubing were disposed of in facility trash receptacles. Purge water was passed through a granular activated carbon (GAC) filter prior to disposal on the ground.

6. Laboratory Assignment.

Samples were hand delivered to SGS Environmental Laboratory Services Inc. in Anchorage on 25 June 2012. Analytical methods utilized for this effort include Gasoline Range Organics by AK101, Diesel Range Organics by AK102, dissolved metals (aluminum, arsenic, cadmium, chromium, iron, lead, manganese, and nickel) by SW6020, polychlorinated biphenyls (PCBs) by SW8082, and volatile organic compounds (VOCs) by SW8260B. A trip blank was included to

assess any contamination introduced during shipping and handling, and was analyzed for GRO and VOCs.

7. Results.

All data results are presented in Attachment 2. All results are below the cleanup levels as defined in 18 AAC 75 Table C; detections of TCE in AP-3231 were noted but were below the cleanup level and below the levels reported in 2008 (0.00472 and a duplicate of 0.00500 mg/L; the 2012 result is 0.00312 mg/L).

8. Data Quality Review and Assessment.

An electronic copy of the analytical data package is provided in Attachment 6. A data review and quality assessment was performed by USACE chemist Mike Utley. The data review included an evaluation of sample collection, holding time and summary information for blanks (to assess contamination), sample duplicates (to assess precision), laboratory control samples (to assess accuracy) and matrix spike and surrogate recoveries (to assess matrix effects). Instrument calibration review and raw data verification were not performed. Attachment 2 contains comprehensive data tables and Attachment 3 contains the chains of custody and the ADEC laboratory data review checklists for each Sample Delivery Group (SDG). The review is summarized below:

a. All sample handling criteria were met with the following exceptions:
   i. Two of five total coolers were received at temperatures above the ADEC requirement of 6° C (6.6 and 9.7 degrees). Impacted analytes were DRO and PCBs. Temperature blanks were generated with fresh water the day of submittal to the laboratory, which might impact the elevated temperatures. Also, DRO and PCBs are not significantly impacted by temperature upon receipt, and thus data usability is not significantly impacted. See ADEC work sheet for details.
   ii. Two VOC containers were received with bubbles greater than six millimeters. However, these containers were not used in laboratory analyses, therefore data usability is not impacted.

b. All samples were extracted and analyzed as per the Chains of custody. All quality control frequency criteria were met with the following exceptions:
   i. Lab batch XXX27208 (AK102) and VXX23673 (SW8260B) did not contain the QSM mandated MS/MSD samples. However, both batches contain a LCSD for precision evaluation. Also, a MS/MSD was submitted with this sample group. Therefore, data usability is not impacted by this deviation.

c. All blank results met the required frequency and criteria with the following exceptions:
   i. Method blanks: All criteria were met.
   ii. Trip blanks: All criteria were met.
   iii. Equipment blanks: DRO, manganese, nickel, bromodichloromethane, and chloroform were detected in the two equipment blanks. Trace amounts of these compounds detected in the project samples may be due to carryover and/or source

water contamination. All impacted results are qualified "B". However, all impacted results are well below the project action limits. Data usability is not impacted.

d. All laboratory control sample/laboratory control sample duplicates (LCS/LCSD) were within the specified control limits.

e. All surrogate criteria met recovery limits or exceedances do not impact data usability. Details are presented in the ADEC data quality worksheet (Attachment 3).

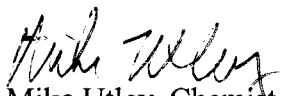
f. All matrix spike/matrix spike duplicate (MS/MSD) results met the laboratory acceptance limits or do not impact data usability with the following exceptions:
   i. DRO failed low in the MS/MSD associated with sample 12AP2983WG and is flagged QL. However, the result is well below the ADEC cleanup level, and data usability is not impacted.

g. All laboratory Limits of Detection (LODs, defined in Ref. 2.b) were below ADEC 18 AAC 75.345 Table C limits except analytes 1,2-dibromoethane and 1,2,3-trichloropropane. As such, the results for these compounds cannot be used to prove the definitive absence of these compounds at the cleanup level. However, these compounds are not contaminants of concern at this site, and the nondetect results are usable to show that these compounds are not a concern. Results for these compounds are flagged "E" to indicate that the cleanup limits were not met.

9. Conclusions and Recommendations.

These results demonstrate that the concentrations of all target analytes are below ADEC cleanup levels. In addition, the concentration of TCE seems to be decreasing from the 2008 levels.

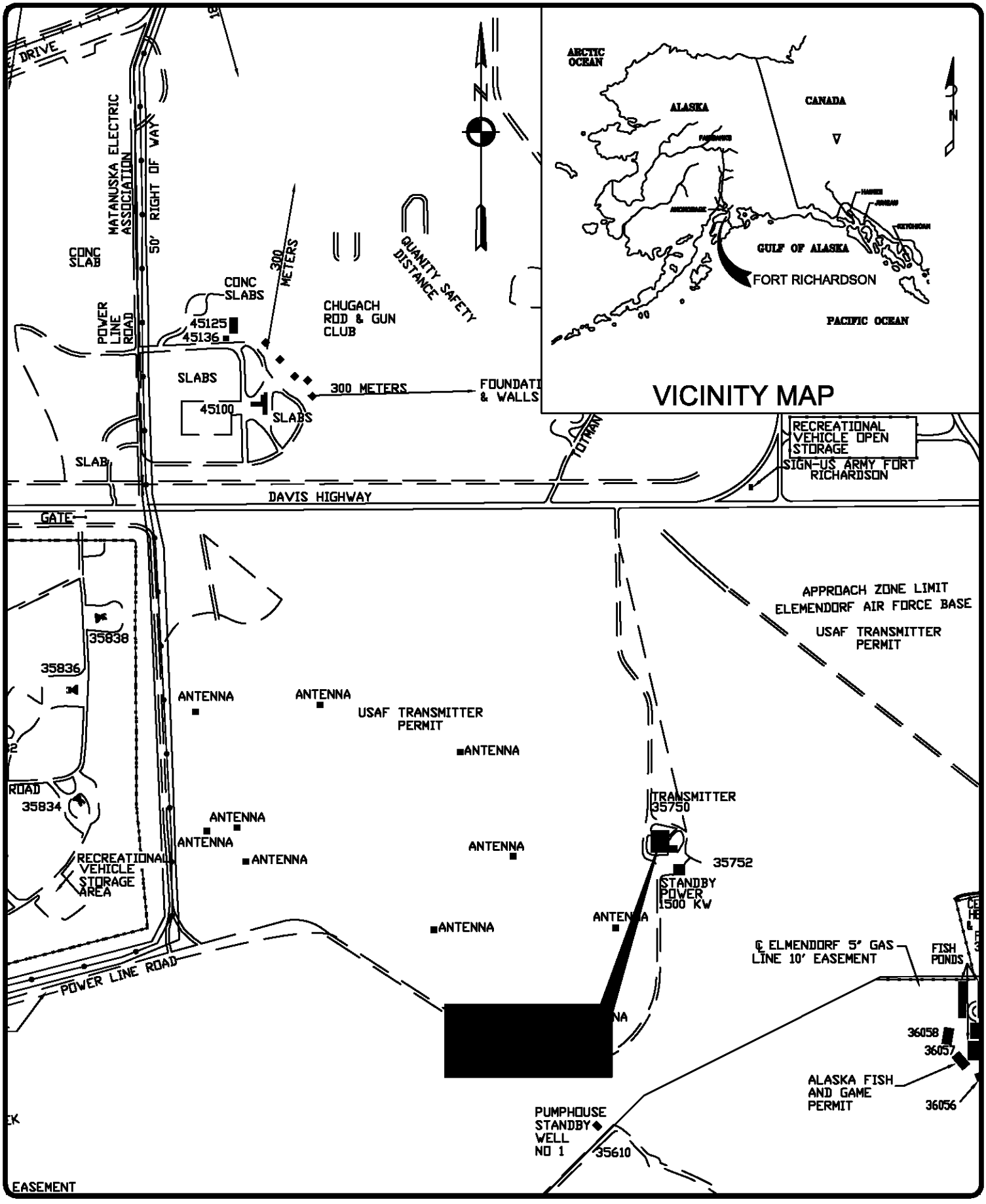
10. Questions and comments should be addressed to Mike Utley (907-753-2691).



Mike Utley, Chemist
Chemistry and Industrial Hygeine Section,
Geotechnical and Engineering Services Branch,
Engineering Division

Attachment 1: Figures and Photographs
Attachment 2: Data Tables
Attachment 3: Project Chains of Custody & ADEC Data Quality Worksheets
Attachment 4: Field Notes
Attachment 5: Purge Logs
Attachment 6: Analytical Data Package (on CD)

Attachment 1
Figures & Photos



ALASKA DISTRICT
CORPS OF ENGINEERS
MATERIALS SECTION

PROJECT LOCATION AND VICINITY MAP
BLDG 35-750

FORT RICHARDSON, ALASKA

SCALE: NTS
DATE: MAY 2008
DRAWN/RVW: MSH
FIGURE 1

JBER Richardson Bldg 35-752 Groundwater Monitoring
Well Locations

Figure 2

Photo 1: AP-3458, looking SE

Photo 2: AP-3232

Photo 3: AP-2983 (note presence of oil can)

Photo 4: Setup on AP-2983, looking NW

Photo 5: AP-3503, looking W; note cock-eyed lid due to inner casing jacking

Photo 6: AP-2982, looking E. Yellow tape is on a plastic cup which is sitting on well cap.

Photo 7: AP-2987, looking S.

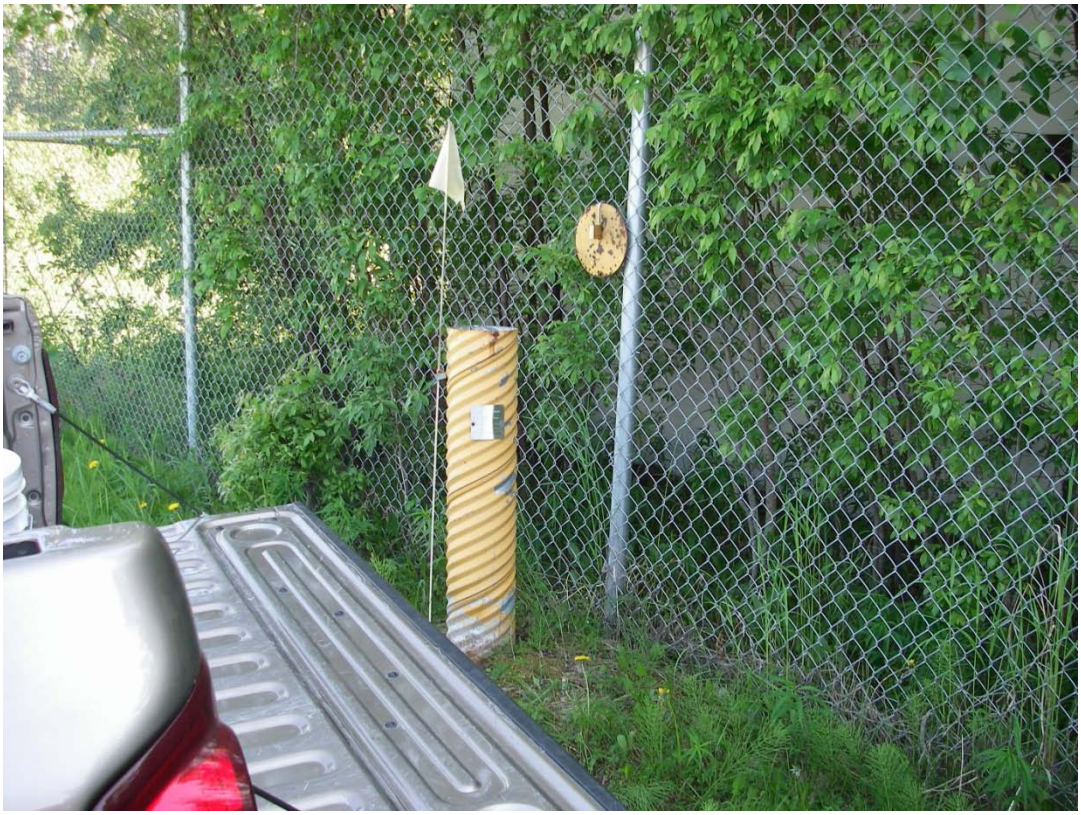


Photo 8: AP-3231, looking SSE

Photo 9: AP-3231 uplift around base of well

Photo 10: Bentonite from AP-3231 on table leg

Photo 11: AP-3503, looking SE, peristaltic pump setup

Attachment 2
Data Tables

Sample Summary
Bldg 35-752 Groundwater Monitoring

LOCID	SAMPID	LABSAMPID	LOGDATE	LOGTIME	MATRIX	LABCODE	SUB	AK101	AK102	SW6020	SW8082A	SW8260B
AP-3983	12AP3983WG	1122522001	21-Jun-12	1750	WG	SGSA	NA	1	1	1	1	1
AP-2982	12AP2982WG	1122522002	22-Jun-12	1231	WG	SGSA	NA	1	1	1	1	1
AP-2987	12AP2987WG	1122522003	22-Jun-12	1445	WG	SGSA	NA	1	1	1	1	1
AP-3232	12AP3232WG	1122522004	21-Jun-12	1605	WG	SGSA	NA	1	1	1	1	1
AP-3458	12AP3458WG	1122522005	21-Jun-12	1136	WG	SGSA	NA	1	1	1	1	1
EB-01	12EB1WG	1122522006	21-Jun-12	1800	WG	SGSA	NA	1	1	1	1	1
AP-3231	12AP3231WG	1122522007	22-Jun-12	1630	WG	SGSA	NA	1	1	1	1	1
AP-3503	12AP3503WG	1122522008	24-Jun-12	1410	WG	SGSA	NA	1	1	1	1	1
EB-02	12EB2WG	1122522009	22-Jun-12	1830	WG	SGSA	NA	1	1	1	1	1
AP-2983	12AP2983WG	1122522010	21-Jun-12	1735	WG	SGSA	NA	1	1	1	1	1
Trip Blank	12TB1WG	1122522013	24-Jun-12	1500	WG	SGSA	NA	1				1

Bldg 35-752 GW Monitoring

				Sample ID	AP-2982	AP-2983	AP-2983	AP-2987	AP-3231
				Location ID, Depth	12AP2982WG	12AP2983WG	12AP3983WG	12AP2987WG	12AP3231WG
				Sample Del Group	1122522	1122522	1122522	1122522	1122522
				Collection Date	6/22/2012	6/21/2012	6/21/2012	6/22/2012	6/22/2012
Method	**ANALYTE**	**UNITS**	**ADEC**				**DUPLICATE**		
AK101	Gasoline Range Organics	MG/L	2.2	0.0554 [0.062] J	ND [0.062]	ND [0.062]	0.399 [0.062]	ND [0.062]	
AK102	Diesel Range Organics	MG/L	1.5	0.337 [0.36] J,B	ND [0.36] QL	ND [0.372]	0.443 [0.376] J,B	ND [0.36]	
SW6020	Aluminum (Lab Filtered)	MG/L	NA	ND [0.3]	ND [0.3]	ND [0.3]	ND [0.3]	ND [0.3]	
SW6020	Arsenic (Lab Filtered)	MG/L	0.01	ND [0.003]	ND [0.003]	ND [0.003]	ND [0.003]	ND [0.003]	
SW6020	Cadmium (Lab Filtered)	MG/L	0.005	ND [0.0012]	ND [0.0012]	ND [0.0012]	ND [0.0012]	ND [0.0012]	
SW6020	Chromium (Lab Filtered)	MG/L	0.1	ND [0.0024]	ND [0.0024]	ND [0.0024]	ND [0.0024]	ND [0.0024]	
SW6020	Iron (Lab Filtered)	MG/L	NA	ND [0.62]	ND [0.62]	ND [0.62]	ND [0.62]	ND [0.62]	
SW6020	Lead (Lab Filtered)	MG/L	0.015	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	
SW6020	Manganese (Lab Filtered)	MG/L	NA	0.551 [0.00124]	0.000847 [0.00124] J,B	0.000751 [0.00124] J,B	0.22 [0.00124]	0.000678 [0.00124] J,B	
SW6020	Nickel (Lab Filtered)	MG/L	0.1	0.00212 [0.00124] B	0.000859 [0.00124] J,B	0.00096 [0.00124] J,B	0.00139 [0.00124] J,B	0.000915 [0.00124] J,B	
SW8082A	PCB-1016 (Aroclor 1016)	MG/L	0.0005	ND [0.000062]	ND [0.000062]	ND [0.000062]	ND [0.000062]	ND [0.0000632]	
SW8082A	PCB-1221 (Aroclor 1221)	MG/L	0.0005	ND [0.0003]	ND [0.0003]	ND [0.0003]	ND [0.0003]	ND [0.000306]	
SW8082A	PCB-1232 (Aroclor 1232)	MG/L	0.0005	ND [0.000062]	ND [0.000062]	ND [0.000062]	ND [0.000062]	ND [0.0000632]	
SW8082A	PCB-1242 (Aroclor 1242)	MG/L	0.0005	ND [0.000062]	ND [0.000062]	ND [0.000062]	ND [0.000062]	ND [0.0000632]	
SW8082A	PCB-1248 (Aroclor 1248)	MG/L	0.0005	ND [0.000062]	ND [0.000062]	ND [0.000062]	ND [0.000062]	ND [0.0000632]	
SW8082A	PCB-1254 (Aroclor 1254)	MG/L	0.0005	ND [0.000062]	ND [0.000062]	ND [0.000062]	ND [0.000062]	ND [0.0000632]	
SW8082A	PCB-1260 (Aroclor 1260)	MG/L	0.0005	ND [0.000062]	ND [0.000062]	ND [0.000062]	ND [0.000062]	ND [0.0000632]	
SW8260B	1,1,1,2-Tetrachloroethane	MG/L	NA	ND [0.0003]	ND [0.0003]	ND [0.0003]	ND [0.0003]	ND [0.0003]	
SW8260B	1,1,1-Trichloroethane	MG/L	0.2	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	
SW8260B	1,1,2,2-Tetrachloroethane	MG/L	0.0043	ND [0.0003]	ND [0.0003]	ND [0.0003]	ND [0.0003]	ND [0.0003]	
SW8260B	1,1,2-Trichloroethane	MG/L	0.005	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	
SW8260B	1,1-Dichloroethane	MG/L	7.3	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	
SW8260B	1,1-Dichloroethene	MG/L	0.007	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	
SW8260B	1,1-Dichloropropene	MG/L	NA	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	
SW8260B	1,2,3-Trichlorobenzene	MG/L	NA	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	
SW8260B	1,2,3-Trichloropropane	MG/L	0.00012	ND [0.00062] E	ND [0.00062] E	ND [0.00062] E	ND [0.00062] E	ND [0.00062] E	
SW8260B	1,2,4-Trichlorobenzene	MG/L	0.07	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	
SW8260B	1,2,4-Trimethylbenzene	MG/L	1.8	0.00643 [0.00062]	ND [0.00062]	ND [0.00062]	0.0511 [0.00062]	ND [0.00062]	
SW8260B	1,2-Dibromo-3-chloropropane	MG/L	NA	ND [0.00124]	ND [0.00124]	ND [0.00124]	ND [0.00124]	ND [0.00124]	
SW8260B	1,2-Dibromoethane	MG/L	0.00005	ND [0.00062] E	ND [0.00062] E	ND [0.00062] E	ND [0.00062] E	ND [0.00062] E	
SW8260B	1,2-Dichlorobenzene	MG/L	0.6	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	
SW8260B	1,2-Dichloroethane	MG/L	0.005	ND [0.0003]	ND [0.0003]	ND [0.0003]	ND [0.0003]	ND [0.0003]	
SW8260B	1,2-Dichloropropane	MG/L	0.005	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	
SW8260B	1,3,5-Trimethylbenzene	MG/L	1.8	ND [0.00062]	ND [0.00062]	ND [0.00062]	0.00215 [0.00062]	ND [0.00062]	
SW8260B	1,3-Dichlorobenzene	MG/L	3.3	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	
SW8260B	1,3-Dichloropropane	MG/L	NA	ND [0.00024]	ND [0.00024]	ND [0.00024]	ND [0.00024]	ND [0.00024]	
SW8260B	1,4-Dichlorobenzene	MG/L	0.075	ND [0.0003]	ND [0.0003]	ND [0.0003]	ND [0.0003]	ND [0.0003]	

ADEC - most stringent of 18 AAC 75 Method 2 Table C Cleanup Levels

[ ] - Laboratory LOD

Solid shade indicates screening value exceedance

Data Flags are defined at the end of the table

Bldg 35-752 GW Monitoring

		Sample ID		AP-2982	AP-2983	AP-2983	AP-2987	AP-3231
		Location ID, Depth		12AP2982WG	12AP2983WG	12AP3983WG	12AP2987WG	12AP3231WG
		Sample Del Group		1122522	1122522	1122522	1122522	1122522
		Collection Date		6/22/2012	6/21/2012	6/21/2012	6/22/2012	6/22/2012
Method	ANALYTE	UNITS	ADEC			DUPLICATE		
SW8260B	2,2-Dichloropropane	MG/L	NA	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	2-Butanone	MG/L	22	ND [0.0062]	ND [0.0062]	ND [0.0062]	ND [0.0062]	ND [0.0062]
SW8260B	2-Chlorotoluene	MG/L	NA	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	2-Hexanone	MG/L	NA	ND [0.0062]	ND [0.0062]	ND [0.0062]	ND [0.0062]	ND [0.0062]
SW8260B	4-Chlorotoluene	MG/L	NA	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	4-Isopropyltoluene	MG/L	NA	0.0006 [0.00062] J	ND [0.00062]	ND [0.00062]	0.00243 [0.00062]	ND [0.00062]
SW8260B	4-Methyl-2-pentanone	MG/L	2.9	ND [0.0062]	ND [0.0062]	ND [0.0062]	ND [0.0062]	ND [0.0062]
SW8260B	Benzene	MG/L	0.005	0.00037 [0.00024] J	ND [0.00024]	ND [0.00024]	0.00223 [0.00024]	ND [0.00024]
SW8260B	Bromobenzene	MG/L	NA	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	Bromochloromethane	MG/L	NA	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	Bromodichloromethane	MG/L	0.014	ND [0.0003]	ND [0.0003]	ND [0.0003]	ND [0.0003]	ND [0.0003]
SW8260B	Bromoform	MG/L	0.11	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	Bromomethane	MG/L	0.051	ND [0.00188]	ND [0.00188]	ND [0.00188]	ND [0.00188]	ND [0.00188]
SW8260B	Carbon disulfide	MG/L	3.7	ND [0.00124]	ND [0.00124]	ND [0.00124]	ND [0.00124]	ND [0.00124]
SW8260B	Carbon tetrachloride	MG/L	0.005	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	Chlorobenzene	MG/L	0.1	ND [0.0003]	ND [0.0003]	ND [0.0003]	ND [0.0003]	ND [0.0003]
SW8260B	Chloroethane	MG/L	0.29	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	Chloroform	MG/L	0.14	ND [0.0006]	0.00042 [0.0006] J,B	0.00048 [0.0006] J,B	ND [0.0006]	0.0004 [0.0006] J,B
SW8260B	Chloromethane	MG/L	0.066	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	cis-1,2-Dichloroethene	MG/L	0.07	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	cis-1,3-Dichloropropene	MG/L	0.0085	ND [0.0003]	ND [0.0003]	ND [0.0003]	ND [0.0003]	ND [0.0003]
SW8260B	Dibromochloromethane	MG/L	0.01	ND [0.0003]	ND [0.0003]	ND [0.0003]	ND [0.0003]	ND [0.0003]
SW8260B	Dibromomethane	MG/L	0.37	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	Dichlorodifluoromethane	MG/L	7.3	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	Ethylbenzene	MG/L	0.7	0.00427 [0.00062]	ND [0.00062]	ND [0.00062]	0.0329 [0.00062]	ND [0.00062]
SW8260B	Hexachlorobutadiene	MG/L	0.0073	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	Isopropylbenzene	MG/L	3.7	0.00164 [0.00062]	ND [0.00062]	ND [0.00062]	0.00488 [0.00062]	ND [0.00062]
SW8260B	Methylene chloride	MG/L	0.005	ND [0.002]	ND [0.002]	ND [0.002]	ND [0.002]	ND [0.002]
SW8260B	Methyl-tert-butyl ether (MTBE)	MG/L	0.47	ND [0.003]	ND [0.003]	ND [0.003]	ND [0.003]	ND [0.003]
SW8260B	Naphthalene	MG/L	0.73	0.00163 [0.00124] J	ND [0.00124]	ND [0.00124]	0.0104 [0.00124]	ND [0.00124]
SW8260B	n-Butylbenzene	MG/L	0.37	0.00071 [0.00062] J	ND [0.00062]	ND [0.00062]	0.0013 [0.00062]	ND [0.00062]
SW8260B	n-Propylbenzene	MG/L	0.37	0.00244 [0.00062]	ND [0.00062]	ND [0.00062]	0.00733 [0.00062]	ND [0.00062]
SW8260B	o-Xylene	MG/L	10	0.00383 [0.00062]	ND [0.00062]	ND [0.00062]	0.385 [0.031]	ND [0.00062]
SW8260B	sec-Butylbenzene	MG/L	0.37	0.00072 [0.00062] J	ND [0.00062]	ND [0.00062]	0.00174 [0.00062]	ND [0.00062]
SW8260B	Styrene	MG/L	0.1	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	tert-Butylbenzene	MG/L	0.37	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	Tetrachloroethene (PCE)	MG/L	0.005	ND [0.00062]	ND [0.00062]	ND [0.00062]	0.00064 [0.00062] J	ND [0.00062]
SW8260B	Toluene	MG/L	1	ND [0.00062]	ND [0.00062]	ND [0.00062]	0.00066 [0.00062] J	ND [0.00062]
SW8260B	trans-1,2-Dichloroethene	MG/L	0.1	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	trans-1,3-Dichloropropene	MG/L	0.0085	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]

ADEC - most stringent of 18 AAC 75 Method 2 Table C Cleanup Levels

[ ] - Laboratory LOD

Solid shade indicates screening value exceedance

Data Flags are defined at the end of the table

Bldg 35-752 GW Monitoring

		Sample ID	AP-2982	AP-2983	AP-2983	AP-2987	AP-3231
		Location ID, Depth	12AP2982WG	12AP2983WG	12AP3983WG	12AP2987WG	12AP3231WG
		Sample Del Group	1122522	1122522	1122522	1122522	1122522
		Collection Date	6/22/2012	6/21/2012	6/21/2012	6/22/2012	6/22/2012
Method	**ANALYTE**	**UNITS**	**ADEC**			**DUPLICATE**	
SW8260B	Trichloroethene (TCE)	MG/L	0.005	0.0007 [0.00062] J	0.00082 [0.00062] J	0.00086 [0.00062] J	0.0007 [0.00062] J	0.00312 [0.00062]
SW8260B	Trichlorofluoromethane	MG/L	11	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	Vinyl chloride	MG/L	0.002	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	Xylene, Isomers m & p	MG/L	10	0.00176 [0.00124] J	ND [0.00124]	ND [0.00124]	0.0452 [0.00124]	ND [0.00124]
SW8260B	Xylenes	MG/L	10	0.00559 [0.00188]	ND [0.00188]	ND [0.00188]	0.121 [0.00188]	ND [0.00188]

ADEC - most stringent of 18 AAC 75 Method 2 Table C Cleanup Levels
[ ] - Laboratory LOD
Solid shade indicates screening value exceedance
Data Flags are defined at the end of the table

Bldg 35-752 GW Monitoring

				Sample ID Location ID, Depth Sample Del Group Collection Date	AP-3232 12AP3232WG 1122522 6/21/2012	AP-3458 12AP3458WG 1122522 6/21/2012	AP-3503 12AP3503WG 1122522 6/24/2012	EB-01 12EB1WG 1122522 6/21/2012	EB-02 12EB2WG 1122522 6/22/2012	Trip Blank 12TB1WG 1122522 6/24/2012
Method	**ANALYTE**	**UNITS**	**ADEC**							
AK101	Gasoline Range Organics	MG/L	2.2		ND [0.062]	0.0311 [0.062] J	ND [0.062]	ND [0.062]	ND [0.062]	ND [0.062]
AK102	Diesel Range Organics	MG/L	1.5		ND [0.36]	0.442 [0.36] J,B	ND [0.36]	0.465 [0.36] J	0.294 [0.36] J	
SW6020	Aluminum (Lab Filtered)	MG/L	NA		ND [0.3]	ND [0.3]	ND [0.3]	ND [0.3]	ND [0.3]	
SW6020	Arsenic (Lab Filtered)	MG/L	0.01		ND [0.003]	ND [0.003]	ND [0.003]	ND [0.003]	ND [0.003]	
SW6020	Cadmium (Lab Filtered)	MG/L	0.005		ND [0.0012]	ND [0.0012]	ND [0.0012]	ND [0.0012]	ND [0.0012]	
SW6020	Chromium (Lab Filtered)	MG/L	0.1		ND [0.0024]	ND [0.0024]	ND [0.0024]	ND [0.0024]	ND [0.0024]	
SW6020	Iron (Lab Filtered)	MG/L	NA		ND [0.62]	0.786 [0.62] J	ND [0.62]	ND [0.62]	ND [0.62]	
SW6020	Lead (Lab Filtered)	MG/L	0.015		ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	
SW6020	Manganese (Lab Filtered)	MG/L	NA		0.0017 [0.00124] J,B	1.49 [0.00124]	0.000665 [0.00124] J,B	0.00179 [0.00124] J	0.00172 [0.00124] J	
SW6020	Nickel (Lab Filtered)	MG/L	0.1		0.000875 [0.00124] J,B	0.00527 [0.00124] B	0.000744 [0.00124] J,B	0.00548 [0.00124]	0.00426 [0.00124]	
SW8082A	PCB-1016 (Aroclor 1016)	MG/L	0.0005		ND [0.000062]	ND [0.000062]	ND [0.000062]	ND [0.0000626]	ND [0.0000632]	
SW8082A	PCB-1221 (Aroclor 1221)	MG/L	0.0005		ND [0.0003]	ND [0.0003]	ND [0.0003]	ND [0.000304]	ND [0.000306]	
SW8082A	PCB-1232 (Aroclor 1232)	MG/L	0.0005		ND [0.000062]	ND [0.000062]	ND [0.000062]	ND [0.0000626]	ND [0.0000632]	
SW8082A	PCB-1242 (Aroclor 1242)	MG/L	0.0005		ND [0.000062]	ND [0.000062]	ND [0.000062]	ND [0.0000626]	ND [0.0000632]	
SW8082A	PCB-1248 (Aroclor 1248)	MG/L	0.0005		ND [0.000062]	ND [0.000062]	ND [0.000062]	ND [0.0000626]	ND [0.0000632]	
SW8082A	PCB-1254 (Aroclor 1254)	MG/L	0.0005		ND [0.000062]	ND [0.000062]	ND [0.000062]	ND [0.0000626]	ND [0.0000632]	
SW8082A	PCB-1260 (Aroclor 1260)	MG/L	0.0005		ND [0.000062]	ND [0.000062]	ND [0.000062]	ND [0.0000626]	ND [0.0000632]	
SW8260B	1,1,1,2-Tetrachloroethane	MG/L	NA		ND [0.0003]	ND [0.0003]	ND [0.0003]	ND [0.0003]	ND [0.0003]	ND [0.0003]
SW8260B	1,1,1-Trichloroethane	MG/L	0.2		ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	1,1,2,2-Tetrachloroethane	MG/L	0.0043		ND [0.0003]	ND [0.0003]	ND [0.0003]	ND [0.0003]	ND [0.0003]	ND [0.0003]
SW8260B	1,1,2-Trichloroethane	MG/L	0.005		ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	1,1-Dichloroethane	MG/L	7.3		ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	1,1-Dichloroethene	MG/L	0.007		ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	1,1-Dichloropropene	MG/L	NA		ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	1,2,3-Trichlorobenzene	MG/L	NA		ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	1,2,3-Trichloropropane	MG/L	0.00012		ND [0.00062] E	ND [0.00062] E	ND [0.00062] E	ND [0.00062] E	ND [0.00062] E	ND [0.00062] E
SW8260B	1,2,4-Trichlorobenzene	MG/L	0.07		ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	1,2,4-Trimethylbenzene	MG/L	1.8		ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	1,2-Dibromo-3-chloropropane	MG/L	NA		ND [0.00124]	ND [0.00124]	ND [0.00124]	ND [0.00124]	ND [0.00124]	ND [0.00124]
SW8260B	1,2-Dibromoethane	MG/L	0.00005		ND [0.00062] E	ND [0.00062] E	ND [0.00062] E	ND [0.00062] E	ND [0.00062] E	ND [0.00062] E
SW8260B	1,2-Dichlorobenzene	MG/L	0.6		ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	1,2-Dichloroethane	MG/L	0.005		ND [0.0003]	ND [0.0003]	ND [0.0003]	ND [0.0003]	ND [0.0003]	ND [0.0003]
SW8260B	1,2-Dichloropropane	MG/L	0.005		ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	1,3,5-Trimethylbenzene	MG/L	1.8		ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	1,3-Dichlorobenzene	MG/L	3.3		ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	1,3-Dichloropropane	MG/L	NA		ND [0.00024]	ND [0.00024]	ND [0.00024]	ND [0.00024]	ND [0.00024]	ND [0.00024]
SW8260B	1,4-Dichlorobenzene	MG/L	0.075		ND [0.0003]	ND [0.0003]	ND [0.0003]	ND [0.0003]	ND [0.0003]	ND [0.0003]

ADEC - most stringent of 18 AAC 75 Method 2 Table C Cleanup Levels

[ ] - Laboratory LOD

Solid shade indicates screening value exceedance

Data Flags are defined at the end of the table

Bldg 35-752 GW Monitoring

		Sample ID Location ID, Depth Sample Del Group Collection Date		AP-3232 12AP3232WG 1122522 6/21/2012	AP-3458 12AP3458WG 1122522 6/21/2012	AP-3503 12AP3503WG 1122522 6/24/2012	EB-01 12EB1WG 1122522 6/21/2012	EB-02 12EB2WG 1122522 6/22/2012	Trip Blank 12TB1WG 1122522 6/24/2012
Method	**ANALYTE**	**UNITS**	**ADEC**						
SW8260B	2,2-Dichloropropane	MG/L	NA	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	2-Butanone	MG/L	22	ND [0.0062]	ND [0.0062]	ND [0.0062]	ND [0.0062]	ND [0.0062]	ND [0.0062]
SW8260B	2-Chlorotoluene	MG/L	NA	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	2-Hexanone	MG/L	NA	ND [0.0062]	ND [0.0062]	ND [0.0062]	ND [0.0062]	ND [0.0062]	ND [0.0062]
SW8260B	4-Chlorotoluene	MG/L	NA	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	4-Isopropyltoluene	MG/L	NA	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	4-Methyl-2-pentanone	MG/L	2.9	ND [0.0062]	ND [0.0062]	ND [0.0062]	ND [0.0062]	ND [0.0062]	ND [0.0062]
SW8260B	Benzene	MG/L	0.005	ND [0.00024]	ND [0.00024]	ND [0.00024]	ND [0.00024]	ND [0.00024]	ND [0.00024]
SW8260B	Bromobenzene	MG/L	NA	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	Bromochloromethane	MG/L	NA	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	Bromodichloromethane	MG/L	0.014	ND [0.0003]	ND [0.0003]	ND [0.0003]	0.00046 [0.0003] J	0.00049 [0.0003] J	ND [0.0003]
SW8260B	Bromoform	MG/L	0.11	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	Bromomethane	MG/L	0.051	ND [0.00188]	ND [0.00188]	ND [0.00188]	ND [0.00188]	ND [0.00188]	ND [0.00188]
SW8260B	Carbon disulfide	MG/L	3.7	ND [0.00124]	ND [0.00124]	ND [0.00124]	ND [0.00124]	ND [0.00124]	ND [0.00124]
SW8260B	Carbon tetrachloride	MG/L	0.005	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	Chlorobenzene	MG/L	0.1	ND [0.0003]	ND [0.0003]	ND [0.0003]	ND [0.0003]	ND [0.0003]	ND [0.0003]
SW8260B	Chloroethane	MG/L	0.29	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	Chloroform	MG/L	0.14	0.00032 [0.0006] J,B	ND [0.0006]	ND [0.0006]	0.0166 [0.0006]	0.0197 [0.0006]	ND [0.0006]
SW8260B	Chloromethane	MG/L	0.066	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	cis-1,2-Dichloroethene	MG/L	0.07	ND [0.00062]	0.00502 [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	cis-1,3-Dichloropropene	MG/L	0.0085	ND [0.0003]	ND [0.0003]	ND [0.0003]	ND [0.0003]	ND [0.0003]	ND [0.0003]
SW8260B	Dibromochloromethane	MG/L	0.01	ND [0.0003]	ND [0.0003]	ND [0.0003]	ND [0.0003]	ND [0.0003]	ND [0.0003]
SW8260B	Dibromomethane	MG/L	0.37	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	Dichlorodifluoromethane	MG/L	7.3	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	Ethylbenzene	MG/L	0.7	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	Hexachlorobutadiene	MG/L	0.0073	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	Isopropylbenzene	MG/L	3.7	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	Methylene chloride	MG/L	0.005	ND [0.002]	ND [0.002]	ND [0.002]	ND [0.002]	ND [0.002]	ND [0.002]
SW8260B	Methyl-tert-butyl ether (MTBE)	MG/L	0.47	ND [0.003]	ND [0.003]	ND [0.003]	ND [0.003]	ND [0.003]	ND [0.003]
SW8260B	Naphthalene	MG/L	0.73	ND [0.00124]	ND [0.00124]	ND [0.00124]	ND [0.00124]	ND [0.00124]	ND [0.00124]
SW8260B	n-Butylbenzene	MG/L	0.37	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	n-Propylbenzene	MG/L	0.37	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	o-Xylene	MG/L	10	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	sec-Butylbenzene	MG/L	0.37	ND [0.00062]	0.00085 [0.00062] J	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	Styrene	MG/L	0.1	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	tert-Butylbenzene	MG/L	0.37	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	Tetrachloroethene (PCE)	MG/L	0.005	ND [0.00062]	ND [0.00062]	0.00055 [0.00062] J	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	Toluene	MG/L	1	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	trans-1,2-Dichloroethene	MG/L	0.1	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	trans-1,3-Dichloropropene	MG/L	0.0085	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]

ADEC - most stringent of 18 AAC 75 Method 2 Table C Cleanup Levels

[ ] - Laboratory LOD

Solid shade indicates screening value exceedance

Data Flags are defined at the end of the table

Bldg 35-752 GW Monitoring

		Sample ID	AP-3232	AP-3458	AP-3503	EB-01	EB-02	Trip Blank
		Location ID, Depth	12AP3232WG	12AP3458WG	12AP3503WG	12EB1WG	12EB2WG	12TB1WG
		Sample Del Group	1122522	1122522	1122522	1122522	1122522	1122522
		Collection Date	6/21/2012	6/21/2012	6/24/2012	6/21/2012	6/22/2012	6/24/2012
Method	**ANALYTE**	**UNITS**	**ADEC**					
SW8260B	Trichloroethene (TCE)	MG/L	0.005	0.00046 [0.00062] J	0.00076 [0.00062] J	0.00097 [0.00062] J	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	Trichlorofluoromethane	MG/L	11	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	Vinyl chloride	MG/L	0.002	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]	ND [0.00062]
SW8260B	Xylene, Isomers m & p	MG/L	10	ND [0.00124]	ND [0.00124]	ND [0.00124]	ND [0.00124]	ND [0.00124]	ND [0.00124]
SW8260B	Xylenes	MG/L	10	ND [0.00188]	ND [0.00188]	ND [0.00188]	ND [0.00188]	ND [0.00188]	ND [0.00188]

ADEC - most stringent of 18 AAC 75 Method 2 Table C Cleanup Levels
[ ] - Laboratory LOD
Solid shade indicates screening value exceedance
Data Flags are defined at the end of the table

Data Flag Explanations

ND - Analyte is not detected; [ ] - Laboratory Limit of Detection (LOD)

Qualifier	Definition
J	Analyte result is considered an estimated value because the level is below the laboratory LOQ but above the DL
B	Analyte result is considered a high estimated value due to contamination present in the method blank.
QL	Analyte result is considered an estimated value biased low due to a quality control failure
E	Laboratory Level of Detection exceeds the applicable cleanup level. Result cannot be used to prove definitive absence of analyte.
R	Analyte result is rejected - result is not usable.

Flags may be combined when more than one quality deficiency exists

Attachment 3
Project Chains of Custody &
ADEC Data Quality Worksheets

Chain-of-Custody Report

Collection Organization: CPOA **Chain of Custody:** FTR002 **Cooler ID:** BLUE1 **Admin Number:** 12-073

Project Name: 35752 GWM **Laboratory:** SGS **Bill To:** CPOA **Report To:** CPOA

Location ID	Sample ID	Collection Date	Time	Matrix	Method(s)	Preservative	Jars	Type	QC	Sampler	TAT
AP-2983	12AP2983WG	6/21/2012	1735	WG	AK102	4C_HCL	4	1 L AMB	MS/D	MU/AS	7DAYS
AP-2983	12AP2983WG	6/21/2012	1735	WG	SW8082	4C	4	1 L AMB	MS/D	MU/AS	7DAYS
AP-3983	12AP3983WG	6/21/2012	1750	WG	AK102	4C_HCL	2	1 L AMB		MU/AS	7DAYS
AP-3983	12AP3983WG	6/21/2012	1750	WG	SW8082	4C	2	1 L AMB		MU/AS	7DAYS

1122522

Comments:

Special Instructions

Relinquished By: Mike Kelly **Date/Time:** 6/25/12 0930 **Relinquished By:** _____ **Date/Time:** _____

Received By: _____ **Date/Time:** _____ **Received By:** _____ **Date/Time:** 6/25/12 1117

Printed 6/25/2012 9:30:3

6.0 202

1122522

(5)

Chain-of-Custody Report

Collection Organization: CPOA **Chain of Custody:** FTR001 **Cooler ID:** RED1 **Admin Number:** 12-073

Project Name: 35752 GWM **Laboratory:** SGS **Bill To:** CPOA **Report To:** CPOA

Location ID	Sample ID	Collection Date	Time	Matrix	Method(s)	Preservative	Jars	Type	QC	Sampler	TAT
AP-3231	12AP3231WG (2) A-B	6/22/2012	1630	WG	AK102	4C_HCL	2	1 L AMB		MU	7DAYS
AP-3231	12AP3231WG (7) C-D	6/22/2012	1630	WG	SW8082	4C	2	1 L AMB		MU	7DAYS
AP-3503	12AP3503WG (8) A-B	6/24/2012	1410	WG	AK102	4C_HCL	2	1 L AMB		MU	7DAYS
AP-3503	12AP3503WG (8) C-D	6/24/2012	1410	WG	SW8082	4C	2	1 L AMB		MU	7DAYS
EB-02	12EB2WG (9) A-B	6/22/2012	1830	WG	AK102	4C_HCL	2	1 L AMB		MU	7DAYS
EB-02	12EB2WG (9) C-D	6/22/2012	1830	WG	SW8082	4C	2	1 L AMB		MU	7DAYS

Comments:

Special Instructions

Relinquished By: Mike Tilley **Date/Time:** 6/25/12 0830 **Relinquished By:** _____ **Date/Time:** _____

Received By: _____ **Date/Time:** _____ **Received By:** _____ **Date/Time:** 6/25/12 1177

Printed 6/25/2012 8:25:5

6.6 #202

Chain-of-Custody Report

Collection Organization: CPOA **Chain of Custody:** FTR003 **Cooler ID:** RED2 **Admin Number:** 12-073

Project Name: 35752 GWM **Laboratory:** SGS **Bill To:** CPOA **Report To:** CPOA

Location ID	Sample ID	Collection Date	Time	Matrix	Method(s)	Preservative	Jars	Type	QC	Sampler	TAT
AP-2982	12AP2982WG (2) C-B	6/22/2012	1231	WG	SW8082	4C	2	1 L AMB		MU	7DAYS
AP-2987	12AP2987WG (3) C-D	6/22/2012	1445	WG	SW8082	4C	2	1 L AMB		MU	7DAYS
AP-3232	12AP3232WG (4) C-A	6/21/2012	1605	WG	SW8082	4C	2	1 L AMB		MU/AS	7DAYS
AP-3458	12AP3458WG (5) C-D	6/21/2012	1136	WG	SW8082	4C	2	1 L AMB		MU/AS	7DAYS
EB-01	12EB1WG (6) C-D	6/21/2012	1800	WG	SW8082	4C	2	1 L AMB		MU/AS	7DAYS

1122522

Comments:

Special Instructions

Relinquished By: Mike Wiley **Date/Time:** 6/25/12 1000 **Relinquished By:** _____ **Date/Time:** _____

Received By: _____ **Date/Time:** _____ **Received By:** _____ **Date/Time:** 6/25/12 11:17

Printed 6/25/2012 10:09:

2.8.13

(3)

Chain-of-Custody Report

Collection Organization: CPOA **Chain of Custody:** FTR004 **Cooler ID:** BLUE2 **Admin Number:** 12-073

Project Name: 35752 GWM **Laboratory:** SGS **Bill To:** CPOA **Report To:** CPOA

Location ID	Sample ID	Collection Date	Time	Matrix	Method(s)	Preservative	Jars	Type	QC	Sampler	TAT
AP-2982	12AP2982WG (2) A+B	6/22/2012	1231	WG	AK102	4C_HCL	2	1 L AMB		MU	7DAYS
AP-2987	12AP2987WG (3) A+B	6/22/2012	1445	WG	AK102	4C_HCL	2	1 L AMB		MU	7DAYS
AP-3232	12AP3232WG (4) A+B	6/21/2012	1605	WG	AK102	4C_HCL	2	1 L AMB		MU/AS	7DAYS
AP-3458	12AP3458WG (5) A+B	6/21/2012	1136	WG	AK102	4C_HCL	2	1 L AMB		MU/AS	7DAYS
EB-01	12EB1WG (6) A+B	6/21/2012	1800	WG	AK102	4C_HCL	2	1 L AMB		MU/AS	7DAYS

1122522

Comments:

Special Instructions

Relinquished By: Mike Ulle **Date/Time:** 6/25/12 1030 **Relinquished By:** _____ **Date/Time:** _____

Received By: _____ **Date/Time:** _____ **Received By:** _____ **Date/Time:** 6/25/12 1117

Printed 6/25/2012 10:33:

9.7 # 203

1122522

Chain-of-Custody Report

Collection Organization: CPOA **Chain of Custody:** FTR005 **Cooler ID:** RED5 **Admin Number:** 12-073

Project Name: 35752 GWM **Laboratory:** SGS **Bill To:** CPOA **Report To:** CPOA

Location ID	Sample ID	Collection Date	Time	Matrix	Method(s)	Preservative	Jars	Type	QC	Sampler	TAT
AP-2982	12AP2982WG (2) E-J	6/22/2012	1231	WG	AK101/8260B	4C_HCL	6	40ML VOA		MU	7DAYS
AP-2982	12AP2982WG (2) K,L	6/22/2012	1231	WG	SW6020	4C_NITRIC	1	500ML PL		MU	7DAYS
AP-2983	12AP2983WG (10)(11)(12) E-J	6/21/2012	1735	WG	AK101/8260B	4C_HCL	18	40ML VOA	MS/D	MU/AS	7DAYS
AP-2983	12AP2983WG (10)(11)(12) K-L	6/21/2012	1735	WG	SW6020	4C_NITRIC	1	500ML PL	MS/D	MU/AS	7DAYS
AP-2987	12AP2987WG (3) E-J	6/22/2012	1445	WG	AK101/8260B	4C_HCL	6	40ML VOA		MU	7DAYS
AP-2987	12AP2987WG (3) K,L	6/22/2012	1445	WG	SW6020	4C_NITRIC	1	500ML PL		MU	7DAYS
AP-3231	12AP3231WG (7) E-J	6/22/2012	1630	WG	AK101/8260B	4C_HCL	6	40ML VOA		MU	7DAYS
AP-3231	12AP3231WG (7) K,L	6/22/2012	1630	WG	SW6020	4C_NITRIC	1	500ML PL		MU	7DAYS
AP-3232	12AP3232WG (4) E-J	6/21/2012	1605	WG	AK101/8260B	4C_HCL	6	40ML VOA		MU/AS	7DAYS
AP-3232	12AP3232WG (4) K,L	6/21/2012	1605	WG	SW6020	4C_NITRIC	1	500ML PL		MU/AS	7DAYS
AP-3458	12AP3458WG (5) E-J	6/21/2012	1136	WG	AK101/8260B	4C_HCL	6	40ML VOA		MU/AS	7DAYS
AP-3458	12AP3458WG (5) K-L	6/21/2012	1136	WG	SW6020	4C_NITRIC	1	500ML PL		MU/AS	7DAYS
AP-3503	12AP3503WG (8) E-J	6/24/2012	1410	WG	AK101/8260B	4C_HCL	6	40ML VOA		MU	7DAYS
AP-3503	12AP3503WG (8) K-L	6/24/2012	1410	WG	SW6020	4C_NITRIC	1	500ML PL		MU	7DAYS
AP-3983	12AP3983WG (1) E-J	6/21/2012	1750	WG	AK101/8260B	4C_HCL	6	40ML VOA		MU/AS	7DAYS
AP-3983	12AP3983WG (1) K-L	6/21/2012	1750	WG	SW6020	4C_NITRIC	1	500ML PL		MU/AS	7DAYS
EB-01	12EB1WG (6) E-J	6/21/2012	1800	WG	AK101/8260B	4C_HCL	6	40ML VOA		MU/AS	7DAYS
EB-01	12EB1WG (6) K-L	6/21/2012	1800	WG	SW6020	4C_NITRIC	1	500ML PL		MU/AS	7DAYS
EB-02	12EB2WG (9) E-J	6/22/2012	1830	WG	AK101/8260B	4C_HCL	6	40ML VOA		MU	7DAYS
EB-02	12EB2WG (9) K-L	6/22/2012	1830	WG	SW6020	4C_NITRIC	1	500ML PL		MU	7DAYS
TRIP BLANK	12TB1WG (13) A-F	6/24/2012	1500	WG	AK101/8260B	4C_HCL	6	40ML VOA		MU	7DAYS

Comments:

Special Instructions SW6020 - AL, AS, CD, CR, FE, MN, NI, PB

Relinquished By: Mike Kelly **Date/Time:** 6/25/12 1040 **Relinquished By:** _____ **Date/Time:** _____

Received By: _____ **Date/Time:** _____ **Received By:** [signature] **Date/Time:** 11:17 6/25/12

6.0 13

Printed 6/25/2012 10:36:

SGS

1122522

SAMPLE RECEIPT FORM

Review Criteria:	Condition:	Comments/Action Taken:
Were **custody seals** intact? Note # & location, if applicable. COC accompanied samples?	Yes No (N/A) (Yes) No N/A	
Temperature blank compliant* (i.e., 0-6°C after correction factor)? * *Note: Exemption permitted for chilled samples collected less than 8 hours ago.* Cooler ID: BLUE 1 @ 6.0 w/ Therm.ID: 202 Cooler ID: Red 5 @ 6.0 w/ Therm.ID: 13 Cooler ID: Blue 2 @ 9.7 w/ Therm.ID: 203 Cooler ID: Red 2 @ 2.8 w/ Therm.ID: 13 Cooler ID: Red 1 @ 4.6 w/ Therm.ID: 202 *Note: If non-compliant, use form FS-0029 to document affected samples/analyses.* If samples are received without a temperature blank, the "cooler temperature" will be documented in lieu of the temperature blank & "**COOLER TEMP**" will be noted to the right. In cases where neither a temp blank nor cooler temp can be obtained, note "ambient" or "chilled." **If temperature(s) <0°C, were all sample containers ice free?**	Yes (No) N/A Yes No (N/A)	Client OK w/ temp
Delivery method (specify all that apply): Client USPS Alert Courier Road Runner AK Air Lynden Carlile ERA PenAir FedEx UPS NAC Other: → *For WO# with airbills, was the WO# & airbill info recorded in the Front Counter eLog?*	Note ABN/ tracking # See Attached or N/A Yes No (N/A)	
→ For samples received with payment, note amount ($) and cash / check / CC **(circle one)** or note: → For samples **received in FBKS**, ANCH staff will verify all criteria are reviewed.		(N/A) SRF Initiated by: AL N/A
Were samples received within hold time? *Note: Refer to form F-083 "Sample Guide" for hold time information.* Do samples **match COC*** (i.e., sample IDs, dates/times collected)? ** Note: Exemption permitted if times differ <1hr; in which case, use times on COC.* Were analyses requested unambiguous?	(Yes) No N/A (Yes) No N/A (Yes) No N/A	5B received cracked replaced jar.
Were samples in **good condition** (no leaks/cracks/breakage)? Packing material used (specify all that apply): Bubble Wrap Separate plastic bags Vermiculite Other:	Yes (No) N/A	samples 6A, 12E have
Were all VOA vials **free of headspace** (i.e., bubbles ≤6 mm)? Were all soil VOAs **field extracted** with MeOH+BFB?	Yes (No) N/A Yes No N/A	bubbles > 6mm
Were **proper containers** (type/mass/volume/preservative*) used? ** Note: Exemption permitted for waters to be analyzed for metals.* Were **Trip Blanks** (i.e., VOAs, LL-Hg) in cooler with samples?	Yes (No) N/A (Yes) No N/A	Limited volume
For **special handling** (e.g., "MI" or foreign soils, lab filter, limited volume, Ref Lab), were bottles/paperwork flagged (e.g., sticker)?	Yes No (N/A)	added 4mm of HCl
For preserved waters (other than VOA vials, LL-Mercury or microbiological analyses), was **pH verified and compliant**? If pH was adjusted, were bottles flagged (i.e., stickers)?	(Yes) No N/A (Yes) No N/A	RushDue OK 7/21/17 AL
For **RUSH/SHORT Hold Time** or **site-specific QC** (e.g., BMS/BMSD/BDUP) samples, were the COC & bottles flagged (e.g., stickers) accordingly? For RUSH/SHORT HT, was email sent?	(Yes) No N/A	AL
For any question answered "No," has the PM been notified and the problem resolved (or paperwork put in their bin)?	(Yes) No N/A	SRF Completed by: PM = S. Crupi N/A
Was **PEER REVIEW** of ***sample numbering/labeling completed?***	Yes No (N/A)	Peer Reviewed by: (N/A)
Additional notes (if applicable):		

Note to Client: *Any "no" circled above indicates non-compliance with standard procedures and may impact data quality.*

Laboratory Data Review Checklist

Completed by: Mike Utley

Title: Chemist Date: 8/8/2012

CS Report Name: Bldg 35-752 Groundwater Monitoring Report Date: 8/8/2012

Consultant Firm: US Army Corps of Engineers

Laboratory Name: SGS Laboratory Report Number: 1122522

ADEC File Number: 2102.38.005 ADEC RecKey Number:

1. Laboratory
   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?
      ☒Yes ☐No ☐NA (Please explain.) Comments:

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?
      ☐Yes ☐ No ☒NA (Please explain.) Comments:

      Samples were not transferred.

2. Chain of Custody (COC)
   a. COC information completed, signed, and dated (including released/received by)?
      ☒Yes ☐ No ☐NA (Please explain.) Comments:

   b. Correct analyses requested?
      ☒Yes ☐ No ☐NA (Please explain.) Comments:

3. Laboratory Sample Receipt Documentation
   a. Sample/cooler temperature documented and within range at receipt (4° ± 2° C)?
      ☐Yes ☒No ☐NA (Please explain.) Comments:

      Cooler Red1 arrived at the lab with a temperature of 6.6° C. Cooler Blue2 arrived at the lab with a temperature of 9.7° C.

b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

☒Yes ☐No ☐NA (Please explain.) Comments:

c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

☒Yes ☐No ☐NA (Please explain.) Comments:

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

☒Yes ☐No ☐NA (Please explain.) Comments:

Sample jars 6B and 12E are listed as having bubbles greater than 6 mm.

e. Data quality or usability affected? (Please explain.)

Comments:

Samples in Coolers Red1 and Blue2 (temperature of receipt 6.6° C and 9.7° C, respectively) were analyzed for DRO and/or PCB. All samples were kept in a temperature controlled environment until processing prior to delivery to the lab. The elevated temperatures are most likely due to temp blanks that were not in equilibrium with the project samples. Because of this and that the impacted analytes are not subject to significant losses due to elevated temperatures, results are not further qualified, and usability is not impacted.

Sample jars -006B and -012E were reported to have bubbles greater than six mm, potentially impacting any volatile sample results. However, jar 6B was not used in the analysis, so the results are not affected. Sample -012 is a MSD; since the lab does not report which jar is used when reporting MS/MSD results, it is not possible to assess impact. However, the primary results for all samples are not impacted. Further qualification is not required.

4. Case Narrative

a. Present and understandable?

☒Yes ☐No ☐NA (Please explain.) Comments:

b. Discrepancies, errors or QC failures identified by the lab?

☒Yes ☐No ☐NA (Please explain.) Comments:

c. Were all corrective actions documented?

☒Yes ☐No ☐NA (Please explain.) Comments:

d. What is the effect on data quality/usability according to the case narrative?

Comments:

Data is usable as reported and flagged

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

☒Yes ☐No ☐NA (Please explain.) Comments:

b. All applicable holding times met?

☒Yes ☐No ☐NA (Please explain.) Comments:

c. All soils reported on a dry weight basis?

☐Yes ☐No ☒NA (Please explain.) Comments:

Only water samples are reported in this SDG.

d. Are the reported PQLs less than the Cleanup Level or the minimum required detection level for the project?

☐Yes ☒No ☐NA (Please explain.) Comments:

Analytes PCB-1221, dibromoethane, and 1,2,3-trichloropropane have LOQs (PQLs) that are above ADEC Table C values. Also, dibromoethane and 1,2,3-trichloropropane have LODs (MDLs) that are also above ADEC Table C values.

e. Data quality or usability affected?

Comments:

Results for dibromoethane and 1,2,3-trichloropropane cannot be used to prove that these analytes are not present at the site at the cleanup limits. However, these compounds are not contaminants of concern at this site, therefore the results are usable as noted.

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

☒Yes ☐No ☐NA (Please explain.) Comments:

ii. All method blank results less than PQL?

☒Yes ☐No ☐NA (Please explain.) Comments:

iii. If above PQL, what samples are affected?

Comments:

Not applicable.

iv. Do the affected sample(s) have data flags and if so, are the data flags clearly defined?

☐Yes ☐No ☒NA (Please explain.) Comments:

No flagging is necessary.

v. Data quality or usability affected? (Please explain.)

Comments:

Not applicable.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

☒Yes ☐No ☐NA (Please explain.) Comments:

LCS/LCSD: All required samples are present. MS/MSD: Lab batch XXX27208 (AK102) and VXX23673 (SW8260B) do not contain the QSM mandated MS/MSD samples.

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

☒Yes ☐No ☐NA (Please explain.) Comments:

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

☐Yes ☒No ☐NA (Please explain.) Comments:

LCS/LCSD: All analytes met the required recoveries. MS/MSD: DRO failed low in 12AP2983WG and 1,1-dichloroethylene failed high in 12AP2983WG.

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

☐Yes ☒No ☐NA (Please explain.) Comments:

LCS/LCSD: Analyte 2-hexanone exceeded RPD limits of 30% at 32.1%. MS/MSD: Analyte PCB-1016 exceeded RPD limits of 30% at 51.2%.

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

DRO in 12AP2983WG is flagged "QL" based on the MS/MSD failure. 1,1-dichloroethylene was not detected in the primary sample, therefore no further qualification is required.
Because 2-hexanone and PCB-1016 were not detected in the project samples, further qualifications are not required due to these RPD exceedances.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☒Yes ☐No ☐NA (Please explain.) Comments:

DRO in 12AP2983WG is flagged "QL" based on the MS/MSD failure.

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

DRO: Because the DRO result is well below the ADEC Table C cleanup limit, data usability is not impacted.

c. Surrogates – Organics Only

i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples?

☒Yes ☐No ☐NA (Please explain.) Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

☐Yes ☒No ☐NA (Please explain.) Comments:

Sample 12AP3232WG surrogate for AK102 (DRO) failed high.

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

☒Yes ☐No ☐NA (Please explain.) Comments:

iv. Data quality or usability affected? (Use the comment box to explain.)

Comments:

Since DRO in sample 12AP3232WG is nondetect, data usability is not impacted. Further qualification is not required.

d. Trip blank – Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)
☒Yes ☐No ☐NA (Please explain.) Comments:

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)
☒Yes ☐No ☐NA (Please explain.) Comments:

iii. All results less than PQL?
☒Yes ☐No ☐NA (Please explain.) Comments:

iv. If above PQL, what samples are affected?
Comments:

Not applicable.

v. Data quality or usability affected? (Please explain.)
Comments:

Not applicable.

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?
☒Yes ☐No ☐NA (Please explain.) Comments:

ii. Submitted blind to lab?

☒Yes ☐No ☐NA (Please explain.) Comments:

iii. Precision – All relative percent differences (RPD) less than specified DQOs? (Recommended: 30% water, 50% soil)

RPD (%) = Absolute value of: $\frac{(R_1-R_2)}{((R_1+R_2)/2)} \times 100$

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

☒Yes ☐No ☐NA (Please explain.) Comments:

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

Not applicable

f. Decontamination or Equipment Blank (If not used explain why).

☒Yes ☐No ☐NA (Please explain.) Comments:

i. All results less than PQL?

☐Yes ☒No ☐NA (Please explain.) Comments:

DRO, manganese, nickel, bromodichloromethane, and chloroform were detected in the two equipment blanks.

ii. If above PQL, what samples are affected?

Comments:

Trace amounts of these compounds detected in the project samples may be due to carryover and/or source water contamination. All impacted results are qualified "B".

iii. Data quality or usability affected? (Please explain.)

Comments:

All impacted results are well below the project action limits. Data usability is not impacted.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)
   a. Defined and appropriate?

☒Yes ☐No ☐NA (Please explain.) Comments:

Attachment 4
Field Notes

"Rite in the Rain"®

ALL-WEATHER

FIELD

No. 351

Bldg 35-752

Groundwater

Sampling

6/20

Bldg 35-752 GW

1300 P/U glassware + supplies

1400 @ Fort Rich -

Recon well locations

2982 - flush mount, but construction log says 2.8' stickup.

- Mentioned in 5yr Review as WP as RAS that it was changed ?

1530 back @ office.

done for day

6/21 Bldg 35-752 56 overcast

0800 @ office, prep for day

0930 Leave for site

0945 Nabhy, A/F & intern to sample Welsch @ bldg.

1000 Start on AP-3458
See GW Form
YSI CONDUCTIVITY 1125
TRUE VALUE 1173
PH7 6.98
TRUE VALUE 7.0

1136 Sample AP-3458 (not sampled in 2008)

→ 4 ~~3~~ pictures - (#1 - #4)

1230 done - lunch

1300 Meet Emerald @ JBER-001
p/u two drums.

1330 Back to site -

1330 - Start on AP-3232
(not sampled in 2008)

→ 1 Picture
Int Probe not working.
TO AFCES for 9V battery
→ None
TO office
p/u another interface & probe

1440 Back @ site - AP3232

~~1640~~ 1605 Samples taken

→ 3 pictures (#5 - #7)

1645 Start on AP2983

Pictures - #8 - #12
Note - oil can + stained soil on ground.

1730 - Sampled AP2983 1745 collect EB #1

1800 - Head back to office unpack, prep for next day.

~~1900~~ 1915 done for day

6/22 35-752 GWM. 63 F Clear

0800 @ office for Prep Time sheet

1000 @ Site – AP-3503

→ Can't put well (pump) down hole, ~~see~~ gets stuck ~ 4.2' BTOC.

=> Use Peri pump on this well.

TTT has one available Sample well tomorrow.

1100 AP-2982

* Flush mount → NOT as constructed. Appears valid. (per well const. diagram)

YSI Calibration

Cond - 1206 TV 1251

pH 7 - 7.33 → 7.28/7.20 7.0

→ Recalibrate pH ~~don't know~~ (MS)

6/22 35-752 GWM 65 F Clear

1320 - Lunch

1345 - @ AP-2987

Funny looking cap on well, but otherwise in good shape.

1520 Done -

1520 - @ AP3231

1700 Done { Collect EB2 - EQUIP BLK #2

1715 Head to office Unload Pump for Saturday

(Peri pump @ AP3503)

=> no Equipment Blank

→ while cleaning up - Noticed base of well uplifted ~ 8-12". Originally thought it was a ground feature, but Table 6a had bentonite on it. See Pics.

6/22 Bldg 35-752 GWM

~~1545~~ 1745 Back @ office
Prep for Saturday
Put Samples away.

1815 Done for day -
(AM)

6/24 Bldg 35-752 55°F overcast

1245 @ office for prep

1310 @ Site → MP-3503
Use peri pump for sampling

Calibration Check

pH 7 Read 7.45
→ Calibrate @ 7.0

" Conductance - Reads 1222
True 1180
R = 103% => Good!

Reread pH 7 after calibration
= 7.02
=> GOOD!

1340 - Start Purging

1410 - Start Sampling

1430 done Sampling

1500 @ office, unpack truck

1530 done for day - (AM)

Attachment 5
Purge Logs

Groundwater Sampling Data Sheet

FRA-044

Site Name	Event	Well ID	Project Number
Bldg 35-752	2012 GW Mon	AP-2982	12-073
Weather Conditions	**In Well (IW) and Breathing Zone (BZ) PID Reading**	**Date**	**Sampler Initials**
Clear ~65 F	NA	6/22/12	MM

Well Information

Well Integrity	Well Type	Well Casing Material	Casing Diameter(in) / Gallons per linear foot(g)
(Good) Fair Poor	(Monitor) Extraction	(PVC)	1 / 0.041 (2 / 0.163) 4 / 0.653 6 / 1.469
Depth to Product (ft)	**Depth to GW (ft)**	**Total Depth of Casing (ft)**	**Amount of Product = Depth to GW – Depth to Product**
NA	12.20	14.3-24.3 / 24.5/23.95 SCH / ACT / MSD	NA

Max purge volume (3 well casing volumes) = [total depth of casing (ft) – depth to water (ft)] x gallons per linear foot of casing x 3

SHOW WORK Max Purge Volume = [(ft) – (ft)] X (g/ft) X (3) = gallons
1 gal = 3.785 L

Well Purging Information

Start Time	Finish Time	Depth of Tubing (ft)	Equipment Used for Purging
		20'	Bailer Peristaltic Pump Submersible Pump

Color	Odor	Sheen	Purged Dry	Meter Used During Purging
Clear (Cloudy) Brown Other:	None Faint Moderate Strong	Yes (No)	Yes (No)	(YSI Multi Meter) Hach Turbidimeter

Water generated during purging was: (Treated) Stored Other: released

Maximum Pumping Rate = 0.264 gallons per minute (1 liter per minute) 1 gallon = 3.785 liters
Maximum Water Level Drawdown = 25% distance between screen and intake

		Acceptable Range for Field Parameter to Demonstrate Stability						
		5.71 ± 0.2 s.u.	26.8 ± 3%	3.7 ± 0.2 °C	±10% 149 (±1 NTU if < 10 NTUs)	±10% 10.00 (±0.2 mg/L if < 2 mg/L)	65 ± 20 mV	14.70
Time (HH:mm)	Rate (mL/min)	pH (S.U.)	Conductivity (µS/cm)	Temperature (°C)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Water Level (feet btoc)
1137	350							12.21
1142		6.60	223	7.05	42.2	12.81	-29	12.21
1147		6.35	180	7.50	50.8	11.58	-57	
1152		6.08	160	6.30	~~44.4~~	10.68	-50	
1200	*1000	5.41	148	5.38	14.4	8.35	-47	12.41
1205		5.06	148	4.44	4.30 ~~7.3~~ MM	7.36	-46	12.38
** 1210	variable pumping rate	5.03	146	3.73	4.25	7.44	-55	12.57
1221	1250	4.93	146	3.68	2.89	7.06	-55	12.55
1226		4.90	146	3.68	1.93	7.04	-56	12.55
1231		4.72	145	3.63	1.48	7.05	-59	12.55

Sample Collection Information

Start Time	Finish Time / Date	Depth of Tubing	Equipment Used for Sampling
1231	1320	20'	Peristaltic Pump (Submersible Pump)

Container/Preservative	Analysis Requested	Notes	Ferrous Iron (Fe 2+) mg/L =
6 x 40 ml Purge	AK101/8260B	*Rate changed w/o change to pump	
2 x 1L	AK102 DRO	**Rate changing & significantly	
2 x 1L	5W8082		
1 x 500 ml Poly	Metals		

___See reverse side of this form for additional field parameter measurements

Try raising rate to keep more constant.

Groundwater Sampling Data Sheet

FRA044

Site Name	Event	Well ID	Project Number
Bldg 35-752	2012 GW Sampling	AP-2983	12-073
Weather Conditions	**In Well (IW) and Breathing Zone (BZ) PID Reading**	**Date**	**Sampler Initials**
Clear ~65F	NA	6/21/12	MM/AS

Well Information

Well Integrity	Well Type	Well Casing Material	Casing Diameter(in) / Gallons per linear foot(g)
(Good) Fair Poor	(Monitor) Extraction	(PVC)	1 / 0.041 (2 / 0.163) 4 / 0.653 6 / 1.469
Depth to Product (ft)	**Depth to GW (ft)**	**Total Depth of Casing (ft)**	**Amount of Product = Depth to GW – Depth to Product**
NA	13.12	13.23 SCRN / 24 ACT / 25.3 MSD	NA

Max purge volume (3 well casing volumes) = [total depth of casing (ft) – depth to water (ft)] x gallons per linear foot of casing x 3

SHOW WORK Max Purge Volume = [(ft) – (ft)] X (g/ft) X (3) = gallons

1 gal = 3.785 L

Well Purging Information

Start Time	Finish Time	Depth of Tubing (ft)		Equipment Used for Purging
1717	1732	18'		Bailer Peristaltic Pump (Submersible Pump)
Color	**Odor**	**Sheen**	**Purged Dry**	**Meter Used During Purging**
(Clear) Cloudy Brown Other:	None (Moderate) Faint Strong	Yes (No)	Yes (No)	(YSI Multi Meter) Hach Turbidimeter

Water generated during purging was: (Treated) Stored Other: + released

Maximum Pumping Rate = 0.264 gallons per minute (1 liter per minute) 1 gallon = 3.785 liters

Maximum Water Level Drawdown = 25% distance between screen and intake

		Acceptable Range for Field Parameter to Demonstrate Stability						
		5.71 ± 0.2 S.U.	16.8 ± 3%	3.8 ± 0.2 °C	±10% 169 (±1 NTU if < 10 NTUs)	±10% 1.00 (±0.2 mg/L if < 2 mg/L)	234 ± 20 mV	15.55
Time (HH:mm)	Rate (mL/min)	pH (S.U.)	Conductivity (µS/cm)	Temperature (°C)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Water Level (feet btoc)
1717	375	5.21	147	5.15	2.44	11.25	-110	13.15
1722		5.13	152	5.80	3.70	11.10	-101	
1727		5.04	151	5.86	5.22	10.92	-105	
1732		5.11	155	6.64	1.68	10.86	-110	13.16

Sample Collection Information

Start Time	Finish Time / Date	Depth of Tubing	Equipment Used for Sampling
1735	1800	18'	Peristaltic Pump (Submersible Pump)
Container/Preservative	**Analysis Requested**	**Notes**	Ferrous Iron (Fe 2+) mg/L =
18 40ml Purge	AK101/SW8260B	MS/D	
4 1L	AK102		
4 1L	SW8082		
1 500ml Poly	~~SW8051~~		
6 40ml Purge	SW6020		
2 1L	AK101/SW8260B		
2 1L	AK102		
1 500ml Poly	SW8082		
	SW6020		

duplicate

See reverse side of this form for additional field parameter measurements

Groundwater Sampling Data Sheet

FRA044

Site Name	Event	Well ID	Project Number
Bldg 35-752	GW Sampling 2012	AP-3458	12-073
Weather Conditions	**In Well (IW) and Breathing Zone (BZ) PID Reading**	**Date**	**Sampler Initials**
cloudy 56°F	N/A	6/21/12	MM/AS

Well Information

Well Integrity	Well Type	Well Casing Material	Casing Diameter(in) / Gallons per linear foot(g)
(Good) Fair Poor	(Monitor) Extraction	(PVC)	1 / 0.041 (2 / 0.163) 4 / 0.653 6 / 1.469
Depth to Product (ft)	**Depth to GW (ft)**	**Total Depth of Casing (ft)**	**Amount of Product = Depth to GW – Depth to Product**
N/A	25.17	25-35 SCR / 35 ACT / 37.20 measured	N/A

Max purge volume (3 well casing volumes) = [total depth of casing (ft) – depth to water (ft)] x gallons per linear foot of casing x 3

SHOW WORK Max Purge Volume = [(ft) – (ft)] X (g/ft) X (3) = gallons

1 gal = 3.785 L

Well Purging Information

Start Time	Finish Time	Depth of Tubing (ft)	Equipment Used for Purging
1100	1136	30	Bailer Peristaltic Pump (Submersible Pump)

Color	Odor	Sheen	Purged Dry	Meter Used During Purging
(Clear) Cloudy Brown Other:	(None) Faint Moderate Strong	Yes (No)	Yes (No)	(YSI Multi Meter) (Hach Turbidimeter)

Water generated during purging was: (Treated) Stored Other: drummed

Maximum Pumping Rate = 0.264 gallons per minute (1 liter per minute) 1 gallon = 3.785 liters

Maximum Water Level Drawdown = 25% distance between screen and intake

		Acceptable Range for Field Parameter to Demonstrate Stability						
		± 0.2 S.U.	± 3%	± 0.2 °C	±10% (±1 NTU if < 10 NTUs)	±10% (±0.2 mg/L if < 2 mg/L)	± 20 mV	*
Time (HH:mm)	Rate (mL/min)	pH (S.U.)	Conductivity (µS/cm)	Temperature (°C)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Water Level (feet btoc)
1106	175	5.32	210	7.19	15.2	1.32	-35	26.61
1111		5.26	210	7.28	8.93	1.76	-25	26.58
1116		5.29	215	7.00	7.21	1.75	-25	26.78
1121		5.33	220	6.94	6.69	1.43	-37	
1126	290	5.23	219	6.54	3.68	1.12	-34	
1131		5.27	228	6.74	2.97	1.01	-31	26.83
1136		5.33	236	6.81	2.36	1.06	-30	
* Pump read out fluctuating				~11.5 and 13.5		Variable pump speed? Use smaller diameter tubing for greater control		

Sample Collection Information

Start Time	Finish Time / Date	Depth of Tubing	Equipment Used for Sampling
1136	1150	36'	Peristaltic Pump (Submersible Pump)

Ordered filled

Container/Preservative	Analysis Requested	Notes	Ferrous Iron (Fe 2+) mg/L =
(3) 2 1L / HCl	AK102		
(4) 2 1L	5030B2		
(2) 500mL Poly	Metals		
(1) 6 x 40mL Purge	AK101/8260B		

See reverse side of this form for additional field parameter measurements

Groundwater Sampling Data Sheet

FRA044

Site Name	Event	Well ID	Project Number
Bldg 35-752	2012 GW Monitoring	AP-3503	12-073
Weather Conditions	**In Well (IW) and Breathing Zone (BZ) PID Reading**	**Date**	**Sampler Initials**
Cloudy 55 F	N/A	6/24/12	MEL

Well Information

Well Integrity	Well Type	Well Casing Material	Casing Diameter(in) / Gallons per linear foot(g)
Good (Fair) Poor	(Monitor) Extraction	(PVC)	1 / 0.041 (2) / 0.163 4 / 0.653 6 / 1.469
Depth to Product (ft)	**Depth to GW (ft)**	**Total Depth of Casing (ft)**	**Amount of Product = Depth to GW – Depth to Product**
NA	14.55	11.5-21.5 SCR / 22 BRT / 22.5 MSD	NA

Max purge volume (3 well casing volumes) = [total depth of casing (ft) – depth to water (ft)] x gallons per linear foot of casing x 3

SHOW WORK Max Purge Volume = [(ft) – (ft)] X (g/ft) X (3) = gallons

1 gal = 3.785 L

Well Purging Information

Start Time	Finish Time	Depth of Tubing (ft)	Equipment Used for Purging
1350	1410	16	Bailer (Peristaltic Pump) Submersible Pump

Color	Odor	Sheen	Purged Dry	Meter Used During Purging
(Clear) Cloudy Brown Other:	(None) Faint Moderate Strong	Yes (No)	Yes (No)	(YSI Multi Meter) Hach Turbidimeter

Water generated during purging was: (Treated) Stored Other: released onsite

Maximum Pumping Rate = 0.264 gallons per minute (1 liter per minute) 1 gallon = 3.785 liters

Maximum Water Level Drawdown = 25% distance between screen and intake

		Acceptable Range for Field Parameter to Demonstrate Stability						
		± 0.2 S.U.	± 3%	± 0.2 °C	±10% (±1 NTU if < 10 NTUs)	±10% (±0.2 mg/L if < 2 mg/L)	± 20 mV	
Time (HH:mm)	Rate (mL/min)	pH (S.U.)	Conductivity (µS/cm)	Temperature (°C)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Water Level (feet btoc)
1350	280			~~5.03~~				14.59
1355		6.02	186	5.63	3.21	6.63	-73	
1400		5.77	172	5.28	2.30	6.38	-53	
1405		5.72	167	5.26	2.59	6.01	-46	
1410		5.72	166	5.28	2.02	5.77	-43	14.59

Sample Collection Information

Start Time	Finish Time / Date	Depth of Tubing	Equipment Used for Sampling
1410	1450	16	(Peristaltic Pump) Submersible Pump

Container/Preservative	Analysis Requested	Notes	Ferrous Iron (Fe 2+) mg/L =
6 x 40ml Purge	AK101/SW8015B	well jetted.	
2 x 1L	AK102		
2 x 1L	SW8082		
500ml Poly	SW6020		

See reverse side of this form for additional field parameter measurements

Groundwater Sampling Data Sheet

FRA-044

Site Name	Event	Well ID	Project Number
Bldg 35-752	2012 GW Sampling	AP-3503	12-073
Weather Conditions	**In Well (IW) and Breathing Zone (BZ) PID Reading**	**Date**	**Sampler Initials**
Clear - 63 F	NA	6/22/12	MM

Well Information

Well Integrity	Well Type	Well Casing Material	Casing Diameter(in) / Gallons per linear foot(g)
Good (Fair) Poor	(Monitor) Extraction	(PVC)	1 / 0.041 (2 / 0.163) 4 / 0.653 6 / 1.469
Depth to Product (ft)	**Depth to GW (ft)**	**Total Depth of Casing (ft)**	**Amount of Product = Depth to GW – Depth to Product**
NA	14.50	~~15~~ 11.5 ~~18~~ 21.5 SCR / 19.22 ACT / 22.50 MS	NA

Max purge volume (3 well casing volumes) = [total depth of casing (ft) – depth to water (ft)] x gallons per linear foot of casing x 3

SHOW WORK Max Purge Volume = [(ft) – (ft)] X (g/ft) X (3) = gallons

1 gal = 3.785 L

Well Purging Information

Start Time	Finish Time	Depth of Tubing (ft)		Equipment Used for Purging
		18		Bailer Peristaltic Pump (Submersible Pump)
Color	**Odor**	**Sheen**	**Purged Dry**	**Meter Used During Purging**
Clear Cloudy Brown Other:	None Faint Moderate Strong	Yes No	Yes No	YSI Multi Meter Hach Turbidimeter

Water generated during purging was: Treated Stored Other:

Maximum Pumping Rate = 0.264 gallons per minute (1 liter per minute) 1 gallon = 3.785 liters

Maximum Water Level Drawdown = 25% distance between screen and intake

		Acceptable Range for Field Parameter to Demonstrate Stability						
		± 0.2 S.U.	± 3%	± 0.2 °C	±10% (±1 NTU if < 10 NTUs)	±10% (±0.2 mg/L if < 2 mg/L)	± 20 mV	
Time (HH:mm)	Rate (mL/min)	pH (S.U.)	Conductivity (µS/cm)	Temperature (°C)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Water Level (feet btoc)

NOT SAMPLED

Sample Collection Information

Start Time	Finish Time / Date	Depth of Tubing	Equipment Used for Sampling
			Peristaltic Pump Submersible Pump
Container/Preservative	**Analysis Requested**	**Notes**	Ferrous Iron (Fe 2+) mg/L =

Well may have jacked. Morrison cap was above well casing. Bend in PVC casing @ ~4 ft. Cannot get subm. pump down hole, Resample w/ perc.

See reverse side of this form for additional field parameter measurements

Groundwater Sampling Data Sheet

FRA044

Site Name	Event	Well ID	Project Number
Bldg 35-752	GW Sampling 5 yr	AP-3232	12-073
Weather Conditions	**In Well (IW) and Breathing Zone (BZ) PID Reading**	**Date**	**Sampler Initials**
overcast/clear (65F)	NA	6/21/12	MM/AS.

Well Information

Well Integrity	Well Type	Well Casing Material	Casing Diameter(in) / Gallons per linear foot(g)
(Good) Fair Poor	(Monitor) Extraction	(PVC)	1 / 0.041 2 / (0.163) 4 / 0.653 6 / 1.469
Depth to Product (ft)	**Depth to GW (ft)**	**Total Depth of Casing (ft)**	**Amount of Product = Depth to GW – Depth to Product**
NA	9.95	5-15 scr / 15 ART	

Max purge volume (3 well casing volumes) = [total depth of casing (ft) – depth to water (ft)] x gallons per linear foot of casing x 3

SHOW WORK Max Purge Volume = [(ft) – (ft)] X (g/ft) X (3) = gallons

1 gal = 3.785 L

Well Purging Information

Start Time	Finish Time	Depth of Tubing (ft)	Equipment Used for Purging
1510 / 9.95 DGW		14	Bailer (Peristaltic Pump) (Submersible Pump)
Color	**Odor**	**Sheen / Purged Dry**	**Meter Used During Purging**
(Clear) Cloudy Brown Other:	(None) Faint Moderate Strong	Yes (No) / Yes (No)	(YSI Multi Meter) (Hach Turbidimeter)

Water generated during purging was: (Treated) Stored Other: + released

Maximum Pumping Rate = 0.264 gallons per minute (1 liter per minute) 1 gallon = 3.785 liters

Maximum Water Level Drawdown = 25% distance between screen and intake

		Acceptable Range for Field Parameter to Demonstrate Stability						
		± 0.2 S.U.	± 3%	± 0.2 °C	±10% (±1 NTU if < 10 NTUs)	±10% (±0.2 mg/L if < 2 mg/L)	± 20 mV	
Time (HH:mm)	Rate (mL/min)	pH (S.U.)	Conductivity (µS/cm)	Temperature (°C)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Water Level (feet btoc)
1530	1L ↓	4.39 1.12	1.47	4.39		14.49	-65	10.33
1540	333	0.65	149	4.80	2.16	13.07	-86	
1548		0.64	150	5.00		12.66	-82	10.10
1555		1.86	149	4.87	0.89	12.30	-91	
1602		2.83	148	4.88	0.68	12.20	-84	

Sample Collection Information

Start Time	Finish Time / Date	Depth of Tubing	Equipment Used for Sampling
1605		14'	Peristaltic Pump (Submersible Pump)
Container/Preservative	**Analysis Requested**	**Notes**	Ferrous Iron (Fe 2+) mg/L =
6 40mL Purge	AR101/8260B		
2 1L A	AR102		
2 1L	SW8082		
1 500mL Poly	SW6020		

See reverse side of this form for additional field parameter measurements

258-1515

Groundwater Sampling Data Sheet

FKA044

Site Name	Event	Well ID	Project Number
Bldg 35-752	2012 GWM	AP-2987	12-073
Weather Conditions	**In Well (IW) and Breathing Zone (BZ) PID Reading**	**Date**	**Sampler Initials**
65 F Clear	NA	6/22/12	MK

Well Information

Well Integrity	Well Type	Well Casing Material	Casing Diameter(in) / Gallons per linear foot(g)
(Good) Fair Poor	(Monitor) Extraction	(PVC)	1 / 0.041 (2 / 0.163) 4 / 0.653 6 / 1.469
Depth to Product (ft)	**Depth to GW (ft)**	**Total Depth of Casing (ft)**	**Amount of Product = Depth to GW – Depth to Product**
NA	11.40	9.19 SCRN / 19 ART / 20.15 MSD	NA

Max purge volume (3 well casing volumes) = [total depth of casing (ft) – depth to water (ft)] x gallons per linear foot of casing x 3

SHOW WORK Max Purge Volume = [(ft) – (ft)] X (g/ft) X (3) = gallons

1 gal = 3.785 L

Well Purging Information

Start Time	Finish Time	Depth of Tubing (ft)		Equipment Used for Purging
1412	1442	15'		Bailer Peristaltic Pump Submersible Pump
Color	**Odor**	**Sheen**	**Purged Dry**	**Meter Used During Purging**
(Clear) Cloudy Brown Other:	None (Faint) Moderate Strong	Yes (No)	Yes (No)	(YSI Multi Meter) Hach Turbidimeter

Water generated during purging was: (Treated) Stored Other: ~~of~~ released onsite

Maximum Pumping Rate = 0.264 gallons per minute (1 liter per minute) 1 gallon = 3.785 liters

Maximum Water Level Drawdown = 25% distance between screen and intake

		Acceptable Range for Field Parameter to Demonstrate Stability						
		5.54 ± 0.2 S.U.	21.9 mS/m ±3%	2.3 ± 0.2 °C	±10% 1.5 (±1 NTU if < 10 NTUs)	±10% 4.26 (±0.2 mg/L if < 2 mg/L)	151 ± 20 mV	10.78
Time (HH:mm)	Rate (mL/min)	pH (S.U.)	Conductivity (µS/cm)	Temperature (°C)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Water Level (feet btoc)
1412	1250							11.48
1417	~~6.14~~ (NM)	6.14	159	6.02	4.29	10.38	-101	11.48
1422		5.63	147	4.16	1.86	9.09	-92	11.52
1427		5.47	147	4.05	1.26	8.42	-91	
1432		5.39	148	4.02	1.08	7.69	-89	
1437		5.31	151	4.04	1.20	6.86	-93	
1442		5.27	153	4.14	0.95	6.12	-97	

check each time

Sample Collection Information

Start Time	Finish Time / Date	Depth of Tubing	Equipment Used for Sampling
1445	1500	15'	Peristaltic Pump Submersible Pump
Container/Preservative	**Analysis Requested**	**Notes**	Ferrous Iron (Fe 2+) mg/L =
6 x 40 ml Purge	AK101/8260B	Funky well cap - See pretares	
2 x 1L	AK102		
2 x 1L	SW8082		
1 x 500 ml Poly	SW6020/Metals		

See reverse side of this form for additional field parameter measurements

Groundwater Sampling Data Sheet

FRA0421

Site Name	Event	Well ID	Project Number
Bldg 35-752	2012 GWM	AP-3231	12-073
Weather Conditions	**In Well (IW) and Breathing Zone (BZ) PID Reading**	**Date**	**Sampler Initials**
Clear ~65F	NA	6/22/12	MH

Well Information

Well Integrity	Well Type	Well Casing Material	Casing Diameter(in) / Gallons per linear foot(g)
Good (Fair)* Poor	(Monitor) Extraction	(PVC)	1 / 0.041 (2 / 0.163) 4 / 0.653 6 / 1.469
Depth to Product (ft)	**Depth to GW (ft)**	**Total Depth of Casing (ft)**	**Amount of Product = Depth to GW – Depth to Product**
—	14.97	13-23 SCRN / 23 ART / 23 MSD	NA

Max purge volume (3 well casing volumes) = [total depth of casing (ft) – depth to water (ft)] x gallons per linear foot of casing x 3

SHOW WORK Max Purge Volume = [(ft) – (ft)] X (g/ft) X (3) = gallons

1 gal = 3.785 L

Well Purging Information

Start Time	Finish Time	Depth of Tubing (ft)	Equipment Used for Purging
1607	1627	19'	Bailer Peristaltic Pump Submersible Pump

Color	Odor	Sheen	Purged Dry	Meter Used During Purging
(Clear) Cloudy Brown Other:	(None) Faint Moderate Strong	Yes (No)	Yes (No)	(YSI Multi Meter) Hach Turbidimeter

Water generated during purging was: (Treated) Stored Other: ~ Released

Maximum Pumping Rate = 0.264 gallons per minute (1 liter per minute) 1 gallon = 3.785 liters

Maximum Water Level Drawdown = 25% distance between screen and intake

		Acceptable Range for Field Parameter to Demonstrate Stability						
		5.76 ± 0.2 S.U.	19.5 ± 3%	3.4 ± 0.2 °C	~~T = ±10%~~ 4.56 (±1 NTU if < 10 NTUs)	±10% 1.765 (±0.2 mg/L if < 2 mg/L)	228 ± 20 mV	14.0 (7.8)
Time (HH:mm)	Rate (mL/min)	pH (S.U.)	Conductivity (µS/cm)	Temperature (°C)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Water Level (feet btoc)
1607	500							~~14.97~~ 15.0
1612		6.28	145	4.47	7.24	13.05	-127	15.10
1617		5.95	145	4.33	5.13	12.41	-113	
1622		5.82	147	4.66	4.01	12.37	-109	15.02
1627		5.76	148	4.91	2.94	12.30	-107	

Sample Collection Information

Start Time	Finish Time / Date	Depth of Tubing	Equipment Used for Sampling
1630	1645	19'	Peristaltic Pump (Submersible Pump)

Container/Preservative	Analysis Requested	Notes
6 x ~~AG~~ (HNO3) 40ml Purge	AK101/8260B	Ferrous Iron (Fe 2+) mg/L =
2 x 1L	AK102	
2 x 1L	SW8082	
1 x 500ml Poly	SW6020	

* While cleaning up, noticed base of well up liftout. Bentonite squished onto table top. See pictures

____See reverse side of this form for additional field parameter measurements