

# ALLIED ENGINEERING & PRODUCTION CORP.

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# **RECEIVED**

11:07 am, Nov 30, 2010

Alameda County Environmental Health

November 29, 2010

In reference to Report of November 2010 Sampling, I declare under penalty of perjury that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge.

Kassandra Miller, Vice President

Allied Engineering & Production Corporation

# geo - logic

geotechnical and environmental consulting services

1140 - 5th Avenue, Crockett, CA 94525

(510) 593-5382 - Fax (510) 787-1457

Nov. 19, 2010

Ms. Donna Drogos Alameda County Environmental Health Services 1131 Harbor Bay Parkway, Suite 250 Alameda, CA 94502-6577

RE:

Report of November 2010 Sampling Allied Engineering Co., 2421 Blanding Avenue, Alameda, CA Fuel Leak Case No. RO0002601

Dear Ms. Drogos:

This report documents the recent sampling of three monitoring wells at the above-referenced site, the second sampling event. The wells were installed in April, 2010, in accordance with Geo-Logic's work plan dated December 22, 2008, as requested in a letter from Alameda County Environmental Health (ACEH) dated November 13, 2008.

# SITE DESCRIPTION

The subject site is located on the northeastern side of Blanding Avenue, southeast of Park Street, on the eastern perimeter of Alameda, Alameda County, California. The site is located adjacent to the tidal canal of Alameda Harbor. At the site, a 2,000-gallon gasoline tank, dispenser and the related product piping were removed. A Site Plan (Figure 1) showing the location of these features is attached to this report.

# **PREVIOUS FIELD ACTIVITIES**

On January 7, 2004, one 2,000-gasoline tank was removed. Mr. Bill Oyas, Fire Inspector with the City of Alameda, and Mr. Rob Weston of Alameda County Environmental Health (ACEH) witnessed the tank removal. Mr. Weston also directed the soil and groundwater sampling.

The tank was constructed of single wall steel, and appeared to have been covered with a tar paper that was largely dissolved. The tank, which measured approximately six feet in diameter and ten feet in length, appeared to be in good condition and no holes were observed. The fill port for the tank was located on the eastern end of the tank, and had consisted of a "T" fitting that was plumbed to a remote fill location and a fill port directly over the tank. The tank was transported under manifest to ECI in Richmond, California.

Odors of hydrocarbons were detected in the excavated soils and sidewalls, and in the groundwater. Groundwater collected in the tank pit excavation at approximately nine feet below grade.

The tank pit backfill material appeared to be a silty fine-grained sand which was stained dark gray to black. The native material in the sidewalls, beneath about 1.5 feet of fill material, appeared to be clayey silt and silty clay, which was dark brown to about five feet below grade, where the color changed to olive green.

Following the tank removal, a "grab" groundwater sample was collected from the tank pit excavation. The sample was collected using a disposable teflon bailer. Some oily product appeared to have collected on the surface of the water, which may have been the result of the dissolving of the tar paper that was originally on the tank. The groundwater sample had a moderate odor of weathered fuel.

One soil sample, designated as TP-W (7.25'), was collected from the sidewall of the western end of the tank pit excavation at the depth indicated. The soil at this location consisted of dark gray to black silty sand backfill with a moderate odor of weathered fuel. A second sample, designated as TP-N (8'), was collected from the northern sidewall of the excavation. The soil at this location consisted of green clayey silt/silty clay, which also had a moderate odor of weathered fuel. The locations of the sample points are shown on Figure 1.

One soil sample, designated as P1 (3.5'), was collected at a 90 degree elbow location in the product piping trench, approximately 1.5 foot below the excavation bottom. No odors of hydrocarbons were observed at this location. Another soil sample, designated as Disp. (3.5'), was collected from beneath the former dispenser location. A moderate odor of weathered fuel was observed on this sample. The materials at these locations consisted of native dark gray clayey silt/silty clay. The locations of these sample points are shown on Figure 1.

The soil and groundwater samples were analyzed for TPH as gasoline, benzene, toluene, ethylbenzene, and xylenes (BTEX) and methyl tertiary butyl ether (MTBE) by EPA method 8020, and for total lead. All of the soil and groundwater samples were also analyzed for the eight fuel oxygenates by EPA Method 8260. The groundwater sample was also analyzed for organic lead.

Elevated concentrations of TPH as gasoline and BTEX were detected in the soil and groundwater samples. MTBE and the eight fuel oxygenates were non-detectable. 8.4 parts per billion of 1,2-dichloroethane was detected in the grab groundwater sample. Total Lead was detected in the samples at what appears to be naturally-occurring background concentrations. Organic Lead was non-detectable in the grab ground water sample.

On March 8, 2007, one four-part composite sample was collected from approximately 100 cubic yards of soil that had remained on site since the tank removal. The soil was underlain by plastic tarps. The stockpile sample was analyzed for TPH as gasoline, BTEX, and MTBE by EPA method 8020, and for total lead and STLC lead. The soil was profiled for disposal and was later removed from the site and transported to the Altamont Landfill in Livermore, California.

Based on letters from the ACEH dated September 22, 2006 and March 28, 2005, Geo-Logic prepared a work plan dated March 16, 2007 for a soil and groundwater investigation. The work plan was reviewed by ACEH and revisions were requested in a letter dated April 10, 2007. The revisions to the work plan were prepared and submitted on April 23, 2007, and were conditionally approved by the ACEH in a letter dated May 24, 2007.

On June 27, 2007, six of the eight proposed borings were completed to groundwater, and other shallow borings were completed. Borings B1, B5, B6 and B8 were completed at the proposed locations. Due to access limitations (the presence of concrete near the bank and trees overhead), boring B2 was not completed at the proposed location and B3 was relocated midway between the originally proposed locations of B2 and B3. Boring B4 could not be completed with the drilling rig due to the presence of trees. Two attempts were made using a hand auger. The first attempt, designated as B4A, encountered sheet metal at about one foot, proximal to a sheet metal building. The second attempt, designated as B4B, encountered metal shavings at about one foot below grade, and the hole was terminated due to refusal.

Boring 7 was attempted three times at or near the original location with the drill rig but encountered concrete about one foot below grade. As it was observed that there was an active storm drain that outletted to the estuary underlying this area, the boring was relocated and completed to the northwest. This location was desirable to provide delineation both of the hydrocarbons in water, and possible metal debris near the bank.

The borings were completed using a geoprobe rig provided by Vironex of Pacheco, California, a state-licensed driller. The locations of the borings are shown on Figure 1. The borings were continuously cored and the subsurface soils were examined for evidence of contamination. A photo-ionization detector (PID) was also used to screen the soil for contamination. Samples were selected from about five feet below grade, at the capillary fringe (about 7.5 feet below grade), and at about 12.5 feet and 15 feet below grade. The 12.5 foot samples generally corresponded to the last part of a layer of low permeability soils that appeared to contain hydrocarbons in many of the holes. The sample at the total depth (about 15 feet below grade) was generally in higher permeability water-bearing sandy soils and no odor of hydrocarbons was apparent.

All of the soil and groundwater samples were analyzed for TPH as gasoline, BTEX, and MTBE by EPA Methods 8015 and 8020. The ground water samples were analyzed for the fuel oxygenates and lead scavengers by EPA Method 8260. Selected soil samples from B3, B7B and B7C from a depth of four to 4.5 feet below grade, and the groundwater samples from B3 and B7C, were analyzed for the CAM 17 metals. The soil from B7B and B7C at that interval had visible metal debris in it. Mr. Steven Plunkett of ACDEH witnessed most of the drilling and sampling.

The analytical results of the soil samples indicated predominantly non-detectable results for petroleum hydrocarbons, except at the capillary fringe (about 7.5 feet below grade). The samples from B3, which was about 1.5 foot higher in elevation than the tank pit borings, had an elevated TPH as gasoline concentration at 12.5 feet below grade and non-detectable results at 7.5 feet below grade. The sample from 4.5 feet below grade near the former dispenser location at B5 also had elevated concentrations of hydrocarbons.

The analytical results of the grab groundwater samples indicated dissolved concentrations of hydrocarbons in groundwater in all of the borings except B7C, which was non-detectable. The concentrations of benzene in groundwater attenuated to very low (2.4 ppb in B3) to non-detectable to the north and east. The concentrations were not defined below about 100 to 160 ppb to the west and south.

The analytical results for the CAM 17 metals in B3 at 4.5 feet below grade, which appeared to be native soil, did not indicate any metals above the ESLs. The sample from B7B at four feet below grade, which contained abundant metal debris, had concentrations of nine of the CAM 17 metals above the ESLs. This sample, which contained the highest concentration of chromium of the soil samples analyzed, was also analyzed for hexavalent chromium by method E218.6m, which indicated a concentration of hexavalent chromium of 500 ppm. Arsenic and chromium concentrations exceeded their respective ESLs in the soil sample from B7C at 4.5 feet below grade, which also appeared to be historical fill material similar to the sample from B7B.

The analytical results for the CAM 17 metals in groundwater indicated concentrations of 14 metals above their respective ESLs in B3, and eleven metals above their respective ESLs in B7C. Except for lead and molybdenum, the concentrations of metals in the groundwater sample from B7C are significantly lower than the concentrations in B3. The collection of the sample in B7C was difficult and the rods were retracted three times, making it possible that metal debris from shallower depth affected the water sample analyses.

This work is summarized in Geo-Logic's "Report of Soil and Groundwater Investigation" dated July 18, 2007.

On April 19, 2010, three monitoring wells, designated as MW1 through MW3 on the attached Figure 3, were installed at the site. Well MW1 was located in the vicinity of previous boring B1, on the northeast side of the former tank pit, within the warehouse. Well MW2 was located adjacent to previous boring B5, at the former dispenser location. Well MW3 was located adjacent to previous boring B3, near the top of the estuary bank. Due to the previous logging and sampling, soil samples were not collected from the borings for these wells, however, the drill cuttings were examined for lithology and evidence of contamination. Odors of hydrocarbons were encountered beginning at approximately 6 feet (capillary fringe) in MW1, and at approximately two feet in MW2, in the former dispenser area.

Well Construction: The well casings consisted of two-inch diameter schedule 40 PVC with flush threaded joints and 0.010 inch factory slots. Based on previous conditions encountered in exploratory borings, the wells were screened between approximately 5 and 20 feet below grade with 0.010 inch screen. #2/12 sand was used for the filter pack and was placed from approximately 4.5 to 20 feet below grade, starting approximately 1/2 foot above the perforated interval. A 0.5-foot thick bentonite seal was placed in the annular space on top of the sand pack. Neat cement grout was placed on top of the bentonite seal to the surface.

On May 4, 2010, samples were obtained from the three wells, and the wells were monitored and sampled. The groundwater samples were analyzed for TPH as gasoline, BTEX, and MTBE and the fuel oxygenates and lead scavengers by EPA Method 8260 B, and for the CAM 17 metals. The analytical results of the groundwater samples collected from the three monitoring wells indicated concentrations ranging from predominantly non-detectable in MW3 to up to 2,300 parts per billion (ppb) of TPH as gasoline and up to 210 ppb of benzene in MW2, at the former dispenser area. At MW3, the only detected analyte was MTBE, at a concentration of 1.6 ppb. Toluene and xylenes were also detected in MW2 at concentrations of 5.8 and 130 ppb, respectively. At MW1, adjacent to the former tank pit, TPH as gasoline, benzene, toluene, xylenes and t-Butyl Alcohol were detected at concentrations of 380, 22, 0.77, 1.2 and 2.4 ppb, respectively. The concentrations of TPH as gasoline (2,300 ppb), benzene (210 ppb), and xylenes (130 ppb) are in excess of their respective Environmental Screening Levels (Table F-1b).

For the CAM 17 metals, six metals (beryllium, chromium, mercury, selenium, silver, and thallium) were non-detectable. Of the other eleven metals, cadmium, cobalt, copper, lead and nickel were detected in excess of their respective ESLs. Nickel concentrations were particularly elevated (ranging up to 190 ppb in MW2, in excess of the ESL of 8.2 ppb).

The analytical data is summarized in Tables 2 and 3. The results of this work were summarized in Geo-Logic's "Report of Monitoring Well Installation and May 2010 Sampling", dated May 14, 2010.

# RECENT FIELD ACTIVITIES -GROUNDWATER SAMPLING

On Nov. 5, 2010, samples were again obtained from the three wells, and the wells were monitored. The groundwater samples were collected as follows: prior to sampling, the wells were checked for depth to water and the presence of free product and sheen. No free product or sheen was noted in the wells.

The wells were bailed until the volume of water withdrawn was equal to at least three casing volumes. To assure that a representative groundwater sample was collected, periodic measurements of the temperature, pH and specific conductance were made. The samples were collected only when the temperature, pH, and/or specific conductance reached relatively constant values.

Water samples were collected using disposable bailers. An effort was made to minimize exposure of the samples to air. The samples were decanted into clean VOA vials that were then sealed with Teflon-lined screw caps, labeled, and stored in a cooler, on ice, until delivery to the laboratory. The containers for CAM 17 metals analyses were filtered using 0.45 micron disposable filters. Excess water resulting from the purging and cleaning procedures was collected and contained in a drum.

# HYDROLOGY

On Nov. 5, 2010, the measured depth to groundwater in wells MW1 through MW3 varied between approximately 5.40 to 6.03 feet below the tops of the well casings. As shown on Figure 2, the estimated hydraulic gradient was to the southwest at approximately 0.06 feet per foot, apparently under strong tidal influence. There was a difference of 2.02 feet between well MW2 and well MW3.

The groundwater elevation data is summarized in Table 1 and on Figure 2. . Copies of the field data sheets are attached to this report.

# **ANALYTICAL RESULTS**

The groundwater samples were analyzed by McCampbell Analytical Laboratory in Pittsburg, California, a state-certified laboratory. The groundwater samples were analyzed for TPH as gasoline, BTEX, and MTBE and the fuel oxygenates and lead scavengers by EPA Method 8260 B, and for the CAM 17 metals.

The analytical results of the groundwater samples collected from the three monitoring wells indicated concentrations ranging from non-detectable in MW3 to up to 120 parts per billion (ppb) of TPH as gasoline in MW1 and up to 28 ppb of benzene in MW2, at the former dispenser area. TPH as gasoline, ethylbenzene and MTBE were also detected in MW2 at concentrations of 110, 2.3 and 0.55 ppb, respectively. At MW1, adjacent to the former tank pit, benzene was also detected at a concentration of 4.5 ppb. The concentrations of hydrocarbons detected are significantly less than the last event, and not in excess of their respective Environmental Screening Levels (where groundwater is not considered a potential drinking water source, Table F1b).

For the CAM 17 metals, two metals, beryllium and thallium) were non-detectable. Of the other fifteen metals, cadmium, cobalt, copper, lead, mercury, nickel and silver were detected in excess of their respective ESLs (where groundwater is not considered a potential drinking water source, Table F-1b) in one or more wells. Nickel concentrations were again particularly elevated, ranging up to 120 ppb in MW2, in excess of the ESL of 8.2 ppb.

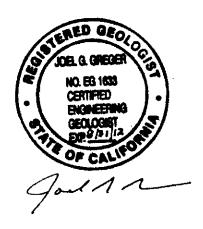
The analytical data is summarized in Tables 2 and 3 and Figure 3. Copies of the laboratory analyses data sheets and chain of custody are attached to this report.

# **RECOMMENDATIONS**

This report will be uploaded to the Geotracker database in addition to the ACEH database. Additional sampling is proposed to further evaluate the hydrologic conditions and contaminant concentrations. After review of the additional data, additional recommendations will be made, as warranted.

Should you have any questions regarding this report, please do not hesitate to call me at (510) 593-5382.

Sincerely, **Geo-Logic** 



Joel G. Greger Certified Engineering Geologist Registered Environmental Assessor CEG # EG1633, REA # 07079

cc: Mr. Dave Belcher, Allied Engineering

Attachments: Tables 1 through 3

Figures 1 through 3

Laboratory Analytical Data

Field Data Sheets

# TABLE 1 GROUNDWATER MONITORING DATA 2421 Blanding Ave., Alameda, CA

Well No.	Date	Groundwater Elevation	Top of casing Elevation	Depth to Water	Well Depth	Product Thickness	Sheen	Water purged (gallons)
•								
MW1	4/26/2010	2.37	8.27	5.90	20.13	0	No	25
	5/4/2010	-0.30		8.57	20.18	0	No	7
	11/5/2010	2.24		6.03	20.16	0	No	9
MW2	4/27/2010	2,60	7.24	4.64	18.90	0	No	28
	5/4/2010	0.48		6.76	19.18	0	No	8.5
	11/5/2010	1,91		5.33	19.14	0	No	8
MW3	4/26/2010	2.36	9,33	6.97	20.02	0	No	25
111110	5/4/2010	-1.16		10.49	20.04	0	No	5.75
	11/5/2010	3.93		5.40	20.03	0	No	9
				I	1		L	

# TABLE 2 GROUNDWATER ANALYTICAL RESULTS - HYDROCARBONS 2421 Blanding Ave., Alameda, CA

Well No.	Date	TPH-g (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)	MTBE (ppb)	TBA (ppb)
MW1	5/4/2010	380	22	0,77	<0.5	1.2	<0.5	2.4
	11/5/2010	120	4.5	<0.5	<0.5	<0.5	<0.5	<2.0
MW2	5/4/2010	2,300	210	5.8	<5.0	130	<5.0	<20
	11/5/2010	110	28	<0.5	2.3	<0.5	0.55	<2.0
MW3	5/4/2010	<50	<0.5	<0.5	<0.5	<0.5	1.6	<2.0
	11/5/2010	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0
ĖSL		100/500	1.0/46	40/130	30/290	13/13	5.0/1,800	12/18,000

# EXPLANATION:

ppb = parts per billion
TPH =Total Petroleum Hydrocarbons as gasoline.

TBA = t-Butyl alcohol

ESL - Environmental Screening Level, Tables F-1a/F-1b (groundwater is/is not a potential drinking water source).

TABLE 3
GROUNDWATER ANALYTICAL RESULTS - CAM 17 METALS
2421 Blanding Avenue, Alameda, CA

Well No.	Date	Antimony	Arsenic	Barium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenun	Nickel	Selenium	Silver	Vanadium	Zinc
		(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
·																
MWI	5/4/2010	<0.5	17	130	0.29	< 0.5	6.2	< 0.5	2.1	< 0.025	4.8	120	<0.5	< 0.19	6.0	5.9
	11/5/2010	<0.5	15	93	<0.25	<0.5	1.4	0.83	< 0.5	<0.025	2.0	75	<0.5	< 0.19	2.7	<5.0
MW2	5/4/2010	<0.5	4.1	84	1.0	<0.5	7.9	1.7	4.0	<0.025	2.4	190	<0.5	< 0.19	8.0	14
	11/5/2010	<0.5	5.3	61	< 0.25	<0.5	1.9	3.6	1.7	< 0.025	0.74	110	<0.5	<0.19	9.1	10
MW3	5/4/2010	0.65	2.7	180	2.1	<0.5	5.9	6.4	14	<0.025	20	85	<0.5	< 0.19	4.4	7.0
	11/5/2010	0.91	2.1	81	6.2	7.6	3.6	7.7	4.9	0.055	26	15	2.7	3.0	3.3	35
ESL -		6.0	36	1000	0.25	50	3.0	3.1	2.5	0.025	35	8.2	5.0	0.19	15	81
Table F-1a																
ESL -		30	36	1000	0.25	180	3.0	3.1	2.5	0.025	.240	8.2	5.0	0.19	19	81
Table F-1b																

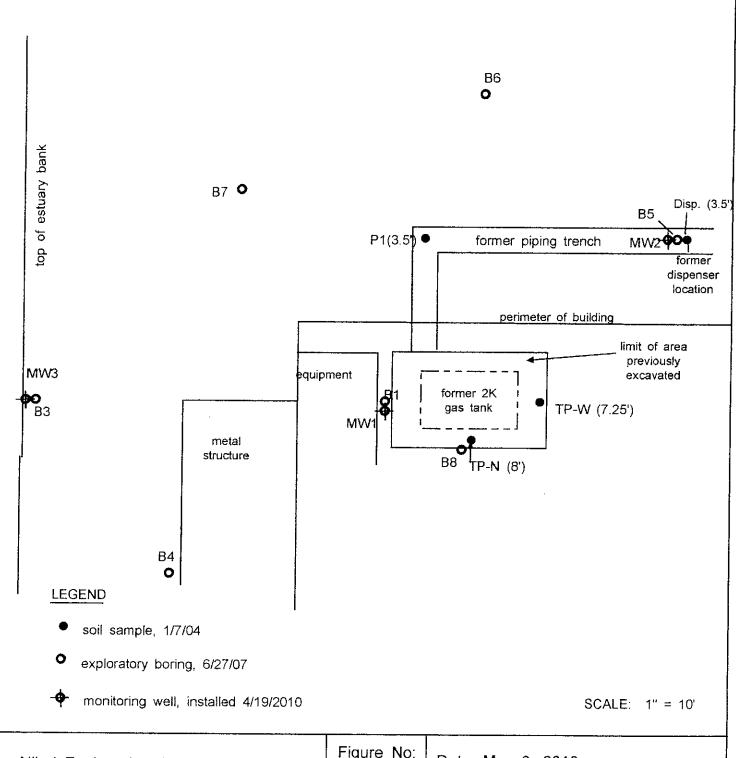
# **EXPLANATION:**

ESL = Environmental Screening Level, RWQCB, May 2008. Table F-1a, groundwater is a potential drinking water source, Table F-1b, groundwater is not a potential drinking water source.

Beryllium and thallium were non-detectable.

ppb = parts per billion





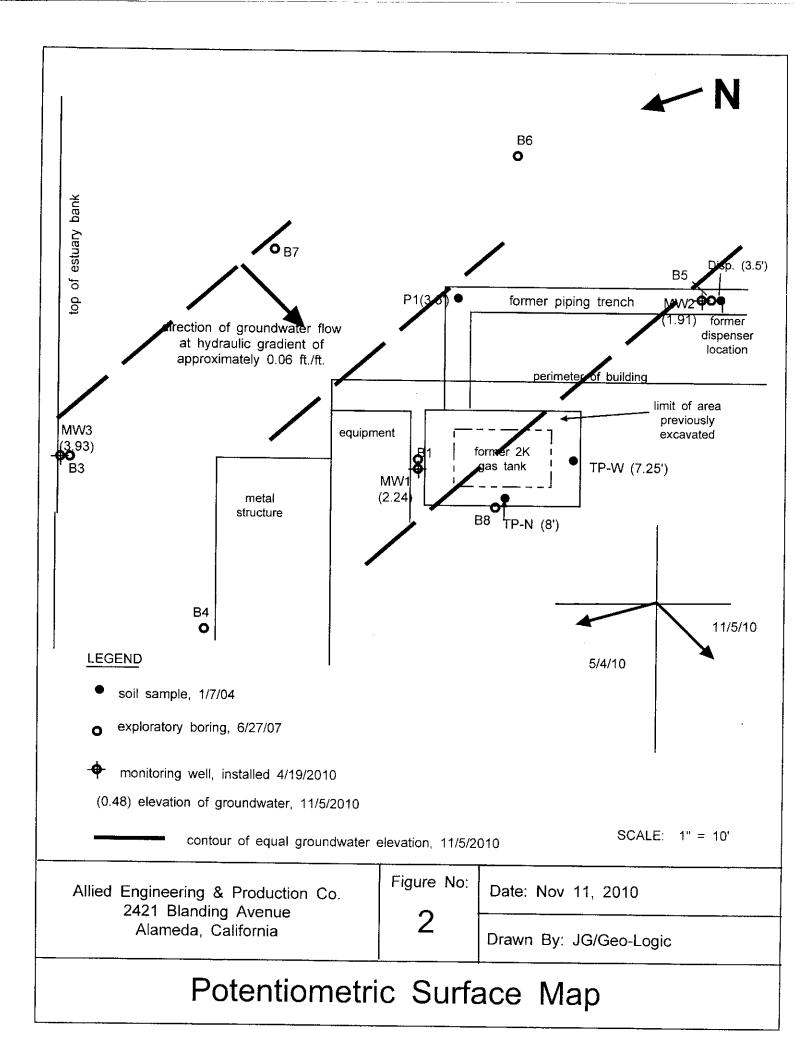
Allied Engineering & Production Co. 2421 Blanding Avenue Alameda, California

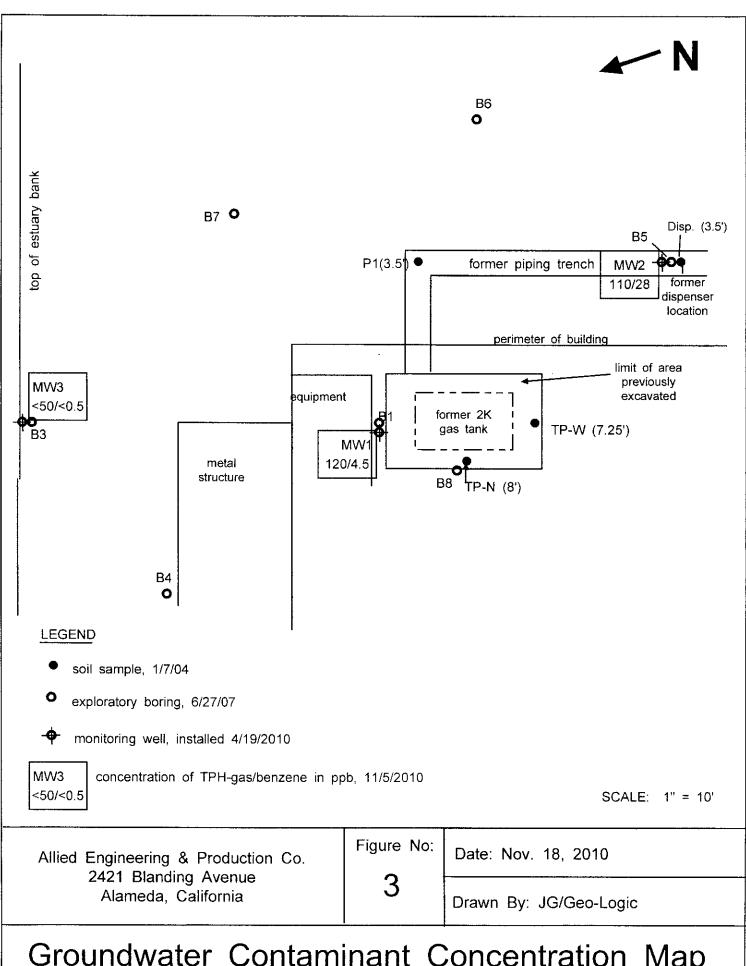
Figure No:

Date: May 6, 2010

Drawn By: JG/Geo-Logic

Site Plan





Groundwater Contaminant Concentration Map



# McCampbell Analytical, Inc.

"When Ouality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Web: www.mccampbell.com E-mail: main@mccampbell.com
Telephone: 877-252-9262 Fax: 925-252-9269

Geo-Logic Client Project ID: Allied Engineering Date Sampled: 11/05/10

1140 5th Avenue Client Contact: Joel Gregor Date Extracted: 11/08/10

Crockett, CA 94525 Client P.O.: Date Analyzed 11/09/10

### CAM / CCR 17 Metals\*

Lab ID	1011251-001B	1011251-002B	1011251-003B	Reporting Limit for DF = ND means not detected
Client ID	MWI	MW2	MW3	ND means not detected above the reporting limit
Matrix	W	W	W	S W
Extraction Type	DISS.	DISS.	DISS.	mg/kg μg/L

## ICP-MS Metals, Concentration\*

Analytical Method: E200.8	Extr	action Method: E200.8		Work Order:	1011251
Dilution Factor	1	l	l i	1	1
Antimony	ND	ND	0.91	NA	0.5
Arsenic	15	5,3	2.1	NA	0.5
Barium	93	61	81	NA	5.0
Beryllium	ND	ND	ND	NA	0.5
Cadmium	ND	ND	6.2	NA	0.25
Chromium	ND	ND	7.6	NA	0.5
Cobalt	1.4	1.9	3.6	NA NA	0.5
Copper	0.83	3.6	7.7	NA_	0.5
Lead	ND	1.7	4.9	NA_	0.5
Mercury	ND	ND	0.055	NA	0.025
Molvbdenum	2.0	0,74	26	NA	0.5
Nickel	75	110	15	NA NA	0.5
Selenium	ND	ND	2.7	NA.	0.5
Silver	ND	ND	3.0	NA	0.19
Thallium	ND	ND	ND	NA	0.5
Vanadium	2.7	9.1	3.3	NA	0.5
Zinc	ND	10	35	NA	5.0
%SS:	N/A	N/A	N/A		

\*water samples are reported in µg/L, product/oil/non-aqueous liquid samples and all TCLP / STLC / DISTLC / SPLP extracts are reported in mg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, filter samples in µg/filter.

# means surrogate diluted out of range; ND means not detected above the reporting limit/method detection limit; N/A means not applicable to this sample or instrument.

TOTAL = Hot acid digestion of a representative sample aliquot.

TRM = Total recoverable metals is the "direct analysis" of a sample aliquot taken from its acid-preserved container.

DISS = Dissolved metals by direct analysis of 0.45 µm filtered and acidified sample.

%SS = Percent Recovery of Surrogate Standard

DF = Dilution Factor

Comments



1534 Willow Pass Road, Pittsburg, CA 94565-1701
Web: www.inccampbell.com E-mail: main@mccampbell.com
Telephone: 877-252-9262 Fax: 925-252-9269

# **OC SUMMARY REPORT FOR SW8260B**

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 54290

WorkOrder 1011251

EPA Method SW8260B	Extra	ction SW	5030B					5	Spiked San	ple ID	: 1011221-0	06B
	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acce	ptance	Criteria (%)	
Analyte	μg/L	μg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
tert-Amyl methyl ether (TAME)	ND	10	86.5	87.7	1.37	81.4	82.1	0.904	70 - 130	30	70 - 130	30
Benzene	ND	10	105	106	1.13	109	110	0.786	70 - 130	30	70 - 130	30
t-Butyl alcohol (TBA)	19	50	74.8	77.3	2.25	83.3	78.4	6.01	70 - 130	30	70 - 130	30
Diisopropyl ether (DIPE)	ND	10	107	107	0	110	110_	0	70 - 130	30	70 - 130	30
Ethyl tert-butyl ether (ETBE)	ND	10	101	102	0.926	98.5	99.8	1.23	70 - 130	30	70 - 130	30
Methyl-t-butyl ether (MTBE)	3.9	10	113	114	0.558	103	102	0.852	70 - 130	30	70 - 130	30
Toluene	ND	10	101	102	0.591	106	103	2.49	70 - 130	30	70 - 130	30
%SS1:	87	25	108	108	0	102	100	2.02	70 - 130	30	70 - 130	30
%SS2:	100	25	103	102	0.904	101	99	1.28	70 - 130	30	70 - 130	30

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

## BATCH 54290 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1011251-001A	11/05/10 12:49 PM	11/09/10	11/09/10 11:18 PM	1011251-001A	11/05/10 12:49 PM	11/09/10	11/09/10 11:18 PM
1011251-002A	11/05/10 11:43 AM		11/10/10 12:01 AM	i	11/05/10 11:43 AM	11/10/10	11/10/10 12:01 AM
1011251-003A	11/05/10 12:12 PM		11/10/10 12:43 AM	1011251-003A	11/05/10 12:12 PM	11/10/10	11/10/10 12:43 AM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

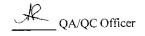
% Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.



# QC SUMMARY REPORT FOR E200.8

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 54293

WorkOrder 1011251

EPA Method E200.8	Extra	ction E20	8.00					S	piked Sar	npie ID	: 1010274-0	)13A
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acc	eptance	Criteria (%)	)
	μg/L	μg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
Antimony	ND	10	98.8	99.6	0.797	114	106	7.46	70 - 130	20	85 - 115	20
Arsenic	1.7	10	96.1	94.9	1.07	93.7	102	8.66	70 - 130	20	85 - 115	20
Barium	59	100	94.8	96.2	0.908	94.9	93.6	1.42	70 - 130	20	85 - II5	20
Beryllium	ND	10	82.1	85.2	3.78	106	104	1.43	70 - 130	20	85 - 115	20
Cadmium	ND	10	93.6	95.7	2.24	99.8	97.5	2.29	70 - 130	20	85 - 115	20
Chromium	0.61	10	89.6	90.4	0.770	99.4	95.6	3.79	70 - 130	20	85 - 115	20
Cobalt	ND	10	87.2	86	1.36	103	102	0.782	70 - 130	20	85 - 115	20
Copper	110	10	NR	NR	NR	93.6	93.4	0.139	70 - 130	20	85 - 115	20
Lead	ND	10	97.4	96.7	0.701	94.6	92.3	2,42	70 - 130	20	85 - 115	20
Mercury	ND	0.25	101	100	1.19	92.1	89.3	3.13	70 - 130	20	85 - 115	20
Molybdenum	2.0	10	94.2	95.4	1.05	96.6	94.6	2.18	70 - 130	20	85 - 115	20
Nickel	1.8	10	82.8	85.2	2.36	97.5	98.2	0.689	70 - 130	20	85 - 115	20
Selenium	ND	10	95.4	94.8	0.583	101	95.3	6.22	70 - 130	20	85 - 115	20
Silver	ND	10	88.7	89.5	0.931	97.6	95.4	2.22	70 - 130	20	85 - 115	20
Thallium	ND	10	95	94	0.963	91.4	89.7	1.88	70 - 130	20	85 - 115	20
Vanadium	3.7	10	101	97.7	2.28	103	100	2.58	70 - 130	20	85 - 115	20
Zinc	11	100	88.5	91	2.45	99.9	101	0.966	70 - 130	20	85 - 115	20
%SS:	97	750	96	97	0.568	98	98	0	70 - 130	20	70 - 130	20

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE

### BATCH 54293 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1011251-001B	11/05/10 12:49 PM	11/08/10	11/09/10 3:23 PM	1011251-002B	11/05/10 11:43 AM	11/08/10	11/09/10 3:32 PM
1011251-003B	11/05/10 12:12 PM	11/08/10	11/09/10 3:41 PM				' '

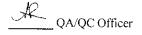
MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not applicable to this method.

NR = matrix interference and/or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.



A Carriery

Web Telepho	osite: <u>www.me</u> ne: (877) 252	1534 WI PITTSBI camphell -9262	LLOW PA RG, CA 9 .com .km	88 RO 4565-15 ail: mi	AD Inj tinan F	icean ix: (	որհշե 1925) 2	com 52-91	£69				RN /	\R0		D T	[M]	Ξ	R	) 131	**	Q ah	-	## 	] H2	721		) 11/2		
Report To: Jos	L GREEK	12	I	ВіНТс	<u>د_ ر</u>	<u> </u>	<u>136</u>	ک		We demokratie	_	<del></del>				Anal	<u>ysis</u>	Req	nest	- 3	<u> </u>				0	ther	Cor	ment		
Company: (36) 1140 (3c) Tele: (50) 50 Project #: Project Location: Sampler Signatur	5M AM CAT CA 13:5282 344 BD	ING2 NOOC	L AS	E-Mai	t Nan	' <del>'</del> } ne:	Allt	D e	N.	) (S. C.	*	in Cas (e82) N921 × N935) (E875 (e82) / 80215	(4) (301.5)	Great 1661, 3520 PHKP	KATEGONJADNI) LBOZI JHVOK SI	Postickers	OMAN Amelor Congener	-beby hebers is	Cl Berkeidest	はなるという		. 2968 - Oglu , 60265	Stan one shot	H / 6128	(34.34.) L	DAG BOTTELL WINE	for ana	er iples Metals lysisi No	er en	
		SAM	PLING		S Jai	2 N	IATŘ	IX		ETHO SERV		Ē 2	hotes	₹ . 2 :	3 3	: X.	<u></u>	5			4	9	2	33	engli.	3	100			
SAMPLE (D	I OCATION: Field Point Name	Date	Time	# Containers	lyte Cantain	Water	Nir	Sludge Other	3.)	Solution	Other		(PB as )Week, 3	intai l'atrafater	Part Cars Fig.	FPASHS GINERAL	1 1 No. 3 - 30 V 1 1	F P V 5077 - 86.14	FFA 563 - SI51	179 7 170 V 14	NIV MEN X.	TANE WEST	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	11,118 (18)	THIXILI		Capp Br*  C  C  Characteristic various / trimpagan.neps/por  HP delegation before various / trimpagan.neps/por		A A	
			1 / <sup>1</sup> 1 /		7 /y 0 _	~	:		7.	Ps. Fs.	<sub>F</sub> J <sup>c</sup>				***************************************				- N	<.		, - ad men en	* * * · · · · · · · · · · · · · · · · ·		s .	,				
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# **CHAIN-OF-CUSTODY RECORD**

Page 1 of 1

McCampbell Analytical, Inc.
1534 Willow Pass Rd
Pittsburg CA 94565-1701

Report to:         Bill to:           Joel Gregor         Email: cage2usa@aol.com         Joel Greger           Geo-Logic         cc:         Geo-Logic           1140 5th Avenue         PO:         1140 5th Avenue           Crockett, CA 94525         ProjectNo: Allied Engineering         Crockett, CA 94525		ThirdParty		<sub>lag</sub>
Joel Gregor Email: cage2usa@aol.com Joel Greger Geo-Logic cc: Geo-Logic 1140 5th Avenue PO: 1140 5th Avenue Crockett, CA 94525 ProjectNo: Allied Engineering Crockett, CA 94525		quested TAT:	5 d	lays
1140 5th Avenue PO: 1140 5th Avenue Crockett, CA 94525 ProjectNo: Allied Engineering Crockett, CA 94525	Da			
(Tab) Tab	Da	te Received: te Printed:	11/08/2 11/08/2	
(510) 787-6867 FAX (510) 787-1457				
Requested Tests (So	e legend b	below)		
Lab ID Glient ID Matrix Collection Date Hold 1 2 3 4 5 6	7 8	9 10	11	12
1011251-001 MW1 Water 11/5/2010 12:49 B A A				
1011251-002 MW2 Water 11/5/2010 11:43 B A				
1011251-003 MW3 Water 11/5/2010 12:12 B A				

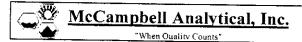
### Test Legend:

1 CAM17MS_DISS	2 GAS8260_W	3 PREDF REPORT	4	5
6	7	8	9	10
11	12			

The following SampIDs: 001A, 002A, 003A contain testgroup.

Prepared by: Ana Venegas

### Comments:



Comments:

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Web: www.mccampbell.com E-mail: main@mccampbell.com
Telephone: 877-252-9262 Fax: 925-252-9269

# Sample Receipt Checklist

Client Name:	Geo-Logic				Date	and <sup>-</sup>	Time Received:	11/8/2010	5:04:52 PM
Project Name:	Allied Engine	ering			Che	cklist	completed and re	eviewed by:	Ana Venegas
WorkOrder N°:	1011251	Matrix <u>Water</u>			Carri	ier:	Derik Cartan (M	IAI Courier)	Ť
		Chair	of C	ustody (	COC) Inform	nation	n		
Chain of custody	present?		Yes	-	No □				
Chain of custody	signed when relia	quished and received?	Yes	V	No □				
	agrees with samp		Yes	<b>V</b>	No □				
Sample IDs noted	by Client on COC	?	Yes	V	No 🗆				
Date and Time of	collection noted by	Client on COC?	Yes	<b>✓</b>	No 🗆				
Sampler's name n	noted on COC?		Yes	✓ .	No □				
		Si	ample	Receip	t Informatio	n			
Custody seals int	act on shipping co		Yes		No □	11	,	va 🗹	
	er/cooler in good c		Yes	<b>V</b>	No 🗆		'	W4 1221	
Samples in prope			Yes	<b>V</b>	No 🗆			•	
Sample container			Yes	<b>✓</b>	No 🗆				
Sufficient sample	volume for indicat	ed test?	Yes	<b>7</b>	No 🗆				
••		Sample Preser	vatio	n and Ho	old Time (HT	r) Info	ormation		
All samples receiv	ved within holding		Yes	<b>V</b>	No □				
Container/Temp B	Blank temperature		Coole	er Temp:	3.6°C		١	va 🗀	
Water - VOA vials	s have zero heads	pace / no bubbles?	Yes	V	No 🗀	No \	VOA vials submitt		
Sample labels che	ecked for correct p	reservation?	Yes	<b>✓</b>	№ 🗌				
Metal - pH accepta	able upon receipt (	pH<2)?	Yes	$\checkmark$	№ □		7	<b>м</b> 🗆	
Samples Received	d on ice?		Yes	$\checkmark$	No 🗆				
		(Ice Type	: WE	TICE )	)				
* NOTE: If the "No	o" box is checked,	see comments below.							
			==	===:					
Client contacted:		Date contacte	d:				Contacted by	y:	



# McCampbell Analytical, Inc. "When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701 Web: www.mccampbell.com E-mail: main@mccampbell.com
Telephone: 877-252-9262 Fax: 925-252-9269

"When Quality	Counts"		Telephone: 8	77-252-9262 Fax: 92:	5-252-9269			
Geo-Logic	Client Pro	oject ID: Allied l	Engineering	Date Sampled:	11/05/10			
1140 5th Avenue				Date Received: 11/08/10				
1140 Jul Avenue	Client Co	ontact: Joel Greg	gor	Date Extracted: 11/09/10-11/10/10				
Crockett, CA 94525	Client P.0	O.:		Date Analyzed: 11/09/10-11/10/10				
The state of the s	Oxygenated Vol	atile Organics &	BTEX by GC/M	IS*				
Extraction Method: SW5030B	, ,	lytical Method: SW826	•		Work Order:	1011251		
Lab ID	1011251-001A	1011251-002A	1011251-003A					
Client ID	MWI	MW2	MW3		Reporting Limit fo			
Matrix	W	W	W		Dr.	-1		
DF	1	1	1		s	W		
Compound		Conce	entration		ug/kg	μg/L		
tert-Amyl methyl ether (TAME)	ND	ND	ND		NA	0.5		
Benzene	4.5	28	ND		NA	0.5		
t-Butyl alcohol (TBA)	ND	ND	ND		NA	2.0		
				<del></del>	+			
1,2-Dibromoethane (EDB)	ND	ND	ND	1	NA	0.5		
	ND ND	ND ND	ND ND		NA NA	0.5		
1,2-Dichloroethane (1,2-DCA)					<del>                                     </del>			
1,2-Dichloroethane (1,2-DCA)	ND	ND	ND		NA	0.5		
1,2-Dichloroethane (1,2-DCA)  Diisopropyl ether (DIPE)  Ethylbenzene	ND ND	ND ND	ND ND		NA NA	0.5		
1,2-Dichloroethane (1,2-DCA)  Diisopropyl ether (DIPE)  Ethylbenzene  Ethyl tert-butyl ether (ETBE)	ND ND ND	ND ND 2.3	ND ND ND		NA NA NA	0.5 0.5 0.5		
1,2-Dichloroethane (1,2-DCA)  Diisopropyl ether (DIPE)  Ethylbenzene  Ethyl tert-butyl ether (ETBE)	ND ND ND	ND ND 2.3 ND	ND ND ND		NA NA NA	0.5 0.5 0.5		
1,2-Dichloroethane (1,2-DCA)  Diisopropyl ether (DIPE)  Ethylbenzene  Ethyl tert-butyl ether (ETBE)  Methyl-t-butyl ether (MTBE)	ND ND ND ND ND	ND ND 2.3 ND 0.55	ND ND ND ND ND		NA NA NA NA	0.5 0.5 0.5 0.5		
Ethyl tert-butyl ether (ETBE)  Methyl-t-butyl ether (MTBE)  Toluene	ND	ND ND 2.3 ND 0.55 ND	ND		NA NA NA NA NA NA NA	0.5 0.5 0.5 0.5 0.5 0.5		
1,2-Dichloroethane (1,2-DCA)  Diisopropyl ether (DIPE)  Ethylbenzene  Ethyl tert-butyl ether (ETBE)  Methyl-t-butyl ether (MTBE)  Toluene	ND	ND	ND		NA NA NA NA NA NA NA	0.5 0.5 0.5 0.5 0.5 0.5		

<sup>\*</sup> water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

<sup>#</sup> surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.

MeC	Campbell Anal		Web: www.mccan	Pass Road, Pittsburg, CAnpbell.com E-mail: main: 877-252-9262 Fax: 92		.com
Geo-Logic		Client Project ID:		Date Sampled:		
1140 53 4				Date Received:	11/08/10	
1140 5th Avenue	;	Client Contact: Jo	el Gregor	Date Extracted:	11/09/10-	11/10/10
Crockett, CA 945	25	Client P.O.:		Date Analyzed		
			Trap and GC/MS*	1		···
Extraction method SW5	5030B		ethods SW8260B		Work Order:	1011251
Lab ID	Client ID	Matrix	TPH(g)	D	F %SS	Comments
001A	MWI	w	120	1	103	
002A	MW2	w	110	1	108	
003A	MW3	W	ND	*	106	
				· · · · · · · · · · · · · · · · · · ·		
					<u> </u>	
				<u> </u>		<u> </u>
•	ing Limit for DF =1;	w	50		μg/I	•
	the reporting limit	S	NA		NA	

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.

%SS = Percent Recovery of Surrogate Standard

DF = Dilution Factor

Web		1534 WH PUTTSBU amphell	LLOW PA RG, CA 9	SS RO 1565-11	AD 701 ain-g r	нссан	npbel		269		1			RO	UNE	TI (	N OI ME		Q RUSE	11 3		ł.	48 I	l IR	72 H	/—	
Report To: Joe	- GREGI	2	Ŀ	sill Te	): <i>(</i> -	ec-	رنو	10							A	naly	sis Re	que:	st g	Ĵ				O	ther	Comments	1
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Tele: (510) 5° Project#:	12 - 2252			ax: (		<u>)</u>	Acci	w c		المجهر	- F	T COK		3 3	. X	_	Ž.	ides	大	<u>}</u>	Ê	. <b>35</b>		3	Œ	analysis: Yes / No	
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			PLING	, s	ž,	Ρ,	1411	REX	PRE	THOD SERVE		0.000	Hotor O	ofal Petroleum (bif & C. ofal Petroleum II) deve		PA SUSCINIS (808) (C)	PA 605 / KB2 PC B'S ONLA; Armelors PA 507 / SLM (NP Perticides)	515 / 8151 (Acidio Cl Herbicides	24.2 16.24 (260) VOL.19	\$ (18270) (SNOC3) \$ (4800) (880) (38	Netab (200.7 / 200.8 / 6010 / 6020)	Netals (289,7) 286,87 64107 6020;	7. 2148 N. 641347 641245	CAMITACERS	CORD AND THE CHANGE OF THE	AND	D - 0
SAMPLE ID	LOCATION/			ontainers	1 2					1	3	7	Σ: Έ	frum Frum	149	8	1718	7.	7.79	ğ	4	5	**	DISTORAÇO		O S FILL	Diver
	Field Point Name	Date	Time	nta	[ ₹	1 5		립 :			-   E	Ξ.	PH as Diesel	,eta	걸	30	5   C 8   S	15.	2	2	-	7.	ź	25	5	000	12
/				°C #	ž	Water	景岩	Sludge Other	E E	HNO HNO	MIBL BIL	# C	<u>.</u>		5.	7.1	4 · 5	1.5	7.	¥ 1	7	Ξ	cad (	3	Ž	علها إن	17
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MUL 181		12/10	1466		FA	QH.	CI							D THON LABSI				Pi	الاسلا	DJC.	1 (	× 1		PL	NP	(extrava	ue)
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TRADI HELE	1//-		022C)	14			3				API PRI	PROP ESER	KIAT VED	re co 1844	NTAE B_	NERS 		•			15	~ Z:	アシア	ا بله دن م		in in Feld	
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MURAL	그	1/1/12	1241	Corre	الميل	(-47)	4	INC)			PRI	ESFR	VAT		273	vait.	. AIE pH		. 0	. me.n						1HCL	
· Day		197 F			)	1	/ /	$\sqrt{}$	_				-	. —							-						

Dysert Environmental, Inc.

# FLUID-LEVEL MONITORING DATA

Project Name: ALLIED ENGINERING	Date	: 115-10 - FRIDAY
Project/Site Location: 2421 BLANDING	AUE	ALAWEDA CA
Technician: Q JASQUEZ	Method:	ELECTRONIC.

Boring/ Well	Depth to Water (feet)	Depth to Product (feet)	Product Thickness (feet)	Total Well Depth (feet)	Comments
เนเบ3	5-40	N/D	ND	20.03	B1045
mwi	6,03	N/D	a\v	20.16	BOY BELOW TOC.
MWZ	5-33	<b>√</b> /b	ND	19.14	€ 1050
			j		

DATE: 11-5-10

Well IDM (U)

DYSERT ENVIRONMENTAL, INC. **WELL PURGING / SAMPLING DATA**  Dysert Environmental, Inc.

р.3

PROJECT:

NOTES:

SHELOCATION	: 2421 Blan	iding Aveni	ue					
CITY: Alameda				STATE: C	4			
<u>circle one</u> su	ıbmersible ı	pump (	eristaltic pu	IE DEVICE Imp bla IMG DEVIC	adder pump <i>E</i>	dispo	sable bailer	
circle one blacasing diameter (casing volumes (casing volumes)		peristalt circle one circle one		disposable 1 0.05		iscrete sam 2 0.2	pler other	er 6 1.52
	SA	MPLER/S:		LL DATA				
WELL NUMB						:		
		LL DEPTH:	20.14	<b>a</b>		*****	·····	
В	. DEPTH T	O WATER:	5,3	3				
C. W	ATER HEI	GHT (A-B):	14.8	3				
D. WELL	CASING D	NAMETER:	2					
	E. CASING	VOLUME:						
F. SINGLE C	ASE VOLU	JME (CxE):		<u> </u>				
G. CASE VOL				· · · · · · · · · · · · · · · · · · ·				
H: 80% REC	HARGE LE	VEL (F+B):		GE DATA				
START TIME:	1216	<del></del> ,	PUR	GE DATA				
FINISH TIME:	179	3						<del> </del>
	1 = 0	<u> </u>	RECHARGE	/SAMPLE	TIME			***************************************
DEPTH TO WAT		33		TIME MEA		245		
GREATER THAN		L TO 80% I	RECHARG			ne (YES	), NO	
SAMPLE TIME:	1249	- , -	0.0	DEPTH TO		<u>5-33</u>		
SAMPLE APPEA				FUEL	- OR	<u> </u>		<u> </u>
TOTAL GALLON	S PURGED		MELLELI	) D PARAME	TEDS	~ <del></del>		<del> </del>
CASE VOLUME	0	0.5	1-0	1-5	2.0	2.5	3.0	
pН	7-26	7.27	7.22	7.22	7-17	7-25	7.24	
TEMP in °C	20.8	19.8	19.9	19.9	19.8	19-8	19.8	
USEM COND/SC	1683	925	924	916	903	910	912	
DTW	5,33	5-40	5.58	6.40	7.08	7.36	7.48	
Pump Depth	12FT							
Pump Rate	2 Guil							<b>7</b> 

Well ID: WW2\_

DYSERT ENVIRONMENTAL, INC. WELL PURGING / SAMPLING DATA

Dysert Environmental, Inc.

PROJECT:

SITE LOCATION: 2421 Blanding Avenue

DATE: 11-5-10

CITY: Alameda		····		STATE: C	A		· · · · · · · · · · · · · · · · · · ·	
			PUR	SE-DEVICE				
<u>circle one</u> s	ubmersib <b>le</b>	pump (	peristaltic p		ladder pumj	o dispo	sable bailer	
<u>circle one</u> bl	adder pump	C peristal	tic pump			liscrete san	npler oth	er
casing diameter (		circle one	0.75	•	1.5			6
casing volumes (	gallons)	circle one	0.02	0.05	0.15	0.2	0.7	1.52
			WE	LL DATA	,			
	SA	MPLER/S:	RNA	SOLE T	<i>-</i>			
WELL NUMB	ER / FIELD	POINT ID:	Mu	2		-		
A. 1	TOTAL WE	LL DEPTH:	19-1	4				
	3. DEPTH T	O WATER:		3				
C. W	VATER HEI	GHT (A-B):	131					
D. WELL	CASING D	NAMETER:	2					
	E. CASING	VOLUME:	U. 6	) —			· <u></u>	
F. SINGLE	CASE VOLU	JME (CxE):	2-6	2			· · · · · · · · · · · · · · · · · · ·	
G. CASE VOL	.UME (s) (C	xEx):	7.8	7				
H: 80% REC	HARGE LE	VEL (F+B):	8-6	ς				
			PUR	GE DATA				
START TIME:	1117							
FINISH TIME:	1136							
		~ <i>,</i>	RECHARGE	/ SAMPLE	TIME			
DEPTH TO WAT		<u> کاد</u>		TIME MEA	SURED:	1140		
GREATER THAN		L TO 80%	RECHARG	E LEVEL (F	i): <u>circle c</u>	ne XES	NO NO	
SAMPLE TIME:	<u> 1143</u>		<del> </del>	DEPTH TO	WATER:	650		······································
SAMPLE APPEA			ear	DE	IFC C	SOOR		
TOTAL GALLON	IS PURGED	<u></u>	GALLON	15				
	1 .	1	VELL FLUI	D PARAME	TERS			,
CASE VOLUME	$\triangle$	0.5	1-0	1-5	2.0	2.5	3.0	
pH	75i	7.39	7.35	7.49	7.34	7.35	7.40	
TEMP in °C	20.61	20.6	21-0	20.9	21-0	20.9	20,9	
COND/SC	586020 585	522 volu	512 cook	520 cks	50 lester	502 vsku	498 usk	LLI
DTW	6.03	4.83	6-41	5.43	6.53	7.29	8-06	
Pump Depth	12FT							*************
Pump Rate	Born							<del></del>
NOTES:	<i>[</i> 1						···········	

DATE: 11-5-10

Well ID: ww 3

DYSERT ENVIRONMENTAL, INC. WELL PURGING / SAMPLING DATA

Dysert Environmental, Inc.

PROJECT:

5,40

12FT 2L/

DTW

Pump Depth

**Pump Rate** NOTES:

CITY: Alameda	STATE: CA
	PURGE DEVICE
<u>circle one</u> submersible pump	peristaltic pump bladder pump disposable bailer
circle one bladder pump peristal	SAMPLING DEVICE  altic pump > disposable bailer   discrete sampler   other
casing diameter (inches) circle one	0.75
casing votumes (gallons) circle one	$\sim$ $\sim$ $\sim$ $\sim$ $\sim$
	WELL DATA
SAMPLER/S:	: R.VASCLE?
WELL NUMBER / FIELD POINT ID:	: MW3
A. TOTAL WELL DEPTH:	: 20.03
B. DEPTH TO WATER:	: 5.40
C. WATER HEIGHT (A-B):	: 14.63
D. WELL CASING DIAMETER:	: 2
E. CASING VOLUME:	: 0.7
F. SINGLE CASE VOLUME (CxE):	2.93
G. CASE VOLUME (s) (CxEx 3):	8.78
H: 80% RECHARGE LEVEL (F+B):	<del></del>
	PURGE DATA
START TIME: 1100 STOPP	ED QUIZ SEE DOTES, START AGAIND
FINISH TIME: 1260	
	RECHARGE / SAMPLE TIME
DEPTH TO WATER: 5,40	TIME MEASURED: 1210
GREATER THAN OR EQUAL TO 80% I	RECHARGE LEVEL (H): <u>circle one</u> YES NO
SAMPLE TIME: (2)2	DEPTH TO WATER: 5-40
SAMPLE APPEARANCE / ODOR:	LIEAR NO ODOR.
OTAL GALLONS PURGED: 9 9	AILONS
1/	WELL FLUID PARAMETERS
CASE VOLUME C 6.5	1.0 1.5 2.0 2.5 3.0
	7.62 757 748 745 741
CASE VOLUME C 6.5	