



Chevron

May 11, 1997

Mr. Scott Seery
Alameda County Health Care Services
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Chevron Products Company
6001 Bollinger Canyon Road
Building L
San Ramon, CA 94583
P.O. Box 6004
San Ramon, CA 94583-0904

Marketing - Sales West
Phone 510 842-9500

Re: Former Chevron Service Station #9-2960
2416 Grove Way
Castro Valley, California

Dear Mr. Seery:

Enclosed is a copy of the Risk Based Corrective Action (RBCA) Evaluation that has been developed by Chevron's Research and Technology Company for the above noted site. The purpose of this investigation was to determine the potential human health threat via the benzene vapor inhalation pathway to future commercial workers at this site.

The site is currently a vacant lot but development plans have been submitted to construct a drive-up coffee stand at the site. Additionally, future development plans call for the widening of Redwood Road, which will require the taking of approximately 30 feet of the current property along Redwood Road. The current onsite monitoring wells C-1, C-2 and C-3 will most likely be destroyed by this road widening.

As requested by you, Chevron used the maximum detected BTEX concentrations from the site soil and groundwater to develop this site specific RBCA evaluation. Site specific target level's (SSTL's) for a target risk of 1×10^{-5} for commercial worker exposure to vapors from benzene in soil and groundwater and a hazard index of 1.0 for commercial worker exposure to toluene, ethylbenzene, and xylene. Chevron also evaluated the 95% Upper Confidence Limit (UCL) for the subsurface (> 3 ft.) and groundwater data that was above the method detection level for the specific analyte to aid in developing a risk range for future commercial worker exposure.

Exposure pathways considered in the RBCA evaluation were: 1) surface soil (<3 ft.) ingestion, inhalation and dermal contact for a commercial worker; 2) subsurface soil (> 3 ft.) soil volatilization to indoor and outdoor air; and 3) groundwater volatilization to indoor and outdoor air.

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Former Chevron Service Station # 9-2960
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Note that in evaluating each exposure pathway, the commercial worker receptor is modeled to be directly above the calculated soil and groundwater concentration, regardless of actual location of soil and groundwater contamination and actual building location.

The total estimated health risk for the exposure to the benzene vapors associated with the maximum concentration of site soils and groundwater is estimated to be 1.5×10^{-4} , which is above the regulatory guidance of 1×10^{-5} provided by ACHCS. This represents a maximum theoretical health risk and is based on conservative assumptions including placing the receptor directly above the impacted site soils and groundwater. The calculated Hazard Index for exposure to the maximum site TEX was calculated to be 0.057, below the 1.0 threshold.

The total estimated health risk for the exposure to the volatile vapors associated with the 95% UCL concentrations of site soils and groundwater is estimated to be 4.4×10^{-5} , above the regulatory guidance of 1×10^{-5} provided by ACHCS. This is a theoretical health risk and is based on conservative assumptions including placing the receptor directly above the impacted site soils and groundwater and does not include the site soils and groundwater data that was non-detect. Note that the actual location of the planned site building is not in the area of the maximum site soils and groundwater concentrations.

The estimated health risk range for commercial worker exposure to volatile vapors from site soils and groundwater is 1.5×10^{-4} to 4.4×10^{-5} , which is above the 1×10^{-5} risk limit guidance provided by ACHCS. This health risk range would represent the hypothetical risk to commercial workers in a building directly over the hydrocarbon impacted soil and groundwater. Because the site development plans place the building in an area that appears to be minimally contaminated, the probable risk will be much less than modeled.

The current development plans place the proposed building along the rear of the site property and will not be located above the currently delineated soil and groundwater contaminant plume. To be protective of the potential health effects due to the site soil and groundwater contamination, it may be appropriate to replace the moisture barrier with a vapor barrier underneath the proposed building.

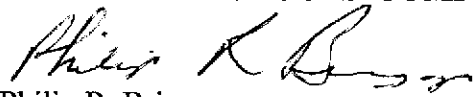
When Redwood Road is widened in the near future, monitoring wells C-1, C-2 and C-3 is expected to be abandoned. To retain some continuity of sampling for the site, it may be appropriate to install a replacement monitoring well midway between wells C-1 and C-2. Prior to well abandonment it may also be appropriate to place oxygen releasing compound

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(ORC) in each of the wells to accelerate natural attenuation of hydrocarbons present in the groundwater.

If you have any questions on this evaluation contact Curt Peck at (510) 242-7086 or call me at (510) 842-9136.

Sincerely,
CHEVRON PRODUCTS COMPANY


Philip R. Briggs
Site Assessment and Remediation Project Manager

Enclosure

cc. Curt Peck, Chevron

ENVIRONMENTAL
PROTECTION
MAY 14 PM 2:56



Chevron

Research and
Technology Company

May 7, 1997
Richmond, California

**Re: Risk-Based Corrective Action Evaluation
Former Chevron Service Station #9-2960
2416 Grove Way, Castro Valley, CA**

Mr. Phil Briggs:
San Ramon, California

The following Risk Based Corrective Action (RBCA) Evaluation has been developed to determine the potential human health threat via the benzene vapor inhalation pathway to future commercial workers at this site. The site is currently a vacant lot and development plans are being finalized to place a drive-up coffee stand at the site. Additionally, site development plans call for widening of Redwood Road, which will place approximately 30' of the current property along Redwood Road under the future expanded road surface. Current onsite wells C-1, C-2 and C-3 will most likely be destroyed by this road widening activity.

As requested by Scott Seery, ACHCS, Chevron used the maximum detected benzene, toluene, ethylbenzene and xylene concentrations from the site soil and groundwater to develop this site specific RBCA evaluation. This exposure is considered the Maximum Exposure Scenario. Site specific target levels (SSTL's) for a target risk of 1×10^{-5} for commercial worker exposure to vapors from benzene (B) in soil and groundwater and a hazard index of 1.0 for commercial worker exposure to toluene, ethylbenzene and xylene (TEX) vapors were generated in this evaluation. These SSTL's were then compared to the maximum concentrations for the site and a risk value was estimated. In addition, site specific data collected from site activities in January, 1997 (fraction organic carbon, total porosity and bulk density) were also included in the RBCA evaluation. Chevron also evaluated the 95% Upper Confidence Limit (UCL) of the geometric mean for the subsurface soil (> 3 ft) and groundwater data that was above the method detection level for the specific analyte to aid in developing a risk range for future commercial worker exposure. The 95% UCL value was compared to the SSTL's and a risk value was estimated. Groundwater concentrations from the January 23, 1997 groundwater monitoring report were used in the RBCA evaluation. Soil concentrations from the January 30, 1997 soil boring investigation were used in the RBCA evaluation.

Exposure pathways considered in the RBCA evaluation were: 1) Surface soil (< 3 ft) ingestion, inhalation and dermal contact for a commercial worker; 2) Subsurface soil (> 3 ft) soil volatilization to indoor and outdoor air; and 3) Groundwater volatilization to indoor and outdoor air.

Note that in evaluating each exposure pathway, the commercial worker receptor is modeled to be directly above the calculated soil and groundwater concentration, regardless of actual location of soil and groundwater contamination and actual building location. Preferential site pathways for horizontal vapor migration were not considered in this modeling effort as the RBCA models are one dimensional vapor transport models - from the subsurface to a receptor placed directly over calculated contaminant concentrations.

Results - Maximum Concentrations of BTEX

Surface soil samples from boring B1 at 3 feet (B1-3) were determined to be the maximum BTEX concentrations for this site. The calculated health risk to a commercial worker exposed to benzene from this surface soil via ingestion, inhalation and dermal contact was estimated to be 4.7×10^{-7} for these pathways. Subsurface soil samples from boring B1 at 16 feet (B1-16) were determined to represent the maximum BTEX concentrations for this site. Note that these soil samples were taken in the capillary zone. The calculated health risk to a commercial worker exposed to benzene from subsurface soil volatilization to indoor air and outdoor air was estimated to be 1.2×10^{-4} for indoor air and 8.7×10^{-7} for outdoor air. Groundwater samples from the 9/22/95 sampling event for well C-1 were determined to represent the maximum groundwater BTEX concentrations. The calculated health risk to a commercial worker exposed to benzene vapors from the groundwater to indoor air and outdoor air were estimated to be 3.2×10^{-5} for indoor air and 1.1×10^{-7} for outdoor air.

~~The total estimated health risk for the exposure to the benzene vapors associated with the maximum concentrations of site soils and groundwater is estimated to be 1.5×10^{-4} , above the regulatory guidance of 1×10^{-5} provided by the ACHCS. This represents a maximum theoretical health risk and is based on conservative assumptions including placing the receptor directly above the impacted site soils and groundwater. Also, the actual location of the planned site building is not in the area of maximum site soil and groundwater concentrations. The calculated Hazard Index for exposure to the maximum site TEX was calculated to be 0.057, below the 1.0 threshold.~~

Results - 95% UCL Concentrations of BTEX

The 95% UCL concentrations for site subsurface soils (> 3 ft) and groundwater were calculated from detections of BTEX in soil borings B1 through B6 and from groundwater data from the last 5 quarters (since 1/2/96) in wells C-1 and C-2. Site surface soil (< 3 ft) data was modeled as the maximum site data from B1-3.

The calculated health risk to a commercial worker exposed to the 95% UCL concentrations of subsurface soil (2.7 mg/Kg benzene) volatilizing to indoor air and outdoor air was estimated to be 2.4×10^{-5} for indoor air and 1.8×10^{-7} for outdoor air. The calculated health risk to a commercial worker exposed to the 95% UCL concentrations of groundwater (2.7 mg/L benzene) vapors to indoor air and outdoor air were estimated to be 1.9×10^{-5} for indoor air and 6.4×10^{-8} for outdoor air. The calculated health risk to a commercial worker exposed to maximum surface soil (1.5 mg/Kg) via ingestion, inhalation and dermal contact was estimated to be 4.7×10^{-7} for these pathways. The calculated Hazard Index for exposure to the 95% UCL concentrations of TEX was calculated to be 0.012, below the 1.0 threshold.

~~The total estimated health risk for the exposure to the volatile vapors associated with the 95% UCL concentrations of site soils and groundwater is estimated to be 1.5×10^{-4} , above the regulatory guidance of 1×10^{-5} provided by the ACHCS. Note that this theoretical health risk and is based on conservative assumptions including placing the receptor directly above the impacted site soils and groundwater and does not include the site soils and groundwater data that was non-detect. Additionally, the actual location of the planned site building is not in the area of maximum site soil and groundwater concentrations.~~

Recommendations

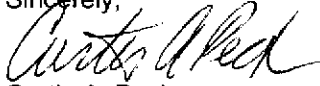
Based on the RBCA evaluations for the maximum and 95% UCL concentrations of BTEX in site soils and groundwater, the estimated health risk range for commercial worker exposure to volatile vapors from site soils and groundwater is 1.5×10^{-4} to 4.4×10^{-5} , above the 1×10^{-5} risk limit guidance provided by ACHCS. This risk range would represent the hypothetical risk to commercial

workers located in a building directly over the hydrocarbon impacted soil and groundwater. Because the site development plans place the building in an area that appears to be minimally contaminated, the probable risk will be much less than modeled.

The current site development plans indicate that the proposed building will not be placed above the currently delineated soil contamination or groundwater contaminant plume. **To be protective of potential health effects due to site soil and groundwater contamination, it may be appropriate to upgrade the soil moisture barrier to a vapor barrier beneath the proposed building.** Chevron may also be required to replace wells C-1, C-2 and C-3, which will be destroyed during Redwood Road widening activities. It would be appropriate to place a single well mid-way between the C-1 and C-2 well locations. Prior to well abandonment, it may be appropriate to place oxygen releasing compound (ORC) in each of the wells to accelerate bioremediation of hydrocarbons present in the groundwater.

Please contact me at 242-7086 with questions or comments regarding this evaluation.

Sincerely,



Curtis A. Peck
Senior Hydrogeologist

Attachments:

- 1) RBCA Evaluation - Maximum Contaminant Concentration - 9-2960Ma
- 2) RBCA Evaluation - 95% UCL Contaminant Concentration - 9-2960U
- 3) Soil Concentration map - 2/5/97
- 4) Groundwater Monitoring Data - 1/23/97
- 5) Proposed Building Location

Table 1. Analytical Results - Former Chevron Service Station #9-2960, 2416 Grove Way, Castro Valley, California.

Sample ID	Depth (ft)	Date	Analytic Method	←-----ppm----->					Organic Carbon %	Bulk Density		Grain Density gm/cc	Porosity %
				TPHg	Benzene	Toluene	Ethylbenzene	Xylenes		Dry gm/cc	Wet gm/cc		
B1-3	3	02/05/97	8015/8020	1,200	1.5	<0.50	4.1	18	---	---	---	---	---
B1-5.5	5.5	02/05/97	8015/8020/API RP-40	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	0.070	1.95	2.23	2.69	27.5
B1-11	11	02/05/97	8015/8020/API RP-40	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	0.078	1.95	2.22	2.68	27.4
B1-16	16	02/05/97	8015/8020/API RP-40	2,300	13	64	32	160	0.051	2.02	2.27	2.69	24.9
B2-6	6	02/05/97	8015/8020	<1.0	<0.0050	0.011	<0.0050	0.015	---	---	---	---	---
B2-11	11	02/05/97	8015/8020	2.0	<0.0050	<0.0050	0.0055	0.018	---	---	---	---	---
B2-15.5	15.5	02/05/97	8015/8020	330	0.30	0.63	0.81	1.6	---	---	---	---	---
B3-6	6	02/05/97	8015/8020	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B3-11	11	02/05/97	8015/8020	<1.0	<0.0050	<0.0050	<0.0050	0.010	---	---	---	---	---
B3-15.5	15.5	02/05/97	8015/8020	3.4	0.0062	0.0078	<0.0050	0.075 ¹	---	---	---	---	---
B4-4.5	4.5	02/05/97	8015/8020	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B4-10.5	10.5	02/05/97	8015/8020	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B4-15.5	15.5	02/05/97	8015/8020	<1.0	<0.0050	<0.0050	<0.0050	0.0052	---	---	---	---	---
B5-6	6	02/05/97	8015/8020	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B5-10	10	02/05/97	8015/8020	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B5-16	16	02/05/97	8015/8020	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B5-18.5	18.5	02/05/97	8015/8020	7.5	1.0	0.87	0.20	0.63	---	---	---	---	---
B6-2.5	2.5	02/05/97	8015/8020	560	<0.25	0.47	2.7	8.3	---	---	---	---	---
B6-6	6	02/05/97	8015/8020	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B6-11	11	02/05/97	8015/8020	3.3	<0.0050	<0.0050	0.0082	0.060	---	---	---	---	---
B6-16	16	02/05/97	8015/8020	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B6-18.5	18.6	02/05/97	8015/8020	580	<0.50	0.83	5.1	32	---	---	---	---	---
SP-(A-D) Comp	---	02/05/96	8015/8020	13	0.014	0.012	0.090	0.24	---	---	---	---	---

EXPLANATION:

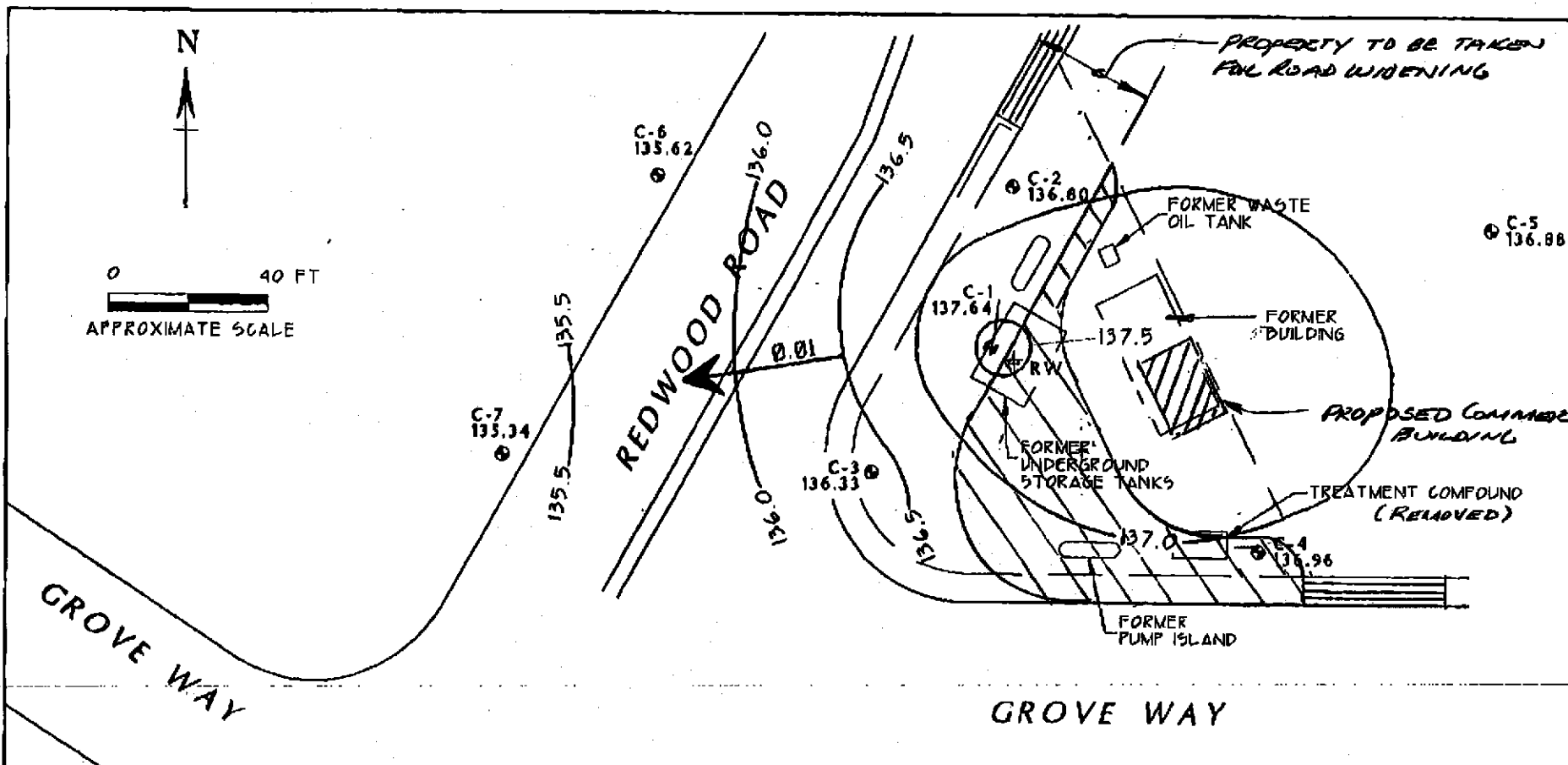
TPHg = Total Petroleum Hydrocarbons as gasoline
 ft = Feet
 ppm = Parts per million
 gm/cc = Grams per cubic centimeter
 --- = Not analyzed/not applicable
¹ = Weathered gasoline (C8-C12)

ANALYTICAL METHODS:

8015 = EPA Method for TPHg
 8020 = EPA Method for benzene, toluene, ethylbenzene and xylenes
 API RP-40 = API Recommended Practice for Core-Analysis Procedure, 1960.

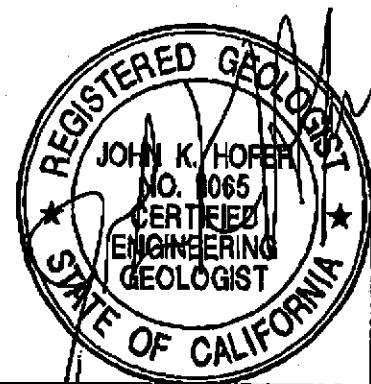
ANALYTICAL LABORATORY:

Sequoia Analytical (ELAP #1210).



EXPLANATION

- ⊙ C-7 GROUND-WATER MONITORING WELL
- ⊕ RW RECOVERY WELL (NOT MEASURED)
- 135.34 GROUND-WATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- 136.5 GROUND-WATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL
- 0.01 → APPROXIMATE DIRECTION OF GROUND-WATER FLOW. GRADIENT INDICATED IN FEET / FEET



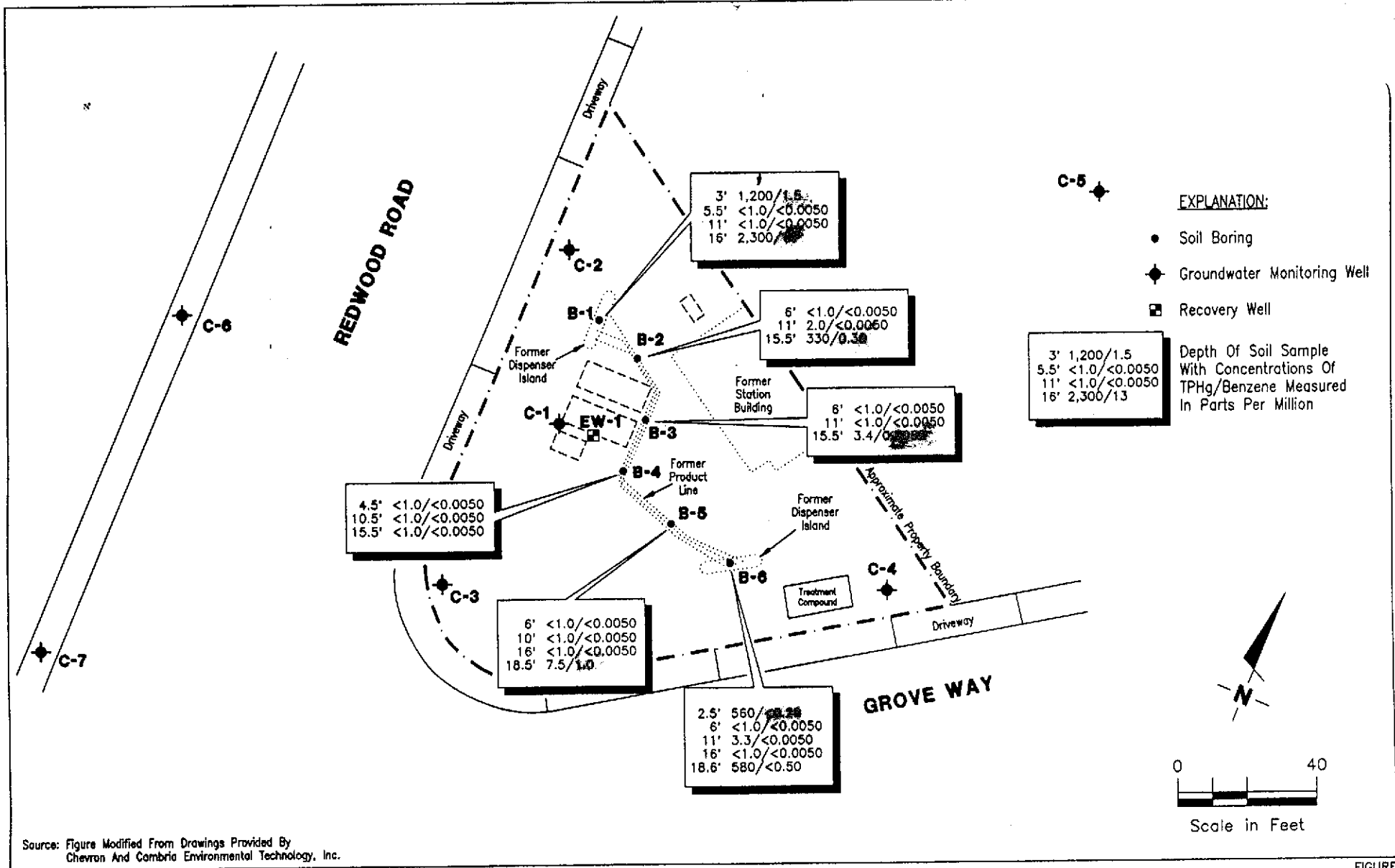
NOTES:

TITLE : GROUND-WATER ELEVATION CONTOUR MAP - OCTOBER 17, 1998
LOCATION : FORMER CHEVRON SERVICE STATION #9-2960 2416 GROVE WAY, CASTRO VALLEY, CALIFORNIA
SOURCE : CAMBRIA ENVIRONMENTAL TECHNOLOGY, INC



GEOCONSULTANTS, INC
 SAN JOSE, CALIFORNIA
 Project No. Q750-09
 DRWG NO: W101796 REV:

05/01/97 10:54 0510 842 8370 CHEVRON U.S.A. 002/002



Gertler - Ryan Inc.

6747 Sierra Ct., Suite J (510) 551-7555
Dublin, CA 94568

JOB NUMBER
6365

REVIEWED BY
[Signature]

SOIL CONCENTRATION MAP
Former Chevron Service Station No. 9-2960
2416 Grove Way
Castro Valley, California

DATE
February 5, 1997

REVISED DATE

FIGURE

2

9-2960Ma

RBCA TIER 1/TIER 2 EVALUATION

Output Table 1

Site Name: Former Chevron Station #9-2960Ma Identification: 9-2960Ma
 Site Location: 2416 Grove Way, Castro Valley Date Completed: 4/30/97
 Completed By: Curt Peck

Software: GSI RBCA Spreadsheet
 Version: v 1.0

NOTE: values which differ from Tier 1 default values are shown in bold italics and underlined.

DEFAULT PARAMETERS

Exposure Parameter	Definition (Units)	Residential			Commercial/Industrial		Surface Parameters	Definition (Units)	Commercial/Industrial		
		Adult	(1-6yrs)	(1-16 yrs)	Chronic	Constructn			Residential	Chronic	Construction
ATc	Averaging time for carcinogens (yr)	70					t	Exposure duration (yr)	30	25	1
ATn	Averaging time for non-carcinogens (yr)	30	6	16	25	1	A	Contaminated soil area (cm ²)	2.2E+06		1.0E+06
BW	Body Weight (kg)	70	15	35	70		W	Length of affected soil parallel to wind (cm)	1.5E+03		1.0E+03
ED	Exposure Duration (yr)	30	6	16	25	1	W.gw	Length of affected soil parallel to groundwater (cm)	1.5E+03		
EF	Exposure Frequency (days/yr)	350			250	180	Uair	Ambient air velocity in mixing zone (cm/s)	2.3E+02		
EF.Derm	Exposure Frequency for dermal exposure	350			250		delta	Air mixing zone height (cm)	2.0E+02		
IRgw	Ingestion Rate of Water (l/day)	2			1		Lss	Definition of surficial soils (cm)	<u>0.1E+01</u>		
IRs	Ingestion Rate of Soil (mg/day)	100	200		50	100	Pe	Particulate areal emission rate (g/cm ² /s)	2.2E-10		
IRadj	Adjusted soil ing. rate (mg ² /yr/kg ²)	1.1E+02			9.4E+01		Groundwater				
IRa.in	Inhalation rate indoor (m ³ /day)	15			20		delta.gw	Groundwater mixing zone depth (cm)	2.0E+02		
IRa.out	Inhalation rate outdoor (m ³ /day)	20			20	10	I	Groundwater infiltration rate (cm/yr)	3.0E+01		
SA	Skin surface area (dermal) (cm ²)	5.8E+03		2.0E+03	5.8E+03	5.8E+03	Ugw	Groundwater Darcy velocity (cm/yr)	2.5E+03		
SAadj	Adjusted dermal area (cm ² /yr/kg)	2.1E+03			1.7E+03		Ugw.tr	Groundwater Transport velocity (cm/yr)	6.6E+03		
M	Soil to Skin adherence factor	1					Ka	Saturated Hydraulic Conductivity (cm/s)			
AAFs	Age adjustment on soil ingestion	FALSE			FALSE		grad	Groundwater Gradient (cm/cm)			
AAFd	Age adjustment on skin surface area	FALSE			FALSE		Sw	Width of groundwater source zone (cm)			
tox	Use EPA tox data for air (or PEL based)	TRUE					Sd	Depth of groundwater source zone (cm)			
gwMCL?	Use MCL as exposure limit in groundwater?	FALSE					BC	Biodegradation Capacity (mg/L)			
							is	Is Biattenuation Considered	FALSE		
							phi.eff	Effective Porosity in Water-Bearing Unit	3.8E-01		
							loc.sat	Fraction organic carbon in water-bearing unit	1.0E-03		
Matrix of Exposed Persons to Complete Exposure Pathways		Residential			Commercial/Industrial		Soil				
							Definition (Units)				
							Value				
Groundwater Pathways:							hc	Capillary zone thickness (cm)	<u>7.6E+00</u>		
GW.i	Groundwater Ingestion	FALSE			FALSE		hv	Vadose zone thickness (cm)	<u>4.8E+02</u>		
GW.v	Volatilization to Outdoor Air	FALSE			TRUE		rho	Soil density (g/cm ³)	<u>1.95</u>		
GW.b	Vapor Intrusion to Buildings	FALSE			TRUE		loc	Fraction of organic carbon in vadose zone	<u>0.07</u>		
Soil Pathways							phi	Soil porosity in vadose zone	<u>0.275</u>		
S.v	Volatiles from Subsurface Soils	FALSE			TRUE		Lgw	Depth to groundwater (cm)	<u>4.8E+02</u>		
SS.v	Volatiles and Particulate Inhalation	FALSE			TRUE	FALSE	Ls	Depth to top of affected soil (cm)	<u>7.6E+01</u>		
SS.d	Direct Ingestion and Dermal Contact	FALSE			TRUE	TRUE	Leubs	Thickness of affected subsurface soils (cm)	<u>4.1E+02</u>		
S.l	Leaching to Groundwater from all Soils	FALSE			FALSE		pH	Soil/groundwater pH	<u>7</u>		
S.b	Intrusion to Buildings - Subsurface Soils	FALSE			TRUE		phi.w	Volumetric water content	<u>0.2475</u>	<u>0.075</u>	<u>0.075</u>
							phi.a	Volumetric air content	<u>0.0275</u>	<u>0.2</u>	<u>0.2</u>
Matrix of Receptor Distance and Location on- or off-site		Residential			Commercial/Industrial		Building				
							Definition (Units)				
							Residential				
							Commercial				
GW	Groundwater receptor (cm)			FALSE		FALSE	Lb	Building volume/area ratio (cm)	2.0E+02	3.0E+02	
S	Inhalation receptor (cm)			FALSE		TRUE	ER	Building air exchange rate (h ⁻¹)	1.4E-04	2.3E-04	
							Lcrk	Foundation crack thickness (cm)	1.5E+01		
							eta	Foundation crack fraction	0.01		
Matrix of Target Risks							Dispersive Transport				
							Parameters				
							Definition (Units)				
							Residential				
							Commercial				
TRab	Target Risk (class A&B carcinogens)	<u>1.0E-05</u>					ax	Longitudinal dispersion coefficient (cm)			
TRc	Target Risk (class C carcinogens)	1.0E-05					ay	Transverse dispersion coefficient (cm)			
THQ	Target Hazard Quotient	1.0E+00					az	Vertical dispersion coefficient (cm)			
Opt	Calculation Option (1, 2, or 3)	2					Vapor				
Tier	RBCA Tier	2					dcoy	Transverse dispersion coefficient (cm)			
							dcz	Vertical dispersion coefficient (cm)			

RBCA SITE ASSESSMENT

Tier 2 Worksheet 8.3

Site Name: Former Chevron Station #9-2960
 Site Location: 2416 Grove Way, Castro Valley CA

Completed By: Curt Peck
 Date Completed: 4/30/1997

TIER 2 BASELINE RISK SUMMARY TABLE

EXPOSURE PATHWAY	BASELINE CARCINOGENIC RISK				Risk Limit(s) Exceeded?	BASELINE TOXIC EFFECTS				Toxicity Limit(s) Exceeded?
	Individual COC Risk		Cumulative COC Risk			Hazard Quotient		Hazard Index		
	Maximum Value	Target Risk	Total Value	Target Risk		Maximum Value	Applicable Limit	Total Value	Applicable Limit	
AIR EXPOSURE PATHWAYS										
Complete:	1.5E-4	1.0E-5	1.5E-4	N/A	■	5.2E-2	1.0E+0	5.7E-2	N/A	□
GROUNDWATER EXPOSURE PATHWAYS										
Complete:	0.0E+0	1.0E-5	0.0E+0	N/A	□	0.0E+0	1.0E+0	0.0E+0	N/A	□
SOIL EXPOSURE PATHWAYS										
Complete:	4.5E-7	1.0E-5	4.5E-7	N/A	□	1.2E-3	1.0E+0	1.5E-3	N/A	□
CRITICAL EXPOSURE PATHWAY (Select Maximum Values From Complete Pathways)										
Air Pathway	1.5E-4	1.0E-5	1.5E-4	N/A	■	5.2E-2	1.0E+0	5.7E-2	N/A	□

NOTE: Maximum Benzene concentrations for soil and groundwater were used in these calculations.
 Air Pathway to Indoor Air exceeded by Soil at 16' in B1 at 13 mg/Kg and GW at 4.5 mg/L.

Serial: g-303-ydx-938

Software: GSI RBCA Spreadsheet

© Groundwater Services, Inc. (GSI), 1995. All Rights Reserved.

Version: v 1.0

RBCA SITE ASSESSMENT

Tier 2 Worksheet 9.3

Site Name: Former Chevron Station #9-2960
 Site Location: 2416 Grove Way, Castro Valley CA

Completed By: Curt Peck
 Date Completed: 4/30/1997

1 OF 1

GROUNDWATER SSTL VALUES

Target Risk (Class A & B) 1.0E-5 MCL exposure limit?
 Target Risk (Class C) 1.0E-5 PEL exposure limit?
 Target Hazard Quotient 1.0E+0

Calculation Option: 2

SSTL Results For Complete Exposure Pathways ("x" If Complete)

CONSTITUENTS OF CONCERN		Representative Concentration (mg/L)	Groundwater Ingestion			Groundwater Volatilization to Indoor Air <input checked="" type="checkbox"/>		Groundwater Volatilization to Outdoor Air <input checked="" type="checkbox"/>		Applicable SSTL (mg/L)	SSTL Exceeded ? "■" If yes	Required CRF Only if "yes" left
			Residential: (on-site)	Commercial: (on-site)	Regulatory(MCL): (on-site)	Residential: (on-site)	Commercial: (on-site)	Residential (on-site)	Commercial: (on-site)			
71-43-2	Benzene	4.5E+0	NA	NA	NA	NA	1.4E+0	NA	4.2E+2	1.4E+0	■	3.0E+00
100-41-4	Ethylbenzene	5.2E-1	NA	NA	NA	NA	>Sol	NA	>Sol	>Sol	<input type="checkbox"/>	<1
108-88-3	Toluene	1.1E+0	NA	NA	NA	NA	1.6E+2	NA	>Sol	1.6E+2	<input type="checkbox"/>	<1
1330-20-7	Xylene (mixed isomers)	1.9E+0	NA	NA	NA	NA	>Sol	NA	>Sol	>Sol	<input type="checkbox"/>	<1

RBCA SITE ASSESSMENT

Tier 2 Worksheet 9.1

Site Name: Former Chevron Station #9-2960

Completed By: Curt Peck

Site Location: 2416 Grove Way, Castro Valley CA

Date Completed: 4/30/1997

1 OF 1

**SURFACE SOIL SSTL VALUES
(< 3 FT BGS)**

Target Risk (Class A & B) 1.0E-5

MCL exposure limit?

Calculation Option: 2

Target Risk (Class C) 1.0E-5

PEL exposure limit?

Target Hazard Quotient 1.0E+0

SSTL Results For Complete Exposure Pathways ("x" if Complete)

CONSTITUENTS OF CONCERN		Representative Concentration	Soil Leaching to Groundwater			X Ingestion, Inhalation and Dermal Contact		X Construction Worker	Applicable SSTL	SSTL Exceeded ?	Required CRF
			Residential: (on-site)	Commercial: (on-site)	Regulatory(MCL): (on-site)	Residential: (on-site)	Commercial: (on-site)	Commercial: (on-site)			
CAS No.	Name	(mg/kg)							(mg/kg)	"■" If yes	Only if "yes" left
71-43-2	Benzene	1.5E+0	NA	NA	NA	NA	3.2E+1	1.1E+3	3.2E+1	<input type="checkbox"/>	<1
100-41-4	Ethylbenzene	4.1E+0	NA	NA	NA	NA	>Res	>Res	>Res	<input type="checkbox"/>	<1
108-88-3	Toluene	5.0E-1	NA	NA	NA	NA	>Res	>Res	>Res	<input type="checkbox"/>	<1
#####	Xylene (mixed isomers)	1.8E+1	NA	NA	NA	NA	>Res	>Res	>Res	<input type="checkbox"/>	<1

RBCA SITE ASSESSMENT

Tier 2 Worksheet 9.2

Site Name: Former Chevron Station #9-2960
 Site Location: 2416 Grove Way, Castro Valley CA

Completed By: Curt Peck
 Date Completed: 4/30/1997

1 OF 1

**SUBSURFACE SOIL SSTL VALUES
 (> 3 FT BGS)**

Target Risk (Class A & B) 1.0E-5 MCL exposure limit?
 Target Risk (Class C) 1.0E-5 PEL exposure limit?
 Target Hazard Quotient 1.0E+0

Calculation Option: 2

SSTL Results For Complete Exposure Pathways ("x" if Complete)

CONSTITUENTS OF CONCERN		Representative Concentration (mg/kg)	Soil Leaching to Groundwater			Soil Volatilization to Indoor Air		Soil Volatilization to Outdoor Air		Applicable SSTL (mg/kg)	SSTL Exceeded ? "■" If yes	Required CRF Only if "yes" left
			Residential: (on-site)	Commercial: (on-site)	Regulatory(MCL): (on-site)	Residential: (on-site)	Commercial: (on-site)	Residential: (on-site)	Commercial: (on-site)			
71-43-2	Benzene	1.3E+1	NA	NA	NA	NA	1.1E+0	NA	1.5E+2	1.1E+0	■	1.1E+01
100-41-4	Ethylbenzene	3.2E+1	NA	NA	NA	NA	7.1E+2	NA	>Res	7.1E+2	<input type="checkbox"/>	<1
108-88-3	Toluene	6.4E+1	NA	NA	NA	NA	4.4E+2	NA	>Res	4.4E+2	<input type="checkbox"/>	<1
1330-20-7	Xylene (mixed isomers)	1.6E+2	NA	NA	NA	NA	>Res	NA	>Res	>Res	<input type="checkbox"/>	<1

9-29604

RBCA TIER 1/TIER 2 EVALUATION

Output Table 1

Site Name: Former Chevron Station #9-29604 Identification: 9-29604
 Site Location: 2416 Grove Way, Castro Valley Date Completed: 4/30/97
 Completed By: Curt Peck

Software: GSI RBCA Spreadsheet
 Version: v 1.0

NOTE: values which differ from Tier 1 default values are shown in bold italics and underlined.

Exposure Parameter		Residential			Commercial/Industrial	
		Adult	(1-6yrs)	(1-16 yrs)	Chronic	Constructn
ATc	Averaging time for carcinogens (yr)	70				
ATn	Averaging time for non-carcinogens (yr)	30	6	16	25	1
BW	Body Weight (kg)	70	15	35	70	
ED	Exposure Duration (yr)	30	6	16	25	1
EF	Exposure Frequency (days/yr)	350			250	180
EF.Derm	Exposure Frequency for dermal exposure	350			250	
IRgw	Ingestion Rate of Water (l/day)	2			1	
IRs	Ingestion Rate of Soil (mg/day)	100	200		50	100
IRadj	Adjusted soil ing. rate (mg/yr/kg-d)	1.1E+02			9.4E+01	
IRa.in	Inhalation rate indoor (m ³ /day)	15			20	
IRa.out	Inhalation rate outdoor (m ³ /day)	20			20	10
SA	Skin surface area (dermal) (cm ²)	5.8E+03		2.0E+03	5.8E+03	5.8E+03
SAadj	Adjusted dermal area (cm ² -yr/kg)	2.1E+03			1.7E+03	
M	Soil to Skin adherence factor	1				
AAFs	Age adjustment on soil ingestion	FALSE			FALSE	
AAFd	Age adjustment on skin surface area	FALSE			FALSE	
tox	Use EPA tox data for air (or PEL based)	TRUE				
gwMCL?	Use MCL as exposure limit in groundwater?	FALSE				

Surface Parameters		Residential		Commercial/Industrial	
		Chronic	Construction	Chronic	Construction
I	Exposure duration (yr)	30		25	1
A	Contaminated soil area (cm ²)	2.2E+06			1.0E+06
W	Length of affected soil parallel to wind (cm)	1.5E+03			1.0E+03
W.gw	Length of affected soil parallel to groundwater (cm)	1.5E+03			
Uair	Ambient air velocity in mixing zone (cm/s)	2.3E+02			
delta	Air mixing zone height (cm)	2.0E+02			
Lss	Definition of surficial soils (cm)	8.1E+01			
Pe	Particulate areal emission rate (g/cm ² /s)	2.2E-10			

Groundwater Parameters		Value		
		Residential	Chronic	Construction
delta.gw	Groundwater mixing zone depth (cm)	2.0E+02		
I	Groundwater infiltration rate (cm/yr)	3.0E+01		
Ugw	Groundwater Darcy velocity (cm/yr)	2.5E+03		
Ugw.tr	Groundwater Transport velocity (cm/yr)	6.6E+03		
Ka	Saturated Hydraulic Conductivity (cm/s)			
grad	Groundwater Gradient (cm/cm)			
Sw	Width of groundwater source zone (cm)			
Sd	Depth of groundwater source zone (cm)			
BC	Biodegradation Capacity (mg/L)			
BIO?	Is Biodegradation Considered	FALSE		
phi.eff	Effective Porosity in Water-Bearing Unit	3.8E-01		
foc.sat	Fraction organic carbon in water-bearing unit	1.0E-03		

Soil Parameters		Value		
		capillary	vadose	foundation
hc	Capillary zone thickness (cm)	7.6E+00		
hv	Vadose zone thickness (cm)	4.8E+02		
rho	Soil density (g/cm ³)	1.95		
foc	Fraction of organic carbon in vadose zone	0.07		
phi	Soil porosity in vadose zone	0.275		
Lgw	Depth to groundwater (cm)	4.9E+02		
Ls	Depth to top of affected soil (cm)	7.6E+01		
Lsubs	Thickness of affected subsurface soils (cm)	4.1E+02		
pH	Soil/groundwater pH	7		
phi.w	Volumetric water content	0.2475	0.075	0.075
phi.a	Volumetric air content	0.0275	0.2	0.2

Building Parameters		Residential		Commercial
		Distance	On-Site	Commercial
Lb	Building volume/area ratio (cm)	2.0E+02		3.0E+02
ER	Building air exchange rate (s ⁻¹)	1.4E-04		2.3E-04
Lcrk	Foundation crack thickness (cm)	1.5E+01		
eta	Foundation crack fraction	0.01		

Dispersive Transport Parameters		Residential		Commercial
		Distance	On-Site	Commercial
Groundwater				
ax	Longitudinal dispersion coefficient (cm)			
ay	Transverse dispersion coefficient (cm)			
az	Vertical dispersion coefficient (cm)			
Vapor				
dcy	Transverse dispersion coefficient (cm)			
dcz	Vertical dispersion coefficient (cm)			

Matrix of Exposed Persons to Complete Exposure Pathways		Residential		Commercial/Industrial	
		Chronic	Constructn	Chronic	Constructn
Groundwater Pathways:					
GW.i	Groundwater Ingestion	FALSE		FALSE	
GW.v	Volatilization to Outdoor Air	FALSE		TRUE	
GW.b	Vapor Intrusion to Buildings	FALSE		TRUE	
Soil Pathways					
S.v	Volatiles from Subsurface Soils	FALSE		TRUE	
SS.v	Volatiles and Particulate Inhalation	FALSE		TRUE	FALSE
SS.d	Direct Ingestion and Dermal Contact	FALSE		TRUE	TRUE
S.l	Leaching to Groundwater from all Soils	FALSE		FALSE	
S.b	Intrusion to Buildings - Subsurface Soils	FALSE		TRUE	

Matrix of Receptor Distance and Location on- or off-site		Residential		Commercial/Industrial	
		Distance	On-Site	Distance	On-Site
GW	Groundwater receptor (cm)		TRUE		TRUE
S	Inhalation receptor (cm)		TRUE		TRUE

Matrix of Target Risks		Individual		Cumulative
		Individual	Cumulative	Cumulative
TRab	Target Risk (class A&B carcinogens)	1.0E-05		
TRc	Target Risk (class C carcinogens)	1.0E-05		
THQ	Target Hazard Quotient	1.0E+00		
Opt	Calculation Option (1, 2, or 3)	1		
Tier	RBCA Tier	2		

RBCA SITE ASSESSMENT

Tier 2 Worksheet 8.3

Site Name: Former Chevron Station #9-2960
 Site Location: 2416 Grove Way, Castro Valley CA

Completed By: Curt Peck
 Date Completed: 4/30/1997

1 of 1

TIER 2 BASELINE RISK SUMMARY TABLE

EXPOSURE PATHWAY	BASELINE CARCINOGENIC RISK					BASELINE TOXIC EFFECTS				
	Individual COC Risk		Cumulative COC Risk		Risk Limit(s) Exceeded?	Hazard Quotient		Hazard Index		Toxicity Limit(s) Exceeded?
	Maximum Value	Target Risk	Total Value	Target Risk		Maximum Value	Applicable Limit	Total Value	Applicable Limit	
AIR EXPOSURE PATHWAYS										
Complete:	4.4E-5	1.0E-5	4.4E-5	N/A	■	1.2E-2	1.0E+0	1.2E-2	N/A	□
GROUNDWATER EXPOSURE PATHWAYS										
Complete:	0.0E+0	1.0E-5	0.0E+0	N/A	□	0.0E+0	1.0E+0	0.0E+0	N/A	□
SOIL EXPOSURE PATHWAYS										
Complete:	4.5E-7	1.0E-5	4.5E-7	N/A	□	1.2E-3	1.0E+0	1.5E-3	N/A	□
CRITICAL EXPOSURE PATHWAY (Select Maximum Values From Complete Pathways)										
Air Pathway	4.4E-5	1.0E-5	4.4E-5	N/A	■	1.2E-2	1.0E+0	1.2E-2	N/A	□

NOTE: 95% UCL Benzene concentrations for soil and groundwater were used in these calculations.
 Air Pathway to Indoor Air exceeded by Soil at 16' in B1 at 2.7 mg/Kg and 95% UCL GW at 2.7 mg/L.

RBCA SITE ASSESSMENT

Tier 2 Worksheet 9.1

Site Name: Former Chevron Station #9-2960

Completed By: Curt Peck

Site Location: 2416 Grove Way, Castro Valley CA

Date Completed: 4/30/1997

1 OF 1

**SURFACE SOIL SSTL VALUES
(< 3 FT BGS)**

Target Risk (Class A & B) 1.0E-5

MCL exposure limit?

Calculation Option: 1

Target Risk (Class C) 1.0E-5

PEL exposure limit?

Target Hazard Quotient 1.0E+0

SSTL Results For Complete Exposure Pathways ("x" if Complete)

CONSTITUENTS OF CONCERN		Representative Concentration	Soil Leaching to Groundwater			X	Ingestion, Inhalation and Dermal Contact	X	Construction Worker	Applicable SSTL	SSTL Exceeded ?	Required CRF
CAS No.	Name	(mg/kg)	Residential: (on-site)	Commercial: (on-site)	Regulatory(MCL): (on-site)	Residential: (on-site)	Commercial: (on-site)	Commercial: (on-site)	(mg/kg)	"■" If yes	Only if "yes" left	
71-43-2	Benzene	1.5E+0	NA	NA	NA	NA	3.2E+1	1.1E+3	3.2E+1	<input type="checkbox"/>	<1	
100-41-4	Ethylbenzene	4.1E+0	NA	NA	NA	NA	>Res	>Res	>Res	<input type="checkbox"/>	<1	
108-88-3	Toluene	5.0E-1	NA	NA	NA	NA	>Res	>Res	>Res	<input type="checkbox"/>	<1	
#####	Xylene (mixed isomers)	1.8E+1	NA	NA	NA	NA	>Res	>Res	>Res	<input type="checkbox"/>	<1	

Site Name: Former Chevron Station #9-2960 Completed By: Curt Peck
 Site Location: 2416 Grove Way, Castro Valley Date Completed: 4/30/1997

TIER 2 SURFACE SOILS CONCENTRATION DATA SUMMARY (e.g., <3 FT BGS)

CONSTITUENTS DETECTED		Analytical Method			Detected Concentrations		
		Typical Detection Limit (mg/kg)	No. of Samples	No. of Detects	Maximum Conc. (mg/kg)	Mean Conc. (mg/kg)	UCL on Mean Conc. (mg/kg)
CAS No.	Name						
71-43-2	Benzene	5.0E-01	1	1	1.5E+00	#DIV/0!	#DIV/0!
100-41-4	Ethylbenzene	5.0E-01	1	1	4.1E+00	#DIV/0!	#DIV/0!
108-88-3	Toluene	5.0E-01	1	0	0.0E+00	#DIV/0!	#DIV/0!
1330-20-7	Xylene (mixed isomers)	5.0E-01	1	1	1.8E+01	#DIV/0!	#DIV/0!

RBCA SITE ASSESSMENT

Tier 2 Worksheet 9.3

Site Name: Former Chevron Station #9-2960
 Site Location: 2416 Grove Way, Castro Valley CA

Completed By: Curt Peck
 Date Completed: 4/30/1997

1 OF 1

GROUNDWATER SSTL VALUES

Target Risk (Class A & B) 1.0E-5 MCL exposure limit?
 Target Risk (Class C) 1.0E-5 PEL exposure limit?
 Target Hazard Quotient 1.0E+0

Calculation Option: 1

SSTL Results For Complete Exposure Pathways ("x" If Complete)

CONSTITUENTS OF CONCERN		Representative Concentration (mg/L)	Groundwater Ingestion			Groundwater Volatilization to Indoor Air		Groundwater Volatilization to Outdoor Air		Applicable SSTL (mg/L)	SSTL Exceeded ? *■* If yes	Required CRF Only if "yes" left
			Residential: (on-site)	Commercial: (on-site)	Regulatory(MCL): (on-site)	Residential: (on-site)	Commercial: (on-site)	Residential (on-site)	Commercial: (on-site)			
71-43-2	Benzene	2.7E+0	NA	NA	NA	NA	1.4E+0	NA	4.2E+2	1.4E+0	■	2.0E+00
100-41-4	Ethylbenzene	3.0E-1	NA	NA	NA	NA	>Sol	NA	>Sol	>Sol	□	<1
108-88-3	Toluene	3.7E-1	NA	NA	NA	NA	1.6E+2	NA	>Sol	1.6E+2	□	<1
1330-20-7	Xylene (mixed isomers)	6.1E-1	NA	NA	NA	NA	>Sol	NA	>Sol	>Sol	□	<1

Site Name: Former Chevron Station #9-2850 Completed By: Curt Peck
Site Location: 2416 Grova Way, Castro Valley Date Completed: 4/30/1997 1 of 1

TIER 2 GROUNDWATER CONCENTRATION DATA SUMMARY

CONSTITUENTS DETECTED		Analytical Method Typical Detection Limit (mg/L)	No. of Samples	No. of Detects	Detected Concentrations		
					Maximum Conc. (mg/L)	Mean Conc. (mg/L)	UCL on Mean Conc. (mg/L)
71-43-2	Benzene	0.05	10	10	4.5E+00	2.0E+00	2.7E+00
100-41-4	Ethylbenzene	0.05	10	10	5.2E-01	2.3E-01	3.0E-01
108-88-3	Toluene	0.05	10	10	1.6E+00	2.2E-01	3.7E-01
1330-20-7	Xylene (mixed isomers)	0.05	10	10	1.9E+00	4.0E-01	6.1E-01

Calculated
Distribution
of Data

Normal	0.005
Normal	0.005
Lognormal	0.005
Lognormal	0.005

Choose UCL Percentile
(must be 0.9 or 0.95)

Analytical Data (Up to 50 Data Points)

1 2 3 4 5 6 7 8 9 10 11 12

Well Name	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Date Sampled	1/22/97	1/22/97	1/22/97	1/22/97	1/22/97	1/22/97	1/22/97	1/22/97	1/22/97	1/22/97	1/22/97	1/22/97
	4.5	2.0	4.5	2.0	4.5	2.0	4.5	2.0	4.5	2.0	4.5	2.0
	5.2	2.3	5.2	2.3	5.2	2.3	5.2	2.3	5.2	2.3	5.2	2.3
	1.6	2.2	1.6	2.2	1.6	2.2	1.6	2.2	1.6	2.2	1.6	2.2
	1.9	4.0	1.9	4.0	1.9	4.0	1.9	4.0	1.9	4.0	1.9	4.0

RBCA SITE ASSESSMENT

Tier 2 Worksheet 9.2

Site Name: Former Chevron Station #9-2960
 Site Location: 2416 Grove Way, Castro Valley CA

Completed By: Curt Peck
 Date Completed: 4/30/1997

1 OF 1

**SUBSURFACE SOIL SSTL VALUES
 (> 3 FT BGS)**

Target Risk (Class A & B) 1.0E-5 MCL exposure limit?
 Target Risk (Class C) 1.0E-5 PEL exposure limit?
 Target Hazard Quotient 1.0E+0

Calculation Option: 1

SSTL Results For Complete Exposure Pathways ("x" if Complete)

CONSTITUENTS OF CONCERN		Representative Concentration (mg/kg)	Soil Leaching to Groundwater			Soil Volatilization to Indoor Air		Soil Volatilization to Outdoor Air		Applicable SSTL (mg/kg)	SSTL Exceeded ? "■" If yes	Required CRF Only if "yes" left
			Residential: (on-site)	Commercial: (on-site)	Regulatory(MCL): (on-site)	Residential: (on-site)	Commercial: (on-site)	Residential: (on-site)	Commercial: (on-site)			
71-43-2	Benzene	2.7E+0	NA	NA	NA	NA	1.1E+0	NA	1.5E+2	1.1E+0	■	2.0E+00
100-41-4	Ethylbenzene	1.2E+0	NA	NA	NA	NA	7.1E+2	NA	>Res	7.1E+2	□	<1
108-88-3	Toluene	6.6E+0	NA	NA	NA	NA	4.4E+2	NA	>Res	4.4E+2	□	<1
1330-20-7	Xylene (mixed isomers)	1.6E+0	NA	NA	NA	NA	>Res	NA	>Res	>Res	□	<1

SCREEN 7.3
SUBSURFACE SOILS
CONCENTRATION
CALCULATOR

Site Name: Former Chevron Station #9-2966 Completed By: Curt Peck
Site Location: 2416 Grove Way, Castro Valley CA Date Completed: 4/30/1997 1 of 1

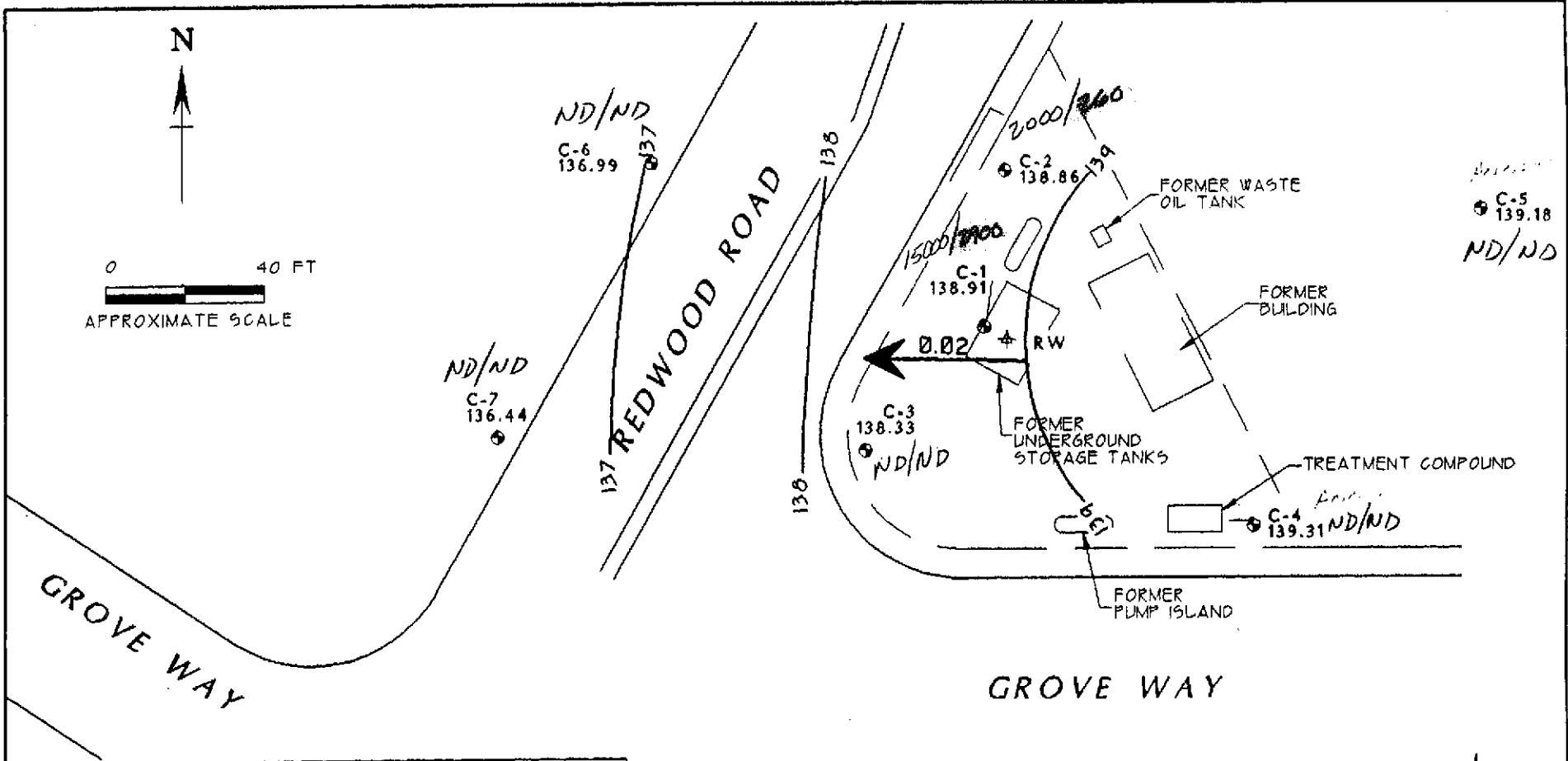
TIER 2 SUBSURFACE SOIL CONCENTRATION DATA SUMMARY (e.g., >3 FT BGS)

CONSTITUENTS DETECTED		Analytical Method Typical Detection Limit (mg/kg)	No. of Samples	No. of Detects	Detected Concentrations		
CAS No.	Name				Maximum Conc. (mg/kg)	Mean Conc. (mg/kg)	UCL on Mean Conc. (mg/kg)
71-43-2	Benzene	2.0E+01	5	5	1.3E+01	4.1E+01	2.7E+00
100-41-4	Ethylbenzene	3.0E+01	7	7	3.2E+01	1.8E+01	1.2E+00
108-88-3	Toluene	5.0E+01	5	5	6.4E+01	7.4E+01	6.6E+00
1330-20-7	Xylene (mixed isomers)	5.0E+01	9	9	1.6E+02	3.0E+01	1.6E+00

Calculated Distribution of Data	Default Detection Limit (mg/L)
Lognormal	0.5
Lognormal	0.5
Lognormal	0.5

UCL Percentile
(must be 0.9 or 0.95)
Analytical Data (Up to 50 Data Points)

	1	2	3	4	5	6	7	8	9	10	11
Sample Name	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Date Sampled											



TPH-g/BENZENE
(ug/L) 1/23/97



EXPLANATION

- C-7 GROUND-WATER MONITORING WELL
- ⊕ RW RECOVERY WELL (NOT MEASURED)
- 136.44 GROUND-WATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- 138 GROUND-WATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL
- 0.02 → APPROXIMATE DIRECTION OF GROUND-WATER FLOW. GRADIENT INDICATED IN FEET / FEET

NOTES:

TITLE : GROUND-WATER ELEVATION CONTOUR MAP - JANUARY 23, 1997
 LOCATION : FORMER CHEVRON SERVICE STATION #9-2960 2416 GROVE WAY, CASTRO VALLEY, CALIFORNIA
 SOURCE : CAMBRIA ENVIRONMENTAL TECHNOLOGY, INC



GEOCONSULTANTS, INC
 SAN JOSE, CALIFORNIA
 Project No. G758-09
 DRWG NO: W012397 REV:

Cumulative Table of Well Data and Analytical Results

Vertical Measurements are in feet.

Volumetric Measurements are in gallons.

Analytical results are in parts per billion (ppb)

DATE	Vertical Measurements are in feet.			Volumetric Measurements are in gallons.			Notes	Analytical results are in parts per billion (ppb)					
	Well Head Elev.	Ground Water Elev.	Depth To Water	SPH Thickness	SPH Removed	Total SPH Removed		TPH-Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylene	MTBE
C-1													
10/23/86	153.36	--	--	--	--	--	--	3100	6400	3700	--	4300	--
09/10/87	153.36	--	--	--	--	--	--	120,000	25,000	60,000	13,000	56,000	--
10/03/90	153.36	134.69	18.67	--	--	--	--	--	--	--	--	--	--
10/25/90	153.36	135.22	18.71	0.71	--	--	--	--	--	--	--	--	--
01/22/91	153.36	135.22	18.70	0.70	--	--	--	--	--	--	--	--	--
02/21/91	153.36	135.44	18.62	0.88	--	--	--	--	--	--	--	--	--
04/01/91	153.36	136.47	16.91	0.03	--	--	--	--	--	--	--	--	--
04/11/91	153.36	136.49	16.90	0.04	--	--	--	--	--	--	--	--	--
07/01/91	153.36	135.75	17.61	0.00	--	--	--	--	--	--	--	--	--
09/24/91	153.36	135.17	18.98	0.99	--	--	--	--	--	--	--	--	--
10/23/91	153.36	135.03	19.32	1.24	--	--	--	--	--	--	--	--	--
11/22/91	153.36	134.53	18.83	0.97	--	--	--	--	--	--	--	--	--
01/09/92	153.36	136.10	17.26	--	--	--	--	--	--	--	--	--	--
03/06/92	153.36	137.16	16.69	0.61	--	--	--	--	--	--	--	--	--
06/04/92	153.36	136.44	17.10	0.22	--	--	--	--	--	--	--	--	--
09/28/92	153.36	--	18.71	0.77	--	--	--	--	--	--	--	--	--
12/17/92	153.36	--	17.54	0.45	--	--	--	--	--	--	--	--	--
04/29/93	153.36	137.50	16.40	0.68	--	--	--	--	--	--	--	--	--
07/26/93	153.36	136.92	16.85	0.51	--	--	--	--	--	--	--	--	--
10/22/93	153.36	135.55	17.83	0.03	--	--	--	--	--	--	--	--	--
01/24/94	153.36	--	--	--	--	--	--	--	--	--	--	--	--
04/11/94	153.36	136.01	17.76	0.51	--	--	--	--	--	--	--	--	--
07/01/94	153.36	135.95	17.46	0.06	--	--	--	--	--	--	--	--	--
10/06/94	153.36	135.24	18.18	0.08	--	--	--	--	--	--	--	--	--
01/11/95	153.36	136.63	16.79	0.08	0.039	0.039	--	--	--	--	--	--	--
04/07/95	153.36	139.23	14.13	--	--	0.039	--	44,000	410	100	130	5400	--
07/20/95	153.36	136.84	16.52	--	--	0.039	--	16,000	96	81	53	1000	--
09/22/95	153.36	137.22	16.14	--	--	0.039	--	59,000	150	36	16	56	--
01/02/96	153.36	137.43	15.93	--	--	0.039	--	29,000	4500	1100	520	1900	<250
04/26/96	153.36	137.31	16.05	--	--	0.039	--	7200	1300	340	130	390	--
07/22/96	153.36	143.14	10.22	--	--	0.039	--	7300	2500	170	360	520	--
10/17/96	153.36	137.64	15.72	--	--	0.039	--	19,000	3400	59	360	430	--
01/23/97	153.36	138.91	14.45	--	--	0.039	--	15,000	2900	390	250	480	--

Cumulative Table of Well Data and Analytical Results

Vertical Measurements are in feet.

Volumetric Measurements are in gallons.

Analytical results are in parts per billion (ppb)

DATE	Well	Ground	Depth	Total			Notes	TPH- Gasoline	Benzene	Toluene	Ethyl- Benzene	Xylene	MTBE
	Head Elev.	Water Elev.	To Water	SPH Thickness	SPH Removed	SPH Removed							
C-2													
10/23/86	151.84	--	--	--	--	--	--	30,000	2700	1900	--	1500	--
09/10/87	151.84	--	--	--	--	--	--	14,000	2600	2900	500	1200	--
10/16/89	151.84	--	--	--	--	--	--	600	260	34	1.7	41	--
01/04/90	151.84	--	--	--	--	--	--	2600	470	150	23	130	--
04/05/90	151.84	--	--	--	--	--	--	500	280	29	6.3	19	--
07/02/90	151.84	--	--	--	--	--	--	2400	670	110	17	76	--
10/03/90	151.84	--	--	--	--	--	--	--	--	--	--	--	--
10/25/90	151.84	135.24	16.60	--	--	--	--	1300	390	47	9.0	58	--
01/22/91	151.84	135.15	16.69	--	--	--	--	2600	680	88	29	130	--
02/21/91	151.84	135.53	16.31	--	--	--	--	--	--	--	--	--	--
04/01/91	151.84	136.76	15.08	--	--	--	--	--	--	--	--	--	--
04/11/91	151.84	136.61	15.23	--	--	--	--	--	--	--	--	--	--
07/01/91	151.84	135.88	15.96	--	--	--	--	--	--	--	--	--	--
09/24/91	151.84	135.33	16.51	--	--	--	--	3600	1400	63	6.9	63	--
10/23/91	151.84	135.18	16.66	--	--	--	--	--	--	--	--	--	--
11/22/91	151.84	135.47	16.37	--	--	--	--	--	--	--	--	--	--
01/09/92	151.84	136.28	15.56	--	--	--	--	7100	770	740	190	690	--
03/06/92	151.84	137.47	14.37	--	--	--	--	3200	250	230	59	220	--
06/04/92	151.84	136.80	15.04	--	--	--	--	1500	<0.5	180	42	130	--
09/28/92	151.84	135.44	16.40	--	--	--	--	6400	940	230	57	220	--
12/17/92	151.84	136.46	15.38	--	--	--	--	1500	370	160	6.0	25	--
04/29/93	151.84	136.87	14.97	--	--	--	--	1800	690	120	74	140	--
07/29/93	151.84	136.92	14.92	--	--	--	--	4300	1500	96	29	96	--
10/22/93	151.84	136.03	15.81	--	--	--	--	820	560	57	15	58	--
01/24/94	151.84	--	--	--	--	--	--	--	--	--	--	--	--
04/11/94	151.84	136.49	15.35	--	--	--	--	2000	240	48	36	110	--
07/01/94	151.84	136.44	15.40	--	--	--	--	370	55	12	3.1	8.6	--
10/06/94	151.84	135.84	16.00	--	--	--	--	150	47	4.8	1.8	5.4	--
01/11/95	151.84	137.06	14.78	--	--	--	--	52	0.65	<0.5	<0.5	<0.5	--
04/07/95	151.84	138.93	12.91	--	--	--	--	1500	260	64	52	85	--
07/20/95	151.84	136.81	15.03	--	--	--	--	3000	500	100	96	110	--
09/22/95	151.84	137.05	14.79	--	--	--	--	2000	630	120	20	79	--

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Cumulative Table of Well Data and Analytical Results

Vertical Measurements are in feet.

Volumetric Measurements are in gallons.

Analytical results are in parts per billion (ppb)

DATE	Well	Ground	Depth	Total			Notes	Analytical results are in parts per billion (ppb)					
	Head Elev.	Water Elev.	To Water	SPH Thickness	SPH Removed	SPH Removed		TPH-Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylene	MTBE
C-2 (CONT'D)													
01/02/96	151.84	137.37	14.47	--	--	--	--	1900	240	110	58	180	<12
04/26/96	151.84	137.97	13.87	--	--	--	--	1300	340	190	44	120	--
07/22/96	151.84	136.73	15.11	--	--	--	--	3700	1100	140	150	330	--
10/17/96	151.84	136.80	15.04	--	--	--	--	22,000	3900	1600	350	1800	--
01/23/97	151.84	138.86	12.98	--	--	--	--	2000	260	48	76	94	--

Cumulative Table of Well Data and Analytical Results

Vertical Measurements are in feet.				Volumetric Measurements are in gallons.			Analytical results are in parts per billion (ppb)						
DATE	Well Head Elev.	Ground Water Elev.	Depth To Water	SPH Thickness	SPH Removed	Total SPH Removed	Notes	TPH-Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylene	MTBE
C-3													
10/23/86	154.13	--	--	--	--	--	--	3300	49	24	--	20	--
09/10/87	154.13	--	--	--	--	--	--	200	110	2.6	<2.0	<2.0	--
10/16/89	154.13	--	--	--	--	--	--	900	640	4.2	1.6	16	--
01/04/90	154.13	--	--	--	--	--	--	920	430	7.0	6.0	7.0	--
04/05/90	154.13	--	--	--	--	--	--	930	690	3.4	5.1	4.8	--
07/02/90	154.13	--	--	--	--	--	--	1700	590	11	4.8	9.4	--
10/03/90	154.13	134.97	19.16	--	--	--	--	--	--	--	--	--	--
10/25/90	154.13	134.85	19.28	--	--	--	--	750	510	2.0	6.0	5.0	--
01/22/91	154.13	134.95	19.18	--	--	--	--	430	260	2.0	2.0	5.0	--
01/22/91	154.13	134.95	19.18	--	--	--	--	400	250	2.0	2.0	5.0	--
02/21/91	154.13	135.25	18.88	--	--	--	--	--	--	--	--	--	--
04/01/91	154.13	136.54	17.59	--	--	--	--	--	--	--	--	--	--
04/11/91	154.13	136.32	17.81	--	--	--	--	--	--	--	--	--	--
07/01/91	154.13	135.57	18.56	--	--	--	--	--	--	--	--	--	--
09/24/91	154.13	135.01	19.12	--	--	--	--	260	52	0.7	0.8	2.2	--
10/23/91	154.13	134.89	19.24	--	--	--	--	--	--	--	--	--	--
11/22/91	154.13	135.10	19.03	--	--	--	--	--	--	--	--	--	--
01/09/92	154.13	135.90	18.23	--	--	--	--	240	120	0.9	<0.5	1.6	--
03/06/92	154.13	137.09	17.04	--	--	--	--	230	68	1.2	1.2	1.3	--
06/04/92	154.13	136.34	17.79	--	--	--	--	80	36	0.6	0.5	0.7	--
09/28/92	154.13	135.13	19.00	--	--	--	--	84	49	<0.5	<0.5	1.5	--
12/17/92	154.13	135.95	18.18	--	--	--	--	220	30	<0.5	<0.5	<0.5	--
04/29/93	154.13	135.35	18.78	--	--	--	--	380	12	0.6	<0.5	<1.5	--
07/26/93	154.13	136.41	17.72	--	--	--	--	800	38	1.1	<0.5	<1.5	--
10/22/93	154.13	135.63	18.50	--	--	--	--	200	64	0.6	<0.5	<1.5	--
01/24/94	154.13	135.62	18.51	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
04/11/94	154.13	136.09	18.04	--	--	--	--	100	3.6	2.1	<0.5	2.3	--
07/01/94	154.13	136.01	18.12	--	--	--	--	140	3.7	1.2	<0.5	1.0	--
10/06/94	154.13	135.50	18.63	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--

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Cumulative Table of Well Data and Analytical Results

Vertical Measurements are in feet.

Volumetric Measurements are in gallons.

Analytical results are in parts per billion (ppb)

DATE	Well	Ground	Depth	Total			Notes	Analytical results are in parts per billion (ppb)						
	Head Elev.	Water Elev.	To Water	SPH Thickness	SPH Removed	SPH Removed		TPH-Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylene	MTBE	
C-3 (CONT'D)														
01/11/95	154.13	137.01	17.12	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
04/07/95	154.13	138.34	15.79	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
07/20/95	154.13	136.37	17.76	--	--	--	--	<50	1.5	1.9	<0.5	3.5	<0.5	--
09/22/95	154.13	136.58	17.55	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
01/02/96	154.13	136.88	17.25	--	--	--	--	<50	<0.5	<0.5	<0.5	1.1	<0.5	<2.5
04/26/96	154.13	137.42	16.71	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
07/22/96	154.13	136.50	17.63	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
10/17/96	154.13	136.33	17.80	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
01/23/97	154.13	138.33	15.80	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--

Cumulative Table of Well Data and Analytical Results

Vertical Measurements are in feet.

Volumetric Measurements are in gallons.

Analytical results are in parts per billion (ppb)

DATE	Well	Ground	Depth	Total			Notes	TPH- Gasoline	Benzene	Toluene	Ethyl- Benzene	Xylene	MTBE
	Head Elev.	Water Elev.	To Water	SPH Thickness	SPH Removed	SPH Removed							
C-4													
10/23/86	156.00	--	--	--	--	--	--	570	3.0	4.0	--	5.0	--
09/10/87	156.00	--	--	--	--	--	--	500	3.0	<0.5	<0.5	<0.5	--
10/16/89	156.00	--	--	--	--	--	--	<500	12	1.0	<0.5	0.8	--
01/04/90	156.00	--	--	--	--	--	--	<500	5.0	<0.5	<0.5	0.9	--
04/05/90	156.00	--	--	--	--	--	--	<50	6.6	<0.5	<0.5	0.7	--
07/02/90	156.00	--	--	--	--	--	--	71	4.1	<0.5	<0.5	<0.5	--
10/03/90	156.00	--	--	--	--	--	--	--	--	--	--	--	--
10/25/90	156.00	135.57	20.43	--	--	--	--	<50	2.0	<0.5	<0.5	<0.5	--
01/22/91	156.00	135.50	20.50	--	--	--	--	<50	3.0	<0.5	<0.5	<0.5	--
02/21/91	156.00	135.77	20.23	--	--	--	--	--	--	--	--	--	--
04/01/91	156.00	136.97	19.03	--	--	--	--	--	--	--	--	--	--
04/11/91	156.00	136.95	19.05	--	--	--	--	--	--	--	--	--	--
07/01/91	156.00	136.10	19.90	--	--	--	--	--	--	--	--	--	--
09/24/91	156.00	135.59	20.41	--	--	--	--	87	1.6	<0.5	<0.5	<0.5	--
10/23/91	156.00	135.47	20.53	--	--	--	--	--	--	--	--	--	--
11/22/91	156.00	135.65	20.35	--	--	--	--	--	--	--	--	--	--
01/09/92	156.00	136.46	19.54	--	--	--	--	51	4.3	<0.5	<0.5	<0.5	--
01/09/92	156.00	136.46	19.54	--	--	--	--	<50	4.8	<0.5	<0.5	<0.5	--
03/06/92	156.00	137.74	18.26	--	--	--	--	<50	0.8	<0.5	<0.5	<0.5	--
06/04/92	156.00	137.08	18.92	--	--	--	--	<50	<0.5	<0.5	<0.5	0.7	--
09/28/92	156.00	135.69	20.31	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
12/17/92	156.00	136.43	19.57	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
04/29/93	156.00	138.22	17.78	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--
07/26/93	156.00	--	--	--	--	--	--	--	--	--	--	--	--
08/18/93	156.00	137.09	18.91	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--
10/22/93	156.00	136.61	19.39	--	--	--	--	<50	2.9	2.1	1.1	4.3	--
01/24/94	156.00	136.58	19.42	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
04/11/94	156.00	136.86	19.14	--	--	--	--	<50	<0.5	0.6	<0.5	0.5	--
07/01/94	156.00	136.80	19.20	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
10/06/94	156.00	136.26	19.74	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--

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Cumulative Table of Well Data and Analytical Results

Vertical Measurements are in feet.

Volumetric Measurements are in gallons.

Analytical results are in parts per billion (ppb)

DATE	Well	Ground	Depth	Total			Notes	TPH- Gasoline	Benzene	Toluene	Ethyl- Benzene	Xylene	MTBE
	Head Elev.	Water Elev.	To Water	SPH Thickness	SPH Removed	SPH Removed							
C-4 (CONT'D)													
01/11/95	156.00	139.70	16.30	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
04/07/95	156.00	139.49	16.51	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
07/20/95	156.00	137.20	18.80	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
09/22/95	156.00	137.26	18.74	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
01/02/96	156.00	137.65	18.35	--	--	--	--	<50	1.6	1.8	0.95	4.1	<2.5
04/26/96	156.00	138.43	17.57	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
07/22/96	156.00	137.00	19.00	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
10/17/96	156.00	136.96	19.04	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
01/23/97	156.00	139.31	16.69	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--

Cumulative Table of Well Data and Analytical Results

Vertical Measurements are in feet.

Volumetric Measurements are in gallons.

Analytical results are in parts per billion (ppb)

DATE	Vertical Measurements are in feet.		Depth To Water	Volumetric Measurements are in gallons.			Notes	Analytical results are in parts per billion (ppb)					
	Well Head Elev.	Ground Water Elev.		SPH Thickness	SPH Removed	Total SPH Removed		TPH- Gasoline	Benzene	Toluene	Ethyl- Benzene	Xylene	MTBE
C-5													
10/03/90	153.38	135.60	17.78	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
10/25/90	153.38	135.46	17.92	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
11/09/90	153.38	135.46	17.92	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
01/22/91	153.38	135.58	17.80	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
02/21/91	153.38	135.87	17.51	--	--	--	--	--	--	--	--	--	--
04/01/91	153.38	137.07	16.31	--	--	--	--	--	--	--	--	--	--
04/11/91	153.38	137.02	16.36	--	--	--	--	--	--	--	--	--	--
07/01/91	153.38	136.26	17.12	--	--	--	--	--	--	--	--	--	--
09/24/91	153.38	135.68	17.70	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
09/24/91	153.38	135.68	17.70	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
10/23/91	153.38	135.56	17.82	--	--	--	--	--	--	--	--	--	--
11/22/91	153.38	135.77	17.61	--	--	--	--	--	--	--	--	--	--
01/09/92	153.38	136.34	17.04	--	--	--	--	<50	<0.5	0.7	<0.5	<0.5	--
03/06/92	153.38	137.62	15.76	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
06/04/92	153.38	136.98	16.40	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
09/28/92	153.38	135.80	17.58	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
12/17/92	153.38	136.56	16.82	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
04/29/93	153.38	138.14	15.24	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--
07/26/93	153.38	137.08	16.30	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--
10/22/93	153.38	136.30	17.08	--	--	--	--	52	2.3	2.7	1.1	5.2	--
01/24/94	153.38	136.25	17.13	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
04/11/94	153.38	136.75	16.63	--	--	--	--	<50	<0.5	0.7	<0.5	0.6	--
07/01/94	153.38	136.73	16.65	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
10/06/94	153.38	136.16	17.22	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
01/11/95	153.38	137.41	15.97	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
04/07/95	153.38	139.37	14.01	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
07/20/95	153.38	137.17	16.21	--	--	--	--	<50	<0.5	<0.5	<0.5	0.61	--
09/22/95	153.38	137.07	16.31	--	--	--	--	62	<0.5	<0.5	<0.5	<0.5	--
01/02/96	153.38	137.56	15.82	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5
04/26/96	153.38	138.41	14.97	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
07/22/96	153.38	137.06	16.32	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
10/17/96	153.38	136.88	16.50	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
01/23/97	153.38	139.18	14.20	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--

Cumulative Table of Well Data and Analytical Results

Vertical Measurements are in feet.				Volumetric Measurements are in gallons.				Analytical results are in parts per billion (ppb)					
DATE	Well Head Elev.	Ground Water Elev.	Depth To Water	SPH Thickness	SPH Removed	Total SPH Removed	Notes	TPH-Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylene	MTBE
C-6													
10/03/90	152.84	134.70	18.14	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
10/25/90	152.84	134.55	18.29	--	--	--	--	<50	<0.5	1.0	<0.5	<0.5	--
11/09/90	152.84	134.58	18.26	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
01/22/91	152.84	134.69	18.15	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
02/21/91	152.84	134.92	17.92	--	--	--	--	--	--	--	--	--	--
04/01/91	152.84	135.73	17.11	--	--	--	--	--	--	--	--	--	--
04/11/91	152.84	135.83	17.01	--	--	--	--	--	--	--	--	--	--
07/01/91	152.84	135.12	17.72	--	--	--	--	--	--	--	--	--	--
09/24/91	152.84	135.72	17.12	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
10/23/91	152.84	134.59	18.25	--	--	--	--	--	--	--	--	--	--
11/22/91	152.84	134.79	18.05	--	--	--	--	--	--	--	--	--	--
01/09/92	152.84	135.42	17.42	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
03/06/92	152.84	136.33	16.51	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
06/04/92	152.84	135.83	17.01	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
09/28/92	152.84	134.84	18.00	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
12/17/92	152.84	135.58	17.26	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
04/29/93	152.84	136.61	16.23	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--
07/29/93	152.84	135.88	16.96	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--
10/22/93	152.84	135.38	17.46	--	--	--	--	74	7.4	6.1	3.3	9.7	--
01/24/94	152.84	135.38	17.46	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
04/11/94	152.84	135.64	17.20	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
07/01/94	152.84	135.66	17.18	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
10/06/94	152.84	135.19	17.65	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
01/11/95	152.84	136.18	16.66	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
04/07/95	152.84	137.25	15.59	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
07/20/95	152.84	135.80	17.04	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
09/22/95	152.84	135.74	17.10	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
01/02/96	152.84	136.08	16.76	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5
04/26/96	152.84	136.64	16.20	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
07/22/96	152.84	135.79	17.05	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
10/17/96	152.84	135.62	17.22	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
01/23/97	152.84	136.99	15.85	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--

Cumulative Table of Well Data and Analytical Results

Vertical Measurements are in feet.

Volumetric Measurements are in gallons.

Analytical results are in parts per billion (ppb)

DATE	Vertical Measurements are in feet.			Volumetric Measurements are in gallons.			Notes	Analytical results are in parts per billion (ppb)					
	Well Head Elev.	Ground Water Elev.	Depth To Water	SPH Thickness	SPH Removed	Total SPH Removed		TPH-Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylene	MTBE
C-7													
10/03/90	155.34	134.52	20.82	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
10/25/90	155.34	134.43	20.91	--	--	--	--	<50	<0.5	1.0	<0.5	<0.5	--
11/09/90	155.34	134.40	20.94	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
01/22/91	155.34	133.84	21.50	--	--	--	--	<50	4.0	<0.5	<0.5	<0.5	--
02/21/91	155.34	134.63	20.71	--	--	--	--	--	--	--	--	--	--
04/01/91	155.34	135.34	20.00	--	--	--	--	--	--	--	--	--	--
04/11/91	155.34	135.29	20.05	--	--	--	--	--	--	--	--	--	--
07/01/91	155.34	134.82	20.52	--	--	--	--	--	--	--	--	--	--
09/24/91	155.34	134.52	20.82	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
10/23/91	155.34	134.43	20.91	--	--	--	--	--	--	--	--	--	--
11/22/91	155.34	134.55	20.79	--	--	--	--	--	--	--	--	--	--
01/09/92	155.34	135.18	20.16	--	--	--	--	--	--	--	--	--	--
03/06/92	155.34	135.92	19.42	--	--	--	--	<50	<0.5	<0.5	<0.5	0.9	--
06/04/92	155.34	135.53	19.81	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
09/28/92	155.34	134.69	20.65	--	--	--	--	250	<0.5	<0.5	<0.5	<0.5	--
12/17/92	155.34	135.32	20.02	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
04/29/93	155.34	136.19	19.15	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--
07/26/93	155.34	135.57	19.77	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--
10/22/93	155.34	135.17	20.17	--	--	--	--	--	--	--	--	--	--
01/24/94	155.34	135.11	20.23	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
04/11/94	155.34	135.39	19.95	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
07/01/94	155.34	135.42	19.92	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
10/06/94	155.34	135.03	20.31	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
01/11/95	155.34	135.98	19.36	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
04/07/95	155.34	136.84	18.50	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
07/20/95	155.34	135.46	19.88	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
09/22/95	155.34	135.38	19.96	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
01/02/96	155.34	135.64	19.70	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
04/26/96	155.34	136.17	19.17	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5
07/22/96	155.34	135.49	19.85	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
10/17/96	155.34	135.34	20.00	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
01/23/97	155.34	136.44	18.90	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--

Cumulative Table of Well Data and Analytical Results

Vertical Measurements are in feet.

Volumetric Measurements are in gallons.

Analytical results are in parts per billion (ppb)

DATE	Well Head Elev.	Ground Water Elev.	Depth To Water	SPH Thickness	SPH Removed	Total SPH Removed	Notes	TPH-Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylene	MTBE
TRIP BLANK													
10/03/90	--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
10/25/90	--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
11/09/90	--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
01/22/91	--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
09/24/91	--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
01/09/92	--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
03/06/92	--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
06/04/92	--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
09/28/92	--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
12/17/92	--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
04/29/93	--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--
07/26/93	--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--
10/22/93	--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--
01/24/94	--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
04/11/94	--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
07/01/94	--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
10/06/94	--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
01/11/95	--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
04/07/95	--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
07/20/95	--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
09/22/95	--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
01/02/96	--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
04/26/96	--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
07/22/96	--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
10/17/96	--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
01/23/97	--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--

Note: Blaine Tech Services, Inc. began routine monitoring of the groundwater wells at this site on November 1, 1994.
 Earlier field data and analytical results are drawn from the September 27, 1994 Groundwater Technology, Inc. report.

ABBREVIATIONS:

TPH = Total Petroleum Hydrocarbons
 SPH = Separate-Phase Hydrocarbons
 MTBE = Methyl t-butyl ether