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February 1, 1999

Mr. Larry Seto
Senior Hazardous Materials Specialist
Alameda County Department of Environmental Health
1131 Harbor Bay Parkway, #250
Alameda, California 94502-6577

Re: Groundwater Monitoring Report – Third Quarter
Alameda Federal Center, 620 Central Avenue, Alameda, California
STID 4655
CAPE Project No. 2403C.024.001 (JBR CAPE02)

Dear Mr. Seto:

Please find enclosed the third quarterly groundwater monitoring report for the above referenced project. This report has been prepared by Cape Environmental Management Inc (CAPE) on behalf of the General Services Administration (GSA) to monitor observed groundwater impacts due to former leaking underground diesel fuel storage tanks.

CAPE and the GSA will continue quarterly monitoring until 4 quarters have been completed.

If you have further questions or require additional information, please contact the undersigned at 714/427-6160.

Sincerely,
Cape Environmental Management Inc



William W. Millar, R.G.
Manager, Environmental Services



Attachment

cc James Lew/GSA (9PEC) 450 Golden Gate Ave. San Francisco CA 94102
Ando Merendi/GSA (9PMS) 450 Golden Gate Ave. San Francisco CA 94102
Project File

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Quarterly Groundwater Monitoring Report - Third Quarter

Alameda Federal Center
620 Central Avenue
Alameda, California

STID # 4655
CAPE Project No.: 2403C.024.001 (JBR CAPE02)

prepared for:

General Service Administration, Region 9
450 Golden Gate Avenue
San Francisco, California 94025

prepared by:

Cape Environmental Management Inc
Harbor Corporate Park
3631 South Harbor Boulevard, Suite 130
Santa Ana, California 92704

February 1999

99 FEB --8 PM 4: 15
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1.0 INTRODUCTION

On behalf of the General Services Administration (GSA), Cape Environmental Management Inc (CAPE) has performed this Quarterly Groundwater Monitoring – Third Quarter at the Alameda Federal Center, located at 620 Central Avenue, Alameda, California. The purpose of the monitoring is to assess the extent of possible groundwater contamination due to underground storage tank (UST) releases. The USTs have been removed from the site. Figure 1 is a Site Vicinity Map depicting relative location of the project site.

1.1 SITE DESCRIPTION

The site is located in the northwest portion of the City of Alameda, California. The site is approximately 500 feet east of the San Francisco Bay shoreline, and is situated in a relatively flat tidal plain area, which slopes gently towards the bay. The site spans approximately 10 acres with several buildings used for administrative office space and storage functions. Figure 2, 3, and 4 depict the location and orientation of the subject site and monitoring well locations.

2.0 PROJECT DESCRIPTION

This section describes details of the field and laboratory activities conducted during the groundwater monitoring to include groundwater sampling, sample handling, and laboratory analyses. Fieldwork was conducted on November 16, 1998.

2.1 GROUNDWATER MONITORING METHODOLOGY

CAPE measured the depth to ground water in the 8 wells. The 4 wells in the monitoring program were purged of approximately 3 well volumes, and groundwater samples were collected. The depth to groundwater and other development and sampling details for all the wells are provided in Appendix A - Groundwater Purging and Sampling Logs. Water samples were collected from MW-1, AMW-1, AMW-2 and AMW-3 with dedicated disposal 2-inch diameter plastic hand bailers. Sample containers filled from each well included 3 VOA vials, 40 milliliter (ml) glass and 2 amber glass 1-liter container. The containers were labeled, preserved at 4° Celsius, and transferred to the laboratory under chain-of-custody documentation.

2.2 LABORATORY TESTING

Chemical analysis of the groundwater samples from MW-1, AMW-1, AMW-2 and AMW-3 included the following suite of parameters:

- hydrocarbon Oil and Grease (O&G) using Test Method SMWW 5520;
- total petroleum hydrocarbons as diesel (TPHd)(referred to by the laboratory as total extractable hydrocarbons (THE)) using DHS/LUFT procedure EPA Test Method 8015-Modified (diesel);

- total petroleum hydrocarbons as gasoline (TPHg)(referred to by the laboratory as total volatile hydrocarbons (TVH)) using DHS/LUFT procedure EPA Test Method 8015-Modified (gasoline);
- benzene, toluene, ethyl benzene, and total xylenes (BTEX) using EPA Test Method 8020; and

3.0 GROUNDWATER MONITORING RESULTS

A summary of laboratory chemical test results for groundwater samples obtained from monitoring wells MW-1, AMW-1, AMW-2 and AMW-3 is provided on Table 3.0.1, and 3.0.2. TPHd levels for samples collected from wells MW-1, AMW-1, AMW-2, and AMW-3 were reported to be 230 micrograms per liter ($\mu\text{g/l}$), 61 $\mu\text{g/l}$, 58 $\mu\text{g/l}$, and 580 $\mu\text{g/l}$ respectively. The laboratory also notes that chromatographs of hydrocarbons in the diesel range for all the samples did not resemble the pattern of a diesel standard. Further, the chromatographs for the diesel range hydrocarbons detected in the samples from MW-1 and AMW-3 were heavier hydrocarbons than a diesel standard. Concentrations of TPHg and BTEX compounds were below the limit of detection of the method used (ND) for the 4 water samples. Results for all samples for O&G were ND.

Do to an oversight halogenated volatile organics (HVO) were not run on the four samples this round. The fourth quarter samples will be analyzed for HVOs. Appendix B presents a copy of the analytical report submitted by the laboratory for the groundwater samples. The laboratory report lists concentrations for samples collected from "MW-4" the samples were collected from MW-1. / / /

4.0 GROUNDWATER GRADIENT MEASUREMENT

An illustration of the estimated groundwater gradient is provided on Figure 5 - Groundwater Gradient Map and monitoring well reference points are tabulated on Table 4.0.1 - Static Water Level (SWL) Measurements. All elevations used are reduced to mean sea level datum.

Groundwater gradient was estimated by concurrent sounding of all 7 monitoring points, after the elevations for each well was determined. Depth to static groundwater from each reference point was then reduced to mean sea level elevations and a graphic method was used to establish groundwater gradient and direction. The result of this determination indicated that the groundwater gradient is approximately 0.0023 ft/ft (12.14 ft/mile) with a flow direction to the south.

These calculations represent the configuration of the shallow groundwater surface at the time of the sounding. It is expected that seasonal fluctuation in water level and corresponding alterations

of the current groundwater regime (gradient and direction) may occur in response to local precipitation, landscape irrigation, urban runoff, and other influences.

5.0 SUMMARY


Depths to groundwater were recorded for each of the groundwater monitoring wells on the site. The wells in the sampling program were purged and sampled. The sounding data from well MW-2R could not be used because an elevation for the well casing was not established due to a car being parked over the well during the survey.

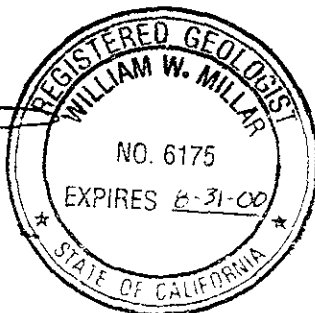
The water samples were analyzed for TPHd, TPHg, O&G, and BTEX compounds. Due to an oversight in the field samples were not collected or analyzed for HVOs. HVO analysis will be conducted on the samples collected during the fourth round of monitoring. TPHd concentrations were reported in the samples collected from each of the four wells in the monitoring program. The chromatograph patterns for the diesel range hydrocarbons detected in the four samples did not resemble a diesel standard. Also, the patterns for the diesel range hydrocarbons detected in the samples from wells MW-1 & AMW-3 indicated heavier hydrocarbons than a diesel standard. TPHg and BTEX concentrations for all of the samples collected from the 4 wells were ND. O&G concentrations for the samples collected were ND.

The groundwater gradient for this monitoring event was found to be towards the south. The projected groundwater gradient for the August 1998 monitoring event was to the south and the February 1998 monitoring event was roughly to the west.

6.0 CAPE TEAM MEMBERS AND SIGNATURE PAGE

For this project, CAPE Team Members included Mr. William W. Millar, California Professional Registered Geologist and Manager of Environmental Services and Mr. George R. Fagin CAD Operator. Field activities and report review for this Quarterly Groundwater Monitoring was performed by William Millar, whose signature, professional registration number, and stamp appear below.


William W. Millar, R.G.
Registration No.: 6175



2-1-99

Date

TABLE 3.0.1
SUMMARY OF FUEL HYDORCARBONS ANALYTICAL RESULTS

Sample ID	Date Sampled	TPHd (µg/l)	TPHg (µg/l)	B (µg/l)	T (µg/l)	E (µg/l)	X (µg/l)	O&G (mg/l)
MW-1	11/16/98	230	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(5)
AMW-1	11/16/98	61	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(5)
AMW-2	11/16/98	58	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(5)
AMW-3	11/16/98	580	ND(50)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND(5)

NOTES:

- µg/L- micrograms per liter.
- ND- not detected at or above Method Detection Limit (MDL).
- ()- number in parenthesis following reported ND result represents MDL.
- TPHd- total petroleum hydrocarbons as diesel, using EPA 8015 modified.
- TPHg- total petroleum hydrocarbons as gasoline, using EPA 8015 modified.
- BTEX- benzene, toluene, ethyl benzene and total xylenes (m-, p-, and o- isomers) using EPA Test Method 8020.
- O&G oil and grease using EPA SM 5520.

TABLE 4.0.1
 STATIC WATER LEVEL (SWL) MEASUREMENTS
 NOVEMBER 16, 1998

Location	Date	Time	SWL(ft)	Casing Elevation(ft)	Water Elevation(ft)
MW-1	11-16-98	1520	4.76	8.19	3.43
MW-2R	11-16-98	1522	4.58	?	?
MW-4	11-16-98	1523	5.05	8.53	3.48
MW-5	11-16-98	1525	4.795	8.37	3.575
MW-6	11-16-98	1527	5.30	8.61	3.31
AMW-1	11-16-98	1550	4.44	8.73	4.29
AMW-2	11-16-98	1550	4.51	8.84	4.33
AMW-3	11-16-98	1550	4.22	8.53	4.31

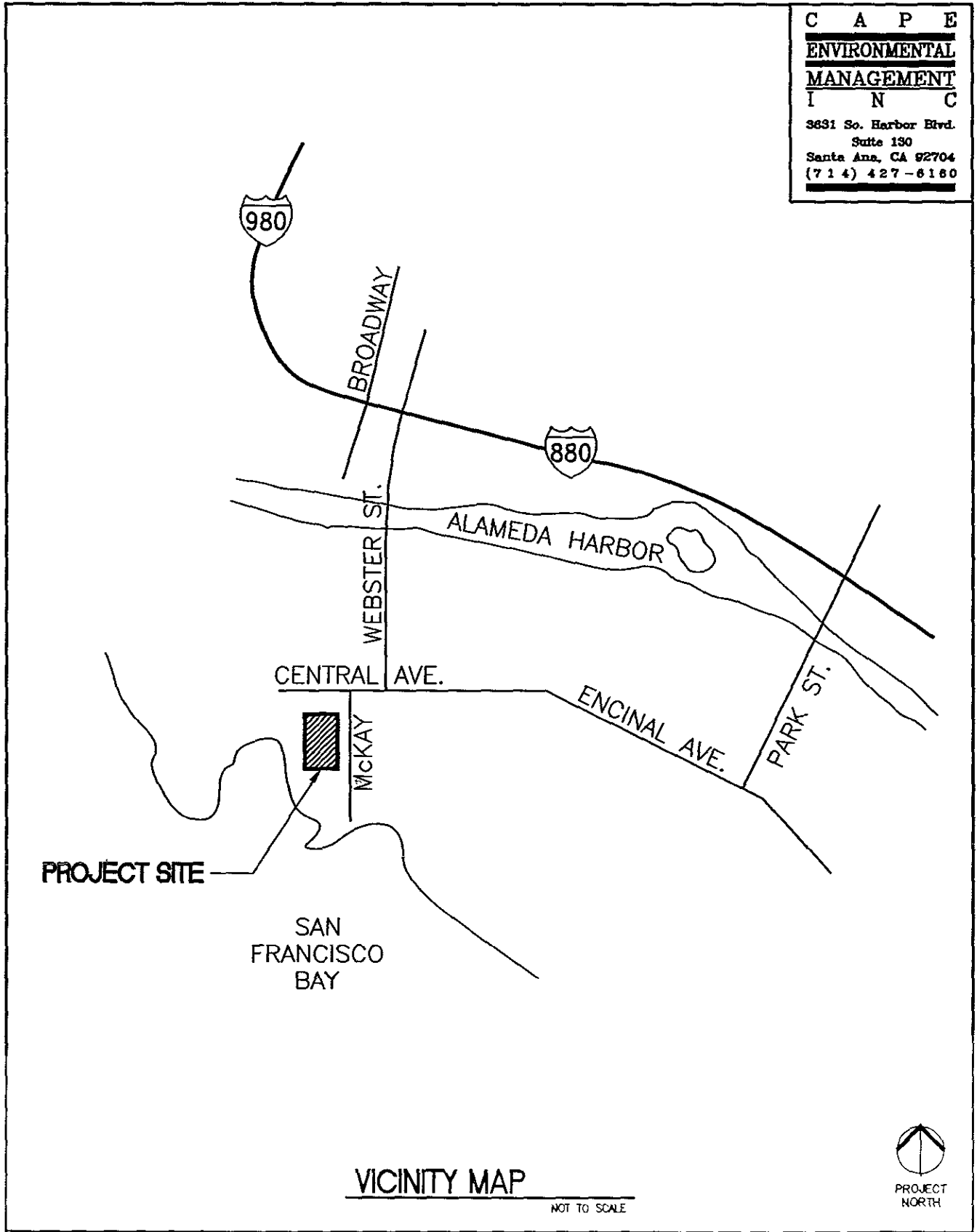
NOTES:

SWL in feet below top of well casing.
 Elevations in feet above mean sea level.
 NA = not available.

FIGURES

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VICINITY MAP

NOT TO SCALE



PROJECT NORTH

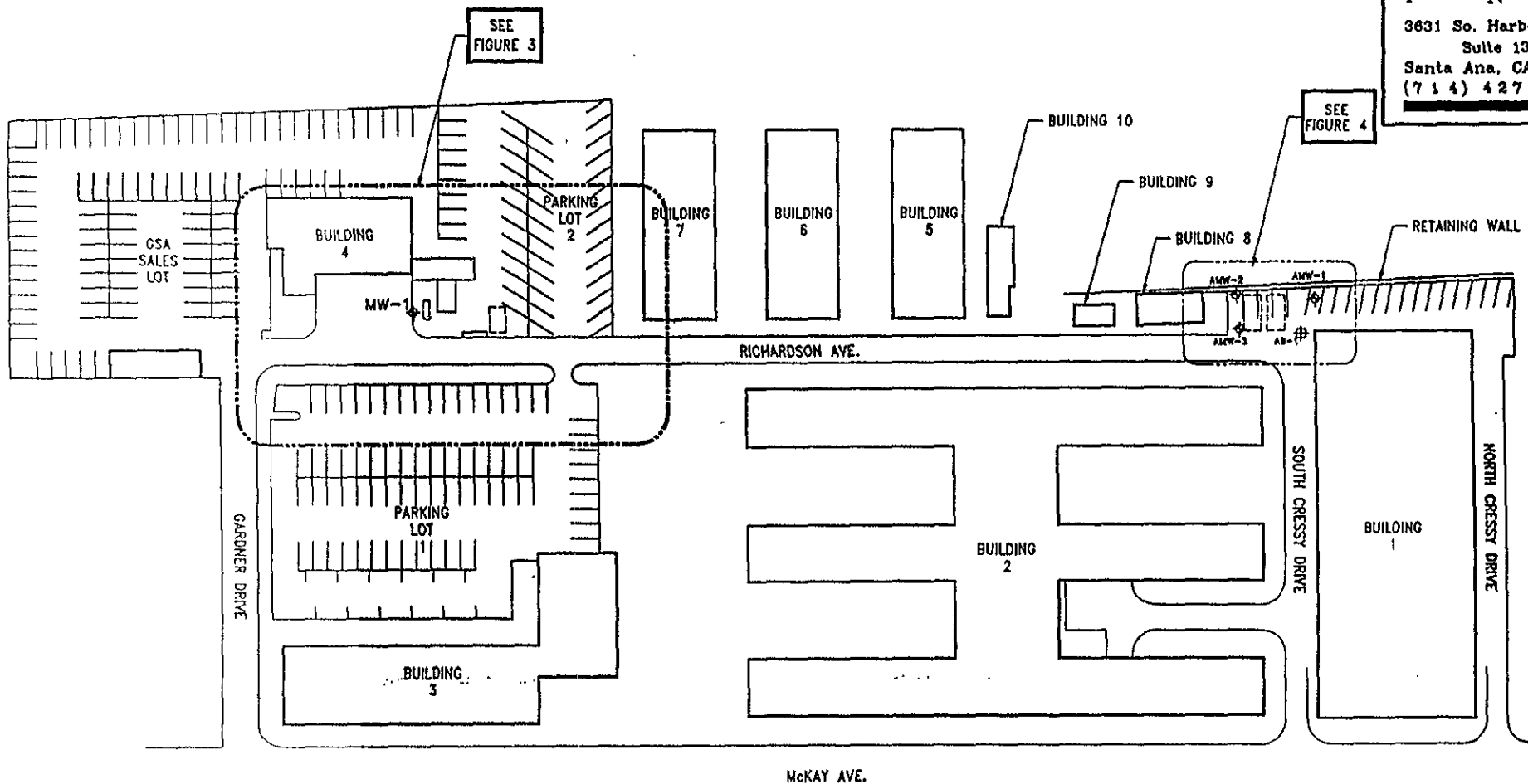
SHEET TITLE: FIGURE 1 - SITE VICINITY MAP		CHECKED BY: W.W.M.	PROJECT NUMBER: 2403C.24
PROJECT TITLE: ALAMEDA FEDERAL CENTER, ALAMEDA, CA		DRAWN BY: G.R.F	DATE: DEC. 1998
		SHEET: 1	

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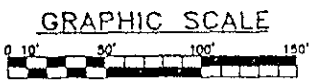
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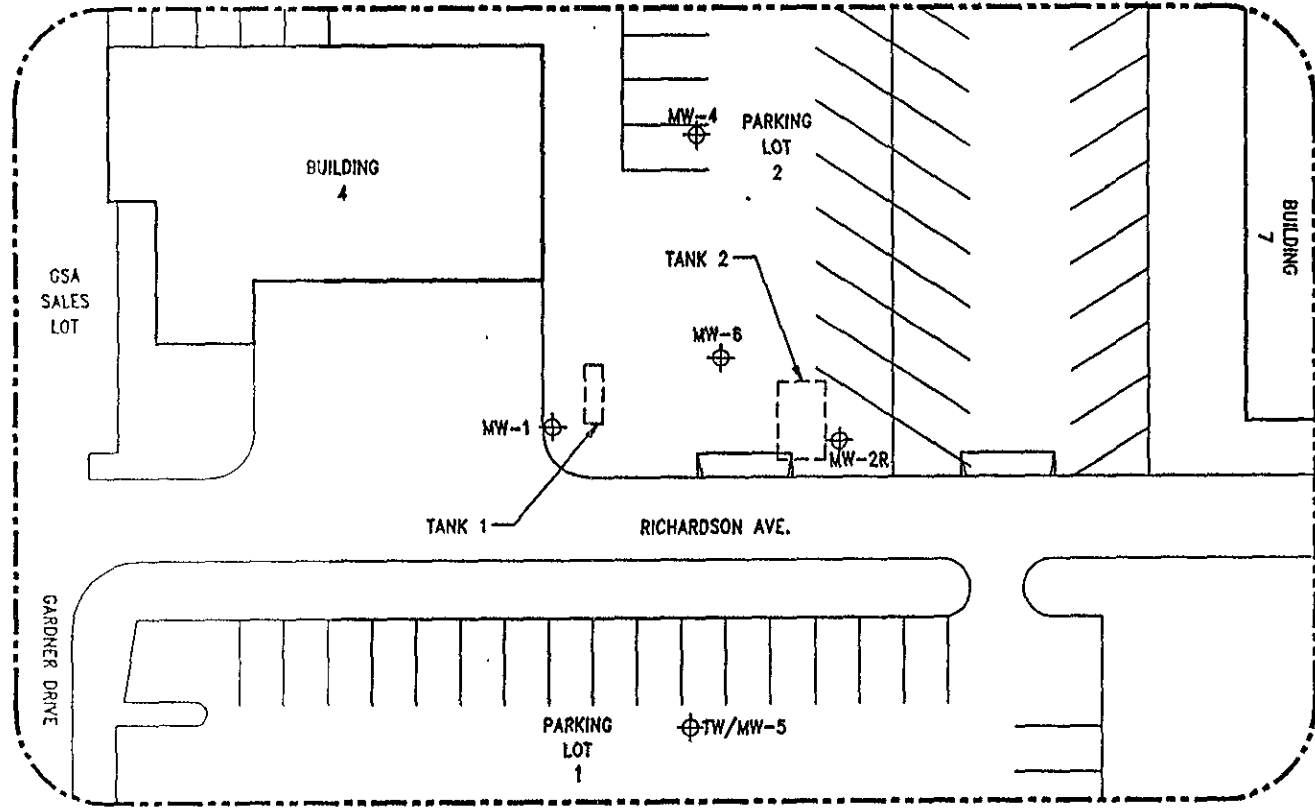
LEGEND

- MW-1 ◆ MONITORING WELL
- AB-1 # SOIL BORING



<p>SHEET TITLE: FIGURE 2 - SITE MAP</p> <p>PROJECT TITLE: ALAMEDA FEDERAL CENTER, ALAMEDA, CA</p>	<p>CHECKED BY: W.W.M.</p> <p>DRAWN BY: G.R.F.</p>	<p>PROJECT NUMBER: 2403C.24</p> <p>DATE: SEPT. 1998</p> <p>SHEET: 2 OF 5</p>
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LEGEND
 ⊕ MW EXISTING MONITORING WELL
 - - - - - APPROX. LOCATION OF REMOVED UST's

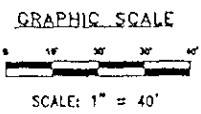
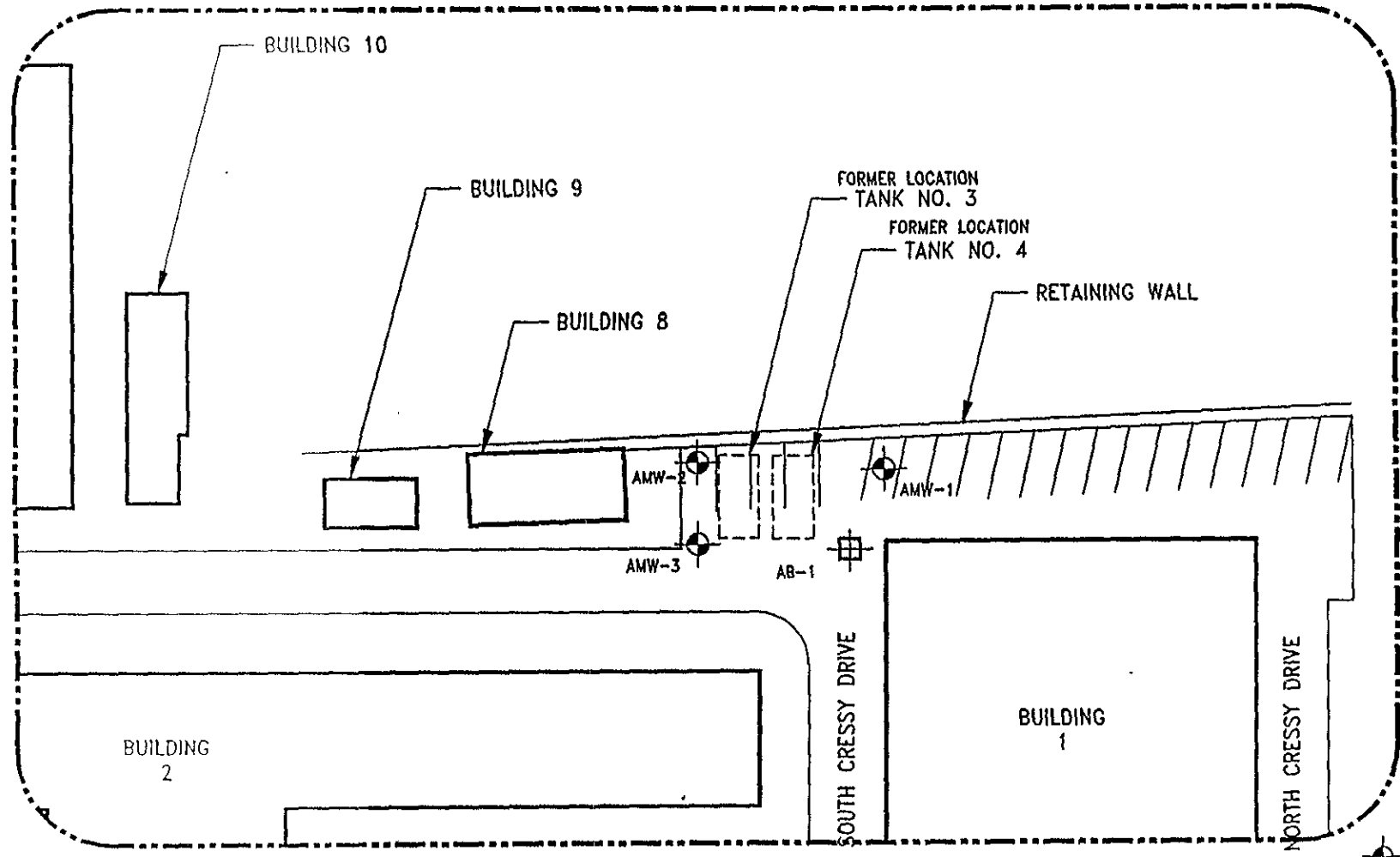
GRAPHIC SCALE

 SCALE: 1" = 40'



SHEET TITLE: FIGURE 3 - TANK 1 & 2 AREA / BORING LOCATIONS		CHECKED BY: W.W.M.	PROJECT NUMBER: 2403C.24
PROJECT TITLE: ALAMEDA FEDERAL CENTER, ALAMEDA, CA		DRAWN BY: G.R.F.	DATE: SEPT. 1998
			SHEET: 3 OF 5

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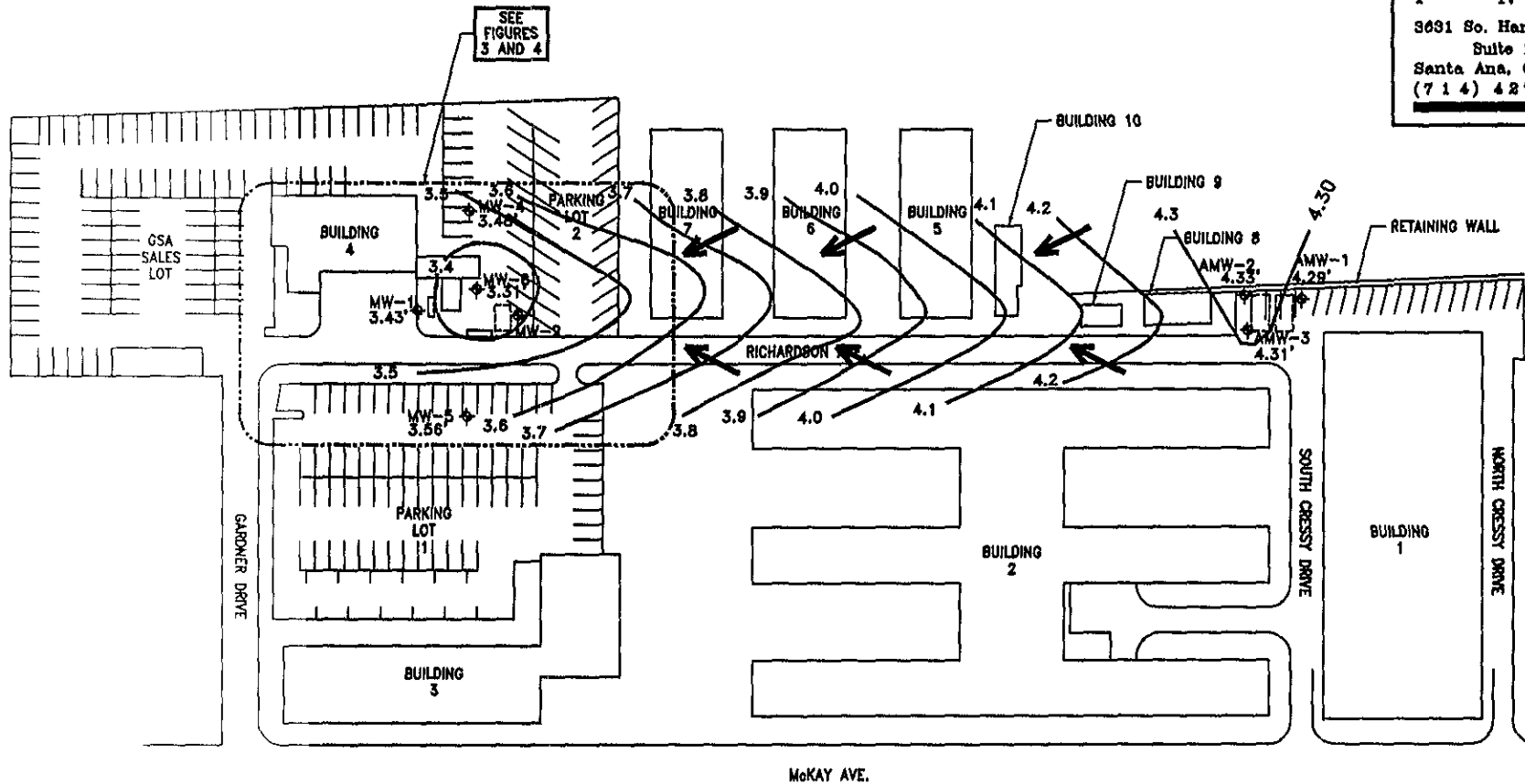


- LEGEND
- MONITORING WELLS
 - SOIL BORING
 - APPROX. LOCATION OF REMOVED UST's

SHEET TITLE: FIGURE 4 - TANK 3 & 4 AREA / MONITORING WELL LOCATIONS		CHECKED BY: W.W.M.	PROJECT NUMBER: 2403C.24
PROJECT TITLE: ALAMEDA FEDERAL CENTER, ALAMEDA, CA		DRAWN BY: G.R.F.	DATE: SEPT. 1998 SHEET: 4 OF 5

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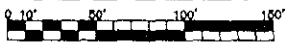
LEGEND

MW-1 3.57' EXISTING MONITORING WELL WITH GROUNDWATER LEVEL

GRADIENT DIRECTION

GROUNDWATER ISOCONTOUR LINE

GRAPHIC SCALE



SHEET TITLE: FIGURE 4 - GROUNDWATER GRADIENT MAP 3RD QUARTER 11-16-98		CHECKED BY: B. Miller	PROJECT NUMBER: 2403C.057.001
PROJECT TITLE: ALAMEDA FEDERAL CENTER, ALAMEDA, CA		DRAWN BY: G. Fagin	DATE: DEC. 02 '98
			SHEET: 4 OF 4

APPENDIX A
GROUNDWATER PURGING AND SAMPLING LOGS

WELL NUMBER: AMW-1
 SITE: ALAMEDA SITE JOB NUMBER: ^{CAPE} CAPE 2403C.024.001
 COLLECTOR: WUM DATE SAMPLED: 11-16-98
 pH / SPECIFIC CONDUCTIVITY METER USED, SERIAL NUMBER: 47129722
 pH / METER CALIBRATION: FIELD
 DEPTH TO WATER PRIOR TO PURGING: 4.4' ft. TIME: 1550
 DEPTH TO BOTTOM OF WELL: 15' ft. CASING DIAMETER _____
 STANDING WELL VOLUME: 1.80 (5.4) gallons (inches): 2"

TIME	TEMP (C)	pH	CONDUCTIVITY (umhos)	COLOR	TURBIDITY	OTHERS	VOLUME PURGED
1608	65.2	7.03	9.26x160	TAN	MOD.		2 BARRELS
1611	64.1	6.83	9.81	"	"		5 BARRELS
1613	63.8	7.05	12.58	"	"		7 "
1616	63.4	7.08	9.57	"	"		10 "
1620	63.2	7.08	9.48	"	"		15 "

DEPTH TO WATER AFTER PURGING: (@5.44') 4.44' START PURGE: 1605 o'clock
 END PURGE: 1625 o'clock
 PURGE DURATION 20 minutes
 WELL VOLUMES PURGED: 3

SAMPLE NUMBER	CONTAINER(S)	TYPE	FILTERED (Y/N)	TIME	PRESERVATIVES	REMARKS
AMW-1	1	1 LT. GLASS	N	1730	HCL ICE	
"	1	1 LT. GLASS	N	1730	ICE	
"	3	DA	N	1730	ICE	

DECON PROCEDURE: (internal) DISPOSABLE BAKER
 DECON PROCEDURE: (external) _____

WELL NUMBER: Amw-3
 SITE: ALAMEDA JOB NUMBER: CAPE 2403c.024.001
 COLLECTOR: WJSM DATE SAMPLED: 11-16-98
 pH / SPECIFIC CONDUCTIVITY METER USED, SERIAL NUMBER: 971297122
 pH / METER CALIBRATION: FIELD
 DEPTH TO WATER PRIOR TO PURGING: 4.22' ft. TIME: 1550
 DEPTH TO BOTTOM OF WELL: 15' ft. CASING DIAMETER _____
 STANDING WELL VOLUME: 1.83 (5.5) gallons (inches): 24

TIME	TEMP (C)	pH	CONDUCTIVITY (umhos)	COLOR	TURBIDITY	OTHERS	VOLUME PURGED
1707	60.7	7.43	6.35 X100	TH	WOD	SCREEN	2.5"
1709	60.9	7.73	7.33	"	"	"	5"
1712	64.1	7.86	7.48	"	"	"	10"
1715	63.6	7.89	6.97	"	"	"	15"

DEPTH TO WATER AFTER PURGING: (87.78) 6.78' START PURGE: 1705 o'clock
 END PURGE: 1717 o'clock
 PURGE DURATION 12 minutes
 WELL VOLUMES PURGED: 3

SAMPLE NUMBER	CONTAINER(S)	TYPE	FILTERED (Y/N)	TIME	PRESERVATIVES	REMARKS
Amw-3	1	1 Lt. GLASS	N	1804	HCL ICE	
"	1	1 Lt. GLASS	N	1804	ICE	
"	3	VDA	N	1804	ICE	

DECON PROCEDURE: (internal) _____
 DECON PROCEDURE: (external) _____



environmental consultants, inc.

Salt Lake City, Utah • Cedar City, Utah • Springville, Utah • Reno, Nevada • Elko, Nevada

PROJECT NO. CAPECZ

BY Bill MULLER DATE 11-16-98

CHK'D BY _____ DATE _____

SHEET NO. 1 OF 1

11-16-98

ALAMOGADO SITE

WELL #

DEPTH TO GROUND WATER

MW-1

DEPTH UNCORRECTED

4.76' (85.76')

MW-2

4.58' (85.58')

MW-4

5.05' (86.05')

MW-5

4.795' (85.795')

MW-6

5.30' (86.30')

AMW-1

4.44' (85.44')

AMW-2

4.51' (85.51')

AMW-3

4.22' (85.22')

APPENDIX B
ANALYTICAL REPORT



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

A N A L Y T I C A L R E P O R T

Prepared for:

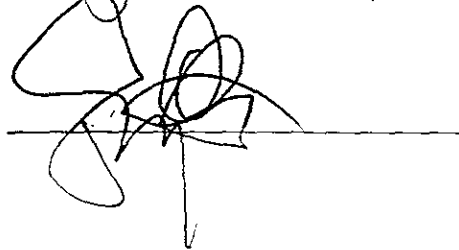
Cape Environmental, Inc.
3631 South Harbor Blvd.
Suite 130
Santa Anna, CA 92704

Date: 03-DEC-98
Lab Job Number: 136681
Project ID: 2403C.024.001
Location: Alameda Fed.

Reviewed by:



Reviewed by:



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Hydrocarbon Oil & Grease

Client: Cape Environmental, Inc.
Project #: 2403C.024.001
Location : Alameda Fed.

Analysis Method: SMWW 17:5520BF
Prep Method: SMWW 17:5520BF

Sample #	Client ID	Batch#	Sampled	Analyzed	Moisture
136681-001	AMW-1	45011	16-NOV-98	03-DEC-98	-
136681-002	AMW-2	45011	16-NOV-98	03-DEC-98	-
136681-003	AMW-3	45011	16-NOV-98	03-DEC-98	-
136681-004	MW-4	45011	16-NOV-98	03-DEC-98	-
QC86024	Method Blank	45011	-	03-DEC-98	-

Analyte: Petroleum Hydrocarbons

Matrix: Water

Units: mg/L

Sample #	Client ID	Result	Reporting Limit	Dilution Factor
136681-001	AMW-1	ND	5.0	1
136681-002	AMW-2	ND	5.0	1
136681-003	AMW-3	ND	5.0	1
136681-004	MW-4	ND	5.0	1
QC86024	Method Blank	ND	5.0	1

ND = None Detected at or above Reporting Limit



Hydrocarbon Oil & Grease

Client: Cape Environmental, Inc.
Project #: 2403C.024.001
Location : Alameda Fed.

Analysis Method: SMWW 17:5520BF
Prep Method: SMWW 17:5520BF

Sample #	Client ID	Batch#	Sampled	Analyzed	Moisture
QC86025	Blank Spike	45011	-	03-DEC-98	-
QC86026	Blank Spike Duplicate	45011	-	03-DEC-98	-

Analyte: Petroleum Hydrocarbons

Matrix: Water

Units: mg/L

Sample #	Sample Type	Spike Amt.	Result	%Rec	Limits	%RPD	Limit
QC86025	Blank Spike	186.8	174.4	93	80-120		
QC86026	Blank Spike Duplicate	149.3	135.3	91	80-120	3	20



TEH-Tot Ext Hydrocarbons

Curtis & Tompkins, Ltd.

Client: Cape Environmental, Inc.
 Project#: 2403C.024.001
 Location: Alameda Fed.

Analysis Method: EPA 8015M
 Prep Method: EPA 3520

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
136681-001	AMW-1	44782	11/16/98	11/19/98	11/21/98	
136681-002	AMW-2	44782	11/16/98	11/19/98	11/21/98	
136681-003	AMW-3	44782	11/16/98	11/19/98	11/21/98	
136681-004	MW-4	44782	11/16/98	11/19/98	11/21/98	

Matrix: Water

Analyte	Units	136681-001	136681-002	136681-003	136681-004
Diln Fac:		1	1	1	1
Diesel C10-C24	ug/L	61 Y	58 Y	580 YH	230 YH
Surrogate					
Hexacosane	%REC	65	69	80	90

Y: Sample exhibits fuel pattern which does not resemble standard

H: Heavier hydrocarbons than indicated standard

Lab #: 136681

BATCH QC REPORT



Page 1 of 1

TEH-Tot Ext Hydrocarbons

Curtis & Tompkins, Ltd.

Client: Cape Environmental, Inc.
Project#: 2403C.024.001
Location: Alameda Fed.

Analysis Method: EPA 8015M
Prep Method: EPA 3520

METHOD BLANK

Matrix: Water
Batch#: 44782
Units: ug/L
Diln Fac: 1

Prep Date: 11/19/98
Analysis Date: 11/21/98

MB Lab ID: QC85123

Analyte	Result	
Diesel C10-C24	<50	
Surrogate	%Rec	Recovery Limits
Hexacosane	75	53-136

Lab #: 136681

BATCH QC REPORT



Curtis & Tompkins, Ltd.

TEH-Tot Ext Hydrocarbons

Client: Cape Environmental, Inc.
Project#: 2403C.024.001
Location: Alameda Fed.

Analysis Method: EPA 8015M
Prep Method: EPA 3520

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water
Batch#: 44782
Units: ug/L
Diln Fac: 1

Prep Date: 11/19/98
Analysis Date: 11/22/98

BS Lab ID: QC85124

Analyte	Spike Added	BS	%Rec #	Limits
Diesel C10-C24	2475	1703	69	58-110
Surrogate	%Rec	Limits		
Hexacosane	75	53-136		

BSD Lab ID: QC85125

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Diesel C10-C24	2475	1785	72	58-110	5	21
Surrogate	%Rec	Limits				
Hexacosane	74	53-136				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits

TVH-Total Volatile Hydrocarbons

 Client: Cape Environmental, Inc.
 Project#: 2403C.024.001
 Location: Alameda Fed.

 Analysis Method: EPA 8015M
 Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
136681-001	AMW-1	44759	11/16/98	11/19/98	11/19/98	
136681-002	AMW-2	44759	11/16/98	11/20/98	11/20/98	
136681-003	AMW-3	44759	11/16/98	11/20/98	11/20/98	
136681-004	MW-4	44759	11/16/98	11/19/98	11/19/98	

Matrix: Water

Analyte	Units	136681-001	136681-002	136681-003	136681-004
Diln Fac:		1	1	1	1
Gasoline C7-C12	ug/L	<50	<50	<50	<50
Surrogate					
Trifluorotoluene	%REC	100	116	107	109
Bromofluorobenzene	%REC	97	100	104	101

BTXE

 Client: Cape Environmental, Inc.
 Project#: 2403C.024.001
 Location: Alameda Fed.

 Analysis Method: EPA 8021B
 Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
136681-001	AMW-1	44759	11/16/98	11/19/98	11/19/98	
136681-002	AMW-2	44759	11/16/98	11/20/98	11/20/98	
136681-003	AMW-3	44759	11/16/98	11/20/98	11/20/98	
136681-004	MW-4	44759	11/16/98	11/19/98	11/19/98	

Matrix: Water

Analyte	Units	136681-001	136681-002	136681-003	136681-004
Diln Fac:		1	1	1	1
Benzene	ug/L	<0.5	<0.5	<0.5	<0.5
Toluene	ug/L	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	ug/L	<0.5	<0.5	<0.5	<0.5
m,p-Xylenes	ug/L	<0.5	<0.5	<0.5	<0.5
o-Xylene	ug/L	<0.5	<0.5	<0.5	<0.5
Surrogate					
Trifluorotoluene	%REC	92	103	99	95
Bromofluorobenzene	%REC	91	94	96	101

Lab #: 136681

BATCH QC REPORT



Curtis & Associates
10000
10000

TVH-Total Volatile Hydrocarbons

Client: Cape Environmental, Inc.
Project#: 2403C.024.001
Location: Alameda Fed.

Analysis Method: EPA 8015M
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
Batch#: 44759
Units: ug/L
Diln Fac: 1

Prep Date: 11/19/98
Analysis Date: 11/19/98

MB Lab ID: QC85034

Analyte	Result	
Gasoline C7-C12	<50	
Surrogate	%Rec	Recovery Limits
Trifluorotoluene	106	59-162
Bromofluorobenzene	108	59-162

Lab #: 136681

BATCH QC REPORT



BTXE

Client: Cape Environmental, Inc.
Project#: 2403C.024.001
Location: Alameda Fed.

Analysis Method: EPA 8021B
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
Batch#: 44759
Units: ug/L
Diln Fac: 1

Prep Date: 11/19/98
Analysis Date: 11/19/98

MB Lab ID: QC85034

Analyte	Result
Benzene	<0.5
Toluene	<0.5
Ethylbenzene	<0.5
m,p-Xylenes	<0.5
o-Xylene	<0.5

Surrogate	%Rec	Recovery Limits
Trifluorotoluene	100	53-124
Bromofluorobenzene	99	41-142

Lab #: 136681

BATCH QC REPORT



Curtis & Jenkins, Inc. 136681

TVH-Total Volatile Hydrocarbons

Client: Cape Environmental, Inc.
Project#: 2403C.024.001
Location: Alameda Fed.

Analysis Method: EPA 8015M
Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Water
Batch#: 44759
Units: ug/L
Diln Fac: 1

Prep Date: 11/19/98
Analysis Date: 11/19/98

LCS Lab ID: QC85031

Analyte	Result	Spike Added	%Rec #	Limits
Gasoline C7-C12	2215	2000	111	80-119
Surrogate	%Rec	Limits		
Trifluorotoluene	105	59-162		
Bromofluorobenzene	143	59-162		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 1 outside limits

Lab #: 136681

BATCH QC REPORT



Curtis & Associates, Inc. 1

BTXE

Client: Cape Environmental, Inc. Analysis Method: EPA 8021B
 Project#: 2403C.024.001 Prep Method: EPA 5030
 Location: Alameda Fed.

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water Prep Date: 11/19/98
 Batch#: 44759 Analysis Date: 11/19/98
 Units: ug/Kg
 Diln Fac: 1

BS Lab ID: QC85032

Analyte	Spike Added	BS	%Rec #	Limits
Benzene	20	20.71	104	69-109
Toluene	20	20.99	105	72-116
Ethylbenzene	20	20.24	101	67-120
m,p-Xylenes	40	41.76	104	69-117
o-Xylene	20	20.4	102	75-122
Surrogate	%Rec	Limits		
Trifluorotoluene	105	53-124		
Bromofluorobenzene	98	41-142		

BSD Lab ID: QC85033

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Benzene	20	21.39	107	69-109	3	11
Toluene	20	21.43	107	72-116	2	11
Ethylbenzene	20	20.93	105	67-120	3	12
m,p-Xylenes	40	43.68	109	69-117	4	11
o-Xylene	20	21.33	107	75-122	4	12
Surrogate	%Rec	Limits				
Trifluorotoluene	102	53-124				
Bromofluorobenzene	101	41-142				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits

Lab #: 136681

BATCH QC REPORT



Curtis & Partners

TVH-Total Volatile Hydrocarbons

Client: Cape Environmental, Inc.	Analysis Method: EPA 8015M
Project#: 2403C.024.001	Prep Method: EPA 5030
Location: Alameda Fed.	

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ	Sample Date: 11/18/98
Lab ID: 136662-005	Received Date: 11/18/98
Matrix: Water	Prep Date: 11/19/98
Batch#: 44759	Analysis Date: 11/19/98
Units: ug/L	
Diln Fac: 1	

MS Lab ID: QC85035

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Gasoline C7-C12	2000	<50	2174	109	71-131
Surrogate	%Rec	Limits			
Trifluorotoluene	104	59-162			
Bromofluorobenzene	142	59-162			

MSD Lab ID: QC85036

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Gasoline C7-C12	2000	2175	109	71-131	0	26
Surrogate	%Rec	Limits				
Trifluorotoluene	103	59-162				
Bromofluorobenzene	145	59-162				


Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits

CHAIN OF CUSTODY FORM

Curtis & Tompkins, Ltd.
 Analytical Laboratories, Since 1878

 2323 Fifth Street
 Berkeley, CA 94710
 (510) 486-0900 Phone
 (510) 486-0532 Fax

C&T
 LOGIN # 136681

Analyses

Project No: 2403C.024.001

Report To: BILL MILLAN

Project Name: ALAMGDA

Company: CAMS ENV. MANAGEMENT INC.

Project P.O.: 2403C.024.001

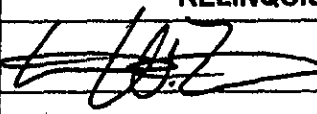
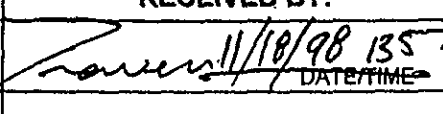
Telephone: 714/427-6160

Turnaround Time: NORMAL

Fax: 714/427-6161

Lab Number	Sample ID.	Sampling Date Time	Matrix			# of Containers	Preservative				Field Notes	BTEX	BTEX	OTG
			Soil	Water	Waste		HCl	H ₂ SO ₄	HNO ₃	ICE				
1	AMW-1	11-16-98 1730		X		5	X			X				
2	AMW-2	1745		X		5	X			X				
3	AMW-3	1804		X		5	X			X				
4	MW-4	1843		X		5	X			X				

Notes:

RELINQUISHED BY:  11-18-98 1357 DATE/TIME	RECEIVED BY:  11/18/98 1357 DATE/TIME
DATE/TIME	DATE/TIME
DATE/TIME	DATE/TIME

Signature on this form constitutes a firm Purchase Order for the services requested above.