

April 13, 1998

UST Local Oversight Program
Alameda County Health Agency
Department of Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502 6577

Attention: Ms. Madhulla Logan

Subject: Addendum to Tier 2 RBCA Assessment
Former Oakland Tribune Site
2302 Valdez Street, Oakland, California
Alameda County LOP Site ID 3663
GA 125-01-02

Ladies and Gentlemen:

Pursuant to our telephone conversation on Thursday, April 2, 1998, this letter provides revisions to the recently-completed Tier 2 RBCA Assessment conducted for the subject site in Oakland, California. Your concerns, as we understand them, include: (1) The need to assess risk at the project site itself using the most current groundwater analytical data from wells located within the project site building to calculate representative groundwater concentrations; and (2) The need to address potential offsite risk to nearby residential and commercial receptors. These concerns are addressed below.

Risk Assessment Within the Project Site Building

In order to provide a more representative assessment of risk, we ran the GSI RBCA computer model with the following changes:

- For representative groundwater concentrations, we used the mean BTEX concentrations from the last three sampling events for inside project site wells MW-1, MW-2, and MW-4 (the other inside project site wells, MW-3, MW-5, and MW-6, were not sampled for BTEX constituents during the last three sampling events). We used the mean, rather than the 90% UCL mean, because only nine samples were used to calculate representative COC concentrations, rather than 24 samples as was previously used.
- We used residential, rather than commercial, receptors for outdoor air and indoor air exposure pathways, thereby providing a more conservative assessment of risk at the site.
- We changed the foundation crack fraction to 0.05, rather than the default value of 0.01.

Copies of output pages from the GSI RBCA computer model incorporating these changes are included in Attachment A. These changes result in the following risk calculations:

Table 1 TOTAL PATHWAY RISK ESTIMATES Former Oakland Tribune Site								
Exposure Pathway	Carcinogenic Risk				Toxic Effects Risk			
	Individual COC Risk		Cumulative COC Risk		Individual COC Risk		Cumulative COC Risk	
	Maximum Value	Target Risk	Total Value	Target Risk	Hazard Quotient	Applicable Limit	Hazard Index	Applicable Limit
Outdoor air exposure pathways	7.0×10^{-3}	1×10^{-3}	7.0×10^{-3}	1×10^{-4}	9.7×10^{-1}	1	9.9×10^{-1}	1
Indoor air exposure pathways	5.5×10^{-4}	1×10^{-3}	5.5×10^{-4}	1×10^{-4}	7.5×10^{-2}	1	7.7×10^{-2}	1
Soil Exposure Pathways	NC	1×10^{-3}	NC	1×10^{-4}	NC	1	NC	1
Groundwater exposure pathways	5.2×10^{-11}	1×10^{-3}	5.2×10^{-11}	1×10^{-4}	6.0×10^{-11}	1	9.2×10^{-11}	1

Thus, while these changes have resulted in different risk calculations, the overall conclusions for project site risk have not changed. Model risk calculations indicate that remaining hydrocarbons in subsurface soils and groundwater at the site pose no significant risk to possible residential receptors at the project site. Note that there is no indication that the project site will ever be used as residential property.

Risk Assessment For Nearby Offsite Receptors

The closest identified potentially downgradient receptors are a residential apartment building and a commercial building, located across 23rd Street about 70 feet south and southeast, respectively, from the project site. A revised site plan showing the location of these buildings is included in Attachment B.

Based on groundwater analytical results from wells MW-2, MW-4, and MW-8, it does not appear that groundwater in the vicinity of the residential apartment building has been significantly impacted by hydrocarbon releases from the project site. Both historical and recent groundwater data from these wells shows extremely low to nondetectable levels of BTEX constituents in these wells. Because these wells are located in an approximately downgradient direction between the former USTs and this residential apartment building, these low to nondetectable BTEX results clearly indicate no significant impact to groundwater in the vicinity of this residential apartment building.

Groundwater analytical results from MW-9, located crossgradient from the residential building and upgradient from the commercial building, indicate BTEX impacts to groundwater in this location. In order to assess potential risk to commercial receptors in the downgradient commercial building,

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we ran the GSI RBCA computer model for onsite commercial receptors using the most recent groundwater analytical data from MW-9 as representative COC concentrations. Copies of output pages from the GSI RBCA model are included in Attachment B. Using these concentrations, all risk calculations for onsite commercial receptors were below the target risk value of 1.0×10^{-5} .

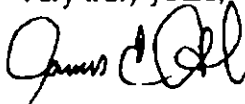
Conclusions

Based on results of revised risk calculations, we conclude that: (1) Remaining hydrocarbons in subsurface soils and groundwater at the site pose no significant risk to any possible commercial or residential receptors at the project site; (2) Soil and groundwater in the vicinity of the nearby offsite residential apartment building do not appear to be significantly hydrocarbon-impacted and, hence, do not pose a significant risk to this offsite residential receptor; and (3) Remaining hydrocarbons in groundwater in the vicinity of MW-9 pose no significant risk to the downgradient offsite commercial building, located on the south side of 23rd Street southeast from the project site.

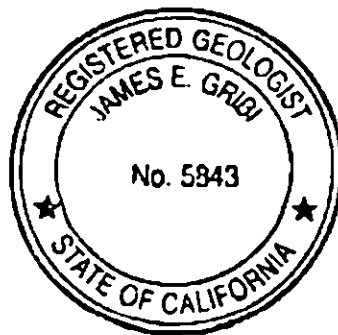
Based on these conclusions, we request that Alameda County Department of Environmental Health grant regulatory closure for this site.

We appreciate the opportunity to present this information for your review. Please call if you have questions or require additional information.

Very truly yours,



James E. Gribi
Registered Geologist
California No. 5843



JEG/ct
Enclosure

c Mr. Chad Schwartz, Esq.
Mr. Arthur Goldman, Ritchie Commercial

File: GA-15/rc-alam.tl2

GRIBI Associates

ATTACHMENT A

**GSI RBCA MODEL OUTPUT TABLES FOR PROJECT SITE
BUILDING USING REVISED INPUT PARAMETERS**

RBCA TIER 1/TIER 2 EVALUATION

Output Table 1

Site Name: Former Gas Tank UST Site Job Identification: Oakland Tribune RBCA
 Site Location: 2302 Valdez Street Oakland, CA 94608 Date Completed: 3/9/98
 Completed By: James E. Gibi

Software: GSRBCA Spreadsheet
 Version: 1.2.1

NOTE: Values which differ from 1 or 1 default values are shown in bold (bold) and underlined.

Exposure Parameter	Definition (Units)	Adult (1-6 yrs)	Residential (1-18 yrs)	Commercial/Industrial/Chronic	Conductivity
AT1	Averaging time for carcinogens (yr)	70	6	25	1
AT2	Averaging time for non-carcinogens (yr)	30	15	70	35
BW	Body Weight (kg)	30	6	25	1
ED	Exposure Duration (yr)	30	6	25	1
f	Averaging time for vapor flux (yr)	30	30	250	100
EF	Exposure Frequency (days/yr)	350	350	250	100
ES-Derm	Exposure Frequency for dermal exposure	350	350	250	100
IRGW	Ingestion Rate of Water (L/day)	2	1	1	100
IRHd	Ingestion Rate of Soil (mg/kg-d)	100	100	300	100
IRIn	Adjusted soiling rate (mg/kg-d)	100	100	300	100
IRaIn	Inhalation rate outdoor (m ³ /day)	15	15	20	10
IRaOut	Inhalation rate indoor (m ³ /day)	20	20	20	10
SA	Soil surface area (dm ²) (cm ²)	50E+03	20E+03	50E+03	50E+03
SA-Adj	Adjusted dermal area (cm ² -yr/kg)	21E+03	21E+03	17E+03	17E+03
SA-Adj	Soil: Skin adherence factor	1	1	1	1
SA-Adj	Age adjustment on soil ingestion	FALSE	FALSE	FALSE	FALSE
SA-Adj	Age adjustment on soil surface area	FALSE	FALSE	FALSE	FALSE
USE	Use EPA use data for es (or PEF based)?	TRUE	TRUE	TRUE	TRUE
USE-MCL	Use MCL as exposure limit in groundwater?	FALSE	FALSE	FALSE	FALSE

Surface Parameters	Definition (Units)	Residential	Commercial
A	Contaminated soil area (cm ²)	3.1E+08	3.1E+08
Vf	Length of affect soil parallel to wind (cm)	1.5E+00	1.0E+00
Vf-90	Length of affect soil parallel to groundwater	1.5E+00	1.0E+00
Uair	Ambient air velocity in routing zone (cm/s)	2.3E+02	2.3E+02
delta	Air routing zone height (cm)	2.0E+02	2.0E+02
delta	Thickness of affected surface soils (cm)	6.9E-14	6.9E-14
PE	Estimated soil erosion rate (g/cm ² -yr)		

Groundwater Definition (Units)	Value
delta gw	Groundwater routing zone depth (cm)
1	Groundwater routing rate (cm/yr)
Lgw	Groundwater layer velocity (cm/yr)
Lgw-b	Groundwater base layer velocity (cm/yr)
Ks	Saturated hydraulic conductivity (cm/s)
grad	Groundwater gradient (cm/cm)
SW	Width of groundwater source zone (cm)
SW	Width of groundwater source zone (cm)
SD	Depth of groundwater source zone (cm)
phi-eff	Effective porosity in water bearing unit
loc-sal	Fracture organic carbon in water bearing unit
BIO?	Is bioturbation considered?
BC	Biogeneration capacity (mg/L)

Soil Definition (Units)	Value
hc	Capillary zone thickness (cm)
hv	Vadose zone thickness (cm)
rho	Soil density (g/cm ³)
loc	Factor of organic carbon in vadose zone
phi	Soil porosity in vadose zone
lgw	Depth to groundwater (cm)
ls	Depth to top of affected subsurface soil (cm)
lsubs	Thickness of affected subsurface soils (cm)
pH	Subgroundwater pH
phi-w	Volume % water content
phi-a	Volume % air content

Building Parameters	Definition (Units)	Residential	Commercial
Ld	Building volume/area ratio (cm)	2.0E+02	3.0E+02
ER	Building air exchange rate (hr ⁻¹)	1.4E-04	2.3E-04
L/A	Building cracks thickness (cm)	1.5E-01	1.5E-01
ela	Fourier air transfer fraction	0.05	0.05

Transport Parameters	Definition (Units)	Residential	Commercial
ax	Length of dispersion (cm)	2.4E+01	2.4E+01
ay	Transverse dispersion (cm)	8.0E+02	8.0E+02
az	Vertical dispersion (cm)	1.2E+02	1.2E+02
dy	Transverse dispersion coefficient (cm)		
dz	Vertical dispersion coefficient (cm)		

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REPRESENTATIVE COC CONCENTRATIONS IN SOURCE MEDIA

(Complete the following table)

CONSTITUENT	Representative COC Concentration					
	in Groundwater		in Surface Soil		in Subsurface Soil	
	value (mg/L)	note	value (mg/kg)	note	value (mg/kg)	note
Benzene	6.5E-3	mean			9.7E-2	UCL
Ethylbenzene	7.8E-3	mean			1.1E-1	UCL
Toluene	2.2E-3	mean			1.2E-1	UCL
Xylene (mixed isomers)	5.7E-3	mean			3.5E-1	UCL

Site Name: Former Oak. Trib UST Site
 Site Location: 2302 Valdez Street, Oakland, CA

Completed By: James E. Gribi
 Date Completed: 3/9/1999

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RBCA SITE ASSESSMENT

Tier 2 Worksheet 8.3

Site Name: Former Oak, Trib UST Site
 Site Location: 2302 Valdez Street, Oakland, CA

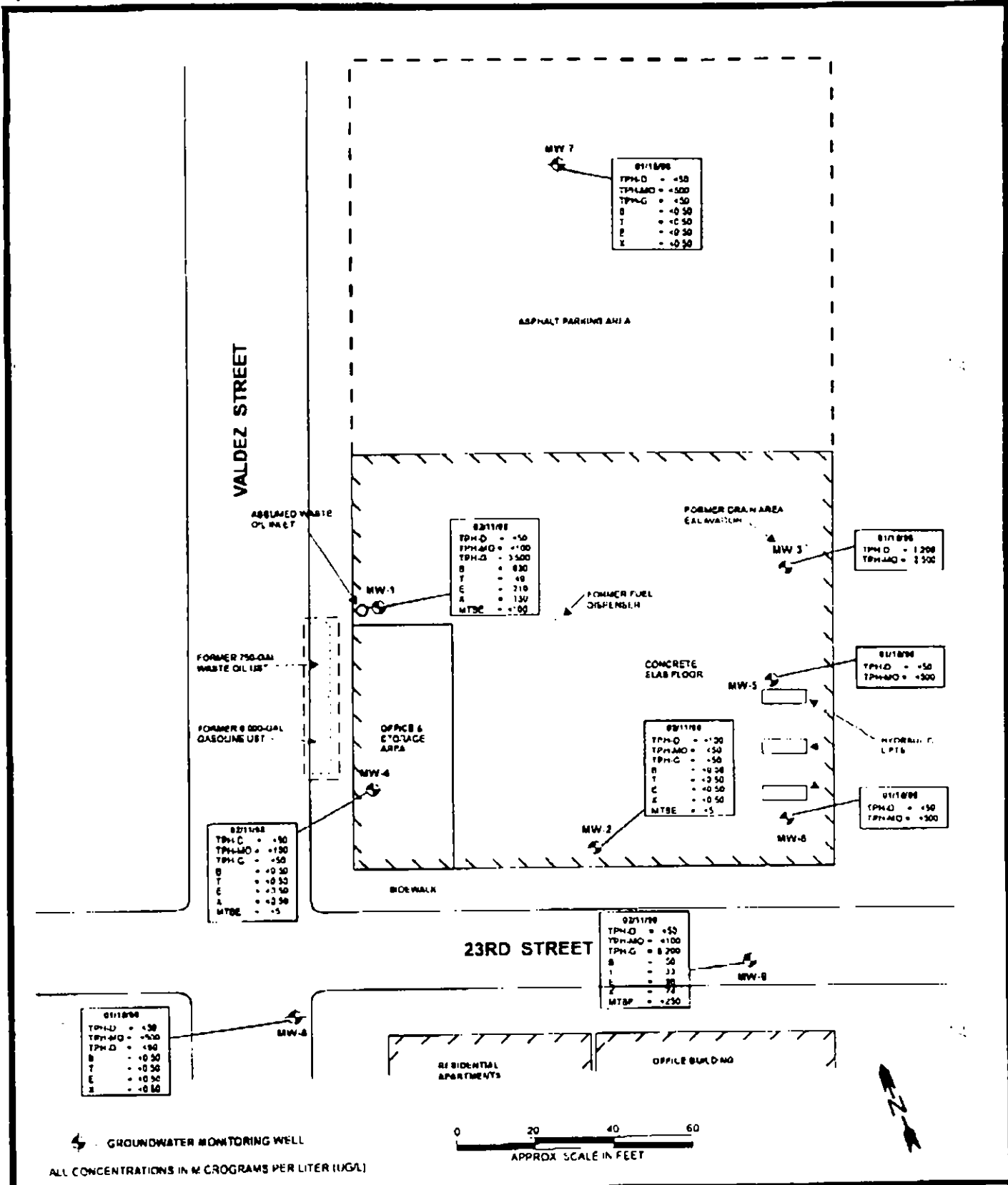
Completed By: James E. Gribi
 Date Completed: 3/9/1998

TIER 2 BASELINE RISK SUMMARY TABLE

EXPOSURE PATHWAY	BASELINE CARCINOGENIC RISK				BASELINE TOXIC EFFECTS				Toxicity Limit(s) Exceeded?	
	Individual COC Risk		Cumulative COC Risk		Risk Limit(s) Exceeded?	Hazard Quotient		Hazard Index		
	Maximum Value	Target Risk	Total Value	Target Risk		Maximum Value	Applicable Limit	Total Value		Applicable Limit
OUTDOOR AIR EXPOSURE PATHWAYS										
Complete:	7.0E-9	1.0E-5	7.0E-9	N/A	<input type="checkbox"/>	9.7E-5	1.0E+0	9.9E-5	N/A	<input type="checkbox"/>
INDOOR AIR EXPOSURE PATHWAYS										
Complete:	5.5E-6	1.0E-5	5.5E-6	N/A	<input type="checkbox"/>	7.5E-2	1.0E+0	7.7E-2	N/A	<input type="checkbox"/>
SOIL EXPOSURE PATHWAYS										
Complete:	NC	1.0E-5	NC	N/A	<input checked="" type="checkbox"/>	NC	1.0E+0	NC	N/A	<input checked="" type="checkbox"/>
GROUNDWATER EXPOSURE PATHWAYS										
Complete:	5.2E-22	1.0E-5	5.2E-22	N/A	<input type="checkbox"/>	6.0E-37	1.0E+0	9.2E-37	N/A	<input type="checkbox"/>
CRITICAL EXPOSURE PATHWAY (Select Maximum Values From Complete Pathways)										
	5.5E-6	1.0E-5	5.5E-6	N/A	<input type="checkbox"/>	7.5E-2	1.0E+0	7.7E-2	N/A	<input type="checkbox"/>

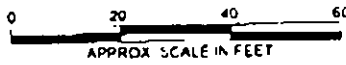
ATTACHMENT B

**REVISED SITE PLAN AND GSI RBCA MODEL OUTPUT FOR
NEARBY OFFSITE RECEPTORS**



GROUNDWATER MONITORING WELL

ALL CONCENTRATIONS IN MICROGRAMS PER LITER (UG/L)



DESIGNED BY:	CHECKED BY:	GROUNDWATER HYDROCARBON RESULTS, VARIOUS DATES FORMER OAKLAND TRIBUNE SHOP OAKLAND, CALIFORNIA	DATE: 02/2/98	FIGURE 5
DRAWN BY: JG	SCALE:		GRIBI Associates	
PROJECT NO 125-01-02				

RBCA TIER 1/TIER 2 EVALUATION

Output Table 1

Site Name: Former Dow, TRILUST Site Job Identification: Oakland Tribune RBCA
 Site Location: 2302 Vassar Street, Oakland, CA 94612
 Software: CSI RBCA Spreadsheet
 Version: 1.0.1
 Completed By: James E. Gribb

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

Exposure Parameter	Definition (Units)	Adult (1-18 yrs)	Child (1-6 yrs)	Chronic Commercial/Industrial	Construction
A/C	Averaging time for carcinogens (yr)	70			
A/Ca	Averaging time for non-carcinogens (yr)	30	4	25	1
BN	Body Weight (kg)	70	15	70	1
ED	Exposure Duration (yr)	30	5	25	1
E	Averaging time for vapor flux (yr)	30		25	1
EF	Exposure Frequency (days/yr)	350		250	180
EF Cont	Exposure frequency for dermal exposure (days/yr)	350		250	180
IR	Ingestion Rate of Water (L/day)	2		1	
IRs	Ingestion Rate of Soil (mg/day)	100	200	50	100
IRd	Adjusted soil ingestion rate (mg-yr/kg-d)	1.1E+02		9.4E+01	
IRa	Inhalation rate indoor (m³/day)	15		20	10
IRo	Inhalation rate outdoor (m³/day)	20		20	10
SA	Skin surface area (dermal) (cm²)	5.8E+03		5.8E+03	5.8E+03
SAadj	Adjusted dermal area (cm²-yr/kg)	2.1E+03		1.7E+03	
SAadj	Soil to Soil adherence factor	1		FALSE	
SAF	Age adjustment on soil ingestion	FALSE		FALSE	
SAFC	Age adjustment on skin surface area	FALSE		FALSE	
SAFCL	Use EPA bio data for air (or PEL based)?	TRUE		TRUE	
SAFCLT	Use MCL as exposure limit in groundwater?	FALSE		FALSE	

Metals of Exposed Persons to Complete Exposure Pathways	Residential	Commercial/Industrial	Chronic	Construction
Outdoor Air Pathways:				
SS v	FALSE	TRUE	FALSE	TRUE
S v	FALSE	TRUE	TRUE	TRUE
GW v	FALSE	TRUE	TRUE	TRUE
Soil Pathways:				
S b	FALSE	TRUE	TRUE	TRUE
GW b	FALSE	TRUE	TRUE	TRUE
Soil Pathways:				
SS d	FALSE	TRUE	TRUE	TRUE
GW d	TRUE	TRUE	FALSE	FALSE
S l	TRUE	TRUE	FALSE	FALSE

Metals of Receptor Distance and Location On- or Off-Site	Residential	Commercial/Industrial
GW	Distance 2.4E+04	Distance 2.4E+04
S	Inhalation receptor (cm) FALSE	Inhalation receptor (cm) TRUE

Metals of Target Risks	Individual	Cumulative
TRB	1.0E-06	1.0E-06
TRC	1.0E-05	1.0E-05
TRH	1.0E+00	1.0E+00
TRK	3	3
TRL	2	2

Surface Parameters	Definition (Units)	Residential	Commercial
A	Contaminated soil area (cm²)	5.1E+05	5.1E+05
W	Length of effect soil parallel to wind (cm)	1.5E+03	1.5E+03
W gw	Length of effect soil parallel to groundwater (cm)	1.5E+03	1.5E+03
Wd	Area of effect soil in storm zone (cm²)	2.3E+02	2.3E+02
Wd gw	Area of effect soil in storm zone (cm²)	2.0E+02	2.0E+02
Wd gw	Area of effect soil in storm zone (cm²)	6.9E+14	6.9E+14
Pe	Particulate emission rate (g/cm²/24h)		

Groundwater Definition (Units)	Value
Groundwater mixing time depth (cm)	2.0E+02
Groundwater infiltration rate (cm/yr)	3.0E+01
Groundwater Darcy velocity (cm/yr)	2.0E+01
Groundwater seepage velocity (cm/yr)	3.0E+01
Saturated hydraulic conductivity (cm/s)	1.0E-04
Groundwater gradient (cm/cm)	7.0E-03
Width of groundwater source zone (cm)	2.4E+03
Depth of groundwater source zone (cm)	4.0E+02
Effective porosity in water bearing unit	3.0E-01
Is biodegradation considered?	TRUE
Biodegradation capacity (mg/L)	TRUE

Soil Definition (Units)	Value
Capillary zone thickness (cm)	5.0E+00
Vadose zone thickness (cm)	4.0E+02
Soil density (g/cm³)	1.7
Fraction of organic carbon in vadose zone	0.01
Soil porosity at vadose zone	0.38
Depth to groundwater (cm)	4.1E+02
Thickness of affected subsurface soil (cm)	3.4E+02
Thickness of affected subsurface soils (cm)	7.4E+02
Soil groundwater pH	6.5
Volumetric water content	0.342
Volumetric air content	0.038

Building Definition (Units)	Residential	Commercial
Building volume/area ratio (cm)	2.0E+02	3.0E+02
Building air exchange rate (s⁻¹)	1.4E-04	2.3E-04
Foundation crack thickness (cm)	1.5E+01	1.5E+01
Foundation crack width	0.05	0.05

Transport Parameters	Definition (Units)	Residential	Commercial
Longitudinal dispersivity (cm)	2.4E+03	2.4E+03	2.4E+03
Transverse dispersivity (cm)	6.0E+02	6.0E+02	6.0E+02
Vertical dispersivity (cm)	1.2E+02	1.2E+02	1.2E+02
Transverse dispersion coefficient (cm)			
Vertical dispersion coefficient (cm)			

REPRESENTATIVE COC CONCENTRATIONS IN SOURCE MEDIA

(Complete the following table)

CONSTITUENT	Representative COC Concentration					
	in Groundwater		in Surface Soil		in Subsurface Soil	
	value (mg/L)	note	value (mg/kg)	note	value (mg/kg)	note
Benzene	5.0E-2	max			9.7E-2	UCL
Ethylbenzene	9.6E-2	max			1.1E-1	UCL
Toluene	3.3E-2	max			1.2E-1	UCL
Xylene (mixed isomers)	7.4E-2	max			3.5E-1	UCL

Site Name: Former Oak. Trn. UST Site
 Site Location: 2302 Valdez Street, Oakland, CA

Completed By: James E. Gribi
 Date Completed: 3/9/1998

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RBCA SITE ASSESSMENT

Tier 2 Worksheet B.3

Site Name: Former Oak 7th UST Site
 Site Location: 2302 Valdez Street, Oakland, CA
 Completed By: James E. Gmbi
 Date Completed: 3/9/1998

TIER 2 BASELINE RISK SUMMARY TABLE

BASELINE CARCINOGENIC RISK										BASELINE TOXIC EFFECTS			
EXPOSURE PATHWAY	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				
Complete:	1.3E-8	1.0E-5	1.3E-8	N/A	<input type="checkbox"/>	2.1E-4	1.0E+0	2.1E-4	N/A	<input type="checkbox"/>			
Complete:	5.0E-6	1.0E-5	5.0E-6	N/A	<input type="checkbox"/>	8.2E-2	1.0E+0	8.4E-2	N/A	<input type="checkbox"/>			
Complete:	NC	1.0E-5	NC	N/A	<input checked="" type="checkbox"/>	NC	1.0E+0	NC	N/A	<input checked="" type="checkbox"/>			
Complete:	5.2E-22	1.0E-5	5.2E-22	N/A	<input type="checkbox"/>	6.0E-37	1.0E+0	9.3E-37	N/A	<input type="checkbox"/>			
	5.0E-6	1.0E-5	5.0E-6	N/A	<input type="checkbox"/>	8.2E-2	1.0E+0	8.4E-2	N/A	<input type="checkbox"/>			