ICF KAISER ENGINEERS

CLEMENT DIVISION

November 20, 1992

ICF Kaiser Engineers, Inc. 1800 Harrison Street P.O. Box 23210 Oakland, California 94612-3430 510/419-6000

Ms. Juliet Shin, Hazardous Materials Specialist Alameda County Department of Environmental Health Hazardous Materials Division - UST Local Oversight Program 80 Swan Way, Room 200 Oakland, CA 94621

RE: Beck Roofing - 21123 Meekland Avenue Hayward, CA 94541

Dear Ms. Shin:

Enclosed please find a copy of the Third Quarter Groundwater Monitoring Report for the above referenced case. As required by the agency, the report includes groundwater analytical data and groundwater elevation data for the months of June, July, August, and September.

If you have any questions, please feel free to contact me at (510) 419-5507 or Mr. Frank Fenzel at (510) 419-5413.

Sincerely yours,

Robert H. Cheung
Environmental Analyst

enclosure

cc: Charles and Mary Beck (w/enclosure)

Fred M. Duman, Esq. (w/o enclosure) Michael S. Brown, Esq. (w/o enclosure)

Chris Whipple (w/o enclosure)

Frank Fenzel (w/o enclosure)

file 05085-001-00

THIRD QUARTERLY GROUNDWATER MONITORING REPORT

FOR

BECK ROOFING

Prepared For:

Beck Roofing 21123 Meekland Avenue Hayward, California 94541

Prepared By:

ICF Kaiser Engineers, Inc.
Clement International Corporation
1800 Harrison Street
Environmental Group
Oakland, California 94612

November 4, 1992

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1.0 INTRODUCTION

Beck Roofing is an active roofing business located at 21123 Meekland Avenue in Hayward, California. Figure 1 depicts the site location. The owners had a 1,000-gallon capacity gasoline underground storage tank (UST) removed from the property on May 20, 1991. Post-excavation soil sampling results indicated that a possible release of the tank's contents to the surrounding environment had occurred. Because of this, the Alameda County Department of Environmental Health (DEH), in an August 5, 1991 letter to Beck Roofing, required that further site investigation take place, including the installation of groundwater monitoring wells (see Figure 2). Since that date, an environmental consultant for Beck Roofing, L & W Environmental Services, Inc. (L & W), has provided two Quarterly Groundwater Monitoring Reports to the DEH. The reports documented the results of L & W's work up to December 31, 1991; and their work from December 31, 1991 to March 31, 1992.

During the period between April and May, 1992, Beck Roofing terminated their relationship with L & W. Clement International Corporation (Clement) was contracted by Beck Roofing to continue the DEH-required environmental investigations at their former gasoline UST location. This report represents the third Quarterly Groundwater Monitoring Report for the UST site. Because of the delays incurred during the change in consultant from L & W to Clement, the report does not contain any groundwater monitoring data for the months March, April, or May, 1992. This circumstance was acknowledged by the DEH in its letter to Beck Roofing dated June 18, 1992.

2.0 BACKGROUND

Four previous rounds of groundwater sampling had been reported by L & W: November and December, 1991, and January and February, 1992. The previous sampling results from the three onsite wells were inconsistent. No contaminants were detected in the November or January sampling, but traces of gasoline-range hydrocarbons were detected in MW-3 in December, 1991,

and in all three wells in February, 1992.

Clement contracted with Brown and Caldwell Analytical (BCA) to collect monthly groundwater samples from the three onsite monitoring wells installed in 1991 by L & W. The approximate locations of the wells are shown on Figure 2. BCA sampled the wells in the months of June, July, August, and September 1992, and recorded the depth to groundwater in each case.

3.0 SUMMARY OF THIRD QUARTER MONITORING RESULTS

BCA collected groundwater samples from the three onsite wells on June 16, July 15, August 13, and September 9, 1992. The samples were analyzed for the same chemical parameters as in previous sampling rounds: total petroleum hydrocarbons, gasoline-range (TPH-G); benzene, toluene, ethylbenzene, and xylenes (BTEX - aromatic hydrocarbons typical of gasoline); and organic lead (historically, a gasoline additive).

Table 1 summarizes the results of the Third Quarter sampling, and also recapitulates the previous four rounds of groundwater data. The Third Quarter results are highlighted in boldface type. As is evident, gasoline-range hydrocarbons, including BTEX compounds, were present in the samples collected from MW-3. TPH-G was detected at a maximum concentration of 7.4 ppm (September) and benzene at a maximum concentration of 1.20 ppm (September). All other constituents, if present, occurred at concentrations below 0.3 ppm.

MW-2 also showed detectable levels of gasoline-range hydrocarbons in the July sampling event, although the reported concentration was at the method detection limit of 0.050 ppm. The well was free of TPH-G compounds according to the June, August, and September sampling results. Toluene, ethylbenzene, xylenes, and organic lead were not detected in the last four sampling rounds. However, benzene was detected at concentrations from a low of 0.0028 ppm in September to a high of 0.024 in July. The analytical results of samples collected from MW-1 indicate an absence of TPH-G compounds between June and September. As with the results

TABLE 1 GROUNDWATER SAMPLING ANALYTICAL RESULTS

WELL	Sample Date	TPH-G	Benzene	Toluene	Ethylbenzene	Total Xylenes	Lead
MW-1	11/04/91	ND	ND	ND	ND	ND	ND
MW-1	12/23/91	ND	ND	ND	ND	ND	ND
MW-1	01/22/92	ND	ND	ND	ND	ND	ND
MW-1	02/24/92	0.09	0.0004	0.001	ND	ND	ND
MW-1	06/16/92	ND	0.0005	ND	ND	ND	ND
MW-1	07/15/92	ND	0.0013	ND	ND	ND	ND
MW-1	08/13/92	ND	ND	ND	ND	ND	ND
MW-1	09/09/92	ND	ND	ND	ND	ND	ND

WELL	Sample Date	TPH-G	Benzene	Toluene	Ethylbenzene	Total Xylenes	Lead
MW-2	11/04/91	ND	ND	ND	ND	ND	ND
MW-2	12/23/91	ND	ND	ND	ND	ND	ND
MW-2	01/22/92	ND	ND	ND	ND	ND	ND
MW-2	02/24/92	0.33	0.11	0.002	ND	0.0009	ND
MW-2	06/16/92	ND	0.0077	ND	ND	ND	ND
MW-2	07/15/92	0.05	0.024	ND	ND	ND	ND
MW-2	08/13/92	ND	0.0065	ND	ND	ND	ND
MW-2	09/09/92	ND	0.0028	ND	ND	ND	ND

All analytical results in parts per million (ppm).

TPH-G: Total Petroleum Hydrocarbons as Gasoline

ND: Non Detect

TABLE 1 GROUNDWATER SAMPLING ANALYTICAL RESULTS (continued)

WELL	Sample Date	TPH-G	Benzene	Toluene	Ethylbenzene	Total Xylenes	Lead
мw-з	11/04/91	ND	ND	ND	ND	ND	ND
MW-3	12/23/91	0.15	0.06	0.0005	0.0006	0.0097	ND
MW-3	01/22/92	ND	ND	ND	ND	ND	ND
MW-3	02/24/92	4.36	0.710	0.016	0.069	0.4	ND
MW-3	06/16/92	4.90	0.770	ND	0.061	0.240	ND
MW-3	07/15/92	5.50	0.840	0.010	0.085	0.290	ND
MW-3	08/13/92	6.60	1.10	ND	0.097	0.270	ND .
MW-3	09/09/92	7.40	1.20	0.0077	0.095	0.170	ND

All analytical results in parts per million (ppm). TPH-G: Total Petroleum Hydrocarbons as Gasoline

ND: Non Detect

from MW-2, toluene, ethylbenzene, xylenes, and organic lead also were not detected. However, traces of benzene were indicated at a concentration of 0.0005 ppm in the June sample and 0.001 ppm in the July sample. Benzene was not detected in either the August or September sampling rounds.

4.0 GROUNDWATER GRADIENT MEASUREMENTS

Depth-to-water measurements were recorded at each well during each of the sampling events. Table 2 lists the depth-to-water measurements collected to date at the site. Approximate groundwater gradients were calculated for each month and are illustrated in Figures 3 through 11. The groundwater flow direction is approximate because the exact location of the three wells has not yet been surveyed. For this report, Clement relied upon the locations and relative monitoring well elevations used by the previous consultant in their prior submissions to DEH.

5.0 INTERPRETATION OF SITE DATA

The most interesting aspect of the groundwater monitoring data is that the calculated direction of groundwater flow is generally opposite to that previously measured. The flow direction indicated by the June through September depth-to-water measurements is west-to-east; earlier data (excepting February data which is questionable) indicated that the flow direction was east-to-west. This result is significant because it suggests that the former UST location is upgradient of MW-3, the well that has shown the highest concentrations of petroleum hydrocarbons. However, accurate interpretations of the available site data are compromised by the lack of precise site survey measurements. Data evaluation is further hindered by the apparently low hydraulic gradient at the site (< 0.01 vertical ft per 100 horizontal ft) indicated by all depth-to water data except February, which may be in error (a 7.36-foot difference in head between wells MW-1 and MW-3 is difficult to reconcile). To help assess the distribution of TPH constituents in

5

TABLE 2 GROUNDWATER ELEVATION DATA

WELL	SAMPLE DATE	TOP OF CASING	DEPTH TO GROUNDWATER	GROUNDWATER ELEVATION
MW-1	11/04/91	100.01	32.32	67.69
MW-1	12/23/91	100.01	32.54	67.47
MW-1	01/22/92	100.01	32.08	67.93
MW-1	02/24/92	100.01	37.26	62.75
MW-1	06/16/92	100.01	30.31	69.7
MW-1	07/15/92	100.01	30.76	69.25
MW-1	07/28/92	100.01	30.98	69.03
MW-1	08/13/92	100.01	31.23	68.78
MW-1	09/09/92	100.01	31.65	68.36

WELL	SAMPLE DATE	TOP OF CASING	DEPTH TO GROUNDWATER	GROUND ELEVATION
MW-2	11/04/91	100.13	32.44	67.69
MW-2	12/23/91	100.13	32.64	67.49
MW-2	01/22/92	100.13	32.19	67.94
MW-2	02/24/92	100.13	32.00	68.13
MW-2	06/16/92	100.13	30.42	69.71
MW-2	07/15/92	100.13	30.90	69.23
MW-2	07/28/92	100.13	31.12	69.01
MW-2	08/13/92	100.13	31.26	68.87
MW-2	09/09/92	100.13	31.80	68.33

All Groundwater Levels in Feet (ft)

TABLE 2 GROUNDWATER ELEVATION DATA (continued)

WELL	SAMPLE DATE	TOP OF CASING	DEPTH TO GROUNDWATER	GROUNDWATER ELEVATION
MW-3	11/04/91	100.00	32.40	67.60
MW-3	12/23/91	100.00	32.60	67.40
MW-3	01/22/92	100.00	32.14	67.86
MW-3	02/24/92	100.00	29.90	70.10
MW-3	06/16/92	100.00	30.25	69.75
MW-3	07/15/92	100.00	30.70	69.30
MW-3	07/28/92	100.00	30.97	69.03
MW-3	08/13/92	100.00	31.22	68.78
MW-3	09/09/92	100.00	31.95	68.05

All Groundwater Levels in Feet (ft)

soil and groundwater, Clement has developed a supplemental site investigation plan that is provided as an attachment to this Quarterly Monitoring Report. Part of the plan calls for the installation of a groundwater monitoring well near the former location of the UST. This proposal follows the recommendations of Regional Water Quality Control Board staff, as set forth in the August 10, 1990 document: "Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites".

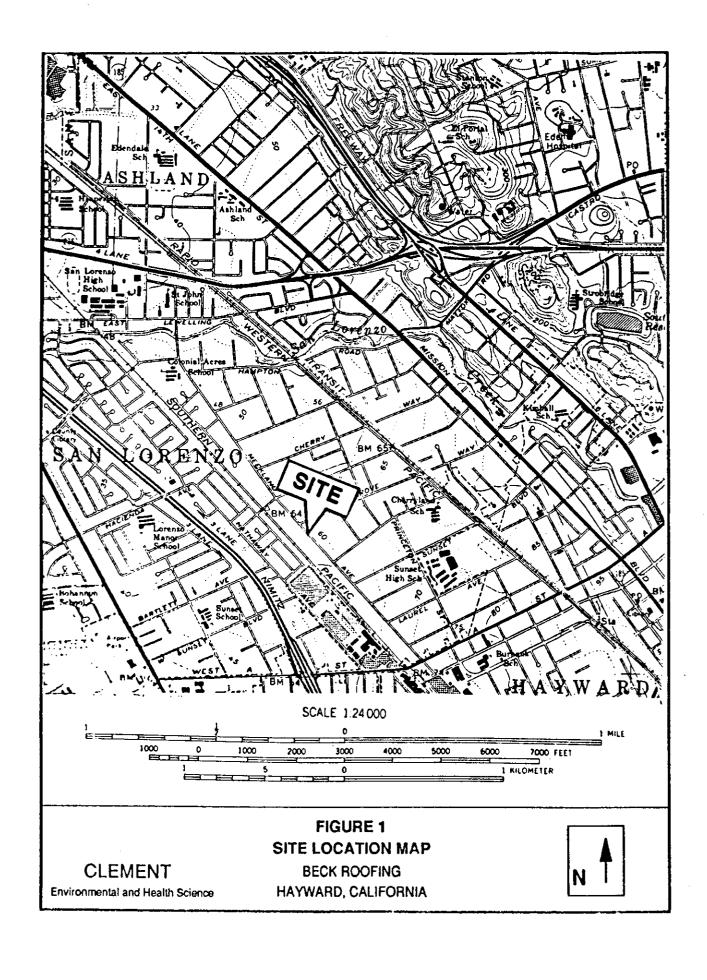
6.0 CONCLUSIONS

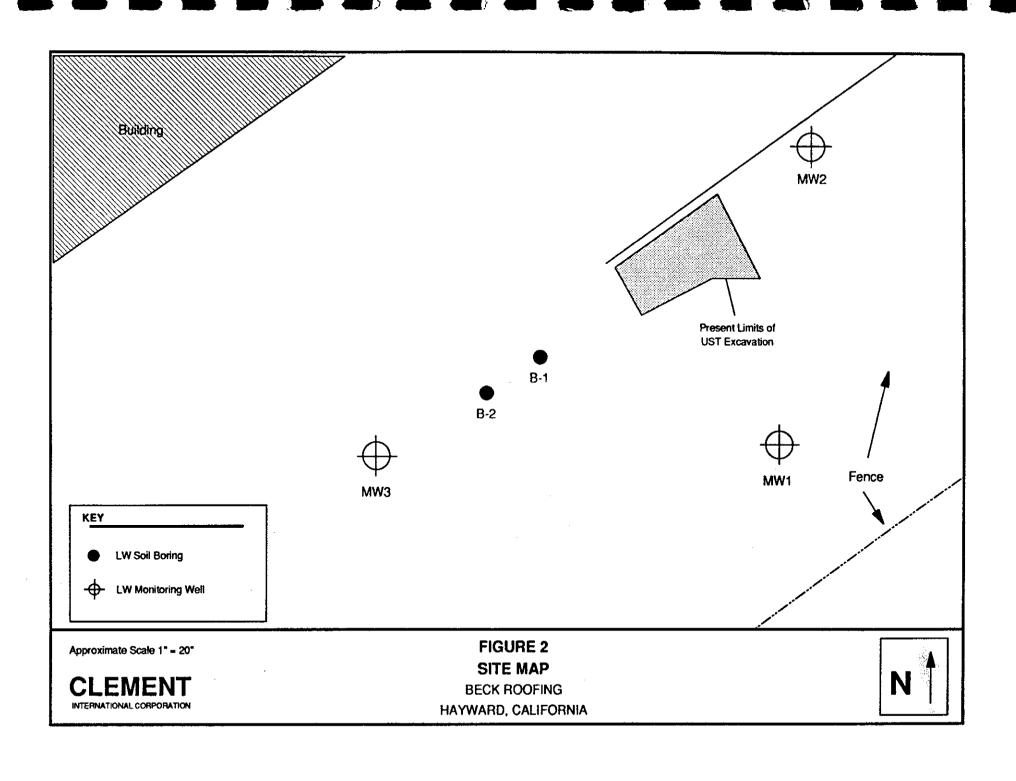
The third quarter of groundwater monitoring at the Beck Roofing site has confirmed the presence of gasoline-range petroleum hydrocarbons in the groundwater underlying the site. The majority of detected contamination is associated with monitoring wells MW-2 and MW-3, situated northeast and southwest of the former gasoline UST location. Well MW-1, southeast of the former UST location, has not exhibited significant levels of the contaminants of concern, although benzene was detected at a concentration of 0.0013 ppm in the July sampling.

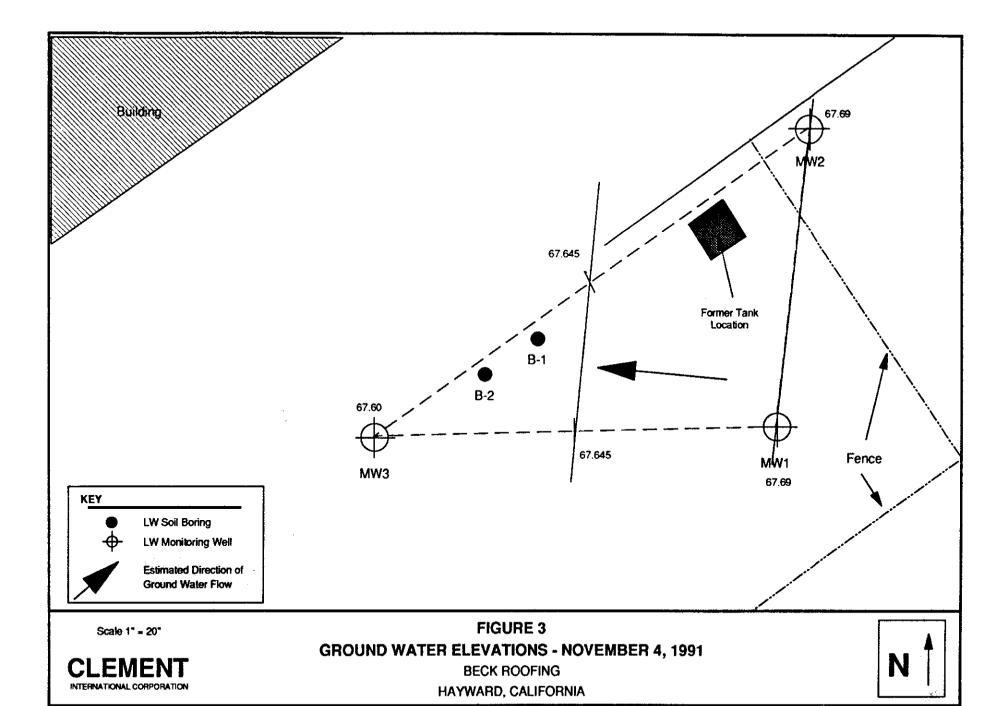
The depth-to-water measurements taken between June and September indicate that the general groundwater gradient is directed toward the east. This result contradicts previous groundwater elevation data which indicated that groundwater flowed to the west. The slope of the water table is of the order of 0.00001 ft/ft. With such a small gradient, it is not surprising that the direction of the groundwater gradient appears to vary and is difficult to establish. The depth to groundwater appears to be about two feet less than measured previously (with the notable exception of MW-1 in February, 1992). This finding is inconsistent with the change from the wetter, winter months to the drier, summer months.

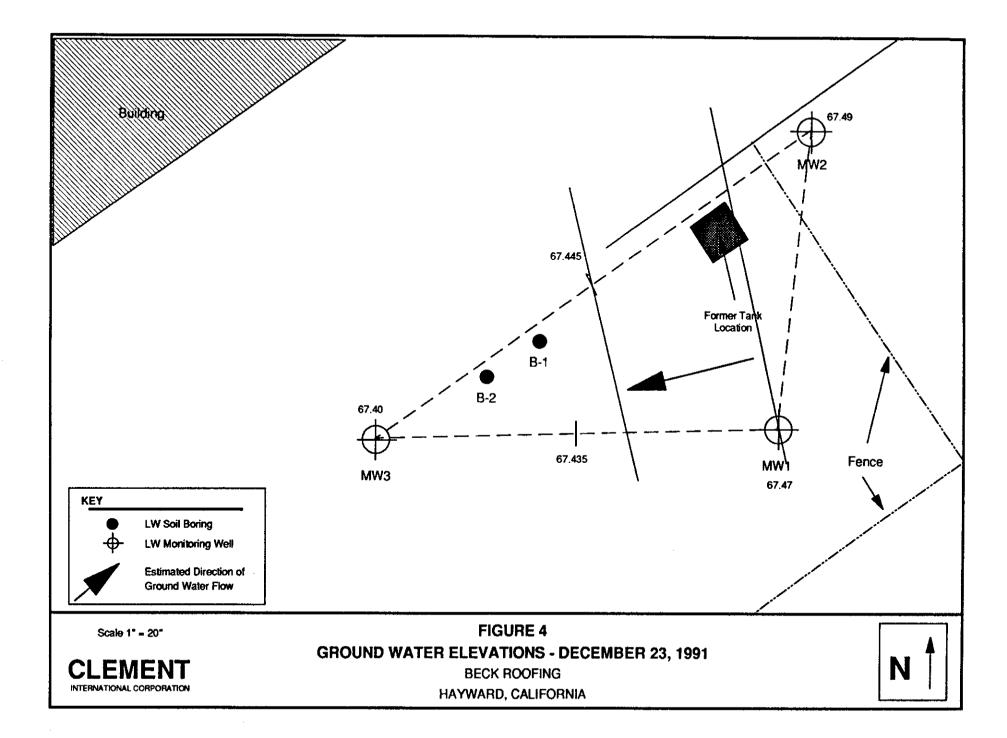
There remain several unresolved issues at the Beck Roofing site, including the extent of soil contamination and the exact source of the groundwater contamination. Although the range of contaminants present in the groundwater is consistent with a gasoline source, deeper soil and groundwater contamination directly beneath the former UST location has yet to be investigated

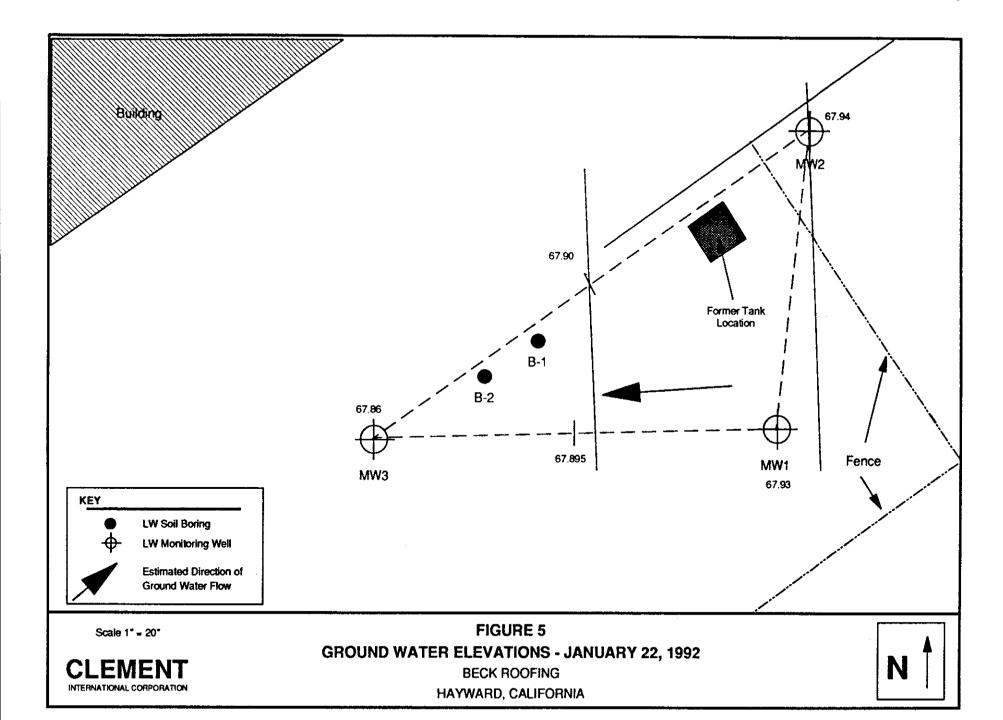
demonstrated. The work proposed in the attached supplemental site investigation plan, once implemented, will help better define the source and extent of petroleum hydrocarbon contamination at the Beck Roofing site and will provide a more reliable basis for development of a sitewide remediation plan.

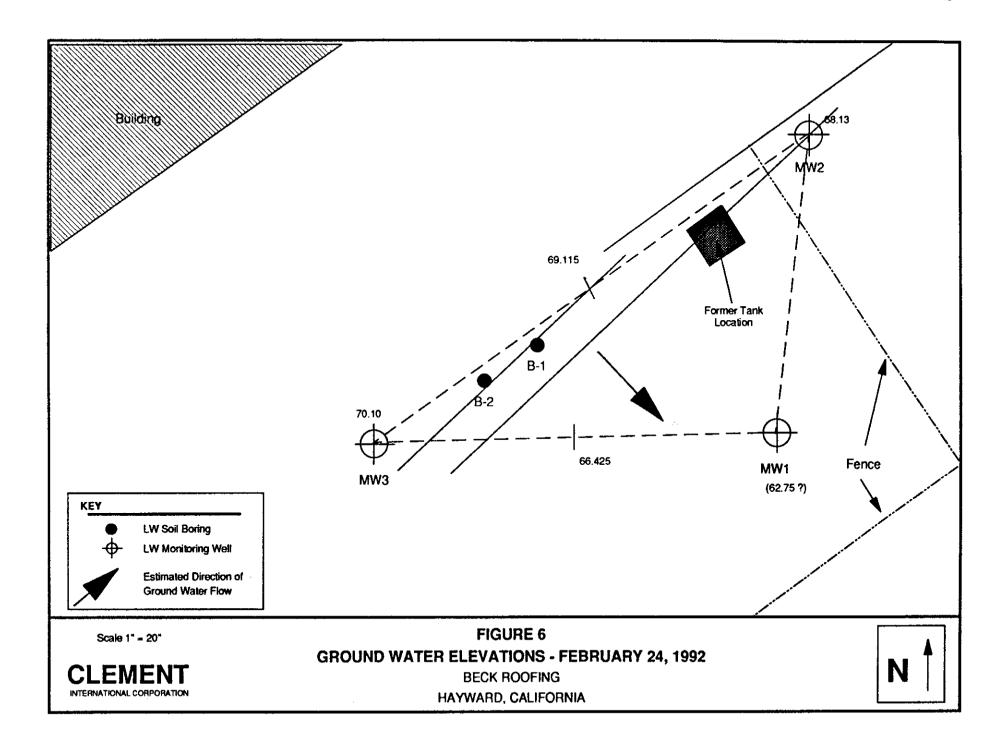


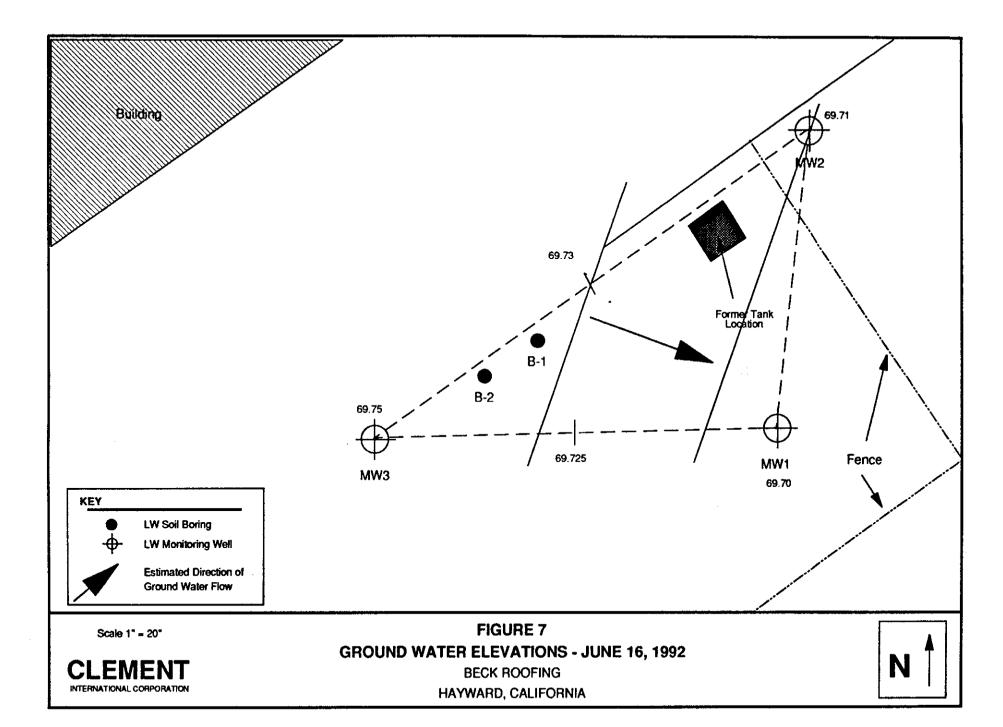


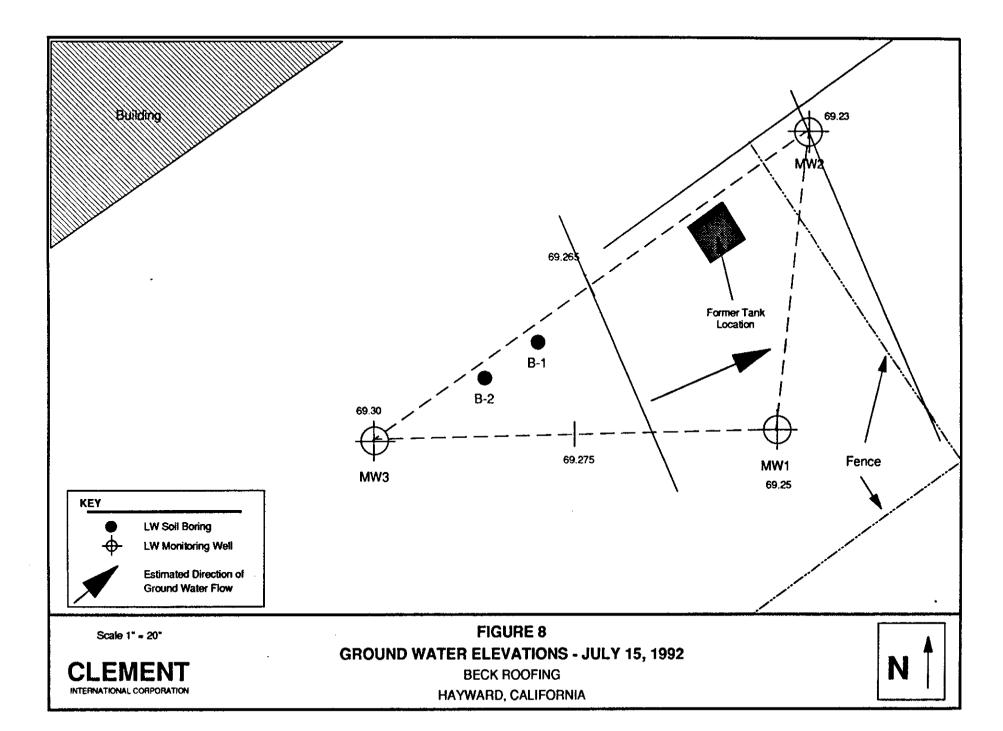


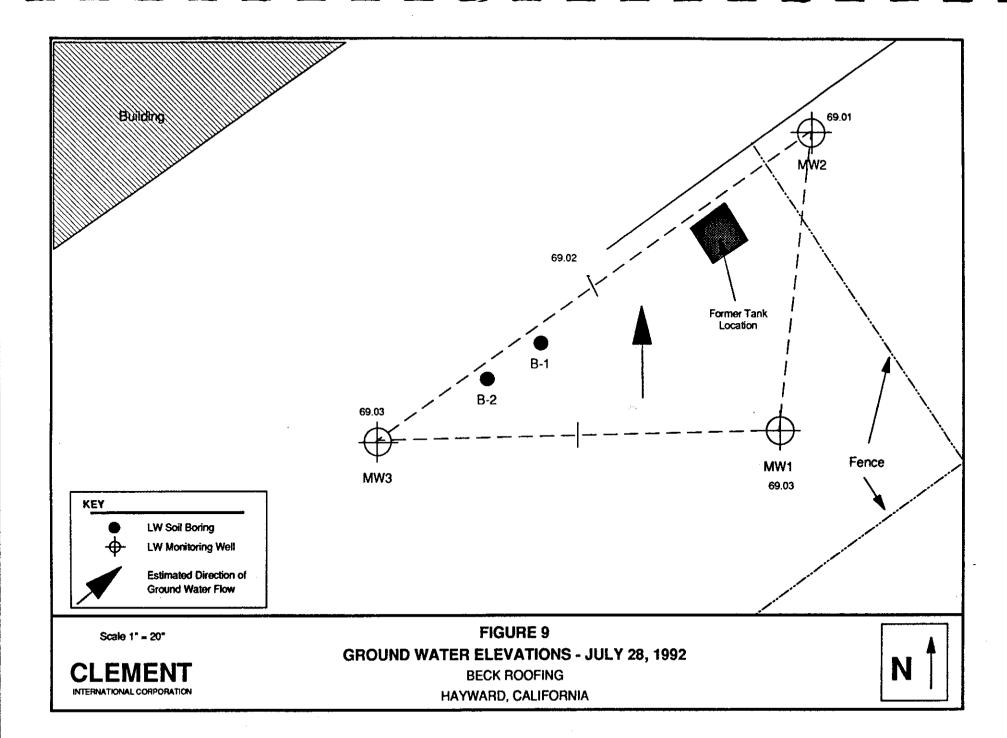


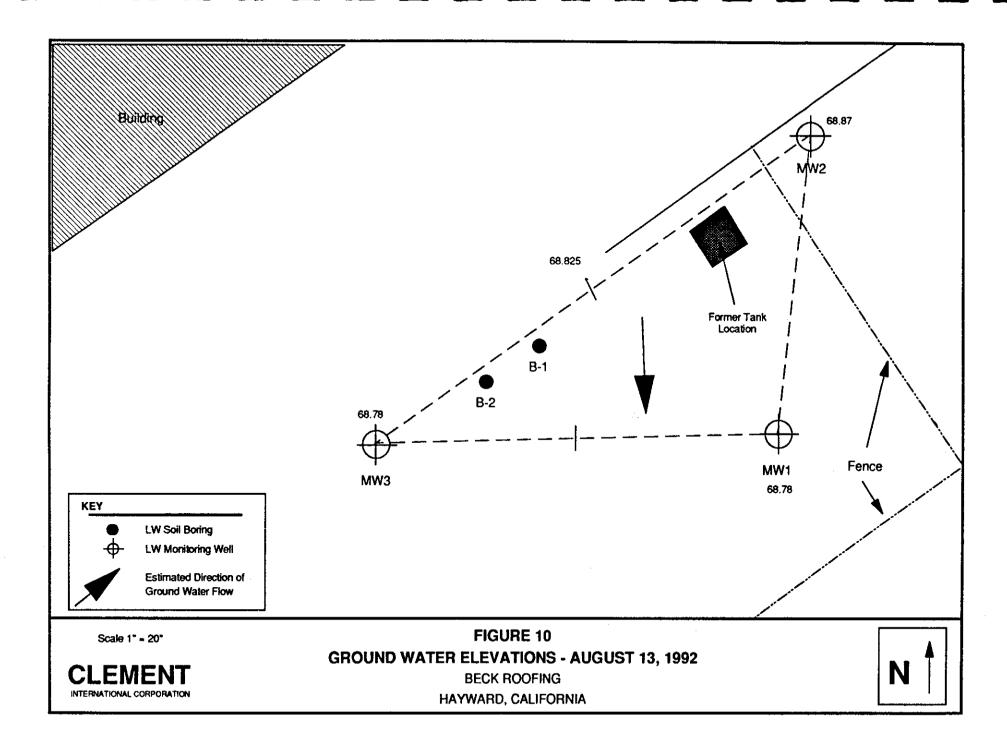


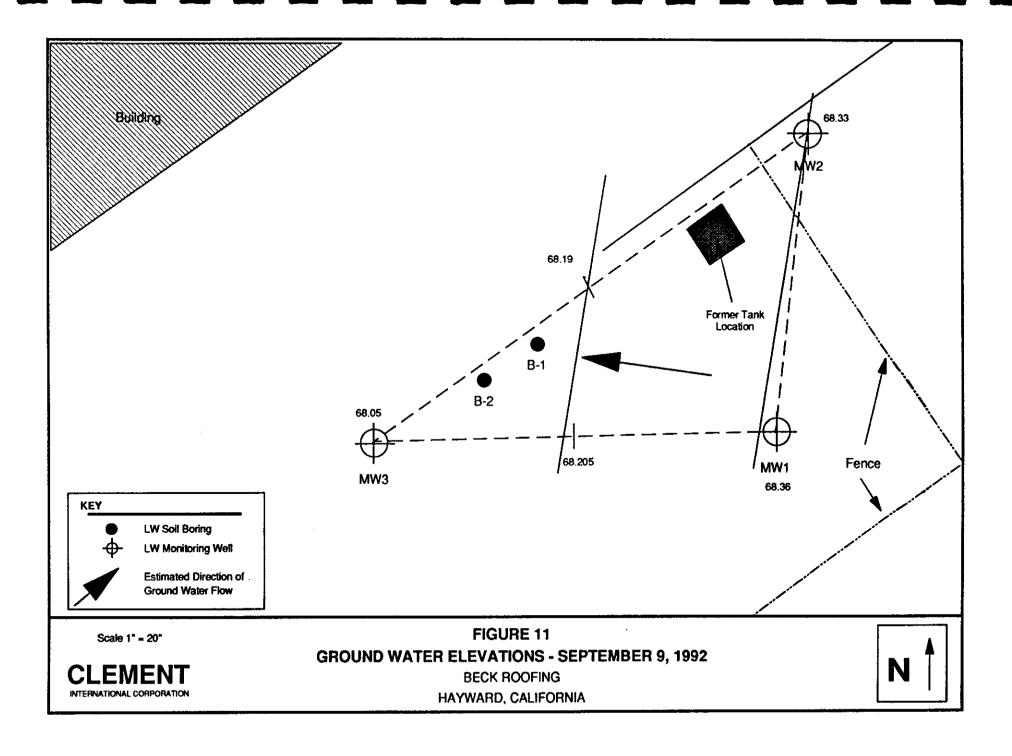












ATTACHMENT A

B C Analytical

ANALYTICAL REPORT

1255 Powell Street Emeryville, CA 94608 510/428-2300 Fax: 510/547-3643

LOG NO: E92-06-374

Received: 16 JUN 92

Mailed: JUL 06 1992

Mr. Peter Barrett Clement Associates 160 Spear Street, Suite 1380 San Francisco, California 94105

Project: 2116

	REPORT OF ANALY	TICAL RESULTS		Page 1
LOG NO	SAMPLE DESCRIPTION, GROUND WATER	R SAMPLES	D/	ATE SAMPLED
06-374-1 06-374-2 06-374-3	MW-3 MW-2 MW-1			16 JUN 92 16 JUN 92 16 JUN 92
PARAMETER		06-374-1	06-374-2	06-374-3
Organic Lea Aromatic Hy		<0.5	<0.5	<0.5
Date Analy Dilution F Benzene, u Ethylbenze Toluene, u	zed actor, Times g/L ne, ug/L	06.30.92 10 770 61 <5 240	06.30.92 1 7.7 <0.5 <0.5 <0.5	1 0.5 <0.5 <0.5
TPH - Volat Date Analy Dilution F C6 to C14	ile Hydrocarbons	06.30.92 10 4900		06.30.92 1 <50

Edward Wilson, Laboratory Director

: BC ANALYTICAL : EMVL LAB : 11:27:46 06 JUL 1992 - P. 1

	SAMPLES	SAMPLE	DESCRIPTION	DETERM	DATE ANALYZED	METHOD	EQUIP.	ВАТСН	ID.NO
1	9206374*1	MW-3		PB,ORG	06.18.92		514-02		7036
•				TPHG, BTEX	06.30.92	5030/8015	516-19	92188	7867
				TPHG.5030	06.30.92	5030/8015	516-19	92188	7867
	9206374*2	MW-2		PB, ORG	06.18.92	LUFT	514-02	9217	7036
				TPHG, BTEX	06.30.92	5030/8015	516-19	92188	7867
_				TPHG.5030	06.30.92	5030/8015	516-19	92188	7867
-	9206374*3	MW-1		PB, ORG	06.18.92	LUFT	514-02	9217	7036
I				TPHG, BTEX	06.30.92	5030/8015	516-19	92188	7867
•				TPHG.5030	06.30.92	5030/8015	516-19	92188	7867

Notes: Equipment = BC Analytical identification number for a particular piece of analytical equipment.

BATCH QC REPORT ORDER: E9206374

DATE REPORTED: 07/06/92

Page 1

LABORATORY CONTROL STANDARDS

DATE BATCH LC LT PERCENT
PARAMETER ANALYZED NUMBER RESULT RESULT UNIT RECOVERY
Organic Lead 06.18.92 9217 1.9 2.0 mg/L 95

BATCH QC REPORT ORDER: E9206374

DATE REPORTED : 07/06/92

Page 1

MATRIX QC PRECISION (DUPLICATE SPIKES)

-	DATE	BATCH	S1	S2		RELATIVE
PARAMETER	ANALYZED	NUMBER	RESULT	RESULT	UNIT	ZDIFF
Organic Lead	06.18.92	9217	1.7	1.7	mg/L	0

BATCH QC REPORT ORDER: E9206374

DATE REPORTED : 07/06/92

Page 1

MATRIX QC ACCURACY (SPIKES)

-	DATE	BATCH	SBAR	TRUE	RBAR	PER	CENT
PARAMETER	ANALYZED	NUMBER	RESULT	RESULT	RESULT	UNIT RECO	VERY
Organic Lead	06.18.92	9217	1.7	2.0	<0.5	mg/L	85

BATCH QC REPORT ORDER: E9206374

DATE REPORTED : 07/06/92

Page 1

METHOD BLANKS AND REPORTING DETECTION LIMIT (RDL)

	DATE	BATCH	BLANK			
PARAMETER	ANALYZED	NUMBER	RESULT	RDL	UNIT	METHOD
Organic Lead	06.18.92	9217	0	1	mg/kg	LUFT

			СНА	IN OF CUSTO	DDY RECORE	,									BCA L	og Num	ber <u>920</u>	6374
Address City, Stat	160 e. Zip	ment Spea CA	1 st 9410	Suite	1380 Report attention	(HIS)	2116 882-30 Barret	43		/5	(\$\frac{1}{2}\)		7 /	Analy	ses requi	$\overline{}$		
Lab Sample number	Date sampled	Time sampled	Type* See key below	Sampled by	Sample de			Number of containers	Į į	A STATE OF THE STA					//2	\$ 30 kg 50 k	Remar	ks
3	6/16/92	1159	6W	mn	-3			4	*	X					×	A	PlEASE F	ilter
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Relinqui	shed by	vH	1 to				<u> </u>					-	*			-	6/16/92	135-1
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Received by Laboratory

Relinquished by

Relinquished by

Received by

1255 Powell Street, Emeryville, CA	94608	(415) 428-2300
------------------------------------	-------	----------------

801 Western Avenue, Glendale, CA 91201	(818) 247-5737
1200 Pacifico Avenue, Anaheim, CA 92805	(714) 978-0113

Nie	ote: Samples are discarded 30 days after results are reported unless other arrangements are made
140	ne. Samples are discarded so days arter results are reported diffessionier arrangements are made
	Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements: ____

*KEY: AQ-Aqueous	NA-No	naqueous	SL—Sludge
GW-Groundwater	SO-Soil	OT-Other	PE-Petroleu

ANALYTICAL REPORT

1255 Powell Street Emeryville, CA 94608 510/428-2300 Fax: 510/547-3643

LOG NO: E92-07-282

Received: 15 JUL 92

Mailed: JUL 29 1992

Mr. Peter Barrett Clement Associates 160 Spear Street, Suite 1380 San Francisco, California 94105

Project: 2116

REPORT OF ANALYTICAL RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SA	MPLES	DA	TE SAMPLED
07-282-1 07-282-2				15 JUL 92 15 JUL 92
07-282-3	W-1			15 JUL 92
PARAMETER		9	07-282-2 ි	07-282-3
Organic Le	ad, mg/L	<0.5	<0.5	<0.5
Date Filte		07.22.92	07.22.92	07.22.92
Aromatic H	y drocarbons			
Date Anal	yzed	07.17.92	07.18.92	07.17.92
Dilution	Factor, Times	1	10	1
Benzene,	ug/L	24	840	1.3
Ethylbenz	ene, ug/L	<0.5	85	<0.5
Toluene,	ug/L	<0.5	10	<0.5
Total Xyl	ene Isomers, ug/L	<0.5	290	<0.5
TPH - Vola	tile Hydrocarbons			
Date Anal		07.17.92	07.18.92	07.17.92
Dilution	Factor, Times	1	10	1
C6 to C14	(as gasoline), ug/L	50	5500	<50
Approxima	te Character, .	SINGLEPEAK	GASOLINE	NO PATTERN

Edward Wilson, Laboratory Director

B C A

AMPLES	SAMPLE DE	ESCRIPTION	DETERM	DATE ANALYZED	METHOD	EQUIP.	ватсн	ID.NO
207282*1	W-2		PB, ORG	07.24.92	CA-DOHS	514-02	9218	7391
			TPHG, BTEX	07.17.92	5030/8015	516-19	92210	7258
			TPHG.5030	07.17.92	5030/8015	516-19	92210	7258
			FILT	07.22.92			92774	7701
207282*2	W-3		PB, ORG	07.24.92	CA-DOHS	514-02	9218	7391
_			TPHG, BTEX	07.17.92	5030/8015	516-19	92210	7258
_			TPHG.5030	07.18.92	5030/8015	516-19	92210	7258
			FILT	07.22.92			92774	7701
9207282*3	W-1		PB, ORG	07.24.92	CA-DOHS	514-02	9218	7391
			TPHG, BTEX	07.17.92	5030/8015	516-19	92210	7867
9			TPHG.5030	07.17.92	5030/8015	516-19	92210	7258
			FILT	07.22.92			92774	7701

Notes: Equipment = BC Analytical identification number for a particular piece of analytical equipment.

ID.NO = BC Analytical employee identification number of analyst.

BATCH QC REPORT ORDER: E9207282

ATE REPORTED : 07/29/92

Page 1

LABORATORY CONTROL STANDARDS

	DATE	BATCH	LC	LT		PERCENT
PARAMETER	ANALYZED	NUMBER	RESULT	RESULT	UNIT	RECOVERY
rganic Lead	07.24.92	9218	1.9	2.0	mg/L	95
Aromatic Hydrocarbons						
Benzene	07.17.92	92210	19	20	ug/L	95
Ethylbenzene	07.17.92	92210	18	20	ug/L	90
Toluene	07.17.92	92210	19	20	ug/L	95
Total Xylene Isomers	07.17.92	92210	57	60	ug/L	95
■PH - Volatile Hydrocarbons						
C6 to C14 (as gasoline)	07.17.92	92210	240	220	ug/L	109

BATCH QC REPORT ORDER: E9207282

TATE REPORTED : 07/29/92

Page 1

MATRIX QC PRECISION (DUPLICATE SPIKES)

PARAMETER rganic Lead	DATE ANALYZED 07.24.92		S1 RESULT 1.8	S2 RESULT 1.8	UNIT mg/L	RELATIVE ZDIFF 0
Aromatic Hydrocarbons Benzene	07.17.92	92210	42	39	ug/L	7
Ethylbenzene	07.17.92		19	18	ug/L	5
Toluene	07.17.92	92210	20	19	ug/L	5
Total Xylene Isomers	07.17.92	92210	58	53	ug/L	9
PH - Volatile Hydrocarbons C6 to C14 (as gasoline)	07.17.92	92210	290	260	ug/L	11

BATCH QC REPORT ORDER: E9207282

DATE REPORTED : 07/29/92

Page 1

MATRIX QC ACCURACY (SPIKES)

	DATE	BATCH	SBAR	TRUE	RBAR		ERCENT
MARAMETER	ANALYZED	NUMBER	RESULT	RESULT	RESULT	UNIT REC	COVERY
rganic Lead	07.24.92	9218	1.8	2.0	<0.5	mg/L	90
Aromatic Hydrocarbons							
Benzene	07.17.92	92210	40.5	44	24	ug/L	83
Ethylbenzene	07.17.92	92210	18.5	20	<0.5	ug/L	93
Toluene	07.17.92	92210	19.5	20	<0.5	ug/L	98
Total Xylene Isomers	07.17.92	92210	55.5	60	<0.5	ug/L	93
■PH - Volatile Hydrocarbons				**			
C6 to C14 (as gasoline)	07.17.92	92210	275	270	50	ug/L	102

BATCH QC REPORT ORDER: E9207282

TATE REPORTED : 07/29/92

Page 1

METHOD BLANKS AND REPORTING DETECTION LIMIT (RDL)

	DATE	BATCH	BLANK			
PARAMETER	ANALYZED	NUMBER	RESULT	RDL	UNIT	METHOD
rganic Lead	07.24.92	9218	0	0.5	mg/L	CA-DOHS
Aromatic Hydrocarbons						
Date Analyzed	07.17.92	92210	7.17.92	NA	Date	5030/8015
Benzene	07.17.92	92210	0	0.5		5030/8015
Ethylbenzene	07.17.92	92210	0	0.5	ug/L	5030/8015
Toluene	07.17.92	92210	0.095	0.5	ug/L	5030/8015
Total Xylene Isomers	07.17.92	92210	0.12	0.5	ug/L	5030/8015
PH - Volatile Hydrocarbons						
Date Analyzed	07.17.92	92210	7.17.92	NA	Date	5030/8015
C6 to C14 (as gasoline)	07.17.92	92210	0.67	50	ug/L	5030/8015

CHAIN OF CUSTODY RECO	RN

BCA Log Number __

Client na	ne Cla	nent	_			Project or PO#	6			AL		Ai	nalyses r	equired		
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Lab	_		Type*	Sampled by	, Pot	ton	Number] /		XXXXX		/ /	/ /	/ /	8 6 8 6 8 7	
Sample number	Date sampled	Time sampled	See key below		Sample	description	containers	/ (~ 8)					\2 ³ 65	Remark	ks
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	by Laborator	y	***													
L	iai vtica				Note: Samples	are discarded 30 days after results	are reported u	unless oti	her arran	gements	are made.	*KE	EY: WV	N-Was	tewater SU-Surface W	/ater SO—Soil

B C ANALYTICAL

- ☐ 1255 Powell Street, Emeryville, CA 94608 (510) 428-2300
- ☐ 801 Western Avenue, Glendale, CA 91201 (818) 247-5737
- ☐ 1200 Gene Autry Way, Anaheim, CA 92805 (714) 978-0113

Samples are discarded 30 days after results are reported unless other arrangements are made
Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements:

SL—Sludge PE—Petroleum OT—Other NA-Nonaqueous GW-Groundwater AQ-Aqueous 1255 Powell Street Emeryville, CA 94608 510/428-2300 Fax: 510/547-3643

LOG NO: E92-08-295

Received: 13 AUG 92

Mailed: AUG 3 1 1992

Mr. Peter Barrett Clement Associates 160 Spear Street, Suite 1380 San Francisco, California 94105

Purchase Order: 2116

Project: Beck Roofing

REPORT OF ANALYTICAL RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION, GROUN	D WATER	SAMPLES		DA	TE SAMPLED
08-295-1	MW-2					13 AUG 92
08-295-2	MW-1					13 AUG 92
08-295-3	MW-3					13 AUG 92
PARAMETER					08-295-2	08-295-3
Organic Le				<0.5	<0.5	<0.5
Aromatic H	ydrocarbons					
Date Anal	yzed			08.21.92	08.21.92	08.21.92
Dilution	Factor, Times			1	1	20
Benzene,	ug/L			6.5	<0.5	1100
Ethylbenz	_			<0.5	<0.5	97
Toluene,	. •			<0.5	<0.5	<10
	ene Isomers, ug/L			<0.5	<0.5	270
•	tile Hydrocarbons					
Date Anal				08.21.92	08.21.92	08.21.92
	Factor, Times			1.	1	1
	(as gasoline), ug/L			<50	<50	6600
	te Character, .			NO PATTERN	NO PATTERN	GASOLINE

Edward Wilson, Laboratory Director

BCA

MPLES	SAMPLE	DESCRIPTION	DETERM	DATE ANALYZED	метнор	EQUIP.	ВАТСН	ID.NO
08295*1	MW-2		PB,ORG	08.25.92	LUFT	514-02	9219	7036
•			TPHG, BTEX	08.21.92	5030/8020	516-23	92241	7258
			TPHG.5030	08.21.92	5030/8015	516-23	92241	7258
08295*2	MW-1		PB,ORG	08.25.92	LUFT	514-02	9219	7036
ļ.			TPHG, BTEX	08.21.92	5030/8020	516-23	92241	8302
_			TPHG.5030	08.21.92	5030/8015	516-23	92241	8302
28295*3	MW-3		PB,ORG	08.25.92	LUFT	514-02	9219	7036
7			TPHG, BTEX	08.21.92	5030/8020	516-23	92241	8302
			TPHG.5030	08.21.92	5030/8015	516-23	92241	8302

- Notes: Equipment = BC Analytical identification number for a particular piece of analytical equipment.
 - ID.NO = BC Analytical employee identification number of analyst.

BATCH QC REPORT ORDER: E9208295

TE REPORTED: 08/28/92

Page 1

LABORATORY CONTROL STANDARDS

	DATE	BATCH	ьc	LT		PERCENT
RAMETER	ANALYZED	NUMBER	RESULT	RESULT	UNIT	RECOVERY
	08.25.92	9219	2.00	2.00	mg/L	100
omatic Hydrocarbons						
Benzene	08.21.92	92241	20.2	20.0	ug/L	101
Ethylbenzene	08.21.92	92241	20.5	20.0	ug/L	103
	08.21.92	92241	21.0	20.0	ug/L	105
Total Xylene Isomers	08.21.92	92241	65.8	60.0	ug/L	110
H - Volatile Hydrocarbons						
C6 to C14 (as gasoline)	08.21.92	92241	228	222	ug/L	103
	Ethylbenzene Toluene	RAMETER ANALYZED ganic Lead 08.25.92 omatic Hydrocarbons 08.21.92 Benzene 08.21.92 Ethylbenzene 08.21.92 Toluene 08.21.92 Total Xylene Isomers 08.21.92 H - Volatile Hydrocarbons	RAMETER ANALYZED NUMBER ganic Lead 08.25.92 9219 omatic Hydrocarbons Benzene 08.21.92 92241 Ethylbenzene 08.21.92 92241 Toluene 08.21.92 92241 Total Xylene Isomers 08.21.92 92241 H - Volatile Hydrocarbons	RAMETER ANALYZED NUMBER RESULT ganic Lead 08.25.92 9219 2.00 omatic Hydrocarbons Benzene 08.21.92 92241 20.2 Ethylbenzene 08.21.92 92241 20.5 Toluene 08.21.92 92241 21.0 Total Xylene Isomers 08.21.92 92241 65.8 H - Volatile Hydrocarbons	RAMETER ANALYZED NUMBER RESULT RESULT ganic Lead 08.25.92 9219 2.00 2.00 omatic Hydrocarbons Benzene 08.21.92 92241 20.2 20.0 Ethylbenzene 08.21.92 92241 20.5 20.0 Toluene 08.21.92 92241 21.0 20.0 Total Xylene Isomers 08.21.92 92241 65.8 60.0 H - Volatile Hydrocarbons	RAMETER ANALYZED NUMBER RESULT RESULT UNIT ganic Lead 08.25.92 9219 2.00 2.00 mg/L omatic Hydrocarbons Benzene 08.21.92 92241 20.2 20.0 ug/L Ethylbenzene 08.21.92 92241 20.5 20.0 ug/L Toluene 08.21.92 92241 21.0 20.0 ug/L Total Xylene Isomers 08.21.92 92241 65.8 60.0 ug/L H - Volatile Hydrocarbons

BATCH QC REPORT ORDER: E9208295

DATE REPORTED: 08/28/92

Page 1

MATRIX QC PRECISION (DUPLICATE SPIKES)

DATE	BATCH	S1	S2		RELATIVE
ANALYZED	NUMBER	RESULT	RESULT	UNIT	ZDIFF
08.25.92	9219	1.8	1.9	mg/L	5
08.21.92	92241	21.3	20.7	ug/L	3
08.21.92	92241	21.5	21.0	ug/L	2
08.21.92	92241	22.5	21.7	ug/L	4
08.21.92	92241	70.0	66.9	ug/L	5
08.21.92	92241	240	236	ug/L	2
	ANALYZED 08.25.92 08.21.92 08.21.92 08.21.92 08.21.92	ANALYZED NUMBER 08.25.92 9219 08.21.92 92241 08.21.92 92241 08.21.92 92241 08.21.92 92241	ANALYZED NUMBER RESULT 08.25.92 9219 1.8 08.21.92 92241 21.3 08.21.92 92241 21.5 08.21.92 92241 22.5 08.21.92 92241 70.0	ANALYZED NUMBER RESULT RESULT 08.25.92 9219 1.8 1.9 08.21.92 92241 21.3 20.7 08.21.92 92241 21.5 21.0 08.21.92 92241 22.5 21.7 08.21.92 92241 70.0 66.9	ANALYZED NUMBER RESULT RESULT UNIT 08.25.92 9219 1.8 1.9 mg/L 08.21.92 92241 21.3 20.7 ug/L 08.21.92 92241 21.5 21.0 ug/L 08.21.92 92241 22.5 21.7 ug/L 08.21.92 92241 70.0 66.9 ug/L

BATCH QC REPORT ORDER: E9208295

DATE REPORTED: 08/28/92

Page 1

MATRIX QC ACCURACY (SPIKES)

RAMETER	DATE ANALYZED	BATCH NUMBER	SBAR RESULT	TRUE RESULT	RBAR RESULT	UNIT REC	COVERY
ganic Lead	08.25.92	9219	1.85	2.0	<0.5	mg/L	93
Acomatic Hydrocarbons							
■ Benzene	08.21.92	92241	21	20.0	<0.5	ug/L	105
Ethylbenzene	08.21.92	92241	21.25	20.0	<0.5	ug/L	106
Toluene	08.21.92	92241	22.1	20.0	<0.5	ug/L	111
▲ Total Xylene Isomers	08.21.92	92241	68.45	60.0	<0.5	ug/L	114
M - Volatile Hydrocarbons C6 to C14 (as gasoline)	08.21.92	92241	238	222	<50	ug/L	107

BATCH QC REPORT ORDER: E9208295

DATE REPORTED : 08/28/92

Page 1

METHOD BLANKS AND REPORTING DETECTION LIMIT (RDL)

	DATE	BATCH	BLANK			
RAMETER	ANALYZED	NUMBER	RESULT	RDL	UNIT	METHOD
ganic Lead	08.25.92	9219	0	0.5	mg/L	LUFT
Aromatic Hydrocarbons						
▲ Date Analyzed	08.21.92	92241	8.21.92	NA	Date	5030/8020
Benzene	08.21.92	92241	0	0.5	ug/L	5030/8020
Date Analyzed Benzene Ethylbenzene	08.21.92	92241	0	0.5	ug/L	5030/8020
Toluene	08.21.92	92241	0.18	0.5	ug/L	5030/8020
Total Xylene Isomers	08.21.92	92241	0.19	0.5	ug/L	5030/8020
H - Volatile Hydrocarbons						
Date Analyzed	08.21.92	92241	8.21.92	NA	Date	5030/8015
C6 to C14 (as gasoline)	08.21.92	92241	0	50	ug/L	5030/8015

CHAIN OF CUSTODY RECORD

Client na	len 60 S	ent				Project or PO# 2 (6				<u></u>	<u>n/</u>	7	Ar	nalyses r	required	7 /	$\overline{}$	
Address	60 8	plan	st			Phone # 882-	3043		,	15	~ },	/ ,	/ ,	/ ,	/ /	/		ĺ
City, Sta	e Zip	Ca c	14105		Report attention	Phone # 1 882- Barrett					3/1 ⁹ /							
Lab	Date	Time	Type* See key	Sampled by	Polstin		Number	/) */		/ /	//	/	//	/ /s			
Sample	sampled	sampled	below		Sample desc	ription	containers	/ A	2	<u>~</u>	<u>_</u>	<u>_</u> ,	_	<u> </u>	\2 ³ 63	*/ 	Remark	
1	8/15/22	1300	6w	m	v-2		4	X	X						χ	please	fla	cif
7)	1318	ſ	m	v-2 w-/ w-3		4	8	X						X	Clou	dy	
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☐ 1255 F	IALYTICA Owell Street, E estern Avenue, Gene Autry Way	meryville, CA Glendale, CA	91201 (818)	428-2300 247-5737	Note: Samples are d	iscarded 30 days after results πples will be returned to clien	t or disposed o	f at clien	t's expe	nse.	its are π	nade.	*KE	SL-	—Sludge	PE—Petrole	um OT	ater SO—Soil -Other tter AQ—Aqueous

: BC ANALYTICAL : EMVL LAB : 17:35:28 24 SEP 1992 - P.

_	SAMPLE DESCRIPT	TION DETERM	DATE ANALYZED		EQUIP.	ВАТСН	ID.NO
9209181*1	MW - 1	PB,ORG TPHG,BTEX		5030/8020	514-02 516-19	92253	7036 7258 7258
9209181*2	MW-2	TPHG.5030 PB,ORG TPHG,BTEX	09.14.92 09.11.92	5030/8020	516-19 514-02 516-19	9220 92253	7256 7036 7258 7258
9209181*3	MW-3	TPHG.5030 PB,ORG TPHG,BTEX TPHG.5030	09.14.92 09.14.92	5030/8015 LUFT 5030/8020 5030/8015	516-19 514-02 516-19 516-19	9220 92254	· -

Notes: Equipment = BC Analytical identification number for a particular piece of analytical equipment.

> = BC Analytical employee identification number of ID.NO analyst.

BATCH QC REPORT ORDER: E9209181

DATE REPORTED: 09/24/92

Page 1

LABORATORY CONTROL STANDARDS

PARAMETER organic Lead	DATE ANALYZED 09.14.92	BATCH NUMBER 9220	LC RESULT 1.72	LT RESULT 2.00	UNIT mg/L	PERCENT RECOVERY 86
Aromatic Hydrocarbons Benzene Ethylbenzene Toluene Total Xylene Isomers	09.11.92 09.11.92 09.11.92 09.11.92	92253 92253 92253 92253	15.1 16.4 16.7 52.4	20.0 20.0 20.0 60.0	ug/L ug/L ug/L ug/L	76 82 84 87
PH - Volatile Hydrocarbons C6 to C14 (as gasoline)	09.11.92	92253	241	222	ug/L	109
Aromatic Hydrocarbons Benzene Ethylbenzene Toluene Total Xylene Isomers	09.14.92 09.14.92 09.14.92 09.14.92	92254 92254 92254 92254	20.1 20.9 21.6 67.4	20.0 20.0 20.0 60.0	ug/L ug/L ug/L ug/L	101 105 108 112
PH - Volatile Hydrocarbons C6 to C14 (as gasoline)	09.14.92	92254	258	222	ug/L	116

BATCH QC REPORT ORDER: E9209181

DATE REPORTED: 09/24/92

Page 1

MATRIX QC PRECISION (DUPLICATE SPIKES)

PARAMETER Organic Lead	DATE ANALYZED 09.14.92	BATCH NUMBER 9220	S1 RESULT 1.65	S2 RESULT 1.65	UNIT mg/L	RELATIVE %DIFF O
Aromatic Hydrocarbons		22252	00.0	00.6	m /T	0
Benzene	09.11.92	92253	89.3	89.6	ug/L	0
Ethylbenzene	09.11.92	92253	31.7	31.5	ug/L	1
Toluene	09.11.92	92253	19.9	19.7	ug/L	1
	09.11.92	92253	58.6	57.7	ug/L	2
Total Xylene Isomers TPH - Volatile Hydrocarbons C6 to C14 (as gasoline)	09.11.92	92253	644	652	ug/L	1
_Aromatic Hydrocarbons		2225	00.0	10.0		1
Benzene Ethylhenzene	09.14.92	92254	20.0	19.8	ug/L	1
Ethylbenzene	09.14.92	92254	20.8	20.8	ug/L	0
Toluene	09.14.92	92254	21.6	21.5	ug/L	0
Total Xylene Isomers	09.14.92	92254	67.2	67.3	ug/L	0
TPH - Volatile Hydrocarbons C6 to C14 (as gasoline)	09.14.92	92254	254	258	ug/L	2

BATCH QC REPORT ORDER: E9209181

DATE REPORTED: 09/24/92

Page 1

MATRIX QC ACCURACY (SPIKES)

PARAMETER Organic Lead	DATE ANALYZED 09.14.92	BATCH NUMBER 9220	SBAR RESULT 1.65	TRUE RESULT 2.00	RBAR RESULT <0.5	PE UNIT REC mg/L	RCENT OVERY 83
Aromatic Hydrocarbons	00 11 00	00060	89,45	101	81	ug/L	SOR
Benzene	09.11.92	92253	31.6	36.7	17	ug/L	74
Ethylbenzene	09.11.92	92253 92253	19.8	23.3	3.3	ug/L	83
Toluene	09.11.92	92253	58.15	65.9	5.9	ug/L	87
Total Xylene Isomers	09.11.92	92255	70.17	03.9	٠,٠	ug/ L	0,
PPH - Volatile Hydrocarbons C6 to C14 (as gasoline)	09.11.92	92253	648	643	420	ug/L	102
Aromatic Hydrocarbons		00051	10.0	00.0	40 E	/I	100
Benzene	09.14.92	92254	19.9	20.0	<0.5	ug/L	104
<pre>Ethylbenzene</pre>	09.14.92	92254	20.8	20.0	<0.5	ug/L	104
Toluene	09.14.92	92254	21.55	20.0	<0.5	ug/L	112
■ Total Xylene Isomers	09.14.92	92254	67.25	60.0	<0.5	ug/L	112
C6 to C14 (as gasoline)	09.14.92	92254	256	222	<50	ug/L	115

SOR = Spike Out of Range (relative to high sample concentration)

BATCH QC REPORT ORDER: E9209181

DATE REPORTED: 09/24/92

Page 1

METHOD BLANKS AND REPORTING DETECTION LIMIT (RDL)

Organic Lead	DATE ANALYZED 09.14.92	BATCH NUMBER 9220	BLANK RESULT O	RDL 0.5	UNIT mg/L	METHOD LUFT
Aromatic Hydrocarbons	09.11.92	02253	9.11.92	NA	Date	5030/8020
Date imaly = co			0	0.5		5030/8020
Denbene	09.11.92	92253	••			
Deny rochoene	09.11.92		0	0.5		5030/8020
■ Toluene	09.11.92	92253	0.27	0.5		5030/8020
Total Xylene Isomers	09.11.92	92253	0.114	0.5	ug/L	5030/8020
TPH - Volatile Hydrocarbons						
_ Date Analyzed	09.11.92	92253	9.11.92	NA		5030/8015
	09.11.92	92253	4.7	50	ug/L	5030/8015
Aromatic Hydrocarbons						
	09.14.92	92254	9.14.92	NA		5030/8020
	09.14.92	92254	0	0.5	ug/L	5030/8020
Delizerie	09.14.92	92254	0	0.5	ug/L	5030/8020
Ethylbenzene	09.14.92		0.27	0.5		5030/8020
Tordene			0.93	0.5		5030/8020
10041 1,1200 2000012	09.14.92	92254	0.93	0.5	ug/L	303070020
TPH - Volatile Hydrocarbons					_	5600 10015
	09.14.92	92254	9.14.92	NA		5030/8015
	09.14.92	92254	0	50	ug/L	5030/8015

			CHAIN OF CUSTODY	RECORD
ame	. //	,		

Client name Clevent	Project or PO#					WX.	1	Ai	nalyses	required	4		7	·
Address (60 Spear ST	Suite 1380 Phone #			/	/ x}	5/ p				Ι.	/ /			
City. State, Zip CA 94105-1	535 Report attention Peter Be	rell		200	XX.									
Lab Sample Date Time See key	Sutt 1380 Phone # 535 Report attention Me. Peter Berlied by Stings, S. Polston Sample description	Number of		\\$\/	/ 	" /	/ /	/ /	/ /	/ /	10 10 10 10 10 10 10 10 10 10 10 10 10 1	/ 		
number sampled sampled below	Sample description	containers		<u> </u>	94			_	_	/2 ⁸ 0	3 /	Rem	arks	_
2 9/9/92 GW	mw-2 mw-1 mw-3	4	X	X										
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B C ANALYTICAL 1255 Powell Street, Emerywille, CA 94608 (510) 428-230 801 Western Avenue, Glendale, CA 91201 (818) 247-573	Note: Samples are discarded 30 days after results Hazardous samples will be returned to client		ınless oth	ner arrar	r ngement	ts are m	ade.	*KE	SL	.—Sludç	ge PE	SU—Surface Petroleum O GW—Ground	Water S	SO-Soil

☐ 1200 Gene Autry Way, Anaheim, CA 92805 (714) 978-0113

ATTACHMENT B

		GROU	INDWATI	ER SAMPLE COLLECTION	ON RECORD		
'roject Name:	Cline	nt_		Job No. 2	116	Date:	0(10192
Lamina	150	· a b	Roo	feny			
Samplers Name:	500	77	Polit	and the second	_		
Weather Conditions:		unyny					
<u></u>					FoC Elevation (fro	om LS)	
1. WATER LEVEL [m ToC) = 30	-, - - Z]	•			
a. Depth to water	. (-9						
b. Total Well Dep		= 3		/b		ell Dia	
c. Length of Wat						sing	- 4-
d. Casing Volum		= _/	<i>D.</i> 3	[c. x (gal/ft casing)]	2-inch ca	-	■ 0.65 gal/
e. Length of filter		<u></u>		a an min ata		le filter pack	= 1.21 gal/
 Filter pack vol 				(e. x (gal/ft filter pack)	12-Inch ho	le filter pack	
g. TOTAL WELL	VOLUME	=		(d. + f.)	6-Inch ca	sing	= 1.47 gal
2. WELL PURGING	DATA:	,	z (1				
a. Purge Method	<u> </u>	and	Call.	_,			
b. Required Pur	ge Volume	(@ <u>·</u>	gallon	s per well volume) =	<u> </u>		
 b. Required Purp 	ge Volume	(@	gallor	s per well volume) =			
b. Required Purgc. Field Testing;Volume Removed	ge Volume Equipmen	t Used	PH	Spec. Conductivity			/Description
b. Required Purgc. Field Testing;Volume Removed	ge Volume Equipmen	t Used	PH	Spec. Conductivity			/Description
b. Required Purgo. Field Testing; Volume Removed	Equipment Time	T°	PH	Spec. Conductivity			/Description
b. Required Purgo. Field Testing; Volume Removed	Equipment	T° 18.6	PH 7.01	Spec. Conductivity 630 630			/Description
b. Required Purgo. Field Testing; Volume Removed	Equipment Time	T° 18.6	PH 7.01	Spec. Conductivity 630			/Description
b. Required Purgo. Field Testing; Volume Removed	Equipment	T° 18.6	PH 7.01	Spec. Conductivity 630 630			/Description
b. Required Pury c. Field Testing; Volume Removed	Equipment	T° 18.6	PH 7.01	Spec. Conductivity 630 630			Description
b. Required Purgo. Field Testing; Volume Removed	Equipment	T° 18.6	PH 7.01	Spec. Conductivity 630 630			Description
b. Required Purgo. Field Testing; Volume Removed	Equipment	T° 18.6	PH 7.01	Spec. Conductivity 630 630			Description
b. Required Purgo. Field Testing; Volume Removed	Equipment	T° 18.6	PH 7.01	Spec. Conductivity 630 630			Description
b. Required Purgo. Field Testing; Volume Removed	Equipment	T° 18.6	PH 7.01	Spec. Conductivity 630 630			Description
b. Required Pury c. Field Testing; Volume Removed	Equipment Time	T° 18.6	PH 7.01	Spec. Conductivity 630 630	Turbidity		
b. Required Pury c. Field Testing; Volume Removed	Equipment Time 1250 1250 1258	(@	PH 7.01 7.19 7.22	Spec. Conductivity 630 630	Turbidity	Color	4.0
b. Required Pury c. Field Testing; Volume Removed	Equipment Time 1250 1250 1258	t Used T° 18.9 18.9	PH 7.01 7.19 7.22	Spec. Conductivity 630 630 630 Container	Turbidity From von 500ml plast	Color	in it cl
b. Required Pury c. Field Testing; Volume Removed	Equipment Time 1250 1250 1258	t Used T° 18.9 18.9	PH 7.01 7.19 7.22	Spec. Conductivity 630 630	Turbidity From von 500ml plast	Color	in it cl

	·	GROU	NDWATE	R SAMPLE COLLECTION	ON RECORD		
ocation:	Beck	. Ro	CE + 130		.11 (0	Date:	5/16/92
. WATER LEVEL D a. Depth to water b. Total Well Dep c. Length of Wate d. Casing Volume e. Length of filter 1. Filter pack volu g. TOTAL WELL V	(ft) th er Column e pack ume	= 3 = 6/ = _//	6.91	(b a.) [c. x (gal/ft casing)] (e. x (gal/ft filter pack)	Tape Con We 2-inch cas 4-inch cas 10-inch)hol	e Elev r. (TC) ell Dia sing sing le filter pack le filter pack	= 0.16 gal/ = 0.65 gal/ = 1.21 gal/
A MEST BURGING	DATA.		_:O				
 WELL PURGING a. Purge Method b. Required Purg c. Field Testing; I 	DATA: 1+c re Volume Equipment	ev-J <u>l</u> (@ <u>-`</u> : Used	gallons	s per well volume) = Spec. Conductivity	3, 69 = Turbidity	3 casinj	V∠ /Description
WELL PURGING a. Purge Method b. Required Purg c. Field Testing; I	DATA: Pe Volume Equipment	(@ <u>.`</u> Used	gallons PH	Spec. Conductivity	<u></u>	3 casinj	
a. Purge Method b. Required Purg c. Field Testing; I	DATA: Te Volume Equipment Time	ev-J <u>l</u> (@ <u>-`</u> : Used	PH	Spec. Conductivity	<u></u>	3 casinj	
WELL PURGING a. Purge Method b. Required Purg c. Field Testing; I	DATA: Pe Volume Equipment	(@ -> Used	9allons PH 7:00 6:64	Spec. Conductivity	<u></u>	3 casinj	
e. Purge Method b. Required Purg c. Field Testing; Volume Removed	DATA: 14. re Volume Equipment Time 1221 1224	(@ :\.\.\.\.\.\.\.\.\.\.\.\.\.\.\.\.\.\.\.	9allons PH 7:00 6:64	Spec. Conductivity のより とろう	<u></u>	3 casinj	
e. Purge Method b. Required Purg c. Field Testing; Volume Removed	DATA: 14. re Volume Equipment Time 1221 1224	(@ :\.\.\.\.\.\.\.\.\.\.\.\.\.\.\.\.\.\.\.	9allons PH 7:00 6:64	Spec. Conductivity 840 83つ 840	<u></u>	3 casinj	

Somple the = 1230

Well No. MW-3

		GROU	INDWATE	R SAMPLE COLLECTI	ON RECORD			
'roject Name:	Lem	د م، آ		Job No2	-116	Date:	6/16	192
ocation:	36 K.S	Roc	FING		_			
Samplers Name:	SCOT	<u>r Po</u>	c stor	<i>)</i>	_			
Weather Conditions:	<u>- 5'0</u> ,	229						
1. WATER LEVEL D a. Depth to water b. Total Well Dep c. Length of Wate d. Casing Volume e. Length of filter f. Filter pack volume g. TOTAL WELL N 2. WELL PURGING	PATA: (from the following pack t	m ToC) = 3 = 3 =	6.25 4.45 4.2 672	(b a.) [c. x (gal/ft casing)] (e. x (gal/ft filter pack)	Tape Co W 2-inch c 4-inch c 10-inch)h 12-inch h 6-inch c	ole Elev orr. (TC) Vell Dia asing asing ole filter pace	2:0	
c. Field Testing;			<u>. S </u>					
Volume Removed		To	l bH	Spec. Conductivity	Turbidity		lor/Desci	
.75	1138	19 7	6.20	920		- cl	siedy	
1.50	1143	ان او ا	6.80	910				<u>, — , — , — , — , — , — , — , — , — , —</u>
2.25	1146	19.5	6.78	900				
7.0-							<u>.</u>	
		 						
			 					
		<u> </u>						-
	<u> </u>		 				,	
			ļ					
·								
	_		<u> </u>					
3. SAMPLE COLLE	ARKS A	nalysis _	TPhi	Contained	* ORGan	Preser EPb	vation <u>//</u>	cl/wan

	1	Ground	Water Sam	pling Do	ata	Vers	ion 5: 7/9/92	
Date :	15/92		Well I	D. :	J-1			
Pump Type : Dedicated/Por	HAND B		Chain	of Custo	dy Doc. *	* :		
Depth of casin	1g: 36.	8	Casin	g Diameti	er :	2.0		
Depth to water			Volum	ne factor		./7		
Water in Casin	ng (ft): _6	104	Gallon	s / Časi/	ng Vol	1.0	Mod	
Time Pump on	114	48	Initial	flow Rat Q =	te gpm :	40	8	_
Time Pump Of	f:			by grad. neter-oth	•	bucket		_
Time Q	Gal. Removed	pН	Temp C•	sc	OG	D. O ² e	h DTW	
1149 NA	1.0	7.06	19.2	760	-			
11521	2,0	6.76	18.6	650				
1154	<u> 500</u>	6.79	18.5					
			<u> </u>					
	<u>,</u>							
·						v. .		
Meter S	Berial #	Calibrated			Rep. 1	Rep. 2	Rep. 3	
pH \$22	2204	yes no	final pi		(Op. 1	1.57.2		\neg
s.c. <u>840</u>	74054	ves/ no	final T	•c				_
Redox		yes / no	final S	c				ᅦ
D. 0 ²		yes / no	<u> </u>			·		
H ² 0 143	40	yes / no			Sample	rs Initials :	<i>Sf)</i>	
Sample I.D. :(ve	rify) <u>W</u>	<u> </u>		llected :		1(5/		
Requested Analyses :	1PHAS GO	ts t BTex b	Sample (Size/Pr	Containe reserv.)		ent place	Hel wopen	4

Ground War	ter Sampling Data Version 5: 7/9/92
Date: 7/15/92	Well ID.: W-Z
Pump Type: Have bail Dedicated/Portable (circle one)	Chain of Custody Doc. # :
Depth of casing: 36.9	Casing Diameter: 2.0
Depth to water: 56 30,7	Volume factor: ./7
Water in Casing (ft): 6.0	Gallons / Casing Vol.: 1.0 sal/vol
Time Pump on: 1157	Initial flow Rate Q = gpm:
Time Pump Off :	Meas. by grad. cylinder-bucket flow meter-other :
Time Q Gal. Removed pH T	emp C* SC OG D.O ² eh DTW
1058 NA 1.0 6.89	19.0 1100
1100 210 6.80	18,9 1100
102 3.0 6.62	19.7 1000
•.	
y	
Meter Serial # Calibrated	Rep. 1 Rep. 2 Rep. 3
pH <u>orraro</u> 4 (yes) no	final pH
s.c. <u>89040521</u> (yes) no	final T C
Redoxyes / no	final S C
D.0 ² yes / no	
H ² 0 <u>14340</u> yes/no	Samplers Initials:
Sample I.D.:(verify) W-2	Time Collected: 1104
Requested TPH AS: GAS+ BTEX Analyses: ORG. Pb	Sample Container (3) 40ml. you Hel (Size/Preserv.) (1) 500 ml place/No per

	ater Sampling Data Version 5: 7/9/92
Date: 7/15/92	well ID.: <u>W-3</u>
Pump Type: HAND BAL Dedicated/Portable (circle one)	Chain of Custody Doc. # :
Depth of casing: 34.45	Casing Diameter: 2.0
Depth to water: 30.7'	Volume factor: ./7
Water in Casing (ft): 3.75	Gallons / Casing Vol 63 gd/vd
Time Pump on: 1125	Initial flow Rate Q = gpm:
Time Pump Off :	Meas. by grad. cylinder-backet flow meter-other:
Time Q Gal. Removed pH 7	Temp C - SC OG D.O ² eh DTW
1127 NA .75 659	19.9 /100
1128 \ 1.5 6.59	19.7 1100
1130 2.5 6.56	19,2 /100
Meter Serial # Calibrated	Rep. I Rep. 2 Rep. 3
pH 6222204 (yes) / no	Final pH
s.c. <u>8904054</u> (yes)/ no	final T ° C
Redox yes/no	final S C
$D.0^{2} \qquad yes / no$ $H^{2}O \qquad /434O \qquad (yes) no$	Samplers Initials:
Sample I.D.: (verify) 4 -3	_ Time Collected:
	Time conected.
Requested TPHAS BAS & BTEX Analyses: ORb. Pb	(Size/Preserv.)
OKO. PU	South brown Webers

	Ground W	ater Samplin	ng Data	Versio	on 5: 7/9/92
Date: 7.28 92	·	Well ID. :_	Mw-	. 1	·
Pump Type : Dedicated/Porfable (cit	rcle one)	Chain of C	ustody Doc.	# :	
Depth of casing: 3	6.91	Casing Dic	ameter :	2"	;
Depth to water :	3P. 68	Volume fo	actor:	16	
Water in Casing (ft):					
Time Pump on :		Initial flow	w Rate Q = gpm :		
Time Pump Off :		_	grad.cylindei r-other:		
Time Q Gal. Rem	oved pH	Temp C* S	SC OG	D.0 ² eh	DTW
		<u> </u>		*************************************	
				 	
					·
				 	
				· · · · · · · · · · · · · · · · · ·	
·					
Meter Serial#	Calibrated		Rep. I	Rep. 2	Rep. 3
рН	yes / no	final pH			
S.C.	yes / no	final T ° C			
Redox	yes / no	final S C			
D. 0 ²	yes / no	<u> </u>			<u>, I </u>
н ² о	yes / no		Sample	ers Initials: .	·
Sample I.D. :(verify)	······	_ Time Collect	red:		
Requested Analyses:		Sample Cont (Size/Preser			
					Mary
			<u>-</u>		

-1977

	Ground W	ater Samplin	g Data	Versio	n 5: 7/9/92
Date: 7.28 97.		Well 1D. :_	MW.	2	
Pump Type : Dedicated/Portable (cli	cle one)	Chain of Co	ustody Doc. ‡	* : <u></u>	
Depth of casing:	7 2 37.19	Casing Dia	meter :	2	
Depth to water:	51.12		ctor:	.16	Carlo De Car
Water in Casing (ft)					
Time Pump on :		Initial Flow	/ Rate Q = gpm :		
Time Pump Off :		_	rad.cylinder -other:		
Time Q Gal. Rem	oved pH	Temp C* S	c og	D. 0 2 eh	DTW
Meter Serial #	Oalibaahad				
	Calibrated yes / no		Rep. I	Rep. 2	Rep. 3
рН S.C.	yes / no	Final pH			
Redox	yes / no	final T ° C			
D. 0 ²	yes / no	final S C			
н ² о	yes / no		Sample	rs Initials : _	
Sample I.D. :(verify)		Time Collect	ed:		
Requested		Sample Cont (Size/Preser			· ···

(#) (#)

	Ground W	ater Samplir	ng Data	Versio	n 5: 7/9/92	
Date: 7.28.93		Well ID. :_	MW.	3		
Pump Type : Dedicated/Portable (circ	le one)	Chain of C	ustody Doc. †	" ;		
	epth of casing: 34.48 Casing Diameter:					
Depth to water: 3	0-97	Volume fo	actor:			
Water in Casing (ft)						
Time Pump on :		Initial flo	v Rate Q = gpm :			
Time Pump Off :		•	grad. cylinder r-other :			
Time Q Gal. Remov	ed pH	Temp C* S	BC OG	D.0 ² eh	DTW	
Meter Serial #	Calibrated					
pH Serial	yes / no	[Rep. I	Rep. 2	Rep. 3	
S.C.	yes / no	final pH final T • C				
Redox	_ yes / no	final S C				
D. 0 ²	_ yes/no	Tinaroc				
H ² 0	yes / no		Sample	rs Initials : _		
Sample I.D. :(verify)		_ Time Collect	'ed:			
Requested Analyses:		Sample Cont (Size/Preser				

Ground W	later Sampling Data Version 5: 7/9/92	2
Date: 8.13.92	Well ID.: Mw]	
Pump Type : Dedicated/Portable (circle one)	Chain of Custody Doc. # :	
Depth of casing : 36.91	Casing Diameter : 2"	
Depth to water: 31.23	Volume factor: ,16	
Water in Casing (ft): 5.68	Gallons / Casing Vol. :	
Time Pump on :	Initial flow Rate Q = gpm :	<u></u>
Time Pump Off :	Meas, by grad. cylinder-bucket flow meter-other:	·
Time Q Gal. Removed pH	Temp C SC OG D.O ² eh DTW	
1312 / 7.10	19.4 575	
1314 2 7,00	19,2 570	
1316 3 6.93	19.5-570	

Meter Serial # Calibrated	Rep. 1 Rep. 2 Rep. 3	
pH 023 1980 (yes) / no	final pH	
s.c. 8904054 (es) no	final T ° C	
Redox yes / no	final S C	
D.0 ² yes/no H ² 0 [4340 @3/no	\mathcal{L}	
4/1, 21	Samplers Initials : 27	, ,
Sumple 1.b. (vertify)	_ Time Collected: 1510	/201
Requested TPH Gas KTEX Analyses: ORG LEAD	(Size/Preserv.) 500 ml plas pres	HÜ

and the second

Ground W	later Sampling Data Version 5: 7/9/92
Date: 8:13.92	Well ID.: Mw2
Pump Type : Dedicated/Portable (circle one)	Chain of Custody Doc. # :
Depth of casing: 37.19	Casing Diameter :
Depth to water: 31.26	Volume factor: 116
Water in Casing (ft): 5,93	Gallons / Casing Vol. 95
Time Pump on :	Initial flow Rate Q = gpm :
Time Pump Off :	Meas. by grad. cylinder-bucket flow meter-other :
Time Q Gal. Removed pH	Temp C • SC OG D.O ² eh DTW
1254 1 7.88	19,0 820
1 3 57 a 7.48	18.6 800
1259 3 6.94	19.6 800
<u> </u>	
Meter Serial # Calibrated	Rep. 1 Rep. 2 Rep. 3
pH <u>0231980</u> (esy no	Final pH
s.c. <u>8904054</u> @1no	final T • C
Redox yes / no	Final S C
$D.0^{2} \qquad yes / no$, D
H ² 0 14340 yes no	Samplers Initials:
Sample I.D. :(verify)	_ Time Collected: 1300
Requested TPH Gar Btex	Sample Container Sx 40 ml VOH W/HCO
Analyses: ORG LFAD	(Size/Preserv.) 500 ml plas/no pu
<u> </u>	

	Ground Water S	Samplin	g Data	Versio	on 5: 7/9/92
Date: 8.13,92	W	ell ID. :	MW3		
Pump Type : Dedicated/Porfable (circle one	Ch	ain of Cu	istody Doc. #	· :	
Depth of casing : 34.49			neter:		
Depth to water: 31,20	<u> 2</u> va	olume fac	ctor:	16	
Water in Casing (ft): 30	<u> </u>	allons / C	asing Vol.:	.52	
Time Pump on :		itial Flow	Rate Q = gpm ;		
Time Pump Off :			rad. cylinder -other :		·
Time .Q Gal. Removed	рН Тетр	C• S	C OG	D.0 ² eh	DTW
1328 ,75	7.15 19	a, 8:	30		
1329 1.25	6.88 19.	68	30		
1331 1.75	6.86 20,		T)		
					
				· · · · · · · · · · · · · · · · · · ·	
Meter Serial # C	alibrated		Rep. I	Rep. 2	Rep. 3
PH 0231980	es no Fin	al pH			
s.c. <u>8904054</u> 8	es / no fin	al T °C			
· · · · · · · · · · · · · · · · · · ·	es / no fin	al S C			
	res / no	<u></u> t_		· · · · · · · · · · · · · · · · · · ·	<d< td=""></d<>
_ 	es) no		Sample	rs Initials : .	<i>></i> r
Sample I.D. :(verify) MW	Time	e Collecte	2d: 15	> 2	<u> </u>
Requested TPH Gos + Analyses: GRG LEF	- (Size	ple Conto e/Preserv	niner <u>3x 40</u>	ml pl	H WHCe as pus
					

<u>.</u>..

Ground	Water Sampling Data	Version 5; 7/9/92
J. 54074	Section Continuency Guild	
Date: 9-9-92	well ID.:_MW-1	
Pump Type: PAIL Dedicated/Portable (circle one)	Chain of Custody Dac	
Depth of casing: 37.0	Casing Diameter:	2.0
Depth to water: 31.65	Volume factor:	.10
Water in Casing (tt): 5.35	Gallons / Casing Vol.	. 45
Time Pump on :	initial flow Rate Q = gpm .	
Time Pump Off:	Meas by grad cylindi	u-buoko†
Time Q Gal Removed pH	Temp C• SC OG	D.O ² en DTW
1125 1.0 7.38	18.5 740	
1130 7.0 6.98	185 640	
1135 30 682	18.6 746	
Meter Serial # Calibrated	Rep. 1	Rep. 2 Rep. 3
pH <u>0231980</u> yes/no	final pH	
s.c. <u>8904054</u> yes 1 no	Final T °C	
Redoxyes/no	Final 8 C	
D.0 ² yes / no		
H ² o <u>14340</u> yes 1 no	Acres 1	ërs Initials :
Sample 1.b. (verify) NW-1	Time Collected :	9.5
Requested TPH GAS & Block Analyses: Ora 78	Sample Container (Size/Preserv.)	

Groun	nd Water Sampling Do	ita Versi	on 5: 7/9/92
Date: 9-9-92	Well ID. : MU	<u>-2</u>	
Pump Type : Dedicated/Portable (circle one)	Chain of Custo	ty Doc. # :	
Depth of casing: 37.0	Casing Diamete	r: 2	
Depth to water: 31.80	Volume factor	: 16	
water in Casing (ft): 5.1	Gallons / Casin	g Vol 83	
Time Pump on :	Initial flow Rat		
Time Pump Off:	도 있습니다. 현기 기계 등 등 등 등 등 등 등 등 등 등 등 등 등 등 등 등 등 등	pm: cylinder-bucket er	
Time O Gal. Removed pH		OG D.OZ eh	DTW
1100 .3 1.0gal 10.11	15,5 1020		
1110 2.0 7.22	183 960		
1113 3.0 7.46	185 980		
Meter Serial # Calibrate	d Re	p. 1 Rep. 2	Rep. 3
pH <u>023/980</u> yes / no	Final pH		
s.c. <u>B904054</u> yes i no Redox yes i no			
D.O ² yes / no			
H ² 0 14340 yes/no		Samplers Initials : _	
Sample I.D. :(verify) 10 2	Time Collected :		
Requested TPN GAS + Btex Analyses: Org. Pb		3x40ml VOA 4	HCL

					n 5: 7/9/92
Date:			of Custody Doc.		
Depth of casing: 34.0 Depth to water: 31.9 Water in Casing (ft): Time Pump on:		Volum Gallon	Diameter: e factor: s / Casing Vol.:	2.0' 16 .43	2
Time Pump Off : Time Q Gal. Removed		Meas. How m Temp C:	Q = gpm: by grad cylinder eter-other: 80 06	-bucket D 0 ² eh	D TW
1147 1.0	6 84	* (A) 1	1206 1100 1165		

Meter

Serial #

Cällbrated

	MELIUI:	CHIDINIE	ANYTH ANYTH	was a substitute of the state o	xtended Fage
	22.00	: ,		Rep. 1 Rep. 2	Rep. 3
pH _	0231980	yes / no	Final pH		
S.C.	8904054	yes I no	Final T°C		
Redox		yes i no	Final S C		
D.0 ²		yes / no			
H ² 0	14340	yes / no		Samplers Initials : _	
Sample L	D. ;(verify)		Time Collected		
Reques	ited TPH G	451Btex	Sample Contail		
Analys	es: ORG.	8	(Size/Preserv.)		
	***************************************		A Comment of the Comm		
			San San Day		

TOTAL P.04