January 17, 2000

Mr. Reid Riner
Remediation Manager
Amerco Real Estate Company/U-Haul Interna:
2721 North Central Avenue, Suite 700
Phoenix, Arizona 85012

Re:

Results of Groundwater Sampling Event Conducted on October 21, 1999 AMERCO Real Estate Company Property Alameda County Assessor Parcel Nos. 414-11-4-6 and 414-11-4-7 19100 - 19600 Mission Boulevard Hayward, California

Dear Mr. Riner:

Pursuant to your request, Blaes Environmental Management, Inc. (Blaes Environmental) is pleased to provide this letter presenting the results of the groundwater sampling event conducted at the above-mentioned site on October 21, 1999. The purpose of the groundwater sampling program was to evaluate current groundwater quality beneath the site using two existing groundwater monitoring wells.

#### Site Background

The subject property consists of 2.73 acres (comprised of two adjacent properties) located immediately south of State Highway 238 and northeast of Mission Boulevard in Hayward, California (Figures 1 and 2; Attachment A). The site is currently abandoned and pending redevelopment. Several vacant structures occupy the site. These structures include two multi-story residential buildings, a water tower/pump house, and two single-story commercial buildings.

The commercial portion of the property previously operated two underground storage tanks: a 550-gallon gasoline tank and a 280-gallon waste-oil tank. These two tanks were removed from the site on June 5, 1990, according to a May 18, 1998 *Limited Environmental Site Assessment* (ESA) prepared by Pinnacle Environmental Technologies (Pinnacle).

Upon removal of the two tanks and discovery of petroleum hydrocarbons in the soil beneath the tanks, the Alameda County Health Care Agency requested the installation of groundwater monitoring well(s) (MW-1 and MW-2) near the former tank excavation area. Previous analyses of groundwater samples collected from these wells did not identify detectable concentrations of petroleum hydrocarbons. However, the screen interval of monitoring well MW-1 was below the groundwater table. (No well construction information was available for monitoring well MW-2). As a result, the previous groundwater sample results may not be representative of actual hydrocarbon concentrations (Pinnacle, 1998)

202 E. Earll Drive, #478 Pho	enix, Arizona 85012
Telephone: (602) 728-0707	Fax: (602) 728-0708

#### **Groundwater Sampling Activities**

On October 21, 1999, Blaes Environmental conducted groundwater sampling at the site. Groundwater monitoring and sampling activities began with measuring groundwater levels within the two existing groundwater monitoring wells, followed by purging and sampling of each well. Groundwater levels were measured from the top of the monitoring well casing to the groundwater surface, and were measured to the nearest 0.01 foot using a Heron Instruments® water level meter. The data is presented in Table 1 (Attachment B). Groundwater depth measurements were performed in accordance with Blaes Environmental's groundwater monitoring procedures summarized in Attachment C.

Following measurement of groundwater depth at the two monitoring wells, Blaes Environmental purged a minimum of three well-casing volumes of groundwater from each well. The calculated purge volumes are presented on Table 1. A description of the purging procedure is included in Attachment C. After the purging process was complete, the depth to groundwater was re-measured to ensure that the groundwater level had recovered to at least 80% of the original level. Purged groundwater was stored in three 55-gallon drums at the site pending laboratory analyses and/or waste profiling.

Following purging, groundwater samples were collected from each of the groundwater monitoring wells using a new polyethylene disposable bailer. Groundwater samples from each well were placed in four 40-milliliter VOA vials supplied by Columbia Analytical Services (CAS) of Santa Clara, California, a California State certified analytical laboratory. Following collection, the groundwater samples were placed in an iced cooler and transported to CAS, under chain-of-custody record, for laboratory analysis.

#### Laboratory Analyses of Groundwater Samples

Each groundwater sample collected on October 21, 1999 was analyzed for: Total Purgeable Petroleum Hydrocarbons as Gasoline (TPPH-G) according to EPA Method 8015 Modified, benzene, toluene, ethylbenzene, total xylenes (BTEX) with methyl tert-butyl ether (MTBE) using EPA Method 8020; and fuel oxygenates using EPA Method 8260. The laboratory analytical report with chain-of-custody is included as Attachment D and analytical results are summarized on Table 2 (Attachment B).

#### Groundwater Monitoring and Sampling Results

Observations and results of groundwater sampling activities are presented below.

- The depth to groundwater measured at monitoring wells MW-1 and MW-2 was 23.98 and 24.00 feet below top of casing, respectively. This is approximately eight feet lower than measurements presented in the previous Pinnacle report (1998).
- Monitoring well MW-2 was capped with duct-tape and contained debris such as a Styrofoam cup
- Groundwater from monitoring well MW-1 was clear and did not exhibit a hydrocarbon-like odor.
- Groundwater from monitoring well MW-2 exhibited a hydrogen-sulfide-like odor. Observations also revealed a slight hydrocarbon sheen on the water surface

Blaes Envirnmental January 17, 2000

- Analytical results of groundwater collected from monitoring well MW-1 indicated that the sample did not contain reportable concentrations of petroleum hydrocarbons or fuel oxygenate compounds.
- Analytical results of groundwater collected from monitoring well MW-2 indicated the presence of TPH-G (290 micrograms per liter [µg/L]), MTBE (0.6 µg/L), toluene (32 µg/L), ethylbenzene (26 µg/L), and total xylenes (110 µg/L). With exception to MTBE, no other analyzed fuel oxygenate compounds were reported in the groundwater sample from MW-2.
- Three 55-gallon drums of purged groundwater remain at the site pending surface discharge or removal and treatment.

#### Recommendations

Reid Riner

Based on groundwater sample analytical results and observations, Blaes Environmental presents the following recommendations.

- Due to the position of the screened interval at MW-1, the top of which is approximately nine feet below the groundwater surface, and the limited data regarding subsurface conditions at the site, it is suggested that a new monitoring well be installed to replace MW-1. If it is learned that the groundwater surface is at approximately 24 feet below ground surface (bgs), then MW-1 should be abandoned after completion of the new well. It is possible that MW-1 (screened from 33 to 43 feet bgs) was intended to monitor a confined saturated horizon. If so, MW-1 will not be replaced.
- Surge and bail monitor well MW-2 to remove debris and re-establish communication to the saturated horizon. If possible, determine the screened interval at MW-2 to validate groundwater sample results. Monitor well MW-2 also requires a new well vault.
- At a minimum, install up to two additional monitor wells to further assess groundwater conditions beneath the site and define the lateral extent of dissolved hydrocarbons detected at
- Collect and analyze soil samples from the soil boring drilled for replacement of monitor well MW-1.
- Establish a quarterly groundwater monitoring program for the site.
- Observations indicated that several wash drains, clarifiers, and former hydraulic lifts are present at the site. It is suggested that upon removal, soil samples be collected beneath these items. This will decrease the risk of future environmental liability with such features.

The result of these recommendations is to ultimately support a request for site closure. Presently, the two wells at the site do not provide enough data to pursue site closure.

Exp. 05/0

This letter summarizes groundwater sampling activities conducted on October 21, 1999. any questions or need additional information, please call either of the undersigned.

Sincerely,

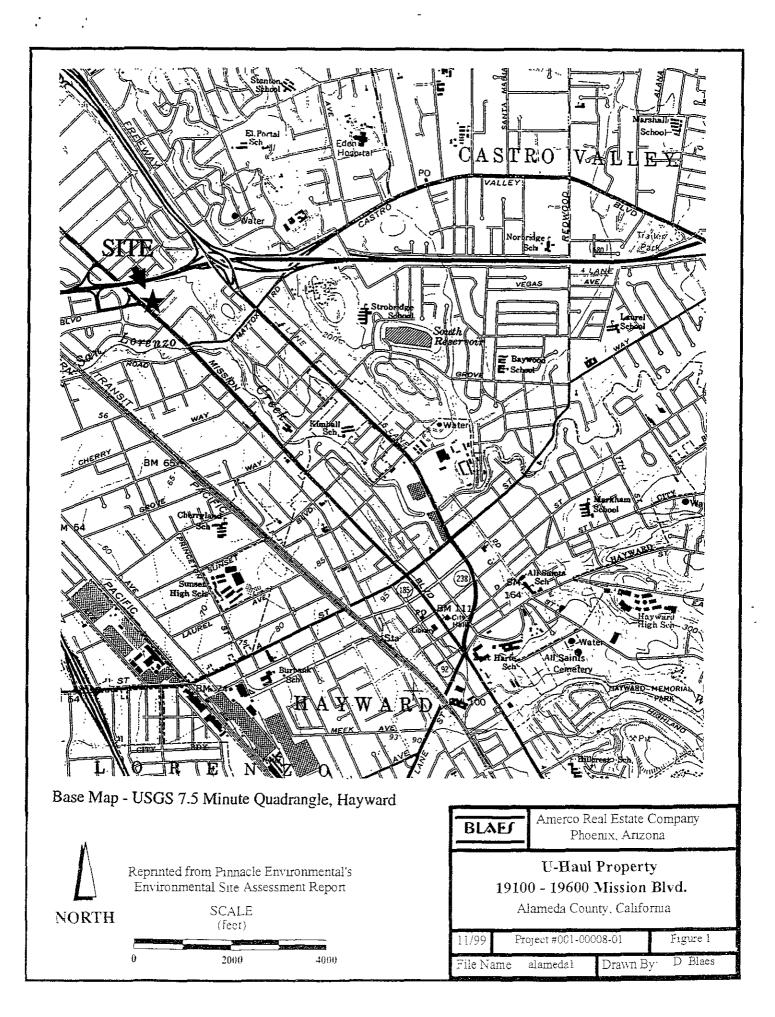
Blaes Environmental

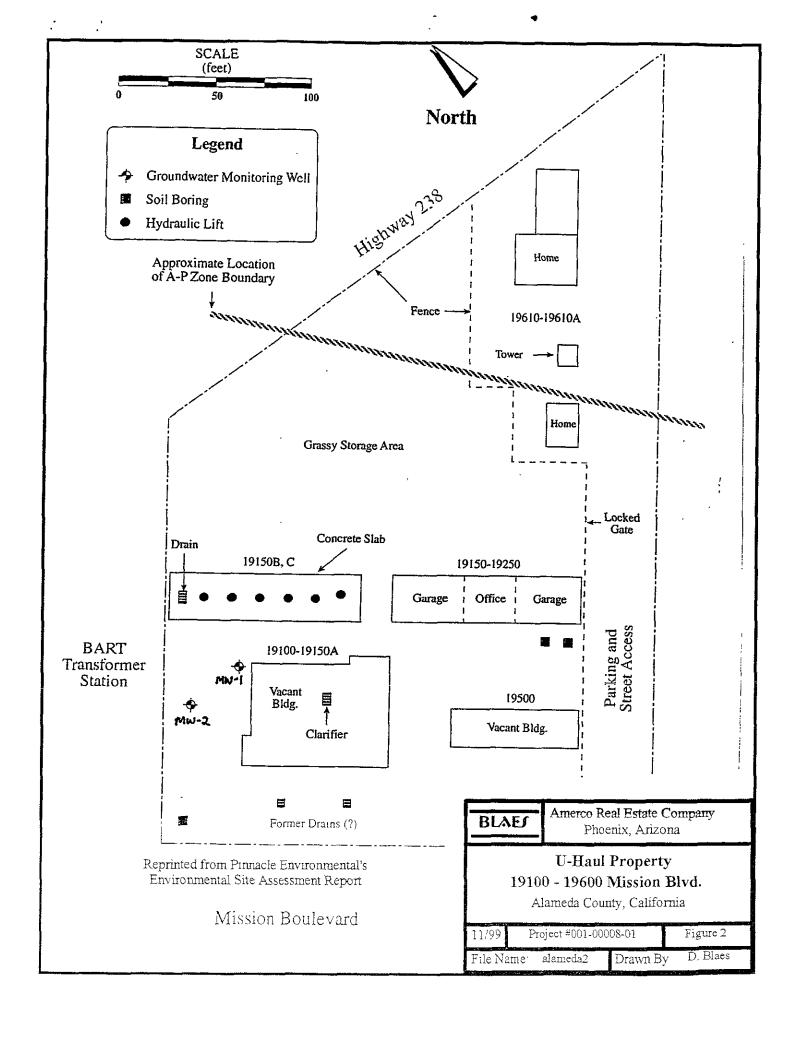
California Registered Civil Engineer

Attachments:

- A) Figures 1 and 2 Site Location and Site Map, respectively
- B) Table 1 Groundwater Monitoring Results Table 2 - Summary of Groundwater Sample Analytical Results
- C) Description of Groundwater Sampling Procedures
- D) Certified Analytical Laboratory Report

#### ATTACHMENT A





#### ATTACHMENT B

Project No. 001-0008-01

Task No.: 0032

Client: Amerco Property

Site: Mission Bldv. Hayward, CA

### **Table 1 - Groundwater Monitoring Data**

Date: 10/21/99

Groundwater Monitoring Data

Well <b>ID</b>	Time	Depth to Groundwater (ft. bgs)	Well Diam (inches)	Total Depth (feet)	Calc. Purge Vol. (gal)	Act. Purge Vol. (gal)
MW-1	2:25	23.98	2	43.2	10.3	11
MW-2	2:35	24.00	6	49	112.5	35

Groundwater Purging Data

Well I.D.	Time	Gallons	Cond.	Cond.	Salinity (mS/L)	Temp (deg. C)
MW-1	2:54	0			<del></del> <u></u>	···
	3:02	8	1145	1292	0.6	19.1
	3:05	11	1140	1287	0.6	19
MW-2	3:24	0				
	3:30	6	Hydrogen S	Sulfide odd	or and a sheen on	water
	3:34	10	118.1	133.3	0.1	19
	3:44	20	105.5	119.3	0.1	18.9
	4:00	35	Pump ceas	ed. Likely	due to debris in v	vell casing.

#### TABLE 2

# Summary of Groundwater Sample Analytical Results

#### AMERCO Property Mission Blvd., Hayward, CA

			Using EPA Method 8015/8020						
Sample I.D.	Sample Date	TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl- Benzene (ug/L)	Total Xylenes (ug/l)	MTBE (ug/L)		
MW-1-1099	10/21/99	<50	<0.5	<0.5	<0.5	<1	<3		
MW-2-1099	10/21/99	290	<0.5	25	21	96	<3		

			Using EPA Method 8260						
Sample I.D.	Sample Date	Benzene (ug/L)	Toluene (ug/L)	Ethyl- Benzene (ug/L)	Total Xylenes (ug/l)	MTBE (ug/L)	Other Fuel Oxygenates (ug/L)		
MW-1-1099	10/21/99	<0.5	<0.5	<0.5	<0.5	<0.5	ND		
MW-2-1099	10/21/99	<0.5	32	26	110	0.6	ND		

NOTES: TPHg = total petroleum hydrocarbons as gasoline

MTBE = Methyl tert-Butyl Ether ug/L = micrograms per Liter

< 0.5 = Analyte not detected above indicated reporting limit

ND = Analytes not detected above reporting limit

#### ATTACHMENT C

### GROUNDWATER MONITORING AND SAMPLING PROCEDURES

#### Groundwater Depth Measurements

Groundwater depth measurements were obtained at each groundwater monitoring well using a Heron interface probe. Groundwater depth measurements were recorded from a mark that is typically on the north side of the top of the uncapped PVC monitoring well casing. The groundwater elevation in each well is calculated by subtracting the measured depth to groundwater from the surveyed well head elevation established at the designated measuring point on the top of the each PVC monitoring well casing.

The interface probe was decontaminated prior to arrival on the site and between each groundwater monitoring well. Decontamination procedures include washing the probe with a non-phosphate detergent and tap water followed by rinsing with deionized water.

### Groundwater Monitoring Well Purging Procedures

Each groundwater monitoring well was purged using a new disposable Teflon bailer or a Whale In-Line 925, 12 volt D.C. pump. Purged groundwater from each monitoring well was simply recycled into the existing water treatment system.

During the purging process in each well, field parameters such as salinity, conductivity, and groundwater temperature were recorded in approximate 4 to 10 gallon intervals. The final stabilized field parameters for each well are recorded on the field log sheets.

#### ATTACHMENT D



October 29, 1999

Service Request No.: S9903283

Mr. Daniel Blaes BLAES ENVIRONMENTAL 202 E. Earl Drive Suite #478 Phoenix, AZ 85012

RE:

Amerco-Alameda/001-0008-01

Dear Mr. Blaes:

Enclosed are the results of the sample(s) submitted to our laboratory on October 22, 1999. All analyses were performed in accordance with our laboratory's quality assurance program. Results are intended to be considered in their entirety and apply to the sample(s) analyzed. Columbia Analytical Services is not responsible for use of less than the complete report. Signature of this CAS Analytical Report confirms that pages 2 through 10, following, have been thoroughly reviewed and approved for release.

Columbia Analytical Services is certified for environmental analyses by the California Department of Health Services (certificate number: 2352, expiration: January 31, 2001).

If you have any questions, please call me at (408) 748-9700.

Respectfully submitted,

Columbia Analytical Services, Inc.

Project Chemist

### COLUMBIA ANALYTICAL SERVICES2Inc.

Acronyms

American Association for Laboratory Accreditation A2LA **ASTM** American Society for Testing and Materials

BOD Biochemical Oxygen Demand

BTEX Benzene, Toluene, Ethylbenzene, Xylenes

CAM California Assessment Metals CARB Californía Air Resources Board

**CAS Number** Chemical Abstract Service registry Number

CFC Chlorofluorocarbon CFU Colony-Forming Unit COD Chemical Oxygen Demand

DEC Department of Environmental Conservation DEQ Department of Environmental Quality DHS Department of Health Services DLCS **Duplicate Laboratory Control Sample** 

DMS Duplicate Matrix Spike DOE Department of Ecology DOH Department of Health

**EPA** U. S. Environmental Protection Agency

**ELAP** Environmental Laboratory Accreditation Program

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

IC Ion Chromatography

ICB Initial Calibration Blank sample

ICP Inductively Coupled Plasma atomic emission spectrometry

**ICV** Initial Calibration Verification sample

Estimated concentration. The value is less than the MRL, but greater than or equal to J. ...

the MDL. If the value is equal to the MRL, the result is actually <MRL before rounding.

LCS Laboratory Control Sample **LUFT** Leaking Underground Fuel Tank

Modified

**MBAS** Methylene Blue Active Substances

MCL Maximum Contaminant Level. The highest permissible concentration of a

substance allowed in drinking water as established by the U. S. EPA.

MDL Method Detection Limit MPN Most Probable Number MRL Method Reporting Limit

MS Matrix Spike

MTBE Methyl tert-Butyl Ether NA Not Applicable NAN Not Analyzed NC Not Calculated

NCASI National Council of the paper industry for Air and Stream Improvement Not Detected at or above the method reporting/detection limit (MRL/MDL) ND

NIOSH National Institute for Occupational Safety and Health

NTU Nephelometric Turbidity Units

ppb Parts Per Billion ppm Parts Per Million

PQL Practical Quantitation Limit QA/QC Quality Assurance/Quality Control RCRA

Resource Conservation and Recovery Act

RPD Relative Percent Difference SIM Selected Ion Monitoring

SM Standard Methods for the Examination of Water and Wastewater, 18th Ed., 1992 STLC

Solubility Threshold Limit Concentration

SW Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846.

3rd Ed., 1986 and as amended by Updates I, II, IIA, and IIB.

TCLP Toxicity Characteristic Leaching Procedure

TDS Total Dissolved Solids

TPH Total Petroleum Hydrocarbons

Trace level. The concentration of an analyte that is less than the PQL but greater than or equal ţ٢

to the MDL. If the value is equal to the PQL, the result is actually <PQL before rounding.

TRPH Total Recoverable Petroleum Hydrocarbons

TSS Total Suspended Solids

TTLC Total Threshold Limit Concentration

VOA Volatile Organic Analyte(s) ACRONLST.DOC 7/14/95 Page 2

### Analytical Report

Client:

Blaes Environmental

Project:

Amerco-Alameda/001-0008-01

Service Request: S9903283 Date Collected: 10/21/99

Sample Matrix:

Water

Date Received: 10/22/99

Fuel Oxygenates

Sample Name: Lab Code:

MW-2-1099

Test Notes:

S9903283-001

Units: ug/L (ppb) Basis: NA

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor		Date Analyzed	Result	Result Notes
tert-Butyl Alcohol Methyl tert-Butyl Ether Diisopropyl Ether Ethyl tert-Butyl Ether tert-Amyl Methyl Ether Benzene Toluene Ethylbenzene Total Xylenes	EPA 5030A EPA 5030A EPA 5030A EPA 5030A EPA 5030A EPA 5030A EPA 5030A EPA 5030A	8260 8260 8260 8260 8260 8260 8260 8260	50 0.5 5 5 5 0.5 0.5 0.5	1 1 1 1 1 1 1 1	NA NA NA NA NA NA NA	10/28/99 10/28/99 10/28/99 10/28/99 10/28/99 10/28/99 10/28/99 10/28/99	ND 0.6 ND ND ND ND ND 32 26 110	Hotes

(\$44021397p

Page 3

### Analytical Report

Client: Project:

Blaes Environmental

Amerco-Alameda/001-0008-01

Sample Matrix: Water Service Request: \$9903283 Date Collected: 10/21/99

Date Received: 10/22/99

Fuel Oxygenates

Sample Name: Lab Code:

MW-1-1099 S9903283-002

Units: ug/L (ppb)

H

Test Notes:

Basis: NA

Analyte  tert-Butyl Alcohol Methyl tert-Butyl Ether Diisopropyl Ether Ethyl tert-Butyl Ether tert-Amyl Methyl Ether Benzene Toluene Ethylbenzene Total Xylenes	Prep Method EPA 5030A EPA 5030A EPA 5030A EPA 5030A EPA 5030A EPA 5030A EPA 5030A	Analysis Method 8260 8260 8260 8260 8260 8260 8260 8260	MRL 50 0.5 5 5 0.5 0.5 0.5 0.5	Dilution Factor  1 1 1 1 1 1 1 1 1 1 1 1	Date Extracted  NA	Date Analyzed 10/28/99 10/28/99 10/28/99 10/28/99 10/28/99 10/28/99 10/28/99	Result ND	Result Notes
						10/20/57	ND	

رS-4/021397

Date. 10-29-99

#### Analytical Report

Client:

Blaes Environmental

Project: Sample Matrix:

Amerco-Alameda/001-0008-01

Water

Service Request: S9903283

Date Collected: NA Date Received: NA

ND

Fuel Oxygenates

Sample Name: Lab Code:

Test Notes:

Method Blank (MS01)

S991028-WB1

EPA 5030A

8260

Units: ug/L (ppb) Basis: NA

Prep Analysis Dilution Analyte Date Date Result Method Method MRL Factor Extracted Analyzed Result Notes tert-Butyl Alcohol EPA 5030A 8260 50 Methyl tert-Butyl Ether NA 10/28/99 ND EPA 5030A 8260 0.5 Diisopropyl Ether 1 NA 10/28/99 ND EPA 5030A 8260 5 1 Ethyl tert -Butyl Ether NA 10/28/99 ND EPA 5030A 5 8260 1 NΑ tert -Amyl Methyl Ether 10/28/99 ND EPA 5030A 5 8260 1 NA Benzene 10/28/99 ND EPA 5030A 8260 0.5 Toluene 1 NA 10/28/99 ND EPA 5030A 8260 0.5 1 Ethylbenzene NA 10/28/99 ND EPA 5030A 8260 0.5 Į Total Xylenes NA 10/28/99 ND

0.5

1

NA

10/28/99

Approved By

1844/02.397p

Date. 10-29-55

QA/QC Report

Client:

Blaes Environmental

Project:

Sample Matrix:

Amerco-Alameda/001-0008-01

Water

Service Request: \$9903283

Date Collected: NA Date Received: NA

Date Extracted: NA Date Analyzed: NA

Surrogate Recovery Summary

Fuel Oxygenates

Prep Method:

EPA 5030A

Analysis Method: 8260

Units: PERCENT

Basis: NA

Sample Name	Lab Code	Test Notes	Perce i Dibromofluoromethane	n t Rec Toluene-D8	o v e r y  4-Bromofluorobenzene
MW-2-1099	\$9903283-001		92	100	95
MW-1-1099	\$9903283-002		93	100	92
Method Blank (MS01)	\$991028-WB1		92	100	89

EPA Acceptance Limits:

86-118

88-110

86-115

SURE/0205974

Analytical Report

Client:

Blaes Environmental

Project:

Amerco-Alameda/001-0008-01

Sample Matrix:

Water

Service Request: S9903283

Date Collected: 10/21/99

Date Received: 10/22/99

BTEX, MTBE and TPH as Gasoline

Sample Name:

MW-2-1099

Lab Code:

\$9903283-001

Test Notes:

Units: ug/L (ppb)

Basis: NA

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
TPH as Gasoline Benzene Toluene Ethylbenzene Xylenes, Total	EPA 5030 EPA 5030 EPA 5030 EPA 5030	CA/LUFT 8021B 8021B 8021B 8021B	50 0.5 0.5 0.5	1 1 1 1	NA NA NA NA	10/26/99 10/26/99 10/26/99 10/26/99 10/26/99	290 ND 25 21 96	
Methyl tert-Butyl Ether	EPA 5030 802	8021B	3	1	NA	10/26/99	ND	9

Approved By

Date 10-29-99

1820/020597p

Analytical Report

Client:

Blaes Environmental

Project:

Amerco-Alameda/001-0008-01

Sample Matrix:

Water

Service Request: S9903283

Date Collected: 10/21/99

Date Received: 10/22/99

BTEX, MTBE and TPH as Gasoline

Sample Name:

MW-I-1099

Lab Code:

S9903283-002

Test Notes:

Units: ug/L (ppb)

Basis: NA

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
TPH as Gasoline Benzene Toluene Ethylbenzene Xylenes, Total Methyl <i>tert</i> -Butyl Ether	EPA 5030 EPA 5030 EPA 5030 EPA 5030 EPA 5030	CA/LUFT 8021B 8021B 8021B 8021B 8021B	50 0.5 0.5 0.5 1 3	1 1 1 1 1	NA NA NA NA	10/26/99 10/26/99 10/26/99 10/26/99	ND ND ND ND	
			J	1	NA	10/26/99	ND	

1822/020597p

Analytical Report

Client:

Blaes Environmental

Project:

Amerco-Alameda/001-0008-01

Sample Matrix:

Water

Service Request: S9903283

Date Collected: NA

Date Received: NA

BTEX, MTBE and TPH as Gasoline

Sample Name:

Method Blank

Lab Code:

S991026-WB1

Test Notes:

Units: ug/L (ppb)

Basis: NA

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
TPH as Gasoline Benzene Toluene Ethylbenzene Xylenes, Total Methyl <i>tert</i> -Butyl Ether	EPA 5030 EPA 5030 EPA 5030 EPA 5030 EPA 5030	CA/LUFT 8021B 8021B 8021B 8021B 8021B	50 0.5 0.5 0.5 1 3	1 1 1 1	NA NA NA NA	10/26/99 10/26/99 10/26/99 10/26/99	ND ND ND ND	
			J	i	NA	10/26/99	ИD	4

\_\_\_\_\_ Date \_\_\_\_\_\_ O - 29 - 95

(S22/020597<sub>2</sub>)

QA/QC Report

Client:

Blaes Environmental

Project:

Amerco-Alameda/001-0008-01

Sample Matrix:

Water

Service Request: S9903283

Date Collected: NA

Date Received: NA Date Extracted: NA

Date Analyzed: NA

Surrogate Recovery Summary BTEX, MTBE and TPH as Gasoline

Prep Method:

EPA 5030

Analysis Method: 8021B CA/LUFT

Units: PERCENT

Basis: NA

Sample Name	Lab Code	Test Nates	Percent 4-Bromofluorobenzene	Recovery a,a,a-Trifluorotoluene
MW-2-1099 MW-1-1099 Method Blank	S9903283-001 S9903283-002 S991026-WB1		97 99 89	106 100

CAS Acceptance Limits:

69-116

72-139

Approved By

5UF20101975

If was you must so indicate by writing "DW" for each such sample.