KIFF Analytical LLC

Report Number : 47142
Date : 12/6/2005

Andrew LoCicero
Blue Rock Environmental, Inc.
535 3rd Street, Suite 100
Eureka, CA 95501

Subject : 2 Vapor Samples
Project Name : Former Central BP
Project Number : NC-24

Dear Mr. LoCicero,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed.

Kiff Analytical is certified by the State of California (# 2236). If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

Joel Kiff

KIFF Analytical LLC

Report Number : 47142

Date : 12/6/2005

Project Name : **Former Central BP**

Project Number : **NC-24**

Sample : **Influent 11/29/05** Matrix : Air Lab Number : 47142-02

Sample Date :11/29/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**1.9**	0.20	mg/m3	EPA 8260B	12/1/2005
Toluene	**22**	0.20	mg/m3	EPA 8260B	12/1/2005
Ethylbenzene	**3.7**	0.20	mg/m3	EPA 8260B	12/1/2005
Total Xylenes	**36**	0.20	mg/m3	EPA 8260B	12/1/2005
Methyl-t-butyl ether (MTBE)	**< 0.20**	0.20	mg/m3	EPA 8260B	12/1/2005
Benzene (in ppmv)	**0.58**	0.060	ppmv	EPA 8260B	12/1/2005
Toluene (in ppmv)	**5.8**	0.050	ppmv	EPA 8260B	12/1/2005
Ethylbenzene (in ppmv)	**0.84**	0.050	ppmv	EPA 8260B	12/1/2005
Total Xylenes (in ppmv)	**8.2**	0.050	ppmv	EPA 8260B	12/1/2005
Methyl-t-butyl ether (in ppmv)	**< 0.10**	0.10	ppmv	EPA 8260B	12/1/2005
TPH as Gasoline	**400**	20	mg/m3	EPA 8260B	12/1/2005
TPH as Gasoline (in ppmv)	**100**	5.0	ppmv	EPA 8260B	12/1/2005
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	12/1/2005
4-Bromofluorobenzene (Surr)	91.1		% Recovery	EPA 8260B	12/1/2005

Approved By: Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800

KIFF Analytical LLC

Report Number : 47142

Date : 12/6/2005

Project Name : **Former Central BP**

Project Number : **NC-24**

Sample : **Effluent 11/29/05** Matrix : Air Lab Number : 47142-01

Sample Date :11/29/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.20**	0.20	mg/m3	EPA 8260B	12/1/2005
Toluene	**< 0.20**	0.20	mg/m3	EPA 8260B	12/1/2005
Ethylbenzene	**< 0.20**	0.20	mg/m3	EPA 8260B	12/1/2005
Total Xylenes	**< 0.20**	0.20	mg/m3	EPA 8260B	12/1/2005
Methyl-t-butyl ether (MTBE)	**< 0.20**	0.20	mg/m3	EPA 8260B	12/1/2005
Benzene (in ppmv)	**< 0.050**	0.050	ppmv	EPA 8260B	12/1/2005
Toluene (in ppmv)	**< 0.050**	0.050	ppmv	EPA 8260B	12/1/2005
Ethylbenzene (in ppmv)	**< 0.050**	0.050	ppmv	EPA 8260B	12/1/2005
Total Xylenes (in ppmv)	**< 0.050**	0.050	ppmv	EPA 8260B	12/1/2005
Methyl-t-butyl ether (in ppmv)	**< 0.10**	0.10	ppmv	EPA 8260B	12/1/2005
TPH as Gasoline	**< 20**	20	mg/m3	EPA 8260B	12/1/2005
TPH as Gasoline (in ppmv)	**< 5.0**	5.0	ppmv	EPA 8260B	12/1/2005
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	12/1/2005
4-Bromofluorobenzene (Surr)	90.4		% Recovery	EPA 8260B	12/1/2005

Approved By: Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800

Report Number : 47142

Date : 12/6/2005

QC Report : Method Blank Data

Project Name : **Former Central BP**

Project Number : **NC-24**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.20	0.20	mg/m3	EPA 8260B	11/29/2005
Toluene	< 0.20	0.20	mg/m3	EPA 8260B	11/29/2005
Ethylbenzene	< 0.20	0.20	mg/m3	EPA 8260B	11/29/2005
Total Xylenes	< 0.20	0.20	mg/m3	EPA 8260B	11/29/2005
Methyl-t-butyl ether (MTBE)	< 0.20	0.20	mg/m3	EPA 8260B	11/29/2005
Benzene (in ppmv)	< 0.050	0.050	ppmv	EPA 8260B	11/29/2005
Toluene (in ppmv)	< 0.050	0.050	ppmv	EPA 8260B	11/29/2005
Ethylbenzene (in ppmv)	< 0.050	0.050	ppmv	EPA 8260B	11/29/2005
Total Xylenes (in ppmv)	< 0.050	0.050	ppmv	EPA 8260B	11/29/2005
Methyl-t-butyl ether (in ppmv)	< 0.10	0.10	ppmv	EPA 8260B	11/29/2005
TPH as Gasoline	< 20	20	mg/m3	EPA 8260B	11/29/2005
TPH as Gasoline (in ppmv)	< 5.0	5.0	ppmv	EPA 8260B	11/29/2005
Toluene - d8 (Surr)	99.6		%	EPA 8260B	11/29/2005
4-Bromofluorobenzene (Surr)	93.1		%	EPA 8260B	11/29/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800

KIFF Analytical LLC

2795 2nd Street, Suite 300
Davis, CA 95616
Lab: 530.297.4800
Fax: 530.297.4802

SRG # / Lab No. 47142

Page 1 of 1

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF To): Andrew Solicero

California EDF Report? ☐ Yes ☒ No

Company / Address: BlueRock Environ. 535 3rd St. #100 Eureka, CA 95501

Sampling Company Log Code:

Phone #: 707 441 1934 Fax #: 707 441 1949

Global ID:

Project #: NC-24 P.O. #:

EDF Deliverable To (Email Address):

Project Name: Former Control BP

Sampler Signature:

Project Address: 2160 Control Ave McKinleyville CA

Sample Designation	Sampling Date	Sampling Time	Container: 40 ml VOA	Sleeve	Poly	Glass	Tedlar		Preservative: HCl	HNO_3	None	Cool		Matrix: Water	Soil	Air		MTBE (EPA 8260B) per EPA 8021 level @ 5.0 ppb	MTBE (EPA 8260B) @ 0.5 ppb	BTEX (EPA 8260B)	TPH Gas (EPA 8260B)	5 Oxygenates (EPA 8260B)	7 Oxygenates (EPA 8260B)	Lead Scav.(1,2 DCA & 1,2 EDB-EPA 8260B)	Volatile Halocarbons (EPA 8260B)	Volatile Organics Full List (EPA 8260B)	Volatile Organics (EPA 524.2 Drinking Water)	TPH as Diesel (EPA 8015M)	TPH as Motor Oil (EPA 8015M)	Total Lead (EPA 6010)	W.E.T. Lead (STLC)				TAT: 12 hr / 24 hr / 48 hr / 72 hr / 1 wk	For Lab Use Only
Effluent 11/29/05	11/29/05	1030					1					✓				✓			✓	✓	✓														✓	-01
Influent 11/29/05	11/29/05	1045					1					✓				✓			✓	✓	✓														✓	-02

Relinquished by:	Date	Time	Received by:
H. Ha	11/29/05	1500	FED EX

Remarks: Results in ppmv + mg/m³

Bill to: B.R. Foster City

Relinquished by:	Date	Time	Received by Laboratory:
	11/30/05	1024	R. MA Kiff Analytical

For Lab Use Only: Sample Receipt

Temp °C	Initials	Date	Time	Therm. ID #	Coolant Present
					Yes / No

Distribution: White - Lab; Pink - Originator
Rev: 051805

KIFF Analytical LLC

Report Number : 47562
Date : 12/23/2005

Andrew LoCicero
Blue Rock Environmental, Inc.
535 3rd Street, Suite 100
Eureka, CA 95501

Subject : 2 Vapor Samples
Project Name : Former Central BP
Project Number : NC-24

Dear Mr. LoCicero,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed.

Kiff Analytical is certified by the State of California (# 2236). If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

Jeff Dahl

KIFF Analytical LLC

Report Number : 47562

Date : 12/23/2005

Project Name : **Former Central BP**

Project Number : **NC-24**

Sample : **Effluent 12/20/05** Matrix : Air Lab Number : 47562-01

Sample Date :12/20/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.20**	0.20	mg/m3	EPA 8260B	12/21/2005
Toluene	**< 0.20**	0.20	mg/m3	EPA 8260B	12/21/2005
Ethylbenzene	**< 0.20**	0.20	mg/m3	EPA 8260B	12/21/2005
Total Xylenes	**< 0.20**	0.20	mg/m3	EPA 8260B	12/21/2005
Methyl-t-butyl ether (MTBE)	**< 0.20**	0.20	mg/m3	EPA 8260B	12/21/2005
Benzene (in ppmv)	**< 0.050**	0.050	ppmv	EPA 8260B	12/21/2005
Toluene (in ppmv)	**< 0.050**	0.050	ppmv	EPA 8260B	12/21/2005
Ethylbenzene (in ppmv)	**< 0.050**	0.050	ppmv	EPA 8260B	12/21/2005
Total Xylenes (in ppmv)	**< 0.050**	0.050	ppmv	EPA 8260B	12/21/2005
Methyl-t-butyl ether (in ppmv)	**< 0.10**	0.10	ppmv	EPA 8260B	12/21/2005
TPH as Gasoline	**< 20**	20	mg/m3	EPA 8260B	12/21/2005
TPH as Gasoline (in ppmv)	**< 5.0**	5.0	ppmv	EPA 8260B	12/21/2005
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	12/21/2005
4-Bromofluorobenzene (Surr)	95.3		% Recovery	EPA 8260B	12/21/2005

Approved By: Jeff Dahl

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800

KIFF Analytical LLC

Report Number : 47562

Date : 12/23/2005

Project Name : **Former Central BP**

Project Number : **NC-24**

Sample : **Influent 12/20/05** Matrix : Air Lab Number : 47562-02

Sample Date :12/20/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**0.39**	0.20	mg/m3	EPA 8260B	12/22/2005
Toluene	**7.0**	0.20	mg/m3	EPA 8260B	12/22/2005
Ethylbenzene	**1.1**	0.20	mg/m3	EPA 8260B	12/22/2005
Total Xylenes	**26**	0.20	mg/m3	EPA 8260B	12/22/2005
Methyl-t-butyl ether (MTBE)	**< 0.20**	0.20	mg/m3	EPA 8260B	12/22/2005
Benzene (in ppmv)	**0.12**	0.050	ppmv	EPA 8260B	12/22/2005
Toluene (in ppmv)	**1.8**	0.050	ppmv	EPA 8260B	12/22/2005
Ethylbenzene (in ppmv)	**0.26**	0.050	ppmv	EPA 8260B	12/22/2005
Total Xylenes (in ppmv)	**6.0**	0.050	ppmv	EPA 8260B	12/22/2005
Methyl-t-butyl ether (in ppmv)	**< 0.10**	0.10	ppmv	EPA 8260B	12/22/2005
TPH as Gasoline	**440**	20	mg/m3	EPA 8260B	12/22/2005
TPH as Gasoline (in ppmv)	**110**	5.0	ppmv	EPA 8260B	12/22/2005
Toluene - d8 (Surr)	98.6		% Recovery	EPA 8260B	12/22/2005
4-Bromofluorobenzene (Surr)	100		% Recovery	EPA 8260B	12/22/2005

Approved By: Jeff Dahl

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800

Report Number : 47562

Date : 12/23/2005

QC Report : Method Blank Data

Project Name : **Former Central BP**

Project Number : **NC-24**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.20	0.20	mg/m3	EPA 8260B	12/21/2005
Toluene	< 0.20	0.20	mg/m3	EPA 8260B	12/21/2005
Ethylbenzene	< 0.20	0.20	mg/m3	EPA 8260B	12/21/2005
Total Xylenes	< 0.20	0.20	mg/m3	EPA 8260B	12/21/2005
Methyl-t-butyl ether (MTBE)	< 0.20	0.20	mg/m3	EPA 8260B	12/21/2005
Benzene (in ppmv)	< 0.050	0.050	ppmv	EPA 8260B	12/21/2005
Toluene (in ppmv)	< 0.050	0.050	ppmv	EPA 8260B	12/21/2005
Ethylbenzene (in ppmv)	< 0.050	0.050	ppmv	EPA 8260B	12/21/2005
Total Xylenes (in ppmv)	< 0.050	0.050	ppmv	EPA 8260B	12/21/2005
Methyl-t-butyl ether (in ppmv)	< 0.10	0.10	ppmv	EPA 8260B	12/21/2005
TPH as Gasoline	< 20	20	mg/m3	EPA 8260B	12/21/2005
TPH as Gasoline (in ppmv)	< 5.0	5.0	ppmv	EPA 8260B	12/21/2005
Toluene - d8 (Surr)	97.7		%	EPA 8260B	12/21/2005
4-Bromofluorobenzene (Surr)	112		%	EPA 8260B	12/21/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed

Approved By: Jeff Dahl

KIFF ANALYTICAL, LLC

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800

KIFF Analytical LLC

2795 2nd Street, Suite 300
Davis, CA 95616
Lab: 530.297.4800
Fax: 530.297.4802

SRG # / Lab No. 47562

Page 1 of 1

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF To): Andrew Lockard

California EDF Report? ☐ Yes ☑ No

Company / Address: Blue Rock Environ., 535 3rd St. #110 Eureka CA 95501

Sampling Company Log Code:

Phone #: 707 441 1134 Fax #: 707 441 1149

Global ID:

Project #: NC-24 P.O. #:

EDF Deliverable To (Email Address):

Project Name: Former central BP

Sampler Signature:

Project Address: 2160 Central Ave. McKinleyville CA

Sample Designation	Sampling Date	Sampling Time	Container: 40 ml VOA	Sleeve	Poly	Glass	Tedlar		Preservative: HCl	HNO_3	None	Air Dark		Matrix: Water	Soil	Air		MTBE (EPA 8260B) per EPA 8021 level @ 5.0 ppb	MTBE (EPA 8260B) @ 0.5 ppb	BTEX (EPA 8260B)	TPH Gas (EPA 8260B)	5 Oxygenates (EPA 8260B)	7 Oxygenates (EPA 8260B)	Lead Scav.(1,2 DCA & 1,2 EDB-EPA 8260B)	Volatile Halocarbons (EPA 8260B)	Volatile Organics Full List (EPA 8260B)	Volatile Organics (EPA 524.2 Drinking Water)	TPH as Diesel (EPA 8015M)	TPH as Motor Oil (EPA 8015M)	Total Lead (EPA 5010)	W.E.T. Lead (STLC)				TAT: 12 hr / 24 hr / 48 hr / 72 hr / 1 wk	For Lab Use Only
Effluent 12/20/05	12/20/05	1530					1					X				X			X	X	X														X	-01
Effluent 12/20/05	12/20/05	1345					1					X				X			X	X	X														X	-02

Relinquished by:	Date	Time	Received by:
	12/20/05	1530	FED EX
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by Laboratory:
	122105	1115	Kiff Analytical

Remarks: results in ppm + mg/m³

Bill to: Bill Foster City

For Lab Use Only: Sample Receipt

Temp °C	Initials	Date	Time	Therm. ID #	Coolant Present
					Yes / No

Distribution: White - Lab; Pink - Originator
Rev: 051805

KIFF Analytical LLC

Report Number : 47726
Date : 1/9/2006

Andrew LoCicero
Blue Rock Environmental, Inc.
535 3rd Street, Suite 100
Eureka, CA 95501

Subject : 12 Water Samples
Project Name : PICO
Project Number : NC-24

Dear Mr. LoCicero,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed.

Kiff Analytical is certified by the State of California (# 2236). If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

Joel Kiff

KIFF Analytical LLC

Report Number : 47726
Date : 1/9/2006

Subject : 12 Water Samples
Project Name : PICO
Project Number : NC-24

Case Narrative

The Method Reporting Limit for TPH as Diesel is increased due to interference from Gasoline-Range Hydrocarbons for sample MW-7.

Approved By: Joel Kiff

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800

KIFF Analytical LLC

Report Number : 47726

Date : 1/9/2006

Project Name : **PICO**

Project Number : **NC-24**

Sample : **MW-1** Matrix : Water Lab Number : 47726-01

Sample Date :12/28/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	12/31/2005
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	12/31/2005
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	12/31/2005
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	12/31/2005
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	12/31/2005
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	12/31/2005
Toluene - d8 (Surr)	109		% Recovery	EPA 8260B	12/31/2005
4-Bromofluorobenzene (Surr)	89.6		% Recovery	EPA 8260B	12/31/2005

Sample : **MW-2** Matrix : Water Lab Number : 47726-02

Sample Date :12/28/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	12/31/2005
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	12/31/2005
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	12/31/2005
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	12/31/2005
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	12/31/2005
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	12/31/2005
Toluene - d8 (Surr)	108		% Recovery	EPA 8260B	12/31/2005
4-Bromofluorobenzene (Surr)	89.3		% Recovery	EPA 8260B	12/31/2005

Approved By: Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800

KIFF Analytical LLC

Report Number : 47726

Date : 1/9/2006

Project Name : **PICO**

Project Number : **NC-24**

Sample : **MW-3** Matrix : Water Lab Number : 47726-03

Sample Date :12/28/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	12/30/2005
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	12/30/2005
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	12/30/2005
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	12/30/2005
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	12/30/2005
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	12/30/2005
Toluene - d8 (Surr)	99.1		% Recovery	EPA 8260B	12/30/2005
4-Bromofluorobenzene (Surr)	110		% Recovery	EPA 8260B	12/30/2005

Sample : **MW-4** Matrix : Water Lab Number : 47726-04

Sample Date :12/28/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	12/31/2005
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	12/31/2005
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	12/31/2005
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	12/31/2005
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	12/31/2005
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	12/31/2005
Toluene - d8 (Surr)	95.1		% Recovery	EPA 8260B	12/31/2005
4-Bromofluorobenzene (Surr)	94.8		% Recovery	EPA 8260B	12/31/2005

Approved By: Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800

KIFF Analytical LLC

Report Number : 47726

Date : 1/9/2006

Project Name : **PICO**

Project Number : **NC-24**

Sample : **MW-5** Matrix : Water Lab Number : 47726-05

Sample Date :12/28/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	1/4/2006
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	1/4/2006
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	1/4/2006
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	1/4/2006
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	1/4/2006
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	1/4/2006
Toluene - d8 (Surr)	99.0		% Recovery	EPA 8260B	1/4/2006
4-Bromofluorobenzene (Surr)	99.9		% Recovery	EPA 8260B	1/4/2006

Sample : **MW-6** Matrix : Water Lab Number : 47726-06

Sample Date :12/28/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	12/31/2005
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	12/31/2005
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	12/31/2005
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	12/31/2005
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	12/31/2005
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	12/31/2005
Toluene - d8 (Surr)	107		% Recovery	EPA 8260B	12/31/2005
4-Bromofluorobenzene (Surr)	89.9		% Recovery	EPA 8260B	12/31/2005

Approved By: Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800

KIFF Analytical LLC

Report Number : 47726

Date : 1/9/2006

Project Name : **PICO**

Project Number : **NC-24**

Sample : **MW-7** Matrix : Water Lab Number : 47726-07

Sample Date :12/28/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**51**	4.0	ug/L	EPA 8260B	1/3/2006
Toluene	**500**	4.0	ug/L	EPA 8260B	1/3/2006
Ethylbenzene	**240**	4.0	ug/L	EPA 8260B	1/3/2006
Total Xylenes	**2300**	4.0	ug/L	EPA 8260B	1/3/2006
Methyl-t-butyl ether (MTBE)	**< 4.0**	4.0	ug/L	EPA 8260B	1/3/2006
TPH as Gasoline	**11000**	400	ug/L	EPA 8260B	1/3/2006
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	1/3/2006
4-Bromofluorobenzene (Surr)	96.3		% Recovery	EPA 8260B	1/3/2006
TPH as Diesel (Silica Gel)	**< 600**	600	ug/L	M EPA 8015	1/6/2006
Octacosane (Diesel Surrogate)	88.8		% Recovery	M EPA 8015	1/6/2006

Sample : **MW-8** Matrix : Water Lab Number : 47726-08

Sample Date :12/28/2005.

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	12/31/2005
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	12/31/2005
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	12/31/2005
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	12/31/2005
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	12/31/2005
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	12/31/2005
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	12/31/2005
4-Bromofluorobenzene (Surr)	95.0		% Recovery	EPA 8260B	12/31/2005

Approved By: Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800

KIFF Analytical LLC

Report Number : 47726

Date : 1/9/2006

Project Name : **PICO**

Project Number : **NC-24**

Sample : **MW-9** Matrix : Water Lab Number : 47726-09

Sample Date :12/28/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	1/3/2006
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	1/3/2006
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	1/3/2006
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	1/3/2006
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	1/3/2006
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	1/3/2006
Toluene - d8 (Surr)	99.9		% Recovery	EPA 8260B	1/3/2006
4-Bromofluorobenzene (Surr)	95.8		% Recovery	EPA 8260B	1/3/2006

Sample : **MW-10** Matrix : Water Lab Number : 47726-10

Sample Date :12/28/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	1/3/2006
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	1/3/2006
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	1/3/2006
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	1/3/2006
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	1/3/2006
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	1/3/2006
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	1/3/2006
4-Bromofluorobenzene (Surr)	111		% Recovery	EPA 8260B	1/3/2006

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KIFF Analytical LLC

Report Number : 47726

Date : 1/9/2006

Project Name : **PICO**

Project Number : **NC-24**

Sample : **MW-11** Matrix : Water Lab Number : 47726-11

Sample Date :12/28/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	1/3/2006
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	1/3/2006
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	1/3/2006
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	1/3/2006
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	1/3/2006
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	1/3/2006
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	1/3/2006
4-Bromofluorobenzene (Surr)	111		% Recovery	EPA 8260B	1/3/2006

Sample : **MW-12** Matrix : Water Lab Number : 47726-12

Sample Date :12/28/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**3.0**	0.50	ug/L	EPA 8260B	1/3/2006
Toluene	**1.9**	0.50	ug/L	EPA 8260B	1/3/2006
Ethylbenzene	**3.6**	0.50	ug/L	EPA 8260B	1/3/2006
Total Xylenes	**17**	0.50	ug/L	EPA 8260B	1/3/2006
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	1/3/2006
TPH as Gasoline	**370**	50	ug/L	EPA 8260B	1/3/2006
Toluene - d8 (Surr)	98.4		% Recovery	EPA 8260B	1/3/2006
4-Bromofluorobenzene (Surr)	102		% Recovery	EPA 8260B	1/3/2006

Approved By: Joel Kiff

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Report Number : 47726

Date : 1/9/2006

QC Report : Method Blank Data

Project Name : **PICO**

Project Number : **NC-24**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	1/5/2006
Octacosane (Diesel Surrogate)	86.0		%	M EPA 8015	1/5/2006
Benzene	< 0.50	0.50	ug/L	EPA 8260B	1/3/2006
Toluene	< 0.50	0.50	ug/L	EPA 8260B	1/3/2006
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	1/3/2006
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	1/3/2006
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	1/3/2006
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	1/3/2006
Toluene - d8 (Surr)	98.4		%	EPA 8260B	1/3/2006
4-Bromofluorobenzene (Surr)	100		%	EPA 8260B	1/3/2006
Benzene	< 0.50	0.50	ug/L	EPA 8260B	1/3/2006
Toluene	< 0.50	0.50	ug/L	EPA 8260B	1/3/2006
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	1/3/2006
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	1/3/2006
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	1/3/2006
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	1/3/2006
Toluene - d8 (Surr)	99.1		%	EPA 8260B	1/3/2006
4-Bromofluorobenzene (Surr)	102		%	EPA 8260B	1/3/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	1/3/2006
Toluene	< 0.50	0.50	ug/L	EPA 8260B	1/3/2006
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	1/3/2006
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	1/3/2006
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	1/3/2006
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	1/3/2006
Toluene - d8 (Surr)	100		%	EPA 8260B	1/3/2006
4-Bromofluorobenzene (Surr)	99.9		%	EPA 8260B	1/3/2006
Benzene	< 0.50	0.50	ug/L	EPA 8260B	12/30/2005
Toluene	< 0.50	0.50	ug/L	EPA 8260B	12/30/2005
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	12/30/2005
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	12/30/2005
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	12/30/2005
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	12/30/2005
Toluene - d8 (Surr)	99.8		%	EPA 8260B	12/30/2005
4-Bromofluorobenzene (Surr)	112		%	EPA 8260B	12/30/2005
Benzene	< 0.50	0.50	ug/L	EPA 8260B	1/3/2006
Toluene	< 0.50	0.50	ug/L	EPA 8260B	1/3/2006
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	1/3/2006
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	1/3/2006
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	1/3/2006
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	1/3/2006
Toluene - d8 (Surr)	101		%	EPA 8260B	1/3/2006
4-Bromofluorobenzene (Surr)	113		%	EPA 8260B	1/3/2006

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800

Report Number : 47726

Date : 1/9/2006

QC Report : Method Blank Data

Project Name : **PICO**

Project Number : **NC-24**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	12/30/2005
Toluene	< 0.50	0.50	ug/L	EPA 8260B	12/30/2005
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	12/30/2005
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	12/30/2005
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	12/30/2005
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	12/30/2005
Toluene - d8 (Surr)	109		%	EPA 8260B	12/30/2005
4-Bromofluorobenzene (Surr)	89.6		%	EPA 8260B	12/30/2005
Benzene	< 0.50	0.50	ug/L	EPA 8260B	12/30/2005
Toluene	< 0.50	0.50	ug/L	EPA 8260B	12/30/2005
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	12/30/2005
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	12/30/2005
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	12/30/2005
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	12/30/2005
Toluene - d8 (Surr)	97.7		%	EPA 8260B	12/30/2005
4-Bromofluorobenzene (Surr)	83.6		%	EPA 8260B	12/30/2005
Benzene	< 0.50	0.50	ug/L	EPA 8260B	1/3/2006
Toluene	< 0.50	0.50	ug/L	EPA 8260B	1/3/2006
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	1/3/2006
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	1/3/2006
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	1/3/2006
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	1/3/2006
Toluene - d8 (Surr)	101		%	EPA 8260B	1/3/2006
4-Bromofluorobenzene (Surr)	94.3		%	EPA 8260B	1/3/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800

Report Number : 47726

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 1/9/2006

Project Name : **PICO**

Project Number : **NC-24**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Benzene	47711-02	<0.50	40.0	39.9	37.6	37.9	ug/L	EPA 8260B	1/3/06	94.1	95.0	0.969	70-130	25
Toluene	47711-02	<0.50	40.0	39.9	35.9	35.8	ug/L	EPA 8260B	1/3/06	89.7	89.6	0.0630	70-130	25
Tert-Butanol	47711-02	<5.0	200	200	186	192	ug/L	EPA 8260B	1/3/06	93.2	96.4	3.33	70-130	25
Methyl-t-Butyl Ether	47711-02	<0.50	40.0	39.9	35.0	33.6	ug/L	EPA 8260B	1/3/06	87.4	84.2	3.67	70-130	25
Benzene	47726-12	3.0	40.0	40.0	46.1	44.1	ug/L	EPA 8260B	1/3/06	108	103	4.83	70-130	25
Toluene	47726-12	1.9	40.0	40.0	43.4	41.8	ug/L	EPA 8260B	1/3/06	104	99.8	4.04	70-130	25
Tert-Butanol	47726-12	<5.0	200	200	199	202	ug/L	EPA 8260B	1/3/06	99.6	101	1.27	70-130	25
Methyl-t-Butyl Ether	47726-12	<0.50	40.0	40.0	41.5	41.0	ug/L	EPA 8260B	1/3/06	104	102	1.15	70-130	25
Benzene	47736-03	<0.50	40.0	40.0	43.2	42.6	ug/L	EPA 8260B	1/3/06	108	106	1.48	70-130	25
Toluene	47736-03	<0.50	40.0	40.0	41.8	40.6	ug/L	EPA 8260B	1/3/06	104	102	2.88	70-130	25
Tert-Butanol	47736-03	<5.0	200	200	201	202	ug/L	EPA 8260B	1/3/06	100	101	0.858	70-130	25
Methyl-t-Butyl Ether	47736-03	1.6	40.0	40.0	42.8	43.9	ug/L	EPA 8260B	1/3/06	103	106	2.67	70-130	25
Benzene	47726-03	<0.50	40.0	40.0	41.1	38.6	ug/L	EPA 8260B	12/30/05	103	96.6	6.21	70-130	25
Toluene	47726-03	<0.50	40.0	40.0	41.1	37.5	ug/L	EPA 8260B	12/30/05	103	93.6	9.38	70-130	25
Tert-Butanol	47726-03	<5.0	200	200	209	190	ug/L	EPA 8260B	12/30/05	105	94.8	9.86	70-130	25
Methyl-t-Butyl Ether	47726-03	<0.50	40.0	40.0	40.4	37.3	ug/L	EPA 8260B	12/30/05	101	93.2	8.10	70-130	25
Benzene	47726-11	<0.50	40.0	40.0	42.0	40.0	ug/L	EPA 8260B	1/3/06	105	100	4.87	70-130	25
Toluene	47726-11	<0.50	40.0	40.0	40.7	39.1	ug/L	EPA 8260B	1/3/06	102	97.8	3.91	70-130	25

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800

Report Number : 47726

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 1/9/2006

Project Name : **PICO**

Project Number : **NC-24**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Tert-Butanol	47726-11	<5.0	200	200	208	201	ug/L	EPA 8260B	1/3/06	104	101	3.39	70-130	25
Methyl-t-Butyl Ether	47726-11	<0.50	40.0	40.0	40.5	39.4	ug/L	EPA 8260B	1/3/06	101	98.6	2.66	70-130	25
Benzene	47715-02	0.93	40.0	40.0	44.6	42.9	ug/L	EPA 8260B	12/30/05	109	105	3.89	70-130	25
Toluene	47715-02	<0.50	40.0	40.0	46.0	44.5	ug/L	EPA 8260B	12/30/05	115	111	3.31	70-130	25
Tert-Butanol	47715-02	<5.0	200	200	217	215	ug/L	EPA 8260B	12/30/05	108	108	0.630	70-130	25
Methyl-t-Butyl Ether	47715-02	12	40.0	40.0	51.9	51.2	ug/L	EPA 8260B	12/30/05	101	99.0	1.74	70-130	25
Benzene	47715-12	<0.50	40.0	40.0	45.0	42.7	ug/L	EPA 8260B	12/30/05	112	107	5.23	70-130	25
Toluene	47715-12	<0.50	40.0	40.0	43.8	42.1	ug/L	EPA 8260B	12/30/05	109	105	3.79	70-130	25
Tert-Butanol	47715-12	<5.0	200	200	217	218	ug/L	EPA 8260B	12/30/05	109	109	0.341	70-130	25
Methyl-t-Butyl Ether	47715-12	<0.50	40.0	40.0	48.4	42.1	ug/L	EPA 8260B	12/30/05	121	105	13.9	70-130	25
Benzene	47733-04	1.8	40.0	40.0	45.7	43.9	ug/L	EPA 8260B	1/3/06	110	105	4.24	70-130	25
Toluene	47733-04	<0.50	40.0	40.0	43.3	41.4	ug/L	EPA 8260B	1/3/06	108	104	4.43	70-130	25
Tert-Butanol	47733-04	<5.0	200	200	226	229	ug/L	EPA 8260B	1/3/06	113	114	1.22	70-130	25
Methyl-t-Butyl Ether	47733-04	<0.50	40.0	40.0	46.6	45.8	ug/L	EPA 8260B	1/3/06	116	114	1.77	70-130	25
TPH as Diesel	Blank	<50	1000	1000	914	973	ug/L	M EPA 8015	1/5/06	91.4	97.3	6.29	70-130	25

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

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Report Number : 47726

QC Report : Laboratory Control Sample (LCS)

Date : 1/9/2006

Project Name : **PICO**

Project Number : **NC-24**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	40.0	ug/L	EPA 8260B	1/3/06	96.2	70-130
Toluene	40.0	ug/L	EPA 8260B	1/3/06	90.1	70-130
Tert-Butanol	200	ug/L	EPA 8260B	1/3/06	94.8	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	1/3/06	82.9	70-130
Benzene	40.0	ug/L	EPA 8260B	1/3/06	103	70-130
Toluene	40.0	ug/L	EPA 8260B	1/3/06	106	70-130
Tert-Butanol	200	ug/L	EPA 8260B	1/3/06	102	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	1/3/06	98.2	70-130
Benzene	40.0	ug/L	EPA 8260B	1/3/06	104	70-130
Toluene	40.0	ug/L	EPA 8260B	1/3/06	104	70-130
Tert-Butanol	200	ug/L	EPA 8260B	1/3/06	97.3	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	1/3/06	100	70-130
Benzene	40.0	ug/L	EPA 8260B	12/30/05	101	70-130
Toluene	40.0	ug/L	EPA 8260B	12/30/05	104	70-130
Tert-Butanol	200	ug/L	EPA 8260B	12/30/05	103	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	12/30/05	100	70-130
Benzene	40.0	ug/L	EPA 8260B	1/3/06	103	70-130

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800

Report Number : 47726

QC Report : Laboratory Control Sample (LCS)

Date : 1/9/2006

Project Name : **PICO**

Project Number : **NC-24**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Toluene	40.0	ug/L	EPA 8260B	1/3/06	103	70-130
Tert-Butanol	200	ug/L	EPA 8260B	1/3/06	106	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	1/3/06	99.8	70-130
Benzene	40.0	ug/L	EPA 8260B	12/30/05	107	70-130
Toluene	40.0	ug/L	EPA 8260B	12/30/05	117	70-130
Tert-Butanol	200	ug/L	EPA 8260B	12/30/05	105	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	12/30/05	95.3	70-130
Benzene	40.0	ug/L	EPA 8260B	12/30/05	111	70-130
Toluene	40.0	ug/L	EPA 8260B	12/30/05	110	70-130
Tert-Butanol	200	ug/L	EPA 8260B	12/30/05	107	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	12/30/05	108	70-130
Benzene	40.0	ug/L	EPA 8260B	1/3/06	107	70-130
Toluene	40.0	ug/L	EPA 8260B	1/3/06	103	70-130
Tert-Butanol	200	ug/L	EPA 8260B	1/3/06	113	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	1/3/06	107	70-130

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800

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SRG # / Lab No. 47726

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Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF To): Andrew LoCicero

California EDF Report? ☒ Yes ☐ No

Company / Address: Blue Rock Env. Inc. 535 3rd St. Ste. 100 Eureka, CA

Sampling Company Log Code:

Phone #: (707) 441-1934 Fax #: (707) 441-1949

Global ID: T0602300491

Project #: NC-24 P.O. #:

EDF Deliverable To (Email Address): andrew@bluerockenv.com

Project Name: PICO

Sampler Signature: Jamie Linderman

Project Address: 2160 Central Ave. Mckinleyville, CA

Analysis Request

TAT: ☐ 12 hr ☐ 24 hr ☐ 48 hr ☐ 72 hr ☒ 1 wk

Sample Designation	Sampling Date	Sampling Time	Container: 40 ml VOA	Sleeve	Poly	Glass	Tedlar	Preservative: HCl	HNO_3	None	Matrix: Water	Soil	Air	MTBE (EPA 8260B) per EPA 8021 level @ 5.0 ppb	MTBE (EPA 8260B) @ 0.5 ppb	BTEX (EPA 8260B)	TPH Gas (EPA 8260B)	5 Oxygenates (EPA 8260B)	7 Oxygenates (EPA 8260B)	Lead Scav.(1,2 DCA & 1,2 EDB-EPA 8260B)	Volatile Halocarbons (EPA 8260B)	Volatile Organics Full List (EPA 8260B)	Volatile Organics (EPA 524.2 Drinking Water)	TPH as Diesel (EPA 8015M) Silica gel	TPH as Motor Oil (EPA 8015M)	Total Lead (EPA 6010)	W.E.T. Lead (STLC)	1 wk	For Lab Use Only
MW-1	12/28/05	12:00	3					X			X				X	X	X											X	01
MW-2		11:40																											02
MW-3		11:20																											03
MW-4		12:20																											04
MW-5		12:35																											05
MW-6		12:45																											06
MW-7		13:00	6																					X					07
MW-8		13:15	3																										08
MW-9		13:30																											09
MW-10		13:45																											10

Relinquished by:	Date	Time	Received by:
Jamie Linderman	12/29/05		Fed Ex
	123005	1020	Jason N Hawnly (Kiff Analytical)

Remarks:

Bill to:

For Lab Use Only: Sample Receipt

Temp °C	Initials	Date	Time	Therm. ID #	Coolant Present
1.4°C	JNH	123005	1020	IR-1	(Yes) No

Distribution: White - Lab; Pink - Originator
Rev: 051805

KIFF Analytical LLC

2795 2nd Street, Suite 300
Davis, CA 95616
Lab: 530.297.4800
Fax: 530.297.4802

SRG # / Lab No. 47726

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF To): Andrew LoCicero

California EDF Report? ☒ Yes ☐ No

Company / Address: Blue Rock Env. Inc. 535 3rd St. Ste. 100 Eureka, CA

Sampling Company Log Code:

Phone #: (707) 441-1934 Fax #: (707) 441-1949

Global ID: T0602300491

Project #: NC-24 P.O. #:

EDF Deliverable To (Email Address): andrew@bluerockenv.com

Project Name: PICO

Sampler Signature: Aaron Linderman

Project Address: 2160 Central Ave. McKinleyville, CA

Sample Designation	Sampling Date	Sampling Time	Container: 40 ml VOA	Sleeve	Poly	Glass	Tedlar		Preservative: HCl	HNO_3	None			Matrix: Water	Soil	Air		MTBE (EPA 8260B) per EPA 8021 level @ 5.0 ppb	MTBE (EPA 8260B) @ 0.5 ppb	BTEX (EPA 8260B)	TPH Gas (EPA 8260B)	5 Oxygenates (EPA 8260B)	7 Oxygenates (EPA 8260B)	Lead Scav.(1,2 DCA & 1,2 EDB-EPA 8260B)	Volatile Halocarbons (EPA 8260B)	Volatile Organics Full List (EPA 8260B)	Volatile Organics (EPA 524.2 Drinking Water)	TPH as Diesel (EPA 8015M)	TPH as Motor Oil (EPA 8015M)	Total Lead (EPA 6010)	W.E.T. Lead (STLC)				TAT: 12 hr	24 hr	48 hr	72 hr	1 wk	For Lab Use Only
MW-11	12/28/05	14:00	3						X					X					X	X	X																		X	11
MW-12	↓	14:15	3						X					X					X	X	X																		X	12

Relinquished by:	Date	Time	Received by:
Aaron Linderman	12/29/05		Fed Ex

Remarks:

Bill to:

Relinquished by:	Date	Time	Received by Laboratory:
	123005	1000	Jason Nitterauer Kiff Analytical

For Lab Use Only: Sample Receipt

Temp °C	Initials	Date	Time	Therm. ID #	Coolant Present
					Yes / No

Distribution: White - Lab; Pink - Originator
Rev: 051805

APPENDIX C

NORTH COAST UNIFIED AIR QUALITY MANAGEMENT DISTRICT

AUTHORITY TO CONSTRUCT

NAC-380

BLUE ROCK ENVIRONMENTAL, INC. FOR LOUISE PIERSON REVOCABLE TRUST

LEGAL OWNER OR OPERATOR:	LOUISE PIERSON REVOCABLE TRUST 1200 W. Harris St. Eureka, CA Responsible official: Doreen Megli Phone: 707-268-1800
CONTRACTOR:	BLUE ROCK ENVIRONMENTAL, INC. 535 Third Street, Suite 100 Eureka, CA 95501 Responsible official: Andrew LoCicero 707-441-1934

BUSINESS ACTIVITY: Groundwater Remediation via Vapor Extraction

EQUIPMENT LOCATED AT: The project is located in the northwestern portion of California within the County of Humboldt, at 2160 Central Avenue, McKinleyville, CA.

Whereas application for an Authority to Construct has been made by Blue Rock Environmental, Inc. on behalf of the Louise Pierson Revocable Trust (hereinafter called the Permittee) pursuant to Regulation 3 of the Rules and Regulations of the North Coast Unified Air Quality Management District (hereinafter called the District), and said application has been reviewed and considered by the Air Pollution Control Officer of said District (hereinafter referred to as the Control Officer or NCUAQMD).

This is your Authority to Construct and Temporary Permit to Operate (hereinafter called PERMIT) subject to the following terms and conditions:

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LIST OF ABBREVIATIONS

CARB	California Air Resources Board
CFM	cubic feet per minute
CFR	Code of Federal Regulations
District	North Coast Unified Air Quality Management District
EPA	Environmental Protection Agency
gpm	gallons per minute
LEL	lower explosive limit
OSHA	Occupational Safety and Health Administration
SCFM	standard cubic feet per minute
TPH	total petroleum hydrocarbons

PERMIT UNITS

A. Vapor Extraction System

(1) Permit Number - NAC-380

I. BASIC EQUIPMENT - The project consists of the installation and operation of a groundwater vapor extraction system intended to remove gasoline and diesel which have leaked from underground fuel tanks and dispensers. Five 20 foot deep vapor extraction wells and six 25 foot deep air sparge wells will be constructed to provide access to the contaminated soil and groundwater. The vapor extraction wells will be connected with piping to a Solleco 250 CCAT 250 scfm electric catalytic oxidizer at the remediation compound. The air sparge wells will be connected with piping to an air injection manifold located at the remediation compound. The operation will consist of balancing the input sparge pressure with the exit vacuum pressure of the soil vapor extraction blower to maximize the underground sparge vapor capture and subsequent oxidation of contaminants at the surface.

II. EMISSIONS LIMITATION

Emissions shall not exceed the emission limits in the following table:

SUMMARY OF EMISSION LIMITS					
Pollutant	*ppmv*	*lbs/hr*	*lbs/day*	*tons/yr*	*Regulation*
TPH(g)	3569	9.13	219.12	39.99	NSR/PSD
Benzene	0.138	0.00250	0.06008	0.01096	Hot Spot
Toluene	2.4	0.05142	1.23411	0.22523	Hot Spot
Ethylbenzene	2.74	0.06754	1.62106	0.29584	Hot Spot
MTBE	0.069	0.00141	0.03395	0.00620	Hot Spot
Xylene	11.61	0.28620	6.86880	1.25356	Hot Spot

III. COMPLIANCE MONITORING

A. No less than 15 minutes after start-up, the Permittee shall:

1. Analyze exhaust gas stream to determine the flow rate and concentration of benzene, toluene, ethylbenzene, MTBE, xylenes, and TPHg present for each of the first four days of operation and before shutdown periods.

B. After the initial testing required by A.1. is complete, the permittee shall analyze the exhaust gas to determine the concentration of benzene, toluene, ethylbenzene, MTBE, xylenes, and TPHg present 1) once per week and 2) before shutdown periods.

C. The permittee shall calculate the benzene, toluene, ethylbenzene, MTBE, xylenes, and TPHg emission rate in pounds per hour based on the exhaust gas analysis and the operating exhaust flow rate. The air sparge and soil vapor extraction flow rates shall be decreased, if necessary, to demonstrate compliance with the emission limits in Section II.

D. The permittee shall submit the test results and emission calculations to the District within one month of the testing date. Samples shall be analyzed according to modified EPA test method TO-14 or equivalent to determine the concentrations of benzene, toluene, ethylbenzene, MTBE, xylenes, and TPHg.

IV. REPORTING AND RECORDKEEPING - see also General Provisions, section F.

A. The Permittee shall submit to the District within 30 days of the end of each month the following records for each month of operation of the source:

1. Days and hours of operation.
2. Each emission test, analysis or monitoring results logged in for the day of operation they were taken.

B. Any noncompliance with conditions must be reported to the District at the time it was discovered. The submittal shall include the data showing the exceedence as well as the time of occurrence.

GENERAL PROVISIONS

These general provisions apply to all facilities or sources owned or operated by the permittee as detailed in this permit.

A. Permit Validity – This authority to Construct Permit is valid from the date of issuance until a permit to operate for the equipment for which the application was filed is granted or denied or the application is canceled. In the event a permit to operate is not issued within one (1) year from the effective date of this permit, the permit to operate shall be deemed denied. Notwithstanding, upon written request to the APCO, this Authority to Construct permit may be extended by written authorization of the APCO.

B. Fee Payment - The Permittee shall pay an annual permit fee as required in accordance with Regulation 3, Rule 1-300 of the District. Failure to pay these fees will result in forfeiture of this Permit. Operation without a permit subjects the source to potential enforcement action by the District.

C. Fee Payment - The Permittee shall pay an annual permit fee as required in accordance with Regulation 3, Rule 1-300 of the District. Failure to pay these fees will result in forfeiture of this Permit. Operation without a permit subjects the source to potential enforcement action by the District.

D. Inspection and Entry - Upon presentation of credentials and other documents as may be required by law, the permittee shall allow the District or an authorized representative to perform the following:

1. Enter upon the permittee's premises where a regulated facility or emissions-related activity is located or conducted, or where records must be kept under the conditions of this permit.

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit.

3. Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit.

4. Sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the conditions of this permit.

E. Facility Operation

1. Operation under this permit must be conducted in compliance with all data and specifications included in the application which attest to the operator's ability to comply with District Rules and Regulations.

2. All equipment of this permit shall at all times be maintained in good working order and be operated as efficiently as possible so as to minimize air pollutant emissions.

F. Compliance

1. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of Regulation 1 of the District and is grounds for enforcement action; for permit termination, revocation and re-issuance, or modification; or for denial of an application for re-issuance of the permit.

2. The need to halt or reduce activity is not a defense. It shall not be a defense for a permittee in an enforcement action that it would be necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

3. The permittee shall furnish to the District, within a reasonable time, any information that the District may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. Upon request, the permittee shall also furnish to the District copies of records required to be kept by this permit.

G. Severability - If any term or condition of this permit shall for any reason be adjudged by a court of competent jurisdiction to be invalid, such judgment shall not affect or invalidate the remainder of this permit.

H. Recordkeeping and Reporting

1. The permittee shall retain records of all required monitoring data and support information for a period of at least one (1) year from the date of the sample, measurement, report, or application. Support information includes all maintenance records, and copies of all reports required by this permit.

2. The permittee shall report to the District any deviations from these permit requirements, including those attributable to breakdown conditions, the probable cause of the deviations, and any corrective actions or preventive measures taken. Procedures of Regulation 1, Rule 540 shall be followed in the reporting of such deviations. A breakdown log shall be maintained for recordkeeping purposes[Regulation 1, Rule 540].

I. Transfer of Ownership - In the event of any changes in control or ownership of these facilities, this permit together with its terms and conditions shall be binding on all subsequent owners and operators. This permit is not transferable from one person to another unless such transfer is made through the District. The permittee shall notify the succeeding owner and operator of the existence of this permit and its conditions by letter, a copy of which shall be forwarded to the District. [Regulation 1, Rule 240(j)]

J. Reopening for Cause - This permit may be modified, revoked, reopened, reissued, or terminated for the following reasons:

1. The filing of a request by the permittee for a permit modification, revocation and re-issuance, or termination, or of a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

2. The District determines that the permit contains a material mistake made in establishing the emissions standards or limitations, or other requirements of the permit.

3. The District determines that the permit must be revised or revoked to assure compliance with the applicable requirements.

K. Property Rights - This permit does not convey any property rights of any sort, or any exclusive privilege.

L. Permit Modification - The permittee shall submit an application for any changes to the basic or control equipment for any permit unit in this permit.

M. Prohibitions - These limitations apply to all emissions sources at the permittee's facility unless more specific and limiting requirements are listed for an individual permitted emissions unit in this permit.

1. **Public Nuisance** - The permittee shall not discharge such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health or safety of any such persons or the public or which cause or have an natural tendency to cause injury or damage to business or property.[H&S 41700]

2. **Circumvention** - The permittee shall not construct, erect, modify, operate, or use any equipment which conceals an air contaminant emission, which would otherwise constitute a violation of the limitations of this permit, unless the operation or use of said equipment results in a significant reduction in the total emission of air contaminants.[Rule 400(b)]

3. **Regulation 2, Open Burning Procedures** - The permittee shall not ignite or cause to be ignited or suffer, allow or maintain any open outdoor fire for the disposal of rubber, petroleum or plastic wastes, demolition debris, tires, tar paper, wood waste, asphalt shingles, linoleum, cloth, household garbage or other combustible refuse; or for metal salvage or burning of motor vehicle bodies except as provided in Rule 2-102, Exemptions.

THIS PERMIT BECOMES VOID UPON ANY ALTERATION OF EQUIPMENT

This permit does not authorize the emission of air contaminants in excess of those allowed by the Health and Safety Code of the State of California or the Rules and Regulations of the North Coast Unified Air Quality Management District as stated in this permit. This permit cannot be considered as permission to violate existing laws, ordinances, regulation or statutes of other governmental agencies. The violation of any of these terms and conditions shall be grounds for revocation of this permit, and shall be a violation of District Rules and Regulations.

NORTH COAST UNIFIED AIR QUALITY MANAGEMENT DISTRICT

2300 MYRTLE AVENUE
EUREKA, CALIFORNIA 95501

PHONE (707) 443-3093
FAX (707) 443-3099

DATE: 7/15/04

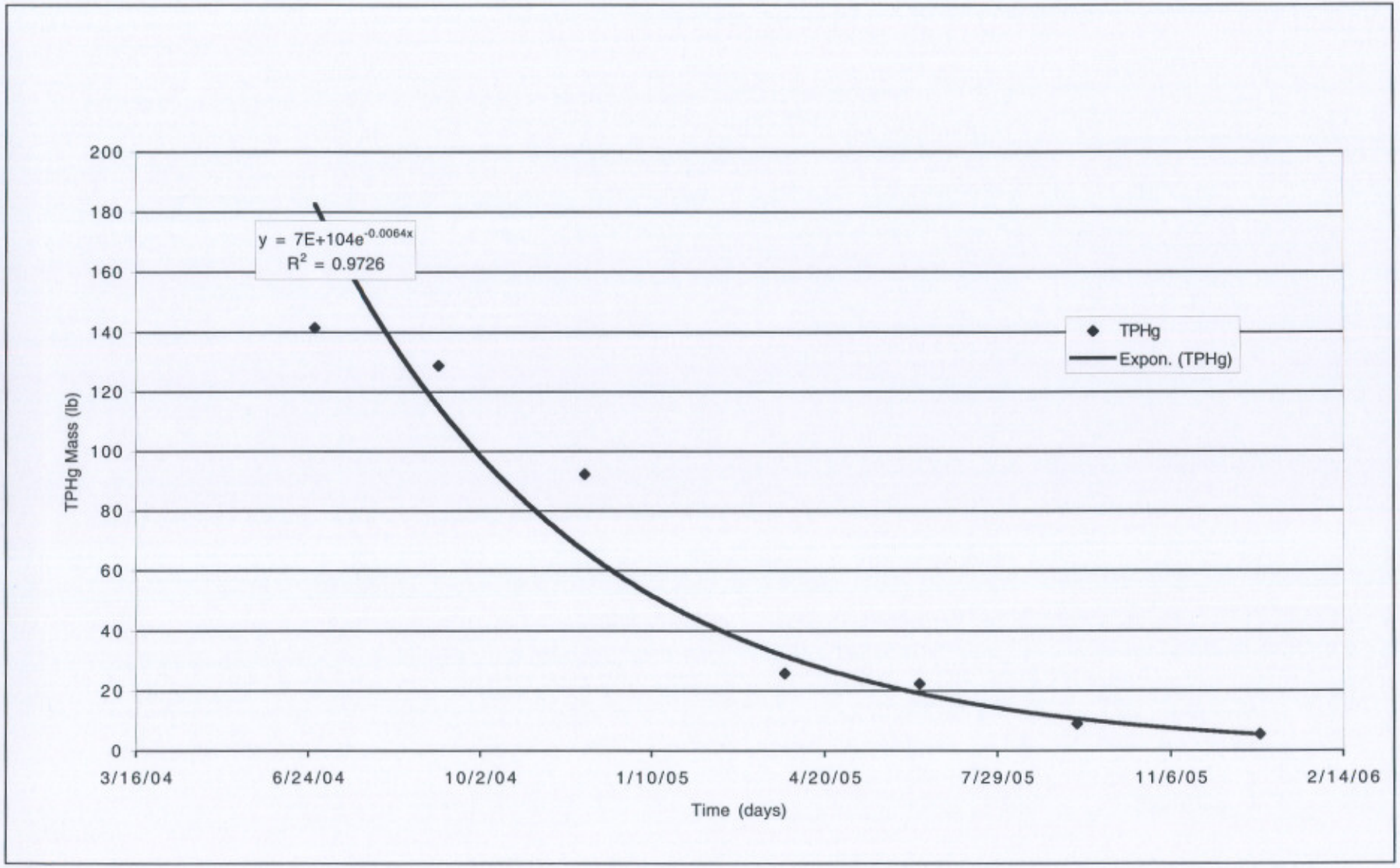
BY: Dave Wunker

DAVE WUNKER,
AIR QUALITY SPECIALIST III
for
LAWRENCE ODLE,
AIR POLLUTION CONTROL OFFICER

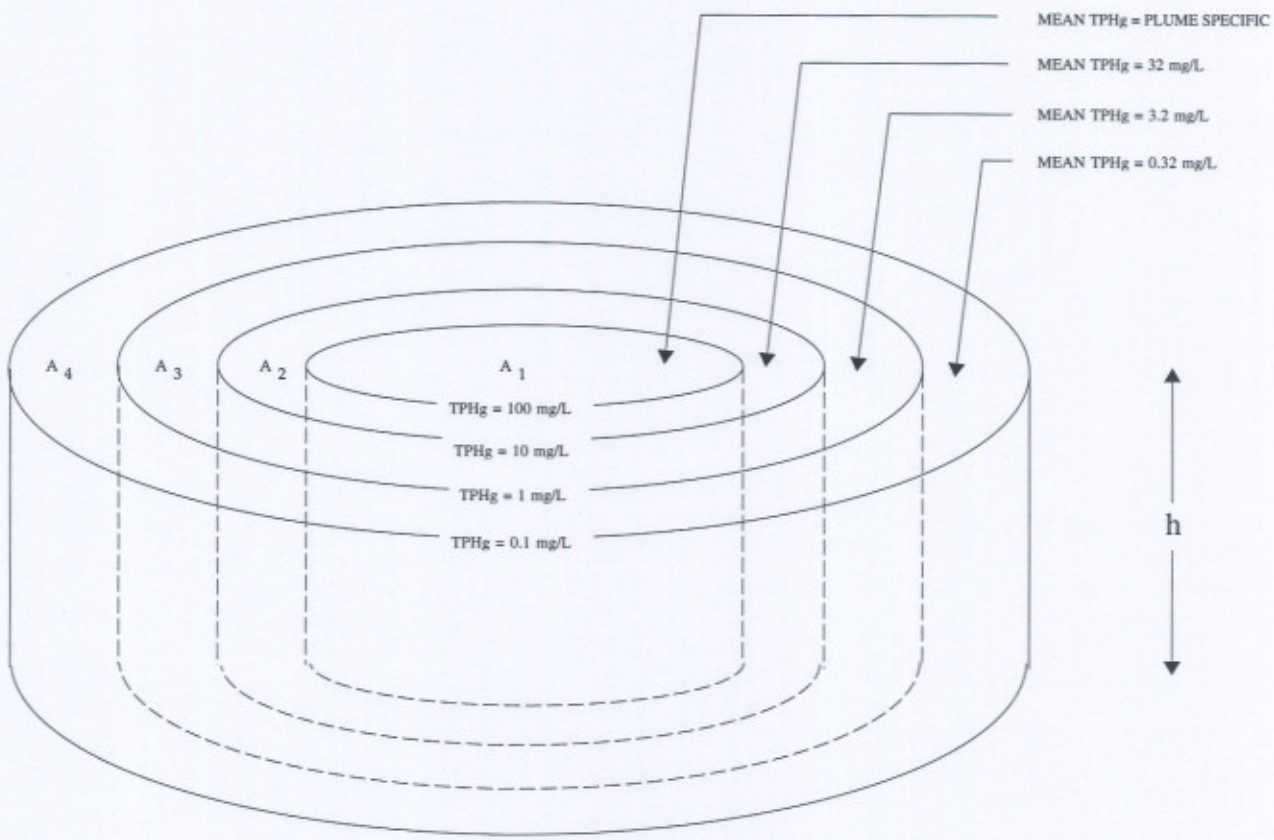
Permit Seal

APPENDIX D

Chart 1
Dissolved-Phase TPHg Mass vs. Time
Former Central BP
2160 Central Ave.
Mckinleyville, CA



MODEL FOR CALCULATING RESIDUAL DISSOLVED CONTAMINANT MASS (TPHg)



$$\text{TPHg mass } (ft^3\text{-mg/L}) = \sum_{1}^{n} V_X (\text{mean TPHg concentration}_X)$$

Convert TPHg mass to (lbs) = $(ft^3\text{-mg/L})\ (28.31\ L/ft^3)\ (0.000001\ kg/mg)\ (2.2\ lbs/kg)$

where,

$$V_X = A_X (h)\, n$$

A_X = Area between isoconcentrations measured by planimeter

h = Thickness of dissolved contaminant plume

n = Porosity of saturated zone soil

Model assumes that contaminant concentrations decrease logarithmically from source. Thus, log based formula was used to calculate mean contaminant concentrations.

Calculation of Residual Dissolved-Phase Contaminant Mass December 2005
Former Central BP, Mckinleyville, CA
Project # NC-24

Residual TPHg

Zone 1

TPHg mean (mg/L)	A (ft^2)	h (ft)	n	V (ft^3)	TPHg mass (ft^3-mg/L)	TPHg mass (lb)
11.000	469	20	0.35	3,283	36,113.0	2.24919
				Total TPHg (lb)		2.24919
				Total TPHg (gals)		0.3687

Zone 2

TPHg mean (mg/L)	A (ft^2)	h (ft)	n	V (ft^3)	TPHg mass (ft^3-mg/L)	TPHg mass (lb)
3.200	1,870	20	0.35	13,090	41,888.0	2.60887
				Total TPHg (lb)		2.60887
				Total TPHg (gals)		0.4277

Zone 3

TPHg mean (mg/L)	A (ft^2)	h (ft)	n	V (ft^3)	TPHg mass (ft^3-mg/L)	TPHg mass (lb)
0.32000	4,647	20	0.35	32,529	10,409.3	0.64831
				Total TPHg (lb)		0.64831
				Total TPHg (gals)		0.1063

Total TPHg (lb.)	5.5064
Total TPHg (gal.)	0.9027

A = Area
h = thickness
V = volume = A * h
n = soil porosity (assume 35%)
TPHg mass = V (ft3) * Mean TPH conc. (unitless)
TPHg = Total petroleum hydrocarbons as gasoline
lb = pound
mg/L = milligrams per liter
gal. = gallons
ft. = foot

Calculation of Residual Dissolved-Phase Contaminant Mass September 2005
Former Central BP, Mckinleyville, CA
Project # NC-24

Residual TPHg

Zone 1

TPHg mean (mg/L)	A (ft^2)	h (ft)	n	V (ft^3)	TPHg mass (ft^3-mg/L)	TPHg mass (lb)
11.000	750	20	0.35	5,250	57,750.0	3.59679
				Total TPHg (lb)		3.59679
				Total TPHg (gals)		0.5896

Zone 2

TPHg mean (mg/L)	A (ft^2)	h (ft)	n	V (ft^3)	TPHg mass (ft^3-mg/L)	TPHg mass (lb)
3.200	2,811	20	0.35	19,677	62,966.4	3.92167
				Total TPHg (lb)		3.92167
				Total TPHg (gals)		0.6429

Zone 3

TPHg mean (mg/L)	A (ft^2)	h (ft)	n	V (ft^3)	TPHg mass (ft^3-mg/L)	TPHg mass (lb)
0.32000	10,803	20	0.35	75,621	24,198.7	1.50714
				Total TPHg (lb)		1.50714
				Total TPHg (gals)		0.2471

Total TPHg (lb.)	9.0256
Total TPHg (gal.)	1.4796

A = Area
h = thickness
V = volume = A * h
n = soil porosity (assume 35%)
TPHg mass = V (ft3) * Mean TPH conc. (unitless)
TPHg = Total petroleum hydrocarbons as gasoline
lb = pound
mg/L = milligrams per liter
gal. = gallons
ft. = foot

Calculation of Residual Dissolved-Phase Contaminant Mass June 2005
Former Central BP, Mckinleyville, CA
Project # NC-24

Residual TPHg

Zone 1

TPHg mean (mg/L)	A (ft^2)	h (ft)	n	V (ft^3)	TPHg mass (ft^3-mg/L)	TPHg mass (lb)
16.000	1,794	20	0.35	12,558	200,928.0	12.51420
				Total TPHg (lb)		12.51420
				Total TPHg (gals)		2.0515

Zone 2

TPHg mean (mg/L)	A (ft^2)	h (ft)	n	V (ft^3)	TPHg mass (ft^3-mg/L)	TPHg mass (lb)
3.200	5,711	20	0.35	39,977	127,926.4	7.96751
				Total TPHg (lb)		7.96751
				Total TPHg (gals)		1.3061

Zone 3

TPHg mean (mg/L)	A (ft^2)	h (ft)	n	V (ft^3)	TPHg mass (ft^3-mg/L)	TPHg mass (lb)
0.32000	12,981	20	0.35	90,867	29,077.4	1.81100
				Total TPHg (lb)		1.81100
				Total TPHg (gals)		0.2969

Total TPHg (lb.)	22.2927
Total TPHg (gal.)	3.6545

A = Area
h = thickness
V = volume = A * h
n = soil porosity (assume 35%)
TPHg mass = V (ft3) * Mean TPH conc. (unitless)
TPHg = Total petroleum hydrocarbons as gasoline
lb = pound
mg/L = milligrams per liter
gal. = gallons
ft. = foot

Calculation of Residual Dissolved-Phase Contaminant Mass March 2005
Former Central BP, Mckinleyville, CA
Project # NC-24

Residual TPHg

Zone 1

TPHg mean (mg/L)	A (ft^2)	h (ft)	n	V (ft^3)	TPHg mass (ft^3-mg/L)	TPHg mass (lb)
18.000	1,794	20	0.35	12,558	226,044.0	14.07847
				Total TPHg (lb)		14.07847
				Total TPHg (gals)		2.3079

Zone 2

TPHg mean (mg/L)	A (ft^2)	h (ft)	n	V (ft^3)	TPHg mass (ft^3-mg/L)	TPHg mass (lb)
3.200	6,991	20	0.35	48,937	156,598.4	9.75326
				Total TPHg (lb)		9.75326
				Total TPHg (gals)		1.5989

Zone 3

TPHg mean (mg/L)	A (ft^2)	h (ft)	n	V (ft^3)	TPHg mass (ft^3-mg/L)	TPHg mass (lb)
0.320	14,161	20	0.35	99,127	31,720.6	1.97562
				Total TPHg (lb)		1.97562
				Total TPHg (gals)		0.3239

Total TPHg (lb.)	25.8074
Total TPHg (gal.)	4.2307

A = Area
h = thickness
V = volume = A * h
n = soil porosity (assume 35%)
TPHg mass = V (ft3) * Mean TPH conc. (unitless)
TPHg = Total petroleum hydrocarbons as gasoline
lb = pound
mg/L = milligrams per liter
gal. = gallons
ft. = foot

Calculation of Residual Dissolved-Phase Contaminant Mass December 2004
Former Central BP, Mckinleyville, CA
Project # NC-24

Residual TPHg

Zone 1

TPHg mean (mg/L)	A (ft^2)	h (ft)	n	V (ft^3)	TPHg mass (ft^3-mg/L)	TPHg mass (lb)
44.000	4,172	20	0.35	29,204	1,284,976.0	80.03088
				Total TPHg (lb)		80.03088
				Total TPHg (gals)		13.1198

Zone 2

TPHg mean (mg/L)	A (ft^2)	h (ft)	n	V (ft^3)	TPHg mass (ft^3-mg/L)	TPHg mass (lb)
3.200	7,471	20	0.35	52,297	167,350.4	10.42292
				Total TPHg (lb)		10.42292
				Total TPHg (gals)		1.7087

Zone 3

TPHg mean (mg/L)	A (ft^2)	h (ft)	n	V (ft^3)	TPHg mass (ft^3-mg/L)	TPHg mass (lb)
0.32000	13,614	20	0.35	95,298	30,495.4	1.89931
				Total TPHg (lb)		1.89931
				Total TPHg (gals)		0.3114

Total TPHg (lb.)	92.3531
Total TPHg (gal.)	15.1399

A = Approximate area
h = Approximate thickness
V = volume = A * h
n = soil porosity (assume 35%)
TPHg mass = V (ft3) * Mean TPH conc. (unitless)
TPHg = Total petroleum hydrocarbons as gasoline
lb = pound
mg/L = milligrams per liter
gal. = gallons
ft. = foot

Calculation of Residual Dissolved-Phase Contaminant Mass September 2004
Former Central BP, Mckinleyville, CA
Project # NC-24

Residual TPHg

Zone 1

TPHg mean (mg/L)	A (ft^2)	h (ft)	n	V (ft^3)	TPHg mass (ft^3-mg/L)	TPHg mass (lb)
64.000	4,172	20	0.35	29,204	1,869,056.0	116.40855
				Total TPHg (lb)		116.40855
				Total TPHg (gals)		19.0834

Zone 2

TPHg mean (mg/L)	A (ft^2)	h (ft)	n	V (ft^3)	TPHg mass (ft^3-mg/L)	TPHg mass (lb)
3.200	7,471	20	0.35	52,297	167,350.4	10.42292
				Total TPHg (lb)		10.42292
				Total TPHg (gals)		1.7087

Zone 3

TPHg mean (mg/L)	A (ft^2)	h (ft)	n	V (ft^3)	TPHg mass (ft^3-mg/L)	TPHg mass (lb)
0.32000	13,614	20	0.35	95,298	30,495.4	1.89931
				Total TPHg (lb)		1.89931
				Total TPHg (gals)		0.3114

Total TPHg (lb.)	128.7308
Total TPHg (gal.)	21.1034

A = Approximate area
h = Approximate thickness
V = volume = A * h
n = soil porosity (assume 35%)
TPHg mass = V (ft3) * Mean TPH conc. (unitless)
TPHg = Total petroleum hydrocarbons as gasoline
lb = pound
mg/L = milligrams per liter
gal. = gallons
ft. = foot

Calculation of Residual Dissolved-Phase Contaminant Mass March 2004
Former Central BP, Mckinleyville, CA
Project # NC-24

Residual TPHg

Zone 1

TPHg mean (mg/L)	A (ft^2)	h (ft)	n	V (ft^3)	TPHg mass (ft^3-mg/L)	TPHg mass (lb)
77.000	3,807	20	0.35	26,649	2,051,973.0	127.80098
				Total TPHg (lb)		127.80098
				Total TPHg (gals)		20.9510

Zone 2

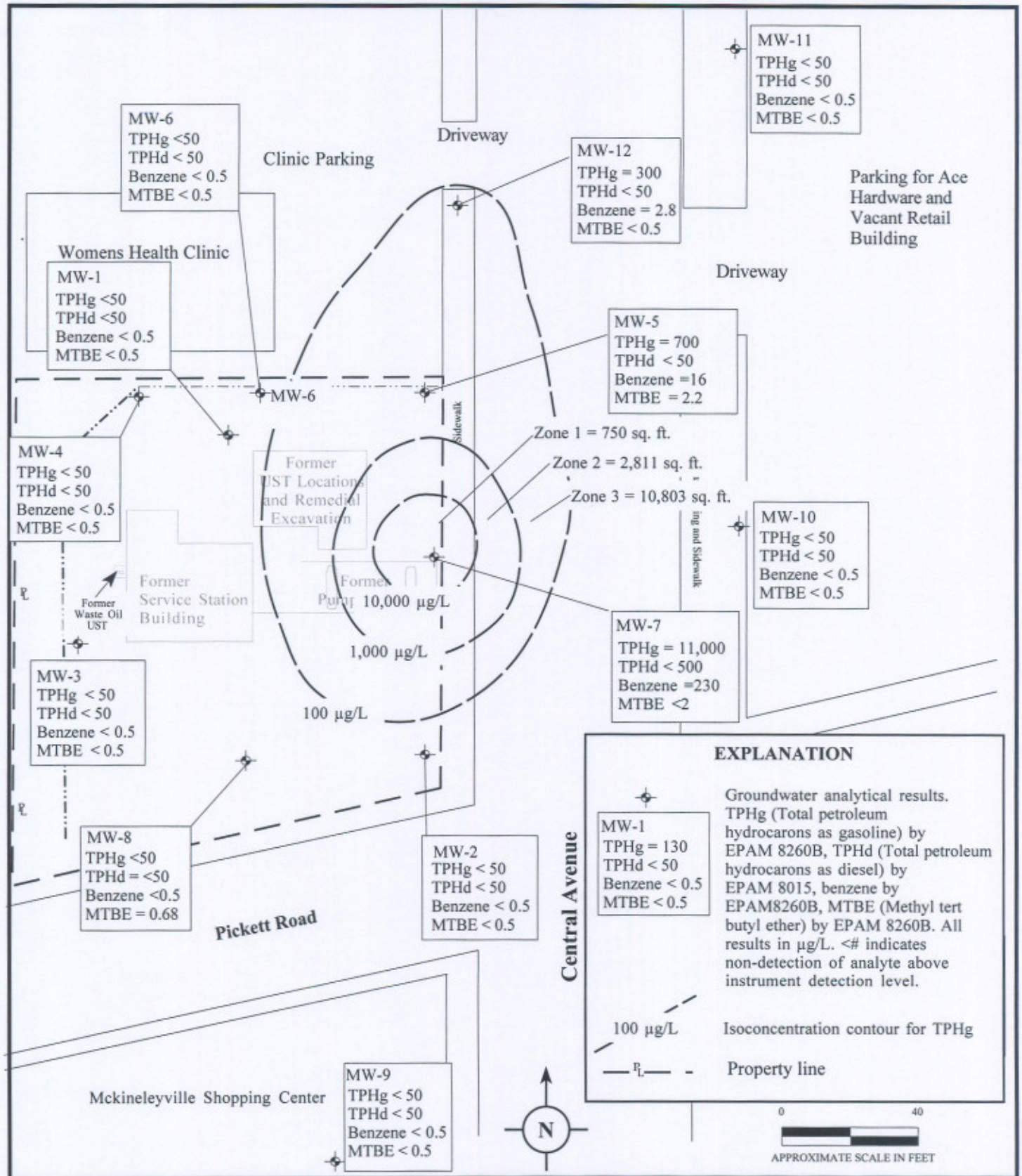
TPHg mean (mg/L)	A (ft^2)	h (ft)	n	V (ft^3)	TPHg mass (ft^3-mg/L)	TPHg mass (lb)
3.200	8,110	20	0.35	56,770	181,664.0	11.31440
				Total TPHg (lb)		11.31440
				Total TPHg (gals)		1.8548

Zone 3

TPHg mean (mg/L)	A (ft^2)	h (ft)	n	V (ft^3)	TPHg mass (ft^3-mg/L)	TPHg mass (lb)
0.32000	16,980	20	0.35	118,860	38,035.2	2.36891
				Total TPHg (lb)		2.36891
				Total TPHg (gals)		0.3883

Total TPHg (lb.)	141.4843
Total TPHg (gal.)	23.1941

A = Approximate area
h = Approximate thickness
V = volume = A * h
n = soil porosity (assume 35%)
TPHg mass = V (ft3) * Mean TPH conc. (unitless)
TPHg = Total petroleum hydrocarbons as gasoline
lb = pound
mg/L = milligrams per liter
gal. = gallons
ft. = foot

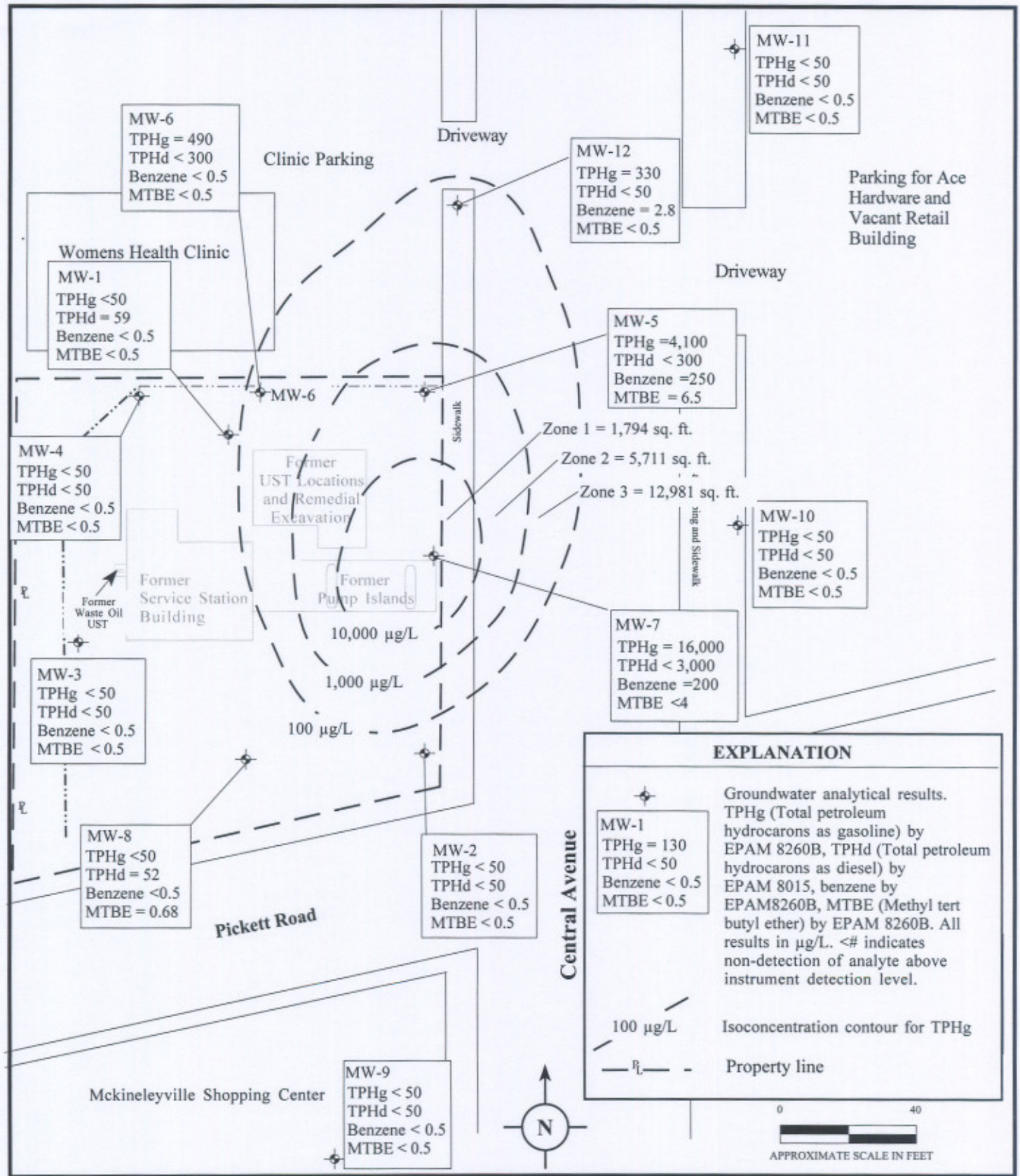


Dissolved-Phase Hydrocarbon (TPHg) Distribution 9/13/05

Former Central BP Station
2160 Central Avenue
McKinleyville, California

BLUE ROCK ENVIRONMENTAL, INC.

Project No.	Report Date	Figure
NC-24	9/05	

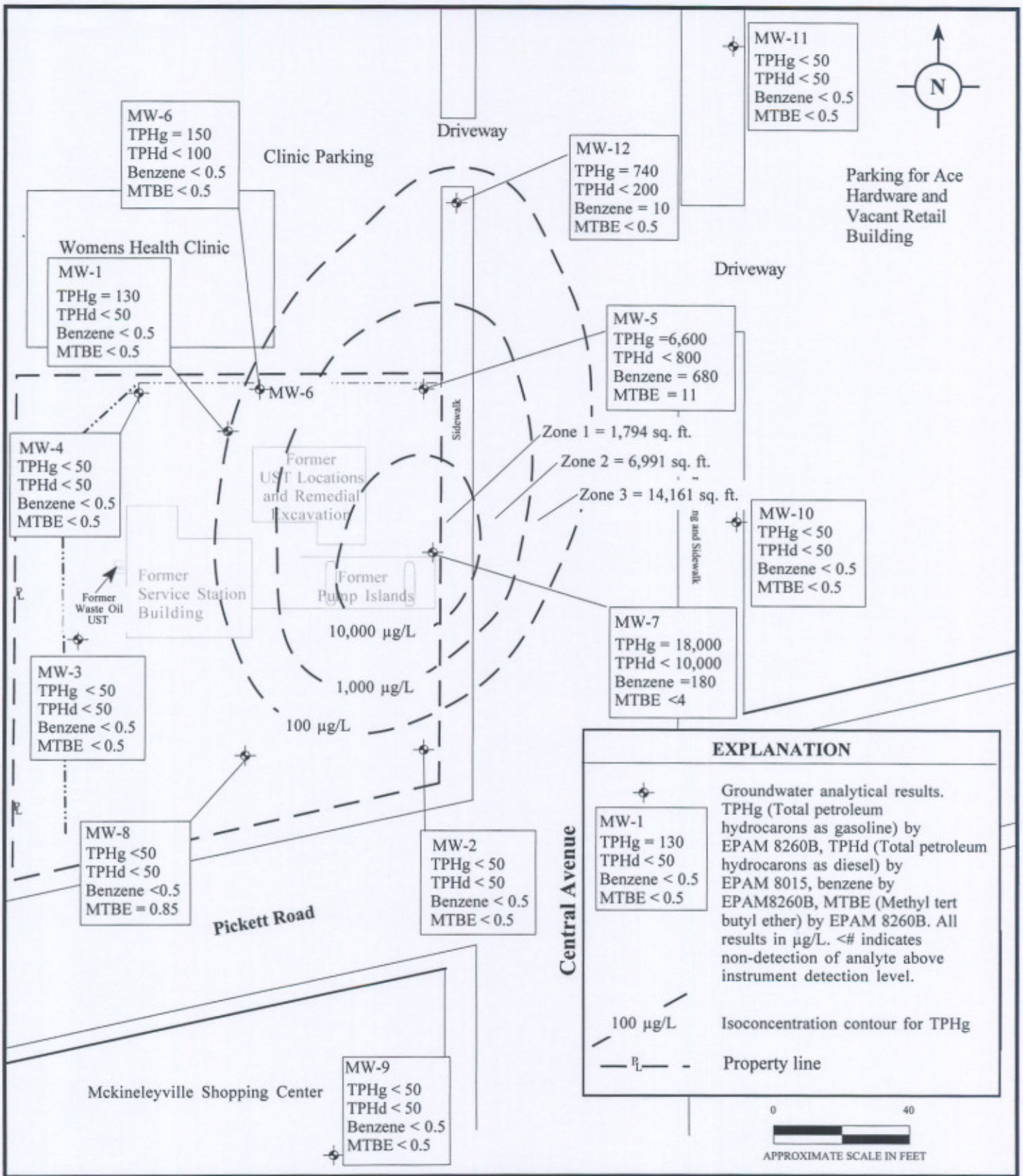


Dissolved-Phase Hydrocarbon (TPHg) Distribution 6/14/05

Former Central BP Station
2160 Central Avenue
McKinleyville, California

BLUE ROCK ENVIRONMENTAL, INC.

Project No.	Report Date	Figure
NC-24	7/05	

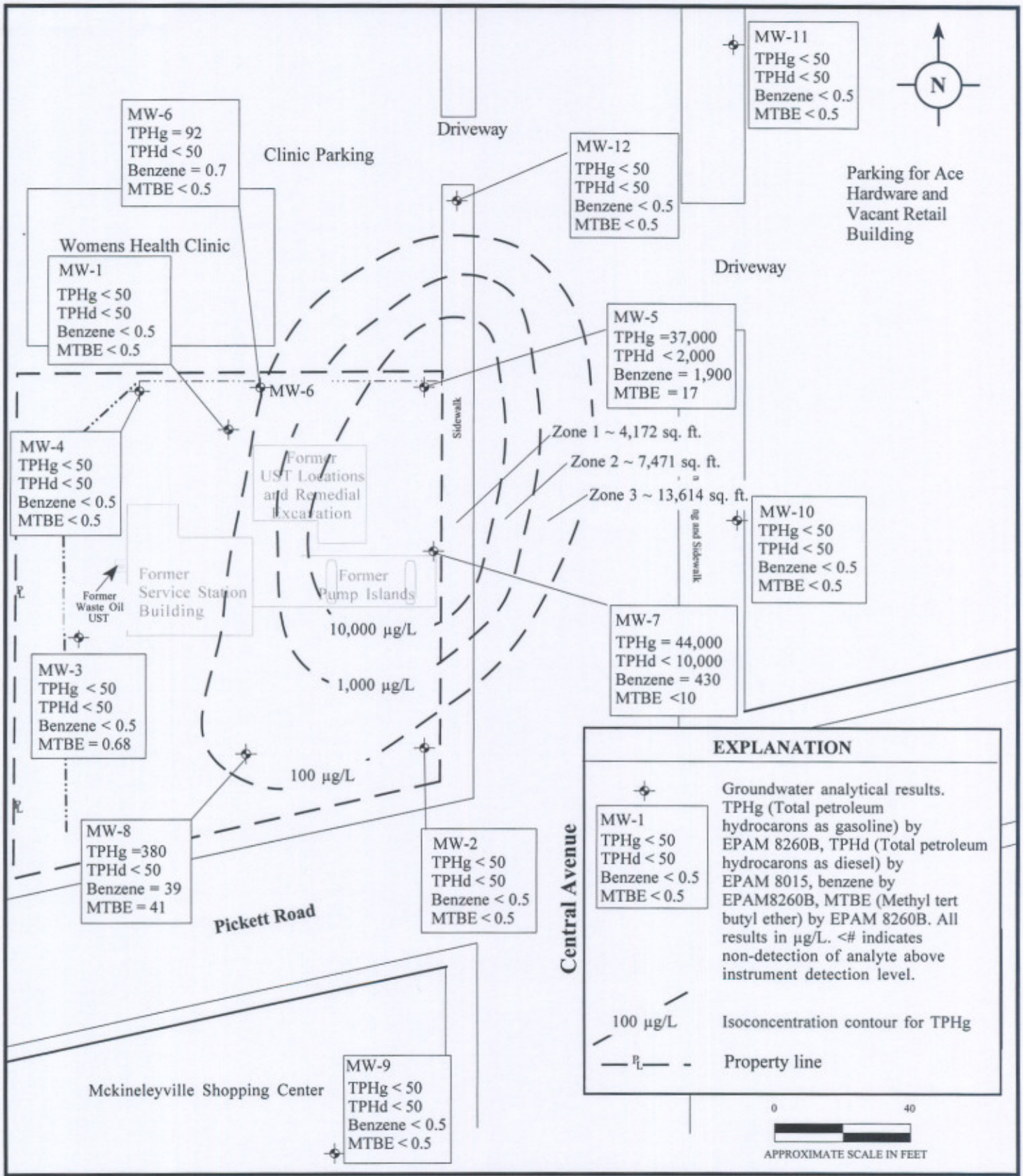


Dissolved-Phase Hydrocarbon (TPHg) Distribution 3/27/05 - 3/28/05

Former Central BP Station
2160 Central Avenue
McKinleyville, California

BLUE ROCK ENVIRONMENTAL, INC.

Project No.	Report Date	Figure
NC-24	4/05	

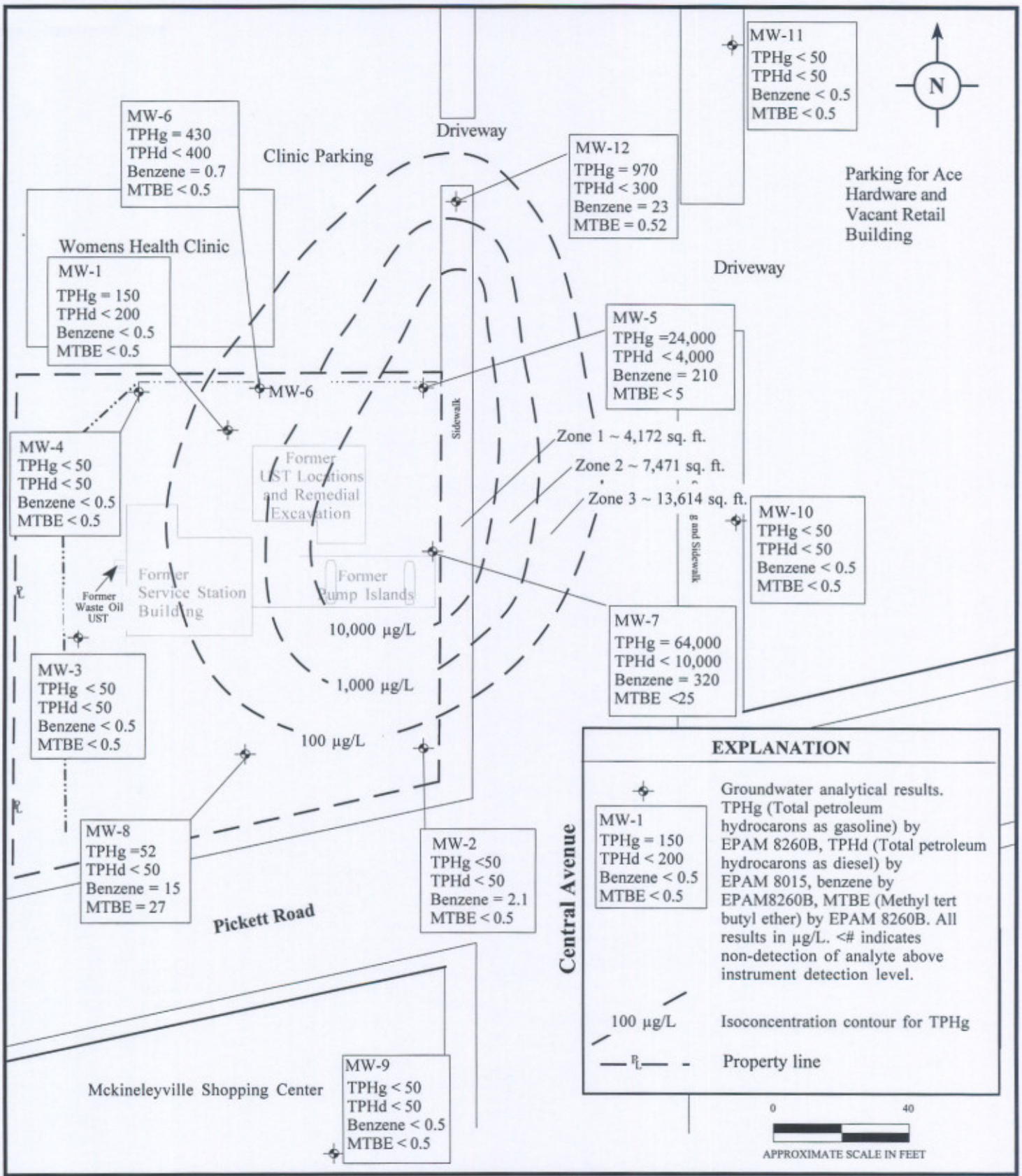


Dissolved-Phase Hydrocarbon (TPHg) Distribution 12/2/04

Former Central BP Station
2160 Central Avenue
McKinleyville, California

BLUE ROCK ENVIRONMENTAL, INC.

Project No.	Report Date	Figure
NC-24	1/05	

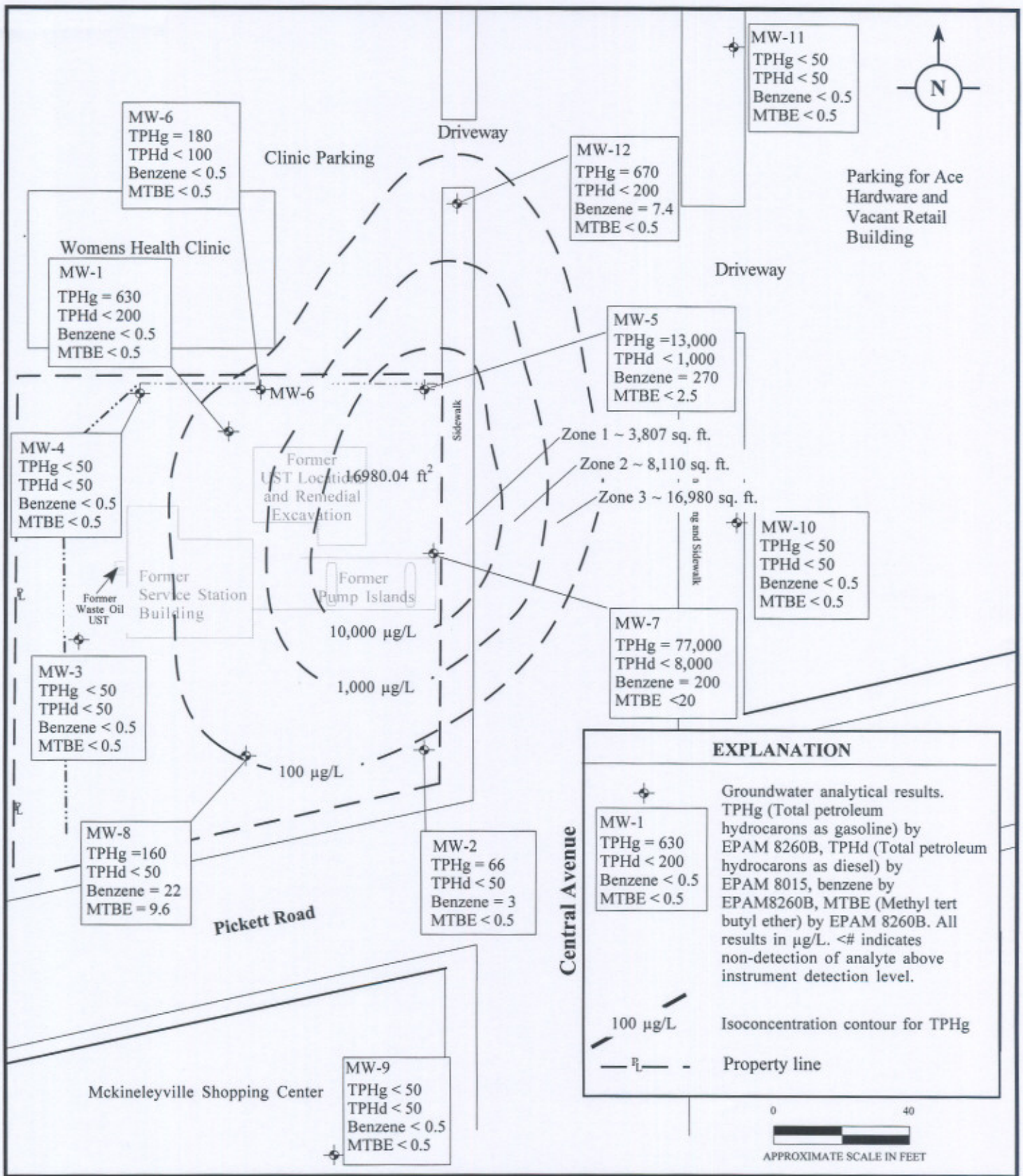


Dissolved-Phase Hydrocarbon (TPHg) Distribution 9/8/04

Former Central BP Station
2160 Central Avenue
McKinleyville, California

BLUE ROCK ENVIRONMENTAL, INC.

Project No.	Report Date	Figure
NC-24	10/04	



Dissolved-Phase Hydrocarbon (TPHg) Distribution 6/28/04

Former Central BP Station
2160 Central Avenue
McKinleyville, California

BLUE ROCK ENVIRONMENTAL, INC.

Project No.	Report Date	Figure
NC-24	7/04	